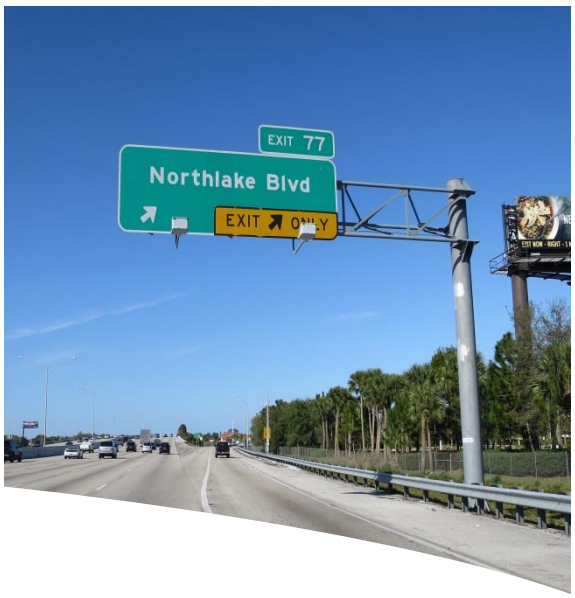
Project Development & Environment (PD&E) Study For SR 9/I-95 @ Northlake Boulevard Interchange In Palm Beach County

Interchange Modification Report (IMR)

FM No: 435803-1-22-02 **ETDM No: 14182**



May 2017

Florida Department of Transportation | District IV

3400 West Commercial Boulevard | Fort Lauderdale, FL 33309

Interchange Modification Report (IMR)
SR 9/I-95 at Northlake Boulevard

Palm Beach County, Florida

FM# 435803-1-22-02| ETDM# 14182

Prepared for

Florida Department of Transportation

District 4

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May 2017

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Palm Beach County, Florida

FPID: 435803-1-22-02

Florida Department of Transportation

Determination of Engineering and Operational Acceptability

Acceptance of this document indicates successful completion of the review and determination of engineering and operational acceptability of the Interchange Access Request. Approval of the access request is contingent upon compliance with applicable Federal requirements, specifically the National Environmental Policy Act (NEPA) or Department's Project Development and Environment (PD&E) Procedures. Completion of the NEPA/PD&E process is considered approval of the project location design concept described in the environmental document.

N/A	Requestor	Scott Thurman, P.E. FDOT District 4 Project Manager	4/11/17 Date
☒	Expressway Authority		Date
☒	Other		Date
	Interchange Review Coordinator	Scott Peterson, P.E. FDOT District 4 Project Development Manager	4/14/17 Date
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	State Chief Engineer	Courtney Drummond, P.E. State Chief Engineer	6/12/17 Date
☒	Assistant Secretary Intermodal Systems Development		Date
☒	Federal Highway Administration		Date

I hereby certify that I am a registered professional engineer in the State of Florida practicing with GOAL Associates Inc., a corporation, located at 14750 NW 77th Court, Suite 320, Miami Lakes, Florida and authorized to operate as an engineering business under Certificate of Authorization No. 30697 and FEID No. 46-4649215, by the State of Florida, Department of Professional Regulation, Board of Professional Engineers, and that I have reviewed or approved the evaluation, findings, opinions, conclusions, or technical advice hereby reported for:

Project: SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

FPID: 435803-1-22-02

ETDM: 14182

FAP: N/A

Location: Palm Beach County, Florida

Client: Florida Department of Transportation District 4

This Interchange Modification Report (IMR) contains detailed engineering information that fulfills the purpose and need for the SR-9/I-95 at Northlake Boulevard Interchange Project Development and Environment (PD&E) Study. I acknowledge that the procedures and references used to develop the results contained in this report are standard to the professional practice of transportation engineering and planning as applied through professional judgment and experience.

GODFREY LAMPTEY Digitally signed by GODFREY LAMPTEY Date: 2017.06.20 00:22:03 -04'00'

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EXECUTIVE SUMMARY

This Executive Summary presents the key findings of the analysis supporting the proposed interchange modification for the SR-9/I-95 at Northlake Boulevard Interchange in Palm Beach County, Florida, and a discussion of the eight Federal Highway Administration (FHWA) Policy Points.

1. Project Background

The Florida Department of Transportation (FDOT) District 4 completed the I-95 Interchange Master Plan Study for Palm Beach County in December 2014 to identify the short-term and long-term needs for the I-95 Interchanges within the County. The purpose of the I-95 Interchange Master Plan Study was to develop design concepts to address traffic spillback onto I-95, improve interchange operations, reduce congestion, and enhance safety at these interchanges through the year 2040. A total of 17 interchange locations were studied as part of the I-95 Interchange Master Plan including the SR-9/I-95 at Northlake Boulevard (CR 809A) interchange.

The Concept Development Report prepared for the I-95 Interchange at Northlake Boulevard in Palm Beach County identified several preliminary short-term and long-term improvements based on the traffic operations analysis conducted for the SR-9/I-95 at Northlake Boulevard interchange and adjacent signalized intersections. The preliminary improvements at this location were recommended to be further evaluated as part of the next phase of the project.

In July 2015, FDOT District 4 initiated the SR-9/I-95 at Northlake Boulevard Interchange Project Development and Environment (PD&E) Study. This Interchange Modification Report (IMR) prepared as part of the PD&E Study will focus on the development and evaluation of alternatives for the proposed improvements at the SR-9/I-95 at Northlake Boulevard interchange. This IMR has been developed in accordance with FDOT's Policy No. 000-525-015 and Procedure No. 525-030-160, including the FDOT Publication: Interchange Access Request User's Guide, March 2015. It outlines the technical procedures, assumptions, traffic data, analyses and documentation required for this process.

2. Project Description, Purpose & Need

The SR-9/I-95 at Northlake Boulevard interchange is located along SR-9/I-95 (MP 34.34 to MP 34.776) between the Blue Heron Boulevard (SR 708) interchange (1.76 miles to the south) and the PGA Boulevard (SR 786) interchange (1.73 miles to the north) within the City of Palm Beach Gardens in eastern Palm Beach County. The interchange is a conventional diamond configuration.

The purpose of the project is to enhance overall traffic operations at the existing interchange of SR-9/I-95 and Northlake Boulevard by providing improvements to achieve acceptable Levels of Service (LOS) at the interchange in the future condition (2040 Design Year). Conditions along Northlake Boulevard are anticipated to deteriorate below acceptable LOS standards if no improvements occur by 2040; the interchange will have insufficient capacity to accommodate the projected travel demand.

The need for the project is based primarily on capacity/transportation demand and growth management. Over the past 20 years, the area has experienced rapid development with associated transportation improvements trying to keep pace. This growth within the study area has burdened the arterial system and the existing interchanges along I-95 to a point where current capacity is beginning to limit mobility. Future travel demand projections indicate that the population and employment within the vicinity of the interchange is anticipated to increase within a 2-mile buffer of the interchange location. As such, the proposed improvements at this interchange location will be critical in supporting growth within the vicinity of the interchange and the overall vision of the City of Palm Beach Gardens and Palm Beach County.

3. Methodology

The methodology applied in this IMR is based on the Methodology Letter of Understanding (MLOU) dated October 2015. The MLOU is a companion document to this IMR Study and was approved by FDOT District 4 and FDOT Central Office. The MLOU outlines the criteria, assumptions, processes, analyses and documentation requirements for the project. A copy of the approved MLOU is provided in **Appendix A**. The MLOU was prepared in accordance with the FDOT's Interchange Access Request Users Guide.

4. Existing Traffic Conditions

The segment of I-95 in the vicinity of the Northlake Boulevard interchange is a ten-lane north-south divided facility and is functionally classified as an urban principal arterial interstate. It is also designated as a Strategic Intermodal System (SIS) corridor. Northlake Boulevard in the vicinity of I-95 is a six-lane divided east-west roadway classified as an urban principal arterial and maintained by Palm Beach County.

The existing (2015) annual average daily traffic (AADT) along SR 9/I-95 is approximately 166,000 vehicles per day. Along Northlake Boulevard the existing AADT ranges from 40,000 to 62,000 vehicles per day. The existing AM and PM peak hour operating conditions for the ramps merge

and diverge locations as well as the SR 9/I-95 mainline sections show LOS D or better for all the merge and diverge locations as well as the basic freeway segments.

The operational analysis for the signalized intersections indicated that several of the existing signalized intersections are operating at an overall LOS E or worse during peak periods. In addition, several intersection approaches and movements, particularly those along the minor side streets are operating at LOS E or worse. For the Northlake Boulevard interchange ramp terminals, the northbound approach at the NB off-ramp operates at LOS F while the southbound approach at the SB off-ramp terminal operates at LOS E during the AM peak period. During the PM Peak period, both the northbound approach at the NB off-ramp and the southbound approach at the SB off-ramp terminal operate at LOS E.

The queue analysis indicated that both the northbound and southbound off-ramps experience significant queues during the AM and PM peak periods with traffic spillback onto the I-95 mainline. This is consistent with observations made during the field reviews.

5. Future Conditions and Alternatives Considered

The alternatives considered as part of the SR 9/I-95 at Northlake Boulevard Interchange PD&E Study include a No Build Alternative, Transportation System Management and Operations (TSM&O) Alternative, and seven Preliminary Build Alternatives. The No Build Alternative assumes no proposed improvements and serves as a baseline for comparison against the other alternatives while the TSM&O Alternative includes low-cost improvements such as, adding turn lanes at intersections, adjusting signal phasing and timings and implementation of intelligent transportation systems (ITS) such as Adaptive Traffic Signals.

Based on the future operational analysis, the No-Build and the TSM&O alternatives will result in LOS F at both the I-95 northbound and southbound Ramp terminals with extended queues backing into the I-95 mainline during the AM and PM peak periods, if no additional improvements are done. In addition, the freeway segment between the Northlake Boulevard northbound on-ramp and the PGA Boulevard off-ramp will operate at LOS E. Consequently, it was determined that the No Build and TSM&O Alternatives will be inadequate to accommodate the future travel demand within this interchange. Although the TSM&O Alternative alone does not satisfactorily address the future needs of this interchange, the TSM&O elements were incorporated into the proposed Build Alternatives evaluated as part of this IMR Study.

A total of seven preliminary alternatives were developed as part of the Tier 1 alternatives analysis to evaluate and select the most effective alternatives for further refinement. The preliminary build alternatives were initially evaluated for the 2040 design year and include the following:

- Alternative 1 - Modified Concept Report
  - Triple lefts & triple rights at ramp terminal exits
- Alternative 2 - Diverging Diamond Interchange
- Alternative 3 - Elevated Flyover Ramp(s)
  - Alt. 3A: Westbound to Southbound Entrance Ramp
  - Alt. 3B: Northbound to Westbound Exit Ramp
  - Alt. 3C: Eastbound to Northbound Entrance Ramp
  - Alt. 3D: Southbound to Eastbound Exit Ramp
  - Alt. 3E: Westbound to Southbound & Eastbound to Northbound Entrance Ramps

A qualitative evaluation of the preliminary build alternatives based on operational improvements to the ramp terminals, potential right of way impacts and construction costs was performed as part of the study. Based on the evaluation, Build Alternatives 1, 2 and 3E were selected for further refinement as part of the Tier 2 Analysis.

6. Refined Build Alternatives

A detailed operational evaluation of the refined build alternatives using SYNCHRO for the LOS analysis and microsimulation using SIMTRAFFIC for the queue length analysis was performed. The results from the analysis indicated that the refined build alternatives perform substantially better than the No Build Alternative for all future year scenarios particularly for the Northlake Boulevard interchange ramp terminal approaches, which is the primary focus for this study. The table below shows a comparison of the No-Build and Build Alternatives for the 2040 design year.

Alternative	I-95 SB Ramp Terminal Approach			I-95 NB Ramp Terminal Approach		
	LOS (AM/PM)	Max. Queue Length	Storage Deficiency	LOS (AM/PM)	Max. Queue Length	Storage Deficiency
No-Build Alternative	**F/F**	1746	Yes (66%)	**F/F**	1250	Yes (11%)
Alternative 1 - Modified CDR	D/D	573	No	D/D	747	No
Alternative 2 - DDI	B/C	688	No	B/C	625	No
Alternative 3E – Dual Flyovers	D/D	636	No	D/D	439	No

Based on the evaluation results, all three build alternatives will provide acceptable level of service for the ramp terminal approaches. It is anticipated that the Build Alternatives will provide 65% to 77% reduction in delays for the I-95 SB ramp terminal and 69% to 79% reduction in delays at the I-95 NB ramp terminal compared to the No-Build Alternative. However, Build Alternative 1 results in LOS E for the northbound left turn movement at the NB ramp terminal for the 2040 design year. Alternative 2 provides better operations at the ramp terminal compared to the other alternatives due to the DDI configuration which reduces the number of signal phases.

A comparison of the queue lengths at the ramp terminal approaches indicate that all the build alternatives provide adequate storage to accommodate the queues along the ramps without backup into the I-95 mainline compared to the No-Build condition. It is anticipated that the Build Alternatives will result in a 61% to 67% reduction in queue length at the I-95 SB off-ramp and 40% to 65% reduction in queue length at the I-95 NB off-ramp. Build Alternative 1 will require realignment and extension of the existing NB and SB off-ramps to accommodate the 2040 design year queues which will result in right of way impacts to the residential properties in the northwest quadrant of the interchange. The DDI configuration proposed in Build Alternative 2 will require extensive right of way impacts to commercial properties within all 4 quadrants of the interchange with potential adverse impact on the tax base and revenue. Build Alternatives 3 also requires additional right of way to accommodate flyover for the northbound on-ramp which results in right of way impacts to approximately 18 residential properties in the northeast quadrant.

These results demonstrate that the Build Alternatives provide overall better traffic operating conditions when compared to the No-Build Alternative. Although Build Alternative 2 provides the best operational performance among the three build alternatives, overall, Build Alternative 1 provides comparable operational performance with the least impacts and costs while satisfying the purpose and need of this project.

7. Recommendations

Northlake Boulevard Interchange

The PD&E study process analyzed several factors related to the regional traffic growth, required traffic lanes to support the level of service standards, No-Build and Build Alternatives to meet the required level of service standards, effects to the human and natural environment, costs and public comments. Based on the comprehensive evaluation presented in this IMR study, community and local government input, and extensive discussions with FDOT staff, Build Alternative 1 was selected as the recommended alternative since it provides adequate operational performance with the least impacts and costs among the three build alternatives

while satisfying the purpose and need of this project. The Recommended Build Alternative 1 offers several advantages compared to the No-Build Alternative including the following:

- **Reduced Travel Time and Delays:** The traffic operational analysis performed as part of this study indicated that for the Recommended Build Alternative 1, all the approaches for I-95 ramp terminals will operate at LOS D or better during both the AM and PM peak periods for the 2040 design years compared to LOS F for the No-Build Alternative. For the Northlake Boulevard ramp terminal approaches, the southbound off-ramp approach will experience 67% and 73% reduction in delay whereas the northbound off-ramp approach will experience 80% and 72% reduction in delay compared to the No-Build Alternative for the AM and PM peak periods respectively.
- **No Queue Spillback onto I-95 Mainline:** The queuing analysis performed using SIMTRAFFIC microsimulation model indicated that Build Alternative 1 results in 67% and 40% reduction in queue length at the I-95 SB and NB ramp terminals respectively compared to the No-Build Alternative. In addition, Build Alternative 1 requires the least amount of right of way impact compared to the other build alternatives to accommodate the 2040 design year queues. The No-Build Alternative will exceed the existing ramp storage by 11% and 66% at the NB and SB off-ramps respectively.
- **Enhanced Safety & Access Management:** The proposed improvements under Build Alternative 1 is anticipated to enhance safety along both I-95 and Northlake Boulevard due to the significant reduction in delays, improved mobility, and no queue spillback onto the I-95 mainline. In addition, Build Alternative 1 provides access management improvements along Northlake Boulevard by closing the directional median at Roan Lane and removing the eastbound left turn and traffic signal. The existing directional median opening, located approximately 375 ft from the I-95 NB Ramp terminal is substandard and does not meet the minimum 660 ft requirement per the Palm Beach County Access Management Standards.

PGA Boulevard SB On-Ramps

As part of this IMR study, improvements at the PGA Boulevard Southbound On-Ramps were also evaluated. These improvements are considered as a traffic safety and operations improvement and not a capacity improvement project and do not require formal Location Design Concept Acceptance. The proposed improvements are fully contained within the I-95 limited access right of way, does not add travel lanes and are anticipated to be either a Type I Categorical Exclusion or a Minor Categorical Exclusion (MiCE).

Based on the evaluation of the operational, roadway, drainage, environmental impacts and construction costs, PGA Alternative 1 was selected as the recommended operational improvement since it achieves a similar operational benefit compared to PGA Alternative 2. In addition, Alternative 1 is less costly, less disruptive and results in less environmental impacts.

The proposed improvement under PGA Alternative 1 realigns the WB-SB flyover ramp to join I-95 as an auxiliary lane, eliminating the existing tapered merge connection to the outside general purpose lane. The EB-SB ramp then joins the mainline as an additional auxiliary lane, approximately 1,000 ft. downstream of the WB-SB ramp connection. The second auxiliary lane runs parallel for 1,350 ft. to allow for driver gap acceptance, before merging into the inside auxiliary lane, which then extends south to the interchange with Northlake Boulevard.

ASSESSMENT OF FHWA'S POLICY

An assessment was made of the FHWA's Policy on Access to the Interstate System as outlined in the FHWA Interstate System Access Informational Guide, dated August 2010. The FHWA Policy defines the requirements (eight policy statements) that must be addressed for the justification and documentation necessary to substantiate any proposed change(s) in access to the Interstate System. The following demonstrate compliance with the FHWA's requirements and justification for the proposed modifications to the SR-9/I-95 at Northlake Boulevard Interchange.

Policy Point 1:

The need being addressed by the request cannot be adequately satisfied by existing interchanges to the Interstate, and/or local roads and streets in the corridor can neither provide the desired access, nor can they be reasonably improved (such as access control along surface streets, improving traffic control, modifying ramp terminals and intersections, adding turn bays or lengthening storage) to satisfactorily accommodate the design-year traffic demands (23 CFR 625.2(a)).

Response: The purpose of the project is to enhance overall traffic operations at the existing interchange of SR-9/I-95 and Northlake Boulevard by providing improvements to achieve acceptable Levels of Service (LOS) at the interchange in the future condition (2040 Design Year). This primary objective cannot be satisfied by other existing interchanges, or improvements to Northlake Boulevard and local streets. The nearest interchanges are located approximately 2 miles north and south of this interchange at PGA Boulevard and Blue Heron Boulevard respectively. The proposed improvements include ramp terminal modifications as well as capacity and intersection improvements along Northlake Boulevard to accommodate the design year traffic demand.

Policy Point 2:

The need being addressed by the request cannot be adequately satisfied by reasonable transportation system management (such as ramp metering, mass transit, and HOV facilities, geometric design, and alternative improvements to the Interstate without the proposed change(s) in access (23 CFR 625.2(a)).

Response: A TSM&O Alternative was considered as part of the IMR Study to provide low-cost improvements such as, adding turn lanes at intersections, adjusting signal phasing and timings and implementation of intelligent transportation systems (ITS) such as Adaptive Traffic Signals. Palm Beach County in conjunction with FDOT District 4 is currently evaluating Adaptive Traffic

Control System (ATCS) along Northlake Boulevard to handle fluctuations in traffic volumes and improve progression through the traffic signals (FM: 432883-1). Given the current saturated conditions along Northlake Boulevard during the peak periods, these TSM&O improvements are anticipated to provide short term operational and safety benefits such as 25% delay reduction and 3% crash reduction during non-recurring events, based on data from the previous FDOT D4 ATCS projects conducted in Broward and Palm Beach Counties.

Based on the future operational analysis, the No-Build and the TSM&O alternatives will result in LOS F at the I-95 Ramp terminals with extended queues backing into the I-95 mainline for the 2040 design year if no additional improvements are implemented. Although the TSM&O Alternative alone does not satisfactorily address the future needs of this interchange, TSM&O elements were incorporated into the proposed Build Alternatives considered as part of the IMR. The Build Alternatives provide the necessary improvements to meet the level of service requirements for the design year.

Policy Point 3:

An operational and safety analysis has concluded that the proposed change in access does not have a significant adverse impact on the safety and operation of the Interstate facility (which includes mainline lanes, existing, new, or modified ramps, ramp intersections with crossroad) or on the local street network based on both the current and the planned future traffic projections. The analysis shall, particularly in urbanized areas, include at least the first adjacent existing or proposed interchange on either side of the proposed change in access (23 CFR 625.2(a), 655.603(d) and 771.111(f)). The crossroads and the local street network, to at least the first major intersection on either side of the proposed change in access, shall be included in this analysis to the extent necessary to fully evaluate the safety and operational impacts that the proposed change in access and other transportation improvements may have on the local street network (23 CFR 625.2(a) and 655.603(d)). Requests for a proposed change in access must include a description and assessment of the impacts and ability of the proposed changes to safely and efficiently collect, distribute and accommodate traffic on the Interstate facility, ramps, intersection of ramps with crossroad, and local street network (23 CFR 625.2(a) and 655.603(d)). Each request must also include a conceptual plan of the type and location of the signs proposed to support each design alternative (23 U.S.C. 109(d) and 23 CFR 655.603(d)).

Response: From an operational perspective, the traffic analysis performed for the signalized intersections indicated that several of the existing signalized intersections are operating at an overall LOS E or worse during the peak periods. For the Northlake Boulevard interchange ramp

terminals, the NB off-ramp approach operates at LOS F during the AM peak period while the SB off-ramp approach operates at LOS E during the PM peak period. Significant queues were observed during the field reviews for the northbound off-ramps.

The Recommended Build Alternative 1 for this study performs substantially better than the No Build Alternative for all future year scenarios particularly for the Northlake Boulevard interchange ramp terminals, which is the primary focus for this study. The traffic analysis results indicate that all the approaches for I-95 ramp terminals will operate at LOS D or better during both the AM and PM peak periods for the 2040 design years compared to LOS F for the No-Build Alternative. For the Northlake Boulevard ramp terminal approaches, the southbound off-ramp approach will experience 67% and 73% reduction in delay whereas the northbound off-ramp approach will experience 80% and 72% reduction in delay compared to the No-Build Alternative for the AM and PM peak periods respectively.

In addition, Build Alternative 1 results in 67% and 40% reduction in queue length at the I-95 SB and NB ramp terminals respectively compared to the No-Build Alternative. Build Alternative 1 also requires the least amount of right of way impact to accommodate the 2040 design year queues compared to the other build alternatives. The No-Build alternative will exceed the existing ramp storage by 11% and 66% at the NB and SB off-ramps respectively.

From a safety perspective, the safety analysis performed for this study indicated a total of 1086 crashes for the study area for the five-year period from 2010 to 2014 with five fatalities. The predominant crash type that occurred within the study area was rear end collisions with 53%, angle crashes with 14%, and sideswipe collisions with 13%. Crashes of this type are typically attributed to the congested conditions along the arterials and interchange ramps and terminals.

The proposed improvements under Build Alternative 1 is anticipated to enhance safety along both I-95 and Northlake Boulevard due to the significant reduction in delays, improved mobility, and no queue spillback onto the I-95 mainline. In addition, Build Alternative 1 provides access management improvements along Northlake Boulevard by closing the directional median and removing the eastbound left turn and traffic signal at Roan Lane.

Overall, the Recommended Build Alternative 1 provides significantly better traffic operations and enhanced safety when compared to the No Build Alternative.

Policy Point 4:

The proposed access connects to a public road only and will provide for all traffic movements. Less than "full interchanges" may be considered on a case-by-case basis for applications requiring special access for managed lanes (e.g., transit, HOVs, HOT lanes) or park and ride lots. The proposed access will be designed to meet or exceed current standards (23 CFR 625.2(a), 625.4(a)(2), and 655.603(d)).

Response: The existing SR-9/I-95 at Northlake Boulevard interchange is a full-service interchange which provides all traffic movements to Northlake Boulevard, a County Road (CR 809A). The proposed interchange modifications will be designed and constructed to meet current and future FDOT and AASHTO design standards.

Policy Point 5:

The proposal considers and is consistent with local and regional land use and transportation plans. Prior to receiving final approval, all requests for new or revised access must be included in an adopted Metropolitan Transportation Plan, in the adopted Statewide or Metropolitan Transportation Improvement Program (STIP or TIP), and the Congestion Management Process within transportation management areas, as appropriate, and as specified in 23 CFR part 450, and the transportation conformity requirements of 40 CFR parts 51 and 93.

Response: The proposed improvements at the SR-9/I-95 at Northlake Boulevard Interchange is identified in the Palm Beach County Metropolitan Planning Organization (MPO) 2040 Long Range Transportation Plan (LRTP) as an unfunded project with Design $2,995,000, Right of Way $39,400,000, and Construction $25,610,000. An amendment to Palm Beach MPO's adopted 2040 LRTP to include the project as fully funded in the Cost Feasible Plan (CFP) is expected to be received prior to the public hearing currently scheduled for September 2017.

The proposed project is also identified in the Palm Beach County approved 2017-2021 Transportation Improvement Program (TIP) (FPID: 435803-1) with funding for the design phase in 2021 and the construction phase beyond the TIP five-year horizon. Additionally, the project is included in the FDOT 2040 Strategic Intermodal System (SIS) approved 2nd 5-Year Plan, as well as the approved 2016 State Transportation Improvement Program (STIP) with funding for both the design and construction phases.

The Northlake Boulevard Interchange Improvements project (FPID 435803-1) is included in the FDOT District Four Five-Year Work Program with funding allocated as follows:

- Preliminary Engineering (2018) $ 5,100,000

- Right of way (2020) $ 61,463,486
- Construction (2022) $ 15,050,388

The PD&E Phase of this project commenced in the Summer of 2015 and is anticipated to be completed by Fall 2017 with the approval of the Local Design Concept and Acceptance (LDCA). The preparation of the design plans is anticipated to begin in Fall 2017. The right-of-way acquisition and final design phase are anticipated to be completed by Fall 2021. Construction is anticipated to begin in Summer 2022.

Policy Point 6:

In corridors where the potential exists for future multiple interchange additions, a comprehensive corridor or network study must accompany all requests for new or revised access with recommendations that address all of the proposed and desired access changes within the context of a longer-range system or network plan (23 U.S.C. 109(d), 23 CFR 625.2(a), 655.603(d), and 771.111).

Response: The SR-9/I-95 at Northlake Boulevard (CR 809A) interchange was one of the 17 interchanges studied as part of the recently completed I-95 Interchange Master Plan in Palm Beach County. For this IMR study, the area of influence included the adjacent interchanges along I-95 to the north and south at PGA Boulevard and Blue Heron Boulevard respectively.

In addition to the proposed improvements at the Northlake Boulevard interchange, this IMR study also evaluated improvements to the PGA Boulevard southbound on-ramps to enhance operations and safety. The proposed improvement realigns the WB-SB flyover ramp to join I-95 as an auxiliary lane, eliminating the existing tapered merge connection to the outside general purpose lane.

Policy Point 7:

When a new or revised access point is due to a new, expanded, or substantial change in current or planned future development or land use, requests must demonstrate appropriate coordination has occurred between the development and any proposed transportation system improvements (23 CFR 625.2(a) and 655.603(d)). The request must describe the commitments agreed upon to assure adequate collection and dispersion of the traffic resulting from the development with the adjoining local street network and Interstate access point (23 CFR 625.2(a) and 655.603(d)).

Response: The proposed SR-9/I-95 at Northlake Boulevard interchange improvements are not due to changes in current or planned future development or land use. The surrounding land use

is highly developed urban land use according to the Future Land Use Maps for Palm Beach County and the City of Palm Beach Gardens. The proposed interchange modifications were identified as part of the recently completed I-95 Interchange Master Plan in Palm Beach County prepared by the FDOT District 4.

Over the past 20 years, the area has experienced rapid development with associated transportation improvements trying to keep pace. This growth within the study area has burdened the arterial system and the existing interchanges along I-95 to a point where current capacity is beginning to limit mobility. Future travel demand projections indicate that the population within the vicinity of the interchange is anticipated to increase by 50% from 2010 to 2040, while employment is expected to increase by approximately 51% from 2010 to 2040 within a 2-mile buffer of the interchange location. As such, the proposed improvements will be critical in supporting growth within the vicinity of the interchange and the overall vision of the City of Palm Beach Gardens and Palm Beach County.

Policy Point 8:

The proposal can be expected to be included as an alternative in the required environmental evaluation, review and processing. The proposal should include supporting information and current status of the environmental processing (23 CFR 771.111).

Response: An evaluation of the potential environmental impacts associated with the proposed improvements was performed as part the SR-9/I-95 at Northlake Boulevard Project Development and Environment (PD&E) Study, and was conducted concurrently with the review and approval of this Interchange Access Request.

The project is not anticipated to have any adverse impacts on the surrounding community, historical or archaeological resources, threatened and endangered species, noise or Section 4(f) facilities. The PD&E Study identifies efforts to minimize the social, cultural, physical and natural environment effects of the build alternative.

The PD&E Phase of this project commenced in July 2015 and is anticipated to be completed by December 2017. An Agency/Public Kickoff Meeting was conducted in November 2015 and an Alternative Workshop was held in December 2016, The Public Hearing for the PD&E Study is scheduled for September 2017 and the final environmental document (Categorical Exclusion Type II) is anticipated to be completed by November 2017 with location design concept acceptance (LDCA) obtained by December 2017.

1.0 INTRODUCTION

1.1 Project Background

The Florida Department of Transportation (FDOT) District 4 completed the I-95 Interchange Master Plan Study for Palm Beach County in December 2014 to identify the short-term and long-term needs for the I-95 Interchanges within the County. The purpose of the I-95 Interchange Master Plan Study was to develop design concepts to address traffic spillback onto I-95, improve interchange operations, reduce congestion, and enhance safety at these interchanges through the year 2040. A total of 17 interchange locations were studied as part of the I-95 Interchange Master Plan including the SR-9/I-95 at Northlake Boulevard (CR 809A) interchange.

The Concept Development Report prepared for the I-95 Interchange at Northlake Boulevard in Palm Beach County identified several preliminary short-term and long-term improvements based on the traffic operations analysis conducted for the SR-9/I-95 at Northlake Boulevard interchange and adjacent signalized intersections. Some of the preliminary improvements identified for this interchange include:

- Triple left turns for the SR-9/I-95 northbound off-ramp.
- Dual SR-9/I-95 northbound on-ramp and an auxiliary lane on northbound SR-9/I-95 to accommodate westbound-to-northbound right-turn free-flow lane.
- Quadruple left-turns for the SR-9/I-95 southbound off-ramp.
- Improvements at various intersections along Northlake Boulevard including Keating Drive, Military Trail, and Sunrise Drive/Sandtree Drive.

The preliminary improvements at this location were recommended for further evaluation as part of the Project Development and Environment (PD&E) Study. In order to streamline the PD&E process and to expedite the traffic analysis effort, the FDOT District 4 Planning and Environmental Management Office prepared a Traffic Data Collection & Traffic Projections Report for various PD&E studies along I-95 including the I-95 Interchange at Northlake Boulevard to provide consistent traffic data and forecasts. This report provides the existing traffic data as well as the Annual Average Daily Traffic (AADT) forecasts for the freeway and arterial segments within the project study limits and will serve as the basis of the traffic analysis.

This Interchange Modification Report (IMR) prepared as part of the SR-9/I-95 at Northlake Boulevard Interchange Project Development and Environment (PD&E) Study will focus on the development and evaluation of alternatives for the proposed improvements at the SR-9/I-95 at Northlake Boulevard interchange. This IMR was developed in accordance with FDOT's Policy No. 000-525-015 and Procedure No. 525-030-160, including the FDOT Publication: Interchange

Access request User's Guide, March 2015. It outlines the technical procedures, assumptions, traffic data, analyses, and documentation required for this process.

1.2 PGA Boulevard Southbound On-Ramp

Included in the Interchange Modification Report was the evaluation of the I-95 Southbound On-Ramp at PGA Boulevard. FDOT District 4 requested an evaluation to determine the feasibility of combining the two I-95 SB on-ramp access points for the eastbound to southbound ramp and the westbound to southbound flyover ramp. The PGA Boulevard Ramp improvement anticipated level of environmental effect is either a Type I Categorical Exclusion or a Minor Categorical Exclusion (MiCE), since all the improvements will be constructed within the existing maintained I-95 right of way.

1.3 Project Description

SR-9/I-95 is currently a ten-lane divided interstate freeway from north of the Blue Heron Boulevard interchange (southern limit) to north of the PGA Boulevard interchange (northern limit) providing four general purpose lanes and one High Occupancy Vehicle (HOV) lane in each direction. Auxiliary lanes are also provided in both the northbound and southbound directions between PGA Boulevard to the north and Blue Heron Boulevard to the south. North of Northlake Boulevard, SR-9/I-95 southbound provides one auxiliary lane between PGA Boulevard and Northlake Boulevard for a total of six southbound lanes. South of Northlake Boulevard, SR-9/I-95 provides one auxiliary lane in each direction between Blue Heron Boulevard and Northlake Boulevard resulting in a twelve-lane section. The existing right-of-way varies as it approaches the interchange, but the typical right-of-way ranges from approximately 300 to 725 ft. As part of the Strategic Intermodal System (SIS) and one of two major expressways (Florida's Turnpike being the other) that connect the major employment centers and residential areas of Miami-Dade, Broward and Palm Beach Counties, SR-9/I-95 serves an important role in facilitating the north-south movement of traffic in Southeast Florida.

Under the jurisdiction of Palm Beach County, Northlake Boulevard is a six-lane divided urban other principal arterial. Northlake Boulevard at the SR-9/I-95 overpass has dual left-turn lanes and a single right-turn lane in both the eastbound and westbound directions to access the SR-9/I-95 on-ramps. The existing right-of-way varies from approximately 150 ft. to 200 ft. west of SR-9/I-95 and 200 ft. east of SR-9/I-95. Sidewalks and bicycle lanes are provided along both sides

of Northlake Boulevard but only extend from Keating Drive on the west side of the interchange and Sandtree Drive to the east.

The interchange at SR-9/I-95 and Northlake Boulevard is a conventional diamond configuration. Adjacent accessible signalized intersections relative to this interchange are located at Keating Drive (west), Roan Lane, and Sunrise Drive/Sandtree Drive (east). This interchange project proposes to improve interchange operations to address traffic spillback onto SR-9/I-95, reduce congestion, and increase safety. These improvements include widening of Northlake Boulevard between Keating Drive and Sunrise Drive from six to eight lanes and providing additional left and right turn lanes at the I-95 NB and SB off-ramp terminals. The interchange improvements (2040 Design Year Recommended Improvements) are likely to require additional right-of-way. Based on the Florida Department of Transportation's preliminary Long Range Estimate (LRE), the construction cost estimate for the improvements is estimated at approximately $28.8 million.

1.4 Project Location

The SR-9/I-95 at Northlake Boulevard interchange is located along SR-9/I-95 (MP 34.34 to MP 34.776) between the Blue Heron Boulevard (SR 708) interchange (1.76 miles to the south) the PGA Boulevard (SR 786) interchange (1.73 miles to the north) within the City of Palm Beach Gardens in eastern Palm Beach County. **Figure 1-1** shows the project location map and study area.

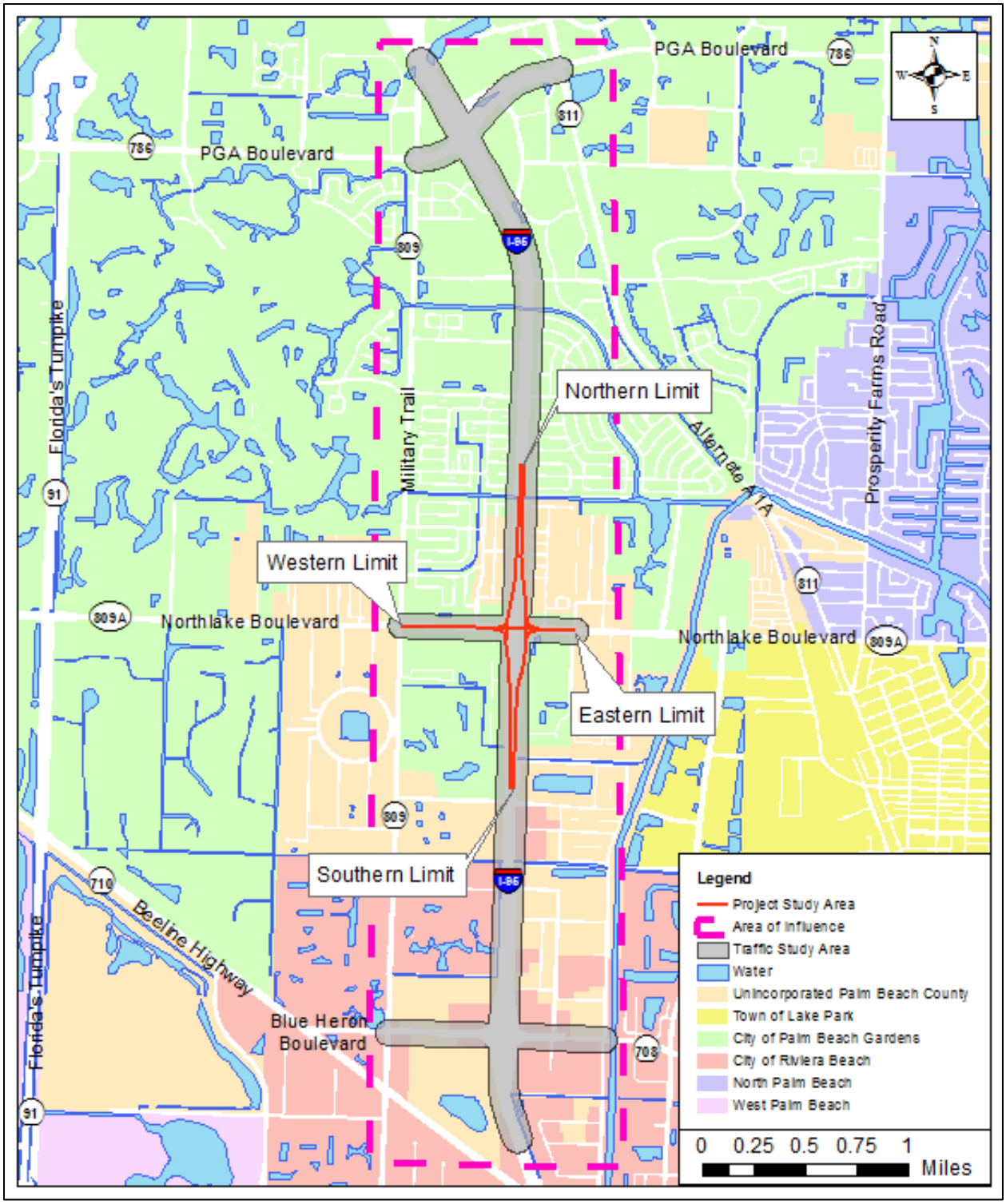


Figure 1-1 Project Location Map

1.5 Purpose and Need

The purpose of the project is to enhance overall traffic operations at the existing interchange of SR-9/I-95 and Northlake Boulevard by providing improvements to achieve acceptable Levels of Service (LOS) at the interchange in the future condition (2040 Design Year). Conditions along Northlake Boulevard are anticipated to deteriorate below acceptable LOS standards if no improvements occur by 2040; the interchange will have insufficient capacity to accommodate the projected travel demand. The need for the project is based on the following primary and secondary criteria, which was obtained from the Efficient Transportation Decision Making (ETDM) Summary Report (published May 2015).

1.5.1 Primary Criteria: Capacity/Transportation Demand

The project is anticipated to improve traffic operations at the SR-9/I-95 and Northlake Boulevard interchange and study area roadways/intersections by implementing operational and capacity improvements to meet the future travel demand.

Based upon the traffic operations analysis conducted for the SR-9/I-95 at Northlake Boulevard interchange and adjacent signalized intersections, the existing and future AM and PM peak hour traffic conditions for the six study intersections along Northlake Boulevard are shown in **Table 1-1** below.

Table 1-1
Existing and Future Intersection LOS

Intersection	Existing (2015)				Future (2040 No-Build)			
	AM		PM		AM		PM	
	LOS	Delay(s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)
Military Trail	E	55.3	E	64.6	E	63.2	F	90.4
Keating Drive	B	17.5	D	44.3	E	73.6	F	142.5
SB Ramp Terminal	C	27.9	C	31.5	F	80.5	F	90.4
NB Ramp Terminal	E	59.5	D	47.5	F	103.9	F	123.4
Roan Lane	A	1.1	A	2.3	A	0.9	A	2.6
Sunrise Drive	E	62.9	E	68.8	E	70.7	F	98.6

Although all the intersections along Northlake Boulevard operate at LOS E or better under existing conditions, it should be noted that several of the individual through and turning movements at the intersections (which include the SR-9/I-95 on/off-ramp approaches) operate at LOS F during both the AM and PM peak periods. In addition, the northbound off-ramp experiences significant queues during both the AM and PM peak periods with traffic spillback onto the I-95 mainline.

Without the proposed improvements, all the study intersections (except Roan Lane) are projected to experience excessive delays and operate at LOS F by the 2040 Design Year, which is below acceptable LOS D standard for FDOT SIS Facilities (I-95 ramp terminals) and LOS E for Palm Beach County (Military Trail, Keaton Drive and Sunrise/Sandtree Drive). This will also result in extended queues along the I-95 northbound and southbound ramps with traffic backing into the I-95 mainline during the AM and PM peak periods.

1.5.2 Primary Criteria: Growth Management

Commercial retail/office and residential land uses are located adjacent to the interchange. Commercial retail/office land uses are located along Northlake Boulevard west of the SR-9/I-95 southbound ramps. Predominantly residential uses are located to the west of Congress Avenue, while residential and commercial retail uses are located to the east of SR-9/I-95. According to the Future Land Use Maps for Palm Beach County and the City of Palm Beach Gardens, the project area is to remain relatively unchanged.

The population within the vicinity of the interchange is anticipated to increase by 50% from 2010 to 2040, while the employment is expected to increase by approximately 51% from 2010 to 2040 within a 2-mile buffer of the interchange location. These projections are based on data derived from the Southeast Regional Planning Model (SERPM) Version 7.0 (February 2015 version).

As such, the proposed improvements will be critical in supporting growth within the vicinity of the interchange and the overall vision of the City of Palm Beach Gardens and Palm Beach County.

1.5.3 Secondary Criteria: Safety

The Concept Development Report for the I-95 Interchange at Northlake Boulevard included a safety analysis of the project area. A total of 153 crashes occurred at the ramp terminal intersections and approaches at the interchange for the three-year period from 2010 through 2012. The predominant crash type was rear-end crashes accounting for 54% of the total crashes.

FDOT's high crash location reports (for the period 2010 through 2012) provide those locations that have a higher crash rate as compared to crash rates for similar statewide roadways. The high crash locations along SR-9/I-95 within the area of influence include:

- SR-9/I-95 Northbound Off-Ramp (2011)
- SR-9/I-95 mainline between mileposts 34.6 and 34.8 (2010)

The proposed improvements are anticipated to provide additional through and turn lanes, as well as interchange ramp improvements, to help reduce conflict points and the potential occurrence of collisions at the interchange.

1.5.4 Secondary Criteria: Emergency Evacuation

SR-9/I-95 and Northlake Boulevard (from SR-9/I-95 to SR A1A) serve as part of the emergency evacuation route network designated by the Florida Division of Emergency Management. Also, designated by Palm Beach County as evacuation facilities, SR-9/I-95 and Northlake Boulevard (from SR-9/I-95 to SR A1A) are critical in facilitating traffic flows during emergency evacuation periods as they connect other major arterials and highways of the state evacuation route network. The project is anticipated to:

- Improve emergency evacuation capabilities by enhancing connectivity and accessibility to SR-9/I-95 and other major arterials designated on the state evacuation route network from the west and east, and
- Increase the operational capacity of traffic that can be evacuated during an emergency event.

2.0 METHODOLOGY

The methodology applied in this IMR is based on the Methodology Letter of Understanding (MLOU) dated October 2015. The MLOU is a companion document to this IMR Study and was approved by FDOT District 4, FDOT Central Office Systems Planning. The MLOU outlines the criteria, assumptions, processes, analyses and documentation requirements for the project. A copy of the approved MLOU is provided in **Appendix A**. The following sections summarize some of the more prominent issues covered under the MLOU.

2.1 Area of Influence

The area of influence for this IMR study defines the area that is anticipated to experience changes in traffic operating characteristics as a result of the access proposal. In urban areas, the area of influence as defined in the Interchange Access Request Users Guide, includes one adjacent interchange in each direction and signalized intersections within half-a-mile of the interchanges. The project area of influence is along SR 9/I-95 from Blue Heron Boulevard Interchange (MP 32.565 to MP 33.036) to PGA Boulevard Interchange (MP 36.50 to MP 36.962) including the following freeway segments, arterial segment, and signalized intersections:

- **Freeway Segments**
  a. I-95 NB and SB between Blue Heron Boulevard and Northlake Boulevard
  b. I-95 NB and SB between Northlake Boulevard and PGA Boulevard

- **Arterial Segment**
  a. Northlake Boulevard between Military Trail and Sunrise Drive/Sandtree Drive

- **Signalized Intersections**
  a. <u>Northlake Boulevard</u>
     i. Northlake Boulevard at N Military Trail
     ii. Northlake Boulevard at Keating Drive
     iii. Northlake Boulevard at I-95 SB ramp terminal
     iv. Northlake Boulevard at I-95 NB ramp terminal
     v. Northlake Boulevard at Sunrise Drive
  b. <u>Blue Heron Boulevard</u>
     i. Blue Heron Boulevard at Military Trail

ii. Blue Heron Boulevard at I-95 SB ramp terminal
iii. Blue Heron Boulevard at I-95 NB ramp terminal
iv. Blue Heron Boulevard at Garden Road

c. PGA Boulevard
i. PGA Boulevard at N Military Trail
ii. PGA Boulevard at I-95 SB ramp terminal
iii. PGA Boulevard at I-95 NB ramp terminal

The area of influence for this IMR Study is shown in **Figure 1-1**. Two intersections within the influence area were not included in the study:

1. PGA Boulevard at Lake Victoria Gardens
2. Blue Heron Boulevard at 42nd Way

The PGA Boulevard at Lake Victoria Gardens intersection was not included since it was previously evaluated as part of the PGA/Central Boulevard PD&E study (FM# 413265-1). The Blue Heron Boulevard at 42nd Way was not included since it provides access to small a residential community and does not impact traffic coming off from the interstate.

2.2 Analysis Years

The analysis years for the operational analysis were established based on coordination with FDOT District 4. The proposed analysis years for the IMR are as follows:

A. Traffic Forecasting

- Base year: 2010
- Horizon year: 2040

B. Traffic Operational Analysis

- Existing year: 2015
- Opening year: 2020
- Design year: 2040

2.3 Travel Demand Forecasting

The travel demand forecast for this IMR Study was performed by FDOT District 4 using the MPO approved Southeast Florida Regional Planning Model - SERPM 7.0 (February 2015 version) with a base year of 2010 and horizon year of 2040.

AADT Forecast Volumes

The AADT forecast volumes for this IMR Study were developed by FDOT District 4. The traffic forecasting methodology used for each intersection approach was based on the 2015 AADT (from the field) as well as the SERPM 7.0 model volumes for the 2010 base year and 2040 design year. The detailed methodology and recommended future AADTs are provided in the I-95 Interchange PD&E Studies Traffic Data Collection & Traffic Projections Report.

Validation Methodology

Reasonableness checks were performed by comparing the socioeconomic data from the SERPM 7.0 prepared for this PD&E study and those from the SERPM 6.5 prepared for the Interchange Master Plan. The results indicated differences ranging from -11.2% to 1.6% for the socioeconomic data within the 2-mile buffer of the study interchange. The detailed SERPM 7.0 model validation methodology is documented in the I-95 Interchange PD&E Studies Traffic Data Collection & Traffic Projections Report.

2.4 Traffic Factors

The recommended K, D and T_{24} factors for the I-95 mainline, ramps and arterial segments are provided in **Table 2-1** below.

Table 2-1
Traffic Factors

Roadway	K [1]	D [2]	T_{24} [3]	PHF [1]	MOCF
I-95 Mainline	8.0%	56.9%	7.4%	0.95	N/A
I-95 NB Ramps	9.0%	100%	7.1%	0.95	N/A
I-95 SB Ramps	9.0%	100%	5.4%	0.95	N/A
Northlake Boulevard	9.0%	56.6%	8.0%	0.95	N/A
Military Trail	9.0%	56.3%	4.4%	0.95	N/A
Sunrise Drive	9.0%	65.0%	4.3%	0.95	N/A
Keating Drive	9.0%	55.4%	4.3%	0.95	N/A

Sources:
1. Project Traffic Forecasting Handbook
2. Based on average from Traffic Counts Data Collected for PD&E Study and FDOT Traffic online 2014
3. Traffic Counts Data Collected for PD&E Study

2.5 Operational Analysis Procedures

2.5.1 Traffic Analyses of Existing Conditions

Traffic operational analyses for existing conditions were performed using methodologies outlined in the 2010 Highway Capacity Manual (HCM). AM and PM peak period analyses were performed for the No-Build for the existing year (2015), opening year (2020) and design year (2040).

Capacity analyses for the AM and PM periods were performed for freeway and ramp segments using Highway Capacity Software (HCS) 2010 to determine densities and Level of Service (LOS). TMTOOL was used to develop initial turning movement volumes at intersections which were then manually balanced. The arterial and intersection analyses were performed using the HCM module within the SYNCHRO 9 Software.

No calibration was required for the HCM 2010 or SYNCHRO 9 software tools; however, the following SYNCHRO and SIMTRAFFIC parameters were adjusted to replicate observed field conditions.

- Link Speeds (SYNCHRO)
- Lost time adjustment factor (SYNCHRO)
- HCM Platoon Ratio (SYNCHRO)
- Vehicle lengths to match AASHTO vehicle dimensions (SIMTRAFFIC)
- Carpool1 and Carpool2 occurrence set to 0% (SIMTRAFFIC)

2.5.2 Design Hour Traffic Development

The future DDHVs of arterial segments were developed by applying AADT x K x D. The existing ratio of AM to PM peak hour volumes were maintained for future years. Therefore, since the highest traffic volume on the arterial segment is in the PM, future PM peak hour volume was calculated by multiplying the future AADT by K-factor, and the future AM peak hour volume was calculated by multiplying the future PM peak hour volume with the ratio of existing AM to PM peak hour volumes.

The development of future year turning movement volumes for the signalized intersections was based upon the existing turning movement percentages obtained from the field. The TMTOOL spreadsheet was used to estimate turning movement volumes for the 2020 Opening Year and 2040 Design Year based on projected link volumes and existing turning movements. The existing and future year projected turns were smoothed and balanced to within +/- 7% tolerance level.

2.5.3 Traffic Analysis of Future Years and Design Alternatives

Traffic operational analysis for future years and Build Alternatives were performed using methodologies outlined in the 2010 Highway Capacity Manual (HCM). AM and PM peak period analysis was performed for the opening year (2020) and design year (2040).

Capacity analysis for the AM and PM periods were performed for freeway and ramp segments using Highway Capacity Software (HCS) 2010 to determine densities and Level of Service (LOS). TMTOOL was used to balance turning movement volumes at intersections. The arterial and intersection analysis was performed using the HCM module within the SYNCHRO 9 Software.

2.6 Measures of Effectiveness

The measures of effectiveness criteria for each roadway classification, including mainline, ramps, ramp terminal intersections and the crossroad beyond the interchange ramp terminal intersections are identified below:

- Mainline freeway segments – Density (pc/mi/ln), average travel speed & LOS
- Freeway ramps (merge and diverge) – Density (pc/mi/ln) and LOS
- Weaving segments – Density (pc/mi/ln) and speed (mph) and LOS
- Signalized intersections – Queue length, volume/capacity ratio, delay & LOS
- Arterial Segments – Speed, Travel time and LOS

In addition, other operational MOEs that were utilized for the evaluation of alternatives include the following.

- Maintenance of traffic impacts
- Potential for crash reduction

3.0 EXISTING CONDITIONS

3.1 Demographics

The study area falls within three U.S. Census tracts (9.02, 9.03 and 10.04) that are predominantly (≥60%) comprised of white households, with the remaining households being Hispanic (11- 17%), Black or African American (6-18%), or some other ethnicity (2-5%). Also, the households in Census tracts 9.02, 9.03, and 10.04 have median household incomes of $72,379, $42,457 and $42,304, respectively. Thus, the areas are not considered minority or low income communities. The 500-foot project buffer contains a minority population greater than 40%. A total of 3,030 individuals comprise the minority population of these census blocks. Demographic information also supports that Limited English Proficiency (LEP) accommodations be provided within the buffer area.

3.2 Existing Land Use

The interchange falls within the City of Palm Beach Gardens and Unincorporated Palm Beach County. According to the Palm Beach County and City of Palm Beach Gardens Zoning District Maps, the area northeast of the project is zoned residential low density (RL2, RL3), mixed use (MXD), general commercial (CG1), and public or institutional (P/I); southeast is zoned general commercial (CG1), residential medium density (RM), professional office (PO), and industrial. The area northwest of the project is zoned residential low density (RL3), general commercial (CG1), and intensive commercial (CG2). The area southwest of the interchange is zoned general commercial (CG), residential medium density (RM), and residential low density (RL3). The commercial retail/office uses are located along Northlake Boulevard (north and south) both east and west of SR-9/I-95. Residential uses within the area are primarily buffered by the commercial uses along Northlake Boulevard; however, they are adjacent to SR-9/I-95 further north and south of the interchange. A mix of commercial retail/office and residential activities exist southeast of the interchange as part of the Northlake Boulevard Planned Unit Development.

According to the Future Land Use Maps for Palm Beach County and the City of Palm Beach Gardens, the project is expected to support the vision of both Palm Beach County and the City of Palm Beach Gardens as it will accommodate the expanding employment growth in the area supported by the established Planned Unit Development (Northlake Boulevard), City of Palm Beach Gardens Northlake Boulevard Overlay Zone, and growing commercial retail/office uses around the interchange. Effects on the area's character resulting from the minor additional right-of-way required as part of the interchange improvement are anticipated to be minimal. **Figure 3-1** shows the existing land use in the surrounding area of the project study limits.

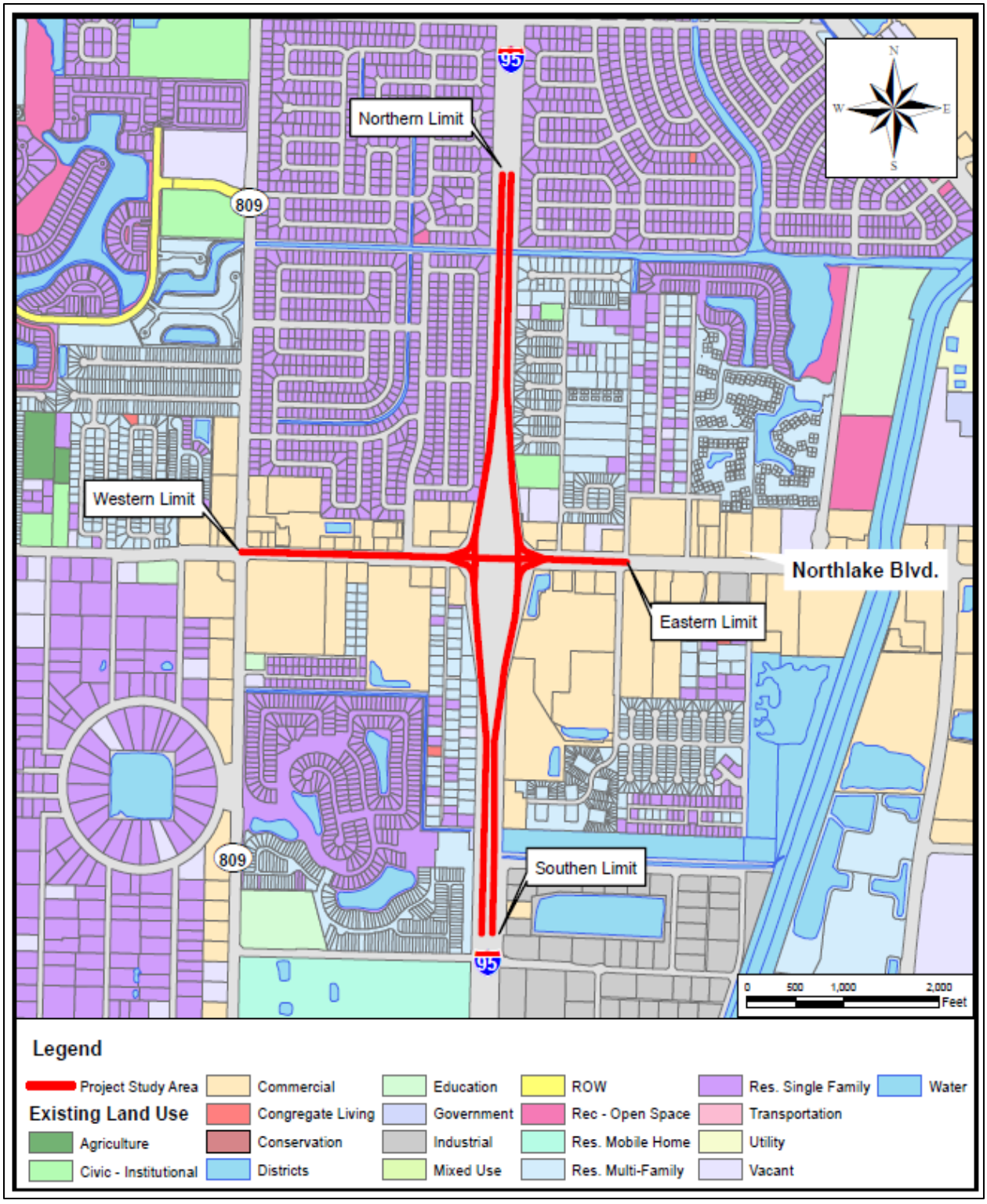


Figure 3-1 Existing Land Use Map

3.3 Roadway Characteristics

3.3.1 Functional Classification

The existing roadway network within the project study area is comprised of state roads, county roads and local roads which provide access and traffic circulation within residential, commercial and industrial areas. The segment of I-95 in the vicinity of the Northlake Boulevard interchange is a ten-lane north-south divided facility and is functionally classified as an urban principal arterial interstate. It is also designated as a Strategic Intermodal System (SIS) corridor. Northlake Boulevard in the vicinity of I-95 is a six-lane divided east-west roadway classified as an urban principal arterial other and maintained by Palm Beach County. Keating Drive, located west of the interchange is a two-lane undivided local roadway with landscaped medians at the intersection with Northlake Boulevard which is maintained by Palm Beach County to the north and privately maintained to the south. Streets located east of the interchange include Roan Lane and Sunrise Drive to the north which are both two-lane undivided local roadways maintained by Palm Beach County. Sandtree Drive is two-lane undivided local roadway maintained by Palm Beach Gardens located on the south side of Northlake Boulevard. **Figure 3-2** shows the functional classifications of the roadways within the vicinity of the project study limits, shown in the white call outs, and the general surrounding area. The straight-line diagram for I-95 and Northlake Boulevard are provided in **Appendix B**.

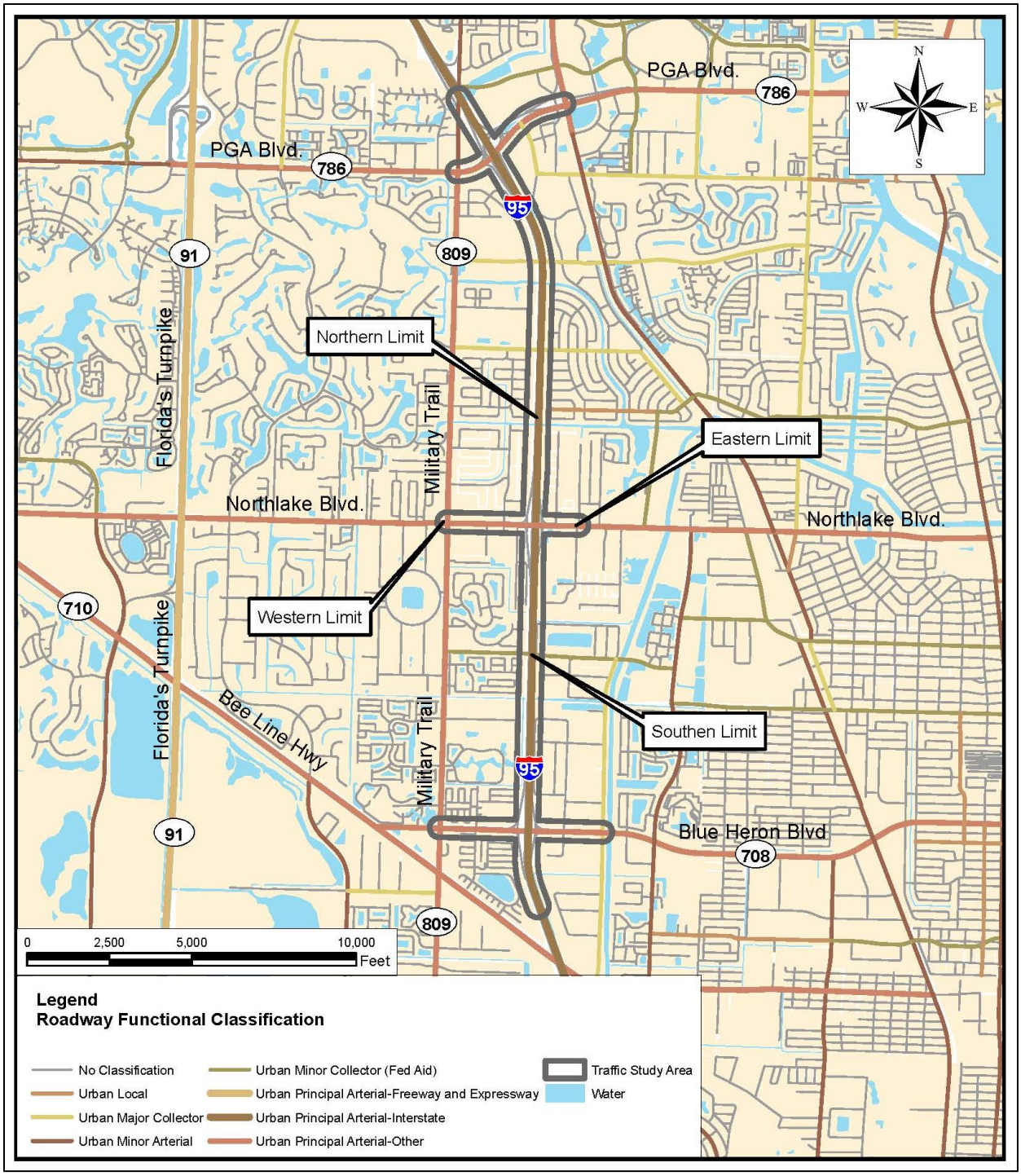


Figure 3-2 Roadway Functional Classification

3.3.2 I-95 Mainline

I-95 is a ten-lane divided interstate freeway providing four general purpose lanes and one HOV lane in each direction. North of Northlake Boulevard, I-95 southbound provides one auxiliary lane between PGA Boulevard and Northlake Boulevard for a total of six southbound lanes.

South of Northlake Boulevard, I-95 provides one auxiliary lane in each direction between Blue Heron Boulevard and Northlake Boulevard for a total of six lanes in both the northbound and southbound directions.

Lane widths are 12 ft. and 12 ft. (10 ft. paved) outside shoulders and 15 ft. paved inside shoulders are provided along I-95. The design speed is 70 MPH based on the final as-built plans from FM# 231921-1 and the posted speed limit along the study corridor is 65 MPH. **Figure 3-3** shows the existing typical section along SR 9/I-95 mainline.

3.3.3 Northlake Boulevard

Northlake Boulevard is currently a six-lane urban divided roadway with a raised landscaped median in the interchange area. Underneath the I-95 overpass, the eastbound and westbound lanes are separated by a 12-foot wide median containing a raised concrete barrier wall and support piers for the I-95 overpass. Dual left-turn lanes are provided along Northlake Boulevard both eastbound and westbound serving the I-95 on-ramps. A single right-turn lane is provided both eastbound and westbound along Northlake Boulevard serving the I-95 on-ramps.

Lane widths along Northlake Boulevard vary from 11 ft. to 12 ft. The design speed is 45 MPH based on the final as-built plans from FM# 231921-1 and the posted speed limit within the study limits is 45 MPH. **Figure 3-4** shows the existing typical section along Northlake Boulevard.

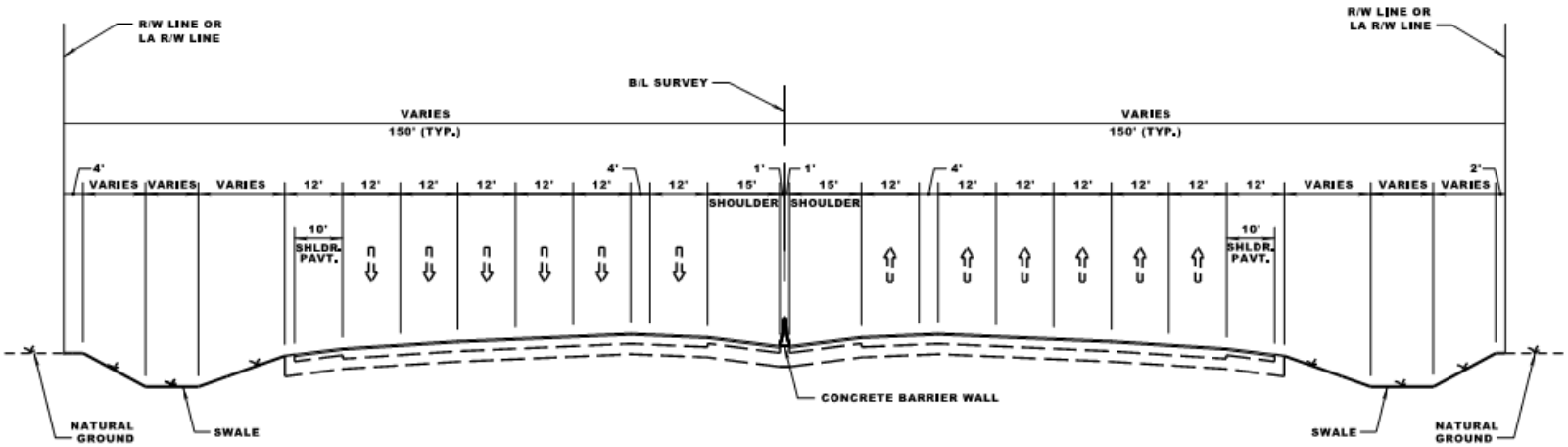


Figure 3-3 Existing Typical Section along SR 9/I-95 Mainline

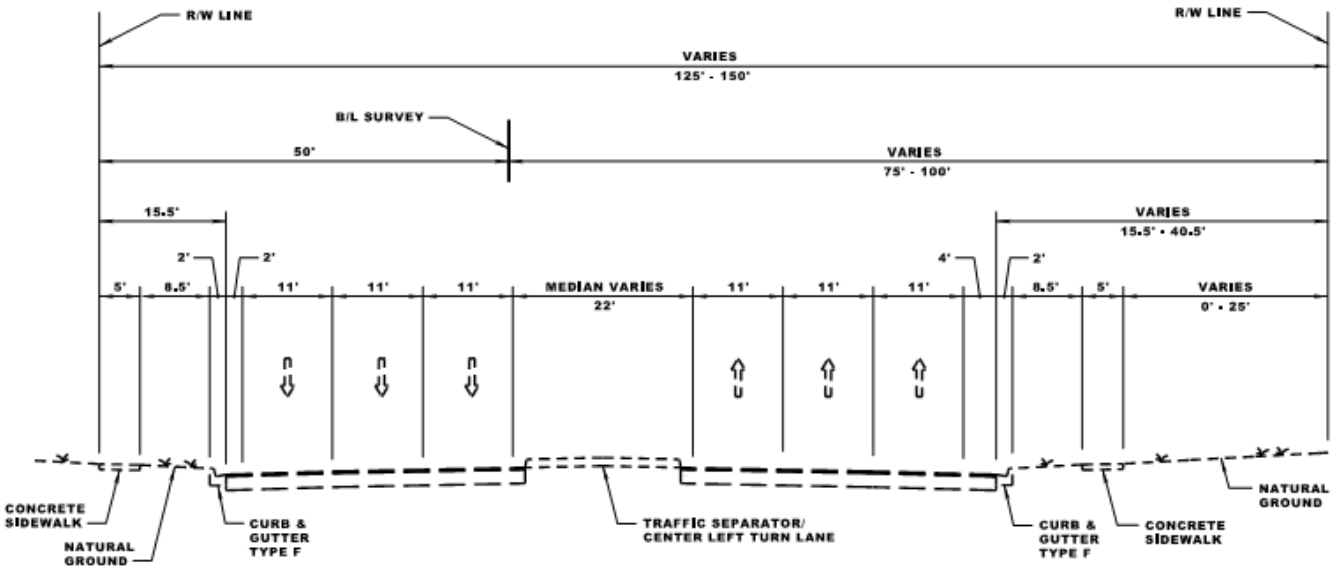


Figure 3-4 Existing Typical Section along Northlake Boulevard

3.4 Interchange

The existing tight diamond interchange provides four ramps at Northlake Boulevard.

- Ramp A - southbound on-ramp
- Ramp B - northbound off-ramp
- Ramp C - northbound on-ramp
- Ramp D - southbound off-ramp

The northbound and southbound off-ramps provide two exit lanes from I-95 and transition into four-lane approaches at the ramp intersections with Northlake Boulevard. The four-lane off-ramp approaches consist of two left turn lanes and two channelized right-turn lanes, all under signal control.

The northbound on-ramp provides two receiving lanes at the Northlake Boulevard intersection that merge to one lane approximately 450 ft. north of the intersection. The remaining on-ramp lane merges with I-95 approximately 1,000 ft. north of the gore area. The northbound on-ramp accommodates two receiving lanes for the eastbound Northlake Boulevard dual left-turn movement and a single, yield-controlled, channelized right-turn lane.

The southbound on-ramp accommodates two receiving lanes for the westbound Northlake Boulevard dual left-turn movement and a single free-flow channelized right-turn lane. The three lanes merge to two lanes prior to the gore area of the mainline of southbound I-95. The southbound on-ramp provides two lanes along the entire length of the ramp. The two lanes merge to one lane past the gore area with I-95 and the remaining ramp lane becomes an auxiliary lane between the Northlake Boulevard and the Blue Heron Boulevard interchanges.

Lane widths for the multilane ramps are 12 ft. with 12 ft. (10 ft. paved) outside shoulders and 8 ft. (4 ft. paved) inside shoulders. The single lane ramp has a lane width of 15 ft. with 6 ft. (4 ft. paved) outside shoulder width and 6 ft. (2 ft. paved) inside shoulder width. The design speed for all the ramps varies from 40 to 60 mph based on the final as-built plans from FM# 231921-1.

The existing geometric elements for the I-95 mainline corridor, interchange ramps, and bridge underpass, as well as Northlake Boulevard from Keating Drive to Sandtree Drive/Sunrise Drive, were obtained from the final as-built plans (FM# 231921-1-52-01) available from FDOT District 4.

3.4.1 Horizontal Alignment

There are no horizontal curves along the I-95 mainline in the vicinity of the interchange at Northlake Boulevard. However, there is a total of seven horizontal curves for the alignment of

the interchange ramps (A, B, C & D) and two horizontal curves for the alignment of Northlake Boulevard west of the interchange and east of Keating Drive. The existing horizontal alignment is summarized in **Table 3-1.**

Table 3-1
Horizontal Alignment

Curve Number	Point of Intersection (PI) STA	Interior Angle (Δ) (Degrees)	Length (L) (ft.)	Radius (R) (ft.)	Existing Superelevation (e) (ft./ft.)	Design Speed (mph)
Curve A-1 (Ramp A)	234+29.39	8° 10’ 26” LT	817.38	5729.58	0.03	60
Curve A-2 (Ramp A)	242+35.39	7° 56’ 51” RT	794.74	5729.58	RC	40
Curve B-1 (Ramp B)	336+73.02	5° 09’ 55” RT	516.53	5729.58	0.03	60
Curve B-2 (Ramp B)	342+87.39	7° 06’ 59” LT	711.63	5729.58	0.02	40
Curve C-1 (Ramp C)	458+29.21	8° 27’ 04” RT	1690.22	11459.16	0.02	60
Curve D-1 (Ramp D)	550+00.26	8° 45’ 01” RT	437.51	2864.79	0.03	40
Curve D-2 (Ramp D)	556+42.69	4° 40’ 27” LT	467.42	5729.58	0.03	60
Curve NL-1 (Northlake Boulevard)	29+16.07	2° 46’ 28” LT	416.15	8594.42	NC	45
Curve NL-2 (Northlake Boulevard)	33+35.61	2° 49’ 30” RT	423.74	8594.42	NC	45

3.4.2 Vertical Alignment

Other than the approaches to the bridge over Northlake Boulevard the vertical alignment for mainline I-95 northbound and southbound is generally flat along the travel lanes and with a saw tooth profile grade of (+) or (-) 0.300% respectively provided along the median barrier wall. Similarly, the vertical alignment for Northlake Boulevard within the vicinity of the I-95 interchange is generally flat with a saw tooth profile grade (+) or (-) 0.300% left and right. The pavement cross slopes of Northlake Boulevard in the interchange area vary to provide a plateau intersection. The interchange Ramp “A” (southbound on-ramp) profile grade is relatively flat from I-95 back to Northlake Boulevard with a maximum grade of (+) 0.963% followed by (-) 0.400% with a 434 ft. crest vertical curve. Similarly, the Ramp “B” (northbound off-ramp) profile

grade is relatively flat from I-95 to Northlake Boulevard with a maximum grade of (+) 0.977% followed by (-) 0.400% with a 494 ft. crest vertical curve. The interchange Ramp "C" (northbound on-ramp) profile grade is relatively flat with a positive grade of (+) 0.300% followed by (-) 0.772% with a 400 ft. crest vertical curve prior to transitioning into I-95 with a relatively flat grade. The Ramp "D" (southbound off-ramp) profile grade is relatively flat from Northlake Boulevard back to I-95 with a negative grade of (-) 0.700% followed by (+) 2.017% with a 140 ft. sag vertical curve, then a grade of (-) 0.300% and a crest vertical curve of 860 ft. prior to transitioning into I-95 with a relatively flat grade.

3.4.3 Ramps Acceleration/Deceleration Lengths

The interchange ramps acceleration and deceleration lengths were evaluated as part of the study to determine any deficiencies. **Table 3-2** shows the evaluation summary.

Table 3-2
Ramps Acceleration/Deceleration Lengths

Ramp	Type	Speed	Acceleration/ Deceleration Length	Criteria	Compliance
I-95 NB to Northlake Boulevard Ramp	Off-Ramp	60	760' (D)	820 ft.	No
Northlake Boulevard to I-95 NB Ramp	On-Ramp	60	700' (A)	580 ft.	Yes
I-95 SB to Northlake Boulevard Ramp	Off-Ramp	60	960' (D)	820 ft.	Yes
Northlake Boulevard to I-95 SB Ramp	On-Ramp	60	1300' (A)	580 ft.	Yes

As shown above, all the acceleration or deceleration lengths for the ramps meet criteria with the exception of the I-95 NB to Northlake Boulevard On-Ramp.

3.4.4 Vertical Clearance

At the Northlake Boulevard I-95 underpass bridge, the minimum vertical clearance from the beam's low member to the highpoint of the road is 17 ft. 4 inches based on project survey information. This location is adjacent to the inside dual left turn lanes adjacent to the piers on the west end of the bridge. Vertical clearance for the existing outside travel lanes is approximately 17 ft. 10 inches based on the survey information. Table 2.10.1 of the FDOT PPM Volume 1 states the minimum vertical clearance for a bridge over a roadway is 16.5 ft.

The bridge mounted signs at the I-95 underpass were surveyed for vertical clearance and provide 18 ft. 8 inches to the bottom of the sign from the existing roadway elevation. The clearance to the bottom of the sign light is 17 ft. 4 inches for the sign located on the west side of the bridge and 17 ft. 6 inches for the sign located on the east side. Table 2.10.1 of the FDOT PPM Volume 1 states the minimum vertical clearance for an overhead sign structure is 17.5 ft.

There are five signalized intersections along Northlake Boulevard from Keating Drive to Sandtree Drive/Sunrise Drive. FDOT PPM Volume 1, Table 2.10.2 states that the minimum vertical clearance for signals is 17.5 ft. According to the final as-built plans from FM# 231921-1, all traffic signals within the study segment appear to be mounted more than 17.5 ft. over the roadway and are in compliance with the requirement.

3.4.5 Lateral Offset

A field review of the study area indicated that the bridge abutments, piers or retaining walls as well as traffic control signs are adequately protected by a barrier wall system, guardrail or located outside the clear zone based on both FDOT and AASHTO requirements.

In addition, it was observed that ITS poles and related items, light poles, power poles, signal poles and controller cabinets, traffic control signs and trees are the primary above ground objects. Light poles, power poles, signal poles and ITS poles are located adjacent to the sidewalk, within raised median islands and swale areas or are generally outside the required clear zone. However, two light poles along Ramp A (southbound on-ramp) and one light pole along Ramp B (northbound on-ramp) were located within the 18 ft. clear zone requirement for multilane ramps as per Design Standard Index No. 700. These light poles are near the ramp approaches to Northlake Boulevard.

3.4.6 Intelligent Transportation Systems

Intelligent Transportation System (ITS) facilities are present on Northlake Boulevard, within the vicinity of the I-95 interchange. Closed Circuit Television (CCTV) cameras are located on the south side of Northlake Boulevard at the southbound on-ramp to I-95 and on the north side of Northlake Boulevard at the northbound on-ramp to I-95. The Palm Beach County Traffic Engineering ITS Section has existing fiber optic cable, conduit and pull boxes along the north side of Northlake Boulevard from west of SR 809/Military Trail to east of Sunrise Drive. ITS components within the I-95 Interchange Master Plan include CCTV cameras, Dynamic Message Signs (DMS) mounted on overhead sign structures both northbound and southbound, Highway

Advisory Radio (HAR) transmitters with beacons spaced approximately at 1.5 mile intervals, Microwave Vehicle Detection System (MVDS), Road Weather Information System (RWIS) and non-intrusive vehicle detectors spaced at approximately one-mile intervals generally located along the east side of the I-95 corridor.

Within the area of influence of the interchange at I-95 and Northlake Boulevard, there is an existing DMS provided for I-95 northbound travelers approximately 0.7 miles north of the interchange. In addition, HAR transmitters and MVDS components are located on the northbound ramp at the Blue Heron Boulevard Interchange, CCTV cameras, HAR beacon sites, and MVDS sites are located north and south of the Northlake Boulevard Interchange as well as south of the PGA Boulevard Interchange. Wireless components are mounted on the CCTV/MVDS/Voice over IP (VoIP) concrete poles providing communications for Road Ranger mobile access and VoIP applications. These ITS elements are connected to the District 4's SMART SunGuide Transportation Management Center (TMC) via fiber optic based Ethernet communications network along the I-95 corridor. The existing underground infrastructure consists of one 144-count single-mode fiber optic cable in one 2" High Density Polyethylene (HDPE) conduit, one 2" HDPE spare conduit, and one 2" HDPE conduit with electrical service conductors.

3.5 Alternative Travel Modes

3.5.1 Pedestrian and Bicycle Facilities

The segment of Northlake Boulevard within the project limits includes continuous sidewalks on both sides of the roadway separated from the roadway by a utility strip of varying width. The sidewalks vary in width from 5 ft. to 6 ft. There are 5 ft. designated bike lanes along each direction of Northlake Boulevard between Keating Drive and Sunrise/Sandtree Drive. However, the segment of Northlake Boulevard between Military Trail and Keating Drive has no bike lanes.

3.5.2 Palm Tran Transit

Northlake Boulevard, in the vicinity of the I-95 interchange, has transit service provided by Palm Tran Route 20. This route serves transit riders along Northlake Boulevard from Military Trail to Prosperity Farms Road. There is one stop eastbound at the Gardens Plaza East Entrance and two stops westbound at Keating Drive and Building 4301 West Entrance located west of the I-95 interchange. East of the I-95 interchange there is one stop eastbound and one stop westbound at the Sunrise Drive/Sandtree Drive intersection.

3.5.3 Tri-Rail

The closest Tri-Rail station to the I-95 Interchange at Northlake Boulevard is the Mangonia Park Station, which is also the northern termini of the Tri-Rail service. The Mangonia Park station is approximately 2.2 linear miles southeast of the interchange, located on 45th Street east of I-95 in West Palm Beach. This station has connections to Palm Tran services on Palm Tran Transit routes 20 and 33.

3.6 Existing Traffic Data

The existing traffic data used in this IMR Study was provided by FDOT District 4. The data was collected from February 2015 through May 2015 on typical weekdays (Tuesday, Wednesday, and Thursday) at the intersections within the vicinity of the I-95 interchanges. This data collection effort was performed during the peak season for traffic. The traffic data for each intersection included 6-hour turning movement counts (TMC) (6:00 AM to 9:00 AM, and 4:00 PM to 7:00 PM), including the Right-Turn-On-Red (RTOR) volumes, for three consecutive weekdays, 72-hour approach/departure machine counts for all the approaches, and vehicle classification counts for selected approaches at selected intersections.

3.6.1 Turning Movement Counts

The TMCs were obtained for the following intersections along the respective arterials. The locations of the TMCs are shown in **Figure 3-5.**

- <u>Northlake Boulevard Corridor</u>
  1. Northlake Boulevard at Military Trail
  2. Northlake Boulevard at I-95 Southbound Off-Ramp
  3. Northlake Boulevard at I-95 Northbound Off-Ramp
  4. Northlake Boulevard at Sunrise Drive
  5. Northlake Boulevard at Keating Drive
- <u>Blue Heron Boulevard Corridor</u>
  1. Blue Heron Boulevard at Military Trail
  2. Blue Heron Boulevard at I-95 Northbound Off-Ramp
  3. Blue Heron Boulevard at I-95 Southbound Off-Ramp
  4. Blue Heron Boulevard at Garden Road
- <u>PGA Boulevard Corridor</u>
  1. PGA Boulevard at Military Trail

2. PGA Boulevard at I-95 Southbound Off-Ramp
3. PGA Boulevard at I-95 Northbound Off-Ramp

3.6.2 72-hr Machine Counts

72-hour vehicle volume counts from Tuesday to Thursday were also collected at the following locations. These locations are shown in **Figure 3-5.**

1. PGA Boulevard Westbound to I-95 Southbound
2. I-95 Northbound to PGA Boulevard Westbound
3. PGA Boulevard Eastbound to I-95 Southbound

3.6.3 Origin-Destination

Origin-Destination (OD) data for the I-95 interchange at Northlake Boulevard northbound off-ramp left turn movement was also obtained to enable understanding of the traffic patterns for vehicles leaving the interchange and turning into downstream intersections. The Origin-Destination data collection was performed from March 31, 2015 through April 2, 2015 for I-95 (three consecutive weekdays on Tuesday, Wednesday, and Thursday.

3.6.4 Historical Traffic data

Historic traffic counts, classification counts, and data were obtained from FDOT's traffic monitoring sites within the project influence area at the locations shown in **Figure 3-5.**

3.6.5 Signal Timings

Traffic signal timing information was obtained from the Palm Beach County Traffic Engineering Division for the major intersections in the study area, including all the interchange ramp intersections, and incorporated into the existing conditions analysis. Details of the signal phasing and timing plans are provided in **Appendix C.**

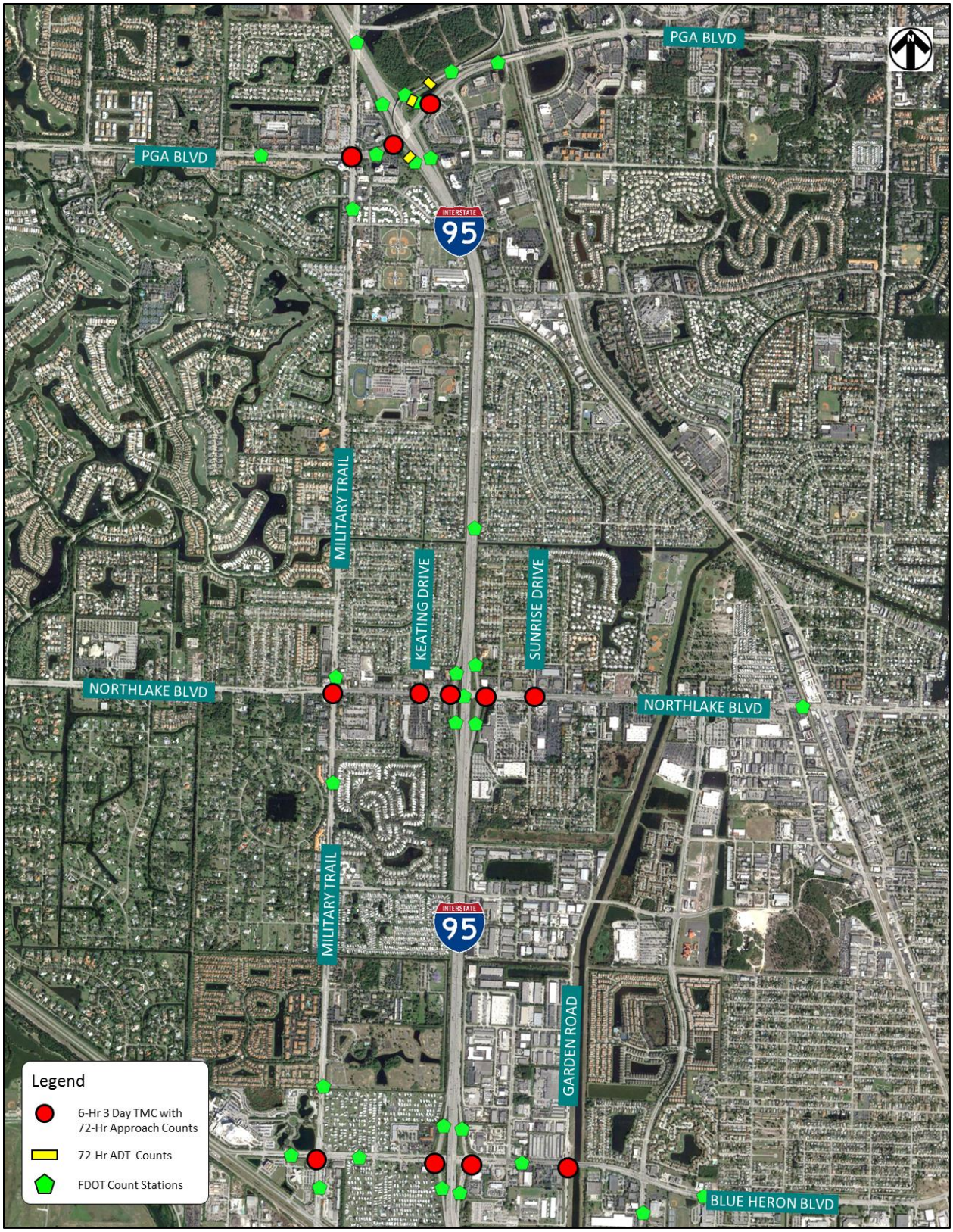


Figure 3-5 Data Collection Locations

3.6.6 Existing Traffic Volume

The existing machine counts were adjusted with axle factors and seasonal factors to obtain the existing AADT volumes along the project arterial segments and are summarized in **Figure 3-6** through **Figure 3-8.**

The peak period turning movement counts and design hour volumes are presented in **Figure 3-9** through **Figure 3-14**. The details of the traffic data collection effort are provided in the *I-95 Interchange Data Collection Forecast Report* provided by FDOT District 4 and shown in **Appendix D**.

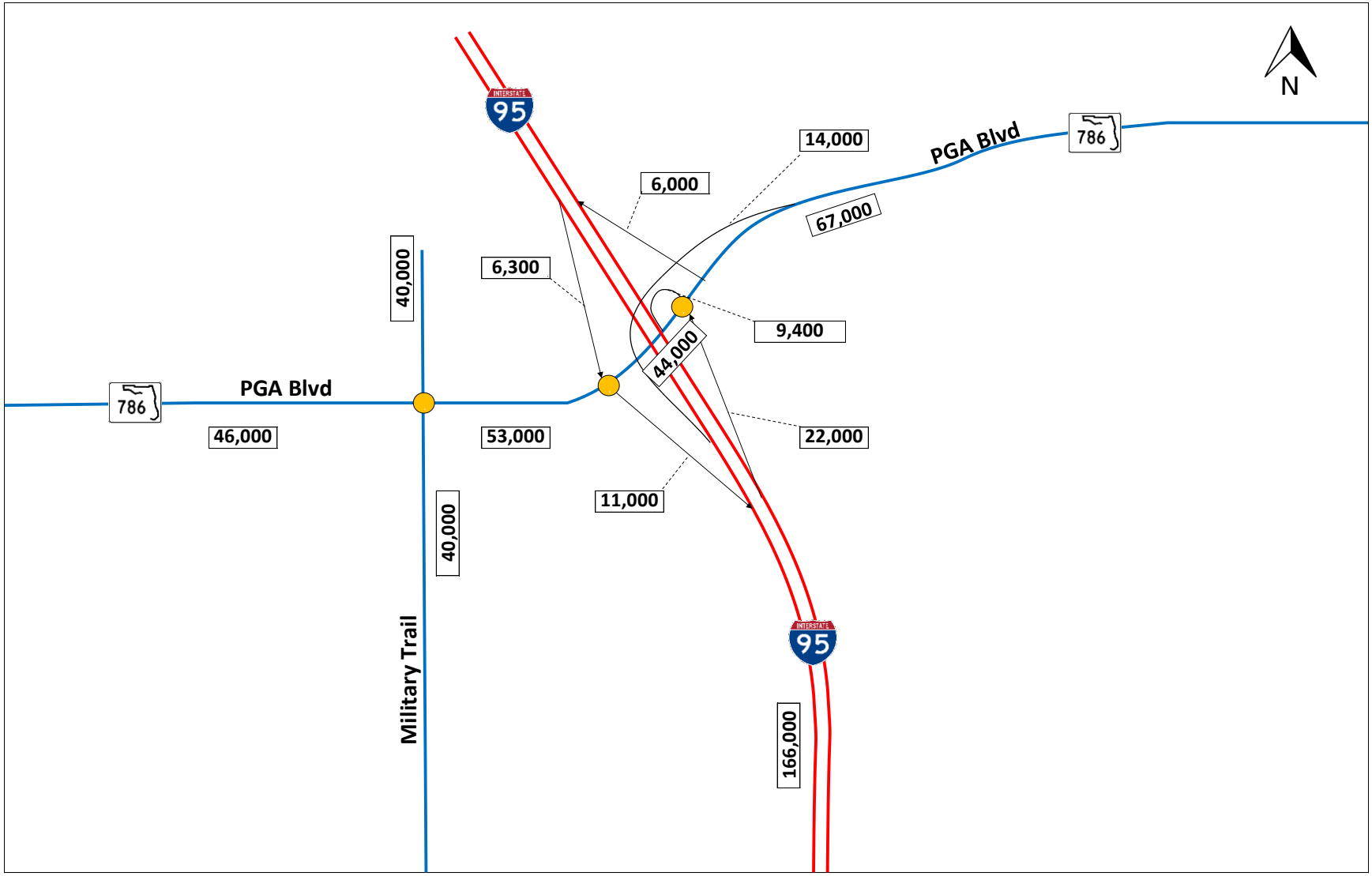


Figure 3-6 PGA Boulevard - 2015 Existing AADT Volumes

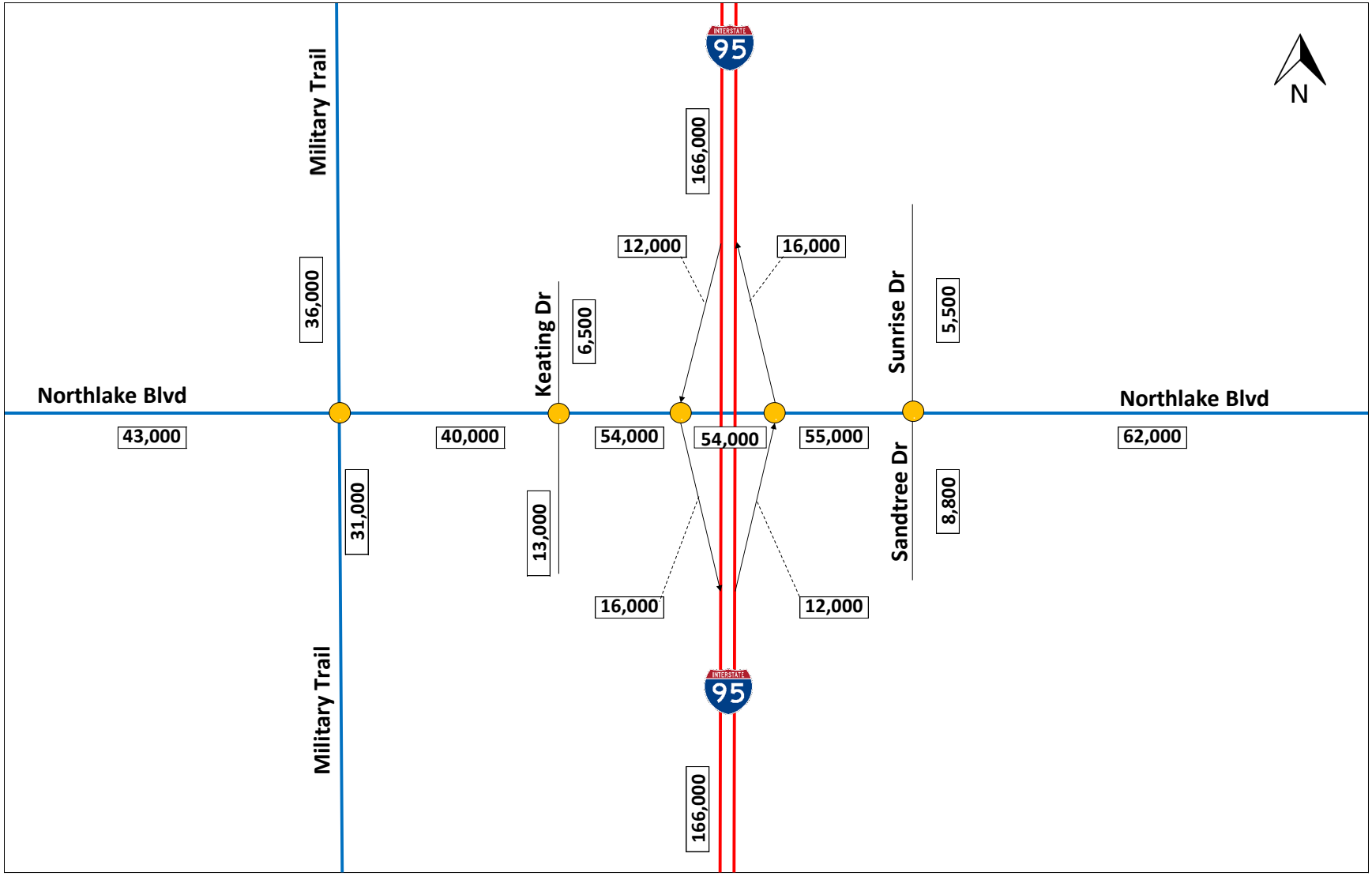


Figure 3-7 Northlake Boulevard - 2015 Existing AADT Volumes

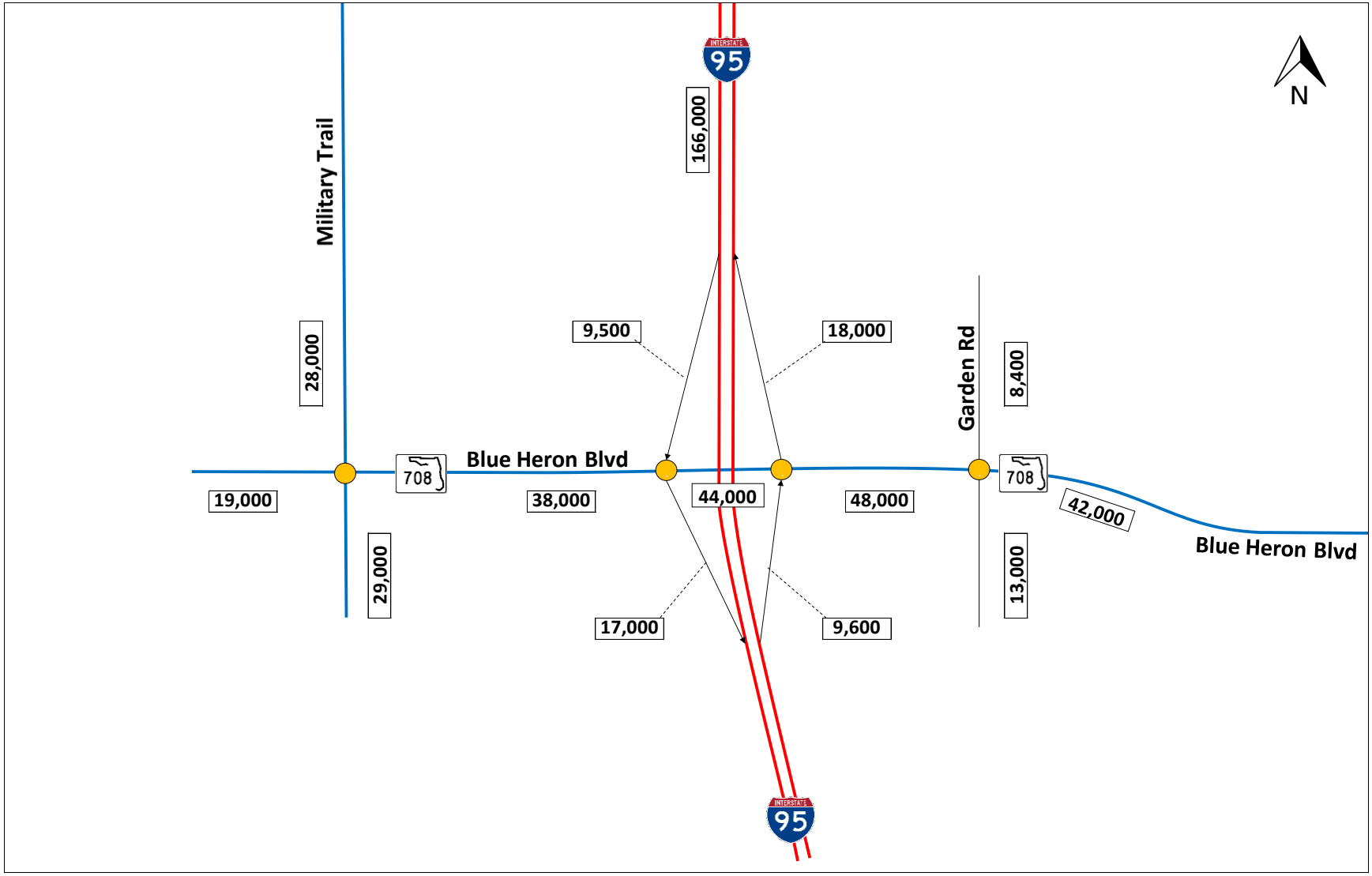


Figure 3-8 Blue Heron Boulevard - 2015 Existing AADT Volumes

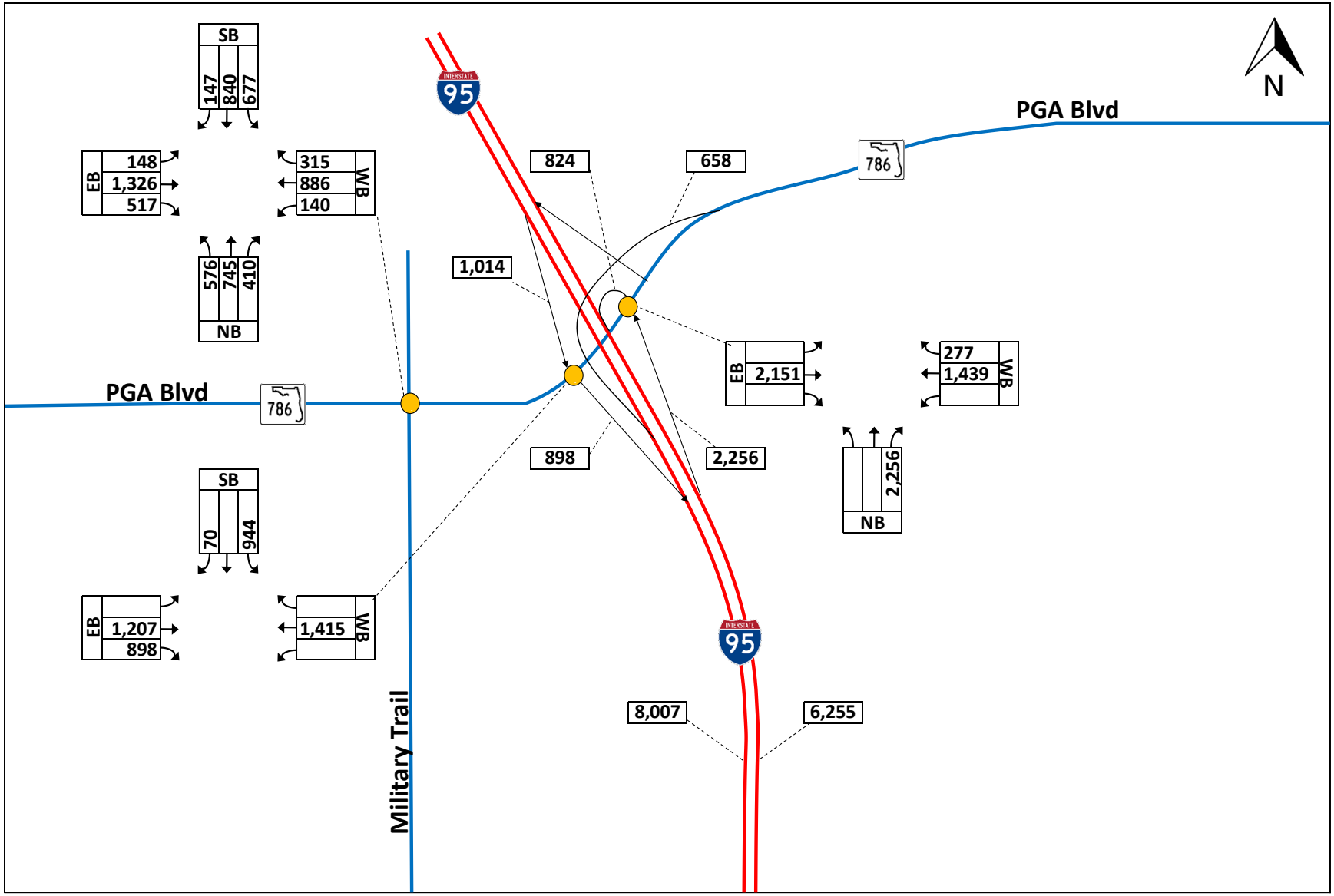


Figure 3-9 PGA Boulevard - 2015 Existing AM Peak Hour DDHV Volumes

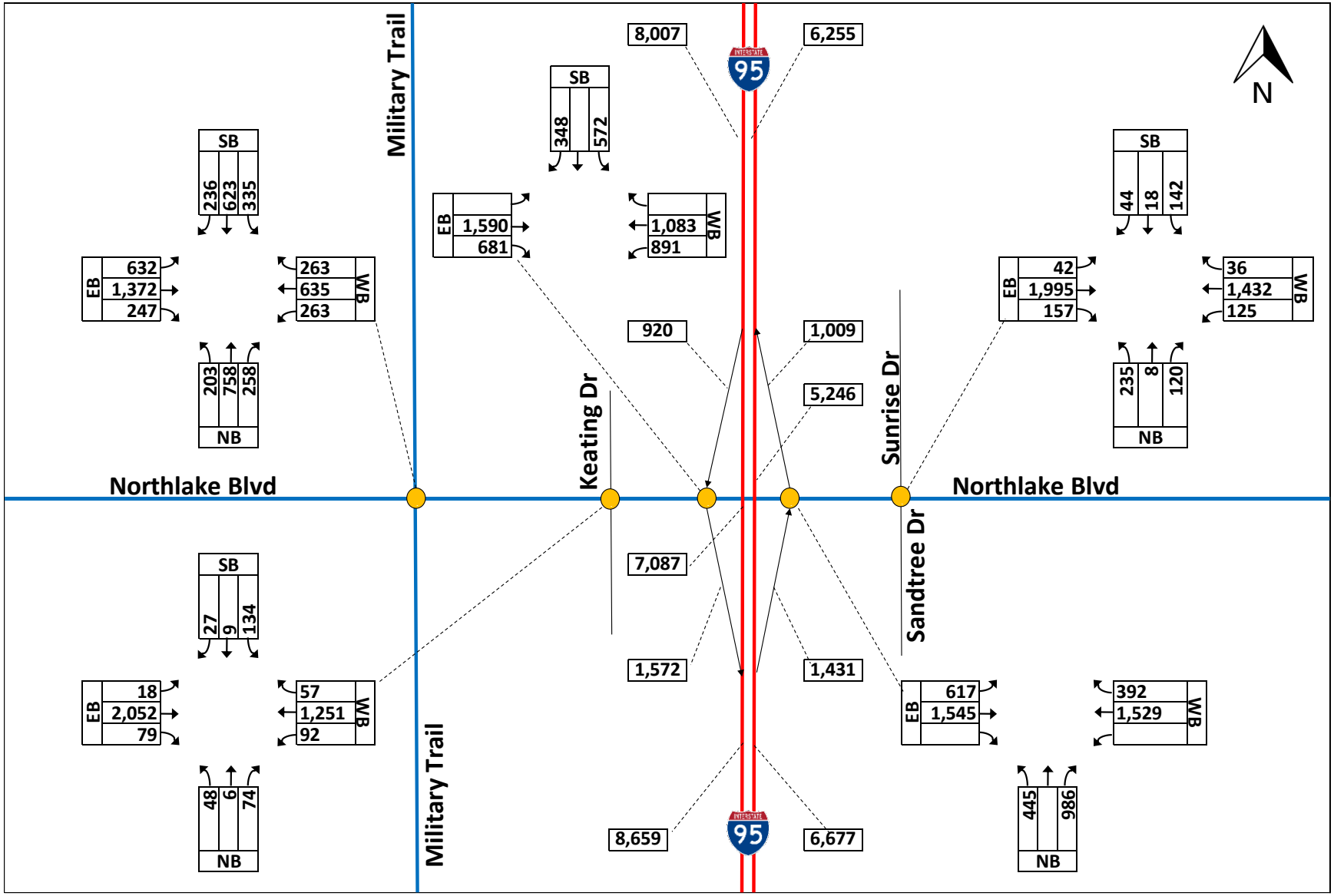


Figure 3-10 Northlake Boulevard - 2015 Existing AM Peak Hour DDHV Volumes

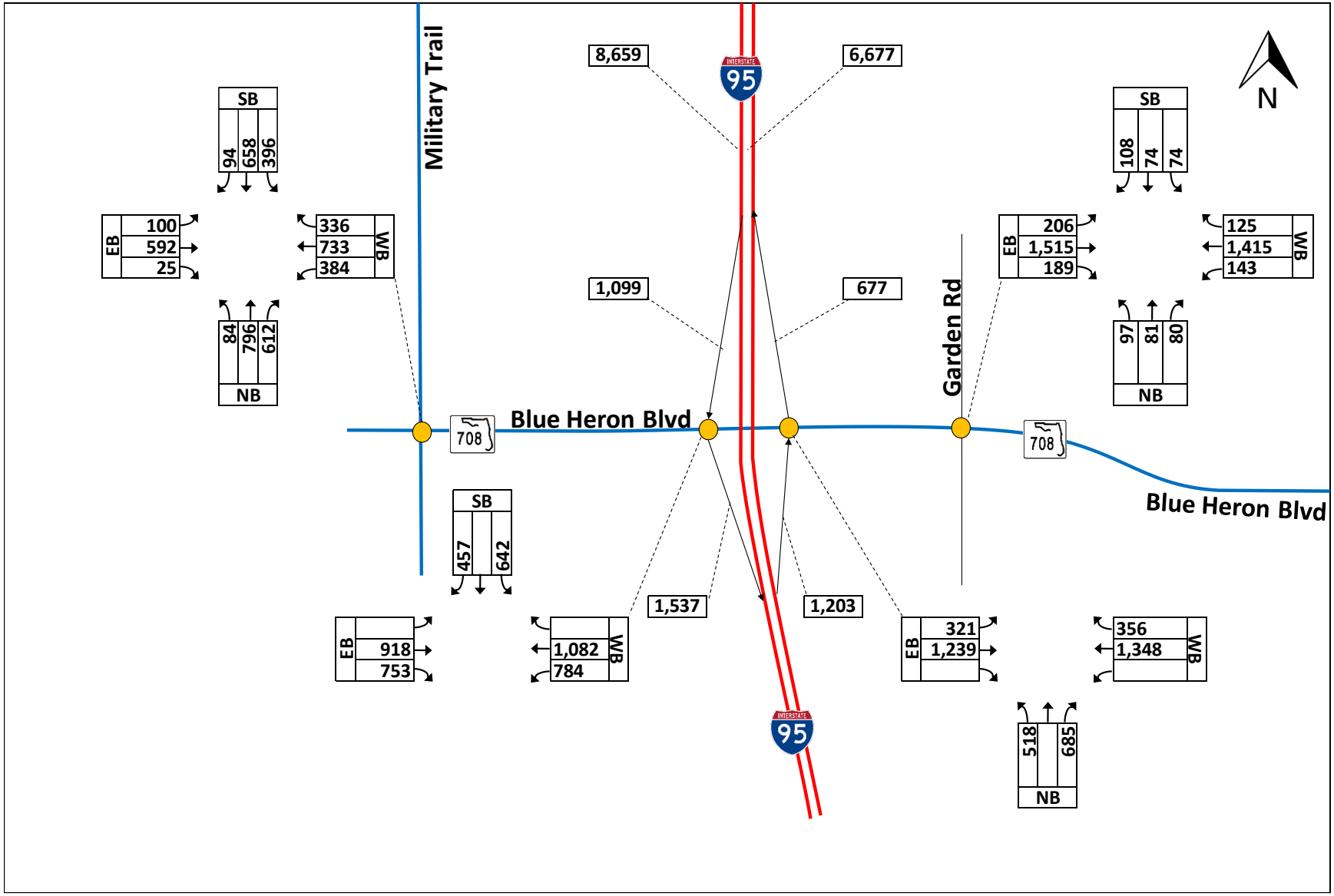


Figure 3-11 Blue Heron Boulevard - 2015 Existing AM Peak Hour DDHV Volumes

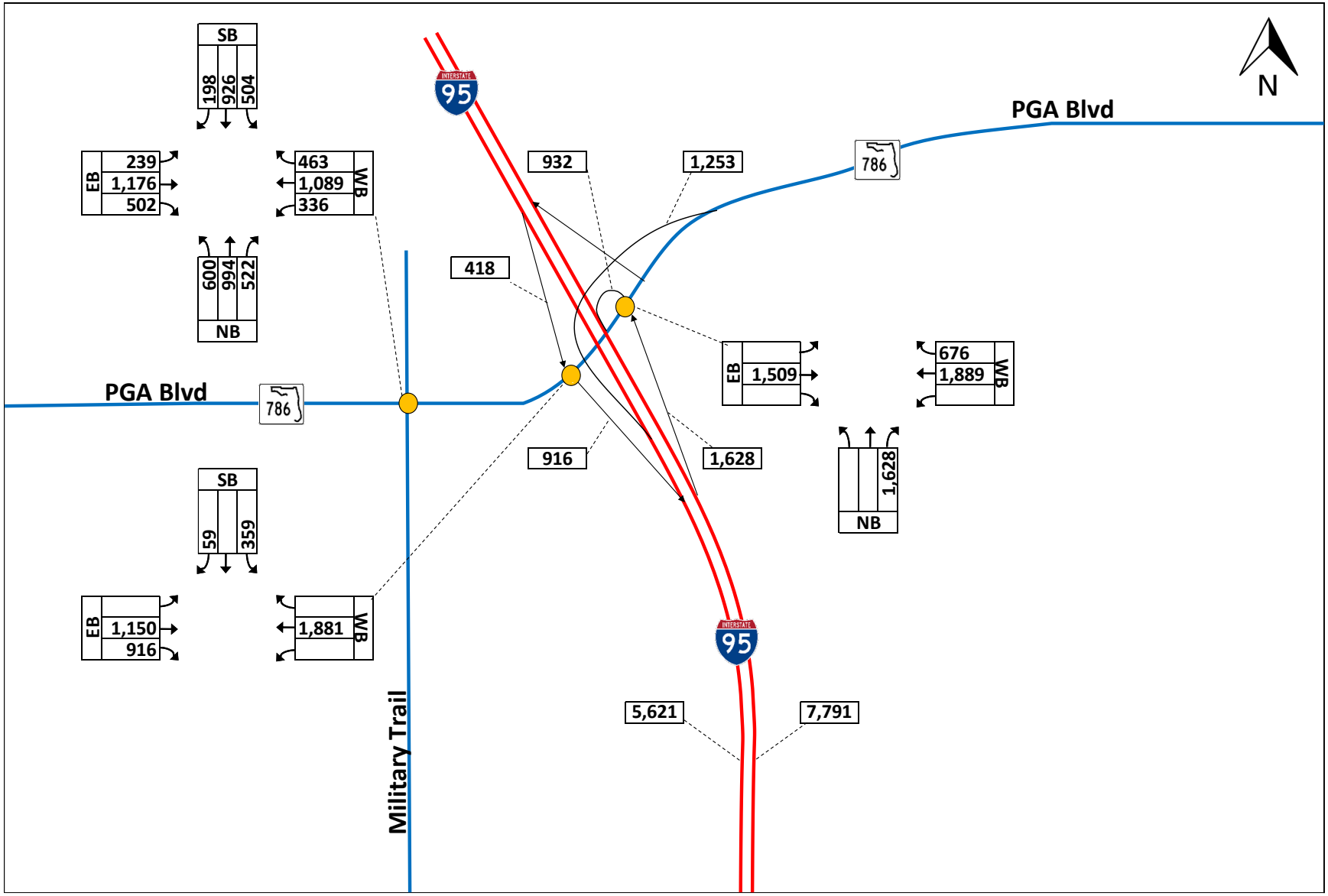


Figure 3-12 PGA Boulevard - 2015 Existing PM Peak Hour DDHV Volumes

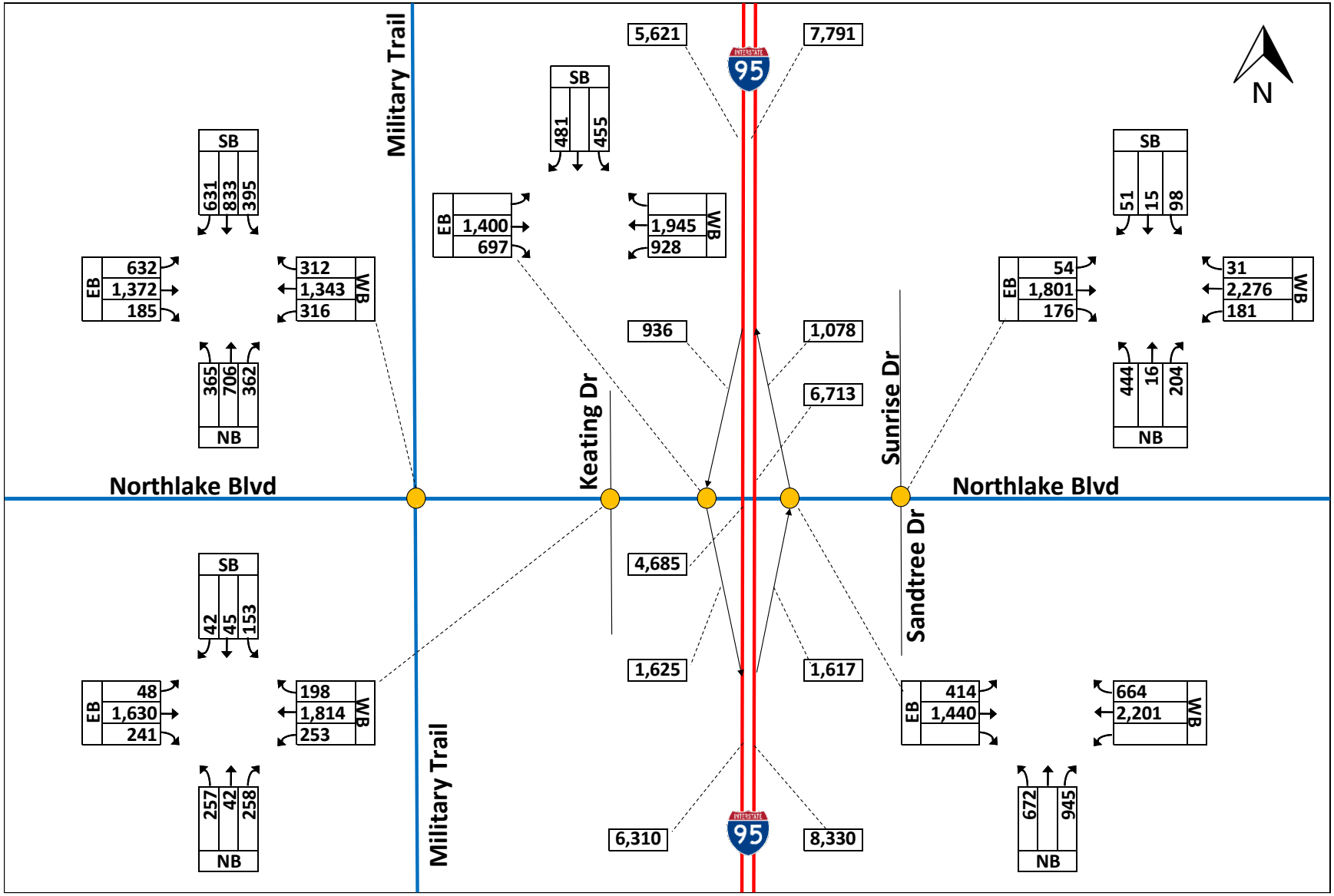


Figure 3-13 Northlake Boulevard - 2015 Existing PM Peak Hour DDHV Volumes

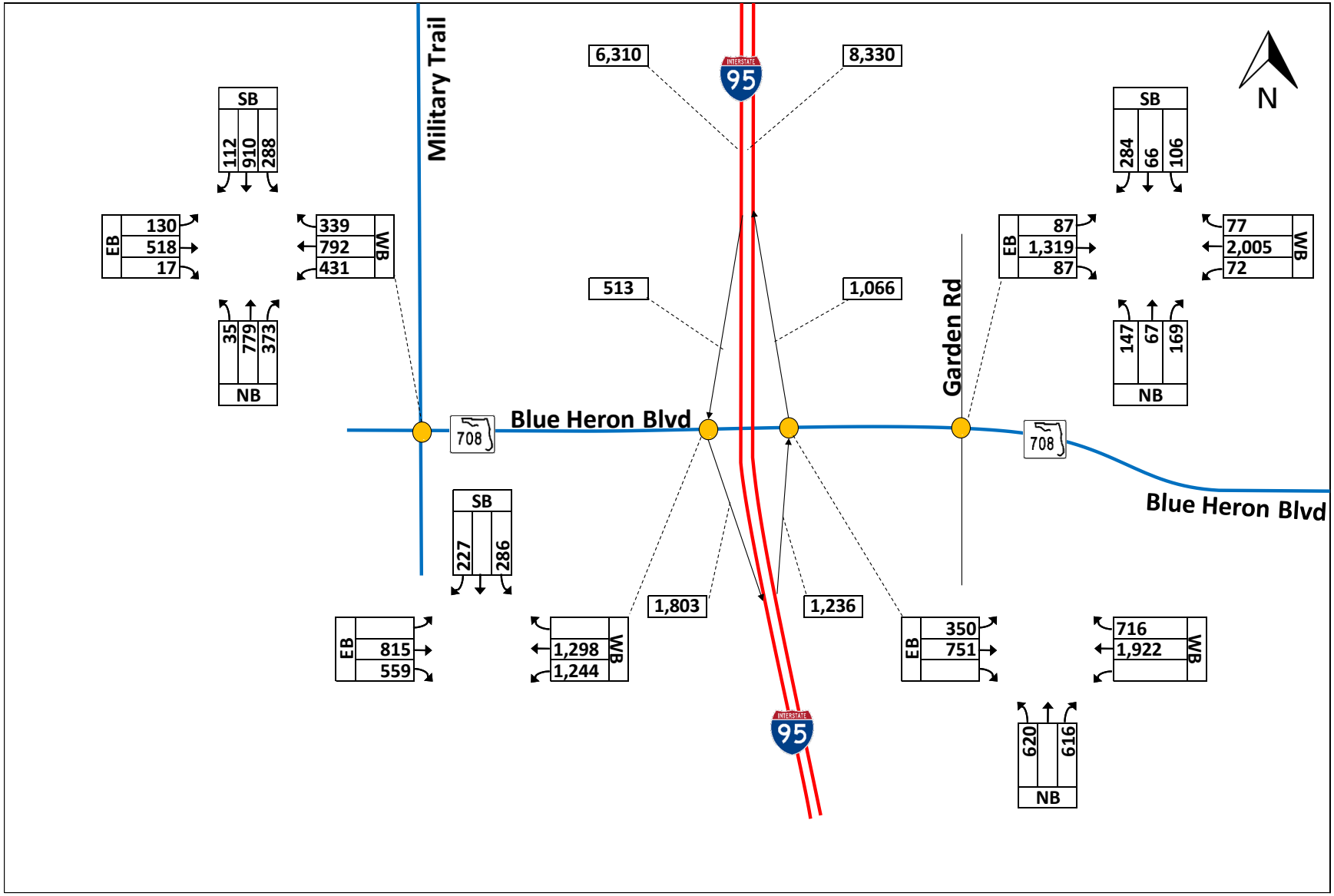


Figure 3-14 Blue Heron Boulevard - 2015 Existing PM Peak Hour DDHV Volumes

3.6.7 Field Observations

Field reviews at the signalized intersections within the project limits were conducted on September 22 and October 28, 2015, in the AM and PM peak periods, in order to evaluate the current operating conditions of the study area. Existing information that was collected included queue length, lane configuration, cycle phasing, and other traffic operations characteristics needed to validate the Synchro model. In general, signalized intersections have traffic actuation cameras at all approaches. The only exception to this is at Roan Lane where the southbound approach is not signalized and does not have an actuation camera. The I-95 interchange at Northlake Boulevard experiences large amounts of congestion in the eastbound direction for the AM peak and in the westbound and southbound directions for the PM peak. The heavy AM movement consisted of Northlake Boulevard westbound traffic turning southbound onto the I-95 on-ramp. Similarly, the heavy PM moment consisted of the I-95 Northbound off-ramp, with queuing backing onto the mainline.

SR 809/Military Trail

SR 809/Military Trail at Northlake Boulevard is a four-leg approach intersection located approximately ½ mile west of the I-95 interchange. The signalized intersection operates with protected left turns and right turn overlap for each approach. Long queues were observed at all four approaches of the intersection during the peak periods. Queues in excess of 400 ft. were observed traveling westbound, although, and queues cleared in one cycle length. **Figure 3-15** shows a queue of approximately 400 ft. of the westbound queue on the eastern leg of the intersection.

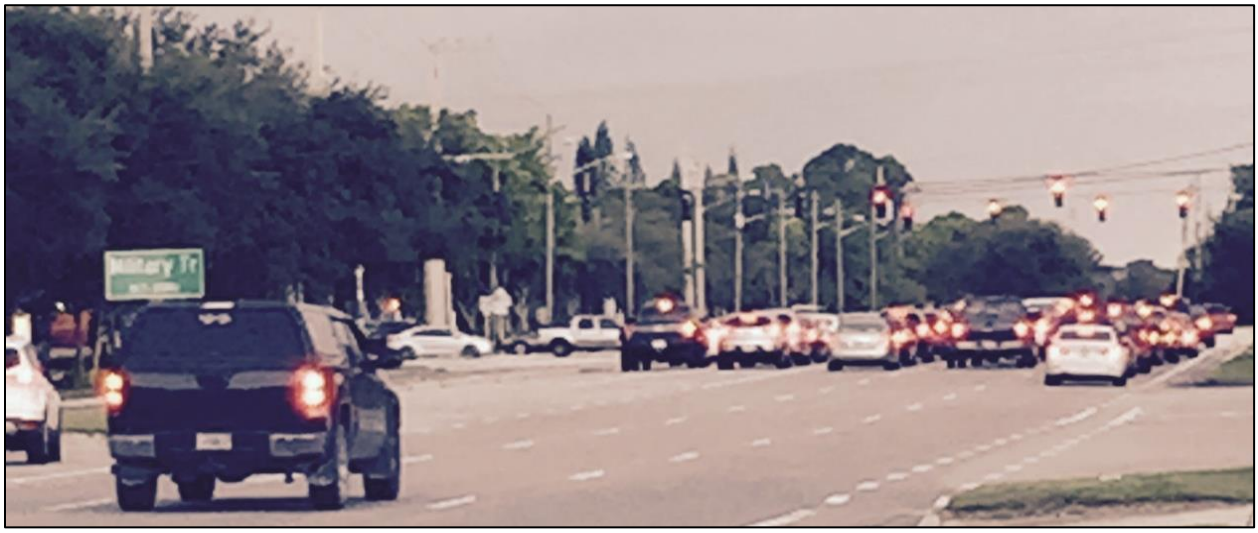


Figure 3-15 Westbound Traffic at Military Trail PM Peak

Keating Drive

Keating Drive at Northlake Boulevard is a four-leg approach intersection located approximately 600 ft. west of the I-95 interchange. The signalized intersection operates with protected left turns, right turn overlap for the east and west approaches and split phasing for the north and south approaches. The eastbound direction experienced the heaviest traffic during the AM peak period. Eastbound queues reached 500 ft. and contained traffic headed towards southbound I-95. Westbound queues reached 345 ft. for the through movement and the left turn pocket held a 375 ft. queue (See **Figure 3-16**). Despite long queues in the AM, all movements cleared within one cycle length with the exception of the westbound left turn movement. In the PM peak period, the westbound traffic was heavier. However, both eastbound and westbound queues exceeded 500 ft. usually clearing in 1 cycle length. It was noted during the field review that several eastbound vehicles run the red light.

Figure 3-16 Westbound Left Queue at Keating Drive AM Peak

I-95 Southbound Ramps

The signalized intersection at the southbound I-95 ramps operates with protected left turns and signal-controlled channelized right turns southbound to westbound and free flow channelized right turn eastbound to southbound with a ground mounted yield sign. The southbound to westbound movement is not permitted to turn right turn on red.

Significant southbound off-ramp queues were observed for both the AM and PM peak periods and required several cycles to clear. The SB off-ramp storage is not adequate for these queue

lengths and spillback onto the mainline of I-95 was observed (See **Figure 3-17 and Figure 3-18**). During the AM peak period, the westbound to southbound queues were observed to back up through the intersections of the northbound ramps and Sunrise Drive/Sandtree Drive a distance of approximately 2,000 ft. No significant queuing was observed in the eastbound direction.

Figure 3-17 I-95 Southbound Off-Ramp at Northlake Boulevard AM Peak

Figure 3-18 I-95 Southbound Off-Ramp at Northlake Boulevard PM Peak

I-95 Northbound Ramps

The signalized intersection at the northbound I-95 ramps operates with protected left turns and signal-controlled channelized right turns northbound to eastbound and channelized right turns westbound to northbound with a ground mounted yield sign. The northbound to eastbound right turn movement is not permitted to turn right on red. The eastbound traffic cleared each cycle length for both peak periods. The westbound to southbound ramp only left turn movement was very heavy in the AM peak period with the queue extending back to the intersection at Roan Lane (see **Figure 3-19**). Several vehicles were observed blocking the intersection of Roan Lane despite multiple "Do Not Block Intersection" signs present on the intersection mast arm.

The northbound off-ramp queues were very long for both peak periods and required several cycles to clear. The ramp storage is not adequate for these queue lengths and spillback onto the mainline of I-95 was observed (See **Figure 3-20** and **Figure 3-21**). It was observed that the signal for the right turn northbound to eastbound is difficult to see as drivers approached the intersection. The signal heads only become visible about 250 ft. from the intersection with objects such as trees and signs obstructing the view from drivers. Advance warning signs or additional signals will be provided as part of the proposed improvements to correct the sight distance issue.

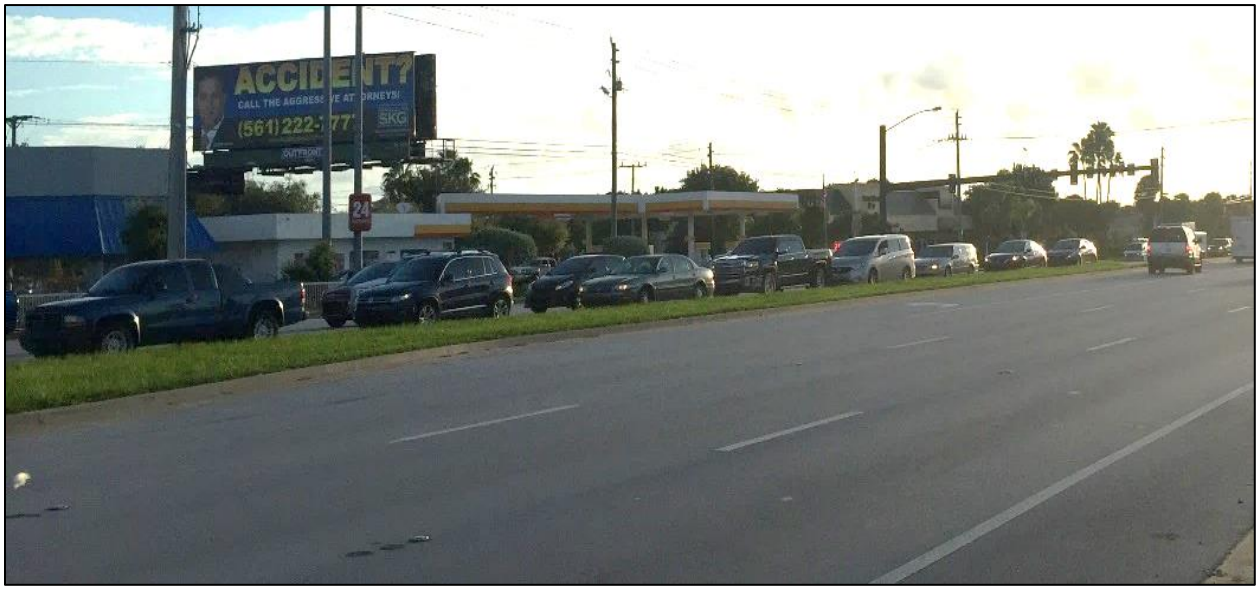


Figure 3-19 Westbound Approach to NB I-95 Signal at Northlake (looking East) AM Peak

Figure 3-20 I 95 Northbound Off-Ramp at Northlake Boulevard AM Peak

Figure 3-21 I 95 Northbound Off-Ramp at Northlake Boulevard PM Peak

Roan Lane

Roan Lane at Northlake Boulevard is a T-intersection, located approximately 375 ft. from the I-95 northbound intersection, operating with a protected eastbound left turn movement and no northbound approach. The eastbound through movement is fixed green since there are no conflicting movements. Only the eastbound left and westbound through movements are restricted by the signal. The southbound approach is not signalized. The longest queue observed for the eastbound left turn was approximately 275 ft. in both the AM and PM peak periods. The current storage was completely full for this queue length. Although no vehicles spilled back onto Northlake Boulevard, there was no room for deceleration within the turn lane. The queue was observed to be cleared after each cycle length. Vehicles traveling southbound on Roan Lane, from the north approach of the intersection to Northlake Boulevard, are only permitted to make a right turn westbound. Pedestrian crosswalks are only provided on the southbound approach of this intersection. Queues from the eastbound movement at the Sunrise/Sandtree Drive signal often backs up in excess of 200 ft. west of the Roan Lane intersection as shown in **Figure 3-22**, which shows the green light at the eastbound Roan Signal and traffic backed up past the northbound off-ramp.

Figure 3-22 Eastbound traffic on Northlake backed up past NB Off-Ramp

Sunrise Drive/Sandtree Drive

Sunrise Drive/Sandtree Drive at Northlake Boulevard is a four-leg approach intersection located approximately 1,000 ft. east of the I-95 interchange. The signalized intersection operates with protected left-turn phases for all approaches and right turn overlap for the east approach. During the field review, the eastbound movement appeared to be the heavier movement in the AM peak period and the westbound traffic appeared to be heavier in the PM peak period. Eastbound queues were observed to back up past the intersection at Roan Lane, approximately 750 ft. in the AM peak period and 455 ft. in the PM peak. (See **Figure 3-23** and **Figure 3-24**). Westbound traffic that is headed southbound on I-95 was observed to begin queuing on the left through lanes to enter the left turn lanes for the I-95 southbound on-ramps. Westbound AM Peak queues reached 420 ft. and the PM peak reached 340 ft. The southbound and northbound queues were observed to be much shorter, approximately 140 ft. and 260 ft. in the AM and 290 ft. and 175 ft. in the PM peak, respectively.

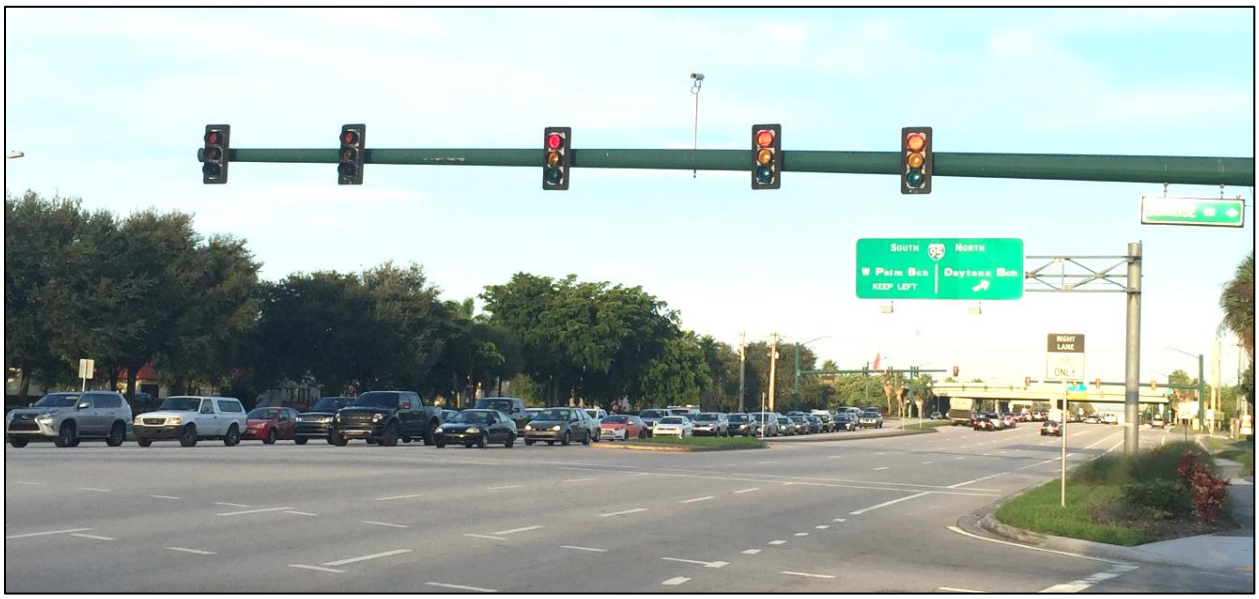


Figure 3-23 Eastbound Traffic at Sandtree/Sunrise Drive AM Peak

Figure 3-24 Eastbound Traffic at Sandtree/Sunrise Drive PM Peak

3.7 Existing Operational Analysis

3.7.1 Freeway and Ramp Merge/Diverge

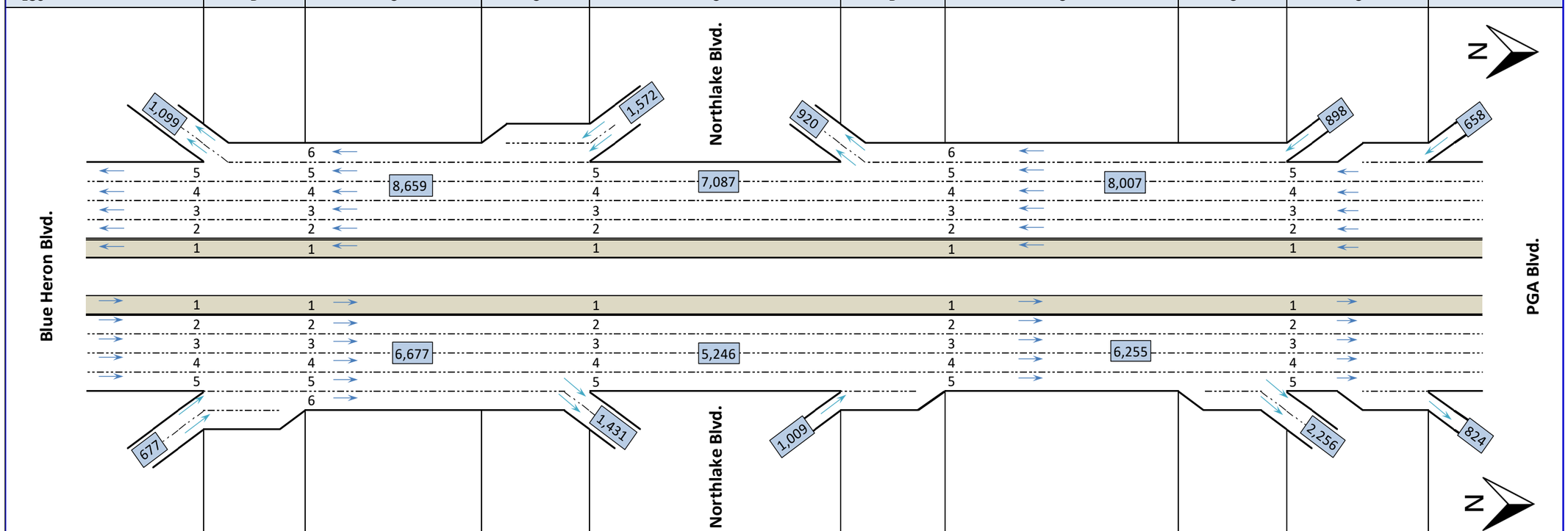
The existing AM and PM peak hour operating conditions for the off-ramps, on- ramps and I-95 mainline sections between the ramps were analyzed using Highway Capacity Software 2010, based on Highway Capacity Manual 2010 methodology. Since the operation and performance of limited access HOV lanes cannot be evaluated with current HCM 2010 freeway methods, the default capacity of an HOV lane i.e. 1,600 vehicles per hour, (See **Appendix E**) was subtracted from the existing freeway DDHV and the number of freeway lanes also reduced accordingly for the freeway and ramp merge/diverge analysis.

Figure 3-25 and **Figure 3-26** show the density, speed, and level of service for the freeway segments as well as the merge and diverge locations for the AM and PM peak periods respectively.

Based on the analysis, all the freeway segments are currently operating at an acceptable LOS D or better. The details of the results are included in **Appendix F.**

I-95 Southbound

Length	1,500-ft	3,943-ft	1,500-ft	2,070-ft	1,500-ft	6,335-ft	1,500-ft	450-ft
Analysis Type	Diverge	Basic Freeway	Merge	Basic Freeway	Diverge	Basic Freeway	Merge	Merge
Density	11.8 pc/mi/ln	23.4 pc/mi/ln	22.5 pc/mi/ln	22.7 pc/mi/ln	10.9 pc/mi/ln	21.2 pc/mi/ln	23.4 pc/mi/ln	24.1 pc/mi/ln
Speed	54.2 mph	64.8 mph	57.3 mph	64.9 mph	54.6 mph	65.0 mph	57.1 mph	57.0 mph
LOS	B	C	C	C	B	C	C	C



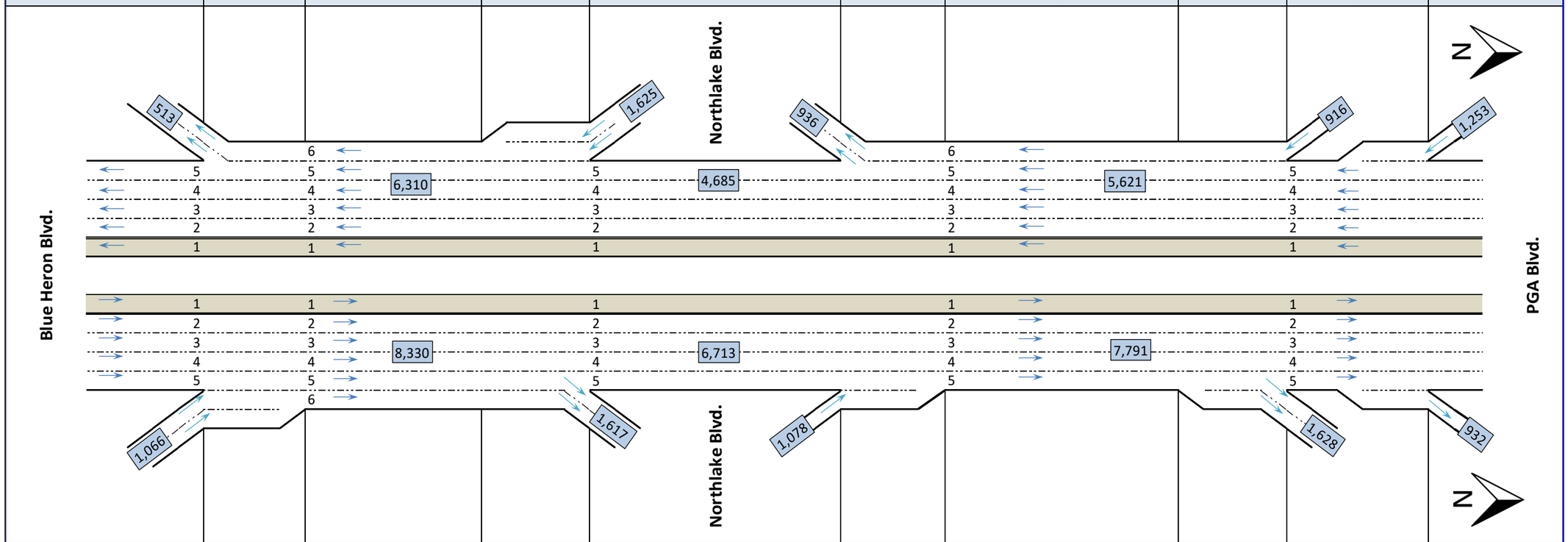
Length	950-ft	4,498-ft	1,500-ft	2,239-ft	1,260-ft	6,480-ft	1,500-ft	850-ft
Analysis Type	Merge	Basic Freeway	Diverge	Basic Freeway	Merge	Basic Freeway	Diverge	Diverge
Density	16.1 pc/mi/ln	16.8 pc/mi/ln	11.5 pc/mi/ln	15.1 pc/mi/ln	22.4 pc/mi/ln	19.2 pc/mi/ln	17.3 pc/mi/ln	13.7 pc/mi/ln
Speed	59.1 mph	65.0 mph	53.5 mph	65.0 mph	57.5 mph	65.0 mph	51.6 mph	51.8 mph
LOS	B	B	B	B	C	C	B	B

I-95 Northbound

Figure 3-25 2015 Existing AM Freeways and Ramp Merge/Diverge Analysis

I-95 Southbound

Length	1,500-ft	3,943-ft	1,500-ft	2,070-ft	1,500-ft	6,335-ft	1,500-ft	450-ft
Analysis Type	Diverge	Basic Freeway	Merge	Basic Freeway	Diverge	Basic Freeway	Merge	Merge
Density	6.4 pc/mi/ln	15.6 pc/mi/ln	19.1 pc/mi/ln	12.7 pc/mi/ln	5.8 pc/mi/ln	13.3 pc/mi/ln	12.0 pc/mi/ln	18.7 pc/mi/ln
Speed	55.5 mph	65.0 mph	58.5 mph	65.0 mph	54.6 mph	65.0 mph	58.2 mph	57.7 mph
LOS	A	B	B	B	A	B	B	B



Length	950-ft	4,498-ft	1,500-ft	2,239-ft	1,260-ft	6,480-ft	1,500-ft	850-ft
Analysis Type	Merge	Basic Freeway	Diverge	Basic Freeway	Merge	Basic Freeway	Diverge	Diverge
Density	23.4 pc/mi/ln	22.2 pc/mi/ln	14.7 pc/mi/ln	21.1 pc/mi/ln	28.0 pc/mi/ln	26.0 pc/mi/ln	16.7 pc/mi/ln	23.0 pc/mi/ln
Speed	57.2 mph	65.0 mph	53.1 mph	65.0 mph	56.0 mph	64.0 mph	53.0 mph	51.6 mph
LOS	C	C	B	C	C	C	B	C

I-95 Northbound

Figure 3-26 2015 Existing PM Freeways and Ramp Merge/Diverge Analysis

3.7.2 Signalized Intersections

Existing traffic conditions for signalized intersections were analyzed using HCM 2010 methodology or HCM 2000 methodology where HCM 2010 was not applicable. SYNCHRO 9 software was used to perform the analysis. The analysis was performed for AM and PM peak periods. For the existing conditions analysis, the actual Right Turn on Red (RTOR) volumes obtained from the data collection were used instead of the estimated values. **Figure 3-27** through **Figure 3-35** show the existing intersections lane configurations and LOS analysis results for the signalized intersections.

The analysis results show that several of the existing signalized intersections are operating at an overall LOS E or worse during the peak periods. Most of the ramp terminals are operating at overall LOS E or better with the exception of the northbound off-ramp terminal at PGA Boulevard which is currently operating at LOS F during the AM peak period. In addition, several intersection approaches and movements, particularly those along the minor side streets are operating at LOS E or worse. It should be noted that the existing signals along the Northlake Boulevard arterial are coordinated and configured to favor the east-west movements sometimes resulting in significant delays for the minor side streets.

For the Northlake Boulevard interchange ramp terminals, the northbound approach at the NB off-ramp operates at LOS F while the southbound approach at the SB off-ramp terminal operates at LOS E during the AM peak period. During the PM Peak period, both the northbound approach at the NB off-ramp and the southbound approach at the SB off-ramp terminal operates at LOS E. The following signalized intersections do not meet the adopted LOS D Standards:

<u>Northlake Boulevard</u>

- Military Trail intersection operates at LOS E during both the AM and PM peak periods.
- The I-95 NB Ramp Terminal operates at LOS E during the AM peak period.
- Sunrises Drive Intersection operates at LOS E during the AM peak period and LOS F during PM peak period.

<u>PGA Boulevard</u>

- Military Trail intersection operates at LOS E during both the AM and PM peak periods.
- The I-95 NB Ramp Terminal operates at LOS F during AM peak periods.

<u>Blue Heron Boulevard</u>

- Military Trail intersection operates at LOS E during both the AM and PM peak periods.
- The I-95 NB Ramp Terminal operates at LOS E during the PM peak period.

The detailed results of the existing conditions analysis for the signalized intersections within the project limits are provided in **Figure 3-27** through **Figure 3-35** and **Appendix G**.

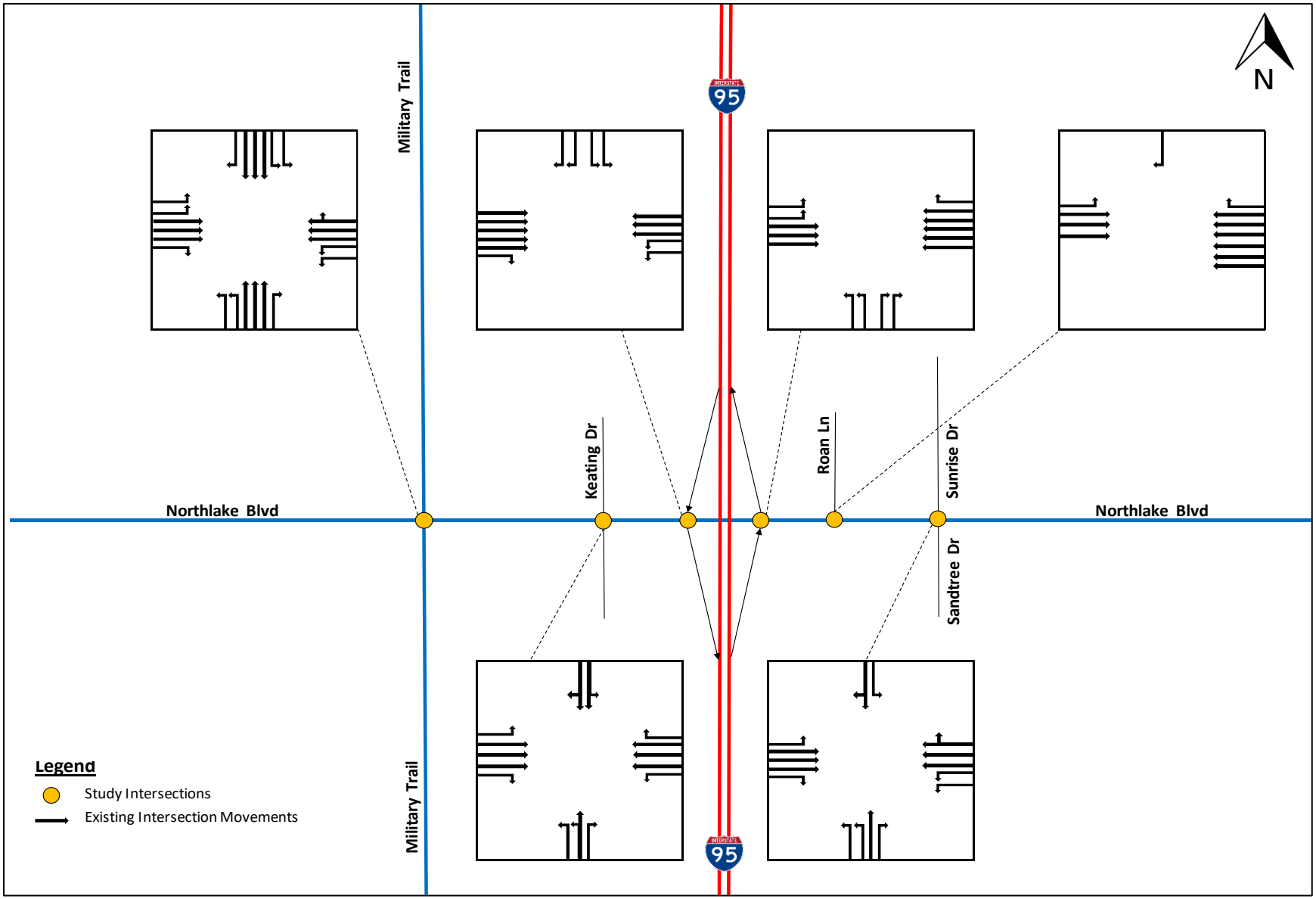


Figure 3-27 Northlake Boulevard - Existing Intersections Lane Configuration

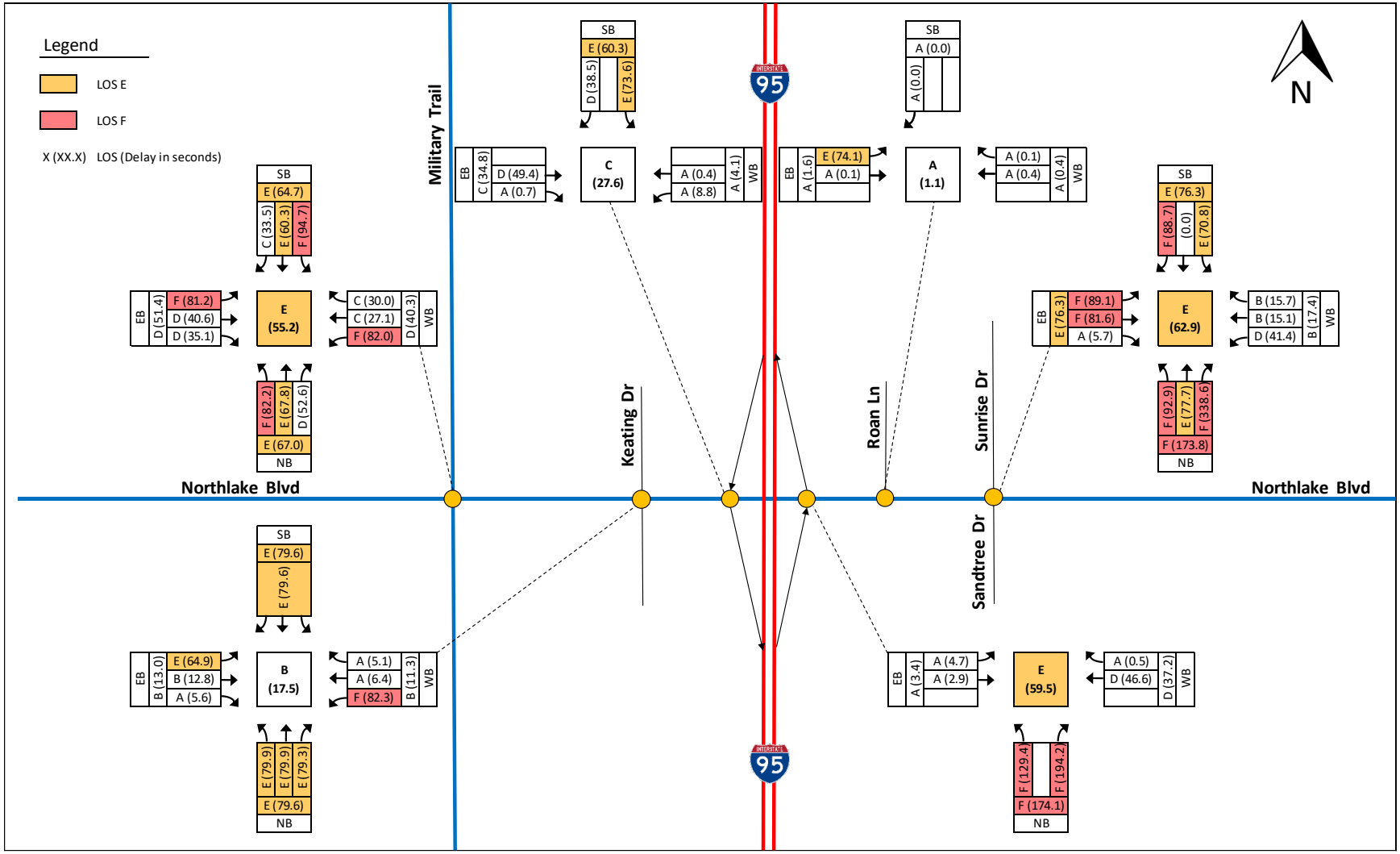


Figure 3-28 Northlake Boulevard - 2015 AM Existing Intersection LOS

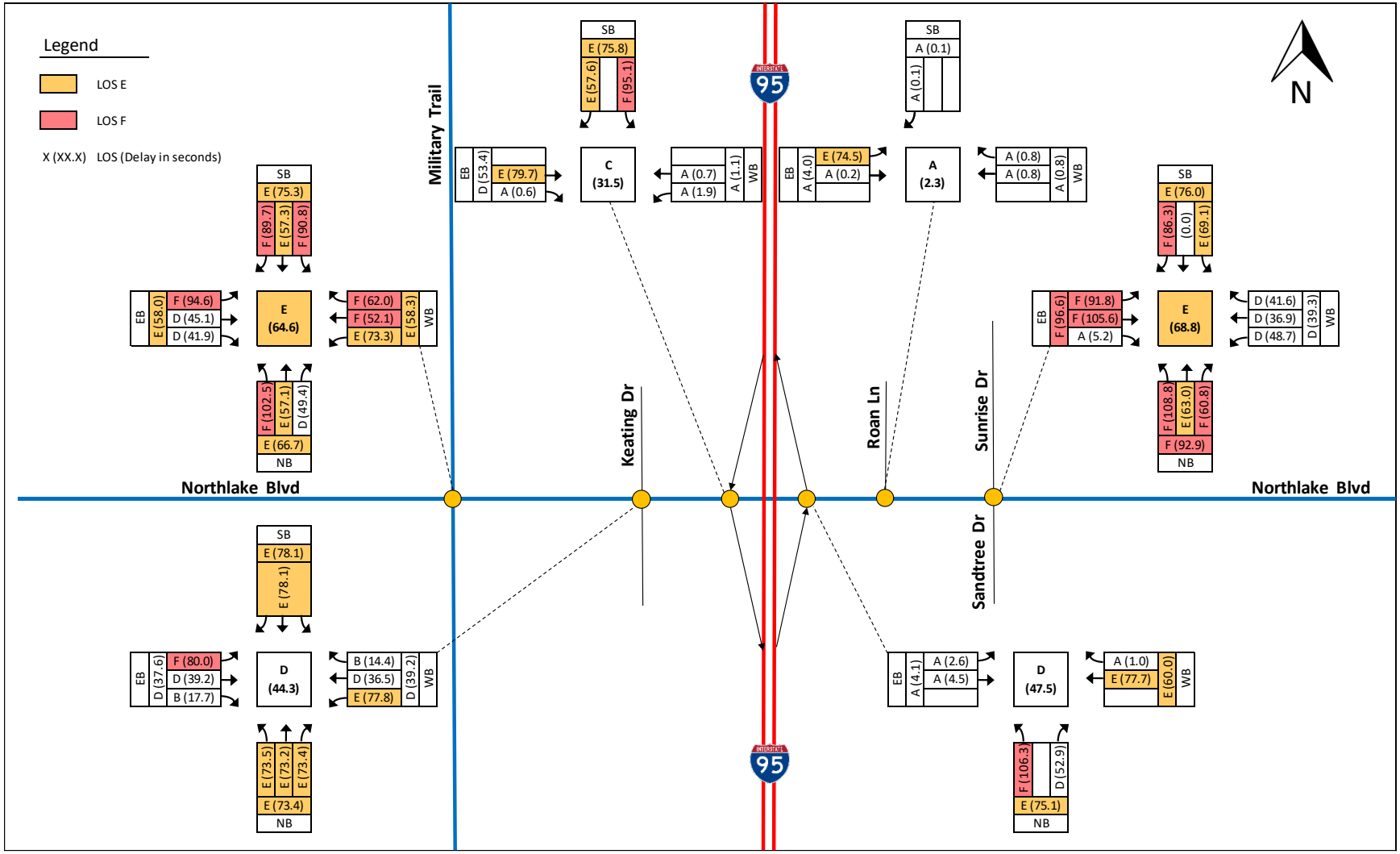


Figure 3-29 Northlake Boulevard - 2015 PM Existing Intersection LOS

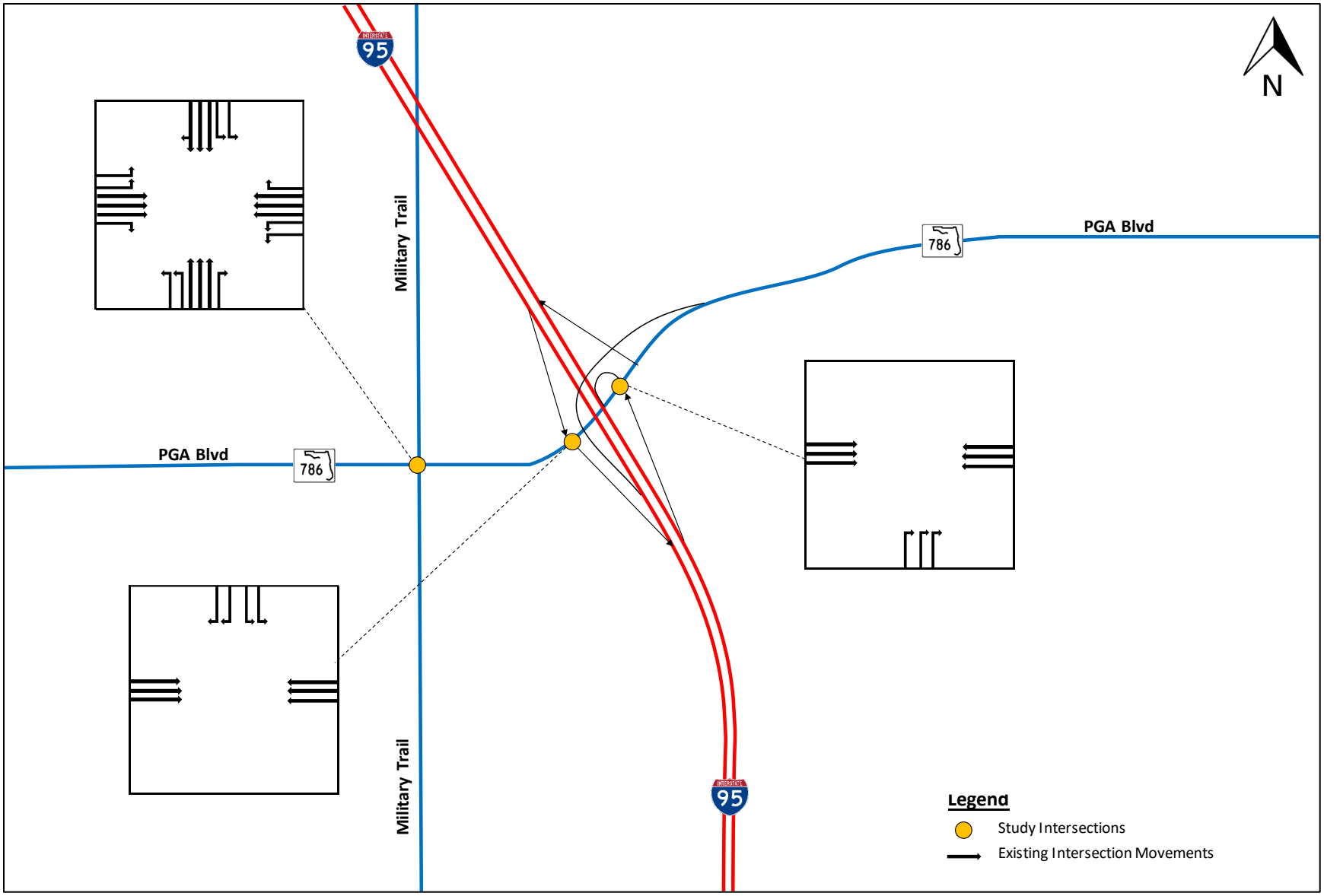


Figure 3-30 PGA Boulevard - Existing Intersections Lane Configuration

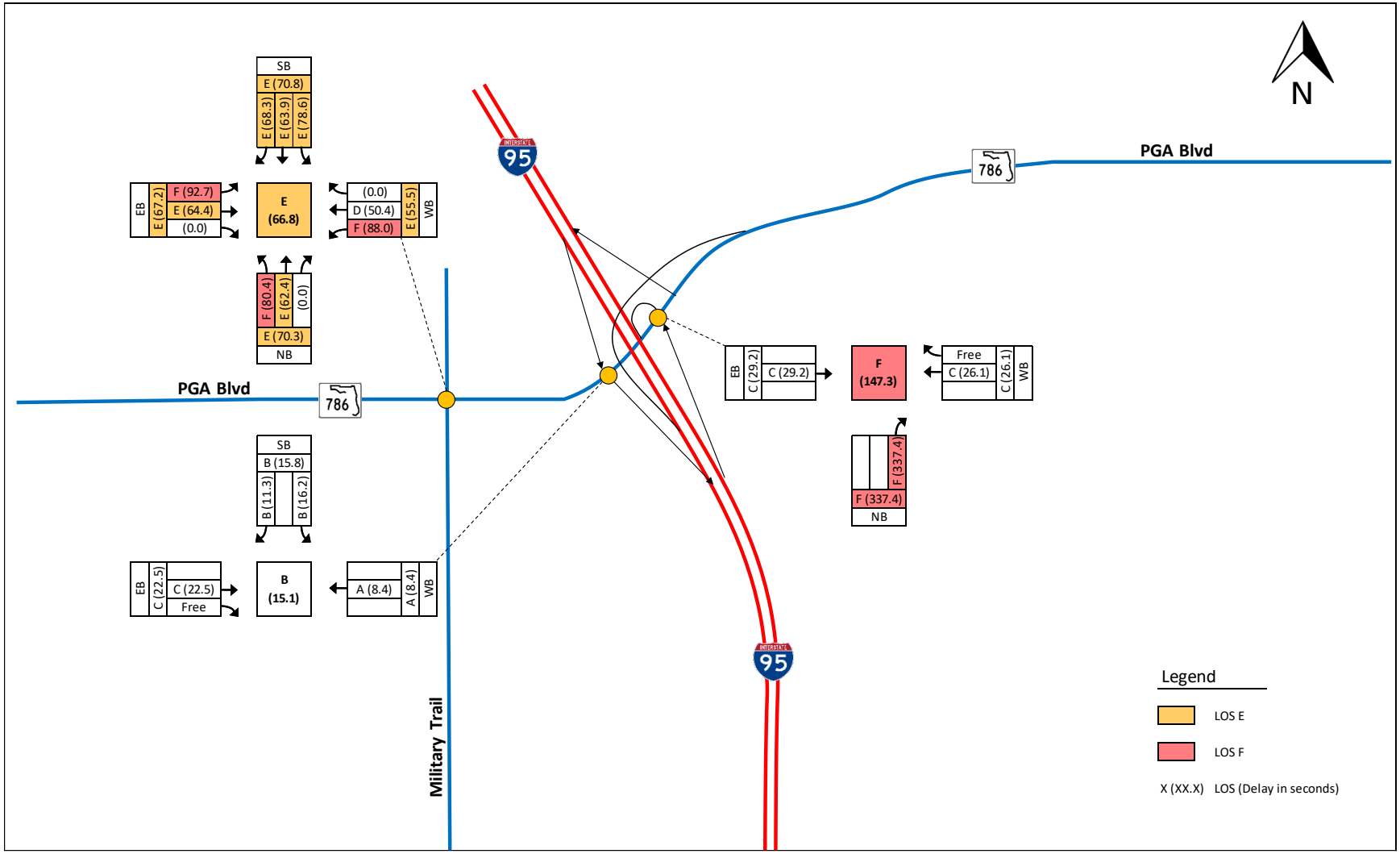


Figure 3-31 PGA Boulevard 2015 - AM Existing Intersection LOS

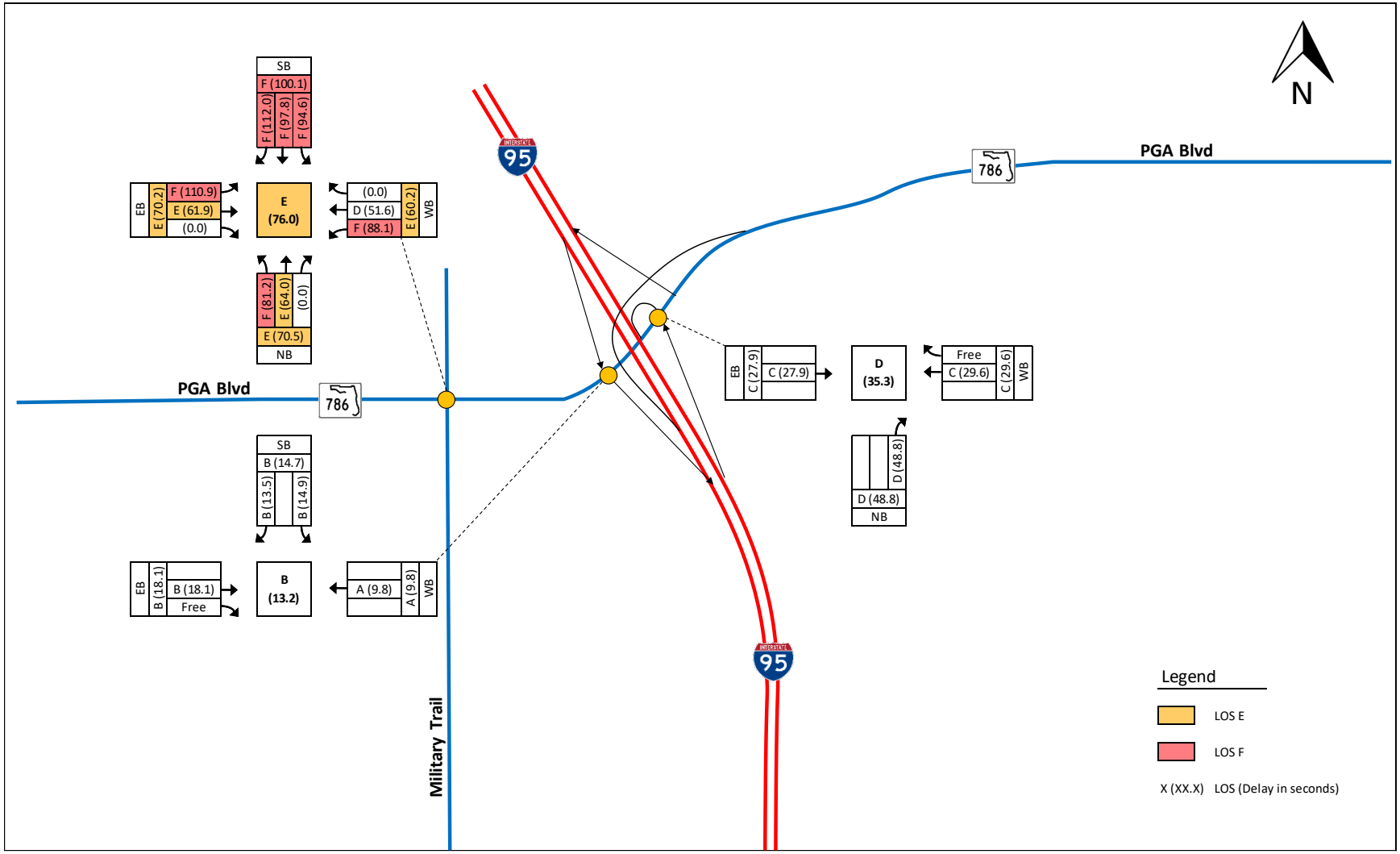


Figure 3-32 PGA Boulevard - 2015 PM Existing Intersection LOS

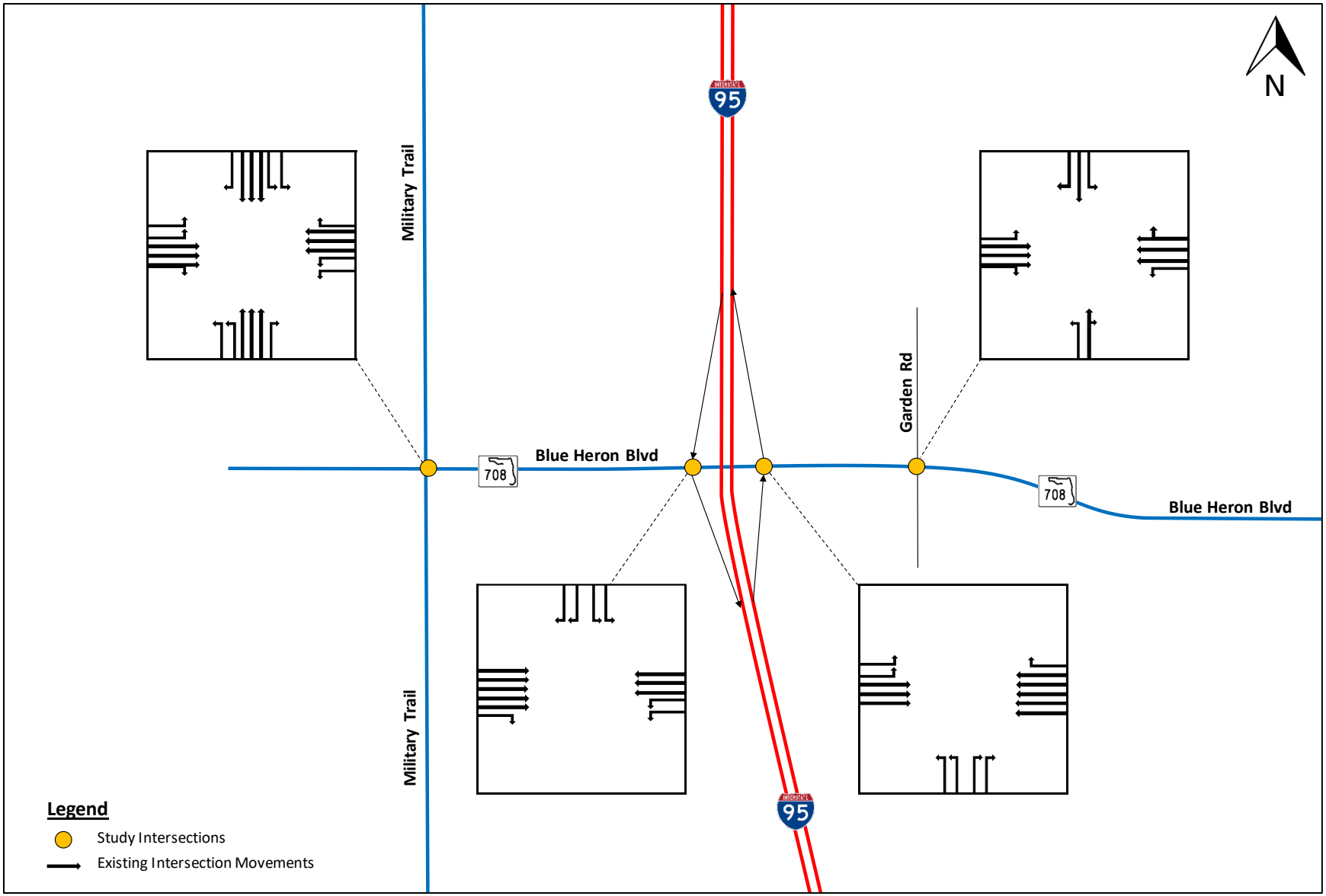


Figure 3-33 Blue Heron Boulevard - Existing Intersections Lane Configuration

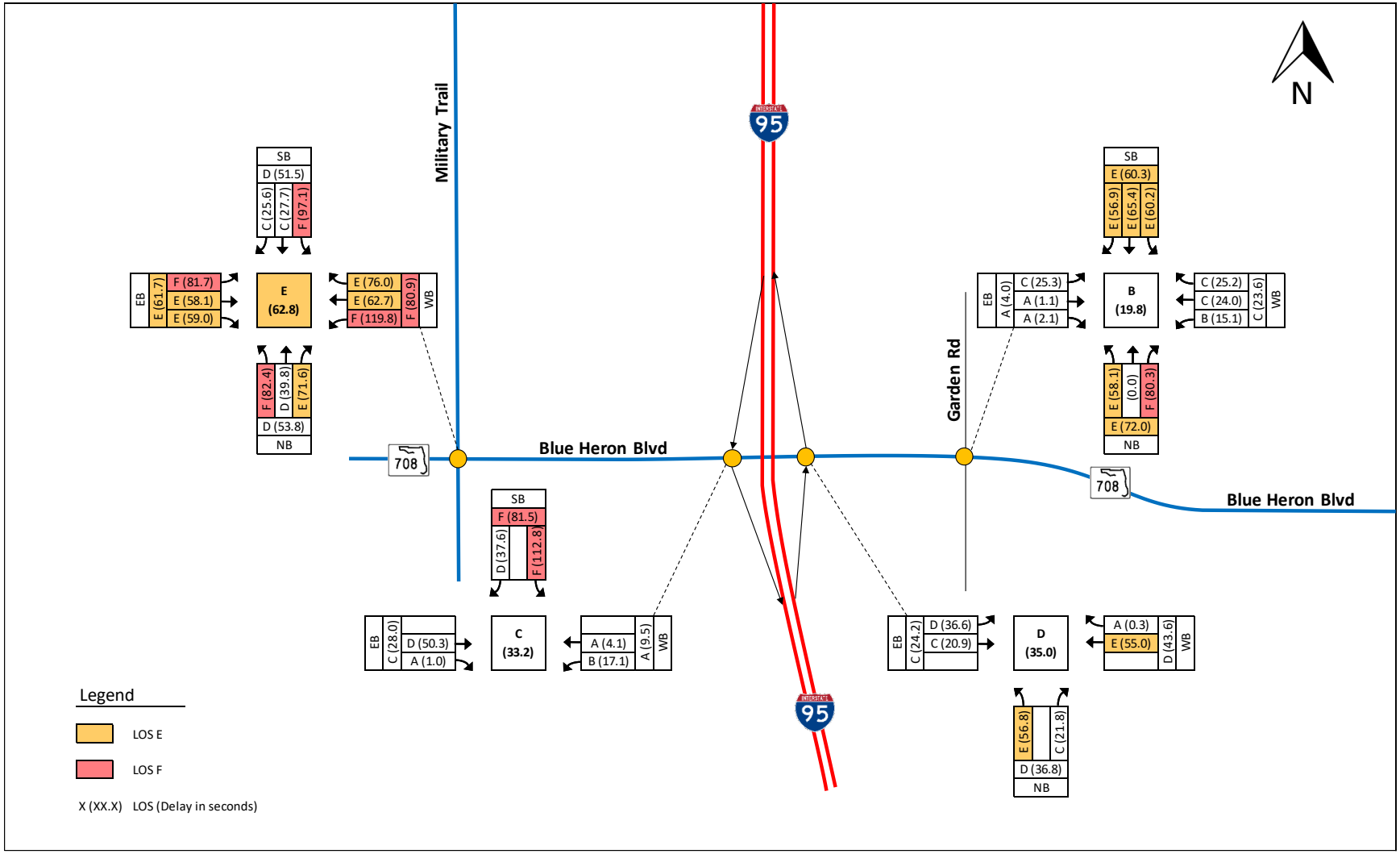


Figure 3-34 Blue Heron Boulevard - 2015 AM Existing Intersection LOS

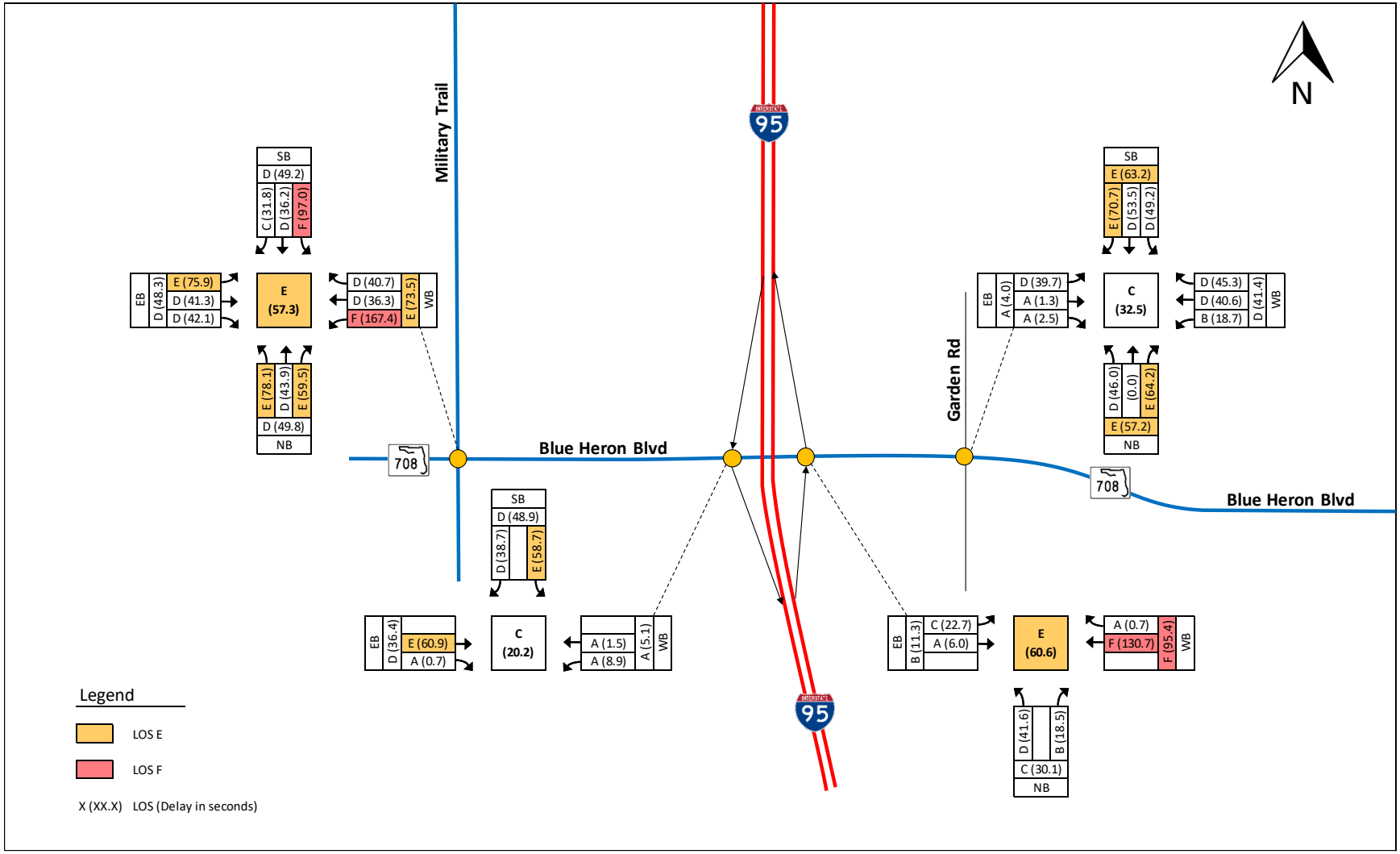


Figure 3-35 Blue Heron Boulevard - 2015 PM Existing Intersection LOS

3.7.3 Queue Length Analysis

A vehicle queuing analysis was performed as part of the study to determine the adequacy of the existing left-turn storage lengths for the intersections along the corridor. The queuing analysis was performed using SIMTRAFFIC microsimulation model since the results were found to be more representative of the field observation than the results from SYNCHRO model. The same data set and signal timings from the SYNCHRO model were used for the microsimulation. A visual calibration of the SIMTRAFFIC microsimulation model was performed to make sure that the microsimulation resembled the traffic conditions witnessed in the field. The following adjustments were made to the model:

- Changed vehicle lengths to match AASHTO vehicle dimensions
- Changed Carpool1 and Carpool2 occurrence to 0%
- 60 minutes simulation time with 15 minutes seeding time
- Positioning and mandatory distances changed

SIMTRAFFIC gives average queue length, maximum queue length and 95th percentile queue length for each lane for the analysis period. A vehicle is considered queued when it is traveling at less than 10 ft. per second. For this study, the 95th percentile queue result, calculated as the average queue plus 1.65 standard deviations was used.

Five simulation runs were made and the 95th percentile vehicular queue length in ft. for the left turn and right turn movements at each of the study intersections were obtained. These were compared against the existing storage lengths in order to identify storage deficiencies where the estimated queue exceeds the storage capacity.

Based on the analysis, approximately 23 out of the 28 locations (82%) have deficient storage lengths. The queue analysis indicated that both the northbound and southbound off-ramps experience significant queues during both the AM and PM peak periods with traffic spillback onto the I-95 mainline. This is consistent with observations made during the field reviews. The detailed queue analysis results are provided in **Appendix H**.

Table 3-3
2015 Existing Queue Length Analysis

Intersection		Approach		AM Peak Period	PM Peak Period	Max. Queue Length	Existing Storage (ft.)	Storage Deficiency	% Over Existing Storage
1	Northlake Boulevard and Military Trail	EB	L	430	460	460	300	Yes	53%
			R	408	440	440	270	Yes	63%
		WB	L	228	522	522	450	Yes	16%
			R	411	1270	1270	-	-	-
		NB	L	337	330	337	190	Yes	77%
			R	275	278	278	180	Yes	54%
		SB	L	437	452	452	290	Yes	56%
			R	177	258	258	175	Yes	47%
2	Northlake Boulevard and Keating Drive	EB	L	74	177	177	165	Yes	7%
			R	232	333	333	200	Yes	67%
		WB	L	202	596	596	490	Yes	22%
			R	35	541	541	365	Yes	48%
		NB	L	41	245	245	145	Yes	69%
			R	117	197	197	115	Yes	71%
		SB	L	244	321	321	150	Yes	114%
			R	72	190	190	150	Yes	27%
3	Northlake Boulevard and I-95 SB Ramp Terminal	EB	L	-	-	-	-	-	-
			R	-	-	-	-	-	-
		WB	L	383	166	383	920	OK	-
			R	-	-	-	-	-	-
		SB	L	825	1599	1599	1050	Yes	53%
			R	844	1608	1608			
4	Northlake Boulevard and I-95 NB Ramp Terminal	EB	L	317	160	317	650	OK	-
			R	-	-	-	-	-	-
		WB	L	-	-	-	-	-	-
			R	344	416	416	300	Yes	39%
		NB	L	1320	1433	1433	1125	Yes	27%
			R	780	919	919			
5	Northlake Boulevard and Roan Lane	EB	L	115	287	287	270	Yes	6%
			R	-	-	-	-	-	-
		WB	L	-	-	-	-	-	-
			R	138	233	233	270	OK	-
		SB	L	-	-	-	-	-	-
			R	30	227	227	-	-	-
6	Northlake Boulevard and Sunrise Drive	EB	L	79	293	293	370	OK	-
			R	63	76	76	390	OK	-
		WB	L	228	347	347	180	Yes	93%
			R	297	1246	1246	-	-	-
		NB	L	247	477	477	325	Yes	47%
			R	159	255	255	190	Yes	34%
		SB	L	288	207	288	150	Yes	92%
			R	116	146	146	-	-	-

3.8 Safety Analysis

A crash analysis was conducted for the SR-9/I-95 interchange at Northlake Boulevard PD&E study, for the most recent five-year period available (2010 – 2014), to identify crash patterns, probable contributing causes and to identify countermeasures for recommendation for further studies, if needed. Crash data for Northlake Boulevard was collected from Palm Beach County Traffic Engineering and data for the SR-9/I-95 mainline, ramps and Military Trail was collected from the FDOT Crash Analysis Reporting System (CARS) from the Safety Office Crash Records Section. The crash analysis evaluated the I-95 mainline, on and off-ramps and intersections located on Northlake Boulevard within the area of influence. The following section summarizes the crash analysis completed for the Northlake Boulevard interchange and the PGA Boulevard Southbound On-Ramp.

3.8.1 Northlake Boulevard

3.8.1.1 Crash Data Summary

Crash report data was collected from two different sources; Palm Beach County and FDOT CARS; the data was then standardized into the same format for a cohesive analysis. Data that was obtained from Palm Beach County included PDF files of the short form crash report. These forms were individually reviewed and the information provided was properly coded into an Excel database. It was observed that Palm Beach County used different versions of the crash report forms for different years and a careful detailed review of the crash reports was required. Therefore, a standardized coding system was used to combine the crash data from the different crash report forms and data sources so that a comprehensive detailed evaluation could be completed. HSMV Crash report numbers were used to remove duplicate crash report entries from both data sources. Associated short form crash reports were not provided with the FDOT CARS data, therefore an assumption is made that all the data is correct and complete.

There was a total of 1086 crashes for the study area for the five-year period from 2010 to 2014. The predominant crash type that occurred within the study area was rear end collisions with 53%, angle crashes with 14%, and sideswipe collisions with 13%. There was a total of five fatalities that occurred within the study area for the five-year analysis period. A summary of crash type for the entire study area is illustrated in **Figure 3-36**.

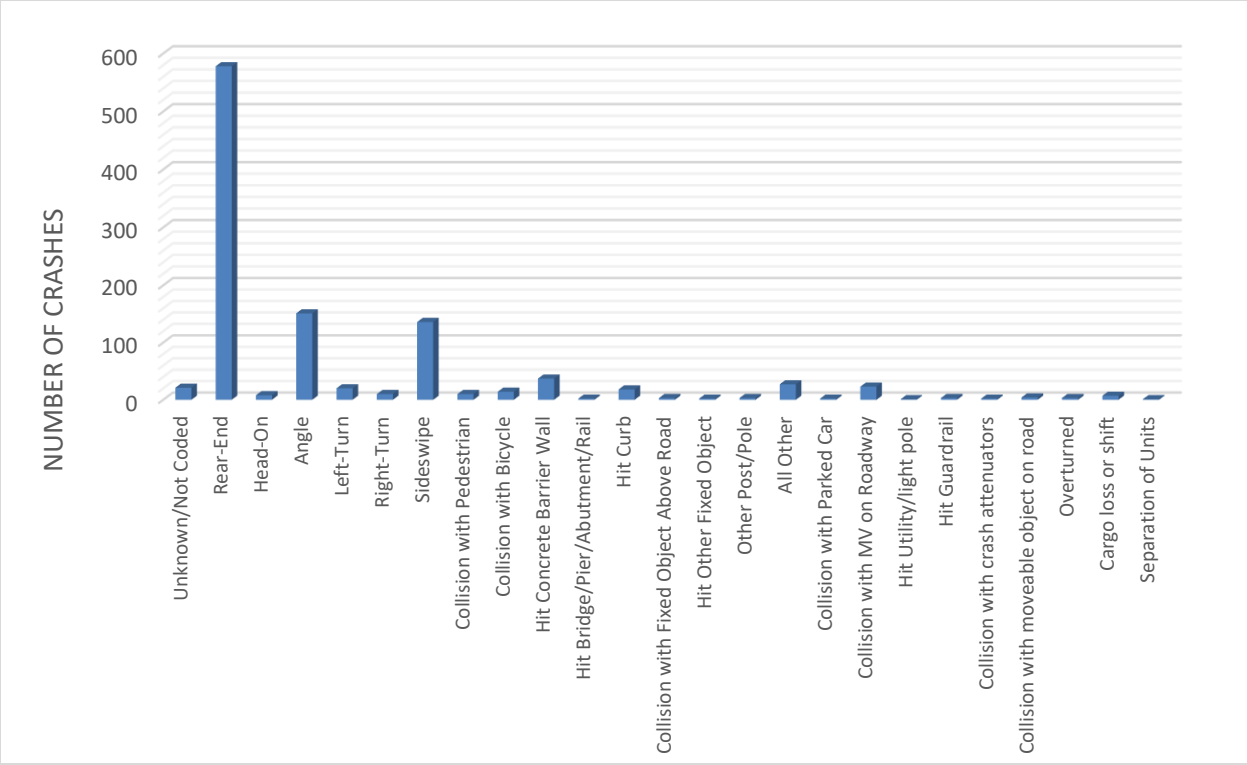


Figure 3-36 Five Year Crash Type Distribution

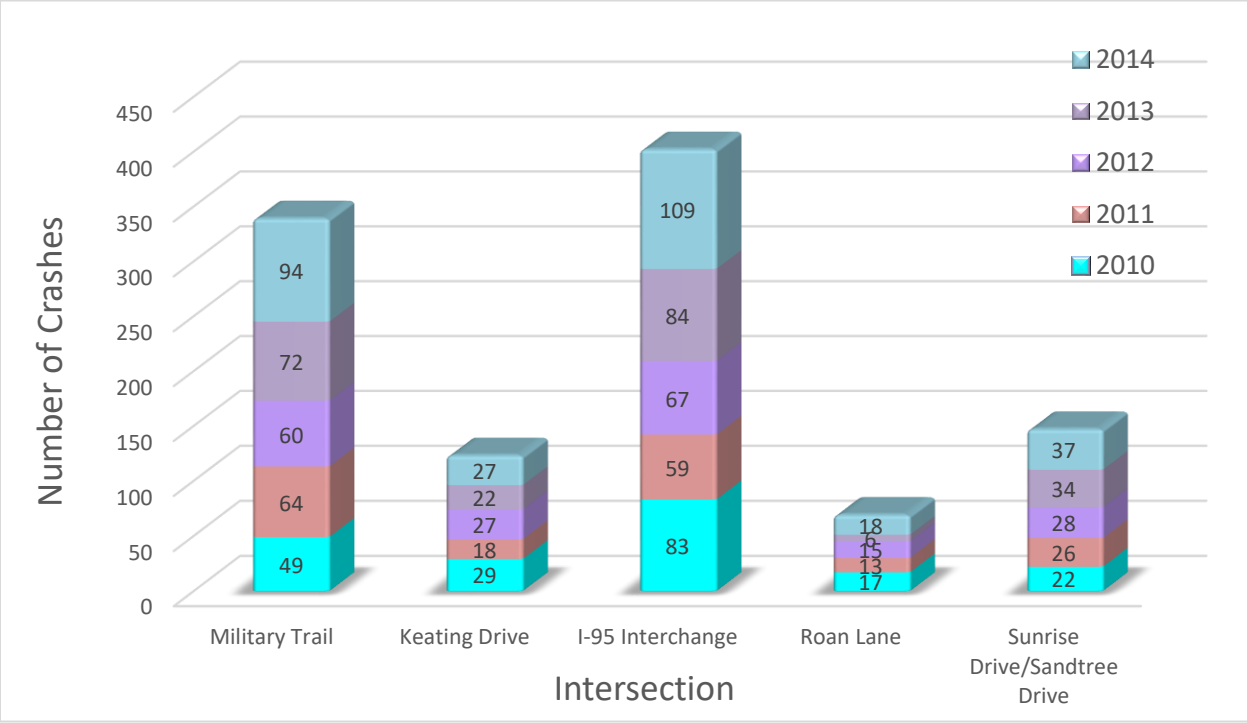


Figure 3-37 Number of Crashes per Intersection per Year

The crash data was analyzed for each intersection and roadway way segment and collision diagrams were constructed. The collision diagrams are provided in **Appendix I**. The intersection located on Northlake Boulevard within the study area with the most amount of crashes was reported to be at the I-95 interchange intersections, followed by Military Trail, Sunrise Drive/Sandtree.

Drive, Keating Drive and Roan Lane, respectively. The number of crashes for each intersection for each study year is depicted in **Figure 3-37.** A decrease in the number of intersection crashes was identified from year 2013 to 2014 except at the I-95 interchange intersections.

The intersection at Military Trail had a total of 339 crashes for the five-year period with an average of 68 crashes per year. The most common type of collision occurring at the intersection was rear end crashes with approximately 60%, the second recorded as sideswipe collisions with 16% and the third is documented as angle collisions with 14% of the total crashes.

Keating Drive intersection had a reported 123 crashes for the five-year analysis period with an average of 25 crashes occurring a year. The three most predominant crash types occurring at the intersection were rear-end (70%), angle (13%), and sideswipe (10%), respectively. The SR-9/I-95 interchange intersections had a reported total of 402 crashes for the five-year period. Rear end collisions accounted for approximately 43% of the total crashes for the intersections, angle collisions for 12% and hit concrete barrier wall for 9% of the total crashes.

The Roan Lane intersection had a total of 69 crashes in the five-year analysis period. The three most predominant crash types occurring at the intersection were rear-end crashes (32%), angle crashes (19%) and sideswipe crashes (19%), respectively.

Sunrise Drive/Sandtree Drive intersection had a reported 147 crashes for the five-year analysis period. The most recorded crash type being rear end collisions with 64%, followed by sideswipe collisions with 17% and then angle collisions with 8%.

The crash data was analyzed for severity. The Florida Traffic Crash Report short forms obtained from Palm Beach County did not provide the crash severity information in the detailed crash report form and were, therefore, not included in this portion of the analysis. The FDOT data was separated by roadway segment for SR-9/I-95 and Military Trail and is presented in **Table 3-4**.

Table 3-4 State Roadway Crash Severity Summary							
SR-9/I-95							
Severity	**2010**	**2011**	**2012**	**2013**	**2014**	**Total**	**Percentage**
Property Damage Only	27	20	16	33	59	155	59%
Severity 2-4	21	8	12	19	46	106	40%
Fatalities	0	0	1	1	0	2	1%
Total	48	28	29	53	105	263	100%
Military Trail							
Severity	**2010**	**2011**	**2012**	**2013**	**2014**	**Total**	**Percentage**
Property Damage Only	3	2	3	8	10	26	26%
Severity 2-4	9	8	13	11	33	74	74%
Fatalities	0	0	0	0	0	0	0%
Total	12	10	16	19	43	100	100%

The primary occurrence of rear end and sideswipe collisions within the study area could be attributed to large amounts of congestion at the interchange and the surrounding Northlake Boulevard corridor. The secondary predominance of angle collisions occurring at the intersections within the study area could be attributed to signal timing and vehicles running red lights.

Approximately 18% of the crashes reported for the study area were indicated as dark-lighted, dark-no light or dark-unknown conditions. This is less than the state-wide average of 34%. Also for the five-year analysis period, about 13% of all the reported crashes for the study area occurred in wet conditions.

Crashes occurring at the interchange were further evaluated to determine which roadway facilities were experiencing the most amount of crashes. The total number of crashes reported for SR-9/I-95 from both the FDOT CARS and Palm Beach County totaled 402 for the five-year analysis period. The total number of reported non-junction (along the mainline) I-95 related crashes within the study area was 229 crashes for the five years from 2010 to 2014. The complete crash elevation for the interchange related crashes sorted by facility type are shown in **Table 3-5.** The collision diagrams provided in **Appendix I** illustrates the approximate location of all reported crashes.

Table 3-5 SR-9/I-95 Crashes by Facility Type						
Facility Type	**2010**	**2011**	**2012**	**2013**	**2014**	**Total**
Non-junction	48	29	32	53	67	**229**
Intersection	13	17	26	9	10	**75**
Intersection related	18	8	8	11	4	**49**
Entrance/exit Ramp	2	2	1	10	26	**41**
Unknown/Other	2	3	0	1	2	**8**
Total	**83**	**59**	**67**	**84**	**109**	**402**

3.8.1.2 Fatal Crash Summary

Two fatalities were reported from the FDOT CARS data for SR-9/I-95 and three fatalities were reported from the Palm Beach County crash data. One fatality occurred in 2012 was reported as a collision with another motor vehicle on the roadway. This collision was reported at milepost 34.507 on SR 9/I-95 near the south end of the bridge spanning over Northlake Boulevard. The at-fault vehicle is denoted as traveling south.

The second fatality reported from the FDOT CARS data for SR-9/I-95 occurred in 2013 and the harmful event is reported as unknown. This collision is recorded as happening at milepost 34.726, near the gore of the southbound off-ramp. This collision is reported as having a total of three vehicles involved in the crash with the at-fault vehicle traveling northbound.

The Palm Beach County data provided states that three fatalities occurred in the study area within the five-year period, all related to SR-9/I-95. As stated earlier, the pdf documents of the crash reports were provided from Palm Beach County and all three fatality reports could be reviewed in detail. The first fatality reported by the County occurring 2011 on SR-9/I-95 mainline traveling northbound. There was only one vehicle reported in the collision, and the report stated that the vehicle struck the outside wall, putting the car in a spinning motion, until it hit the concrete median wall. This crash occurred under dry, dark-lighted conditions.

The second fatality reported in the County data occurred in 2014 at the southbound SR-9/I-95 on-ramp. The report states that vehicle one was traveling eastbound on Northlake Boulevard at a high rate of speed when it hit the curb of the median for the on-ramp causing the vehicle to travel east hitting a concrete pole and two palm trees. The collision was indicated to transpire under dark but lighted and dry roadway surface conditions.

The third fatality reported in the Palm Beach County crash data occurred in 2014 on SR-9/I-95 mainline traveling northbound approximately 0.6 miles south of the Northlake Boulevard interchange. The report details that the collision took place under wet roadway surface conditions under dark and lighted conditions. According to the report write up vehicle one was traveling northbound and did not observe vehicle two as it changed lanes, causing vehicle two to veer in a northwesterly direction until the vehicle struck the concrete barrier wall median. The driver of vehicle two was pronounced deceased on the scene.

3.8.2 PGA Boulevard Southbound On-Ramp

3.8.2.1 Crash Data Summary

Crash data for the PGA Boulevard on westbound to southbound entrance ramp, eastbound to southbound entrance ramp and SR-9/I-95 mainline from mile post 35.365 to 36.6913 was also collected from the FDOT State Safety Office for years 2010-2014. For the five-year period, 220 crashes were reported along the mainline for the given limits and a total of 24 crashes were reported for both southbound on-ramps.

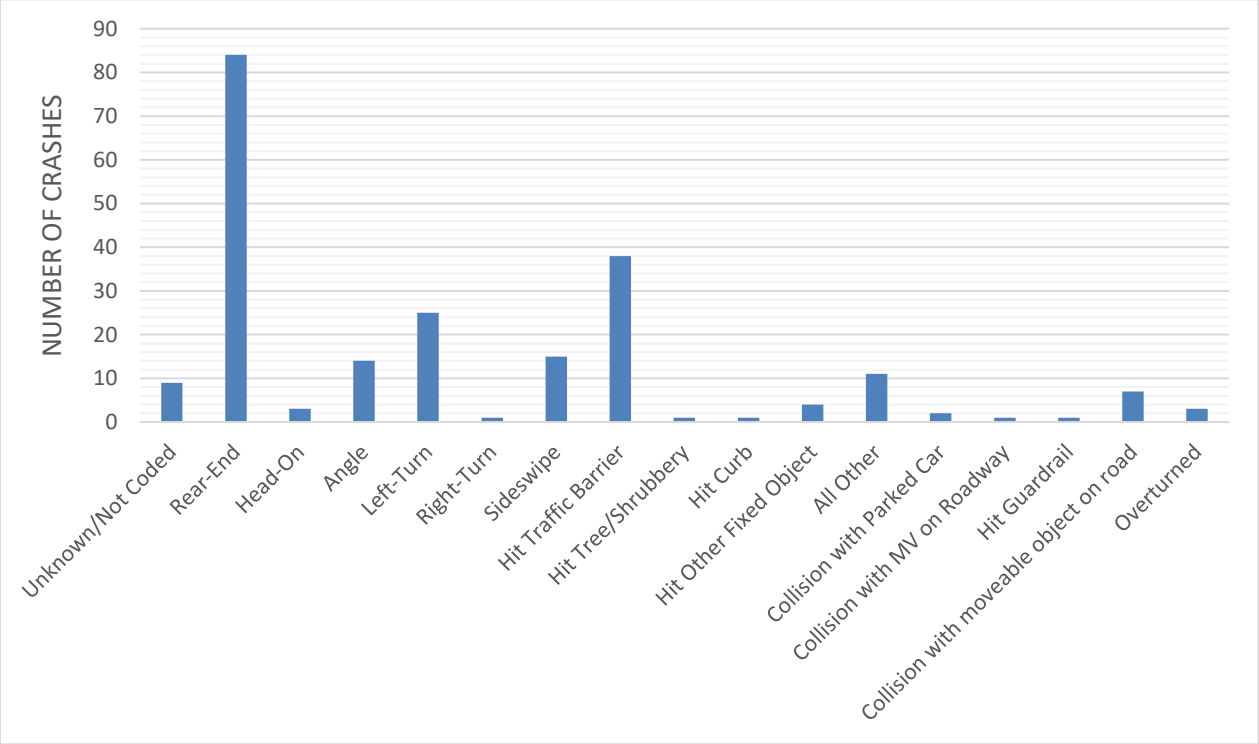


Figure 3-38 Main Line Crashes near PGA Boulevard for 2010-2014

It can be seen in **Figure 3-38** that the predominant crash types that occurred on the mainline within the PGA Boulevard study limits was rear end, hit traffic barrier and left turn collisions. The rear end collisions could be attributed to congestion and driver error. The southbound ramps also experienced a high number of rear end and hit concrete barrier wall collisions. The collision types for the southbound on-ramps for years 2010-2014 can be seen in **Figure 3-39**.

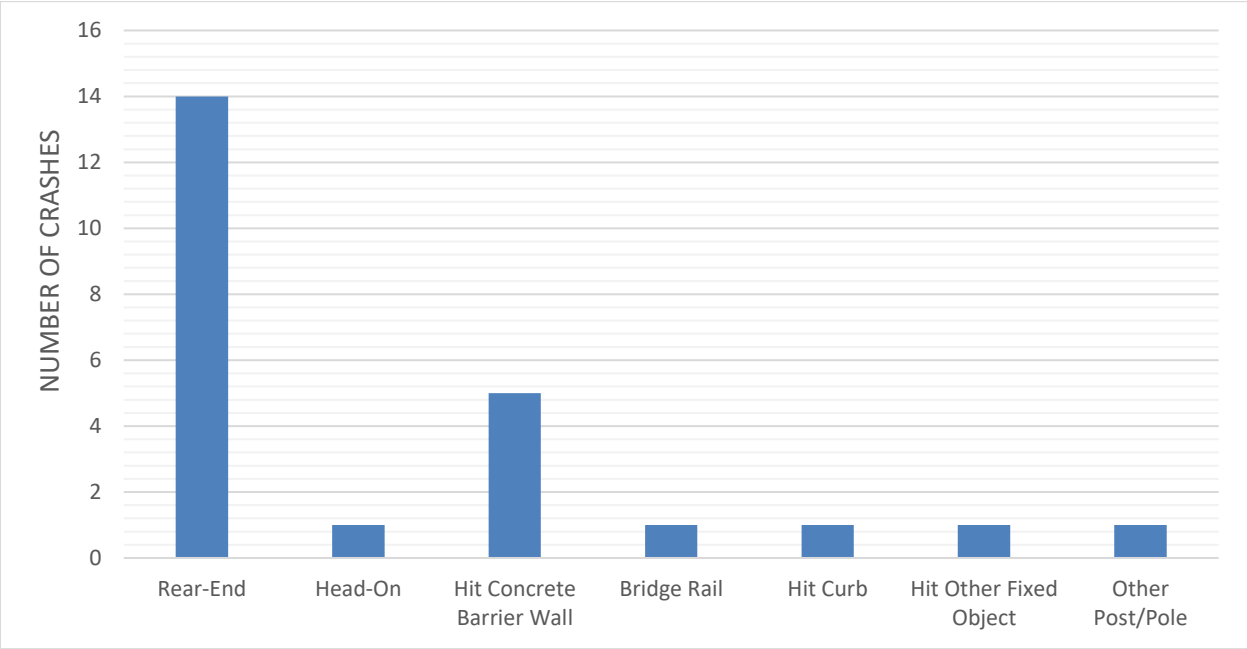


Figure 3-39 PGA Boulevard Ramp Crashes for 2010-2014

3.8.2.2 Fatal Crash Summary

Two reported fatalities for the PGA Boulevard interchange were reported. The first fatality (HSMV # 820037540) occurred in 2011 on the westbound to southbound on-ramp. The collision occurred under dry road surface conditions with dawn lighting conditions. It was reported that the driver was suspected to have used alcohol and drugs. The second fatality (HSMV # 820034850) occurred on the same ramp in 2013. The collision first harmful event was also reported as hit concrete barrier wall. The collision was reported to have occurred under dry road surface conditions under dark but lighted conditions. The driver was not reported to have suspected alcohol or drug use.

3.9 Existing Environmental Considerations

The area within the project limits is primarily commercial with a number of residential uses. Hence, there are no direct impacts to environmental features and resources. However, contamination and noise impacts are anticipated.

Several potential hazardous material sites were identified within the vicinity of the SR-9/I-95 and Northlake Boulevard Interchange. A preliminary evaluation identified (approximately) 52 potentially contaminated sites within the screening area located in 38 different land parcels and assigned low, medium and high risk ratings. Of the sites located, 5 were rated High Risk, 13 Medium Risk, and 18 Low Risk. In addition, two concrete bridges within the interchange study area appear to be coated and would be investigated further for the likelihood of lead based paint during demolition, construction, or reconstruction.

A site visit identified noise sensitive receptors located within 500 ft. of the proposed interchange improvements. There are existing sound barriers in the vicinity of the Northlake Boulevard interchange along the I-95 northbound and southbound on-ramps and the I-95 southbound off-ramp. Although minimal noise impacts are expected as a result of the proposed project, increased noise levels during construction could have short-term impacts on nearby businesses. Overall, noise and vibration related impacts as a result of the project are anticipated to be moderate.

Preliminary evaluation of the environmental impacts as a result of the proposed improvements has been performed for this interchange study and is discussed in **Section 6.3**. The evaluation includes an analysis of social, cultural, natural and physical environmental effects associated with the proposed project.

4.0 FUTURE CONDITIONS ANALYSIS

4.1 Travel Demand Model

The travel demand forecast for this IMR Study was performed by FDOT using the MPO approved Southeast Florida Regional Planning Model - SERPM 7.0 (February 2015 version) with a base year of 2010 and horizon year of 2040. The SERPM 7 Model is an Activity-Based Model (ABM) based on the Coordinated Travel Regional Activity-Based Modeling Platform (CT-RAMP). The SERPM 7.0 ABM operates on micro-zones (MAZs). The current South East Florida MAZ system design consists of approximately 12,000 zones. However, to avoid computational burden, SERPM 7.0 relies on a 4,200 Transportation Analysis Zone (TAZ) system for highway skims and assignment, but performs transit calculations at the more detailed MAZ level.

4.1.1 Model Validation

Model validation was performed as part of the future traffic forecast analysis. To evaluate the model performance, the output from SERPM 7.0 (February 2015 version) was summarized and compared with the traffic projection performed using I-95 Corridor Design Consultant (CDC) Corridor Model (which is also known as I -95 Corridor model used in the Palm Beach County and Broward County I -95 Interchange Master Plan) and traffic projections from SERPM 6.5 (the last version of the 4-step trip based model). The lane geometries and the model output volumes from SERPM 6.5, I -95 Corridor Model, and SERPM 7.0 (February 2015 version) were obtained and compared under this study. The population and employment data in Palm Beach County, Broward County, and Miami-Dade County, and the TAZs within the 2-mile buffer area of the study interchanges were also compared for the three models. The detailed model validation methodology is documented in the *I-95 Interchange PD&E Studies Traffic Data Collection & Traffic Projections Report* provided in **Appendix J.**

4.1.2 Adjustment Procedures

The model adjustment procedures utilized in the future traffic forecast analysis are consistent with established methodologies documented in FDOT's FSUTMS-Cube Framework Phase II, Model Calibration and Validation Standards: Model Validation Guidelines and Standards (2008). The detailed adjustment procedures are documented in the *I-95 Interchange PD&E Studies Traffic Data Collection & Traffic Projections Report* provided in **Appendix J.**

4.2 Future Traffic Volumes

4.2.1 Development of AADT Volumes

The AADT forecast volumes for this IMR Study were developed by FDOT District 4. The traffic forecasting methodology used for each intersection approach was based on the 2015 AADT (from the field), and 2010 and 2040 SERPM 7.0 model volumes. The 2015 model volume was interpolated using 2010 and 2040 model volumes. Then the differences of 2015 AADT and interpolated 2015 forecasted AADT from the model was calculated. The recommended 2040 AADT were calculated by applying this difference to the 2040 SERPM 7.0 model volumes. Then the 2020 and 2030 volumes were interpolated using 2015 AADT and recommended 2040 volumes. For the roadway segments where the SERPM 7 2040 model volumes are lower than the SERPM 7 2010 model volumes or are not included in the SERPM 7 network, the future 2020, 2030, and 2040 AADTs were calculated using 2015 AADT and a compound growth factor of 0.5%. For all the roadway links, the 2015 and 2040 AADT has been compared, and a minimum compound growth rate of 0.5% has been adopted. The recommended future AADTs are provided in **Figure 4-1** through **Figure 4-6**.

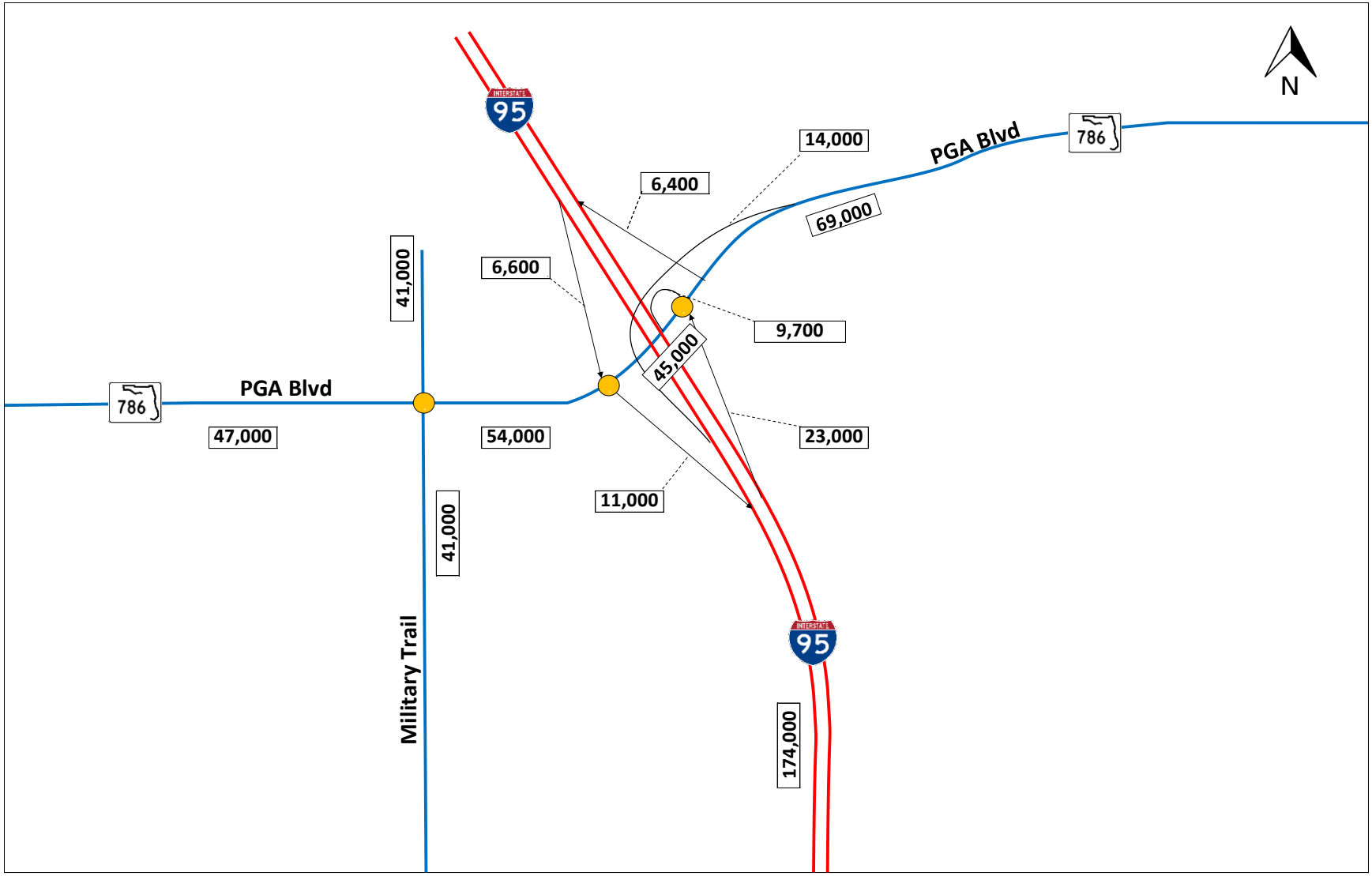


Figure 4-1 PGA Boulevard - 2020 Future AADT Volumes

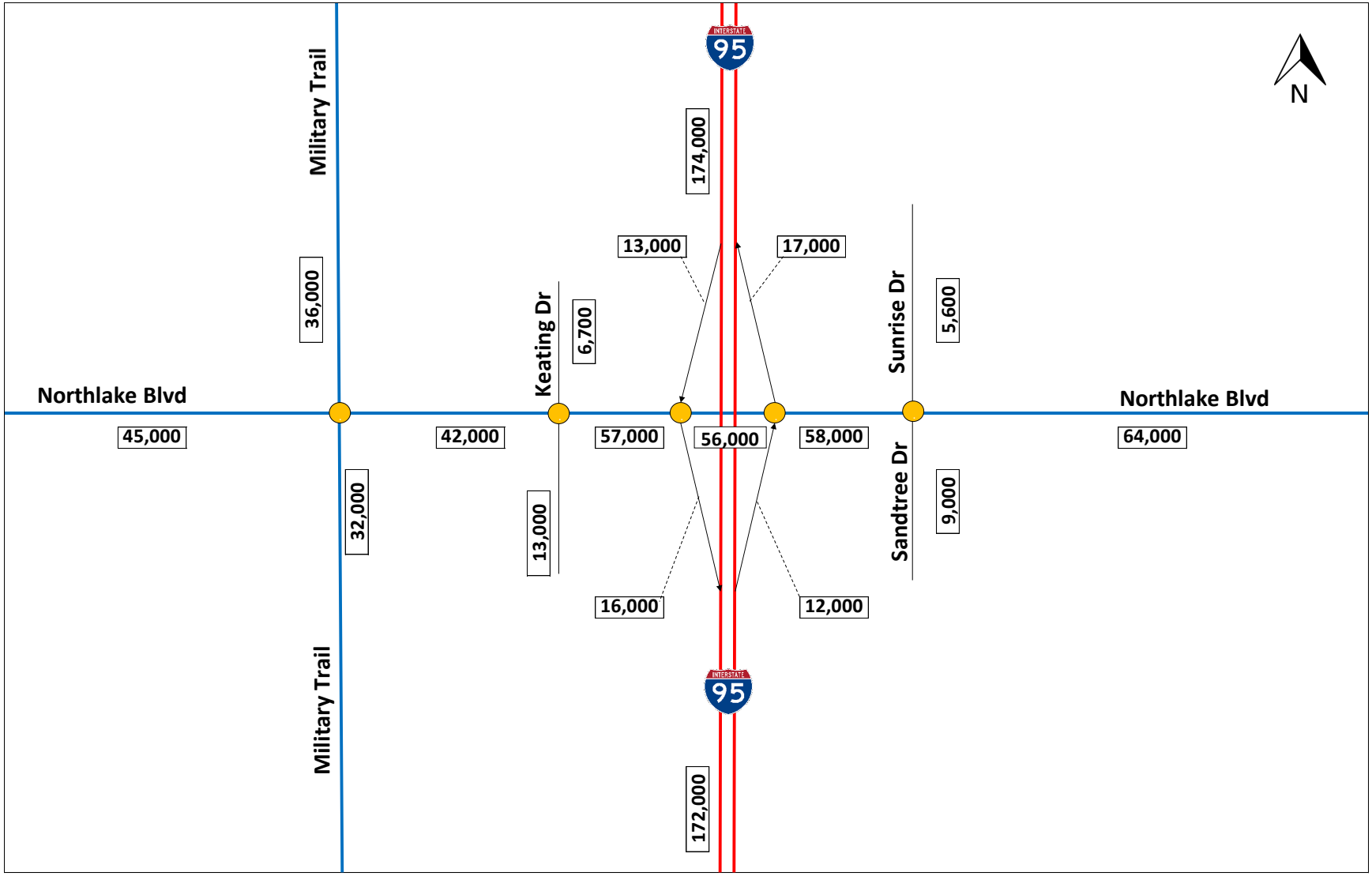


Figure 4-2 Northlake Boulevard - 2020 Future AADT Volumes

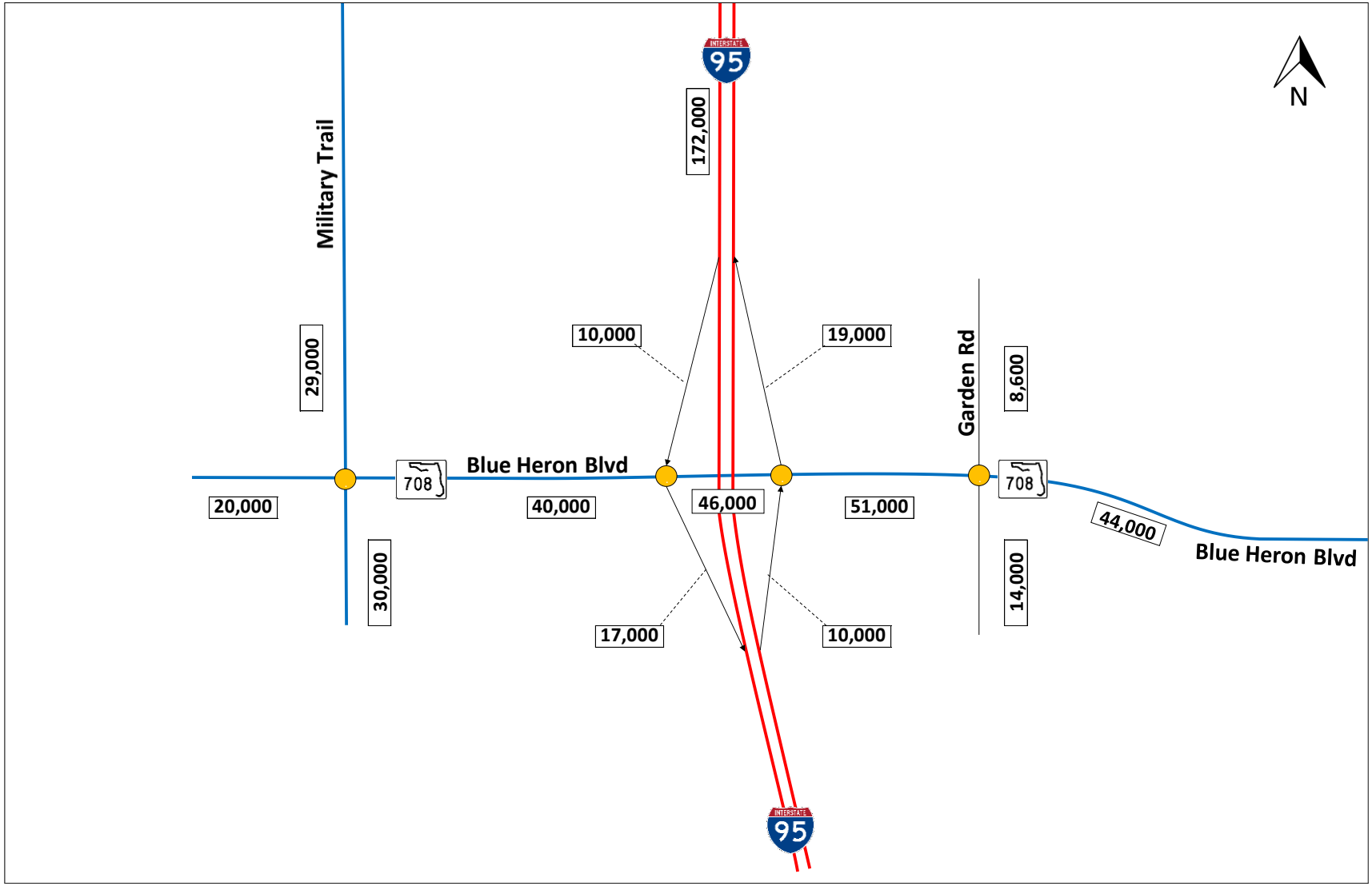


Figure 4-3 Blue Heron Boulevard - 2020 Future AADT Volumes

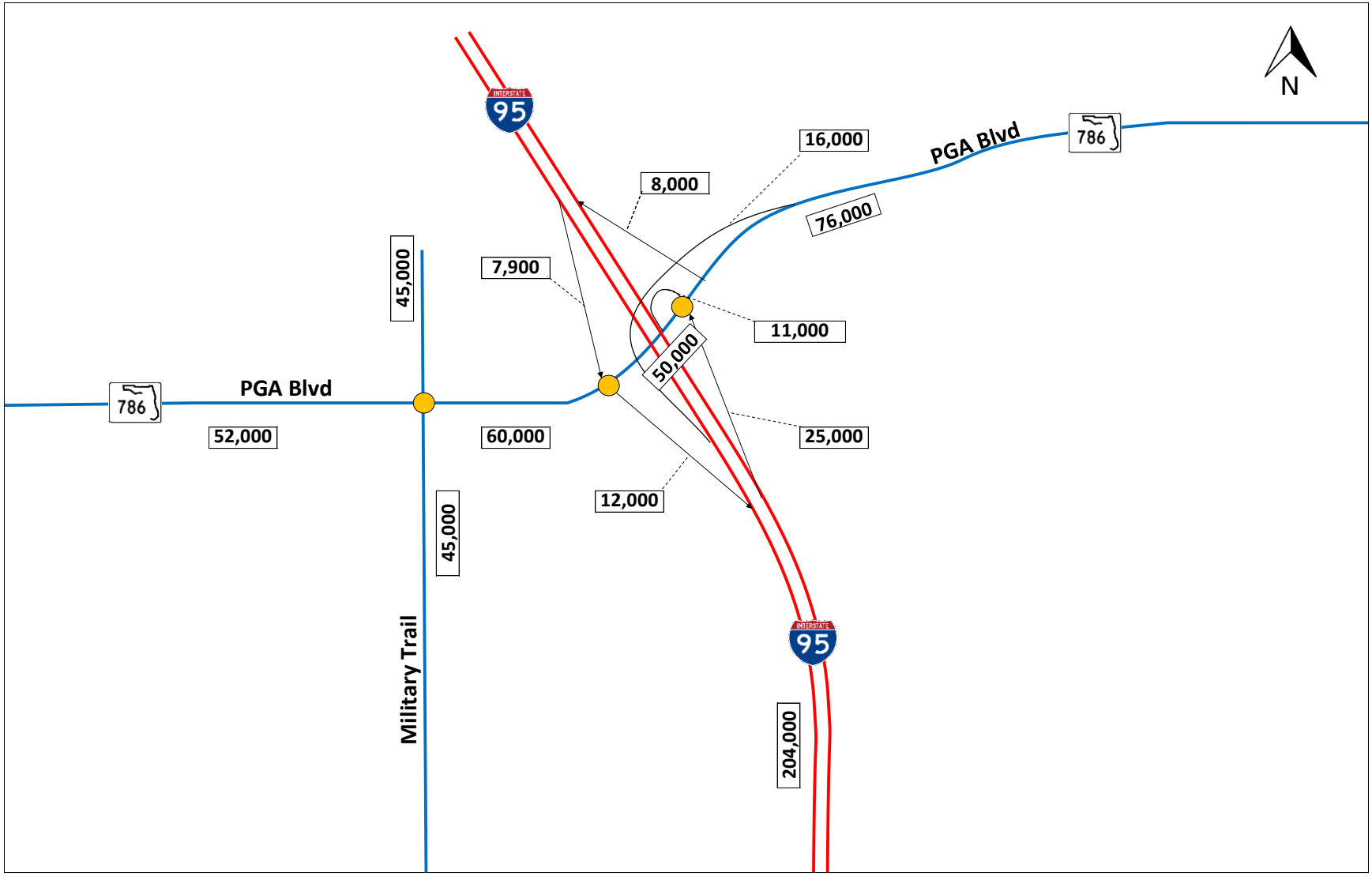


Figure 4-4 PGA Boulevard - 2040 Future AADT Volumes

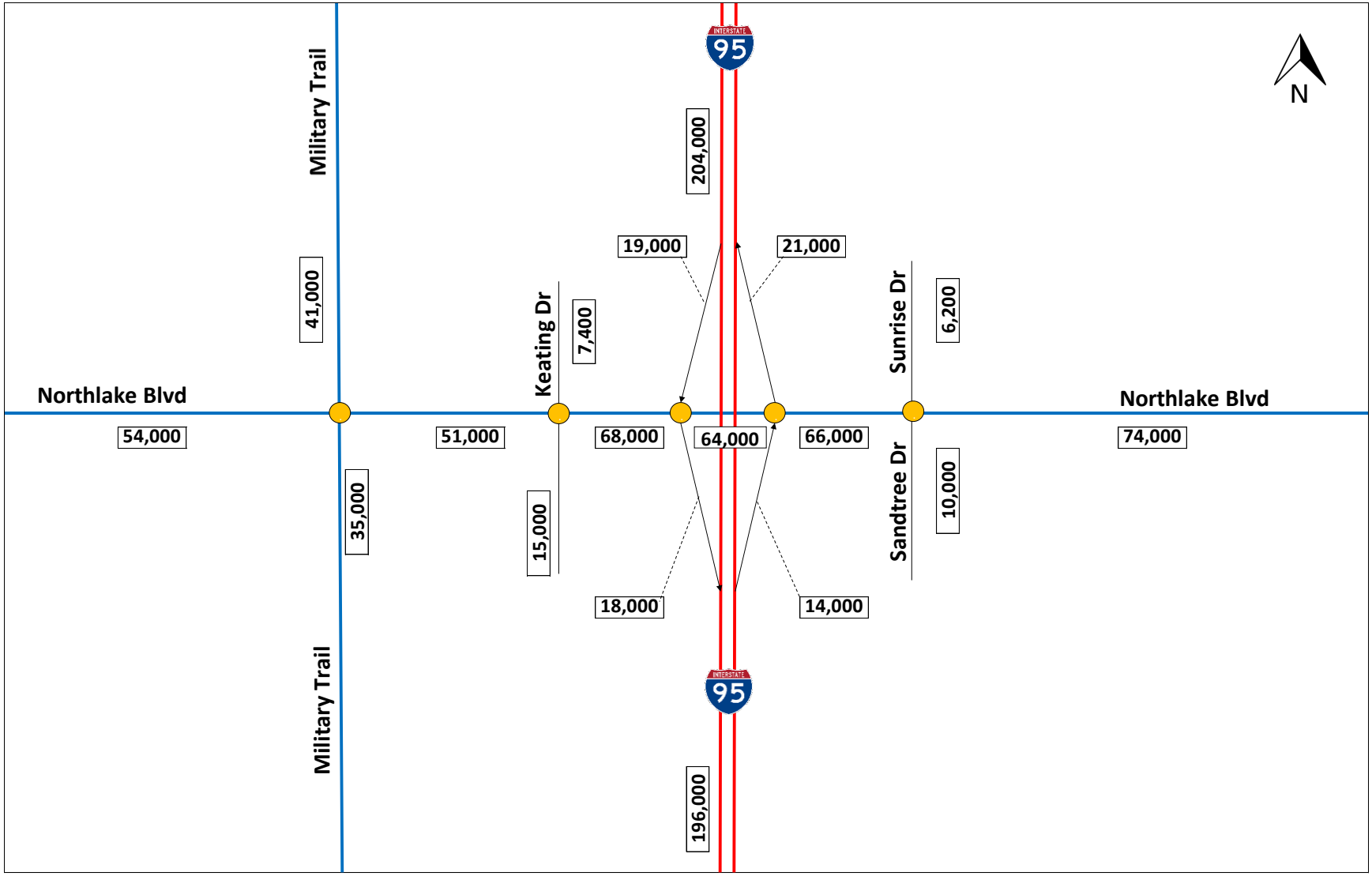


Figure 4-5 Northlake Boulevard - 2040 Future AADT Volumes

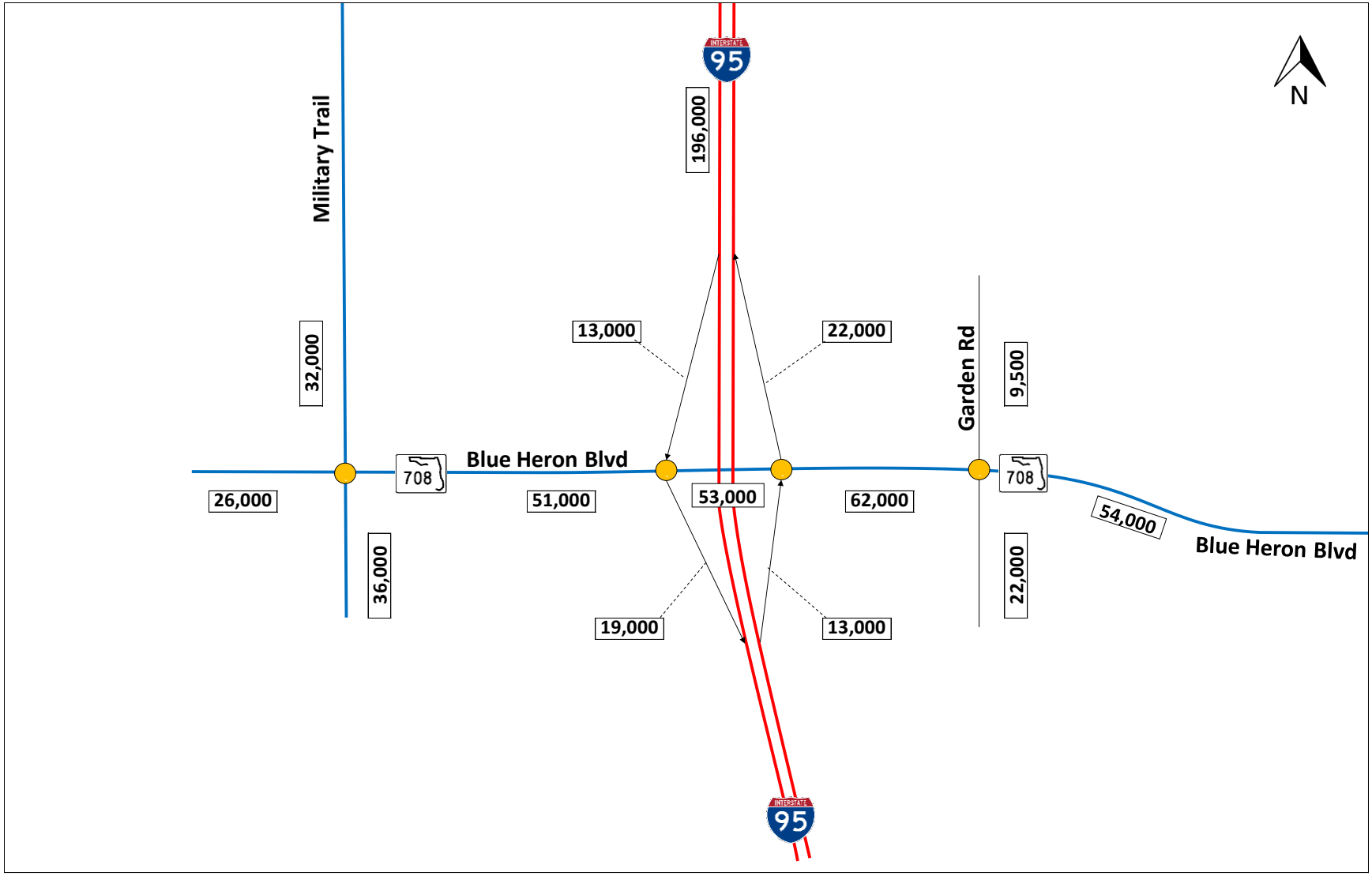


Figure 4-6 Blue Heron Boulevard - 2040 Future AADT Volumes

4.2.2 Development of DDHV Volumes

The 2040 future directional design year volumes were calculated from the future AADTs previously discussed using the recommended D-factor and the standard K-factor by applying AADT x K x D. The existing ratio of AM to PM peak hour volumes were maintained for future years. The development of future year turning movement volumes for the signalized intersections was based upon the existing turning movement percentages obtained from the field. The TMTOOL spreadsheet was used to estimate turning movement volumes for the 2020 Opening Year and 2040 Design Year based on projected link volumes and existing turning movements. The Directional Design Hour Volumes (DDHV) obtained were then balanced and smoothened to ensure consistency between the freeways, ramp and intersection volumes. The 2020 and 2040 DDHVs for the various freeway and arterial segments are provided in **Figure 4-7** through **Figure 4-18**. The detailed future traffic forecast analyses are provided in **Appendix K**.

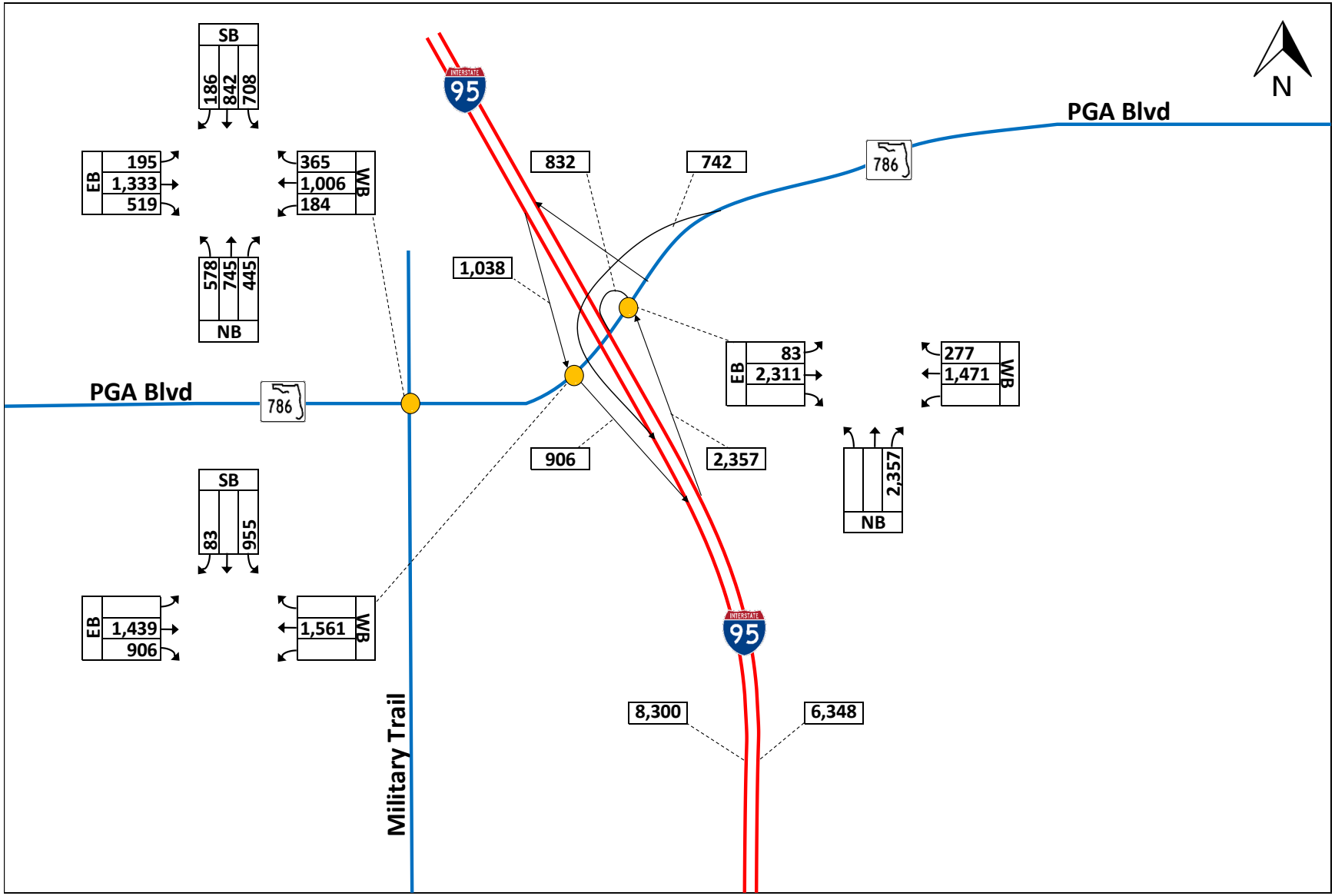


Figure 4-7 PGA Boulevard - 2020 AM Peak Hour Future DDHV Volumes

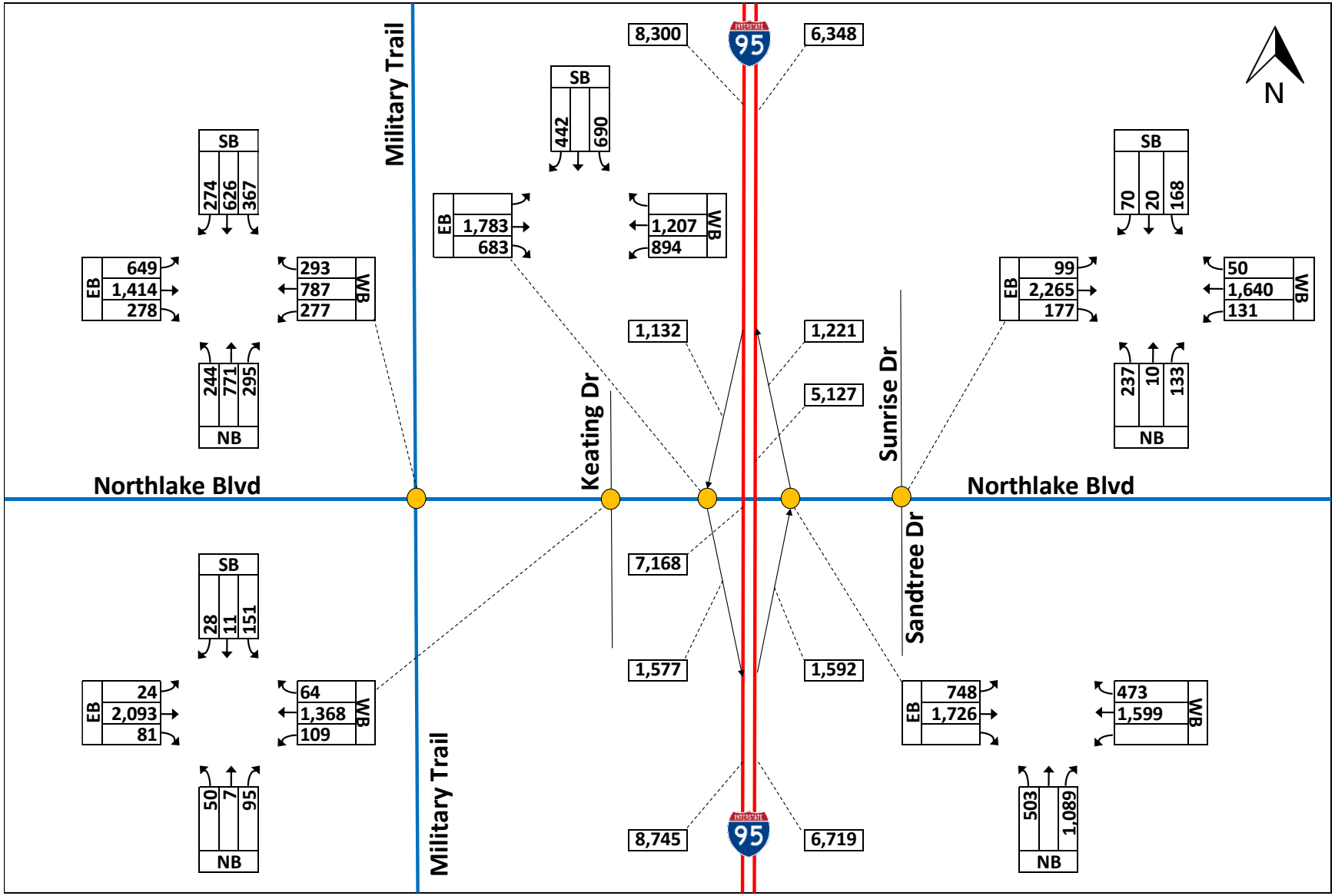


Figure 4-8 Northlake Boulevard - 2020 AM Peak Hour Future DDHV Volumes

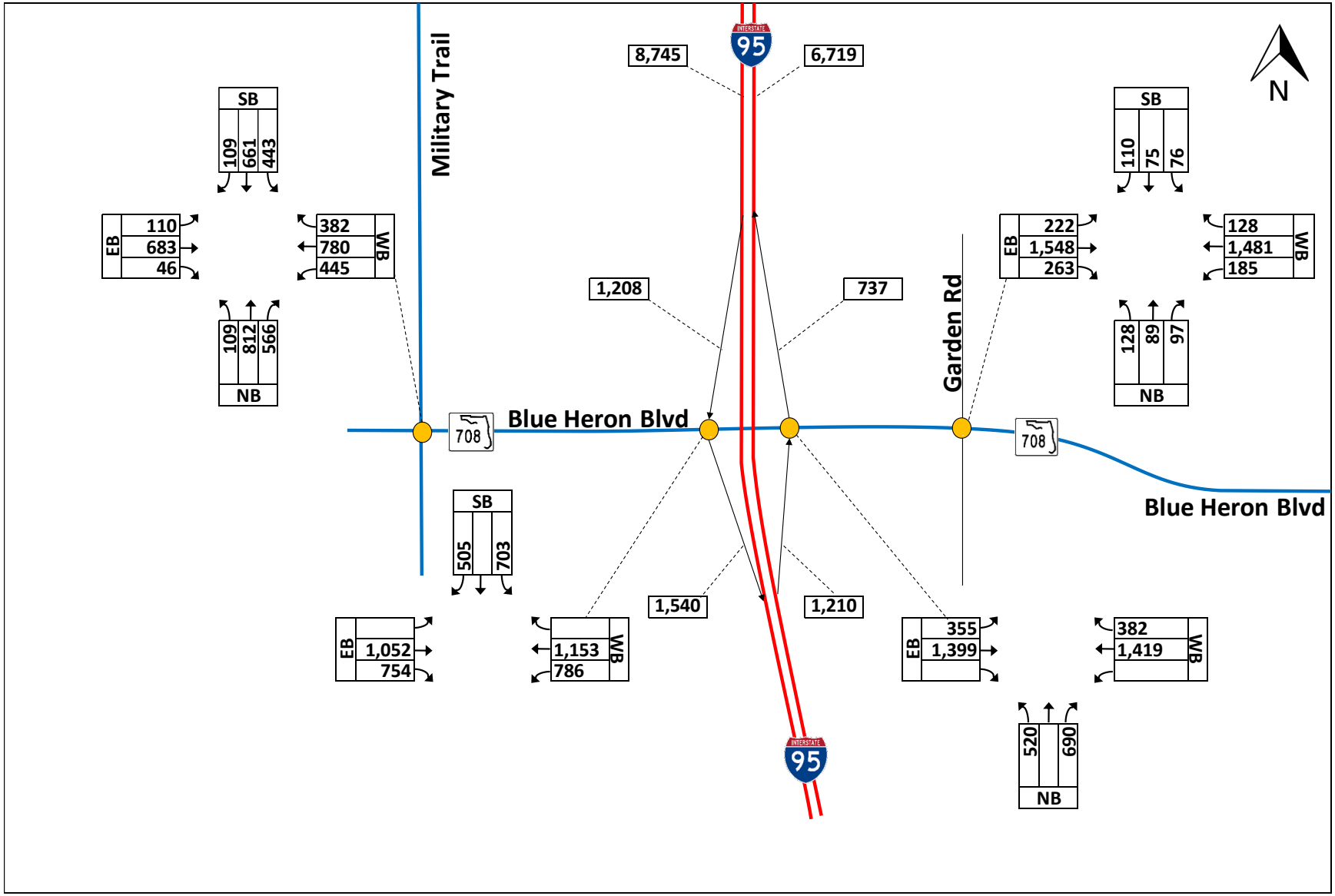


Figure 4-9 Blue Heron Boulevard - 2020 AM Peak Hour Future DDHV Volumes

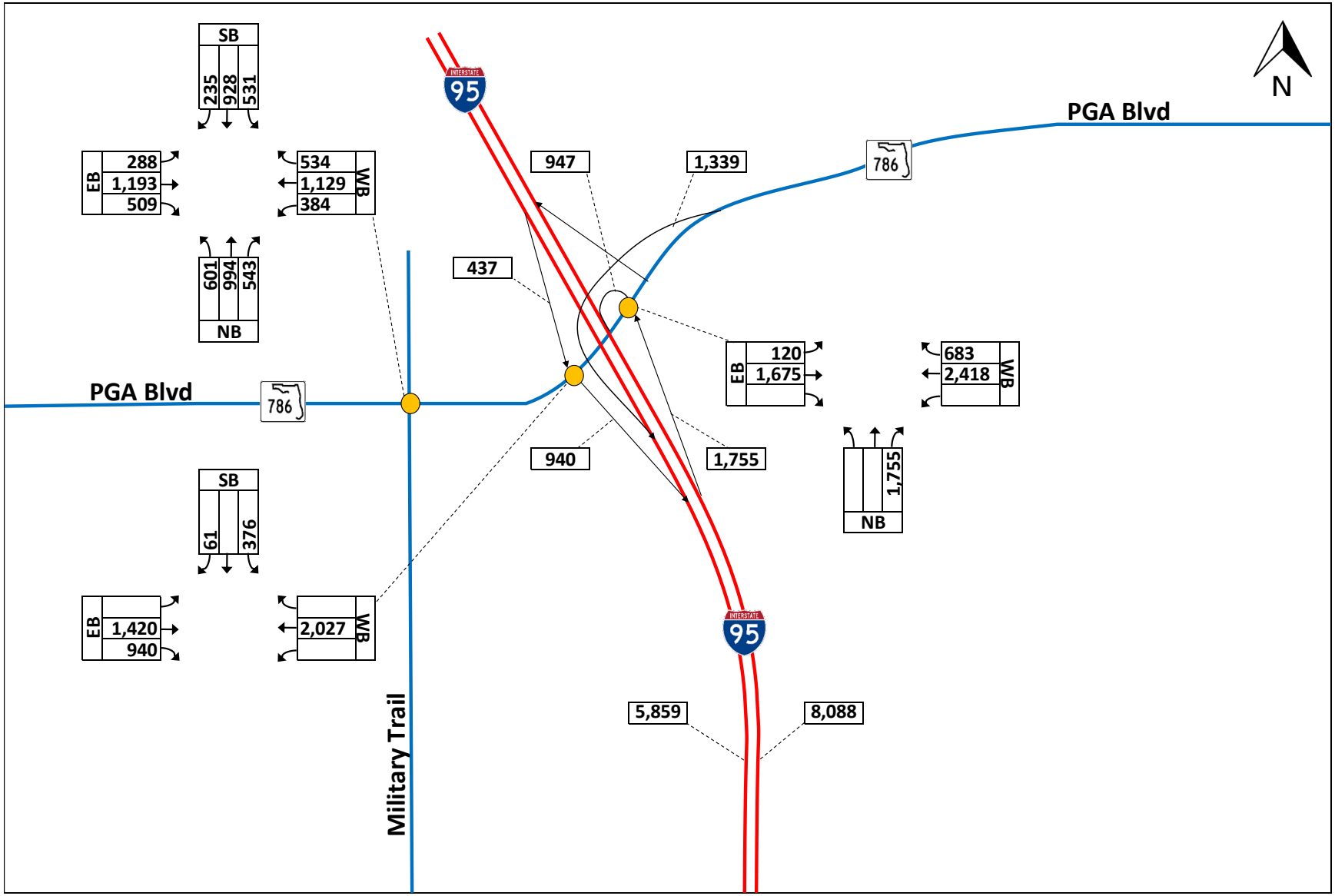


Figure 4-10 PGA Boulevard - 2020 PM Peak Hour Future DDHV Volumes

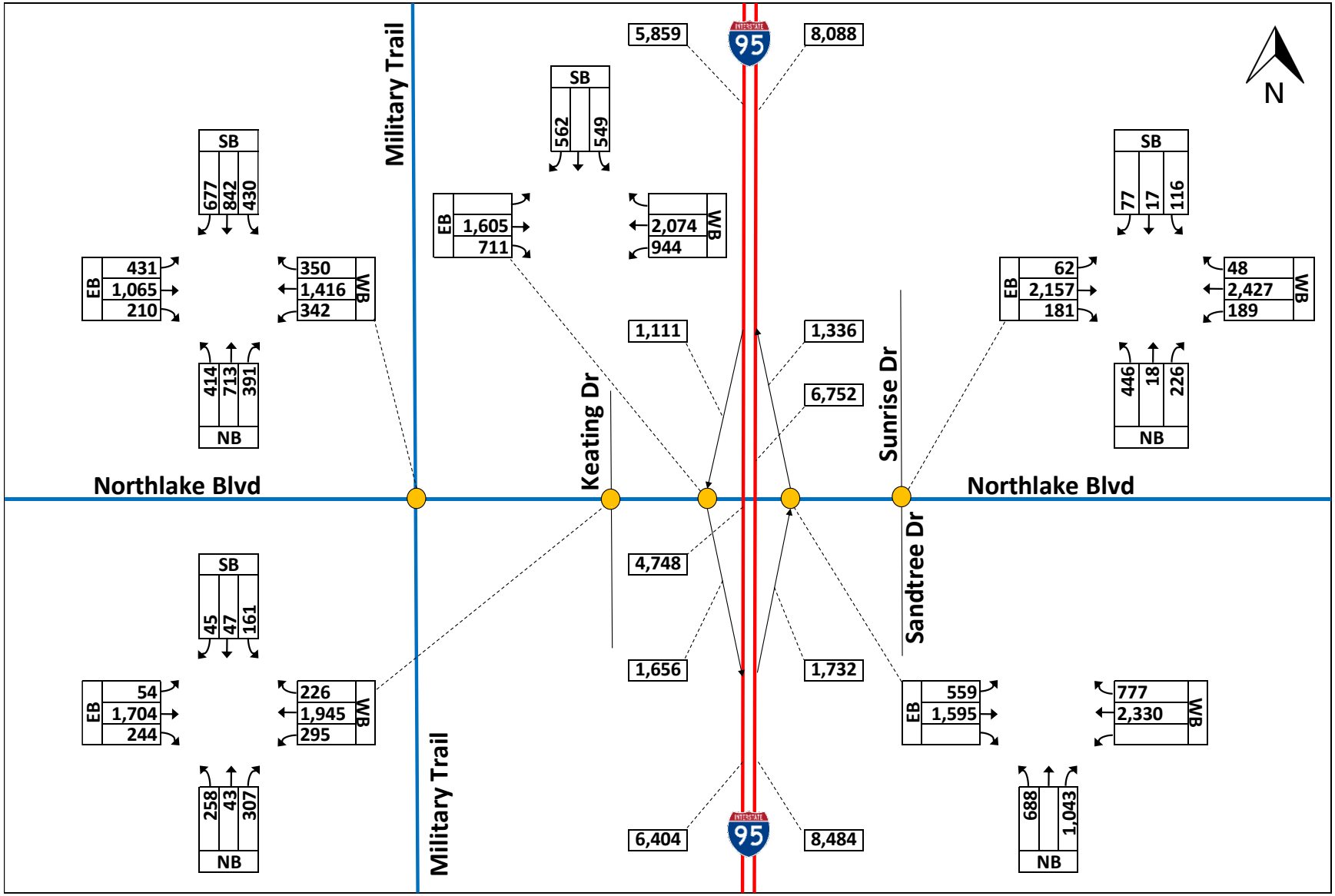


Figure 4-11 Northlake Boulevard - 2020 PM Peak Hour Future DDHV Volumes

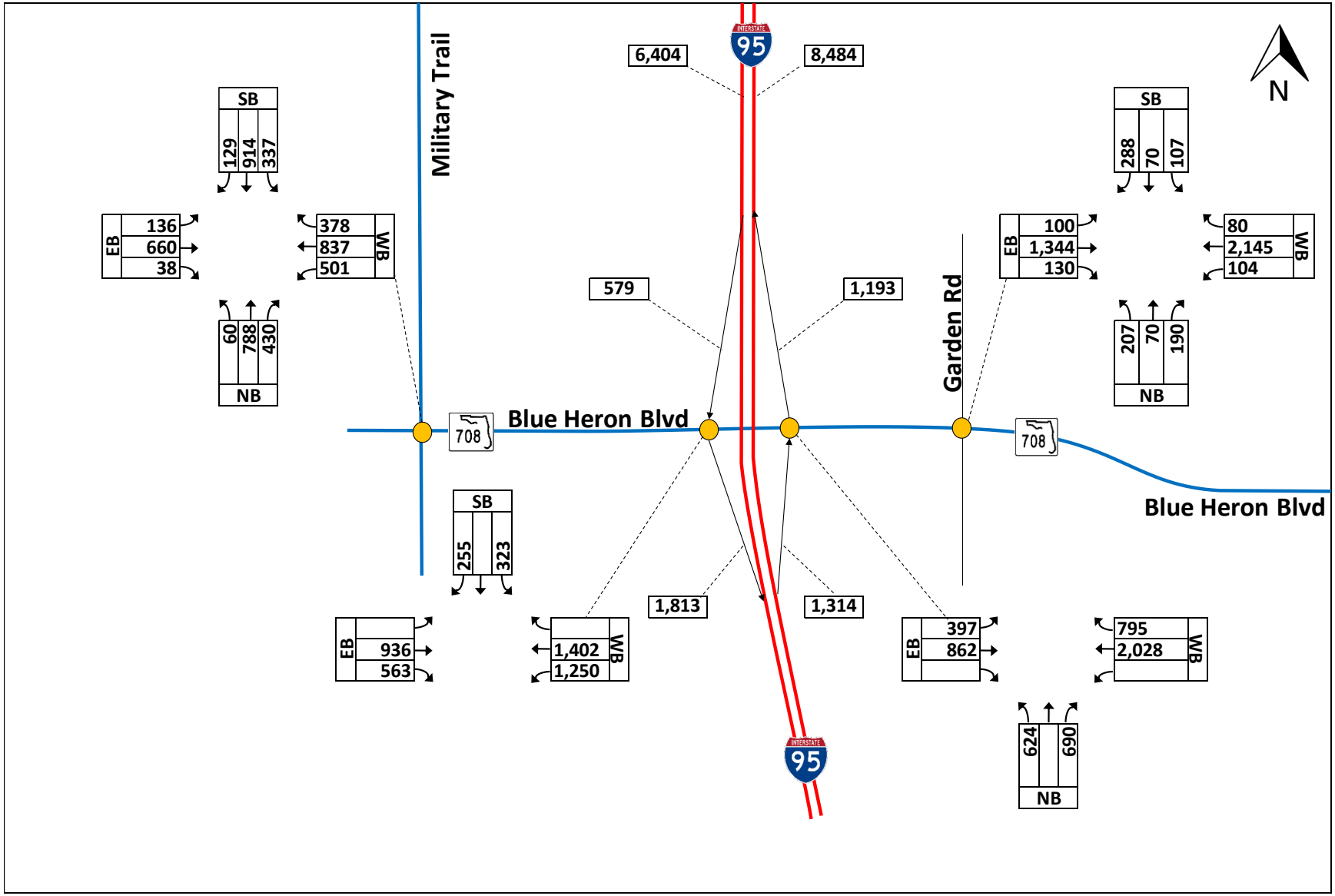


Figure 4-12 Blue Heron Boulevard - 2020 PM Peak Hour Future DDHV Volumes

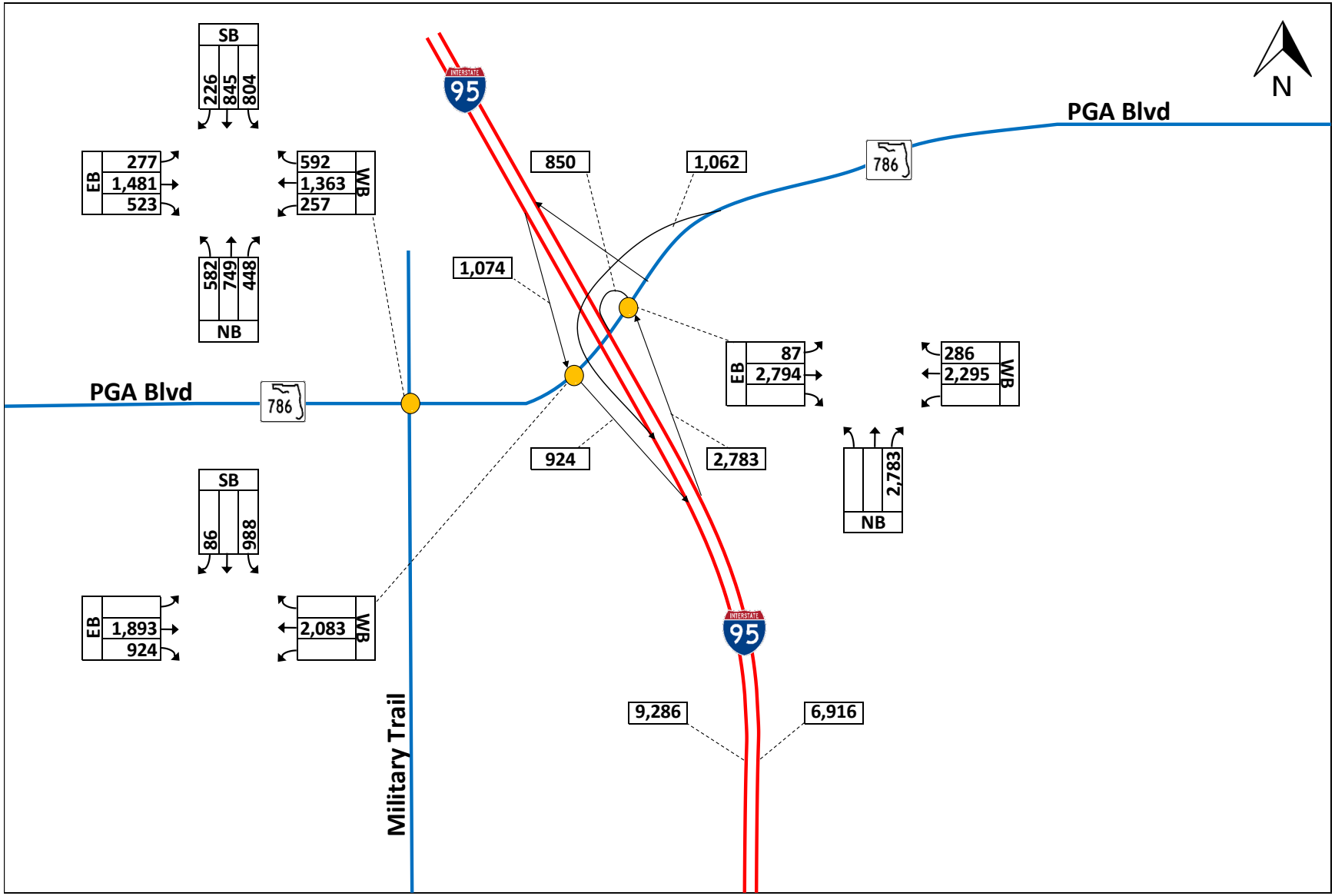


Figure 4-13 PGA Boulevard 2040 AM Peak Hour Future DDHV Volumes

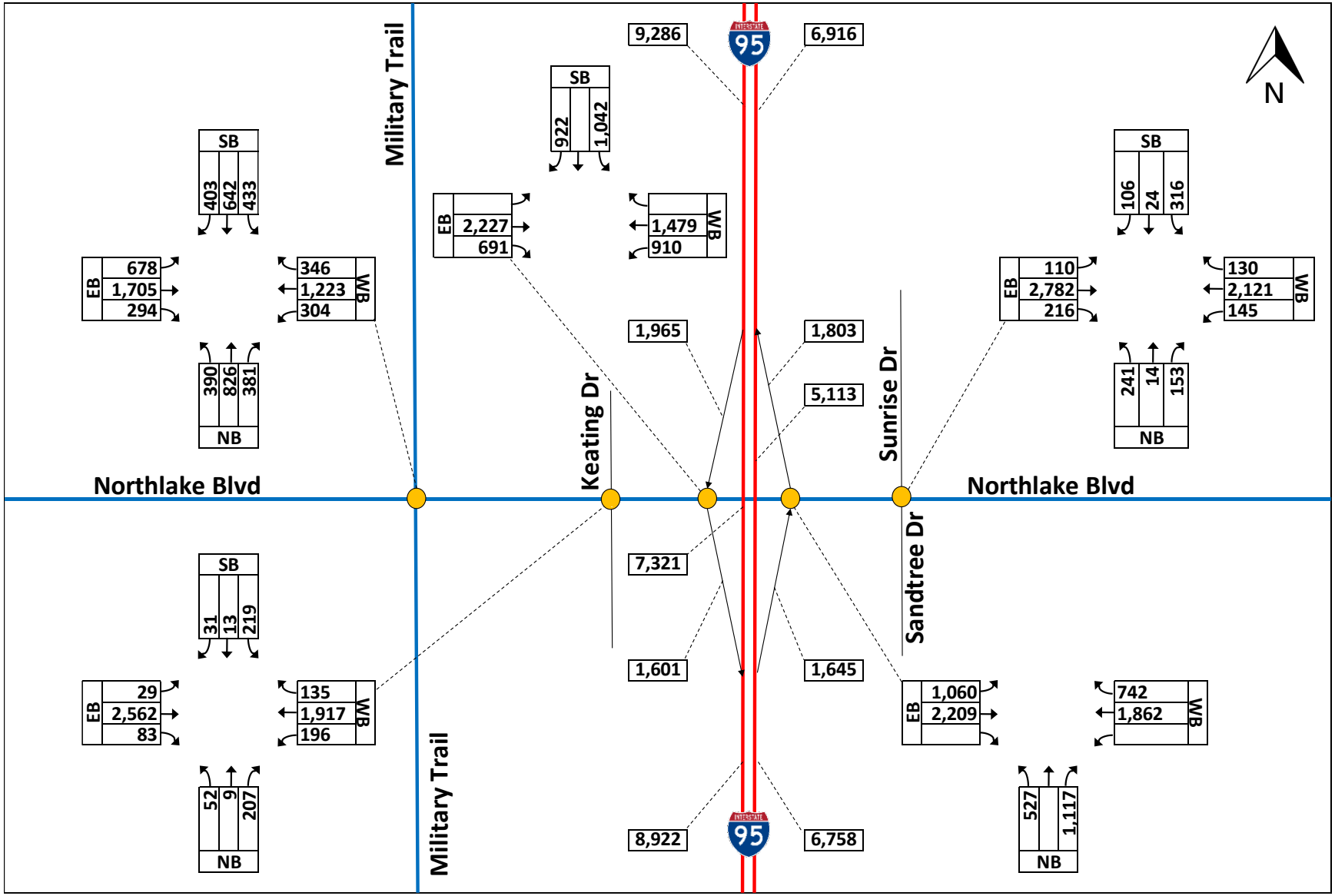


Figure 4-14 Northlake Boulevard - 2040 AM Peak Hour Future DDHV Volumes

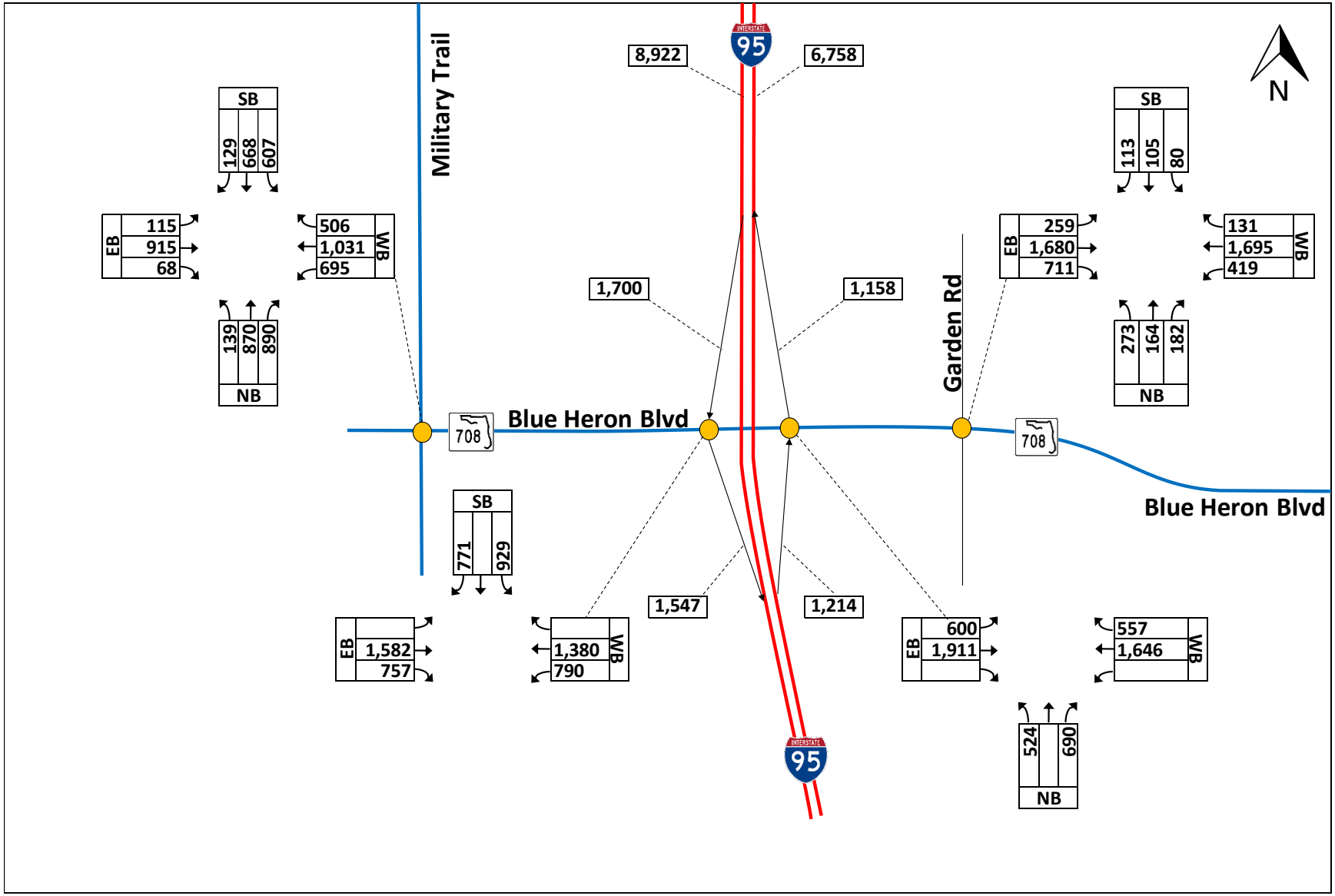


Figure 4-15 Blue Heron Boulevard - 2040 AM Peak Hour Future DDHV Volumes

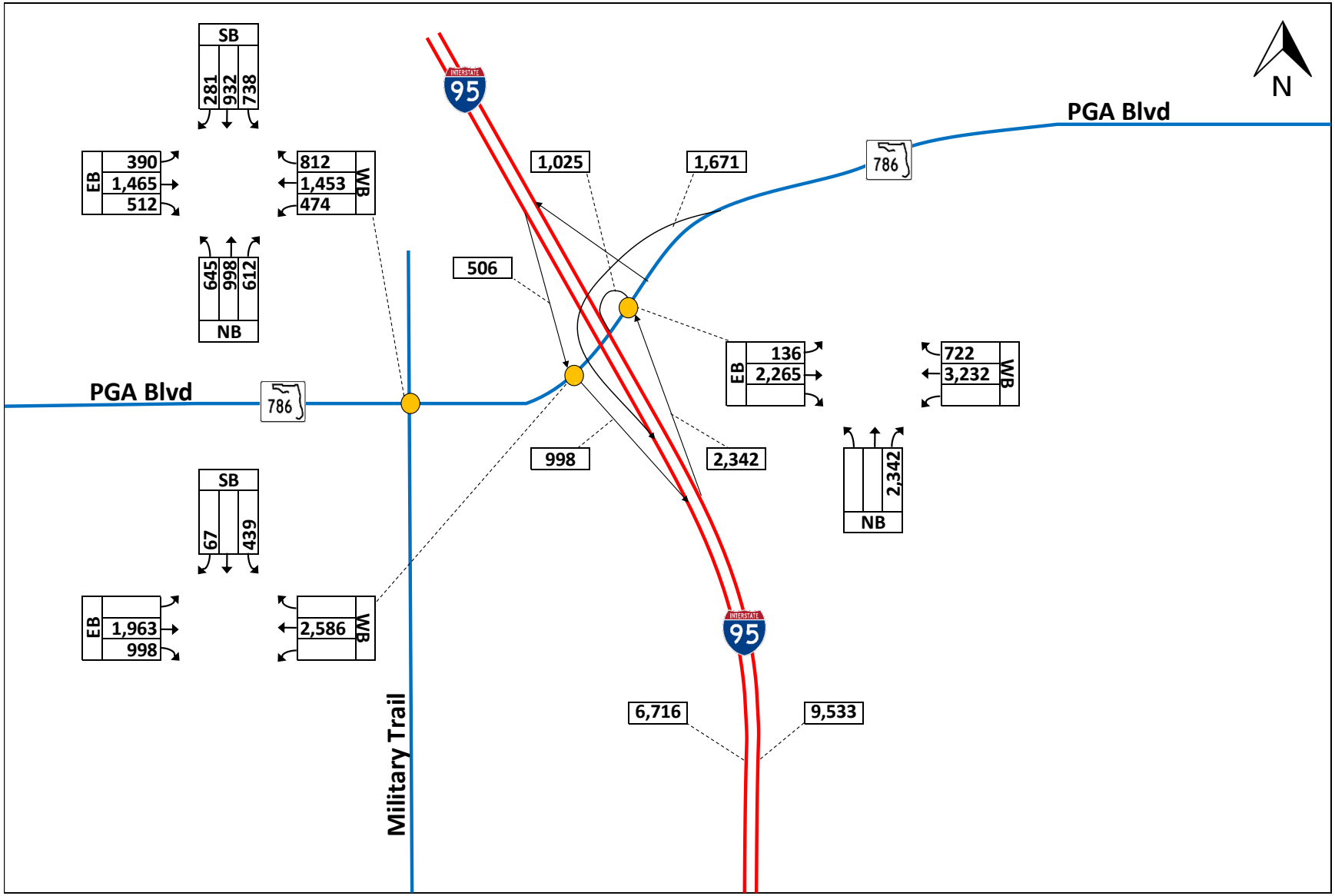


Figure 4-16 PGA Boulevard - 2040 PM Peak Hour Future DDHV Volumes

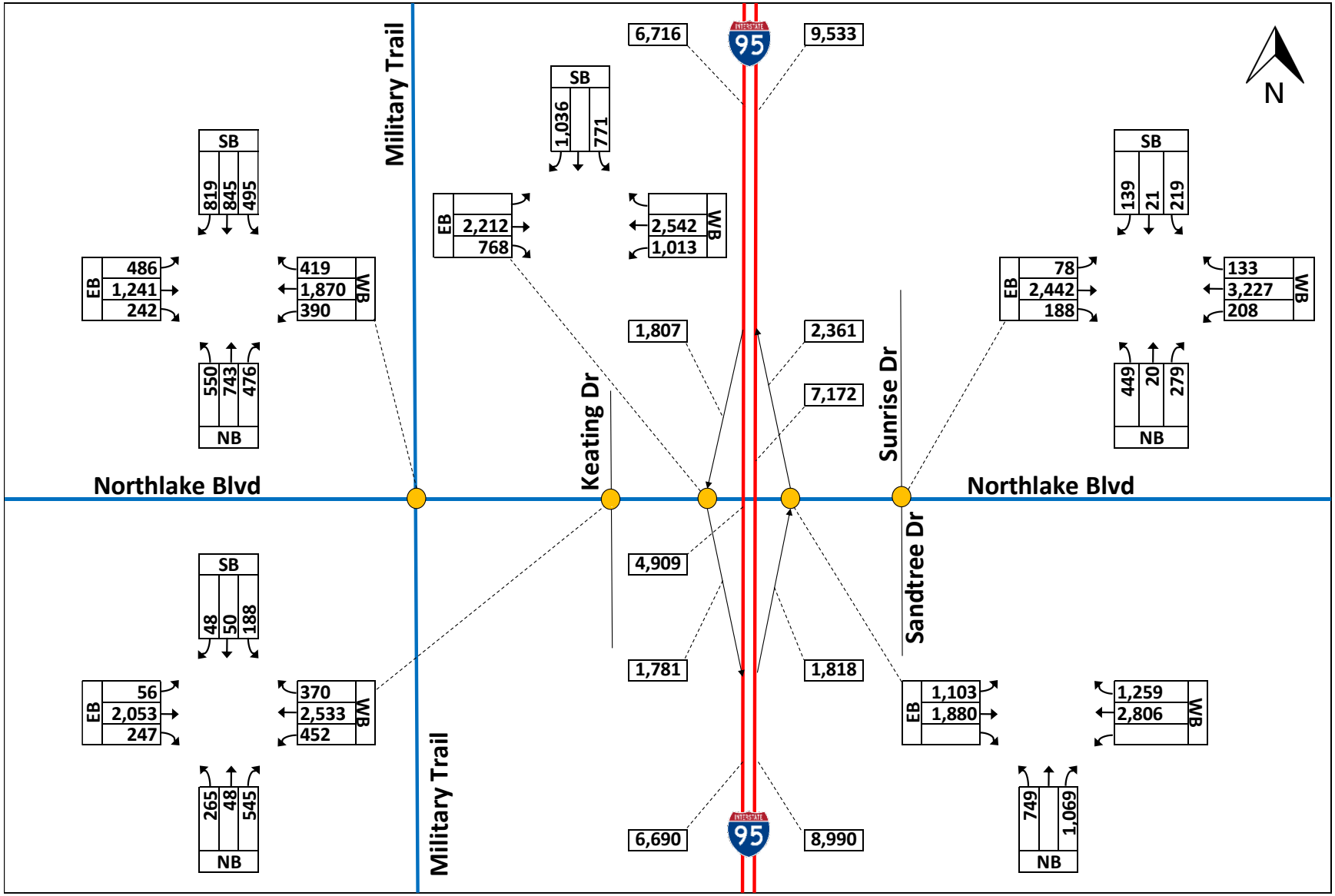


Figure 4-17 Northlake Boulevard - 2040 PM Peak Hour Future DDHV Volumes

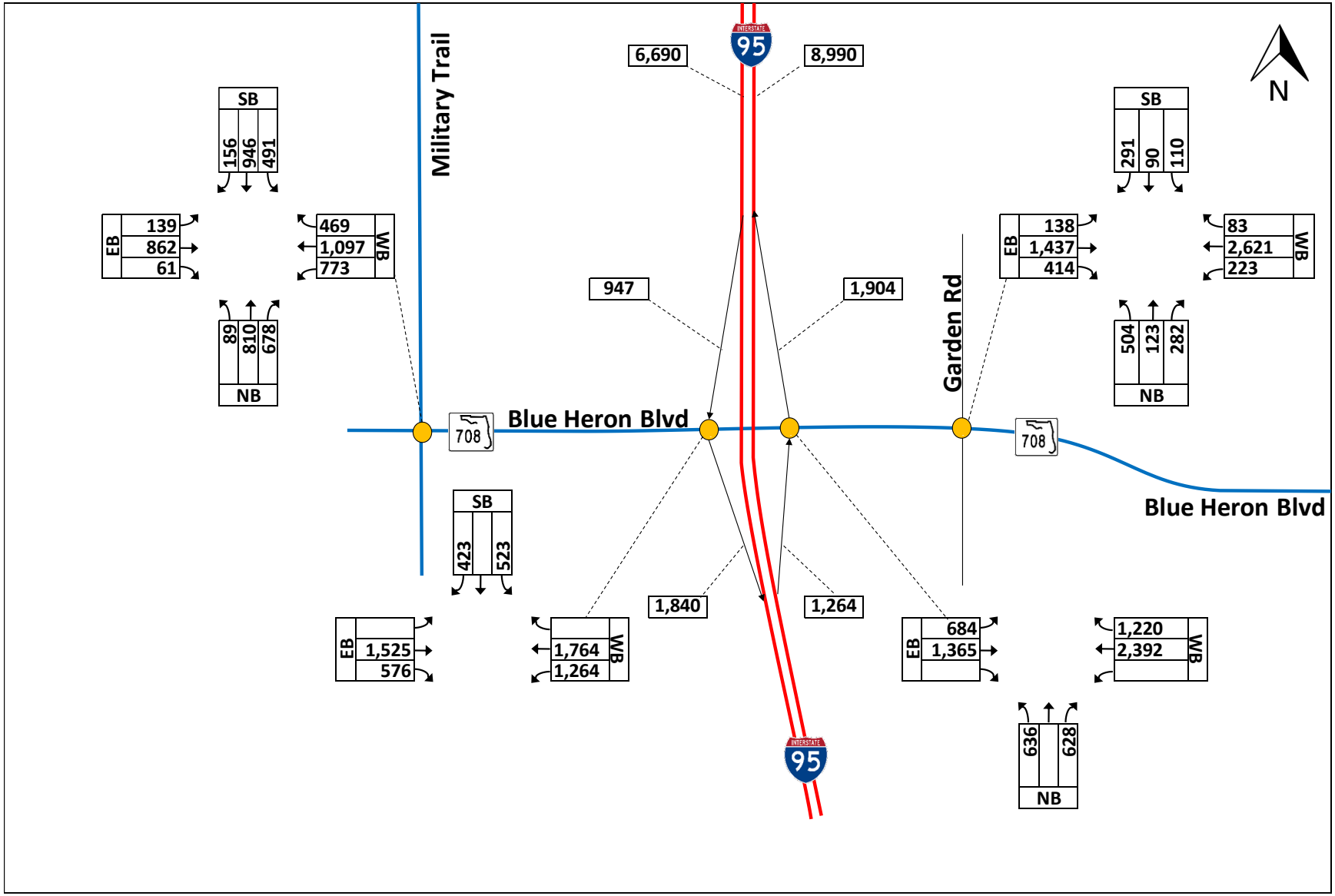


Figure 4-18 **Blue Heron Boulevard - 2040 PM Peak Hour Future DDHV Volumes**

5.0 CONSIDERED ALTERNATIVES

The alternatives considered as part of the SR 9/I-95 at Northlake Boulevard Interchange PD&E Study include a No Build Alternative, Transportation System Management & Operations (TSM&O) Alternative, and seven Preliminary Build Alternatives (Tier 1) and three Refined Build Alternatives (Tier 2). The Alternatives are described below:

5.1 No Build Alternative

The No-Build Alternative assumes no proposed improvements and serves as a baseline for comparison against the other alternatives. It, however, includes on-going construction projects and all funded or programmed improvements scheduled to be opened to traffic in the analysis year being considered. These improvements must be part of the Department's adopted Five-Year Work Program, Palm Beach County Metropolitan Planning Organization (MPO) Cost Feasible Long Range Transportation Plan (LRTP), and any developer-funded transportation improvements specified in approved development orders.

5.2 Transportation Systems Management and Operations (TSM&O) Alternative

The TSM&O Alternative considers minor improvements to enhance operations and safety without the addition of through lanes. For this Study, the TSM&O improvements include low-cost improvements such as, adding turn lanes at intersections, adjusting signal phasing and timings, and considering opportunities to enhance alternative travel modes and implementation of intelligent transportation systems (ITS) such as Adaptive Traffic Signals (ATCS). Palm Beach County in conjunction with FDOT District 4 is currently evaluating ATCS along Northlake Boulevard to handle fluctuations in traffic volumes and improve progression through the traffic signals (FM: 432883-1). This will serve as the TSM&O strategy along this corridor. Based on results from the previous FDOT D4 ATCS projects conducted in Broward and Palm Beach Counties, the following benefits are expected with the deployment of the ATCS:

- 25% delay reduction during non-recurring events
- Reduced incident duration by 30%
- Decrease in crashes by 3%
- 17:1 Benefit/cost ratio (based on a 2% - 3% reduction in delay and the cost for operations and maintenance)

These TSM&O improvements will be carried through the build alternatives.

5.3 Preliminary Build Alternatives (Tier 1 Analysis)

A total of seven preliminary alternatives were developed as part of the Tier 1 alternatives analysis to evaluate and select the most effective alternatives for further refinement. The alternatives considered include the following:

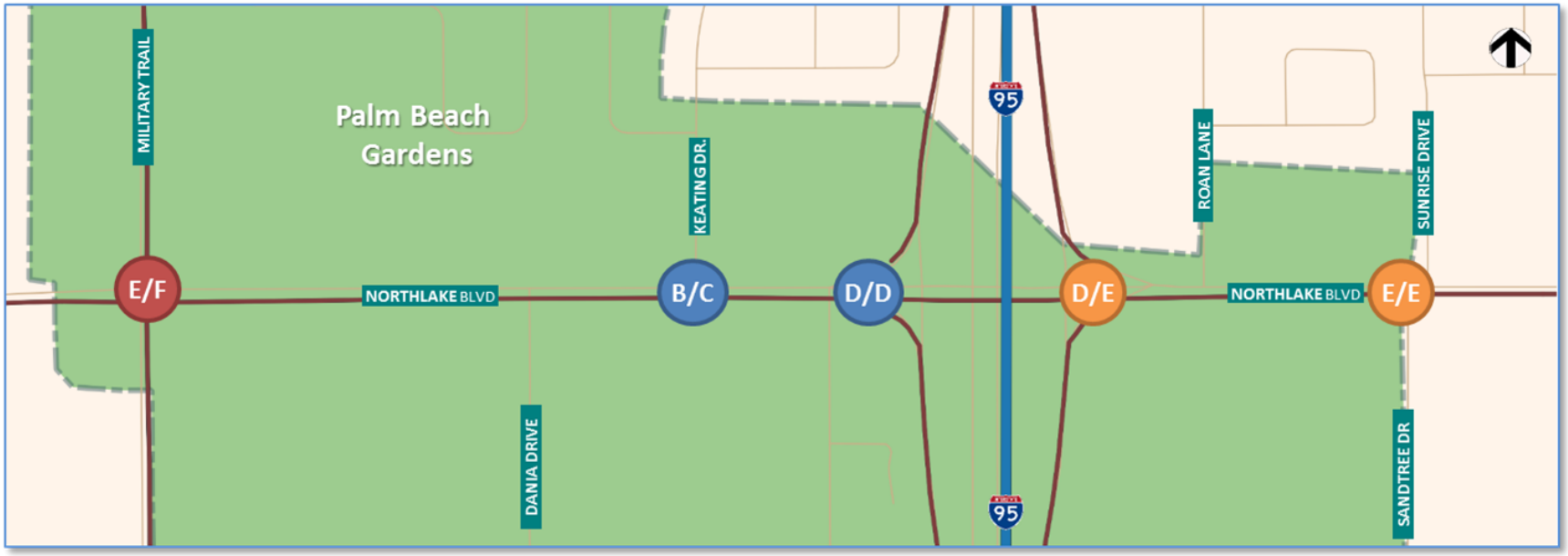
- Alternative 1 - Modified Concept Report
  - Triple lefts & triple rights at ramp terminal exits
- Alternative 2 - Diverging Diamond Interchange
- Alternative 3 - Elevated Ramp(s)
  - Alt. 3A: Westbound to Southbound Entrance Ramp
  - Alt. 3B: Northbound to Westbound Exit Ramp
  - Alt. 3C: Eastbound to Northbound Entrance Ramp
  - Alt. 3D: Southbound to Eastbound Exit Ramp
  - Alt. 3E: Westbound to Southbound & Eastbound to Northbound Entrance Ramps

The preliminary Tier 1 alternatives were only evaluated for the 2040 design year. The proposed improvements and results are illustrated in **Figure 5-1** through **Figure 5-7**. The detailed analysis results are provided in **Appendix L**.

Table 5-1 below shows a qualitative evaluation of the preliminary build alternatives based on operational improvements to the ramp terminals, potential right of way impacts and construction costs. Based on the evaluation, Build Alternatives 1, 2 and 3E were selected for further refinement as part of the Tier 2 Analysis.

Table 5-1
Comparison of Preliminary Build Alternatives

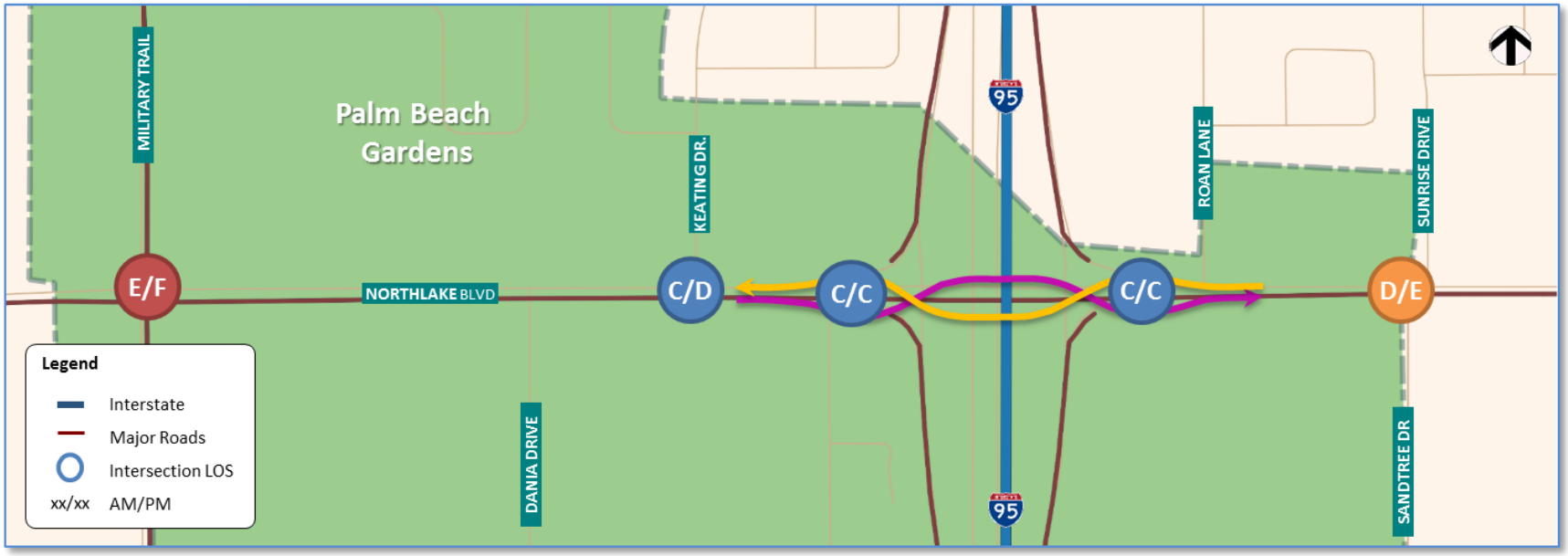
Preliminary Build Alternative	Improve Exit Ramp Queuing	Improved Ramp Terminal LOS	Potential R/W Impacts	Construction Cost
Alternative 1 - Modified CDR	Low	Medium	Low	Low
Alternative 2 - DDI	High	High	High	Medium
Alternative 3A - WB-SB Flyover	Medium	Medium	Medium	Medium
Alternative 3B - NB-WB Flyover	Low	Medium	High	Medium
Alternative 3C - EB-NB Flyover	Low	Medium	High	Medium
Alternative 3D - SB-EB Flyover	Low	Medium	High	Medium
Alternative 3E –Flyovers A+C	High	High	High	High



Intersection	Approach LOS (AM/PM)				Overall LOS (AM/PM)
	NB	SB	EB	WB	
Military Trail	E/F	E/F	E/F	E/F	E/F
Keating Drive	D/D	F/E	A/A	A/D	B/C
I-95 SB Ramps	-	D/D	D/C	E/E	D/D
I-95 NB Ramps	D/E	-	D/E	E/E	D/E
Sunrise Drive	E/E	F/F	F/E	C/F	E/E

- Widen Northlake Blvd. to provide 4 lanes in each direction from Keating Dr. to Sunrise Dr.
- Provide triple left and triple right turn lanes at I-95 NB and SB ramp terminal exits
- Provide exclusive WB right turn lane at Military Trail intersection
- Maintains existing EB left turn at Roan Lane
- I-95 NB Ramp terminal operates at LOS E during PM Peak Period
- I-95 NB approach at the off ramp terminals operate at LOS E during PM peak period

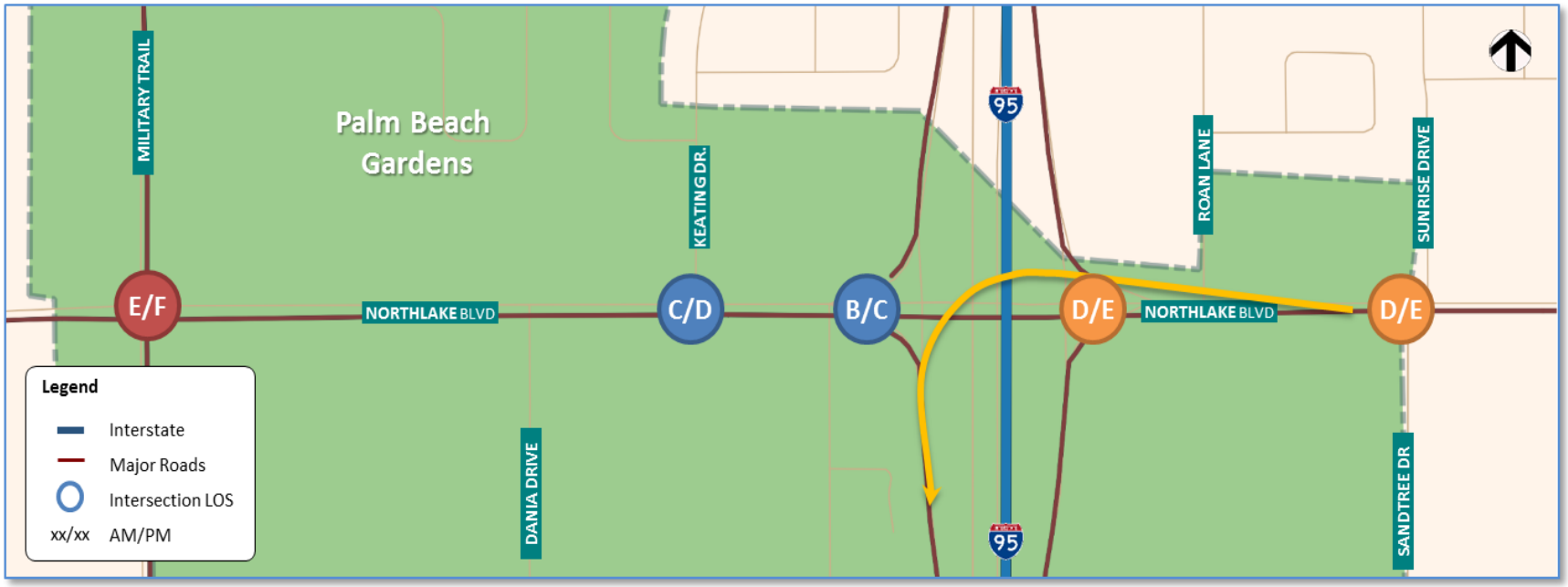
Figure 5-1 2040 Build Alternative 1– Modified CDR



Intersection	Approach LOS (AM/PM)				Overall LOS (AM/PM)
	NB	SB	EB	WB	
Military Trail	E/F	E/F	E/F	F/F	E/F
Keating Drive	E/D	E/E	B/D	B/C	C/D
I-95 SB Ramps	-	B/C	C/D	B/B	C/C
I-95 NB Ramps	C/C	-	B/C	C/C	C/C
Sunrise Drive	E/F	E/F	D/D	C/E	D/E

- Widen Northlake Blvd. to provide 4 lanes in each direction from Keating Dr. to Sunrise Dr.
- Diverging diamond configuration with 4 through lanes in each direction
- Provide triple left and triple right turn lanes at I-95 NB and SB exit ramp terminals
- Potential access impact to Roan Lane EB left turn movement
- Most intersections operate at LOS D or better during the AM and PM peak periods
- I-95 NB and SB off-ramp approaches operate at LOS C or better during AM and PM peak periods

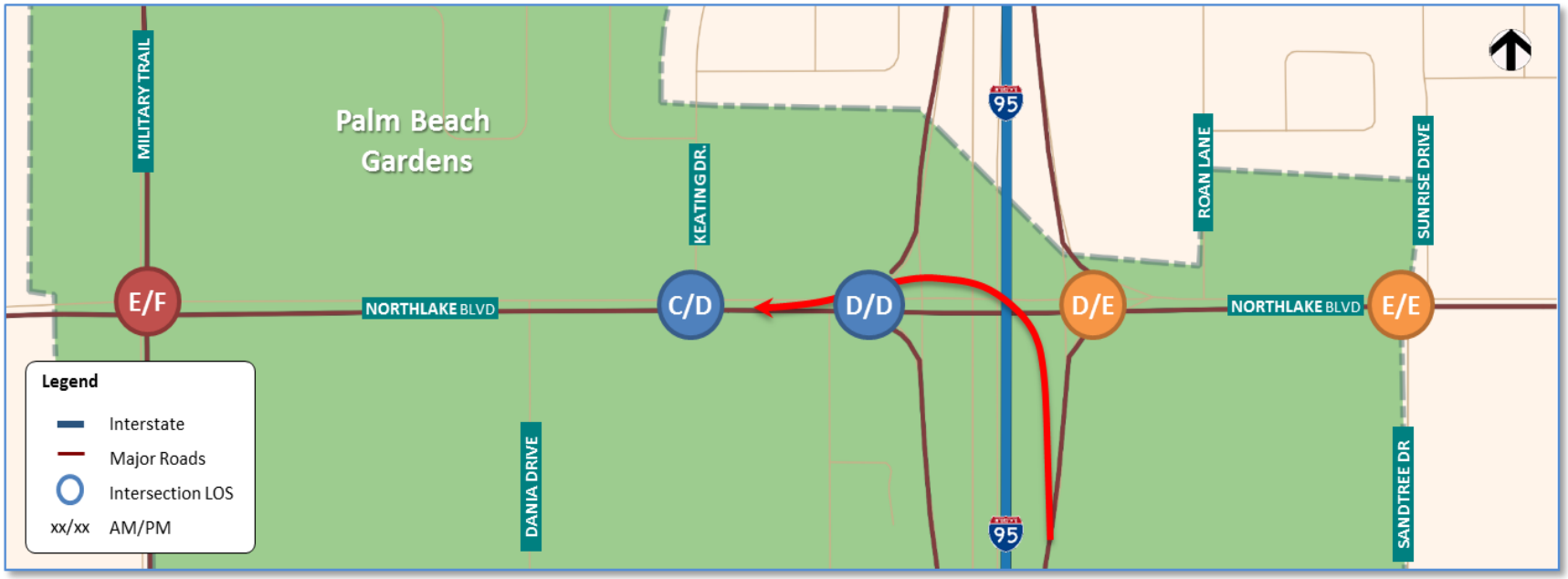
Figure 5-2 2040 Build Alternative 2 – Diverging Diamond



Intersection	Approach LOS (AM/PM)				Overall LOS (AM/PM)
	NB	SB	EB	WB	
Military Trail	E/F	E/F	E/C	F/F	E/F
Keating Drive	D/E	E/E	B/E	C/C	C/D
I-95 SB Ramps	-	C/E	A/B	B/C	B/C
I-95 NB Ramps	D/E	-	E/F	C/C	D/E
Sunrise Drive	E/E	F/F	D/E	D/E	D/E

- Widen Northlake Blvd. to provide 4 lanes in each direction from Keating Dr. to Sunrise Dr.
- Direct single lane flyover ramp from WB Northlake Blvd. to SB I-95
- Provide triple left and triple right turn lanes at I-95 NB and SB ramp terminal exits
- Maintains existing EB left turn at Roan Lane
- I-95 NB off ramp operates at LOS E during PM peak period
- EB approach at NB off ramp operates at LOS F during the PM peak period

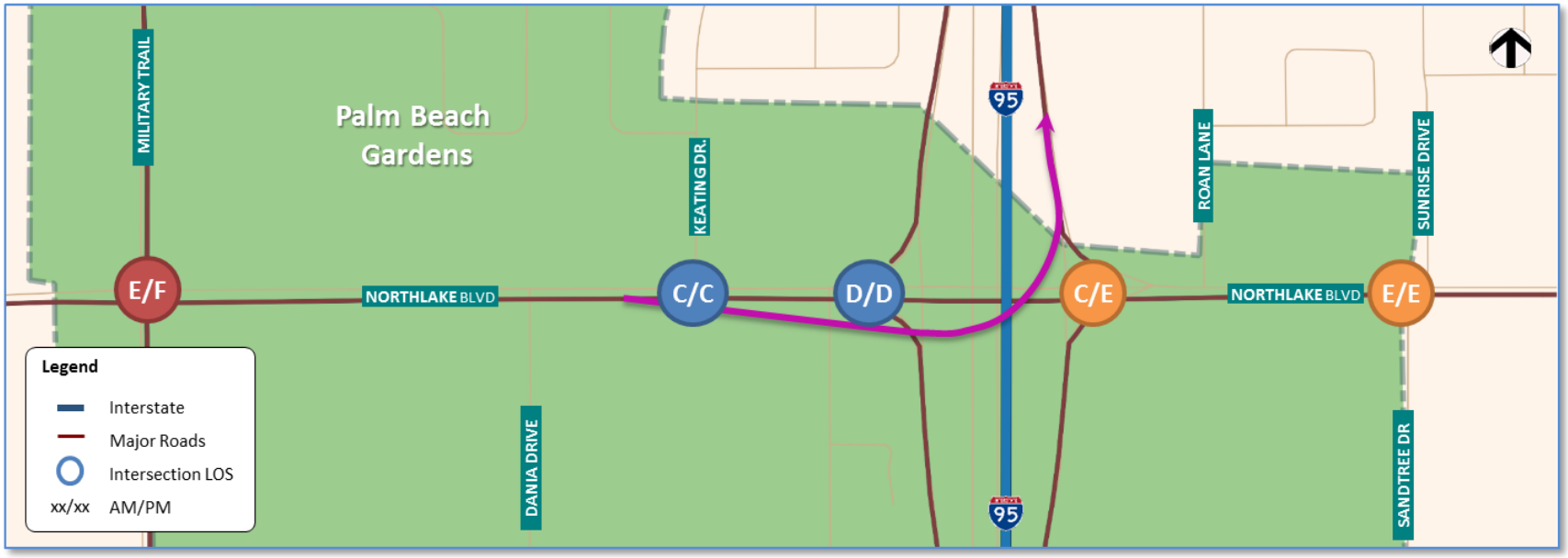
Figure 5-3 2040 Build Alternative 3A – WB to SB Flyover



Intersection	Approach LOS (AM/PM)				Overall LOS (AM/PM)
	NB	SB	EB	WB	
Military Trail	F/F	E/F	E/F	E/F	E/F
Keating Drive	D/D	F/F	C/C	A/E	C/D
I-95 SB Ramps	-	E/F	C/C	B/B	D/D
I-95 NB Ramps	D/D	-	D/D	C/E	D/E
Sunrise Drive	E/E	F/F	E/C	C/E	E/E

- Widen Northlake Blvd. to provide 4 lanes in each direction from Keating Dr. to Sunrise Dr.
- Direct single lane flyover ramp from NB I-95 to WB Northlake Blvd.
- Provide triple left and triple right turn lanes at I-95 NB and SB ramp terminal exits
- Maintains existing EB left turn at Roan Lane
- Potential weaving issue between WB thru to access NB Keating Dr.
- I-95 NB off ramp SB approach operates at LOS F during the PM peak

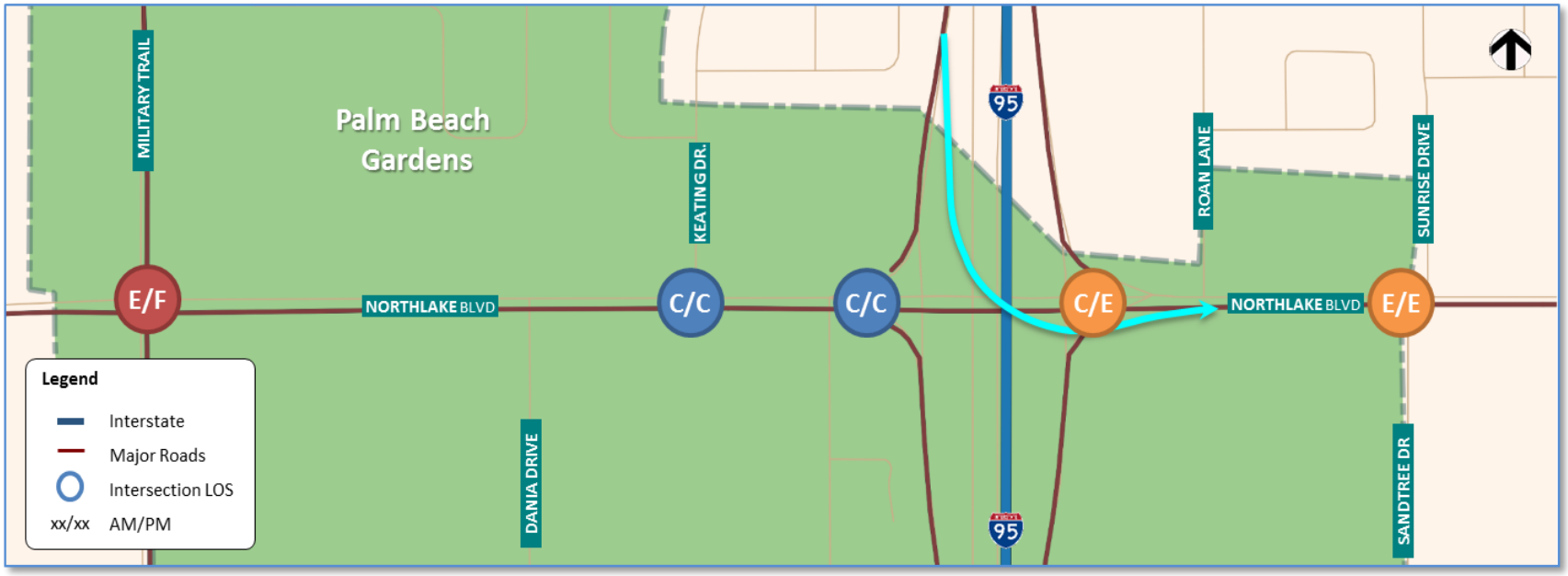
Figure 5-4 2040 Build Alternative 3B – NB to WB Flyover



Intersection	Approach LOS (AM/PM)				Overall LOS (AM/PM)
	NB	SB	EB	WB	
Military Trail	F/F	F/F	E/F	B/D	E/F
Keating Drive	C/D	F/F	D/C	A/B	C/C
I-95 SB Ramps	-	E/D	C/C	C/D	D/D
I-95 NB Ramps	E/F	-	B/E	A/A	C/E
Sunrise Drive	E/E	F/F	F/E	D/E	E/E

- Widen Northlake Blvd. to provide 4 lanes in each direction from Keating Dr. to Sunrise Dr.
- Direct single lane flyover ramp from EB Northlake Blvd. to NB I-95
- Provide triple left and triple right turn lanes at I-95 NB and SB ramp terminals
- Requires grade separation over Keating Drive to maintain full access to businesses
- Maintains existing EB left turn at Roan Lane
- I-95 NB off ramp operates at LOS E during PM peak period
- NB approach at NB off ramp operates at LOS F during the PM peak period

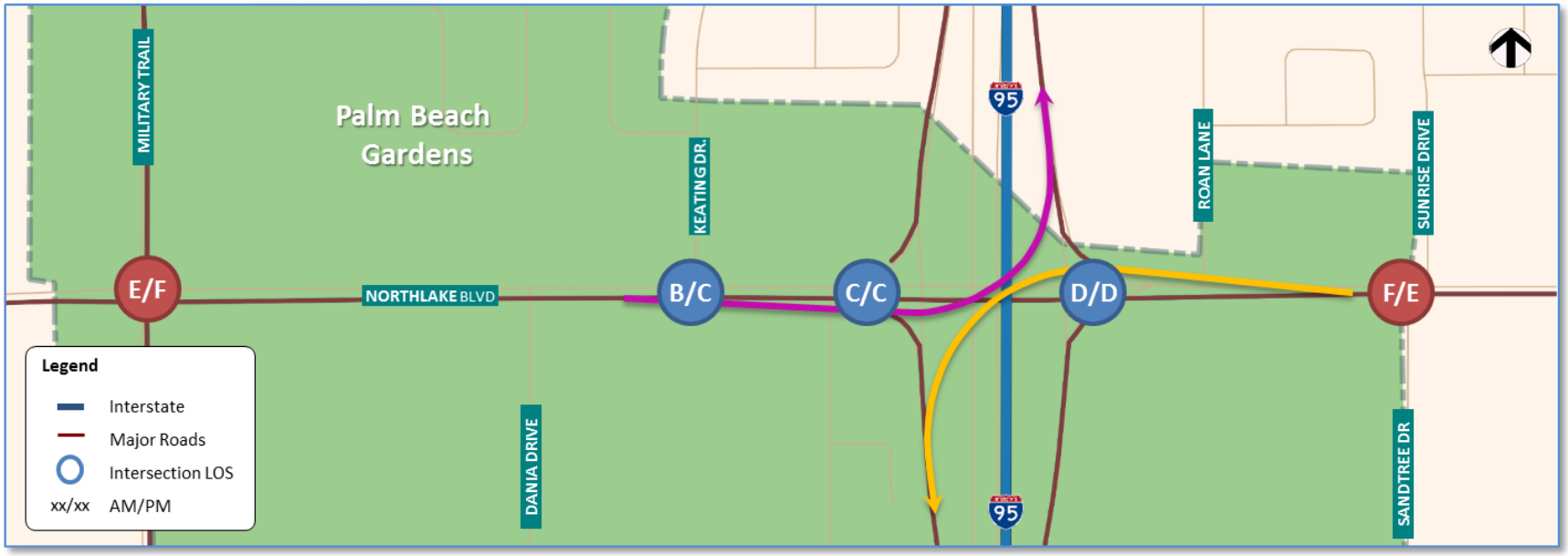
Figure 5-5 2040 Build Alternative 3C – EB to NB Flyover



Intersection	Approach LOS (AM/PM)				Overall LOS (AM/PM)
	NB	SB	EB	WB	
Military Trail	F/F	E/F	E/E	E/E	E/F
Keating Drive	D/D	F/F	A/A	C/D	C/C
I-95 SB Ramps	-	E/E	C/D	B/A	C/C
I-95 NB Ramps	E/F	-	A/C	C/F	C/E
Sunrise Drive	E/E	F/F	E/C	C/E	E/E

- Widen Northlake Blvd. to provide 4 lanes in each direction from Keating Dr. to Sunrise Dr.
- Direct single lane flyover ramp from SB I-95 to EB Northlake Blvd.
- Provide triple left and triple right turn lanes at I-95 NB and SB ramp terminal exits
- Maintains existing EB left turn at Roan Lane
- Potential weaving issue with EB thru to SB Sandtree Dr.
- I-95 NB off ramp operates at LOS E during the PM peak
- NB approach at I-95 NB off ramp operates at LOS F during PM peak

Figure 5-6 2040 Build Alternative 3D – SB to EB Flyover



Intersection	Approach LOS (AM/PM)				Overall LOS (AM/PM)
	NB	SB	EB	WB	
Military Trail	F/F	E/F	E/E	E/F	E/F
Keating Drive	D/D	F/F	B/C	A/B	B/C
I-95 SB Ramps	-	C/D	B/C	C/C	C/C
I-95 NB Ramps	D/D	-	D/D	C/C	D/D
Sunrise Drive	E/E	F/F	F/E	C/E	F/E

- Widen Northlake Blvd. to provide 4 lanes in each direction from Keating Dr. to Sunrise Dr.
- Direct single lane flyover ramps from EB and WB Northlake Blvd. to NB and SB I-95
- Requires grade separation over Keating Drive to maintain full access to businesses
- Provide triple left and triple right turn lanes at I-95 NB and SB ramp terminal exits
- Maintains existing EB left turn at Roan Lane
- Both I-95 NB and SB off ramp operates at LOS D or better during the AM and PM peak

Figure 5-7 2040 Build Alternative 3E - EB to NB & WB to SB Flyovers

5.4 Refined Build Alternatives (Tier 2 Analysis)

5.4.1 Build Alternative 1 – Modified Concept Report Alternative

This concept will modify each off-ramp of the existing I-95 tight diamond interchange at Northlake Boulevard. The modifications will widen the existing dual left and right turn lane configuration to include a triple turn lane alignment for both left and right turning maneuvers. The terminal gore point locations on I-95 NB off-ramp will remain unchanged. However, the I-95 SB off-ramp will be extended to provide adequate storage to accommodate the ramp queues. The existing I-95 bridge over Northlake Boulevard will remain unchanged.

This concept will also widen westbound (WB) Northlake Boulevard from three to four lanes between Military Boulevard and Sunrise Drive/Sandtree Drive. In addition, eastbound (EB) Northlake Boulevard will be widened from three to four lanes beginning west of Keating Drive to Sunrise Drive/Sandtree Drive. **Figure 5-8** and **Figure 5-9** depict the conceptual layout for Build Alternative 1.

5.4.2 Build Alternative 2 – Diverging Diamond

This concept will reconstruct the existing I-95 tight diamond interchange at Northlake Boulevard to a diverging diamond interchange (DDI). The ramp lane configuration of the northbound on-ramp will be expanded to a two-lane parallel entrance ramp. The three other ramps will remain unchanged; however, each ramp will require alignment modifications to meet the DDI geometric lane configuration. The modifications will widen the existing dual left and right turn lane configuration to include a triple turn lane alignment for both left and right turning maneuvers at each off-ramp. The terminal gore point locations on the I-95 off-ramps will remain unchanged. The existing I-95 bridge over Northlake Boulevard will require replacement with a longer bridge structure to span over the DDI geometric configuration. I-95 will continue to traverse over Northlake Boulevard. The DDI lane geometrics along Northlake Boulevard will pass under the new I-95 bridge structure. The DDI geometrics will meet the requirements for an urban highway with a 40 mph design speed and a crossover intersection angle of 40 degrees to meet FHWA DDI guidelines and FDOT District 4 requirements.

This concept will also widen WB Northlake Boulevard from three to four lanes between Military Boulevard and Sunrise Drive/Sandtree Drive. In addition, EB Northlake Boulevard will be widened from three to four lanes beginning west of Keating Drive to Sunrise Drive/Sandtree Drive. **Figure 5-10** depicts the conceptual layout for Build Alternative 2.

5.4.3 Build Alternative 3E – Dual Flyover Ramps

This concept will modify the existing I-95 tight diamond interchange at Northlake Boulevard to provide two flyover ramps. One flyover ramp will allow direct connection from EB Northlake Boulevard to NB I-95. The other flyover ramp will allow a direct connection from WB Northlake Boulevard to SB I-95. Each ramp will be a single lane ramp. The terminal gore point locations on I-95 will move for Ramp A and Ramp C. The existing I-95 bridge over Northlake Boulevard will remain unchanged.

Beginning approximately 1,500 ft. west of I-95, the EB to NB ramp will vertically take-off within the Northlake Boulevard median at a 5% grade to span over and maintain the signalized intersection at Keating Drive. The EB to NB ramp will span over I-95 and vertically transition down to meet the existing at-grade NB on-ramp (Ramp C) and I-95 general purpose lanes approximately 2,200 ft. north of Northlake Boulevard. The existing at-grade NB on-ramp will merge with the EB to NB flyover ramp into a dual lane ramp. The dual lane ramp will merge with NB I-95 approximately 4,800 ft. north of Northlake Boulevard.

Beginning approximately 1,200 ft. east of I-95, near the Sandtree Drive signalized intersection, the WB to SB ramp will vertically take-off within the Northlake Boulevard median at a 5% grade to span over I-95. The flyover will vertically transition down to meet the existing at-grade SB on-ramp (Ramp A) approximately 2,200 ft. south of Northlake Boulevard. The existing SB on-ramp will merge with the WB to SB flyover ramp into a single lane ramp. The single lane ramp will connect to the existing SB auxiliary lane approximately 4,500 ft. south of Northlake Boulevard.

Each flyover ramp has a design speed of 35 mph with the following typical section characteristics:

- 580 ft. radius
- One 15 ft. travel lane
- 10 ft. inside shoulder (provided for stopping sight distance)
- 6 ft. outside shoulder

This concept will also widen WB Northlake Boulevard from three to four lanes between Military Boulevard and Sunrise Drive/Sandtree Drive. In addition, EB Northlake Boulevard will be widened from three to four lanes beginning west of Keating Drive to Sunrise Drive/Sandtree Drive. **Figure 5-11** and **Figure 5-12** depict the conceptual layout for Build Alternative 3E.

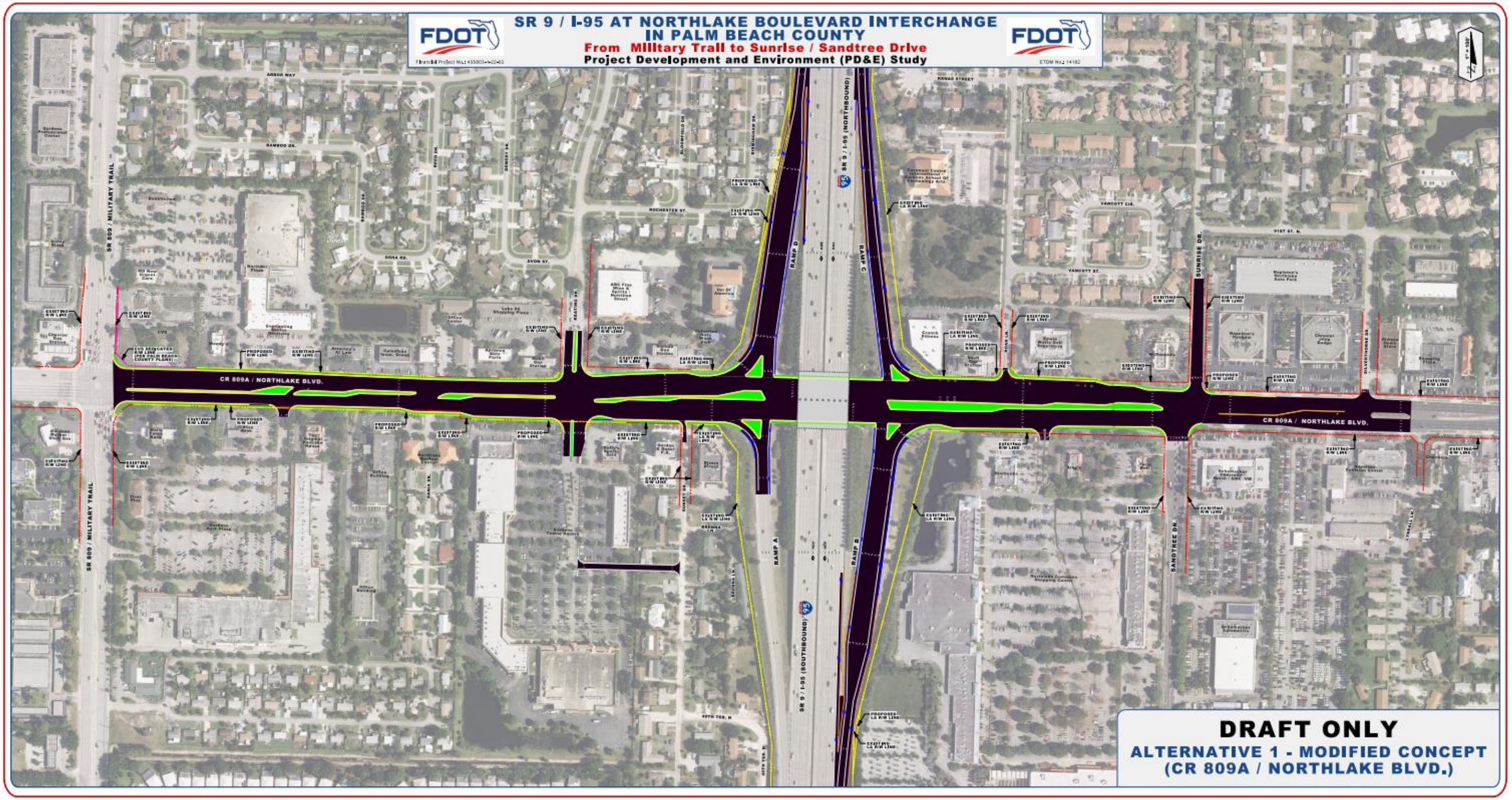


Figure 5-8 Conceptual Design for Build Alternative 1– Modified CDR (Northlake Boulevard)

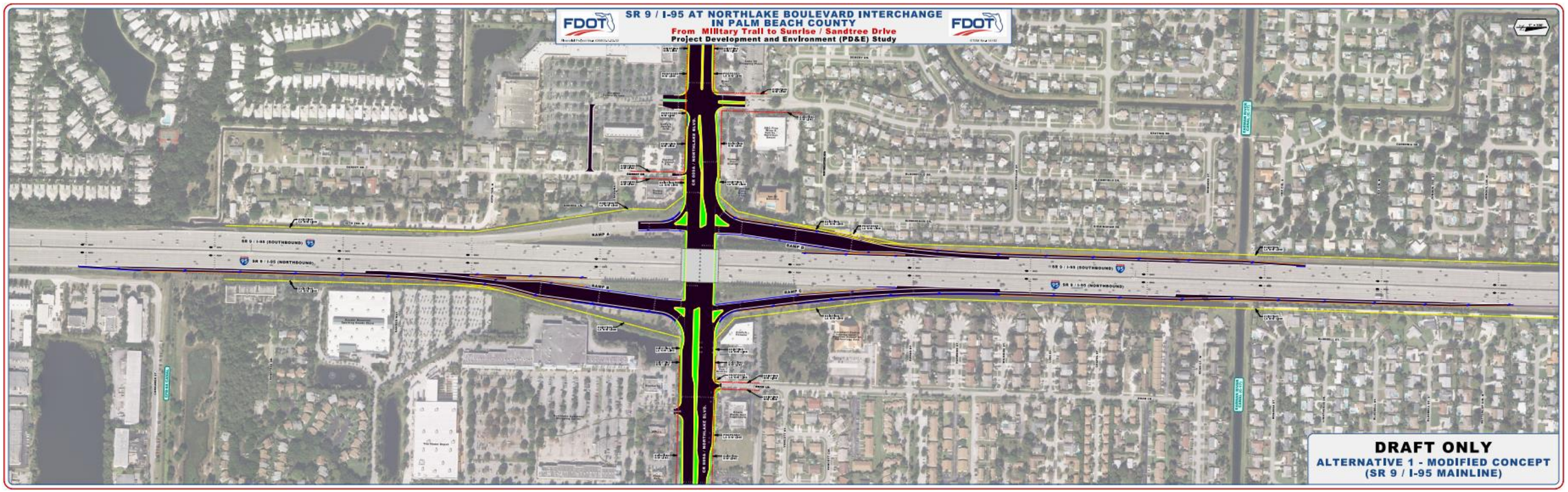


Figure 5-9 Conceptual Design for Build Alternative 1– Modified CDR (I-95)

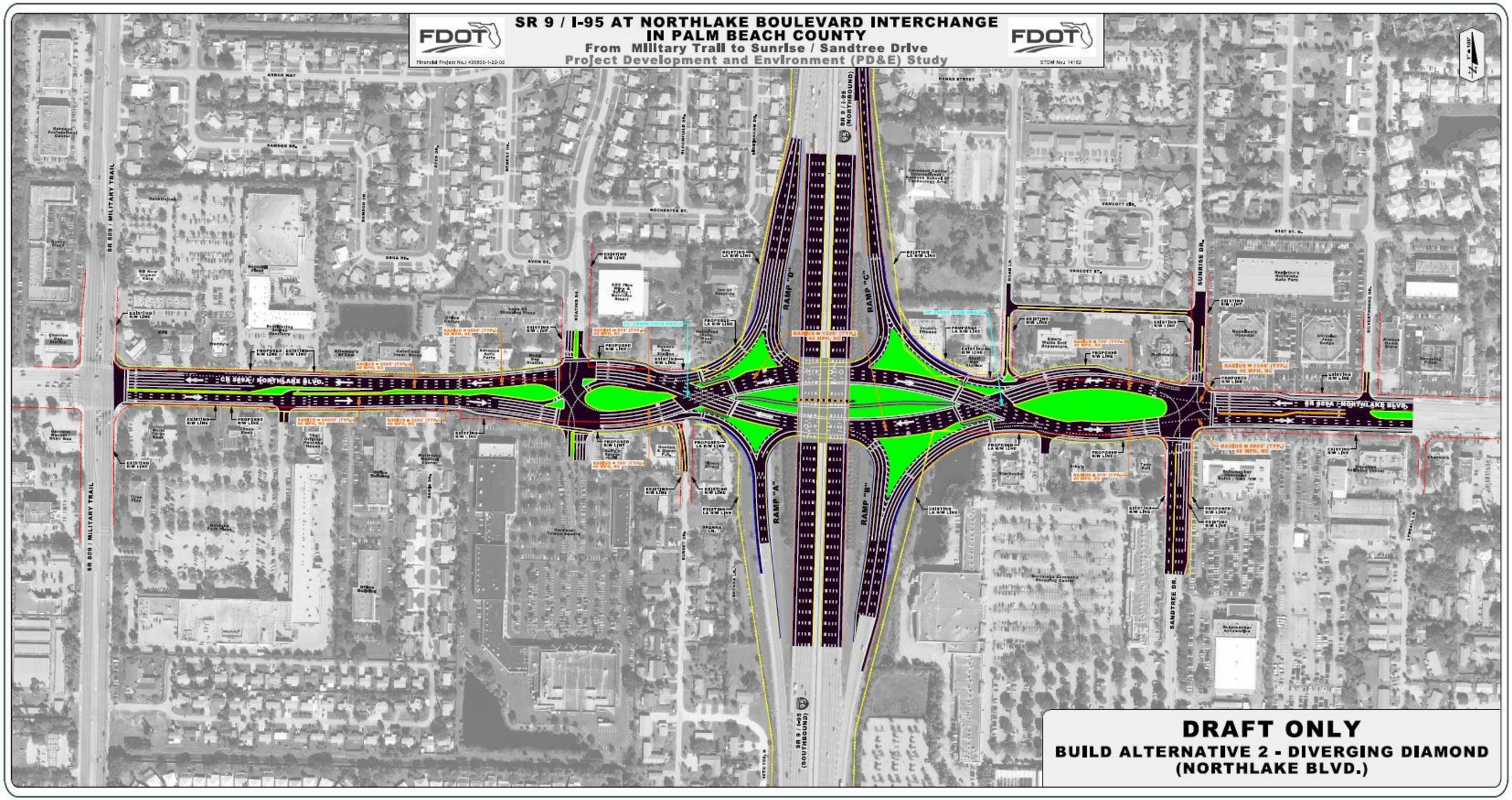


Figure 5-10 Conceptual Design for Build Alternative 2 – Diverging Diamond

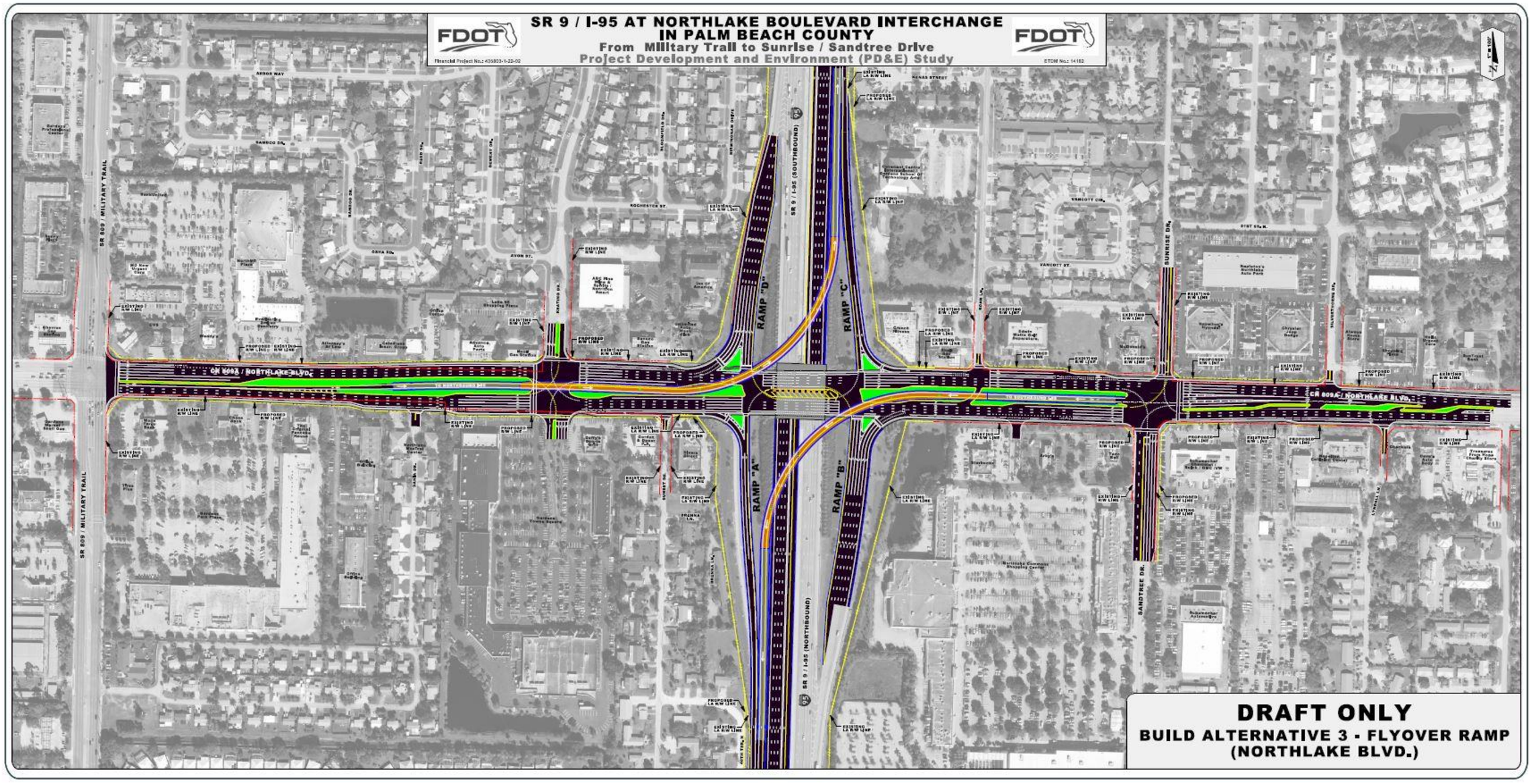


Figure 5-11 Conceptual Design for Build Alternative 3E - Dual Flyovers (Northlake Boulevard)

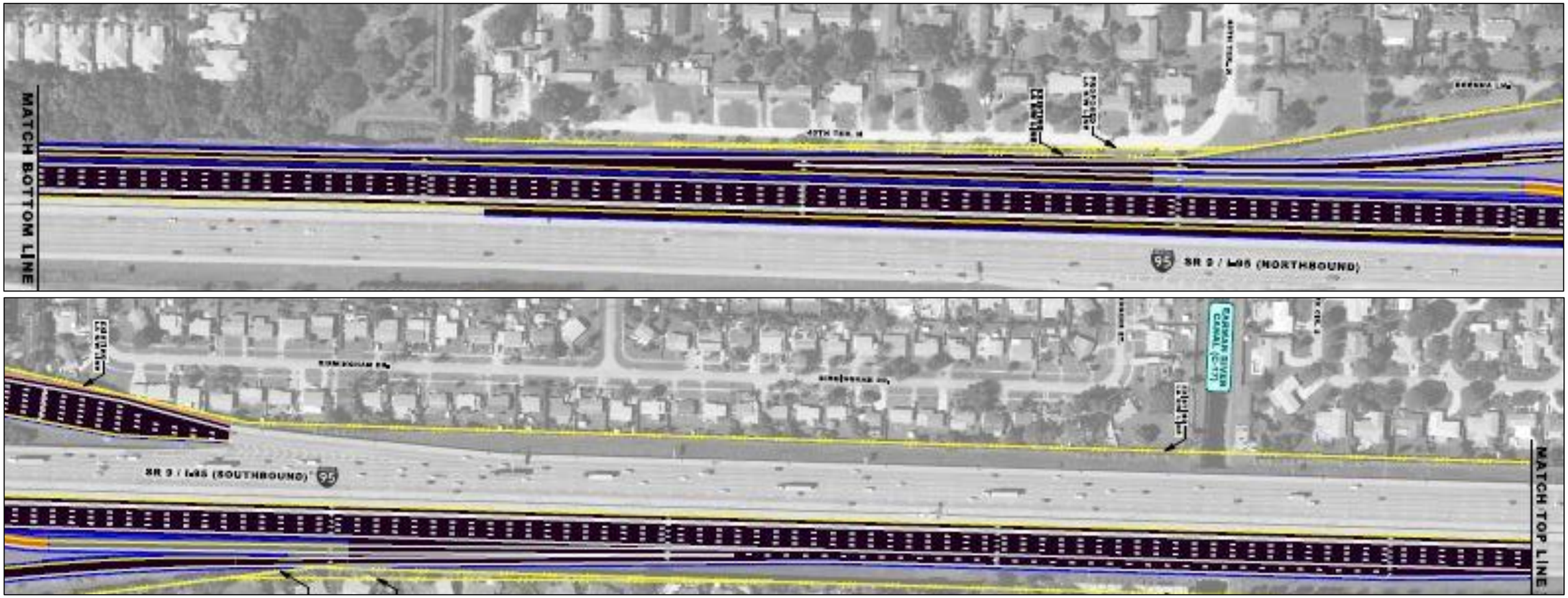


Figure 5-12 Conceptual Design for Build Alternative 3E – Dual Flyovers (I-95)

5.5 Build Alternatives for PGA Boulevard SB On-Ramp

During the I-95 PGA/Central Boulevard Interchange Justification Report Study (FM 413265-1-22-01, ETDM 13748), the southbound on-ramps from PGA Boulevard were identified for a potential traffic operations improvement. The I-95 PGA/Central Boulevard IJR and PD&E Study was completed in December 2016; therefore, the PGA Boulevard Southbound On-Ramp concepts were evaluated with the I-95 Northlake IMR Study. The ramp evaluation analyzed the operations of the two (2) existing southbound ramp access connections to the I-95 mainline, which are in close proximity to each other. The eastbound-to-southbound (EB-SB) ramp enters as an existing auxiliary lane, approximately 760 ft. downstream of the westbound-to-southbound (WB-SB) flyover ramp connection. The existing SB auxiliary lane begins at the end of the EB-SB on-ramp at PGA Boulevard and ends at the Northlake Boulevard off-ramp.

5.5.1 Build Alternative 1 - PGA SB On-Ramps

PGA SB Ramp Alternative 1 realigns the WB-SB flyover ramp to join the existing I-95 auxiliary lane, eliminating the existing tapered merge connection to the outside general purpose lane. The EB-SB ramp then joins the mainline as an additional auxiliary lane, approximately 1,000 ft. downstream of the WB-SB ramp connection. The second auxiliary lane runs parallel for 1,350 ft. to allow for driver gap acceptance, before merging into the existing auxiliary lane, which extends south to the Northlake Boulevard exit ramp. The total length of the ramp improvements is 3,400 ft., and is entirely within the existing limited access right-of-way. **Figure 5-13** depicts the conceptual layout for the PGA Boulevard SB On-Ramp Build Alternative 1.

5.5.2 Build Alternative 2 - PGA SB On-Ramps

PGA SB Ramp Alternative 2 realigns the WB-SB flyover ramp to join I-95 as a barrier-separated auxiliary lane, eliminating the existing tapered merge connection to the outside general purpose lane. The EB-SB ramp joins the WB-SB ramp, which then connects to the I-95 mainline as a two-lane ramp. The two lanes run parallel for 1,200 ft. to allow for driver gap acceptance, before the outside lane merges into the inside auxiliary lane, which then extends south to the interchange with Northlake Boulevard. The total length of the ramp improvement is 4,200 ft., and is entirely within the existing limited access right-of-way. **Figure 5-14** depicts the conceptual layout for the PGA Boulevard SB On-Ramp Build Alternative 2.

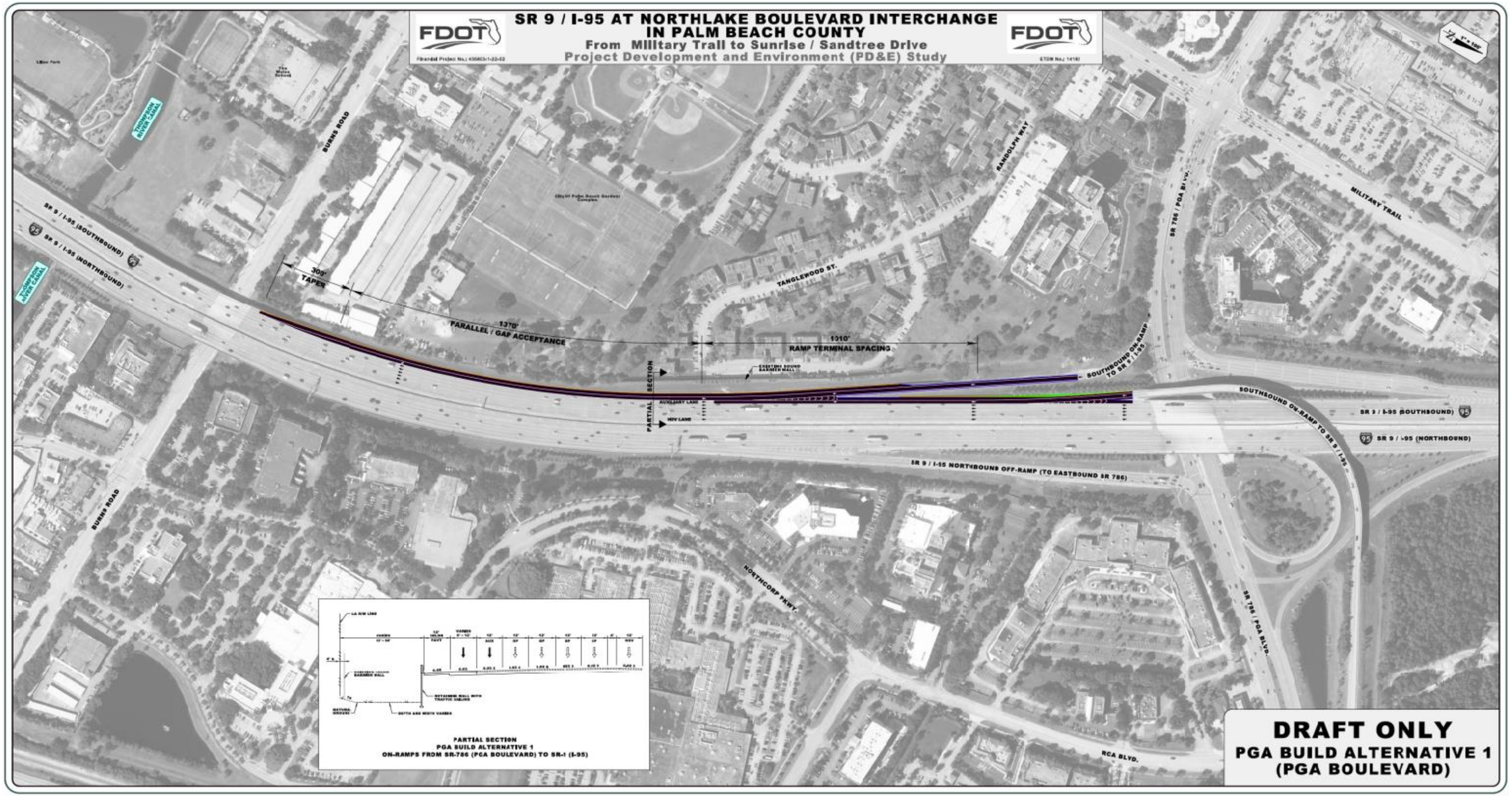


Figure 5-13 Conceptual Design for PGA Boulevard Southbound On-Ramps – Alternative 1

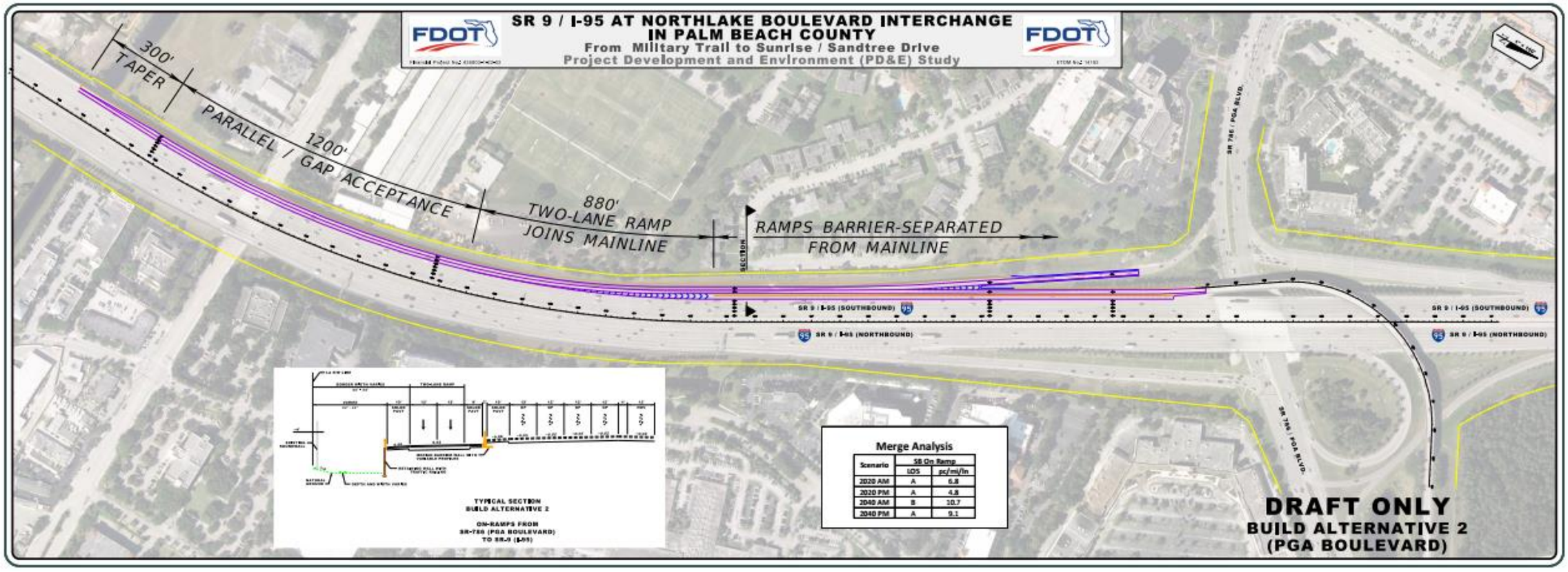


Figure 5-14 Conceptual Design for PGA Boulevard Southbound On-Ramps – Alternative 2

6.0 ALTERNATIVES EVALUATION

6.1 Future Traffic Operational Analysis

6.1.1 Lane Requirement Analysis

Lane requirements analysis for the 2040 design year No-Build and Build conditions were determined using the FDOT Generalized LOS Tables. FDOT's 2012 Generalized LOS Tables show the maximum service volumes for a given LOS based on the number of lanes, type of area (i.e., urban, rural, etc.), and traffic control. The 2012 Generalized LOS Tables are included in **Appendix M.** The base year volumes were compared to the maximum traffic volumes for the adopted level of service LOS D.

Table 6-1 shows the arterial LOS for future years along the project corridor for No-Build and Build conditions. The results of the lane requirement analysis indicate that for the 2040 No-Build condition, most of the segments operate at LOS F except for the segments west of Keating Drive which operates at LOS C.

The build alternatives along Northlake Boulevard include widening of the existing roadway between Keating Drive and Sunrise Drive from six to eight lanes with four lanes in each direction. The fourth lane in the westbound direction will be carried to Military Trail and dropped as an exclusive right turn lane. These proposed improvements will result in LOS D or better for all the segments of the project corridor.

Table 6-1
2040 Northlake Boulevard Arterial Level of Service (LOS)

Alternative	Road Segment	AM Peak Hour				PM Peak Hour			
		DDHV		Lanes	LOS	DDHV		Lanes	LOS
		EB	WB			EB	WB		
No-Build Alternative	West of Military Trail	2,441	1,687	6	C	2,109	2,751	6	C
	Military Trail to Keating Drive	2,305	1,593	6	C	1,992	2,598	6	C
	Keating Drive to I-95 SB Ramps	3,074	2,124	6	F	2,656	3,464	6	F
	I-95 SB Ramps to I-95 NB Ramps	2,893	1,999	6	F	2,500	3,260	6	F
	I-95 NB Ramps to Sunrise Drive	2,983	2,061	6	F	2,578	3,362	6	F
	East of Sunrise Drive	3,344	2,312	6	F	2,890	3,770	6	F
Build Alternatives 1 and 2	West of Military Trail	2,441	1,687	6	C	2,109	2,751	6	C
	Military Trail to Keating Drive	2,305	1,593	6	C	1,992	2,598	6	C
	Keating Drive to I-95 SB Ramps	3,074	2,124	8	C	2,656	3,464	8	C
	I-95 SB Ramps to I-95 NB Ramps	2,893	1,999	8	C	2,500	3,260	8	C
	I-95 NB Ramps to Sunrise Drive	2,983	2,061	8	C	2,578	3,362	8	C
	East of Sunrise Drive	3,344	2,312	8	C	2,890	3,770	8	D
Build Alternative 3E	West of Military Trail	2,441	1,687	6	C	2,109	2,751	6	C
	Military Trail to Keating Drive	2,305	1,593	6	C	1,992	2,598	6	C
	Keating Drive to I-95 SB Ramps	1,797	2,124	8	C	1,553	3,464	8	C
	I-95 SB Ramps to I-95 NB Ramps	1,617	1,378	8	C	1,397	2,247	8	C
	I-95 NB Ramps to Sunrise Drive	2,983	1,440	8	C	2,578	2,349	8	C
	East of Sunrise Drive	3,344	2,312	8	C	2,890	3,770	8	D

Note: Arterial LOS based on FDOT 2012 Generalized Service Volumes Tables for Urbanized Areas with applicable factors for Non-State Road

6.1.2 No-Build Alternative

6.1.2.1 Freeway and Ramps Merge/Diverge Analysis

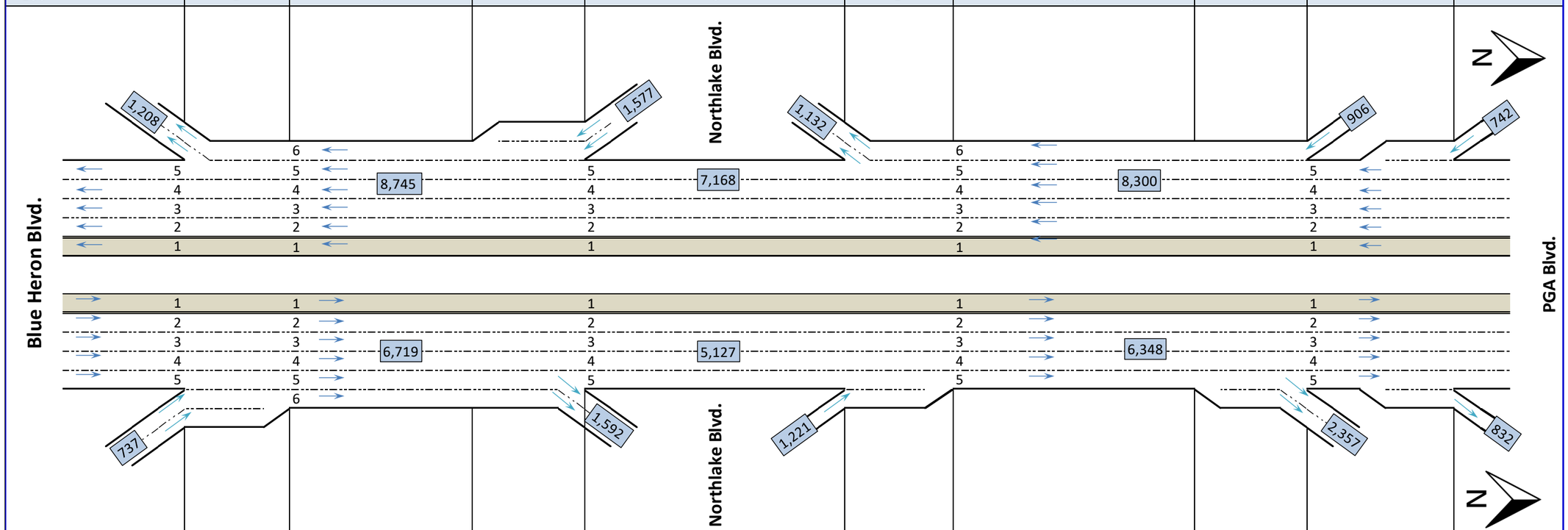
The 2020 and 2040 No-Build conditions for the off-ramps, on- ramps and I-95 mainline sections between the ramps were analyzed using Highway Capacity Software (HCS 2010), based on Highway Capacity Manual 2010 methodology for the AM and PM peak periods. **Figure 6-1** through **Figure 6-4** show the density, speed, and level of service for the freeway segments as well as the merge and diverge locations for the AM and PM peak periods respectively.

Based on the analysis, all the freeway segments will operate at an acceptable LOS D or better with the exception of the Northlake Boulevard NB on-ramp merge area and the northbound basic freeway segment between the Northlake Boulevard northbound on-ramp and the PGA Boulevard off-ramp which operates at LOS E.

The details of the freeway and ramps merge/diverge analysis results for the no-build conditions are included in **Appendix N.**

I-95 Southbound

Length	1,500-ft	3,943-ft	1,500-ft	2,070-ft	1,500-ft	6,335-ft	1,500-ft	450-ft	
Analysis Type	Diverge	Basic Freeway	Merge	Basic Freeway	Diverge	Basic Freeway	Merge	Merge	
Density	12.7 pc/mi/ln	23.7 pc/mi/ln	22.6 pc/mi/ln	23.O pc/mi/ln	11.3 pc/mi/ln	22.1 pc/mi/ln	24.2 pc/mi/ln	25.4 pc/mi/ln	
Speed	54.0 mph	64.7 mph	57.4 mph	64.9 mph	54.1 mph	65.0 mph	57.0 mph	56.7 mph	
LOS	B	C	C	C	B	C	C	C	



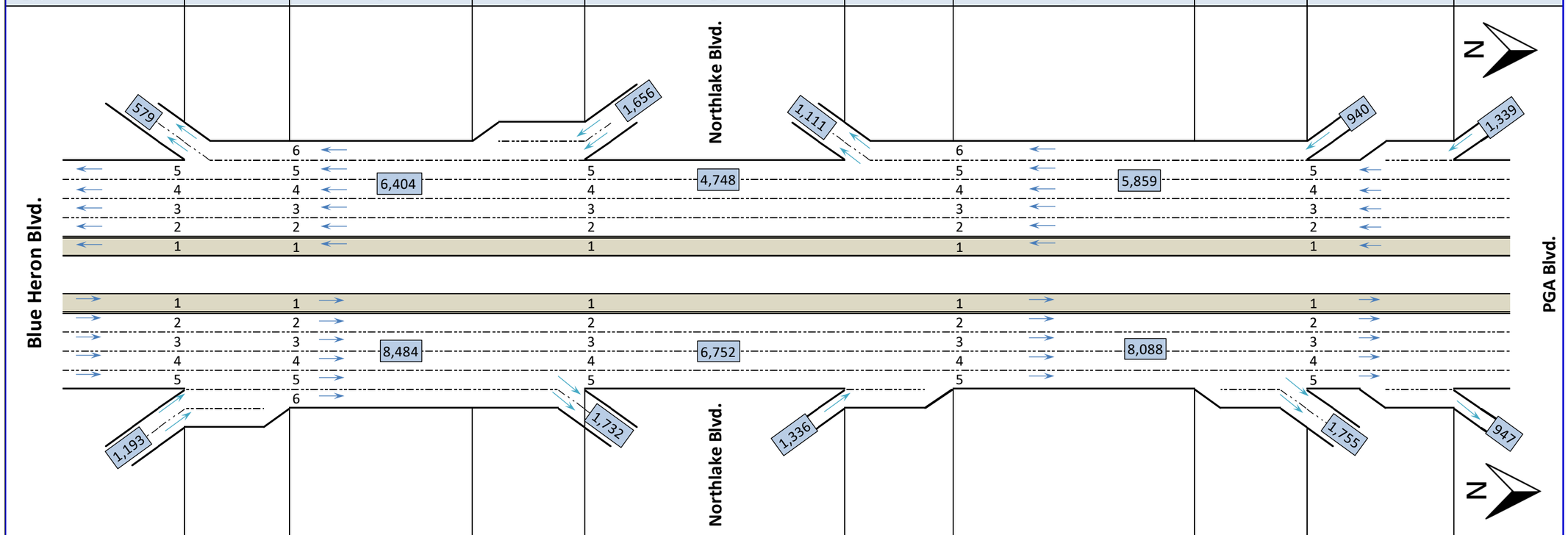
Length	950-ft	4,498-ft	1,500-ft	2,239-ft	1,260-ft	6,480-ft	1,500-ft	850-ft	
Analysis Type	Merge	Basic Freeway	Diverge	Basic Freeway	Merge	Basic Freeway	Diverge	Diverge	
Density	16.6 pc/mi/ln	16.9 pc/mi/ln	12.7 pc/mi/ln	14.6 pc/mi/ln	23.8 pc/mi/ln	19.6 pc/mi/ln	18.3 pc/mi/ln	13.7 pc/mi/ln	
Speed	59.1 mph	65.0 mph	53.1 mph	65.0 mph	57.0 mph	65.0 mph	51.4 mph	51.8 mph	
LOS	B	B	B	B	C	C	B	B	

I-95 Northbound

Figure 6-1 2020 AM Freeways and Ramp Merge/Diverge Analysis – No-Build

I-95 Southbound

Length	1,500-ft	3,943-ft	1,500-ft	2,070-ft	1,500-ft	6,335-ft	1,500-ft	450-ft	
Analysis Type	Diverge	Basic Freeway	Merge	Basic Freeway	Diverge	Basic Freeway	Merge	Merge	
Density	6.7 pc/mi/ln	15.9 pc/mi/ln	19.6 pc/mi/ln	13.0 pc/mi/ln	7.5 pc/mi/ln	14.1 pc/mi/ln	20.8 pc/mi/ln	19.8 pc/mi/ln	
Speed	55.4 mph	65.0 mph	58.3 mph	65.0 mph	54.2 mph	65.0 mph	57.5 mph	57.6 mph	
LOS	A	B	B	B	A	B	C	B	



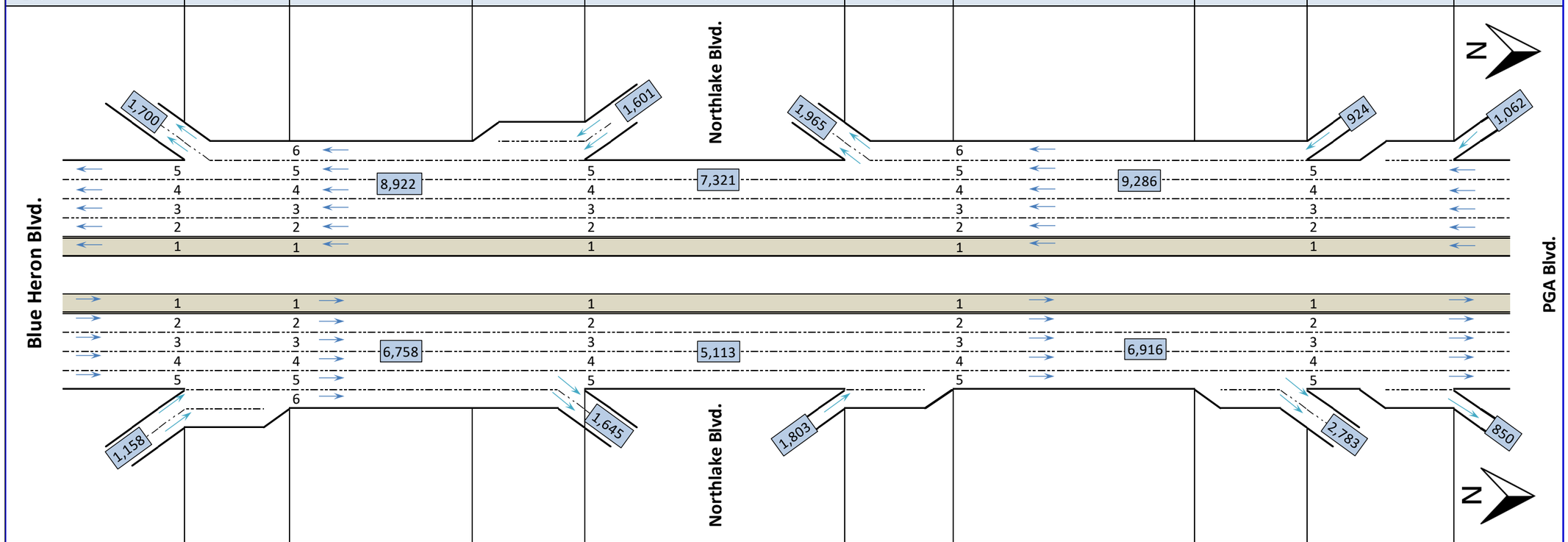
Length	950-ft	4,498-ft	1,500-ft	2,239-ft	1,260-ft	6,480-ft	1,500-ft	850-ft	
Analysis Type	Merge	Basic Freeway	Diverge	Basic Freeway	Merge	Basic Freeway	Diverge	Diverge	
Density	24.5 pc/mi/ln	22.8 pc/mi/ln	15.8 pc/mi/ln	21.3 pc/mi/ln	30.1 pc/mi/ln	27.5 pc/mi/ln	18.3 pc/mi/ln	23.7 pc/mi/ln	
Speed	56.7 mph	64.9 mph	52.8 mph	65.0 mph	55.1 mph	63.3 mph	52.8 mph	51.6 mph	
LOS	C	C	B	C	D	D	B	C	

I-95 Northbound

Figure 6-2 2020 PM Freeways and Ramp Merge/Diverge Analysis – No-Build

I-95 Southbound

Length	1,500-ft	3,943-ft	1,500-ft	2,070-ft	1,500-ft	6,335-ft	1,500-ft	450-ft	
Analysis Type	Diverge	Basic Freeway	Merge	Basic Freeway	Diverge	Basic Freeway	Merge	Merge	
Density	16.4 pc/mi/ln	24.3 pc/mi/ln	23.2 pc/mi/ln	23.7 pc/mi/ln	18.9 pc/mi/ln	25.7 pc/mi/ln	26.1 pc/mi/ln	30.1 pc/mi/ln	
Speed	52.9 mph	64.6 mph	57.2 mph	64.7 mph	52.3 mph	64.1 mph	56.5 mph	55.2 mph	
LOS	B	C	C	C	B	C	C	D	



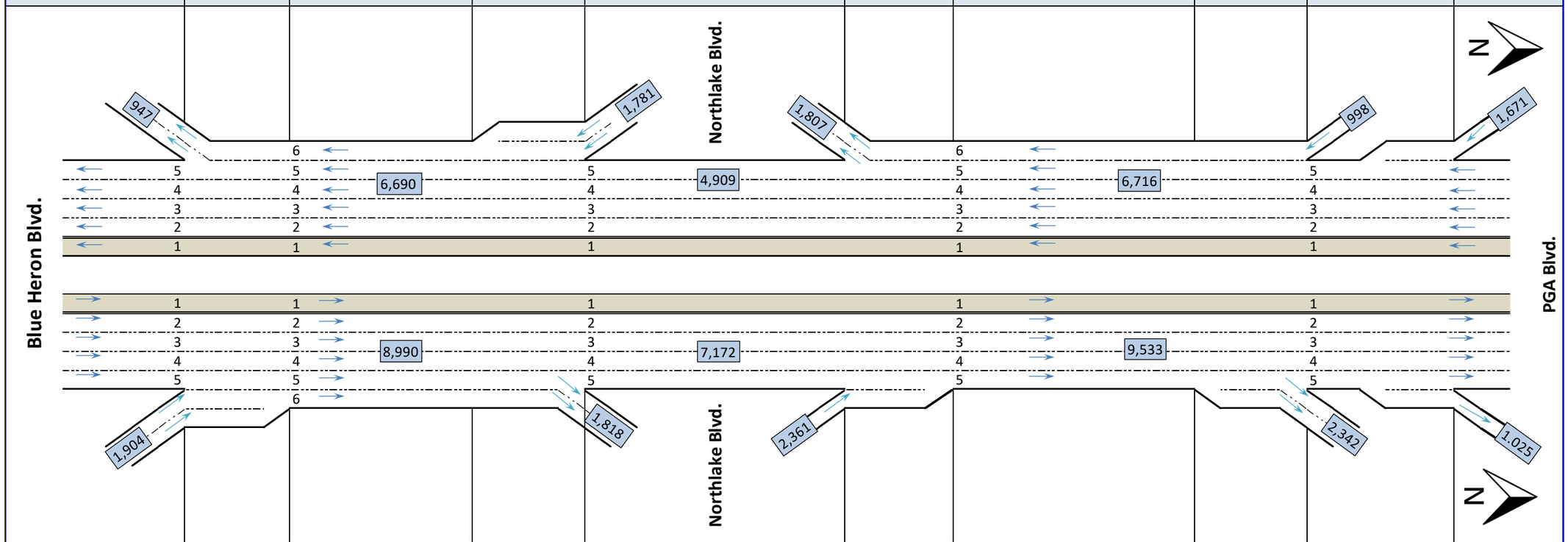
Length	950-ft	4,498-ft	1,500-ft	2,239-ft	1,260-ft	6,480-ft	1,500-ft	850-ft	
Analysis Type	Merge	Basic Freeway	Diverge	Basic Freeway	Merge	Basic Freeway	Diverge	Diverge	
Density	18.6 pc/mi/ln	17.0 pc/mi/ln	12.5 pc/mi/ln	14.5 pc/mi/ln	28.3 pc/mi/ln	22.0 pc/mi/ln	22.5 pc/mi/ln	14.4 pc/mi/ln	
Speed	58.6 mph	65.0 mph	53.0 mph	65.0 mph	55.7 mph	65.0 mph	50.5 mph	51.8 mph	
LOS	B	B	B	B	D	C	C	B	

I-95 Northbound

Figure 6-3 2040 AM Freeways and Ramp Merge/Diverge Analysis – No-Build

I-95 Southbound

Length	1,500-ft	3,943-ft	1,500-ft	2,070-ft	1,500-ft	6,335-ft	1,500-ft	450-ft	
Analysis Type	Diverge	Basic Freeway	Merge	Basic Freeway	Diverge	Basic Freeway	Merge	Merge	
Density	8.2 pc/mi/ln	16.8 pc/mi/ln	21.1 pc/mi/ln	13.7 pc/mi/ln	14.1 pc/mi/ln	16.9 pc/mi/ln	24.0 pc/mi/ln	23.9 pc/mi/ln	
Speed	54.6 mph	65.0 mph	57.9 mph	65.0 mph	52.7 mph	65.0 mph	57.0 mph	56.9 mph	
LOS	A	C	C	B	B	C	C	C	



Length	950-ft	4,498-ft	1,500-ft	2,239-ft	1,260-ft	6,480-ft	1,500-ft	850-ft	
Analysis Type	Merge	Basic Freeway	Diverge	Basic Freeway	Merge	Basic Freeway	Diverge	Diverge	
Density	29.4 pc/mi/ln	24.6 pc/mi/ln	17.4 pc/mi/ln	23.1 pc/mi/ln	39.6 pc/mi/ln	37.0 pc/mi/ln	25.8 pc/mi/ln	27.6 pc/mi/ln	
Speed	53.1 mph	64.5 mph	52.6 mph	64.9 mph	46.1 mph	57.5 mph	51.4 mph	51.4 mph	
LOS	D	C	B	C	E	E	C	C	

I-95 Northbound

Figure 6-4 2040 PM Freeways and Ramp Merge/Diverge Analysis – No-Build

6.1.2.2 No Build Signalized Intersections LOS

Figure 6-5 through **Figure 6-16** show the Future No-Build conditions LOS analysis results for the signalized intersections within the study area. The existing signal timings were optimized for the No-Build analysis to account for traffic growth and demand. For the future conditions analysis, the Right Turn on Red (RTOR) volumes were capped at 60 vph for exclusive right turn lanes and 10 vph for shared right turn lanes where permitted as per Palm Beach County requirements.

The analysis results show most of the study intersections will operate at LOS E or worse if no improvements are done. In addition, both the northbound approach at NB off-ramp and the southbound approach at the SB off-ramp terminal at the Northlake Boulevard interchange will experience excessive delays and operate at LOS E or worse during both the AM and PM peak periods for the 2020 opening year and 2040 design year.

The following signalized intersections do not meet the adopted LOS D Standards:

2020 Opening Year

- Northlake Boulevard
  - Military Trail intersection operates at LOS E during the AM and LOS F during the PM peak period.
  - Keating Drive Intersection operates at LOS E during the PM peak period.
  - The I-95 NB Ramp Terminal operates at LOS F during both the AM and PM peak periods.
  - Sunrise Drive intersection operates at LOS E during the PM peak period.

- Blue Heron Boulevard
  - Military Trail intersection operates at LOS E during both the AM and PM peak periods.
  - The I-95 NB Ramp Terminal operates at LOS E during the AM peak period.
  - Garden Road intersection operates at LOS E during both the AM and PM peak periods.

- PGA Boulevard
  - Military Trail intersection operates at LOS E during the AM peak period and LOS F during the PM peak period.
  - The I-95 NB Ramp Terminal operates at LOS F during the AM peak period.

2040 Design Year

- Northlake Boulevard
  - Military Trail intersection operates at LOS E during the AM peak period and LOS F during the PM peak period.
  - Keating Drive Intersection operates at LOS E during the AM peak period and LOS F during the PM peak period.
  - The SB Ramp Terminal operates at LOS F during both AM and PM peak periods.
  - The NB Ramp Terminal operates at LOS F during both AM and PM peak periods.
  - Sunrise Drive intersection operates at LOS E during the AM peak period and LOS F during the PM peak period.

- Blue Heron Boulevard
  - Military Trail intersection operates at LOS F during both AM and PM peak periods.
  - Garden Drive Intersection operates at LOS F during both AM and PM peak periods.

- PGA Boulevard
  - Military Trail intersection operates at LOS F during both AM and PM peak periods.
  - The NB Ramp Terminal operates at LOS F during both AM and PM peak periods.

The detailed results of the 2020 opening year and 2040 design year No-Build future conditions analysis for the signalized intersections within the project limits are provided in **Appendix O**.

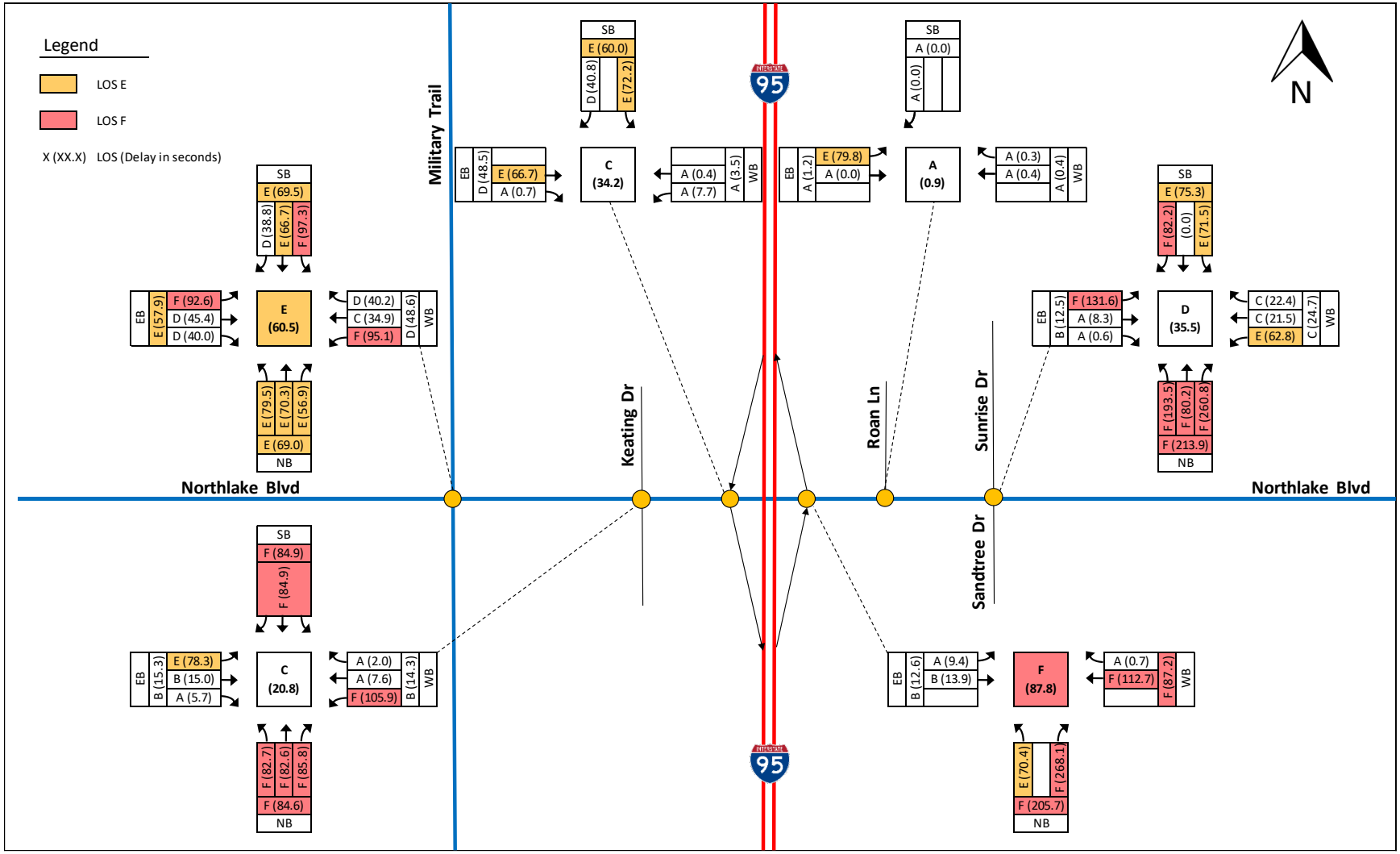


Figure 6-5 Northlake Boulevard - 2020 Future AM No Build Intersection LOS

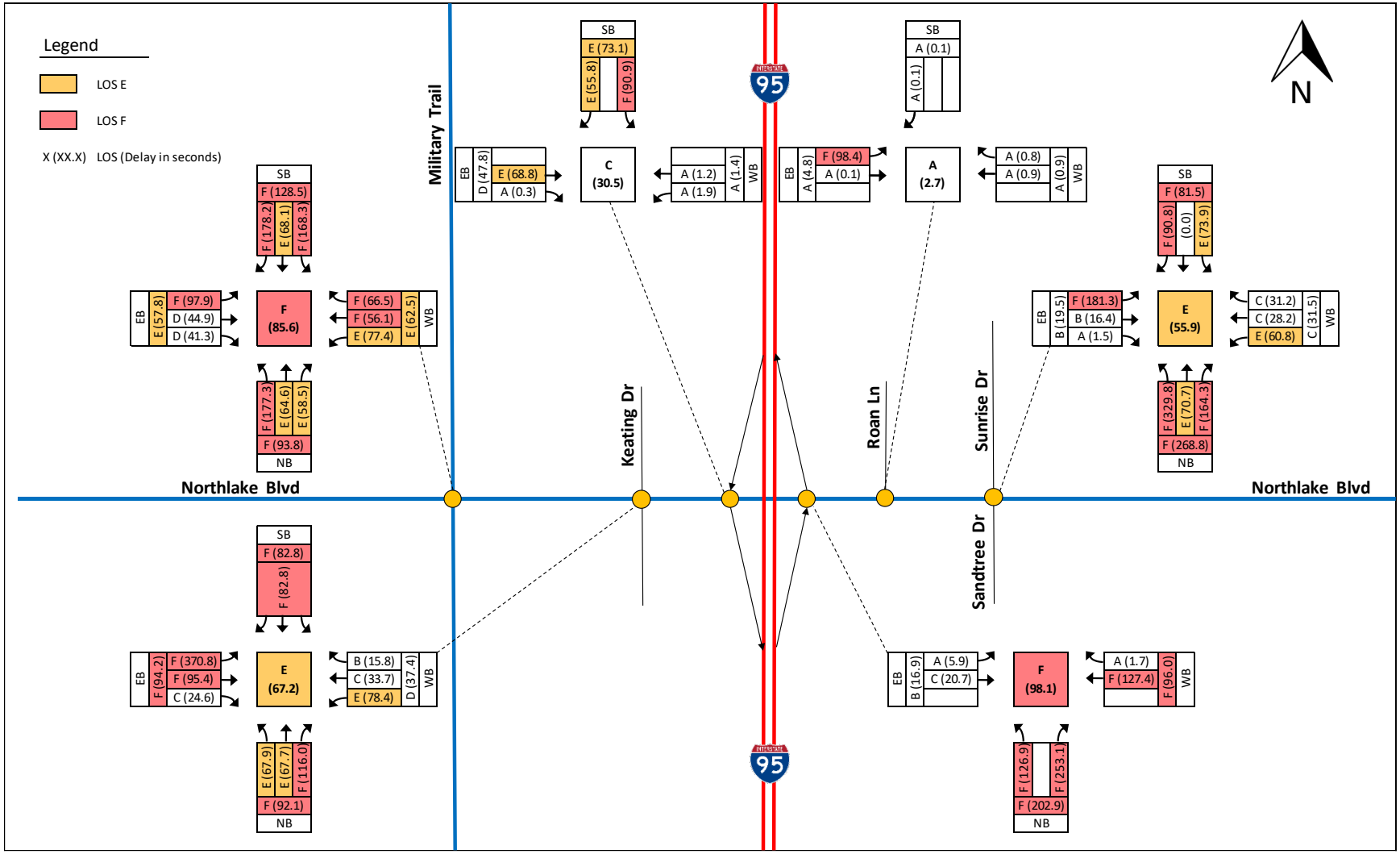


Figure 6-6 Northlake Boulevard - 2020 Future PM No Build Intersection LOS

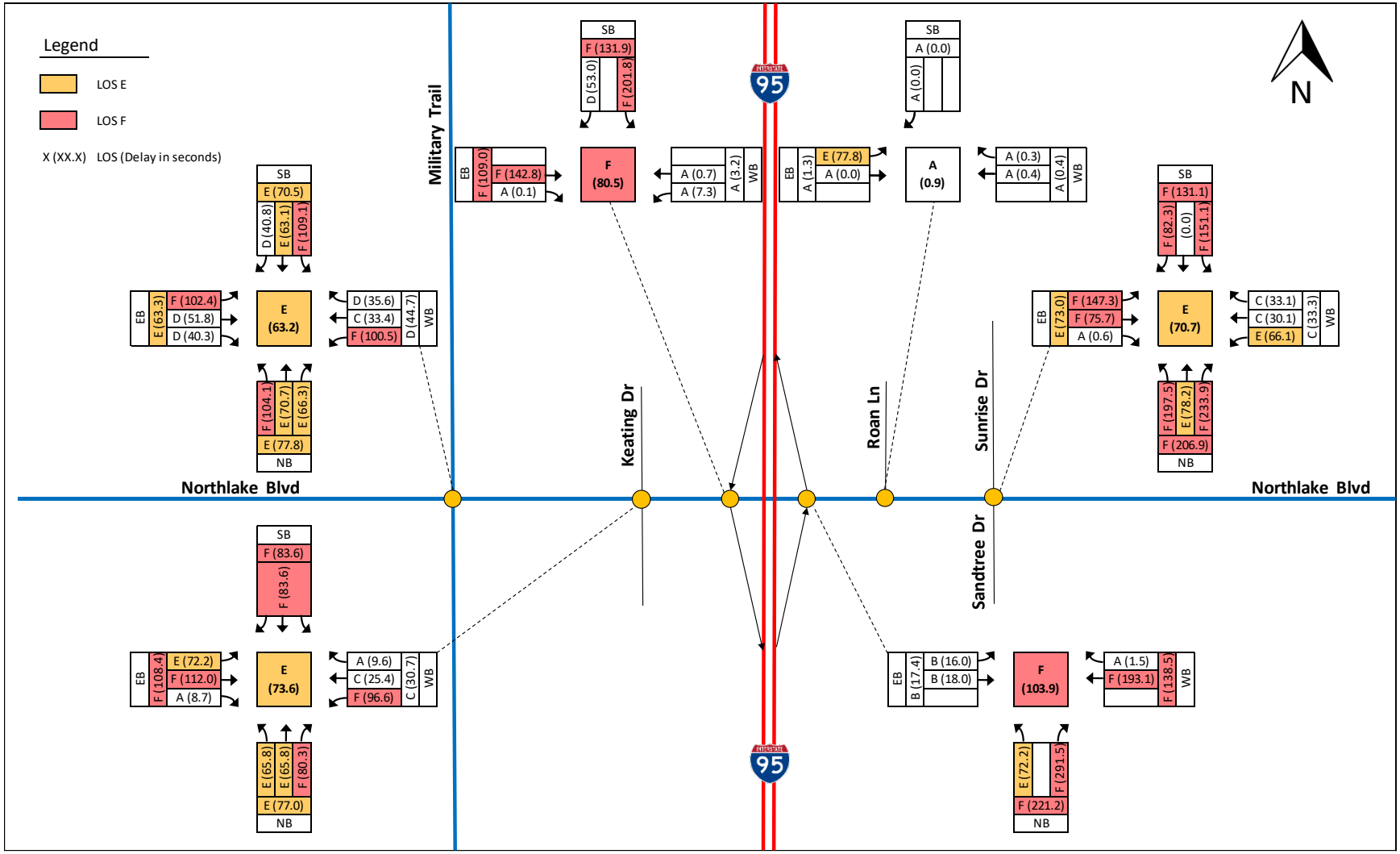


Figure 6-7 Northlake Boulevard - 2040 Future AM No Build Intersection LOS

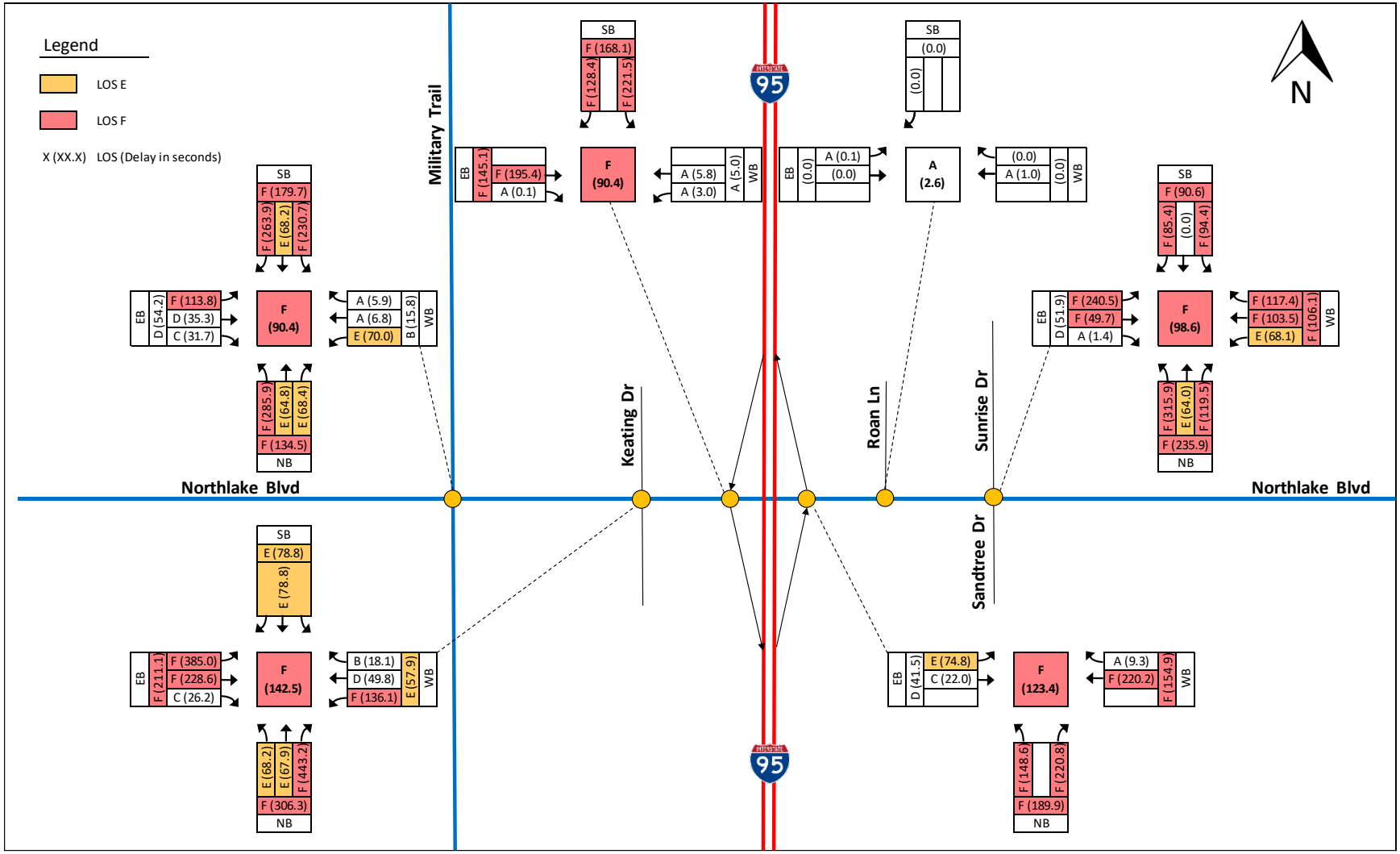


Figure 6-8 Northlake Boulevard - 2040 Future PM No Build Intersection LOS

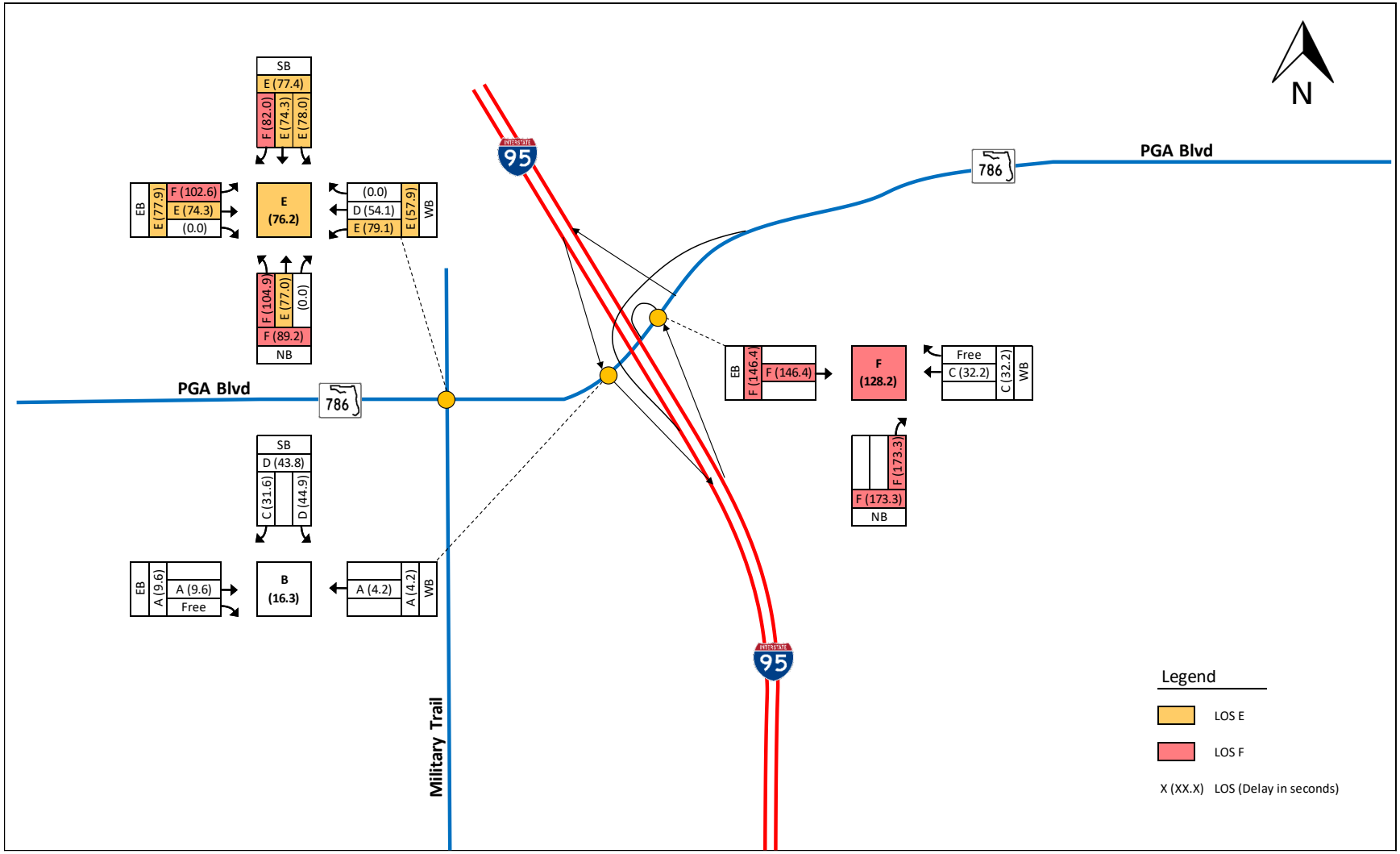


Figure 6-9 PGA Boulevard - 2020 Future AM No Build Intersection LOS

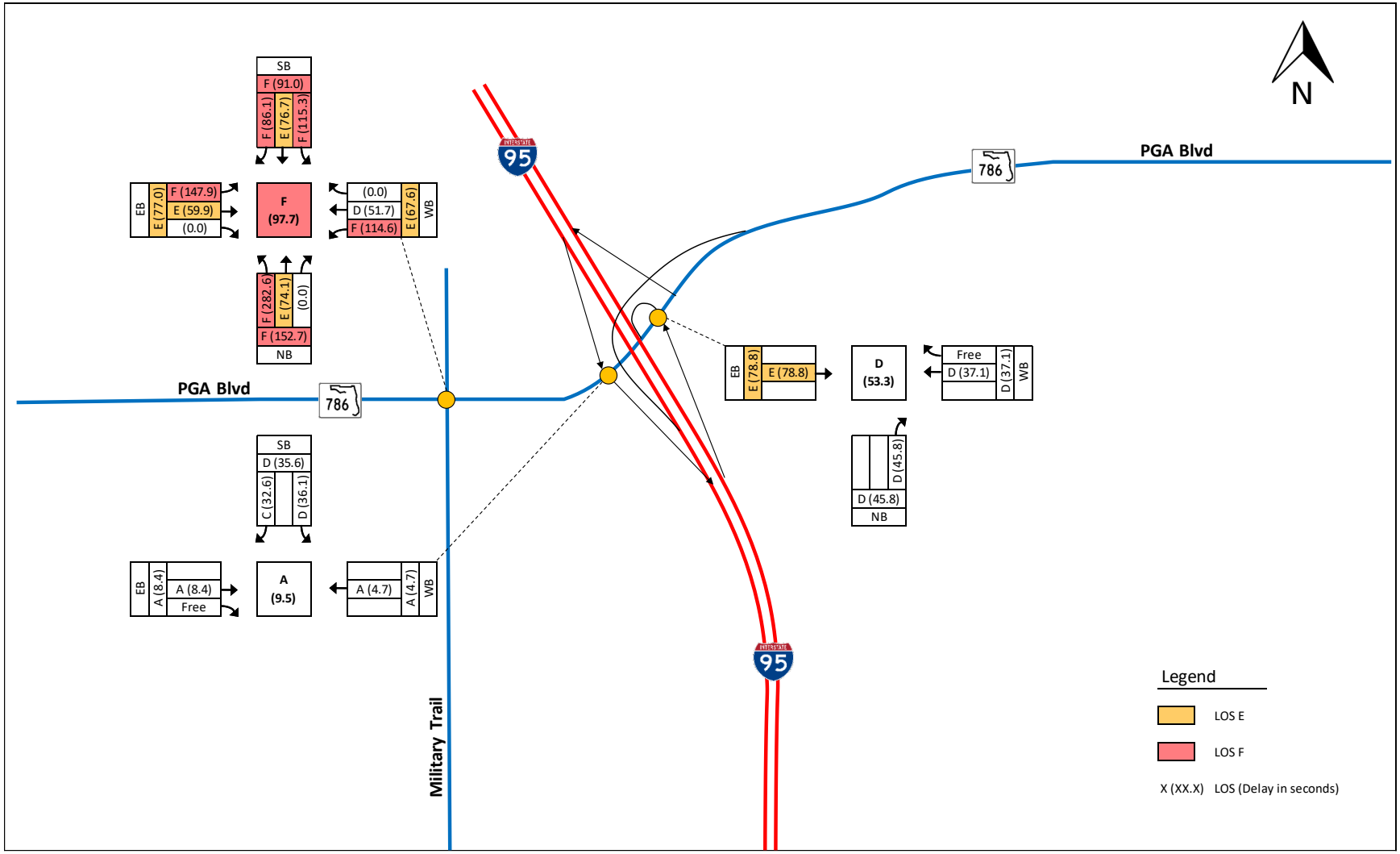


Figure 6-10 PGA Boulevard - 2020 Future PM No Build Intersection LOS

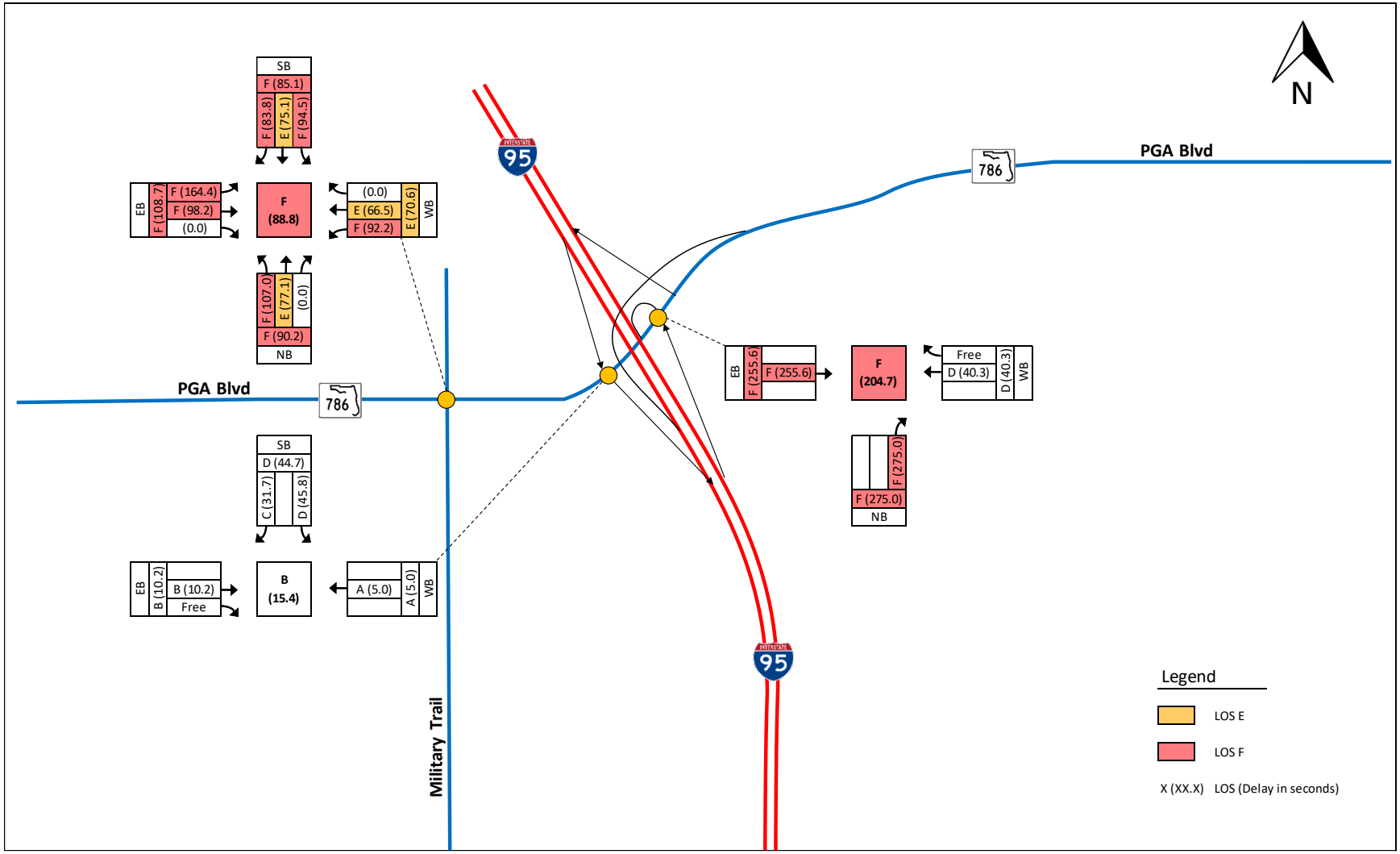


Figure 6-11 PGA Boulevard - 2040 Future AM No Build Intersection LOS

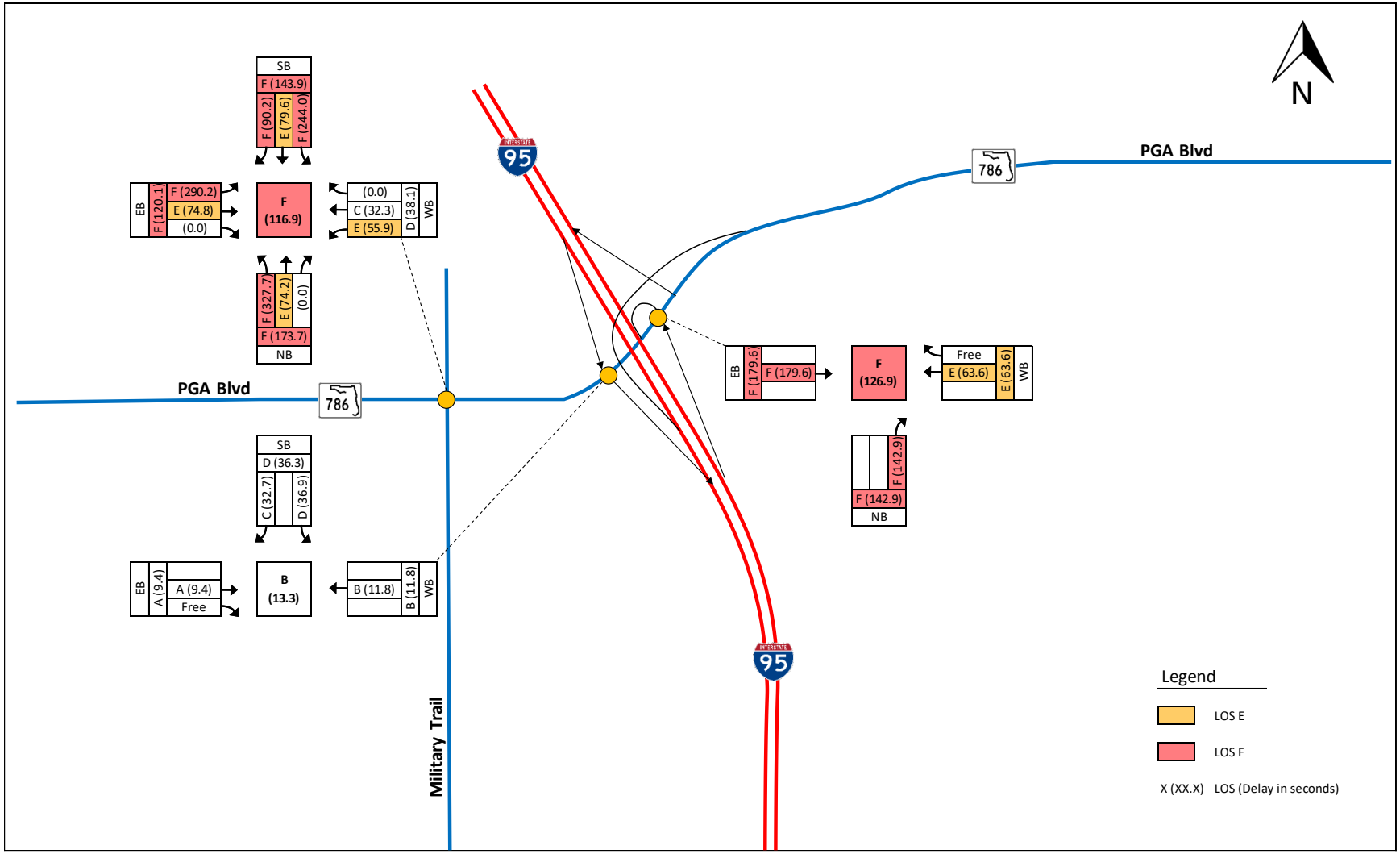


Figure 6-12 PGA Boulevard - 2040 Future PM No Build Intersection LOS

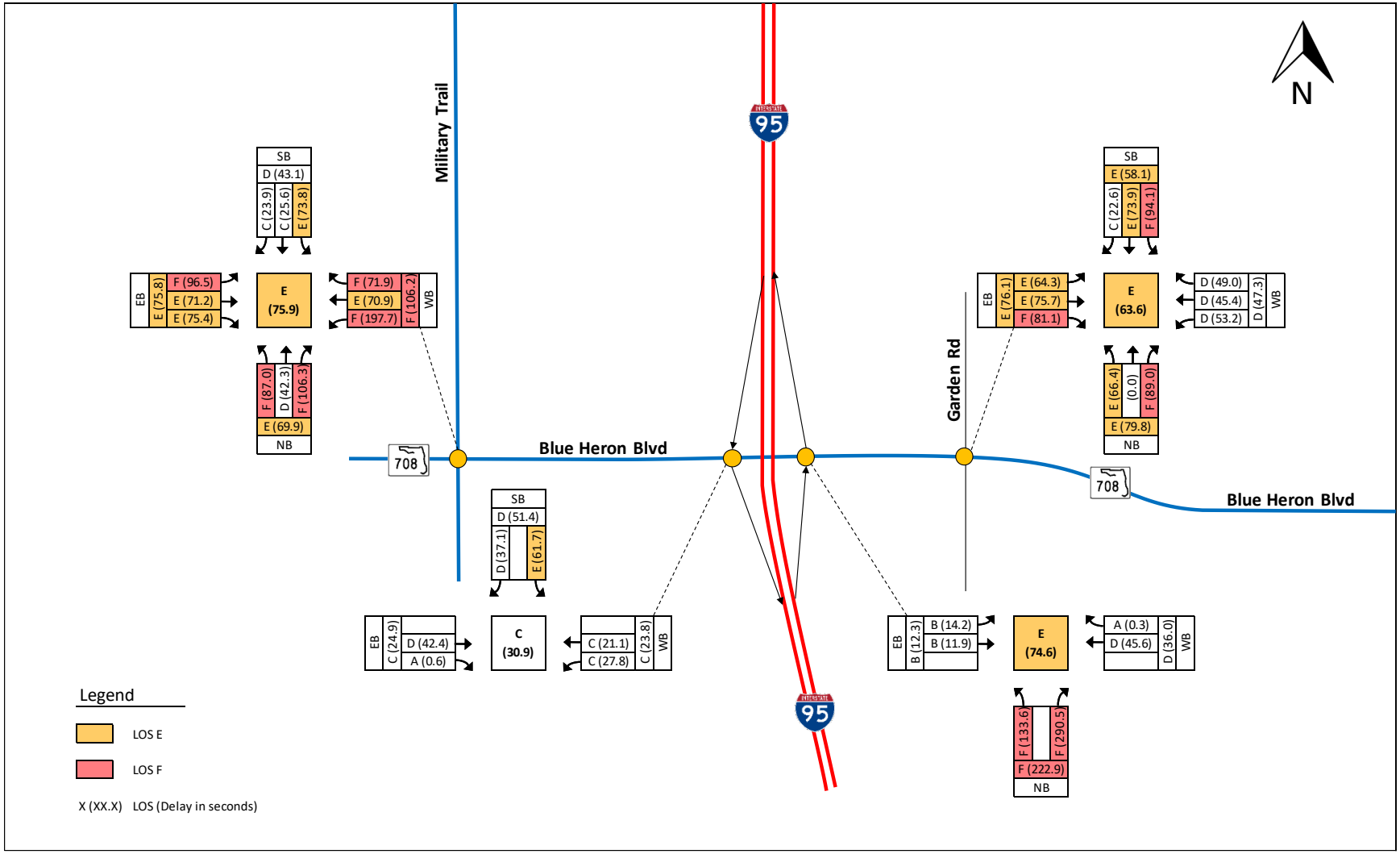


Figure 6-13 Blue Heron Boulevard - 2020 Future AM No Build Intersection LOS

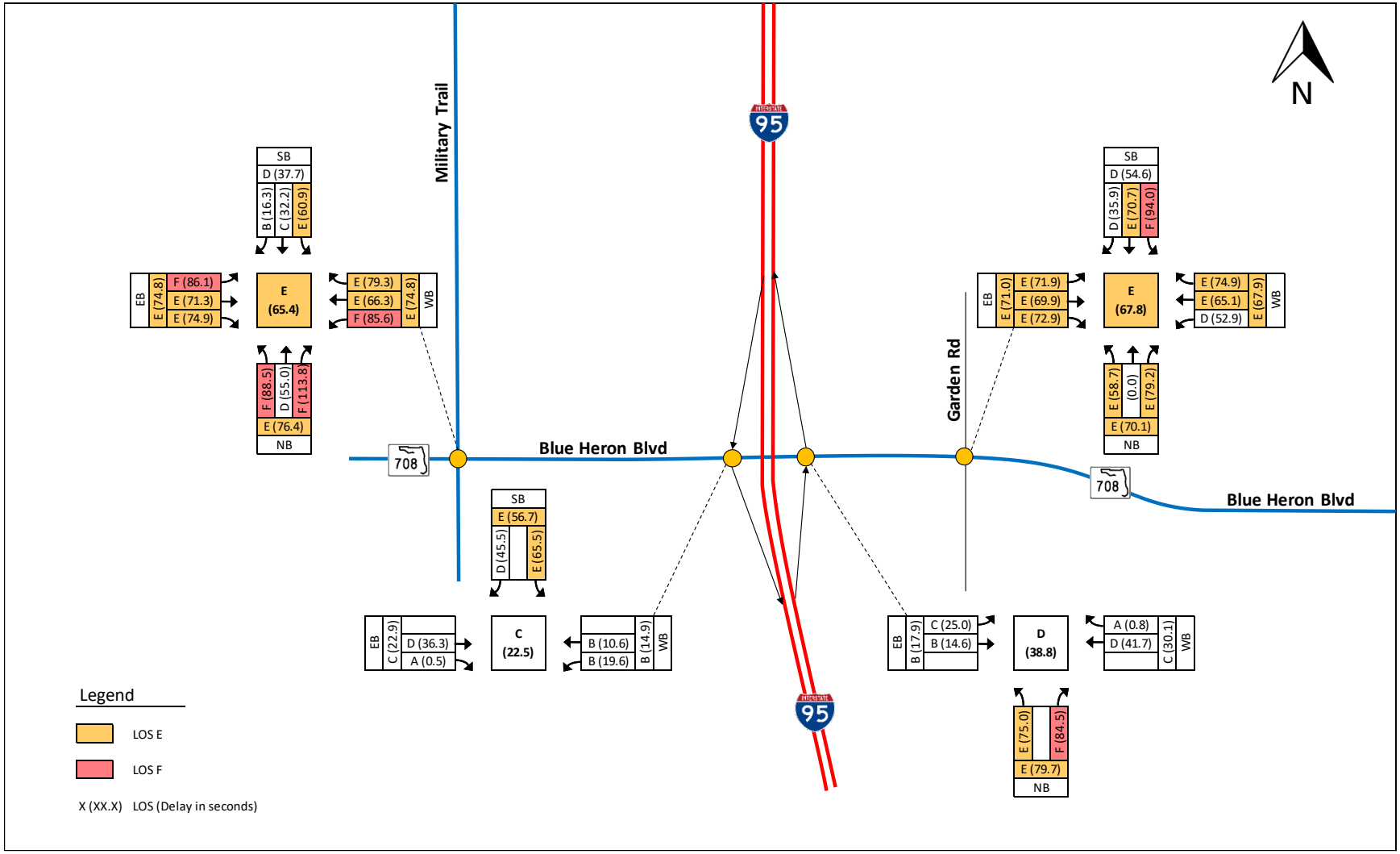


Figure 6-14 Blue Heron Boulevard - 2020 Future PM No Build Intersection LOS

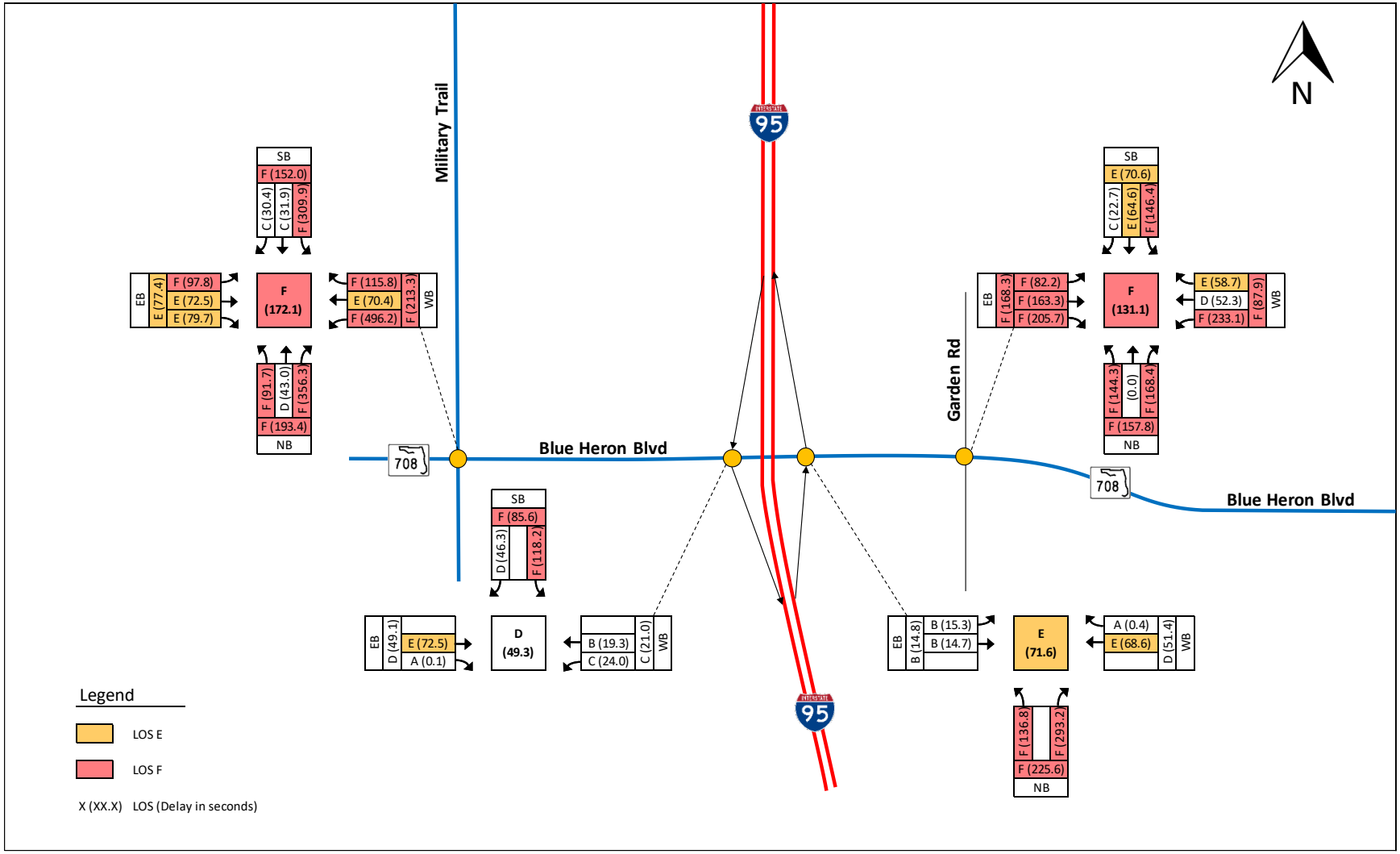


Figure 6-15 Blue Heron Boulevard - 2040 Future AM No Build Intersection LOS

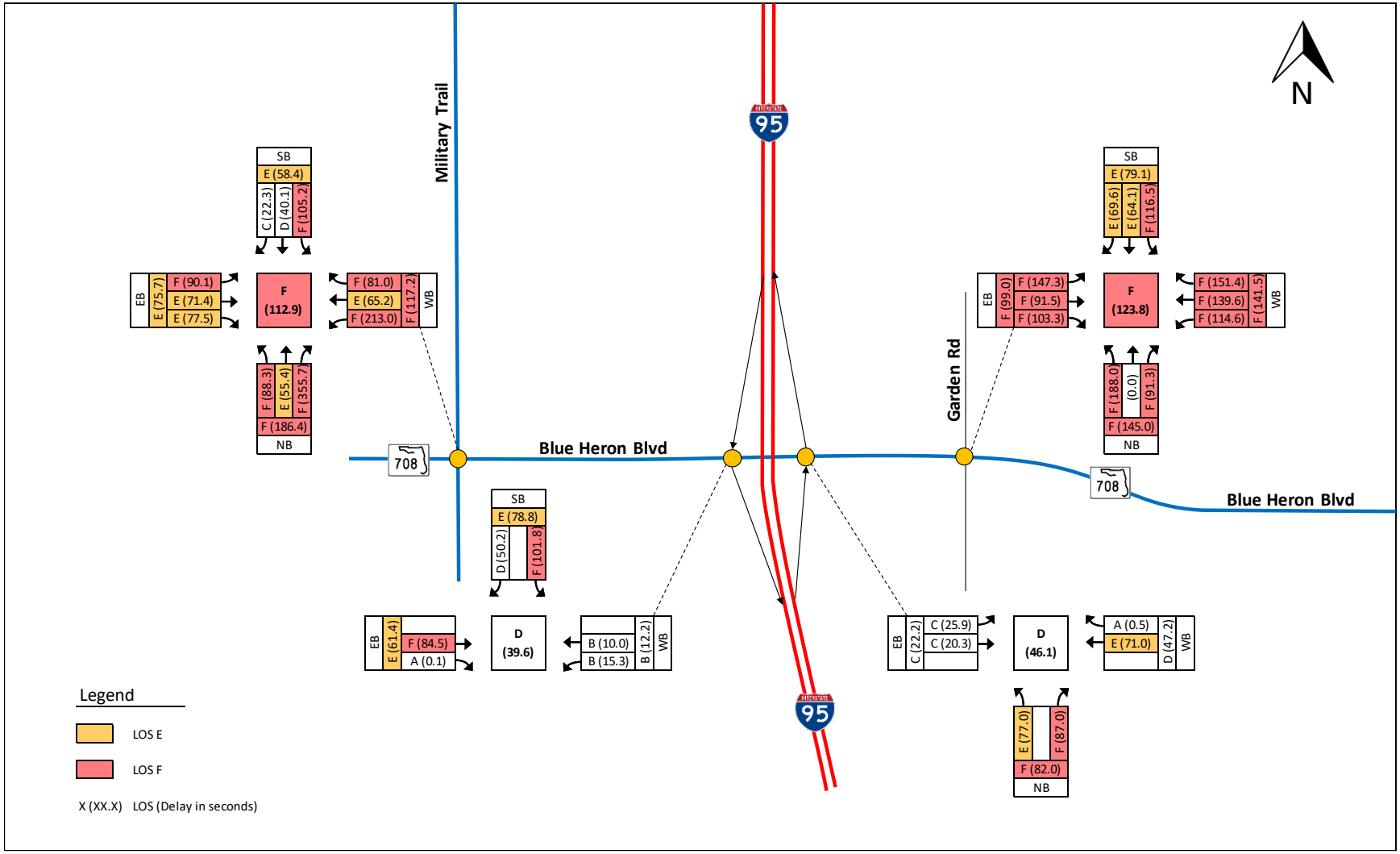


Figure 6-16 Blue Heron Boulevard - 2040 Future PM No Build Intersection LOS

6.1.2.3 2040 No Build Queue Length Analysis

A queuing analysis for 2040 No-Build future condition was performed as part of the study to determine the adequacy of the existing left-turn storage lengths for the intersections along the corridor using SIMTRAFFIC microsimulation. Based on the existing conditions analysis, the results from the SIMTRAFFIC were found to be more representative of the field observation and hence were used for the identification of storage deficiencies under the No-Build Conditions.

The same data set and signal timings from the SYNCHRO No-Build models were used for the SIMTRAFFIC microsimulation model. In addition, the calibration adjustments from the existing conditions were applied to the 2040 No-Build models. Five simulation runs were made and the 95th percentile vehicular queue length in ft. for the left turn and right turn movements at each of the study intersections were obtained. These were compared against the existing storage lengths in order to identify storage deficiencies where the estimated queue exceeds the storage capacity. The queue analysis results for the 2040 No-Build conditions are shown in **Table 6-2**.

Based on the analysis, approximately 20 out of the 28 locations (71%) have deficient storage lengths. The queue analysis also indicated that both the northbound and southbound off-ramps will experience significant queues during the AM and PM peak periods with traffic spillback onto the I-95 mainline. It is anticipated that the northbound off-ramp will exceed the existing ramp storage by 11% while the southbound off-ramp will exceed the existing storage by 66%. The detailed queue analysis results are provided in **Appendix P**.

Table 6-2
2040 No Build Queue Length Analysis

Intersection		Approach		AM Peak Period	PM Peak Period	Max. Queue Length	Existing Storage (ft.)	Storage Deficiency	% Over Existing Storage
1	Northlake Boulevard and Military Trail	EB	L	582	661	661	300	Yes	120%
			R	534	537	537	270	Yes	99%
		WB	L	290	232	290	450	OK	-
			R	137	75	137	-	-	-
		NB	L	352	400	400	190	Yes	111%
			R	405	391	405	180	Yes	125%
		SB	L	434	408	434	290	Yes	50%
			R	337	360	360	175	Yes	106%
2	Northlake Boulevard and Keating Drive	EB	L	190	215	215	165	Yes	30%
			R	356	452	452	200	Yes	126%
		WB	L	337	573	573	490	Yes	17%
			R	229	330	330	365	OK	-
		NB	L	59	229	229	145	Yes	58%
			R	285	319	319	115	Yes	177%
		SB	L	396	416	416	150	Yes	177%
			R	196	286	286	150	Yes	91%
3	Northlake Boulevard and I-95 SB Ramp Terminal	EB	L	-	-	-	-	-	-
			R	-	-	-	-	-	-
		WB	L	551	328	551	920	OK	-
			R	-	-	-	-	-	-
		SB	L	1746	1565	1746	1050	Yes	66%
			R	780	653	780			
4	Northlake Boulevard and I-95 NB Ramp Terminal	EB	L	512	540	540	650	OK	-
			R	-	-	-	-	-	-
		WB	L	-	-	-	-	-	-
			R	472	417	472	300	Yes	57%
		NB	L	1250	1188	1250	1125	Yes	11%
			R	803	970	970			
5	Northlake Boulevard and Roan Lane	EB	L	113	196	196	270	OK	-
			R	-	-	-	-	-	-
		WB	L	-	-	-	-	-	-
			R	152	531	531	270	Yes	97%
		SB	L	-	-	-	-	-	-
			R	0	175	175	-	-	-
6	Northlake Boulevard and Sunrise Drive	EB	L	248	101	248	370	OK	-
			R	73	53	73	390	OK	-
		WB	L	595	444	595	180	Yes	231%
			R	1192	1094	1192	-	-	-
		NB	L	366	354	366	325	Yes	13%
			R	148	188	188	190	OK	-
		SB	L	488	335	488	150	Yes	225%
			R	360	306	360	-	-	-

6.1.3 Build Alternatives

6.1.3.1 Freeway and Ramps Merge/Diverge Analysis

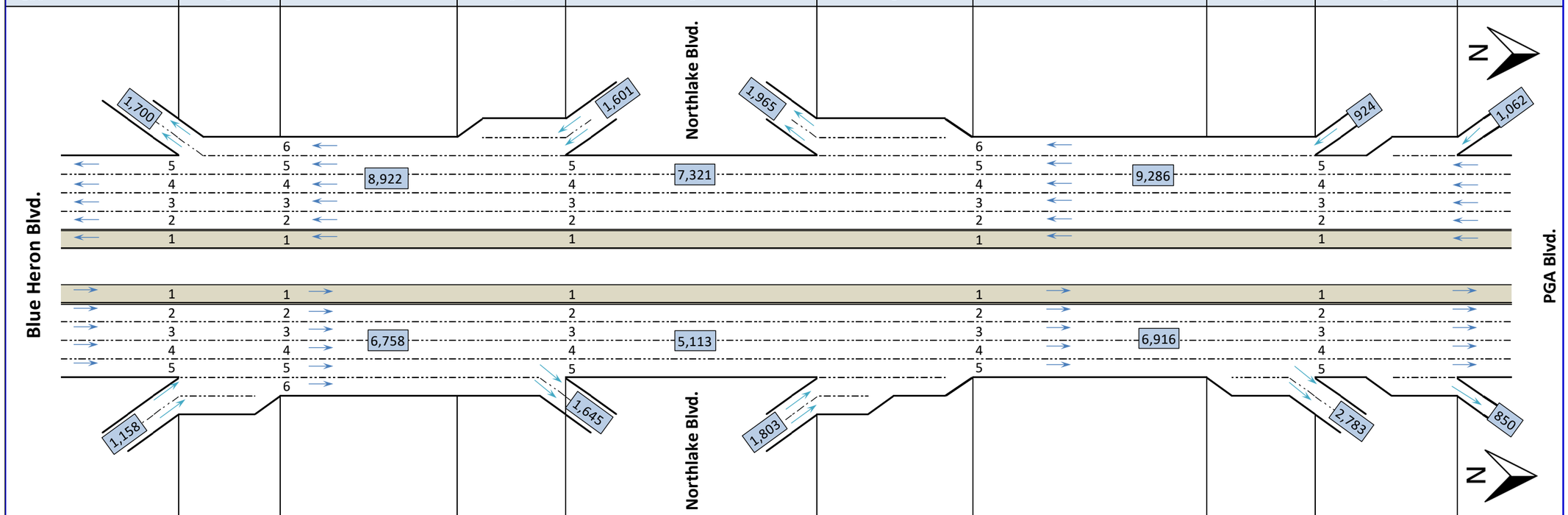
As part of the Build Alternatives analysis, the configuration of the Northlake Boulevard NB on-ramp was modified from one lane to two lanes to improve operations at this location. An evaluation of the proposed configuration was performed using Highway Capacity Software (HCS 2010), based on Highway Capacity Manual 2010 methodology for the 2040 design year AM and PM peak periods. **Figure 6-17** through **Figure 6-18** show the density, speed, and level of service for the freeway segments as well as the merge and diverge locations for the AM and PM peak periods respectively.

Based on the analysis, the two-lane ramp improves the operation of the Northlake Boulevard NB on-ramp merge area from LOS D to LOS C during the AM peak period and from LOS E to LOS D during the PM peak period. However, the northbound basic freeway segment between the Northlake Boulevard northbound on-ramp and the PGA Boulevard off-ramp still operates at LOS E during the PM peak hour since no capacity improvements are being proposed along I-95.

The details of the freeway and ramps merge/diverge analysis results for the build conditions are included in **Appendix Q.**

I-95 Southbound

Length	1,500-ft	3,943-ft	1,500-ft	2,070-ft	1,500-ft	6,335-ft	1,500-ft	450-ft	
Analysis Type	Diverge	Basic Freeway	Merge	Basic Freeway	Diverge	Basic Freeway	Merge	Merge	
Density	16.4 pc/mi/ln	24.3 pc/mi/ln	23.2 pc/mi/ln	23.7 pc/mi/ln	18.9 pc/mi/ln	25.7 pc/mi/ln	26.1 pc/mi/ln	30.1 pc/mi/ln	
Speed	52.9 mph	64.6 mph	57.2 mph	64.7 mph	52.3 mph	64.1 mph	56.5 mph	55.2 mph	
LOS	B	C	C	C	B	C	C	D	



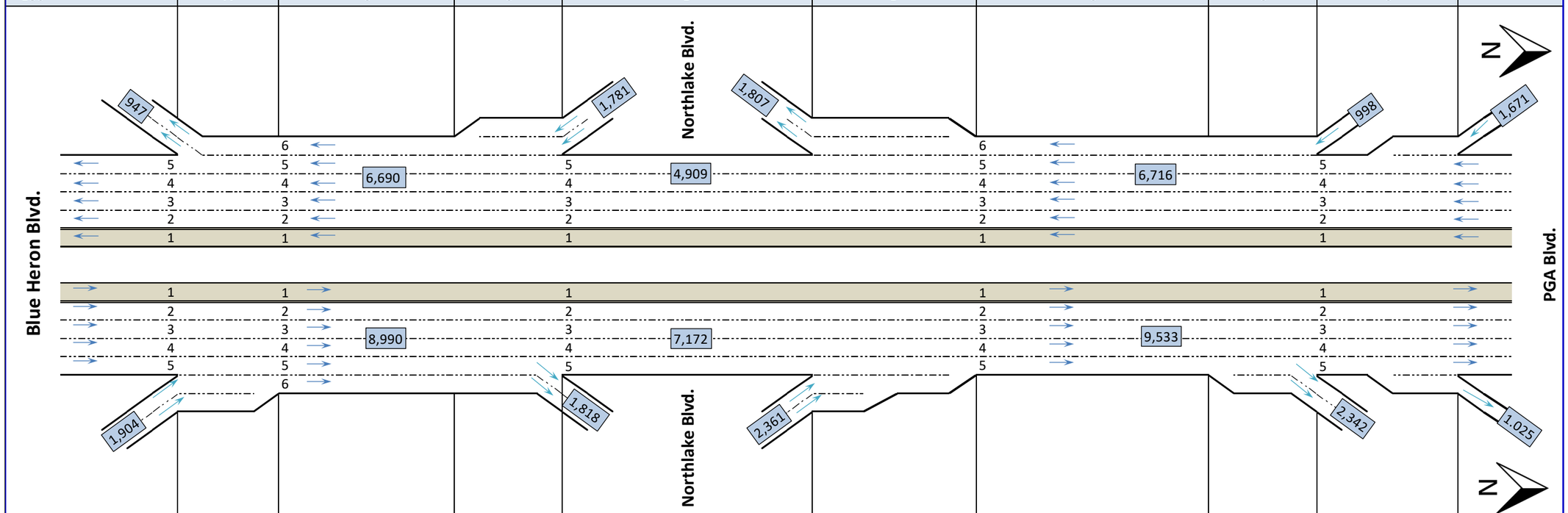
Length	950-ft	4,498-ft	1,500-ft	2,239-ft	1,260-ft	6,480-ft	1,500-ft	850-ft	
Analysis Type	Merge	Basic Freeway	Diverge	Basic Freeway	Merge	Basic Freeway	Diverge	Diverge	
Density	18.6 pc/mi/ln	17.0 pc/mi/ln	12.5 pc/mi/ln	14.5 pc/mi/ln	22.0 pc/mi/ln	22.0 pc/mi/ln	22.5 pc/mi/ln	14.4 pc/mi/ln	
Speed	58.6 mph	65.0 mph	53.0 mph	65.0 mph	57.6 mph	65.0 mph	50.5 mph	51.8 mph	
LOS	B	B	B	B	C	C	C	B	

I-95 Northbound

Figure 6-17 2040 AM Freeways and Ramp Merge/Diverge Analysis – Build Condition

I-95 Southbound

Length	1,500-ft	3,943-ft	1,500-ft	2,070-ft	1,500-ft	6,335-ft	1,500-ft	450-ft	
Analysis Type	Diverge	Basic Freeway	Merge	Basic Freeway	Diverge	Basic Freeway	Merge	Merge	
Density	8.2 pc/mi/ln	16.8 pc/mi/ln	21.1 pc/mi/ln	13.7 pc/mi/ln	14.1 pc/mi/ln	16.9 pc/mi/ln	24.0 pc/mi/ln	23.9 pc/mi/ln	
Speed	54.6 mph	65.0 mph	57.9 mph	65.0 mph	52.7 mph	65.0 mph	57.0 mph	56.9 mph	
LOS	A	C	C	B	B	C	C	C	



Length	950-ft	4,498-ft	1,500-ft	2,239-ft	1,260-ft	6,480-ft	1,500-ft	850-ft	
Analysis Type	Merge	Basic Freeway	Diverge	Basic Freeway	Merge	Basic Freeway	Diverge	Diverge	
Density	29.4 pc/mi/ln	24.6 pc/mi/ln	17.4 pc/mi/ln	23.1 pc/mi/ln	33.3 pc/mi/ln	38.4 pc/mi/ln	26.3 pc/mi/ln	28.2 pc/mi/ln	
Speed	53.1 mph	64.5 mph	52.6 mph	64.9 mph	48.0 mph	56.6 mph	51.4 mph	51.4 mph	
LOS	D	C	B	C	D	E	C	D	

I-95 Northbound

Figure 6-18 2040 PM Freeways and Ramp Merge/Diverge Analysis – Build Condition

6.1.3.2 Signalized Intersections – Build Alternative 1

Figure 6-19 through **Figure 6-23** show the future LOS analysis results for the signalized intersections under Build Alternative 1.

The analysis results show that most of the intersections will operate at LOS D or better for the 2020 opening year. However, for the 2040 design year, two of the six signalized intersections will operate at LOS E or worse with the intersections at Military Trail and Sunrise/Sandtree Drive operating at LOS F during the PM peak period. Although these two intersections operate at LOS F, the maximum queues obtained from the SIMTRAFFIC simulation do not extend to the adjacent intersections and do not impact the operations of the I-95 ramp terminals. The eastbound left turn at the Roan Lane intersection, just east of the I-95 NB ramp terminal will be eliminated due to the proximity to the NB ramp terminal. Access to Roan Lane can be accomplished via U-Turn at Sunrise/Sandtree Drive or via the existing local access road located behind the first row of commercial properties between Roan Lane and Sunrise/Sandtree Drive.

For the Northlake Boulevard ramp terminals, the southbound approach at SB off-ramp will operate at LOS D or better during both the AM and PM peak periods for the 2020 opening and 2040 design years. The northbound approach at the NB off-ramp terminal will operate at LOS D or better during both the AM and PM peak periods for the 2020 opening and 2040 design year. However, the northbound left turn movement at the NB ramp terminal operates at LOS E for the 2040 design year.

Compared to the No-Build Alternative, Build Alternative 1 will result in 65% and 72% reduction in overall intersection delays at the I-95 SB and NB ramp terminal intersections respectively for the AM peak period. For the PM peak period, an overall intersection delay reduction of 75% and 69% is anticipated at the I-95 SB and NB ramp terminal intersections respectively.

For the Northlake Boulevard ramp terminal approaches, the southbound off-ramp approach will experience 67% and 73% reduction in delay whereas the northbound off-ramp approach will experience 80% and 72% reduction in delay compared to the No-Build Alternative for the AM and PM peak periods respectively.

The detailed results of the future conditions analysis for the signalized intersections along Northlake Boulevard under Build Alternative 1 are provided in **Appendix R**.

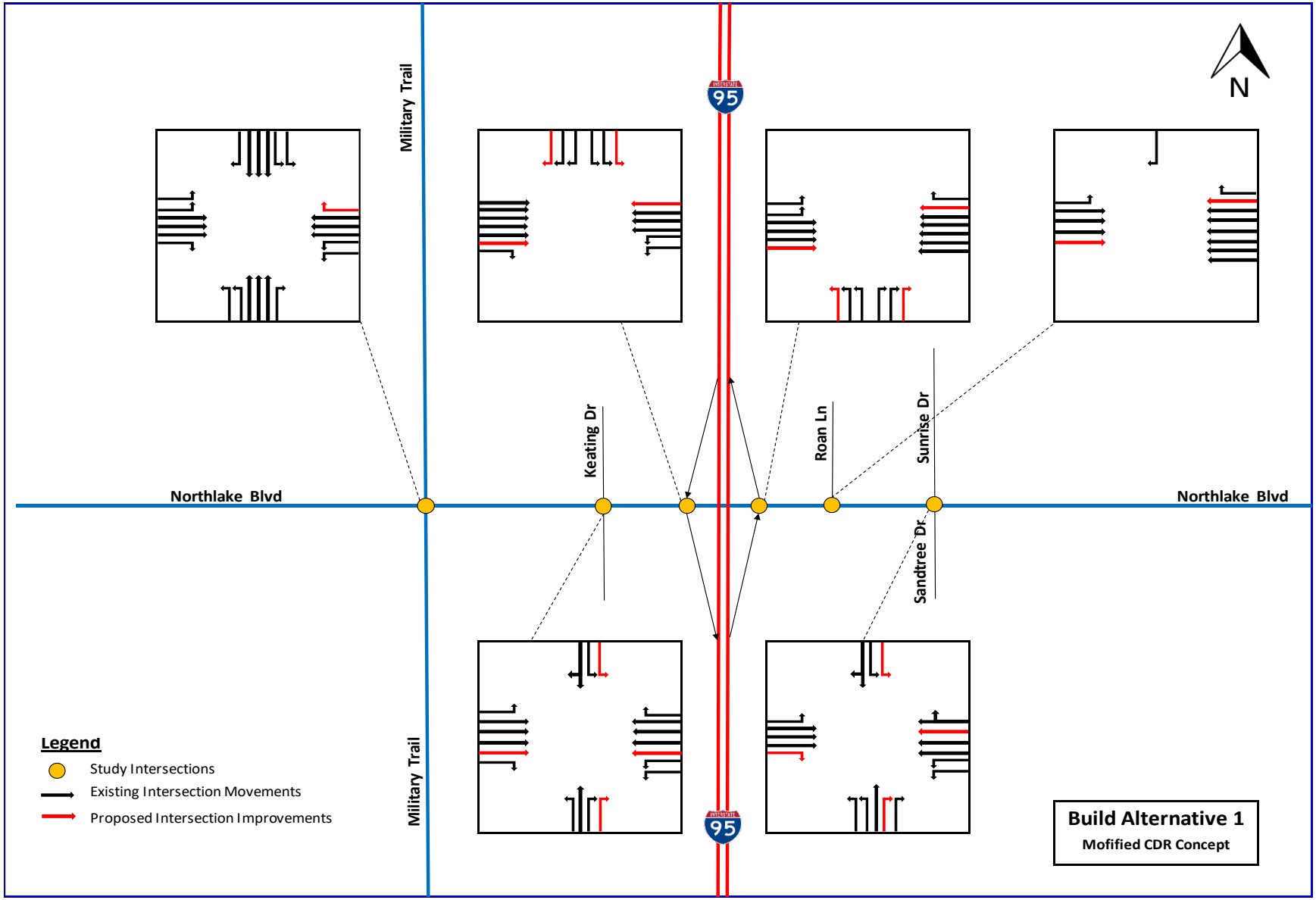


Figure 6-19 Northlake Boulevard – Proposed Improvements – Build Alternative 1

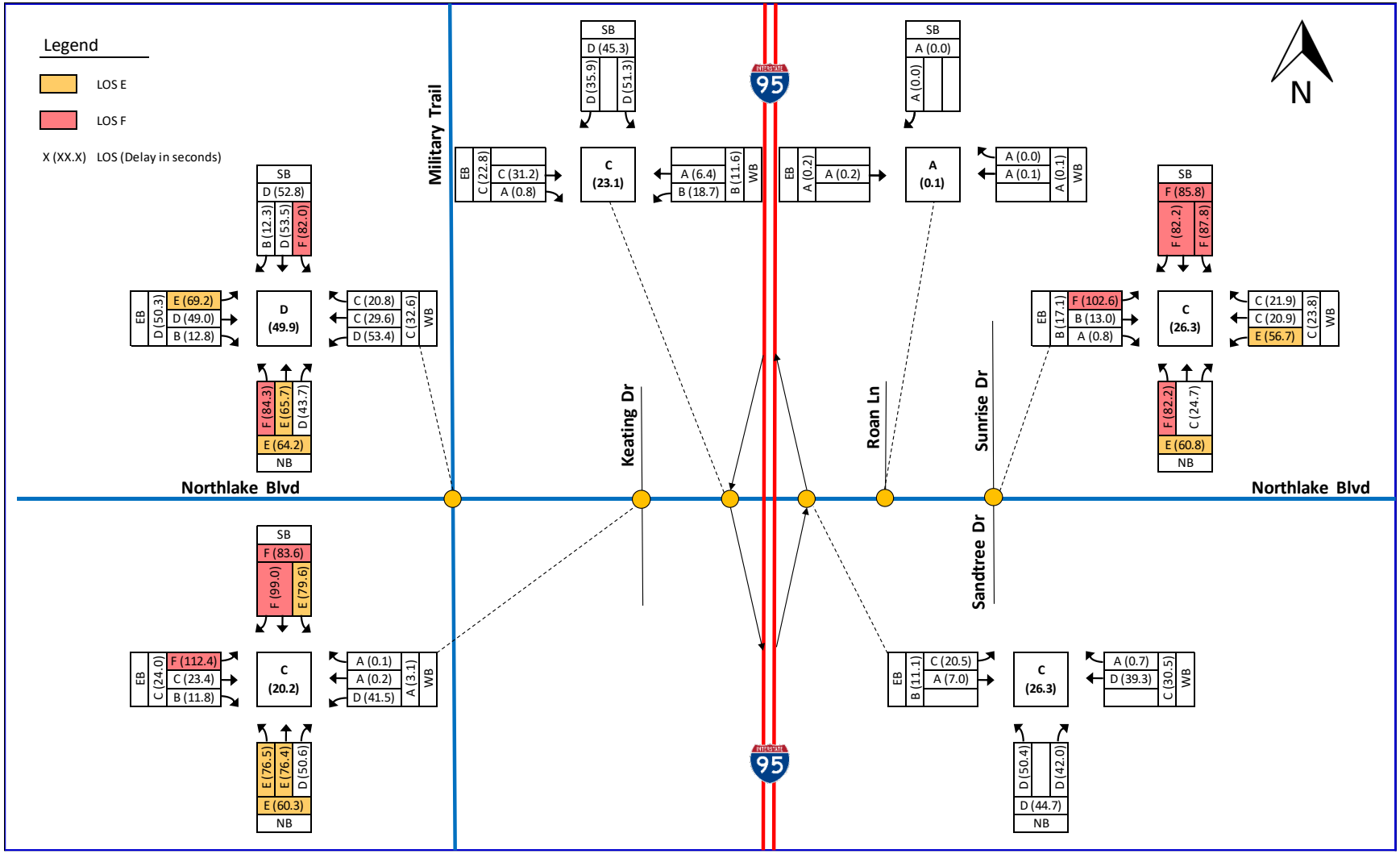


Figure 6-20 Northlake Boulevard - 2020 AM Intersection LOS – Build Alternative 1

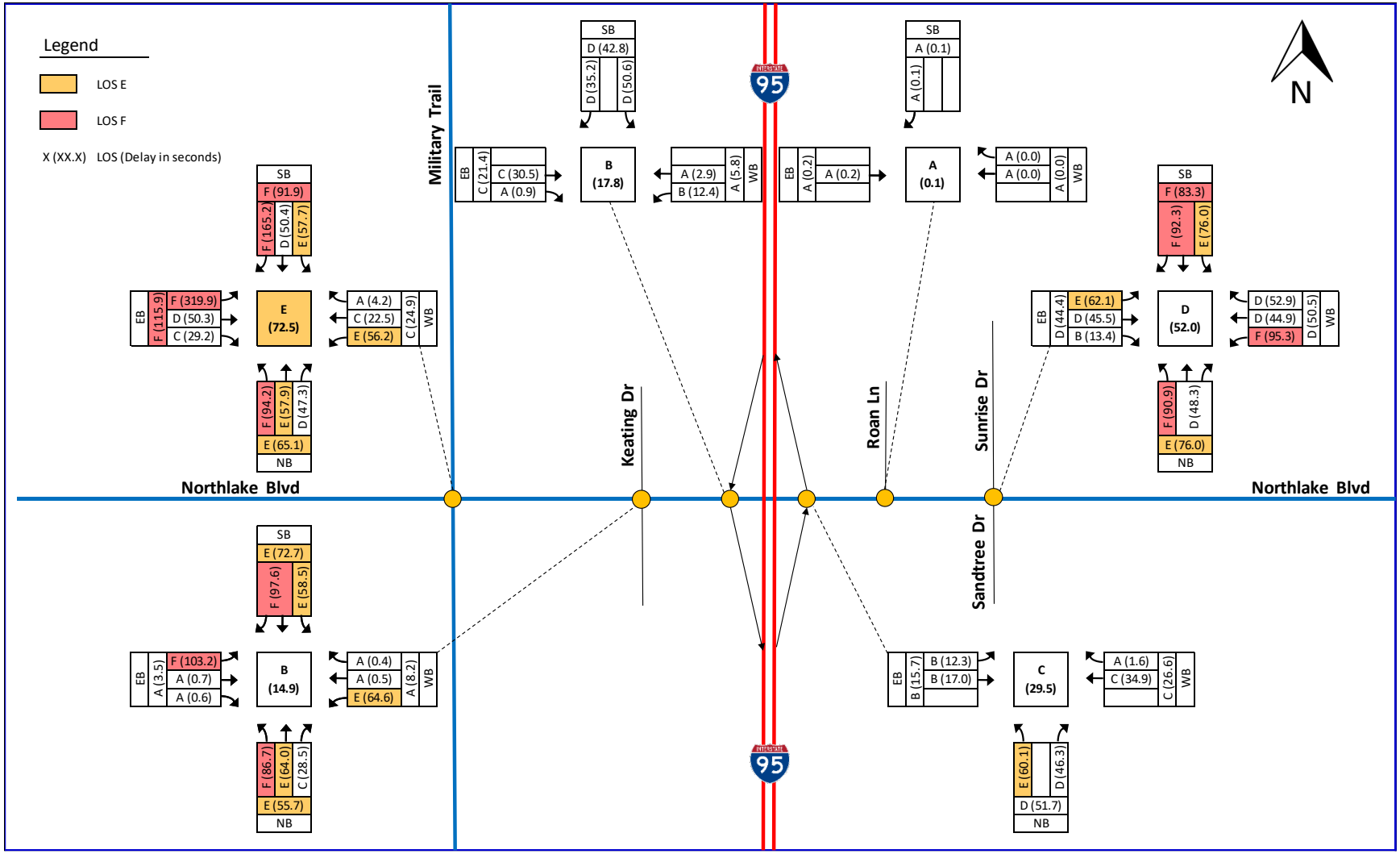


Figure 6-21 Northlake Boulevard - 2020 PM Intersection LOS – Build Alternative 1

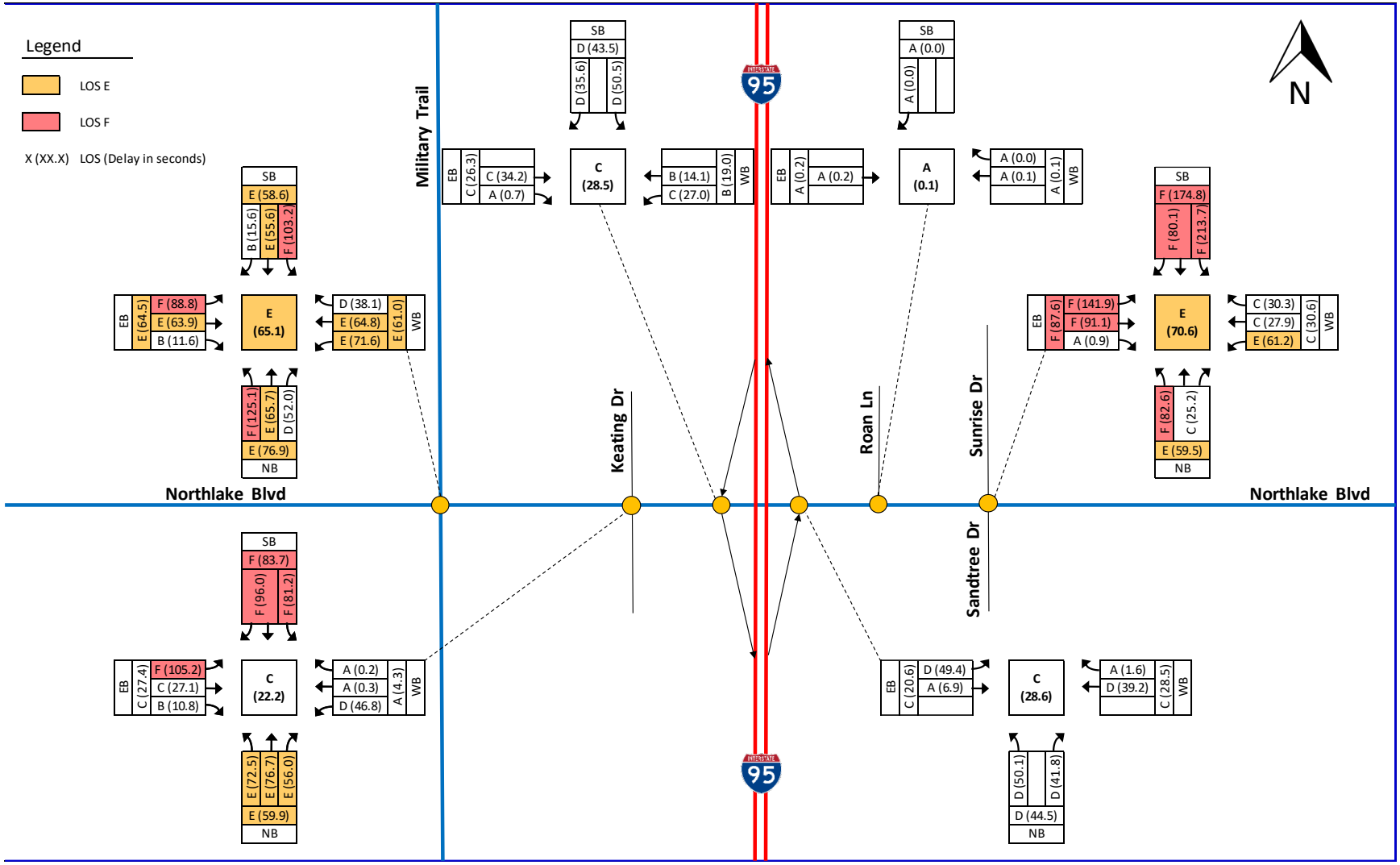


Figure 6-22 Northlake Boulevard - 2040 AM Intersection LOS – Build Alternative 1

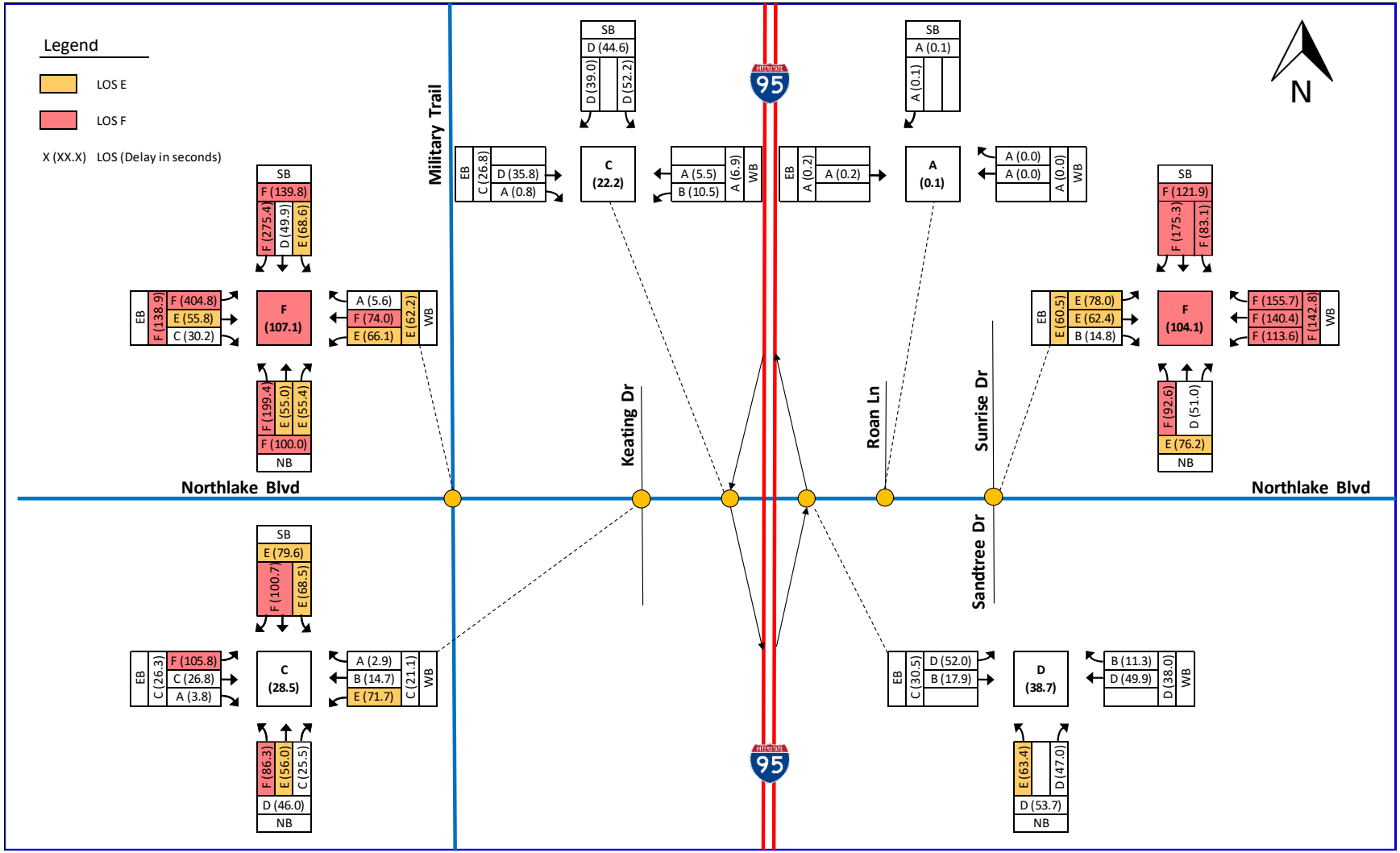


Figure 6-23 Northlake Boulevard - 2040 PM Intersection LOS – Build Alternative 1

6.1.3.3 Signalized Intersections – Build Alternative 2

Figure 6-24 through **Figure 6-28** show the future LOS analysis results for the signalized intersections under Build Alternative 2.

The analysis results show most of the intersections will operate at LOS D or better for the 2020 opening year. However, for the 2040 design year, two of the six signalized intersections will operate at LOS E or worse with the intersection at Military Trail operating at LOS F during the PM peak period. Although this intersection operates at LOS F, the maximum queues obtained from the SIMTRAFFIC simulation do not extend to the adjacent intersections and do not impact the operations of the I-95 ramp terminals.

For the Northlake Boulevard ramp terminals, all the approaches, as well as the turning movements, will operate at LOS C or better during both the AM and PM peak periods for both the 2020 opening and 2040 design years.

It should be noted that for this diverging diamond interchange configuration, the intersection at Roan Lane, just east of the I-95 NB ramp terminal will be eliminated due to the crossover configuration. Access to Roan Lane can be accomplished via U-Turn at Sunrise/Sandtree Drive or via the existing local access road located behind the first row of commercial properties between Roan Lane and Sunrise/Sandtree Drive.

Compared to the No-Build Alternative, Build Alternative 2 will also result in 69% and 76% reduction in overall intersection delays at the I-95 SB and NB ramp terminal intersections respectively for the AM peak period. For the PM peak period, an overall intersection delay reduction of 77% and 79% is anticipated at the I-95 SB and NB ramp terminal intersections respectively.

For the Northlake Boulevard ramp terminal approaches, the southbound off-ramp approach will experience 85% and 86% reduction in delay whereas the northbound off-ramp approach will experience 92% and 89% reduction in delay compared to the No-Build Alternative for the AM and PM peak periods respectively.

The detailed results of the future conditions analysis for the signalized intersections along Northlake Boulevard under Build Alternative 2 are provided in **Appendix S**.

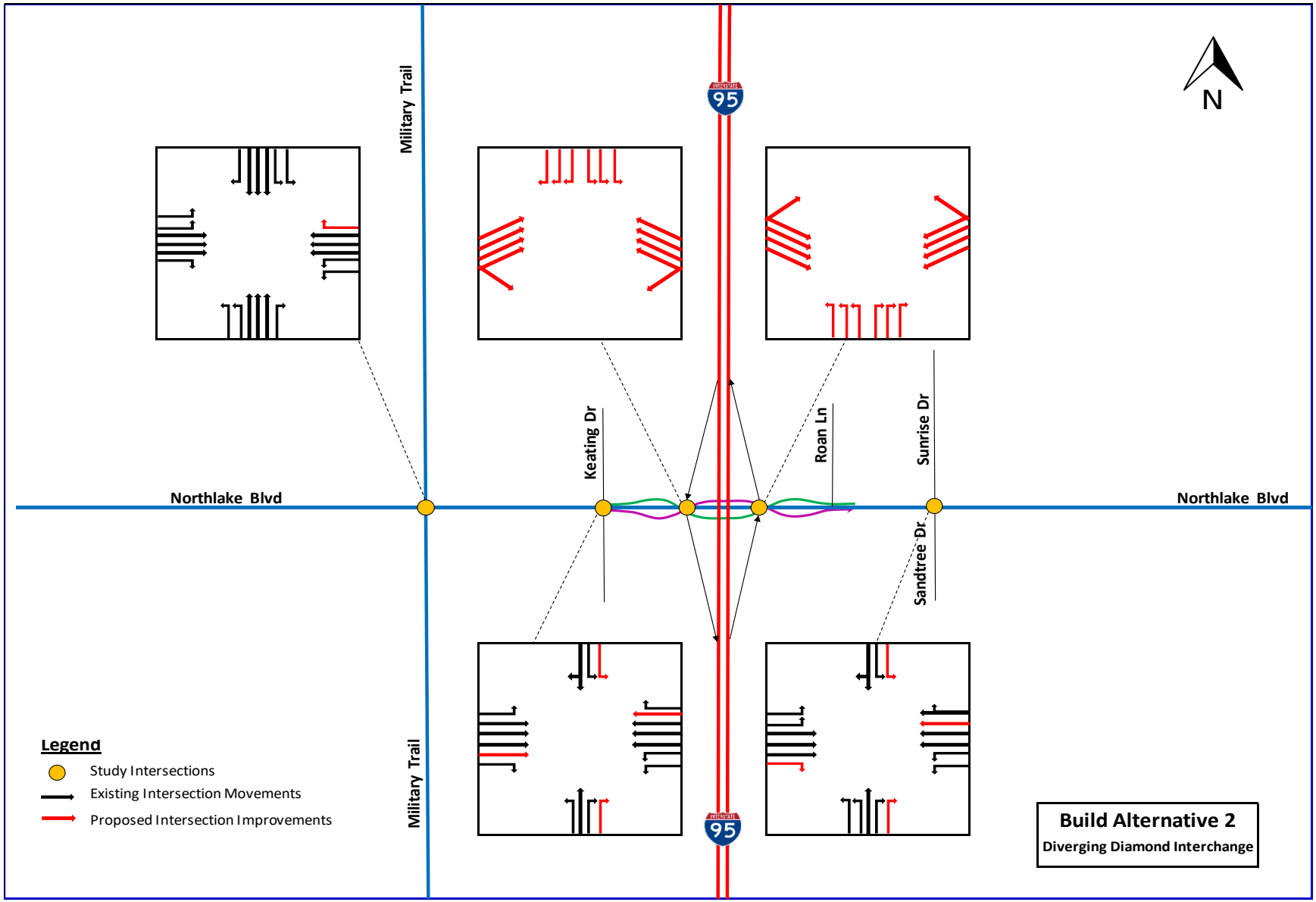


Figure 6-24 Northlake Boulevard – Proposed Improvements – Build Alternative 2

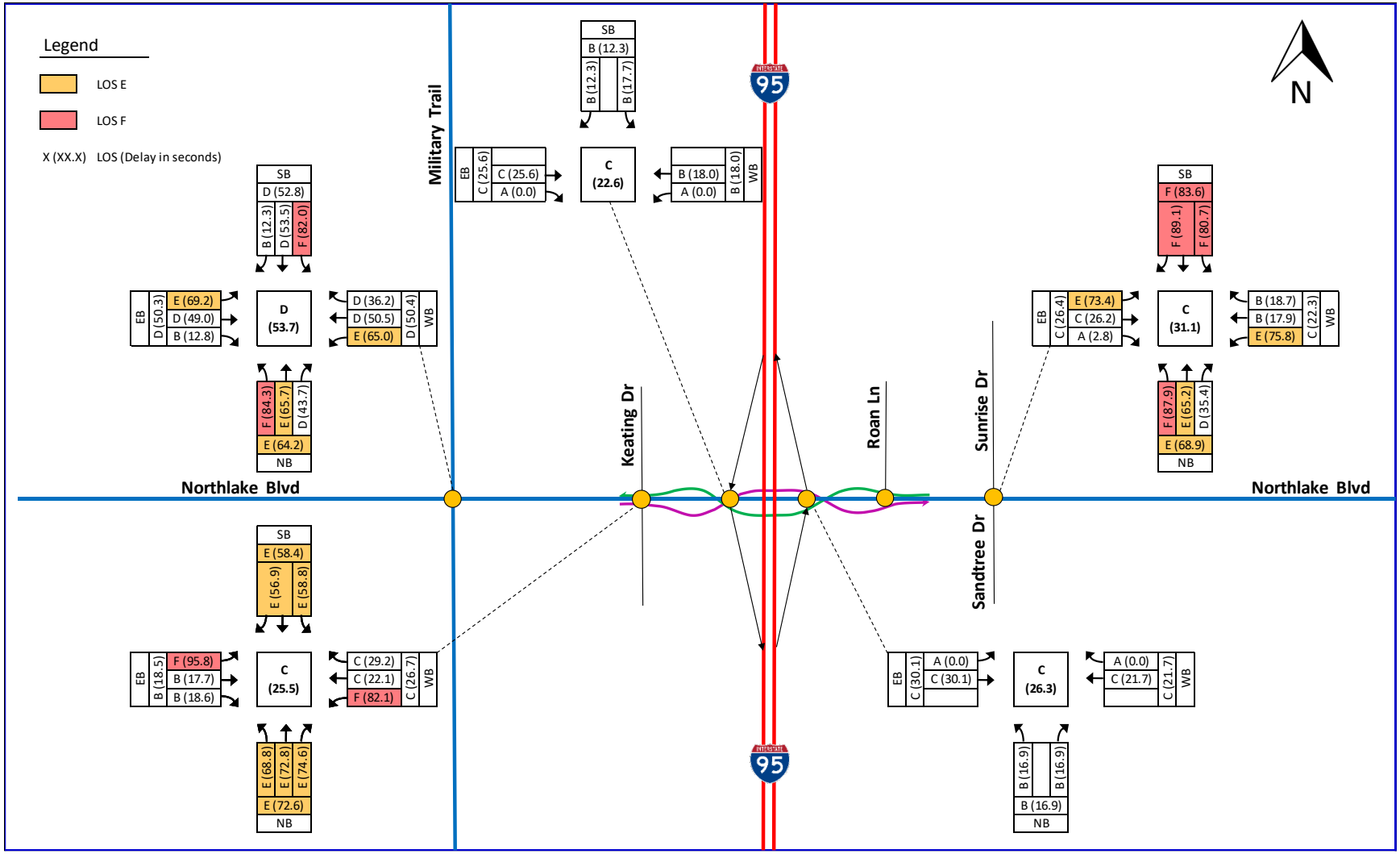


Figure 6-25 Northlake Boulevard - 2020 AM Intersection LOS – Build Alternative 2

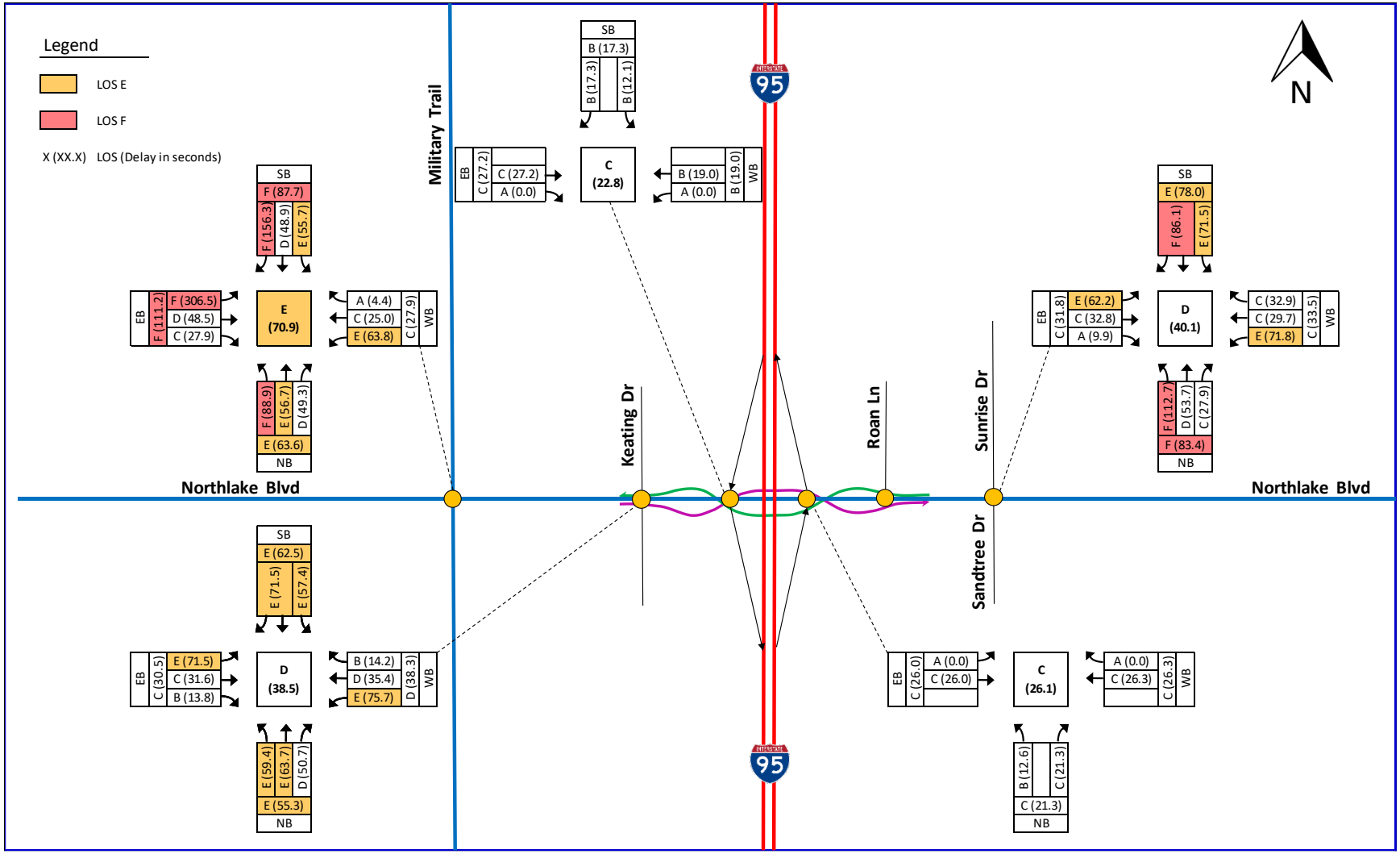


Figure 6-26 Northlake Boulevard - 2020 PM Intersection LOS – Build Alternative 2

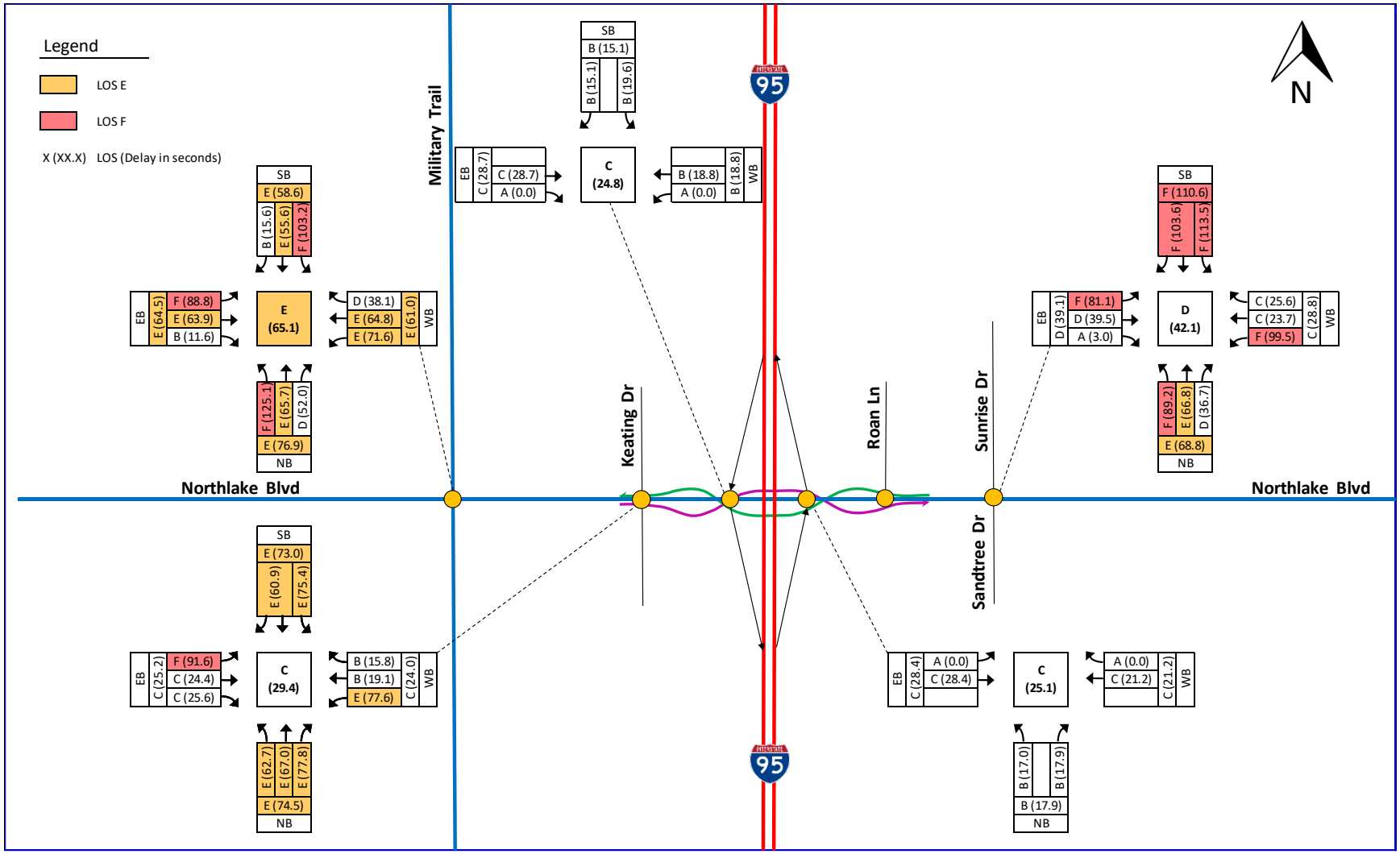


Figure 6-27 Northlake Boulevard - 2040 AM Intersection LOS – Build Alternative 2

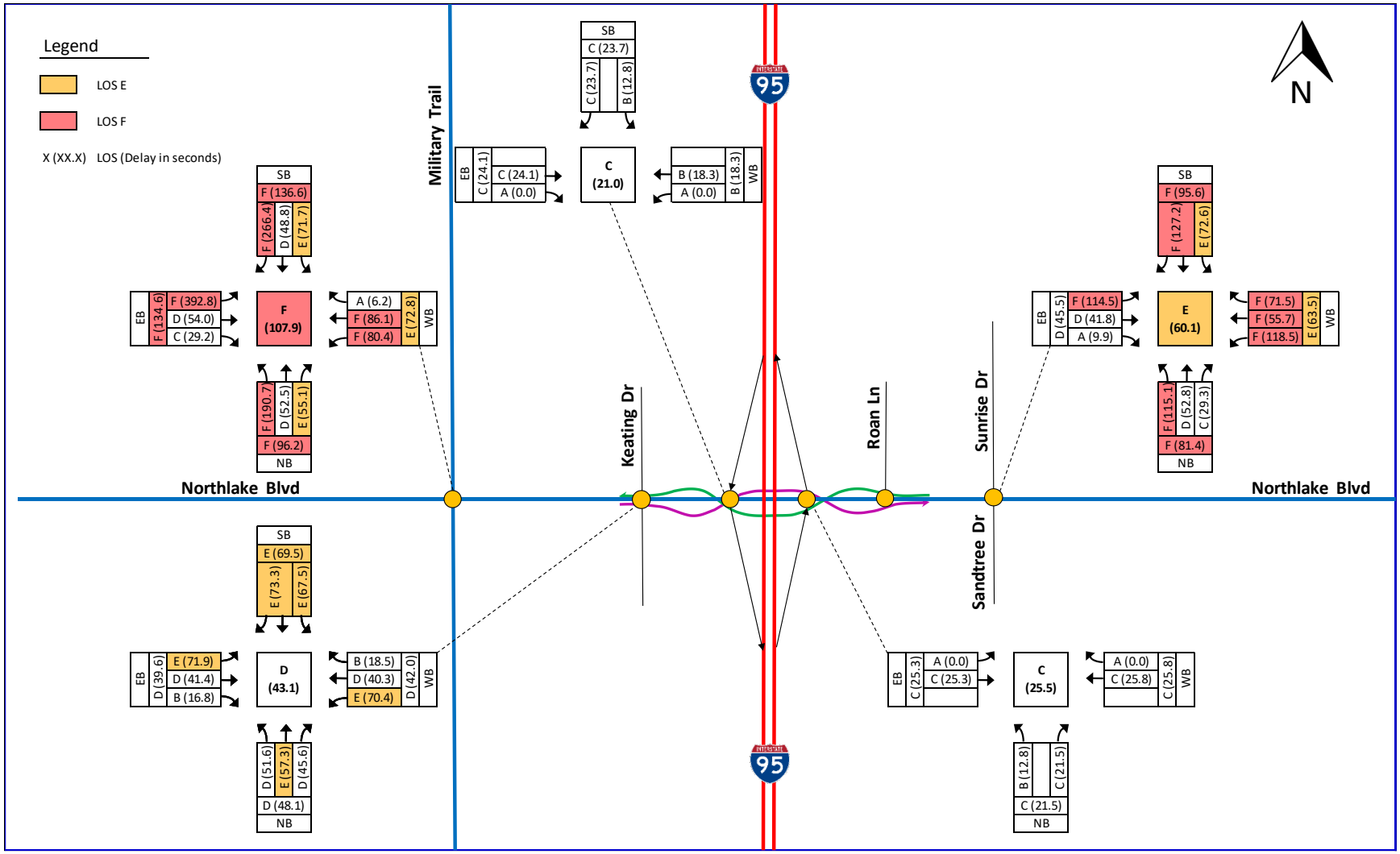


Figure 6-28 Northlake Boulevard - 2040 PM Intersection LOS – Build Alternative 2

6.1.3.4 Signalized Intersections – Build Alternative 3E

Figure 6-29 through **Figure 6-33** show the future LOS analysis results for the signalized intersections under Build Alternative 3E.

The analysis results show that most of the intersections will operate at LOS D or better for the 2020 opening year with only the Military Trail intersection operating at LOS E. For the 2040 design year, two of the six signalized intersections will operate at LOS E or worse with the intersections at Military Trail and Sunrise/Sandtree Drive operating at LOS F during the PM peak period. Although these two intersections operate at LOS F, the maximum queues obtained from the SIMTRAFFIC simulation do not extend to the adjacent intersections and do not impact the operations of the I-95 ramp terminals.

For the Northlake Boulevard ramp terminals, all the approaches, as well as the turning movements, will operate at LOS D or better during both the AM and PM peak periods for both the 2020 opening and 2040 design years. It should be noted that this alternative maintains the eastbound left turn movement at Roan Lane just east of the I-95 NB ramp terminal and maintains an at-grade left turn onto the on-ramps for local traffic.

Compared to the No-Build Alternative, Build Alternative 3E will also result in 69% and 73% reduction in overall intersection delays at the I-95 SB and NB ramp terminal intersections respectively for the AM peak period. For the PM peak period, an overall intersection delay reduction of 74% and 78% is anticipated at the I-95 SB and NB ramp terminal intersections respectively.

For the Northlake Boulevard ramp terminal approaches, the southbound off-ramp approach will experience 69% and 75% reduction in delay whereas the northbound off-ramp approach will experience 81% and 75% reduction in delay compared to the No-Build Alternative for the AM and PM peak periods respectively.

The detailed results of the future conditions analysis for the signalized intersections along Northlake Boulevard under Build Alternative 3E are provided in **Appendix T**.

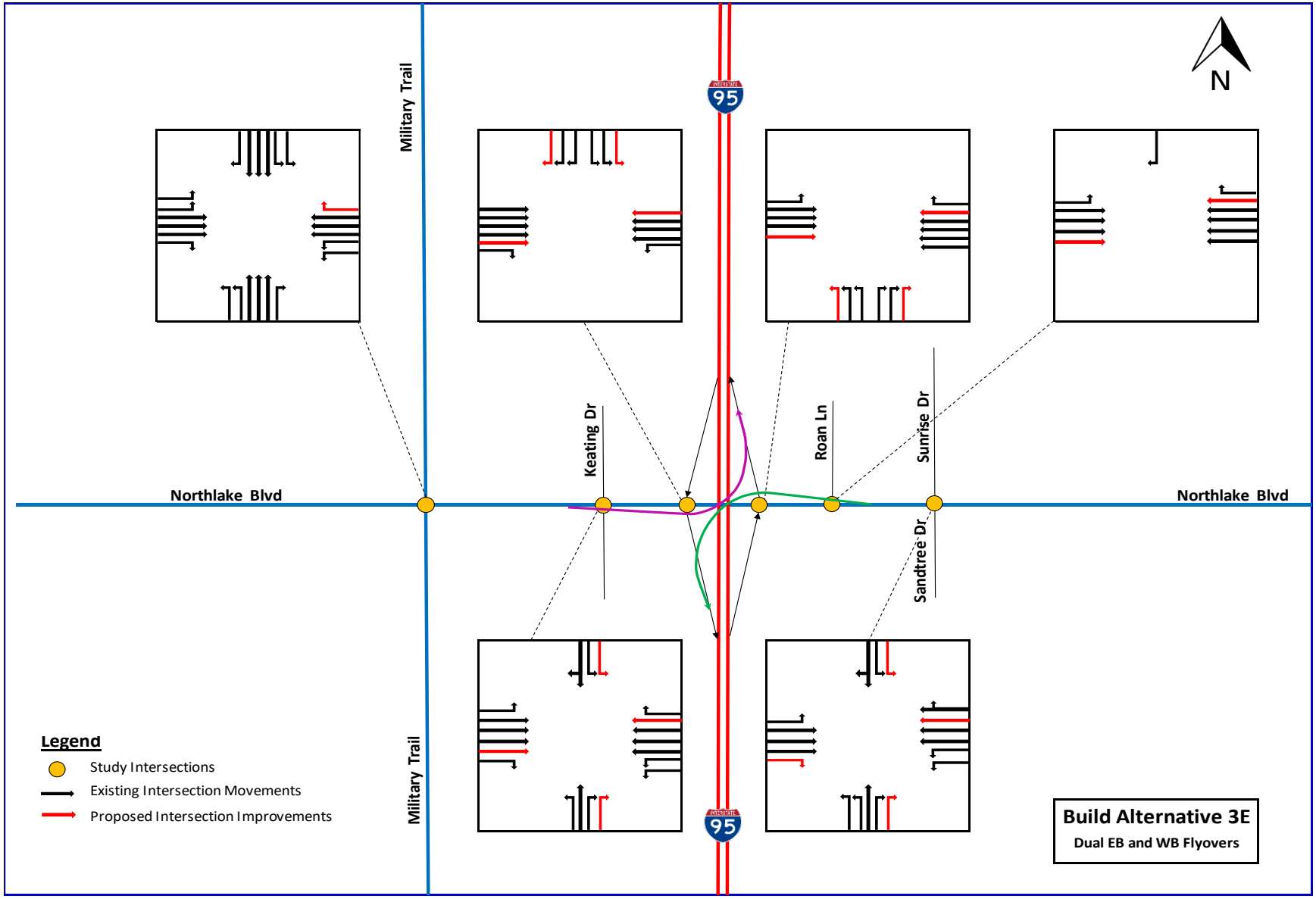


Figure 6-29 Northlake Boulevard – Proposed Improvements – Build Alternative 3E

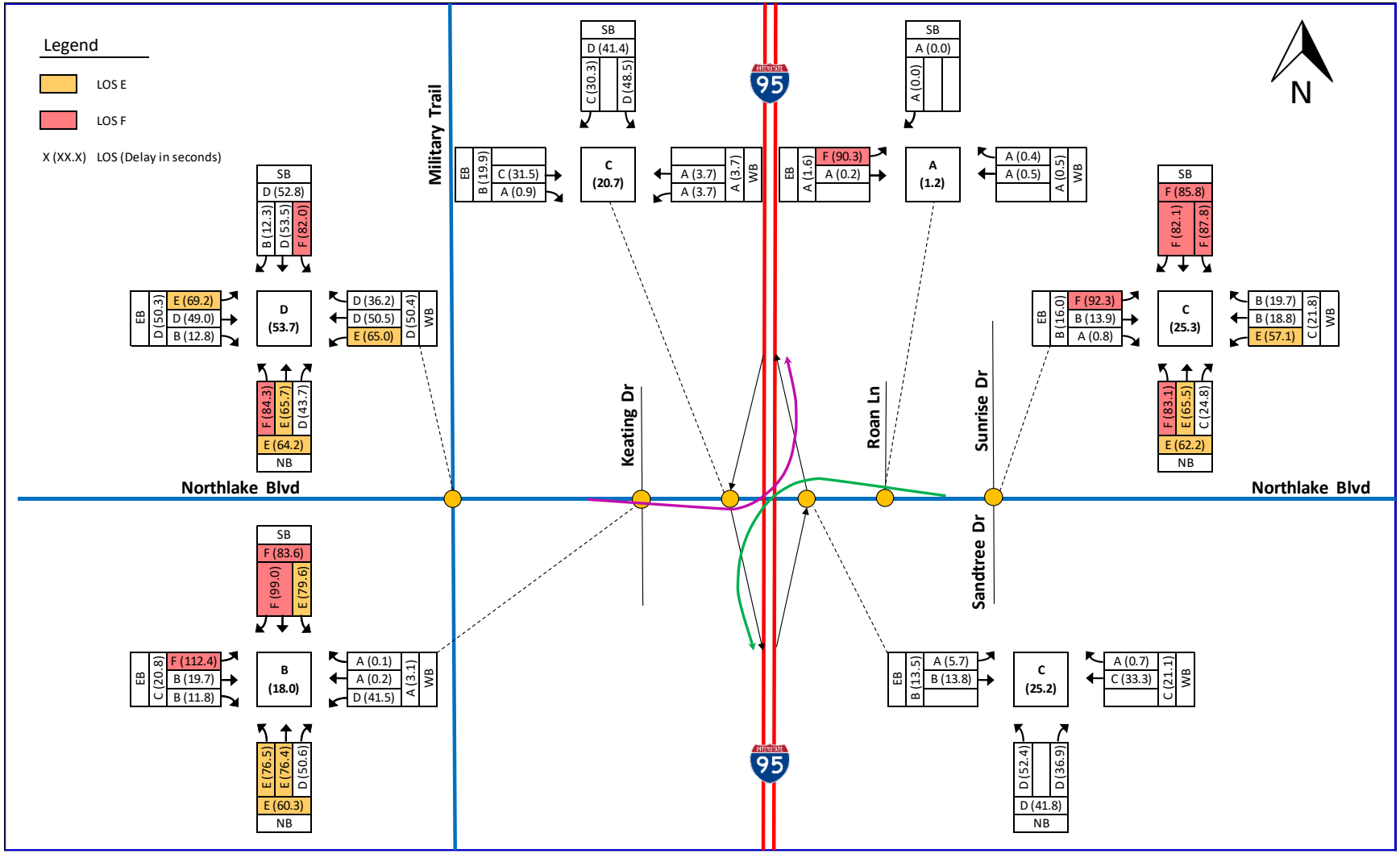


Figure 6-30 Northlake Boulevard - 2020 AM Intersection LOS – Build Alternative 3E

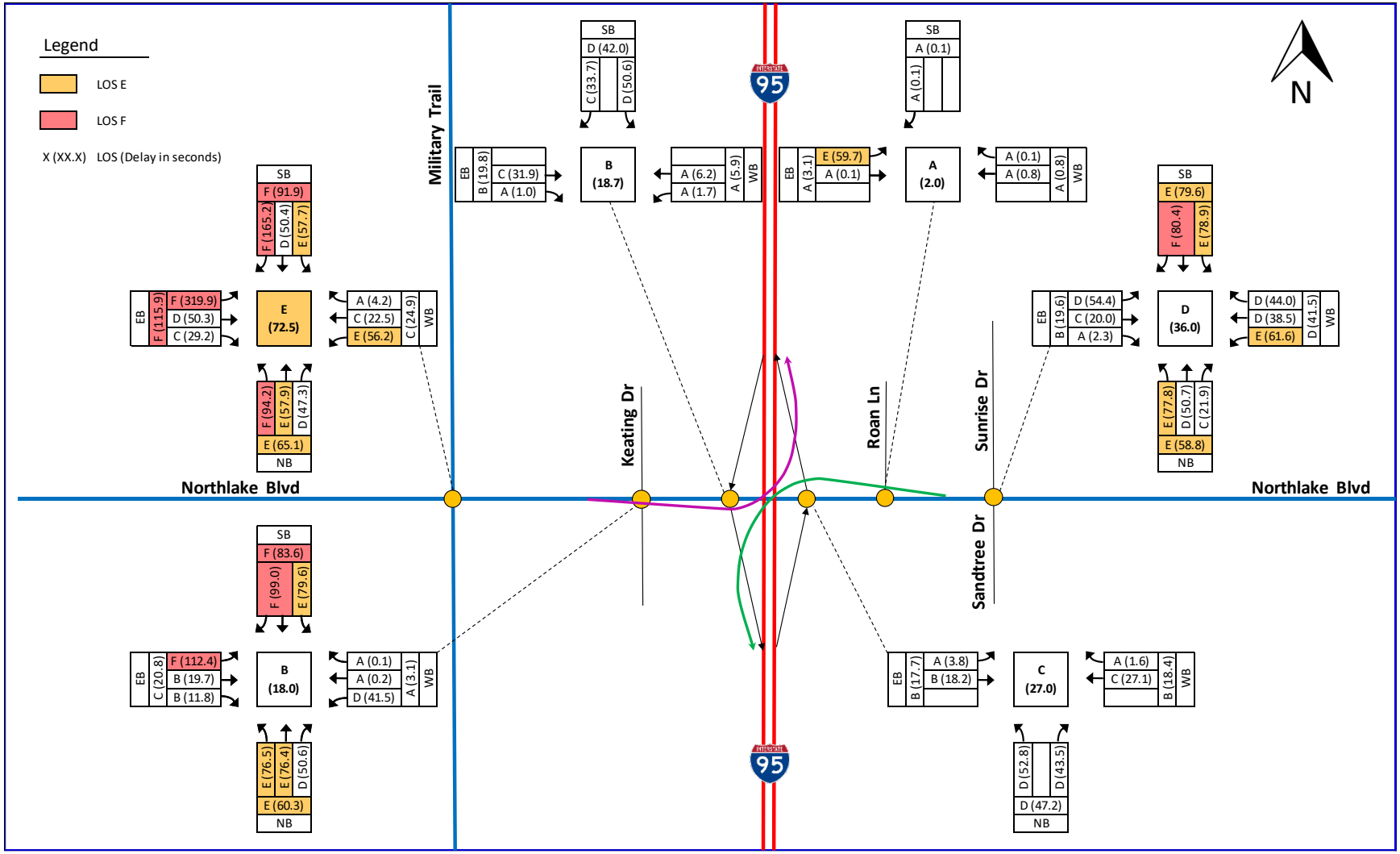


Figure 6-31 Northlake Boulevard - 2020 PM Intersection LOS – Build Alternative 3E

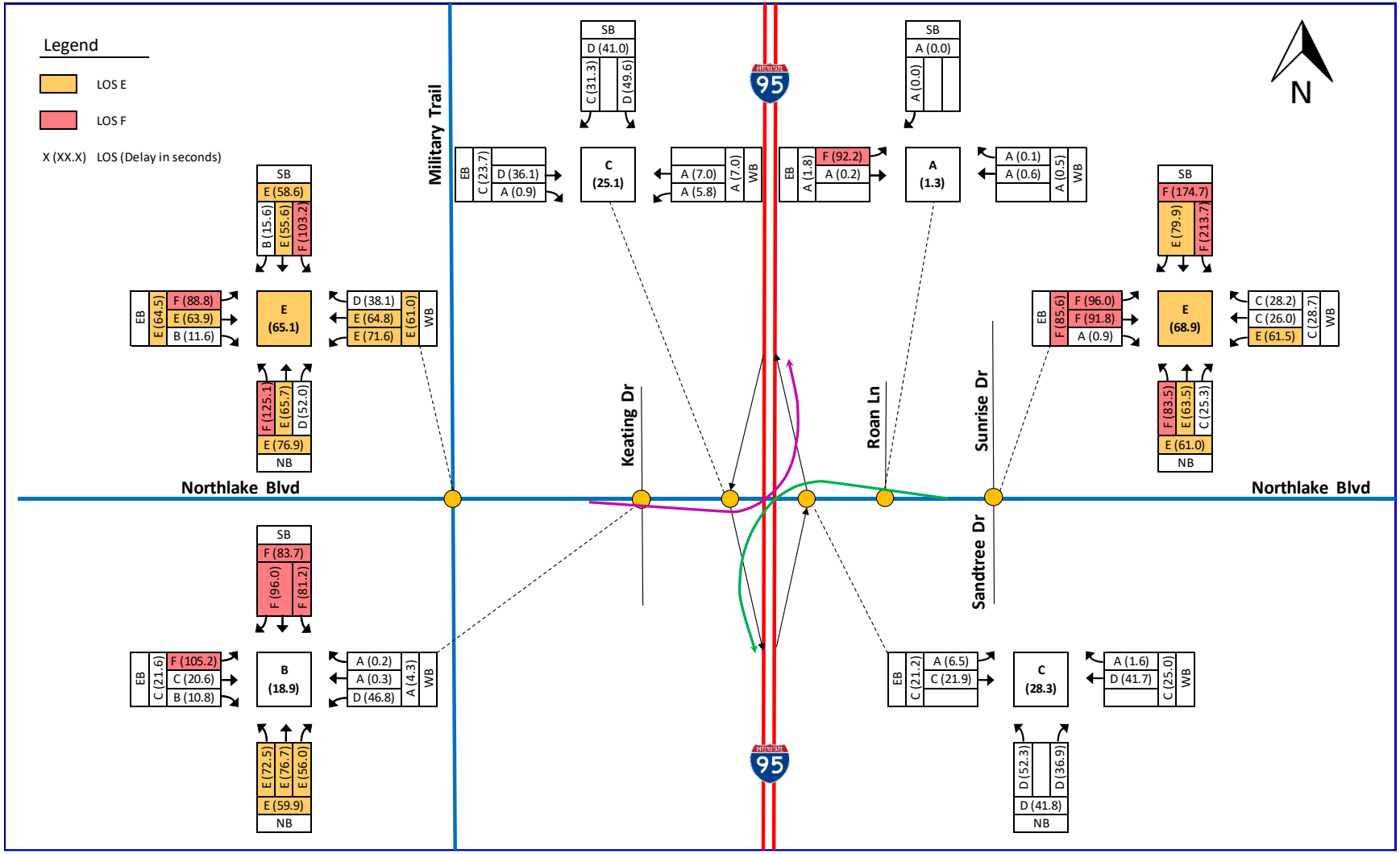


Figure 6-32 Northlake Boulevard - 2040 AM Intersection LOS – Build Alternative 3E

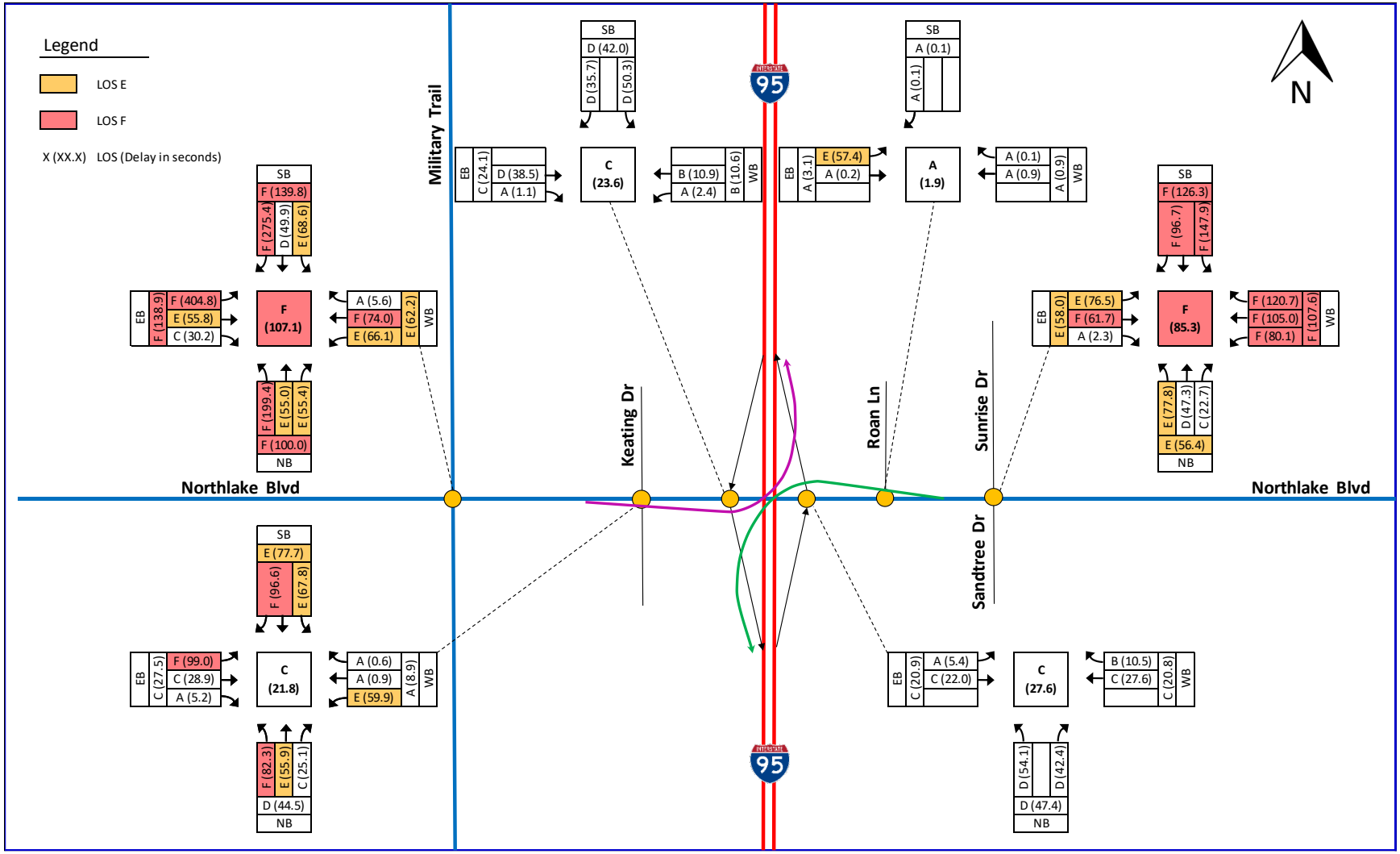


Figure 6-33 Northlake Boulevard - 2040 PM Intersection LOS – Build Alternative 3E

6.1.3.5 2040 Build Queue Length Analysis

A queuing analysis for Build Alternatives 1, 2 and 3E was performed for the 2040 design year for comparison among the build alternatives using SIMTRAFFIC. Based on the existing conditions analysis, the results from the SIMTRAFFIC were found to be more representative of the field observation and hence were used for the identification of storage deficiencies under the various Build Alternatives.

The same data set and signal timings from the SYNCHRO Build models were used for the SIMTRAFFIC simulation. In addition, the calibration adjustments from the existing conditions were applied to the 2040 Build models. Five simulation runs were made and the 95th percentile vehicular queue length in ft. for the left turn and right turn movements at each of the study, intersections were obtained. These were compared against the existing storage lengths in order to identify storage deficiencies where the estimated queue exceeds the existing storage capacity and identifies storage requirements for the build alternatives. The queue analysis results for the 2040 Build Alternatives are shown in **Table 6-3** through **Table 6-5**.

For Build Alternative 1, approximately 19 out of the 27 locations (70%) have deficient storage lengths. For the I-95 NB and SB off-ramp terminals, realignment and extension of the existing off-ramps will be required to accommodate the 2040 design year queues without any spillback onto the I-95 mainline. Build Alternative 1 also results in 67% and 40% reduction in queue length at the I-95 SB and NB ramp terminals respectively compared to the No-Build Alternative.

For Build Alternative 2, approximately 17 out of the 25 locations (68%) have deficient storage lengths. For the I-95 NB and SB off-ramps ramp terminals, the queue lengths can be adequately accommodated along the ramps without any spillback onto the I-95 mainline. Build Alternative 2 also results in 61% and 50% reduction in queue length at the I-95 SB and NB ramp terminals respectively compared to the No-Build Alternative.

For Build Alternative 3E, approximately 17 out of the 27 locations (63%) have deficient storage lengths. For the I-95 NB and SB off-ramps ramp terminals, the queue lengths can be adequately accommodated along the ramps without any spillback onto the I-95 mainline. Build Alternative 3E also results in 64% and 65% reduction in queue length at the I-95 SB and NB ramp terminals respectively compared to the No-Build Alternative.

The detailed queue analysis results for the Build Alternatives are provided in **Appendix U.**

Table 6-3
2040 Build Alternative-1 Queue Length Analysis

Intersection		Approach		AM Peak Period	PM Peak Period	Max. Queue Length	Proposed Storage (ft.)	Storage Deficiency	% Over Proposed Storage
1	Northlake Boulevard and Military Trail	EB	L	471	401	471	300	Yes	57%
			R	455	180	455	270	Yes	69%
		WB	L	289	572	572	450	Yes	27%
			R	443	907	907	-	-	-
		NB	L	301	323	323	190	Yes	70%
			R	271	277	277	180	Yes	54%
		SB	L	444	312	444	290	Yes	53%
			R	253	225	253	175	Yes	45%
2	Northlake Boulevard and Keating Drive	EB	L	405	103	405	165	Yes	145%
			R	438	147	438	200	Yes	119%
		WB	L	172	311	311	490	OK	-
			R	27	85	85	365	OK	-
		NB	L	112	225	225	145	Yes	55%
			R	306	336	336	115	Yes	192%
		SB	L	252	199	252	150	Yes	68%
			R	72	185	185	150	Yes	23%
3	Northlake Boulevard and I-95 SB Ramp Terminal	EB	L	-	-	-	-	-	-
			R	-	-	-	-	-	-
		WB	L	453	348	453	855	OK	-
			R	-	-	-	-	-	-
		SB	L	561	525	561	1370	OK	-
			R	544	573	573			
4	Northlake Boulevard and I-95 NB Ramp Terminal	EB	L	453	456	456	631	OK	-
			R	-	-	-	-	-	-
		WB	L	-	-	-	-	-	-
			R	500	398	500	770	OK	-
		NB	L	530	735	735	1370	OK	-
			R	578	747	747			
5	Northlake Boulevard and Roan Lane	EB	L	-	-	-	-	-	-
			R	-	-	-	-	-	-
		WB	L	-	-	-	-	-	-
			R	162	430	430	270	Yes	59%
		SB	L	-	-	-	-	-	-
			R	0	155	155	-	-	-
6	Northlake Boulevard and Sunrise Drive	EB	L	348	392	392	370	Yes	6%
			R	69	190	190	390	OK	-
		WB	L	487	467	487	400	Yes	22%
			R	383	354	383	-	-	-
		NB	L	265	477	477	325	Yes	47%
			R	134	233	233	190	Yes	23%
		SB	L	462	304	462	150	Yes	208%
			R	311	284	311	-	-	-

Table 6-4
2040 Build Alternative-2 Queue Length Analysis

Intersection		Approach		AM Peak Period	PM Peak Period	Max. Queue Length	Proposed Storage (ft.)	Storage Deficiency	% Over Proposed Storage
1	Northlake Boulevard and Military Trail	EB	L	433	524	524	300	Yes	75%
			R	441	410	441	270	Yes	63%
		WB	L	218	301	301	450	OK	-
			R	210	262	262	-	-	-
		NB	L	313	354	354	190	Yes	86%
			R	263	267	267	180	Yes	48%
		SB	L	444	479	479	290	Yes	65%
			R	252	227	252	175	Yes	44%
2	Northlake Boulevard and Keating Drive	EB	L	369	406	406	165	Yes	146%
			R	299	300	300	200	Yes	50%
		WB	L	198	315	315	490	OK	-
			R	186	328	328	365	OK	-
		NB	L	114	223	223	145	Yes	54%
			R	359	419	419	115	Yes	264%
		SB	L	327	396	396	150	Yes	164%
			R	67	234	234	150	Yes	56%
3	Northlake Boulevard and I-95 SB Ramp Terminal	EB	L	-	-	-	-	-	-
			R	-	-	-	-	-	-
		WB	L	44	302	302	300	Yes	1%
			R	-	-	-	-	-	-
		SB	L	542	258	542	1050	OK	-
			R	229	688	688			
4	Northlake Boulevard and I-95 NB Ramp Terminal	EB	L	220	72	220	300	OK	-
			R	-	-	-	-	-	-
		WB	L	-	-	-	-	-	-
			R	-	-	-	-	-	-
		NB	L	191	507	507	1125	OK	-
			R	609	625	625			
6	Northlake Boulevard and Sunrise Drive	EB	L	252	286	286	370	OK	-
			R	70	54	70	390	OK	-
		WB	L	573	241	573	400	Yes	43%
			R	451	355	451	-	-	-
		NB	L	495	479	495	325	Yes	52%
			R	303	308	308	190	Yes	62%
		SB	L	282	246	282	150	Yes	88%
			R	223	243	243	-	-	-

Note:
Build Alternative 2 does not have a signalized eastbound left. turn lane at Roan Lane

Table 6-5
2040 Build Alternative-3E Queue Length Analysis

Intersection		Approach		AM Peak Period	PM Peak Period	Max. Queue Length	Proposed Storage (ft.)	Storage Deficiency	% Over Proposed Storage
1	Northlake Boulevard and Military Trail	EB	L	378	465	465	300	Yes	55%
			R	433	424	433	270	Yes	60%
		WB	L	252	380	380	450	OK	-
			R	379	456	456	-	-	-
		NB	L	295	318	318	190	Yes	67%
			R	250	253	253	180	Yes	41%
		SB	L	392	400	400	290	Yes	38%
			R	273	225	273	175	Yes	56%
2	Northlake Boulevard and Keating Drive	EB	L	186	90	186	165	Yes	13%
			R	278	109	278	200	Yes	39%
		WB	L	167	248	248	490	OK	-
			R	35	148	148	365	OK	-
		NB	L	99	225	225	145	Yes	55%
			R	346	310	346	115	Yes	201%
		SB	L	405	242	405	150	Yes	170%
			R	72	172	172	150	Yes	15%
3	Northlake Boulevard and I-95 SB Ramp Terminal	EB	L	-	-	-	-	-	-
			R	-	-	-	-	-	-
		WB	L	685	31	685	621	Yes	10%
			R	-	-	-	-	-	-
		SB	L	601	612	612	1050	OK	-
			R	575	636	636			
4	Northlake Boulevard and I-95 NB Ramp Terminal	EB	L	554	368	554	646	OK	-
			R	-	-	-	-	-	-
		WB	L	-	-	-	-	-	-
			R	-	-	-	-	-	-
		NB	L	290	390	390	1125	OK	-
			R	361	439	439			
5	Northlake Boulevard and Roan Lane	EB	L	120	296	296	270	Yes	10%
			R	-	-	-	-	-	-
		WB	L	-	-	-	-	-	-
			R	25	37	37	270	OK	-
		SB	L	-	-	-	-	-	-
			R	54	117	117	-	-	-
6	Northlake Boulevard and Sunrise Drive	EB	L	197	187	197	370	OK	-
			R	76	77	77	390	OK	-
		WB	L	158	143	158	400	OK	-
			R	353	352	353	-	-	-
		NB	L	275	470	470	325	Yes	45%
			R	190	235	235	190	Yes	24%
		SB	L	399	363	399	150	Yes	166%
			R	221	249	249	-	-	-

6.1.4 Comparison of Build Alternatives

Table 6-6 below provides a comparison of the capacity and queue analysis results between the No-Build Alternative and the Build Alternatives at the I-95 ramp terminals approaches for the 2040 design year.

Table 6-6
Comparison of Queue Length Analysis Results

Alternative	I-95 SB Ramp Terminal				I-95 NB Ramp Terminal			
	LOS (AM/PM)	Max. Queue Length	Storage Deficiency	Inprove-ment over No-Build	LOS (AM/PM)	Max. Queue Length	Storage Deficiency	Inprove-ment over No-Build
No-Build Alternative	F/F	1746	Yes (66%)	-	F/F	1250	Yes (11%)	-
Alternative 1 - Modified CDR	D/D	573	No	-67%	D/D	747	No	-40%
Alternative 2 - DDI	B/C	688	No	-61%	B/C	625	No	-50%
Alternative 3E – Dual Flyovers	D/D	636	No	-64%	D/D	439	No	-65%

Based on the evaluation results, all three build alternatives will provide acceptable level of service for the ramp terminal approaches. However, Build Alternative 1 results in LOS E for the northbound left turn movement at the NB ramp terminal for the 2040 design year. Alternative 2 provides the best operations at the ramp terminals compared to the other alternatives due to the DDI configuration which reduces the number of signal phases.

A comparison of the queue lengths at the ramp terminal approaches indicates that all three alternatives will reduce the queue lengths compared to the No-Build condition. Build Alternative 1 will require realignment and extension of the existing NB and SB off-ramps to accommodate the 2040 design year queues which will result in right of way impacts to the residential properties in the northwest quadrant of the interchange. The DDI configuration proposed in Build Alternative 2 will require extensive right of way impacts to commercial properties within all 4 quadrants of the interchange with potential adverse impact on the tax base and revenue. Build Alternatives 3 also requires additional right of way to accommodate flyover for the northbound on-ramp which results in right of way impacts to approximately 18 residential properties in the northeast quadrant.

Although Build Alternative 2 provides the best operational performance among the three build alternatives, overall, Build Alternative 1 provides comparable operational performance with the least impacts and costs while satisfying the purpose and need of this project.

6.2 Engineering Effects

6.2.1 Geometric Compliance to Design Controls

6.2.1.1 No-Build Alternative

The No-Build Alternative has several geometric design deficiencies. These include the k-values of the vertical alignment for mainline I-95 at Northlake Boulevard and Ramp D. Vertical alignment design variations are required for both mainline I-95 at Northlake Boulevard and Ramp D sag vertical curves since the minimum K-values are not met. In addition, a design exception for the mainline I-95 crest vertical curve over Northlake Boulevard and the Ramp D crest vertical curve would be required since the minimum stopping sight distance is not met. Finally, a design variation for border width along each ramp would be required.

6.2.1.2 Build Alternatives

The proposed project alternatives were developed based on the current FDOT design standards and the American Association of State Highway Transportation Officials (AASHTO) - A Policy on Geometric Design of Highways and Streets. However, the design exception and design variations for the I-95 mainline vertical alignment and border width noted for the No-Build Alternative would also be required for the Build Alternatives.

6.2.2 Utility Impacts

6.2.2.1 No-Build Alternative

No utility impacts are anticipated with the No-Build Alternative, as no roadway modifications are proposed. The existing utility facilities along the corridor are to remain.

6.2.2.2 Build Alternative 1 - Modified Concept Report Alternative

Build Alternative 1 will have impacts to the existing utilities. The proposed widening along Northlake Boulevard will impact the existing aerial facilities where additional right of way is required and will require relocation or adjustment. Impacts to buried facilities may also be necessary depending on the existing depth of cover and location related to the proposed roadway footprint. The utility agency owners with potential impacts include AT&T Distribution, Comcast, Fiberlight LLC, FPL Distribution, FPL Fibernet LLC, Level 3 Communications, Palm Beach County Traffic, Seacoast Utility Authority and TECO Peoples Gas.

This alternative has a general negative utility impact effect compared to the No-Build Alternative. The utility impact effect is less than Build Alternative 2 due to the interchange and Northlake Boulevard modifications consisting primarily of widening rather than reconstruction.

6.2.2.3 Build Alternative 2 – Diverging Diamond

Build Alternative 2 will also impact the existing aerial facilities where additional right of way is required. It will also impact the buried facilities where the reconstruction of the roadway and interchange is proposed. The impacted utility owners are the same as that of Build Alternative 1. The larger footprint of this alternative impacts utilities beyond the existing right of way. This alternative also modifies the existing roadway profile in the interchange area and therefore has a greater impact on the existing buried facilities. This alternative has a substantial negative utility impact effect when compared to the No Build Alternative and Build Alternatives 1 and 3 due to the larger footprint and the reconstruction of Northlake Boulevard and the I-95 bridge over Northlake Boulevard.

6.2.2.4 Build Alternative 3 – Dual Flyover Ramps

Build Alternative 3 has similar utility impacts as Build Alternative 1 and the same utility owners are impacted. This alternative has a general negative utility impact effect compared to the No-Build Alternative. The utility impact effect is anticipated to be less than Build Alternative 2.

6.2.3 Multi-modal (Transit/Pedestrian/Bicycle Facilities)

6.2.3.1 No-Build Alternative

No multi-modal impacts are anticipated with the No-Build Alternative, as no roadway modifications are proposed. The existing transit, pedestrian and bicycle facilities will remain. This alternative does not provide bicycle facilities between Military Trail and Keating Drive.

6.2.3.2 Build Alternative 1 – Modified Concept Report Alternative

Build Alternative 1 provides pedestrian and bicycle facilities along the corridor. Sidewalks are located near the right of way along both sides of Northlake Boulevard. Crosswalks at the signalized intersections provide protected pedestrian movements at these locations. This alternative provides dedicated bike lanes in each direction. The proposed roadway widening impacts the existing bus stops west of I-95, however, these transit facilities can be relocated near the new curb line. This alternative generally has a more positive effect than the No-Build Alternative as bike facilities are provided throughout the corridor.

6.2.3.3 Build Alternative 2 – Diverging Diamond

Build Alternative 2 also provides pedestrian and bicycle facilities along the corridor. Crosswalks at the signalized intersections provide protected pedestrian movement at these locations. Through the interchange area, these crosswalk locations are generally shorter than Alternative 1 and the refuge island in the median provides a wide area for pedestrian traffic. This island allows pedestrians to cross the arterial street at the DDI. Dedicated bicycle facilities are provided along the roadway and follow the alignment of the roadway. Similar to Alternative 1, this alternative impact the existing bus stops west of I-95, however relocation along the new alignment can accommodate new bus stops. This alternative generally has a more positive effect than the No-Build Alternative as bike facilities are provided throughout the corridor. The alternative is also generally more positive than Alternative 1 as pedestrian crossing locations are shorter than Alternative 1 and a pedestrian refuge island is provided in the median under the I-95 overpass.

6.2.3.4 Build Alternative 3 – Dual Flyover Ramps

Build Alternative 3 like the other build alternatives provide pedestrian and bicycle facilities along the corridor. Similar to Alternative 1 sidewalks are located near the right of way along both sides of Northlake Boulevard. Crosswalks at the signalized intersections provide protected pedestrian movements at these locations. Dedicated bicycle facilities are provided along the corridor. This alternative impact all transit facilities along the project. However, similar to the other build alternatives, these facilities can be relocated along the new roadway alignment. This alternative generally has a more positive effect than the No-Build Alternative as bike facilities are provided throughout the corridor. This alternative is generally more positive than Alternative 1 as the heavy left turn on-ramp movements are elevated and are not competing with the pedestrian crossing movements at the interchange.

6.2.4 Access Modifications

6.2.4.1 No-Build Alternative

The No-Build Alternative does not propose any modifications to the existing access management classification or access locations as no roadway modifications are proposed for Northlake Boulevard, PGA Boulevard or I-95.

6.2.4.2 Build Alternative 1 – Modified Concept Report Alternative

Build Alternative 1 maintains the existing management classification and maintains the current access locations. Additional lanes are proposed at the ramp terminals and side streets to improve traffic in the interchange area. Some existing driveways will require adjustments due to the proposed roadway widening. This alternative eliminates the eastbound left turn access to Roan Lane from Northlake Boulevard. This movement is provided via an access road with a connection to Sunrise Drive. This alternative has some negative impacts on access for residents and businesses when compared to the No-Build due to the proposed access modifications.

6.2.4.3 Build Alternative 2 – Diverging Diamond

Build Alternative 2 maintains the existing management classification. However, it proposes modifications to several access points. This alternative eliminates the Northlake Boulevard eastbound left turn access to Roan Lane and the westbound access to Northlake Boulevard from Roan Lane. Access to and from Roan Lane is provided via an access road with a connection to Sunrise Drive. Access to and from Sunset Drive is provided via a connection through the commercial parcels to connect to the signalized intersection of Keating Drive. This alternative also requires side street and driveway modifications to accommodate the traffic needs as well as the new roadway alignment. This alternative has substantial negative impacts to access for the residents and businesses when compared to the No-Build and other build alternatives due to the proposed access modifications.

6.2.4.4 Build Alternative 3 – Dual Flyover Ramps

Build Alternative 3 also maintains the current access classification. However, it proposes several access modifications. The westbound Northlake Boulevard access to Gardens Park Plaza has been eliminated to allow eastbound access to the northbound flyover ramp. Eastbound access to Northlake Boulevard has been eliminated at Silverthorne Drive. Access to and from Roan Lane has been maintained. This alternative has a generally negative effect when compared to the No-Build Alternative and Alternative 1 in terms of access impacts to businesses and residents. The impacts of this alternative are less than Alternative 2, therefore, it receives a higher ranking than Alternative 2.

6.2.5 Maintenance of Traffic

6.2.5.1 No-Build Alternative

The No-Build Alternative does not have any maintenance of traffic impacts as there are no roadway modifications or construction activities associated with the alternative.

6.2.5.2 Build Alternative 1 – Modified Concept Report Alternative

Build Alternative 1 maintains the current access locations and proposes to widen the existing roadway, side streets, and ramps. The terminal gore point locations on I-95 will remain unchanged. The existing I-95 bridge over Northlake Boulevard will remain unchanged. The proposed widening can be accomplished with lane closures during non-peak hours.

6.2.5.3 Build Alternative 2 – Diverging Diamond

Build Alternative 2 has the most complex maintenance of traffic elements of all the build alternatives. This alternative requires reconstruction of the existing ramps and reconstruction of the existing I-95 bridge over Northlake Boulevard (Bridge No. 930516). There are also impacts to the existing access points.

To allow the reconfiguration of the interchange the existing I-95 bridge over Northlake Boulevard must be reconstructed first. The current number of travel lanes on I-95 will be maintained for all traffic control phases. The construction phasing for the bridge reconstruction is proposed as follows:

- Phase 1 consists of temporary widening of Northlake Boulevard to shift the traffic to the outside to allow a work zone in the median of Northlake Boulevard. This allows a work area for the bridge pier construction in subsequent phases.
- Phase 2 would remove the median barrier along I-95 to accommodate shifting the traffic to the east to allow construction of the bridge replacement on the west side of I-95.
- Phase 3 would shift the southbound traffic to the newly constructed bridge while the center bridge section is constructed.
- Phase 4 shifts the northbound traffic to the center bridge section to allow construction of the bridge on the east side of I-95.
- Phase 5 reconstructs the I-95 median barrier and resurfaces the I-95 lanes impacted by the bridge construction.

The construction phasing of Northlake Boulevard is proposed as follows:

- Phase 6 consists of maintaining traffic along Northlake Boulevard and widening to the outside.
- Phase 7 consists of shifting traffic to the outside and constructing the inside lanes. Provide temporary pavement as needed.
- Phase 8 consists of constructing median and ramp improvements needed for the final phase and layout.

This alternative has a substantial negative maintenance of traffic effect when compared to the No-Build and other build alternatives due to the complex maintenance of traffic activities and reconstruction of the I-95 bridge over Northlake Boulevard.

6.2.5.4 Build Alternative 3 – Dual Flyover Ramps

For this alternative, the maintenance of traffic complexity falls between Build Alternatives 1 and 2. To construct the flyover ramps works zone in the median of Northlake Boulevard will be needed.

The construction phasing is proposed as follows:

- Phase 1 consists of widening of Northlake Boulevard on the outside, to allow a work zone in the median for flyover construction.
- Phase 2 consists of constructing the flyovers.
- Phase 3 consists of constructing the remainder of the improvements.

This alternative has a substantial negative maintenance of traffic effect when compared to the No-Build and Build Alternative 1. The impacts of this alternative are less than Alternative 2, therefore, it receives a higher ranking than Alternative 2.

6.3 Environmental Effects

An evaluation of the potential impacts to the social, cultural, natural and physical environment associated with the proposed improvements was performed as part of this IMR. The findings are summarized in the following sections:

6.3.1 Socioeconomic

The land use is primarily businesses and commercial. There are some residential communities located adjacent to the I-95 SB on and off-ramps, and along the NB on-ramp. Direct impacts to residents are expected. Alternatives 1 and 3 impact six residential properties along the SB off-ramp. Alternative 3 also impacts 19 residential properties along the NB on-ramp. Alternative 2 does not impact residential properties. Additional right of way is needed along Northlake Boulevard to implement the facility's proposed improvements and a few businesses may be affected, including a gas station and a McDonald's restaurant. Right of way acquisition along Northlake Boulevard will affect the business community. The total right of way cost for Alternative 1 is $25.6M, Alternative 2 is $48.3M, and Alternative 3 is $66.2M.

Access to residences and businesses could temporarily be affected and in some cases permanently modified by the proposed improvements. The overall impacts on the social environment and community cohesion are anticipated to be minimal.

Northlake Boulevard is a major east-west corridor in northern Palm Beach County that provides access to businesses, residential communities, schools, and I-95. Aesthetics, mobility and the overall economic effects are expected to be enhanced by the implementation of the proposed improvements along Northlake Boulevard and at the I-95 interchange.

6.3.2 Cultural, Historical and Archeological

Minimal involvement with historical and archeological sites is anticipated due to the commercial land use. Impacts to Cultural Historical and Archeological resources are not expected.

6.3.3 Section 4(f)

No Section 4(f) resources are located within the project limits and impacts are not expected.

6.3.4 Threatened & Endangered Species

While the project area lies within several USFWS Consultation Areas for protected species, the project area is commercially developed and there is little to no suitable habitat or resources for these species, which include: the Florida scrub-jay and wood stork core foraging area (CFA). Due to the SFWMD S-44 weir structure located to the east of the project in the SFWMD C-17 canal, the project area is not accessible to manatees. Therefore, no involvement regarding protected species, wildlife and habitat resources is anticipated. The Endangered Species Biological Assessment Report prepared during the PD&E Study includes the detailed evaluation of protected species in the project area.

6.3.5 Wetlands and Other Surface Waters

There are no naturally occurring wetlands within the project limits. There are two stormwater retention ponds and one dry detention pond adjacent to the project corridor. One retention pond lies north of Northlake Boulevard within a commercial development that is approximately a quarter mile east of Military Trail and the other retention pond is adjacent (east) to the SR-9/I-95 northbound off-ramp. The dry detention pond is along the eastbound lanes of Northlake Boulevard approximately 300 ft. east of Military Trail. In addition, there are dry detention areas within the interchange infields and adjacent to mainline I-95 on each side of the road permitted for stormwater management.

There are several man-made drainage features (including surface waters) within the project vicinity. The I-95 mainline crosses a drainage canal located approximately 3,000 ft. north of the Northlake Boulevard interchange. The canal connects to Lake Catherine and eventually the SFWMD C-17 Canal. The culvert for this canal may need to be extended to the east side to facilitate widening of the SR-9/I-95 northbound on-ramp and may require the construction of an adjacent retaining wall resulting in minimal impacts to surface waters. The detailed evaluation is provided in the Wetland Evaluation Report prepared as part of the PD&E Study.

6.3.6 Water Quality

No Impaired Waters are located within the project vicinity. However, the project discharges to the C-17 Canal which is impaired for nutrients. Minimal involvement regarding water quality and quantity is anticipated for the following reasons:

1) Additional stormwater treatment for additional impervious area;

2) Potential need for additional right-of-way to provide for the creation of retention/detention ponds or swales to meet regulatory stormwater treatment and water quality criteria; and

3) Potential impacts from construction related disturbances. The project will be designed to meet state water quality and quantity standards, and best management practices will be utilized during construction. A Water Quality Impact Evaluation will be conducted during the PD&E Study to determine potential impacts to water quality and quantity.

6.3.7 Contamination

Several potential hazardous material sites were identified within the vicinity of the SR-9/I-95 and Northlake Boulevard Interchange. A preliminary evaluation identified 52 potentially contaminated sites within the screening area located in 38 different land parcels. A quarter mile screening radius was utilized to search for registered facilities and potential contamination sources. A one-mile search radius was utilized for Federal Superfund sites including NPL, CERCLIS, and Solid Waste Facilities such as landfills and Brownfield Areas. All sites were evaluated separately and adjacent activities and conditions, such as surface water and groundwater flows, were considered for each location. Historic aerial photos also identified the changes in land use over time which may identify the potential for contamination. Residential sites were not evaluated unless the property address was noted on the Environmental Data Resources Inc. (EDR) report.

The evaluated sites are shown in **Table 6-7.** Risk rating criteria was followed as set per the PD&E Manual Part 2, Chapter 22. Parcels that contained more than one contaminated site were color-coded based on the most severe rating for a site located within that parcel. Site ID numbers were assigned geographically from west to east and then south to north within the study area. Table 7-1 summarizes the potential contamination sites and the preliminary risk rating. Five High Risk, 13 Medium Risk and 18 Low Risk potentially contaminated sites were identified and located within the quarter-mile and one-mile screening areas. Sixteen sites evaluated were determined to be No Risk. For properties that have more than one site listed in the same parcel, and given the highest risk rating on the Potential Contamination Site Location Map individual rankings can be seen in the tables below.

Risk ratings were assigned to parcels based on contamination history, contamination type and proximity to the interchange and proposed improvements. The Low Risk sites are primarily sites

listed as hazardous waste sites or sites with aboveground or underground storage tanks with no known releases. The Medium Risk sites are primarily sites with documented releases that have been investigated, or have received Notice of Violations (NOVs). The High-Risk sites are sites where contamination has been documented, but the nature and extent of the contamination is unknown, or the contamination has potential to cause dewatering issues. These High-Risk sites should be further evaluated during subsequent phases to determine if contaminants may be disturbed during project activities.

Table 6-7
Contaminated Sites Ranking

Map Parcel #	Site Name	Site Address	Risk/Database(s)	Risk Rating
1	Premiere cleaners	4595 Northlake Blvd #104 Palm Beach Gardens, FL 33418	Drycleaners	medium
2	Shell Donnini Enterprises Inc.	8961 N Military Trail Lake Park, FL 33410	FL LUST, FL UST, FL AST, FL DWM CONTAM, FL Financial Assurance, RCRA NonGen/NLR, FINDS, EDR US Hist Auto Stat	medium
3	AT&T Mobility (also reported as Cingular Wireless LLC)	8735 North Military Trail Palm Beach Gardens, FL 33418	FL Tier 2, FINDS	low
4	AAA Auto Club South	9123 N Military Trail Palm Beach Gardens, FL	FL AST, EDR US Hist Auto Stat, FL Financial Assurance	low
5	Cheveron, also reported as North Lake-Get Gas & Go, Sunshine Food Mart #352, BP Oil Co #02409, Hess Northlake-Get Gas 7 Go LTD Co	9031 N Military Trail Palm Beach Gardens, FL	FL RGA LUST, EDR US Hist Auto Stat, FL LUST, FL UST, FL CLEANUP SITES, FL DWM CONTAM, FL Financial Assurance, RCRA NonGen/NLR, FINDS	high
6	Tires Plus, also reported as Olson Tire Total Car Care	8990 N Military Trail West Palm Bech, FL 33410	EDR US Hist Auto Stat, RCRA-CESQG, FINDS	medium
	Perfectly Clear Pool Supples, Inc	4370 Northlake Blvd Palm Beach Gardens, FL 33410	SSTS, ERNS, FINDS	low
	Snow White Dry Cleaners	8934 N Military Trail Palm Beach Gardens, FL	EDR US Hist Cleaners, FL AIRS, FL RESP PARTY, US AIRS, FINDS, FL PRIORITYCLEANERS, FL CLEANUP SITES, FL DRYCLEANERS, FL DWM CONTAM, RCRA-CESQG	medium
7	Amoco Service Station #7027	4481 Northlake Blvd Lake Park, FL 33410	EDR US Hist Auto Stat, FL LUST, FL UST, RCRA NonGen / NLR, FINDS, FL CLEANUP SITES, FL DWM CONTAM, FL Financial Assurance	high
8	MDNOW Urgent Care, reported as HEC Cleaning LLC	9056 N Military Trail Palm Beach Gardens, FL 33410	FINDS, EDR US Hist Cleaners, RCRA-SQG, FL VCP, FL CLEANUP SITES, FL DRYCLEANERS, FL RESP PARTY	high

Table 6-7 Contaminated Sites Ranking				
Map Parcel #	**Site Name**	**Site Address**	**Risk/Database(s)**	**Risk Rating**
9	Exxon Co	4361 Northlake Blvd West Palm Beach, FL	EDR US Hist Auto Stat	low
10	Tropical Smoothie, reported as Dry Cleaning USA, Florida DEP DSCP D227 #509502213, Page & Page Dry Clean USA	4276 Northlake Blvd Palm Beach Gardens, FL 33410	FL PRIORITYCLEANERS, FL DRYCLEANERS, RCRA NonGen/NLR, FINDS	low
	PGA Pool, reported as Pool Centers U.S.A	4272 Northlake Blvd #4 Palm Beach Gardens, FL 33410	FINDS	low
	Publix Super Market #434	4200 Northlake Blvd Palm Beach Gardens, FL 33410	FL AST, FL Financial Assurance	low
11	Mobil Oil Corp SS #F19	4201 Northlake Blvd Palm Beach Gardens, FL 33410	EDR US Hist Auto Stat, RCRA-CESQG, FINDS, RCRA NonGen/NLR, FL LUST, FL UST, FL CLEANUP SITES, FL DWM CONTAM, FL Financial Assurance, FL RGA LUST, FINDS	high
12	Sunoco, reported as Palm Beach Gardens Chevron	4109 Northlake Blvd West Palm Beach, FL	EDR US Hist Auto Station, RCRA NonGen/NLR, FINDS, ERNS, FL RGA LUST, LUST, UST, FL Financial Assurance, FL DWM Contam	medium
13	I-95 Shell, also reported as Texaco & Larry's Sunoco	3905 Northlake Blvd Lake Park, FL 33418	EDR US Hist Auto Station, FL RGA LUST, FINDs, FL UST, FL CLEANUP SITES, FL DWM CONTAM, FL Financial Assurance, RCRA NonGen/NLR	high
14	Starbucks, reported as Shell Dobereiner and BP Oil Co #24656	3866 Northlake Blvd Palm Beach Gardens, FL 33403	FL LUST, FL UST, FL AST, FL Financial Assurance, EDR US Hist Auto Stat, RCRA NonGen/NLR, FINDS	medium
15	Florida DEP DSCP D316-509601793	3804-3980 Northlake Blvd Palm Beach Gardens, FL	RCRA-CESQG, FINDS, FL PRIORITYCLEANERS, FL DWM CONTAM	low
16	Home Depot #0220	3860 Northlake BlvdLake Park, FL 33403	AST, FL Financial Assurance, FL TIER 2, FL SPILLS, RCRA-SQG, FINDS, PA MANIFEST, FL AST, RCRA NonGen/NLR	low
17	Gander Mountain	100 Gander Way Palm Beach Gardens, FL 33403	FINDS, FL AST, RCRA-CESQG, FL Financial Assurance	low
18	Schumacher Automotove (previously called Art Moran Auto Plaza Inc)	3720 Northlake Blvd Lake Park, FL 33403	RCRA-CESQG, FL LUST, FL UST, FL AST, FINDS, FL Financial Assurance, FL TIER 2, FL RGA LUST	medium

Table 6-7 Contaminated Sites Ranking				
Map Parcel #	**Site Name**	**Site Address**	**Risk/Database(s)**	**Risk Rating**
19	Napletons North Palm Auto Park	3703 Northlake Blvd Palm Beach Gardens, FL 33403	RCRA-CESQG, FINDS, FL UST, FL AST, FL Financial Assurance, FL TIER 2	medium
	Sansone Auto Galleria	3701 Northlake Blvd Palm Beach Gardens, FL 33403	RCRA NonGen/NLR, FINDS	medium
20	Napleton Northlake KIA (reported as John Staluppi Property and Maroone Lincoln Mercury of North Palm)	3658 Northlake Blvd Lake Park, FL 33403	FL LUST, FL UST, FL RGA LUST	medium
		3626 Northlake Blvd Lake Park, FL 33403	FL TIER2, RCRA-CESQG, FINDS	
21	Kauffs Ventures Property	3591 Northlake Blvd Palm Beach Gardens, FL	FL LUST, FL UST, FL DWM CONTAM	medium
22	Checkers (reported as AT&T Mobility, Crown Castle - AAYW BRA111 and New Cingular Wireless)	8940 Lyndall Lane West Palm Beach, FL 33403	FL TIER 2	low
		8646 Lyndall Lane Lake Park, FL 33403	FL TIER 2	
23	BMT Realty	3560 Northlake Blvd Lake Park, FL 33405	FL UST, FL RGA LUST	medium
	Daves Auto Body Inc	3550 Northlake Blvd Palm Beach Gardens, FL 33403	RCRA-CESQG, FINDS	low
24	Sancilio & Company Inc, also reported as SCI, American Colors and Seaco	3874 Fiscal Ct, Ste 100 & 200 Riviera Beach, FL 33404	RCRA nonGen / NLR, FINDS,	low
			FINDS, RCRA-SQG	
			FINDS, RCRA-CESQG	
25	United, reported as Kenworth Trucks WPB and Freightliner Trucks of South FL Inc	3945 Fiscal Ct Riviera Beach, FL 33404	RCRA NonGen/NLR, FINDS, FL UST, FL Financial Assurance	low
	Airgas USA, LLC., also reported as Airgas South, Inc.	3857 Fiscal Court, Suite 400 Riviera Beach, FL 33404	FL TIER 2	low
26	General Caulking & Coating Co Inc	3750 Consumer St Riviera Beach, FL 33404	RCRA-SQG, FL UST, FINDS	low
	Florida Waterproofing Supply	3750 Consumer St, Ste C Riviera Beach, FL 33404	RCRA-CESQG, FINDS	low
27	Total Maintenance building Services Inc., also reported as Forward Express Trucking Co Inc	3690 Consumer St Riviera Beach, FL 33404	SWF/LF	medium
		3690 Consumer St Riviera Beach, FL 33404	FL UST	
28	Coast Millworkers	3810 Consumer St. Riviera Beach, FL	not listed	low

There are two existing bridge structures within the project limits Bridge 930516 is a two-span single bridge that carries SR-9 (I-95) over Northlake Boulevard. The superstructure consists of pre-stressed AASHTO girders with an out to out width of 183 ft. 1 in. The deck carries ten lanes of traffic: five north bound and five south bound. The bridge also includes two 10 ft. outside shoulders, two 15 ft. inside shoulders, and two 4 ft. buffer zones. Bridge 930178 is a three-barrel box culvert that carries SR-9 (I-95) over Earman River Canal. This bridge culvert consists of three 10 ft.x12 ft. cells with a total width of 39 ft. and an approximate length of 235 ft. The culvert carries ten lanes of traffic: five north bound and five south bound.

In accordance with the National Emission Standards for Hazardous Air Pollutants regulations, asbestos inspection reports were requested for bridges and structures. There were no asbestos reports available for review for both structures. Further investigation of the likelihood of encountering asbestos during demolition, construction, or reconstruction of bridge structure should be conducted during the design phase.

Lead-based paint was used on steel bridges, towers, storage tanks, buildings, and other facilities through the 1980s, and in some cases into the 1990s. Lead based paint may have to be removed during facility maintenance or when buildings or structures are being demolished, restored or renovated. Lead is a serious health hazard if it is inhaled or ingested. Scraping or sanding lead based paint creates paint particles that are a hazardous waste and can be a health hazard if proper safety precautions are not taken (USDA, 2007).

The structures located within the interchange study area are concrete structures and appear to be coated. Coated concrete structures could possibly contain lead. Therefore, further investigation in the likelihood of encountering lead based paint during demolition, construction, or reconstruction of bridge structure should be conducted during the design phase.

6.3.8 Noise

A site visit identified that there are noise sensitive receptors located within 500 ft. of the proposed interchange improvements, which consist of a church, single and multifamily homes, and a few commercial businesses with exterior use such as patio dining and a hotel swimming pool. There are existing sound barriers near the Northlake Boulevard interchange along the I-95 northbound and southbound on-ramps and the I-95 southbound off-ramp. Although minimal noise impacts are expected as a result of the proposed project, increased noise levels during construction could have short-term impacts on nearby businesses. Overall, noise and vibration related impacts as a result of the project are anticipated to be moderate. The detailed noise analysis and abatement is included in the Noise Study Report prepared as part of the PD&E Study.

6.4 Project Cost

The estimated construction costs were developed for the Northlake Boulevard Interchange Alternatives using the FDOT Long Range Estimates (LRE) Program. Design Engineering Costs were estimated at 10% of the total construction cost and Construction Engineering Inspection (CEI) were estimated at 13%. Right of way costs were provided by FDOT and include right of way acquisition and business damages. **Table 6-8** reflects the estimated project costs for the Northlake Boulevard Alternatives.

Table 6-8
Estimated Project Costs for Northlake Boulevard Interchange Alternatives

Costs	No-Build	Build Alternative 1 Modified Concept Report	Build Alternative 2 Diverging Diamond	Build Alternative 3 Dual Flyover Ramps
Roadway Construction Costs	$0.00	$28,800,000	$34,500,000	$53,400,000
Design Engineering Costs (10%)	$0.00	$2,900,000	$3,500,000	$5,300,000
CEI Costs (13%)	$0.00	$3,700,000	$4,500,000	$6,900,000
Right of Way Costs	$0.00	$25,700,000	$48,300,000	$66,200,000
Total Alternative Cost	**$0.00**	**$61,100,000**	**$90,800,000**	**$131,800,000**

6.5 Evaluation

6.5.1 Northlake Boulevard Alternatives Comparative Analysis

A comparative (qualitative) analysis of the advantages and disadvantages for the Northlake Boulevard no-build and build alternatives was conducted based on the engineering and environmental impacts of the alternatives discussed previously. **Table 6-9** presents a summary of this analysis.

Table 6-9
Comparative Analysis of Alternatives

Alternative	Advantages	Disadvantages
No-Build Alternative	• No roadway design and construction costs • No right of way acquisition cost • No utility impacts • No inconveniences to commuters and adjacent property owners due to construction maintenance of traffic • No social, business and neighborhood impacts due to construction	• Traffic operations may continue to deteriorate resulting in more congestion • Decrease in air quality due to increase congestion • Increase in accident rates due to increased congestion may compromise safety • Inconsistent with FDOT Work Program • Does not meet the purpose and need of the project • Does not provide bicycle facilities along entire corridor
Build Alternative 1 **Modified Concept Report**	• Improved exit ramp queuing and ramp terminal LOS over the No-Build • Potential safety benefits due to reduced congestion and improved mobility over No-Build • Maintains EB Northlake Boulevard signal access to Roan Lane • Lowest right of way impacts compared to Build Alternatives 2 and 3E • Lowest structural and drainage impacts compared to Build Alternatives 2 and 3E • Lowest construction costs compared to Build Alternatives 2 and 3E • Lowest maintenance of traffic impacts during construction compared to Build Alternatives 2 and 3E • Consistent with FDOT Work Program	• No EB Northlake Boulevard access to Roan Lane • Decreased LOS compared to Build Alternatives 2 and 3E • Impacts to utilities and drainage • Residential and business impacts.

Table 6-9 Comparative Analysis of Alternatives		
Alternative	**Advantages**	**Disadvantages**
Build Alternative 2 **Diverging Diamond**	• Improved exit ramp queuing at ramp terminal over the No-Build • Best LOS for build alternatives • Potential safety benefits due to reduced congestion and improved mobility over No-Build • Right of way and construction costs less than Build Alternative 3E • Opportunity for visual enhancements such as landscaping • Consistent with FDOT Work Program	• No EB Northlake Boulevard access to Roan Lane • No WB Northlake Boulevard access from Roan Lane • Highest maintenance of traffic impact; Requires reconstruction of Northlake Boulevard, I-95 Bridge, and ramps at interchange • Major property impacts from west of Keating Drive to Sandtree Drive/Sunrise Drive • High structural impacts; reconstruction of I-95 bridge • Major impacts to utilities and drainage • Right of way and construction costs more than Build Alternative 1
Build Alternative 3E **Dual Flyover Ramps**	• Improved exit ramp queuing ramp terminal over the No-Build • Better LOS compared to Build Alternative 1 • Potential safety benefits due to reduced congestion and improved mobility over No-Build • Maintains EB Northlake Boulevard signal access to Roan Lane • Maintains Roan Lane access to WB Northlake Boulevard • Less maintenance of traffic impacts during construction compared to Build Alternatives 2 • Consistent with FDOT Work Program	• No WB Northlake Boulevard access to Gardens Park Plaza • Highest right of way cost of all build alternatives • Highest construction cost of all build alternatives • High structural impacts; flyovers • Impacts to utilities and drainage • Highest residential and business impacts • Highest visual impact of all build alternatives • Potential for highest noise impacts of all build alternatives

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6.5.2 Northlake Boulevard Alternatives Evaluation Matrix

The quantitative evaluation of the Northlake Boulevard Interchange Alternatives was performed based on the multi-criteria evaluation methodology. This methodology involves quantitative analysis to combine the different impacts for each alternative. These performance criteria are not all monetized and usually have different dimensions (units). Therefore, a ranking scale number was assigned for each evaluation criteria for all alternatives. The ranking scale used is as follows:

1 = Substantial Negative Effect or Worse Alternative

2 = Generally Negative Effect or Inferior Alternative

3 = Generally No Effect or Moderate Alternative

4 = Generally Positive Effect or Good Alternative

5 = Substantial Positive Effect or Best Alternative

Table 6-10 shows the evaluation matrix for the Northlake Boulevard Interchange Alternatives.

Based on the evaluation and analysis of several key evaluation parameters including horizontal and vertical alignment, right of way impacts, construction cost, potential utility impacts, bridge analysis, traffic operations and safety, maintenance of traffic, environmental impacts and access modifications considerations, in addition to extensive discussions with both FDOT and Palm Beach County, Build Alternative 1 which maintains the existing diamond configuration and results in the least impact and costs was ranked as number one and subsequently selected as the Recommended Alternative.

Table 6-10
Northlake Boulevard Interchange Alternatives Evaluation Matrix

Evaluation Factors		Alternatives			
		No-Build	Build Alternative 1 Modified Concept Report	Build Alternative 2 Diverging Diamond	Build Alternative 3 Dual Flyover Ramps
Traffic	Level of Service	1	3	5	4
	Delay / Queue Removed from I-95 Mainline	1	3	5	5
	Safety Benefits	1	3	5	4
	Meets Purpose and Need	1	4	5	5
Engineering	Geometric Compliance to Design Controls	3	4	4	4
	Utility Impacts	4	3	1	2
	Multi-modal (Transit/Pedestrian /Bicycle)	1	3	4	4
	Access Modifications	4	3	1	2
	Maintenance of Traffic	4	3	1	2
Socio-Economic	R/W and Property Impacts	4	3	2	1
	Social & Neighborhood Impacts	3	4	2	2
	Economic & Employment Impacts	2	3	2	3
	Community Services/ Features	3	3	3	3
	Visual & Aesthetics Impacts	3	3	4	2
	Public Comments	1	4	3	2
Environment	Threatened & Endangered Species	3	3	3	3
	Wetland / Surface Water Impacts	3	3	2	3
	Water Quality	3	3	3	3
	Contamination	3	2	2	2
	Noise	3	3	3	2
Cost	R/W Cost	3	2	1	1
	Construction Cost	3	2	1	1
	Engineering Design & CEI Costs	3	2	2	2
SCORE		**60**	**69**	**64**	**62**
RANKING		**4**	**1**	**2**	**3**

6.5.3 PGA Boulevard SB On-Ramp Alternatives Comparison

6.5.3.1 Engineering Impacts

The section of I-95 between Northlake Boulevard and PGA Boulevard was recently widened to ten (10) lanes, to include four (4) general purpose and one (1) HOV Lane in each direction. As part of the previous widening project, design exceptions/variations were obtained for that widening as follows:

1. Vertical Alignment (stopping sight distance and vertical curve k-value)
2. Pavement Cross-Slope (number of lanes sloped in the same direction)
3. Border Width

The PGA Boulevard SB On-Ramp Alternatives will widen the I-95 southbound mainline, but will not change the existing vertical alignment or the number of lanes sloped in the same direction. The border width will be further reduced by the proposed widening. As such, design variations for these same design elements will be required.

Alternative 1 will not impact any mainline or ramp bridges over Burns Road, or PGA Boulevard. However, Alternative 2 includes widening the bridge over Burns Road, which will require maintenance of traffic along Burns Road during construction.

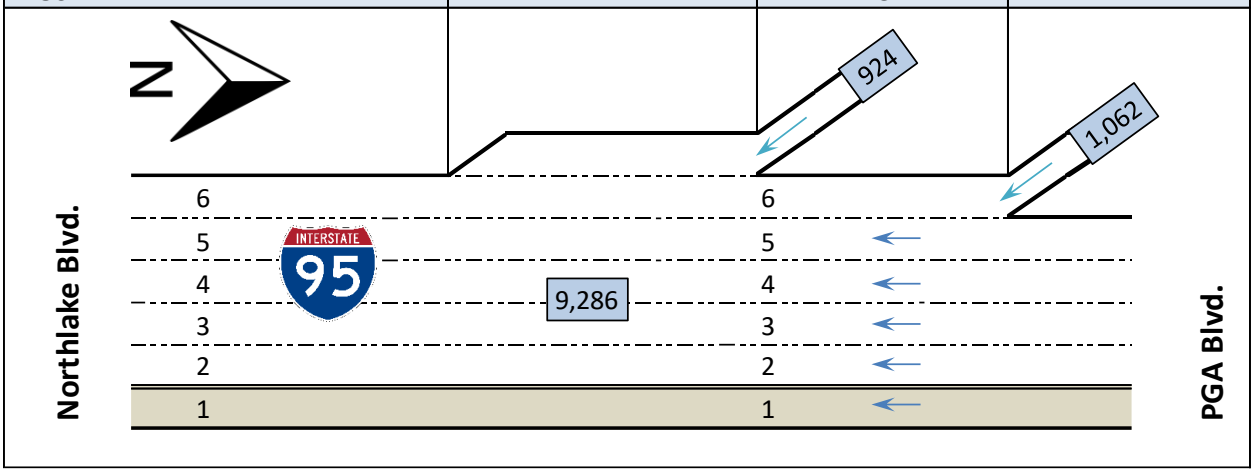
Both Alternatives will encroach into the permitted outside stormwater detention swales (which will require modification for permitting). In addition, both Alternatives involve reconstruction of the existing retaining wall along the outside of the widening, due to the elevated approaches to the bridges over Burns Road and PGA Boulevard.

Alternative 2 is more significant than Alternative 1 in terms of cost and complexity; and includes more barrier wall and retaining wall, in addition to the Burns Road bridge widening.

6.5.3.2 Operational Impacts

A traffic operational evaluation of the PGA Boulevard SB On-Ramp alternatives was performed as part of this study for the 2040 design year using Highway Capacity Software (HCS 2010), based on Highway Capacity Manual 2010 methodology for the AM and PM peak periods. **Figure 6-1** through **Figure 6-4** show the density, speed, and level of service for the freeway segments as well as the merge and diverge locations for the AM and PM peak periods respectively.

PGA Boulevard to I-95 SB On-Ramps - AM Peak Period - Alternative 1			
Length	1,500-ft	1,500-ft	
Analysis Type	Merge	Merge	
Density	19.9 pc/mi/ln	23.5 pc/mi/ln	
Speed	58.0 mph	57.1 mph	
LOS	**B**	**C**	



PGA Boulevard to I-95 SB On-Ramps - PM Peak Period - Alternative 1			
Length	1,500-ft	1,500-ft	
Analysis Type	Merge	Merge	
Density	14.7 pc/mi/ln	17.6 pc/mi/ln	
Speed	59.0 mph	58.8 mph	
LOS	**B**	**B**	

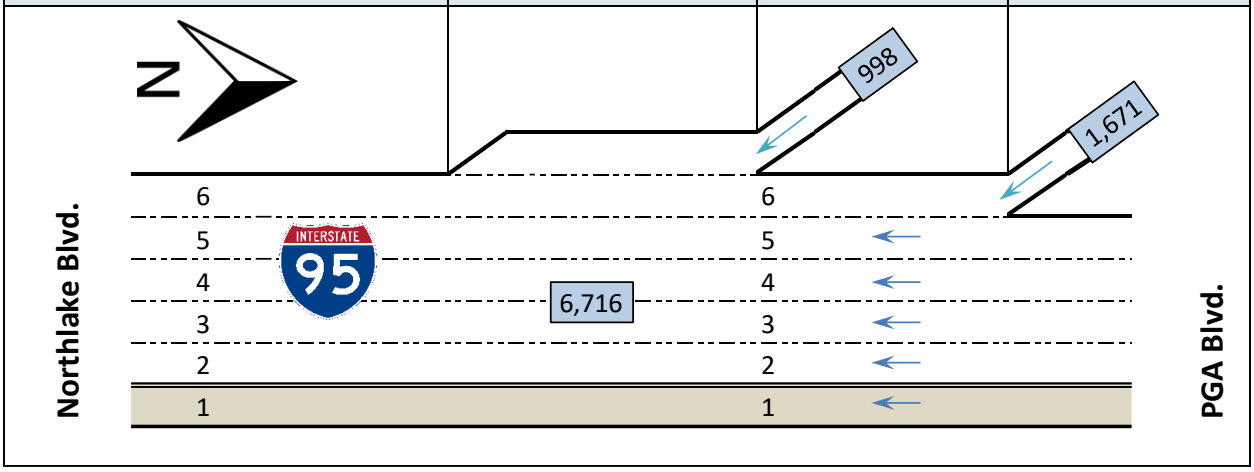
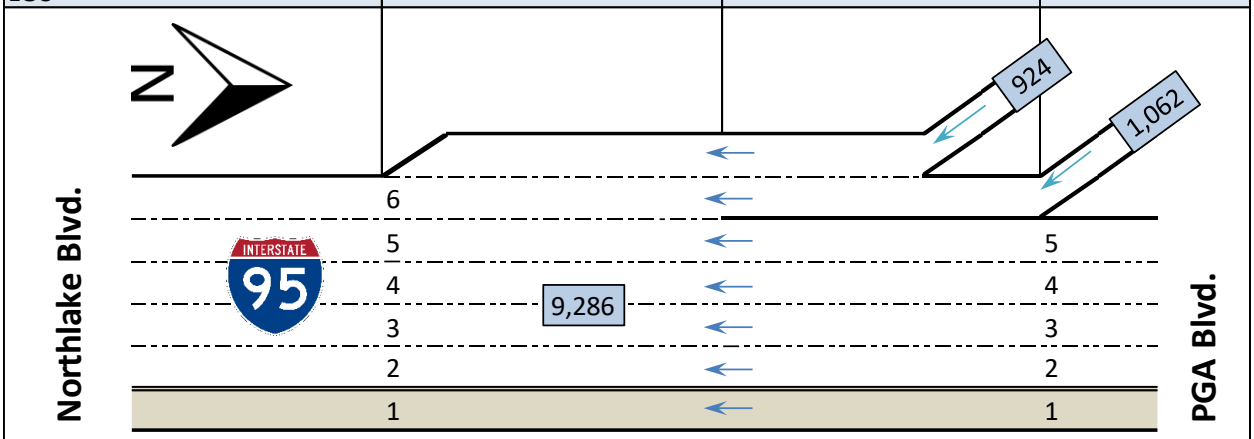


Figure 6-34 Ramp Merge LOS for PGA Boulevard SB On-Ramp Alternative 1

PGA Boulevard to I-95 SB On-Ramps - AM Peak Period - Alternative 2			
Length	1,500-ft	1,500-ft	
Analysis Type	Merge	CD Road	
Density	9.9 pc/mi/ln	19.4 pc/mi/ln	
Speed	61.3 mph	55.0 mph	
LOS	**A**	**C**	



PGA Boulevard to I-95 SB On-Ramps - PM Peak Period - Alternative 2			
Length	1,500-ft	1,500-ft	
Analysis Type	Merge	CD Road	
Density	-6.7 pc/mi/ln	26.1 pc/mi/ln	
Speed	64.1 mph	55.0 mph	
LOS	**A**	**D**	

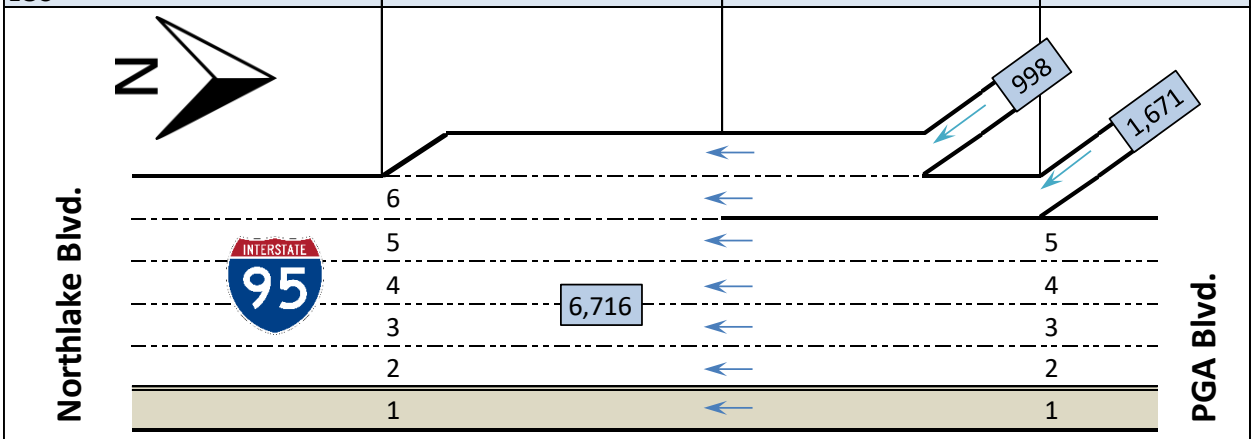


Figure 6-35 Ramp Merge LOS for PGA Boulevard SB On-Ramp Alternative 2

Based on the analysis, both alternatives will operate at an acceptable LOS D or better for the AM and PM peak periods. For Alternative 1, the EB to SB ramp merge location will operate at LOS B during both the AM and PM peak periods while the WB to SB ramp merge location will operate at LOS C and LOS B during the AM and PM peak periods respectively. For Alternative 2, the two-lane ramp merge location with the I-95 mainline operates at LOS A during both the AM and PM peak periods. However, the C-D Road system operates at LOS C during the AM peak period and LOS D during the PM peak period. The details of the ramps merge analysis results for the PGA Boulevard SB On-Ramp alternatives are included in **Appendix V.**

6.5.3.3 Environmental Impacts

The improvements at PGA Boulevard Southbound On-Ramp under both alternatives can be accommodated within the I-95 limited access right of way. However, Alternative 2 will require an extension of the canal crossing located approximately 500-ft. south of Burns Road resulting in other surface water impacts.

6.5.3.4 Project Costs

Table 6-11 shows the estimated project costs for the PGA Boulevard SB On-Ramp Alternatives.

Table 6-11
Estimated Project Costs for PGA Boulevard SB On-Ramp Alternatives

Costs	No-Build	Build Alternative 1	Build Alternative 2
Roadway Construction Costs	$0.00	$4,000,000.00	$5,900,000.00
Design Engineering Costs (10%)	$0.00	$400,000.00	$590,000.00
CEI Costs (13%)	$0.00	$520,000.00	$770,000.00
Right of Way Costs	$0.00	$0.00	$0.00
Total Alternative Cost	**$0.00**	**$4,920,000.00**	**$7,260,000.00**

As shown in the table above, the total construction cost for Alternative 2 is approximately 48% higher than Alternative 1.

6.5.3.5 Recommendations

Based on the evaluation above, Alternative 1 was selected as the recommended operational improvement for the I-95 SB on-ramps at PGA Boulevard since it achieves a similar operational benefit compared to Alternative 2. In addition, Alternative 1 is less costly, less disruptive and results in less environmental impacts.

7.0 OTHER CONSIDERATIONS

7.1 Conformance with Transportation Plans

The proposed improvements at the SR-9/I-95 at Northlake Boulevard Interchange is identified in the Palm Beach County Metropolitan Planning Organization (MPO) 2040 Long Range Transportation Plan (LRTP) as an unfunded project with Design $2,995,000, Right of Way $39,400,000, and Construction $25,610,000. An amendment to Palm Beach MPO's adopted 2040 LRTP to include the project as fully funded in the Cost Feasible Plan (CFP) is expected to be received prior to the public hearing currently scheduled for September 2017. The proposed project is also identified in the Palm Beach County approved 2017-2021 Transportation Improvement Program (TIP) (FPID: 435803-1) with funding for the design phase in 2021 and the construction phase beyond the TIP five-year horizon. Additionally, the project is included in the FDOT 2040 Strategic Intermodal System (SIS) approved 2nd 5-Year Plan, as well as the approved 2016 State Transportation Improvement Program (STIP) with funding for both the design and construction phases. The project (FPID 435803-1) is also included in the FDOT District Four Five-Year Work Program with funding allocated preliminary design in 2018, right of way in 2020 and construction in 2022.

7.2 Coordination

The proposed IMR study will coordinate with the I-95 at PGA Boulevard/Central Boulevard Project Development and Environment (PD&E) Study (413265-1) and the I-95 Managed Lanes Phase 4 Master Plan from Linton Boulevard to Indiantown Road (FM: 436576-1). Both projects are currently on-going by FDOT District 4. The study will also coordinate with the following TSM&O improvements along Northlake Boulevard:

- FM: 431645-1 - Intersection Improvements at the Military Trail and Northlake Boulevard intersection to add an exclusive westbound right turn lane at this location.
- FM: 432883-1 - Adaptive Traffic Control System (ATCS) along Northlake Boulevard to handle fluctuations in traffic volumes and improve progression through the traffic signals.

Several coordination meetings were held with the District 4 Interchange Review Coordinator (DIRC). **Appendix W** includes the meeting notes from the DIRC Meetings and the review comments from the DIRC.

- On September 24, 2015, the MLOU parameters were discussed.

- All ultimate interchange modifications will use the design year 2040 to maintain consistency with the recently adopted 2040 LRTP regardless of the year when the design funds are currently programmed.
- Based on the conclusion of the District's second Quadrupled Left-turn Workshop, quadruple lefts should not be pursued as a viable option through the PD&E process. The focus should be at providing a more standard design alternative. Benjamin Restrepo had shared recently the workshop memorandum documenting the discussion on this matter (attached).

- On March 24, 2016, an alternatives operational analysis update was provided.
  - A detailed operational analysis of potential alternatives included the No-Build and TSM&O Alternatives, a modified CDA, DDI, and various elevated ramp alternative.
- On September 22, 2016, an alternatives findings and effects discussion was conducted.
  - The alternatives analysis of the three build alternatives was discussed as they related to the purpose and need of the study.

Several Public Meetings were conducted during the study.

- On November 11, 2015, the Public, Agencies and Elected Officials Kickoff Meetings were held. A brief presentation provided the project overview, purpose and need and allowed interested attendees to interact with the project team.
- On December 8, 2016, the Alternatives Public Workshop was held and attended by 130 participants. Approximately 1250 notifications were distributed to both owners and occupants within 500 ft. of the project limits. Twenty-five people provided written comments.
- On December 21, 2016, the project was presented to the Town of Lake Park Commission Meeting.
- On January 5, 2017, the project was presented to the City of Palm Beach Gardens, City Council.
- On November 18, 2016, the project was presented to the North Palm Beach Chamber of Commerce, Government Affairs Committee.
- On January 26, 2017, the project was presented to the Village of North Palm Beach.

7.3 Environmental Documentation

A PD&E Study is being conducted for the proposed improvements to the I-95 interchange and Northlake Boulevard that will fully evaluate viable alternatives included in this IMR Study. The proposed Class of Action and National Environmental Policy Act (NEPA) environmental document is a Type 2 Categorical Exclusion.

7.4 Conceptual Signing Plan

A conceptual signing plan was developed for the recommended alternative and is provided in **Appendix X.**

8.0 FUNDING PLAN & SCHEDULE

8.1 Northlake Boulevard Interchange

The Northlake Boulevard Interchange Improvements project (FPID 435803-1) is included in the FDOT District Four Five-Year Work Program with funding allocated as follows:

Table 8-1
Project Funding Plan

Phase	Fiscal Year	Funding
Preliminary Engineering	2018	$ 5,100,000
Right of way	2020	$ 61,463,486
Construction	2022	$ 15,050,388
Total		**$81,613,874**

The PD&E Phase of this project commenced in Summer 2015 and is anticipated to be completed by Fall 2017 with the approval of the Local Design Concept and Acceptance (LDCA). The preparation of the final design plans is anticipated to begin in Fall 2017. The right-of-way acquisition and final design phase are anticipated to be completed by Fall 2021. Construction is anticipated to begin in Summer 2022.

8.2 PGA Southbound On-Ramp

At this time, no funding for the PGA Boulevard southbound on-ramps has been identified. FDOT District 4 will coordinate with Palm Beach County to ensure that the PGA Southbound on-ramp operational improvements are funded and included in the Palm Beach MPO TIP prior to initiating the Design Phase.

9.0 RECOMMENDATIONS

9.1 Northlake Boulevard Interchange

The PD&E study process analyzed several factors related to the regional traffic growth, required traffic lanes to support the level of service standards, No-Build and Build Alternatives to meet the required level of service standards, effects to the human and natural environment, costs and public comments. Based on the comprehensive evaluation presented in this IMR study, community and local government input, and extensive discussions with FDOT staff, Build Alternative 1 was selected as the recommended alternative since it provides adequate operational performance with the least impacts and costs among the three build alternatives while satisfying the purpose and need of this project. The Recommended Build Alternative 1 offers several advantages compared to the No-Build Alternative including the following:

- **Reduced Travel Time and Delays:** The traffic operational analysis performed as part of this study indicated that for the Recommended Build Alternative 1, all the approaches for I-95 ramp terminals will operate at LOS D or better during both the AM and PM peak periods for the 2040 design years compared to LOS F for the No-Build Alternative. For the Northlake Boulevard ramp terminal approaches, the southbound off-ramp approach will experience 67% and 73% reduction in delay whereas the northbound off-ramp approach will experience 80% and 72% reduction in delay compared to the No-Build Alternative for the AM and PM peak periods respectively.
- **No Queue Spillback onto I-95 Mainline:** The queuing analysis performed using SIMTRAFFIC microsimulation model indicated that Build Alternative 1 results in 67% and 40% reduction in queue length at the I-95 SB and NB ramp terminals respectively compared to the No-Build Alternative. In addition, Build Alternative 1 requires the least amount of right of way impact compared to the other build alternatives to accommodate the 2040 design year queues. The No-Build Alternative will exceed the existing ramp storage by 11% and 66% at the NB and SB off-ramps respectively.
- **Enhanced Safety & Access Management:** The proposed improvements under Build Alternative 1 is anticipated to enhance safety along both I-95 and Northlake Boulevard due to the significant reduction in delays, improved mobility, and no queue spillback onto the I-95 mainline. In addition, Build Alternative 1 provides access management improvements along Northlake Boulevard by closing the directional median at Roan Lane and removing the eastbound left turn and traffic signal. The existing directional median opening, located approximately 375 ft from the I-95 NB Ramp terminal is substandard

and does not meet the minimum 660 ft requirement per the Palm Beach County Access Management Standards.

The recommended Build Alternative 1 maintains the existing conventional interchange configuration and includes the following improvements or modifications.

- I-95 Off-Ramps will be widened to provide triple left turn lanes and triple right turn lanes, and the storage lengths will be extended.
    - For the I-95 northbound off-ramp, provide a second auxiliary lane for 1300 ft.
    - For the I-95 southbound off-ramp, provide a second auxiliary lane for 1300 ft.
- I-95 On-Ramps will have three lanes to receive one dedicated right turn lane and dual left turn lanes from Northlake Boulevard.
    - The I-95 northbound on-ramp has three lanes that will merge to two lanes, joining I-95 as two auxiliary lanes for 1200 ft, then merge to one lane after an additional 1200 ft, lane, then merge into I-95 approximately 3500 ft south of the auxiliary lane taper for the northbound exit to PGA Boulevard.
    - The southbound I-95 three lane on-ramp will not change.
- The I-95 mainline bridge over Northlake Boulevard does not require modification.
- At the interchange, Northlake Boulevard will have four (4) through lanes in the eastbound and westbound directions, two (2) left turn lanes and single lane free-flow right-turn lanes to the on-ramps.
- Pedestrians have full mobility along Northlake Boulevard with signalized pedestrian crossings. Bicycle lanes are provided within the Build Alternative project limits on Northlake Boulevard.
- Northlake Boulevard will have one additional lane for eastbound traffic from west of Keating Drive to Sandtree Drive to maintain traffic flow through the I-95 terminals.
- Northlake Boulevard will have one additional lane for westbound traffic from west of Keating Drive to east of Sandtree Drive to maintain traffic flow through the I-95 terminals.
- At Sunset Drive, closure of the northbound right turn should be considered to reduce vehicle conflicts. Access from Sunset Drive to Keating Drive through the shopping center and right of way and joint-use agreements should be considered during the design and right of way phase.
- At Roan Lane, the eastbound left turn, median opening, and the traffic signal are removed.

9.2 PGA Boulevard SB On-Ramps

As part of this IMR study, improvements at the PGA Boulevard Southbound On-Ramps were also evaluated. These improvements are considered as a traffic safety and operations improvement and not a capacity improvement project and do not require formal Location Design Concept Acceptance. The proposed improvements are fully contained within the I-95 limited access right of way does not add travel lanes and are anticipated to be either a Type I Categorical Exclusion or a Minor Categorical Exclusion (MiCE).

Based on the evaluation of the operational, roadway, drainage, environmental impacts and construction costs, PGA Alternative 1 was selected as the recommended operational improvement since it achieves a similar operational benefit compared to PGA Alternative 2. In addition, Alternative 1 is less costly, less disruptive and results in less environmental impacts.

The proposed improvement under PGA Alternative 1 realigns the WB-SB flyover ramp to join I-95 as an auxiliary lane, eliminating the existing tapered merge connection to the outside general purpose lane. The EB-SB ramp then joins the mainline as an additional auxiliary lane, approximately 1,000 ft. downstream of the WB-SB ramp connection. The second auxiliary lane runs parallel for 1,350 ft. to allow for driver gap acceptance, before merging into the inside auxiliary lane, which then extends south to the interchange with Northlake Boulevard.

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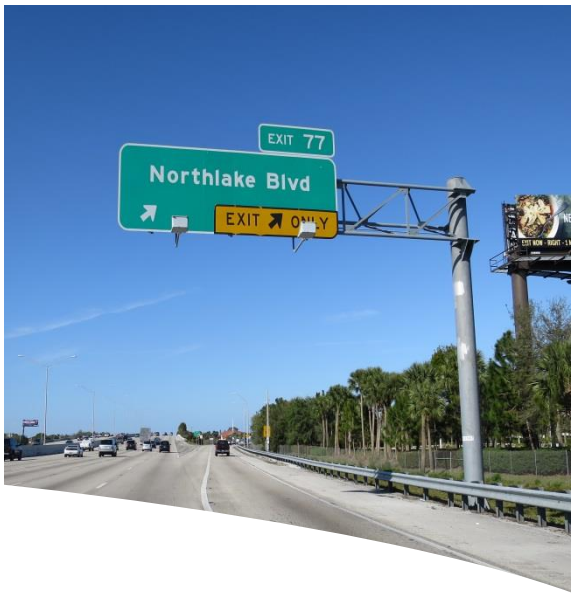
APPENDIX A

(Methodology Letter of Understanding)

Project Development & Environment (PD&E) Study For SR 9/I-95 @ Northlake Boulevard Interchange In Palm Beach County

Methodology Letter of Understanding (MLOU)

FM No: 435803-1-22-02 **ETDM No: 14182**



October 2015

Florida Department of Transportation | District IV
3400 West Commercial Boulevard | Fort Lauderdale, FL 33309

Florida Department of Transportation Interchange Access Request

Methodology Letter of Understanding (MLOU)

Type of request ☐ IJR ☒ IMR ☐ IOAR

Type of Process ☒ Programmatic ☐ Non-Programmatic

SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

FM No.: 435803-1-22-02
ETDM No.: 14182

Coordination of assumptions, procedures, data, networks, and outputs for project traffic review during the access request process will be maintained throughout the evaluation process.

Full compliance with all MLOU requirements does not obligate the Acceptance Authorities to accept the IAR.

The Requester shall inform the approval authorities of any changes to the approved methodology in the MLOU and an amendment shall be prepared if determined to be necessary.

Requestor	Scott Thurman, P.E. *FDOT District 4 Project Manager*	10/5/15 *Date*
Interchange Review Coordinator	Steve Braun, P.E. *FDOT District 4*	10/12/15 *Date*
State Interchange Review Coordinator (if applicable)	Martha Hodgson *Systems Planning Office – Central Office*	11/10/15 *Date*
Federal Highway Administration	N/A Programmatic Chad Thompson, P.E. *Program Operations Engineer*	 *Date*

1.0 Project Description

The Florida Department of Transportation (FDOT) District 4 recently completed the I-95 Interchange Master Plan Study to identify the short-term and long-term needs for the I-95 Interchanges in Broward and Palm Beach Counties. The purpose of the I-95 Master Plan study was to develop design concepts to address traffic spillback onto I-95, improve interchange operations, reduce congestion, and enhance safety at the these interchanges through the year 2040. A total of 31 interchange locations were studied with 14 in Broward County and 17 in Palm Beach County. The SR-9/I-95 at Northlake Boulevard (CR 809A) interchange was one of the 17 interchanges studied as part of the I-95 Interchange Master Plan.

The Concept Development Report prepared for the I-95 Interchange at Northlake Boulevard in Palm Beach County identified several preliminary short-term and long-term improvements based on the traffic operations analysis conducted for the SR-9/I-95 at Northlake Boulevard interchange and adjacent signalized intersections. Some of the preliminary improvements identified for this interchange include:

- Triple left turns for the SR-9/I-95 northbound off-ramp.
- Dual SR-9/I-95 northbound on-ramp and an auxiliary lane on northbound SR-9/I-95 to accommodate westbound-to-northbound right-turn free-flow lane.
- Quadruple left-turns for the SR-9/I-95 southbound off-ramp.
- Improvements at various intersections along Northlake Boulevard including Keating Drive, Military Trail and Sunrise Drive/Sandtree Drive.

The preliminary improvements at this location were recommended to be further evaluated as part of the Project Development and Environment (PD&E) Study. In order to streamline the PD&E process and to expedite the traffic analysis effort, the FDOT District 4 Planning and Environmental Management Office prepared a Traffic Data Collection & Traffic Projections Report for various PD&E studies along I-95 including the I-95 Interchange at Northlake Boulevard to provide consistent traffic data and forecasts. This report provided the existing traffic data as well as the Annual Average Daily Traffic (AADT) forecasts for the freeway and arterial segments within the project study limits and will serve as the basis of the traffic analysis.

This Interchange Modification Report (IMR) is being prepared as part of the Project Development and Environment (PD&E) Study to address the proposed improvements at the I-95 Interchange with Northlake Boulevard. The Methodology Letter of Understanding (MLOU) outlines the criteria, assumptions, processes, analyses and documentation requirements for preparation of the Interchange Modification Report (IMR) for the proposed improvements at the SR-9/I-95 at Northlake Boulevard interchange. This MLOU has been developed in accordance with FDOT's Policy No. 000-525-015 and Procedure No. 525-030-160, including the FDOT publications: Interchange Access Request User's Guide, March 2015. It outlines the technical procedures, assumptions, traffic data, analyses, and documentation required for this project.

A *Purpose and Need Statement*

The purpose of the project is to enhance overall traffic operations at the existing interchange of SR-9/I-95 and Northlake Boulevard by providing improvements to achieve acceptable Levels of Service (LOS) at the interchange in the future condition (2040 Design Year). Conditions along Northlake Boulevard are anticipated to deteriorate below acceptable LOS standards if no improvements occur by 2040; the interchange will have insufficient capacity to accommodate the projected travel demand. The need for the project is based on the following primary and secondary criteria:

Primary Criteria

Capacity/Transportation Demand: Improve Operational Capacity and Overall Traffic Operations

The project is anticipated to improve traffic operations at the SR-9/I-95 and Northlake Boulevard interchange and study area roadways/intersections by implementing operational and capacity improvements to meet the future travel demand projected as a result of Palm Beach County population and employment growth.

Based upon the traffic operations analysis conducted for the SR-9/I-95 at Northlake Boulevard interchange and adjacent signalized intersections as part of I-95 Interchange Master Plan, the existing and future AM and PM peak hour traffic conditions for the five study intersections along Northlake Boulevard are as follows:

Intersection	Existing (2013)				Future (2040 No-Build)			
	AM		PM		AM		PM	
	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)
Keating Drive	C	23.4	D	47.9	E	59.1	F	102.5
SB Ramp Terminal	C	28.3	C	29.3	E	80.0	D	53.0
NB Ramp Terminal	D	53.2	D	36.0	E	60.4	E	77.6
Roan Lane	A	2.4	A	2.2	A	2.8	A	3.4
Sunrise Drive	D	35.6	F	80.7	F	83.2	F	104.1

Source: Concept Development Report for the I-95 Interchange at Northlake Boulevard

Although all of the intersections along Northlake Boulevard (except Sunrise Drive/Sandtree Drive) operate at LOS E or better under existing conditions, it should be noted that several of the individual through and turning movements at the intersections (which include the SR-9/I-95 on/off-ramp approaches) operate at LOS F during both the AM and PM peak periods. Without the proposed improvements, the intersections are projected to experience excessive delays and queuing and operate below acceptable LOS standards by the 2040 Design Year.

Growth Management: Accommodate Future Growth and Development

Commercial retail/office and residential land uses are located adjacent to the interchange. Commercial retail/office uses are located along Northlake Boulevard west of the SR-9/I-95 southbound

ramps. Predominantly residential uses are located to the west of Congress Avenue, while residential and commercial retail uses are located to the east of SR-9/I-95. According to the Future Land Use Maps for Palm Beach County and the City of Palm Beach Gardens, the project area is to remain relatively unchanged.

The population within the vicinity of the interchange is anticipated to increase by 50% from 2010 to 2040, while the employment is expected to increase by approximately 51% from 2010 to 2040 within a 2-mile buffer of the interchange location. These projections are based on data derived from the Southeast Regional Planning Model (SERPM) Version 7.0.

As such, the proposed improvements will be critical in supporting growth within the vicinity of the interchange and the overall vision of the City of Palm Beach Gardens and Palm Beach County.

Secondary Criteria

Safety: Improve Safety Conditions

The Concept Development Report for the I-95 Interchange at Northlake Boulevard included a safety analysis of the project area. A total of 153 crashes occurred at the ramp terminal intersections and approaches at the interchange for the three-year period from 2010 through 2012. The predominant crash type were rear-end crashes accounting for 54% of the total crashes.

FDOT's high crash location reports (for the period 2010 through 2012) provide those locations that have a higher crash rate as compared to crash rates for similar statewide roadways. The high crash locations along SR-9/I-95 within the area of influence include:

- SR-9/I-95 Northbound Off-Ramp (2011)
- SR-9/I-95 mainline between mileposts 34.6 and 34.8 (2010)

The proposed improvements are anticipated to provide additional through and turn lanes, as well as interchange ramp improvements, to help reduce conflict points and the potential occurrence of collisions at the interchange.

Emergency Evacuation: Enhance Emergency Evacuation and Response Times

SR-9/I-95 and Northlake Boulevard (from SR-9/I-95 to SR A1A) serve as part of the emergency evacuation route network designated by the Florida Division of Emergency Management. Also designated by Palm Beach County as evacuation facilities, SR-9/I-95 and Northlake Boulevard (from SR-9/I-95 to SR A1A) are critical in facilitating traffic flows during emergency evacuation periods as they connect other major arterials and highways of the state evacuation route network. The project is anticipated to:

- Improve emergency evacuation capabilities by enhancing connectivity and accessibility to SR-9/I-95 and other major arterials designated on the state evacuation route network from the west and east, and
- Increase the operational capacity of traffic that can be evacuated during an emergency event.

A Project Location

The SR-9/I-95 at Northlake Boulevard interchange is located on SR-9/I-95 (MP 34.34 to MP 34.776) between the PGA Boulevard (SR 786) interchange (1.73 miles to the north) and the Blue Heron Boulevard (SR 708) interchange (1.76 miles to the south) within the City of Palm Beach Gardens in eastern Palm Beach County. This interchange project proposes to improve interchange operations to address traffic spillback onto SR-9/I-95, reduce congestion, and increase safety. **Figure 1** shows the project location map and study area.

B Area of Influence

The area of influence for this IMR study defines the area that is anticipated to experience substantial changes in traffic operating characteristics as the result of the access proposal. In urban areas, the area of influence as defined in the Interchange Access Request Users Guide, includes one adjacent interchange in each direction and signalized intersections within half-a-mile of the interchanges.

The project area of influence is along SR 9/I-95 from Blue Heron Boulevard Interchange (MP 32.565 to MP 33.036) to PGA Boulevard Interchange (MP 36.50 to MP 36.962) including the following freeway segments, arterial segment, and signalized intersections:

- **Freeway Segments**
    a. I-95 NB and SB between Blue Heron Boulevard and Northlake Boulevard
    b. I-95 NB and SB between Northlake Boulevard and PGA Boulevard

- **Arterial Segment**
    a. Northlake Boulevard between Military Trail and Mac Arthur Boulevard

- **Signalized Intersections**
    a. Northlake Boulevard
        i. Northlake Boulevard at N Military Trail
        ii. Northlake Boulevard at Keating Dr.
        iii. Northlake Boulevard at I-95 SB ramp terminal
        iv. Northlake Boulevard at I-95 NB ramp terminal
        v. Northlake Boulevard at Sunrise Dr.

    b. Blue Heron Boulevard
        i. Blue Heron Boulevard at Military Trail
        ii. Blue Heron Boulevard at I-95 SB ramp terminal
        iii. Blue Heron Boulevard at I-95 NB ramp terminal
        iv. Blue Heron Boulevard at Garden Rd.

    c. PGA Boulevard
        i. PGA Boulevard at N Military Trail.
        ii. PGA Boulevard at I-95 SB ramp terminal
        iii. PGA Boulevard at I-95 NB ramp terminal

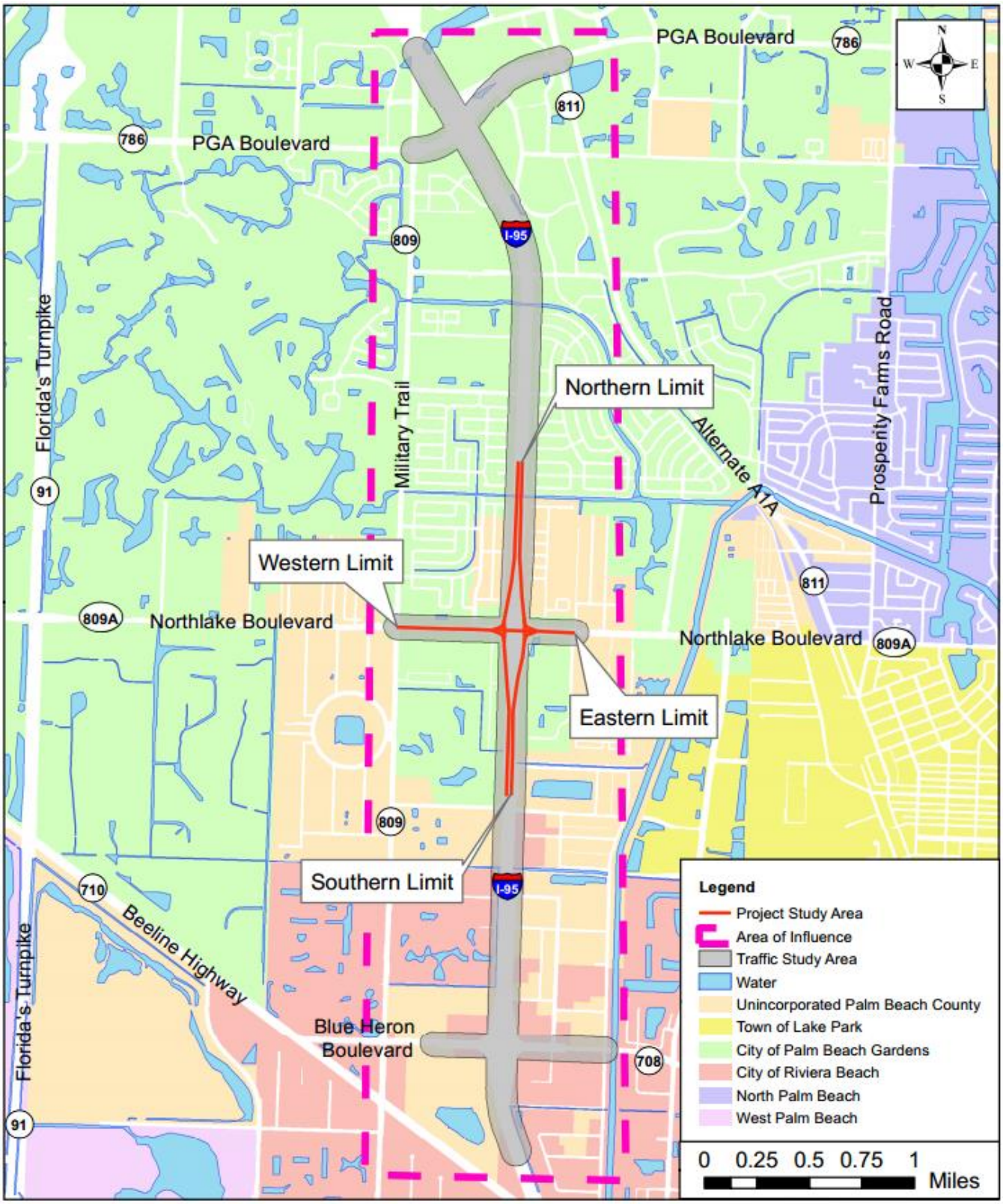


Figure 1 Project Location Map and Study Area

The anticipated area of influence for this IMR Study is shown in **Figure 1**. Two intersections within the influence area were not included in the study:

1. Northlake Boulevard at Roan Lane
2. PGA Boulevard at Lake Victoria Gardens

The Northlake Boulevard at Roan Lane intersection was not included since the signal only controls the eastbound left turn movement and does not impact traffic coming off from the interstate. The PGA Boulevard at Lake Victoria Gardens intersection of was not included since any improvements needed at this location will be included as part of the ongoing PGA/Central Blvd PD&E study (FM# 413265-1).

C Project Schedule

The PD&E Study is anticipated to be completed in approximately 24 months. **Figure 2** below lists the major milestones needed to accomplish the various IMR study tasks. The expected approval of the IMR is in July 2016.

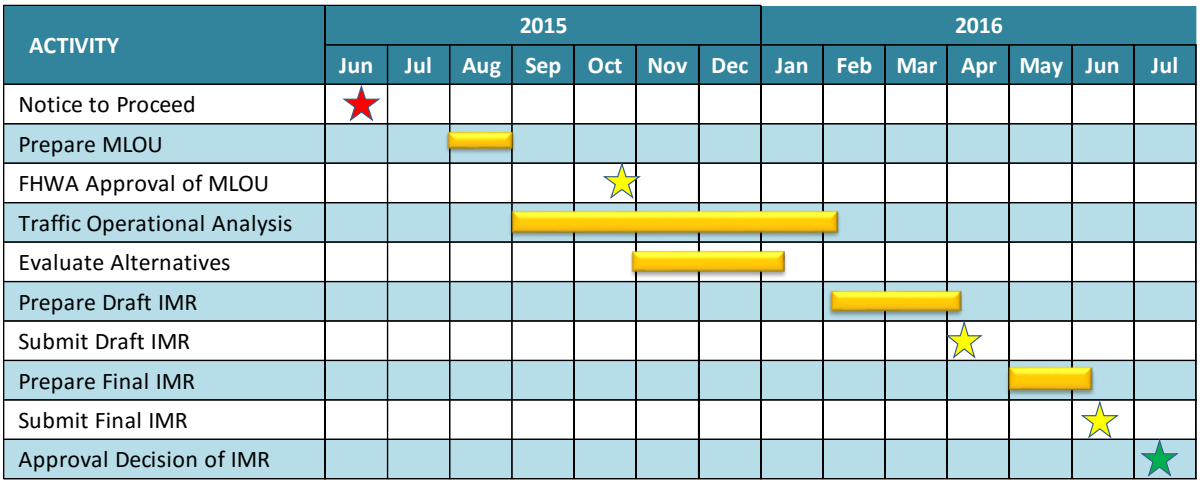


Figure 2 Interchange Access Request Schedule

2.0 Analysis Years

The analysis years for the operational analysis were established based on coordination with FDOT District Four. The proposed analysis years for the IMR are as follows:

A Traffic Forecasting

- Base year: 2010
- Horizon year: 2040

B Traffic Operational Analysis

- Existing year: 2015
- Opening year: 2020
- Design year: 2040

3.0 Alternatives

The No-Build and Build alternatives including a TSM&O alternative shall be analyzed for this IMR. The following alternatives will be evaluated as part of this IMR Study.

A No-Build Alternative

The No Build Alternative assumes no proposed improvements to the study intersection and serves as a baseline for comparison against the Build Alternative. It will however, include on-going construction projects and all funded or programmed improvements scheduled to be opened to traffic in the analysis years being considered. These improvements must be part of the Department's adopted Five-Year Work Program, Palm Beach County Metropolitan Planning Organization (MPO) cost feasible Long Range Transportation Plan (LRTP), transportation elements of Local Government Comprehensive Plans (LGCP), or developer-funded transportation improvements specified in approved development orders.

B Transportation Systems Management and Operations (TSM&O) Alternative

The TSM&O Alternative considers minor improvements to enhance operations and safety without the addition of through lanes. TSM&O includes low-cost improvements such as adding turn lanes at intersections, adjusting signal phasing and timings, and considering opportunities to enhance alternative travel modes and implement intelligent transportation systems (ITS) such as adaptive traffic signals.

C Build Alternative 1 – Tight Diamond

Build Alternative 1 considered for this IMR Study is generally based on the preliminary conceptual design recommended as part of the planning study (See **Attachment A**). This alternative maintains theexisting tight diamond configuration and provides the following improvements to accommodate the 2040 design year traffic demand:

- Triple left turns for the SR-9/I-95 northbound off-ramp terminal.
- Dual SR-9/I-95 northbound on-ramp and an auxiliary lane on northbound SR-9/I-95 to accommodate westbound-to-northbound right-turn free-flow lane.
- Triple left-turns for the SR-9/I-95 southbound off-ramp terminal. Turn lane improvements at various intersections along Northlake Boulevard including Keating Drive, Military Trail and Sunrise Drive/Sandtree Drive.

Additional improvements may be required to accommodate the design year traffic volumes at this interchange location.

D Build Alternative 2 – Diverging Diamond

Build Alternative 2 considered for this IMR Study reconfigures the existing tight diamond interchange into a diverging diamond interchange configuration (See **Attachment A**). The diverging diamond concept requires drivers to briefly cross to the left, or opposite side of the road at carefully designed crossoverintersections. Drivers travel for a short distance, then cross back to the traditional or right side of theroad. This unconventional design allows free-flow movements for the left and right turns to and from the I-95 ramps onto Northlake Boulevard without crossing the path of opposing traffic. The crossoveris made at the signal where the opposing traffic flows split the signal green time. The major advantageof this type of interchange is that the left turning vehicles do not require a signal phase which makes this a two-phased signal system with more green time for the opposing traffic. Turn laneimprovements at various intersections along Northlake Boulevard including Keating Drive, Military Trailand Sunrise Drive/Sandtree Drive are similar to Build Alternative 1.

E Build Alternative 3 – Flyover Ramp

Build Alternative 3 considered for this IMR Study generally maintains the existing tight diamond configuration but provides a westbound to southbound third level flyover ramp (See **Appendix A**). The proposed flyover ramp provides mobility improvements for higher volume westbound to southbound movement compared to the eastbound to northbound movement. In addition, it reduces the westbound thru traffic volume at the northbound ramp terminal intersection and also eliminates one signal phase at the southbound ramp terminal intersection. This allows additional green time to be assigned to the northbound and southbound left turn movements at the ramp terminal intersections thereby reducing the number of turn lanes required while improving operations and safety to accommodate the 2040 design year travel demand. The implementation of this alternative may require the elimination of the directional eastbound left turn at roan lane as well as right of way and access impacts to the businesses in the northeast quadrant of the interchange. Turn lane improvements at various intersections along Northlake Boulevard including Keating Drive, Military Trail and Sunrise Drive/Sandtree Drive are similar to Build Alternative 1.

4.0 Data Collection

A Transportation System Data

Data Collection Sources

The table below summarizes transportation system data sources which will be utilized in this IMR study.

Summary of Data Sources		
Item	**Source**	**Purpose**
Traffic Counts	FDOT's Florida Traffic Information (FTI) Online	Traffic factors, Existing Condition Analysis
	Traffic Counts collected for this IMR (collected on a typical weekday)	
Roadway data	Straight Line Diagram (SLD) from FDOT	Existing Condition Analysis, Travel Demand Forecast
	Roadway Characteristic Inventory (RCI) from FDOT	
Land use	Palm Beach County and the MPO	Travel Demand Forecast
Long Range Transportation Plan	Palm Beach MPO	Travel Demand Forecast
I-95 Master Plan Studies	FDOT District 4	Purpose and Need
Crash Data	FDOT CARS Database Palm Beach County Crash Database	Existing Condition Analysis
Environmental Data	Efficient Transportation Decision Making (ETDM)	Environmental Impacts Evaluation

Transportation Network

SR-9/I-95 is currently a ten-lane divided interstate freeway from north of the Congress Avenue interchange (southern limit) to north of the PGA Boulevard interchange (northern limit) providing four general purpose lanes and one High Occupancy Vehicle (HOV) lane in each direction. Auxiliary lanes are also provided in both the northbound and southbound directions between PGA Boulevard to the north and Heron Boulevard to the south. North of Northlake Boulevard, SR-9/I-95 southbound provides one auxiliary lane between PGA Boulevard and Northlake Boulevard for a total of six southbound lanes. South of Northlake Boulevard, SR-9/I-95 provides one auxiliary lane in each direction between Blue Heron Boulevard and Northlake Boulevard resulting in a twelve-lane section. The existing right-of-way varies as it approaches the interchange, but the typical right-of-way ranges from approximately 300 to 725 feet. As part of the Strategic Intermodal System (SIS) and one of two major expressways (Florida's Turnpike being the other) that connect the major employment centers and residential areas of Miami-Dade, Broward and Palm Beach Counties, SR-9/I-95 serves an important role in facilitating the north-south movement of traffic in Southeast Florida.

Northlake Boulevard (CR 809A) is a six-lane divided urban other principal arterial under the jurisdiction of Palm Beach County. Northlake Boulevard at the SR-9/I-95 overpass has dual left-turn lanes and a single right-turn lane in both the eastbound and westbound directions to access the SR-9/I-95 on-ramps. The existing right-of-way varies from approximately 150 to 200 feet west of SR-9/I-95 and 200 feet east of SR-9/I-95. Sidewalks and designated bicycle lanes are provided along both sides of Northlake Boulevard within the area of influence. The interchange at SR-9/I-95 and Northlake Boulevard is a typical diamond configuration. Adjacent accessible signalized intersections relative to this interchange are located at Keating Drive (west) and Roan Lane and Sunrise Drive/Sandtree Drive (east).

B Existing and Historical Traffic Data

The existing traffic data to be used by this IMR Study was provided by FDOT District 4. The data was collected from February, 2015 through May, 2015 on typical weekdays (Tuesday, Wednesday, and Thursday) at the intersections within the vicinity of the I-95 interchanges. This data collection effort was performed during the peak season for traffic. In general, the traffic data for each intersection included 6-hour turning movement counts (6:00 AM to 9:00 AM, and 4:00 PM to 7:00 PM), including the Right-Turn-On-Red (RTOR) volumes, for three consecutive weekdays, 72-hour approach/departure machine counts for all the approaches, and vehicle classification counts for selected approaches at selected intersections.

Turning Movement Counts

The TMC's were obtained for the following intersections along the respective arterials. The locations of the TMCs are shown in **Figure 3.**

- Northlake Boulevard Corridor
  1. Northlake Boulevard at Military Trail
  2. Northlake Boulevard at I-95 Southbound off Ramp
  3. Northlake Boulevard at I-95 Northbound off Ramp
  4. Northlake Boulevard at Sunrise Drive
  5. Northlake Boulevard at Keating Drive

- Blue Heron Boulevard Corridor
  1. Blue Heron Boulevard at Military Trail
  2. Blue Heron Boulevard at I-95 Northbound off Ramp
  3. Blue Heron Boulevard at I-95 Southbound off Ramp
  4. Blue Heron Boulevard at Garden Road

- PGA Boulevard Corridor
  1. PGA Boulevard at Military Trail
  2. PGA Boulevard at I-95 Southbound off Ramp
  3. PGA Boulevard at I-95 Northbound off Ramp

Figure 3 Data Collection Locations

72-hr Machine Counts

72-hour vehicle volume counts from Tuesday to Thursday were also collected at the following locations. These locations are shown in **Figure 3.**

1. PGA Boulevard Westbound to I-95 Southbound
2. I-95 Northbound to PGA Boulevard Westbound
3. PGA Boulevard Eastbound to I-95 Southbound

Origin-Destination

Origin-Destination (OD) data for the I-95 interchange at Northlake Lake Boulevard northbound off-ramp left turn movement was also obtained to enable understanding of the traffic patterns for vehicles leaving the interchange and turning into downstream intersections. The Origin-Destination data collection was performed from March 31, 2015 through April 2, 2015 for I-95 (three consecutive weekdays on Tuesday, Wednesday, and Thursday.

Historical Traffic data

Historic traffic counts, classification counts and data were obtained from the following FDOT's traffic monitoring sites within the project influence area. There are several FDOT traffic counts within the project influence areas. The locations are provided in **Figure 3**.

C Land Use Data

The SR-9/I-95 at Northlake Boulevard interchange occurs within the City of Palm Beach Gardens. The area surrounding the interchange is urbanized. Commercial retail/office uses are located along Northlake Boulevard (north and south) both east and west of SR-9/I-95. Residential uses within the area are primarily buffered by the commercial uses along Northlake Boulevard; however, they are adjacent to SR-9/I-95 further north and south. A mix of commercial retail/office and residential activities exist southeast of the interchange as part of the Northlake Boulevard Planned Unit Development.

According to the Future Land Use Maps for Palm Beach County and the City of Palm Beach Gardens, the project is expected to support the vision of both Palm Beach County and the City of Palm Beach Gardens as it will accommodate the expanding employment growth in the area supported by the established Planned Unit Development (Northlake Boulevard), City of Pam Beach Gardens Northlake Boulevard Overlay Zone, and growing commercial retail/office uses around the interchange. Effects on the area's character resulting from the minor additional right-of-way required as part of the interchange improvement are anticipated to be minimal.

D Environmental Data

Environmental Data obtained from the FDOT Environmental Screening Tool (EST) as well as data obtained as part of the PD&E Study will be used to prepare preliminary evaluations of the environmental impacts for the IMR.

E Planned and Programmed Projects

A number of planned projects were identified within the influence area of this IMR study. The table below provides a summary of these planned projects:

Planned Projects				
Project #	**Project Name**	**Improvement Type**	**Year**	**Phase**
4132651	SR 9/I-95 at PGA Boulevard/Central Boulevard	Interchange Justification Report	2016	Design
4316451	Military Trail @ CR 809A/Northlake Blvd	Add Turn Lanes	2017	Construction
2012506	SR 786/PGA Blvd. At Military Trail	Intersection Improvement	2016	Construction
4347231	I-95 @ Blue Heron Interchange	Add Turn Lanes	2016	Construction
4333011	DMS Signs at W. Blue Heron Blvd.	Dynamic Message Sign	2016	Design Build

5.0 Travel Demand Forecasting

The travel demand forecasting analysis for this IMR study was developed based on the guidelines and procedures outlined in the FDOT's Project Traffic Forecasting Handbook (2014).

A Selected Travel Demand Model(s)

The travel demand forecast for this IMR Study was performed by FDOT District 4 using the MPO approved Southeast Florida Regional Planning Model - SERPM 7.0 with a base year of 2010 and horizon year of 2040.

B Project Traffic Forecast Development Methodology

AADT Forecast Volumes

The AADT forecast volumes for this IMR Study was developed by FDOT District 4. The traffic forecasting methodology used for each intersection approach was based on the 2015 AADT (from field) as well as the SERPM 7.0 model volumes for the 2010 base year and 2040 design year. The detailed methodology and recommended future AADTs are provided in the *I-95 Interchange PD&E Studies Traffic Data Collection & Traffic Projections Report*.

Design Hour Traffic Development

The future DDHVs of arterial segments will be developed by applying AADT x K x D. The existing ratio of AM to PM peak hour volumes will be maintained for future years. Therefore, if the highest traffic volume on an arterial segment is in the PM, future PM peak hour volume was calculated by multiplying the future AADT by K-factor, and the future AM peak hour volume was calculated by multiplying the future PM peak hour volume with the ratio of existing AM to PM peak hour volumes.

The development of future year turning movement volumes for the signalized intersections will be based upon the existing turning movement percentages obtained from the field. The TMTOOL spreadsheet will be used to estimate turning movement volumes for the 2020 Opening Year and 2040 Design Year based on projected link volumes and existing turning movements. The existing and future year projected turns will be smoothed and balanced to within +/- 7% tolerance level.

C Validation Methodology

Reasonableness checks were performed by comparing the projections utilizing SERPM 7.0 prepared for this PD&E study and those utilizing SERPM 6.5 prepared for the Interchange Master Plan. The detailed model validation methodology is documented in the *I-95 Interchange PD&E Studies Traffic Data Collection & Traffic Projections Report*.

D Adjustment Procedures

The model adjustment procedures utilized in the future traffic forecast analysis are consistent with established methodologies documented in FDOT's *FSUTMS-Cube Framework Phase II, Model Calibration and Validation Standards: Model Validation Guidelines and Standards (2008)*. The detailed adjustment procedures are documented in the *I-95 Interchange PD&E Studies Traffic Data Collection & Traffic Projections Report*.

E Traffic Factors

- Utilizing recommended ranges identified in the Project Traffic Forecasting Handbook and Procedure (525-030-120).
- Utilizing other factors, identified below:

  The recommended K, D and T_{24} factors for the I-95 mainline, ramps and arterial segments are provided in the table below.

Roadway	K	D	T_{24}	PHF	MOCF
I-95 Mainline	8.0%	50.4%	7.4%	0.95	N/A
I-95 NB Ramps	9.0%	100%	7.1%	0.95	N/A
I-95 SB Ramps	9.0%	100%	5.4%	0.95	N/A
Northlake Blvd.	9.0%	55.3%	8.0%	0.95	N/A
Military Trail	9.0%	53.7%	4.4%	0.95	N/A
Sunrise Drive	9.0%	69.6%	4.3%	0.95	N/A
Keating Drive	9.0%	56.2%	4.3%	0.95	N/A

Sources:
1. FDOT Traffic Online 2014
2. Traffic Counts Data Collected for PD&E Study

6.0 Traffic Operational Analysis

The area type, traffic conditions, and analysis tools to be used are summarized in this section.

A Existing Area Type/Traffic Conditions

Area Type	Conditions	
	Under Saturated	Saturated
Rural	☐	☐
Urban Area/Transitioning Area	☐	☒

B Traffic Analysis Software Used

Software		System Component					
		Freeway				Crossroad	
Name	Version	Basic Segment	Weaving	Ramp Merge	Ramp Diverge	Arterials	Intersections
HCS/HCM	2010	☒	☒	☒	☒	☐	☐
Synchro	9.0	☐	☐	☐	☐	☒	☒
TMTOOLS	2.0	☐	☐	☐	☐	☐	☒
VISSIM[1]	7.0	☒	☒	☒	☒	☒	☒

Note 1: Microsimulation analysis software to be used if required

Traffic operational analysis for existing and future conditions will be performed using methodologies outlined in the 2010 Highway Capacity Manual (HCM). AM and PM peak period analysis will be performed for the No-Build and Build Alternatives for the existing year (2015), opening year (2020) and design year (2040).

Capacity analysis for the AM and PM periods will be performed for freeway and ramp segments using Highway Capacity Software (HCS) 2010 to determine densities and Level of Service (LOS). TMTOOL will be used to balance turning movement volumes at intersections. The arterial and intersection analysis will be performed using the HCM module within the SYNCHRO 9 Software.

The need for microsimulation analysis to evaluate the alternatives under consideration will be determined based on results of the HCS 2010 and Synchro 9 analysis.

C Calibration Methodology

- *Calibration methodology and parameters utilized will be documented.*

  No calibration is required for the HCM 2010 or SYNCHRO 9 software tools; however, the following SYNCHRO parameters will be adjusted if necessary to replicate observed field conditions.

- Lost time adjustment factor
- HCM Platoon Ratio

- *Calibration Measures of Effectiveness (MOEs) and calibration targets.*
  - No calibration targets are required for the above adjustment parameters.

D Selection of Measures of Effectiveness (MOE)

- *The Level of Service criteria for each roadway classification, including mainline, ramps, ramp terminal intersections and the crossroad beyond the interchange ramp terminal intersections are identified below.*
  - Mainline freeway segments – Density (pc/mi/ln), average travel speed & LOS
  - Freeway ramps (merge and diverge) – Density (pc/mi/ln) and LOS
  - Weaving segments – Density (pc/mi/ln) and speed (mph) and LOS
  - Signalized intersections – Queue length, volume/capacity ratio, delay & LOS
  - Arterial Segments – Speed, Travel time and LOS

- *In addition to the Level of Service criteria, state other operational MOEs to be utilized for the evaluation of alternatives.*
  - Maintenance of traffic impacts
  - Potential for crash reduction

7.0 Safety Analysis

Detailed crash data within the study area will be analyzed and documented.

Years: Last 5-years of data (2010 to 2014)
Source: FDOT Crash Analysis Reporting System (CARS) and Palm Beach County Crash Database

8.0 Consistency with Other Plans/Projects

A. *The request will be reviewed for consistency with facility Master Plans, Actions Plans, SIS Plan, MPO Long Range Transportation Plans, Local Government Comprehensive Plans or development applications, etc.*

The project is included in the FY 2015-2020 FDOT Work Program (FM #435803-1), the State Transportation Improvement Program (STIP) and the FY 2015–2019 Transportation Improvement Program (TIP) of the Palm Beach Metropolitan Planning Organization (MPO) with funding for the PD&E Phase.

The SR-9/I-95 and Northlake Boulevard interchange improvement is not included in the Cost-Feasible component of the Palm Beach MPO 2040 Long Range Transportation Plan (LRTP). However, it is included as part of the 2020-2040 desires plan with partially committed funding.

B. Where the request is inconsistent with any plan, steps to bring the plan into consistency will be developed.

FDOT District 4 will coordinate with the Palm Beach MPO the FDOT Central Office during the PD&E Study to identify and include funding for the project in the Palm Beach MPO 2040 LRTP Cost-Feasible component and the FDOT STIP prior to requesting Federal Highway Administration (FHWA) Location and Design Concept Acceptance.

C. The operational relationship of this request to the other interchanges will be reviewed and documented. The following other IARs are located within the area of influence.

- Interchange Justification Report (IJR) for SR 9/I-95 @ PGA Boulevard/Central Boulevard (FM# 413265-1)

9.0 Environmental Considerations

A. Status of Environmental Approval and permitting process.

An Efficient Transportation Decision Making (ETDM) Programming Screening was performed prior to the commencement of the PD&E Study. The programming screening performed preliminary evaluation of the socio-economic, cultural, natural and physical environmental impacts of the proposed improvements. Further evaluation of the environmental impacts will be done as part of this PD&E Study to document any potential social, cultural, natural and physical environmental effects associated with the proposed improvements.

B. Identify the environmental considerations that could influence the outcome of the alternative development and selection process.

As part of the ETDM programming screening, FDEP and USEPA reported several potential contamination sites within the 500-foot project buffer including: two dry cleaning program sites, nineteen hazardous waste facilities, twenty-one petroleum contamination monitoring sites, nineteen storage tank contamination monitoring sites, nine Super Act risk sources, forty-four Super Act wells, and sixteen USEPA RCRA-regulated facilities.

As such contamination was assigned a substantial degree of effect due to the large number of sites within proximity to the project, the potential for subsurface contamination associated with these sites, and the potential presence of hazardous substances associated with the existing bridge over the unnamed drainage canal to the north.

Other environmental issues that were assigned a moderate degree of impact include:

- Land Use Changes
- Relocation Potential
- Historic and Archeological Sites
- Wetlands

10.0 Coordination

Yes	No/NA	
☒	☐	An appropriate effort of coordination will be made with appropriate proposed developments in the area.
☒	☐	Request will identify and include (if applicable) a commitment to complete the other non-interchange/non-intersection improvements that are necessary for the interchange/intersection to function as proposed.
☒	☐	Request will document whether the project requires financial or infrastructure commitments from other agencies, organizations, or private entities.
☒	☐	Request will document any pre-condition contingencies required in regards to the timing of other improvements and their inclusion in a TIP/STIP/LRTP prior to the Interstate access acceptance (final approval of NEPA document).
☒	☐	Request will document the funding and phasing.

**Explain if No or Not Applicable (N/A) is checked*:

11.0 Anticipated Design Exceptions and Variations

☐ *Design exceptions/variations are not anticipated, but if an exception/variation should arise it will be processed per FHWA and FDOT standards.*

☒ *The following exceptions/variations to FDOT, AASHTO or FHWA rules, policies, standards, criteria or procedures have been identified:*

- Border width for Eastbound Northlake under I-95 bridge
- Horizontal Clearance for Northlake under bridge
- Border width for interchange ramps

12.0 Conceptual Signing Plan

A conceptual signing and marking plan shall be prepared and included in the access request.

13.0 Access Management Plan

☐ *Access management plan within the area of influence will not be changed by the proposed improvements to the interchange.*

☒ *The improvements may affect access management along Northlake Boulevard within the area of influence. FDOT will coordinate with Palm Beach County to complement the improvements to the interchange:*

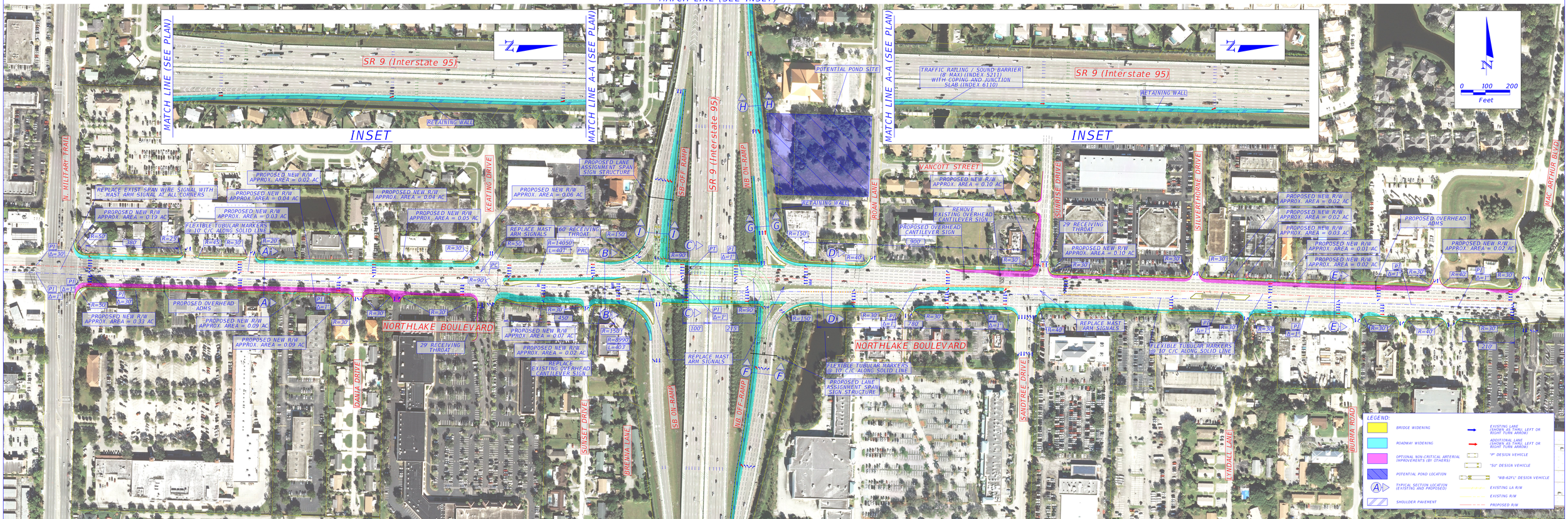
14.0 FHWA Policy Points

The following eight FHWA Policy Criteria (also known as 8 FHWA criteria, Doc E9-20679, dated August 22, 2009) will be specifically addressed within the requested unless identified as not applicable:

N/A	8 FHWA Criteria	
☐	Policy Point 1:	Need for the Access Point Revision
☐	Policy Point 2:	Reasonable Alternatives
☐	Policy Point 3:	Operational and Safety Analyses
☐	Policy Point 4:	Access Connections and Design
☐	Policy Point 5:	Land Use and Transportation Plans
☐	Policy Point 6:	Future Interchanges
☐	Policy Point 7:	Coordination
☐	Policy Point 8:	Environmental Processes

ATTACHMENT A

(Conceptual Plan from Planning Study & Build Alternatives)



Kimley-Horn and Associates, Inc.
Certificate Of Authorization No. 696
HODI GIN Nu, P.E.
P.E. License No. 58123
Suite 100
1690 South Congress Avenue
Delray Beach, Florida 33445

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

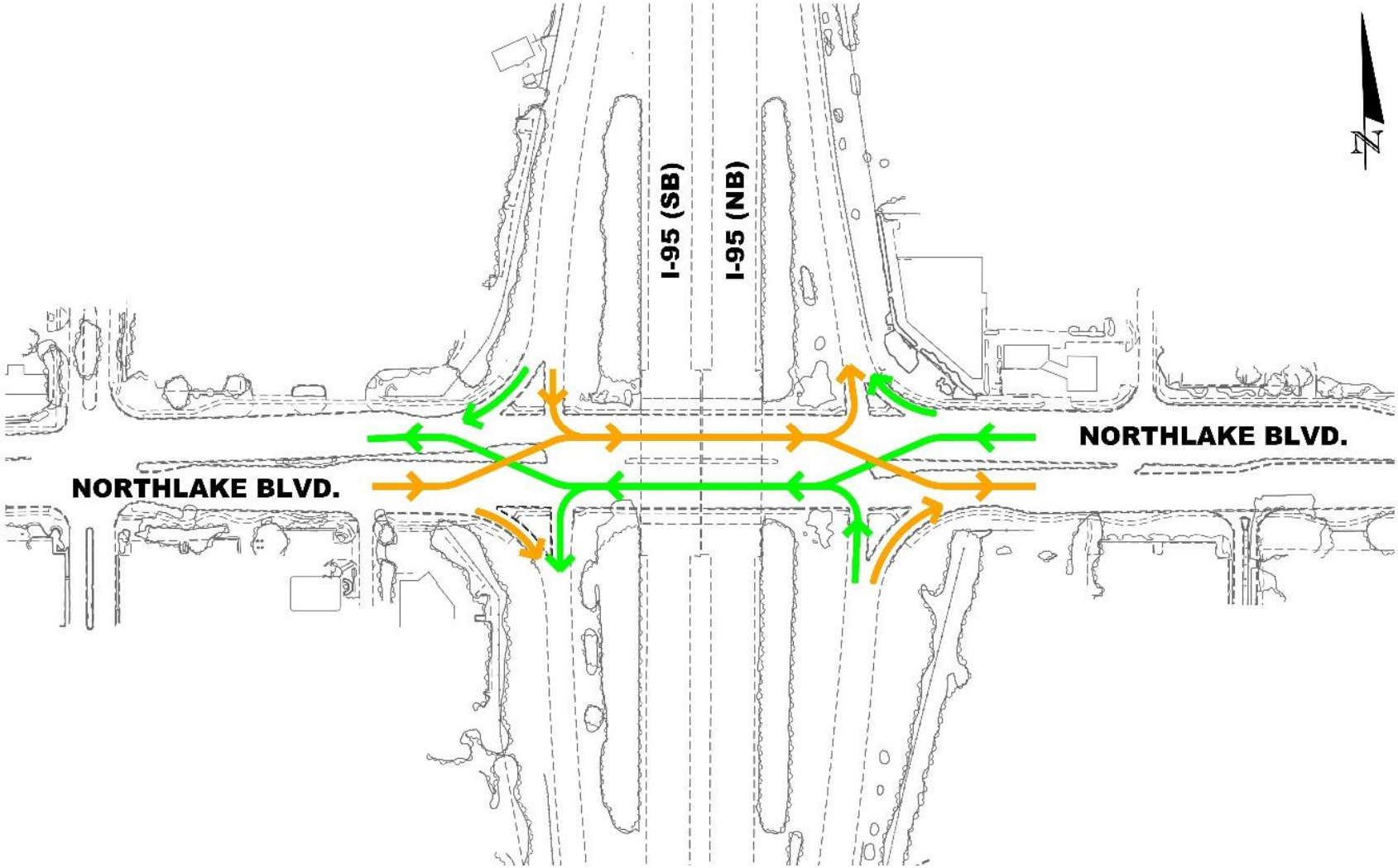
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
9	PALM BEACH	432785-1-22-01

SR 9 (INTERSTATE 95) NORTHLAKE BOULEVARD

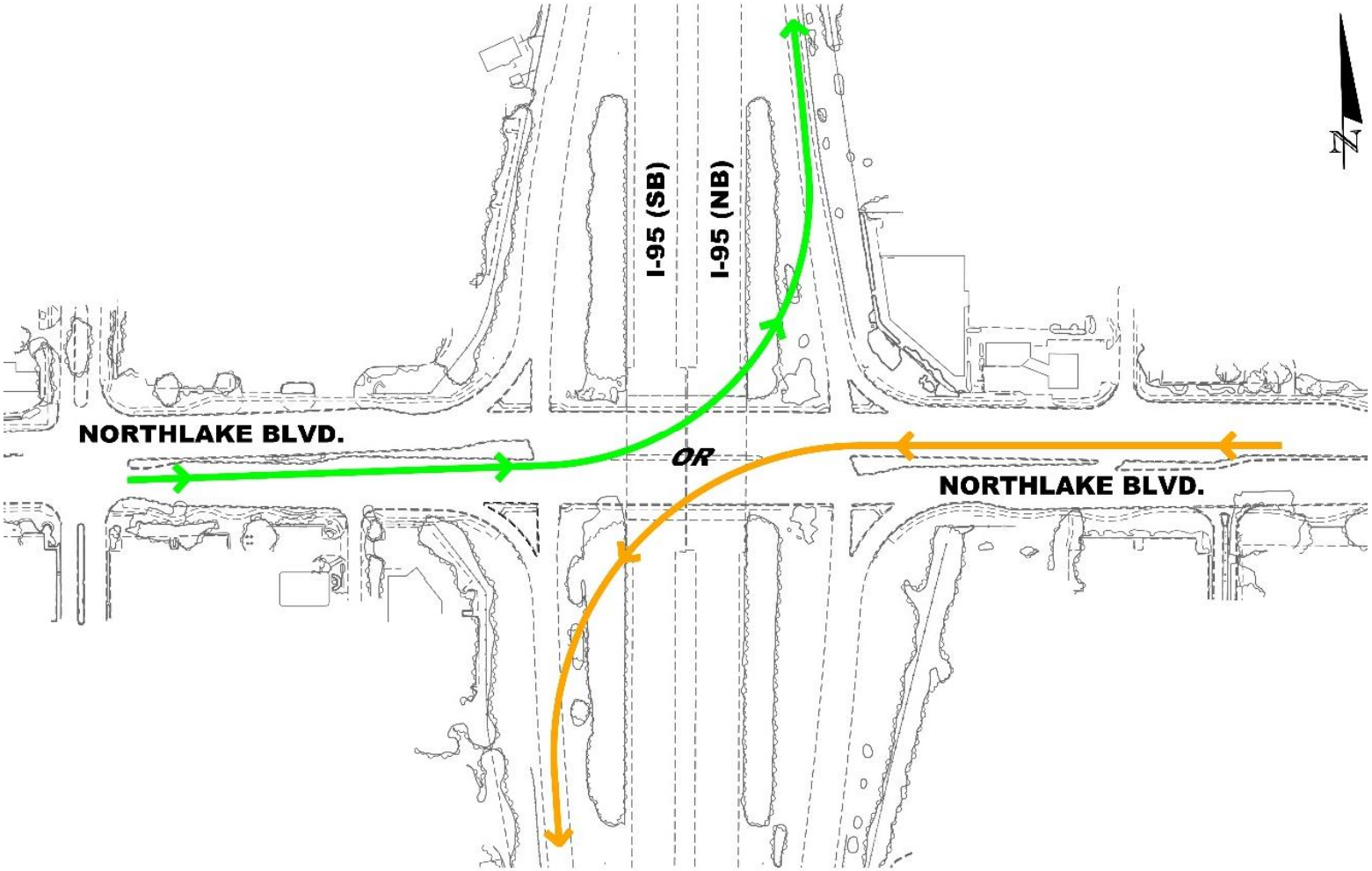
SHEET NO.

sean.bukovich 8/11/2014 3:10:31 PM K:\DCO_Roadway\040006288_SIS_I95_Interchanges\432785122001\17_Northlake_Blvd\roadway\Plan\PLANR001.DGN

Build Alternative:
Diverging Diamond Interchange



Build Alternative: Third Level Flyover



APPENDIX B

(Straight Line Diagrams)

	5 YR INV	SLD REV
DATE	09/02/2014	09/22/2014
BY	CALTRAN	CALTRAN

BMP	EMP	INV	SLD REV
000,000	046,018	F-326	04/08/2015 FDOT-D4
000,000	046,018	11/25/2014 CALTRAN	11/25/2014 CALTRAN

FLORIDA DEPARTMENT OF TRANSPORTATION

STRAIGHT LINE DIAGRAM OF ROAD INVENTORY

SECTION STATUS	INT. or US ROUTE NO.	STATE ROAD NO.	COUNTY	DISTRICT	ROADWAY ID	SHEET NO.
02	I 95	SR 9	PALM BEACH	04	93220000	9 OF 12

ROADWAY FEATURES

32.000 INSIDE CITY, AND URBAN
* RIVIERA BEACH
* MIAMI
*|<=I-95
*|<SR 9
*|<I 95

SR 710 (32.097) — MM 75 — 710

ON RAMP 93220076 A 32.565 — OFF RAMP 93220078 A 32.575

BLUE HERON BLVD — DIAMOND # 076

OFF RAMP 93220077 A 33.025 — ON RAMP 93220079 A 33.036

MM 76 (33.095)

DITCH (33.981) — FARMWAY — DRAINAGE — ROYAL

33.981 INSIDE URBAN, OUTSIDE CITY
* MIAMI
*|<=I-95
*|<SR 9
*|<I 95

32.274 209.0' - 156.0'
12 - 13.0' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
10.0' PVD SHLD1 - LT
11.0' WARN SHLD1 - RT

32.364 206.0' - 78.0'L+64.0'R
6 - 13.0'L + 5 - 12.8'R RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
10.0' PVD SHLD1 - LT
10.0' WARN SHLD1 - RT
12.0' LWN SHLD2 - RT

32.486 181.0' - 128.0'
10 - 12.8' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
10.0' PVD SHLD1 - LT
11.0' PVD SHLD1 - RT

32.575 181.0' - 128.0'
10 - 12.8' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
10.0' WARN SHLD1 - LT
11.0' WARN SHLD1 - RT

33.040 185.0' - 128.0'
10 - 12.8' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
13.0' PVD SHLD1 - LT
12.0' PVD SHLD1 - RT

33.341 194.0' - 128.0'
10 - 12.8' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
10.0' WARN SHLD1 - LT
12.0' WARN SHLD1 - RT
12.0' LWN SHLD2 - LT

33.418 218.0' - 78.0'L+64.0'R
6 - 13.0'L + 5 - 12.8'R RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
2 - 10.0' WARN SHLD1
2 - 12.0' LWN SHLD2

LANE WIDTHS ARE AVERAGED

32.000 210.0' - 156.0'
12 - 13.0' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
2 - 8.0' WARN SHLD1
2 - 3.0' VG SHLD2

32.272 209.0' - 156.0'
12 - 13.0' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
10.0' PVD SHLD1 - LT
8.0' WARN SHLD1 - RT
3.0' VG SHLD2 - RT

32.354 220.0' - 156.0'
12 - 13.0' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
10.0' PVD SHLD1 - LT
10.0' WARN SHLD1 - RT
12.0' LWN SHLD2 - RT

32.465 195.0' - 78.0'L+64.0'R
6 - 13.0'L + 5 - 12.8'R RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
10.0' PVD SHLD1 - LT
11.0' PVD SHLD1 - RT

32.565 181.0' - 128.0'
10 - 12.8' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
10.0' WARN SHLD1 - LT
11.0' PVD SHLD1 - RT

33.036 182.0' - 128.0'
10 - 12.8' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
10.0' WARN SHLD1 - LT
12.0' PVD SHLD1 - RT

33.148 185.0' - 128.0'
10 - 12.8' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
13.0' WARN SHLD1 - LT
12.0' PVD SHLD1 - RT

33.324 185.0' - 128.0'
10 - 12.8' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
13.0' WARN SHLD1 - LT
12.0' WARN SHLD1 - RT

33.391 204.0' - 128.0'
10 - 12.8' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
2 - 10.0' WARN SHLD1
2 - 12.0' LWN SHLD2

33.488 232.0' - 156.0'
12 - 13.0' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
2 - 10.0' WARN SHLD1
2 - 12.0' LWN SHLD2

33.951 220.0' - 156.0'
12 - 13.0' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
10.0' PVD SHLD1 - LT
10.0' WARN SHLD1 - RT
12.0' LWN SHLD2 - RT

ROADWAY COMPOSITION

32.000 28/FC-5
28/FC-5

HORIZONTAL ALIGNMENT

CURVE DATA NOT FIELD VERIFIED

PC=32.701
PI=32.802
PT=32.900
Δ=21°00'45.00"
D=2°00'00 00

STRUCTURE DESCRIPTION

31.952 #0177 32.059
565' BR
#0173
565' BR
31.924 32.031

32.764 1 - 7' X 7' X 292' CBC

32.784 #0519 32.822
200.6' BR

33.768 2 - 8' X 10' X 186' CBC

33.776 #0191 33.780
21.1' CB

33.805 #4162 33.812
37' UP

DISTRICT USE

SIS

32.000 SIS CORRIDOR — SIS CORRIDOR 32.717 32.717 SIS CORRIDOR

FUN CLASS

32.000 URBAN PRIN ART INT.

ROADWAY FEATURES

34.000 INSIDE URBAN, OUTSIDE CITY
* MIAMI
*|<=I-95
*|<SR 9
*|<I 95

34.144 MM 77

34.234 INSIDE CITY, AND URBAN
* PALM BCH.GARDENS
* MIAMI
*|<=I-95
*|<SR 9
*|<I 95

ON RAMP 93220080 A 34.340 — OFF RAMP 93220082 A 34.352

NORTHLAKE BLVD — DIAMOND # 077

OFF RAMP 93220081 A 34.732 — ON RAMP 93220083 A 34.776

MM 78 (35.091)

DITCH (35.366) — 2187 — DRAINAGE — DR — HOLLY

34.223 194.0' - 64.0'L+78.0'R
5 - 12.8'L + 6 - 13.0'R RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
10.0' PVD SHLD1 - LT
10.0' WARN SHLD1 - RT

34.358 194.0' - 64.0'L+78.0'R
5 - 12.8'L + 6 - 13.0'R RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
2 - 10.0' WARN SHLD1

34.776 180.0' - 128.0'
10 - 12.8' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
2 - 10.0' PVD SHLD1

34.927 180.0' - 128.0'
10 - 12.8' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
2 - 10.0' WARN SHLD1

LANE WIDTHS ARE AVERAGED

34.000 220.0' - 156.0'
12 - 13.0' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
10.0' PVD SHLD1 - LT
10.0' WARN SHLD1 - RT
12.0' LWN SHLD2 - RT

34.144 206.0' - 64.0'L+78.0'R
5 - 12.8'L + 6 - 13.0'R RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
10.0' PVD SHLD1 - LT
10.0' WARN SHLD1 - RT
12.0' LWN SHLD2 - RT

34.288 195.0' - 64.0'L+78.0'R
5 - 12.8'L + 6 - 13.0'R RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
8.0' PVD SHLD1 - LT
10.0' WARN SHLD1 - RT
3.0' VG SHLD2 - LT

34.404 180.0' - 128.0'
10 - 12.8' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
2 - 10.0' WARN SHLD1

34.713 180.0' - 128.0'
10 - 12.8' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
10.0' PVD SHLD1 - LT
10.0' WARN SHLD1 - RT

34.866 180.0' - 128.0'
10 - 12.8' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
10.0' WARN SHLD1 - LT
10.0' PVD SHLD1 - RT

35.142 192.0' - 128.0'
10 - 12.8' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
2 - 10.0' WARN SHLD1
12.0' LWN SHLD2 - RT

35.261 180.0' - 128.0'
10 - 12.8' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
2 - 10.0' WARN SHLD1

35.471 194.0' - 78.0'L+64.0'R
6 - 13.0'L + 5 - 12.8'R RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
2 - 10.0' WARN SHLD1

ROADWAY COMPOSITION

34.000 28/FC-5
28/FC-5

34.143 28/FC-2
28/FC-5

HORIZONTAL ALIGNMENT

CURVE DATA NOT FIELD VERIFIED

PI=34.306
Δ=0°25'26"RT

STRUCTURE DESCRIPTION

34.228 1 - 6' X 9' X 300' CBC

34.535 #0516 34.574
205.9' BR

35.351 3 - 12' X 10' X 235' CBC

35.350 #0178 35.357
37' CB

35.483 1 - 30" X 255' CC

35.546 #0517 35.569
121.4' BR

35.570 1 - 36" X 270' CC

35.980 1 - 36" X 255' CC

DISTRICT USE

SIS

34.000 SIS CORRIDOR

FUN CLASS

34.000 URBAN PRIN ART INT.

Version: 1.4.2.24 03/30/2015

	5 YR INV	SLD REV
DATE	09/02/2014	09/22/2014
BY	CALTRAN	CALTRAN

BMP	EMP	INV	SLD REV
000,000	046.018	F-326	04/08/2015 FDOT-D4
000,000	046.018	11/25/2014 CALTRAN	11/25/2014 CALTRAN

FLORIDA DEPARTMENT OF TRANSPORTATION

STRAIGHT LINE DIAGRAM OF ROAD INVENTORY

SECTION STATUS	INT. or US ROUTE NO.	STATE ROAD NO.	COUNTY	DISTRICT	ROADWAY ID	SHEET NO.
02	I 95	SR 9	PALM BEACH	04	93220000	10 OF 12

36.0 37.0 38.0

ROADWAY FEATURES

INSIDE CITY, AND URBAN
* PALM BCH,GARDENS
* MIAMI
*|<=I-95
*|<SR 9
*|<I 95

36.000 MM 79 RD 36.089 BURNS

ON RAMP 93220084 36.500 A

OTHER # 079

ON RAMP 93220087 36.704 A

SR 786/ PGA BLVD 786

RAMP 93220087

OFF RAMP 93220088 36.934 A

PARTIAL DIAMOND # 079C

MM 80 37.107 TRAIL MILITARY

OFF RAMP 93220090 37.466 A

MM 81 37.634

OFF RAMP 93220085 36.526 A

SR 786/PGA BLVD

OFF RAMP 93220086 36.834 A

ON RAMP 93220089 36.962 A

ON RAMP 93220091 37.460 A

36.402 190.0' - 78.0'L+64.0'R
6 - 13.0'L + 5 - 12.8'R RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
6.0' PVD SHLD1 - LT
10.0' PVD SHLD1 - RT

37.460 205.0' - 128.0'
10 - 12.8' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
11.0' PVD SHLD1 - LT
10.0' PVD SHLD1 - RT
2 - 12.0' LWN SHLD2

37.586 205.0' - 128.0'
10 - 12.8' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
11.0' WARN SHLD1 - LT
10.0' WARN SHLD1 - RT
2 - 12.0' LWN SHLD2

37.888 195.0' - 128.0'
10' - 12.8' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
13.0' WARN SHLD1 - LT
10.0' WARN SHLD1 - RT
12.0' LWN SHLD2 - RT

LANE WIDTHS ARE AVERAGED

36.000 194.0' - 78.0'L+64.0'R
6 - 13.0'L + 5 - 12.8'R RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
2 - 10.0' WARN SHLD1

36.396 190.0' - 78.0'L+64.0'R
6 - 13.0'L + 5 - 12.8'R RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
6.0' PVD SHLD1 - LT
10.0' WARN SHLD1 - RT

36.567 190.0' - 78.0'L+64.0'R
6 - 13.0'L + 5 - 12.8'R RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
6.0' PVD SHLD1 - LT
10.0' WARN SHLD1 - RT

36.691 176.0' - 128.0'
10 - 12.8' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
6.0' PVD SHLD1 - LT
10.0' WARN SHLD1 - RT

36.704 181.0' - 128.0'
10 - 12.8' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
8.0' WARN SHLD1 - LT
10.0' WARN SHLD1 - RT
3.0' VG SHLD2 - LT

36.834 186.0' - 128.0'
10 - 12.8' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
8.0' WARN SHLD1 - LT
12.0' PVD SHLD1 - RT
2 - 3.0' VG SHLD2

36.962 182.0' - 128.0'
10 - 12.8' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
2 - 8.0' WARN SHLD1
2 - 3.0' VG SHLD2

37.045 181.0' - 128.0'
10 - 12.8' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
10.0' WARN SHLD1 - LT
8.0' WARN SHLD1 - RT
3.0' VG SHLD2 - RT

37.061 180.0' - 128.0'
10 - 12.8' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
2 - 10.0' WARN SHLD1

37.425 193.0' - 128.0'
10 - 12.8' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
11.0' PVD SHLD1 - LT
10.0' WARN SHLD1 - RT
12.0' LWN SHLD2 - LT

37.575 205.0' - 128.0'
10 - 12.8' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
11.0' PVD SHLD1 - LT
10.0' WARN SHLD1 - RT
2 - 12.0' LWN SHLD2

37.749 195.0' - 128.0'
10 - 12.8' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
11.0' WARN SHLD1 - LT
12.0' WARN SHLD1 - RT
12.0' LWN SHLD2 - LT

37.873 205.0' - 128.0'
10 - 12.8' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
11.0' WARN SHLD1 - LT
10.0' WARN SHLD1 - RT
2 - 12.0' LWN SHLD2

ROADWAY COMPOSITION

36.000 28/FC-2
28/FC-5

36.585 28/FC-5
28/FC-5

HORIZONTAL ALIGNMENT

CURVE DATA NOT FIELD VERIFIED Δ=32°11'40.00" D=1°30'00.00
PC=36.234
PI=36.443
PT=36.641

B=N30°31'40"W

STRUCTURE DESCRIPTION

36.054 #0518 116.2' BR 36.076
36.054 #0521 116.2' BR 36.076
36.166 2 - 7' X 12' X 220' CBC

36.731 #0335 216.5' BR 36.772
36.741 #0336 221.8' BR 36.783

36.855 #0388 31.7' UP 36.861
36.882 1 - 30" X 440' CC

37.135 #0378 374.9' BR 37.206

37.432 1 - 18" X 200' CC

37.501 1 - 18" X 252' CC

37.652 1 - 30" X 340' CMP

DISTRICT USE

SIS 36.000 SIS CORRIDOR

FUN CLASS 36.000 URBAN PRIN ART INT.

38.0 39.0 40.0

ROADWAY FEATURES

INSIDE CITY, AND URBAN
* PALM BCH,GARDENS
* MIAMI
*|<=I-95
*|<SR 9
*|<I 95

38.000 2214 38.120 BLVD CENTRAL

MM 82 38.605 RD HOOD

MM 83 39.600

ON RAMP 93220093 39.703 A

OFF RAMP 93220095 39.812 A

38.016 205.0' - 128.0'
10 - 12.8' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
11.0' WARN SHLD1 - LT
10.0' WARN SHLD1 - RT
2 - 12.0' LWN SHLD2

38.175 185.0' - 128.0'
10 - 12.8' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
13.0' WARN SHLD1 - LT
12.0' WARN SHLD1 - RT

38.273 205.0' - 128.0'
10 - 12.8' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
11.0' WARN SHLD1 - LT
10.0' WARN SHLD1 - RT
2 - 12.0' LWN SHLD2

38.724 209.0' - 128.0'
10 - 12.8' RDWY
56.0 VEG W/ GRD MED
2 - 10.0' PVD INSHLD1
13.0' WARN SHLD1 - LT
12.0' WARN SHLD1 - RT

38.842 229.0' - 128.0'
10 - 12.8' RDWY
56.0 VEG W/ GRD MED
2 - 10.0' PVD INSHLD1
11.0' WARN SHLD1 - LT
10.0' WARN SHLD1 - RT
2 - 12.0' LWN SHLD2

39.711 230.0' - 128.0'
10 - 12.8' RDWY
56.0 VEG W/ GRD MED
2 - 10.0' PVD INSHLD1
12.0' WARN SHLD1 - LT
10.0' PVD SHLD1 - RT
2 - 12.0' LWN SHLD2

39.951 220.0' - 128.0'
10 - 12.8' RDWY
56.0 VEG W/ GRD MED
2 - 10.0' PVD INSHLD1
10.0' WARN SHLD1 - LT
11.0' WARN SHLD1 - RT
3.0' VG SHLD2 - LT
12.0' LWN SHLD2 - RT

LANE WIDTHS ARE AVERAGED

38.000 195.0' - 128.0'
10 - 12.8' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
13.0' WARN SHLD1 - LT
10.0' WARN SHLD1 - RT
12.0' LWN SHLD2 - RT

38.118 195.0' - 128.0'
10 - 12.8' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
11.0' WARN SHLD1 - LT
12.0' WARN SHLD1 - RT
12.0' LWN SHLD2 - LT

38.209 195.0' - 128.0'
10 - 12.8' RDWY
32.0 PVD W/ BAR MED
14.0' WARN INSHLD1 - LT
15.0' WARN INSHLD1 - RT
13.0' WARN SHLD1 - LT
10.0' WARN SHLD1 - RT
12.0' LWN SHLD2 - RT

38.401 229.0' - 128.0'
10 - 12.8' RDWY
56.0 VEG W/ GRD MED
2 - 10.0' PVD INSHLD1
11.0' WARN SHLD1 - LT
10.0' WARN SHLD1 - RT
2 - 12.0' LWN SHLD2

38.648 219.0' - 128.0'
10 - 12.8' RDWY
56.0 VEG W/ GRD MED
2 - 10.0' PVD INSHLD1
11.0' WARN SHLD1 - LT
12.0' WARN SHLD1 - RT
12.0' LWN SHLD2 - LT

38.739 219.0' - 128.0'
10 - 12.8' RDWY
56.0 VEG W/ GRD MED
2 - 10.0' PVD INSHLD1
13.0' WARN SHLD1 - LT
10.0' WARN SHLD1 - RT
12.0' LWN SHLD2 - RT

39.583 229.0' - 128.0'
10 - 12.8' RDWY
56.0 VEG W/ GRD MED
2 - 10.0' PVD INSHLD1
11.0' PVD SHLD1 - LT
10.0' WARN SHLD1 - RT
2 - 12.0' LWN SHLD2

39.698 229.0' - 128.0'
10 - 12.8' RDWY
56.0 VEG W/ GRD MED
2 - 10.0' PVD INSHLD1
11.0' PVD SHLD1 - LT
10.0' PVD SHLD1 - RT
2 - 12.0' LWN SHLD2

39.853 231.0' - 128.0'
10 - 12.8' RDWY
56.0 VEG W/ GRD MED
2 - 10.0' PVD INSHLD1
12.0' WARN SHLD1 - LT
11.0' WARN SHLD1 - RT
2 - 12.0' LWN SHLD2

39.991 208.0' - 128.0'
10 - 12.8' RDWY
56.0 VEG W/ GRD MED
2 - 10.0' PVD INSHLD1
10.0' WARN SHLD1 - LT
8.0' WARN SHLD1 - RT
2 - 3.0' VG SHLD2

ROADWAY COMPOSITION

38.000 28/FC-5
28/FC-5

HORIZONTAL ALIGNMENT

CURVE DATA NOT FIELD VERIFIED
PC=38.312
PI=38.415
PT=38.517
Δ=2°31'28.00"
D=0°14'

B=N30°31'40"W

B=N28°00'12"W

STRUCTURE DESCRIPTION

38.099 1 - 84" X 288' CC

38.188 #0379 110.9' UP 38.209

38.729 #0398 52.8' UP 38.739

39.266 1 - 60" X 380' CC

39.608 1 - 15" X 108' CC

39.968 1 - 15" X 155' CC

DISTRICT USE

SIS 38.000 SIS CORRIDOR

FUN CLASS 38.000 URBAN PRIN ART INT.

Version: 1.4.2.24 03/30/2015

APPENDIX C

(Existing Signal Timings)

NORTHLAKE BLVD.

Palm Beach County **Signal Timing Sheet** **9/10/2015**

17300 : 660 - Northlake Bl and Military Trail (Special 1 File)

Phase [1.1.1]

	1 (EL)	2 (WT)	3 (SL)	4 (NT)	5 (WL)	6 (ET)	7 (NL)	8 (ST)	9	10	11	12	13	14	15	16
Walk		5		5		5		5								
Ped Clearance		40		32		36		36								
Min Green	4	20	4	6	4	20	4	6								
Passage	2	4	2	2	2	4	2	2								
Max1	40	45	30	40	35	45	25	40								
Max2	28	60	30	35	35	60	25	35								
Yellow	4	4.5	4	4	4	4.5	4	4	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Red	2	2.5	3	2.5	3	2.5	3	2								

Phase Option [1.1.2]

	1 (EL)	2 (WT)	3 (SL)	4 (NT)	5 (WL)	6 (ET)	7 (NL)	8 (ST)	9	10	11	12	13	14	15	16
Enable	ON	ON	ON	ON	ON	ON	ON	ON								
Auto Entry				ON				ON								
Auto Exit		ON				ON										
Non Act1																
Non Act2																
Lock Call		ON				ON										
Min Recall		ON				ON										
Max Recall																
Ped Recall																
Dual Entry		ON		ON		ON		ON								
Sim Gap Enable																
Rest In Walk																

Detector, Vehicle Parameters 1-16 [5.1]

	1 (EBL1)	2 (EBL2)	3 (WBT1)	4 (WBT2)	5 (WBT3)	6	7 (SBL1)	8 (SBL2)	9 (NBT1)	10 (NBT2)	11 (NBT3)	12 (NBR1)	13 (WBL1)	14 (WBL2)	15 (EBT1)	16 (EBT2)
Call Phase	1	1	2	2	2		3	3	4	4	4	4	5	5	6	6
Switch Phase																
Delay Time												10				

Detector, Vehicle Parameters 17-32 [5.1]

	17 (EBT3)	18 (EBR1)	19 (NBL1)	20 (NBL2)	21 (SBT1)	22 (SBT2)	23 (SBT3)	24 (SBR1)	25	26	27	28	29	30	31	32
Call Phase	6	6	7	7	8	8	8	8								
Switch Phase																
Delay Time								10								

Detector, Vehicle Parameters 33-48 [5.1]

	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Call Phase																
Switch Phase																
Delay Time																

Detector, Vehicle Parameters 49-64 [5.1]

	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
Call Phase																
Switch Phase																
Delay Time																

Approved By: Stephen Shreve **Date:** _____

Palm Beach County **System Timing Sheet** **9/10/2015**

17300 : 660 - Northlake Bl and Military Trail (Special 1 File)

TB Coor, Day Plan [4.4]

Day Plan Table 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		7	10	15	20											
Minute																
Action	100	2	1	3	4											

Day Plan Table 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		7	9	21												
Minute																
Action	100	4	5	4												

Day Plan Table 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		7	9	21												
Minute																
Action	100	4	5	4												

Coordination, Pattern 1-16 [2.1]/Coordination, Alt Tables+[2.6]

Pattern	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Cycle Time	160	170	170	120	160											
Offset Time	12	115	129	35	108											
Split Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Seq Number	3	1	1	12	14	9	1	1	1	1	1	1	1	1	1	1
Ph Opt Alt																
Ph Time Alt																

Coordination, Splits [2.7.1]

Split Table 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	26	58	32	44	35	49	23	53								
Mode	NON	MAX	NON	NON	NON	MAX	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	46	52	28	44	28	70	24	48								
Mode	NON	MAX	NON	NON	NON	MAX	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	30	63	32	45	34	59	27	50								
Mode	NON	MAX	NON	NON	NON	MAX	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	24	39	22	35	22	41	22	35								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	35	52	28	45	30	57	24	49								
Mode	NON	MAX	NON	NON	NON	MAX	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	20	39	27	34	20	39	20	41								
Mode	NON	MAX	MAX	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Approved By: Stephen Shreve **Date:** _____

17300 : 660 - Northlake Bl and Military Trail (Special 1 File)

Preemption Times[3.1]/Phases[3.2]/Options[3.3]

Channel	1	2	3	4	5	6
Lock Input						
Override Flash						
Override Higher						
Flash Dwell						
Link						
Delay						
Min Duration						
Min Green						
Min Walk						
Ped Clear						
Track Green						
Min Dwell						
Max Presence						
Track R1						
Track R2						
Track R3						
Track R4						
Dwell P1						
Dwell P2						
Dwell P3						
Dwell P4						
Dwell P5						
Dwell P6						
Dwell P7						
Dwell P8						
Dwell P9						
Dwell P10						
Dwell P11						
Dwell P12						
Dwell Ped1						
Dwell Ped2						
Dwell Ped3						
Dwell Ped4						
Dwell Ped5						
Dwell Ped6						
Dwell Ped7						
Dwell Ped8						
Exit R1						
Exit R2						
Exit R3						
Exit R4						

Preemption Times+[3.4]/Overlaps+[3.5]/Options+[3.6]

Preempt	1	2	3	4	5	6
Enable						
Type	EMERG	EMERG	EMERG	EMERG	EMERG	EMERG
Skip Track						
Volt Mon Flash						
Coord in Preempt						
Max2						
Return Max/Min	MAX	MAX	MAX	MAX	MAX	MAX
Extend Dwell						
Pattern						
Output Mode	TS2	TS2	TS2	TS2	TS2	TS2
Track Over 1						
Track Over 2						
Track Over 3						
Track Over 4						
Track Over 5						
Track Over 6						
Track Over 7						
Track Over 8						
Track Over 9						
Track Over 10						
Track Over 11						
Track Over 12						
Dwell Over 1						
Dwell Over 2						
Dwell Over 3						
Dwell Over 4						
Dwell Over 5						
Dwell Over 6						
Dwell Over 7						
Dwell Over 8						
Dwell Over 9						
Dwell Over 10						
Dwell Over 11						
Dwell Over 12						
Ped Clear						
Yellow						
Red						
Return Min/Max						
Delay Inh						
Exit Time						
All Red B4						

Overlap Program Parameters [1.5.2.1]

Overlap	Included Phases								Modifer Phases								Type	Green	Yellow	Red
Overlap 1	1																NORMAL		3.5	1.5
Overlap 2																	NORMAL		3.5	1.5
Overlap 3	5																NORMAL		3.5	1.5
Overlap 4	7																NORMAL		3.5	1.5
Overlap 5																	NORMAL		3.5	1.5
Overlap 6																	NORMAL		3.5	1.5
Overlap 7																	NORMAL		3.5	1.5
Overlap 8																	NORMAL		3.5	1.5
Overlap 9																	NORMAL		3.5	1.5
Overlap 10																	NORMAL		3.5	1.5
Overlap 11																	NORMAL		3.5	1.5
Overlap 12																	NORMAL		3.5	1.5
Overlap 13																	NORMAL		3.5	1.5
Overlap 14																	NORMAL		3.5	1.5
Overlap 15																	NORMAL		3.5	1.5
Overlap 16																	NORMAL		3.5	1.5

Approved By: Stephen Shreve **Date:** _____

17300 : 660 - Northlake Bl and Military Trail (Special 1 File)

Alternate Phase Program 1, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

Alternate Phase Program 2, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

Alternate Phase Program 3, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

Alternate Phase Program 4, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

Alternate Phase Program 5, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

TB Coor, Day Plan [4.4]

Day Plan Table 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Approved By: Stephen Shreve **Date:** _____

Palm Beach County **Special System Timing Sheet** **9/10/2015**

17300 : 660 - Northlake Bl and Military Trail (Special 1 File)

Coordination, Splits [2.7.1]

Split Table 7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 8	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 9	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 10	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 11	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	25	45	35	35	28	42	24	46								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 12	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	44	38	24	34	25	57	20	38								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 13	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	26	68	29	37	34	60	26	40								
Mode	NON	MAX	NON	NON	MAX	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 14	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	23	41	32	34	23	41	23	43								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 15	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	24	39	22	35	22	41	22	35								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 16	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	19	40	27	34	20	39	20	41								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Approved By: Stephen Shreve **Date:** _____

Palm Beach County **Signal Timing Sheet** **9/10/2015**

17324 : 665 - Northlake Bl and Keating Dr (Special 1 File)

Phase [1.1.1]

	1 (EL)	2 (WT)	3 (ST)	4 (NT)	5 (WL)	6 (ET)	7	8	9	10	11	12	13	14	15	16
Walk		7	5			7										
Ped Clearance		26	32			23										
Min Green	4	20	5	5	4	20										
Passage	2	4	2	2	2	4										
Max1	15	45	20	25	30	45										
Max2	8	70	15	10	20	70										
Yellow	4	4.5	4	4	4	4.5			3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Red	2	1.5	2	2	2	1.5										

Phase Option [1.1.2]

	1 (EL)	2 (WT)	3 (ST)	4 (NT)	5 (WL)	6 (ET)	7	8	9	10	11	12	13	14	15	16
Enable	ON	ON	ON	ON	ON	ON										
Auto Entry				ON												
Auto Exit		ON				ON										
Non Act1																
Non Act2																
Lock Call		ON				ON										
Min Recall		ON				ON										
Max Recall																
Ped Recall																
Dual Entry		ON				ON										
Sim Gap Enable																
Rest In Walk																

Detector, Vehicle Parameters 1-16 [5.1]

	1 (EBL1)	2 (WBT1)	3 (WBT2)	4 (WBT3)	5 (WBR1)	6 (SBT1)	7 (SBT2)	8 (NBL1)	9 (NBT1)	10 (NBR1)	11 (WBL1)	12 (EBT1)	13 (EBT2)	14 (EBT3)	15 (EBR1)	16
Call Phase	1	2	2	2	2	3	3	4	4	4	5	6	6	6	6	
Switch Phase																
Delay Time																

Detector, Vehicle Parameters 17-32 [5.1]

	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Call Phase																
Switch Phase																
Delay Time																

Detector, Vehicle Parameters 33-48 [5.1]

	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Call Phase																
Switch Phase																
Delay Time																

Detector, Vehicle Parameters 49-64 [5.1]

	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
Call Phase																
Switch Phase																
Delay Time																

Approved By: Stephen Shreve **Date:** _____

17324 : 665 - Northlake Bl and Keating Dr (Special 1 File)

TB Coor, Day Plan [4.4]

Day Plan Table 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		7	10	15	20											
Minute																
Action	21	2	1	3	4											

Day Plan Table 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		7	9	21												
Minute																
Action	21	4	5	4												

Day Plan Table 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		7	9	21												
Minute																
Action	21	4	5	4												

Coordination, Pattern 1-16 [2.1]/Coordination, Alt Tables+[2.6]

Pattern	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Cycle Time	160	170	170	120	160						200					
Offset Time	10	123	103	16	82						123					
Split Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Seq Number	3	3	3	3	3	1	1	1	1	1	3	1	1	1	1	1
Ph Opt Alt																
Ph Time Alt	3	2	3	4	4											

Coordination, Splits [2.7.1]

Split Table 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	16	78	45	21	37	57		66								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	17	91	45	17	28	80		62								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	17	81	45	27	36	62		72								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	20	53	18	29	30	43		47								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	17	75	45	23	36	56		68								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	20	53	39	28	31	42		67								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

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Preemption Times[3.1]/Phases[3.2]/Options[3.3]

Channel	1	2	3	4	5	6
Lock Input						
Override Flash						
Override Higher						
Flash Dwell						
Link						
Delay						
Min Duration						
Min Green						
Min Walk						
Ped Clear						
Track Green						
Min Dwell						
Max Presence						
Track R1						
Track R2						
Track R3						
Track R4						
Dwell P1						
Dwell P2						
Dwell P3						
Dwell P4						
Dwell P5						
Dwell P6						
Dwell P7						
Dwell P8						
Dwell P9						
Dwell P10						
Dwell P11						
Dwell P12						
Dwell Ped1						
Dwell Ped2						
Dwell Ped3						
Dwell Ped4						
Dwell Ped5						
Dwell Ped6						
Dwell Ped7						
Dwell Ped8						
Exit R1						
Exit R2						
Exit R3						
Exit R4						

Preemption Times+[3.4]/Overlaps+[3.5]/Options+[3.6]

Preempt	1	2	3	4	5	6
Enable						
Type	EMERG	EMERG	EMERG	EMERG	EMERG	EMERG
Skip Track						
Volt Mon Flash						
Coord in Preempt						
Max2	ON					
Return Max/Min	MAX	MAX	MAX	MAX	MAX	MAX
Extend Dwell						
Pattern						
Output Mode	TS2	TS2	TS2	TS2	TS2	TS2
Track Over 1						
Track Over 2						
Track Over 3						
Track Over 4						
Track Over 5						
Track Over 6						
Track Over 7						
Track Over 8						
Track Over 9						
Track Over 10						
Track Over 11						
Track Over 12						
Dwell Over 1						
Dwell Over 2						
Dwell Over 3						
Dwell Over 4						
Dwell Over 5						
Dwell Over 6						
Dwell Over 7						
Dwell Over 8						
Dwell Over 9						
Dwell Over 10						
Dwell Over 11						
Dwell Over 12						
Ped Clear						
Yellow						
Red						
Return Min/Max						
Delay Inh						
Exit Time						
All Red B4						

Overlap Program Parameters [1.5.2.1]

Overlap	Included Phases								Modifer Phases								Type	Green	Yellow	Red
Overlap 1																	NORMAL		3.5	1.5
Overlap 2	3																NORMAL		3.5	1.5
Overlap 3																	NORMAL		3.5	1.5
Overlap 4	4																NORMAL		3.5	1.5
Overlap 5																	NORMAL		3.5	1.5
Overlap 6																	NORMAL		3.5	1.5
Overlap 7																	NORMAL		3.5	1.5
Overlap 8																	NORMAL		3.5	1.5
Overlap 9																	NORMAL		3.5	1.5
Overlap 10																	NORMAL		3.5	1.5
Overlap 11																	NORMAL		3.5	1.5
Overlap 12																	NORMAL		3.5	1.5
Overlap 13																	NORMAL		3.5	1.5
Overlap 14																	NORMAL		3.5	1.5
Overlap 15																	NORMAL		3.5	1.5
Overlap 16																	NORMAL		3.5	1.5

Approved By: Stephen Shreve **Date:** _____

17324 : 665 - Northlake Bl and Keating Dr (Special 1 File)

Alternate Phase Program 1, Interval Times

Alternate Phase Program 2, Interval Times

[1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

[1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1			4	2	8		4	2	1	
2										
3										
4										
5										
6										
7										
8										

Alternate Phase Program 3, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1			4	2	12		4	2	1	
2										
3										
4										
5										
6										
7										
8										

Alternate Phase Program 4, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1			4	2	10		4	2	1	
2										
3										
4										
5										
6										
7										
8										

Alternate Phase Program 5, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

TB Coor, Day Plan [4.4]

Day Plan Table 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Approved By: Stephen Shreve **Date:** _____

Palm Beach County **Special System Timing Sheet** **9/10/2015**

17324 : 665 - Northlake Bl and Keating Dr (Special 1 File)

Coordination, Splits [2.7.1]

Split Table 7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 8	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 9	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 10	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 11	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	17	121	45	17	38	100		62								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 12	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 13	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	36	62	30	22	20	78	30	22								
Mode	NON	MAX	NON	NON	MAX	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 14	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 15	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 16	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Approved By: Stephen Shreve **Date:** _____

Palm Beach County **Signal Timing Sheet** **9/18/2015**

17325 : 675 - Northlake Bl and I-95 (Special 1 File)

Phase [1.1.1]

	1 (WT)	2 (WL)	3 (NR)	4 (NL)	5 (ET)	6 (EL)	7 (SR)	8 (SL)	9	10	11	12	13	14	15	16
Walk		5	5			5	5									
Ped Clearance		10	10			10	10									
Min Green	4	4	10	6	4	4	5	6	4	4						
Passage		2	4	2		2	4	2	2	2						
Max1	4	20	45	25	4	20	45	25	20	20						
Max2																
Yellow	4.5	4	4	4	4.5	4	4	4	4	4						
Red	2	3	2	2	2	3	2	2	2	2						

Phase Option [1.1.2]

	1 (WT)	2 (WL)	3 (NR)	4 (NL)	5 (ET)	6 (EL)	7 (SR)	8 (SL)	9	10	11	12	13	14	15	16
Enable	ON	ON	ON	ON	ON	ON	ON	ON								
Auto Entry								ON								
Auto Exit			ON													
Non Act1																
Non Act2																
Lock Call		ON														
Min Recall																
Max Recall																
Ped Recall																
Dual Entry																
Sim Gap Enable									ON	ON	ON	ON	ON	ON	ON	ON
Rest In Walk																

Detector, Vehicle Parameters 1-16 [5.1]

	1 (WBL1)	2 (WBL2)	3 (WBT1)	4 (WBT2)	5 (WBT3)	6 (EBL1)	7 (EBL2)	8 (EBT1)	9 (EBT2)	10 (EBT3)	11 (NBL1)	12 (NBL2)	13 (NBR1)	14 (NBR2)	15 (WBL3)	16 (WBL4)
Call Phase	2	2	2	2	2	6	6	6	6	6	4	4	4	4	2	2
Switch Phase																
Delay Time																

Detector, Vehicle Parameters 17-32 [5.1]

	17 (WBT4)	18 (WBT5)	19 (WBT6)	20 (SBL1)	21 (SBL2)	22 (SBR1)	23 (SBR2)	24 (EBL3)	25 (EBL4)	26 (EBT4)	27 (EBT5)	28 (EBT6)	29	30	31	32
Call Phase	2	2	2	8	8	8	8	6	6	6	6	6				
Switch Phase																
Delay Time																

Detector, Vehicle Parameters 33-48 [5.1]

	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Call Phase	3	3	3	3	3	7	7	7	7	7					3	3
Switch Phase																
Delay Time																

Detector, Vehicle Parameters 49-64 [5.1]

	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
Call Phase	3	3	3	7	7	7	7	7								
Switch Phase																
Delay Time																

Approved By: Stephen Shreve **Date:** _____

Palm Beach County **System Timing Sheet** **9/18/2015**

17325 : 675 - Northlake Bl and I-95 (Special 1 File)

TB Coor, Day Plan [4.4]

Day Plan Table 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		7	10	15	20											
Minute																
Action	4	2	1	3	4											

Day Plan Table 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		7	9	21												
Minute																
Action	4	4	5	4												

Day Plan Table 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		7	9	21												
Minute																
Action	4	4	5	4												

Coordination, Pattern 1-16 [2.1]/Coordination, Alt Tables+[2.6]

Pattern	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Cycle Time	160	170	170	120	160											
Offset Time	120	50	51	98	40											
Split Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Seq Number	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Ph Opt Alt																
Ph Time Alt																

Coordination, Splits [2.7.1]

Split Table 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	11	22	26	20	11	22	23	25								
Mode	NON	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph			ON													

Split Table 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	11	22	26	20	11	22	28	30								
Mode	NON	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph			ON													

Split Table 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	11	22	33	32	11	22	19	20								
Mode	NON	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph			ON													

Split Table 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	11	16	16	19	11	16	13	18								
Mode	NON	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph			ON													

Split Table 5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	11	22	36	16	11	22	20	22								
Mode	NON	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph			ON													

Split Table 6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Approved By: Stephen Shreve **Date:** _____

17325 : 675 - Northlake Bl and I-95 (Special 1 File)

Preemption Times[3.1]/Phases[3.2]/Options[3.3]

Channel	1	2	3	4	5	6
Lock Input		ON	ON	ON	ON	ON
Override Flash		ON	ON	ON	ON	ON
Override Higher	ON	ON	ON	ON	ON	ON
Flash Dwell						
Link						
Delay						
Min Duration						
Min Green						
Min Walk						
Ped Clear						
Track Green						
Min Dwell						
Max Presence						
Track R1						
Track R2						
Track R3						
Track R4						
Dwell P1						
Dwell P2						
Dwell P3						
Dwell P4						
Dwell P5						
Dwell P6						
Dwell P7						
Dwell P8						
Dwell P9						
Dwell P10						
Dwell P11						
Dwell P12						
Dwell Ped1						
Dwell Ped2						
Dwell Ped3						
Dwell Ped4						
Dwell Ped5						
Dwell Ped6						
Dwell Ped7						
Dwell Ped8						
Exit R1						
Exit R2						
Exit R3						
Exit R4						

Preemption Times+[3.4]/Overlaps+[3.5]/Options+[3.6]

Preempt	1	2	3	4	5	6
Enable		ON	ON	ON	ON	ON
Type	RAIL	EMERG	EMERG	EMERG	EMERG	EMERG
Skip Track						
Volt Mon Flash						
Coord in Preempt						
Max2						
Return Max/Min	MAX	MAX	MAX	MAX	MAX	MAX
Extend Dwell						
Pattern						
Output Mode	TS2	TS2	TS2	TS2	TS2	TS2
Track Over 1						
Track Over 2						
Track Over 3						
Track Over 4						
Track Over 5						
Track Over 6						
Track Over 7						
Track Over 8						
Track Over 9						
Track Over 10						
Track Over 11						
Track Over 12						
Dwell Over 1						
Dwell Over 2						
Dwell Over 3						
Dwell Over 4						
Dwell Over 5						
Dwell Over 6						
Dwell Over 7						
Dwell Over 8						
Dwell Over 9						
Dwell Over 10						
Dwell Over 11						
Dwell Over 12						
Ped Clear						
Yellow	4					
Red	2					
Return Min/Max						
Delay Inh						
Exit Time						
All Red B4						

Overlap Program Parameters [1.5.2.1]

Overlap	Included Phases								Modifer Phases								Type	Green	Yellow	Red
Overlap 1	2	3	4														NORMAL		3.5	1.5
Overlap 2	1	2	3														NORMAL		3.5	1.5
Overlap 3	5	6	7														NORMAL		3.5	1.5
Overlap 4	4	5	10														NORMAL		3.5	1.5
Overlap 5	1	8	9														NORMAL		3.5	1.5
Overlap 6	2	3	4	5	6												NORMAL		3.5	1.5
Overlap 7	1	2	6	7	8	9											NORMAL		3.5	1.5
Overlap 8	6	7	8	9													NORMAL		3.5	1.5
Overlap 9	3	4	5														NORMAL		3.5	1.5
Overlap 10																	NORMAL		3.5	1.5
Overlap 11	1	7	8														NORMAL		3.5	1.5
Overlap 12																	NORMAL		3.5	1.5
Overlap 13	2	3															PED 1		3.5	1.5
Overlap 14	2	3															PED 1		3.5	1.5
Overlap 15	6	7															PED 1		3.5	1.5
Overlap 16	6	7															PED 1		3.5	1.5

Approved By: Stephen Shreve **Date:** _____

17325 : 675 - Northlake Bl and I-95 (Special 1 File)

Alternate Phase Program 1, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

Alternate Phase Program 2, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

Alternate Phase Program 3, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

Alternate Phase Program 4, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

Alternate Phase Program 5, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

TB Coor, Day Plan [4.4]

Day Plan Table 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Approved By: Stephen Shreve **Date:** _____

Palm Beach County **Special System Timing Sheet** **9/18/2015**

17325 : 675 - Northlake Bl and I-95 (Special 1 File)

Coordination, Splits [2.7.1]

Split Table 7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 8	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 9	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 10	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 11	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 12	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 13	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 14	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 15	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 16	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Approved By: Stephen Shreve **Date:** _____

Palm Beach County **Signal Timing Sheet** **9/10/2015**

17326 : 680 - Northlake Bl and Roan Ln (Special 1 File)

Phase [1.1.1]

	1 (EL)	2 (WT)	3	4	5	6 (ET)	7	8	9	10	11	12	13	14	15	16
Walk		7														
Ped Clearance		14														
Min Green	4	20				20										
Passage	3	4				4										
Max1	25	60				60										
Max2																
Yellow	4	4.5				4.5			3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Red	4	2				2										

Phase Option [1.1.2]

	1 (EL)	2 (WT)	3	4	5	6 (ET)	7	8	9	10	11	12	13	14	15	16
Enable	ON	ON				ON										
Auto Entry	ON															
Auto Exit		ON				ON										
Non Act1																
Non Act2																
Lock Call		ON				ON										
Min Recall		ON				ON										
Max Recall																
Ped Recall																
Dual Entry		ON				ON										
Sim Gap Enable																
Rest In Walk																

Detector, Vehicle Parameters 1-16 [5.1]

	1 (EBL1)	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Call Phase	1	2														
Switch Phase																
Delay Time																

Detector, Vehicle Parameters 17-32 [5.1]

	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Call Phase																
Switch Phase																
Delay Time																

Detector, Vehicle Parameters 33-48 [5.1]

	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Call Phase																
Switch Phase																
Delay Time																

Detector, Vehicle Parameters 49-64 [5.1]

	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
Call Phase																
Switch Phase																
Delay Time																

Approved By: Stephen Shreve **Date:** _____

17326 : 680 - Northlake Bl and Roan Ln (Special 1 File)

TB Coor, Day Plan [4.4]

Day Plan Table 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		7	10	15	20											
Minute																
Action	100	12	1	13	4											

Day Plan Table 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		7	9	21												
Minute																
Action	100	4	5	4												

Day Plan Table 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		7	9	21												
Minute																
Action	100	4	5	4												

Coordination, Pattern 1-16 [2.1]/Coordination, Alt Tables+[2.6]

Pattern	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Cycle Time	160	170	170	120	160						200	85	85			
Offset Time	39	76	77	13	42						46	37	46			
Split Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Seq Number	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Ph Opt Alt																
Ph Time Alt																

Coordination, Splits [2.7.1]

Split Table 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	33	127				160										
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	33	137				170										
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	33	137				170										
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	33	87				120										
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	33	127				160										
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Approved By: Stephen Shreve **Date:** _____

Preemption Times[3.1]/Phases[3.2]/Options[3.3]

Channel	1	2	3	4	5	6
Lock Input						
Override Flash						
Override Higher						
Flash Dwell						
Link						
Delay						
Min Duration						
Min Green						
Min Walk						
Ped Clear						
Track Green						
Min Dwell						
Max Presence						
Track R1						
Track R2						
Track R3						
Track R4						
Dwell P1						
Dwell P2						
Dwell P3						
Dwell P4						
Dwell P5						
Dwell P6						
Dwell P7						
Dwell P8						
Dwell P9						
Dwell P10						
Dwell P11						
Dwell P12						
Dwell Ped1						
Dwell Ped2						
Dwell Ped3						
Dwell Ped4						
Dwell Ped5						
Dwell Ped6						
Dwell Ped7						
Dwell Ped8						
Exit R1						
Exit R2						
Exit R3						
Exit R4						

Preemption Times+[3.4]/Overlaps+[3.5]/Options+[3.6]

Preempt	1	2	3	4	5	6
Enable						
Type	EMERG	EMERG	EMERG	EMERG	EMERG	EMERG
Skip Track						
Volt Mon Flash						
Coord in Preempt						
Max2	ON					
Return Max/Min	MAX	MAX	MAX	MAX	MAX	MAX
Extend Dwell						
Pattern						
Output Mode	TS2	TS2	TS2	TS2	TS2	TS2
Track Over 1						
Track Over 2						
Track Over 3						
Track Over 4						
Track Over 5						
Track Over 6						
Track Over 7						
Track Over 8						
Track Over 9						
Track Over 10						
Track Over 11						
Track Over 12						
Dwell Over 1						
Dwell Over 2						
Dwell Over 3						
Dwell Over 4						
Dwell Over 5						
Dwell Over 6						
Dwell Over 7						
Dwell Over 8						
Dwell Over 9						
Dwell Over 10						
Dwell Over 11						
Dwell Over 12						
Ped Clear						
Yellow						
Red						
Return Min/Max						
Delay Inh						
Exit Time						
All Red B4						

Overlap Program Parameters [1.5.2.1]

Overlap	Included Phases								Modifer Phases								Type	Green	Yellow	Red
Overlap 1																	NORMAL		3.5	1.5
Overlap 2																	NORMAL		3.5	1.5
Overlap 3																	NORMAL		3.5	1.5
Overlap 4																	NORMAL		3.5	1.5
Overlap 5																	NORMAL		3.5	1.5
Overlap 6																	NORMAL		3.5	1.5
Overlap 7																	NORMAL		3.5	1.5
Overlap 8																	NORMAL		3.5	1.5
Overlap 9																	NORMAL		3.5	1.5
Overlap 10																	NORMAL		3.5	1.5
Overlap 11																	NORMAL		3.5	1.5
Overlap 12																	NORMAL		3.5	1.5
Overlap 13																	NORMAL		3.5	1.5
Overlap 14																	NORMAL		3.5	1.5
Overlap 15																	NORMAL		3.5	1.5
Overlap 16																	NORMAL		3.5	1.5

Approved By: Stephen Shreve **Date:** _____

17326 : 680 - Northlake Bl and Roan Ln (Special 1 File)

Alternate Phase Program 1, Interval Times

Alternate Phase Program 2, Interval Times

[1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

[1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

Alternate Phase Program 3, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

Alternate Phase Program 4, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

Alternate Phase Program 5, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

TB Coor, Day Plan [4.4]

Day Plan Table 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Approved By: Stephen Shreve **Date:** _____

Palm Beach County **Special System Timing Sheet** **9/10/2015**

17326 : 680 - Northlake Bl and Roan Ln (Special 1 File)

Coordination, Splits [2.7.1]

Split Table 7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 8	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 9	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 10	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 11	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	63	137				200										
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 12	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	35	50				85										
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 13	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	25	60				85										
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 14	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 15	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 16	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Approved By: Stephen Shreve **Date:** _____

Palm Beach County **Signal Timing Sheet** **9/10/2015**

17330 : 685 - Northlake Bl and Sandtree Dr (Special 1 File)

Phase [1.1.1]

	1 (EL)	2 (WT)	3 (SL)	4 (NT)	5 (WL)	6 (ET)	7 (NL)	8 (ST)	9	10	11	12	13	14	15	16
Walk		7		5		7		5								
Ped Clearance		18		30		24		39								
Min Green	4	20	4	6	4	20	4	6								
Passage	2	4	2	2	2	4	2	2								
Max1	20	45	15	20	20	45	35	20								
Max2																
Yellow	4	4.5	4	4	4	4.5	4	4	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Red	3	3	2.5	3	3	3	2.5	3								

Phase Option [1.1.2]

	1 (EL)	2 (WT)	3 (SL)	4 (NT)	5 (WL)	6 (ET)	7 (NL)	8 (ST)	9	10	11	12	13	14	15	16
Enable	ON	ON	ON	ON	ON	ON	ON	ON								
Auto Entry				ON				ON								
Auto Exit		ON				ON										
Non Act1																
Non Act2																
Lock Call		ON				ON										
Min Recall		ON				ON										
Max Recall																
Ped Recall																
Dual Entry		ON		ON		ON		ON								
Sim Gap Enable																
Rest In Walk																

Detector, Vehicle Parameters 1-16 [5.1]

	1 (EBL1)	2 (WBT1)	3 (WBT2)	4 (WBT3)	5 (SBL1)	6 (NBT1)	7 (NBR1)	8 (WBL1)	9 (WBL2)	10 (EBT1)	11 (EBT2)	12 (EBT3)	13 (EBR1)	14 (NBL1)	15 (NBL2)	16 (SBT1)
Call Phase	1	2	2	2	3	4	4	5	5	6	6	6	6	7	7	8
Switch Phase																
Delay Time						5	10									5

Detector, Vehicle Parameters 17-32 [5.1]

	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Call Phase																
Switch Phase																
Delay Time																

Detector, Vehicle Parameters 33-48 [5.1]

	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Call Phase																
Switch Phase																
Delay Time																

Detector, Vehicle Parameters 49-64 [5.1]

	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
Call Phase																
Switch Phase																
Delay Time																

Approved By: Stephen Shreve **Date:** _____

17330 : 685 - Northlake Bl and Sandtree Dr (Special 1 File)

TB Coor, Day Plan [4.4]

Day Plan Table 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		7	10	15	20											
Minute																
Action	100	2	1	3	4											

Day Plan Table 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		7	9	21												
Minute																
Action	100	4	5	4												

Day Plan Table 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		7	9	21												
Minute																
Action	100	4	5	4												

Coordination, Pattern 1-16 [2.1]/Coordination, Alt Tables+[2.6]

Pattern	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Cycle Time	160	170	170	120	160						200					
Offset Time	93	160	17	74	142						160					
Split Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Seq Number	6	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1
Ph Opt Alt																
Ph Time Alt																

Coordination, Splits [2.7.1]

Split Table 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	22	59	36	53	23	58	36	53								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph						ON										

Split Table 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	28	66	25	51	23	71	24	52								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph						ON										

Split Table 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	19	68	24	59	20	67	32	51								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph						ON										

Split Table 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	24	56	22	18	24	56	21	19								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph						ON										

Split Table 5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	18	66	23	53	19	65	23	53								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph						ON										

Split Table 6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Approved By: Stephen Shreve **Date:** _____

17330 : 685 - Northlake Bl and Sandtree Dr (Special 1 File)

Preemption Times[3.1]/Phases[3.2]/Options[3.3]

Channel	1	2	3	4	5	6
Lock Input						
Override Flash						
Override Higher						
Flash Dwell						
Link						
Delay						
Min Duration						
Min Green						
Min Walk						
Ped Clear						
Track Green						
Min Dwell						
Max Presence						
Track R1						
Track R2						
Track R3						
Track R4						
Dwell P1						
Dwell P2						
Dwell P3						
Dwell P4						
Dwell P5						
Dwell P6						
Dwell P7						
Dwell P8						
Dwell P9						
Dwell P10						
Dwell P11						
Dwell P12						
Dwell Ped1						
Dwell Ped2						
Dwell Ped3						
Dwell Ped4						
Dwell Ped5						
Dwell Ped6						
Dwell Ped7						
Dwell Ped8						
Exit R1						
Exit R2						
Exit R3						
Exit R4						

Preemption Times+[3.4]/Overlaps+[3.5]/Options+[3.6]

Preempt	1	2	3	4	5	6
Enable						
Type	EMERG	EMERG	EMERG	EMERG	EMERG	EMERG
Skip Track						
Volt Mon Flash						
Coord in Preempt						
Max2	ON					
Return Max/Min	MAX	MAX	MAX	MAX	MAX	MAX
Extend Dwell						
Pattern						
Output Mode	TS2	TS2	TS2	TS2	TS2	TS2
Track Over 1						
Track Over 2						
Track Over 3						
Track Over 4						
Track Over 5						
Track Over 6						
Track Over 7						
Track Over 8						
Track Over 9						
Track Over 10						
Track Over 11						
Track Over 12						
Dwell Over 1						
Dwell Over 2						
Dwell Over 3						
Dwell Over 4						
Dwell Over 5						
Dwell Over 6						
Dwell Over 7						
Dwell Over 8						
Dwell Over 9						
Dwell Over 10						
Dwell Over 11						
Dwell Over 12						
Ped Clear						
Yellow						
Red						
Return Min/Max						
Delay Inh						
Exit Time						
All Red B4						

Overlap Program Parameters [1.5.2.1]

Overlap	Included Phases								Modifer Phases								Type	Green	Yellow	Red
Overlap 1																	NORMAL		3.5	1.5
Overlap 2																	NORMAL		3.5	1.5
Overlap 3																	NORMAL		3.5	1.5
Overlap 4	7																NORMAL		3.5	1.5
Overlap 5																	NORMAL		3.5	1.5
Overlap 6																	NORMAL		3.5	1.5
Overlap 7																	NORMAL		3.5	1.5
Overlap 8																	NORMAL		3.5	1.5
Overlap 9																	NORMAL		3.5	1.5
Overlap 10																	NORMAL		3.5	1.5
Overlap 11																	NORMAL		3.5	1.5
Overlap 12																	NORMAL		3.5	1.5
Overlap 13																	NORMAL		3.5	1.5
Overlap 14																	NORMAL		3.5	1.5
Overlap 15																	NORMAL		3.5	1.5
Overlap 16																	NORMAL		3.5	1.5

Approved By: Stephen Shreve **Date:** _____

17330 : 685 - Northlake Bl and Sandtree Dr (Special 1 File)

Alternate Phase Program 1, Interval Times

Alternate Phase Program 2, Interval Times

[1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4							4			
5										
6										
7										
8							4			

[1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

Alternate Phase Program 3, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

Alternate Phase Program 4, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

Alternate Phase Program 5, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

TB Coor, Day Plan [4.4]

Day Plan Table 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Approved By: Stephen Shreve **Date:** _____

Palm Beach County **Special System Timing Sheet** **9/10/2015**

17330 : 685 - Northlake Bl and Sandtree Dr (Special 1 File)

Coordination, Splits [2.7.1]

Split Table 7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 8	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 9	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 10	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 11	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	58	66	25	51	23	101	24	52								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph						ON										

Split Table 12	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 13	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	36	62	30	22	20	78	30	22								
Mode	NON	MAX	NON	NON	MAX	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 14	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 15	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 16	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Approved By: Stephen Shreve **Date:** _____

PGA BLVD.

Palm Beach County **Signal Timing Sheet** **10/24/2012**

14350 : 455 - PGA Bl and Military Trail (Standard File)

Phase [1.1.1]

	1 (EL)	2 (WT)	3 (SL)	4 (NT)	5 (WL)	6 (ET)	7 (NL)	8 (ST)	9	10	11	12	13	14	15	16
Walk		7		5		7		5								
Ped Clearance		32		33		38		42								
Min Green	4	20	4	10	4	20	4	10								
Passage	2	4	3	2	2	4	2	3								
Max1	20	45	45	45	25	45	35	40								
Max2	12	50	25	45	25	50	25	40								
Yellow	4	4.5	4	4.5	4.5	4.5	4	4.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Red	4	3	4.5	3	4.5	3	4	3								

Phase Option [1.1.2]

	1 (EL)	2 (WT)	3 (SL)	4 (NT)	5 (WL)	6 (ET)	7 (NL)	8 (ST)	9	10	11	12	13	14	15	16
Enable	ON	ON	ON	ON	ON	ON	ON	ON								
Auto Entry				ON				ON								
Auto Exit		ON				ON										
Non Act1																
Non Act2																
Lock Call		ON				ON										
Min Recall		ON				ON										
Max Recall	ON	ON				ON										
Ped Recall																
Dual Entry		ON		ON		ON		ON								
Sim Gap Enable																
Rest In Walk																

Detector, Vehicle Parameters 1-16 [5.1]

	1 (EBL1)	2 (EBL2)	3	4 (WBT1)	5 (WBT2)	6 (WBT3)	7	8 (SBL1)	9 (SBL2)	10	11 (NBT1)	12 (NBT2)	13 (NBT3)	14	15 (WBL1)	16 (WBL2)
Call Phase	1	1		2	2	2		3	3		4	4	4		5	5
Switch Phase																
Delay Time																

Detector, Vehicle Parameters 17-32 [5.1]

	17	18 (EBT1)	19 (EBT2)	20 (EBT3)	21	22 (NBL1)	23 (NBL2)	24	25 (SBT1)	26 (SBT2)	27 (SBT3)	28	29	30	31	32
Call Phase		6	6	6		7	7		8	8	8					
Switch Phase																
Delay Time																

Detector, Vehicle Parameters 33-48 [5.1]

	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Call Phase																
Switch Phase																
Delay Time																

Detector, Vehicle Parameters 49-64 [5.1]

	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
Call Phase																
Switch Phase																
Delay Time																

Approved By: Stephen Shreve **Date:** _____

Palm Beach County **System Timing Sheet** **10/24/2012**

14350 : 455 - PGA Bl and Military Trail (Standard File)

TB Coor, Day Plan [4.4]

Day Plan Table 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		6	9	16	20											
Minute		30														
Action	21	2	1	3	4											

Day Plan Table 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		8	11	19												
Minute																
Action	21	4	1	4												

Day Plan Table 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		8	11	19												
Minute																
Action	21	4	1	4												

Coordination, Pattern 1-16 [2.1]/Coordination, Alt Tables+[2.6]

Pattern	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Cycle Time	160	170	180	100	120	120										
Offset Time	79	70	165	63	117	25										
Split Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Seq Number	2	6	2	2	2	2	1	1	1	1	1	1	1	1	1	1
Ph Opt Alt																
Ph Time Alt																

Coordination, Splits [2.7.1]

Split Table 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	18	52	35	55	28	42	35	55								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph						ON										

Split Table 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	20	47	52	51	20	47	48	55								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph						ON										

Split Table 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	22	57	39	62	31	48	55	46								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph						ON										

Split Table 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	18	36	21	25	21	33	20	26								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph						ON										

Split Table 5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	20	43	30	27	22	41	27	30								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph						ON										

Split Table 6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	26	45	23	26	19	52	23	26								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph						ON										

Approved By: Stephen Shreve **Date:** _____

14350 : 455 - PGA Bl and Military Trail (Standard File)

Preemption Times[3.1]/Phases[3.2]/Options[3.3]

Channel	1	2	3	4	5	6
Lock Input						
Override Flash						
Override Higher						
Flash Dwell						
Link						
Delay						
Min Duration						
Min Green						
Min Walk						
Ped Clear						
Track Green						
Min Dwell						
Max Presence						
Track R1						
Track R2						
Track R3						
Track R4						
Dwell P1						
Dwell P2						
Dwell P3						
Dwell P4						
Dwell P5						
Dwell P6						
Dwell P7						
Dwell P8						
Dwell P9						
Dwell P10						
Dwell P11						
Dwell P12						
Dwell Ped1						
Dwell Ped2						
Dwell Ped3						
Dwell Ped4						
Dwell Ped5						
Dwell Ped6						
Dwell Ped7						
Dwell Ped8						
Exit R1						
Exit R2						
Exit R3						
Exit R4						

Preemption Times+[3.4]/Overlaps+[3.5]/Options+[3.6]

Preempt	1	2	3	4	5	6
Enable						
Type	EMERG	EMERG	EMERG	EMERG	EMERG	EMERG
Skip Track						
Volt Mon Flash						
Coord in Preempt						
Max2	ON					
Return Max/Min	MAX	MAX	MAX	MAX	MAX	MAX
Extend Dwell						
Pattern						
Output Mode	TS2	TS2	TS2	TS2	TS2	TS2
Track Over 1						
Track Over 2						
Track Over 3						
Track Over 4						
Track Over 5						
Track Over 6						
Track Over 7						
Track Over 8						
Track Over 9						
Track Over 10						
Track Over 11						
Track Over 12						
Dwell Over 1						
Dwell Over 2						
Dwell Over 3						
Dwell Over 4						
Dwell Over 5						
Dwell Over 6						
Dwell Over 7						
Dwell Over 8						
Dwell Over 9						
Dwell Over 10						
Dwell Over 11						
Dwell Over 12						
Ped Clear						
Yellow						
Red						
Return Min/Max						
Delay Inh						
Exit Time						
All Red B4						

Overlap Program Parameters [1.5.2.1]

Overlap	Included Phases								Modifer Phases								Type	Green	Yellow	Red
Overlap 1																	NORMAL		3.5	1.5
Overlap 2																	NORMAL		3.5	1.5
Overlap 3																	NORMAL		3.5	1.5
Overlap 4																	NORMAL		3.5	1.5
Overlap 5																	NORMAL		3.5	1.5
Overlap 6																	NORMAL		3.5	1.5
Overlap 7																	NORMAL		3.5	1.5
Overlap 8																	NORMAL		3.5	1.5
Overlap 9																	NORMAL		3.5	1.5
Overlap 10																	NORMAL		3.5	1.5
Overlap 11																	NORMAL		3.5	1.5
Overlap 12																	NORMAL		3.5	1.5
Overlap 13																	NORMAL		3.5	1.5
Overlap 14																	NORMAL		3.5	1.5
Overlap 15																	NORMAL		3.5	1.5
Overlap 16																	NORMAL		3.5	1.5

Approved By: Stephen Shreve **Date:** _____

Alternate Phase Program 1, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

Alternate Phase Program 2, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

Alternate Phase Program 3, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

Alternate Phase Program 4, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

Alternate Phase Program 5, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

TB Coor, Day Plan [4.4]

Day Plan Table 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Approved By: Stephen Shreve **Date:** _____

Palm Beach County **Special System Timing Sheet** **10/24/2012**

14350 : 455 - PGA Bl and Military Trail (Standard File)

Coordination, Splits [2.7.1]

Split Table 7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 8	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 9	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 10	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 11	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	23	50	35	52	25	48	44	43								
Mode	NON	MAX	NON	NON	MAX	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph						ON										

Split Table 12	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	20	60	47	33	22	58	35	45								
Mode	NON	MAX	NON	NON	MAX	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph						ON										

Split Table 13	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	24	51	37	48	28	47	42	43								
Mode	NON	MAX	NON	NON	MAX	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph						ON										

Split Table 14	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	22	51	30	47	25	48	36	41								
Mode	NON	MAX	NON	NON	MAX	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph						ON										

Split Table 15	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	20	46	27	27	22	44	27	27								
Mode	NON	MAX	NON	NON	MAX	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph						ON										

Split Table 16	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	26	45	23	26	19	52	23	26								
Mode	NON	MAX	NON	NON	MAX	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph						ON										

Approved By: Stephen Shreve **Date:** _____

Palm Beach County **Signal Timing Sheet** **4/5/2012**

14352 : 460 - PGA Bl and I-95 (Standard File)

Phase [1.1.1]

	1 (NR)	2	3 (ET)	4	5	6	7	8	9	10	11	12	13	14	15	16
Walk			7													
Ped Clearance			10													
Min Green	4		20	5												
Passage	2.5	2	4	2												
Max1	30	6	40	10												
Max2																
Yellow	4	4	4	4												
Red	2	2	2	2												

Phase Option [1.1.2]

	1 (NR)	2	3 (ET)	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable	ON		ON													
Auto Entry	ON															
Auto Exit			ON													
Non Act1																
Non Act2																
Lock Call			ON													
Min Recall			ON													
Max Recall			ON													
Ped Recall																
Dual Entry																
Sim Gap Enable									ON	ON	ON	ON	ON	ON	ON	ON
Rest In Walk																

Detector, Vehicle Parameters 1-16 [5.1]

	1 (NBR1)	2 (NBR2)	3 (NBR3)	4 (EBT1)	5 (EBT2)	6 (EBT3)	7 (NBR4)	8 (EBT4)	9	10	11	12	13	14	15	16
Call Phase	1	1	1	3	3	3	1	3	3							
Switch Phase																
Delay Time																

Detector, Vehicle Parameters 17-32 [5.1]

	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Call Phase	4	4	4	4												
Switch Phase																
Delay Time																

Detector, Vehicle Parameters 33-48 [5.1]

	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Call Phase																
Switch Phase																
Delay Time																

Detector, Vehicle Parameters 49-64 [5.1]

	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
Call Phase																
Switch Phase																
Delay Time																

Approved By: Stephen Shreve **Date:** _____

Palm Beach County **System Timing Sheet** **4/5/2012**

14352 : 460 - PGA Bl and I-95 (Standard File)

TB Coor, Day Plan [4.4]

Day Plan Table 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		6	9	11	16	20										
Minute		30														
Action	15	12	14	11	13	15										

Day Plan Table 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		7	20													
Minute																
Action	15	16	15													

Day Plan Table 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		7	20													
Minute																
Action	15	16	15													

Coordination, Pattern 1-16 [2.1]/Coordination, Alt Tables+[2.6]

Pattern	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Cycle Time	70	80	80	60	50						80	80	80	75	60	60
Offset Time	41	20	30	42	39						63	1	40	3	5	21
Split Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Seq Number	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Ph Opt Alt																
Ph Time Alt																

Coordination, Splits [2.7.1]

Split Table 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	25	6	39													
Mode	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph			ON													

Split Table 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	30	6	44													
Mode	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph			ON													

Split Table 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Time	30	6	44													
Mode	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph			ON													

Split Table 4	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Time	22		38													
Mode	NON	OMT	MAX	OMT	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph			ON													

Split Table 5	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Time	20		30													
Mode	NON	OMT	MAX	OMT	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph			ON													

Split Table 6	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Time																
Mode	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Approved By: Stephen Shreve **Date:** _____

Palm Beach County **Preempt & Overlap Timing Sheet** **4/5/2012**

14352 : 460 - PGA Bl and I-95 (Standard File)

Preemption Times[3.1]/Phases[3.2]/Options[3.3]

Channel	**1**	**2**	**3**	**4**	**5**	**6**
Lock Input						
Override Flash						
Override Higher						
Flash Dwell						
Link						
Delay						
Min Duration						
Min Green						
Min Walk						
Ped Clear						
Track Green						
Min Dwell						
Max Presence						
Track R1						
Track R2						
Track R3						
Track R4						
Dwell P1						
Dwell P2						
Dwell P3						
Dwell P4						
Dwell P5						
Dwell P6						
Dwell P7						
Dwell P8						
Dwell P9						
Dwell P10						
Dwell P11						
Dwell P12						
Dwell Ped1						

Preemption Times+[3.4]/Overlaps+[3.5]/Options+[3.6]

Preempt	**1**	**2**	**3**	**4**	**5**	**6**
Enable						
Type	EMERG	EMERG	EMERG	EMERG	EMERG	EMERG
Skip Track						
Volt Mon Flash						
Coord in Preempt						
Max2						
Return Max/Min	MAX	MAX	MAX	MAX	MAX	MAX
Extend Dwell						
Pattern						
Output Mode	TS2	TS2	TS2	TS2	TS2	TS2
Track Over 1						
Track Over 2						
Track Over 3						
Track Over 4						
Track Over 5						
Track Over 6						
Track Over 7						
Track Over 8						
Track Over 9						
Track Over 10						
Track Over 11						
Track Over 12						
Dwell Over 1						
Dwell Over 2						
Dwell Over 3						
Dwell Over 4						
Dwell Over 5						
Dwell Over 6						
Dwell Over 7						
Dwell Over 8						

Dwell Ped2						
Dwell Ped3						
Dwell Ped4						
Dwell Ped5						
Dwell Ped6						
Dwell Ped7						
Dwell Ped8						
Exit R1						
Exit R2						
Exit R3						
Exit R4						

Dwell Over 9						
Dwell Over 10						
Dwell Over 11						
Dwell Over 12						
Ped Clear						
Yellow						
Red						
Max Green						

Overlap Program Parameters [1.5.2.1]

Overlap	Included Phases								Modifer Phases								Type	Green	Yellow	Red
Overlap 1																	NORMAL		3.5	1.5
Overlap 2	3																NORMAL		3.5	1.5
Overlap 3	1																NORMAL		3.5	1.5
Overlap 4	1																NORMAL		3.5	1.5
Overlap 5	3																NORMAL		3.5	1.5
Overlap 6																	NORMAL		3.5	1.5
Overlap 7																	NORMAL		3.5	1.5
Overlap 8																	NORMAL		3.5	1.5
Overlap 9																	NORMAL		3.5	1.5
Overlap 10	3																NORMAL		3.5	1.5
Overlap 11	1																NORMAL		3.5	1.5
Overlap 12																	NORMAL		3.5	1.5
Overlap 13																	NORMAL		3.5	1.5
Overlap 14																	NORMAL		3.5	1.5
Overlap 15																	NORMAL		3.5	1.5
Overlap 16																	NORMAL		3.5	1.5

Approved By: Stephen Shreve **Date:** _____

Palm Beach County **Alternate Timing Sheet** **4/5/2012**

14352 : 460 - PGA Bl and I-95 (Standard File)

Alternate Phase Program 1, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

Alternate Phase Program 2, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

Alternate Phase Program 3, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										

Alternate Phase Program 4, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										

4										
5										
6										
7										
8										

4										
5										
6										
7										
8										

Alternate Phase Program 5, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

TB Coor, Day Plan [4.4]

Day Plan Table 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Approved By: Stephen Shreve **Date:** _____

Palm Beach County **Special System Timing Sheet** **4/5/2012**

14352 : 460 - PGA Bl and I-95 (Standard File)

Coordination, Splits [2.7.1]

Split Table 7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 8	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 9	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 10	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 11	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	34	6	40													
Mode	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph			ON													

Split Table 12	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	30		50													
Mode	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph			ON													

Split Table 13	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	33	6	41													
Mode	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph			ON													

Split Table 14	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	31	6	38													
Mode	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph			ON													

Split Table 15	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	21		39													
Mode	NON	OMT	MAX	OMT	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph			ON													

Split Table 16	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	25		35													
Mode	NON	OMT	MAX	OMT	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph			ON													

Approved By: Stephen Shreve **Date:** _____

BLUE HERON BLVD.

Palm Beach County **Signal Timing Sheet** **12/10/2014**

20100 : 815 - Blue Heron Bl and Military Trail (Standard File)

Phase [1.1.1]

	1 (SL)	2 (NT)	3 (WL)	4 (ET)	5 (NL)	6 (ST)	7 (EL)	8 (WT)	9	10	11	12	13	14	15	16
Walk		5		5		5		5								
Ped Clearance		40		39		36		38								
Min Green	4	20	4	10	4	20	4	10								
Passage	2	4	3	4	2	4	3	4								
Max1	35	45	25	45	15	45	20	45								
Max2																
Yellow	5	5	4.5	4.5	5	5	4.5	4.5								
Red	2	2	2	2.5	2	2	2	2								

Phase Option [1.1.2]

	1 (SL)	2 (NT)	3 (WL)	4 (ET)	5 (NL)	6 (ST)	7 (EL)	8 (WT)	9	10	11	12	13	14	15	16
Enable	ON	ON	ON	ON	ON	ON	ON	ON								
Auto Entry				ON				ON								
Auto Exit		ON				ON										
Non Act1																
Non Act2																
Lock Call		ON				ON										
Min Recall		ON				ON										
Max Recall																
Ped Recall																
Dual Entry		ON		ON		ON		ON								
Sim Gap Enable									ON	ON	ON	ON	ON	ON	ON	ON
Rest In Walk																

Detector, Vehicle Parameters 1-16 [5.1]

	1 (SBL1)	2 (SBL2)	3 (NBT1)	4 (NBT2)	5 (NBT3)	6 (NBR1)	7 (WBL1)	8 (WBL2)	9 (EBT1)	10 (EBT2)	11 (EBT3)	12 (NBL1)	13 (NBL2)	14 (SBT1)	15 (SBT2)	16 (SBT3)
Call Phase	1	1	2	2	2	2	3	3	4	4	4	5	5	6	6	6
Switch Phase																
Delay Time																

Detector, Vehicle Parameters 17-32 [5.1]

	17 (SBR1)	18 (EBL1)	19 (EBL2)	20 (WBT1)	21 (WBT2)	22 (WBT3)	23 (WBT4)	24 (WBR1)	25	26	27	28	29	30	31	32
Call Phase	6	7	7	8	8	8	8	8								
Switch Phase																
Delay Time																

Detector, Vehicle Parameters 33-48 [5.1]

	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Call Phase																
Switch Phase																
Delay Time																

Detector, Vehicle Parameters 49-64 [5.1]

	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
Call Phase																
Switch Phase																
Delay Time																

Approved By: Stephen Shreve **Date:** _____

Palm Beach County **System Timing Sheet** **12/10/2014**

20100 : 815 - Blue Heron Bl and Military Trail (Standard File)

TB Coor, Day Plan [4.4]

Day Plan Table 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		6	9	11	16	18	22									
Minute		30														
Action	100	2	4	1	3	5	100									

Day Plan Table 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		7	18	22												
Minute																
Action	100	6	5	100												

Day Plan Table 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		7	18	22												
Minute																
Action	100	6	5	100												

Coordination, Pattern 1-16 [2.1]/Coordination, Alt Tables+[2.6]

Pattern	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Cycle Time	140	160	150	120	120	140										
Offset Time	139	59	148	116	45	139										
Split Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Seq Number	10	10	10	10	3	2	1	1	1	1	1	1	1	1	1	1
Ph Opt Alt																
Ph Time Alt																

Coordination, Splits [2.7.1]

Split Table 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	17	48	22	53	17	48	22	53								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph						ON										

Split Table 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	28	53	26	53	17	64	22	57								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph						ON										

Split Table 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	21	53	23	53	17	57	21	55								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph						ON										

Split Table 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	20	46	22	32	17	49	17	37								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph						ON										

Split Table 5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	22	43	25	30	17	48	20	35								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	17	48	22	53	17	48	22	53								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph						ON										

Approved By: Stephen Shreve **Date:** _____

20100 : 815 - Blue Heron Bl and Military Trail (Standard File)

Preemption Times[3.1]/Phases[3.2]/Options[3.3]

Channel	1	2	3	4	5	6
Lock Input						
Override Flash						
Override Higher						
Flash Dwell						
Link						
Delay						
Min Duration						
Min Green						
Min Walk						
Ped Clear						
Track Green						
Min Dwell						
Max Presence						
Track R1						
Track R2						
Track R3						
Track R4						
Dwell P1						
Dwell P2						
Dwell P3						
Dwell P4						
Dwell P5						
Dwell P6						
Dwell P7						
Dwell P8						
Dwell P9						
Dwell P10						
Dwell P11						
Dwell P12						
Dwell Ped1						
Dwell Ped2						
Dwell Ped3						
Dwell Ped4						
Dwell Ped5						
Dwell Ped6						
Dwell Ped7						
Dwell Ped8						
Exit R1						
Exit R2						
Exit R3						
Exit R4						

Preemption Times+[3.4]/Overlaps+[3.5]/Options+[3.6]

Preempt	1	2	3	4	5	6
Enable						
Type	EMERG	EMERG	EMERG	EMERG	EMERG	EMERG
Skip Track						
Volt Mon Flash						
Coord in Preempt						
Max2						
Return Max/Min	MAX	MAX	MAX	MAX	MAX	MAX
Extend Dwell						
Pattern						
Output Mode	TS2	TS2	TS2	TS2	TS2	TS2
Track Over 1						
Track Over 2						
Track Over 3						
Track Over 4						
Track Over 5						
Track Over 6						
Track Over 7						
Track Over 8						
Track Over 9						
Track Over 10						
Track Over 11						
Track Over 12						
Dwell Over 1						
Dwell Over 2						
Dwell Over 3						
Dwell Over 4						
Dwell Over 5						
Dwell Over 6						
Dwell Over 7						
Dwell Over 8						
Dwell Over 9						
Dwell Over 10						
Dwell Over 11						
Dwell Over 12						
Ped Clear						
Yellow						
Red						
Return Min/Max						
Delay Inh						
Exit Time						
All Red B4						

Overlap Program Parameters [1.5.2.1]

Overlap	Included Phases								Modifer Phases								Type	Green	Yellow	Red
Overlap 1	1																NORMAL		3.5	1.5
Overlap 2	3																NORMAL		3.5	1.5
Overlap 3	5																NORMAL		3.5	1.5
Overlap 4	7																NORMAL		3.5	1.5
Overlap 5																	NORMAL		3.5	1.5
Overlap 6																	NORMAL		3.5	1.5
Overlap 7																	NORMAL		3.5	1.5
Overlap 8																	NORMAL		3.5	1.5
Overlap 9																	NORMAL		3.5	1.5
Overlap 10																	NORMAL		3.5	1.5
Overlap 11																	NORMAL		3.5	1.5
Overlap 12																	NORMAL		3.5	1.5
Overlap 13																	NORMAL		3.5	1.5
Overlap 14																	NORMAL		3.5	1.5
Overlap 15																	NORMAL		3.5	1.5
Overlap 16																	NORMAL		3.5	1.5

Approved By: Stephen Shreve **Date:** _____

20100 : 815 - Blue Heron Bl and Military Trail (Standard File)

Alternate Phase Program 1, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

Alternate Phase Program 2, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

Alternate Phase Program 3, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

Alternate Phase Program 4, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

Alternate Phase Program 5, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

TB Coor, Day Plan [4.4]

Day Plan Table 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Approved By: Stephen Shreve **Date:** _____

Palm Beach County **Special System Timing Sheet** **12/10/2014**

20100 : 815 - Blue Heron Bl and Military Trail (Standard File)

Coordination, Splits [2.7.1]

Split Table 7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 8	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 9	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 10	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 11	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 12	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 13	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 14	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 15	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 16	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Approved By: Stephen Shreve **Date:** _____

Palm Beach County **Signal Timing Sheet** **5/31/2013**

20150 : 825 - Blue Heron Bl and I-95 (Standard File)

Phase [1.1.1]

	1 (WT)	2 (WL)	3	4 (NR)	5 (ET)	6 (EL)	7	8 (SR)	9	10	11	12	13	14	15	16
Walk		7				7										
Ped Clearance		7				7										
Min Green	3	10		4	3	10		4	5	5	5	5	5	5	5	5
Passage		4		2		4		2	1	1	1	1	1	1	1	1
Max1	3	45		45	3	35		30	25	25	25	25	25	25	25	25
Max2									50	50	50	50	50	50	50	50
Yellow	4	4		4	4	4		4	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Red	4.5	4.5		4.5	4.5	4.5		4.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5

Phase Option [1.1.2]

	1 (WT)	2 (WL)	3	4 (NR)	5 (ET)	6 (EL)	7	8 (SR)	9	10	11	12	13	14	15	16
Enable	ON	ON		ON	ON	ON		ON								
Auto Entry								ON								
Auto Exit		ON														
Non Act1																
Non Act2																
Lock Call		ON							ON	ON	ON	ON	ON	ON	ON	ON
Min Recall		ON														
Max Recall																
Ped Recall																
Dual Entry																
Sim Gap Enable									ON	ON	ON	ON	ON	ON	ON	ON
Rest In Walk																

Detector, Vehicle Parameters 1-16 [5.1]

	1 (WBL1)	2 (WBL2)	3 (WBT1)	4 (WBT2)	5 (WBT3)	6 (SBL1)	7 (SBL2)	8 (SBR1)	9 (SBR2)	10 (EBL1)	11 (EBL2)	12 (EBT1)	13 (EBT2)	14 (EBT3)	15	16
Call Phase	2	2	2	2	2	8	8	8	8	6	6	6	6	6		
Switch Phase																
Delay Time																

Detector, Vehicle Parameters 17-32 [5.1]

	17 (WBL3)	18 (WBL4)	19 (WBT4)	20 (WBT5)	21 (WBT6)	22 (EBL3)	23 (EBL4)	24 (EBT4)	25 (EBT5)	26 (EBT6)	27 (NBL1)	28 (NBL2)	29 (NBR1)	30 (NBR2)	31	32
Call Phase	2	2	2	2	2	6	6	6	6	6	4	4	4	4		
Switch Phase																
Delay Time																

Detector, Vehicle Parameters 33-48 [5.1]

	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Call Phase	11	11	12	12	12	10	10	10	10	12	12	12	12	12		
Switch Phase																
Delay Time																

Detector, Vehicle Parameters 49-64 [5.1]

	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
Call Phase	12	12	12	12	12	11	11	12	12	12	10	10	10	10		
Switch Phase																
Delay Time																

Approved By: Stephen Shreve **Date:** _____

Palm Beach County **System Timing Sheet** **5/31/2013**

20150 : 825 - Blue Heron Bl and I-95 (Standard File)

TB Coor, Day Plan [4.4]

Day Plan Table 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		6	8	9	15	15	16	18	22							
Minute		30	35	35		30	20	30								
Action	100	2	12	1	3	13	3	4	100							

Day Plan Table 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		8	11	19	22											
Minute																
Action	100	5	6	5	100											

Day Plan Table 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		8	11	19	22											
Minute																
Action	100	5	6	5	100											

Coordination, Pattern 1-16 [2.1]/Coordination, Alt Tables+[2.6]

Pattern	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Cycle Time	140	160	160	120	120	140						160	160			
Offset Time	117		49	67	67	117							49			
Split Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Seq Number	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Ph Opt Alt																
Ph Time Alt																

Coordination, Splits [2.7.1]

Split Table 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	12	34		28	12	29		25								
Mode	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	12	31		51	12	24		30								
Mode	NON	NON	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph						ON										

Split Table 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	12	54		36	12	23		23								
Mode	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	12	24		18	12	33		21								
Mode	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	12	33		21	12	25		17								
Mode	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	12	34		28	12	29		25								
Mode	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Approved By: Stephen Shreve **Date:** _____

20150 : 825 - Blue Heron Bl and I-95 (Standard File)

Preemption Times[3.1]/Phases[3.2]/Options[3.3]

Channel	1	2	3	4	5	6
Lock Input		ON	ON	ON	ON	ON
Override Flash		ON	ON	ON	ON	ON
Override Higher						
Flash Dwell						
Link						
Delay						
Min Duration						
Min Green						
Min Walk						
Ped Clear						
Track Green						
Min Dwell						
Max Presence						
Track R1						
Track R2						
Track R3						
Track R4						
Dwell P1						
Dwell P2						
Dwell P3						
Dwell P4						
Dwell P5						
Dwell P6						
Dwell P7						
Dwell P8						
Dwell P9						
Dwell P10						
Dwell P11						
Dwell P12						
Dwell Ped1						
Dwell Ped2						
Dwell Ped3						
Dwell Ped4						
Dwell Ped5						
Dwell Ped6						
Dwell Ped7						
Dwell Ped8						
Exit R1						
Exit R2						
Exit R3						
Exit R4						

Preemption Times+[3.4]/Overlaps+[3.5]/Options+[3.6]

Preempt	1	2	3	4	5	6
Enable						
Type	RAIL	EMERG	EMERG	EMERG	EMERG	EMERG
Skip Track						
Volt Mon Flash						
Coord in Preempt						
Max2						
Return Max/Min	MAX	MAX	MAX	MAX	MAX	MAX
Extend Dwell						
Pattern						
Output Mode	TS2	TS2	TS2	TS2	TS2	TS2
Track Over 1						
Track Over 2						
Track Over 3						
Track Over 4						
Track Over 5						
Track Over 6						
Track Over 7						
Track Over 8						
Track Over 9						
Track Over 10						
Track Over 11						
Track Over 12						
Dwell Over 1						
Dwell Over 2						
Dwell Over 3						
Dwell Over 4						
Dwell Over 5						
Dwell Over 6						
Dwell Over 7						
Dwell Over 8						
Dwell Over 9						
Dwell Over 10						
Dwell Over 11						
Dwell Over 12						
Ped Clear						
Yellow						
Red						
Return Min/Max						
Delay Inh						
Exit Time						
All Red B4						

Overlap Program Parameters [1.5.2.1]

Overlap	Included Phases								Modifer Phases								Type	Green	Yellow	Red
Overlap 1	2	4															NORMAL		3.5	1.5
Overlap 2	2	4	5	6													NORMAL		3.5	1.5
Overlap 3	1	8															NORMAL		3.5	1.5
Overlap 4	1	8															NORMAL		3.5	1.5
Overlap 5	5	6															NORMAL		3.5	1.5
Overlap 6	2	3															PED 1		3.5	1.5
Overlap 7	2	3															PED 1		3.5	1.5
Overlap 8	3	6															PED 1		3.5	1.5
Overlap 9	6	8															NORMAL		3.5	1.5
Overlap 10	1	2	6	8													NORMAL		3.5	1.5
Overlap 11	4	5															NORMAL		3.5	1.5
Overlap 12	4	5															NORMAL		3.5	1.5
Overlap 13	1	2															NORMAL		3.5	1.5
Overlap 14	3	6															PED 1		3.5	1.5
Overlap 15	3	6															PED 1		3.5	1.5
Overlap 16	2	3															PED 1		3.5	1.5

Approved By: Stephen Shreve **Date:** _____

20150 : 825 - Blue Heron Bl and I-95 (Standard File)

Alternate Phase Program 1, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

Alternate Phase Program 2, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

Alternate Phase Program 3, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

Alternate Phase Program 4, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

Alternate Phase Program 5, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4										
5										
6										
7										
8										

TB Coor, Day Plan [4.4]

Day Plan Table 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action	100															

Day Plan Table 5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action	100															

Day Plan Table 6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action	100															

Approved By: Stephen Shreve **Date:** _____

Palm Beach County **Special System Timing Sheet** **5/31/2013**

20150 : 825 - Blue Heron Bl and I-95 (Standard File)

Coordination, Splits [2.7.1]

Split Table 7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 8	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 9	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 10	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 11	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 12	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	12	31		50	12	25		30								
Mode	NON	NON	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph						ON										

Split Table 13	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	12	51		36	12	24		25								
Mode	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 14	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 15	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 16	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Approved By: Stephen Shreve **Date:** _____

Palm Beach County **Signal Timing Sheet** **5/31/2013**

20175 : 830 - Blue Heron Bl and Garden Rd (Standard File)

Phase [1.1.1]

	1 (EL)	2 (WT)	3 (SL)	4 (NT)	5 (WL)	6 (ET)	7 (NL)	8 (ST)	9	10	11	12	13	14	15	16
Walk		7		7		7		7								
Ped Clearance		18		21		18		21								
Min Green	4	20	4	6	4	20	4	6								
Passage	2	4	2	2	2	4	2	2								
Max1	35	45	30	25	15	45	20	25								
Max2	30	50	15	18	15	50	15	18								
Yellow	4	4	4	4	4	4	4	4								
Red	3	3	3	3	3	3	3	3								

Phase Option [1.1.2]

	1 (EL)	2 (WT)	3 (SL)	4 (NT)	5 (WL)	6 (ET)	7 (NL)	8 (ST)	9	10	11	12	13	14	15	16
Enable	ON	ON	ON	ON	ON	ON	ON	ON								
Auto Entry				ON				ON								
Auto Exit		ON				ON										
Non Act1																
Non Act2																
Lock Call		ON				ON										
Min Recall		ON				ON										
Max Recall																
Ped Recall																
Dual Entry		ON		ON		ON		ON								
Sim Gap Enable									ON	ON	ON	ON	ON	ON	ON	ON
Rest In Walk																

Detector, Vehicle Parameters 1-16 [5.1]

	1 (EBL1)	2 (WBT1)	3 (WBT2)	4 (WBT3)	5 (SBL1)	6 (NBT1)	7 (WBL1)	8 (EBT1)	9 (EBT2)	10 (EBT3)	11 (NBL1)	12 (SBT1)	13 (SBR1)	14	15	16
Call Phase	1	2	2	2	3	4	5	6	6	6	7	8	8			
Switch Phase	6				8		2				4					
Delay Time													10			

Detector, Vehicle Parameters 17-32 [5.1]

	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Call Phase																
Switch Phase																
Delay Time																

Detector, Vehicle Parameters 33-48 [5.1]

	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Call Phase																
Switch Phase																
Delay Time																

Detector, Vehicle Parameters 49-64 [5.1]

	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
Call Phase																
Switch Phase																
Delay Time																

Approved By: Stephen Shreve **Date:** _____

20175 : 830 - Blue Heron Bl and Garden Rd (Standard File)

TB Coor, Day Plan [4.4]

Day Plan Table 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		6	8	9	15	15	16	18	22							
Minute		30	35	35		30	20	30								
Action	100	2	12	1	3	13	3	4	100							

Day Plan Table 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		8	11	19	22											
Minute																
Action	100	5	6	5	100											

Day Plan Table 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour		8	11	19	22											
Minute																
Action	100	5	6	5	100											

Coordination, Pattern 1-16 [2.1]/Coordination, Alt Tables+[2.6]

Pattern	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Cycle Time	140	160	160	120	120	140						160	160			
Offset Time	102	46	35	57	57	102						46	35			
Split Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Seq Number	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Ph Opt Alt																
Ph Time Alt	1	2	3	4	5											

Coordination, Splits [2.7.1]

Split Table 1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	17	60	22	41	17	60	18	45								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	40	62	17	41	17	85	17	41								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	28	67	25	40	17	78	25	40								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	21	48	18	33	20	49	18	33								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	21	48	18	33	20	49	18	33								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	17	60	22	41	17	60	18	45								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Approved By: Stephen Shreve **Date:** _____

Preemption Times[3.1]/Phases[3.2]/Options[3.3]

Channel	1	2	3	4	5	6
Lock Input						
Override Flash						
Override Higher						
Flash Dwell						
Link						
Delay						
Min Duration						
Min Green						
Min Walk						
Ped Clear						
Track Green						
Min Dwell						
Max Presence						
Track R1						
Track R2						
Track R3						
Track R4						
Dwell P1						
Dwell P2						
Dwell P3						
Dwell P4						
Dwell P5						
Dwell P6						
Dwell P7						
Dwell P8						
Dwell P9						
Dwell P10						
Dwell P11						
Dwell P12						
Dwell Ped1						
Dwell Ped2						
Dwell Ped3						
Dwell Ped4						
Dwell Ped5						
Dwell Ped6						
Dwell Ped7						
Dwell Ped8						
Exit R1						
Exit R2						
Exit R3						
Exit R4						

Preemption Times+[3.4]/Overlaps+[3.5]/Options+[3.6]

Preempt	1	2	3	4	5	6
Enable						
Type	EMERG	EMERG	EMERG	EMERG	EMERG	EMERG
Skip Track						
Volt Mon Flash						
Coord in Preempt						
Max2						
Return Max/Min	MAX	MAX	MAX	MAX	MAX	MAX
Extend Dwell						
Pattern						
Output Mode	TS2	TS2	TS2	TS2	TS2	TS2
Track Over 1						
Track Over 2						
Track Over 3						
Track Over 4						
Track Over 5						
Track Over 6						
Track Over 7						
Track Over 8						
Track Over 9						
Track Over 10						
Track Over 11						
Track Over 12						
Dwell Over 1						
Dwell Over 2						
Dwell Over 3						
Dwell Over 4						
Dwell Over 5						
Dwell Over 6						
Dwell Over 7						
Dwell Over 8						
Dwell Over 9						
Dwell Over 10						
Dwell Over 11						
Dwell Over 12						
Ped Clear						
Yellow						
Red						
Return Min/Max						
Delay Inh						
Exit Time						
All Red B4						

Overlap Program Parameters [1.5.2.1]

Overlap	Included Phases								Modifer Phases								Type	Green	Yellow	Red
Overlap 1	1																NORMAL		3.5	1.5
Overlap 2																	NORMAL		3.5	1.5
Overlap 3																	NORMAL		3.5	1.5
Overlap 4																	NORMAL		3.5	1.5
Overlap 5																	NORMAL		3.5	1.5
Overlap 6																	NORMAL		3.5	1.5
Overlap 7																	NORMAL		3.5	1.5
Overlap 8																	NORMAL		3.5	1.5
Overlap 9																	NORMAL		3.5	1.5
Overlap 10																	NORMAL		3.5	1.5
Overlap 11																	NORMAL		3.5	1.5
Overlap 12																	NORMAL		3.5	1.5
Overlap 13																	NORMAL		3.5	1.5
Overlap 14																	NORMAL		3.5	1.5
Overlap 15																	NORMAL		3.5	1.5
Overlap 16																	NORMAL		3.5	1.5

Approved By: Stephen Shreve **Date:** _____

20175 : 830 - Blue Heron Bl and Garden Rd (Standard File)

Alternate Phase Program 1, Interval Times

Alternate Phase Program 2, Interval Times

[1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4	7	21	10	2	21		4	3	4	
5										
6										
7										
8	7	21	10	2	21		4	3	8	

[1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4	7	21	10	2	21		4	3	4	
5										
6										
7										
8	7	21	10	2	21		4	3	8	

Alternate Phase Program 3, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4	7	21	10	2	23		4	3	4	
5										
6										
7										
8	7	21	10	2	23		4	3	8	

Alternate Phase Program 4, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4	7	21	10	2	21		4	3	4	
5										
6										
7										
8	7	21	10	2	21		4	3	8	

Alternate Phase Program 5, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1										
2										
3										
4	7	21	10	2	21		4	3	4	
5										
6										
7										
8	7	21	10	2	21		4	3	8	

TB Coor, Day Plan [4.4]

Day Plan Table 4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Day Plan Table 6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour																
Minute																
Action																

Approved By: Stephen Shreve **Date:** _____

Palm Beach County **Special System Timing Sheet** **5/31/2013**

20175 : 830 - Blue Heron Bl and Garden Rd (Standard File)

Coordination, Splits [2.7.1]

Split Table 7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 8	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 9	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 10	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 11	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 12	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	40	62	17	41	17	85	17	41								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 13	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time	28	67	25	40	17	78	25	40								
Mode	NON	MAX	NON	NON	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 14	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 15	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Split Table 16	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Time																
Mode	NON	MAX	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON	NON
Coord-Ph		ON														

Approved By: Stephen Shreve **Date:** _____

APPENDIX D

(Existing Traffic Data Collection)

Blue Heron Boulevard at Military Trail

County: 93
Station: 3311
Description: MILITARY TRAIL N OF BLUE HERON BLVD
Start Date: 03/24/2015
Start Time: 0000

	Direction: N					Direction: S					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	27	26	19	14	86	22	24	17	16	79	165
0100	22	23	15	14	74	4	11	10	17	42	116
0200	10	11	17	13	51	11	10	9	11	41	92
0300	11	11	10	16	48	8	8	8	11	35	83
0400	12	14	12	27	65	9	18	24	17	68	133
0500	26	40	53	57	176	25	36	46	55	162	338
0600	73	108	153	256	590	75	98	120	191	484	1074
0700	232	271	369	383	1255	197	273	263	319	1052	2307
0800	297	330	299	320	1246	307	228	256	209	1000	2246
0900	249	241	240	216	946	237	195	212	182	826	1772
1000	222	236	224	221	903	224	225	194	219	862	1765
1100	219	207	215	243	884	219	205	244	215	883	1767
1200	249	250	298	253	1050	250	285	214	232	981	2031
1300	255	241	258	228	982	263	219	205	251	938	1920
1400	217	239	218	250	924	268	276	312	258	1114	2038
1500	266	244	279	236	1025	298	298	308	282	1186	2211
1600	285	254	296	306	1141	353	301	367	333	1354	2495
1700	305	323	310	285	1223	402	316	371	320	1409	2632
1800	251	234	199	183	867	296	222	163	193	874	1741
1900	141	166	147	126	580	157	176	159	134	626	1206
2000	121	140	135	95	491	122	139	135	109	505	996
2100	115	90	78	86	369	105	116	94	52	367	736
2200	64	77	63	71	275	87	76	61	46	270	545
2300	52	49	49	38	188	67	38	46	33	184	372
24-Hour Totals:					15439					15342	30781

Peak Volume Information

	Direction: N		Direction: S		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	730	1379	715	1162	730	2496
P.M.	1645	1244	1645	1422	1645	2666
Daily	730	1379	1645	1422	1645	2666

Generated by SPS 5.0.45P

County: 93
Station: 3311
Description: MILITARY TRAIL N OF BLUE HERON BLVD
Start Date: 03/25/2015
Start Time: 0000

	Direction: N					Direction: S					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	23	25	20	19	87	29	24	13	16	82	169
0100	21	7	9	14	51	3	13	11	7	34	85
0200	9	15	10	5	39	7	5	15	7	34	73
0300	6	8	8	10	32	6	1	8	4	19	51
0400	3	9	17	23	52	9	10	15	20	54	106
0500	24	44	62	80	210	20	34	56	55	165	375
0600	69	103	155	241	568	82	97	144	176	499	1067
0700	258	279	358	353	1248	208	263	276	255	1002	2250
0800	292	344	313	317	1266	285	254	282	252	1073	2339
0900	256	246	237	217	956	224	278	253	250	1005	1961
1000	236	242	204	230	912	259	247	202	201	909	1821
1100	204	204	209	234	851	216	229	246	238	929	1780
1200	250	235	266	242	993	268	217	233	257	975	1968
1300	246	210	246	229	931	233	242	231	224	930	1861
1400	265	229	217	245	956	280	282	308	257	1127	2083
1500	243	259	280	253	1035	273	305	323	261	1162	2197
1600	275	268	261	292	1096	365	354	339	335	1393	2489
1700	271	324	334	345	1274	344	349	340	293	1326	2600
1800	238	243	201	223	905	312	230	205	174	921	1826
1900	164	179	148	122	613	169	156	137	161	623	1236
2000	114	129	128	111	482	163	140	136	138	577	1059
2100	104	91	90	72	357	105	106	90	76	377	734
2200	69	55	67	62	253	89	56	57	51	253	506
2300	58	46	44	42	190	53	49	41	39	182	372
24-Hour Totals:					15357					15651	31008

Peak Volume Information

	Direction: N		Direction: S		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	730	1347	715	1079	730	2417
P.M.	1700	1274	1600	1393	1700	2600
Daily	730	1347	1600	1393	1700	2600

Generated by SPS 5.0.45P

County: 93
Station: 3311
Description: MILITARY TRAIL N OF BLUE HERON BLVD
Start Date: 03/26/2015
Start Time: 0000

	Direction: N					Direction: S					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	28	24	20	20	92	26	16	22	14	78	170
0100	19	5	21	8	53	14	13	11	12	50	103
0200	7	9	5	8	29	8	6	8	9	31	60
0300	10	9	8	9	36	7	4	12	18	41	77
0400	15	9	21	27	72	10	26	12	21	69	141
0500	21	38	56	72	187	22	28	40	64	154	341
0600	77	102	159	229	567	69	107	144	168	488	1055
0700	276	263	361	387	1287	198	270	316	317	1101	2388
0800	294	335	281	304	1214	280	271	237	242	1030	2244
0900	221	246	282	219	968	206	201	206	191	804	1772
1000	224	209	212	229	874	208	197	184	215	804	1678
1100	225	222	205	235	887	206	238	202	223	869	1756
1200	234	248	259	245	986	263	230	241	252	986	1972
1300	253	232	232	222	939	236	215	231	224	906	1845
1400	213	247	246	249	955	244	246	321	290	1101	2056
1500	259	260	259	268	1046	324	296	294	281	1195	2241
1600	268	258	320	289	1135	326	293	346	325	1290	2425
1700	312	319	306	280	1217	364	323	344	282	1313	2530
1800	245	213	209	186	853	262	248	203	174	887	1740
1900	168	134	108	150	560	147	139	152	137	575	1135
2000	120	101	146	112	479	130	135	91	107	463	942
2100	111	88	104	81	384	107	106	84	75	372	756
2200	89	66	58	50	263	74	58	64	52	248	511
2300	57	44	37	32	170	61	53	48	39	201	371
24-Hour Totals:					15253					15056	30309

Peak Volume Information

	Direction: N		Direction: S		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	730	1377	730	1184	730	2561
P.M.	1630	1240	1630	1358	1630	2598
Daily	730	1377	1630	1358	1630	2598

Generated by SPS 5.0.45P

County: 93
Station: 3313
Description: BLUE HERON BLVD E OF MILITARY TRAIL
Start Date: 03/24/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	36	48	30	20	134	52	61	40	44	197	331
0100	23	16	20	18	77	36	46	40	37	159	236
0200	20	18	23	17	78	47	50	24	33	154	232
0300	18	21	21	43	103	22	29	37	31	119	222
0400	43	46	62	34	185	24	41	42	57	164	349
0500	87	74	95	112	368	69	94	147	174	484	852
0600	154	188	245	288	875	186	256	342	383	1167	2042
0700	316	380	400	411	1507	359	442	495	473	1769	3276
0800	379	337	357	361	1434	457	392	338	386	1573	3007
0900	313	267	275	267	1122	326	311	307	293	1237	2359
1000	239	228	301	323	1091	344	266	342	289	1241	2332
1100	267	292	338	286	1183	283	344	322	332	1281	2464
1200	308	303	275	290	1176	348	351	399	364	1462	2638
1300	254	275	238	279	1046	354	341	366	296	1357	2403
1400	277	287	342	307	1213	349	327	333	377	1386	2599
1500	286	309	319	326	1240	397	494	468	416	1775	3015
1600	358	305	485	373	1521	488	453	479	488	1908	3429
1700	398	361	334	269	1362	550	591	529	426	2096	3458
1800	299	233	224	185	941	432	374	335	288	1429	2370
1900	207	167	195	122	691	272	280	268	236	1056	1747
2000	145	112	116	101	474	276	235	211	243	965	1439
2100	113	98	72	79	362	211	191	156	172	730	1092
2200	72	66	88	38	264	165	166	146	130	607	871
2300	56	51	58	54	219	106	106	65	80	357	576
24-Hour Totals:					18666					24673	43339

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	715	1570	715	1867	715	3437
P.M.	1630	1617	1645	2158	1630	3725
Daily	1630	1617	1645	2158	1630	3725

Generated by SPS 5.0.45P

County: 93
Station: 3313
Description: BLUE HERON BLVD E OF MILITARY TRAIL
Start Date: 03/25/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	29	40	18	24	111	62	70	53	30	215	326
0100	23	13	17	7	60	30	20	16	19	85	145
0200	13	16	12	10	51	18	20	17	21	76	127
0300	19	13	21	33	86	32	23	15	18	88	174
0400	40	55	61	72	228	27	16	52	71	166	394
0500	73	84	111	135	403	93	132	153	173	551	954
0600	146	216	239	277	878	228	287	338	394	1247	2125
0700	298	430	411	373	1512	424	476	549	589	2038	3550
0800	429	376	388	318	1511	454	454	401	384	1693	3204
0900	332	289	374	357	1352	340	302	239	282	1163	2515
1000	303	335	327	310	1275	283	295	230	276	1084	2359
1100	282	300	291	307	1180	238	247	235	289	1009	2189
1200	299	265	291	265	1120	231	268	301	297	1097	2217
1300	282	284	270	237	1073	281	297	304	297	1179	2252
1400	308	311	328	279	1226	247	274	263	358	1142	2368
1500	302	321	380	358	1361	331	314	376	391	1412	2773
1600	386	332	449	401	1568	384	438	394	410	1626	3194
1700	339	302	344	265	1250	517	466	518	398	1899	3149
1800	242	217	255	201	915	402	302	329	253	1286	2201
1900	198	174	174	155	701	241	241	180	176	838	1539
2000	148	117	135	119	519	180	203	175	194	752	1271
2100	116	91	92	95	394	193	167	162	104	626	1020
2200	96	74	74	66	310	125	128	93	134	480	790
2300	57	78	54	66	255	91	72	72	63	298	553
24-Hour Totals:					19339					22050	41389

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	715	1643	715	2068	715	3711
P.M.	1600	1568	1645	1911	1645	3297
Daily	715	1643	715	2068	715	3711

Generated by SPS 5.0.45P

County: 93
Station: 3313
Description: BLUE HERON BLVD E OF MILITARY TRAIL
Start Date: 03/26/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	29	38	20	20	107	68	64	57	34	223	330
0100	21	21	14	8	64	33	30	31	13	107	171
0200	15	9	18	17	59	28	20	9	26	83	142
0300	16	12	23	36	87	14	23	21	27	85	172
0400	26	53	64	68	211	28	23	33	58	142	353
0500	96	101	115	125	437	63	81	120	138	402	839
0600	149	191	244	257	841	208	198	281	368	1055	1896
0700	309	366	429	413	1517	319	384	489	476	1668	3185
0800	385	306	332	310	1333	394	341	313	291	1339	2672
0900	292	297	274	281	1144	285	316	297	270	1168	2312
1000	234	262	272	273	1041	271	280	267	282	1100	2141
1100	232	312	265	306	1115	274	243	240	269	1026	2141
1200	305	263	296	276	1140	282	299	285	324	1190	2330
1300	284	290	279	302	1155	318	299	285	326	1228	2383
1400	225	239	344	286	1094	301	394	401	444	1540	2634
1500	319	313	352	339	1323	421	411	514	409	1755	3078
1600	381	323	417	366	1487	454	488	451	579	1972	3459
1700	338	296	328	294	1256	504	623	495	438	2060	3316
1800	281	213	214	213	921	339	383	380	315	1417	2338
1900	182	148	162	132	624	272	239	224	221	956	1580
2000	125	125	127	91	468	248	198	207	149	802	1270
2100	106	104	84	79	373	229	221	172	153	775	1148
2200	85	81	61	51	278	150	126	112	124	512	790
2300	59	78	53	55	245	116	92	99	90	397	642
24-Hour Totals:					18320					23002	41322

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	715	1593	715	1743	715	3336
P.M.	1600	1487	1645	2201	1630	3574
Daily	715	1593	1645	2201	1630	3574

Generated by SPS 5.0.45P

County: 93
Station: 3315
Description: MILITARY TRAIL S OF BLUE HERON BLVD
Start Date: 03/24/2015
Start Time: 0000

	Direction: N					Direction: S					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	25	22	18	14	79	38	38	16	18	110	189
0100	23	16	7	12	58	14	12	18	16	60	118
0200	12	8	15	13	48	26	8	13	13	60	108
0300	9	11	15	19	54	10	9	10	13	42	96
0400	17	23	35	30	105	13	14	18	26	71	176
0500	42	49	63	62	216	22	26	41	54	143	359
0600	79	133	163	267	642	71	100	111	161	443	1085
0700	266	306	443	400	1415	196	240	233	288	957	2372
0800	352	348	300	374	1374	289	265	262	185	1001	2375
0900	254	267	237	242	1000	228	200	214	197	839	1839
1000	200	222	225	246	893	247	226	215	206	894	1787
1100	230	253	259	249	991	217	216	176	226	835	1826
1200	268	256	290	301	1115	237	276	271	240	1024	2139
1300	264	275	213	259	1011	275	229	238	200	942	1953
1400	263	275	257	274	1069	264	269	263	287	1083	2152
1500	269	256	277	243	1045	271	349	342	292	1254	2299
1600	306	256	320	348	1230	336	339	323	368	1366	2596
1700	382	318	291	291	1282	382	326	388	353	1449	2731
1800	277	218	213	160	868	300	245	182	194	921	1789
1900	170	151	168	120	609	164	184	176	152	676	1285
2000	123	133	147	107	510	152	166	143	152	613	1123
2100	107	87	71	85	350	120	133	113	74	440	790
2200	57	76	65	67	265	85	125	79	75	364	629
2300	60	51	45	40	196	83	69	43	47	242	438
24-Hour Totals:					16425					15829	32254

Peak Volume Information

	Direction: N		Direction: S		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	730	1543	745	1104	730	2618
P.M.	1630	1368	1645	1464	1645	2803
Daily	730	1543	1645	1464	1645	2803

Generated by SPS 5.0.45P

County: 93
Station: 3315
Description: MILITARY TRAIL S OF BLUE HERON BLVD
Start Date: 03/25/2015
Start Time: 0000

	Direction: N					Direction: S					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	21	17	17	22	77	44	37	19	17	117	194
0100	12	8	12	9	41	8	17	6	9	40	81
0200	8	12	13	11	44	7	14	10	8	39	83
0300	12	15	17	17	61	9	8	7	10	34	95
0400	17	33	31	39	120	7	12	10	24	53	173
0500	50	59	73	78	260	27	29	64	71	191	451
0600	122	168	253	271	814	68	103	122	167	460	1274
0700	304	443	393	332	1472	188	245	247	298	978	2450
0800	339	304	352	242	1237	271	297	250	201	1019	2256
0900	274	239	251	207	971	247	218	216	207	888	1859
1000	214	268	228	282	992	218	212	218	181	829	1821
1100	225	250	248	246	969	211	231	230	283	955	1924
1200	283	241	243	248	1015	241	223	223	243	930	1945
1300	271	250	263	247	1031	296	249	274	254	1073	2104
1400	273	276	240	244	1033	275	271	264	292	1102	2135
1500	248	278	296	277	1099	236	321	335	298	1190	2289
1600	330	264	316	315	1225	347	392	381	350	1470	2695
1700	301	350	349	326	1326	374	361	385	353	1473	2799
1800	244	219	218	229	910	310	288	225	182	1005	1915
1900	181	164	162	111	618	195	170	174	159	698	1316
2000	124	115	153	102	494	154	195	158	164	671	1165
2100	107	88	89	90	374	128	143	116	97	484	858
2200	70	58	71	57	256	93	85	87	70	335	591
2300	54	48	48	39	189	81	60	68	42	251	440
24-Hour Totals:					16628					16285	32913

Peak Volume Information

	Direction: N		Direction: S		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	715	1507	745	1116	715	2568
P.M.	1700	1326	1615	1497	1700	2799
Daily	715	1507	1615	1497	1700	2799

Generated by SPS 5.0.45P

County: 93
Station: 3315
Description: MILITARY TRAIL S OF BLUE HERON BLVD
Start Date: 03/26/2015
Start Time: 0000

	Direction: N					Direction: S					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	21	19	16	19	75	46	46	32	24	148	223
0100	20	8	8	11	47	21	21	14	14	70	117
0200	5	7	8	13	33	11	14	8	13	46	79
0300	13	12	14	14	53	9	8	11	18	46	99
0400	16	10	30	31	87	9	16	13	21	59	146
0500	35	50	55	84	224	23	33	50	63	169	393
0600	76	110	173	238	597	78	92	137	153	460	1057
0700	276	301	443	386	1406	172	242	265	320	999	2405
0800	312	330	308	329	1279	282	292	252	216	1042	2321
0900	229	281	240	260	1010	243	217	206	202	868	1878
1000	206	213	218	242	879	230	204	210	205	849	1728
1100	225	271	247	294	1037	247	219	194	248	908	1945
1200	246	263	295	258	1062	255	243	258	247	1003	2065
1300	267	257	274	228	1026	250	213	250	232	945	1971
1400	200	301	291	258	1050	222	292	293	329	1136	2186
1500	277	291	308	284	1160	318	331	359	288	1296	2456
1600	330	272	327	323	1252	333	311	371	343	1358	2610
1700	357	305	316	306	1284	379	376	356	343	1454	2738
1800	272	215	228	184	899	252	268	228	185	933	1832
1900	184	137	133	159	613	173	164	154	141	632	1245
2000	126	114	173	103	516	163	160	108	115	546	1062
2100	103	80	103	92	378	130	125	89	92	436	814
2200	87	64	64	64	279	88	83	88	77	336	615
2300	47	42	32	30	151	76	73	74	55	278	429
24-Hour Totals:					16397					16017	32414

Peak Volume Information

	Direction: N		Direction: S		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	730	1471	730	1159	730	2630
P.M.	1630	1312	1630	1469	1630	2781
Daily	730	1471	1630	1469	1630	2781

Generated by SPS 5.0.45P

County: 93
Station: 3317
Description: BLUE HERON BLVD W OF MILITARY TRAIL
Start Date: 03/24/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	17	29	22	21	89	31	31	20	11	93	182
0100	12	19	11	17	59	8	14	16	10	48	107
0200	12	15	11	12	50	6	13	11	10	40	90
0300	13	15	14	18	60	6	13	16	36	71	131
0400	18	19	26	22	85	29	34	33	22	118	203
0500	42	53	78	75	248	62	58	64	98	282	530
0600	92	135	183	181	591	106	150	147	171	574	1165
0700	215	224	244	278	961	190	213	195	208	806	1767
0800	209	174	179	136	698	201	194	201	195	791	1489
0900	169	114	148	107	538	155	162	140	157	614	1152
1000	134	89	133	103	459	134	111	160	152	557	1016
1100	112	125	137	121	495	147	126	140	165	578	1073
1200	119	148	137	135	539	149	155	160	117	581	1120
1300	132	129	145	105	511	119	126	124	127	496	1007
1400	162	137	152	147	598	126	148	139	141	554	1152
1500	158	198	182	183	721	162	178	196	185	721	1442
1600	185	208	196	197	786	181	173	268	183	805	1591
1700	265	259	242	190	956	205	184	188	152	729	1685
1800	177	166	153	161	657	142	138	119	116	515	1172
1900	127	124	109	106	466	100	92	117	74	383	849
2000	92	110	96	90	388	83	58	50	39	230	618
2100	87	85	60	74	306	70	58	38	41	207	513
2200	78	53	58	41	230	46	30	41	27	144	374
2300	35	40	27	31	133	26	46	44	38	154	287
24-Hour Totals:					10624					10091	20715

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	700	961	715	817	715	1772
P.M.	1645	963	1630	840	1630	1757
Daily	1645	963	1630	840	715	1772

Generated by SPS 5.0.45P

County: 93
Station: 3317
Description: BLUE HERON BLVD W OF MILITARY TRAIL
Start Date: 03/25/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	21	22	24	17	84	24	24	9	11	68	152
0100	4	11	3	10	28	9	7	10	10	36	64
0200	13	10	4	11	38	13	8	11	4	36	74
0300	18	8	11	11	48	11	14	12	20	57	105
0400	13	14	19	29	75	34	44	40	49	167	242
0500	54	58	73	73	258	58	59	81	98	296	554
0600	95	161	159	194	609	103	138	157	151	549	1158
0700	193	226	260	302	981	163	225	213	229	830	1811
0800	184	160	197	144	685	235	215	199	170	819	1504
0900	171	135	124	134	564	174	135	185	194	688	1252
1000	137	130	149	116	532	144	136	162	132	574	1106
1100	113	150	127	112	502	147	133	152	163	595	1097
1200	132	154	122	130	538	164	126	157	149	596	1134
1300	146	140	157	115	558	114	139	142	129	524	1082
1400	134	142	144	197	617	140	134	167	138	579	1196
1500	156	192	174	190	712	137	187	227	200	751	1463
1600	163	207	203	211	784	187	194	268	210	859	1643
1700	264	231	243	221	959	165	169	175	148	657	1616
1800	191	195	175	166	727	134	136	136	133	539	1266
1900	128	138	82	103	451	125	113	110	88	436	887
2000	89	95	82	100	366	86	65	61	75	287	653
2100	92	84	75	59	310	62	53	36	59	210	520
2200	46	59	47	53	205	41	49	38	29	157	362
2300	48	48	24	33	153	46	49	39	42	176	329
24-Hour Totals:					10784					10486	21270

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	700	981	715	902	715	1874
P.M.	1700	959	1600	859	1615	1722
Daily	700	981	715	902	715	1874

Generated by SPS 5.0.45P

County: 93
Station: 3317
Description: BLUE HERON BLVD W OF MILITARY TRAIL
Start Date: 03/26/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	22	29	30	22	103	31	31	16	4	82	185
0100	18	7	13	14	52	17	9	13	1	40	92
0200	13	14	7	17	51	13	6	12	12	43	94
0300	6	8	11	17	42	10	7	8	21	46	88
0400	10	22	14	29	75	19	40	44	43	146	221
0500	35	57	60	85	237	65	80	82	99	326	563
0600	115	126	169	211	621	96	151	147	150	544	1165
0700	203	220	257	277	957	187	186	197	197	767	1724
0800	187	184	171	149	691	229	177	199	183	788	1479
0900	137	136	150	117	540	179	165	170	167	681	1221
1000	107	117	111	139	474	128	156	148	150	582	1056
1100	101	123	115	118	457	129	142	141	140	552	1009
1200	121	142	141	146	550	157	169	137	137	600	1150
1300	127	156	157	120	560	138	134	126	149	547	1107
1400	144	113	170	160	587	109	127	148	123	507	1094
1500	143	180	151	198	672	159	166	202	167	694	1366
1600	191	239	186	226	842	186	186	253	177	802	1644
1700	247	253	245	189	934	158	176	185	165	684	1618
1800	168	177	155	158	658	128	103	112	136	479	1137
1900	125	118	100	108	451	93	86	101	65	345	796
2000	94	90	75	68	327	81	67	64	45	257	584
2100	72	106	81	71	330	60	54	44	39	197	527
2200	51	58	33	48	190	40	28	37	34	139	329
2300	44	37	35	44	160	28	63	42	42	175	335
24-Hour Totals:					10561					10023	20584

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	700	957	715	809	715	1750
P.M.	1645	971	1600	802	1630	1676
Daily	1645	971	715	809	715	1750

Generated by SPS 5.0.45P

Three-Day Approach Count Summary

Project Name: Blue Heron Boulevard Study
Project No.: 2013008.018
Location: Blue Heron Boulevard at Military Trail
Direction: NORTHBOUND (APPROACH)
Date: 3/24/2015-3/26/2015

TIME PERIOD (AM)		WEEKDAY TUES 24-Mar	WEED 25-Mar	THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
00:00	00:15	25	21	21	22	
00:15	00:30	22	17	19	19	
00:30	00:45	18	17	16	17	
00:45	01:00	14	22	19	18	77
01:00	01:15	23	12	20	18	
01:15	01:30	16	8	8	11	
01:30	01:45	7	12	8	9	
01:45	02:00	12	9	11	11	49
02:00	02:15	12	8	5	8	
02:15	02:30	8	12	7	9	
02:30	02:45	15	13	8	12	
02:45	03:00	13	11	13	12	42
03:00	03:15	9	12	13	11	
03:15	03:30	11	15	12	13	
03:30	03:45	15	17	14	15	
03:45	04:00	19	17	14	17	56
04:00	04:15	17	17	16	17	
04:15	04:30	23	33	10	22	
04:30	04:45	35	31	30	32	
04:45	05:00	30	39	31	33	104
05:00	05:15	42	50	35	42	
05:15	05:30	49	59	50	53	
05:30	05:45	63	73	55	64	
05:45	06:00	62	78	84	75	233
06:00	06:15	79	122	76	92	
06:15	06:30	133	168	110	137	
06:30	06:45	163	253	173	196	
06:45	07:00	267	271	238	259	684
07:00	07:15	266	304	276	282	
07:15	07:30	306	443	301	350	
07:30	07:45	443	393	443	426	
07:45	08:00	400	332	386	373	1,431
08:00	08:15	352	339	312	334	
08:15	08:30	348	304	330	327	
08:30	08:45	300	352	308	320	
08:45	09:00	374	242	329	315	1,297
09:00	09:15	254	274	229	252	
09:15	09:30	267	239	281	262	
09:30	09:45	237	251	240	243	
09:45	10:00	242	207	260	236	994
10:00	10:15	200	214	206	207	
10:15	10:30	222	268	213	234	
10:30	10:45	225	228	218	224	
10:45	11:00	246	282	242	257	921
11:00	11:15	230	225	225	227	
11:15	11:30	253	250	271	258	
11:30	11:45	259	248	247	251	
11:45	12:00	249	246	294	263	999

TIME PERIOD (PM)		WEEKDAY TUES 24-Mar	WED 25-Mar	THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
12:00	12:15	268	283	246	266	
12:15	12:30	256	241	263	253	
12:30	12:45	290	243	295	276	
12:45	13:00	301	248	258	269	1,064
13:00	13:15	264	271	267	267	
13:15	13:30	275	250	257	261	
13:30	13:45	213	263	274	250	
13:45	14:00	259	247	228	245	1,023
14:00	14:15	263	273	200	245	
14:15	14:30	275	276	301	284	
14:30	14:45	257	240	291	263	
14:45	15:00	274	244	258	259	1,051
15:00	15:15	269	248	277	265	
15:15	15:30	256	278	291	275	
15:30	15:45	277	296	308	294	
15:45	16:00	243	277	284	268	1,101
16:00	16:15	306	330	330	322	
16:15	16:30	256	264	272	264	
16:30	16:45	320	316	327	321	
16:45	17:00	348	315	323	329	1,236
17:00	17:15	382	301	357	347	
17:15	17:30	318	350	305	324	
17:30	17:45	291	349	316	319	
17:45	18:00	291	326	306	308	1,297
18:00	18:15	277	244	272	264	
18:15	18:30	218	219	215	217	
18:30	18:45	213	218	228	220	
18:45	19:00	160	229	184	191	892
19:00	19:15	170	181	184	178	
19:15	19:30	151	164	137	151	
19:30	19:45	168	162	133	154	
19:45	20:00	120	111	159	130	613
20:00	20:15	123	124	126	124	
20:15	20:30	133	115	114	121	
20:30	20:45	147	153	173	158	
20:45	21:00	107	102	103	104	507
21:00	21:15	107	107	103	106	
21:15	21:30	87	88	80	85	
21:30	21:45	71	89	103	88	
21:45	22:00	85	90	92	89	367
22:00	22:15	57	70	87	71	
22:15	22:30	76	58	64	66	
22:30	22:45	65	71	64	67	
22:45	23:00	67	57	64	63	267
23:00	23:15	60	54	47	54	
23:15	23:30	51	48	42	47	
23:30	23:45	45	48	32	42	
23:45	00:00	40	39	30	36	179
DAILY COUNT		16,425	16,628	16,397	16,483	
PEAK HOUR TIME					07:15	
PEAK HOUR COUNT					1,483	
ESTIMATED K-FACTOR					9.0%	

Three-Day Approach Count Summary

Project Name: Blue Heron Boulevard Study
State Project No.: 2013008.018
Location: Blue Heron Boulevard at Military Trail
Direction: SOUTHBOUND (APPROACH)
Date: 3/24/2015-3/26/2015

TIME PERIOD (AM)		WEEKDAY TUES 24-Mar	WEEKDAY WED 25-Mar	WEEKDAY THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
00:00	00:15	22	29	26	26	
00:15	00:30	24	24	16	21	
00:30	00:45	17	13	22	17	
00:45	01:00	16	16	14	15	80
01:00	01:15	4	3	14	7	
01:15	01:30	11	13	13	12	
01:30	01:45	10	11	11	11	
01:45	02:00	17	7	12	12	42
02:00	02:15	11	7	8	9	
02:15	02:30	10	5	6	7	
02:30	02:45	9	15	8	11	
02:45	03:00	11	7	9	9	35
03:00	03:15	8	6	7	7	
03:15	03:30	8	1	4	4	
03:30	03:45	8	8	12	9	
03:45	04:00	11	4	18	11	32
04:00	04:15	9	9	10	9	
04:15	04:30	18	10	26	18	
04:30	04:45	24	15	12	17	
04:45	05:00	17	20	21	19	64
05:00	05:15	25	20	22	22	
05:15	05:30	36	34	28	33	
05:30	05:45	46	56	40	47	
05:45	06:00	55	55	64	58	160
06:00	06:15	75	82	69	75	
06:15	06:30	98	97	107	101	
06:30	06:45	120	144	144	136	
06:45	07:00	191	176	168	178	490
07:00	07:15	197	208	198	201	
07:15	07:30	273	263	270	269	
07:30	07:45	263	276	316	285	
07:45	08:00	319	255	317	297	1,052
08:00	08:15	307	285	280	291	
08:15	08:30	228	254	271	251	
08:30	08:45	256	282	237	258	
08:45	09:00	209	252	242	234	1,034
09:00	09:15	237	224	206	222	
09:15	09:30	195	278	201	225	
09:30	09:45	212	253	206	224	
09:45	10:00	182	250	191	208	878
10:00	10:15	224	259	208	230	
10:15	10:30	225	247	197	223	
10:30	10:45	194	202	184	193	
10:45	11:00	219	201	215	212	858
11:00	11:15	219	216	206	214	
11:15	11:30	205	229	238	224	
11:30	11:45	244	246	202	231	
11:45	12:00	215	238	223	225	894

TIME PERIOD (PM)		WEEKDAY TUES 24-Mar	WEEKDAY WED 25-Mar	WEEKDAY THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
12:00	12:15	250	268	263	260	
12:15	12:30	285	217	230	244	
12:30	12:45	214	233	241	229	
12:45	13:00	232	257	252	247	981
13:00	13:15	263	233	236	244	
13:15	13:30	219	242	215	225	
13:30	13:45	205	231	231	222	
13:45	14:00	251	224	224	233	925
14:00	14:15	268	280	244	264	
14:15	14:30	276	282	246	268	
14:30	14:45	312	308	321	314	
14:45	15:00	258	257	290	268	1,114
15:00	15:15	298	273	324	298	
15:15	15:30	298	305	296	300	
15:30	15:45	308	323	294	308	
15:45	16:00	282	261	281	275	1,181
16:00	16:15	353	365	326	348	
16:15	16:30	301	354	293	316	
16:30	16:45	367	339	346	351	
16:45	17:00	333	335	325	331	1,346
17:00	17:15	402	344	364	370	
17:15	17:30	316	349	323	329	
17:30	17:45	371	340	344	352	
17:45	18:00	320	293	282	298	1,349
18:00	18:15	296	312	262	290	
18:15	18:30	222	230	248	233	
18:30	18:45	163	205	203	190	
18:45	19:00	193	174	174	180	894
19:00	19:15	157	169	147	158	
19:15	19:30	176	156	139	157	
19:30	19:45	159	137	152	149	
19:45	20:00	134	161	137	144	608
20:00	20:15	122	163	130	138	
20:15	20:30	139	140	135	138	
20:30	20:45	135	136	91	121	
20:45	21:00	109	138	107	118	515
21:00	21:15	105	105	107	106	
21:15	21:30	116	106	106	109	
21:30	21:45	94	90	84	89	
21:45	22:00	52	76	75	68	372
22:00	22:15	87	89	74	83	
22:15	22:30	76	56	58	63	
22:30	22:45	61	57	64	61	
22:45	23:00	46	51	52	50	257
23:00	23:15	67	53	61	60	
23:15	23:30	38	49	53	47	
23:30	23:45	46	41	48	45	
23:45	00:00	33	39	39	37	189
DAILY COUNT		15,342	15,651	15,056	15,350	
PEAK HOUR TIME					16:45	
PEAK HOUR COUNT					1,382	
ESTIMATED K-FACTOR					9.0%	

Three-Day Approach Count Summary

Project Name: Blue Heron Boulevard Study
State Project No.: 2013008.018
Location: Blue Heron Boulevard at Military Trail
Direction: EASTBOUND (APPROACH)
Date: 3/24/2015-3/26/2015

TIME PERIOD (AM)		WEEKDAY TUES 24-Mar	WEEKDAY WED 25-Mar	WEEKDAY THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
00:00	00:15	17	21	22	20	
00:15	00:30	29	22	29	27	
00:30	00:45	22	24	30	25	
00:45	01:00	21	17	22	20	92
01:00	01:15	12	4	18	11	
01:15	01:30	19	11	7	12	
01:30	01:45	11	3	13	9	
01:45	02:00	17	10	14	14	46
02:00	02:15	12	13	13	13	
02:15	02:30	15	10	14	13	
02:30	02:45	11	4	7	7	
02:45	03:00	12	11	17	13	46
03:00	03:15	13	18	6	12	
03:15	03:30	15	8	8	10	
03:30	03:45	14	11	11	12	
03:45	04:00	18	11	17	15	50
04:00	04:15	18	13	10	14	
04:15	04:30	19	14	22	18	
04:30	04:45	26	19	14	20	
04:45	05:00	22	29	29	27	78
05:00	05:15	42	54	35	44	
05:15	05:30	53	58	57	56	
05:30	05:45	78	73	60	70	
05:45	06:00	75	73	85	78	248
06:00	06:15	92	95	115	101	
06:15	06:30	135	161	126	141	
06:30	06:45	183	159	169	170	
06:45	07:00	181	194	211	195	607
07:00	07:15	215	193	203	204	
07:15	07:30	224	226	220	223	
07:30	07:45	244	260	257	254	
07:45	08:00	278	302	277	286	966
08:00	08:15	209	184	187	193	
08:15	08:30	174	160	184	173	
08:30	08:45	179	197	171	182	
08:45	09:00	136	144	149	143	691
09:00	09:15	169	171	137	159	
09:15	09:30	114	135	136	128	
09:30	09:45	148	124	150	141	
09:45	10:00	107	134	117	119	547
10:00	10:15	134	137	107	126	
10:15	10:30	89	130	117	112	
10:30	10:45	133	149	111	131	
10:45	11:00	103	116	139	119	488
11:00	11:15	112	113	101	109	
11:15	11:30	125	150	123	133	
11:30	11:45	137	127	115	126	
11:45	12:00	121	112	118	117	485

TIME PERIOD (PM)		WEEKDAY TUES 24-Mar	WEEKDAY WED 25-Mar	WEEKDAY THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
12:00	12:15	119	132	121	124	
12:15	12:30	148	154	142	148	
12:30	12:45	137	122	141	133	
12:45	13:00	135	130	146	137	542
13:00	13:15	132	146	127	135	
13:15	13:30	129	140	156	142	
13:30	13:45	145	157	157	153	
13:45	14:00	105	115	120	113	543
14:00	14:15	162	134	144	147	
14:15	14:30	137	142	113	131	
14:30	14:45	152	144	170	155	
14:45	15:00	147	197	160	168	601
15:00	15:15	158	156	143	152	
15:15	15:30	198	192	180	190	
15:30	15:45	182	174	151	169	
15:45	16:00	183	190	198	190	702
16:00	16:15	185	163	191	180	
16:15	16:30	208	207	239	218	
16:30	16:45	196	203	186	195	
16:45	17:00	197	211	226	211	804
17:00	17:15	265	264	247	259	
17:15	17:30	259	231	253	248	
17:30	17:45	242	243	245	243	
17:45	18:00	190	221	189	200	950
18:00	18:15	177	191	168	179	
18:15	18:30	166	195	177	179	
18:30	18:45	153	175	155	161	
18:45	19:00	161	166	158	162	681
19:00	19:15	127	128	125	127	
19:15	19:30	124	138	118	127	
19:30	19:45	109	82	100	97	
19:45	20:00	106	103	108	106	456
20:00	20:15	92	89	94	92	
20:15	20:30	110	95	90	98	
20:30	20:45	96	82	75	84	
20:45	21:00	90	100	68	86	360
21:00	21:15	87	92	72	84	
21:15	21:30	85	84	106	92	
21:30	21:45	60	75	81	72	
21:45	22:00	74	59	71	68	315
22:00	22:15	78	46	51	58	
22:15	22:30	53	59	58	57	
22:30	22:45	58	47	33	46	
22:45	23:00	41	53	48	47	208
23:00	23:15	35	48	44	42	
23:15	23:30	40	48	37	42	
23:30	23:45	27	24	35	29	
23:45	00:00	31	33	44	36	149
DAILY COUNT		10,624	10,784	10,561	10,656	
PEAK HOUR TIME					07:00	
PEAK HOUR COUNT					966	
ESTIMATED K-FACTOR					9.1%	

Three-Day Approach Count Summary

Project Name: Blue Heron Boulevard Study
State Project No.: 2013008.018
Location: Blue Heron Boulevard at Military Trail
Direction: WESTBOUND (APPROACH)
Date: 3/24/2015-3/26/2015

TIME PERIOD (AM)		WEEKDAY TUES 24-Mar	WEEKDAY WED 25-Mar	WEEKDAY THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
00:00	00:15	52	62	68	61	
00:15	00:30	61	70	64	65	
00:30	00:45	40	53	57	50	
00:45	01:00	44	30	34	36	212
01:00	01:15	36	30	33	33	
01:15	01:30	46	20	30	32	
01:30	01:45	40	16	31	29	
01:45	02:00	37	19	13	23	117
02:00	02:15	47	18	28	31	
02:15	02:30	50	20	20	30	
02:30	02:45	24	17	9	17	
02:45	03:00	33	21	26	27	104
03:00	03:15	22	32	14	23	
03:15	03:30	29	23	23	25	
03:30	03:45	37	15	21	24	
03:45	04:00	31	18	27	25	97
04:00	04:15	24	27	28	26	
04:15	04:30	41	16	23	27	
04:30	04:45	42	52	33	42	
04:45	05:00	57	71	58	62	157
05:00	05:15	69	93	63	75	
05:15	05:30	94	132	81	102	
05:30	05:45	147	153	120	140	
05:45	06:00	174	173	138	162	479
06:00	06:15	186	228	208	207	
06:15	06:30	256	287	198	247	
06:30	06:45	342	338	281	320	
06:45	07:00	383	394	368	382	1,156
07:00	07:15	359	424	319	367	
07:15	07:30	442	476	384	434	
07:30	07:45	495	549	489	511	
07:45	08:00	473	589	476	513	1,825
08:00	08:15	457	454	394	435	
08:15	08:30	392	454	341	396	
08:30	08:45	338	401	313	351	
08:45	09:00	386	384	291	354	1,535
09:00	09:15	326	340	285	317	
09:15	09:30	311	302	316	310	
09:30	09:45	307	239	297	281	
09:45	10:00	293	282	270	282	1,189
10:00	10:15	344	283	271	299	
10:15	10:30	266	295	280	280	
10:30	10:45	342	230	267	280	
10:45	11:00	289	276	282	282	1,142
11:00	11:15	283	238	274	265	
11:15	11:30	344	247	243	278	
11:30	11:45	322	235	240	266	
11:45	12:00	332	289	269	297	1,105

TIME PERIOD (PM)		WEEKDAY TUES 24-Mar	WEEKDAY WED 25-Mar	WEEKDAY THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
12:00	12:15	348	231	282	287	
12:15	12:30	351	268	299	306	
12:30	12:45	399	301	285	328	
12:45	13:00	364	297	324	328	1,250
13:00	13:15	354	281	318	318	
13:15	13:30	341	297	299	312	
13:30	13:45	366	304	285	318	
13:45	14:00	296	297	326	306	1,255
14:00	14:15	349	247	301	299	
14:15	14:30	327	274	394	332	
14:30	14:45	333	263	401	332	
14:45	15:00	377	358	444	393	1,356
15:00	15:15	397	331	421	383	
15:15	15:30	494	314	411	406	
15:30	15:45	468	376	514	453	
15:45	16:00	416	391	409	405	1,647
16:00	16:15	488	384	454	442	
16:15	16:30	453	438	488	460	
16:30	16:45	479	394	451	441	
16:45	17:00	488	410	579	492	1,835
17:00	17:15	550	517	504	524	
17:15	17:30	591	466	623	560	
17:30	17:45	529	518	495	514	
17:45	18:00	426	398	438	421	2,018
18:00	18:15	432	402	339	391	
18:15	18:30	374	302	383	353	
18:30	18:45	335	329	380	348	
18:45	19:00	288	253	315	285	1,377
19:00	19:15	272	241	272	262	
19:15	19:30	280	241	239	253	
19:30	19:45	268	180	224	224	
19:45	20:00	236	176	221	211	950
20:00	20:15	276	180	248	235	
20:15	20:30	235	203	198	212	
20:30	20:45	211	175	207	198	
20:45	21:00	243	194	149	195	840
21:00	21:15	211	193	229	211	
21:15	21:30	191	167	221	193	
21:30	21:45	156	162	172	163	
21:45	22:00	172	104	153	143	710
22:00	22:15	165	125	150	147	
22:15	22:30	166	128	126	140	
22:30	22:45	146	93	112	117	
22:45	23:00	130	134	124	129	533
23:00	23:15	106	91	116	104	
23:15	23:30	106	72	92	90	
23:30	23:45	65	72	99	79	
23:45	00:00	80	63	90	78	351
DAILY COUNT		24,673	22,050	23,002	23,242	
PEAK HOUR TIME					16:45	
PEAK HOUR COUNT					2,090	
ESTIMATED K-FACTOR					9.0%	

MECHANICAL COUNTS

PROJECT NAME: Blue Heron Boulevard Study

LOCATION: Blue Heron Boulevard at Military Trail

Notice to Proceed : 2013008.018

COUNT DATE: 3/24/2015-3/26/2015

NORTHBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	22	19	17	18	77
01:00 AM	18	11	9	11	49
02:00 AM	8	9	12	12	42
03:00 AM	11	13	15	17	56
04:00 AM	17	22	32	33	104
05:00 AM	42	53	64	75	233
06:00 AM	92	137	196	259	684
07:00 AM	282	350	426	373	1431
08:00 AM	334	327	320	315	1297
09:00 AM	252	262	243	236	994
10:00 AM	207	234	224	257	921
11:00 AM	227	258	251	263	999
12:00 PM	266	253	276	269	1064
01:00 PM	267	261	250	245	1023
02:00 PM	245	284	263	259	1051
03:00 PM	265	275	294	268	1101
04:00 PM	322	264	321	329	1236
05:00 PM	347	324	319	308	1297
06:00 PM	264	217	220	191	892
07:00 PM	178	151	154	130	613
08:00 PM	124	121	158	104	507
09:00 PM	106	85	88	89	367
10:00 PM	71	66	67	63	267
11:00 PM	54	47	42	36	179
			24 Hour Total		16,483

SOUTHBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	26	21	17	15	80
01:00 AM	7	12	11	12	42
02:00 AM	9	7	11	9	35
03:00 AM	7	4	9	11	32
04:00 AM	9	18	17	19	64
05:00 AM	22	33	47	58	160
06:00 AM	75	101	136	178	490
07:00 AM	201	269	285	297	1052
08:00 AM	291	251	258	234	1034
09:00 AM	222	225	224	208	878
10:00 AM	230	223	193	212	858
11:00 AM	214	224	231	225	894
12:00 PM	260	244	229	247	981
01:00 PM	244	225	222	233	925
02:00 PM	264	268	314	268	1114
03:00 PM	298	300	308	275	1181
04:00 PM	348	316	351	331	1346
05:00 PM	370	329	352	298	1349
06:00 PM	290	233	190	180	894
07:00 PM	158	157	149	144	608
08:00 PM	138	138	121	118	515
09:00 PM	106	109	89	68	372
10:00 PM	83	63	61	50	257
11:00 PM	60	47	45	37	189
			24 Hour Total		15,350

EASTBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	20	27	25	20	92
01:00 AM	11	12	9	14	46
02:00 AM	13	13	7	13	46
03:00 AM	12	10	12	15	50
04:00 AM	14	18	20	27	78
05:00 AM	44	56	70	78	248
06:00 AM	101	141	170	195	607
07:00 AM	204	223	254	286	966
08:00 AM	193	173	182	143	691
09:00 AM	159	128	141	119	547
10:00 AM	126	112	131	119	488
11:00 AM	109	133	126	117	485
12:00 PM	124	148	133	137	542
01:00 PM	135	142	153	113	543
02:00 PM	147	131	155	168	601
03:00 PM	152	190	169	190	702
04:00 PM	180	218	195	211	804
05:00 PM	259	248	243	200	950
06:00 PM	179	179	161	162	681
07:00 PM	127	127	97	106	456
08:00 PM	92	98	84	86	360
09:00 PM	84	92	72	68	315
10:00 PM	58	57	46	47	208
11:00 PM	42	42	29	36	149
			24 Hour Total		10,656

WESTBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	61	65	50	36	212
01:00 AM	33	32	29	23	117
02:00 AM	31	30	17	27	104
03:00 AM	23	25	24	25	97
04:00 AM	26	27	42	62	157
05:00 AM	75	102	140	162	479
06:00 AM	207	247	320	382	1156
07:00 AM	367	434	511	513	1825
08:00 AM	435	396	351	354	1535
09:00 AM	317	310	281	282	1189
10:00 AM	299	280	280	282	1142
11:00 AM	265	278	266	297	1105
12:00 PM	287	306	328	328	1250
01:00 PM	318	312	318	306	1255
02:00 PM	299	332	332	393	1356
03:00 PM	383	406	453	405	1647
04:00 PM	442	460	441	492	1835
05:00 PM	524	560	514	421	2018
06:00 PM	391	353	348	285	1377
07:00 PM	262	253	224	211	950
08:00 PM	235	212	198	195	840
09:00 PM	211	193	163	143	710
10:00 PM	147	140	117	129	533
11:00 PM	104	90	79	78	351
			24 Hour Total		23,242

ALL

TOTAL
460
254
228
235
403
1120
2938
5274
4557
3609
3410
3483
3837
3745
4121
4631
5221
5615
3844
2627
2222
1765
1265
867
65,731

DAILY TRAFFIC COUNT SUMMARY

NORTHBOUND

A.M. Peak Hour, Time: 07:15 AM Volume: 1,483
A.M. "K" Factor: 9.0% P.H.F. : 0.87

P.M. Peak Hour, Time: 04:30 PM Volume: 1,321
P.M. "K" Factor: 8.0% P.H.F. : 0.95

SOUTHBOUND

A.M. Peak Hour, Time: 07:15 AM Volume: 1,141
A.M. "K" Factor: 7.4% P.H.F. : 0.96

P.M. Peak Hour, Time: 04:45 PM Volume: 1,382
P.M. "K" Factor: 9.0% P.H.F. : 0.93

DAILY TRAFFIC COUNT SUMMARY

EASTBOUND

A.M. Peak Hour, Time: 07:00 AM Volume: 966
A.M. "K" Factor: 9.1% P.H.F. : 0.85

P.M. Peak Hour, Time: 04:45 PM Volume: 961
P.M. "K" Factor: 9.0% P.H.F. : 0.93

WESTBOUND

A.M. Peak Hour, Time: 07:15 AM Volume: 1,893
A.M. "K" Factor: 8.1% P.H.F. : 0.92

P.M. Peak Hour, Time: 04:45 PM Volume: 2,090
P.M. "K" Factor: 9.0% P.H.F. : 0.93

ALL APPROACHES:

A.M. Peak Hour, Time: 07:15 AM Volume: 5,473
A.M. "K" Factor: 8.3% P.H.F. : 0.93

P.M. Peak Hour, Time: 04:45 PM Volume: 5,751
P.M. "K" Factor: 8.7% P.H.F. : 0.96

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at Military Tr 03032015
Site Code :
Start Date : 3/3/2015
Page No : 1

Groups Printed- Autos - Heavy Vehicles - Bicycles - Pedestrians

	Blue Heron Blvd Eastbound					Blue Heron Blvd Westbound					Military Tr Northbound					Military Tr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	8	87	0	0	95	23	95	14	0	132	7	52	18	0	77	22	37	6	0	65	369
06:15 AM	11	104	0	0	115	35	118	30	2	185	14	68	34	0	116	30	61	18	0	109	525
06:30 AM	11	94	1	0	106	59	147	46	1	253	21	91	49	0	161	52	68	20	0	140	660
06:45 AM	11	110	1	0	122	65	127	69	2	263	31	181	59	0	271	62	87	33	0	182	838
Total	41	395	2	0	438	182	487	159	5	833	73	392	160	0	625	166	253	77	0	496	2392
07:00 AM	17	120	0	0	137	76	178	53	0	307	31	160	83	0	274	82	105	26	0	213	931
07:15 AM	16	144	11	0	171	72	180	77	1	330	21	219	118	0	358	98	123	23	1	245	1104
07:30 AM	21	151	8	0	180	89	154	90	1	334	32	227	136	0	395	102	174	32	0	308	1217
07:45 AM	24	155	1	0	180	102	217	111	0	430	24	215	133	0	372	107	146	31	0	284	1266
Total	78	570	20	0	668	339	729	331	2	1401	108	821	470	0	1399	389	548	112	1	1050	4518
08:00 AM	34	181	6	0	221	100	211	78	0	389	8	167	113	0	288	106	184	25	0	315	1213
08:15 AM	15	102	3	0	120	93	229	27	0	349	2	112	109	0	223	84	171	13	0	268	960
08:30 AM	37	139	2	0	178	91	181	71	0	343	15	54	101	0	170	87	145	23	0	255	946
08:45 AM	27	133	8	0	168	94	179	79	0	352	11	173	100	0	284	107	109	23	0	239	1043
Total	113	555	19	0	687	378	800	255	0	1433	36	506	423	0	965	384	609	84	0	1077	4162
*** BREAK ***																					
04:00 PM	30	123	10	0	163	97	134	54	0	285	7	174	100	0	281	100	265	28	0	393	1122
04:15 PM	23	141	7	0	171	98	155	70	0	323	5	153	108	0	266	66	219	15	0	300	1060
04:30 PM	38	167	18	0	223	108	140	66	0	314	13	178	82	0	273	100	251	26	0	377	1187
04:45 PM	29	126	9	0	164	101	177	77	0	355	5	179	97	0	281	82	288	24	0	394	1194
Total	120	557	44	0	721	404	606	267	0	1277	30	684	387	0	1101	348	1023	93	0	1464	4563
05:00 PM	34	106	2	1	143	118	191	83	0	392	10	200	121	0	331	78	236	35	0	349	1215
05:15 PM	27	153	0	2	182	106	219	86	0	411	9	212	93	0	314	76	223	20	0	319	1226
05:30 PM	39	140	5	1	185	124	190	106	0	420	2	180	103	0	285	74	223	31	0	328	1218
05:45 PM	31	119	6	0	156	96	166	80	0	342	10	187	77	0	274	67	224	30	0	321	1093
Total	131	518	13	4	666	444	766	355	0	1565	31	779	394	0	1204	295	906	116	0	1317	4752
06:00 PM	24	94	6	0	124	99	207	92	0	398	3	162	62	0	227	68	183	30	0	281	1030
06:15 PM	16	101	7	0	124	96	164	82	0	342	5	160	65	1	231	46	142	18	0	206	903
06:30 PM	33	91	6	0	130	93	156	94	0	343	6	129	64	0	199	59	147	16	0	222	894
06:45 PM	26	79	5	0	110	53	182	58	0	293	8	127	56	0	191	42	108	8	0	158	752
Total	99	365	24	0	488	341	709	326	0	1376	22	578	247	1	848	215	580	72	0	867	3579
Grand Total	582	2960	122	4	3668	2088	4097	1693	7	7885	300	3760	2081	1	6142	1797	3919	554	1	6271	23966
Apprch %	15.9	80.7	3.3	0.1		26.5	52	21.5	0.1		4.9	61.2	33.9	0		28.7	62.5	8.8	0		
Total %	2.4	12.4	0.5	0	15.3	8.7	17.1	7.1	0	32.9	1.3	15.7	8.7	0	25.6	7.5	16.4	2.3	0	26.2	
Autos	569	2822	118	0	3509	2011	3933	1649	0	7593	275	3687	1969	0	5931	1731	3829	516	0	6076	23109
% Autos	97.8	95.3	96.7	0	95.7	96.3	96	97.4	0	96.3	91.7	98.1	94.6	0	96.6	96.3	97.7	93.1	0	96.9	96.4
Heavy Vehicles	13	138	4	0	155	77	164	44	0	285	25	73	112	0	210	66	90	38	0	194	844
% Heavy Vehicles	2.2	4.7	3.3	0	4.2	3.7	4	2.6	0	3.6	8.3	1.9	5.4	0	3.4	3.7	2.3	6.9	0	3.1	3.5
Bicycles	0	0	0	2	2	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	3
% Bicycles	0	0	0	50	0.1	0	0	0	14.3	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	2	2	0	0	0	6	6	0	0	0	1	1	0	0	0	1	1	10
% Pedestrians	0	0	0	50	0.1	0	0	0	85.7	0.1	0	0	0	100	0	0	0	0	100	0	0

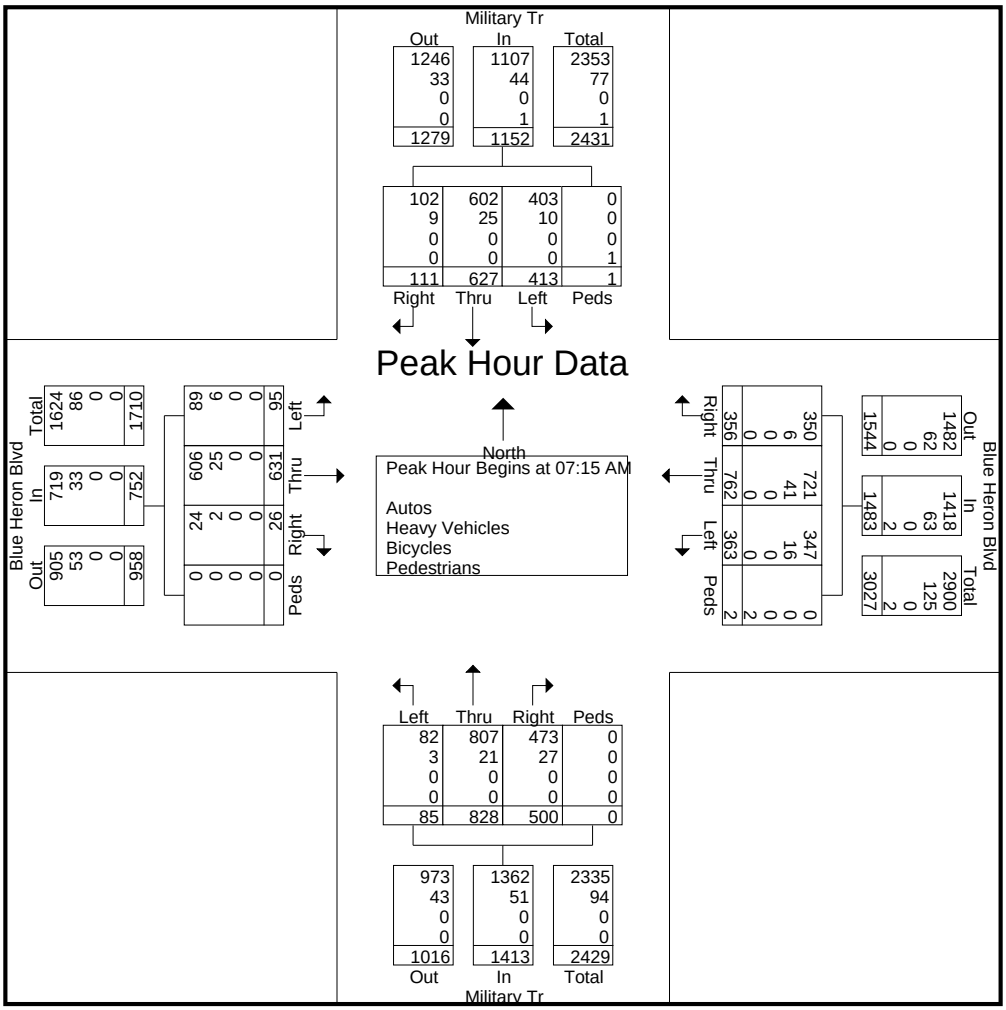
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at Military Tr 03032015
Site Code :
Start Date : 3/3/2015
Page No : 2

	Blue Heron Blvd Eastbound					Blue Heron Blvd Westbound					Military Tr Northbound					Military Tr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	16	144	11	0	171	72	180	77	1	330	21	219	118	0	358	98	123	23	1	245	1104
07:30 AM	21	151	8	0	180	89	154	90	1	334	32	227	136	0	395	102	174	32	0	308	1217
07:45 AM	24	155	1	0	180	102	217	111	0	430	24	215	133	0	372	107	146	31	0	284	1266
08:00 AM	34	181	6	0	221	100	211	78	0	389	8	167	113	0	288	106	184	25	0	315	1213
Total Volume	95	631	26	0	752	363	762	356	2	1483	85	828	500	0	1413	413	627	111	1	1152	4800
% App. Total	12.6	83.9	3.5	0		24.5	51.4	24	0.1		6	58.6	35.4	0		35.9	54.4	9.6	0.1		
PHF	.699	.872	.591	.000	.851	.890	.878	.802	.500	.862	.664	.912	.919	.000	.894	.965	.852	.867	.250	.914	.948
Autos	89	606	24	0	719	347	721	350	0	1418	82	807	473	0	1362	403	602	102	0	1107	4606
% Autos	93.7	96.0	92.3	0	95.6	95.6	94.6	98.3	0	95.6	96.5	97.5	94.6	0	96.4	97.6	96.0	91.9	0	96.1	96.0
Heavy Vehicles	6	25	2	0	33	16	41	6	0	63	3	21	27	0	51	10	25	9	0	44	191
% Heavy Vehicles	6.3	4.0	7.7	0	4.4	4.4	5.4	1.7	0	4.2	3.5	2.5	5.4	0	3.6	2.4	4.0	8.1	0	3.8	4.0
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	1	1	3
% Pedestrians	0	0	0	0	0	0	0	0	100	0.1	0	0	0	0	0	0	0	0	100	0.1	0.1



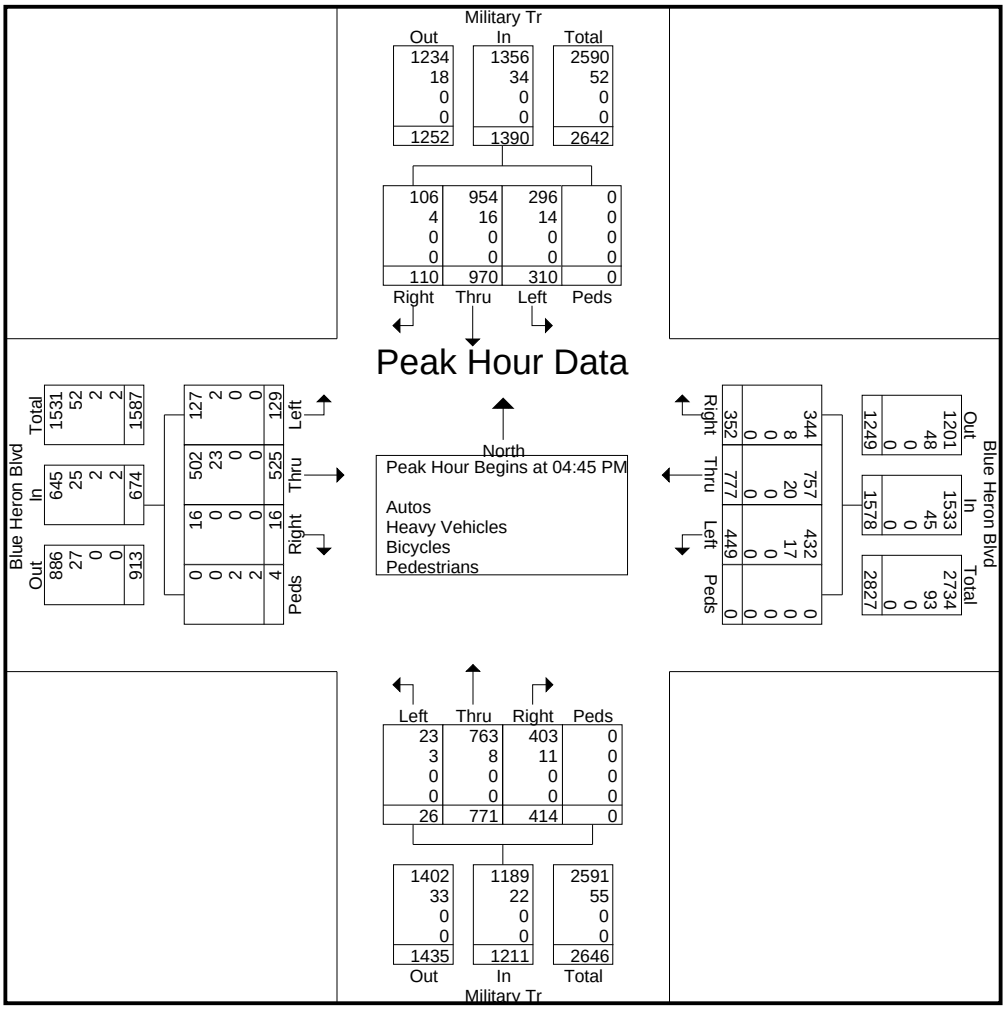
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at Military Tr 03032015
Site Code :
Start Date : 3/3/2015
Page No : 3

	Blue Heron Blvd Eastbound					Blue Heron Blvd Westbound					Military Tr Northbound					Military Tr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	29	126	9	0	164	101	177	77	0	355	5	179	97	0	281	82	288	24	0	394	1194
05:00 PM	34	106	2	1	143	118	191	83	0	392	10	200	121	0	331	78	236	35	0	349	1215
05:15 PM	27	153	0	2	182	106	219	86	0	411	9	212	93	0	314	76	223	20	0	319	1226
05:30 PM	39	140	5	1	185	124	190	106	0	420	2	180	103	0	285	74	223	31	0	328	1218
Total Volume	129	525	16	4	674	449	777	352	0	1578	26	771	414	0	1211	310	970	110	0	1390	4853
% App. Total	19.1	77.9	2.4	0.6		28.5	49.2	22.3	0		2.1	63.7	34.2	0		22.3	69.8	7.9	0		
PHF	.827	.858	.444	.500	.911	.905	.887	.830	.000	.939	.650	.909	.855	.000	.915	.945	.842	.786	.000	.882	.990
Autos	127	502	16	0	645	432	757	344	0	1533	23	763	403	0	1189	296	954	106	0	1356	4723
% Autos	98.4	95.6	100	0	95.7	96.2	97.4	97.7	0	97.1	88.5	99.0	97.3	0	98.2	95.5	98.4	96.4	0	97.6	97.3
Heavy Vehicles	2	23	0	0	25	17	20	8	0	45	3	8	11	0	22	14	16	4	0	34	126
% Heavy Vehicles	1.6	4.4	0	0	3.7	3.8	2.6	2.3	0	2.9	11.5	1.0	2.7	0	1.8	4.5	1.6	3.6	0	2.4	2.6
Bicycles	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
% Bicycles	0	0	0	50.0	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Pedestrians	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
% Pedestrians	0	0	0	50.0	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0



CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at Military Tr 03032015
Site Code :
Start Date : 3/3/2015
Page No : 1

Groups Printed- Heavy Vehicles

	Blue Heron Blvd Eastbound					Blue Heron Blvd Westbound					Military Tr Northbound					Military Tr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	1	4	0	0	5	0	9	1	0	10	3	2	1	0	6	0	2	1	0	3	24
06:15 AM	0	1	0	0	1	2	10	3	0	15	3	2	3	0	8	3	0	4	0	7	31
06:30 AM	0	3	0	0	3	1	12	2	0	15	1	2	9	0	12	0	4	2	0	6	36
06:45 AM	1	7	0	0	8	4	7	4	0	15	2	5	9	0	16	4	0	0	0	4	43
Total	2	15	0	0	17	7	38	10	0	55	9	11	22	0	42	7	6	7	0	20	134
07:00 AM	0	9	0	0	9	3	9	1	0	13	1	6	8	0	15	3	7	2	0	12	49
07:15 AM	2	4	1	0	7	7	13	0	0	20	1	9	9	0	19	1	3	1	0	5	51
07:30 AM	1	6	1	0	8	5	9	1	0	15	1	5	8	0	14	5	7	5	0	17	54
07:45 AM	3	10	0	0	13	0	13	2	0	15	0	3	6	0	9	4	7	1	0	12	49
Total	6	29	2	0	37	15	44	4	0	63	3	23	31	0	57	13	24	9	0	46	203
08:00 AM	0	5	0	0	5	4	6	3	0	13	1	4	4	0	9	0	8	2	0	10	37
08:15 AM	1	1	0	0	2	0	2	4	0	6	0	0	1	0	1	2	1	0	0	3	12
08:30 AM	0	5	0	0	5	1	11	1	0	13	2	3	11	0	16	1	3	3	0	7	41
08:45 AM	0	5	0	0	5	3	14	6	0	23	1	10	10	0	21	5	5	1	0	11	60
Total	1	16	0	0	17	8	33	14	0	55	4	17	26	0	47	8	17	6	0	31	150
*** BREAK ***																					
04:00 PM	1	8	0	0	9	6	8	1	0	15	1	4	5	0	10	3	8	3	0	14	48
04:15 PM	0	8	1	0	9	6	5	1	0	12	0	4	6	0	10	4	4	0	0	8	39
04:30 PM	0	9	0	0	9	9	6	1	0	16	1	2	2	0	5	3	4	4	0	11	41
04:45 PM	2	4	0	0	6	3	6	2	0	11	1	2	3	0	6	4	6	0	0	10	33
Total	3	29	1	0	33	24	25	5	0	54	3	12	16	0	31	14	22	7	0	43	161
05:00 PM	0	6	0	0	6	8	4	2	0	14	1	2	4	0	7	3	3	2	0	8	35
05:15 PM	0	8	0	0	8	4	4	4	0	12	1	0	2	0	3	5	4	0	0	9	32
05:30 PM	0	5	0	0	5	2	6	0	0	8	0	4	2	0	6	2	3	2	0	7	26
05:45 PM	0	3	0	0	3	3	3	0	0	6	1	1	2	0	4	3	2	1	0	6	19
Total	0	22	0	0	22	17	17	6	0	40	3	7	10	0	20	13	12	5	0	30	112
06:00 PM	0	4	0	0	4	2	3	0	0	5	0	2	2	0	4	2	0	1	0	3	16
06:15 PM	1	11	1	0	13	1	1	2	0	4	1	1	2	0	4	5	6	1	0	12	33
06:30 PM	0	8	0	0	8	3	2	3	0	8	2	0	2	0	4	2	2	1	0	5	25
06:45 PM	0	4	0	0	4	0	1	0	0	1	0	0	1	0	1	2	1	1	0	4	10
Total	1	27	1	0	29	6	7	5	0	18	3	3	7	0	13	11	9	4	0	24	84
Grand Total	13	138	4	0	155	77	164	44	0	285	25	73	112	0	210	66	90	38	0	194	844
Apprch %	8.4	89	2.6	0		27	57.5	15.4	0		11.9	34.8	53.3	0		34	46.4	19.6	0		
Total %	1.5	16.4	0.5	0	18.4	9.1	19.4	5.2	0	33.8	3	8.6	13.3	0	24.9	7.8	10.7	4.5	0	23	

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at Military Tr 03042015
Site Code :
Start Date : 3/4/2015
Page No : 1

Groups Printed- Autos - Heavy Vehicles - Bicycles - Pedestrians

	Blue Heron Blvd Eastbound					Blue Heron Blvd Westbound					Military Tr Northbound					Military Tr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	7	89	2	0	98	34	82	14	0	130	6	49	19	0	74	38	42	11	0	91	393
06:15 AM	6	101	2	0	109	32	118	32	0	182	11	66	27	0	104	27	43	16	1	87	482
06:30 AM	10	121	3	0	134	56	135	54	1	246	16	110	46	0	172	50	75	18	0	143	695
06:45 AM	17	117	3	0	137	75	130	66	0	271	24	157	69	0	250	53	95	24	3	175	833
Total	40	428	10	0	478	197	465	166	1	829	57	382	161	0	600	168	255	69	4	496	2403
07:00 AM	13	95	1	0	109	75	152	63	0	290	28	171	68	0	267	77	114	33	1	225	891
07:15 AM	21	124	2	0	147	83	188	83	0	354	28	213	108	0	349	100	126	27	3	256	1106
07:30 AM	19	115	1	0	135	105	174	69	0	348	32	222	131	0	385	150	161	29	0	340	1208
07:45 AM	25	118	9	0	152	105	216	113	0	434	29	208	100	0	337	103	181	27	0	311	1234
Total	78	452	13	0	543	368	730	328	0	1426	117	814	407	0	1338	430	582	116	4	1132	4439
08:00 AM	18	169	6	0	193	87	127	58	0	272	15	213	128	0	356	74	145	21	0	240	1061
08:15 AM	25	142	7	0	174	73	133	70	0	276	12	191	121	0	324	90	152	25	0	267	1041
08:30 AM	31	124	9	0	164	123	105	72	0	300	11	202	137	0	350	88	141	21	1	251	1065
08:45 AM	32	113	3	0	148	74	100	82	0	256	7	226	101	0	334	88	116	22	0	226	964
Total	106	548	25	0	679	357	465	282	0	1104	45	832	487	0	1364	340	554	89	1	984	4131
BREAK																					
04:00 PM	27	124	8	0	159	83	119	66	1	269	6	183	106	0	295	107	232	35	0	374	1097
04:15 PM	26	125	6	0	157	94	150	62	0	306	6	192	96	0	294	87	211	27	0	325	1082
04:30 PM	29	146	17	0	192	91	138	71	0	300	8	167	121	0	296	98	215	30	1	344	1132
04:45 PM	24	126	10	0	160	105	164	72	0	341	8	184	102	0	294	99	240	28	0	367	1162
Total	106	521	41	0	668	373	571	271	1	1216	28	726	425	0	1179	391	898	120	1	1410	4473
05:00 PM	18	133	6	0	157	95	229	72	1	397	8	219	116	0	343	72	228	35	0	335	1232
05:15 PM	24	119	3	0	146	95	193	79	0	367	15	210	92	0	317	70	246	16	0	332	1162
05:30 PM	40	150	3	0	193	117	209	81	0	407	10	198	85	0	293	59	231	31	0	321	1214
05:45 PM	37	141	3	0	181	92	179	79	1	351	6	155	59	0	220	84	211	24	0	319	1071
Total	119	543	15	0	677	399	810	311	2	1522	39	782	352	0	1173	285	916	106	0	1307	4679
06:00 PM	32	108	9	0	149	86	147	81	0	314	2	148	83	1	234	64	197	31	0	292	989
06:15 PM	19	97	0	0	116	78	188	62	1	329	6	152	63	0	221	51	175	19	0	245	911
06:30 PM	29	82	0	0	111	74	91	59	2	226	7	143	69	0	219	58	184	17	0	259	815
06:45 PM	22	86	1	0	109	65	149	70	0	284	7	129	49	0	185	45	129	18	0	192	770
Total	102	373	10	0	485	303	575	272	3	1153	22	572	264	1	859	218	685	85	0	988	3485
Grand Total	551	2865	114	0	3530	1997	3616	1630	7	7250	308	4108	2096	1	6513	1832	3890	585	10	6317	23610
Apprch %	15.6	81.2	3.2	0		27.5	49.9	22.5	0.1		4.7	63.1	32.2	0		29	61.6	9.3	0.2		
Total %	2.3	12.1	0.5	0	15	8.5	15.3	6.9	0	30.7	1.3	17.4	8.9	0	27.6	7.8	16.5	2.5	0	26.8	
Autos	533	2718	113	0	3364	1914	3420	1586	0	6920	285	4038	1993	0	6316	1761	3806	545	0	6112	22712
% Autos	96.7	94.9	99.1	0	95.3	95.8	94.6	97.3	0	95.4	92.5	98.3	95.1	0	97	96.1	97.8	93.2	0	96.8	96.2
Heavy Vehicles	18	147	1	0	166	83	196	44	0	323	23	70	103	0	196	71	84	40	0	195	880
% Heavy Vehicles	3.3	5.1	0.9	0	4.7	4.2	5.4	2.7	0	4.5	7.5	1.7	4.9	0	3	3.9	2.2	6.8	0	3.1	3.7
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0	0
Pedestrians	0	0	0	0	0	0	0	0	7	7	0	0	0	1	1	0	0	0	8	8	16
% Pedestrians	0	0	0	0	0	0	0	0	100	0.1	0	0	0	100	0	0	0	0	80	0.1	0.1

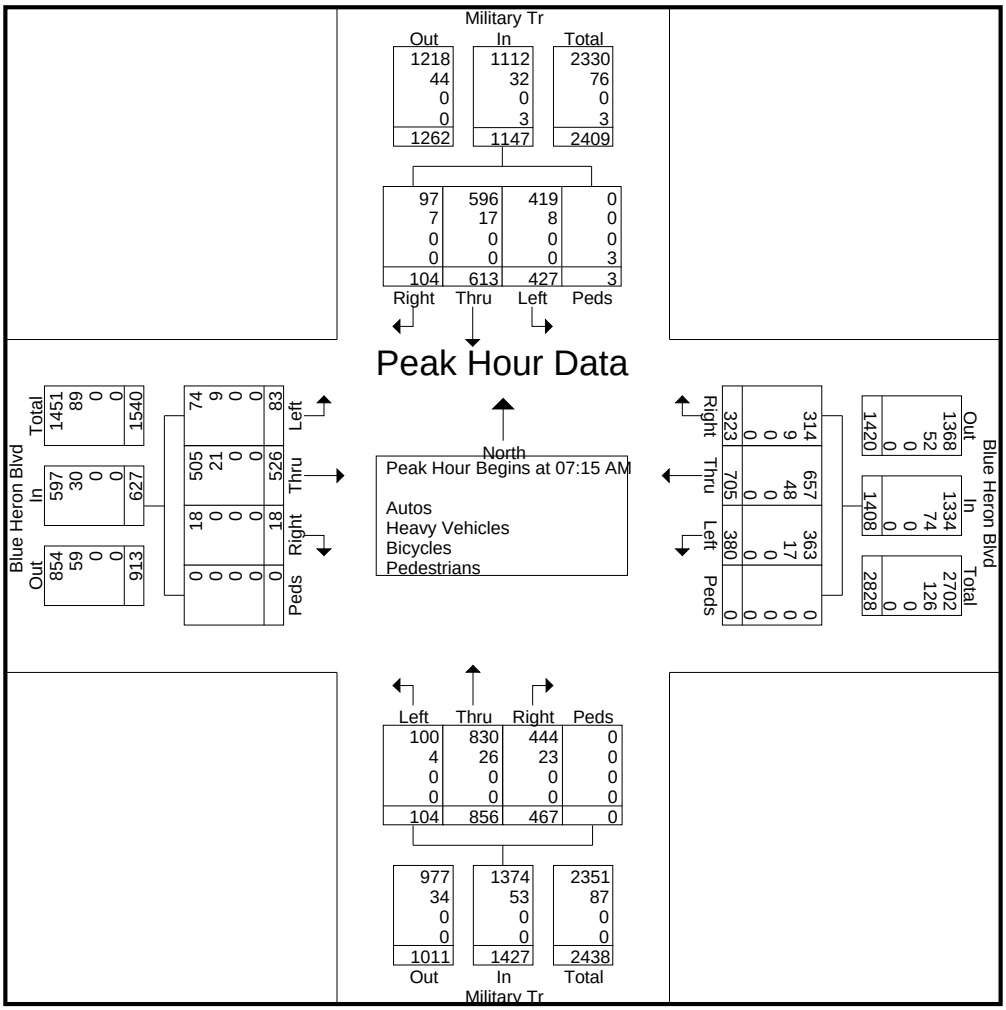
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at Military Tr 03042015
Site Code :
Start Date : 3/4/2015
Page No : 2

	Blue Heron Blvd Eastbound					Blue Heron Blvd Westbound					Military Tr Northbound					Military Tr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	21	124	2	0	147	83	188	83	0	354	28	213	108	0	349	100	126	27	3	256	1106
07:30 AM	19	115	1	0	135	105	174	69	0	348	32	222	131	0	385	150	161	29	0	340	1208
07:45 AM	25	118	9	0	152	105	216	113	0	434	29	208	100	0	337	103	181	27	0	311	1234
08:00 AM	18	169	6	0	193	87	127	58	0	272	15	213	128	0	356	74	145	21	0	240	1061
Total Volume	83	526	18	0	627	380	705	323	0	1408	104	856	467	0	1427	427	613	104	3	1147	4609
% App. Total	13.2	83.9	2.9	0		27	50.1	22.9	0		7.3	60	32.7	0		37.2	53.4	9.1	0.3		
PHF	.830	.778	.500	.000	.812	.905	.816	.715	.000	.811	.813	.964	.891	.000	.927	.712	.847	.897	.250	.843	.934
Autos	74	505	18	0	597	363	657	314	0	1334	100	830	444	0	1374	419	596	97	0	1112	4417
% Autos	89.2	96.0	100	0	95.2	95.5	93.2	97.2	0	94.7	96.2	97.0	95.1	0	96.3	98.1	97.2	93.3	0	96.9	95.8
Heavy Vehicles	9	21	0	0	30	17	48	9	0	74	4	26	23	0	53	8	17	7	0	32	189
% Heavy Vehicles	10.8	4.0	0	0	4.8	4.5	6.8	2.8	0	5.3	3.8	3.0	4.9	0	3.7	1.9	2.8	6.7	0	2.8	4.1
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0.3	0.1



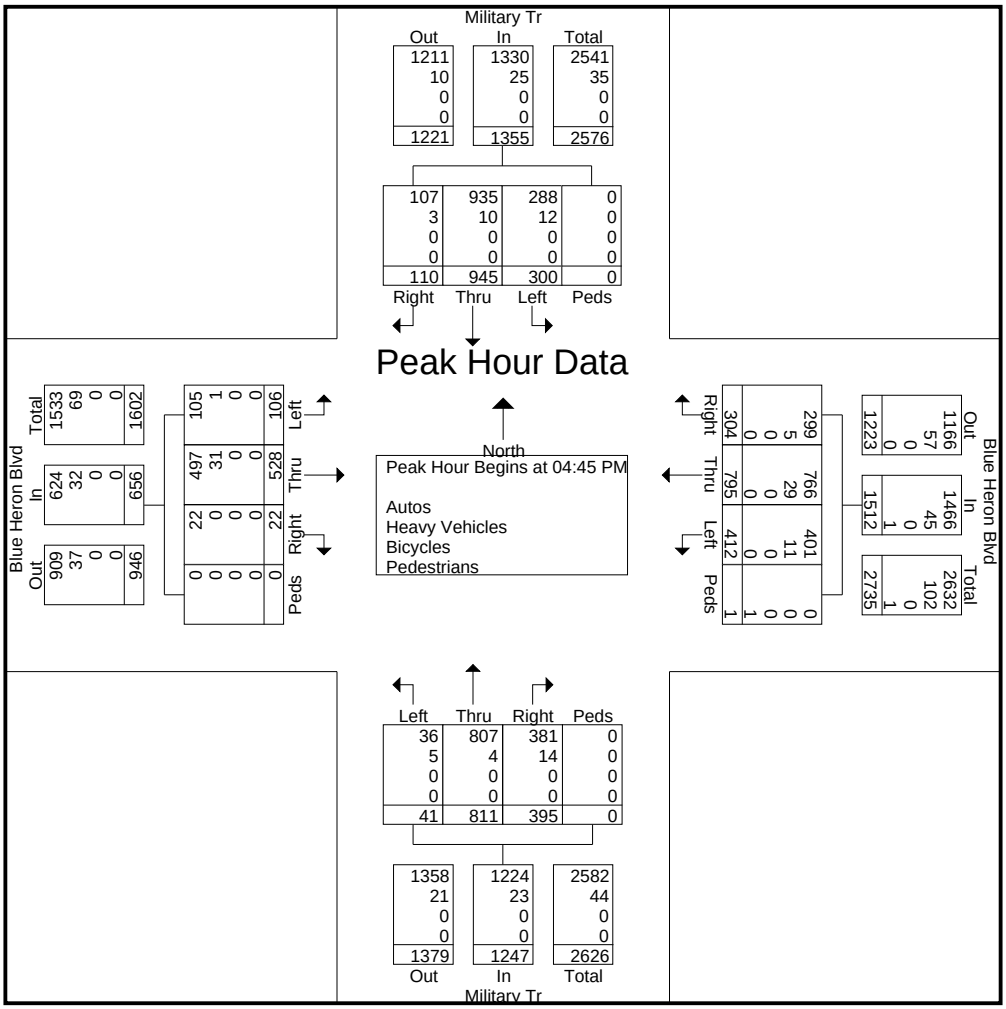
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at Military Tr 03042015
Site Code :
Start Date : 3/4/2015
Page No : 3

	Blue Heron Blvd Eastbound					Blue Heron Blvd Westbound					Military Tr Northbound					Military Tr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	24	126	10	0	160	105	164	72	0	341	8	184	102	0	294	99	240	28	0	367	1162
05:00 PM	18	133	6	0	157	95	229	72	1	397	8	219	116	0	343	72	228	35	0	335	1232
05:15 PM	24	119	3	0	146	95	193	79	0	367	15	210	92	0	317	70	246	16	0	332	1162
05:30 PM	40	150	3	0	193	117	209	81	0	407	10	198	85	0	293	59	231	31	0	321	1214
Total Volume	106	528	22	0	656	412	795	304	1	1512	41	811	395	0	1247	300	945	110	0	1355	4770
% App. Total	16.2	80.5	3.4	0		27.2	52.6	20.1	0.1		3.3	65	31.7	0		22.1	69.7	8.1	0		
PHF	.663	.880	.550	.000	.850	.880	.868	.938	.250	.929	.683	.926	.851	.000	.909	.758	.960	.786	.000	.923	.968
Autos	105	497	22	0	624	401	766	299	0	1466	36	807	381	0	1224	288	935	107	0	1330	4644
% Autos	99.1	94.1	100	0	95.1	97.3	96.4	98.4	0	97.0	87.8	99.5	96.5	0	98.2	96.0	98.9	97.3	0	98.2	97.4
Heavy Vehicles	1	31	0	0	32	11	29	5	0	45	5	4	14	0	23	12	10	3	0	25	125
% Heavy Vehicles	0.9	5.9	0	0	4.9	2.7	3.6	1.6	0	3.0	12.2	0.5	3.5	0	1.8	4.0	1.1	2.7	0	1.8	2.6
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1
% Pedestrians	0	0	0	0	0	0	0	0	100	0.1	0	0	0	0	0	0	0	0	0	0	0.0



CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at Military Tr 03042015
Site Code :
Start Date : 3/4/2015
Page No : 1

Groups Printed- Heavy Vehicles

	Blue Heron Blvd Eastbound					Blue Heron Blvd Westbound					Military Tr Northbound					Military Tr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	1	5	0	0	6	2	10	0	0	12	4	3	0	0	7	3	1	0	0	4	29
06:15 AM	0	3	0	0	3	3	13	5	0	21	2	1	2	0	5	1	2	4	0	7	36
06:30 AM	0	6	0	0	6	4	9	7	0	20	0	1	6	0	7	2	4	2	0	8	41
06:45 AM	1	4	0	0	5	3	4	5	0	12	1	7	12	0	20	5	2	1	0	8	45
Total	2	18	0	0	20	12	36	17	0	65	7	12	20	0	39	11	9	7	0	27	151
07:00 AM	0	1	0	0	1	3	11	1	0	15	0	1	5	0	6	4	7	4	0	15	37
07:15 AM	3	4	0	0	7	5	13	1	0	19	1	2	9	0	12	2	1	1	0	4	42
07:30 AM	1	8	0	0	9	2	9	2	0	13	1	9	10	0	20	2	3	2	0	7	49
07:45 AM	4	7	0	0	11	3	16	5	0	24	1	5	2	0	8	4	6	2	0	12	55
Total	8	20	0	0	28	13	49	9	0	71	3	17	26	0	46	12	17	9	0	38	183
08:00 AM	1	2	0	0	3	7	10	1	0	18	1	10	2	0	13	0	7	2	0	9	43
08:15 AM	0	4	0	0	4	4	0	1	0	5	0	2	1	0	3	1	2	1	0	4	16
08:30 AM	1	6	1	0	8	4	12	1	0	17	1	8	8	0	17	4	4	2	0	10	52
08:45 AM	0	7	0	0	7	2	15	7	0	24	1	6	8	0	15	7	3	2	0	12	58
Total	2	19	1	0	22	17	37	10	0	64	3	26	19	0	48	12	16	7	0	35	169
BREAK																					
04:00 PM	1	11	0	0	12	8	9	0	0	17	1	1	5	0	7	3	5	2	0	10	46
04:15 PM	0	10	0	0	10	5	7	0	0	12	1	5	2	0	8	2	7	2	0	11	41
04:30 PM	0	10	0	0	10	6	7	1	0	14	0	4	7	0	11	1	6	4	0	11	46
04:45 PM	0	8	0	0	8	4	7	3	0	14	3	0	5	0	8	3	2	1	0	6	36
Total	1	39	0	0	40	23	30	4	0	57	5	10	19	0	34	9	20	9	0	38	169
05:00 PM	0	10	0	0	10	4	8	0	0	12	1	2	5	0	8	6	3	1	0	10	40
05:15 PM	1	5	0	0	6	1	4	2	0	7	1	0	1	0	2	3	3	0	0	6	21
05:30 PM	0	8	0	0	8	2	10	0	0	12	0	2	3	0	5	0	2	1	0	3	28
05:45 PM	1	5	0	0	6	3	5	0	0	8	0	1	1	0	2	3	2	0	0	5	21
Total	2	28	0	0	30	10	27	2	0	39	2	5	10	0	17	12	10	2	0	24	110
06:00 PM	0	6	0	0	6	2	3	1	0	6	0	0	3	0	3	4	2	2	0	8	23
06:15 PM	1	7	0	0	8	2	7	0	0	9	3	0	1	0	4	6	3	1	0	10	31
06:30 PM	2	3	0	0	5	1	3	1	0	5	0	0	3	0	3	3	6	3	0	12	25
06:45 PM	0	7	0	0	7	3	4	0	0	7	0	0	2	0	2	2	1	0	0	3	19
Total	3	23	0	0	26	8	17	2	0	27	3	0	9	0	12	15	12	6	0	33	98
Grand Total	18	147	1	0	166	83	196	44	0	323	23	70	103	0	196	71	84	40	0	195	880
Apprch %	10.8	88.6	0.6	0		25.7	60.7	13.6	0		11.7	35.7	52.6	0		36.4	43.1	20.5	0		
Total %	2	16.7	0.1	0	18.9	9.4	22.3	5	0	36.7	2.6	8	11.7	0	22.3	8.1	9.5	4.5	0	22.2	

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at Military Tr 03052015
Site Code :
Start Date : 3/5/2015
Page No : 1

Groups Printed- Autos - Heavy Vehicles - Bicycles - Pedestrians

	Eastbound St. Eastbound					Westbound St. Westbound					Northbound St. Northbound					Southbound St. Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	8	79	3	0	90	31	86	13	0	130	4	35	30	0	69	24	33	9	1	67	356
06:15 AM	13	130	1	0	144	41	86	23	0	150	9	52	37	0	98	33	52	21	0	106	498
06:30 AM	11	102	0	0	113	58	145	50	1	254	12	99	41	2	154	53	56	15	0	124	645
06:45 AM	16	108	2	0	126	62	144	54	0	260	25	148	62	0	235	64	91	35	2	192	813
Total	48	419	6	0	473	192	461	140	1	794	50	334	170	2	556	174	232	80	3	489	2312
07:00 AM	13	117	11	0	141	63	163	68	1	295	16	182	80	0	278	89	119	25	0	233	947
07:15 AM	16	165	14	0	195	77	202	86	1	366	25	198	97	0	320	93	127	34	2	256	1137
07:30 AM	28	138	10	0	176	78	183	79	0	340	27	248	134	0	409	90	174	18	3	285	1210
07:45 AM	33	176	12	0	221	110	226	121	0	457	26	203	132	0	361	97	161	22	3	283	1322
Total	90	596	47	0	733	328	774	354	2	1458	94	831	443	0	1368	369	581	99	8	1057	4616
08:00 AM	29	171	6	0	206	112	217	108	0	437	22	210	125	1	358	96	172	23	1	292	1293
08:15 AM	28	158	6	0	192	97	112	84	0	293	24	172	112	0	308	90	152	17	0	259	1052
08:30 AM	34	161	6	0	201	80	109	69	0	258	20	196	102	0	318	79	140	28	4	251	1028
08:45 AM	27	128	3	0	158	73	113	64	0	250	8	207	90	0	305	62	117	15	0	194	907
Total	118	618	21	0	757	362	551	325	0	1238	74	785	429	1	1289	327	581	83	5	996	4280
BREAK																					
04:00 PM	26	136	11	0	173	83	144	69	0	296	11	172	100	0	283	96	248	27	0	371	1123
04:15 PM	29	123	6	0	158	104	163	71	1	339	8	142	104	0	254	79	215	34	0	328	1079
04:30 PM	36	150	19	0	205	113	168	89	0	370	5	166	97	3	271	85	209	30	0	324	1170
04:45 PM	36	140	11	0	187	130	172	65	0	367	12	213	96	1	322	95	259	25	2	381	1257
Total	127	549	47	0	723	430	647	294	1	1372	36	693	397	4	1130	355	931	116	2	1404	4629
05:00 PM	32	99	5	1	137	94	224	93	0	411	14	212	137	0	363	64	241	30	1	336	1247
05:15 PM	33	115	6	0	154	135	189	96	0	420	8	192	80	0	280	85	218	28	0	331	1185
05:30 PM	37	158	7	2	204	103	209	81	0	393	6	211	83	0	300	79	243	27	0	349	1246
05:45 PM	37	121	6	0	164	119	179	80	0	378	7	160	73	0	240	57	207	30	1	295	1077
Total	139	493	24	3	659	451	801	350	0	1602	35	775	373	0	1183	285	909	115	2	1311	4755
06:00 PM	24	110	4	0	138	101	148	50	0	299	4	151	66	0	221	67	160	25	1	253	911
06:15 PM	24	96	2	0	122	72	137	63	0	272	9	130	75	1	215	58	151	19	2	230	839
06:30 PM	28	84	3	0	115	92	114	54	0	260	6	126	73	0	205	48	169	20	3	240	820
06:45 PM	21	88	8	0	117	62	106	59	0	227	5	120	81	0	206	30	102	15	0	147	697
Total	97	378	17	0	492	327	505	226	0	1058	24	527	295	1	847	203	582	79	6	870	3267
Grand Total	619	3053	162	3	3837	2090	3739	1689	4	7522	313	3945	2107	8	6373	1713	3816	572	26	6127	23859
Apprch %	16.1	79.6	4.2	0.1		27.8	49.7	22.5	0.1		4.9	61.9	33.1	0.1		28	62.3	9.3	0.4		
Total %	2.6	12.8	0.7	0	16.1	8.8	15.7	7.1	0	31.5	1.3	16.5	8.8	0	26.7	7.2	16	2.4	0.1	25.7	
Autos	597	2887	157	0	3641	2006	3529	1645	0	7180	291	3852	1992	0	6135	1644	3712	532	0	5888	22844
% Autos	96.4	94.6	96.9	0	94.9	96	94.4	97.4	0	95.5	93	97.6	94.5	0	96.3	96	97.3	93	0	96.1	95.7
Heavy Vehicles	22	166	5	0	193	84	210	44	0	338	22	93	115	0	230	69	104	40	0	213	974
% Heavy Vehicles	3.6	5.4	3.1	0	5	4	5.6	2.6	0	4.5	7	2.4	5.5	0	3.6	4	2.7	7	0	3.5	4.1
Bicycles	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	5
% Bicycles	0	0	0	33.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15.4	0.1	0
Pedestrians	0	0	0	2	2	0	0	0	4	4	0	0	0	8	8	0	0	0	22	22	36
% Pedestrians	0	0	0	66.7	0.1	0	0	0	100	0.1	0	0	0	100	0.1	0	0	0	84.6	0.4	0.2

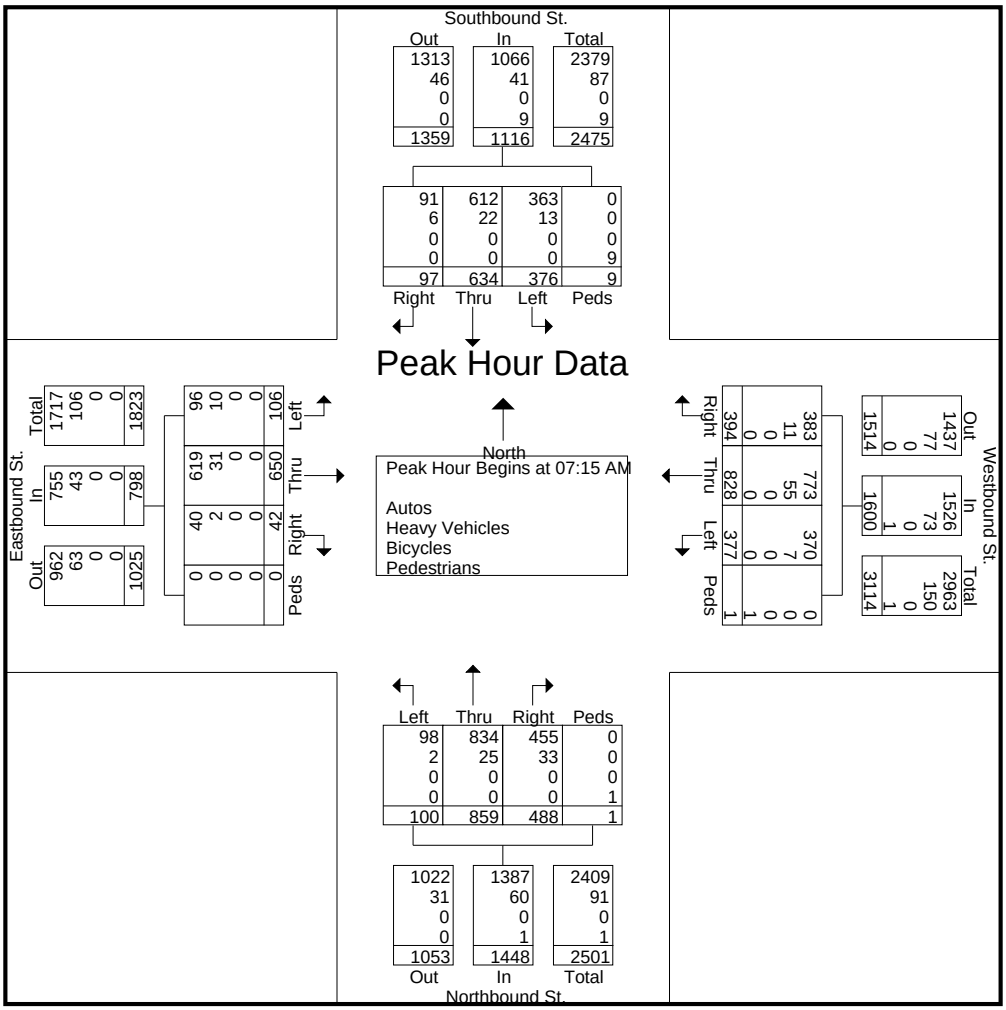
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at Military Tr 03052015
Site Code :
Start Date : 3/5/2015
Page No : 2

	Eastbound St. Eastbound					Westbound St. Westbound					Northbound St. Northbound					Southbound St. Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	16	165	14	0	195	77	202	86	1	366	25	198	97	0	320	93	127	34	2	256	1137
07:30 AM	28	138	10	0	176	78	183	79	0	340	27	248	134	0	409	90	174	18	3	285	1210
07:45 AM	33	176	12	0	221	110	226	121	0	457	26	203	132	0	361	97	161	22	3	283	1322
08:00 AM	29	171	6	0	206	112	217	108	0	437	22	210	125	1	358	96	172	23	1	292	1293
Total Volume	106	650	42	0	798	377	828	394	1	1600	100	859	488	1	1448	376	634	97	9	1116	4962
% App. Total	13.3	81.5	5.3	0		23.6	51.8	24.6	0.1		6.9	59.3	33.7	0.1		33.7	56.8	8.7	0.8		
PHF	.803	.923	.750	.000	.903	.842	.916	.814	.250	.875	.926	.866	.910	.250	.885	.969	.911	.713	.750	.955	.938
Autos	96	619	40	0	755	370	773	383	0	1526	98	834	455	0	1387	363	612	91	0	1066	4734
% Autos	90.6	95.2	95.2	0	94.6	98.1	93.4	97.2	0	95.4	98.0	97.1	93.2	0	95.8	96.5	96.5	93.8	0	95.5	95.4
Heavy Vehicles	10	31	2	0	43	7	55	11	0	73	2	25	33	0	60	13	22	6	0	41	217
% Heavy Vehicles	9.4	4.8	4.8	0	5.4	1.9	6.6	2.8	0	4.6	2.0	2.9	6.8	0	4.1	3.5	3.5	6.2	0	3.7	4.4
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	0	0	0	9	9	11
% Pedestrians	0	0	0	0	0	0	0	0	100	0.1	0	0	0	100	0.1	0	0	0	100	0.8	0.2



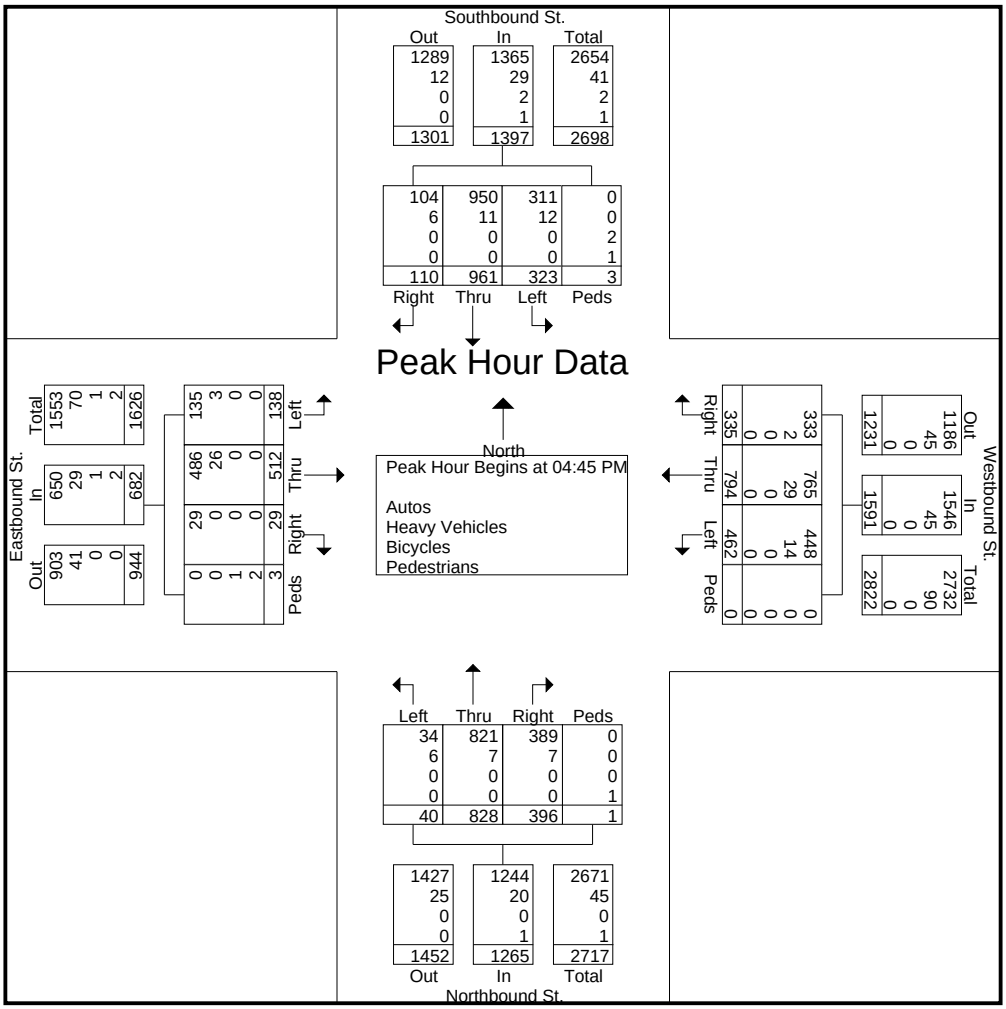
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at Military Tr 03052015
Site Code :
Start Date : 3/5/2015
Page No : 3

	Eastbound St. Eastbound					Westbound St. Westbound					Northbound St. Northbound					Southbound St. Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	36	140	11	0	187	130	172	65	0	367	12	213	96	1	322	95	259	25	2	381	1257
05:00 PM	32	99	5	1	137	94	224	93	0	411	14	212	137	0	363	64	241	30	1	336	1247
05:15 PM	33	115	6	0	154	135	189	96	0	420	8	192	80	0	280	85	218	28	0	331	1185
05:30 PM	37	158	7	2	204	103	209	81	0	393	6	211	83	0	300	79	243	27	0	349	1246
Total Volume	138	512	29	3	682	462	794	335	0	1591	40	828	396	1	1265	323	961	110	3	1397	4935
% App. Total	20.2	75.1	4.3	0.4		29	49.9	21.1	0		3.2	65.5	31.3	0.1		23.1	68.8	7.9	0.2		
PHF	.932	.810	.659	.375	.836	.856	.886	.872	.000	.947	.714	.972	.723	.250	.871	.850	.928	.917	.375	.917	.982
Autos	135	486	29	0	650	448	765	333	0	1546	34	821	389	0	1244	311	950	104	0	1365	4805
% Autos	97.8	94.9	100	0	95.3	97.0	96.3	99.4	0	97.2	85.0	99.2	98.2	0	98.3	96.3	98.9	94.5	0	97.7	97.4
Heavy Vehicles	3	26	0	0	29	14	29	2	0	45	6	7	7	0	20	12	11	6	0	29	123
% Heavy Vehicles	2.2	5.1	0	0	4.3	3.0	3.7	0.6	0	2.8	15.0	0.8	1.8	0	1.6	3.7	1.1	5.5	0	2.1	2.5
Bicycles	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	3
% Bicycles	0	0	0	33.3	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	66.7	0.1	0.1
Pedestrians	0	0	0	2	2	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	4
% Pedestrians	0	0	0	66.7	0.3	0	0	0	0	0	0	0	0	100	0.1	0	0	0	33.3	0.1	0.1



CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at Military Tr 03052015
Site Code :
Start Date : 3/5/2015
Page No : 1

Groups Printed- Heavy Vehicles

	Eastbound St. Eastbound					Westbound St. Westbound					Northbound St. Northbound					Southbound St. Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	5	0	0	5	2	4	0	0	6	2	0	3	0	5	1	2	1	0	4	20
06:15 AM	2	4	1	0	7	0	6	2	0	8	2	4	3	0	9	1	2	4	0	7	31
06:30 AM	0	7	0	0	7	3	14	5	0	22	0	0	6	0	6	1	3	3	0	7	42
06:45 AM	1	5	0	0	6	4	7	5	0	16	1	5	7	0	13	6	3	1	0	10	45
Total	3	21	1	0	25	9	31	12	0	52	5	9	19	0	33	9	10	9	0	28	138
07:00 AM	0	4	0	0	4	2	14	3	0	19	0	8	9	0	17	1	4	3	0	8	48
07:15 AM	1	5	0	0	6	0	15	3	0	18	0	1	7	0	8	4	4	1	0	9	41
07:30 AM	2	4	0	0	6	0	15	0	0	15	1	8	15	0	24	3	5	2	0	10	55
07:45 AM	4	10	1	0	15	0	11	4	0	15	0	12	6	0	18	4	5	2	0	11	59
Total	7	23	1	0	31	2	55	10	0	67	1	29	37	0	67	12	18	8	0	38	203
08:00 AM	3	12	1	0	16	7	14	4	0	25	1	4	5	0	10	2	8	1	0	11	62
08:15 AM	1	5	0	0	6	6	7	2	0	15	0	5	9	0	14	4	5	1	0	10	45
08:30 AM	0	13	1	0	14	5	11	0	0	16	4	8	12	0	24	0	10	3	0	13	67
08:45 AM	2	9	0	0	11	8	14	3	0	25	0	12	6	0	18	3	11	1	0	15	69
Total	6	39	2	0	47	26	46	9	0	81	5	29	32	0	66	9	34	6	0	49	243
BREAK																					
04:00 PM	0	9	1	0	10	8	9	3	0	20	2	9	8	0	19	5	10	1	0	16	65
04:15 PM	0	11	0	0	11	7	7	2	0	16	0	2	5	0	7	2	4	2	0	8	42
04:30 PM	0	2	0	0	2	7	10	2	0	19	0	2	1	0	3	2	7	2	0	11	35
04:45 PM	0	9	0	0	9	4	8	1	0	13	3	2	4	0	9	6	4	1	0	11	42
Total	0	31	1	0	32	26	34	8	0	68	5	15	18	0	38	15	25	6	0	46	184
05:00 PM	2	8	0	0	10	2	3	0	0	5	2	2	0	0	4	1	5	2	0	8	27
05:15 PM	0	4	0	0	4	4	6	1	0	11	0	1	2	0	3	4	0	2	0	6	24
05:30 PM	1	5	0	0	6	4	12	0	0	16	1	2	1	0	4	1	2	1	0	4	30
05:45 PM	1	4	0	0	5	3	6	1	0	10	1	2	0	0	3	4	2	2	0	8	26
Total	4	21	0	0	25	13	27	2	0	42	4	7	3	0	14	10	9	7	0	26	107
06:00 PM	1	9	0	0	10	4	5	0	0	9	0	0	3	0	3	2	3	2	0	7	29
06:15 PM	1	9	0	0	10	2	4	1	0	7	1	3	0	0	4	6	1	0	0	7	28
06:30 PM	0	6	0	0	6	2	3	1	0	6	1	0	2	0	3	3	2	2	0	7	22
06:45 PM	0	7	0	0	7	0	5	1	0	6	0	1	1	0	2	3	2	0	0	5	20
Total	2	31	0	0	33	8	17	3	0	28	2	4	6	0	12	14	8	4	0	26	99
Grand Total	22	166	5	0	193	84	210	44	0	338	22	93	115	0	230	69	104	40	0	213	974
Apprch %	11.4	86	2.6	0		24.9	62.1	13	0		9.6	40.4	50	0		32.4	48.8	18.8	0		
Total %	2.3	17	0.5	0	19.8	8.6	21.6	4.5	0	34.7	2.3	9.5	11.8	0	23.6	7.1	10.7	4.1	0	21.9	

Blue Heron Boulevard at I-95 Southbound off Ramp

County: 93
Station: 3321
Description: I-95 SB OFF RAMP TO BLUE HEARON BLVD
Start Date: 03/24/2015
Start Time: 0000

Direction: S

Time	1st	2nd	3rd	4th	Total
0000	19	27	28	17	91
0100	14	18	7	11	50
0200	9	14	9	7	39
0300	13	10	19	22	64
0400	16	30	23	26	95
0500	29	47	53	87	216
0600	83	144	206	306	739
0700	283	263	272	308	1126
0800	233	231	204	195	863
0900	186	167	155	180	688
1000	176	134	141	147	598
1100	121	132	130	138	521
1200	160	154	166	176	656
1300	149	147	157	155	608
1400	138	154	149	163	604
1500	153	171	149	155	628
1600	141	184	165	154	644
1700	148	126	126	127	527
1800	128	129	117	106	480
1900	68	86	79	69	302
2000	71	62	65	71	269
2100	55	66	47	52	220
2200	46	43	31	20	140
2300	29	20	16	17	82
24-Hour Totals:					10250

Peak Volume Information

	Hour	Volume
A.M.	700	1126
P.M.	1200	656
Daily	700	1126

Truck Percentage 13.73 NaN 13.73

Classification Summary Database

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TotTrk	TotVol
S	36	6707	2100	161	491	349	53	149	146	24	24	10	0	0	0	1407	10250

Generated by SPS 5.0.45P

County: 93
Station: 3321
Description: I-95 SB OFF RAMP TO BLUE HEARON BLVD
Start Date: 03/25/2015
Start Time: 0000

Direction: S

Time	1st	2nd	3rd	4th	Total
0000	13	14	18	15	60
0100	11	14	10	5	40
0200	6	8	12	9	35
0300	12	7	13	26	58
0400	17	31	31	34	113
0500	34	46	50	80	210
0600	85	128	158	287	658
0700	242	222	241	290	995
0800	200	216	183	167	766
0900	146	161	149	124	580
1000	130	164	137	140	571
1100	128	132	129	143	532
1200	115	156	170	142	583
1300	159	145	139	154	597
1400	159	152	145	156	612
1500	146	136	147	150	579
1600	150	145	182	143	620
1700	136	150	129	131	546
1800	116	105	121	111	453
1900	89	82	73	93	337
2000	80	61	68	51	260
2100	61	59	53	52	225
2200	45	42	49	30	166
2300	30	26	32	15	103
24-Hour Totals:					9699

Peak Volume Information

	Hour	Volume
A.M.	700	995
P.M.	1215	627
Daily	700	995

Truck Percentage 15.18 NaN 15.18

Classification Summary Database

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TotTrk	TotVol
S	48	6471	1708	175	479	433	32	122	167	30	26	8	0	0	0	1472	9699

Generated by SPS 5.0.45P

County: 93
Station: 3321
Description: I-95 SB OFF RAMP TO BLUE HEARON BLVD
Start Date: 03/26/2015
Start Time: 0000

Direction: S

Time	1st	2nd	3rd	4th	Total
0000	23	14	13	16	66
0100	8	17	8	10	43
0200	9	10	9	11	39
0300	12	12	8	14	46
0400	19	22	33	27	101
0500	23	47	62	71	203
0600	80	102	156	286	624
0700	231	230	240	281	982
0800	191	193	155	163	702
0900	135	173	161	154	623
1000	148	135	130	168	581
1100	142	158	130	152	582
1200	146	154	155	173	628
1300	145	161	161	143	610
1400	142	151	189	157	639
1500	173	162	137	169	641
1600	141	169	166	136	612
1700	132	149	141	132	554
1800	139	131	115	111	496
1900	109	92	63	79	343
2000	54	58	54	58	224
2100	61	53	60	33	207
2200	44	57	36	50	187
2300	35	38	51	21	145
24-Hour Totals:					9878

Peak Volume Information

	Hour	Volume
A.M.	645	987
P.M.	1430	681
Daily	645	987

Truck Percentage 14.58 NaN 14.58

Classification Summary Database

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TotTrk	TotVol
S	57	6636	1745	163	420	465	28	108	181	36	22	17	0	0	0	1440	9878

Generated by SPS 5.0.45P

County: 93
Station: 3325
Description: I-95 SB ON RAMP FROM BLUE HERON BLVD
Start Date: 04/21/2015
Start Time: 0000

Direction: S

Time	1st	2nd	3rd	4th	Total
0000	43	28	28	24	123
0100	21	19	17	19	76
0200	21	12	22	15	70
0300	27	19	27	27	100
0400	49	51	65	85	250
0500	86	104	120	168	478
0600	178	227	243	271	919
0700	302	313	332	316	1263
0800	277	267	238	248	1030
0900	257	233	222	207	919
1000	240	238	222	238	938
1100	223	260	234	253	970
1200	238	194	242	212	886
1300	242	215	234	222	913
1400	225	255	249	278	1007
1500	296	298	275	310	1179
1600	289	343	312	321	1265
1700	359	308	263	267	1197
1800	243	214	188	173	818
1900	193	154	154	121	622
2000	154	124	135	104	517
2100	128	115	102	82	427
2200	90	83	72	62	307
2300	78	69	65	68	280
24-Hour Totals:					16554

Peak Volume Information

	Hour	Volume
A.M.	700	1263
P.M.	1615	1335
Daily	1615	1335

Truck Percentage 7.49 NaN 7.49

Classification Summary Database

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TotTrk	TotVol
S	60	12130	3124	98	518	63	121	180	224	29	7	0	0	0	0	1240	16554

Generated by SPS 5.0.45P

County: 93
Station: 3325
Description: I-95 SB ON RAMP FROM BLUE HERON BLVD
Start Date: 04/22/2015
Start Time: 0000

Direction: S

Time	1st	2nd	3rd	4th	Total
0000	60	48	34	30	172
0100	25	23	21	19	88
0200	22	25	15	26	88
0300	17	31	17	28	93
0400	29	51	57	74	211
0500	98	92	114	138	442
0600	195	195	258	268	916
0700	286	330	354	380	1350
0800	362	306	311	270	1249
0900	277	279	250	241	1047
1000	230	276	267	241	1014
1100	273	255	270	250	1048
1200	306	271	207	261	1045
1300	242	271	242	253	1008
1400	242	251	285	273	1051
1500	311	351	353	318	1333
1600	374	361	421	340	1496
1700	363	415	363	302	1443
1800	304	270	239	207	1020
1900	184	231	183	186	784
2000	130	175	138	149	592
2100	135	149	122	127	533
2200	92	92	91	73	348
2300	62	87	77	72	298
24-Hour Totals:					18669

Peak Volume Information

	Hour	Volume
A.M.	715	1426
P.M.	1630	1539
Daily	1630	1539

Truck Percentage 7.44 NaN 7.44

Classification Summary Database

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TotTrk	TotVol
S	72	13607	3601	101	593	62	134	208	250	31	7	3	0	0	0	1389	18669

Generated by SPS 5.0.45P

County: 93
Station: 3325
Description: I-95 SB ON RAMP FROM BLUE HERON BLVD
Start Date: 04/23/2015
Start Time: 0000

Direction: S

Time	1st	2nd	3rd	4th	Total
0000	55	50	29	30	164
0100	30	21	24	19	94
0200	20	21	10	22	73
0300	17	32	30	32	111
0400	32	58	54	72	216
0500	91	103	119	127	440
0600	171	203	251	282	907
0700	333	345	341	357	1376
0800	340	315	285	256	1196
0900	275	295	280	260	1110
1000	237	254	262	259	1012
1100	251	239	318	277	1085
1200	241	254	235	285	1015
1300	229	266	232	275	1002
1400	254	252	283	288	1077
1500	307	296	298	290	1191
1600	297	257	316	359	1229
1700	346	374	315	277	1312
1800	284	273	240	212	1009
1900	206	191	152	151	700
2000	140	162	140	152	594
2100	84	135	140	94	453
2200	91	111	93	94	389
2300	76	87	77	68	308
24-Hour Totals:					18063

Peak Volume Information

	Hour	Volume
A.M.	715	1383
P.M.	1630	1395
Daily	1630	1395

Truck Percentage 7.42 NaN 7.42

Classification Summary Database

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TotTrk	TotVol
S	61	13388	3273	103	545	78	142	186	249	29	6	3	0	0	0	1341	18063

Generated by SPS 5.0.45P

County: 93
Station: 3323
Description: BLUE HERON BLVD BTWN I-95 NB & SB RAMPS
Start Date: 03/24/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	31	39	39	34	143	92	90	67	56	305	448
0100	30	22	33	24	109	57	67	47	52	223	332
0200	27	25	29	35	116	44	42	51	44	181	297
0300	23	21	26	49	119	34	47	60	60	201	320
0400	42	62	45	75	224	38	72	83	86	279	503
0500	40	78	84	118	320	113	108	154	170	545	865
0600	120	164	231	339	854	189	241	294	375	1099	1953
0700	354	403	347	411	1515	444	453	557	570	2024	3539
0800	403	357	301	334	1395	470	536	508	423	1937	3332
0900	297	305	272	262	1136	458	459	407	397	1721	2857
1000	249	237	228	284	998	426	373	469	393	1661	2659
1100	226	262	269	256	1013	448	392	414	408	1662	2675
1200	279	264	312	273	1128	445	534	453	495	1927	3055
1300	270	261	252	271	1054	438	452	518	372	1780	2834
1400	237	285	295	321	1138	488	453	514	481	1936	3074
1500	279	232	315	263	1089	564	623	673	624	2484	3573
1600	271	294	310	336	1211	652	609	738	654	2653	3864
1700	329	250	298	241	1118	767	816	679	654	2916	4034
1800	232	208	192	181	813	608	482	468	411	1969	2782
1900	194	164	197	119	674	350	396	299	312	1357	2031
2000	141	135	141	99	516	305	296	316	283	1200	1716
2100	118	102	93	96	409	282	238	225	191	936	1345
2200	64	77	65	59	265	194	185	212	144	735	1000
2300	61	54	50	52	217	148	140	105	98	491	708
24-Hour Totals:					17574					32222	49796

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	715	1564	730	2133	730	3651
P.M.	1615	1269	1630	2975	1630	4200
Daily	715	1564	1630	2975	1630	4200

Generated by SPS 5.0.45P

County: 93
Station: 3323
Description: BLUE HERON BLVD BTWN I-95 NB & SB RAMPS
Start Date: 03/25/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	43	33	26	29	131	90	87	72	38	287	418
0100	34	32	20	18	104	28	52	35	29	144	248
0200	19	17	19	27	82	42	42	23	36	143	225
0300	28	21	14	45	108	30	41	60	22	153	261
0400	36	69	53	79	237	40	56	78	91	265	502
0500	50	74	108	106	338	142	138	163	182	625	963
0600	108	183	220	352	863	203	276	308	405	1192	2055
0700	355	415	407	399	1576	493	525	577	604	2199	3775
0800	447	339	381	328	1495	478	558	527	465	2028	3523
0900	269	272	296	294	1131	496	500	480	437	1913	3044
1000	256	270	250	273	1049	377	357	397	348	1479	2528
1100	261	302	248	255	1066	395	396	371	389	1551	2617
1200	295	256	304	269	1124	378	432	399	459	1668	2792
1300	262	293	289	250	1094	487	402	465	389	1743	2837
1400	235	294	285	284	1098	434	363	474	451	1722	2820
1500	269	298	335	264	1166	495	546	545	579	2165	3331
1600	309	305	251	320	1185	516	548	626	639	2329	3514
1700	315	257	304	237	1113	664	728	612	564	2568	3681
1800	211	236	217	206	870	513	449	420	356	1738	2608
1900	203	151	183	147	684	323	356	279	303	1261	1945
2000	143	141	132	103	519	252	272	250	269	1043	1562
2100	122	120	75	99	416	243	235	227	180	885	1301
2200	85	73	77	58	293	180	179	173	177	709	1002
2300	65	70	58	65	258	157	139	116	94	506	764
24-Hour Totals:					18000					30316	48316

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	715	1668	730	2217	715	3852
P.M.	1530	1213	1630	2657	1645	3839
Daily	715	1668	1630	2657	715	3852

Generated by SPS 5.0.45P

County: 93
Station: 3323
Description: BLUE HERON BLVD BTWN I-95 NB & SB RAMPS
Start Date: 03/26/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	47	36	26	36	145	80	93	72	68	313	458
0100	30	26	30	21	107	52	42	53	41	188	295
0200	18	20	31	19	88	38	37	22	35	132	220
0300	28	21	28	42	119	36	51	56	65	208	327
0400	44	58	62	81	245	49	78	90	86	303	548
0500	59	76	87	133	355	96	127	150	164	537	892
0600	101	139	234	351	825	240	247	285	404	1176	2001
0700	343	358	382	445	1528	428	479	553	542	2002	3530
0800	392	348	364	306	1410	455	502	442	379	1778	3188
0900	282	297	236	278	1093	393	425	396	356	1570	2663
1000	248	225	207	258	938	393	367	379	395	1534	2472
1100	251	219	263	250	983	403	392	344	360	1499	2482
1200	278	252	304	273	1107	323	478	383	468	1652	2759
1300	313	289	261	281	1144	397	415	410	376	1598	2742
1400	235	245	281	246	1007	441	364	453	411	1669	2676
1500	266	266	297	279	1108	520	515	512	519	2066	3174
1600	304	305	297	316	1222	546	562	573	613	2294	3516
1700	293	251	265	247	1056	652	683	617	536	2488	3544
1800	215	230	199	174	818	411	459	428	382	1680	2498
1900	181	138	166	164	649	331	310	301	290	1232	1881
2000	132	121	125	98	476	297	256	258	257	1068	1544
2100	115	90	92	75	372	258	277	222	204	961	1333
2200	73	99	75	71	318	179	186	165	148	678	996
2300	55	73	49	59	236	169	121	131	113	534	770
24-Hour Totals:					17349					29160	46509

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	715	1577	730	2052	730	3619
P.M.	1600	1222	1645	2565	1645	3690
Daily	715	1577	1645	2565	1645	3690

Generated by SPS 5.0.45P

County: 93
Station: 3327
Description: BLUE HERON W OF I-95 SB RAMPS
Start Date: 03/24/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	36	48	30	20	134	52	61	40	44	197	331
0100	23	16	20	18	77	36	46	40	37	159	236
0200	20	18	23	17	78	47	50	24	33	154	232
0300	18	21	21	43	103	22	29	37	31	119	222
0400	43	46	62	34	185	24	41	42	57	164	349
0500	87	74	95	112	368	69	94	147	174	484	852
0600	154	188	245	288	875	186	256	342	383	1167	2042
0700	316	380	400	411	1507	359	442	495	473	1769	3276
0800	379	337	357	361	1434	457	392	338	386	1573	3007
0900	313	267	275	267	1122	326	311	307	293	1237	2359
1000	239	228	301	323	1091	344	266	342	289	1241	2332
1100	267	292	338	286	1183	283	344	322	332	1281	2464
1200	308	303	275	290	1176	348	351	399	364	1462	2638
1300	254	275	238	279	1046	354	341	366	296	1357	2403
1400	277	287	342	307	1213	349	327	333	377	1386	2599
1500	286	309	319	326	1240	397	494	468	416	1775	3015
1600	358	305	485	373	1521	488	453	479	488	1908	3429
1700	398	361	334	269	1362	550	591	529	426	2096	3458
1800	299	233	224	185	941	432	374	335	288	1429	2370
1900	207	167	195	122	691	272	280	268	236	1056	1747
2000	145	112	116	101	474	276	235	211	243	965	1439
2100	113	98	72	79	362	211	191	156	172	730	1092
2200	72	66	88	38	264	165	166	146	130	607	871
2300	56	51	58	54	219	106	106	65	80	357	576
24-Hour Totals:					18666					24673	43339

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	715	1570	715	1867	715	3437
P.M.	1630	1617	1645	2158	1630	3725
Daily	1630	1617	1645	2158	1630	3725

Generated by SPS 5.0.45P

County: 93
Station: 3327
Description: BLUE HERON W OF I-95 SB RAMPS
Start Date: 03/25/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	29	40	18	24	111	62	70	53	30	215	326
0100	23	13	17	7	60	30	20	16	19	85	145
0200	13	16	12	10	51	18	20	17	21	76	127
0300	19	13	21	33	86	32	23	15	18	88	174
0400	40	55	61	72	228	27	16	52	71	166	394
0500	73	84	111	135	403	93	132	153	173	551	954
0600	146	216	239	277	878	228	287	338	394	1247	2125
0700	298	430	411	373	1512	424	476	549	589	2038	3550
0800	429	376	388	318	1511	454	454	401	384	1693	3204
0900	332	289	374	357	1352	340	302	239	282	1163	2515
1000	303	335	327	310	1275	283	295	230	276	1084	2359
1100	282	300	291	307	1180	238	247	235	289	1009	2189
1200	299	265	291	265	1120	231	268	301	297	1097	2217
1300	282	284	270	237	1073	281	297	304	297	1179	2252
1400	308	311	328	279	1226	247	274	263	358	1142	2368
1500	302	321	380	358	1361	331	314	376	391	1412	2773
1600	386	332	449	401	1568	384	438	394	410	1626	3194
1700	339	302	344	265	1250	517	466	518	398	1899	3149
1800	242	217	255	201	915	402	302	329	253	1286	2201
1900	198	174	174	155	701	241	241	180	176	838	1539
2000	148	117	135	119	519	180	203	175	194	752	1271
2100	116	91	92	95	394	193	167	162	104	626	1020
2200	96	74	74	66	310	125	128	93	134	480	790
2300	57	78	54	66	255	91	72	72	63	298	553
24-Hour Totals:					19339					22050	41389

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	715	1643	715	2068	715	3711
P.M.	1600	1568	1645	1911	1645	3297
Daily	715	1643	715	2068	715	3711

Generated by SPS 5.0.45P

County: 93
Station: 3327
Description: BLUE HERON W OF I-95 SB RAMPS
Start Date: 03/26/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	29	38	20	20	107	68	64	57	34	223	330
0100	21	21	14	8	64	33	30	31	13	107	171
0200	15	9	18	17	59	28	20	9	26	83	142
0300	16	12	23	36	87	14	23	21	27	85	172
0400	26	53	64	68	211	28	23	33	58	142	353
0500	96	101	115	125	437	63	81	120	138	402	839
0600	149	191	244	257	841	208	198	281	368	1055	1896
0700	309	366	429	413	1517	319	384	489	476	1668	3185
0800	385	306	332	310	1333	394	341	313	291	1339	2672
0900	292	297	274	281	1144	285	316	297	270	1168	2312
1000	234	262	272	273	1041	271	280	267	282	1100	2141
1100	232	312	265	306	1115	274	243	240	269	1026	2141
1200	305	263	296	276	1140	282	299	285	324	1190	2330
1300	284	290	279	302	1155	318	299	285	326	1228	2383
1400	225	239	344	286	1094	301	394	401	444	1540	2634
1500	319	313	352	339	1323	421	411	514	409	1755	3078
1600	381	323	417	366	1487	454	488	451	579	1972	3459
1700	338	296	328	294	1256	504	623	495	438	2060	3316
1800	281	213	214	213	921	339	383	380	315	1417	2338
1900	182	148	162	132	624	272	239	224	221	956	1580
2000	125	125	127	91	468	248	198	207	149	802	1270
2100	106	104	84	79	373	229	221	172	153	775	1148
2200	85	81	61	51	278	150	126	112	124	512	790
2300	59	78	53	55	245	116	92	99	90	397	642
24-Hour Totals:					18320					23002	41322

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	715	1593	715	1743	715	3336
P.M.	1600	1487	1645	2201	1630	3574
Daily	715	1593	1645	2201	1630	3574

Generated by SPS 5.0.45P

Three-Day Approach Count Summary

Project Name: Blue Heron Boulevard Study
State Project No.: 2013008.018
Location: Blue Heron Boulevard at I-95 Southbound off Ramp
Direction: SOUTHBOUND (APPROACH)
Date: 3/24/2015-3/26/2015

TIME PERIOD (AM)		WEEKDAY TUES 24-Mar	WEEKDAY WED 25-Mar	WEEKDAY THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
00:00	00:15	19	13	23	18	
00:15	00:30	27	14	14	18	
00:30	00:45	28	18	13	20	
00:45	01:00	17	15	16	16	72
01:00	01:15	14	11	8	11	
01:15	01:30	18	14	17	16	
01:30	01:45	7	10	8	8	
01:45	02:00	11	5	10	9	44
02:00	02:15	9	6	9	8	
02:15	02:30	14	8	10	11	
02:30	02:45	9	12	9	10	
02:45	03:00	7	9	11	9	38
03:00	03:15	13	12	12	12	
03:15	03:30	10	7	12	10	
03:30	03:45	19	13	8	13	
03:45	04:00	22	26	14	21	56
04:00	04:15	16	17	19	17	
04:15	04:30	30	31	22	28	
04:30	04:45	23	31	33	29	
04:45	05:00	26	34	27	29	103
05:00	05:15	29	34	23	29	
05:15	05:30	47	46	47	47	
05:30	05:45	53	50	62	55	
05:45	06:00	87	80	71	79	210
06:00	06:15	83	85	80	83	
06:15	06:30	144	128	102	125	
06:30	06:45	206	158	156	173	
06:45	07:00	306	287	286	293	674
07:00	07:15	283	242	231	252	
07:15	07:30	263	222	230	238	
07:30	07:45	272	241	240	251	
07:45	08:00	308	290	281	293	1,034
08:00	08:15	233	200	191	208	
08:15	08:30	231	216	193	213	
08:30	08:45	204	183	155	181	
08:45	09:00	195	167	163	175	777
09:00	09:15	186	146	135	156	
09:15	09:30	167	161	173	167	
09:30	09:45	155	149	161	155	
09:45	10:00	180	124	154	153	630
10:00	10:15	176	130	148	151	
10:15	10:30	134	164	135	144	
10:30	10:45	141	137	130	136	
10:45	11:00	147	140	168	152	583
11:00	11:15	121	128	142	130	
11:15	11:30	132	132	158	141	
11:30	11:45	130	129	130	130	
11:45	12:00	138	143	152	144	545

TIME PERIOD (PM)		WEEKDAY TUES 24-Mar	WEEKDAY WED 25-Mar	WEEKDAY THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
12:00	12:15	160	115	146	140	
12:15	12:30	154	156	154	155	
12:30	12:45	166	170	155	164	
12:45	13:00	176	142	173	164	622
13:00	13:15	149	159	145	151	
13:15	13:30	147	145	161	151	
13:30	13:45	157	139	161	152	
13:45	14:00	155	154	143	151	605
14:00	14:15	138	159	142	146	
14:15	14:30	154	152	151	152	
14:30	14:45	149	145	189	161	
14:45	15:00	163	156	157	159	618
15:00	15:15	153	146	173	157	
15:15	15:30	171	136	162	156	
15:30	15:45	149	147	137	144	
15:45	16:00	155	150	169	158	616
16:00	16:15	141	150	141	144	
16:15	16:30	184	145	169	166	
16:30	16:45	165	182	166	171	
16:45	17:00	154	143	136	144	625
17:00	17:15	148	136	132	139	
17:15	17:30	126	150	149	142	
17:30	17:45	126	129	141	132	
17:45	18:00	127	131	132	130	542
18:00	18:15	128	116	139	128	
18:15	18:30	129	105	131	122	
18:30	18:45	117	121	115	118	
18:45	19:00	106	111	111	109	476
19:00	19:15	68	89	109	89	
19:15	19:30	86	82	92	87	
19:30	19:45	79	73	63	72	
19:45	20:00	69	93	79	80	327
20:00	20:15	71	80	54	68	
20:15	20:30	62	61	58	60	
20:30	20:45	65	68	54	62	
20:45	21:00	71	51	58	60	251
21:00	21:15	55	61	61	59	
21:15	21:30	66	59	53	59	
21:30	21:45	47	53	60	53	
21:45	22:00	52	52	33	46	217
22:00	22:15	46	45	44	45	
22:15	22:30	43	42	57	47	
22:30	22:45	31	49	36	39	
22:45	23:00	20	30	50	33	164
23:00	23:15	29	30	35	31	
23:15	23:30	20	26	38	28	
23:30	23:45	16	32	51	33	
23:45	00:00	17	15	21	18	110
DAILY COUNT		10,250	9,699	9,878	9,942	
PEAK HOUR TIME					06:45	
PEAK HOUR COUNT					1,034	
ESTIMATED K-FACTOR					10.4%	

Three-Day Approach Count Summary

Project Name: Blue Heron Boulevard Study
State Project No.: 2013008.018
Location: Blue Heron Boulevard at I-95 Southbound off Ramp
Direction: EASTBOUND (APPROACH)
Date: 3/24/2015-3/26/2015

TIME PERIOD (AM)		WEEKDAY TUES 24-Mar	WEEKDAY WED 25-Mar	WEEKDAY THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
00:00	00:15	36	29	29	31	
00:15	00:30	48	40	38	42	
00:30	00:45	30	18	20	23	
00:45	01:00	20	24	20	21	117
01:00	01:15	23	23	21	22	
01:15	01:30	16	13	21	17	
01:30	01:45	20	17	14	17	
01:45	02:00	18	7	8	11	67
02:00	02:15	20	13	15	16	
02:15	02:30	18	16	9	14	
02:30	02:45	23	12	18	18	
02:45	03:00	17	10	17	15	63
03:00	03:15	18	19	16	18	
03:15	03:30	21	13	12	15	
03:30	03:45	21	21	23	22	
03:45	04:00	43	33	36	37	92
04:00	04:15	43	40	26	36	
04:15	04:30	46	55	53	51	
04:30	04:45	62	61	64	62	
04:45	05:00	34	72	68	58	208
05:00	05:15	87	73	96	85	
05:15	05:30	74	84	101	86	
05:30	05:45	95	111	115	107	
05:45	06:00	112	135	125	124	403
06:00	06:15	154	146	149	150	
06:15	06:30	188	216	191	198	
06:30	06:45	245	239	244	243	
06:45	07:00	288	277	257	274	865
07:00	07:15	316	298	309	308	
07:15	07:30	380	430	366	392	
07:30	07:45	400	411	429	413	
07:45	08:00	411	373	413	399	1,512
08:00	08:15	379	429	385	398	
08:15	08:30	337	376	306	340	
08:30	08:45	357	388	332	359	
08:45	09:00	361	318	310	330	1,426
09:00	09:15	313	332	292	312	
09:15	09:30	267	289	297	284	
09:30	09:45	275	374	274	308	
09:45	10:00	267	357	281	302	1,206
10:00	10:15	239	303	234	259	
10:15	10:30	228	335	262	275	
10:30	10:45	301	327	272	300	
10:45	11:00	323	310	273	302	1,136
11:00	11:15	267	282	232	260	
11:15	11:30	292	300	312	301	
11:30	11:45	338	291	265	298	
11:45	12:00	286	307	306	300	1,159

TIME PERIOD (PM)		WEEKDAY TUES 24-Mar	WEEKDAY WED 25-Mar	WEEKDAY THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
12:00	12:15	308	299	305	304	
12:15	12:30	303	265	263	277	
12:30	12:45	275	291	296	287	
12:45	13:00	290	265	276	277	1,145
13:00	13:15	254	282	284	273	
13:15	13:30	275	284	290	283	
13:30	13:45	238	270	279	262	
13:45	14:00	279	237	302	273	1,091
14:00	14:15	277	308	225	270	
14:15	14:30	287	311	239	279	
14:30	14:45	342	328	344	338	
14:45	15:00	307	279	286	291	1,178
15:00	15:15	286	302	319	302	
15:15	15:30	309	321	313	314	
15:30	15:45	319	380	352	350	
15:45	16:00	326	358	339	341	1,308
16:00	16:15	358	386	381	375	
16:15	16:30	305	332	323	320	
16:30	16:45	485	449	417	450	
16:45	17:00	373	401	366	380	1,525
17:00	17:15	398	339	338	358	
17:15	17:30	361	302	296	320	
17:30	17:45	334	344	328	335	
17:45	18:00	269	265	294	276	1,289
18:00	18:15	299	242	281	274	
18:15	18:30	233	217	213	221	
18:30	18:45	224	255	214	231	
18:45	19:00	185	201	213	200	926
19:00	19:15	207	198	182	196	
19:15	19:30	167	174	148	163	
19:30	19:45	195	174	162	177	
19:45	20:00	122	155	132	136	672
20:00	20:15	145	148	125	139	
20:15	20:30	112	117	125	118	
20:30	20:45	116	135	127	126	
20:45	21:00	101	119	91	104	487
21:00	21:15	113	116	106	112	
21:15	21:30	98	91	104	98	
21:30	21:45	72	92	84	83	
21:45	22:00	79	95	79	84	376
22:00	22:15	72	96	85	84	
22:15	22:30	66	74	81	74	
22:30	22:45	88	74	61	74	
22:45	23:00	38	66	51	52	284
23:00	23:15	56	57	59	57	
23:15	23:30	51	78	78	69	
23:30	23:45	58	54	53	55	
23:45	00:00	54	66	55	58	240
DAILY COUNT		18,666	19,339	18,320	18,775	
PEAK HOUR TIME					07:15	
PEAK HOUR COUNT					1,602	
ESTIMATED K-FACTOR					8.5%	

Three-Day Approach Count Summary

Project Name: Blue Heron Boulevard Study
State Project No.: 2013008.018
Location: Blue Heron Boulevard at I-95 Southbound off Ramp
Direction: WESTBOUND (APPROACH)
Date: 3/24/2015-3/26/2015

TIME PERIOD (AM)		WEEKDAY TUES 24-Mar	WEED WED 25-Mar	THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
00:00	00:15	92	90	80	87	
00:15	00:30	90	87	93	90	
00:30	00:45	67	72	72	70	
00:45	01:00	56	38	68	54	302
01:00	01:15	57	28	52	46	
01:15	01:30	67	52	42	54	
01:30	01:45	47	35	53	45	
01:45	02:00	52	29	41	41	185
02:00	02:15	44	42	38	41	
02:15	02:30	42	42	37	40	
02:30	02:45	51	23	22	32	
02:45	03:00	44	36	35	38	152
03:00	03:15	34	30	36	33	
03:15	03:30	47	41	51	46	
03:30	03:45	60	60	56	59	
03:45	04:00	60	22	65	49	187
04:00	04:15	38	40	49	42	
04:15	04:30	72	56	78	69	
04:30	04:45	83	78	90	84	
04:45	05:00	86	91	86	88	282
05:00	05:15	113	142	96	117	
05:15	05:30	108	138	127	124	
05:30	05:45	154	163	150	156	
05:45	06:00	170	182	164	172	569
06:00	06:15	189	203	240	211	
06:15	06:30	241	276	247	255	
06:30	06:45	294	308	285	296	
06:45	07:00	375	405	404	395	1,156
07:00	07:15	444	493	428	455	
07:15	07:30	453	525	479	486	
07:30	07:45	557	577	553	562	
07:45	08:00	570	604	542	572	2,075
08:00	08:15	470	478	455	468	
08:15	08:30	536	558	502	532	
08:30	08:45	508	527	442	492	
08:45	09:00	423	465	379	422	1,914
09:00	09:15	458	496	393	449	
09:15	09:30	459	500	425	461	
09:30	09:45	407	480	396	428	
09:45	10:00	397	437	356	397	1,735
10:00	10:15	426	377	393	399	
10:15	10:30	373	357	367	366	
10:30	10:45	469	397	379	415	
10:45	11:00	393	348	395	379	1,558
11:00	11:15	448	395	403	415	
11:15	11:30	392	396	392	393	
11:30	11:45	414	371	344	376	
11:45	12:00	408	389	360	386	1,571

TIME PERIOD (PM)		WEEKDAY TUES 24-Mar	WED 25-Mar	THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
12:00	12:15	445	378	323	382	
12:15	12:30	534	432	478	481	
12:30	12:45	453	399	383	412	
12:45	13:00	495	459	468	474	1,749
13:00	13:15	438	487	397	441	
13:15	13:30	452	402	415	423	
13:30	13:45	518	465	410	464	
13:45	14:00	372	389	376	379	1,707
14:00	14:15	488	434	441	454	
14:15	14:30	453	363	364	393	
14:30	14:45	514	474	453	480	
14:45	15:00	481	451	411	448	1,776
15:00	15:15	564	495	520	526	
15:15	15:30	623	546	515	561	
15:30	15:45	673	545	512	577	
15:45	16:00	624	579	519	574	2,238
16:00	16:15	652	516	546	571	
16:15	16:30	609	548	562	573	
16:30	16:45	738	626	573	646	
16:45	17:00	654	639	613	635	2,425
17:00	17:15	767	664	652	694	
17:15	17:30	816	728	683	742	
17:30	17:45	679	612	617	636	
17:45	18:00	654	564	536	585	2,657
18:00	18:15	608	513	411	511	
18:15	18:30	482	449	459	463	
18:30	18:45	468	420	428	439	
18:45	19:00	411	356	382	383	1,796
19:00	19:15	350	323	331	335	
19:15	19:30	396	356	310	354	
19:30	19:45	299	279	301	293	
19:45	20:00	312	303	290	302	1,283
20:00	20:15	305	252	297	285	
20:15	20:30	296	272	256	275	
20:30	20:45	316	250	258	275	
20:45	21:00	283	269	257	270	1,104
21:00	21:15	282	243	258	261	
21:15	21:30	238	235	277	250	
21:30	21:45	225	227	222	225	
21:45	22:00	191	180	204	192	927
22:00	22:15	194	180	179	184	
22:15	22:30	185	179	186	183	
22:30	22:45	212	173	165	183	
22:45	23:00	144	177	148	156	707
23:00	23:15	148	157	169	158	
23:15	23:30	140	139	121	133	
23:30	23:45	105	116	131	117	
23:45	00:00	98	94	113	102	510
DAILY COUNT		32,222	30,316	29,160	30,566	
PEAK HOUR TIME					16:30	
PEAK HOUR COUNT					2,718	
ESTIMATED K-FACTOR					8.9%	

MECHANICAL COUNTS

PROJECT NAME: Blue Heron Boulevard Study

LOCATION: Blue Heron Boulevard at I-95 Southbound off Ramp

Notice to Proceed : 2013008.018

COUNT DATE: 3/24/2015-3/26/2015

NORTHBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	0	0	0	0	0
01:00 AM	0	0	0	0	0
02:00 AM	0	0	0	0	0
03:00 AM	0	0	0	0	0
04:00 AM	0	0	0	0	0
05:00 AM	0	0	0	0	0
06:00 AM	0	0	0	0	0
07:00 AM	0	0	0	0	0
08:00 AM	0	0	0	0	0
09:00 AM	0	0	0	0	0
10:00 AM	0	0	0	0	0
11:00 AM	0	0	0	0	0
12:00 PM	0	0	0	0	0
01:00 PM	0	0	0	0	0
02:00 PM	0	0	0	0	0
03:00 PM	0	0	0	0	0
04:00 PM	0	0	0	0	0
05:00 PM	0	0	0	0	0
06:00 PM	0	0	0	0	0
07:00 PM	0	0	0	0	0
08:00 PM	0	0	0	0	0
09:00 PM	0	0	0	0	0
10:00 PM	0	0	0	0	0
11:00 PM	0	0	0	0	0
			24 Hour Total		0

SOUTHBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	18	18	20	16	72
01:00 AM	11	16	8	9	44
02:00 AM	8	11	10	9	38
03:00 AM	12	10	13	21	56
04:00 AM	17	28	29	29	103
05:00 AM	29	47	55	79	210
06:00 AM	83	125	173	293	674
07:00 AM	252	238	251	293	1034
08:00 AM	208	213	181	175	777
09:00 AM	156	167	155	153	630
10:00 AM	151	144	136	152	583
11:00 AM	130	141	130	144	545
12:00 PM	140	155	164	164	622
01:00 PM	151	151	152	151	605
02:00 PM	146	152	161	159	618
03:00 PM	157	156	144	158	616
04:00 PM	144	166	171	144	625
05:00 PM	139	142	132	130	542
06:00 PM	128	122	118	109	476
07:00 PM	89	87	72	80	327
08:00 PM	68	60	62	60	251
09:00 PM	59	59	53	46	217
10:00 PM	45	47	39	33	164
11:00 PM	31	28	33	18	110
			24 Hour Total		9,942

EASTBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	31	42	23	21	117
01:00 AM	22	17	17	11	67
02:00 AM	16	14	18	15	63
03:00 AM	18	15	22	37	92
04:00 AM	36	51	62	58	208
05:00 AM	85	86	107	124	403
06:00 AM	150	198	243	274	865
07:00 AM	308	392	413	399	1512
08:00 AM	398	340	359	330	1426
09:00 AM	312	284	308	302	1206
10:00 AM	259	275	300	302	1136
11:00 AM	260	301	298	300	1159
12:00 PM	304	277	287	277	1145
01:00 PM	273	283	262	273	1091
02:00 PM	270	279	338	291	1178
03:00 PM	302	314	350	341	1308
04:00 PM	375	320	450	380	1525
05:00 PM	358	320	335	276	1289
06:00 PM	274	221	231	200	926
07:00 PM	196	163	177	136	672
08:00 PM	139	118	126	104	487
09:00 PM	112	98	83	84	376
10:00 PM	84	74	74	52	284
11:00 PM	57	69	55	58	240
			24 Hour Total		18,775

WESTBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	87	90	70	54	302
01:00 AM	46	54	45	41	185
02:00 AM	41	40	32	38	152
03:00 AM	33	46	59	49	187
04:00 AM	42	69	84	88	282
05:00 AM	117	124	156	172	569
06:00 AM	211	255	296	395	1156
07:00 AM	455	486	562	572	2075
08:00 AM	468	532	492	422	1914
09:00 AM	449	461	428	397	1735
10:00 AM	399	366	415	379	1558
11:00 AM	415	393	376	386	1571
12:00 PM	382	481	412	474	1749
01:00 PM	441	423	464	379	1707
02:00 PM	454	393	480	448	1776
03:00 PM	526	561	577	574	2238
04:00 PM	571	573	646	635	2425
05:00 PM	694	742	636	585	2657
06:00 PM	511	463	439	383	1796
07:00 PM	335	354	293	302	1283
08:00 PM	285	275	275	270	1104
09:00 PM	261	250	225	192	927
10:00 PM	184	183	183	156	707
11:00 PM	158	133	117	102	510
			24 Hour Total		30,566

ALL

TOTAL
491
296
252
335
593
1181
2694
4621
4117
3571
3277
3275
3517
3403
3572
4162
4576
4489
3198
2283
1842
1521
1156
860
59,283

DAILY TRAFFIC COUNT SUMMARY

NORTHBOUND

A.M. Peak Hour, Time: 12:00 AM Volume: 0
A.M. "K" Factor: #DIV/0! P.H.F. : #DIV/0!

P.M. Peak Hour, Time: 12:00 PM Volume: 0
P.M. "K" Factor: #DIV/0! P.H.F. : #DIV/0!

SOUTHBOUND

A.M. Peak Hour, Time: 06:45 AM Volume: 1,034
A.M. "K" Factor: 10.4% P.H.F. : 0.88

P.M. Peak Hour, Time: 03:45 PM Volume: 639
P.M. "K" Factor: 6.4% P.H.F. : 0.93

DAILY TRAFFIC COUNT SUMMARY

EASTBOUND

A.M. Peak Hour, Time: 07:15 AM Volume: 1,602
A.M. "K" Factor: 8.5% P.H.F. : 0.97

P.M. Peak Hour, Time: 04:00 PM Volume: 1,525
P.M. "K" Factor: 8.1% P.H.F. : 0.85

WESTBOUND

A.M. Peak Hour, Time: 07:30 AM Volume: 2,134
A.M. "K" Factor: 7.0% P.H.F. : 0.93

P.M. Peak Hour, Time: 04:30 PM Volume: 2,718
P.M. "K" Factor: 8.9% P.H.F. : 0.92

ALL APPROACHES:

A.M. Peak Hour, Time: 07:15 AM Volume: 4,680
A.M. "K" Factor: 7.9% P.H.F. : 0.93

P.M. Peak Hour, Time: 04:30 PM Volume: 4,822
P.M. "K" Factor: 8.1% P.H.F. : 0.95

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at I-95 SB off Ramp 03032015
Site Code :
Start Date : 3/3/2015
Page No : 1

Groups Printed- Autos - Heavy Vehicles - Bicycles - Pedestrians

	Blue Heron Blvd Eastbound				Blue Heron Blvd Westbound				I-95 SB on-Ramp Northbound		I-95 SB off-Ramp Southbound					
Start Time	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	39	110	0	149	80	127	0	207	0	0	52	0	32	0	84	440
06:15 AM	84	131	0	215	88	148	0	236	0	0	65	0	41	1	107	558
06:30 AM	107	120	0	227	143	156	0	299	0	0	147	0	79	4	230	756
06:45 AM	137	120	0	257	161	276	0	437	0	0	184	0	71	0	255	949
Total	367	481	0	848	472	707	0	1179	0	0	448	0	223	5	676	2703
07:00 AM	148	167	0	315	184	248	0	432	0	0	205	0	92	1	298	1045
07:15 AM	214	211	0	425	173	253	0	426	0	0	173	0	124	0	297	1148
07:30 AM	262	206	0	468	230	287	0	517	0	0	133	0	102	2	237	1222
07:45 AM	243	187	0	430	220	263	0	483	0	0	196	0	168	3	367	1280
Total	867	771	0	1638	807	1051	0	1858	0	0	707	0	486	6	1199	4695
08:00 AM	243	179	0	422	168	271	0	439	0	0	172	0	102	0	274	1135
08:15 AM	196	161	0	357	197	282	0	479	0	0	133	0	82	0	215	1051
08:30 AM	247	161	0	408	169	215	0	384	2	2	123	0	84	0	207	1001
08:45 AM	217	135	0	352	206	248	0	454	0	0	95	0	66	0	161	967
Total	903	636	0	1539	740	1016	0	1756	2	2	523	0	334	0	857	4154
BREAK																
04:00 PM	228	162	0	390	258	291	0	549	0	0	107	0	67	0	174	1113
04:15 PM	234	146	0	380	268	285	0	553	0	0	70	0	76	0	146	1079
04:30 PM	216	160	0	376	307	286	0	593	0	0	84	0	63	0	147	1116
04:45 PM	262	126	0	388	273	309	0	582	1	1	97	0	35	0	132	1103
Total	940	594	0	1534	1106	1171	0	2277	1	1	358	0	241	0	599	4411
05:00 PM	231	163	0	394	346	341	0	687	0	0	62	0	40	0	102	1183
05:15 PM	192	144	0	336	338	362	0	700	0	0	86	0	43	0	129	1165
05:30 PM	227	135	0	362	253	299	0	552	0	0	70	0	54	0	124	1038
05:45 PM	167	112	0	279	253	196	0	449	0	0	67	0	49	0	116	844
Total	817	554	0	1371	1190	1198	0	2388	0	0	285	0	186	0	471	4230
06:00 PM	155	104	0	259	233	483	0	716	0	0	66	0	38	0	104	1079
06:15 PM	161	97	0	258	188	280	0	468	0	0	59	0	36	0	95	821
06:30 PM	152	100	0	252	207	244	0	451	0	0	69	0	49	0	118	821
06:45 PM	137	67	0	204	169	255	0	424	0	0	64	0	43	0	107	735
Total	605	368	0	973	797	1262	0	2059	0	0	258	0	166	0	424	3456
Grand Total	4499	3404	0	7903	5112	6405	0	11517	3	3	2579	0	1636	11	4226	23649
Apprch %	56.9	43.1	0		44.4	55.6	0		100		61	0	38.7	0.3		
Total %	19	14.4	0	33.4	21.6	27.1	0	48.7	0	0	10.9	0	6.9	0	17.9	
Autos	4238	3270	0	7508	4911	6135	0	11046	0	0	2288	0	1582	0	3870	22424
% Autos	94.2	96.1	0	95	96.1	95.8	0	95.9	0	0	88.7	0	96.7	0	91.6	94.8
Heavy Vehicles	261	134	0	395	201	270	0	471	0	0	291	0	54	0	345	1211
% Heavy Vehicles	5.8	3.9	0	5	3.9	4.2	0	4.1	0	0	11.3	0	3.3	0	8.2	5.1
Bicycles	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	2
% Bicycles	0	0	0	0	0	0	0	0	66.7	66.7	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	1	1	0	0	0	11	11	12
% Pedestrians	0	0	0	0	0	0	0	0	33.3	33.3	0	0	0	100	0.3	0.1

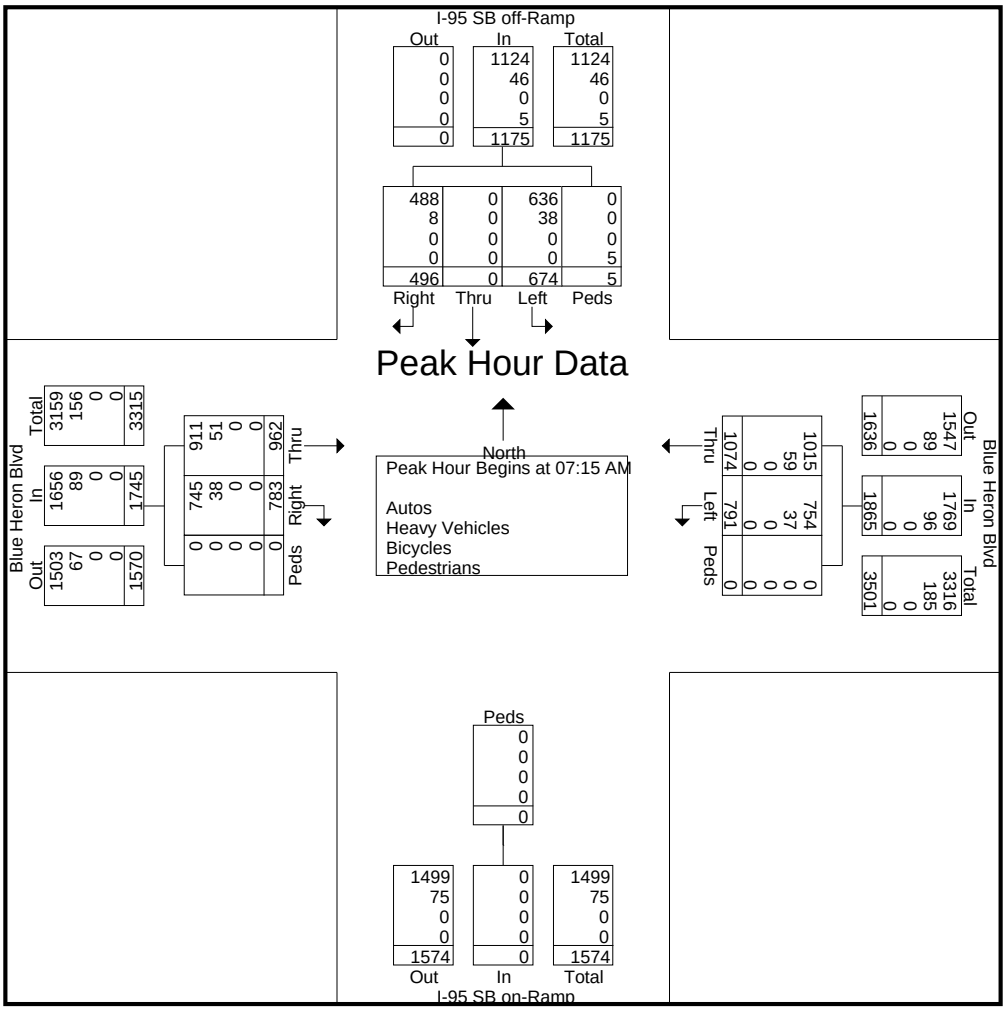
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at I-95 SB off Ramp 03032015
Site Code :
Start Date : 3/3/2015
Page No : 2

	Blue Heron Blvd Eastbound				Blue Heron Blvd Westbound				I-95 SB on-Ramp Northbound		I-95 SB off-Ramp Southbound					
Start Time	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																
Peak Hour for Entire Intersection Begins at 07:15 AM																
07:15 AM	214	211	0	425	173	253	0	426	0	0	173	0	124	0	297	1148
07:30 AM	262	206	0	468	230	287	0	517	0	0	133	0	102	2	237	1222
07:45 AM	243	187	0	430	220	263	0	483	0	0	196	0	168	3	367	1280
08:00 AM	243	179	0	422	168	271	0	439	0	0	172	0	102	0	274	1135
Total Volume	962	783	0	1745	791	1074	0	1865	0	0	674	0	496	5	1175	4785
% App. Total	55.1	44.9	0		42.4	57.6	0		0		57.4	0	42.2	0.4		
PHF	.918	.928	.000	.932	.860	.936	.000	.902	.000	.000	.860	.000	.738	.417	.800	.935
Autos	911	745	0	1656	754	1015	0	1769	0	0	636	0	488	0	1124	4549
% Autos	94.7	95.1	0	94.9	95.3	94.5	0	94.9	0	0	94.4	0	98.4	0	95.7	95.1
Heavy Vehicles	51	38	0	89	37	59	0	96	0	0	38	0	8	0	46	231
% Heavy Vehicles	5.3	4.9	0	5.1	4.7	5.5	0	5.1	0	0	5.6	0	1.6	0	3.9	4.8
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	5
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0.4	0.1



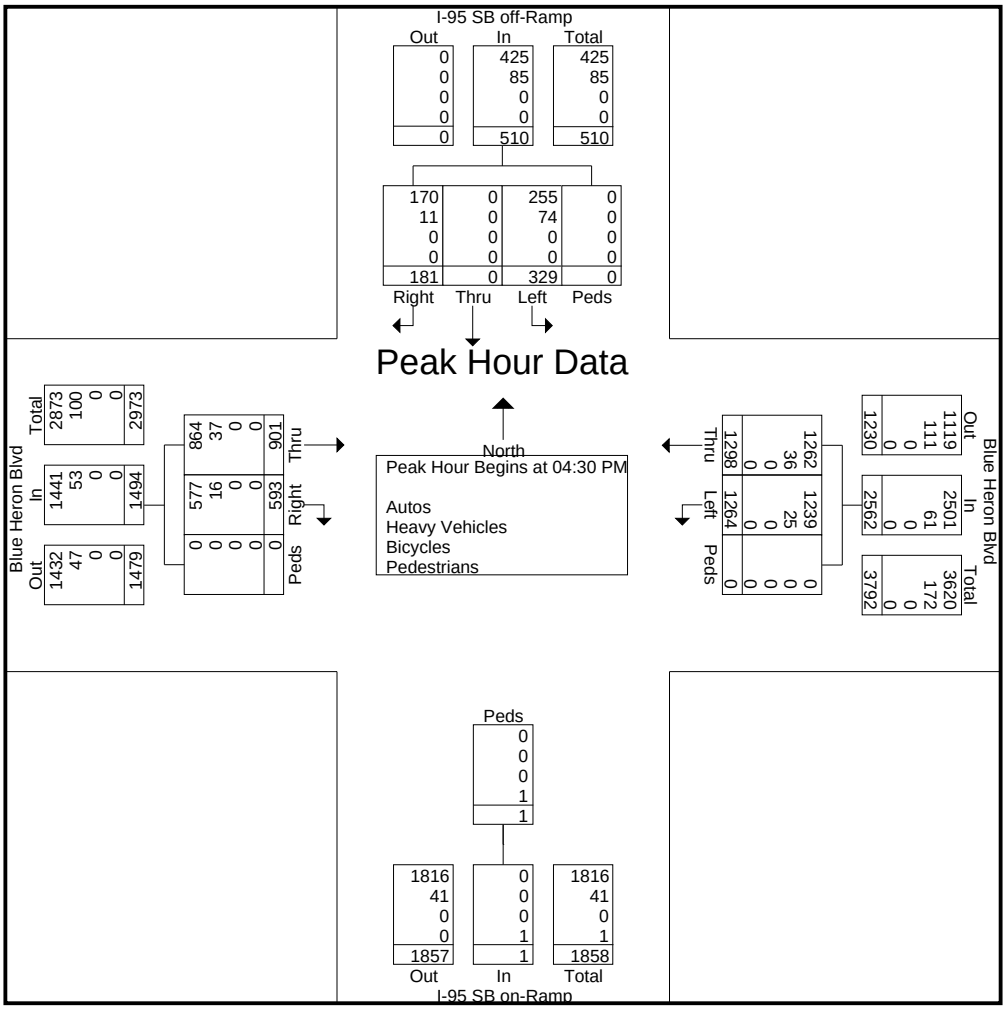
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at I-95 SB off Ramp 03032015
Site Code :
Start Date : 3/3/2015
Page No : 3

	Blue Heron Blvd Eastbound				Blue Heron Blvd Westbound				I-95 SB on-Ramp Northbound		I-95 SB off-Ramp Southbound					
Start Time	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																
Peak Hour for Entire Intersection Begins at 04:30 PM																
04:30 PM	216	160	0	376	307	286	0	593	0	0	84	0	63	0	147	1116
04:45 PM	262	126	0	388	273	309	0	582	1	1	97	0	35	0	132	1103
05:00 PM	231	163	0	394	346	341	0	687	0	0	62	0	40	0	102	1183
05:15 PM	192	144	0	336	338	362	0	700	0	0	86	0	43	0	129	1165
Total Volume	901	593	0	1494	1264	1298	0	2562	1	1	329	0	181	0	510	4567
% App. Total	60.3	39.7	0		49.3	50.7	0		100		64.5	0	35.5	0		
PHF	.860	.910	.000	.948	.913	.896	.000	.915	.250	.250	.848	.000	.718	.000	.867	.965
Autos	864	577	0	1441	1239	1262	0	2501	0	0	255	0	170	0	425	4367
% Autos	95.9	97.3	0	96.5	98.0	97.2	0	97.6	0	0	77.5	0	93.9	0	83.3	95.6
Heavy Vehicles	37	16	0	53	25	36	0	61	0	0	74	0	11	0	85	199
% Heavy Vehicles	4.1	2.7	0	3.5	2.0	2.8	0	2.4	0	0	22.5	0	6.1	0	16.7	4.4
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1
% Pedestrians	0	0	0	0	0	0	0	0	100	100	0	0	0	0	0	0.0



CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at I-95 SB off Ramp 03032015
Site Code :
Start Date : 3/3/2015
Page No : 1

Groups Printed- Heavy Vehicles

	Blue Heron Blvd Eastbound				Blue Heron Blvd Westbound				I-95 SB on-Ramp Northbound		I-95 SB off-Ramp Southbound					
Start Time	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	4	7	0	11	7	10	0	17	0	0	9	0	2	0	11	39
06:15 AM	11	3	0	14	8	17	0	25	0	0	7	0	1	0	8	47
06:30 AM	10	4	0	14	16	12	0	28	0	0	4	0	2	0	6	48
06:45 AM	16	6	0	22	8	8	0	16	0	0	4	0	4	0	8	46
Total	41	20	0	61	39	47	0	86	0	0	24	0	9	0	33	180
07:00 AM	9	6	0	15	14	22	0	36	0	0	8	0	1	0	9	60
07:15 AM	10	6	0	16	8	15	0	23	0	0	10	0	1	0	11	50
07:30 AM	21	12	0	33	9	10	0	19	0	0	5	0	2	0	7	59
07:45 AM	14	14	0	28	9	21	0	30	0	0	13	0	2	0	15	73
Total	54	38	0	92	40	68	0	108	0	0	36	0	6	0	42	242
08:00 AM	6	6	0	12	11	13	0	24	0	0	10	0	3	0	13	49
08:15 AM	13	6	0	19	9	20	0	29	0	0	10	0	3	0	13	61
08:30 AM	13	10	0	23	15	15	0	30	0	0	10	0	3	0	13	66
08:45 AM	16	11	0	27	13	24	0	37	0	0	8	0	2	0	10	74
Total	48	33	0	81	48	72	0	120	0	0	38	0	11	0	49	250
BREAK																
04:00 PM	11	4	0	15	9	12	0	21	0	0	19	0	1	0	20	56
04:15 PM	18	3	0	21	9	6	0	15	0	0	13	0	7	0	20	56
04:30 PM	10	6	0	16	6	13	0	19	0	0	18	0	7	0	25	60
04:45 PM	9	1	0	10	6	4	0	10	0	0	24	0	0	0	24	44
Total	48	14	0	62	30	35	0	65	0	0	74	0	15	0	89	216
05:00 PM	9	4	0	13	7	9	0	16	0	0	14	0	4	0	18	47
05:15 PM	9	5	0	14	6	10	0	16	0	0	18	0	0	0	18	48
05:30 PM	5	5	0	10	6	6	0	12	0	0	14	0	2	0	16	38
05:45 PM	7	5	0	12	8	10	0	18	0	0	19	0	2	0	21	51
Total	30	19	0	49	27	35	0	62	0	0	65	0	8	0	73	184
06:00 PM	10	0	0	10	4	4	0	8	0	0	10	0	2	0	12	30
06:15 PM	12	5	0	17	1	5	0	6	0	0	11	0	2	0	13	36
06:30 PM	10	4	0	14	6	3	0	9	0	0	20	0	1	0	21	44
06:45 PM	8	1	0	9	6	1	0	7	0	0	13	0	0	0	13	29
Total	40	10	0	50	17	13	0	30	0	0	54	0	5	0	59	139
Grand Total	261	134	0	395	201	270	0	471	0	0	291	0	54	0	345	1211
Apprch %	66.1	33.9	0		42.7	57.3	0		0		84.3	0	15.7	0		
Total %	21.6	11.1	0	32.6	16.6	22.3	0	38.9	0	0	24	0	4.5	0	28.5	

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at I-95 SB off Ramp 03042015
Site Code :
Start Date : 3/4/2015
Page No : 1

Groups Printed- Autos - Heavy Vehicles - Bicycles - Pedestrians

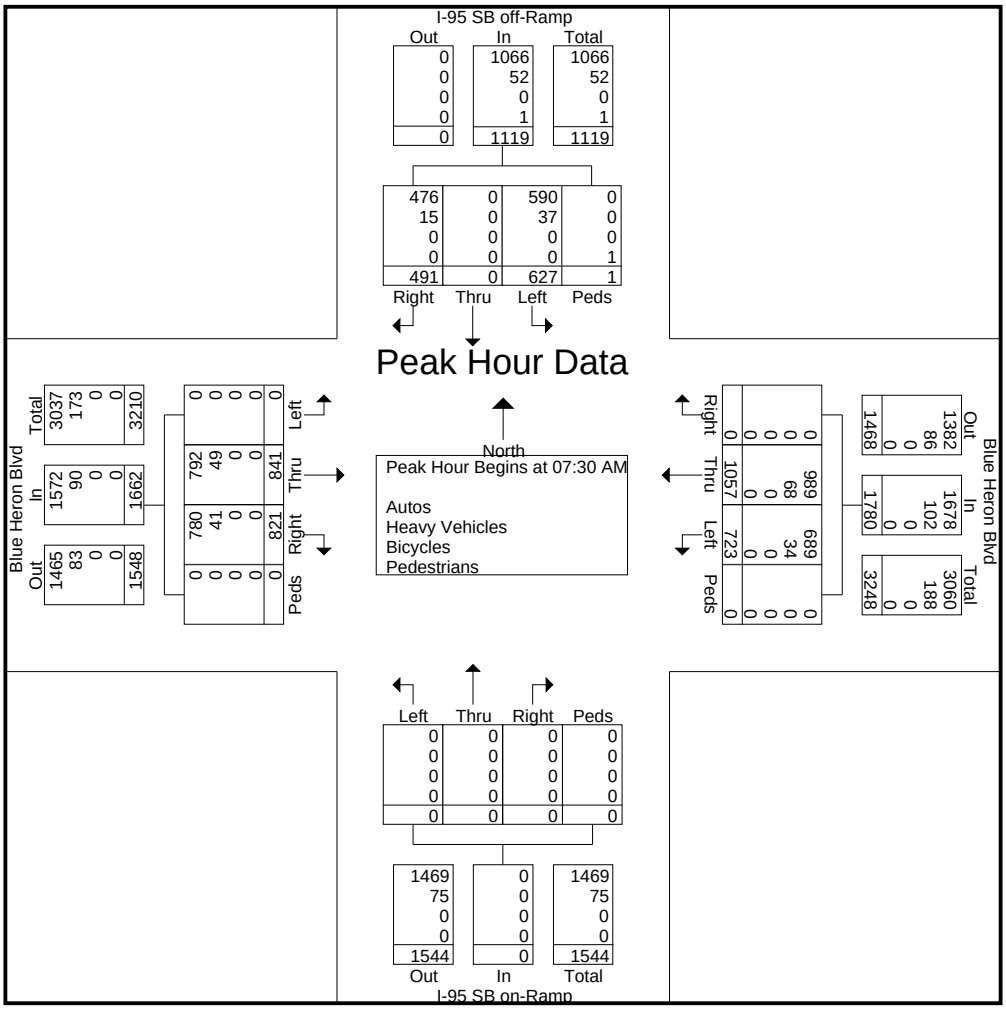
	Blue Heron Blvd Eastbound					Blue Heron Blvd Westbound					I-95 SB on-Ramp Northbound					I-95 SB off-Ramp Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	42	89	0	131	89	103	0	0	192	0	0	0	0	0	70	0	27	2	99	422
06:15 AM	0	81	93	0	174	98	160	0	0	258	0	0	0	0	0	89	0	43	0	132	564
06:30 AM	0	112	101	0	213	150	166	0	0	316	0	0	0	0	0	216	0	84	2	302	831
06:45 AM	0	168	105	0	273	183	217	0	0	400	0	0	0	0	0	261	0	59	0	320	993
Total	0	403	388	0	791	520	646	0	0	1166	0	0	0	0	0	636	0	213	4	853	2810
07:00 AM	0	138	181	0	319	185	246	0	0	431	1	0	0	0	1	151	1	105	0	257	1008
07:15 AM	0	141	220	0	361	159	248	0	0	407	0	0	0	0	0	129	0	119	0	248	1016
07:30 AM	0	198	239	0	437	190	290	0	0	480	0	0	0	0	0	136	0	116	0	252	1169
07:45 AM	0	172	229	0	401	163	284	0	0	447	0	0	0	0	0	174	0	165	0	339	1187
Total	0	649	869	0	1518	697	1068	0	0	1765	1	0	0	0	1	590	1	505	0	1096	4380
08:00 AM	0	210	173	0	383	171	238	0	0	409	0	0	0	0	0	181	0	126	0	307	1099
08:15 AM	0	261	180	0	441	199	245	0	0	444	0	0	0	0	0	136	0	84	1	221	1106
08:30 AM	0	291	163	0	454	172	204	0	0	376	0	0	0	0	0	137	0	94	0	231	1061
08:45 AM	0	282	156	0	438	165	240	0	0	405	0	0	0	0	0	114	0	87	0	201	1044
Total	0	1044	672	0	1716	707	927	0	0	1634	0	0	0	0	0	568	0	391	1	960	4310
BREAK																					
04:00 PM	0	212	138	0	350	255	268	0	0	523	0	0	0	0	0	83	0	66	0	149	1022
04:15 PM	0	242	131	0	373	210	277	0	0	487	0	0	0	0	0	75	0	50	0	125	985
04:30 PM	0	232	164	0	396	324	283	0	0	607	0	0	0	0	0	81	0	72	0	153	1156
04:45 PM	0	207	141	0	348	262	325	0	0	587	0	0	0	0	0	90	0	63	0	153	1088
Total	0	893	574	0	1467	1051	1153	0	0	2204	0	0	0	0	0	329	0	251	0	580	4251
05:00 PM	0	269	148	0	417	367	298	0	0	665	0	0	0	0	0	75	0	58	0	133	1215
05:15 PM	0	193	131	0	324	325	342	0	0	667	0	0	0	2	2	71	0	60	0	131	1124
05:30 PM	0	205	151	0	356	283	285	0	0	568	0	0	0	0	0	75	0	71	0	146	1070
05:45 PM	0	165	148	0	313	251	271	0	0	522	0	0	0	0	0	58	0	59	0	117	952
Total	0	832	578	0	1410	1226	1196	0	0	2422	0	0	0	2	2	279	0	248	0	527	4361
06:00 PM	0	185	106	0	291	210	300	0	0	510	0	0	0	0	0	62	0	55	0	117	918
06:15 PM	0	151	102	0	253	232	273	0	0	505	0	0	0	0	0	59	0	53	0	112	870
06:30 PM	0	154	94	0	248	190	205	0	0	395	0	0	0	0	0	78	0	41	0	119	762
06:45 PM	0	115	77	0	192	225	225	0	0	450	0	0	0	0	0	47	0	41	0	88	730
Total	0	605	379	0	984	857	1003	0	0	1860	0	0	0	0	0	246	0	190	0	436	3280
Grand Total	0	4426	3460	0	7886	5058	5993	0	0	11051	1	0	0	2	3	2648	1	1798	5	4452	23392
Apprch %	0	56.1	43.9	0		45.8	54.2	0	0		33.3	0	0	66.7		59.5	0	40.4	0.1		
Total %	0	18.9	14.8	0	33.7	21.6	25.6	0	0	47.2	0	0	0	0	0	11.3	0	7.7	0	19	
Autos	0	4182	3302	0	7484	4887	5697	0	0	10584	1	0	0	0	1	2356	1	1729	0	4086	22155
% Autos	0	94.5	95.4	0	94.9	96.6	95.1	0	0	95.8	100	0	0	0	33.3	89	100	96.2	0	91.8	94.7
Heavy Vehicles	0	244	158	0	402	171	296	0	0	467	0	0	0	0	0	292	0	69	0	361	1230
% Heavy Vehicles	0	5.5	4.6	0	5.1	3.4	4.9	0	0	4.2	0	0	0	0	0	11	0	3.8	0	8.1	5.3
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	50	33.3	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	5	5	6
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	50	33.3	0	0	0	100	0.1	0

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

File Name : Blue Heron Blvd at I-95 SB off Ramp 03042015
Site Code :
Start Date : 3/4/2015
Page No : 2

	Blue Heron Blvd Eastbound					Blue Heron Blvd Westbound					I-95 SB on-Ramp Northbound					I-95 SB off-Ramp Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	198	239	0	437	190	290	0	0	480	0	0	0	0	0	136	0	116	0	252	1169
07:45 AM	0	172	229	0	401	163	284	0	0	447	0	0	0	0	0	174	0	165	0	339	1187
08:00 AM	0	210	173	0	383	171	238	0	0	409	0	0	0	0	0	181	0	126	0	307	1099
08:15 AM	0	261	180	0	441	199	245	0	0	444	0	0	0	0	0	136	0	84	1	221	1106
Total Volume	0	841	821	0	1662	723	1057	0	0	1780	0	0	0	0	0	627	0	491	1	1119	4561
% App. Total	0	50.6	49.4	0		40.6	59.4	0	0		0	0	0	0		56	0	43.9	0.1		
PHF	.000	.806	.859	.000	.942	.908	.911	.000	.000	.927	.000	.000	.000	.000	.000	.866	.000	.744	.250	.825	.961
Autos	0	792	780	0	1572	689	989	0	0	1678	0	0	0	0	0	590	0	476	0	1066	4316
% Autos	0	94.2	95.0	0	94.6	95.3	93.6	0	0	94.3	0	0	0	0	0	94.1	0	96.9	0	95.3	94.6
Heavy Vehicles	0	49	41	0	90	34	68	0	0	102	0	0	0	0	0	37	0	15	0	52	244
% Heavy Vehicles	0	5.8	5.0	0	5.4	4.7	6.4	0	0	5.7	0	0	0	0	0	5.9	0	3.1	0	4.6	5.3
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0.1	0.0

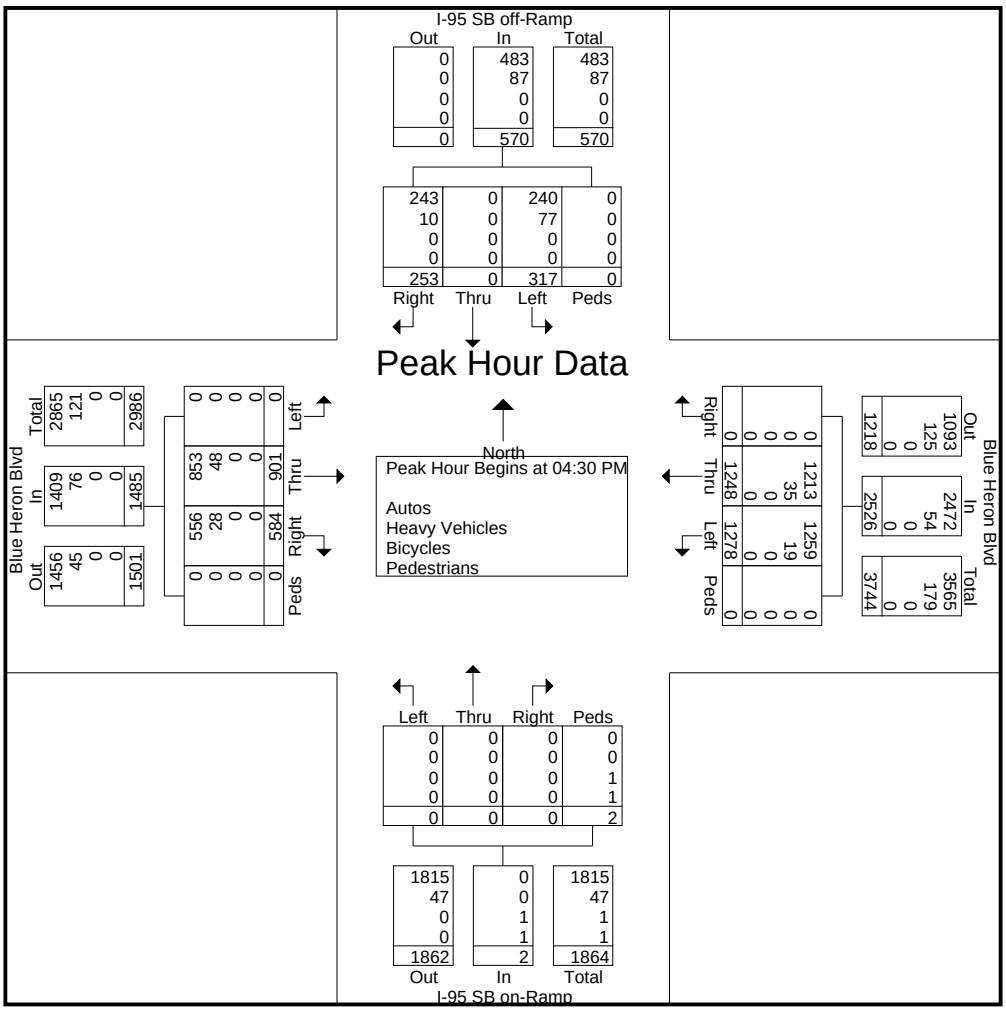


CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

File Name : Blue Heron Blvd at I-95 SB off Ramp 03042015
Site Code :
Start Date : 3/4/2015
Page No : 3

	Blue Heron Blvd Eastbound					Blue Heron Blvd Westbound					I-95 SB on-Ramp Northbound					I-95 SB off-Ramp Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	232	164	0	396	324	283	0	0	607	0	0	0	0	0	81	0	72	0	153	1156
04:45 PM	0	207	141	0	348	262	325	0	0	587	0	0	0	0	0	90	0	63	0	153	1088
05:00 PM	0	269	148	0	417	367	298	0	0	665	0	0	0	0	0	75	0	58	0	133	1215
05:15 PM	0	193	131	0	324	325	342	0	0	667	0	0	0	2	2	71	0	60	0	131	1124
Total Volume	0	901	584	0	1485	1278	1248	0	0	2526	0	0	0	2	2	317	0	253	0	570	4583
% App. Total	0	60.7	39.3	0		50.6	49.4	0	0		0	0	0	100		55.6	0	44.4	0		
PHF	.000	.837	.890	.000	.890	.871	.912	.000	.000	.947	.000	.000	.000	.250	.250	.881	.000	.878	.000	.931	.943
Autos	0	853	556	0	1409	1259	1213	0	0	2472	0	0	0	0	0	240	0	243	0	483	4364
% Autos	0	94.7	95.2	0	94.9	98.5	97.2	0	0	97.9	0	0	0	0	0	75.7	0	96.0	0	84.7	95.2
Heavy Vehicles	0	48	28	0	76	19	35	0	0	54	0	0	0	0	0	77	0	10	0	87	217
% Heavy Vehicles	0	5.3	4.8	0	5.1	1.5	2.8	0	0	2.1	0	0	0	0	0	24.3	0	4.0	0	15.3	4.7
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	50.0	50.0	0	0	0	0	0	0.0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	50.0	50.0	0	0	0	0	0	0.0



CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at I-95 SB off Ramp 03042015
Site Code :
Start Date : 3/4/2015
Page No : 1

Groups Printed- Heavy Vehicles

	Blue Heron Blvd Eastbound					Blue Heron Blvd Westbound					I-95 SB on-Ramp Northbound					I-95 SB off-Ramp Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	2	5	0	7	9	9	0	0	18	0	0	0	0	0	8	0	2	0	10	35
06:15 AM	0	6	3	0	9	14	16	0	0	30	0	0	0	0	0	9	0	2	0	11	50
06:30 AM	0	8	8	0	16	10	15	0	0	25	0	0	0	0	0	4	0	4	0	8	49
06:45 AM	0	18	7	0	25	10	9	0	0	19	0	0	0	0	0	6	0	3	0	9	53
Total	0	34	23	0	57	43	49	0	0	92	0	0	0	0	0	27	0	11	0	38	187
07:00 AM	0	6	6	0	12	12	16	0	0	28	0	0	0	0	0	11	0	1	0	12	52
07:15 AM	0	9	9	0	18	6	19	0	0	25	0	0	0	0	0	9	0	4	0	13	56
07:30 AM	0	10	12	0	22	7	14	0	0	21	0	0	0	0	0	10	0	1	0	11	54
07:45 AM	0	11	9	0	20	6	22	0	0	28	0	0	0	0	0	8	0	5	0	13	61
Total	0	36	36	0	72	31	71	0	0	102	0	0	0	0	0	38	0	11	0	49	223
08:00 AM	0	11	5	0	16	10	16	0	0	26	0	0	0	0	0	11	0	6	0	17	59
08:15 AM	0	17	15	0	32	11	16	0	0	27	0	0	0	0	0	8	0	3	0	11	70
08:30 AM	0	12	11	0	23	7	21	0	0	28	0	0	0	0	0	13	0	5	0	18	69
08:45 AM	0	17	11	0	28	14	32	0	0	46	0	0	0	0	0	19	0	2	0	21	95
Total	0	57	42	0	99	42	85	0	0	127	0	0	0	0	0	51	0	16	0	67	293
BREAK																					
04:00 PM	0	10	5	0	15	5	11	0	0	16	0	0	0	0	0	20	0	7	0	27	58
04:15 PM	0	13	1	0	14	6	9	0	0	15	0	0	0	0	0	16	0	4	0	20	49
04:30 PM	0	9	10	0	19	6	12	0	0	18	0	0	0	0	0	20	0	2	0	22	59
04:45 PM	0	11	8	0	19	1	7	0	0	8	0	0	0	0	0	22	0	3	0	25	52
Total	0	43	24	0	67	18	39	0	0	57	0	0	0	0	0	78	0	16	0	94	218
05:00 PM	0	20	7	0	27	4	8	0	0	12	0	0	0	0	0	21	0	5	0	26	65
05:15 PM	0	8	3	0	11	8	8	0	0	16	0	0	0	0	0	14	0	0	0	14	41
05:30 PM	0	4	4	0	8	1	6	0	0	7	0	0	0	0	0	17	0	0	0	17	32
05:45 PM	0	8	6	0	14	4	3	0	0	7	0	0	0	0	0	9	0	3	0	12	33
Total	0	40	20	0	60	17	25	0	0	42	0	0	0	0	0	61	0	8	0	69	171
06:00 PM	0	10	1	0	11	5	10	0	0	15	0	0	0	0	0	8	0	4	0	12	38
06:15 PM	0	9	6	0	15	7	8	0	0	15	0	0	0	0	0	8	0	2	0	10	40
06:30 PM	0	6	3	0	9	5	3	0	0	8	0	0	0	0	0	12	0	1	0	13	30
06:45 PM	0	9	3	0	12	3	6	0	0	9	0	0	0	0	0	9	0	0	0	9	30
Total	0	34	13	0	47	20	27	0	0	47	0	0	0	0	0	37	0	7	0	44	138
Grand Total	0	244	158	0	402	171	296	0	0	467	0	0	0	0	0	292	0	69	0	361	1230
Apprch %	0	60.7	39.3	0		36.6	63.4	0	0		0	0	0	0		80.9	0	19.1	0		
Total %	0	19.8	12.8	0	32.7	13.9	24.1	0	0	38	0	0	0	0	0	23.7	0	5.6	0	29.3	

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at I-95 SB off Ramp 03052015
Site Code :
Start Date : 3/5/2015
Page No : 1

Groups Printed- Autos - Heavy Vehicles - Bicycles - Pedestrians

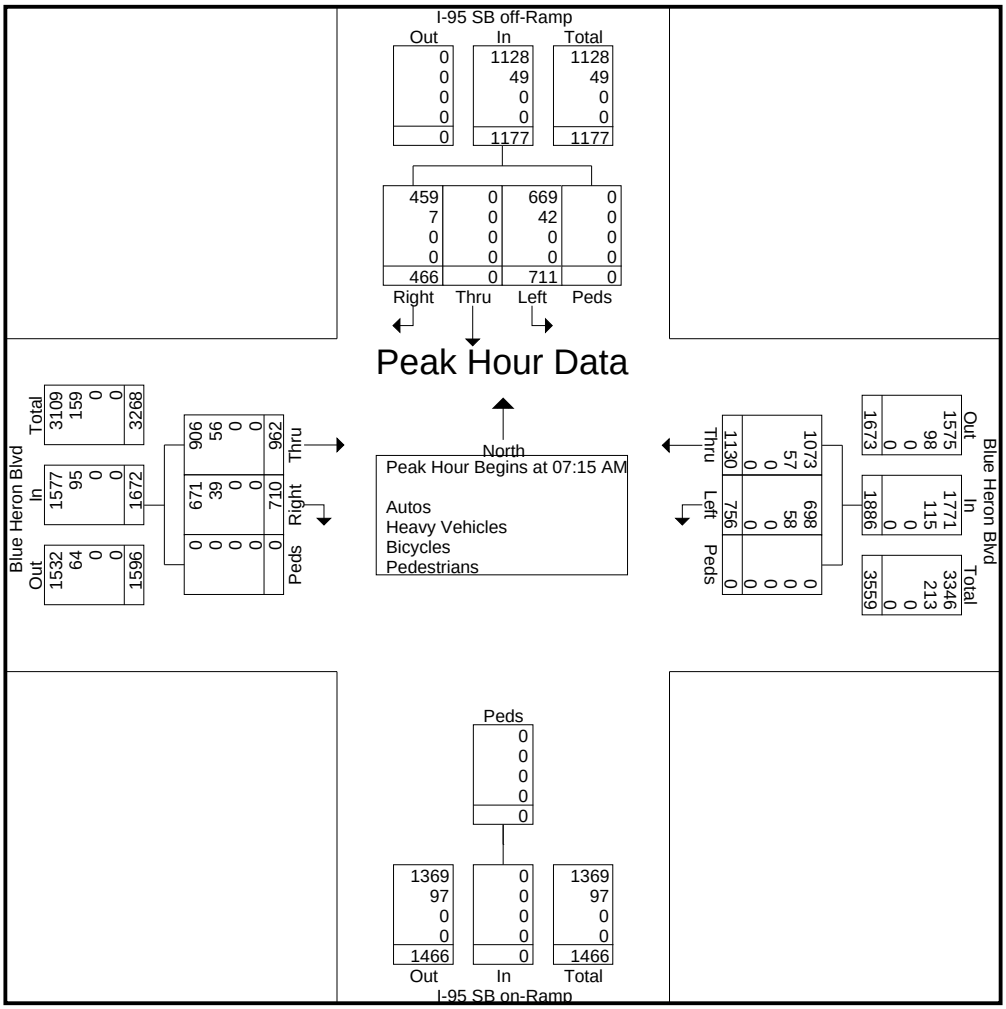
	Blue Heron Blvd Eastbound				Blue Heron Blvd Westbound				I-95 SB on-Ramp Northbound		I-95 SB off-Ramp Southbound					
Start Time	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	49	84	0	133	87	111	0	198	0	0	43	0	43	1	87	418
06:15 AM	64	138	0	202	116	119	0	235	0	0	82	0	51	0	133	570
06:30 AM	122	102	0	224	109	172	0	281	0	0	129	0	75	1	205	710
06:45 AM	148	113	0	261	155	237	0	392	0	0	178	0	94	0	272	925
Total	383	437	0	820	467	639	0	1106	0	0	432	0	263	2	697	2623
07:00 AM	153	168	0	321	189	255	0	444	0	0	202	0	79	0	281	1046
07:15 AM	203	181	0	384	160	266	0	426	0	0	178	0	108	0	286	1096
07:30 AM	259	166	0	425	220	328	0	548	0	0	144	0	113	0	257	1230
07:45 AM	243	183	0	426	205	279	0	484	0	0	206	0	150	0	356	1266
Total	858	698	0	1556	774	1128	0	1902	0	0	730	0	450	0	1180	4638
08:00 AM	257	180	0	437	171	257	0	428	0	0	183	0	95	0	278	1143
08:15 AM	187	177	0	364	218	222	0	440	0	0	131	0	68	0	199	1003
08:30 AM	231	177	0	408	196	195	0	391	0	0	134	0	84	0	218	1017
08:45 AM	202	131	0	333	181	182	0	363	0	0	100	0	46	0	146	842
Total	877	665	0	1542	766	856	0	1622	0	0	548	0	293	0	841	4005
BREAK																
04:00 PM	215	160	0	375	251	300	0	551	1	1	107	0	49	3	159	1086
04:15 PM	223	139	0	362	289	301	0	590	3	3	84	0	42	0	126	1081
04:30 PM	210	149	0	359	344	322	0	666	0	0	89	0	51	1	141	1166
04:45 PM	247	157	0	404	293	297	0	590	0	0	93	1	41	2	137	1131
Total	895	605	0	1500	1177	1220	0	2397	4	4	373	1	183	6	563	4464
05:00 PM	220	147	0	367	349	383	0	732	0	0	59	0	56	0	115	1214
05:15 PM	194	130	0	324	359	357	0	716	0	0	98	0	74	0	172	1212
05:30 PM	243	148	0	391	270	349	0	619	0	0	83	0	72	0	155	1165
05:45 PM	140	119	0	259	258	329	0	587	0	0	54	0	45	0	99	945
Total	797	544	0	1341	1236	1418	0	2654	0	0	294	0	247	0	541	4536
06:00 PM	167	111	0	278	274	242	0	516	0	0	59	0	61	0	120	914
06:15 PM	152	101	0	253	265	246	0	511	0	0	69	0	49	0	118	882
06:30 PM	152	100	0	252	209	208	0	417	1	1	52	0	45	0	97	767
06:45 PM	127	88	0	215	182	165	0	347	0	0	59	0	44	0	103	665
Total	598	400	0	998	930	861	0	1791	1	1	239	0	199	0	438	3228
Grand Total	4408	3349	0	7757	5350	6122	0	11472	5	5	2616	1	1635	8	4260	23494
Apprch %	56.8	43.2	0		46.6	53.4	0		100		61.4	0	38.4	0.2		
Total %	18.8	14.3	0	33	22.8	26.1	0	48.8	0	0	11.1	0	7	0	18.1	
Autos	4140	3189	0	7329	5134	5850	0	10984	0	0	2321	1	1574	0	3896	22209
% Autos	93.9	95.2	0	94.5	96	95.6	0	95.7	0	0	88.7	100	96.3	0	91.5	94.5
Heavy Vehicles	268	160	0	428	216	272	0	488	0	0	295	0	61	0	356	1272
% Heavy Vehicles	6.1	4.8	0	5.5	4	4.4	0	4.3	0	0	11.3	0	3.7	0	8.4	5.4
Bicycles	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	3
% Bicycles	0	0	0	0	0	0	0	0	60	60	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	2	2	0	0	0	8	8	10
% Pedestrians	0	0	0	0	0	0	0	0	40	40	0	0	0	100	0.2	0

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

File Name : Blue Heron Blvd at I-95 SB off Ramp 03052015
Site Code :
Start Date : 3/5/2015
Page No : 2

	Blue Heron Blvd Eastbound				Blue Heron Blvd Westbound				I-95 SB on-Ramp Northbound		I-95 SB off-Ramp Southbound					
Start Time	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																
Peak Hour for Entire Intersection Begins at 07:15 AM																
07:15 AM	203	181	0	384	160	266	0	426	0	0	178	0	108	0	286	1096
07:30 AM	259	166	0	425	220	328	0	548	0	0	144	0	113	0	257	1230
07:45 AM	243	183	0	426	205	279	0	484	0	0	206	0	150	0	356	1266
08:00 AM	257	180	0	437	171	257	0	428	0	0	183	0	95	0	278	1143
Total Volume	962	710	0	1672	756	1130	0	1886	0	0	711	0	466	0	1177	4735
% App. Total	57.5	42.5	0		40.1	59.9	0		0		60.4	0	39.6	0		
PHF	.929	.970	.000	.957	.859	.861	.000	.860	.000	.000	.863	.000	.777	.000	.827	.935
Autos	906	671	0	1577	698	1073	0	1771	0	0	669	0	459	0	1128	4476
% Autos	94.2	94.5	0	94.3	92.3	95.0	0	93.9	0	0	94.1	0	98.5	0	95.8	94.5
Heavy Vehicles	56	39	0	95	58	57	0	115	0	0	42	0	7	0	49	259
% Heavy Vehicles	5.8	5.5	0	5.7	7.7	5.0	0	6.1	0	0	5.9	0	1.5	0	4.2	5.5
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

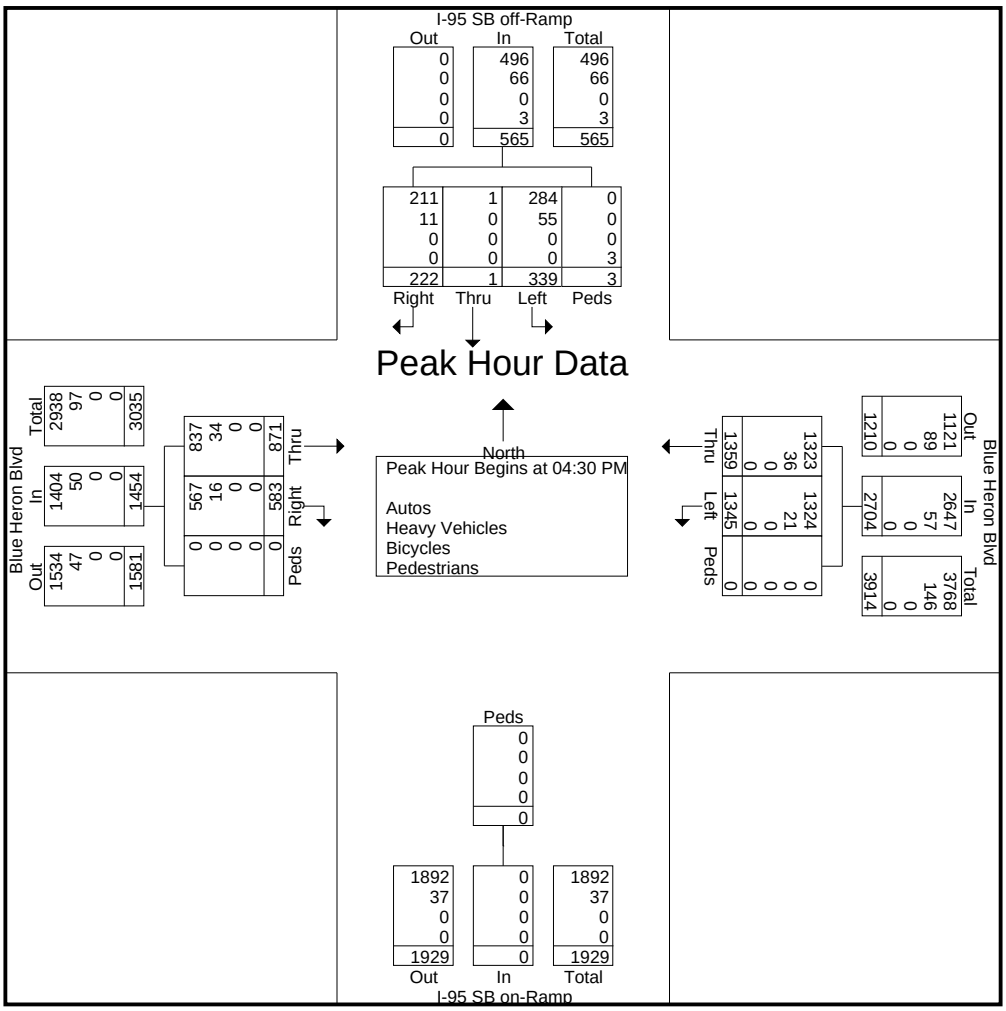


CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

File Name : Blue Heron Blvd at I-95 SB off Ramp 03052015
Site Code :
Start Date : 3/5/2015
Page No : 3

	Blue Heron Blvd Eastbound				Blue Heron Blvd Westbound				I-95 SB on-Ramp Northbound		I-95 SB off-Ramp Southbound					
Start Time	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																
Peak Hour for Entire Intersection Begins at 04:30 PM																
04:30 PM	210	149	0	359	344	322	0	666	0	0	89	0	51	1	141	1166
04:45 PM	247	157	0	404	293	297	0	590	0	0	93	1	41	2	137	1131
05:00 PM	220	147	0	367	349	383	0	732	0	0	59	0	56	0	115	1214
05:15 PM	194	130	0	324	359	357	0	716	0	0	98	0	74	0	172	1212
Total Volume	871	583	0	1454	1345	1359	0	2704	0	0	339	1	222	3	565	4723
% App. Total	59.9	40.1	0		49.7	50.3	0		0		60	0.2	39.3	0.5		
PHF	.882	.928	.000	.900	.937	.887	.000	.923	.000	.000	.865	.250	.750	.375	.821	.973
Autos	837	567	0	1404	1324	1323	0	2647	0	0	284	1	211	0	496	4547
% Autos	96.1	97.3	0	96.6	98.4	97.4	0	97.9	0	0	83.8	100	95.0	0	87.8	96.3
Heavy Vehicles	34	16	0	50	21	36	0	57	0	0	55	0	11	0	66	173
% Heavy Vehicles	3.9	2.7	0	3.4	1.6	2.6	0	2.1	0	0	16.2	0	5.0	0	11.7	3.7
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0.5	0.1



CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at I-95 SB off Ramp 03052015
Site Code :
Start Date : 3/5/2015
Page No : 1

Groups Printed- Heavy Vehicles

	Blue Heron Blvd Eastbound				Blue Heron Blvd Westbound				I-95 SB on-Ramp Northbound		I-95 SB off-Ramp Southbound					
Start Time	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	3	5	0	8	4	7	0	11	0	0	8	0	1	0	9	28
06:15 AM	6	4	0	10	9	11	0	20	0	0	7	0	3	0	10	40
06:30 AM	11	5	0	16	8	17	0	25	0	0	8	0	1	0	9	50
06:45 AM	14	8	0	22	13	16	0	29	0	0	13	0	2	0	15	66
Total	34	22	0	56	34	51	0	85	0	0	36	0	7	0	43	184
07:00 AM	10	7	0	17	10	19	0	29	0	0	12	0	4	0	16	62
07:15 AM	11	8	0	19	12	13	0	25	0	0	12	0	0	0	12	56
07:30 AM	15	9	0	24	14	8	0	22	0	0	8	0	1	0	9	55
07:45 AM	15	6	0	21	20	18	0	38	0	0	11	0	3	0	14	73
Total	51	30	0	81	56	58	0	114	0	0	43	0	8	0	51	246
08:00 AM	15	16	0	31	12	18	0	30	0	0	11	0	3	0	14	75
08:15 AM	20	13	0	33	18	16	0	34	0	0	8	0	2	0	10	77
08:30 AM	20	16	0	36	16	7	0	23	0	0	10	0	4	0	14	73
08:45 AM	15	9	0	24	25	18	0	43	0	0	12	0	4	0	16	83
Total	70	54	0	124	71	59	0	130	0	0	41	0	13	0	54	308
BREAK																
04:00 PM	15	10	0	25	5	12	0	17	0	0	23	0	7	0	30	72
04:15 PM	16	4	0	20	8	13	0	21	0	0	11	0	2	0	13	54
04:30 PM	4	3	0	7	7	14	0	21	0	0	12	0	5	0	17	45
04:45 PM	14	8	0	22	4	6	0	10	0	0	24	0	2	0	26	58
Total	49	25	0	74	24	45	0	69	0	0	70	0	16	0	86	229
05:00 PM	6	4	0	10	7	6	0	13	0	0	9	0	1	0	10	33
05:15 PM	10	1	0	11	3	10	0	13	0	0	10	0	3	0	13	37
05:30 PM	6	3	0	9	3	12	0	15	0	0	18	0	5	0	23	47
05:45 PM	6	3	0	9	4	11	0	15	0	0	16	0	4	0	20	44
Total	28	11	0	39	17	39	0	56	0	0	53	0	13	0	66	161
06:00 PM	10	3	0	13	3	5	0	8	0	0	14	0	1	0	15	36
06:15 PM	12	6	0	18	4	5	0	9	0	0	12	0	2	0	14	41
06:30 PM	6	7	0	13	3	4	0	7	0	0	11	0	0	0	11	31
06:45 PM	8	2	0	10	4	6	0	10	0	0	15	0	1	0	16	36
Total	36	18	0	54	14	20	0	34	0	0	52	0	4	0	56	144
Grand Total	268	160	0	428	216	272	0	488	0	0	295	0	61	0	356	1272
Apprch %	62.6	37.4	0		44.3	55.7	0		0		82.9	0	17.1	0		
Total %	21.1	12.6	0	33.6	17	21.4	0	38.4	0	0	23.2	0	4.8	0	28	

Blue Heron Boulevard at I-95 Northbound off Ramp

County: 93
Station: 3335
Description: I-95 NB OFF RAMP TO BLUE HERON BLVD
Start Date: 03/24/2015
Start Time: 0000

Direction: N

Time	1st	2nd	3rd	4th	Total
0000	17	15	15	14	61
0100	11	4	20	8	43
0200	10	9	8	8	35
0300	8	8	7	10	33
0400	14	10	13	21	58
0500	21	23	42	35	121
0600	42	45	58	81	226
0700	124	132	174	152	582
0800	151	164	181	202	698
0900	191	156	166	117	630
1000	133	144	159	141	577
1100	127	144	148	175	594
1200	167	151	169	137	624
1300	128	168	182	178	656
1400	145	174	161	222	702
1500	215	214	236	237	902
1600	237	244	266	229	976
1700	260	289	251	219	1019
1800	152	153	136	98	539
1900	78	84	91	103	356
2000	92	70	77	70	309
2100	71	87	56	31	245
2200	37	36	34	28	135
2300	28	25	23	23	99
24-Hour Totals:					10220

Peak Volume Information

	Hour	Volume
A.M.	815	738
P.M.	1630	1044
Daily	1630	1044

Truck Percentage 9.91 NaN 9.91

Classification Summary Database

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TotTrk	TotVol
N	42	7624	1541	103	263	221	70	118	172	31	20	15	0	0	0	1013	10220

Generated by SPS 5.0.45P

County: 93
Station: 3335
Description: I-95 NB OFF RAMP TO BLUE HERON BLVD
Start Date: 03/25/2015
Start Time: 0000

Direction: N

Time	1st	2nd	3rd	4th	Total
0000	17	15	6	12	50
0100	9	7	14	10	40
0200	8	7	9	6	30
0300	6	10	9	11	36
0400	9	7	26	14	56
0500	22	22	43	54	141
0600	39	45	58	82	224
0700	112	132	185	109	538
0800	144	164	147	161	616
0900	156	177	158	132	623
1000	125	120	132	146	523
1100	134	140	161	137	572
1200	152	171	180	136	639
1300	139	151	147	158	595
1400	162	145	144	224	675
1500	214	176	221	238	849
1600	209	243	274	264	990
1700	296	260	224	174	954
1800	163	123	116	109	511
1900	123	78	88	84	373
2000	82	60	68	58	268
2100	67	73	52	51	243
2200	44	51	28	35	158
2300	26	13	28	25	92
24-Hour Totals:					9796

Peak Volume Information

	Hour	Volume
A.M.	845	652
P.M.	1630	1094
Daily	1630	1094

Truck Percentage 9.90 NaN 9.90

Classification Summary Database

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TotTrk	TotVol
N	66	7395	1365	141	211	267	42	89	164	32	14	10	0	0	0	970	9796

Generated by SPS 5.0.45P

County: 93
Station: 3335
Description: I-95 NB OFF RAMP TO BLUE HERON BLVD
Start Date: 03/26/2015
Start Time: 0000

Direction: N

Time	1st	2nd	3rd	4th	Total
0000	12	10	12	10	44
0100	7	6	5	8	26
0200	18	8	8	12	46
0300	8	7	5	8	28
0400	12	9	18	21	60
0500	44	19	45	40	148
0600	68	37	62	95	262
0700	117	124	154	128	523
0800	119	146	155	179	599
0900	153	158	142	129	582
1000	126	137	136	148	547
1100	163	120	147	160	590
1200	159	182	148	125	614
1300	143	142	173	152	610
1400	154	157	150	222	683
1500	219	183	247	191	840
1600	216	252	240	263	971
1700	291	245	215	169	920
1800	163	144	126	114	547
1900	98	96	101	74	369
2000	96	73	73	57	299
2100	82	73	51	46	252
2200	46	46	49	40	181
2300	25	37	35	15	112
24-Hour Totals:					9853

Peak Volume Information

	Hour	Volume
A.M.	830	645
P.M.	1615	1046
Daily	1615	1046

Truck Percentage 10.46 NaN 10.46

Classification Summary Database

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TotTrk	TotVol
N	59	7422	1341	114	216	337	52	94	159	36	14	9	0	0	0	1031	9853

Generated by SPS 5.0.45P

County: 93
Station: 3331
Description: I-95 NB ON RAMP FROM BLUE HERON BLVD
Start Date: 03/24/2015
Start Time: 0000

Direction: N

Time	1st	2nd	3rd	4th	Total
0000	70	70	63	42	245
0100	52	44	37	27	160
0200	33	29	25	24	111
0300	27	27	32	33	119
0400	25	61	33	53	172
0500	41	64	107	123	335
0600	123	174	236	448	981
0700	355	428	434	451	1668
0800	407	382	393	329	1511
0900	242	231	238	263	974
1000	244	247	253	290	1034
1100	257	270	248	271	1046
1200	256	254	245	275	1030
1300	245	268	248	246	1007
1400	248	260	275	270	1053
1500	266	297	303	308	1174
1600	253	315	311	293	1172
1700	305	348	279	318	1250
1800	272	234	251	264	1021
1900	258	206	182	160	806
2000	159	159	174	170	662
2100	146	139	143	136	564
2200	153	114	119	103	489
2300	94	70	63	71	298
24-Hour Totals:					18882

Peak Volume Information

	Hour	Volume
A.M.	715	1720
P.M.	1630	1257
Daily	715	1720

Truck Percentage 6.77 NaN 6.77

Classification Summary Database

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TotTrk	TotVol
N	145	14973	2486	129	435	285	95	114	181	32	5	2	0	0	0	1278	18882

Generated by SPS 5.0.45P

County: 93
Station: 3331
Description: I-95 NB ON RAMP FROM BLUE HERON BLVD
Start Date: 03/25/2015
Start Time: 0000

Direction: N

Time	1st	2nd	3rd	4th	Total
0000	68	42	58	42	210
0100	32	36	24	31	123
0200	16	13	21	13	63
0300	16	18	27	19	80
0400	31	58	44	86	219
0500	60	80	115	169	424
0600	129	233	291	432	1085
0700	294	428	428	378	1528
0800	386	426	328	320	1460
0900	246	256	237	232	971
1000	203	260	250	257	970
1100	228	259	249	264	1000
1200	238	250	260	255	1003
1300	250	253	236	258	997
1400	216	244	317	270	1047
1500	262	259	271	308	1100
1600	325	333	307	300	1265
1700	326	311	330	313	1280
1800	240	235	251	211	937
1900	202	187	190	163	742
2000	182	146	160	158	646
2100	138	127	165	141	571
2200	115	121	123	96	455
2300	90	64	75	78	307
24-Hour Totals:					18483

Peak Volume Information

	Hour	Volume
A.M.	715	1620
P.M.	1700	1280
Daily	715	1620

Truck Percentage 6.89 NaN 6.89

Classification Summary Database

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TotTrk	TotVol
N	159	14661	2390	106	360	343	92	122	188	51	3	8	0	0	0	1273	18483

Generated by SPS 5.0.45P

County: 93
Station: 3331
Description: I-95 NB ON RAMP FROM BLUE HERON BLVD
Start Date: 03/26/2015
Start Time: 0000

Direction: N

Time	1st	2nd	3rd	4th	Total
0000	68	57	54	35	214
0100	21	35	23	18	97
0200	27	29	15	21	92
0300	17	21	26	34	98
0400	30	47	50	87	214
0500	47	90	96	151	384
0600	144	206	310	384	1044
0700	329	404	439	484	1656
0800	431	357	300	298	1386
0900	228	216	239	238	921
1000	208	267	244	245	964
1100	242	231	280	241	994
1200	269	255	252	263	1039
1300	252	235	268	306	1061
1400	258	260	239	285	1042
1500	274	260	274	254	1062
1600	315	334	299	306	1254
1700	297	328	265	272	1162
1800	250	273	220	187	930
1900	203	191	190	193	777
2000	177	151	148	170	646
2100	160	147	151	118	576
2200	134	125	128	131	518
2300	89	101	76	80	346
24-Hour Totals:					18477

Peak Volume Information

	Hour	Volume
A.M.	715	1758
P.M.	1600	1254
Daily	715	1758

Truck Percentage 7.01 NaN 7.01

Classification Summary Database

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TotTrk	TotVol
N	221	14582	2378	96	421	347	77	125	171	47	4	8	0	0	0	1296	18477

Generated by SPS 5.0.45P

County: 93
Station: 3333
Description: BLUE HERON BLVD E OF I-95 NB RAMPS
Start Date: 03/24/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	74	93	71	60	298	85	83	70	50	288	586
0100	48	47	49	64	208	46	40	36	50	172	380
0200	53	41	43	45	182	40	35	47	38	160	342
0300	49	47	45	88	229	35	55	46	58	194	423
0400	76	91	89	114	370	60	59	83	100	302	672
0500	80	107	132	195	514	108	116	160	160	544	1058
0600	184	242	377	534	1337	171	193	281	321	966	2303
0700	524	520	542	592	2178	343	394	452	383	1572	3750
0800	561	494	475	438	1968	405	419	428	395	1647	3615
0900	381	338	356	392	1467	380	375	376	350	1481	2948
1000	346	327	323	357	1353	348	355	331	346	1380	2733
1100	337	368	351	363	1419	351	359	343	352	1405	2824
1200	339	372	386	347	1444	422	420	404	362	1608	3052
1300	380	345	347	354	1426	401	379	467	392	1639	3065
1400	375	384	418	397	1574	367	383	390	445	1585	3159
1500	363	342	429	368	1502	493	526	558	480	2057	3559
1600	380	403	440	448	1671	553	509	642	588	2292	3963
1700	457	402	433	397	1689	664	679	600	494	2437	4126
1800	343	340	299	298	1280	524	418	334	258	1534	2814
1900	298	273	273	219	1063	305	267	248	241	1061	2124
2000	212	210	241	190	853	272	218	240	213	943	1796
2100	198	195	166	168	727	251	199	182	138	770	1497
2200	168	158	120	118	564	156	149	166	133	604	1168
2300	125	108	95	86	414	145	121	77	75	418	832
24-Hour Totals:					25730					27059	52789

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	715	2215	730	1659	715	3849
P.M.	1615	1748	1630	2573	1630	4320
Daily	715	2215	1630	2573	1630	4320

Generated by SPS 5.0.45P

County: 93
Station: 3333
Description: BLUE HERON BLVD E OF I-95 NB RAMPS
Start Date: 03/25/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	80	81	61	48	270	77	56	49	47	229	499
0100	57	47	33	44	181	31	39	35	35	140	321
0200	46	31	32	45	154	38	35	20	33	126	280
0300	41	27	49	65	182	23	57	46	39	165	347
0400	54	101	91	138	384	38	56	77	92	263	647
0500	85	117	156	193	551	117	129	145	144	535	1086
0600	173	255	383	581	1392	171	225	231	278	905	2297
0700	509	522	580	587	2198	398	412	432	388	1630	3828
0800	582	553	495	426	2056	423	416	388	418	1645	3701
0900	360	327	374	379	1440	372	465	372	347	1556	2996
1000	344	334	366	349	1393	346	343	319	402	1410	2803
1100	366	387	339	383	1475	349	371	355	385	1460	2935
1200	391	378	402	378	1549	394	411	426	421	1652	3201
1300	377	371	382	367	1497	440	436	425	373	1674	3171
1400	328	393	379	394	1494	367	411	397	444	1619	3113
1500	367	409	391	390	1557	519	504	534	467	2024	3581
1600	392	426	389	442	1649	537	528	641	588	2294	3943
1700	387	412	418	383	1600	689	697	569	445	2400	4000
1800	331	332	335	317	1315	479	392	298	317	1486	2801
1900	302	246	254	238	1040	288	296	260	244	1088	2128
2000	216	246	237	190	889	229	208	246	259	942	1831
2100	208	203	177	183	771	220	198	184	154	756	1527
2200	162	132	152	119	565	154	170	138	152	614	1179
2300	136	125	114	110	485	146	105	103	94	448	933
24-Hour Totals:					26087					27061	53148

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	730	2302	730	1659	730	3961
P.M.	1645	1659	1630	2615	1630	4245
Daily	730	2302	1630	2615	1630	4245

Generated by SPS 5.0.45P

County: 93
Station: 3333
Description: BLUE HERON BLVD E OF I-95 NB RAMPS
Start Date: 03/26/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	88	77	66	59	290	68	68	65	51	252	542
0100	64	42	50	41	197	40	38	36	36	150	347
0200	36	38	39	40	153	33	48	26	34	141	294
0300	43	32	50	68	193	53	45	72	52	222	415
0400	80	89	122	165	456	59	79	99	92	329	785
0500	78	108	130	172	488	105	105	154	143	507	995
0600	178	253	386	550	1367	196	191	293	333	1013	2380
0700	534	504	567	610	2215	371	431	430	397	1629	3844
0800	566	485	500	390	1941	442	376	395	381	1594	3535
0900	334	359	360	315	1368	378	389	362	349	1478	2846
1000	299	335	312	364	1310	354	346	346	375	1421	2731
1100	310	305	353	349	1317	351	368	355	335	1409	2726
1200	346	368	367	364	1445	370	415	413	423	1621	3066
1300	393	371	385	353	1502	403	384	398	396	1581	3083
1400	325	347	371	375	1418	392	409	393	453	1647	3065
1500	386	400	425	392	1603	549	465	515	453	1982	3585
1600	408	388	433	456	1685	534	503	580	592	2209	3894
1700	418	376	403	385	1582	552	671	520	441	2184	3766
1800	341	338	311	300	1290	382	347	350	326	1405	2695
1900	278	254	251	224	1007	287	242	261	242	1032	2039
2000	239	201	214	209	863	257	189	218	249	913	1776
2100	188	181	173	176	718	268	208	188	170	834	1552
2200	150	171	153	139	613	148	150	158	142	598	1211
2300	127	128	99	93	447	154	102	111	96	463	910
24-Hour Totals:					25468					26614	52082

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	715	2247	715	1700	715	3947
P.M.	1615	1695	1630	2395	1630	4078
Daily	715	2247	1630	2395	1630	4078

Generated by SPS 5.0.45P

County: 93
Station: 3323
Description: BLUE HERON BLVD BTWN I-95 NB & SB RAMPS
Start Date: 03/24/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	31	39	39	34	143	92	90	67	56	305	448
0100	30	22	33	24	109	57	67	47	52	223	332
0200	27	25	29	35	116	44	42	51	44	181	297
0300	23	21	26	49	119	34	47	60	60	201	320
0400	42	62	45	75	224	38	72	83	86	279	503
0500	40	78	84	118	320	113	108	154	170	545	865
0600	120	164	231	339	854	189	241	294	375	1099	1953
0700	354	403	347	411	1515	444	453	557	570	2024	3539
0800	403	357	301	334	1395	470	536	508	423	1937	3332
0900	297	305	272	262	1136	458	459	407	397	1721	2857
1000	249	237	228	284	998	426	373	469	393	1661	2659
1100	226	262	269	256	1013	448	392	414	408	1662	2675
1200	279	264	312	273	1128	445	534	453	495	1927	3055
1300	270	261	252	271	1054	438	452	518	372	1780	2834
1400	237	285	295	321	1138	488	453	514	481	1936	3074
1500	279	232	315	263	1089	564	623	673	624	2484	3573
1600	271	294	310	336	1211	652	609	738	654	2653	3864
1700	329	250	298	241	1118	767	816	679	654	2916	4034
1800	232	208	192	181	813	608	482	468	411	1969	2782
1900	194	164	197	119	674	350	396	299	312	1357	2031
2000	141	135	141	99	516	305	296	316	283	1200	1716
2100	118	102	93	96	409	282	238	225	191	936	1345
2200	64	77	65	59	265	194	185	212	144	735	1000
2300	61	54	50	52	217	148	140	105	98	491	708
24-Hour Totals:					17574					32222	49796

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	715	1564	730	2133	730	3651
P.M.	1615	1269	1630	2975	1630	4200
Daily	715	1564	1630	2975	1630	4200

Generated by SPS 5.0.45P

County: 93
Station: 3323
Description: BLUE HERON BLVD BTWN I-95 NB & SB RAMPS
Start Date: 03/25/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	43	33	26	29	131	90	87	72	38	287	418
0100	34	32	20	18	104	28	52	35	29	144	248
0200	19	17	19	27	82	42	42	23	36	143	225
0300	28	21	14	45	108	30	41	60	22	153	261
0400	36	69	53	79	237	40	56	78	91	265	502
0500	50	74	108	106	338	142	138	163	182	625	963
0600	108	183	220	352	863	203	276	308	405	1192	2055
0700	355	415	407	399	1576	493	525	577	604	2199	3775
0800	447	339	381	328	1495	478	558	527	465	2028	3523
0900	269	272	296	294	1131	496	500	480	437	1913	3044
1000	256	270	250	273	1049	377	357	397	348	1479	2528
1100	261	302	248	255	1066	395	396	371	389	1551	2617
1200	295	256	304	269	1124	378	432	399	459	1668	2792
1300	262	293	289	250	1094	487	402	465	389	1743	2837
1400	235	294	285	284	1098	434	363	474	451	1722	2820
1500	269	298	335	264	1166	495	546	545	579	2165	3331
1600	309	305	251	320	1185	516	548	626	639	2329	3514
1700	315	257	304	237	1113	664	728	612	564	2568	3681
1800	211	236	217	206	870	513	449	420	356	1738	2608
1900	203	151	183	147	684	323	356	279	303	1261	1945
2000	143	141	132	103	519	252	272	250	269	1043	1562
2100	122	120	75	99	416	243	235	227	180	885	1301
2200	85	73	77	58	293	180	179	173	177	709	1002
2300	65	70	58	65	258	157	139	116	94	506	764
24-Hour Totals:					18000					30316	48316

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	715	1668	730	2217	715	3852
P.M.	1530	1213	1630	2657	1645	3839
Daily	715	1668	1630	2657	715	3852

Generated by SPS 5.0.45P

County: 93
Station: 3323
Description: BLUE HERON BLVD BTWN I-95 NB & SB RAMPS
Start Date: 03/26/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	47	36	26	36	145	80	93	72	68	313	458
0100	30	26	30	21	107	52	42	53	41	188	295
0200	18	20	31	19	88	38	37	22	35	132	220
0300	28	21	28	42	119	36	51	56	65	208	327
0400	44	58	62	81	245	49	78	90	86	303	548
0500	59	76	87	133	355	96	127	150	164	537	892
0600	101	139	234	351	825	240	247	285	404	1176	2001
0700	343	358	382	445	1528	428	479	553	542	2002	3530
0800	392	348	364	306	1410	455	502	442	379	1778	3188
0900	282	297	236	278	1093	393	425	396	356	1570	2663
1000	248	225	207	258	938	393	367	379	395	1534	2472
1100	251	219	263	250	983	403	392	344	360	1499	2482
1200	278	252	304	273	1107	323	478	383	468	1652	2759
1300	313	289	261	281	1144	397	415	410	376	1598	2742
1400	235	245	281	246	1007	441	364	453	411	1669	2676
1500	266	266	297	279	1108	520	515	512	519	2066	3174
1600	304	305	297	316	1222	546	562	573	613	2294	3516
1700	293	251	265	247	1056	652	683	617	536	2488	3544
1800	215	230	199	174	818	411	459	428	382	1680	2498
1900	181	138	166	164	649	331	310	301	290	1232	1881
2000	132	121	125	98	476	297	256	258	257	1068	1544
2100	115	90	92	75	372	258	277	222	204	961	1333
2200	73	99	75	71	318	179	186	165	148	678	996
2300	55	73	49	59	236	169	121	131	113	534	770
24-Hour Totals:					17349					29160	46509

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	715	1577	730	2052	730	3619
P.M.	1600	1222	1645	2565	1645	3690
Daily	715	1577	1645	2565	1645	3690

Generated by SPS 5.0.45P

Three-Day Approach Count Summary

Project Name: Blue Heron Boulevard Study
Project No.: 2013008.018
Location: Blue Heron Boulevard at I-95 Northbound off Ramp
Direction: NORTHBOUND (APPROACH)
Date: 3/24/2015-3/26/2015

TIME PERIOD (AM)		WEEKDAY TUES 24-Mar	WED 25-Mar	THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
00:00	00:15	17	17	12	15	
00:15	00:30	15	15	10	13	
00:30	00:45	15	6	12	11	
00:45	01:00	14	12	10	12	52
01:00	01:15	11	9	7	9	
01:15	01:30	4	7	6	6	
01:30	01:45	20	14	5	13	
01:45	02:00	8	10	8	9	36
02:00	02:15	10	8	18	12	
02:15	02:30	9	7	8	8	
02:30	02:45	8	9	8	8	
02:45	03:00	8	6	12	9	37
03:00	03:15	8	6	8	7	
03:15	03:30	8	10	7	8	
03:30	03:45	7	9	5	7	
03:45	04:00	10	11	8	10	32
04:00	04:15	14	9	12	12	
04:15	04:30	10	7	9	9	
04:30	04:45	13	26	18	19	
04:45	05:00	21	14	21	19	58
05:00	05:15	21	22	44	29	
05:15	05:30	23	22	19	21	
05:30	05:45	42	43	45	43	
05:45	06:00	35	54	40	43	137
06:00	06:15	42	39	68	50	
06:15	06:30	45	45	37	42	
06:30	06:45	58	58	62	59	
06:45	07:00	81	82	95	86	237
07:00	07:15	124	112	117	118	
07:15	07:30	132	132	124	129	
07:30	07:45	174	185	154	171	
07:45	08:00	152	109	128	130	548
08:00	08:15	151	144	119	138	
08:15	08:30	164	164	146	158	
08:30	08:45	181	147	155	161	
08:45	09:00	202	161	179	181	638
09:00	09:15	191	156	153	167	
09:15	09:30	156	177	158	164	
09:30	09:45	166	158	142	155	
09:45	10:00	117	132	129	126	612
10:00	10:15	133	125	126	128	
10:15	10:30	144	120	137	134	
10:30	10:45	159	132	136	142	
10:45	11:00	141	146	148	145	549
11:00	11:15	127	134	163	141	
11:15	11:30	144	140	120	135	
11:30	11:45	148	161	147	152	
11:45	12:00	175	137	160	157	585

TIME PERIOD (PM)		WEEKDAY TUES 24-Mar	WED 25-Mar	THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
12:00	12:15	167	152	159	159	
12:15	12:30	151	171	182	168	
12:30	12:45	169	180	148	166	
12:45	13:00	137	136	125	133	626
13:00	13:15	128	139	143	137	
13:15	13:30	168	151	142	154	
13:30	13:45	182	147	173	167	
13:45	14:00	178	158	152	163	620
14:00	14:15	145	162	154	154	
14:15	14:30	174	145	157	159	
14:30	14:45	161	144	150	152	
14:45	15:00	222	224	222	223	687
15:00	15:15	215	214	219	216	
15:15	15:30	214	176	183	191	
15:30	15:45	236	221	247	235	
15:45	16:00	237	238	191	222	864
16:00	16:15	237	209	216	221	
16:15	16:30	244	243	252	246	
16:30	16:45	266	274	240	260	
16:45	17:00	229	264	263	252	979
17:00	17:15	260	296	291	282	
17:15	17:30	289	260	245	265	
17:30	17:45	251	224	215	230	
17:45	18:00	219	174	169	187	964
18:00	18:15	152	163	163	159	
18:15	18:30	153	123	144	140	
18:30	18:45	136	116	126	126	
18:45	19:00	98	109	114	107	532
19:00	19:15	78	123	98	100	
19:15	19:30	84	78	96	86	
19:30	19:45	91	88	101	93	
19:45	20:00	103	84	74	87	366
20:00	20:15	92	82	96	90	
20:15	20:30	70	60	73	68	
20:30	20:45	77	68	73	73	
20:45	21:00	70	58	57	62	292
21:00	21:15	71	67	82	73	
21:15	21:30	87	73	73	78	
21:30	21:45	56	52	51	53	
21:45	22:00	31	51	46	43	247
22:00	22:15	37	44	46	42	
22:15	22:30	36	51	46	44	
22:30	22:45	34	28	49	37	
22:45	23:00	28	35	40	34	158
23:00	23:15	28	26	25	26	
23:15	23:30	25	13	37	25	
23:30	23:45	23	28	35	29	
23:45	00:00	23	25	15	21	101
DAILY COUNT		10,220	9,796	9,853	9,956	
PEAK HOUR TIME					16:30	
PEAK HOUR COUNT					1,059	
ESTIMATED K-FACTOR					10.6%	

Three-Day Approach Count Summary

Project Name: Blue Heron Boulevard Study
State Project No.: 2013008.018
Location: Blue Heron Boulevard at I-95 Northbound off Ramp
Direction: EASTBOUND (APPROACH)
Date: 3/24/2015-3/26/2015

TIME PERIOD (AM)		WEEKDAY TUES 24-Mar	WEEKDAY WED 25-Mar	WEEKDAY THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
00:00	00:15	31	43	47	40	
00:15	00:30	39	33	36	36	
00:30	00:45	39	26	26	30	
00:45	01:00	34	29	36	33	140
01:00	01:15	30	34	30	31	
01:15	01:30	22	32	26	27	
01:30	01:45	33	20	30	28	
01:45	02:00	24	18	21	21	107
02:00	02:15	27	19	18	21	
02:15	02:30	25	17	20	21	
02:30	02:45	29	19	31	26	
02:45	03:00	35	27	19	27	95
03:00	03:15	23	28	28	26	
03:15	03:30	21	21	21	21	
03:30	03:45	26	14	28	23	
03:45	04:00	49	45	42	45	115
04:00	04:15	42	36	44	41	
04:15	04:30	62	69	58	63	
04:30	04:45	45	53	62	53	
04:45	05:00	75	79	81	78	235
05:00	05:15	40	50	59	50	
05:15	05:30	78	74	76	76	
05:30	05:45	84	108	87	93	
05:45	06:00	118	106	133	119	338
06:00	06:15	120	108	101	110	
06:15	06:30	164	183	139	162	
06:30	06:45	231	220	234	228	
06:45	07:00	339	352	351	347	847
07:00	07:15	354	355	343	351	
07:15	07:30	403	415	358	392	
07:30	07:45	347	407	382	379	
07:45	08:00	411	399	445	418	1,540
08:00	08:15	403	447	392	414	
08:15	08:30	357	339	348	348	
08:30	08:45	301	381	364	349	
08:45	09:00	334	328	306	323	1,433
09:00	09:15	297	269	282	283	
09:15	09:30	305	272	297	291	
09:30	09:45	272	296	236	268	
09:45	10:00	262	294	278	278	1,120
10:00	10:15	249	256	248	251	
10:15	10:30	237	270	225	244	
10:30	10:45	228	250	207	228	
10:45	11:00	284	273	258	272	995
11:00	11:15	226	261	251	246	
11:15	11:30	262	302	219	261	
11:30	11:45	269	248	263	260	
11:45	12:00	256	255	250	254	1,021

TIME PERIOD (PM)		WEEKDAY TUES 24-Mar	WEEKDAY WED 25-Mar	WEEKDAY THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
12:00	12:15	279	295	278	284	
12:15	12:30	264	256	252	257	
12:30	12:45	312	304	304	307	
12:45	13:00	273	269	273	272	1,120
13:00	13:15	270	262	313	282	
13:15	13:30	261	293	289	281	
13:30	13:45	252	289	261	267	
13:45	14:00	271	250	281	267	1,097
14:00	14:15	237	235	235	236	
14:15	14:30	285	294	245	275	
14:30	14:45	295	285	281	287	
14:45	15:00	321	284	246	284	1,081
15:00	15:15	279	269	266	271	
15:15	15:30	232	298	266	265	
15:30	15:45	315	335	297	316	
15:45	16:00	263	264	279	269	1,121
16:00	16:15	271	309	304	295	
16:15	16:30	294	305	305	301	
16:30	16:45	310	251	297	286	
16:45	17:00	336	320	316	324	1,206
17:00	17:15	329	315	293	312	
17:15	17:30	250	257	251	253	
17:30	17:45	298	304	265	289	
17:45	18:00	241	237	247	242	1,096
18:00	18:15	232	211	215	219	
18:15	18:30	208	236	230	225	
18:30	18:45	192	217	199	203	
18:45	19:00	181	206	174	187	834
19:00	19:15	194	203	181	193	
19:15	19:30	164	151	138	151	
19:30	19:45	197	183	166	182	
19:45	20:00	119	147	164	143	669
20:00	20:15	141	143	132	139	
20:15	20:30	135	141	121	132	
20:30	20:45	141	132	125	133	
20:45	21:00	99	103	98	100	504
21:00	21:15	118	122	115	118	
21:15	21:30	102	120	90	104	
21:30	21:45	93	75	92	87	
21:45	22:00	96	99	75	90	399
22:00	22:15	64	85	73	74	
22:15	22:30	77	73	99	83	
22:30	22:45	65	77	75	72	
22:45	23:00	59	58	71	63	292
23:00	23:15	61	65	55	60	
23:15	23:30	54	70	73	66	
23:30	23:45	50	58	49	52	
23:45	00:00	52	65	59	59	237
DAILY COUNT		17,574	18,000	17,349	17,641	
PEAK HOUR TIME					07:15	
PEAK HOUR COUNT					1,603	
ESTIMATED K-FACTOR					9.1%	

Three-Day Approach Count Summary

Project Name: Blue Heron Boulevard Study
State Project No.: 2013008.018
Location: Blue Heron Boulevard at I-95 Northbound off Ramp
Direction: WESTBOUND (APPROACH)
Date: 3/24/2015-3/26/2015

TIME PERIOD (AM)		WEEKDAY TUES 24-Mar	WEED WED 25-Mar	THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
00:00	00:15	85	77	68	77	
00:15	00:30	83	56	68	69	
00:30	00:45	70	49	65	61	
00:45	01:00	50	47	51	49	256
01:00	01:15	46	31	40	39	
01:15	01:30	40	39	38	39	
01:30	01:45	36	35	36	36	
01:45	02:00	50	35	36	40	154
02:00	02:15	40	38	33	37	
02:15	02:30	35	35	48	39	
02:30	02:45	47	20	26	31	
02:45	03:00	38	33	34	35	142
03:00	03:15	35	23	53	37	
03:15	03:30	55	57	45	52	
03:30	03:45	46	46	72	55	
03:45	04:00	58	39	52	50	194
04:00	04:15	60	38	59	52	
04:15	04:30	59	56	79	65	
04:30	04:45	83	77	99	86	
04:45	05:00	100	92	92	95	298
05:00	05:15	108	117	105	110	
05:15	05:30	116	129	105	117	
05:30	05:45	160	145	154	153	
05:45	06:00	160	144	143	149	529
06:00	06:15	171	171	196	179	
06:15	06:30	193	225	191	203	
06:30	06:45	281	231	293	268	
06:45	07:00	321	278	333	311	961
07:00	07:15	343	398	371	371	
07:15	07:30	394	412	431	412	
07:30	07:45	452	432	430	438	
07:45	08:00	383	388	397	389	1,610
08:00	08:15	405	423	442	423	
08:15	08:30	419	416	376	404	
08:30	08:45	428	388	395	404	
08:45	09:00	395	418	381	398	1,629
09:00	09:15	380	372	378	377	
09:15	09:30	375	465	389	410	
09:30	09:45	376	372	362	370	
09:45	10:00	350	347	349	349	1,505
10:00	10:15	348	346	354	349	
10:15	10:30	355	343	346	348	
10:30	10:45	331	319	346	332	
10:45	11:00	346	402	375	374	1,404
11:00	11:15	351	349	351	350	
11:15	11:30	359	371	368	366	
11:30	11:45	343	355	355	351	
11:45	12:00	352	385	335	357	1,425

TIME PERIOD (PM)		WEEKDAY TUES 24-Mar	WED 25-Mar	THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
12:00	12:15	422	394	370	395	
12:15	12:30	420	411	415	415	
12:30	12:45	404	426	413	414	
12:45	13:00	362	421	423	402	1,627
13:00	13:15	401	440	403	415	
13:15	13:30	379	436	384	400	
13:30	13:45	467	425	398	430	
13:45	14:00	392	373	396	387	1,631
14:00	14:15	367	367	392	375	
14:15	14:30	383	411	409	401	
14:30	14:45	390	397	393	393	
14:45	15:00	445	444	453	447	1,617
15:00	15:15	493	519	549	520	
15:15	15:30	526	504	465	498	
15:30	15:45	558	534	515	536	
15:45	16:00	480	467	453	467	2,021
16:00	16:15	553	537	534	541	
16:15	16:30	509	528	503	513	
16:30	16:45	642	641	580	621	
16:45	17:00	588	588	592	589	2,265
17:00	17:15	664	689	552	635	
17:15	17:30	679	697	671	682	
17:30	17:45	600	569	520	563	
17:45	18:00	494	445	441	460	2,340
18:00	18:15	524	479	382	462	
18:15	18:30	418	392	347	386	
18:30	18:45	334	298	350	327	
18:45	19:00	258	317	326	300	1,475
19:00	19:15	305	288	287	293	
19:15	19:30	267	296	242	268	
19:30	19:45	248	260	261	256	
19:45	20:00	241	244	242	242	1,060
20:00	20:15	272	229	257	253	
20:15	20:30	218	208	189	205	
20:30	20:45	240	246	218	235	
20:45	21:00	213	259	249	240	933
21:00	21:15	251	220	268	246	
21:15	21:30	199	198	208	202	
21:30	21:45	182	184	188	185	
21:45	22:00	138	154	170	154	787
22:00	22:15	156	154	148	153	
22:15	22:30	149	170	150	156	
22:30	22:45	166	138	158	154	
22:45	23:00	133	152	142	142	605
23:00	23:15	145	146	154	148	
23:15	23:30	121	105	102	109	
23:30	23:45	77	103	111	97	
23:45	00:00	75	94	96	88	443
DAILY COUNT		27,059	27,061	26,614	26,911	
PEAK HOUR TIME					16:30	
PEAK HOUR COUNT					2,528	
ESTIMATED K-FACTOR					9.4%	

MECHANICAL COUNTS

PROJECT NAME: Blue Heron Boulevard Study

LOCATION: Blue Heron Boulevard at I-95 Northbound off Ramp

Notice to Proceed : 2013008.018

COUNT DATE: 3/24/2015-3/26/2015

NORTHBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	15	13	11	12	52
01:00 AM	9	6	13	9	36
02:00 AM	12	8	8	9	37
03:00 AM	7	8	7	10	32
04:00 AM	12	9	19	19	58
05:00 AM	29	21	43	43	137
06:00 AM	50	42	59	86	237
07:00 AM	118	129	171	130	548
08:00 AM	138	158	161	181	638
09:00 AM	167	164	155	126	612
10:00 AM	128	134	142	145	549
11:00 AM	141	135	152	157	585
12:00 PM	159	168	166	133	626
01:00 PM	137	154	167	163	620
02:00 PM	154	159	152	223	687
03:00 PM	216	191	235	222	864
04:00 PM	221	246	260	252	979
05:00 PM	282	265	230	187	964
06:00 PM	159	140	126	107	532
07:00 PM	100	86	93	87	366
08:00 PM	90	68	73	62	292
09:00 PM	73	78	53	43	247
10:00 PM	42	44	37	34	158
11:00 PM	26	25	29	21	101
			24 Hour Total		9,956

SOUTHBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	0	0	0	0	0
01:00 AM	0	0	0	0	0
02:00 AM	0	0	0	0	0
03:00 AM	0	0	0	0	0
04:00 AM	0	0	0	0	0
05:00 AM	0	0	0	0	0
06:00 AM	0	0	0	0	0
07:00 AM	0	0	0	0	0
08:00 AM	0	0	0	0	0
09:00 AM	0	0	0	0	0
10:00 AM	0	0	0	0	0
11:00 AM	0	0	0	0	0
12:00 PM	0	0	0	0	0
01:00 PM	0	0	0	0	0
02:00 PM	0	0	0	0	0
03:00 PM	0	0	0	0	0
04:00 PM	0	0	0	0	0
05:00 PM	0	0	0	0	0
06:00 PM	0	0	0	0	0
07:00 PM	0	0	0	0	0
08:00 PM	0	0	0	0	0
09:00 PM	0	0	0	0	0
10:00 PM	0	0	0	0	0
11:00 PM	0	0	0	0	0
			24 Hour Total		0

EASTBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	40	36	30	33	140
01:00 AM	31	27	28	21	107
02:00 AM	21	21	26	27	95
03:00 AM	26	21	23	45	115
04:00 AM	41	63	53	78	235
05:00 AM	50	76	93	119	338
06:00 AM	110	162	228	347	847
07:00 AM	351	392	379	418	1540
08:00 AM	414	348	349	323	1433
09:00 AM	283	291	268	278	1120
10:00 AM	251	244	228	272	995
11:00 AM	246	261	260	254	1021
12:00 PM	284	257	307	272	1120
01:00 PM	282	281	267	267	1097
02:00 PM	236	275	287	284	1081
03:00 PM	271	265	316	269	1121
04:00 PM	295	301	286	324	1206
05:00 PM	312	253	289	242	1096
06:00 PM	219	225	203	187	834
07:00 PM	193	151	182	143	669
08:00 PM	139	132	133	100	504
09:00 PM	118	104	87	90	399
10:00 PM	74	83	72	63	292
11:00 PM	60	66	52	59	237
			24 Hour Total		17,641

WESTBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	77	69	61	49	256
01:00 AM	39	39	36	40	154
02:00 AM	37	39	31	35	142
03:00 AM	37	52	55	50	194
04:00 AM	52	65	86	95	298
05:00 AM	110	117	153	149	529
06:00 AM	179	203	268	311	961
07:00 AM	371	412	438	389	1610
08:00 AM	423	404	404	398	1629
09:00 AM	377	410	370	349	1505
10:00 AM	349	348	332	374	1404
11:00 AM	350	366	351	357	1425
12:00 PM	395	415	414	402	1627
01:00 PM	415	400	430	387	1631
02:00 PM	375	401	393	447	1617
03:00 PM	520	498	536	467	2021
04:00 PM	541	513	621	589	2265
05:00 PM	635	682	563	460	2340
06:00 PM	462	386	327	300	1475
07:00 PM	293	268	256	242	1060
08:00 PM	253	205	235	240	933
09:00 PM	246	202	185	154	787
10:00 PM	153	156	154	142	605
11:00 PM	148	109	97	88	443
			24 Hour Total		26,911

ALL

TOTAL
448
297
275
341
591
1003
2046
3698
3700
3237
2948
3031
3372
3349
3385
4006
4450
4400
2841
2095
1728
1432
1055
781
54,509

DAILY TRAFFIC COUNT SUMMARY

NORTHBOUND

A.M. Peak Hour, Time: 08:30 AM Volume: 672
A.M. "K" Factor: 6.7% P.H.F. : 0.93

P.M. Peak Hour, Time: 04:30 PM Volume: 1,059
P.M. "K" Factor: 10.6% P.H.F. : 0.94

SOUTHBOUND

A.M. Peak Hour, Time: 12:00 AM Volume: 0
A.M. "K" Factor: #DIV/0! P.H.F. : #DIV/0!

P.M. Peak Hour, Time: 12:00 PM Volume: 0
P.M. "K" Factor: #DIV/0! P.H.F. : #DIV/0!

DAILY TRAFFIC COUNT SUMMARY

EASTBOUND

A.M. Peak Hour, Time: 07:15 AM Volume: 1,603
A.M. "K" Factor: 9.1% P.H.F. : 0.96

P.M. Peak Hour, Time: 04:15 PM Volume: 1,224
P.M. "K" Factor: 6.9% P.H.F. : 0.94

WESTBOUND

A.M. Peak Hour, Time: 07:15 AM Volume: 1,663
A.M. "K" Factor: 6.2% P.H.F. : 0.95

P.M. Peak Hour, Time: 04:30 PM Volume: 2,528
P.M. "K" Factor: 9.4% P.H.F. : 0.93

ALL APPROACHES:

A.M. Peak Hour, Time: 07:15 AM Volume: 3,834
A.M. "K" Factor: 7.0% P.H.F. : 0.97

P.M. Peak Hour, Time: 04:30 PM Volume: 4,762
P.M. "K" Factor: 8.7% P.H.F. : 0.97

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at I-95 NB off Ramp 03032015
Site Code :
Start Date : 3/3/2015
Page No : 1

Groups Printed- Autos - Heavy Vehicles - Bicycles - Pedestrians

	Blue Heron Blvd Eastbound				Blue Heron Blvd Westbound				I-95 NB off-Ramp Northbound					I-95 NB on-Ramp Southbound		
Start Time	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Peds	App. Total	Int. Total
06:00 AM	7	86	0	93	110	48	0	158	69	0	33	0	102	0	0	353
06:15 AM	16	117	0	133	150	22	0	172	113	0	66	0	179	1	1	485
06:30 AM	46	207	0	253	195	42	0	237	91	0	89	0	180	3	3	673
06:45 AM	28	285	0	313	268	65	0	333	152	0	114	0	266	0	0	912
Total	97	695	0	792	723	177	0	900	425	0	302	0	727	4	4	2423
07:00 AM	76	290	0	366	298	60	0	358	160	0	165	0	325	2	2	1051
07:15 AM	76	303	0	379	306	54	0	360	132	0	201	0	333	0	0	1072
07:30 AM	80	336	0	416	327	68	0	395	122	0	154	0	276	0	0	1087
07:45 AM	77	317	0	394	349	61	0	410	130	0	198	0	328	0	0	1132
Total	309	1246	0	1555	1280	243	0	1523	544	0	718	0	1262	2	2	4342
08:00 AM	86	350	0	436	372	84	0	456	127	0	108	0	235	0	0	1127
08:15 AM	81	322	0	403	341	122	0	463	114	0	171	0	285	0	0	1151
08:30 AM	72	235	0	307	250	108	0	358	122	0	196	0	318	0	0	983
08:45 AM	70	187	0	257	358	120	0	478	102	0	151	0	253	0	0	988
Total	309	1094	0	1403	1321	434	0	1755	465	0	626	0	1091	0	0	4249
BREAK																
04:00 PM	113	229	0	342	411	153	0	564	124	1	150	0	275	0	0	1181
04:15 PM	89	193	0	282	484	155	0	639	130	0	148	0	278	0	0	1199
04:30 PM	144	211	0	355	484	184	0	668	132	2	147	0	281	1	1	1305
04:45 PM	105	220	0	325	457	195	0	652	164	0	181	0	345	0	0	1322
Total	451	853	0	1304	1836	687	0	2523	550	3	626	0	1179	1	1	5007
05:00 PM	96	184	0	280	510	205	0	715	133	1	89	0	223	1	1	1219
05:15 PM	96	206	0	302	482	182	0	664	156	0	116	0	272	1	1	1239
05:30 PM	77	183	0	260	456	183	0	639	170	0	133	0	303	1	1	1203
05:45 PM	77	186	0	263	409	156	0	565	128	0	95	2	225	0	0	1053
Total	346	759	0	1105	1857	726	0	2583	587	1	433	2	1023	3	3	4714
06:00 PM	82	202	0	284	428	104	0	532	143	59	118	0	320	0	0	1136
06:15 PM	56	157	0	213	404	111	0	515	128	39	138	0	305	0	0	1033
06:30 PM	66	143	0	209	392	111	0	503	125	53	126	0	304	0	0	1016
06:45 PM	58	131	0	189	285	82	0	367	113	55	108	0	276	1	1	833
Total	262	633	0	895	1509	408	0	1917	509	206	490	0	1205	1	1	4018
Grand Total	1774	5280	0	7054	8526	2675	0	11201	3080	210	3195	2	6487	11	11	24753
Apprch %	25.1	74.9	0		76.1	23.9	0		47.5	3.2	49.3	0		100		
Total %	7.2	21.3	0	28.5	34.4	10.8	0	45.3	12.4	0.8	12.9	0	26.2	0	0	
Autos	1719	4899	0	6618	8207	2491	0	10698	2994	205	2955	0	6154	0	0	23470
% Autos	96.9	92.8	0	93.8	96.3	93.1	0	95.5	97.2	97.6	92.5	0	94.9	0	0	94.8
Heavy Vehicles	55	381	0	436	319	184	0	503	86	5	240	0	331	0	0	1270
% Heavy Vehicles	3.1	7.2	0	6.2	3.7	6.9	0	4.5	2.8	2.4	7.5	0	5.1	0	0	5.1
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7	7
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	63.6	63.6	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	2	2	4	4	6
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	100	0	36.4	36.4	0

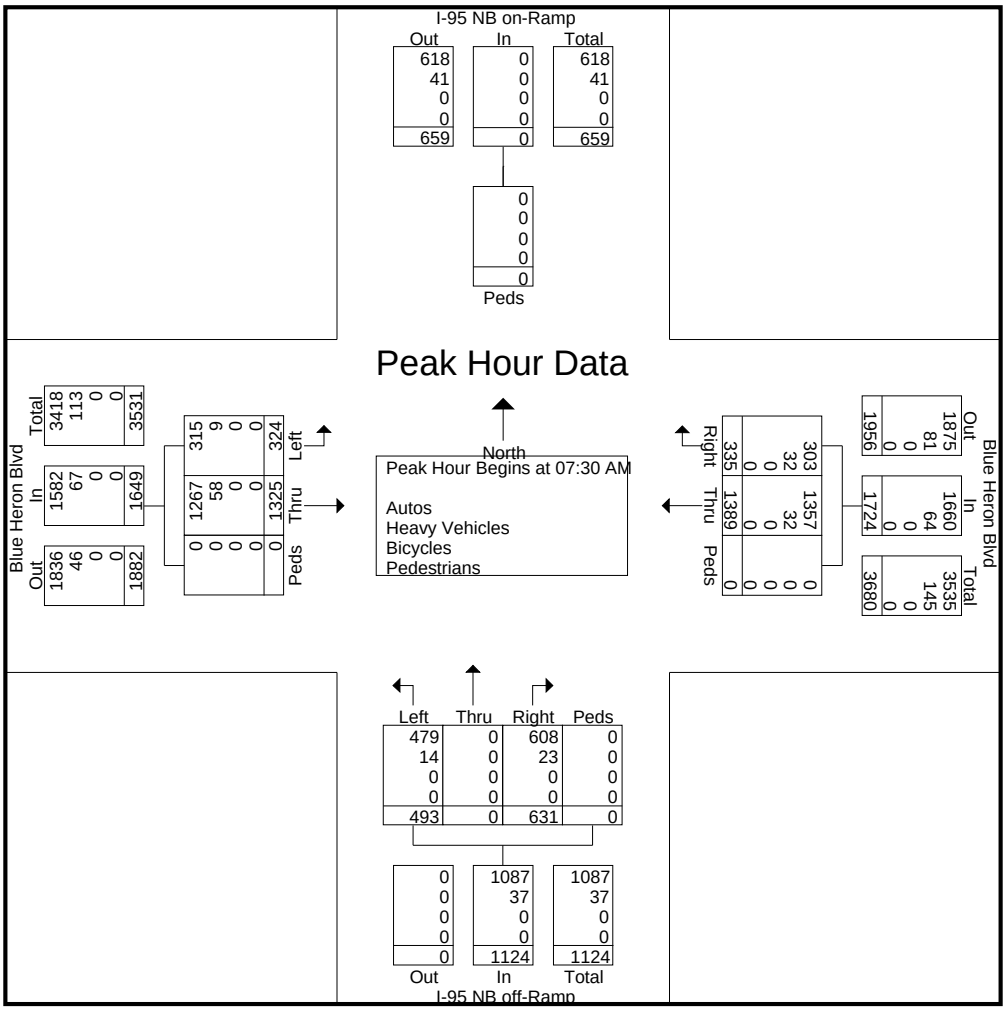
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at I-95 NB off Ramp 03032015
Site Code :
Start Date : 3/3/2015
Page No : 2

	Blue Heron Blvd Eastbound				Blue Heron Blvd Westbound				I-95 NB off-Ramp Northbound					I-95 NB on-Ramp Southbound		
Start Time	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																
Peak Hour for Entire Intersection Begins at 07:30 AM																
07:30 AM	80	336	0	416	327	68	0	395	122	0	154	0	276	0	0	1087
07:45 AM	77	317	0	394	349	61	0	410	130	0	198	0	328	0	0	1132
08:00 AM	86	350	0	436	372	84	0	456	127	0	108	0	235	0	0	1127
08:15 AM	81	322	0	403	341	122	0	463	114	0	171	0	285	0	0	1151
Total Volume	324	1325	0	1649	1389	335	0	1724	493	0	631	0	1124	0	0	4497
% App. Total	19.6	80.4	0		80.6	19.4	0		43.9	0	56.1	0		0		
PHF	.942	.946	.000	.946	.933	.686	.000	.931	.948	.000	.797	.000	.857	.000	.000	.977
Autos	315	1267	0	1582	1357	303	0	1660	479	0	608	0	1087	0	0	4329
% Autos	97.2	95.6	0	95.9	97.7	90.4	0	96.3	97.2	0	96.4	0	96.7	0	0	96.3
Heavy Vehicles	9	58	0	67	32	32	0	64	14	0	23	0	37	0	0	168
% Heavy Vehicles	2.8	4.4	0	4.1	2.3	9.6	0	3.7	2.8	0	3.6	0	3.3	0	0	3.7
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



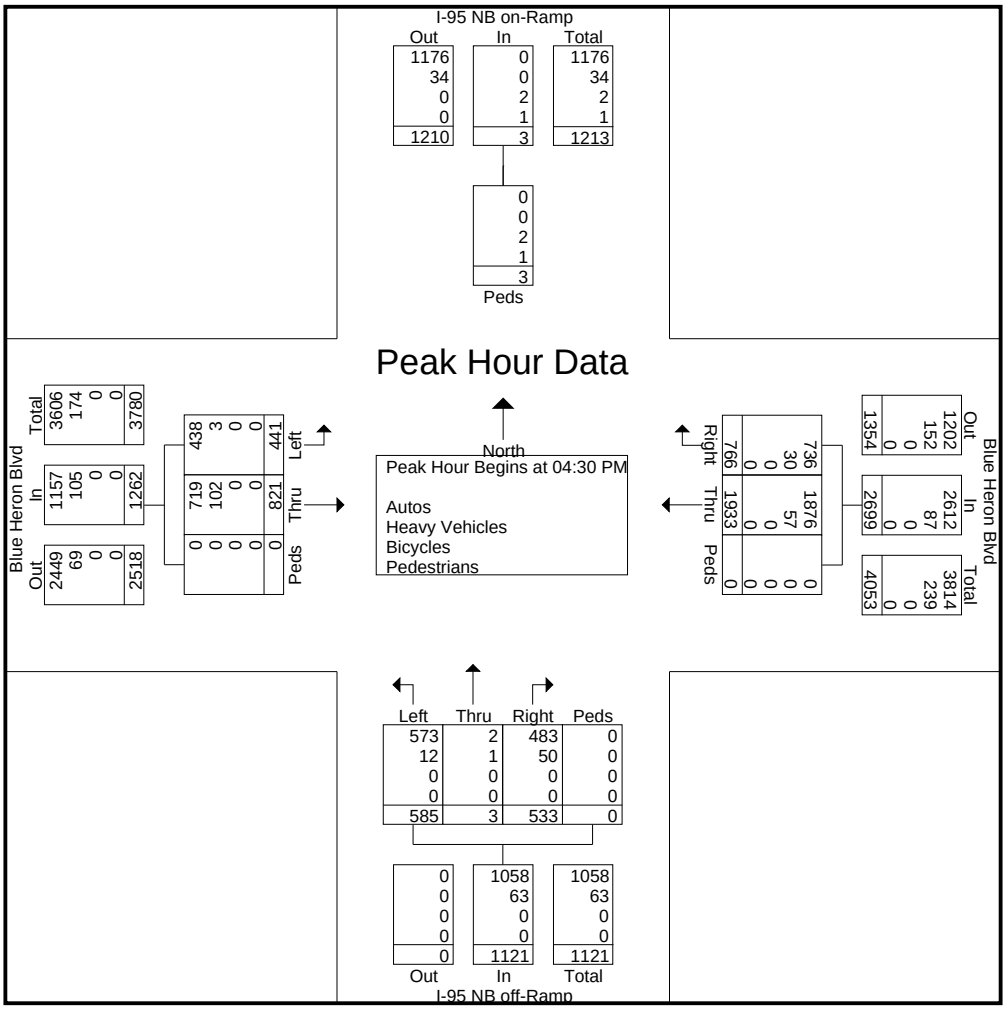
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at I-95 NB off Ramp 03032015
Site Code :
Start Date : 3/3/2015
Page No : 3

	Blue Heron Blvd Eastbound				Blue Heron Blvd Westbound				I-95 NB off-Ramp Northbound					I-95 NB on-Ramp Southbound		
Start Time	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																
Peak Hour for Entire Intersection Begins at 04:30 PM																
04:30 PM	144	211	0	355	484	184	0	668	132	2	147	0	281	1	1	1305
04:45 PM	105	220	0	325	457	195	0	652	164	0	181	0	345	0	0	1322
05:00 PM	96	184	0	280	510	205	0	715	133	1	89	0	223	1	1	1219
05:15 PM	96	206	0	302	482	182	0	664	156	0	116	0	272	1	1	1239
Total Volume	441	821	0	1262	1933	766	0	2699	585	3	533	0	1121	3	3	5085
% App. Total	34.9	65.1	0		71.6	28.4	0		52.2	0.3	47.5	0		100		
PHF	.766	.933	.000	.889	.948	.934	.000	.944	.892	.375	.736	.000	.812	.750	.750	.962
Autos	438	719	0	1157	1876	736	0	2612	573	2	483	0	1058	0	0	4827
% Autos	99.3	87.6	0	91.7	97.1	96.1	0	96.8	97.9	66.7	90.6	0	94.4	0	0	94.9
Heavy Vehicles	3	102	0	105	57	30	0	87	12	1	50	0	63	0	0	255
% Heavy Vehicles	0.7	12.4	0	8.3	2.9	3.9	0	3.2	2.1	33.3	9.4	0	5.6	0	0	5.0
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	66.7	66.7	0.0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	33.3	33.3	0.0



CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at I-95 NB off Ramp 03032015
Site Code :
Start Date : 3/3/2015
Page No : 1

Groups Printed- Heavy Vehicles

	Blue Heron Blvd Eastbound				Blue Heron Blvd Westbound				I-95 NB off-Ramp Northbound					I-95 NB on-Ramp Southbound		
Start Time	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Peds	App. Total	Int. Total
06:00 AM	0	7	0	7	13	18	0	31	5	0	8	0	13	0	0	51
06:15 AM	4	10	0	14	21	7	0	28	6	0	6	0	12	0	0	54
06:30 AM	8	6	0	14	22	11	0	33	3	0	14	0	17	0	0	64
06:45 AM	8	12	0	20	18	11	0	29	5	0	8	0	13	0	0	62
Total	20	35	0	55	74	47	0	121	19	0	36	0	55	0	0	231
07:00 AM	6	15	0	21	22	8	0	30	4	0	12	0	16	0	0	67
07:15 AM	0	7	0	7	9	5	0	14	3	0	6	0	9	0	0	30
07:30 AM	0	5	0	5	1	4	0	5	0	0	2	0	2	0	0	12
07:45 AM	0	9	0	9	4	5	0	9	0	0	1	0	1	0	0	19
Total	6	36	0	42	36	22	0	58	7	0	21	0	28	0	0	128
08:00 AM	2	27	0	29	9	8	0	17	4	0	6	0	10	0	0	56
08:15 AM	7	17	0	24	18	15	0	33	10	0	14	0	24	0	0	81
08:30 AM	2	7	0	9	20	15	0	35	8	0	10	0	18	0	0	62
08:45 AM	6	0	0	6	28	13	0	41	10	0	9	0	19	0	0	66
Total	17	51	0	68	75	51	0	126	32	0	39	0	71	0	0	265
BREAK																
04:00 PM	3	12	0	15	18	6	0	24	4	1	14	0	19	0	0	58
04:15 PM	2	26	0	28	12	4	0	16	2	0	10	0	12	0	0	56
04:30 PM	0	24	0	24	16	5	0	21	2	1	16	0	19	0	0	64
04:45 PM	2	29	0	31	13	12	0	25	2	0	8	0	10	0	0	66
Total	7	91	0	98	59	27	0	86	10	2	48	0	60	0	0	244
05:00 PM	0	25	0	25	14	6	0	20	4	0	14	0	18	0	0	63
05:15 PM	1	24	0	25	14	7	0	21	4	0	12	0	16	0	0	62
05:30 PM	0	17	0	17	8	6	0	14	3	0	11	0	14	0	0	45
05:45 PM	0	26	0	26	12	6	0	18	3	0	3	0	6	0	0	50
Total	1	92	0	93	48	25	0	73	14	0	40	0	54	0	0	220
06:00 PM	3	13	0	16	6	4	0	10	1	2	12	0	15	0	0	41
06:15 PM	1	12	0	13	4	2	0	6	1	1	10	0	12	0	0	31
06:30 PM	0	29	0	29	10	3	0	13	1	0	16	0	17	0	0	59
06:45 PM	0	22	0	22	7	3	0	10	1	0	18	0	19	0	0	51
Total	4	76	0	80	27	12	0	39	4	3	56	0	63	0	0	182
Grand Total	55	381	0	436	319	184	0	503	86	5	240	0	331	0	0	1270
Apprch %	12.6	87.4	0		63.4	36.6	0		26	1.5	72.5	0		0		
Total %	4.3	30	0	34.3	25.1	14.5	0	39.6	6.8	0.4	18.9	0	26.1	0	0	

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at I-95 NB off Ramp 03042015
Site Code :
Start Date : 3/4/2015
Page No : 1

Groups Printed- Autos - Heavy Vehicles - Bicycles - Pedestrians

	Blue Heron Blvd Eastbound					Blue Heron Blvd Westbound					I-95 NB off-Ramp Northbound					I-95 NB on-Ramp Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	13	133	0	0	146	0	115	34	0	149	81	0	82	0	163	0	0	0	0	0	458
06:15 AM	32	175	0	0	207	0	148	37	0	185	113	0	120	0	233	0	0	0	0	0	625
06:30 AM	38	277	0	0	315	0	177	39	0	216	93	0	119	0	212	0	0	0	0	0	743
06:45 AM	52	308	0	0	360	0	250	53	0	303	147	0	102	0	249	0	0	0	0	0	912
Total	135	893	0	0	1028	0	690	163	0	853	434	0	423	0	857	0	0	0	0	0	2738
07:00 AM	52	301	0	0	353	0	282	91	0	373	133	0	179	0	312	0	0	0	0	0	1038
07:15 AM	65	206	0	0	271	0	289	102	0	391	151	0	174	0	325	0	0	0	0	0	987
07:30 AM	69	245	0	0	314	0	298	118	0	416	146	0	148	0	294	0	0	0	0	0	1024
07:45 AM	78	260	0	0	338	0	325	96	0	421	135	0	174	0	309	0	0	0	0	0	1068
Total	264	1012	0	0	1276	0	1194	407	0	1601	565	0	675	0	1240	0	0	0	0	0	4117
08:00 AM	79	332	0	0	411	0	348	78	0	426	122	0	192	0	314	0	0	0	0	0	1151
08:15 AM	94	349	1	0	444	0	329	83	0	412	109	0	180	0	289	0	0	0	0	0	1145
08:30 AM	105	299	0	0	404	0	268	93	0	361	117	0	207	0	324	0	0	0	0	0	1089
08:45 AM	68	297	0	0	365	0	277	85	0	362	143	0	199	0	342	0	0	0	0	0	1069
Total	346	1277	1	0	1624	0	1222	339	0	1561	491	0	778	0	1269	0	0	0	0	0	4454
BREAK																					
04:00 PM	100	200	0	0	300	1	369	138	0	508	133	0	178	0	311	0	0	0	0	0	1119
04:15 PM	83	211	0	0	294	0	354	124	0	478	159	0	186	0	345	0	0	0	0	0	1117
04:30 PM	130	236	0	0	366	0	435	173	0	608	118	0	161	0	279	0	0	0	0	0	1253
04:45 PM	91	195	0	0	286	0	411	177	0	588	164	0	221	0	385	0	0	0	0	0	1259
Total	404	842	0	0	1246	1	1569	612	0	2182	574	0	746	0	1320	0	0	0	0	0	4748
05:00 PM	106	207	0	0	313	0	553	188	0	741	156	0	162	0	318	0	1	0	3	4	1376
05:15 PM	94	192	0	0	286	0	458	184	0	642	175	0	198	0	373	0	0	0	1	1	1302
05:30 PM	79	160	0	0	239	0	489	173	0	662	181	0	163	0	344	0	0	0	0	0	1245
05:45 PM	70	175	0	0	245	0	387	125	0	512	113	0	147	0	260	0	0	0	1	1	1018
Total	349	734	0	0	1083	0	1887	670	0	2557	625	0	670	0	1295	0	1	0	5	6	4941
06:00 PM	48	172	0	0	220	0	312	122	0	434	147	0	188	0	335	0	0	0	0	0	989
06:15 PM	34	152	0	0	186	0	423	113	0	536	134	0	169	0	303	0	0	0	0	0	1025
06:30 PM	59	165	0	0	224	0	300	92	0	392	115	0	155	0	270	0	0	0	0	0	886
06:45 PM	28	134	0	0	162	0	318	78	0	396	113	0	146	0	259	0	0	0	0	0	817
Total	169	623	0	0	792	0	1353	405	0	1758	509	0	658	0	1167	0	0	0	0	0	3717
Grand Total	1667	5381	1	0	7049	1	7915	2596	0	10512	3198	0	3950	0	7148	0	1	0	5	6	24715
Apprch %	23.6	76.3	0	0		0	75.3	24.7	0		44.7	0	55.3	0		0	16.7	0	83.3		
Total %	6.7	21.8	0	0	28.5	0	32	10.5	0	42.5	12.9	0	16	0	28.9	0	0	0	0	0	
Autos	1617	5039	1	0	6657	1	7589	2427	0	10017	3089	0	3740	0	6829	0	0	0	0	0	23503
% Autos	97	93.6	100	0	94.4	100	95.9	93.5	0	95.3	96.6	0	94.7	0	95.5	0	0	0	0	0	95.1
Heavy Vehicles	50	342	0	0	392	0	326	169	0	495	109	0	210	0	319	0	1	0	0	1	1207
% Heavy Vehicles	3	6.4	0	0	5.6	0	4.1	6.5	0	4.7	3.4	0	5.3	0	4.5	0	100	0	0	16.7	4.9
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	16.7	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	80	66.7	0

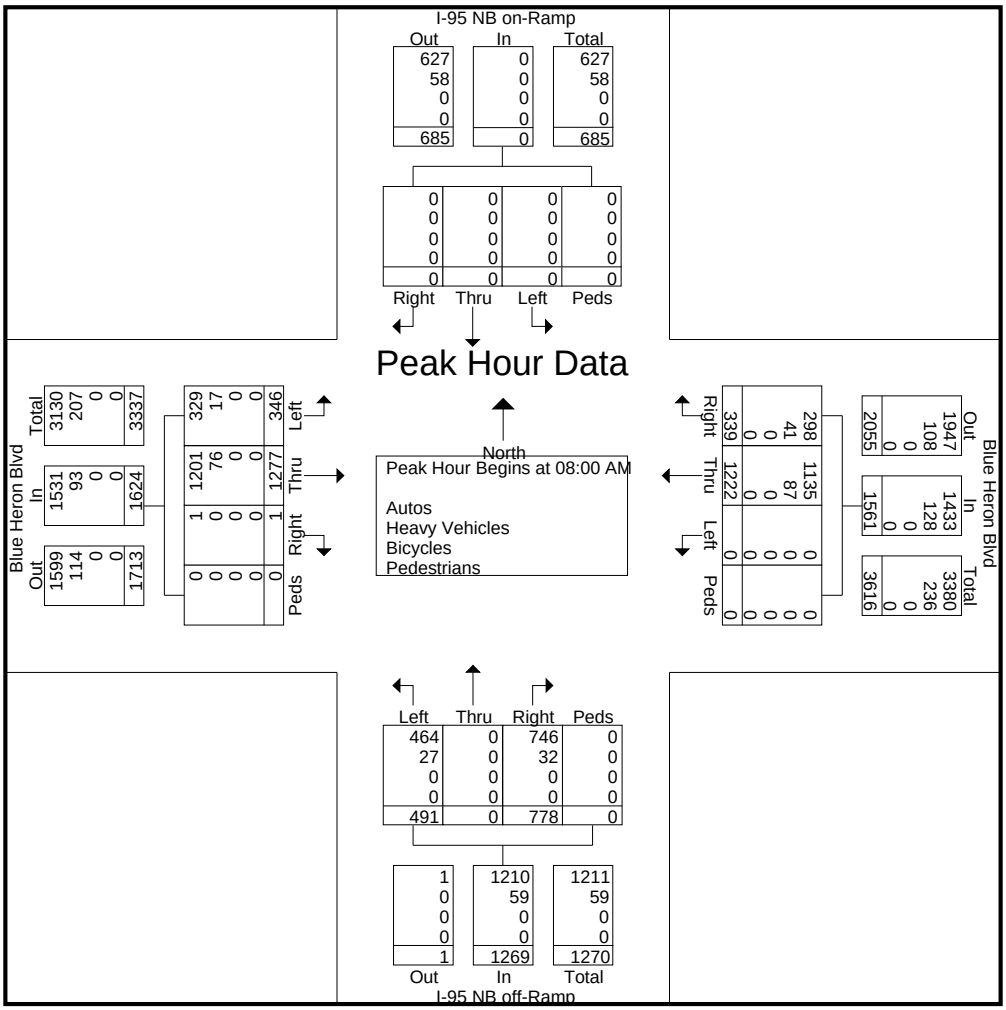
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at I-95 NB off Ramp 03042015
Site Code :
Start Date : 3/4/2015
Page No : 2

	Blue Heron Blvd Eastbound					Blue Heron Blvd Westbound					I-95 NB off-Ramp Northbound					I-95 NB on-Ramp Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	79	332	0	0	411	0	348	78	0	426	122	0	192	0	314	0	0	0	0	0	1151
08:15 AM	94	349	1	0	444	0	329	83	0	412	109	0	180	0	289	0	0	0	0	0	1145
08:30 AM	105	299	0	0	404	0	268	93	0	361	117	0	207	0	324	0	0	0	0	0	1089
08:45 AM	68	297	0	0	365	0	277	85	0	362	143	0	199	0	342	0	0	0	0	0	1069
Total Volume	346	1277	1	0	1624	0	1222	339	0	1561	491	0	778	0	1269	0	0	0	0	0	4454
% App. Total	21.3	78.6	0.1	0		0	78.3	21.7	0		38.7	0	61.3	0		0	0	0	0		
PHF	.824	.915	.250	.000	.914	.000	.878	.911	.000	.916	.858	.000	.940	.000	.928	.000	.000	.000	.000	.000	.967
Autos	329	1201	1	0	1531	0	1135	298	0	1433	464	0	746	0	1210	0	0	0	0	0	4174
% Autos	95.1	94.0	100	0	94.3	0	92.9	87.9	0	91.8	94.5	0	95.9	0	95.4	0	0	0	0	0	93.7
Heavy Vehicles	17	76	0	0	93	0	87	41	0	128	27	0	32	0	59	0	0	0	0	0	280
% Heavy Vehicles	4.9	6.0	0	0	5.7	0	7.1	12.1	0	8.2	5.5	0	4.1	0	4.6	0	0	0	0	0	6.3
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



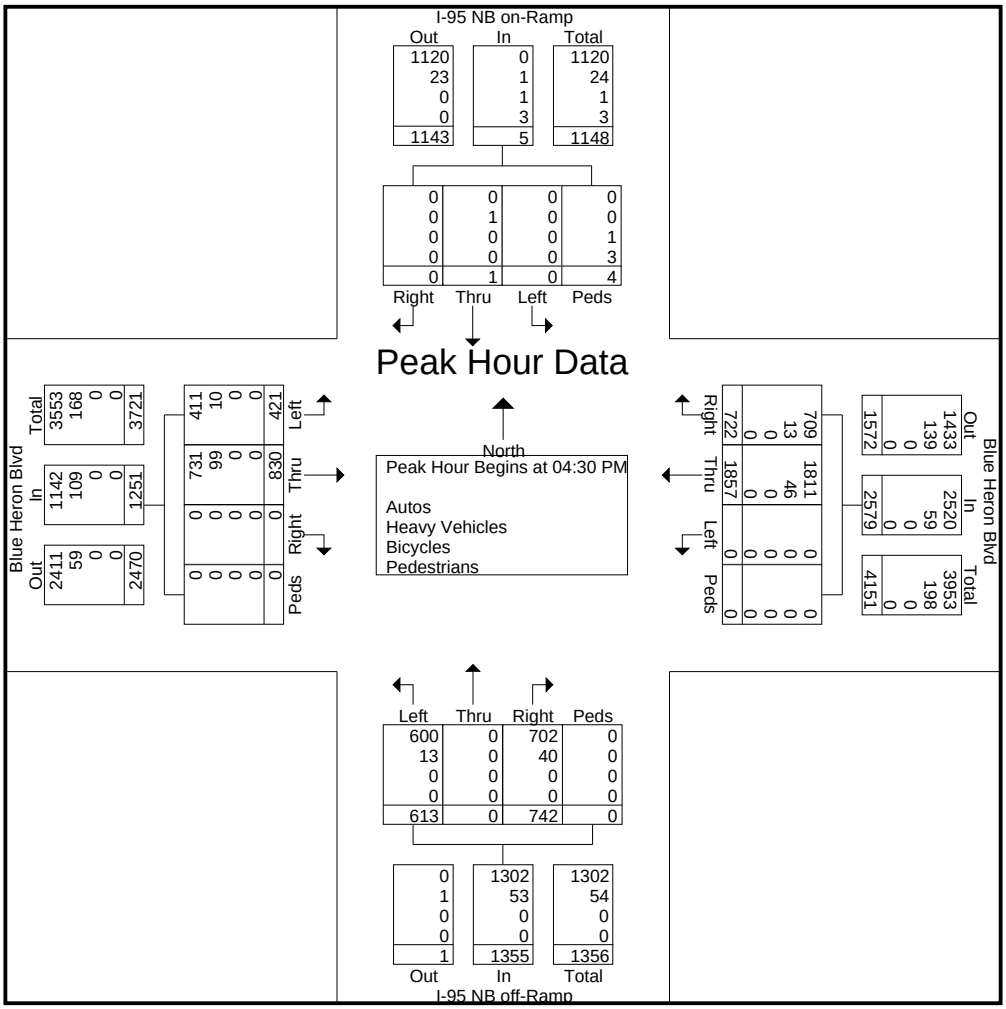
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at I-95 NB off Ramp 03042015
Site Code :
Start Date : 3/4/2015
Page No : 3

	Blue Heron Blvd Eastbound					Blue Heron Blvd Westbound					I-95 NB off-Ramp Northbound					I-95 NB on-Ramp Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	130	236	0	0	366	0	435	173	0	608	118	0	161	0	279	0	0	0	0	0	1253
04:45 PM	91	195	0	0	286	0	411	177	0	588	164	0	221	0	385	0	0	0	0	0	1259
05:00 PM	106	207	0	0	313	0	553	188	0	741	156	0	162	0	318	0	1	0	3	4	1376
05:15 PM	94	192	0	0	286	0	458	184	0	642	175	0	198	0	373	0	0	0	1	1	1302
Total Volume	421	830	0	0	1251	0	1857	722	0	2579	613	0	742	0	1355	0	1	0	4	5	5190
% App. Total	33.7	66.3	0	0		0	72	28	0		45.2	0	54.8	0		0	20	0	80		
PHF	.810	.879	.000	.000	.855	.000	.840	.960	.000	.870	.876	.000	.839	.000	.880	.000	.250	.000	.333	.313	.943
Autos	411	731	0	0	1142	0	1811	709	0	2520	600	0	702	0	1302	0	0	0	0	0	4964
% Autos	97.6	88.1	0	0	91.3	0	97.5	98.2	0	97.7	97.9	0	94.6	0	96.1	0	0	0	0	0	95.6
Heavy Vehicles	10	99	0	0	109	0	46	13	0	59	13	0	40	0	53	0	1	0	0	1	222
% Heavy Vehicles	2.4	11.9	0	0	8.7	0	2.5	1.8	0	2.3	2.1	0	5.4	0	3.9	0	100	0	0	20.0	4.3
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25.0	20.0	0.0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	75.0	60.0	0.1



CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at I-95 NB off Ramp 03042015
Site Code :
Start Date : 3/4/2015
Page No : 1

Groups Printed- Heavy Vehicles

	Blue Heron Blvd Eastbound					Blue Heron Blvd Westbound					I-95 NB off-Ramp Northbound					I-95 NB on-Ramp Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	2	0	0	2	0	16	16	0	32	7	0	3	0	10	0	0	0	0	0	44
06:15 AM	1	0	0	0	1	0	22	12	0	34	14	0	10	0	24	0	0	0	0	0	59
06:30 AM	4	1	0	0	5	0	20	14	0	34	5	0	11	0	16	0	0	0	0	0	55
06:45 AM	5	1	0	0	6	0	24	10	0	34	6	0	7	0	13	0	0	0	0	0	53
Total	10	4	0	0	14	0	82	52	0	134	32	0	31	0	63	0	0	0	0	0	211
07:00 AM	4	14	0	0	18	0	23	9	0	32	2	0	15	0	17	0	0	0	0	0	67
07:15 AM	1	6	0	0	7	0	14	10	0	24	8	0	3	0	11	0	0	0	0	0	42
07:30 AM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	4
BREAK																					
Total	5	20	0	0	25	0	41	19	0	60	10	0	18	0	28	0	0	0	0	0	113
08:00 AM	0	0	0	0	0	0	4	1	0	5	3	0	3	0	6	0	0	0	0	0	11
08:15 AM	7	22	0	0	29	0	25	12	0	37	3	0	13	0	16	0	0	0	0	0	82
08:30 AM	10	23	0	0	33	0	24	17	0	41	9	0	11	0	20	0	0	0	0	0	94
08:45 AM	0	31	0	0	31	0	34	11	0	45	12	0	5	0	17	0	0	0	0	0	93
Total	17	76	0	0	93	0	87	41	0	128	27	0	32	0	59	0	0	0	0	0	280
BREAK																					
04:00 PM	3	20	0	0	23	0	12	8	0	20	5	0	16	0	21	0	0	0	0	0	64
04:15 PM	2	29	0	0	31	0	10	9	0	19	6	0	10	0	16	0	0	0	0	0	66
04:30 PM	3	27	0	0	30	0	13	3	0	16	5	0	12	0	17	0	0	0	0	0	63
04:45 PM	2	26	0	0	28	0	10	5	0	15	1	0	11	0	12	0	0	0	0	0	55
Total	10	102	0	0	112	0	45	25	0	70	17	0	49	0	66	0	0	0	0	0	248
05:00 PM	3	27	0	0	30	0	12	2	0	14	3	0	8	0	11	0	1	0	0	1	56
05:15 PM	2	19	0	0	21	0	11	3	0	14	4	0	9	0	13	0	0	0	0	0	48
05:30 PM	0	17	0	0	17	0	7	9	0	16	2	0	8	0	10	0	0	0	0	0	43
05:45 PM	1	11	0	0	12	0	7	4	0	11	1	0	3	0	4	0	0	0	0	0	27
Total	6	74	0	0	80	0	37	18	0	55	10	0	28	0	38	0	1	0	0	1	174
06:00 PM	1	13	0	0	14	0	11	0	0	11	4	0	10	0	14	0	0	0	0	0	39
06:15 PM	1	18	0	0	19	0	9	5	0	14	5	0	13	0	18	0	0	0	0	0	51
06:30 PM	0	16	0	0	16	0	8	5	0	13	1	0	17	0	18	0	0	0	0	0	47
06:45 PM	0	19	0	0	19	0	6	4	0	10	3	0	12	0	15	0	0	0	0	0	44
Total	2	66	0	0	68	0	34	14	0	48	13	0	52	0	65	0	0	0	0	0	181
Grand Total	50	342	0	0	392	0	326	169	0	495	109	0	210	0	319	0	1	0	0	1	1207
Apprch %	12.8	87.2	0	0		0	65.9	34.1	0		34.2	0	65.8	0		0	100	0	0		
Total %	4.1	28.3	0	0	32.5	0	27	14	0	41	9	0	17.4	0	26.4	0	0.1	0	0	0.1	

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at I-95 NB off Ramp 03052015
Site Code :
Start Date : 3/5/2015
Page No : 1

Groups Printed- Autos - Heavy Vehicles - Bicycles - Pedestrians

	Blue Heron Blvd Eastbound					Blue Heron Blvd Westbound					I-95 NB off-Ramp Northbound					I-95 NB on-Ramp Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	13	90	0	0	103	0	115	27	0	142	73	0	117	0	190	0	0	0	2	2	437
06:15 AM	11	125	0	0	136	0	156	52	0	208	80	0	126	0	206	0	0	0	1	1	551
06:30 AM	35	195	0	0	230	0	186	57	0	243	105	0	195	0	300	0	0	0	0	0	773
06:45 AM	36	277	0	0	313	0	264	61	0	325	151	0	248	0	399	0	0	0	1	1	1038
Total	95	687	0	0	782	0	721	197	0	918	409	0	686	0	1095	0	0	0	4	4	2799
07:00 AM	63	322	0	0	385	0	306	92	0	398	123	0	153	0	276	0	0	0	0	0	1059
07:15 AM	94	307	0	0	401	0	334	82	0	416	156	0	103	0	259	0	0	0	0	0	1076
07:30 AM	69	299	0	0	368	0	313	76	0	389	165	0	125	0	290	0	0	0	0	0	1047
07:45 AM	91	286	0	0	377	0	324	82	0	406	145	0	155	0	300	0	0	0	0	0	1083
Total	317	1214	0	0	1531	0	1277	332	0	1609	589	0	536	0	1125	0	0	0	0	0	4265
08:00 AM	77	313	0	0	390	0	335	95	0	430	107	0	200	0	307	0	0	0	0	0	1127
08:15 AM	83	307	0	0	390	0	330	106	0	436	101	0	250	0	351	0	0	0	0	0	1177
08:30 AM	79	276	0	0	355	0	278	99	0	377	95	0	275	0	370	0	0	0	1	1	1103
08:45 AM	61	259	0	0	320	0	318	95	0	413	96	0	230	0	326	0	0	0	4	4	1063
Total	300	1155	0	0	1455	0	1261	395	0	1656	399	0	955	0	1354	0	0	0	5	5	4470
BREAK																					
04:00 PM	114	200	0	0	314	0	395	150	0	545	155	0	180	0	335	0	0	0	0	0	1194
04:15 PM	76	198	0	0	274	0	481	155	0	636	151	0	172	0	323	0	0	0	0	0	1233
04:30 PM	113	217	0	0	330	0	486	174	0	660	133	0	187	0	320	0	0	0	0	0	1310
04:45 PM	98	199	0	0	297	0	434	177	0	611	130	0	211	0	341	0	0	0	2	2	1251
Total	401	814	0	0	1215	0	1796	656	0	2452	569	0	750	0	1319	0	0	0	2	2	4988
05:00 PM	96	190	0	0	286	0	590	216	0	806	149	0	161	0	310	0	0	0	0	0	1402
05:15 PM	93	178	0	0	271	0	514	204	0	718	175	0	189	0	364	0	0	0	0	0	1353
05:30 PM	80	180	0	0	260	0	495	197	0	692	178	0	207	0	385	0	0	0	0	0	1337
05:45 PM	74	182	0	0	256	0	423	134	0	557	146	0	188	0	334	0	0	0	0	0	1147
Total	343	730	0	0	1073	0	2022	751	0	2773	648	0	745	0	1393	0	0	0	0	0	5239
06:00 PM	66	163	0	0	229	0	390	106	0	496	115	0	155	0	270	0	0	0	0	0	995
06:15 PM	44	167	0	0	211	0	390	88	0	478	102	0	139	0	241	0	0	0	0	0	930
06:30 PM	49	167	0	0	216	0	305	84	0	389	109	0	134	0	243	0	0	0	0	0	848
06:45 PM	38	155	0	0	193	0	222	54	0	276	88	0	143	0	231	0	0	0	0	0	700
Total	197	652	0	0	849	0	1307	332	0	1639	414	0	571	0	985	0	0	0	0	0	3473
Grand Total	1653	5252	0	0	6905	0	8384	2663	0	11047	3028	0	4243	0	7271	0	0	0	11	11	25234
Apprch %	23.9	76.1	0	0		0	75.9	24.1	0		41.6	0	58.4	0		0	0	0	100		
Total %	6.6	20.8	0	0	27.4	0	33.2	10.6	0	43.8	12	0	16.8	0	28.8	0	0	0	0	0	
Autos	1587	4873	0	0	6460	0	8049	2463	0	10512	2921	0	4016	0	6937	0	0	0	0	0	23909
% Autos	96	92.8	0	0	93.6	0	96	92.5	0	95.2	96.5	0	94.7	0	95.4	0	0	0	0	0	94.7
Heavy Vehicles	66	379	0	0	445	0	335	200	0	535	107	0	227	0	334	0	0	0	0	0	1314
% Heavy Vehicles	4	7.2	0	0	6.4	0	4	7.5	0	4.8	3.5	0	5.3	0	4.6	0	0	0	0	0	5.2
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	4
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36.4	36.4	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	7	7
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	63.6	63.6	0

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at I-95 NB off Ramp 03052015
Site Code :
Start Date : 3/5/2015
Page No : 2

	Blue Heron Blvd Eastbound					Blue Heron Blvd Westbound					I-95 NB off-Ramp Northbound					I-95 NB on-Ramp Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	91	286	0	0	377	0	324	82	0	406	145	0	155	0	300	0	0	0	0	0	1083
08:00 AM	77	313	0	0	390	0	335	95	0	430	107	0	200	0	307	0	0	0	0	0	1127
08:15 AM	83	307	0	0	390	0	330	106	0	436	101	0	250	0	351	0	0	0	0	0	1177
08:30 AM	79	276	0	0	355	0	278	99	0	377	95	0	275	0	370	0	0	0	1	1	1103
Total Volume	330	1182	0	0	1512	0	1267	382	0	1649	448	0	880	0	1328	0	0	0	1	1	4490
% App. Total	21.8	78.2	0	0		0	76.8	23.2	0		33.7	0	66.3	0		0	0	0	100		
PHF	.907	.944	.000	.000	.969	.000	.946	.901	.000	.946	.772	.000	.800	.000	.897	.000	.000	.000	.250	.250	.954
Autos	306	1136	0	0	1442	0	1186	330	0	1516	434	0	851	0	1285	0	0	0	0	0	4243
% Autos	92.7	96.1	0	0	95.4	0	93.6	86.4	0	91.9	96.9	0	96.7	0	96.8	0	0	0	0	0	94.5
Heavy Vehicles	24	46	0	0	70	0	81	52	0	133	14	0	29	0	43	0	0	0	0	0	246
% Heavy Vehicles	7.3	3.9	0	0	4.6	0	6.4	13.6	0	8.1	3.1	0	3.3	0	3.2	0	0	0	0	0	5.5
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	0.0

Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM					07:30 AM					08:00 AM					08:00 AM				
+0 mins.	94	307	0	0	401	0	313	76	0	389	107	0	200	0	307	0	0	0	0	0
+15 mins.	69	299	0	0	368	0	324	82	0	406	101	0	250	0	351	0	0	0	0	0
+30 mins.	91	286	0	0	377	0	335	95	0	430	95	0	275	0	370	0	0	0	1	1
+45 mins.	77	313	0	0	390	0	330	106	0	436	96	0	230	0	326	0	0	0	4	4
Total Volume	331	1205	0	0	1536	0	1302	359	0	1661	399	0	955	0	1354	0	0	0	5	5
% App. Total	21.5	78.5	0	0		0	78.4	21.6	0		29.5	0	70.5	0		0	0	0	100	
PHF	.880	.962	.000	.000	.958	.000	.972	.847	.000	.952	.932	.000	.868	.000	.915	.000	.000	.000	.313	.313
Autos	322	1193	0	0	1515	0	1240	324	0	1564	374	0	919	0	1293	0	0	0	0	0
% Autos	97.3	99	0	0	98.6	0	95.2	90.3	0	94.2	93.7	0	96.2	0	95.5	0	0	0	0	0
Heavy Vehicles	9	12	0	0	21	0	62	35	0	97	25	0	36	0	61	0	0	0	0	0
% Heavy Vehicles	2.7	1	0	0	1.4	0	4.8	9.7	0	5.8	6.3	0	3.8	0	4.5	0	0	0	0	0
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	40
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	60	60

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at I-95 NB off Ramp 03052015
Site Code :
Start Date : 3/5/2015
Page No : 3

	Blue Heron Blvd Eastbound					Blue Heron Blvd Westbound					I-95 NB off-Ramp Northbound					I-95 NB on-Ramp Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	98	199	0	0	297	0	434	177	0	611	130	0	211	0	341	0	0	0	2	2	1251
05:00 PM	96	190	0	0	286	0	590	216	0	806	149	0	161	0	310	0	0	0	0	0	1402
05:15 PM	93	178	0	0	271	0	514	204	0	718	175	0	189	0	364	0	0	0	0	0	1353
05:30 PM	80	180	0	0	260	0	495	197	0	692	178	0	207	0	385	0	0	0	0	0	1337
Total Volume	367	747	0	0	1114	0	2033	794	0	2827	632	0	768	0	1400	0	0	0	2	2	5343
% App. Total	32.9	67.1	0	0		0	71.9	28.1	0		45.1	0	54.9	0		0	0	0	100		
PHF	.936	.938	.000	.000	.938	.000	.861	.919	.000	.877	.888	.000	.910	.000	.909	.000	.000	.000	.250	.250	.953
Autos	361	670	0	0	1031	0	1994	770	0	2764	616	0	731	0	1347	0	0	0	0	0	5142
% Autos	98.4	89.7	0	0	92.5	0	98.1	97.0	0	97.8	97.5	0	95.2	0	96.2	0	0	0	0	0	96.2
Heavy Vehicles	6	77	0	0	83	0	39	24	0	63	16	0	37	0	53	0	0	0	0	0	199
% Heavy Vehicles	1.6	10.3	0	0	7.5	0	1.9	3.0	0	2.2	2.5	0	4.8	0	3.8	0	0	0	0	0	3.7
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100	0.0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM					04:45 PM					04:45 PM					04:00 PM				
+0 mins.	114	200	0	0	314	0	434	177	0	611	130	0	211	0	341	0	0	0	0	0
+15 mins.	76	198	0	0	274	0	590	216	0	806	149	0	161	0	310	0	0	0	0	0
+30 mins.	113	217	0	0	330	0	514	204	0	718	175	0	189	0	364	0	0	0	0	0
+45 mins.	98	199	0	0	297	0	495	197	0	692	178	0	207	0	385	0	0	0	2	2
Total Volume	401	814	0	0	1215	0	2033	794	0	2827	632	0	768	0	1400	0	0	0	2	2
% App. Total	33	67	0	0		0	71.9	28.1	0		45.1	0	54.9	0		0	0	0	100	
PHF	.879	.938	.000	.000	.920	.000	.861	.919	.000	.877	.888	.000	.910	.000	.909	.000	.000	.000	.250	.250
Autos	389	720	0	0	1109	0	1994	770	0	2764	616	0	731	0	1347	0	0	0	0	0
% Autos	97	88.5	0	0	91.3	0	98.1	97	0	97.8	97.5	0	95.2	0	96.2	0	0	0	0	0
Heavy Vehicles	12	94	0	0	106	0	39	24	0	63	16	0	37	0	53	0	0	0	0	0
% Heavy Vehicles	3	11.5	0	0	8.7	0	1.9	3	0	2.2	2.5	0	4.8	0	3.8	0	0	0	0	0
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at I-95 NB off Ramp 03052015
Site Code :
Start Date : 3/5/2015
Page No : 1

Groups Printed- Heavy Vehicles

	Blue Heron Blvd Eastbound					Blue Heron Blvd Westbound					I-95 NB off-Ramp Northbound					I-95 NB on-Ramp Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	1	8	0	0	9	0	6	14	0	20	4	0	3	0	7	0	0	0	0	0	36
06:15 AM	0	12	0	0	12	0	12	21	0	33	7	0	3	0	10	0	0	0	0	0	55
06:30 AM	2	13	0	0	15	0	19	19	0	38	5	0	13	0	18	0	0	0	0	0	71
06:45 AM	3	14	0	0	17	0	27	14	0	41	5	0	13	0	18	0	0	0	0	0	76
Total	6	47	0	0	53	0	64	68	0	132	21	0	32	0	53	0	0	0	0	0	238
07:00 AM	5	16	0	0	21	0	18	8	0	26	9	0	7	0	16	0	0	0	0	0	63
07:15 AM	3	3	0	0	6	0	9	8	0	17	6	0	3	0	9	0	0	0	0	0	32
07:30 AM	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	2
07:45 AM	1	2	0	0	3	0	11	3	0	14	0	0	1	0	1	0	0	0	0	0	18
Total	9	21	0	0	30	0	39	19	0	58	15	0	12	0	27	0	0	0	0	0	115
08:00 AM	5	7	0	0	12	0	20	11	0	31	2	0	6	0	8	0	0	0	0	0	51
08:15 AM	8	19	0	0	27	0	30	21	0	51	9	0	9	0	18	0	0	0	0	0	96
08:30 AM	10	18	0	0	28	0	20	17	0	37	3	0	13	0	16	0	0	0	0	0	81
08:45 AM	6	17	0	0	23	0	38	15	0	53	11	0	8	0	19	0	0	0	0	0	95
Total	29	61	0	0	90	0	108	64	0	172	25	0	36	0	61	0	0	0	0	0	323
BREAK																					
04:00 PM	4	29	0	0	33	0	13	4	0	17	4	0	15	0	19	0	0	0	0	0	69
04:15 PM	4	21	0	0	25	0	15	6	0	21	10	0	18	0	28	0	0	0	0	0	74
04:30 PM	2	15	0	0	17	0	15	3	0	18	5	0	12	0	17	0	0	0	0	0	52
04:45 PM	2	29	0	0	31	0	8	4	0	12	7	0	9	0	16	0	0	0	0	0	59
Total	12	94	0	0	106	0	51	17	0	68	26	0	54	0	80	0	0	0	0	0	254
05:00 PM	0	15	0	0	15	0	11	5	0	16	1	0	12	0	13	0	0	0	0	0	44
05:15 PM	2	18	0	0	20	0	10	8	0	18	3	0	8	0	11	0	0	0	0	0	49
05:30 PM	2	15	0	0	17	0	10	7	0	17	5	0	8	0	13	0	0	0	0	0	47
05:45 PM	1	25	0	0	26	0	9	3	0	12	2	0	11	0	13	0	0	0	0	0	51
Total	5	73	0	0	78	0	40	23	0	63	11	0	39	0	50	0	0	0	0	0	191
06:00 PM	2	20	0	0	22	0	11	1	0	12	2	0	13	0	15	0	0	0	0	0	49
06:15 PM	1	24	0	0	25	0	9	1	0	10	1	0	10	0	11	0	0	0	0	0	46
06:30 PM	1	18	0	0	19	0	7	4	0	11	0	0	18	0	18	0	0	0	0	0	48
06:45 PM	1	21	0	0	22	0	6	3	0	9	6	0	13	0	19	0	0	0	0	0	50
Total	5	83	0	0	88	0	33	9	0	42	9	0	54	0	63	0	0	0	0	0	193
Grand Total	66	379	0	0	445	0	335	200	0	535	107	0	227	0	334	0	0	0	0	0	1314
Apprch %	14.8	85.2	0	0		0	62.6	37.4	0		32	0	68	0		0	0	0	0		
Total %	5	28.8	0	0	33.9	0	25.5	15.2	0	40.7	8.1	0	17.3	0	25.4	0	0	0	0	0	

Blue Heron Boulevard at Garden Road

County: 93
Station: 3341
Description: GARDEN RD N OF BLUE HERON BLVD
Start Date: 04/21/2015
Start Time: 0000

	Direction: N					Direction: S					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	5	3	5	5	18	5	3	3	4	15	33
0100	1	5	4	2	12	7	5	2	7	21	33
0200	3	3	4	5	15	7	4	5	4	20	35
0300	8	7	15	8	38	11	5	11	11	38	76
0400	11	16	31	17	75	19	13	21	19	72	147
0500	21	29	34	38	122	14	27	25	30	96	218
0600	39	64	68	69	240	46	49	52	80	227	467
0700	73	76	131	104	384	74	77	83	74	308	692
0800	75	88	70	59	292	93	83	72	90	338	630
0900	62	57	82	57	258	86	66	66	65	283	541
1000	63	54	68	72	257	72	66	71	70	279	536
1100	43	68	76	62	249	81	85	100	99	365	614
1200	62	61	76	65	264	83	93	97	85	358	622
1300	55	68	65	68	256	67	74	90	85	316	572
1400	61	67	59	62	249	77	81	85	110	353	602
1500	66	68	70	62	266	88	143	95	105	431	697
1600	63	56	53	70	242	100	156	119	189	564	806
1700	50	42	38	32	162	109	114	62	74	359	521
1800	40	25	24	20	109	54	42	29	27	152	261
1900	17	16	18	14	65	36	33	21	27	117	182
2000	16	14	15	12	57	20	28	22	21	91	148
2100	10	11	15	8	44	16	16	9	17	58	102
2200	9	8	8	6	31	15	12	10	8	45	76
2300	5	6	4	5	20	10	9	10	9	38	58
24-Hour Totals:					3725					4944	8669

Peak Volume Information

	Direction: N		Direction: S		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	730	398	800	338	730	731
P.M.	1445	266	1615	573	1600	806
Daily	730	398	1615	573	1600	806

Generated by SPS 5.0.45P

County: 93
Station: 3341
Description: GARDEN RD N OF BLUE HERON BLVD
Start Date: 04/22/2015
Start Time: 0000

	Direction: N					Direction: S					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	3	6	5	8	22	7	5	3	5	20	42
0100	5	1	4	2	12	5	10	4	2	21	33
0200	0	2	3	6	11	5	7	3	6	21	32
0300	5	11	11	14	41	6	13	4	13	36	77
0400	7	10	18	40	75	9	21	11	22	63	138
0500	17	23	32	37	109	21	16	28	24	89	198
0600	42	34	75	64	215	31	61	58	61	211	426
0700	77	79	82	146	384	80	79	86	97	342	726
0800	117	73	89	74	353	78	109	82	65	334	687
0900	52	64	58	94	268	94	87	83	68	332	600
1000	60	60	64	78	262	71	85	75	83	314	576
1100	73	43	63	77	256	79	86	91	114	370	626
1200	55	69	73	84	281	104	69	102	107	382	663
1300	75	55	72	71	273	108	69	86	100	363	636
1400	75	69	68	64	276	88	80	93	91	352	628
1500	59	72	79	82	292	115	88	158	103	464	756
1600	65	72	63	61	261	108	119	176	144	547	808
1700	78	50	45	42	215	217	124	134	64	539	754
1800	35	43	27	29	134	76	58	54	33	221	355
1900	23	21	20	17	81	32	34	39	23	128	209
2000	17	17	15	20	69	24	21	30	28	103	172
2100	13	12	11	19	55	25	13	20	6	64	119
2200	8	9	9	10	36	14	15	13	14	56	92
2300	5	3	8	4	20	8	8	12	6	34	54
24-Hour Totals:					4001					5406	9407

Peak Volume Information

	Direction: N		Direction: S		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	745	425	730	370	745	791
P.M.	1215	301	1630	661	1615	930
Daily	745	425	1630	661	1615	930

Generated by SPS 5.0.45P

County: 93
Station: 3341
Description: GARDEN RD N OF BLUE HERON BLVD
Start Date: 04/23/2015
Start Time: 0000

	Direction: N					Direction: S					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	3	3	1	1	8	7	7	3	1	18	26
0100	5	1	7	9	22	3	4	8	3	18	40
0200	7	5	4	2	18	13	10	8	5	36	54
0300	6	5	2	20	33	2	9	7	9	27	60
0400	11	16	17	21	65	17	20	18	23	78	143
0500	20	21	30	35	106	20	15	32	32	99	205
0600	39	57	60	90	246	35	31	44	47	157	403
0700	71	79	84	133	367	99	81	78	76	334	701
0800	104	94	106	78	382	84	85	103	102	374	756
0900	84	73	68	78	303	103	104	52	77	336	639
1000	64	82	49	67	262	70	65	66	65	266	528
1100	87	53	91	92	323	70	90	94	97	351	674
1200	87	63	54	78	282	111	127	97	100	435	717
1300	61	67	76	68	272	63	80	68	94	305	577
1400	70	60	81	63	274	98	90	79	95	362	636
1500	81	71	65	65	282	127	108	149	103	487	769
1600	70	61	55	51	237	123	88	155	100	466	703
1700	72	62	47	38	219	183	108	103	73	467	686
1800	33	44	27	21	125	88	60	29	28	205	330
1900	19	15	14	23	71	24	48	31	21	124	195
2000	12	19	14	9	54	38	22	32	17	109	163
2100	13	8	13	10	44	19	24	12	17	72	116
2200	9	10	8	6	33	25	18	12	5	60	93
2300	8	11	4	4	27	10	15	7	19	51	78
24-Hour Totals:					4055					5237	9292

Peak Volume Information

	Direction: N		Direction: S		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	745	437	830	412	745	785
P.M.	1430	296	1630	546	1630	786
Daily	745	437	1630	546	1630	786

Generated by SPS 5.0.45P

County: 93
Station: 3343
Description: BLUE HERON BLVD E OF GARDEN RD
Start Date: 03/24/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	72	86	67	67	292	76	72	58	51	257	549
0100	45	45	38	59	187	37	42	30	43	152	339
0200	43	37	40	39	159	29	36	40	37	142	301
0300	41	31	25	66	163	29	42	39	38	148	311
0400	65	66	42	66	239	41	30	74	82	227	466
0500	49	77	99	117	342	85	91	138	131	445	787
0600	130	197	301	433	1061	152	152	231	261	796	1857
0700	421	399	413	467	1700	340	357	391	363	1451	3151
0800	414	424	396	357	1591	351	400	352	357	1460	3051
0900	318	326	264	344	1252	334	352	301	334	1321	2573
1000	304	304	305	296	1209	296	289	306	324	1215	2424
1100	319	313	320	308	1260	324	317	300	311	1252	2512
1200	306	340	303	327	1276	360	357	343	359	1419	2695
1300	318	312	320	279	1229	334	345	402	337	1418	2647
1400	322	309	381	316	1328	336	344	364	405	1449	2777
1500	346	300	343	358	1347	446	457	435	445	1783	3130
1600	335	337	410	340	1422	430	456	478	474	1838	3260
1700	423	388	379	384	1574	521	500	444	444	1909	3483
1800	301	289	301	300	1191	448	368	306	233	1355	2546
1900	274	262	251	222	1009	239	260	205	237	941	1950
2000	204	212	207	207	830	247	223	209	184	863	1693
2100	185	197	149	168	699	214	192	157	142	705	1404
2200	151	155	116	110	532	144	147	153	124	568	1100
2300	114	99	87	92	392	114	107	67	67	355	747
24-Hour Totals:					22284					23469	45753

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	730	1718	730	1505	730	3223
P.M.	1700	1574	1630	1973	1630	3534
Daily	730	1718	1630	1973	1630	3534

Generated by SPS 5.0.45P

County: 93
Station: 3343
Description: BLUE HERON BLVD E OF GARDEN RD
Start Date: 03/25/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	69	68	60	48	245	76	58	46	34	214	459
0100	58	35	35	39	167	32	35	32	24	123	290
0200	27	32	29	28	116	34	28	21	28	111	227
0300	31	19	28	53	131	18	39	40	26	123	254
0400	38	73	61	88	260	24	42	57	81	204	464
0500	59	78	124	141	402	76	119	120	115	430	832
0600	138	196	324	474	1132	160	198	229	251	838	1970
0700	470	436	444	519	1869	381	371	425	378	1555	3424
0800	490	504	451	392	1837	356	404	358	397	1515	3352
0900	320	292	315	357	1284	353	400	345	330	1428	2712
1000	311	289	336	281	1217	310	325	301	325	1261	2478
1100	340	302	322	320	1284	326	344	316	312	1298	2582
1200	371	357	343	336	1407	347	364	379	388	1478	2885
1300	325	351	331	325	1332	386	396	368	338	1488	2820
1400	311	314	375	323	1323	326	326	356	416	1424	2747
1500	368	369	328	369	1434	439	437	428	401	1705	3139
1600	348	359	409	348	1464	414	494	509	474	1891	3355
1700	378	403	372	397	1550	560	534	448	397	1939	3489
1800	331	300	316	319	1266	421	342	253	293	1309	2575
1900	274	259	238	234	1005	250	278	226	248	1002	2007
2000	197	247	229	183	856	197	196	232	235	860	1716
2100	203	208	159	181	751	193	195	157	164	709	1460
2200	153	125	135	122	535	150	162	147	131	590	1125
2300	120	110	109	95	434	123	90	101	92	406	840
24-Hour Totals:					23301					23901	47202

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	745	1964	730	1563	730	3520
P.M.	1700	1550	1630	2077	1630	3615
Daily	745	1964	1630	2077	1630	3615

Generated by SPS 5.0.45P

County: 93
Station: 3343
Description: BLUE HERON BLVD E OF GARDEN RD
Start Date: 03/26/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	79	61	56	54	250	62	62	68	46	238	488
0100	61	36	37	28	162	37	35	41	32	145	307
0200	24	17	36	33	110	24	30	19	22	95	205
0300	34	28	38	42	142	26	26	47	35	134	276
0400	62	68	71	67	268	34	49	78	73	234	502
0500	64	86	102	125	377	82	96	128	133	439	816
0600	122	204	297	448	1071	159	153	245	288	845	1916
0700	460	429	414	523	1826	363	371	401	415	1550	3376
0800	442	415	476	323	1656	379	361	345	344	1429	3085
0900	300	293	304	300	1197	370	316	312	332	1330	2527
1000	255	277	268	318	1118	289	332	317	322	1260	2378
1100	296	261	331	320	1208	306	335	318	291	1250	2458
1200	298	328	353	329	1308	328	381	375	397	1481	2789
1300	325	347	327	316	1315	307	367	323	337	1334	2649
1400	309	321	407	354	1391	362	349	343	403	1457	2848
1500	383	398	354	370	1505	475	392	401	431	1699	3204
1600	361	351	413	381	1506	414	444	473	450	1781	3287
1700	434	427	387	414	1662	470	588	463	391	1912	3574
1800	324	361	306	302	1293	320	309	303	293	1225	2518
1900	245	260	238	240	983	230	240	217	234	921	1904
2000	201	215	211	187	814	227	195	196	244	862	1676
2100	167	181	157	168	673	234	201	162	176	773	1446
2200	145	153	150	126	574	145	133	149	131	558	1132
2300	105	114	94	82	395	139	100	91	85	415	810
24-Hour Totals:					22804					23367	46171

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	745	1856	715	1566	700	3376
P.M.	1700	1662	1630	1981	1630	3636
Daily	745	1856	1630	1981	1630	3636

Generated by SPS 5.0.45P

County: 93
Station: 3345
Description: GARDEN RD S OF BLUE HERON BLVD
Start Date: 04/21/2015
Start Time: 0000

	Direction: N					Direction: S					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	17	7	11	13	48	14	11	10	11	46	94
0100	8	6	7	11	32	11	13	11	10	45	77
0200	9	6	14	7	36	9	7	6	8	30	66
0300	7	14	19	12	52	7	7	13	16	43	95
0400	17	30	45	89	181	14	17	28	63	122	303
0500	41	41	50	73	205	59	42	46	53	200	405
0600	58	66	77	103	304	67	76	91	106	340	644
0700	95	101	125	148	469	108	116	129	160	513	982
0800	139	161	104	107	511	167	149	154	140	610	1121
0900	98	91	105	83	377	116	111	119	131	477	854
1000	84	92	82	84	342	126	115	115	112	468	810
1100	103	103	88	108	402	113	125	127	134	499	901
1200	91	79	106	100	376	137	141	128	130	536	912
1300	98	93	115	107	413	150	144	155	147	596	1009
1400	103	100	82	95	380	124	116	132	126	498	878
1500	121	109	133	86	449	125	130	151	152	558	1007
1600	120	106	129	153	508	136	133	141	151	561	1069
1700	132	112	115	79	438	162	147	126	96	531	969
1800	95	67	62	48	272	81	81	71	60	293	565
1900	59	38	28	29	154	57	52	40	38	187	341
2000	33	27	34	23	117	38	36	29	30	133	250
2100	19	15	30	19	83	30	25	25	21	101	184
2200	13	17	11	10	51	17	15	12	17	61	112
2300	42	20	15	4	81	26	24	14	13	77	158
24-Hour Totals:					6281					7525	13806

Peak Volume Information

	Direction: N		Direction: S		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	730	573	745	630	745	1182
P.M.	1630	526	1630	601	1630	1127
Daily	730	573	745	630	745	1182

Generated by SPS 5.0.45P

County: 93
Station: 3345
Description: GARDEN RD S OF BLUE HERON BLVD
Start Date: 04/22/2015
Start Time: 0000

	Direction: N					Direction: S					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	14	13	2	12	41	16	11	6	12	45	86
0100	9	10	14	5	38	10	21	3	10	44	82
0200	11	8	7	19	45	11	7	5	11	34	79
0300	8	12	16	14	50	5	12	16	17	50	100
0400	23	24	59	74	180	11	19	24	102	156	336
0500	61	47	56	54	218	56	47	64	69	236	454
0600	54	54	63	106	277	81	89	109	115	394	671
0700	86	119	134	143	482	144	122	152	215	633	1115
0800	155	123	129	118	525	170	170	168	140	648	1173
0900	97	106	96	72	371	131	121	158	169	579	950
1000	86	82	105	101	374	123	119	122	127	491	865
1100	109	93	84	100	386	125	145	134	176	580	966
1200	106	113	114	131	464	154	158	119	166	597	1061
1300	114	119	122	118	473	184	125	198	145	652	1125
1400	101	105	95	94	395	133	122	150	122	527	922
1500	113	104	162	98	477	140	144	184	164	632	1109
1600	92	117	132	131	472	152	171	186	176	685	1157
1700	128	98	114	90	430	219	161	150	104	634	1064
1800	91	62	40	51	244	101	107	85	76	369	613
1900	56	32	37	28	153	72	56	37	52	217	370
2000	36	27	22	25	110	38	45	27	57	167	277
2100	37	14	14	9	74	34	29	33	21	117	191
2200	15	6	9	16	46	19	9	17	24	69	115
2300	33	25	8	9	75	33	21	16	14	84	159
24-Hour Totals:					6400					8640	15040

Peak Volume Information

	Direction: N		Direction: S		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	730	555	745	723	745	1273
P.M.	1615	508	1615	752	1615	1260
Daily	730	555	1615	752	745	1273

Generated by SPS 5.0.45P

County: 93
Station: 3345
Description: GARDEN RD S OF BLUE HERON BLVD
Start Date: 04/23/2015
Start Time: 0000

	Direction: N					Direction: S					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	13	10	9	9	41	12	11	15	13	51	92
0100	6	1	4	6	17	15	12	15	17	59	76
0200	7	16	12	9	44	2	9	8	11	30	74
0300	15	15	16	19	65	5	8	22	19	54	119
0400	16	24	50	95	185	17	27	50	91	185	370
0500	32	39	44	57	172	32	53	41	62	188	360
0600	69	56	82	98	305	84	87	119	134	424	729
0700	99	126	130	126	481	94	156	148	193	591	1072
0800	152	133	110	96	491	184	150	201	132	667	1158
0900	84	104	84	92	364	124	127	126	135	512	876
1000	84	101	89	85	359	144	135	141	119	539	898
1100	92	101	92	93	378	137	150	146	143	576	954
1200	101	103	95	107	406	145	174	137	154	610	1016
1300	117	114	118	98	447	169	179	185	146	679	1126
1400	87	92	102	111	392	137	134	180	126	577	969
1500	116	101	103	89	409	166	138	200	148	652	1061
1600	108	93	116	150	467	149	127	147	170	593	1060
1700	95	91	89	83	358	159	133	126	66	484	842
1800	82	77	55	53	267	92	66	66	45	269	536
1900	58	36	40	39	173	60	51	41	37	189	362
2000	46	27	22	23	118	43	36	24	22	125	243
2100	23	17	12	19	71	25	26	24	17	92	163
2200	9	13	10	18	50	21	18	11	20	70	120
2300	37	29	8	19	93	37	21	8	20	86	179
24-Hour Totals:					6153					8302	14455

Peak Volume Information

	Direction: N		Direction: S		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	730	541	745	728	745	1249
P.M.	1600	467	1245	687	1245	1143
Daily	730	541	745	728	745	1249

Generated by SPS 5.0.45P

County: 93
Station: 3347
Description: BLUE HERON BLVD W OF GARDEN RD
Start Date: 03/24/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	74	93	71	60	298	85	83	70	50	288	586
0100	48	47	49	64	208	46	40	36	50	172	380
0200	53	41	43	45	182	40	35	47	38	160	342
0300	49	47	45	88	229	35	55	46	58	194	423
0400	76	91	89	114	370	60	59	83	100	302	672
0500	80	107	132	195	514	108	116	160	160	544	1058
0600	184	242	377	534	1337	171	193	281	321	966	2303
0700	524	520	542	592	2178	343	394	452	383	1572	3750
0800	561	494	475	438	1968	405	419	428	395	1647	3615
0900	381	338	356	392	1467	380	375	376	350	1481	2948
1000	346	327	323	357	1353	348	355	331	346	1380	2733
1100	337	368	351	363	1419	351	359	343	352	1405	2824
1200	339	372	386	347	1444	422	420	404	362	1608	3052
1300	380	345	347	354	1426	401	379	467	392	1639	3065
1400	375	384	418	397	1574	367	383	390	445	1585	3159
1500	363	342	429	368	1502	493	526	558	480	2057	3559
1600	380	403	440	448	1671	553	509	642	588	2292	3963
1700	457	402	433	397	1689	664	679	600	494	2437	4126
1800	343	340	299	298	1280	524	418	334	258	1534	2814
1900	298	273	273	219	1063	305	267	248	241	1061	2124
2000	212	210	241	190	853	272	218	240	213	943	1796
2100	198	195	166	168	727	251	199	182	138	770	1497
2200	168	158	120	118	564	156	149	166	133	604	1168
2300	125	108	95	86	414	145	121	77	75	418	832
24-Hour Totals:					25730					27059	52789

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	715	2215	730	1659	715	3849
P.M.	1615	1748	1630	2573	1630	4320
Daily	715	2215	1630	2573	1630	4320

Generated by SPS 5.0.45P

County: 93
Station: 3347
Description: BLUE HERON BLVD W OF GARDEN RD
Start Date: 03/25/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	80	81	61	48	270	77	56	49	47	229	499
0100	57	47	33	44	181	31	39	35	35	140	321
0200	46	31	32	45	154	38	35	20	33	126	280
0300	41	27	49	65	182	23	57	46	39	165	347
0400	54	101	91	138	384	38	56	77	92	263	647
0500	85	117	156	193	551	117	129	145	144	535	1086
0600	173	255	383	581	1392	171	225	231	278	905	2297
0700	509	522	580	587	2198	398	412	432	388	1630	3828
0800	582	553	495	426	2056	423	416	388	418	1645	3701
0900	360	327	374	379	1440	372	465	372	347	1556	2996
1000	344	334	366	349	1393	346	343	319	402	1410	2803
1100	366	387	339	383	1475	349	371	355	385	1460	2935
1200	391	378	402	378	1549	394	411	426	421	1652	3201
1300	377	371	382	367	1497	440	436	425	373	1674	3171
1400	328	393	379	394	1494	367	411	397	444	1619	3113
1500	367	409	391	390	1557	519	504	534	467	2024	3581
1600	392	426	389	442	1649	537	528	641	588	2294	3943
1700	387	412	418	383	1600	689	697	569	445	2400	4000
1800	331	332	335	317	1315	479	392	298	317	1486	2801
1900	302	246	254	238	1040	288	296	260	244	1088	2128
2000	216	246	237	190	889	229	208	246	259	942	1831
2100	208	203	177	183	771	220	198	184	154	756	1527
2200	162	132	152	119	565	154	170	138	152	614	1179
2300	136	125	114	110	485	146	105	103	94	448	933
24-Hour Totals:					26087					27061	53148

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	730	2302	730	1659	730	3961
P.M.	1645	1659	1630	2615	1630	4245
Daily	730	2302	1630	2615	1630	4245

Generated by SPS 5.0.45P

County: 93
Station: 3347
Description: BLUE HERON BLVD W OF GARDEN RD
Start Date: 03/26/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	88	77	66	59	290	68	68	65	51	252	542
0100	64	42	50	41	197	40	38	36	36	150	347
0200	36	38	39	40	153	33	48	26	34	141	294
0300	43	32	50	68	193	53	45	72	52	222	415
0400	80	89	122	165	456	59	79	99	92	329	785
0500	78	108	130	172	488	105	105	154	143	507	995
0600	178	253	386	550	1367	196	191	293	333	1013	2380
0700	534	504	567	610	2215	371	431	430	397	1629	3844
0800	566	485	500	390	1941	442	376	395	381	1594	3535
0900	334	359	360	315	1368	378	389	362	349	1478	2846
1000	299	335	312	364	1310	354	346	346	375	1421	2731
1100	310	305	353	349	1317	351	368	355	335	1409	2726
1200	346	368	367	364	1445	370	415	413	423	1621	3066
1300	393	371	385	353	1502	403	384	398	396	1581	3083
1400	325	347	371	375	1418	392	409	393	453	1647	3065
1500	386	400	425	392	1603	549	465	515	453	1982	3585
1600	408	388	433	456	1685	534	503	580	592	2209	3894
1700	418	376	403	385	1582	552	671	520	441	2184	3766
1800	341	338	311	300	1290	382	347	350	326	1405	2695
1900	278	254	251	224	1007	287	242	261	242	1032	2039
2000	239	201	214	209	863	257	189	218	249	913	1776
2100	188	181	173	176	718	268	208	188	170	834	1552
2200	150	171	153	139	613	148	150	158	142	598	1211
2300	127	128	99	93	447	154	102	111	96	463	910
24-Hour Totals:					25468					26614	52082

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	715	2247	715	1700	715	3947
P.M.	1615	1695	1630	2395	1630	4078
Daily	715	2247	1630	2395	1630	4078

Generated by SPS 5.0.45P

Three-Day Approach Count Summary

Project Name: Blue Heron Boulevard Study
Project No.: 2013008.018
Location: Blue Heron Boulevard at Garden Road
Direction: NORTHBOUND (APPROACH)
Date: 3/24/2015-3/26/2015

TIME PERIOD (AM)		WEEKDAY TUES 24-Mar	WEED 25-Mar	THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
00:00	00:15	17	14	13	15	
00:15	00:30	7	13	10	10	
00:30	00:45	11	2	9	7	
00:45	01:00	13	12	9	11	43
01:00	01:15	8	9	6	8	
01:15	01:30	6	10	1	6	
01:30	01:45	7	14	4	8	
01:45	02:00	11	5	6	7	29
02:00	02:15	9	11	7	9	
02:15	02:30	6	8	16	10	
02:30	02:45	14	7	12	11	
02:45	03:00	7	19	9	12	42
03:00	03:15	7	8	15	10	
03:15	03:30	14	12	15	14	
03:30	03:45	19	16	16	17	
03:45	04:00	12	14	19	15	56
04:00	04:15	17	23	16	19	
04:15	04:30	30	24	24	26	
04:30	04:45	45	59	50	51	
04:45	05:00	89	74	95	86	182
05:00	05:15	41	61	32	45	
05:15	05:30	41	47	39	42	
05:30	05:45	50	56	44	50	
05:45	06:00	73	54	57	61	198
06:00	06:15	58	54	69	60	
06:15	06:30	66	54	56	59	
06:30	06:45	77	63	82	74	
06:45	07:00	103	106	98	102	295
07:00	07:15	95	86	99	93	
07:15	07:30	101	119	126	115	
07:30	07:45	125	134	130	130	
07:45	08:00	148	143	126	139	477
08:00	08:15	139	155	152	149	
08:15	08:30	161	123	133	139	
08:30	08:45	104	129	110	114	
08:45	09:00	107	118	96	107	509
09:00	09:15	98	97	84	93	
09:15	09:30	91	106	104	100	
09:30	09:45	105	96	84	95	
09:45	10:00	83	72	92	82	371
10:00	10:15	84	86	84	85	
10:15	10:30	92	82	101	92	
10:30	10:45	82	105	89	92	
10:45	11:00	84	101	85	90	358
11:00	11:15	103	109	92	101	
11:15	11:30	103	93	101	99	
11:30	11:45	88	84	92	88	
11:45	12:00	108	100	93	100	389

TIME PERIOD (PM)		WEEKDAY TUES 24-Mar	WED 25-Mar	THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
12:00	12:15	91	106	101	99	
12:15	12:30	79	113	103	98	
12:30	12:45	106	114	95	105	
12:45	13:00	100	131	107	113	415
13:00	13:15	98	114	117	110	
13:15	13:30	93	119	114	109	
13:30	13:45	115	122	118	118	
13:45	14:00	107	118	98	108	444
14:00	14:15	103	101	87	97	
14:15	14:30	100	105	92	99	
14:30	14:45	82	95	102	93	
14:45	15:00	95	94	111	100	389
15:00	15:15	121	113	116	117	
15:15	15:30	109	104	101	105	
15:30	15:45	133	162	103	133	
15:45	16:00	86	98	89	91	445
16:00	16:15	120	92	108	107	
16:15	16:30	106	117	93	105	
16:30	16:45	129	132	116	126	
16:45	17:00	153	131	150	145	482
17:00	17:15	132	128	95	118	
17:15	17:30	112	98	91	100	
17:30	17:45	115	114	89	106	
17:45	18:00	79	90	83	84	409
18:00	18:15	95	91	82	89	
18:15	18:30	67	62	77	69	
18:30	18:45	62	40	55	52	
18:45	19:00	48	51	53	51	261
19:00	19:15	59	56	58	58	
19:15	19:30	38	32	36	35	
19:30	19:45	28	37	40	35	
19:45	20:00	29	28	39	32	160
20:00	20:15	33	36	46	38	
20:15	20:30	27	27	27	27	
20:30	20:45	34	22	22	26	
20:45	21:00	23	25	23	24	115
21:00	21:15	19	37	23	26	
21:15	21:30	15	14	17	15	
21:30	21:45	30	14	12	19	
21:45	22:00	19	9	19	16	76
22:00	22:15	13	15	9	12	
22:15	22:30	17	6	13	12	
22:30	22:45	11	9	10	10	
22:45	23:00	10	16	18	15	49
23:00	23:15	42	33	37	37	
23:15	23:30	20	25	29	25	
23:30	23:45	15	8	8	10	
23:45	00:00	4	9	19	11	83
DAILY COUNT		6,281	6,400	6,153	6,278	
PEAK HOUR TIME					07:30	
PEAK HOUR COUNT					556	
ESTIMATED K-FACTOR					8.9%	

Three-Day Approach Count Summary

Project Name: Blue Heron Boulevard Study
State Project No.: 2013008.018
Location: Blue Heron Boulevard at Garden Road
Direction: SOUTHBOUND (APPROACH)
Date: 3/24/2015-3/26/2015

TIME PERIOD (AM)		WEEKDAY TUES 24-Mar	WEEKDAY WED 25-Mar	WEEKDAY THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
00:00	00:15	5	7	7	6	
00:15	00:30	3	5	7	5	
00:30	00:45	3	3	3	3	
00:45	01:00	4	5	1	3	18
01:00	01:15	7	5	3	5	
01:15	01:30	5	10	4	6	
01:30	01:45	2	4	8	5	
01:45	02:00	7	2	3	4	20
02:00	02:15	7	5	13	8	
02:15	02:30	4	7	10	7	
02:30	02:45	5	3	8	5	
02:45	03:00	4	6	5	5	26
03:00	03:15	11	6	2	6	
03:15	03:30	5	13	9	9	
03:30	03:45	11	4	7	7	
03:45	04:00	11	13	9	11	34
04:00	04:15	19	9	17	15	
04:15	04:30	13	21	20	18	
04:30	04:45	21	11	18	17	
04:45	05:00	19	22	23	21	71
05:00	05:15	14	21	20	18	
05:15	05:30	27	16	15	19	
05:30	05:45	25	28	32	28	
05:45	06:00	30	24	32	29	95
06:00	06:15	46	31	35	37	
06:15	06:30	49	61	31	47	
06:30	06:45	52	58	44	51	
06:45	07:00	80	61	47	63	198
07:00	07:15	74	80	99	84	
07:15	07:30	77	79	81	79	
07:30	07:45	83	86	78	82	
07:45	08:00	74	97	76	82	328
08:00	08:15	93	78	84	85	
08:15	08:30	83	109	85	92	
08:30	08:45	72	82	103	86	
08:45	09:00	90	65	102	86	349
09:00	09:15	86	94	103	94	
09:15	09:30	66	87	104	86	
09:30	09:45	66	83	52	67	
09:45	10:00	65	68	77	70	317
10:00	10:15	72	71	70	71	
10:15	10:30	66	85	65	72	
10:30	10:45	71	75	66	71	
10:45	11:00	70	83	65	73	286
11:00	11:15	81	79	70	77	
11:15	11:30	85	86	90	87	
11:30	11:45	100	91	94	95	
11:45	12:00	99	114	97	103	362

TIME PERIOD (PM)		WEEKDAY TUES 24-Mar	WEEKDAY WED 25-Mar	WEEKDAY THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
12:00	12:15	83	104	111	99	
12:15	12:30	93	69	127	96	
12:30	12:45	97	102	97	99	
12:45	13:00	85	107	100	97	392
13:00	13:15	67	108	63	79	
13:15	13:30	74	69	80	74	
13:30	13:45	90	86	68	81	
13:45	14:00	85	100	94	93	328
14:00	14:15	77	88	98	88	
14:15	14:30	81	80	90	84	
14:30	14:45	85	93	79	86	
14:45	15:00	110	91	95	99	356
15:00	15:15	88	115	127	110	
15:15	15:30	143	88	108	113	
15:30	15:45	95	158	149	134	
15:45	16:00	105	103	103	104	461
16:00	16:15	100	108	123	110	
16:15	16:30	156	119	88	121	
16:30	16:45	119	176	155	150	
16:45	17:00	189	144	100	144	526
17:00	17:15	109	217	183	170	
17:15	17:30	114	124	108	115	
17:30	17:45	62	134	103	100	
17:45	18:00	74	64	73	70	455
18:00	18:15	54	76	88	73	
18:15	18:30	42	58	60	53	
18:30	18:45	29	54	29	37	
18:45	19:00	27	33	28	29	193
19:00	19:15	36	32	24	31	
19:15	19:30	33	34	48	38	
19:30	19:45	21	39	31	30	
19:45	20:00	27	23	21	24	123
20:00	20:15	20	24	38	27	
20:15	20:30	28	21	22	24	
20:30	20:45	22	30	32	28	
20:45	21:00	21	28	17	22	101
21:00	21:15	16	25	19	20	
21:15	21:30	16	13	24	18	
21:30	21:45	9	20	12	14	
21:45	22:00	17	6	17	13	65
22:00	22:15	15	14	25	18	
22:15	22:30	12	15	18	15	
22:30	22:45	10	13	12	12	
22:45	23:00	8	14	5	9	54
23:00	23:15	10	8	10	9	
23:15	23:30	9	8	15	11	
23:30	23:45	10	12	7	10	
23:45	00:00	9	6	19	11	41
DAILY COUNT		4,944	5,406	5,237	5,196	
PEAK HOUR TIME					16:15	
PEAK HOUR COUNT					585	
ESTIMATED K-FACTOR					11.3%	

Three-Day Approach Count Summary

Project Name: Blue Heron Boulevard Study
State Project No.: 2013008.018

Location: Blue Heron Boulevard at Garden Road
Direction: EASTBOUND (APPROACH)

Date: 3/24/2015-3/26/2015

TIME PERIOD (AM)		WEEKDAY TUES 24-Mar	WEEKDAY WED 25-Mar	WEEKDAY THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
00:00	00:15	74	80	88	81	
00:15	00:30	93	81	77	84	
00:30	00:45	71	61	66	66	
00:45	01:00	60	48	59	56	286
01:00	01:15	48	57	64	56	
01:15	01:30	47	47	42	45	
01:30	01:45	49	33	50	44	
01:45	02:00	64	44	41	50	195
02:00	02:15	53	46	36	45	
02:15	02:30	41	31	38	37	
02:30	02:45	43	32	39	38	
02:45	03:00	45	45	40	43	163
03:00	03:15	49	41	43	44	
03:15	03:30	47	27	32	35	
03:30	03:45	45	49	50	48	
03:45	04:00	88	65	68	74	201
04:00	04:15	76	54	80	70	
04:15	04:30	91	101	89	94	
04:30	04:45	89	91	122	101	
04:45	05:00	114	138	165	139	403
05:00	05:15	80	85	78	81	
05:15	05:30	107	117	108	111	
05:30	05:45	132	156	130	139	
05:45	06:00	195	193	172	187	518
06:00	06:15	184	173	178	178	
06:15	06:30	242	255	253	250	
06:30	06:45	377	383	386	382	
06:45	07:00	534	581	550	555	1,365
07:00	07:15	524	509	534	522	
07:15	07:30	520	522	504	515	
07:30	07:45	542	580	567	563	
07:45	08:00	592	587	610	596	2,197
08:00	08:15	561	582	566	570	
08:15	08:30	494	553	485	511	
08:30	08:45	475	495	500	490	
08:45	09:00	438	426	390	418	1,988
09:00	09:15	381	360	334	358	
09:15	09:30	338	327	359	341	
09:30	09:45	356	374	360	363	
09:45	10:00	392	379	315	362	1,425
10:00	10:15	346	344	299	330	
10:15	10:30	327	334	335	332	
10:30	10:45	323	366	312	334	
10:45	11:00	357	349	364	357	1,352
11:00	11:15	337	366	310	338	
11:15	11:30	368	387	305	353	
11:30	11:45	351	339	353	348	
11:45	12:00	363	383	349	365	1,404

TIME PERIOD (PM)		WEEKDAY TUES 24-Mar	WEEKDAY WED 25-Mar	WEEKDAY THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
12:00	12:15	339	391	346	359	
12:15	12:30	372	378	368	373	
12:30	12:45	386	402	367	385	
12:45	13:00	347	378	364	363	1,479
13:00	13:15	380	377	393	383	
13:15	13:30	345	371	371	362	
13:30	13:45	347	382	385	371	
13:45	14:00	354	367	353	358	1,475
14:00	14:15	375	328	325	343	
14:15	14:30	384	393	347	375	
14:30	14:45	418	379	371	389	
14:45	15:00	397	394	375	389	1,495
15:00	15:15	363	367	386	372	
15:15	15:30	342	409	400	384	
15:30	15:45	429	391	425	415	
15:45	16:00	368	390	392	383	1,554
16:00	16:15	380	392	408	393	
16:15	16:30	403	426	388	406	
16:30	16:45	440	389	433	421	
16:45	17:00	448	442	456	449	1,668
17:00	17:15	457	387	418	421	
17:15	17:30	402	412	376	397	
17:30	17:45	433	418	403	418	
17:45	18:00	397	383	385	388	1,624
18:00	18:15	343	331	341	338	
18:15	18:30	340	332	338	337	
18:30	18:45	299	335	311	315	
18:45	19:00	298	317	300	305	1,295
19:00	19:15	298	302	278	293	
19:15	19:30	273	246	254	258	
19:30	19:45	273	254	251	259	
19:45	20:00	219	238	224	227	1,037
20:00	20:15	212	216	239	222	
20:15	20:30	210	246	201	219	
20:30	20:45	241	237	214	231	
20:45	21:00	190	190	209	196	868
21:00	21:15	198	208	188	198	
21:15	21:30	195	203	181	193	
21:30	21:45	166	177	173	172	
21:45	22:00	168	183	176	176	739
22:00	22:15	168	162	150	160	
22:15	22:30	158	132	171	154	
22:30	22:45	120	152	153	142	
22:45	23:00	118	119	139	125	581
23:00	23:15	125	136	127	129	
23:15	23:30	108	125	128	120	
23:30	23:45	95	114	99	103	
23:45	00:00	86	110	93	96	449
DAILY COUNT		25,730	26,087	25,468	25,762	
PEAK HOUR TIME					07:15	
PEAK HOUR COUNT					2,244	
ESTIMATED K-FACTOR					8.7%	

Three-Day Approach Count Summary

Project Name: Blue Heron Boulevard Study
State Project No.: 2013008.018
Location: Blue Heron Boulevard at Garden Road
Direction: WESTBOUND (APPROACH)
Date: 3/24/2015-3/26/2015

TIME PERIOD (AM)		WEEKDAY TUES 24-Mar	WEED 25-Mar	THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
00:00	00:15	76	76	62	71	
00:15	00:30	72	58	62	64	
00:30	00:45	58	46	68	57	
00:45	01:00	51	34	46	44	236
01:00	01:15	37	32	37	35	
01:15	01:30	42	35	35	37	
01:30	01:45	30	32	41	34	
01:45	02:00	43	24	32	33	140
02:00	02:15	29	34	24	29	
02:15	02:30	36	28	30	31	
02:30	02:45	40	21	19	27	
02:45	03:00	37	28	22	29	116
03:00	03:15	29	18	26	24	
03:15	03:30	42	39	26	36	
03:30	03:45	39	40	47	42	
03:45	04:00	38	26	35	33	135
04:00	04:15	41	24	34	33	
04:15	04:30	30	42	49	40	
04:30	04:45	74	57	78	70	
04:45	05:00	82	81	73	79	222
05:00	05:15	85	76	82	81	
05:15	05:30	91	119	96	102	
05:30	05:45	138	120	128	129	
05:45	06:00	131	115	133	126	438
06:00	06:15	152	160	159	157	
06:15	06:30	152	198	153	168	
06:30	06:45	231	229	245	235	
06:45	07:00	261	251	288	267	826
07:00	07:15	340	381	363	361	
07:15	07:30	357	371	371	366	
07:30	07:45	391	425	401	406	
07:45	08:00	363	378	415	385	1,519
08:00	08:15	351	356	379	362	
08:15	08:30	400	404	361	388	
08:30	08:45	352	358	345	352	
08:45	09:00	357	397	344	366	1,468
09:00	09:15	334	353	370	352	
09:15	09:30	352	400	316	356	
09:30	09:45	301	345	312	319	
09:45	10:00	334	330	332	332	1,360
10:00	10:15	296	310	289	298	
10:15	10:30	289	325	332	315	
10:30	10:45	306	301	317	308	
10:45	11:00	324	325	322	324	1,245
11:00	11:15	324	326	306	319	
11:15	11:30	317	344	335	332	
11:30	11:45	300	316	318	311	
11:45	12:00	311	312	291	305	1,267

TIME PERIOD (PM)		WEEKDAY TUES 24-Mar	WED 25-Mar	THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
12:00	12:15	360	347	328	345	
12:15	12:30	357	364	381	367	
12:30	12:45	343	379	375	366	
12:45	13:00	359	388	397	381	1,459
13:00	13:15	334	386	307	342	
13:15	13:30	345	396	367	369	
13:30	13:45	402	368	323	364	
13:45	14:00	337	338	337	337	1,413
14:00	14:15	336	326	362	341	
14:15	14:30	344	326	349	340	
14:30	14:45	364	356	343	354	
14:45	15:00	405	416	403	408	1,443
15:00	15:15	446	439	475	453	
15:15	15:30	457	437	392	429	
15:30	15:45	435	428	401	421	
15:45	16:00	445	401	431	426	1,729
16:00	16:15	430	414	414	419	
16:15	16:30	456	494	444	465	
16:30	16:45	478	509	473	487	
16:45	17:00	474	474	450	466	1,837
17:00	17:15	521	560	470	517	
17:15	17:30	500	534	588	541	
17:30	17:45	444	448	463	452	
17:45	18:00	444	397	391	411	1,920
18:00	18:15	448	421	320	396	
18:15	18:30	368	342	309	340	
18:30	18:45	306	253	303	287	
18:45	19:00	233	293	293	273	1,296
19:00	19:15	239	250	230	240	
19:15	19:30	260	278	240	259	
19:30	19:45	205	226	217	216	
19:45	20:00	237	248	234	240	955
20:00	20:15	247	197	227	224	
20:15	20:30	223	196	195	205	
20:30	20:45	209	232	196	212	
20:45	21:00	184	235	244	221	862
21:00	21:15	214	193	234	214	
21:15	21:30	192	195	201	196	
21:30	21:45	157	157	162	159	
21:45	22:00	142	164	176	161	729
22:00	22:15	144	150	145	146	
22:15	22:30	147	162	133	147	
22:30	22:45	153	147	149	150	
22:45	23:00	124	131	131	129	572
23:00	23:15	114	123	139	125	
23:15	23:30	107	90	100	99	
23:30	23:45	67	101	91	86	
23:45	00:00	67	92	85	81	392
DAILY COUNT		23,469	23,901	23,367	23,579	
PEAK HOUR TIME					16:30	
PEAK HOUR COUNT					2,010	
ESTIMATED K-FACTOR					8.5%	

MECHANICAL COUNTS

PROJECT NAME: Blue Heron Boulevard Study

LOCATION: Blue Heron Boulevard at Garden Road

Notice to Proceed : 2013008.018

COUNT DATE: 3/24/2015-3/26/2015

NORTHBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	15	10	7	11	43
01:00 AM	8	6	8	7	29
02:00 AM	9	10	11	12	42
03:00 AM	10	14	17	15	56
04:00 AM	19	26	51	86	182
05:00 AM	45	42	50	61	198
06:00 AM	60	59	74	102	295
07:00 AM	93	115	130	139	477
08:00 AM	149	139	114	107	509
09:00 AM	93	100	95	82	371
10:00 AM	85	92	92	90	358
11:00 AM	101	99	88	100	389
12:00 PM	99	98	105	113	415
01:00 PM	110	109	118	108	444
02:00 PM	97	99	93	100	389
03:00 PM	117	105	133	91	445
04:00 PM	107	105	126	145	482
05:00 PM	118	100	106	84	409
06:00 PM	89	69	52	51	261
07:00 PM	58	35	35	32	160
08:00 PM	38	27	26	24	115
09:00 PM	26	15	19	16	76
10:00 PM	12	12	10	15	49
11:00 PM	37	25	10	11	83
			24 Hour Total		6,278

SOUTHBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	6	5	3	3	18
01:00 AM	5	6	5	4	20
02:00 AM	8	7	5	5	26
03:00 AM	6	9	7	11	34
04:00 AM	15	18	17	21	71
05:00 AM	18	19	28	29	95
06:00 AM	37	47	51	63	198
07:00 AM	84	79	82	82	328
08:00 AM	85	92	86	86	349
09:00 AM	94	86	67	70	317
10:00 AM	71	72	71	73	286
11:00 AM	77	87	95	103	362
12:00 PM	99	96	99	97	392
01:00 PM	79	74	81	93	328
02:00 PM	88	84	86	99	356
03:00 PM	110	113	134	104	461
04:00 PM	110	121	150	144	526
05:00 PM	170	115	100	70	455
06:00 PM	73	53	37	29	193
07:00 PM	31	38	30	24	123
08:00 PM	27	24	28	22	101
09:00 PM	20	18	14	13	65
10:00 PM	18	15	12	9	54
11:00 PM	9	11	10	11	41
			24 Hour Total		5,196

EASTBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	81	84	66	56	286
01:00 AM	56	45	44	50	195
02:00 AM	45	37	38	43	163
03:00 AM	44	35	48	74	201
04:00 AM	70	94	101	139	403
05:00 AM	81	111	139	187	518
06:00 AM	178	250	382	555	1365
07:00 AM	522	515	563	596	2197
08:00 AM	570	511	490	418	1988
09:00 AM	358	341	363	362	1425
10:00 AM	330	332	334	357	1352
11:00 AM	338	353	348	365	1404
12:00 PM	359	373	385	363	1479
01:00 PM	383	362	371	358	1475
02:00 PM	343	375	389	389	1495
03:00 PM	372	384	415	383	1554
04:00 PM	393	406	421	449	1668
05:00 PM	421	397	418	388	1624
06:00 PM	338	337	315	305	1295
07:00 PM	293	258	259	227	1037
08:00 PM	222	219	231	196	868
09:00 PM	198	193	172	176	739
10:00 PM	160	154	142	125	581
11:00 PM	129	120	103	96	449
			24 Hour Total		25,762

WESTBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	71	64	57	44	236
01:00 AM	35	37	34	33	140
02:00 AM	29	31	27	29	116
03:00 AM	24	36	42	33	135
04:00 AM	33	40	70	79	222
05:00 AM	81	102	129	126	438
06:00 AM	157	168	235	267	826
07:00 AM	361	366	406	385	1519
08:00 AM	362	388	352	366	1468
09:00 AM	352	356	319	332	1360
10:00 AM	298	315	308	324	1245
11:00 AM	319	332	311	305	1267
12:00 PM	345	367	366	381	1459
01:00 PM	342	369	364	337	1413
02:00 PM	341	340	354	408	1443
03:00 PM	453	429	421	426	1729
04:00 PM	419	465	487	466	1837
05:00 PM	517	541	452	411	1920
06:00 PM	396	340	287	273	1296
07:00 PM	240	259	216	240	955
08:00 PM	224	205	212	221	862
09:00 PM	214	196	159	161	729
10:00 PM	146	147	150	129	572
11:00 PM	125	99	86	81	392
			24 Hour Total		23,579

ALL

TOTAL
583
384
346
426
878
1249
2685
4521
4314
3472
3242
3421
3746
3661
3683
4189
4513
4407
3045
2274
1946
1608
1255
965
60,814

DAILY TRAFFIC COUNT SUMMARY

NORTHBOUND

A.M. Peak Hour, Time: 07:30 AM Volume: 556
A.M. "K" Factor: 8.9% P.H.F. : 0.94

P.M. Peak Hour, Time: 04:15 PM Volume: 494
P.M. "K" Factor: 7.9% P.H.F. : 0.85

SOUTHBOUND

A.M. Peak Hour, Time: 11:45 AM Volume: 398
A.M. "K" Factor: 7.7% P.H.F. : 0.96

P.M. Peak Hour, Time: 04:15 PM Volume: 585
P.M. "K" Factor: 11.3% P.H.F. : 0.86

DAILY TRAFFIC COUNT SUMMARY

EASTBOUND

A.M. Peak Hour, Time: 07:15 AM Volume: 2,244
A.M. "K" Factor: 8.7% P.H.F. : 0.94

P.M. Peak Hour, Time: 04:15 PM Volume: 1,696
P.M. "K" Factor: 6.6% P.H.F. : 0.94

WESTBOUND

A.M. Peak Hour, Time: 07:30 AM Volume: 1,541
A.M. "K" Factor: 6.5% P.H.F. : 0.95

P.M. Peak Hour, Time: 04:30 PM Volume: 2,010
P.M. "K" Factor: 8.5% P.H.F. : 0.93

ALL APPROACHES:

A.M. Peak Hour, Time: 07:30 AM Volume: 4,679
A.M. "K" Factor: 7.7% P.H.F. : 0.97

P.M. Peak Hour, Time: 04:30 PM Volume: 4,765
P.M. "K" Factor: 7.8% P.H.F. : 0.97

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at Garden Rd 03032015
Site Code :
Start Date : 3/3/2015
Page No : 1

Groups Printed- Autos - Heavy Vehicles - Bicycles - Pedestrians

	Blue Heron Blvd Eastbound					Blue Heron Blvd Westbound					Garden Rd Northbound					Garden Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	8	138	2	0	148	28	102	31	0	161	3	3	10	0	16	24	6	10	0	40	365
06:15 AM	11	162	10	0	183	46	191	17	0	254	6	7	17	1	31	11	10	7	0	28	496
06:30 AM	11	188	7	0	206	63	300	34	0	397	5	6	14	2	27	30	12	13	1	56	686
06:45 AM	14	300	17	0	331	55	378	67	0	500	8	11	20	0	39	18	22	9	0	49	919
Total	44	788	36	0	868	192	971	149	0	1312	22	27	61	3	113	83	50	39	1	173	2466
07:00 AM	15	371	15	0	401	55	415	46	0	516	17	13	40	2	72	20	8	7	2	37	1026
07:15 AM	16	378	25	0	419	62	369	55	1	487	5	6	33	1	45	20	20	11	0	51	1002
07:30 AM	19	425	26	0	470	49	399	48	0	496	14	22	22	0	58	31	19	9	0	59	1083
07:45 AM	28	391	26	0	445	80	466	60	0	606	11	19	20	0	50	29	23	16	0	68	1169
Total	78	1565	92	0	1735	246	1649	209	1	2105	47	60	115	3	225	100	70	43	2	215	4280
08:00 AM	24	282	22	2	330	55	422	63	0	540	17	15	44	2	78	16	25	13	2	56	1004
08:15 AM	29	326	16	1	372	65	383	49	0	497	23	20	36	0	79	31	19	21	0	71	1019
08:30 AM	21	278	18	3	320	56	374	44	0	474	10	21	35	0	66	27	15	18	5	65	925
08:45 AM	15	328	15	0	358	50	325	32	0	407	24	14	42	0	80	29	12	9	3	53	898
Total	89	1214	71	6	1380	226	1504	188	0	1918	74	70	157	2	303	103	71	61	10	245	3846
BREAK																					
04:00 PM	13	434	15	0	462	44	619	30	2	695	31	18	88	1	138	40	18	15	0	73	1368
04:15 PM	14	354	18	0	386	21	428	42	0	491	17	8	42	0	67	35	8	12	1	56	1000
04:30 PM	13	334	19	0	366	25	324	47	0	396	14	10	67	0	91	27	3	5	1	36	889
04:45 PM	18	468	22	0	508	36	646	41	0	723	20	27	67	0	114	40	15	26	0	81	1426
Total	58	1590	74	0	1722	126	2017	160	2	2305	82	63	264	1	410	142	44	58	2	246	4683
05:00 PM	11	345	15	0	371	38	544	32	0	614	27	19	126	0	172	66	30	28	0	124	1281
05:15 PM	15	384	17	0	416	29	638	26	1	694	17	16	73	1	107	53	18	18	0	89	1306
05:30 PM	11	285	7	0	303	21	643	13	0	677	22	17	87	0	126	35	7	16	0	58	1164
05:45 PM	15	307	9	0	331	11	575	24	1	611	12	6	52	0	70	28	6	17	2	53	1065
Total	52	1321	48	0	1421	99	2400	95	2	2596	78	58	338	1	475	182	61	79	2	324	4816
06:00 PM	13	310	9	0	332	28	466	26	1	521	10	6	47	0	63	27	9	11	3	50	966
06:15 PM	13	285	13	0	311	24	387	34	0	445	19	11	40	0	70	20	9	15	0	44	870
06:30 PM	7	281	2	0	290	16	365	19	0	400	8	4	27	0	39	22	8	13	0	43	772
06:45 PM	4	242	6	0	252	16	345	15	0	376	9	2	17	1	29	17	2	8	0	27	684
Total	37	1118	30	0	1185	84	1563	94	1	1742	46	23	131	1	201	86	28	47	3	164	3292
Grand Total	358	7596	351	6	8311	973	10104	895	6	11978	349	301	1066	11	1727	696	324	327	20	1367	23383
Apprch %	4.3	91.4	4.2	0.1		8.1	84.4	7.5	0.1		20.2	17.4	61.7	0.6		50.9	23.7	23.9	1.5		
Total %	1.5	32.5	1.5	0	35.5	4.2	43.2	3.8	0	51.2	1.5	1.3	4.6	0	7.4	3	1.4	1.4	0.1	5.8	
Autos	320	7282	308	0	7910	891	9707	782	0	11380	302	266	983	0	1551	591	290	282	0	1163	22004
% Autos	89.4	95.9	87.7	0	95.2	91.6	96.1	87.4	0	95	86.5	88.4	92.2	0	89.8	84.9	89.5	86.2	0	85.1	94.1
Heavy Vehicles	38	314	43	0	395	82	397	113	0	592	47	35	83	0	165	105	34	45	0	184	1336
% Heavy Vehicles	10.6	4.1	12.3	0	4.8	8.4	3.9	12.6	0	4.9	13.5	11.6	7.8	0	9.6	15.1	10.5	13.8	0	13.5	5.7
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	2
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	9.1	0.1	0	0	0	5	0.1	0
Pedestrians	0	0	0	6	6	0	0	0	6	6	0	0	0	10	10	0	0	0	19	19	41
% Pedestrians	0	0	0	100	0.1	0	0	0	100	0.1	0	0	0	90.9	0.6	0	0	0	95	1.4	0.2

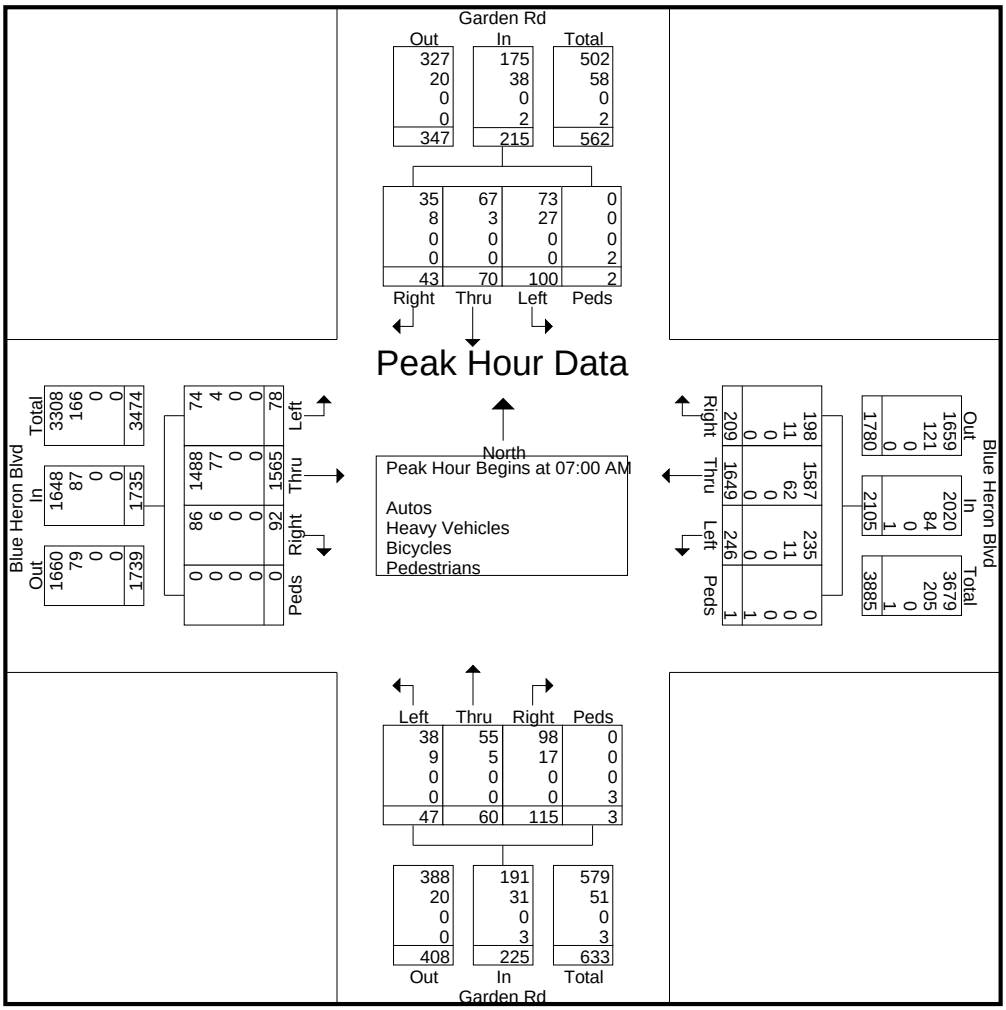
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at Garden Rd 03032015
Site Code :
Start Date : 3/3/2015
Page No : 2

	Blue Heron Blvd Eastbound					Blue Heron Blvd Westbound					Garden Rd Northbound					Garden Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	15	371	15	0	401	55	415	46	0	516	17	13	40	2	72	20	8	7	2	37	1026
07:15 AM	16	378	25	0	419	62	369	55	1	487	5	6	33	1	45	20	20	11	0	51	1002
07:30 AM	19	425	26	0	470	49	399	48	0	496	14	22	22	0	58	31	19	9	0	59	1083
07:45 AM	28	391	26	0	445	80	466	60	0	606	11	19	20	0	50	29	23	16	0	68	1169
Total Volume	78	1565	92	0	1735	246	1649	209	1	2105	47	60	115	3	225	100	70	43	2	215	4280
% App. Total	4.5	90.2	5.3	0		11.7	78.3	9.9	0		20.9	26.7	51.1	1.3		46.5	32.6	20	0.9		
PHF	.696	.921	.885	.000	.923	.769	.885	.871	.250	.868	.691	.682	.719	.375	.781	.806	.761	.672	.250	.790	.915
Autos	74	1488	86	0	1648	235	1587	198	0	2020	38	55	98	0	191	73	67	35	0	175	4034
% Autos	94.9	95.1	93.5	0	95.0	95.5	96.2	94.7	0	96.0	80.9	91.7	85.2	0	84.9	73.0	95.7	81.4	0	81.4	94.3
Heavy Vehicles	4	77	6	0	87	11	62	11	0	84	9	5	17	0	31	27	3	8	0	38	240
% Heavy Vehicles	5.1	4.9	6.5	0	5.0	4.5	3.8	5.3	0	4.0	19.1	8.3	14.8	0	13.8	27.0	4.3	18.6	0	17.7	5.6
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	1	1	0	0	0	3	3	0	0	0	2	2	6
% Pedestrians	0	0	0	0	0	0	0	0	100	0.0	0	0	0	100	1.3	0	0	0	100	0.9	0.1



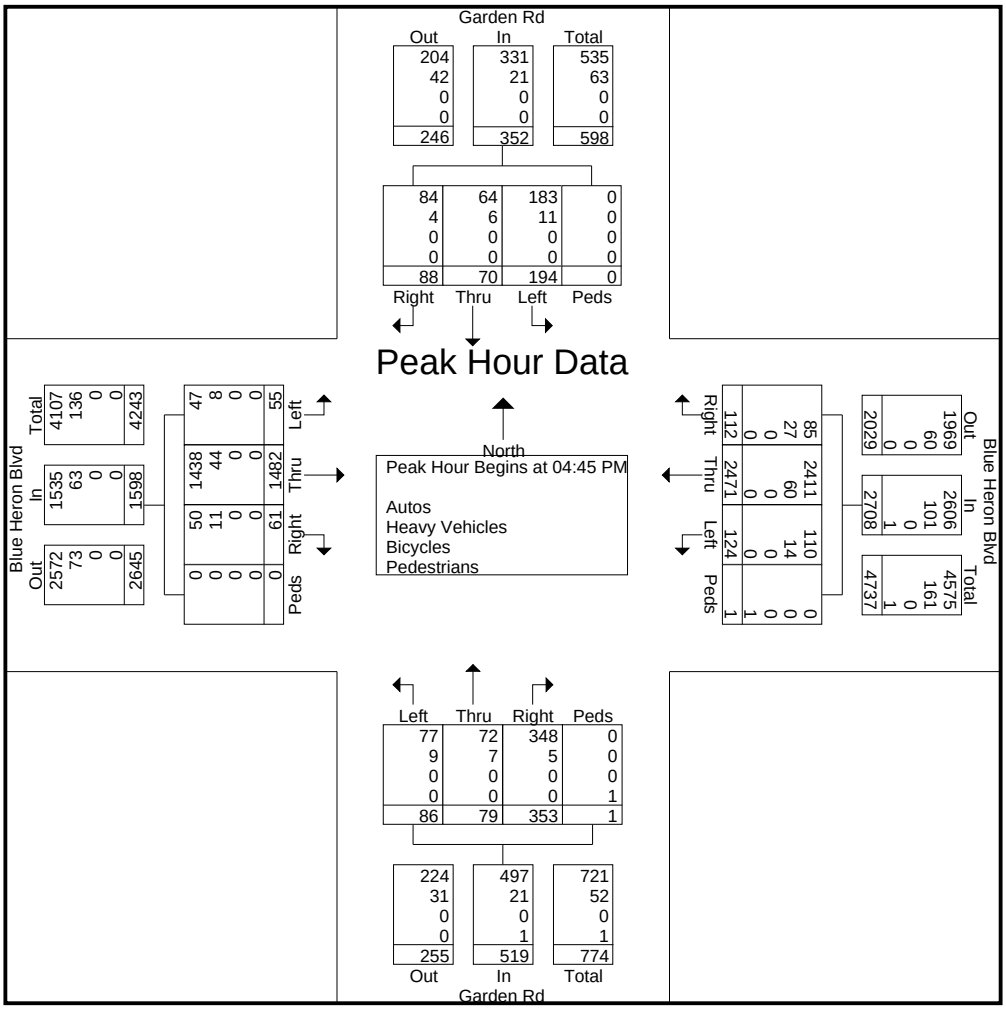
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at Garden Rd 03032015
Site Code :
Start Date : 3/3/2015
Page No : 3

	Blue Heron Blvd Eastbound					Blue Heron Blvd Westbound					Garden Rd Northbound					Garden Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	18	468	22	0	508	36	646	41	0	723	20	27	67	0	114	40	15	26	0	81	1426
05:00 PM	11	345	15	0	371	38	544	32	0	614	27	19	126	0	172	66	30	28	0	124	1281
05:15 PM	15	384	17	0	416	29	638	26	1	694	17	16	73	1	107	53	18	18	0	89	1306
05:30 PM	11	285	7	0	303	21	643	13	0	677	22	17	87	0	126	35	7	16	0	58	1164
Total Volume	55	1482	61	0	1598	124	2471	112	1	2708	86	79	353	1	519	194	70	88	0	352	5177
% App. Total	3.4	92.7	3.8	0		4.6	91.2	4.1	0		16.6	15.2	68	0.2		55.1	19.9	25	0		
PHF	.764	.792	.693	.000	.786	.816	.956	.683	.250	.936	.796	.731	.700	.250	.754	.735	.583	.786	.000	.710	.908
Autos	47	1438	50	0	1535	110	2411	85	0	2606	77	72	348	0	497	183	64	84	0	331	4969
% Autos	85.5	97.0	82.0	0	96.1	88.7	97.6	75.9	0	96.2	89.5	91.1	98.6	0	95.8	94.3	91.4	95.5	0	94.0	96.0
Heavy Vehicles	8	44	11	0	63	14	60	27	0	101	9	7	5	0	21	11	6	4	0	21	206
% Heavy Vehicles	14.5	3.0	18.0	0	3.9	11.3	2.4	24.1	0	3.7	10.5	8.9	1.4	0	4.0	5.7	8.6	4.5	0	6.0	4.0
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0	2
% Pedestrians	0	0	0	0	0	0	0	0	100	0.0	0	0	0	100	0.2	0	0	0	0	0	0.0



CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at Garden Rd 03032015
Site Code :
Start Date : 3/3/2015
Page No : 1

Groups Printed- Heavy Vehicles

	Blue Heron Blvd Eastbound					Blue Heron Blvd Westbound					Garden Rd Northbound					Garden Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	8	0	0	8	3	12	1	0	16	0	0	5	0	5	17	5	4	0	26	55
06:15 AM	0	9	4	0	13	7	18	1	0	26	3	3	7	0	13	6	6	7	0	19	71
06:30 AM	1	12	0	0	13	2	15	1	0	18	2	2	4	0	8	13	3	7	0	23	62
06:45 AM	1	13	3	0	17	1	16	1	0	18	2	4	4	0	10	6	3	1	0	10	55
Total	2	42	7	0	51	13	61	4	0	78	7	9	20	0	36	42	17	19	0	78	243
07:00 AM	1	22	2	0	25	5	18	2	0	25	2	2	7	0	11	7	0	2	0	9	70
07:15 AM	0	16	2	0	18	1	11	4	0	16	3	1	10	0	14	4	3	0	0	7	55
07:30 AM	1	19	2	0	22	0	17	3	0	20	2	1	0	0	3	6	0	2	0	8	53
07:45 AM	2	20	0	0	22	5	16	2	0	23	2	1	0	0	3	10	0	4	0	14	62
Total	4	77	6	0	87	11	62	11	0	84	9	5	17	0	31	27	3	8	0	38	240
08:00 AM	0	18	3	0	21	3	13	5	0	21	4	2	10	0	16	3	1	3	0	7	65
08:15 AM	1	21	0	0	22	7	16	2	0	25	5	2	6	0	13	4	1	4	0	9	69
08:30 AM	5	25	1	0	31	5	18	4	0	27	2	2	6	0	10	3	2	2	0	7	75
08:45 AM	0	25	2	0	27	3	8	5	0	16	2	1	8	0	11	5	0	0	0	5	59
Total	6	89	6	0	101	18	55	16	0	89	13	7	30	0	50	15	4	9	0	28	268
BREAK																					
04:00 PM	3	11	3	0	17	7	18	8	0	33	2	2	1	0	5	5	1	1	0	7	62
04:15 PM	3	6	3	0	12	4	14	5	0	23	4	0	2	0	6	3	1	0	0	4	45
04:30 PM	4	9	3	0	16	6	9	10	0	25	0	1	1	0	2	0	0	0	0	0	43
04:45 PM	3	7	6	0	16	3	15	8	0	26	3	3	2	0	8	6	0	1	0	7	57
Total	13	33	15	0	61	20	56	31	0	107	9	6	6	0	21	14	2	2	0	18	207
05:00 PM	1	15	4	0	20	6	14	9	0	29	2	3	1	0	6	2	3	1	0	6	61
05:15 PM	2	14	1	0	17	3	18	5	0	26	3	0	0	0	3	3	2	1	0	6	52
05:30 PM	2	8	0	0	10	2	13	5	0	20	1	1	2	0	4	0	1	1	0	2	36
05:45 PM	3	10	1	0	14	1	15	10	0	26	0	1	4	0	5	1	0	2	0	3	48
Total	8	47	6	0	61	12	60	29	0	101	6	5	7	0	18	6	6	5	0	17	197
06:00 PM	2	6	2	0	10	3	16	2	0	21	0	0	2	0	2	1	0	0	0	1	34
06:15 PM	0	6	1	0	7	1	18	10	0	29	2	2	0	0	4	0	1	0	0	1	41
06:30 PM	2	6	0	0	8	2	33	5	0	40	1	1	0	0	2	0	1	2	0	3	53
06:45 PM	1	8	0	0	9	2	36	5	0	43	0	0	1	0	1	0	0	0	0	0	53
Total	5	26	3	0	34	8	103	22	0	133	3	3	3	0	9	1	2	2	0	5	181
Grand Total	38	314	43	0	395	82	397	113	0	592	47	35	83	0	165	105	34	45	0	184	1336
Apprch %	9.6	79.5	10.9	0		13.9	67.1	19.1	0		28.5	21.2	50.3	0		57.1	18.5	24.5	0		
Total %	2.8	23.5	3.2	0	29.6	6.1	29.7	8.5	0	44.3	3.5	2.6	6.2	0	12.4	7.9	2.5	3.4	0	13.8	

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at Garden Rd 03042015
Site Code :
Start Date : 3/4/2015
Page No : 1

Groups Printed- Autos - Heavy Vehicles - Bicycles - Pedestrians

	Eastbound St. Eastbound					Westbound St. Westbound					Northbound St. Northbound					Southbound St. Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	29	125	30	0	184	4	123	8	0	135	25	4	5	0	34	2	5	10	0	17	370
06:15 AM	39	182	24	0	245	9	141	6	0	156	15	10	10	1	36	3	4	19	0	26	463
06:30 AM	37	274	39	0	350	6	180	17	0	203	18	16	6	0	40	7	11	22	0	40	633
06:45 AM	60	421	61	0	542	14	247	3	0	264	18	12	13	2	45	9	13	19	0	41	892
Total	165	1002	154	0	1321	33	691	34	0	758	76	42	34	3	155	21	33	70	0	124	2358
07:00 AM	64	390	38	0	492	18	324	13	0	355	24	8	5	0	37	18	8	31	0	57	941
07:15 AM	69	395	57	0	521	19	351	19	0	389	12	21	9	2	44	6	9	30	0	45	999
07:30 AM	62	380	55	0	497	18	314	17	0	349	30	23	14	0	67	13	13	26	0	52	965
07:45 AM	76	409	79	0	564	18	315	25	0	358	30	31	11	0	72	9	14	23	0	46	1040
Total	271	1574	229	0	2074	73	1304	74	0	1451	96	83	39	2	220	46	44	110	0	200	3945
08:00 AM	72	377	61	0	510	22	309	25	0	356	21	20	18	0	59	17	23	47	0	87	1012
08:15 AM	46	381	50	0	477	26	294	15	0	335	25	12	16	0	53	18	15	28	0	61	926
08:30 AM	56	345	48	0	449	20	310	27	0	357	17	17	10	6	50	17	17	42	0	76	932
08:45 AM	44	335	43	0	422	21	231	18	0	270	35	12	10	1	58	12	14	46	0	72	822
Total	218	1438	202	0	1858	89	1144	85	0	1318	98	61	54	7	220	64	69	163	0	296	3692
BREAK																					
04:00 PM	40	310	27	0	377	19	351	12	0	382	42	10	16	1	69	16	16	81	3	116	944
04:15 PM	28	357	16	0	401	10	195	11	0	216	27	17	16	0	60	19	8	46	0	73	750
04:30 PM	30	379	26	0	435	16	390	17	0	423	36	13	13	0	62	20	18	99	0	137	1057
04:45 PM	28	381	42	0	451	24	434	12	0	470	43	25	15	0	83	26	19	61	0	106	1110
Total	126	1427	111	0	1664	69	1370	52	0	1491	148	65	60	1	274	81	61	287	3	432	3861
05:00 PM	30	318	24	0	372	16	516	21	0	553	66	32	26	0	124	19	21	113	1	154	1203
05:15 PM	40	372	29	0	441	21	480	24	0	525	52	19	24	0	95	12	22	95	0	129	1190
05:30 PM	24	285	29	0	338	8	403	7	0	418	34	16	22	0	72	18	23	105	0	146	974
05:45 PM	13	338	22	0	373	15	382	13	0	410	26	11	18	0	55	12	11	51	1	75	913
Total	107	1313	104	0	1524	60	1781	65	0	1906	178	78	90	0	346	61	77	364	2	504	4280
06:00 PM	13	246	21	1	281	7	350	9	0	366	34	8	10	0	52	16	12	55	1	84	783
06:15 PM	11	243	17	0	271	22	374	18	0	414	31	6	6	0	43	14	4	28	0	46	774
06:30 PM	17	195	20	0	232	12	317	8	0	337	29	4	14	0	47	14	5	33	0	52	668
06:45 PM	13	216	21	0	250	7	311	12	0	330	17	3	9	0	29	10	6	29	0	45	654
Total	54	900	79	1	1034	48	1352	47	0	1447	111	21	39	0	171	54	27	145	1	227	2879
Grand Total	941	7654	879	1	9475	372	7642	357	0	8371	707	350	316	13	1386	327	311	1139	6	1783	21015
Apprch %	9.9	80.8	9.3	0		4.4	91.3	4.3	0		51	25.3	22.8	0.9		18.3	17.4	63.9	0.3		
Total %	4.5	36.4	4.2	0	45.1	1.8	36.4	1.7	0	39.8	3.4	1.7	1.5	0.1	6.6	1.6	1.5	5.4	0	8.5	
Autos	874	7239	753	0	8866	331	7347	322	0	8000	598	301	275	0	1174	283	271	1059	0	1613	19653
% Autos	92.9	94.6	85.7	0	93.6	89	96.1	90.2	0	95.6	84.6	86	87	0	84.7	86.5	87.1	93	0	90.5	93.5
Heavy Vehicles	67	415	126	0	608	41	295	35	0	371	109	49	41	0	199	44	40	80	0	164	1342
% Heavy Vehicles	7.1	5.4	14.3	0	6.4	11	3.9	9.8	0	4.4	15.4	14	13	0	14.4	13.5	12.9	7	0	9.2	6.4
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	5	5	6
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	7.7	0.1	0	0	0	83.3	0.3	0
Pedestrians	0	0	0	1	1	0	0	0	0	0	0	0	0	12	12	0	0	0	1	1	14
% Pedestrians	0	0	0	100	0	0	0	0	0	0	0	0	0	92.3	0.9	0	0	0	16.7	0.1	0.1

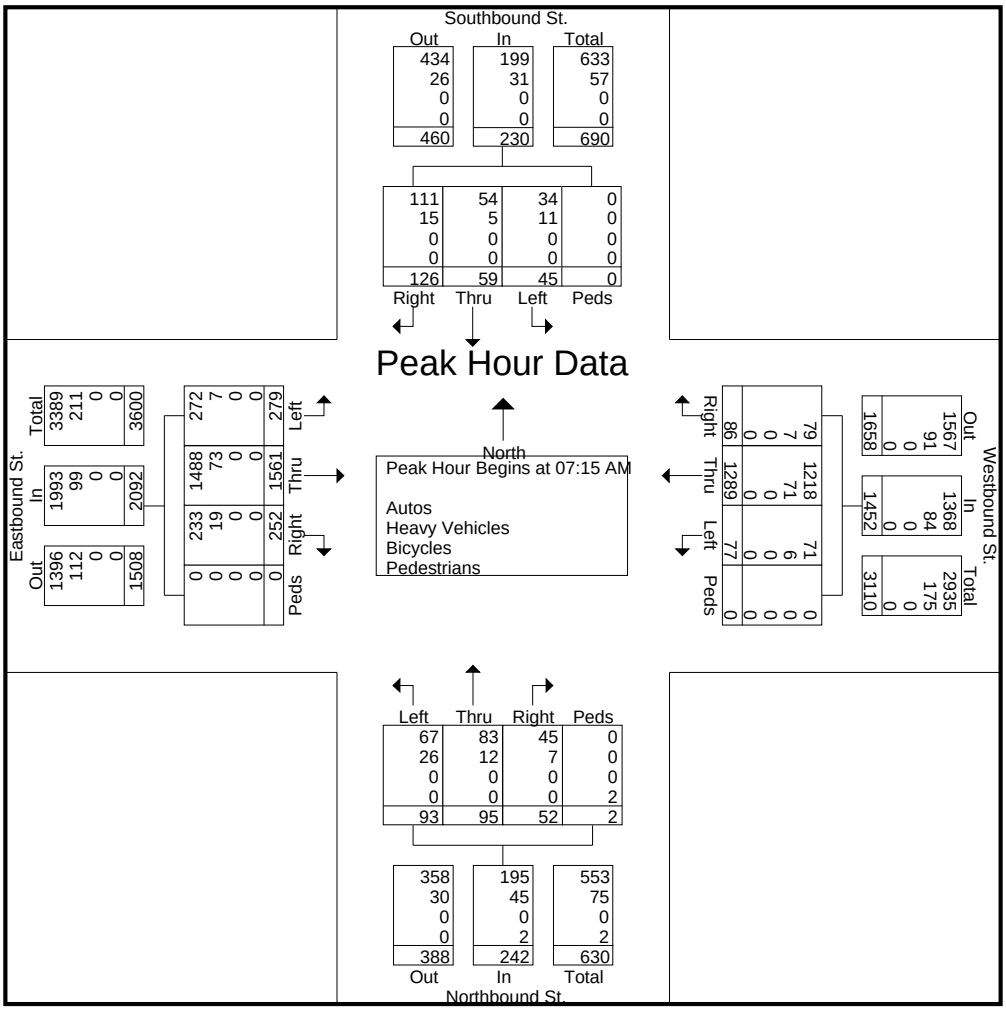
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at Garden Rd 03042015
Site Code :
Start Date : 3/4/2015
Page No : 2

	Eastbound St. Eastbound					Westbound St. Westbound					Northbound St. Northbound					Southbound St. Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	69	395	57	0	521	19	351	19	0	389	12	21	9	2	44	6	9	30	0	45	999
07:30 AM	62	380	55	0	497	18	314	17	0	349	30	23	14	0	67	13	13	26	0	52	965
07:45 AM	76	409	79	0	564	18	315	25	0	358	30	31	11	0	72	9	14	23	0	46	1040
08:00 AM	72	377	61	0	510	22	309	25	0	356	21	20	18	0	59	17	23	47	0	87	1012
Total Volume	279	1561	252	0	2092	77	1289	86	0	1452	93	95	52	2	242	45	59	126	0	230	4016
% App. Total	13.3	74.6	12	0		5.3	88.8	5.9	0		38.4	39.3	21.5	0.8		19.6	25.7	54.8	0		
PHF	.918	.954	.797	.000	.927	.875	.918	.860	.000	.933	.775	.766	.722	.250	.840	.662	.641	.670	.000	.661	.965
Autos	272	1488	233	0	1993	71	1218	79	0	1368	67	83	45	0	195	34	54	111	0	199	3755
% Autos	97.5	95.3	92.5	0	95.3	92.2	94.5	91.9	0	94.2	72.0	87.4	86.5	0	80.6	75.6	91.5	88.1	0	86.5	93.5
Heavy Vehicles	7	73	19	0	99	6	71	7	0	84	26	12	7	0	45	11	5	15	0	31	259
% Heavy Vehicles	2.5	4.7	7.5	0	4.7	7.8	5.5	8.1	0	5.8	28.0	12.6	13.5	0	18.6	24.4	8.5	11.9	0	13.5	6.4
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	2
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0.8	0	0	0	0	0	0.0



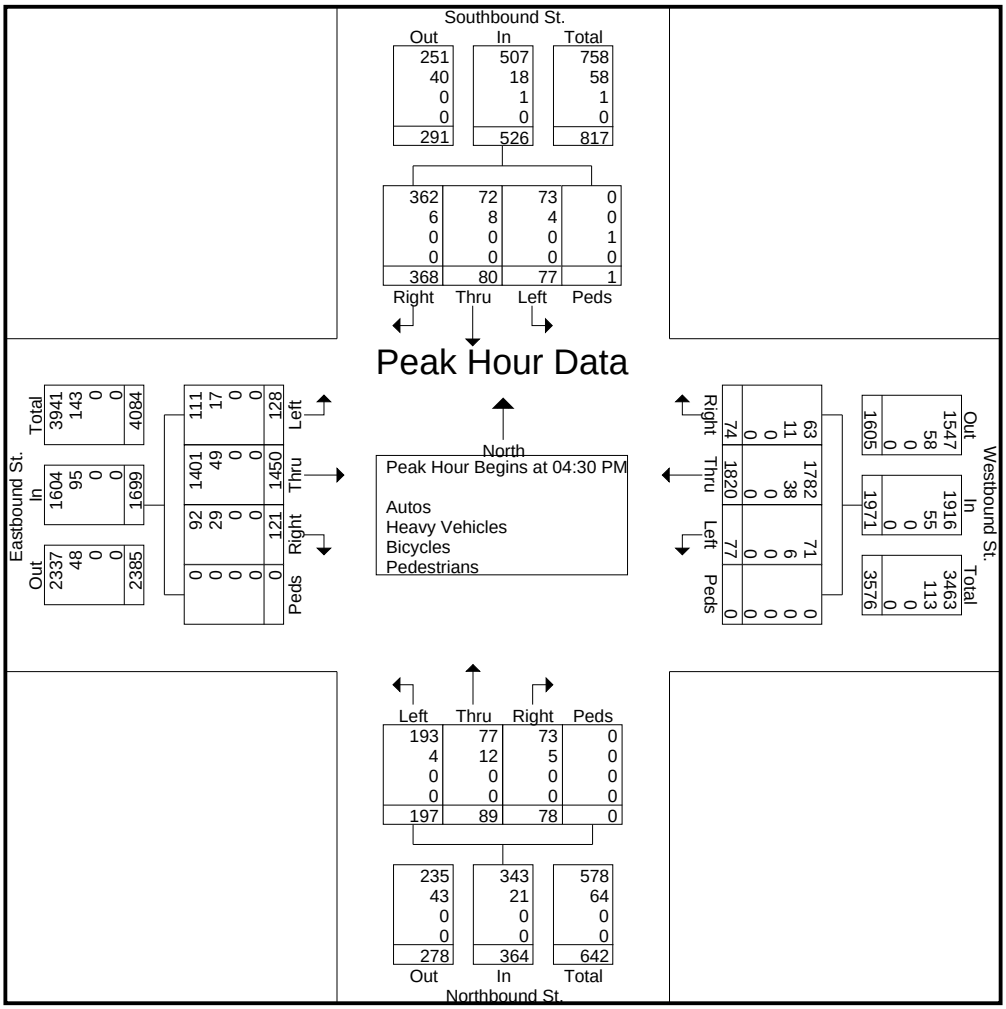
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at Garden Rd 03042015
Site Code :
Start Date : 3/4/2015
Page No : 3

	Eastbound St. Eastbound					Westbound St. Westbound					Northbound St. Northbound					Southbound St. Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	30	379	26	0	435	16	390	17	0	423	36	13	13	0	62	20	18	99	0	137	1057
04:45 PM	28	381	42	0	451	24	434	12	0	470	43	25	15	0	83	26	19	61	0	106	1110
05:00 PM	30	318	24	0	372	16	516	21	0	553	66	32	26	0	124	19	21	113	1	154	1203
05:15 PM	40	372	29	0	441	21	480	24	0	525	52	19	24	0	95	12	22	95	0	129	1190
Total Volume	128	1450	121	0	1699	77	1820	74	0	1971	197	89	78	0	364	77	80	368	1	526	4560
% App. Total	7.5	85.3	7.1	0		3.9	92.3	3.8	0		54.1	24.5	21.4	0		14.6	15.2	70	0.2		
PHF	.800	.951	.720	.000	.942	.802	.882	.771	.000	.891	.746	.695	.750	.000	.734	.740	.909	.814	.250	.854	.948
Autos	111	1401	92	0	1604	71	1782	63	0	1916	193	77	73	0	343	73	72	362	0	507	4370
% Autos	86.7	96.6	76.0	0	94.4	92.2	97.9	85.1	0	97.2	98.0	86.5	93.6	0	94.2	94.8	90.0	98.4	0	96.4	95.8
Heavy Vehicles	17	49	29	0	95	6	38	11	0	55	4	12	5	0	21	4	8	6	0	18	189
% Heavy Vehicles	13.3	3.4	24.0	0	5.6	7.8	2.1	14.9	0	2.8	2.0	13.5	6.4	0	5.8	5.2	10.0	1.6	0	3.4	4.1
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0.2	0.0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at Garden Rd 03042015
Site Code :
Start Date : 3/4/2015
Page No : 1

Groups Printed- Heavy Vehicles

	Eastbound St. Eastbound					Westbound St. Westbound					Northbound St. Northbound					Southbound St. Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	4	9	2	0	15	0	12	0	0	12	15	3	2	0	20	1	2	4	0	7	54
06:15 AM	1	21	1	0	23	0	9	2	0	11	10	5	6	0	21	0	1	9	0	10	65
06:30 AM	2	18	1	0	21	0	11	1	0	12	10	4	4	0	18	2	3	4	0	9	60
06:45 AM	2	23	3	0	28	0	15	1	0	16	3	1	4	0	8	2	2	3	0	7	59
Total	9	71	7	0	87	0	47	4	0	51	38	13	16	0	67	5	8	20	0	33	238
07:00 AM	5	20	5	0	30	1	23	0	0	24	7	1	0	0	8	7	1	6	0	14	76
07:15 AM	1	22	6	0	29	1	18	1	0	20	4	3	0	0	7	2	2	5	0	9	65
07:30 AM	1	20	5	0	26	1	13	1	0	15	7	2	3	0	12	3	1	2	0	6	59
07:45 AM	2	14	4	0	20	2	17	3	0	22	12	4	1	0	17	2	1	2	0	5	64
Total	9	76	20	0	105	5	71	5	0	81	30	10	4	0	44	14	5	15	0	34	264
08:00 AM	3	17	4	0	24	2	23	2	0	27	3	3	3	0	9	4	1	6	0	11	71
08:15 AM	3	19	9	0	31	2	20	0	0	22	4	2	2	0	8	3	4	1	0	8	69
08:30 AM	6	19	5	0	30	4	18	1	0	23	7	1	1	0	9	4	3	4	0	11	73
08:45 AM	2	23	5	0	30	5	19	0	0	24	9	2	0	0	11	2	3	8	0	13	78
Total	14	78	23	0	115	13	80	3	0	96	23	8	6	0	37	13	11	19	0	43	291
BREAK																					
04:00 PM	4	15	9	0	28	3	10	3	0	16	1	1	2	0	4	0	1	5	0	6	54
04:15 PM	3	10	5	0	18	3	8	2	0	13	2	0	5	0	7	3	0	3	0	6	44
04:30 PM	3	14	6	0	23	2	11	2	0	15	0	3	0	0	3	0	3	2	0	5	46
04:45 PM	7	9	5	0	21	1	9	2	0	12	2	5	1	0	8	1	4	1	0	6	47
Total	17	48	25	0	90	9	38	9	0	56	5	9	8	0	22	4	8	11	0	23	191
05:00 PM	4	13	8	0	25	2	6	5	0	13	0	4	1	0	5	2	0	2	0	4	47
05:15 PM	3	13	10	0	26	1	12	2	0	15	2	0	3	0	5	1	1	1	0	3	49
05:30 PM	4	15	8	0	27	1	4	1	0	6	2	2	1	0	5	1	4	4	0	9	47
05:45 PM	1	11	5	0	17	1	9	3	0	13	2	2	0	0	4	1	1	1	0	3	37
Total	12	52	31	0	95	5	31	11	0	47	6	8	5	0	19	5	6	8	0	19	180
06:00 PM	0	18	4	0	22	0	7	1	0	8	0	0	1	0	1	3	0	2	0	5	36
06:15 PM	3	22	5	0	30	6	7	1	0	14	4	1	0	0	5	0	1	3	0	4	53
06:30 PM	2	21	5	0	28	2	8	1	0	11	2	0	1	0	3	0	1	2	0	3	45
06:45 PM	1	29	6	0	36	1	6	0	0	7	1	0	0	0	1	0	0	0	0	0	44
Total	6	90	20	0	116	9	28	3	0	40	7	1	2	0	10	3	2	7	0	12	178
Grand Total	67	415	126	0	608	41	295	35	0	371	109	49	41	0	199	44	40	80	0	164	1342
Apprch %	11	68.3	20.7	0		11.1	79.5	9.4	0		54.8	24.6	20.6	0		26.8	24.4	48.8	0		
Total %	5	30.9	9.4	0	45.3	3.1	22	2.6	0	27.6	8.1	3.7	3.1	0	14.8	3.3	3	6	0	12.2	

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at Garden Rd 03052015
Site Code :
Start Date : 3/5/2015
Page No : 1

Groups Printed- Autos - Heavy Vehicles - Bicycles - Pedestrians

	Blue Heron Blvd Eastbound					Blue Heron Blvd Westbound					Garden Rd Northbound					Garden Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	34	139	27	0	200	12	148	6	0	166	20	4	10	1	35	3	5	5	0	13	414
06:15 AM	39	167	26	0	232	4	172	7	0	183	26	5	12	0	43	6	7	13	0	26	484
06:30 AM	42	299	44	0	385	8	204	9	0	221	17	7	10	0	34	6	6	19	0	31	671
06:45 AM	53	383	57	1	494	13	255	20	0	288	20	13	5	1	39	12	13	30	0	55	876
Total	168	988	154	1	1311	37	779	42	0	858	83	29	37	2	151	27	31	67	0	125	2445
07:00 AM	56	382	49	0	487	10	322	9	0	341	19	17	6	1	43	11	12	29	1	53	924
07:15 AM	56	387	59	0	502	14	344	16	0	374	23	21	13	1	58	15	16	22	0	53	987
07:30 AM	68	348	52	0	468	26	357	19	0	402	28	12	13	0	53	11	14	26	0	51	974
07:45 AM	78	443	71	0	592	23	347	22	0	392	23	29	8	0	60	13	26	35	0	74	1118
Total	258	1560	231	0	2049	73	1370	66	0	1509	93	79	40	2	214	50	68	112	1	231	4003
08:00 AM	64	417	61	0	542	24	295	16	0	335	30	14	19	0	63	16	15	53	0	84	1024
08:15 AM	51	367	47	0	465	23	343	15	0	381	38	26	20	0	84	18	15	28	0	61	991
08:30 AM	56	394	40	0	490	20	359	19	0	398	25	12	21	0	58	17	22	37	0	76	1022
08:45 AM	54	270	40	0	364	14	282	16	0	312	32	17	14	0	63	17	21	40	0	78	817
Total	225	1448	188	0	1861	81	1279	66	0	1426	125	69	74	0	268	68	73	158	0	299	3854
BREAK																					
04:00 PM	38	247	32	0	317	8	375	20	0	403	43	9	13	0	65	24	16	61	0	101	886
04:15 PM	37	269	27	0	333	12	393	11	0	416	41	16	13	0	70	17	11	65	0	93	912
04:30 PM	37	355	34	0	426	14	506	22	0	542	45	12	18	0	75	31	15	67	0	113	1156
04:45 PM	46	339	39	0	424	22	434	16	0	472	49	16	16	0	81	10	14	54	0	78	1055
Total	158	1210	132	0	1500	56	1708	69	0	1833	178	53	60	0	291	82	56	247	0	385	4009
05:00 PM	28	284	33	0	345	15	494	13	0	522	73	29	24	0	126	27	22	125	0	174	1167
05:15 PM	33	360	22	0	415	12	522	31	0	565	36	17	24	0	77	14	14	118	0	146	1203
05:30 PM	21	349	31	0	401	14	399	13	0	426	43	11	15	2	71	21	16	99	1	137	1035
05:45 PM	21	329	23	0	373	17	419	15	0	451	33	8	17	2	60	13	7	68	1	89	973
Total	103	1322	109	0	1534	58	1834	72	0	1964	185	65	80	4	334	75	59	410	2	546	4378
06:00 PM	15	287	19	0	321	8	394	10	0	412	24	3	12	1	40	12	12	44	1	69	842
06:15 PM	28	271	16	0	315	8	323	12	0	343	28	6	7	0	41	15	9	31	0	55	754
06:30 PM	26	250	14	0	290	10	297	6	0	313	18	6	13	1	38	16	7	37	0	60	701
06:45 PM	13	260	13	0	286	6	220	9	0	235	15	3	10	0	28	4	0	27	2	33	582
Total	82	1068	62	0	1212	32	1234	37	0	1303	85	18	42	2	147	47	28	139	3	217	2879
Grand Total	994	7596	876	1	9467	337	8204	352	0	8893	749	313	333	10	1405	349	315	1133	6	1803	21568
Apprch %	10.5	80.2	9.3	0		3.8	92.3	4	0		53.3	22.3	23.7	0.7		19.4	17.5	62.8	0.3		
Total %	4.6	35.2	4.1	0	43.9	1.6	38	1.6	0	41.2	3.5	1.5	1.5	0	6.5	1.6	1.5	5.3	0	8.4	
Autos	885	7201	745	0	8831	300	7866	314	0	8480	632	276	291	0	1199	308	275	1041	0	1624	20134
% Autos	89	94.8	85	0	93.3	89	95.9	89.2	0	95.4	84.4	88.2	87.4	0	85.3	88.3	87.3	91.9	0	90.1	93.4
Heavy Vehicles	109	395	131	0	635	37	338	38	0	413	117	37	42	0	196	41	40	92	0	173	1417
% Heavy Vehicles	11	5.2	15	0	6.7	11	4.1	10.8	0	4.6	15.6	11.8	12.6	0	14	11.7	12.7	8.1	0	9.6	6.6
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	3	3	4
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0.1	0	0	0	50	0.2	0
Pedestrians	0	0	0	1	1	0	0	0	0	0	0	0	0	9	9	0	0	0	3	3	13
% Pedestrians	0	0	0	100	0	0	0	0	0	0	0	0	0	90	0.6	0	0	0	50	0.2	0.1

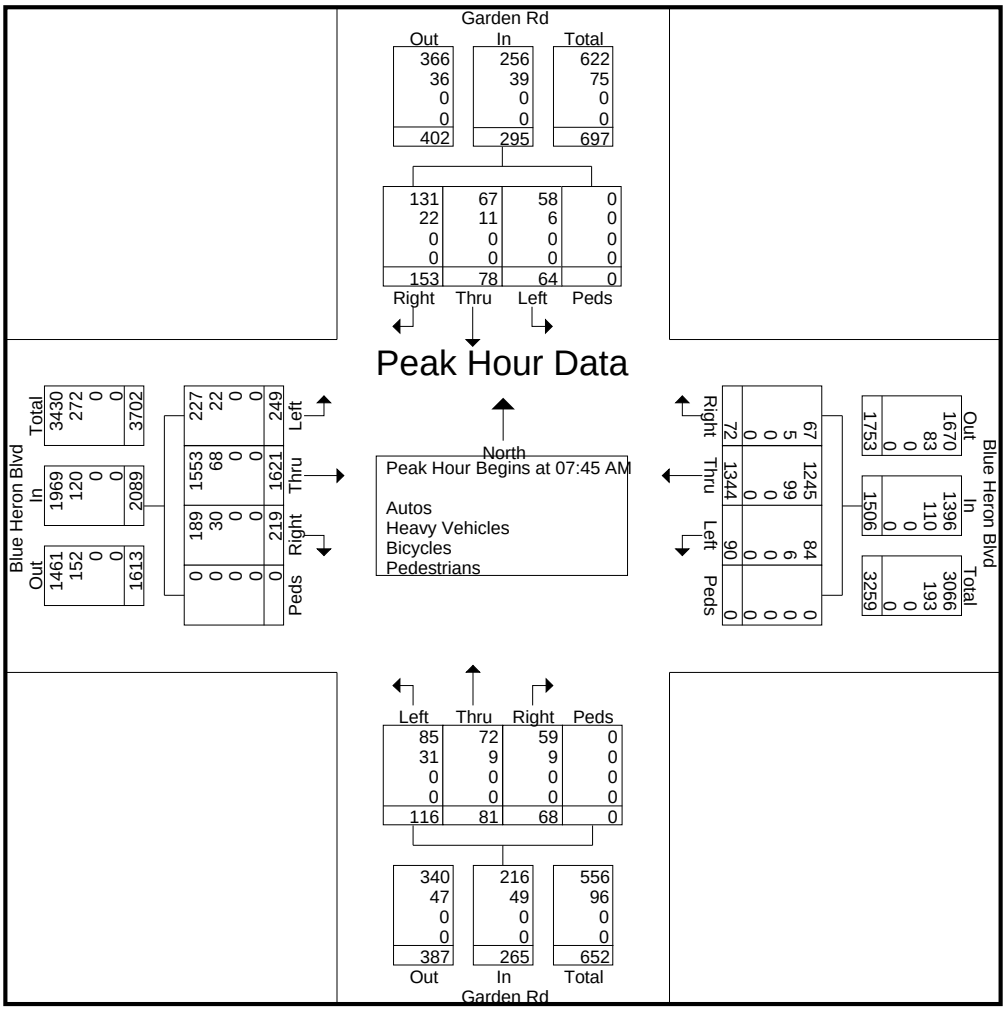
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at Garden Rd 03052015
Site Code :
Start Date : 3/5/2015
Page No : 2

	Blue Heron Blvd Eastbound					Blue Heron Blvd Westbound					Garden Rd Northbound					Garden Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	78	443	71	0	592	23	347	22	0	392	23	29	8	0	60	13	26	35	0	74	1118
08:00 AM	64	417	61	0	542	24	295	16	0	335	30	14	19	0	63	16	15	53	0	84	1024
08:15 AM	51	367	47	0	465	23	343	15	0	381	38	26	20	0	84	18	15	28	0	61	991
08:30 AM	56	394	40	0	490	20	359	19	0	398	25	12	21	0	58	17	22	37	0	76	1022
Total Volume	249	1621	219	0	2089	90	1344	72	0	1506	116	81	68	0	265	64	78	153	0	295	4155
% App. Total	11.9	77.6	10.5	0		6	89.2	4.8	0		43.8	30.6	25.7	0		21.7	26.4	51.9	0		
PHF	.798	.915	.771	.000	.882	.938	.936	.818	.000	.946	.763	.698	.810	.000	.789	.889	.750	.722	.000	.878	.929
Autos	227	1553	189	0	1969	84	1245	67	0	1396	85	72	59	0	216	58	67	131	0	256	3837
% Autos	91.2	95.8	86.3	0	94.3	93.3	92.6	93.1	0	92.7	73.3	88.9	86.8	0	81.5	90.6	85.9	85.6	0	86.8	92.3
Heavy Vehicles	22	68	30	0	120	6	99	5	0	110	31	9	9	0	49	6	11	22	0	39	318
% Heavy Vehicles	8.8	4.2	13.7	0	5.7	6.7	7.4	6.9	0	7.3	26.7	11.1	13.2	0	18.5	9.4	14.1	14.4	0	13.2	7.7
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



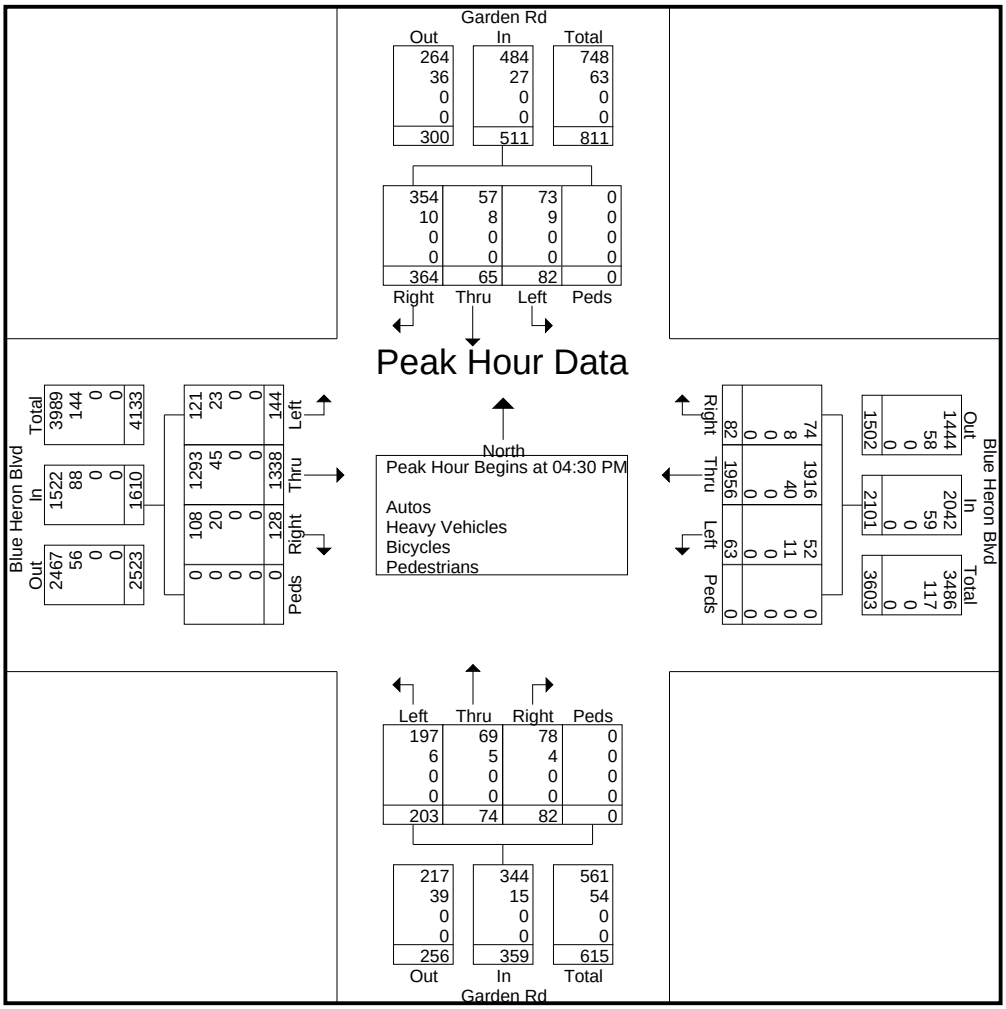
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at Garden Rd 03052015
Site Code :
Start Date : 3/5/2015
Page No : 3

	Blue Heron Blvd Eastbound					Blue Heron Blvd Westbound					Garden Rd Northbound					Garden Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	37	355	34	0	426	14	506	22	0	542	45	12	18	0	75	31	15	67	0	113	1156
04:45 PM	46	339	39	0	424	22	434	16	0	472	49	16	16	0	81	10	14	54	0	78	1055
05:00 PM	28	284	33	0	345	15	494	13	0	522	73	29	24	0	126	27	22	125	0	174	1167
05:15 PM	33	360	22	0	415	12	522	31	0	565	36	17	24	0	77	14	14	118	0	146	1203
Total Volume	144	1338	128	0	1610	63	1956	82	0	2101	203	74	82	0	359	82	65	364	0	511	4581
% App. Total	8.9	83.1	8	0		3	93.1	3.9	0		56.5	20.6	22.8	0		16	12.7	71.2	0		
PHF	.783	.929	.821	.000	.945	.716	.937	.661	.000	.930	.695	.638	.854	.000	.712	.661	.739	.728	.000	.734	.952
Autos	121	1293	108	0	1522	52	1916	74	0	2042	197	69	78	0	344	73	57	354	0	484	4392
% Autos	84.0	96.6	84.4	0	94.5	82.5	98.0	90.2	0	97.2	97.0	93.2	95.1	0	95.8	89.0	87.7	97.3	0	94.7	95.9
Heavy Vehicles	23	45	20	0	88	11	40	8	0	59	6	5	4	0	15	9	8	10	0	27	189
% Heavy Vehicles	16.0	3.4	15.6	0	5.5	17.5	2.0	9.8	0	2.8	3.0	6.8	4.9	0	4.2	11.0	12.3	2.7	0	5.3	4.1
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Blue Heron Blvd at Garden Rd 03052015
Site Code :
Start Date : 3/5/2015
Page No : 1

Groups Printed- Heavy Vehicles

	Blue Heron Blvd Eastbound					Blue Heron Blvd Westbound					Garden Rd Northbound					Garden Rd Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	4	13	2	0	19	0	7	0	0	7	12	3	5	0	20	1	1	2	0	4	50
06:15 AM	2	16	2	0	20	0	13	1	0	14	16	2	9	0	27	2	1	4	0	7	68
06:30 AM	4	24	5	0	33	3	21	1	0	25	8	4	6	0	18	1	1	6	0	8	84
06:45 AM	4	20	4	0	28	1	25	1	0	27	6	0	2	0	8	1	1	5	0	7	70
Total	14	73	13	0	100	4	66	3	0	73	42	9	22	0	73	5	4	17	0	26	272
07:00 AM	6	21	2	0	29	0	9	0	0	9	6	2	0	0	8	2	1	4	0	7	53
07:15 AM	2	14	7	0	23	1	28	1	0	30	2	2	0	0	4	4	3	6	0	13	70
07:30 AM	3	12	3	0	18	3	15	2	0	20	7	2	2	0	11	1	1	7	0	9	58
07:45 AM	9	14	6	0	29	1	30	3	0	34	8	2	1	0	11	2	0	6	0	8	82
Total	20	61	18	0	99	5	82	6	0	93	23	8	3	0	34	9	5	23	0	37	263
08:00 AM	5	16	8	0	29	3	21	1	0	25	5	2	1	0	8	1	3	6	0	10	72
08:15 AM	4	12	11	0	27	1	28	0	0	29	12	4	1	0	17	1	3	5	0	9	82
08:30 AM	4	26	5	0	35	1	20	1	0	22	6	1	6	0	13	2	5	5	0	12	82
08:45 AM	5	17	2	0	24	3	18	2	0	23	9	1	1	0	11	1	3	7	0	11	69
Total	18	71	26	0	115	8	87	4	0	99	32	8	9	0	49	5	14	23	0	42	305
BREAK																					
04:00 PM	10	8	13	0	31	0	6	3	0	9	5	2	0	0	7	4	1	2	0	7	54
04:15 PM	10	8	5	0	23	3	14	2	0	19	5	2	1	0	8	2	1	3	0	6	56
04:30 PM	7	13	5	0	25	6	12	2	0	20	2	1	2	0	5	4	3	1	0	8	58
04:45 PM	5	6	3	0	14	2	10	1	0	13	1	1	0	0	2	1	4	2	0	7	36
Total	32	35	26	0	93	11	42	8	0	61	13	6	3	0	22	11	9	8	0	28	204
05:00 PM	6	15	9	0	30	1	7	2	0	10	2	3	1	0	6	3	0	1	0	4	50
05:15 PM	5	11	3	0	19	2	11	3	0	16	1	0	1	0	2	1	1	6	0	8	45
05:30 PM	1	13	6	0	20	1	8	4	0	13	2	2	2	0	6	1	2	4	0	7	46
05:45 PM	3	25	3	0	31	0	8	3	0	11	0	1	0	0	1	2	1	3	0	6	49
Total	15	64	21	0	100	4	34	12	0	50	5	6	4	0	15	7	4	14	0	25	190
06:00 PM	1	21	9	0	31	0	8	1	0	9	0	0	0	0	0	2	1	4	0	7	47
06:15 PM	4	20	7	0	31	3	8	3	0	14	0	0	0	0	0	1	1	0	0	2	47
06:30 PM	4	22	4	0	30	1	6	0	0	7	1	0	1	0	2	1	2	1	0	4	43
06:45 PM	1	28	7	0	36	1	5	1	0	7	1	0	0	0	1	0	0	2	0	2	46
Total	10	91	27	0	128	5	27	5	0	37	2	0	1	0	3	4	4	7	0	15	183
Grand Total	109	395	131	0	635	37	338	38	0	413	117	37	42	0	196	41	40	92	0	173	1417
Apprch %	17.2	62.2	20.6	0		9	81.8	9.2	0		59.7	18.9	21.4	0		23.7	23.1	53.2	0		
Total %	7.7	27.9	9.2	0	44.8	2.6	23.9	2.7	0	29.1	8.3	2.6	3	0	13.8	2.9	2.8	6.5	0	12.2	

North Lake Boulevard at Military Trail

County: 93
Station: 3213
Description: NORTHLAKE BLVD E OF MILITARY TRAIL
Start Date: 03/24/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	35	30	21	20	106	58	52	39	32	181	287
0100	11	18	13	7	49	25	20	15	21	81	130
0200	3	9	8	10	30	5	13	7	7	32	62
0300	8	9	9	6	32	7	5	7	10	29	61
0400	7	18	21	42	88	8	14	15	16	53	141
0500	27	31	33	55	146	18	35	71	99	223	369
0600	71	69	135	193	468	121	128	201	259	709	1177
0700	258	327	450	399	1434	291	271	324	413	1299	2733
0800	338	391	411	344	1484	307	399	391	370	1467	2951
0900	311	324	291	309	1235	323	307	307	296	1233	2468
1000	282	278	263	275	1098	266	280	333	357	1236	2334
1100	258	294	273	306	1131	374	380	345	399	1498	2629
1200	275	260	302	292	1129	397	403	440	401	1641	2770
1300	293	286	258	254	1091	357	420	422	402	1601	2692
1400	246	261	277	225	1009	470	392	425	488	1775	2784
1500	293	309	303	287	1192	530	556	482	559	2127	3319
1600	266	254	288	264	1072	637	619	558	674	2488	3560
1700	311	316	301	294	1222	656	701	730	640	2727	3949
1800	262	212	189	210	873	644	470	535	445	2094	2967
1900	182	181	156	149	668	442	462	365	353	1622	2290
2000	125	121	121	127	494	315	331	261	251	1158	1652
2100	143	135	85	57	420	276	224	244	163	907	1327
2200	73	70	55	42	240	176	150	113	116	555	795
2300	31	29	27	28	115	88	63	74	56	281	396
24-Hour Totals:					16826					27017	43843

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	730	1578	745	1510	745	3049
P.M.	1700	1222	1645	2761	1645	3953
Daily	730	1578	1645	2761	1645	3953

Generated by SPS 5.0.45P

County: 93
Station: 3213
Description: NORTHLAKE BLVD E OF MILITARY TRAIL
Start Date: 03/25/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	27	21	10	18	76	44	39	16	28	127	203
0100	15	7	9	3	34	27	21	16	16	80	114
0200	11	9	9	4	33	12	9	6	8	35	68
0300	2	12	10	10	34	7	10	4	16	37	71
0400	14	20	23	36	93	10	6	19	16	51	144
0500	31	37	56	86	210	8	32	68	77	185	395
0600	64	93	159	206	522	93	102	137	193	525	1047
0700	239	327	422	388	1376	253	257	295	385	1190	2566
0800	374	396	374	310	1454	317	393	333	364	1407	2861
0900	280	256	230	257	1023	357	340	310	260	1267	2290
1000	196	334	260	255	1045	351	289	331	346	1317	2362
1100	302	255	266	271	1094	355	420	353	391	1519	2613
1200	265	326	322	423	1336	453	451	449	446	1799	3135
1300	417	434	419	391	1661	395	455	409	400	1659	3320
1400	391	415	409	461	1676	460	583	362	423	1828	3504
1500	481	457	391	303	1632	424	446	503	502	1875	3507
1600	293	288	312	268	1161	550	702	680	681	2613	3774
1700	332	306	301	292	1231	697	669	773	776	2915	4146
1800	247	261	242	228	978	716	659	749	650	2774	3752
1900	197	165	167	175	704	367	357	335	273	1332	2036
2000	184	159	130	166	639	340	299	331	271	1241	1880
2100	134	124	91	57	406	228	172	141	95	636	1042
2200	65	74	63	34	236	62	71	45	38	216	452
2300	47	26	35	26	134	22	17	18	12	69	203
24-Hour Totals:					18788					26697	45485

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	730	1580	815	1447	730	2970
P.M.	1430	1808	1715	2934	1700	4146
Daily	1430	1808	1715	2934	1700	4146

Generated by SPS 5.0.45P

County: 93
Station: 3213
Description: NORTHLAKE BLVD E OF MILITARY TRAIL
Start Date: 03/26/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	22	24	8	15	69	5	9	2	7	23	92
0100	14	16	8	18	56	6	6	4	2	18	74
0200	7	12	15	8	42	7	5	5	3	20	62
0300	7	12	11	9	39	1	1	0	0	2	41
0400	4	12	23	48	87	2	2	0	0	4	91
0500	23	28	45	57	153	4	3	1	5	13	166
0600	77	107	138	190	512	4	8	13	23	48	560
0700	223	347	390	403	1363	59	111	107	127	404	1767
0800	394	427	389	366	1576	103	87	78	113	381	1957
0900	297	309	289	349	1244	71	81	44	69	265	1509
1000	251	274	317	275	1117	100	116	123	99	438	1555
1100	300	276	319	327	1222	134	150	135	138	557	1779
1200	330	325	289	320	1264	314	378	528	552	1772	3036
1300	286	276	289	288	1139	566	607	499	513	2185	3324
1400	261	250	284	233	1028	552	427	582	641	2202	3230
1500	279	304	300	296	1179	634	710	666	585	2595	3774
1600	310	266	326	306	1208	775	684	750	946	3155	4363
1700	392	314	272	276	1254	908	948	899	863	3618	4872
1800	246	278	244	264	1032	701	726	560	435	2422	3454
1900	203	181	199	179	762	423	420	411	334	1588	2350
2000	178	163	120	108	569	366	311	338	305	1320	1889
2100	124	101	128	84	437	303	291	222	191	1007	1444
2200	72	69	66	45	252	232	136	156	108	632	884
2300	56	31	43	38	168	87	82	78	43	290	458
24-Hour Totals:					17772					24959	42731

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	730	1614	715	448	730	2038
P.M.	1630	1338	1645	3701	1645	4985
Daily	730	1614	1645	3701	1645	4985

Generated by SPS 5.0.45P

County: 93
Station: 3215
Description: MILITARY TRAIL S OF NORTHLAKE BLVD
Start Date: 03/24/2015
Start Time: 0000

	Direction: N					Direction: S					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	18	15	15	6	54	30	25	16	18	89	143
0100	17	12	3	4	36	16	10	6	12	44	80
0200	3	6	6	10	25	9	4	7	6	26	51
0300	7	4	5	3	19	2	2	4	5	13	32
0400	8	9	14	17	48	6	4	18	15	43	91
0500	26	45	86	67	224	23	32	31	55	141	365
0600	86	96	194	241	617	45	64	139	164	412	1029
0700	251	320	367	343	1281	243	261	287	320	1111	2392
0800	349	369	373	377	1468	233	278	271	298	1080	2548
0900	267	256	271	276	1070	222	236	206	227	891	1961
1000	232	285	263	280	1060	221	192	211	200	824	1884
1100	281	276	296	302	1155	217	240	223	237	917	2072
1200	324	295	321	316	1256	236	274	272	253	1035	2291
1300	299	292	306	269	1166	265	246	222	278	1011	2177
1400	320	284	315	329	1248	253	229	279	287	1048	2296
1500	318	297	377	315	1307	328	324	304	281	1237	2544
1600	391	319	380	411	1501	300	341	327	284	1252	2753
1700	435	372	395	335	1537	336	356	330	328	1350	2887
1800	313	306	299	222	1140	294	193	191	184	862	2002
1900	203	209	160	174	746	183	174	166	156	679	1425
2000	140	124	120	109	493	182	163	150	142	637	1130
2100	110	82	52	66	310	151	115	99	67	432	742
2200	56	60	61	46	223	110	76	62	58	306	529
2300	28	36	29	22	115	70	34	52	26	182	297
24-Hour Totals:					18099					15622	33721

Peak Volume Information

	Direction: N		Direction: S		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	800	1468	730	1118	800	2548
P.M.	1645	1613	1700	1350	1645	2919
Daily	1645	1613	1700	1350	1645	2919

Generated by SPS 5.0.45P

County: 93
Station: 3215
Description: MILITARY TRAIL S OF NORTHLAKE BLVD
Start Date: 03/25/2015
Start Time: 0000

	Direction: N					Direction: S					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	15	14	12	10	51	26	23	21	16	86	137
0100	11	5	5	7	28	12	16	10	14	52	80
0200	8	10	9	1	28	3	3	7	4	17	45
0300	4	8	3	8	23	4	3	5	1	13	36
0400	2	9	18	18	47	5	7	12	13	37	84
0500	24	40	72	84	220	20	26	33	57	136	356
0600	83	101	183	238	605	52	71	130	181	434	1039
0700	298	316	383	351	1348	217	271	281	277	1046	2394
0800	353	374	349	389	1465	253	282	269	284	1088	2553
0900	282	327	333	332	1274	303	335	299	320	1257	2531
1000	261	287	248	268	1064	353	235	218	196	1002	2066
1100	277	264	304	292	1137	235	251	216	248	950	2087
1200	333	302	302	329	1266	293	244	275	288	1100	2366
1300	302	281	311	259	1153	287	273	224	310	1094	2247
1400	318	312	326	327	1283	270	336	313	291	1210	2493
1500	369	334	379	391	1473	377	328	302	261	1268	2741
1600	378	357	392	377	1504	341	390	322	299	1352	2856
1700	429	418	441	389	1677	360	315	345	345	1365	3042
1800	312	282	265	248	1107	291	261	233	225	1010	2117
1900	198	206	155	177	736	189	141	181	172	683	1419
2000	174	149	122	104	549	180	163	202	146	691	1240
2100	99	86	89	71	345	144	115	107	84	450	795
2200	54	42	51	37	184	102	80	76	58	316	500
2300	38	38	36	15	127	54	48	37	34	173	300
24-Hour Totals:					18694					16830	35524

Peak Volume Information

	Direction: N		Direction: S		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	800	1465	845	1221	730	2554
P.M.	1700	1677	1615	1371	1700	3042
Daily	1700	1677	1615	1371	1700	3042

Generated by SPS 5.0.45P

County: 93
Station: 3215
Description: MILITARY TRAIL S OF NORTHLAKE BLVD
Start Date: 03/26/2015
Start Time: 0000

	Direction: N					Direction: S					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	19	16	10	9	54	27	15	21	21	84	138
0100	9	6	8	4	27	13	14	9	18	54	81
0200	3	8	5	6	22	8	5	11	11	35	57
0300	7	4	6	9	26	5	4	6	8	23	49
0400	8	11	24	28	71	8	10	11	12	41	112
0500	22	39	62	81	204	25	23	33	50	131	335
0600	86	80	189	224	579	48	68	116	172	404	983
0700	299	290	348	369	1306	251	235	284	298	1068	2374
0800	346	319	316	374	1355	263	288	286	255	1092	2447
0900	257	267	289	287	1100	228	249	183	213	873	1973
1000	252	275	256	275	1058	208	185	201	218	812	1870
1100	279	280	318	305	1182	227	227	222	262	938	2120
1200	349	297	289	283	1218	244	250	252	260	1006	2224
1300	292	292	266	281	1131	259	260	255	229	1003	2134
1400	290	289	370	330	1279	257	298	314	287	1156	2435
1500	308	335	365	393	1401	377	329	297	268	1271	2672
1600	377	302	429	393	1501	302	353	324	308	1287	2788
1700	473	404	406	341	1624	339	364	350	317	1370	2994
1800	286	242	295	214	1037	262	225	221	165	873	1910
1900	194	155	152	164	665	148	148	186	127	609	1274
2000	120	121	130	93	464	187	135	150	122	594	1058
2100	99	98	79	65	341	129	85	97	83	394	735
2200	71	56	56	46	229	88	70	70	56	284	513
2300	42	24	30	21	117	63	53	45	31	192	309
24-Hour Totals:					17991					15594	33585

Peak Volume Information

	Direction: N		Direction: S		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	730	1382	745	1135	730	2515
P.M.	1630	1699	1700	1370	1645	3037
Daily	1630	1699	1700	1370	1645	3037

Generated by SPS 5.0.45P

County: 93
Station: 3217
Description: NORTHLAKE BLVD W OF MILITARY TRAIL
Start Date: 03/24/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	28	29	18	14	89	40	45	27	25	137	226
0100	13	9	5	10	37	31	17	19	13	80	117
0200	11	11	10	9	41	10	7	9	4	30	71
0300	6	8	9	11	34	7	4	7	9	27	61
0400	6	24	30	39	99	6	10	9	16	41	140
0500	35	57	69	117	278	17	31	51	82	181	459
0600	115	164	295	391	965	82	103	150	176	511	1476
0700	580	594	747	693	2614	174	189	249	310	922	3536
0800	694	638	667	608	2607	302	276	340	310	1228	3835
0900	488	447	387	470	1792	293	290	268	235	1086	2878
1000	351	364	369	370	1454	242	212	276	303	1033	2487
1100	351	408	398	393	1550	276	284	283	340	1183	2733
1200	387	338	381	370	1476	320	341	340	303	1304	2780
1300	333	343	321	355	1352	302	350	309	342	1303	2655
1400	335	389	345	335	1404	354	342	347	373	1416	2820
1500	345	349	403	398	1495	458	438	450	451	1797	3292
1600	362	366	424	411	1563	497	526	490	534	2047	3610
1700	450	451	469	467	1837	599	615	628	610	2452	4289
1800	371	322	323	310	1326	551	436	433	410	1830	3156
1900	306	248	190	202	946	407	412	378	347	1544	2490
2000	145	158	204	169	676	276	266	275	253	1070	1746
2100	205	174	128	77	584	293	252	244	165	954	1538
2200	73	87	59	47	266	154	127	92	91	464	730
2300	40	32	25	31	128	83	64	64	59	270	398
24-Hour Totals:					24613					22910	47523

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	730	2772	830	1233	745	3920
P.M.	1700	1837	1700	2452	1700	4289
Daily	730	2772	1700	2452	1700	4289

Generated by SPS 5.0.45P

County: 93
Station: 3217
Description: NORTHLAKE BLVD W OF MILITARY TRAIL
Start Date: 03/25/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	24	19	11	18	72	39	31	12	20	102	174
0100	13	7	12	4	36	18	12	14	10	54	90
0200	11	9	7	6	33	11	9	3	8	31	64
0300	3	11	11	14	39	6	8	4	15	33	72
0400	11	24	27	50	112	8	2	16	7	33	145
0500	30	55	85	111	281	14	28	60	66	168	449
0600	106	178	287	454	1025	88	101	117	163	469	1494
0700	581	638	732	743	2694	188	211	276	301	976	3670
0800	722	705	648	619	2694	287	300	334	289	1210	3904
0900	484	445	468	464	1861	264	275	255	232	1026	2887
1000	392	373	413	372	1550	283	241	269	270	1063	2613
1100	366	331	369	351	1417	284	309	277	295	1165	2582
1200	378	380	360	375	1493	350	346	338	331	1365	2858
1300	386	346	349	365	1446	350	321	314	363	1348	2794
1400	350	373	406	411	1540	345	331	369	393	1438	2978
1500	354	401	394	414	1563	443	441	449	464	1797	3360
1600	319	400	381	450	1550	476	516	541	495	2028	3578
1700	452	420	396	435	1703	598	607	583	571	2359	4062
1800	371	380	370	313	1434	527	526	487	531	2071	3505
1900	252	231	233	216	932	407	368	352	338	1465	2397
2000	214	202	231	246	893	344	309	309	348	1310	2203
2100	215	174	96	81	566	272	237	187	209	905	1471
2200	99	92	58	63	312	149	118	121	88	476	788
2300	50	25	30	27	132	91	60	66	49	266	398
24-Hour Totals:					25378					23158	48536

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	730	2902	745	1222	730	4066
P.M.	1645	1718	1700	2359	1700	4062
Daily	730	2902	1700	2359	730	4066

Generated by SPS 5.0.45P

County: 93
Station: 3217
Description: NORTHLAKE BLVD W OF MILITARY TRAIL
Start Date: 03/26/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	20	31	16	21	88	48	27	30	37	142	230
0100	14	20	10	12	56	20	13	12	8	53	109
0200	8	14	9	7	38	4	10	8	7	29	67
0300	8	12	11	16	47	8	4	6	9	27	74
0400	13	18	29	38	98	2	1	18	11	32	130
0500	40	48	65	112	265	15	34	50	52	151	416
0600	124	205	318	346	993	85	84	115	178	462	1455
0700	567	655	665	709	2596	168	213	264	317	962	3558
0800	693	696	649	630	2668	301	296	310	286	1193	3861
0900	483	401	444	429	1757	247	278	264	218	1007	2764
1000	340	344	403	370	1457	257	262	276	251	1046	2503
1100	383	355	379	388	1505	308	287	305	286	1186	2691
1200	370	368	373	363	1474	348	318	334	320	1320	2794
1300	362	366	370	347	1445	355	375	304	357	1391	2836
1400	346	418	397	384	1545	355	331	366	402	1454	2999
1500	366	363	401	385	1515	414	434	427	406	1681	3196
1600	356	370	420	432	1578	479	493	486	531	1989	3567
1700	468	464	410	394	1736	594	603	604	588	2389	4125
1800	338	326	266	278	1208	536	479	412	373	1800	3008
1900	235	229	213	197	874	315	314	327	268	1224	2098
2000	200	145	153	159	657	289	280	293	210	1072	1729
2100	166	112	101	93	472	234	245	184	182	845	1317
2200	94	72	58	61	285	170	105	106	89	470	755
2300	53	29	33	36	151	97	68	72	40	277	428
24-Hour Totals:					24508					22202	46710

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	730	2763	745	1224	745	3971
P.M.	1630	1784	1700	2389	1700	4125
Daily	730	2763	1700	2389	1700	4125

Generated by SPS 5.0.45P

County: 93
Station: 3211
Description: MILITARY TRAIL N OF NORTHLAKE BLVD
Start Date: 04/21/2015
Start Time: 0000

	Direction: N					Direction: S					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	7	11	9	10	37	13	14	13	7	47	84
0100	7	5	5	4	21	11	6	8	5	30	51
0200	6	4	6	5	21	6	10	5	5	26	47
0300	2	11	9	10	32	4	4	4	6	18	50
0400	8	17	20	23	68	13	15	12	20	60	128
0500	36	66	58	62	222	28	37	38	53	156	378
0600	109	193	258	402	962	84	120	150	252	606	1568
0700	329	378	404	344	1455	311	310	298	338	1257	2712
0800	378	353	369	268	1368	316	288	249	276	1129	2497
0900	243	259	244	210	956	249	256	273	250	1028	1984
1000	258	241	217	225	941	265	308	283	283	1139	2080
1100	270	239	270	265	1044	290	303	287	329	1209	2253
1200	252	285	269	262	1068	332	307	281	316	1236	2304
1300	288	290	294	257	1129	295	271	311	330	1207	2336
1400	300	317	278	292	1187	354	352	426	493	1625	2812
1500	295	320	301	300	1216	463	405	409	403	1680	2896
1600	281	313	298	318	1210	468	463	417	497	1845	3055
1700	373	345	279	297	1294	504	476	389	357	1726	3020
1800	272	225	231	195	923	287	305	260	283	1135	2058
1900	139	146	131	126	542	221	196	192	196	805	1347
2000	138	137	112	98	485	183	199	209	154	745	1230
2100	82	79	56	52	269	163	135	73	85	456	725
2200	45	52	37	36	170	81	62	54	55	252	422
2300	18	18	21	19	76	37	41	24	21	123	199
24-Hour Totals:					16696					19540	36236

Peak Volume Information

	Direction: N		Direction: S		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	645	1513	715	1262	715	2766
P.M.	1630	1334	1630	1894	1630	3228
Daily	645	1513	1630	1894	1630	3228

Generated by SPS 5.0.45P

County: 93
Station: 3211
Description: MILITARY TRAIL N OF NORTHLAKE BLVD
Start Date: 04/22/2015
Start Time: 0000

	Direction: N					Direction: S					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	17	7	8	8	40	18	13	12	12	55	95
0100	9	9	6	7	31	5	9	6	8	28	59
0200	3	5	4	8	20	7	8	10	4	29	49
0300	8	2	12	12	34	4	6	3	3	16	50
0400	12	8	19	25	64	7	18	16	10	51	115
0500	27	41	66	67	201	22	32	42	40	136	337
0600	68	124	208	262	662	53	91	131	157	432	1094
0700	443	346	412	451	1652	260	355	336	332	1283	2935
0800	368	416	387	406	1577	361	328	309	273	1271	2848
0900	300	270	285	277	1132	304	270	273	294	1141	2273
1000	221	285	256	226	988	280	317	362	318	1277	2265
1100	244	312	265	283	1104	299	327	367	309	1302	2406
1200	297	270	308	304	1179	370	369	335	299	1373	2552
1300	284	331	331	320	1266	334	328	298	339	1299	2565
1400	279	326	324	314	1243	345	362	350	457	1514	2757
1500	323	332	347	334	1336	482	427	380	389	1678	3014
1600	349	297	346	320	1312	423	489	501	436	1849	3161
1700	366	421	388	309	1484	553	521	569	435	2078	3562
1800	345	300	251	252	1148	403	318	356	315	1392	2540
1900	216	144	163	152	675	295	213	200	221	929	1604
2000	140	159	158	135	592	229	216	240	259	944	1536
2100	136	112	102	66	416	207	204	173	85	669	1085
2200	64	52	63	46	225	109	101	72	69	351	576
2300	49	18	18	28	113	64	42	48	25	179	292
24-Hour Totals:					18494					21276	39770

Peak Volume Information

	Direction: N		Direction: S		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	700	1652	715	1384	730	3004
P.M.	1645	1495	1645	2079	1645	3574
Daily	700	1652	1645	2079	1645	3574

Generated by SPS 5.0.45P

County: 93
Station: 3211
Description: MILITARY TRAIL N OF NORTHLAKE BLVD
Start Date: 04/23/2015
Start Time: 0000

	Direction: N					Direction: S					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	13	9	20	13	55	42	16	21	18	97	152
0100	13	5	4	3	25	12	18	6	11	47	72
0200	6	10	6	4	26	4	3	13	8	28	54
0300	1	3	12	6	22	8	2	7	7	24	46
0400	8	10	19	15	52	6	8	17	19	50	102
0500	21	37	82	57	197	21	27	38	44	130	327
0600	68	108	214	315	705	65	92	129	175	461	1166
0700	429	381	412	421	1643	301	311	341	311	1264	2907
0800	385	405	380	394	1564	380	372	322	269	1343	2907
0900	277	254	276	246	1053	295	272	290	303	1160	2213
1000	243	273	275	255	1046	259	239	290	291	1079	2125
1100	248	262	253	315	1078	325	296	265	319	1205	2283
1200	274	281	315	274	1144	339	348	332	317	1336	2480
1300	289	282	290	321	1182	363	310	291	339	1303	2485
1400	281	328	384	284	1277	384	426	443	475	1728	3005
1500	309	304	352	316	1281	633	641	548	545	2367	3648
1600	288	323	332	333	1276	468	547	510	487	2012	3288
1700	312	381	354	296	1343	521	599	429	405	1954	3297
1800	287	289	234	251	1061	365	302	290	228	1185	2246
1900	206	165	151	125	647	332	290	236	188	1046	1693
2000	131	135	133	100	499	185	170	175	172	702	1201
2100	98	85	92	75	350	164	200	159	103	626	976
2200	64	62	69	45	240	101	102	87	64	354	594
2300	37	30	30	23	120	77	52	56	38	223	343
24-Hour Totals:					17886					21724	39610

Peak Volume Information

	Direction: N		Direction: S		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	700	1643	730	1404	730	3027
P.M.	1645	1380	1500	2367	1500	3648
Daily	700	1643	1500	2367	1500	3648

Generated by SPS 5.0.45P

Three-Day Approach Count Summary

Project Name: Northlake Boulevard Study
Project No.: 2013008.018
Location: North Lake Boulevard at Military Trail
Direction: NORTHBOUND (APPROACH)
Date: 3/24/2015-3/26/2015

TIME PERIOD (AM)		WEEKDAY TUES 24-Mar	WED 25-Mar	THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
00:00	00:15	18	15	19	17	
00:15	00:30	15	14	16	15	
00:30	00:45	15	12	10	12	
00:45	01:00	6	10	9	8	53
01:00	01:15	17	11	9	12	
01:15	01:30	12	5	6	8	
01:30	01:45	3	5	8	5	
01:45	02:00	4	7	4	5	30
02:00	02:15	3	8	3	5	
02:15	02:30	6	10	8	8	
02:30	02:45	6	9	5	7	
02:45	03:00	10	1	6	6	25
03:00	03:15	7	4	7	6	
03:15	03:30	4	8	4	5	
03:30	03:45	5	3	6	5	
03:45	04:00	3	8	9	7	23
04:00	04:15	8	2	8	6	
04:15	04:30	9	9	11	10	
04:30	04:45	14	18	24	19	
04:45	05:00	17	18	28	21	55
05:00	05:15	26	24	22	24	
05:15	05:30	45	40	39	41	
05:30	05:45	86	72	62	73	
05:45	06:00	67	84	81	77	216
06:00	06:15	86	83	86	85	
06:15	06:30	96	101	80	92	
06:30	06:45	194	183	189	189	
06:45	07:00	241	238	224	234	600
07:00	07:15	251	298	299	283	
07:15	07:30	320	316	290	309	
07:30	07:45	367	383	348	366	
07:45	08:00	343	351	369	354	1,312
08:00	08:15	349	353	346	349	
08:15	08:30	369	374	319	354	
08:30	08:45	373	349	316	346	
08:45	09:00	377	389	374	380	1,429
09:00	09:15	267	282	257	269	
09:15	09:30	256	327	267	283	
09:30	09:45	271	333	289	298	
09:45	10:00	276	332	287	298	1,148
10:00	10:15	232	261	252	248	
10:15	10:30	285	287	275	282	
10:30	10:45	263	248	256	256	
10:45	11:00	280	268	275	274	1,061
11:00	11:15	281	277	279	279	
11:15	11:30	276	264	280	273	
11:30	11:45	296	304	318	306	
11:45	12:00	302	292	305	300	1,158

TIME PERIOD (PM)		WEEKDAY TUES 24-Mar	WED 25-Mar	THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
12:00	12:15	324	333	349	335	
12:15	12:30	295	302	297	298	
12:30	12:45	321	302	289	304	
12:45	13:00	316	329	283	309	1,247
13:00	13:15	299	302	292	298	
13:15	13:30	292	281	292	288	
13:30	13:45	306	311	266	294	
13:45	14:00	269	259	281	270	1,150
14:00	14:15	320	318	290	309	
14:15	14:30	284	312	289	295	
14:30	14:45	315	326	370	337	
14:45	15:00	329	327	330	329	1,270
15:00	15:15	318	369	308	332	
15:15	15:30	297	334	335	322	
15:30	15:45	377	379	365	374	
15:45	16:00	315	391	393	366	1,394
16:00	16:15	391	378	377	382	
16:15	16:30	319	357	302	326	
16:30	16:45	380	392	429	400	
16:45	17:00	411	377	393	394	1,502
17:00	17:15	435	429	473	446	
17:15	17:30	372	418	404	398	
17:30	17:45	395	441	406	414	
17:45	18:00	335	389	341	355	1,613
18:00	18:15	313	312	286	304	
18:15	18:30	306	282	242	277	
18:30	18:45	299	265	295	286	
18:45	19:00	222	248	214	228	1,095
19:00	19:15	203	198	194	198	
19:15	19:30	209	206	155	190	
19:30	19:45	160	155	152	156	
19:45	20:00	174	177	164	172	716
20:00	20:15	140	174	120	145	
20:15	20:30	124	149	121	131	
20:30	20:45	120	122	130	124	
20:45	21:00	109	104	93	102	502
21:00	21:15	110	99	99	103	
21:15	21:30	82	86	98	89	
21:30	21:45	52	89	79	73	
21:45	22:00	66	71	65	67	332
22:00	22:15	56	54	71	60	
22:15	22:30	60	42	56	53	
22:30	22:45	61	51	56	56	
22:45	23:00	46	37	46	43	212
23:00	23:15	28	38	42	36	
23:15	23:30	36	38	24	33	
23:30	23:45	29	36	30	32	
23:45	00:00	22	15	21	19	120
DAILY COUNT		18,099	18,694	17,991	18,261	
PEAK HOUR TIME					16:45	
PEAK HOUR COUNT					1,651	
ESTIMATED K-FACTOR					9.0%	

Three-Day Approach Count Summary

Project Name: Northlake Boulevard Study
State Project No.: 2013008.018

Location: North Lake Boulevard at Military Trail
Direction: SOUTHBOUND (APPROACH)

Date: 3/24/2015-3/26/2015

TIME PERIOD (AM)		WEEKDAY TUES 24-Mar	WEEKDAY WED 25-Mar	WEEKDAY THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
00:00	00:15	13	18	42	24	
00:15	00:30	14	13	16	14	
00:30	00:45	13	12	21	15	
00:45	01:00	7	12	18	12	66
01:00	01:15	11	5	12	9	
01:15	01:30	6	9	18	11	
01:30	01:45	8	6	6	7	
01:45	02:00	5	8	11	8	35
02:00	02:15	6	7	4	6	
02:15	02:30	10	8	3	7	
02:30	02:45	5	10	13	9	
02:45	03:00	5	4	8	6	28
03:00	03:15	4	4	8	5	
03:15	03:30	4	6	2	4	
03:30	03:45	4	3	7	5	
03:45	04:00	6	3	7	5	19
04:00	04:15	13	7	6	9	
04:15	04:30	15	18	8	14	
04:30	04:45	12	16	17	15	
04:45	05:00	20	10	19	16	54
05:00	05:15	28	22	21	24	
05:15	05:30	37	32	27	32	
05:30	05:45	38	42	38	39	
05:45	06:00	53	40	44	46	141
06:00	06:15	84	53	65	67	
06:15	06:30	120	91	92	101	
06:30	06:45	150	131	129	137	
06:45	07:00	252	157	175	195	500
07:00	07:15	311	260	301	291	
07:15	07:30	310	355	311	325	
07:30	07:45	298	336	341	325	
07:45	08:00	338	332	311	327	1,268
08:00	08:15	316	361	380	352	
08:15	08:30	288	328	372	329	
08:30	08:45	249	309	322	293	
08:45	09:00	276	273	269	273	1,248
09:00	09:15	249	304	295	283	
09:15	09:30	256	270	272	266	
09:30	09:45	273	273	290	279	
09:45	10:00	250	294	303	282	1,110
10:00	10:15	265	280	259	268	
10:15	10:30	308	317	239	288	
10:30	10:45	283	362	290	312	
10:45	11:00	283	318	291	297	1,165
11:00	11:15	290	299	325	305	
11:15	11:30	303	327	296	309	
11:30	11:45	287	367	265	306	
11:45	12:00	329	309	319	319	1,239

TIME PERIOD (PM)		WEEKDAY TUES 24-Mar	WEEKDAY WED 25-Mar	WEEKDAY THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
12:00	12:15	332	370	339	347	
12:15	12:30	307	369	348	341	
12:30	12:45	281	335	332	316	
12:45	13:00	316	299	317	311	1,315
13:00	13:15	295	334	363	331	
13:15	13:30	271	328	310	303	
13:30	13:45	311	298	291	300	
13:45	14:00	330	339	339	336	1,270
14:00	14:15	354	345	384	361	
14:15	14:30	352	362	426	380	
14:30	14:45	426	350	443	406	
14:45	15:00	493	457	475	475	1,622
15:00	15:15	463	482	633	526	
15:15	15:30	405	427	641	491	
15:30	15:45	409	380	548	446	
15:45	16:00	403	389	545	446	1,908
16:00	16:15	468	423	468	453	
16:15	16:30	463	489	547	500	
16:30	16:45	417	501	510	476	
16:45	17:00	497	436	487	473	1,902
17:00	17:15	504	553	521	526	
17:15	17:30	476	521	599	532	
17:30	17:45	389	569	429	462	
17:45	18:00	357	435	405	399	1,919
18:00	18:15	287	403	365	352	
18:15	18:30	305	318	302	308	
18:30	18:45	260	356	290	302	
18:45	19:00	283	315	228	275	1,237
19:00	19:15	221	295	332	283	
19:15	19:30	196	213	290	233	
19:30	19:45	192	200	236	209	
19:45	20:00	196	221	188	202	927
20:00	20:15	183	229	185	199	
20:15	20:30	199	216	170	195	
20:30	20:45	209	240	175	208	
20:45	21:00	154	259	172	195	797
21:00	21:15	163	207	164	178	
21:15	21:30	135	204	200	180	
21:30	21:45	73	173	159	135	
21:45	22:00	85	85	103	91	584
22:00	22:15	81	109	101	97	
22:15	22:30	62	101	102	88	
22:30	22:45	54	72	87	71	
22:45	23:00	55	69	64	63	319
23:00	23:15	37	64	77	59	
23:15	23:30	41	42	52	45	
23:30	23:45	24	48	56	43	
23:45	00:00	21	25	38	28	175
DAILY COUNT		19,540	21,276	21,724	20,847	
PEAK HOUR TIME					16:30	
PEAK HOUR COUNT					2,007	
ESTIMATED K-FACTOR					9.6%	

Three-Day Approach Count Summary

Project Name: Northlake Boulevard Study
State Project No.: 2013008.018
Location: North Lake Boulevard at Military Trail
Direction: EASTBOUND (APPROACH)
Date: 3/24/2015-3/26/2015

TIME PERIOD (AM)		WEEKDAY TUES 24-Mar	WEEKDAY WED 25-Mar	WEEKDAY THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
00:00	00:15	28	24	20	24	
00:15	00:30	29	19	31	26	
00:30	00:45	18	11	16	15	
00:45	01:00	14	18	21	18	83
01:00	01:15	13	13	14	13	
01:15	01:30	9	7	20	12	
01:30	01:45	5	12	10	9	
01:45	02:00	10	4	12	9	43
02:00	02:15	11	11	8	10	
02:15	02:30	11	9	14	11	
02:30	02:45	10	7	9	9	
02:45	03:00	9	6	7	7	37
03:00	03:15	6	3	8	6	
03:15	03:30	8	11	12	10	
03:30	03:45	9	11	11	10	
03:45	04:00	11	14	16	14	40
04:00	04:15	6	11	13	10	
04:15	04:30	24	24	18	22	
04:30	04:45	30	27	29	29	
04:45	05:00	39	50	38	42	103
05:00	05:15	35	30	40	35	
05:15	05:30	57	55	48	53	
05:30	05:45	69	85	65	73	
05:45	06:00	117	111	112	113	275
06:00	06:15	115	106	124	115	
06:15	06:30	164	178	205	182	
06:30	06:45	295	287	318	300	
06:45	07:00	391	454	346	397	994
07:00	07:15	580	581	567	576	
07:15	07:30	594	638	655	629	
07:30	07:45	747	732	665	715	
07:45	08:00	693	743	709	715	2,635
08:00	08:15	694	722	693	703	
08:15	08:30	638	705	696	680	
08:30	08:45	667	648	649	655	
08:45	09:00	608	619	630	619	2,656
09:00	09:15	488	484	483	485	
09:15	09:30	447	445	401	431	
09:30	09:45	387	468	444	433	
09:45	10:00	470	464	429	454	1,803
10:00	10:15	351	392	340	361	
10:15	10:30	364	373	344	360	
10:30	10:45	369	413	403	395	
10:45	11:00	370	372	370	371	1,487
11:00	11:15	351	366	383	367	
11:15	11:30	408	331	355	365	
11:30	11:45	398	369	379	382	
11:45	12:00	393	351	388	377	1,491

TIME PERIOD (PM)		WEEKDAY TUES 24-Mar	WEEKDAY WED 25-Mar	WEEKDAY THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
12:00	12:15	387	378	370	378	
12:15	12:30	338	380	368	362	
12:30	12:45	381	360	373	371	
12:45	13:00	370	375	363	369	1,481
13:00	13:15	333	386	362	360	
13:15	13:30	343	346	366	352	
13:30	13:45	321	349	370	347	
13:45	14:00	355	365	347	356	1,414
14:00	14:15	335	350	346	344	
14:15	14:30	389	373	418	393	
14:30	14:45	345	406	397	383	
14:45	15:00	335	411	384	377	1,496
15:00	15:15	345	354	366	355	
15:15	15:30	349	401	363	371	
15:30	15:45	403	394	401	399	
15:45	16:00	398	414	385	399	1,524
16:00	16:15	362	319	356	346	
16:15	16:30	366	400	370	379	
16:30	16:45	424	381	420	408	
16:45	17:00	411	450	432	431	1,564
17:00	17:15	450	452	468	457	
17:15	17:30	451	420	464	445	
17:30	17:45	469	396	410	425	
17:45	18:00	467	435	394	432	1,759
18:00	18:15	371	371	338	360	
18:15	18:30	322	380	326	343	
18:30	18:45	323	370	266	320	
18:45	19:00	310	313	278	300	1,323
19:00	19:15	306	252	235	264	
19:15	19:30	248	231	229	236	
19:30	19:45	190	233	213	212	
19:45	20:00	202	216	197	205	917
20:00	20:15	145	214	200	186	
20:15	20:30	158	202	145	168	
20:30	20:45	204	231	153	196	
20:45	21:00	169	246	159	191	742
21:00	21:15	205	215	166	195	
21:15	21:30	174	174	112	153	
21:30	21:45	128	96	101	108	
21:45	22:00	77	81	93	84	541
22:00	22:15	73	99	94	89	
22:15	22:30	87	92	72	84	
22:30	22:45	59	58	58	58	
22:45	23:00	47	63	61	57	288
23:00	23:15	40	50	53	48	
23:15	23:30	32	25	29	29	
23:30	23:45	25	30	33	29	
23:45	00:00	31	27	36	31	137
DAILY COUNT		24,613	25,378	24,508	24,833	
PEAK HOUR TIME					07:30	
PEAK HOUR COUNT					2,812	
ESTIMATED K-FACTOR					11.3%	

Three-Day Approach Count Summary

Project Name: Northlake Boulevard Study
State Project No.: 2013008.018
Location: North Lake Boulevard at Military Trail
Direction: WESTBOUND (APPROACH)
Date: 3/24/2015-3/26/2015

TIME PERIOD (AM)		WEEKDAY TUES 24-Mar	WEED 25-Mar	THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
00:00	00:15	58	44	5	36	
00:15	00:30	52	39	9	33	
00:30	00:45	39	16	2	19	
00:45	01:00	32	28	7	22	110
01:00	01:15	25	27	6	19	
01:15	01:30	20	21	6	16	
01:30	01:45	15	16	4	12	
01:45	02:00	21	16	2	13	60
02:00	02:15	5	12	7	8	
02:15	02:30	13	9	5	9	
02:30	02:45	7	6	5	6	
02:45	03:00	7	8	3	6	29
03:00	03:15	7	7	1	5	
03:15	03:30	5	10	1	5	
03:30	03:45	7	4	0	4	
03:45	04:00	10	16	0	9	23
04:00	04:15	8	10	2	7	
04:15	04:30	14	6	2	7	
04:30	04:45	15	19	0	11	
04:45	05:00	16	16	0	11	36
05:00	05:15	18	8	4	10	
05:15	05:30	35	32	3	23	
05:30	05:45	71	68	1	47	
05:45	06:00	99	77	5	60	140
06:00	06:15	121	93	4	73	
06:15	06:30	128	102	8	79	
06:30	06:45	201	137	13	117	
06:45	07:00	259	193	23	158	427
07:00	07:15	291	253	59	201	
07:15	07:30	271	257	111	213	
07:30	07:45	324	295	107	242	
07:45	08:00	413	385	127	308	964
08:00	08:15	307	317	103	242	
08:15	08:30	399	393	87	293	
08:30	08:45	391	333	78	267	
08:45	09:00	370	364	113	282	1,085
09:00	09:15	323	357	71	250	
09:15	09:30	307	340	81	243	
09:30	09:45	307	310	44	220	
09:45	10:00	296	260	69	208	922
10:00	10:15	266	351	100	239	
10:15	10:30	280	289	116	228	
10:30	10:45	333	331	123	262	
10:45	11:00	357	346	99	267	997
11:00	11:15	374	355	134	288	
11:15	11:30	380	420	150	317	
11:30	11:45	345	353	135	278	
11:45	12:00	399	391	138	309	1,191

TIME PERIOD (PM)		WEEKDAY TUES 24-Mar	WED 25-Mar	THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
12:00	12:15	397	453	314	388	
12:15	12:30	403	451	378	411	
12:30	12:45	440	449	528	472	
12:45	13:00	401	446	552	466	1,737
13:00	13:15	357	395	566	439	
13:15	13:30	420	455	607	494	
13:30	13:45	422	409	499	443	
13:45	14:00	402	400	513	438	1,815
14:00	14:15	470	460	552	494	
14:15	14:30	392	583	427	467	
14:30	14:45	425	362	582	456	
14:45	15:00	488	423	641	517	1,935
15:00	15:15	530	424	634	529	
15:15	15:30	556	446	710	571	
15:30	15:45	482	503	666	550	
15:45	16:00	559	502	585	549	2,199
16:00	16:15	637	550	775	654	
16:15	16:30	619	702	684	668	
16:30	16:45	558	680	750	663	
16:45	17:00	674	681	946	767	2,752
17:00	17:15	656	697	908	754	
17:15	17:30	701	669	948	773	
17:30	17:45	730	773	899	801	
17:45	18:00	640	776	863	760	3,087
18:00	18:15	644	716	701	687	
18:15	18:30	470	659	726	618	
18:30	18:45	535	749	560	615	
18:45	19:00	445	650	435	510	2,430
19:00	19:15	442	367	423	411	
19:15	19:30	462	357	420	413	
19:30	19:45	365	335	411	370	
19:45	20:00	353	273	334	320	1,514
20:00	20:15	315	340	366	340	
20:15	20:30	331	299	311	314	
20:30	20:45	261	331	338	310	
20:45	21:00	251	271	305	276	1,240
21:00	21:15	276	228	303	269	
21:15	21:30	224	172	291	229	
21:30	21:45	244	141	222	202	
21:45	22:00	163	95	191	150	850
22:00	22:15	176	62	232	157	
22:15	22:30	150	71	136	119	
22:30	22:45	113	45	156	105	
22:45	23:00	116	38	108	87	468
23:00	23:15	88	22	87	66	
23:15	23:30	63	17	82	54	
23:30	23:45	74	18	78	57	
23:45	00:00	56	12	43	37	213
DAILY COUNT		27,017	26,697	24,959	26,224	
PEAK HOUR TIME					16:45	
PEAK HOUR COUNT					3,094	
ESTIMATED K-FACTOR					11.8%	

MECHANICAL COUNTS

PROJECT NAME: Northlake Boulevard Study

LOCATION: North Lake Boulevard at Military Trail

Notice to Proceed : 2013008.018

COUNT DATE: 3/24/2015-3/26/2015

NORTHBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	17	15	12	8	53
01:00 AM	12	8	5	5	30
02:00 AM	5	8	7	6	25
03:00 AM	6	5	5	7	23
04:00 AM	6	10	19	21	55
05:00 AM	24	41	73	77	216
06:00 AM	85	92	189	234	600
07:00 AM	283	309	366	354	1312
08:00 AM	349	354	346	380	1429
09:00 AM	269	283	298	298	1148
10:00 AM	248	282	256	274	1061
11:00 AM	279	273	306	300	1158
12:00 PM	335	298	304	309	1247
01:00 PM	298	288	294	270	1150
02:00 PM	309	295	337	329	1270
03:00 PM	332	322	374	366	1394
04:00 PM	382	326	400	394	1502
05:00 PM	446	398	414	355	1613
06:00 PM	304	277	286	228	1095
07:00 PM	198	190	156	172	716
08:00 PM	145	131	124	102	502
09:00 PM	103	89	73	67	332
10:00 PM	60	53	56	43	212
11:00 PM	36	33	32	19	120
			24 Hour Total		18,261

SOUTHBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	24	14	15	12	66
01:00 AM	9	11	7	8	35
02:00 AM	6	7	9	6	28
03:00 AM	5	4	5	5	19
04:00 AM	9	14	15	16	54
05:00 AM	24	32	39	46	141
06:00 AM	67	101	137	195	500
07:00 AM	291	325	325	327	1268
08:00 AM	352	329	293	273	1248
09:00 AM	283	266	279	282	1110
10:00 AM	268	288	312	297	1165
11:00 AM	305	309	306	319	1239
12:00 PM	347	341	316	311	1315
01:00 PM	331	303	300	336	1270
02:00 PM	361	380	406	475	1622
03:00 PM	526	491	446	446	1908
04:00 PM	453	500	476	473	1902
05:00 PM	526	532	462	399	1919
06:00 PM	352	308	302	275	1237
07:00 PM	283	233	209	202	927
08:00 PM	199	195	208	195	797
09:00 PM	178	180	135	91	584
10:00 PM	97	88	71	63	319
11:00 PM	59	45	43	28	175
			24 Hour Total		20,847

EASTBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	24	26	15	18	83
01:00 AM	13	12	9	9	43
02:00 AM	10	11	9	7	37
03:00 AM	6	10	10	14	40
04:00 AM	10	22	29	42	103
05:00 AM	35	53	73	113	275
06:00 AM	115	182	300	397	994
07:00 AM	576	629	715	715	2635
08:00 AM	703	680	655	619	2656
09:00 AM	485	431	433	454	1803
10:00 AM	361	360	395	371	1487
11:00 AM	367	365	382	377	1491
12:00 PM	378	362	371	369	1481
01:00 PM	360	352	347	356	1414
02:00 PM	344	393	383	377	1496
03:00 PM	355	371	399	399	1524
04:00 PM	346	379	408	431	1564
05:00 PM	457	445	425	432	1759
06:00 PM	360	343	320	300	1323
07:00 PM	264	236	212	205	917
08:00 PM	186	168	196	191	742
09:00 PM	195	153	108	84	541
10:00 PM	89	84	58	57	288
11:00 PM	48	29	29	31	137
			24 Hour Total		24,833

WESTBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	36	33	19	22	110
01:00 AM	19	16	12	13	60
02:00 AM	8	9	6	6	29
03:00 AM	5	5	4	9	23
04:00 AM	7	7	11	11	36
05:00 AM	10	23	47	60	140
06:00 AM	73	79	117	158	427
07:00 AM	201	213	242	308	964
08:00 AM	242	293	267	282	1085
09:00 AM	250	243	220	208	922
10:00 AM	239	228	262	267	997
11:00 AM	288	317	278	309	1191
12:00 PM	388	411	472	466	1737
01:00 PM	439	494	443	438	1815
02:00 PM	494	467	456	517	1935
03:00 PM	529	571	550	549	2199
04:00 PM	654	668	663	767	2752
05:00 PM	754	773	801	760	3087
06:00 PM	687	618	615	510	2430
07:00 PM	411	413	370	320	1514
08:00 PM	340	314	310	276	1240
09:00 PM	269	229	202	150	850
10:00 PM	157	119	105	87	468
11:00 PM	66	54	57	37	213
			24 Hour Total		26,224

ALL

TOTAL
313
168
119
105
248
772
2522
6179
6418
4983
4710
5079
5780
5649
6324
7025
7720
8377
6085
4074
3281
2306
1286
645
90,165

DAILY TRAFFIC COUNT SUMMARY

NORTHBOUND

A.M. Peak Hour, Time: 08:00 AM Volume: 1,429
A.M. "K" Factor: 7.8% P.H.F. : 0.94

P.M. Peak Hour, Time: 04:45 PM Volume: 1,651
P.M. "K" Factor: 9.0% P.H.F. : 0.93

SOUTHBOUND

A.M. Peak Hour, Time: 07:30 AM Volume: 1,334
A.M. "K" Factor: 6.4% P.H.F. : 0.95

P.M. Peak Hour, Time: 04:30 PM Volume: 2,007
P.M. "K" Factor: 9.6% P.H.F. : 0.94

DAILY TRAFFIC COUNT SUMMARY

EASTBOUND

A.M. Peak Hour, Time: 07:30 AM Volume: 2,812
A.M. "K" Factor: 11.3% P.H.F. : 0.98

P.M. Peak Hour, Time: 05:00 PM Volume: 1,759
P.M. "K" Factor: 7.1% P.H.F. : 0.96

WESTBOUND

A.M. Peak Hour, Time: 11:45 AM Volume: 1,580
A.M. "K" Factor: 6.0% P.H.F. : 0.84

P.M. Peak Hour, Time: 04:45 PM Volume: 3,094
P.M. "K" Factor: 11.8% P.H.F. : 0.97

ALL APPROACHES:

A.M. Peak Hour, Time: 07:30 AM Volume: 6,655
A.M. "K" Factor: 7.4% P.H.F. : 0.98

P.M. Peak Hour, Time: 04:45 PM Volume: 8,497
P.M. "K" Factor: 9.4% P.H.F. : 0.97

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at Military Tr 03032015
Site Code :
Start Date : 3/3/2015
Page No : 1

Groups Printed- Autos - Heavy Vehicles - Bicycles - Pedestrians

	Northlake Boulevard Eastbound					Northlake Boulevard Westbound					Military Trail Northbound					Military Trail Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	32	79	22	0	133	6	66	9	2	83	14	45	19	1	79	19	17	12	0	48	343
06:15 AM	49	100	27	0	176	22	64	22	0	108	16	58	27	0	101	16	46	21	0	83	468
06:30 AM	78	172	41	0	291	21	73	18	0	112	23	117	32	0	172	29	61	30	0	120	695
06:45 AM	94	204	65	0	363	26	113	55	3	197	40	143	40	1	224	34	87	39	0	160	944
Total	253	555	155	0	963	75	316	104	5	500	93	363	118	2	576	98	211	102	0	411	2450
07:00 AM	168	209	43	0	420	35	100	69	1	205	27	236	34	0	297	75	142	43	0	260	1182
07:15 AM	176	258	47	0	481	54	124	55	0	233	29	191	45	0	265	82	165	63	0	310	1289
07:30 AM	167	343	58	0	568	48	144	60	0	252	36	195	48	0	279	80	164	59	0	303	1402
07:45 AM	162	301	71	0	534	62	157	60	0	279	55	162	60	0	277	91	171	69	0	331	1421
Total	673	1111	219	0	2003	199	525	244	1	969	147	784	187	0	1118	328	642	234	0	1204	5294
08:00 AM	146	292	60	0	498	102	145	78	1	326	60	197	76	0	333	82	173	77	1	333	1490
08:15 AM	191	322	76	0	589	91	151	70	0	312	54	197	59	0	310	90	137	57	0	284	1495
08:30 AM	137	290	62	0	489	86	174	76	0	336	59	168	62	0	289	78	114	56	0	248	1362
08:45 AM	142	247	67	0	456	104	171	65	2	342	70	200	73	0	343	103	109	61	1	274	1415
Total	616	1151	265	0	2032	383	641	289	3	1316	243	762	270	0	1275	353	533	251	2	1139	5762
BREAK																					
04:00 PM	93	208	49	0	350	90	308	67	0	465	64	159	85	0	308	94	153	131	4	382	1505
04:15 PM	78	193	48	0	319	84	325	104	0	513	77	165	86	0	328	90	174	117	1	382	1542
04:30 PM	80	192	50	0	322	90	304	78	0	472	102	204	85	1	392	102	164	157	0	423	1609
04:45 PM	98	170	58	0	326	115	323	80	0	518	71	186	112	0	369	109	177	144	0	430	1643
Total	349	763	205	0	1317	379	1260	329	0	1968	314	714	368	1	1397	395	668	549	5	1617	6299
05:00 PM	110	275	45	0	430	99	347	98	0	544	83	163	105	0	351	111	183	157	0	451	1776
05:15 PM	96	211	57	0	364	89	320	82	0	491	119	173	110	0	402	117	206	161	0	484	1741
05:30 PM	115	250	46	0	411	85	318	95	0	498	87	160	133	0	380	109	218	156	2	485	1774
05:45 PM	121	260	48	0	429	85	309	73	0	467	80	156	126	1	363	109	201	110	2	422	1681
Total	442	996	196	0	1634	358	1294	348	0	2000	369	652	474	1	1496	446	808	584	4	1842	6972
06:00 PM	83	255	43	0	381	92	316	85	0	493	90	155	90	0	335	109	168	120	0	397	1606
06:15 PM	83	219	46	0	348	70	298	59	0	427	88	175	78	0	341	90	148	114	4	356	1472
06:30 PM	100	218	40	0	358	81	314	68	0	463	76	136	69	0	281	89	120	114	0	323	1425
06:45 PM	71	178	27	0	276	56	351	91	0	498	72	103	64	0	239	67	113	95	2	277	1290
Total	337	870	156	0	1363	299	1279	303	0	1881	326	569	301	0	1196	355	549	443	6	1353	5793
07:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Grand Total	2670	5446	1196	0	9312	1693	5315	1617	9	8634	1492	3844	1718	4	7058	1975	3411	2164	17	7567	32571
Apprch %	28.7	58.5	12.8	0		19.6	61.6	18.7	0.1		21.1	54.5	24.3	0.1		26.1	45.1	28.6	0.2		
Total %	8.2	16.7	3.7	0	28.6	5.2	16.3	5	0	26.5	4.6	11.8	5.3	0	21.7	6.1	10.5	6.6	0.1	23.2	
Autos	2621	5342	1150	0	9113	1677	5224	1560	0	8461	1445	3755	1688	0	6888	1933	3339	2108	0	7380	31842
% Autos	98.2	98.1	96.2	0	97.9	99.1	98.3	96.5	0	98	96.8	97.7	98.3	0	97.6	97.9	97.9	97.4	0	97.5	97.8
Heavy Vehicles	49	104	46	0	199	16	91	57	0	164	47	89	30	0	166	42	72	56	0	170	699
% Heavy Vehicles	1.8	1.9	3.8	0	2.1	0.9	1.7	3.5	0	1.9	3.2	2.3	1.7	0	2.4	2.1	2.1	2.6	0	2.2	2.1
Bicycles	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	5	5	8
% Bicycles	0	0	0	0	0	0	0	0	33.3	0	0	0	0	0	0	0	0	0	29.4	0.1	0
Pedestrians	0	0	0	0	0	0	0	0	6	6	0	0	0	4	4	0	0	0	12	12	22
% Pedestrians	0	0	0	0	0	0	0	0	66.7	0.1	0	0	0	100	0.1	0	0	0	70.6	0.2	0.1

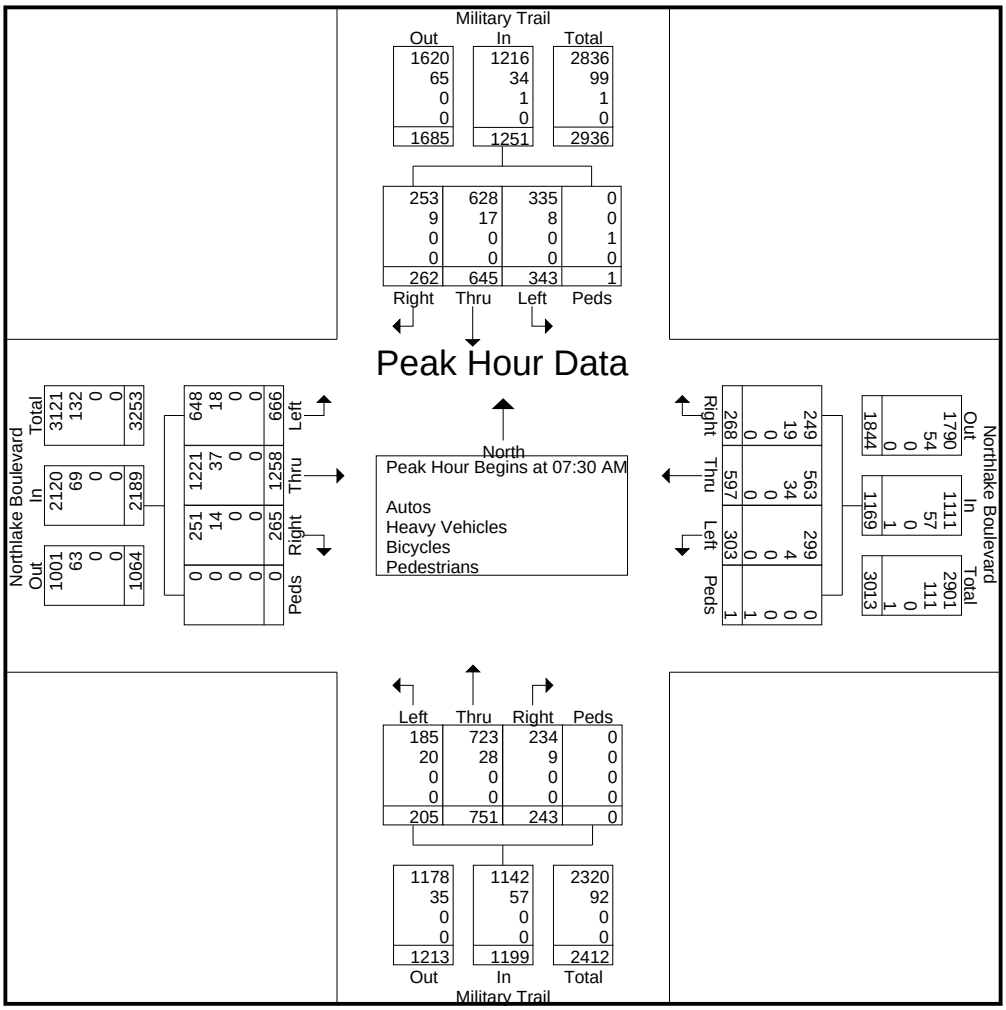
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at Military Tr 03032015
Site Code :
Start Date : 3/3/2015
Page No : 2

	Northlake Boulevard Eastbound					Northlake Boulevard Westbound					Military Trail Northbound					Military Trail Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	167	343	58	0	568	48	144	60	0	252	36	195	48	0	279	80	164	59	0	303	1402
07:45 AM	162	301	71	0	534	62	157	60	0	279	55	162	60	0	277	91	171	69	0	331	1421
08:00 AM	146	292	60	0	498	102	145	78	1	326	60	197	76	0	333	82	173	77	1	333	1490
08:15 AM	191	322	76	0	589	91	151	70	0	312	54	197	59	0	310	90	137	57	0	284	1495
Total Volume	666	1258	265	0	2189	303	597	268	1	1169	205	751	243	0	1199	343	645	262	1	1251	5808
% App. Total	30.4	57.5	12.1	0		25.9	51.1	22.9	0.1		17.1	62.6	20.3	0		27.4	51.6	20.9	0.1		
PHF	.872	.917	.872	.000	.929	.743	.951	.859	.250	.896	.854	.953	.799	.000	.900	.942	.932	.851	.250	.939	.971
Autos	648	1221	251	0	2120	299	563	249	0	1111	185	723	234	0	1142	335	628	253	0	1216	5589
% Autos	97.3	97.1	94.7	0	96.8	98.7	94.3	92.9	0	95.0	90.2	96.3	96.3	0	95.2	97.7	97.4	96.6	0	97.2	96.2
Heavy Vehicles	18	37	14	0	69	4	34	19	0	57	20	28	9	0	57	8	17	9	0	34	217
% Heavy Vehicles	2.7	2.9	5.3	0	3.2	1.3	5.7	7.1	0	4.9	9.8	3.7	3.7	0	4.8	2.3	2.6	3.4	0	2.7	3.7
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0.1	0.0
Pedestrians	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1
% Pedestrians	0	0	0	0	0	0	0	0	100	0.1	0	0	0	0	0	0	0	0	0	0	0.0



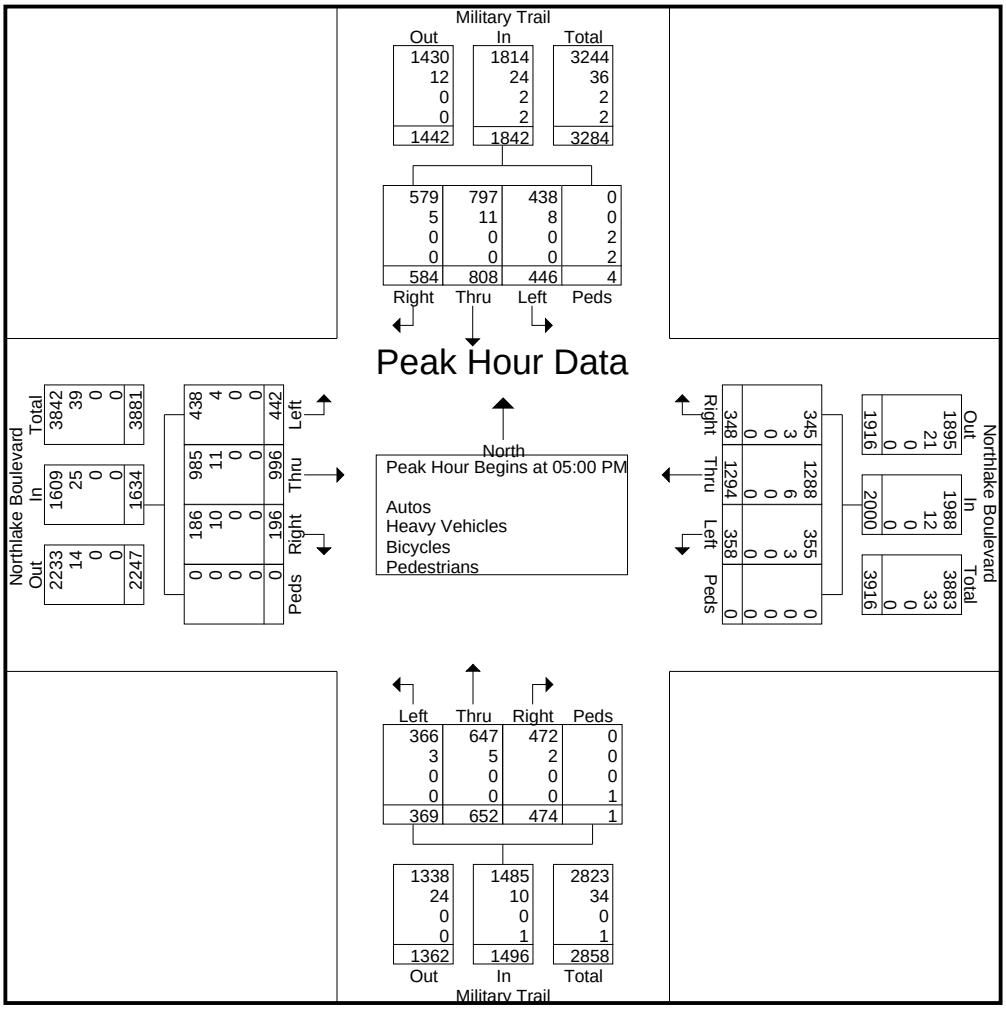
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at Military Tr 03032015
Site Code :
Start Date : 3/3/2015
Page No : 3

	Northlake Boulevard Eastbound					Northlake Boulevard Westbound					Military Trail Northbound					Military Trail Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	110	275	45	0	430	99	347	98	0	544	83	163	105	0	351	111	183	157	0	451	1776
05:15 PM	96	211	57	0	364	89	320	82	0	491	119	173	110	0	402	117	206	161	0	484	1741
05:30 PM	115	250	46	0	411	85	318	95	0	498	87	160	133	0	380	109	218	156	2	485	1774
05:45 PM	121	260	48	0	429	85	309	73	0	467	80	156	126	1	363	109	201	110	2	422	1681
Total Volume	442	996	196	0	1634	358	1294	348	0	2000	369	652	474	1	1496	446	808	584	4	1842	6972
% App. Total	27.1	61	12	0		17.9	64.7	17.4	0		24.7	43.6	31.7	0.1		24.2	43.9	31.7	0.2		
PHF	.913	.905	.860	.000	.950	.904	.932	.888	.000	.919	.775	.942	.891	.250	.930	.953	.927	.907	.500	.949	.981
Autos	438	985	186	0	1609	355	1288	345	0	1988	366	647	472	0	1485	438	797	579	0	1814	6896
% Autos	99.1	98.9	94.9	0	98.5	99.2	99.5	99.1	0	99.4	99.2	99.2	99.6	0	99.3	98.2	98.6	99.1	0	98.5	98.9
Heavy Vehicles	4	11	10	0	25	3	6	3	0	12	3	5	2	0	10	8	11	5	0	24	71
% Heavy Vehicles	0.9	1.1	5.1	0	1.5	0.8	0.5	0.9	0	0.6	0.8	0.8	0.4	0	0.7	1.8	1.4	0.9	0	1.3	1.0
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50.0	0.1	0.0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	2	3
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0.1	0	0	0	50.0	0.1	0.0



CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at Military Tr 03032015
Site Code :
Start Date : 3/3/2015
Page No : 1

Groups Printed- Heavy Vehicles

	Northlake Boulevard Eastbound					Northlake Boulevard Westbound					Military Trail Northbound					Military Trail Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	1	3	0	0	4	0	1	1	0	2	1	3	0	0	4	1	0	0	0	1	11
06:15 AM	1	3	0	0	4	0	0	3	0	3	3	4	1	0	8	2	1	1	0	4	19
06:30 AM	1	4	2	0	7	1	1	2	0	4	0	5	1	0	6	1	0	1	0	2	19
06:45 AM	2	2	2	0	6	1	5	4	0	10	3	10	0	0	13	2	4	2	0	8	37
Total	5	12	4	0	21	2	7	10	0	19	7	22	2	0	31	6	5	4	0	15	86
07:00 AM	0	5	2	0	7	0	3	2	0	5	2	4	2	0	8	2	5	1	0	8	28
07:15 AM	3	3	0	0	6	0	1	1	0	2	2	3	1	0	6	2	4	2	0	8	22
07:30 AM	5	11	5	0	21	1	9	3	0	13	7	6	0	0	13	1	2	2	0	5	52
07:45 AM	3	13	1	0	17	3	7	4	0	14	4	6	2	0	12	2	7	0	0	9	52
Total	11	32	8	0	51	4	20	10	0	34	15	19	5	0	39	7	18	5	0	30	154
08:00 AM	6	7	3	0	16	0	5	4	0	9	5	6	2	0	13	3	4	4	0	11	49
08:15 AM	4	6	5	0	15	0	13	8	0	21	4	10	5	0	19	2	4	3	0	9	64
08:30 AM	4	7	2	0	13	0	9	5	0	14	2	7	4	0	13	4	3	5	0	12	52
08:45 AM	5	5	0	0	10	0	6	2	0	8	4	5	2	0	11	2	3	5	0	10	39
Total	19	25	10	0	54	0	33	19	0	52	15	28	13	0	56	11	14	17	0	42	204
BREAK																					
04:00 PM	1	7	3	0	11	3	8	1	0	12	1	4	1	0	6	0	6	7	0	13	42
04:15 PM	3	7	4	0	14	0	4	2	0	6	3	3	0	0	6	0	4	9	0	13	39
04:30 PM	1	3	2	0	6	1	3	3	0	7	1	2	0	0	3	3	6	4	0	13	29
04:45 PM	1	1	3	0	5	1	4	3	0	8	0	2	3	0	5	0	1	2	0	3	21
Total	6	18	12	0	36	5	19	9	0	33	5	11	4	0	20	3	17	22	0	42	131
05:00 PM	2	3	2	0	7	1	2	1	0	4	0	1	1	0	2	2	1	2	0	5	18
05:15 PM	1	3	2	0	6	1	2	1	0	4	1	0	1	0	2	1	5	1	0	7	19
05:30 PM	1	2	1	0	4	1	2	0	0	3	0	1	0	0	1	2	2	2	0	6	14
05:45 PM	0	3	5	0	8	0	0	1	0	1	2	3	0	0	5	3	3	0	0	6	20
Total	4	11	10	0	25	3	6	3	0	12	3	5	2	0	10	8	11	5	0	24	71
06:00 PM	2	3	0	0	5	1	5	3	0	9	1	2	1	0	4	2	2	1	0	5	23
06:15 PM	0	1	1	0	2	0	0	1	0	1	1	0	0	0	1	2	4	2	0	8	12
06:30 PM	2	1	0	0	3	1	0	1	0	2	0	2	3	0	5	3	0	0	0	3	13
06:45 PM	0	1	1	0	2	0	1	1	0	2	0	0	0	0	0	0	1	0	0	1	5
Total	4	6	2	0	12	2	6	6	0	14	2	4	4	0	10	7	7	3	0	17	53
Grand Total	49	104	46	0	199	16	91	57	0	164	47	89	30	0	166	42	72	56	0	170	699
Apprch %	24.6	52.3	23.1	0		9.8	55.5	34.8	0		28.3	53.6	18.1	0		24.7	42.4	32.9	0		
Total %	7	14.9	6.6	0	28.5	2.3	13	8.2	0	23.5	6.7	12.7	4.3	0	23.7	6	10.3	8	0	24.3	

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at Military Tr 03042015
Site Code :
Start Date : 3/4/2015
Page No : 1

Groups Printed- Autos - Heavy Vehicles - Bicycles - Pedestrians

	Northlake Boulevard Eastbound					Northlake Boulevard Westbound					Military Trail Northbound					Military Trail Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	28	62	16	0	106	10	54	9	1	74	16	45	21	0	82	17	30	6	0	53	315
06:15 AM	40	94	27	1	162	21	64	12	0	97	21	57	20	0	98	24	36	17	0	77	434
06:30 AM	78	146	35	0	259	25	90	29	1	145	20	119	37	0	176	18	63	21	0	102	682
06:45 AM	104	146	45	0	295	30	97	49	5	181	29	141	41	0	211	31	95	26	1	153	840
Total	250	448	123	1	822	86	305	99	7	497	86	362	119	0	567	90	224	70	1	385	2271
07:00 AM	167	270	44	0	481	46	86	70	0	202	36	212	40	0	288	72	165	23	0	260	1231
07:15 AM	175	354	65	0	594	72	111	57	0	240	35	198	43	0	276	97	161	49	2	309	1419
07:30 AM	164	464	70	0	698	56	155	57	0	268	42	177	66	0	285	74	159	37	0	270	1521
07:45 AM	146	456	69	0	671	67	175	74	0	316	53	218	68	1	340	95	156	40	1	292	1619
Total	652	1544	248	0	2444	241	527	258	0	1026	166	805	217	1	1189	338	641	149	3	1131	5790
08:00 AM	156	285	56	0	497	65	145	78	1	289	45	196	71	0	312	72	129	68	0	269	1367
08:15 AM	195	407	41	0	643	65	169	70	0	304	63	169	44	0	276	69	159	50	2	280	1503
08:30 AM	151	338	63	0	552	78	177	77	1	333	52	197	34	0	283	68	139	44	0	251	1419
08:45 AM	156	291	60	0	507	70	153	72	0	295	67	196	68	0	331	85	134	50	0	269	1402
Total	658	1321	220	0	2199	278	644	297	2	1221	227	758	217	0	1202	294	561	212	2	1069	5691
BREAK																					
04:00 PM	95	210	67	0	372	85	302	67	0	454	66	180	90	0	336	102	169	130	2	403	1565
04:15 PM	82	170	55	0	307	81	305	90	0	476	79	160	91	0	330	111	171	107	0	389	1502
04:30 PM	90	220	42	0	352	78	293	76	0	447	76	211	84	0	371	135	217	121	0	473	1643
04:45 PM	133	197	44	0	374	87	310	62	0	459	67	180	100	0	347	113	168	133	0	414	1594
Total	400	797	208	0	1405	331	1210	295	0	1836	288	731	365	0	1384	461	725	491	2	1679	6304
05:00 PM	106	250	49	0	405	81	344	89	1	515	79	221	74	0	374	98	184	159	1	442	1736
05:15 PM	104	231	55	0	390	66	318	68	5	457	120	263	85	0	468	99	222	168	4	493	1808
05:30 PM	101	212	37	0	350	62	347	73	3	485	88	198	92	0	378	102	261	176	2	541	1754
05:45 PM	112	221	42	1	376	75	373	65	4	517	83	172	83	1	339	97	205	171	2	475	1707
Total	423	914	183	1	1521	284	1382	295	13	1974	370	854	334	1	1559	396	872	674	9	1951	7005
06:00 PM	102	277	33	0	412	62	377	71	0	510	80	137	90	1	308	92	191	131	0	414	1644
06:15 PM	84	226	32	0	342	68	308	66	0	442	92	186	80	0	358	104	156	154	0	414	1556
06:30 PM	97	219	38	0	354	75	280	54	0	409	82	141	62	0	285	94	161	123	0	378	1426
06:45 PM	72	228	45	0	345	56	329	79	0	464	78	104	53	0	235	73	97	111	0	281	1325
Total	355	950	148	0	1453	261	1294	270	0	1825	332	568	285	1	1186	363	605	519	0	1487	5951
BREAK																					
Grand Total	2738	5974	1130	2	9844	1481	5362	1514	22	8379	1469	4078	1537	3	7087	1942	3628	2115	17	7702	33012
Apprch %	27.8	60.7	11.5	0		17.7	64	18.1	0.3		20.7	57.5	21.7	0		25.2	47.1	27.5	0.2		
Total %	8.3	18.1	3.4	0	29.8	4.5	16.2	4.6	0.1	25.4	4.4	12.4	4.7	0	21.5	5.9	11	6.4	0.1	23.3	
Autos	2688	5895	1103	0	9686	1468	5271	1461	0	8200	1427	3997	1518	0	6942	1915	3554	2080	0	7549	32377
% Autos	98.2	98.7	97.6	0	98.4	99.1	98.3	96.5	0	97.9	97.1	98	98.8	0	98	98.6	98	98.3	0	98	98.1
Heavy Vehicles	50	79	27	0	156	13	91	53	0	157	42	81	19	0	142	27	74	35	0	136	591
% Heavy Vehicles	1.8	1.3	2.4	0	1.6	0.9	1.7	3.5	0	1.9	2.9	2	1.2	0	2	1.4	2	1.7	0	1.8	1.8
Bicycles	0	0	0	2	2	0	0	0	4	4	0	0	0	0	0	0	0	0	6	6	12
% Bicycles	0	0	0	100	0	0	0	0	18.2	0	0	0	0	0	0	0	0	0	35.3	0.1	0
Pedestrians	0	0	0	0	0	0	0	0	18	18	0	0	0	3	3	0	0	0	11	11	32
% Pedestrians	0	0	0	0	0	0	0	0	81.8	0.2	0	0	0	100	0	0	0	0	64.7	0.1	0.1

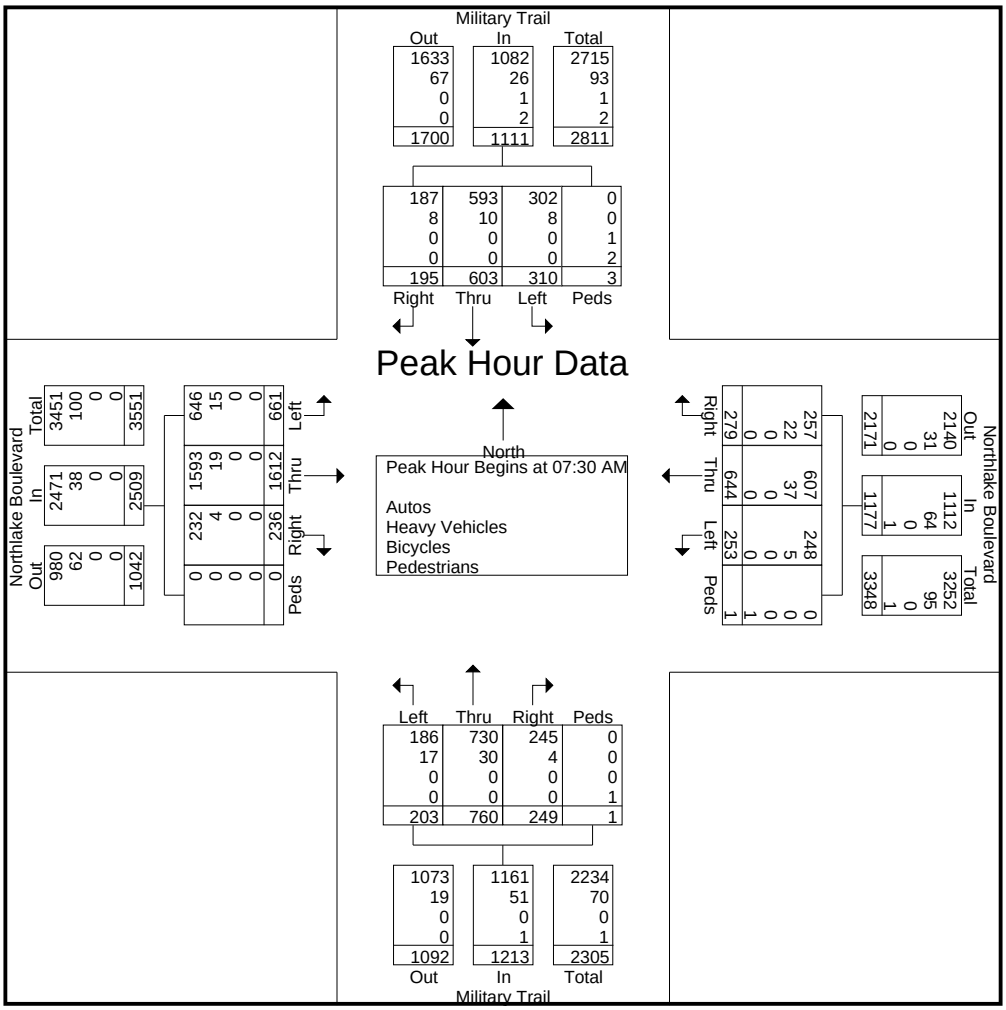
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at Military Tr 03042015
Site Code :
Start Date : 3/4/2015
Page No : 2

	Northlake Boulevard Eastbound					Northlake Boulevard Westbound					Military Trail Northbound					Military Trail Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	164	464	70	0	698	56	155	57	0	268	42	177	66	0	285	74	159	37	0	270	1521
07:45 AM	146	456	69	0	671	67	175	74	0	316	53	218	68	1	340	95	156	40	1	292	1619
08:00 AM	156	285	56	0	497	65	145	78	1	289	45	196	71	0	312	72	129	68	0	269	1367
08:15 AM	195	407	41	0	643	65	169	70	0	304	63	169	44	0	276	69	159	50	2	280	1503
Total Volume	661	1612	236	0	2509	253	644	279	1	1177	203	760	249	1	1213	310	603	195	3	1111	6010
% App. Total	26.3	64.2	9.4	0		21.5	54.7	23.7	0.1		16.7	62.7	20.5	0.1		27.9	54.3	17.6	0.3		
PHF	.847	.869	.843	.000	.899	.944	.920	.894	.250	.931	.806	.872	.877	.250	.892	.816	.948	.717	.375	.951	.928
Autos	646	1593	232	0	2471	248	607	257	0	1112	186	730	245	0	1161	302	593	187	0	1082	5826
% Autos	97.7	98.8	98.3	0	98.5	98.0	94.3	92.1	0	94.5	91.6	96.1	98.4	0	95.7	97.4	98.3	95.9	0	97.4	96.9
Heavy Vehicles	15	19	4	0	38	5	37	22	0	64	17	30	4	0	51	8	10	8	0	26	179
% Heavy Vehicles	2.3	1.2	1.7	0	1.5	2.0	5.7	7.9	0	5.4	8.4	3.9	1.6	0	4.2	2.6	1.7	4.1	0	2.3	3.0
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33.3	0.1	0.0
Pedestrians	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	0	0	0	2	2	4
% Pedestrians	0	0	0	0	0	0	0	0	100	0.1	0	0	0	100	0.1	0	0	0	66.7	0.2	0.1



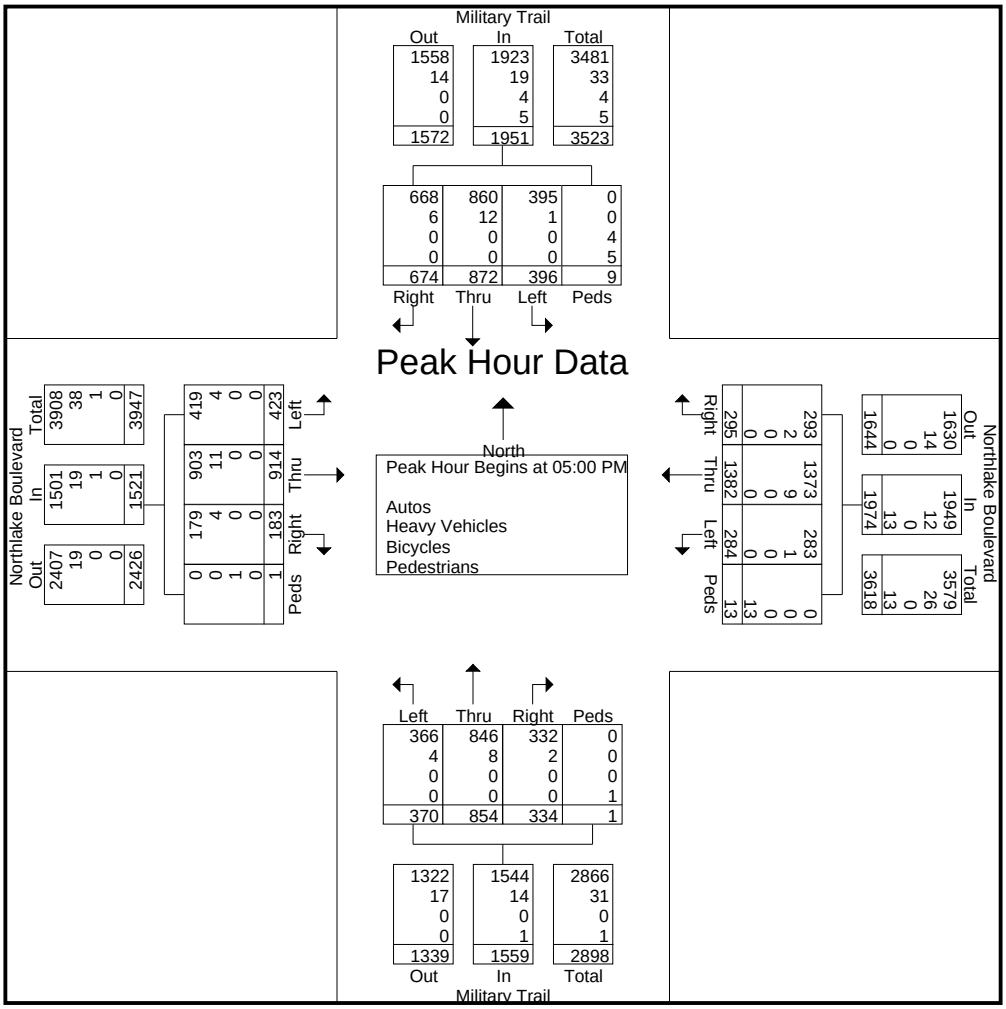
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at Military Tr 03042015
Site Code :
Start Date : 3/4/2015
Page No : 3

	Northlake Boulevard Eastbound					Northlake Boulevard Westbound					Military Trail Northbound					Military Trail Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	106	250	49	0	405	81	344	89	1	515	79	221	74	0	374	98	184	159	1	442	1736
05:15 PM	104	231	55	0	390	66	318	68	5	457	120	263	85	0	468	99	222	168	4	493	1808
05:30 PM	101	212	37	0	350	62	347	73	3	485	88	198	92	0	378	102	261	176	2	541	1754
05:45 PM	112	221	42	1	376	75	373	65	4	517	83	172	83	1	339	97	205	171	2	475	1707
Total Volume	423	914	183	1	1521	284	1382	295	13	1974	370	854	334	1	1559	396	872	674	9	1951	7005
% App. Total	27.8	60.1	12	0.1		14.4	70	14.9	0.7		23.7	54.8	21.4	0.1		20.3	44.7	34.5	0.5		
PHF	.944	.914	.832	.250	.939	.877	.926	.829	.650	.955	.771	.812	.908	.250	.833	.971	.835	.957	.563	.902	.969
Autos	419	903	179	0	1501	283	1373	293	0	1949	366	846	332	0	1544	395	860	668	0	1923	6917
% Autos	99.1	98.8	97.8	0	98.7	99.6	99.3	99.3	0	98.7	98.9	99.1	99.4	0	99.0	99.7	98.6	99.1	0	98.6	98.7
Heavy Vehicles	4	11	4	0	19	1	9	2	0	12	4	8	2	0	14	1	12	6	0	19	64
% Heavy Vehicles	0.9	1.2	2.2	0	1.2	0.4	0.7	0.7	0	0.6	1.1	0.9	0.6	0	0.9	0.3	1.4	0.9	0	1.0	0.9
Bicycles	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	5
% Bicycles	0	0	0	100	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	44.4	0.2	0.1
Pedestrians	0	0	0	0	0	0	0	0	13	13	0	0	0	1	1	0	0	0	5	5	19
% Pedestrians	0	0	0	0	0	0	0	0	100	0.7	0	0	0	100	0.1	0	0	0	55.6	0.3	0.3



CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at Military Tr 03042015
Site Code :
Start Date : 3/4/2015
Page No : 1

Groups Printed- Heavy Vehicles

	Northlake Boulevard Eastbound					Northlake Boulevard Westbound					Military Trail Northbound					Military Trail Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	1	0	0	0	1	0	0	0	0	0	4	1	0	0	5	0	1	0	0	1	7
06:15 AM	0	4	0	0	4	0	1	1	0	2	1	1	1	0	3	0	1	1	0	2	11
06:30 AM	3	3	2	0	8	0	0	3	0	3	1	6	1	0	8	1	0	1	0	2	21
06:45 AM	7	2	0	0	9	1	4	4	0	9	1	8	0	0	9	2	2	1	0	5	32
Total	11	9	2	0	22	1	5	8	0	14	7	16	2	0	25	3	4	3	0	10	71
07:00 AM	2	6	2	0	10	0	4	2	0	6	1	2	0	0	3	2	4	2	0	8	27
07:15 AM	2	4	3	0	9	0	4	2	0	6	2	4	0	0	6	3	0	0	0	3	24
07:30 AM	3	7	1	0	11	1	13	3	0	17	6	5	0	0	11	2	1	1	0	4	43
07:45 AM	4	2	1	0	7	2	9	7	0	18	1	10	1	0	12	4	1	1	0	6	43
Total	11	19	7	0	37	3	30	14	0	47	10	21	1	0	32	11	6	4	0	21	137
08:00 AM	4	4	1	0	9	1	5	7	0	13	6	10	2	0	18	1	3	3	0	7	47
08:15 AM	4	6	1	0	11	1	10	5	0	16	4	5	1	0	10	1	5	3	0	9	46
08:30 AM	1	5	1	0	7	1	4	4	0	9	1	8	4	0	13	1	4	0	0	5	34
08:45 AM	6	6	2	0	14	0	5	1	0	6	3	5	3	0	11	0	4	0	0	4	35
Total	15	21	5	0	41	3	24	17	0	44	14	28	10	0	52	3	16	6	0	25	162
BREAK																					
04:00 PM	2	4	1	0	7	0	1	1	0	2	3	0	1	0	4	1	3	4	0	8	21
04:15 PM	1	5	1	0	7	0	6	1	0	7	3	1	1	0	5	0	6	5	0	11	30
04:30 PM	2	3	4	0	9	1	8	4	0	13	0	3	0	0	3	4	10	2	0	16	41
04:45 PM	3	2	3	0	8	0	5	4	0	9	0	1	1	0	2	2	2	3	0	7	26
Total	8	14	9	0	31	1	20	10	0	31	6	5	3	0	14	7	21	14	0	42	118
05:00 PM	1	6	2	0	9	0	2	1	0	3	0	3	1	0	4	0	4	3	0	7	23
05:15 PM	1	1	1	0	3	0	3	0	0	3	2	2	0	0	4	0	1	1	0	2	12
05:30 PM	1	2	0	0	3	1	1	0	0	2	1	1	0	0	2	0	3	1	0	4	11
05:45 PM	1	2	1	0	4	0	3	1	0	4	1	2	1	0	4	1	4	1	0	6	18
Total	4	11	4	0	19	1	9	2	0	12	4	8	2	0	14	1	12	6	0	19	64
06:00 PM	1	2	0	0	3	2	2	1	0	5	1	0	0	0	1	1	6	1	0	8	17
06:15 PM	0	1	0	0	1	0	1	0	0	1	0	2	0	0	2	0	3	0	0	3	7
06:30 PM	0	2	0	0	2	2	0	0	0	2	0	1	1	0	2	1	4	0	0	5	11
06:45 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	2	1	0	3	4
Total	1	5	0	0	6	4	3	2	0	9	1	3	1	0	5	2	15	2	0	19	39
BREAK																					
Grand Total	50	79	27	0	156	13	91	53	0	157	42	81	19	0	142	27	74	35	0	136	591
Apprch %	32.1	50.6	17.3	0		8.3	58	33.8	0		29.6	57	13.4	0		19.9	54.4	25.7	0		
Total %	8.5	13.4	4.6	0	26.4	2.2	15.4	9	0	26.6	7.1	13.7	3.2	0	24	4.6	12.5	5.9	0	23	

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at Military Tr 03052015
Site Code :
Start Date : 3/5/2015
Page No : 1

Groups Printed- Autos - Heavy Vehicles - Bicycles - Pedestrians

	Northlake Boulevard Eastbound					Northlake Boulevard Westbound					Military Trail Northbound					Military Trail Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	25	66	19	0	110	12	54	12	0	78	16	34	13	0	63	21	34	11	0	66	317
06:15 AM	37	87	28	0	152	14	75	7	0	96	18	73	20	0	111	32	41	24	0	97	456
06:30 AM	76	160	43	0	279	23	74	25	0	122	23	117	31	1	172	27	43	19	0	89	662
06:45 AM	118	204	50	0	372	32	115	47	0	194	34	151	31	0	216	29	87	40	0	156	938
Total	256	517	140	0	913	81	318	91	0	490	91	375	95	1	562	109	205	94	0	408	2373
07:00 AM	134	224	57	0	415	40	110	78	1	229	33	169	50	0	252	76	123	43	1	243	1139
07:15 AM	148	186	45	0	379	50	119	60	0	229	26	188	60	0	274	97	191	63	0	351	1233
07:30 AM	95	231	42	0	368	50	173	40	0	263	40	186	79	0	305	82	141	51	0	274	1210
07:45 AM	96	237	41	0	374	49	172	58	0	279	53	179	75	0	307	93	166	80	0	339	1299
Total	473	878	185	0	1536	189	574	236	1	1000	152	722	264	0	1138	348	621	237	1	1207	4881
08:00 AM	165	393	81	0	639	65	148	65	0	278	56	192	69	0	317	92	186	54	0	332	1566
08:15 AM	214	386	77	0	677	68	171	78	0	317	52	207	58	0	317	85	127	67	2	281	1592
08:30 AM	167	424	61	0	652	48	179	74	0	301	55	164	59	0	278	89	131	65	0	285	1516
08:45 AM	148	303	73	1	525	69	167	71	1	308	53	216	85	0	354	88	156	52	0	296	1483
Total	694	1506	292	1	2493	250	665	288	1	1204	216	779	271	0	1266	354	600	238	2	1194	6157
BREAK																					
04:00 PM	105	302	36	0	443	83	285	96	0	464	70	238	85	1	394	98	187	112	0	397	1698
04:15 PM	82	338	39	0	459	106	299	85	1	491	72	233	82	0	387	111	189	98	0	398	1735
04:30 PM	93	268	37	0	398	67	303	105	0	475	85	238	93	0	416	82	235	142	2	461	1750
04:45 PM	110	266	41	0	417	128	294	85	0	507	79	310	98	0	487	107	183	155	0	445	1856
Total	390	1174	153	0	1717	384	1181	371	1	1937	306	1019	358	1	1684	398	794	507	2	1701	7039
05:00 PM	95	261	64	0	420	74	376	90	0	540	83	173	62	0	318	88	190	136	0	414	1692
05:15 PM	90	248	31	0	369	88	318	52	0	458	97	148	57	0	302	100	220	168	3	491	1620
05:30 PM	95	208	42	0	345	79	326	82	0	487	93	149	75	0	317	79	230	172	0	481	1630
05:45 PM	111	236	38	0	385	64	334	70	0	468	84	142	84	0	310	77	180	159	4	420	1583
Total	391	953	175	0	1519	305	1354	294	0	1953	357	612	278	0	1247	344	820	635	7	1806	6525
06:00 PM	103	233	34	0	370	73	351	75	0	499	72	148	82	0	302	108	141	131	0	380	1551
06:15 PM	85	211	35	0	331	74	311	70	0	455	57	144	65	0	266	85	176	128	0	389	1441
06:30 PM	102	228	27	0	357	76	319	69	0	464	53	122	56	0	231	88	108	113	0	309	1361
06:45 PM	117	176	24	0	317	52	234	62	1	349	60	97	57	0	214	62	79	74	0	215	1095
Total	407	848	120	0	1375	275	1215	276	1	1767	242	511	260	0	1013	343	504	446	0	1293	5448
Grand Total	2611	5876	1065	1	9553	1484	5307	1556	4	8351	1364	4018	1526	2	6910	1896	3544	2157	12	7609	32423
Apprch %	27.3	61.5	11.1	0		17.8	63.5	18.6	0		19.7	58.1	22.1	0		24.9	46.6	28.3	0.2		
Total %	8.1	18.1	3.3	0	29.5	4.6	16.4	4.8	0	25.8	4.2	12.4	4.7	0	21.3	5.8	10.9	6.7	0	23.5	
Autos	2578	5746	1038	0	9362	1460	5188	1499	0	8147	1319	3919	1493	0	6731	1866	3468	2121	0	7455	31695
% Autos	98.7	97.8	97.5	0	98	98.4	97.8	96.3	0	97.6	96.7	97.5	97.8	0	97.4	98.4	97.9	98.3	0	98	97.8
Heavy Vehicles	33	130	27	0	190	24	119	57	0	200	45	99	33	0	177	30	76	36	0	142	709
% Heavy Vehicles	1.3	2.2	2.5	0	2	1.6	2.2	3.7	0	2.4	3.3	2.5	2.2	0	2.6	1.6	2.1	1.7	0	1.9	2.2
Bicycles	0	0	0	1	1	0	0	0	1	1	0	0	0	1	1	0	0	0	5	5	8
% Bicycles	0	0	0	100	0	0	0	0	25	0	0	0	0	50	0	0	0	0	41.7	0.1	0
Pedestrians	0	0	0	0	0	0	0	0	3	3	0	0	0	1	1	0	0	0	7	7	11
% Pedestrians	0	0	0	0	0	0	0	0	75	0	0	0	0	50	0	0	0	0	58.3	0.1	0

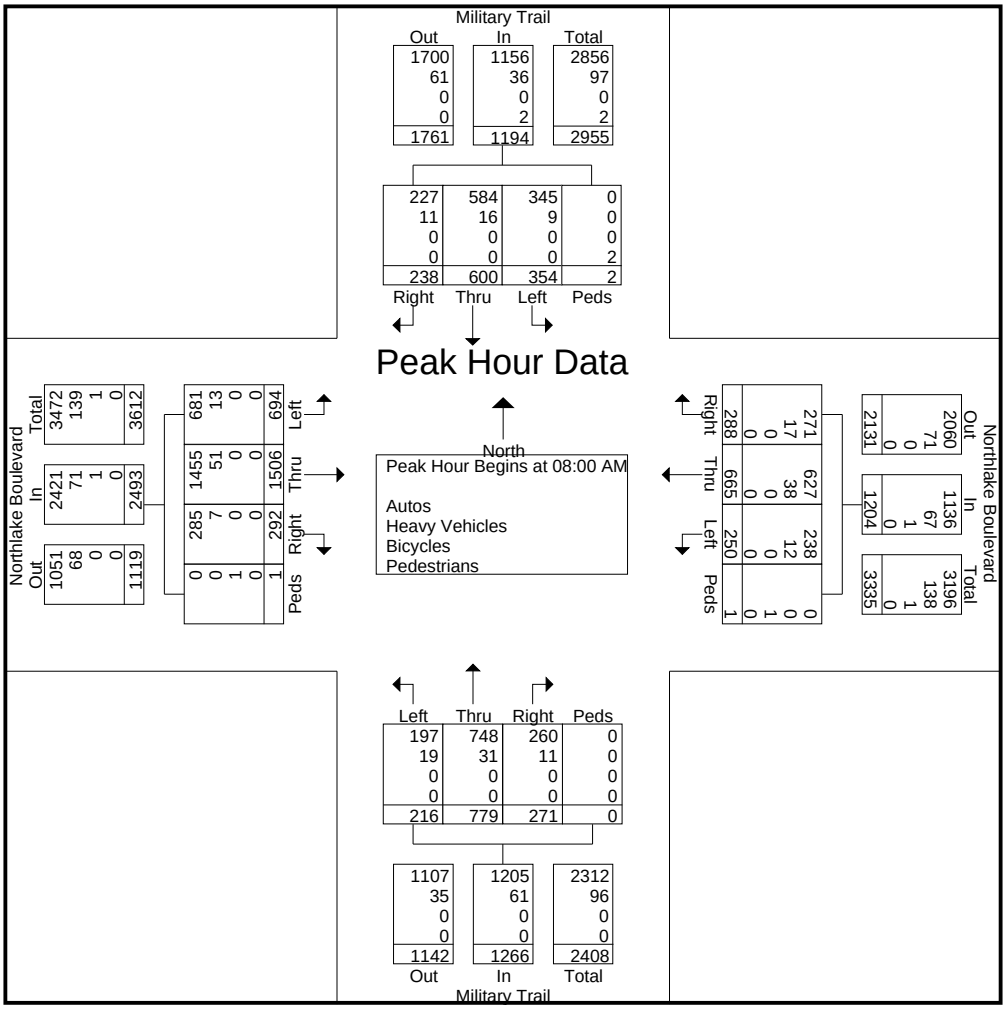
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at Military Tr 03052015
Site Code :
Start Date : 3/5/2015
Page No : 2

	Northlake Boulevard Eastbound					Northlake Boulevard Westbound					Military Trail Northbound					Military Trail Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	165	393	81	0	639	65	148	65	0	278	56	192	69	0	317	92	186	54	0	332	1566
08:15 AM	214	386	77	0	677	68	171	78	0	317	52	207	58	0	317	85	127	67	2	281	1592
08:30 AM	167	424	61	0	652	48	179	74	0	301	55	164	59	0	278	89	131	65	0	285	1516
08:45 AM	148	303	73	1	525	69	167	71	1	308	53	216	85	0	354	88	156	52	0	296	1483
Total Volume	694	1506	292	1	2493	250	665	288	1	1204	216	779	271	0	1266	354	600	238	2	1194	6157
% App. Total	27.8	60.4	11.7	0		20.8	55.2	23.9	0.1		17.1	61.5	21.4	0		29.6	50.3	19.9	0.2		
PHF	.811	.888	.901	.250	.921	.906	.929	.923	.250	.950	.964	.902	.797	.000	.894	.962	.806	.888	.250	.899	.967
Autos	681	1455	285	0	2421	238	627	271	0	1136	197	748	260	0	1205	345	584	227	0	1156	5918
% Autos	98.1	96.6	97.6	0	97.1	95.2	94.3	94.1	0	94.4	91.2	96.0	95.9	0	95.2	97.5	97.3	95.4	0	96.8	96.1
Heavy Vehicles	13	51	7	0	71	12	38	17	0	67	19	31	11	0	61	9	16	11	0	36	235
% Heavy Vehicles	1.9	3.4	2.4	0	2.8	4.8	5.7	5.9	0	5.6	8.8	4.0	4.1	0	4.8	2.5	2.7	4.6	0	3.0	3.8
Bicycles	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2
% Bicycles	0	0	0	100	0.0	0	0	0	100	0.1	0	0	0	0	0	0	0	0	0	0	0.0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0.2	0.0



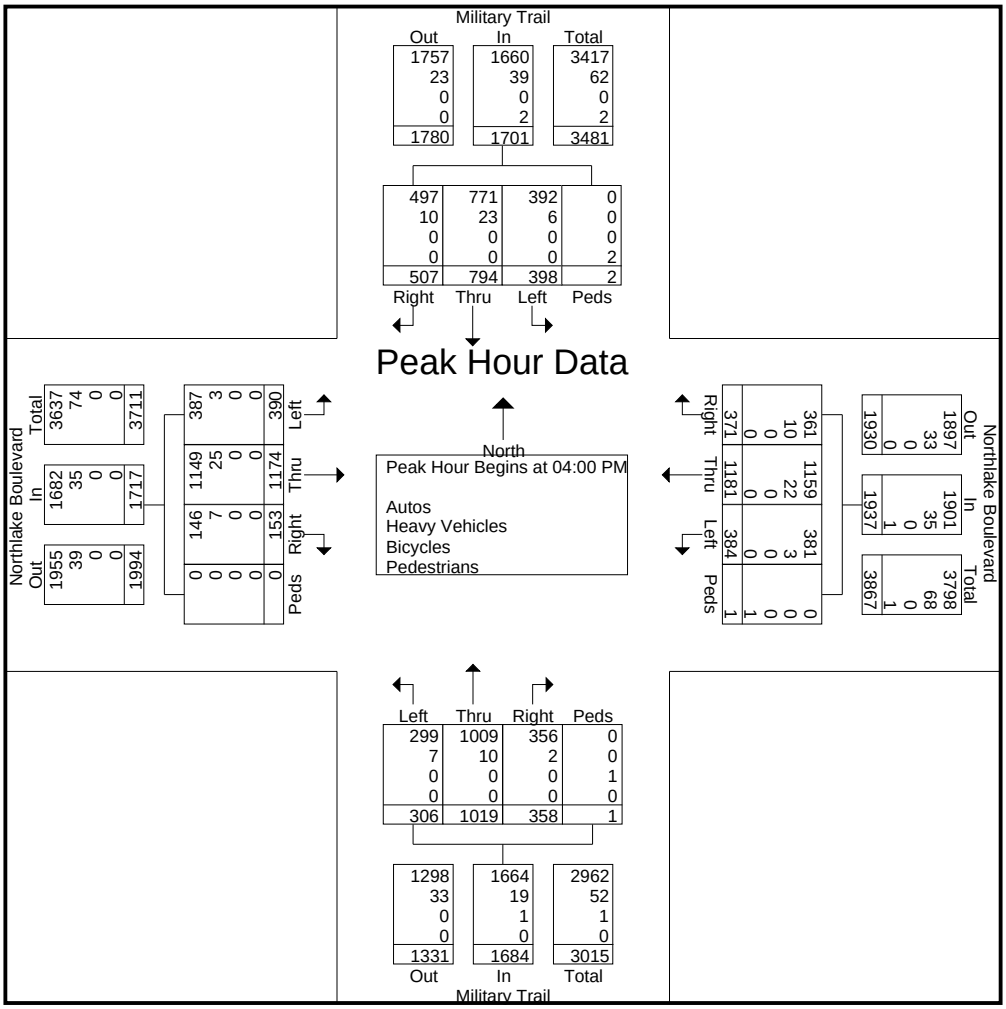
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at Military Tr 03052015
Site Code :
Start Date : 3/5/2015
Page No : 3

	Northlake Boulevard Eastbound					Northlake Boulevard Westbound					Military Trail Northbound					Military Trail Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	105	302	36	0	443	83	285	96	0	464	70	238	85	1	394	98	187	112	0	397	1698
04:15 PM	82	338	39	0	459	106	299	85	1	491	72	233	82	0	387	111	189	98	0	398	1735
04:30 PM	93	268	37	0	398	67	303	105	0	475	85	238	93	0	416	82	235	142	2	461	1750
04:45 PM	110	266	41	0	417	128	294	85	0	507	79	310	98	0	487	107	183	155	0	445	1856
Total Volume	390	1174	153	0	1717	384	1181	371	1	1937	306	1019	358	1	1684	398	794	507	2	1701	7039
% App. Total	22.7	68.4	8.9	0		19.8	61	19.2	0.1		18.2	60.5	21.3	0.1		23.4	46.7	29.8	0.1		
PHF	.886	.868	.933	.000	.935	.750	.974	.883	.250	.955	.900	.822	.913	.250	.864	.896	.845	.818	.250	.922	.948
Autos	387	1149	146	0	1682	381	1159	361	0	1901	299	1009	356	0	1664	392	771	497	0	1660	6907
% Autos	99.2	97.9	95.4	0	98.0	99.2	98.1	97.3	0	98.1	97.7	99.0	99.4	0	98.8	98.5	97.1	98.0	0	97.6	98.1
Heavy Vehicles	3	25	7	0	35	3	22	10	0	35	7	10	2	0	19	6	23	10	0	39	128
% Heavy Vehicles	0.8	2.1	4.6	0	2.0	0.8	1.9	2.7	0	1.8	2.3	1.0	0.6	0	1.1	1.5	2.9	2.0	0	2.3	1.8
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0.1	0	0	0	0	0	0.0
Pedestrians	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2	2	3
% Pedestrians	0	0	0	0	0	0	0	0	100	0.1	0	0	0	0	0	0	0	0	100	0.1	0.0



CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at Military Tr 03052015
Site Code :
Start Date : 3/5/2015
Page No : 1

Groups Printed- Heavy Vehicles

	Northlake Boulevard Eastbound					Northlake Boulevard Westbound					Military Trail Northbound					Military Trail Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	1	2	0	0	3	1	1	0	0	2	2	2	1	0	5	0	0	0	0	0	10
06:15 AM	1	2	0	0	3	1	1	1	0	3	3	2	1	0	6	0	1	1	0	2	14
06:30 AM	1	4	3	0	8	0	5	2	0	7	1	3	1	0	5	1	1	1	0	3	23
06:45 AM	4	6	1	0	11	2	5	4	0	11	1	9	2	0	12	2	3	3	0	8	42
Total	7	14	4	0	25	4	12	7	0	23	7	16	5	0	28	3	5	5	0	13	89
07:00 AM	1	5	1	0	7	0	7	2	0	9	0	1	1	0	2	3	2	2	0	7	25
07:15 AM	1	2	1	0	4	1	10	3	0	14	3	4	2	0	9	2	6	0	0	8	35
07:30 AM	2	5	2	0	9	0	10	3	0	13	5	12	3	0	20	1	1	0	0	2	44
07:45 AM	1	8	1	0	10	1	7	6	0	14	2	9	6	0	17	2	7	3	0	12	53
Total	5	20	5	0	30	2	34	14	0	50	10	26	12	0	48	8	16	5	0	29	157
08:00 AM	2	15	3	0	20	1	5	3	0	9	5	7	2	0	14	5	7	3	0	15	58
08:15 AM	3	8	2	0	13	5	9	4	0	18	5	10	3	0	18	1	3	1	0	5	54
08:30 AM	6	13	0	0	19	2	11	5	0	18	5	5	3	0	13	2	3	3	0	8	58
08:45 AM	2	15	2	0	19	4	13	5	0	22	4	9	3	0	16	1	3	4	0	8	65
Total	13	51	7	0	71	12	38	17	0	67	19	31	11	0	61	9	16	11	0	36	235
BREAK																					
04:00 PM	0	6	1	0	7	1	3	4	0	8	3	5	0	0	8	2	5	4	0	11	34
04:15 PM	1	7	1	0	9	0	4	2	0	6	1	2	1	0	4	2	6	3	0	11	30
04:30 PM	1	5	1	0	7	2	7	4	0	13	3	2	1	0	6	1	5	2	0	8	34
04:45 PM	1	7	4	0	12	0	8	0	0	8	0	1	0	0	1	1	7	1	0	9	30
Total	3	25	7	0	35	3	22	10	0	35	7	10	2	0	19	6	23	10	0	39	128
05:00 PM	1	3	2	0	6	1	2	2	0	5	0	2	0	0	2	0	1	0	0	1	14
05:15 PM	1	5	0	0	6	0	3	2	0	5	0	4	1	0	5	0	2	1	0	3	19
05:30 PM	0	0	0	0	0	0	3	1	0	4	1	2	1	0	4	0	5	1	0	6	14
05:45 PM	3	3	0	0	6	1	2	2	0	5	0	1	0	0	1	1	0	0	0	1	13
Total	5	11	2	0	18	2	10	7	0	19	1	9	2	0	12	1	8	2	0	11	60
06:00 PM	0	1	1	0	2	0	1	1	0	2	1	0	0	0	1	2	3	2	0	7	12
06:15 PM	0	1	1	0	2	0	0	1	0	1	0	3	0	0	3	0	3	0	0	3	9
06:30 PM	0	1	0	0	1	1	2	0	0	3	0	3	0	0	3	0	2	0	0	2	9
06:45 PM	0	6	0	0	6	0	0	0	0	0	0	1	1	0	2	1	0	1	0	2	10
Total	0	9	2	0	11	1	3	2	0	6	1	7	1	0	9	3	8	3	0	14	40
Grand Total	33	130	27	0	190	24	119	57	0	200	45	99	33	0	177	30	76	36	0	142	709
Apprch %	17.4	68.4	14.2	0		12	59.5	28.5	0		25.4	55.9	18.6	0		21.1	53.5	25.4	0		
Total %	4.7	18.3	3.8	0	26.8	3.4	16.8	8	0	28.2	6.3	14	4.7	0	25	4.2	10.7	5.1	0	20	

North Lake Boulevard at I-95 Southbound off Ramp

County: 93
Station: 3231
Description: I-95 SB OFF RAMP TO NORTHLAKE BLVD
Start Date: 03/24/2015
Start Time: 0000

Direction: S

Time	1st	2nd	3rd	4th	Total
0000	41	38	37	11	127
0100	15	19	10	11	55
0200	9	10	15	22	56
0300	9	10	12	9	40
0400	9	12	13	20	54
0500	19	24	35	56	134
0600	49	86	108	141	384
0700	149	177	174	295	795
0800	226	232	195	229	882
0900	162	177	187	185	711
1000	155	186	194	200	735
1100	161	169	216	220	766
1200	194	206	211	196	807
1300	202	189	183	212	786
1400	238	215	238	219	910
1500	208	272	162	185	827
1600	216	257	232	233	938
1700	260	239	195	223	917
1800	201	197	201	213	812
1900	172	140	144	131	587
2000	130	118	104	114	466
2100	114	109	82	72	377
2200	80	63	56	51	250
2300	41	46	34	22	143
24-Hour Totals:					12559

Peak Volume Information

	Hour	Volume
A.M.	745	948
P.M.	1615	982
Daily	1615	982

Truck Percentage 4.32 NaN 4.32

Classification Summary Database

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TotTrk	TotVol
S	41	10157	1818	42	257	79	43	74	45	1	2	0	0	0	0	543	12559

Generated by SPS 5.0.45P

County: 93
Station: 3231
Description: I-95 SB OFF RAMP TO NORTHLAKE BLVD
Start Date: 03/25/2015
Start Time: 0000

Direction: S

Time	1st	2nd	3rd	4th	Total
0000	18	20	18	17	73
0100	16	11	9	6	42
0200	6	2	8	7	23
0300	4	8	7	12	31
0400	6	5	17	22	50
0500	15	24	33	48	120
0600	57	94	98	136	385
0700	143	187	189	234	753
0800	217	215	199	228	859
0900	210	194	191	195	790
1000	171	186	198	252	807
1100	178	187	187	231	783
1200	204	185	228	194	811
1300	206	228	192	245	871
1400	216	204	224	197	841
1500	221	212	205	243	881
1600	216	221	231	245	913
1700	225	249	213	205	892
1800	215	217	200	218	850
1900	180	179	142	131	632
2000	154	124	122	113	513
2100	109	100	85	87	381
2200	84	51	72	59	266
2300	60	49	38	32	179
24-Hour Totals:					12746

Peak Volume Information

	Hour	Volume
A.M.	745	865
P.M.	1630	950
Daily	1630	950

Truck Percentage 4.38 NaN 4.38

Classification Summary Database

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TotTrk	TotVol
S	54	10411	1723	38	214	130	32	76	64	4	0	0	0	0	0	558	12746

Generated by SPS 5.0.45P

County: 93
Station: 3231
Description: I-95 SB OFF RAMP TO NORTHLAKE BLVD
Start Date: 03/26/2015
Start Time: 0000

Direction: S

Time	1st	2nd	3rd	4th	Total
0000	27	28	20	9	84
0100	14	12	15	8	49
0200	8	5	5	7	25
0300	7	7	9	12	35
0400	2	11	13	16	42
0500	15	29	29	43	116
0600	64	87	114	117	382
0700	143	154	189	236	722
0800	225	213	191	254	883
0900	205	175	204	188	772
1000	212	200	191	200	803
1100	193	205	198	215	811
1200	239	217	193	210	859
1300	189	214	205	212	820
1400	233	208	227	219	887
1500	237	246	198	228	909
1600	186	220	202	210	818
1700	254	255	220	237	966
1800	204	216	170	184	774
1900	160	144	154	120	578
2000	127	154	118	115	514
2100	101	133	85	79	398
2200	87	65	61	67	280
2300	58	59	50	51	218
24-Hour Totals:					12745

Peak Volume Information

	Hour	Volume
A.M.	800	883
P.M.	1700	966
Daily	1700	966

Truck Percentage 4.56 NaN 4.56

Classification Summary Database

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TotTrk	TotVol
S	57	10429	1678	40	198	153	47	78	57	7	0	1	0	0	0	581	12745

Generated by SPS 5.0.45P

County: 93
Station: 3235
Description: I-95 SB ON RAMP FROM NORTHLAKE BLVD
Start Date: 03/24/2015
Start Time: 0000

Direction: S

Time	1st	2nd	3rd	4th	Total
0000	37	37	27	21	122
0100	20	17	18	14	69
0200	14	11	10	15	50
0300	13	14	12	16	55
0400	12	15	22	38	87
0500	27	59	58	87	231
0600	102	143	184	245	674
0700	291	339	353	383	1366
0800	346	320	316	260	1242
0900	236	241	262	234	973
1000	203	217	260	243	923
1100	241	217	252	250	960
1200	233	283	276	266	1058
1300	310	270	255	291	1126
1400	279	261	302	277	1119
1500	284	291	322	279	1176
1600	299	332	302	336	1269
1700	377	372	380	328	1457
1800	331	260	233	228	1052
1900	232	212	214	177	835
2000	184	170	170	163	687
2100	154	125	111	99	489
2200	102	97	81	70	350
2300	54	32	42	41	169
24-Hour Totals:					17539

Peak Volume Information

	Hour	Volume
A.M.	715	1421
P.M.	1645	1465
Daily	1645	1465

Truck Percentage 6.01 NaN 6.01

Classification Summary Database

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TotTrk	TotVol
S	47	13064	3374	54	424	250	121	109	77	17	2	0	0	0	0	1054	17539

Generated by SPS 5.0.45P

County: 93
Station: 3235
Description: I-95 SB ON RAMP FROM NORTHLAKE BLVD
Start Date: 03/25/2015
Start Time: 0000

Direction: S

Time	1st	2nd	3rd	4th	Total
0000	38	35	15	20	108
0100	15	14	14	13	56
0200	14	18	9	9	50
0300	10	13	14	9	46
0400	17	26	29	29	101
0500	30	52	56	75	213
0600	79	138	150	160	527
0700	232	270	297	312	1111
0800	316	256	295	256	1123
0900	220	208	230	242	900
1000	224	260	228	201	913
1100	231	251	235	248	965
1200	249	265	259	254	1027
1300	282	260	257	245	1044
1400	238	284	281	269	1072
1500	281	276	282	272	1111
1600	275	320	304	317	1216
1700	343	333	323	298	1297
1800	323	280	248	232	1083
1900	223	191	188	187	789
2000	168	149	162	148	627
2100	135	130	120	108	493
2200	128	98	85	72	383
2300	63	39	42	43	187
24-Hour Totals:					16442

Peak Volume Information

	Hour	Volume
A.M.	715	1195
P.M.	1645	1316
Daily	1645	1316

Truck Percentage 6.69 NaN 6.69

Classification Summary Database

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TotTrk	TotVol
S	63	12143	3136	53	379	355	79	99	93	38	2	2	0	0	0	1100	16442

Generated by SPS 5.0.45P

County: 93
Station: 3235
Description: I-95 SB ON RAMP FROM NORTHLAKE BLVD
Start Date: 03/26/2015
Start Time: 0000

Direction: S

Time	1st	2nd	3rd	4th	Total
0000	37	30	30	20	117
0100	16	21	7	15	59
0200	8	17	17	8	50
0300	5	10	14	13	42
0400	15	25	21	28	89
0500	31	54	65	68	218
0600	80	136	167	149	532
0700	234	278	332	289	1133
0800	292	237	269	227	1025
0900	246	223	215	208	892
1000	218	247	259	236	960
1100	261	254	265	254	1034
1200	227	272	248	264	1011
1300	288	258	256	253	1055
1400	253	281	324	260	1118
1500	277	313	296	259	1145
1600	275	338	307	279	1199
1700	346	366	309	320	1341
1800	318	308	234	238	1098
1900	197	216	190	208	811
2000	163	157	140	148	608
2100	144	132	121	92	489
2200	92	101	87	81	361
2300	67	66	63	53	249
24-Hour Totals:					16636

Peak Volume Information

	Hour	Volume
A.M.	715	1191
P.M.	1700	1341
Daily	1700	1341

Truck Percentage 6.55 NaN 6.55

Classification Summary Database

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TotTrk	TotVol
S	83	12367	3096	41	299	431	83	73	111	49	0	3	0	0	0	1090	16636

Generated by SPS 5.0.45P

County: 93
Station: 3233
Description: NORTHLAKE BLVD BTWN I-95 NB & SB RAMPS
Start Date: 03/24/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	47	47	30	18	142	65	68	49	52	234	376
0100	20	23	21	18	82	39	38	36	33	146	228
0200	19	15	23	12	69	27	24	16	22	89	158
0300	10	16	18	19	63	25	20	16	13	74	137
0400	14	25	26	42	107	12	37	49	44	142	249
0500	46	53	54	98	251	37	66	104	100	307	558
0600	128	127	220	262	737	146	190	244	295	875	1612
0700	345	448	596	591	1980	399	422	451	494	1766	3746
0800	437	545	546	535	2063	499	527	440	517	1983	4046
0900	424	522	449	478	1873	394	373	448	439	1654	3527
1000	443	406	495	458	1802	341	447	434	492	1714	3516
1100	442	523	460	490	1915	499	533	542	575	2149	4064
1200	494	433	518	539	1984	481	598	514	517	2110	4094
1300	435	526	474	447	1882	559	517	581	546	2203	4085
1400	452	409	499	422	1782	549	604	549	596	2298	4080
1500	416	495	453	423	1787	627	578	644	661	2510	4297
1600	480	429	430	448	1787	676	634	699	654	2663	4450
1700	487	460	441	476	1864	680	770	756	678	2884	4748
1800	427	373	390	360	1550	605	572	525	460	2162	3712
1900	330	307	269	281	1187	539	471	363	408	1781	2968
2000	223	235	182	214	854	383	336	371	286	1376	2230
2100	195	177	147	133	652	269	251	235	196	951	1603
2200	115	101	93	84	393	193	198	147	139	677	1070
2300	64	54	62	48	228	100	77	87	84	348	576
24-Hour Totals:					27034					33096	60130

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	730	2169	800	1983	730	4140
P.M.	1230	2018	1700	2884	1700	4748
Daily	730	2169	1700	2884	1700	4748

Generated by SPS 5.0.45P

County: 93
Station: 3233
Description: NORTHLAKE BLVD BTWN I-95 NB & SB RAMPS
Start Date: 03/25/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	54	31	29	29	143	53	69	29	46	197	340
0100	20	17	21	15	73	44	34	26	34	138	211
0200	17	18	16	10	61	25	16	20	22	83	144
0300	10	21	20	19	70	13	25	23	12	73	143
0400	20	16	31	44	111	17	19	30	37	103	214
0500	46	44	64	112	266	48	53	106	111	318	584
0600	89	118	222	287	716	130	177	227	307	841	1557
0700	356	432	557	554	1899	391	409	441	535	1776	3675
0800	500	588	516	416	2020	525	530	443	539	2037	4057
0900	358	376	368	380	1482	456	403	423	393	1675	3157
1000	375	492	440	448	1755	422	435	449	505	1811	3566
1100	443	448	459	433	1783	517	500	505	529	2051	3834
1200	471	452	513	486	1922	496	600	530	524	2150	4072
1300	437	497	445	418	1797	578	485	610	578	2251	4048
1400	419	444	421	484	1768	496	669	572	607	2344	4112
1500	406	489	459	432	1786	616	595	640	669	2520	4306
1600	463	431	431	458	1783	659	694	698	660	2711	4494
1700	477	462	423	489	1851	684	785	693	634	2796	4647
1800	395	416	407	391	1609	649	635	559	504	2347	3956
1900	325	313	286	248	1172	516	466	415	451	1848	3020
2000	283	223	219	210	935	422	354	377	339	1492	2427
2100	235	170	165	114	684	293	292	231	228	1044	1728
2200	114	120	87	63	384	179	179	161	147	666	1050
2300	63	51	59	46	219	111	91	84	83	369	588
24-Hour Totals:					26289					33641	59930

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	730	2199	800	2037	730	4230
P.M.	1230	1933	1630	2827	1630	4655
Daily	730	2199	1630	2827	1630	4655

Generated by SPS 5.0.45P

County: 93
Station: 3233
Description: NORTHLAKE BLVD BTWN I-95 NB & SB RAMPS
Start Date: 03/26/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	33	31	25	35	124	61	69	54	54	238	362
0100	25	19	16	22	82	39	23	20	28	110	192
0200	15	13	15	10	53	30	22	15	17	84	137
0300	14	19	18	20	71	26	18	22	19	85	156
0400	7	17	25	42	91	15	26	37	23	101	192
0500	32	30	63	81	206	58	76	83	103	320	526
0600	115	138	227	262	742	110	202	249	298	859	1601
0700	335	462	511	544	1852	400	473	434	495	1802	3654
0800	467	555	518	459	1999	576	523	472	477	2048	4047
0900	416	422	405	485	1728	406	418	415	387	1626	3354
1000	445	409	448	489	1791	422	465	454	446	1787	3578
1100	420	515	456	474	1865	453	476	585	561	2075	3940
1200	498	458	472	496	1924	519	585	569	569	2242	4166
1300	428	494	437	449	1808	541	532	580	524	2177	3985
1400	429	395	456	427	1707	515	603	678	696	2492	4199
1500	392	502	429	477	1800	678	649	708	608	2643	4443
1600	466	439	443	443	1791	604	648	677	693	2622	4413
1700	492	443	397	435	1767	702	747	738	617	2804	4571
1800	357	342	374	315	1388	668	571	469	450	2158	3546
1900	280	280	265	245	1070	467	405	351	398	1621	2691
2000	254	212	170	190	826	352	387	295	279	1313	2139
2100	174	148	158	117	597	274	297	226	223	1020	1617
2200	113	84	100	74	371	208	169	162	159	698	1069
2300	72	46	51	48	217	130	113	75	79	397	614
24-Hour Totals:					25870					33322	59192

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	745	2084	745	2066	745	4150
P.M.	1200	1924	1645	2880	1645	4655
Daily	745	2084	1645	2880	1645	4655

Generated by SPS 5.0.45P

County: 93
Station: 3237
Description: NORTHLAKE BLVD W OF I-95 SB RAMPS
Start Date: 03/24/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	40	52	29	24	145	61	66	46	34	207	352
0100	27	22	15	19	83	43	26	25	27	121	204
0200	23	12	21	14	70	19	16	13	13	61	131
0300	10	12	17	19	58	18	8	13	8	47	105
0400	12	25	32	46	115	11	17	18	28	74	189
0500	41	55	64	104	264	32	42	68	99	241	505
0600	129	161	227	296	813	99	142	172	268	681	1494
0700	429	525	605	582	2141	266	255	334	464	1319	3460
0800	569	569	561	558	2257	396	431	493	503	1823	4080
0900	457	449	466	478	1850	408	406	379	365	1558	3408
1000	387	427	454	424	1692	330	372	441	445	1588	3280
1100	451	509	468	499	1927	465	475	477	559	1976	3903
1200	467	463	478	522	1930	437	525	577	426	1965	3895
1300	499	484	542	445	1970	493	531	529	541	2094	4064
1400	419	461	470	420	1770	527	504	507	539	2077	3847
1500	489	457	490	487	1923	575	655	609	661	2500	4423
1600	456	468	481	478	1883	655	720	670	628	2673	4556
1700	496	540	503	482	2021	731	760	768	736	2995	5016
1800	460	412	392	390	1654	655	654	582	538	2429	4083
1900	400	319	298	298	1315	537	523	417	430	1907	3222
2000	252	217	242	230	941	448	369	320	345	1482	2423
2100	242	216	156	147	761	272	272	243	208	995	1756
2200	128	118	91	86	423	200	190	129	129	648	1071
2300	71	51	49	49	220	102	77	74	76	329	549
24-Hour Totals:					28226					31790	60016

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	730	2325	815	1835	800	4080
P.M.	1245	2047	1700	2995	1700	5016
Daily	730	2325	1700	2995	1700	5016

Generated by SPS 5.0.45P

County: 93
Station: 3237
Description: NORTHLAKE BLVD W OF I-95 SB RAMPS
Start Date: 03/25/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	47	34	20	27	128	46	57	23	42	168	296
0100	26	19	15	8	68	39	31	24	25	119	187
0200	15	12	14	7	48	15	14	5	11	45	93
0300	7	18	19	17	61	11	15	11	16	53	114
0400	18	26	33	49	126	12	13	16	25	66	192
0500	42	52	75	117	286	23	39	79	105	246	532
0600	106	152	234	317	809	114	112	162	243	631	1440
0700	407	512	540	571	2030	275	303	340	465	1383	3413
0800	626	576	571	455	2228	468	471	439	529	1907	4135
0900	401	361	322	361	1445	407	400	365	299	1471	2916
1000	304	530	400	450	1684	414	334	404	430	1582	3266
1100	474	399	451	455	1779	441	493	424	536	1894	3673
1200	398	489	475	463	1825	525	479	591	504	2099	3924
1300	497	462	472	475	1906	514	479	485	573	2051	3957
1400	398	459	406	502	1765	518	554	562	602	2236	4001
1500	482	471	464	479	1896	572	659	629	633	2493	4389
1600	457	476	513	470	1916	708	751	694	698	2851	4767
1700	515	545	491	445	1996	702	714	710	721	2847	4843
1800	453	473	456	369	1751	659	651	650	638	2598	4349
1900	389	324	313	282	1308	490	500	467	423	1880	3188
2000	295	272	270	279	1116	444	462	406	367	1679	2795
2100	257	212	168	146	783	307	280	229	254	1070	1853
2200	123	122	89	72	406	176	149	151	128	604	1010
2300	75	49	58	44	226	106	69	88	74	337	563
24-Hour Totals:					27586					32310	59896

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	745	2344	800	1907	745	4187
P.M.	1630	2043	1600	2851	1630	4851
Daily	745	2344	1600	2851	1630	4851

Generated by SPS 5.0.45P

County: 93
Station: 3237
Description: NORTHLAKE BLVD W OF I-95 SB RAMPS
Start Date: 03/26/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	39	39	25	33	136	48	58	42	55	203	339
0100	27	23	17	23	90	26	20	20	20	86	176
0200	15	15	20	9	59	22	16	9	15	62	121
0300	14	16	18	17	65	10	14	15	12	51	116
0400	12	21	32	49	114	8	10	24	19	61	175
0500	30	46	64	96	236	29	41	62	75	207	443
0600	128	164	218	301	811	99	110	155	249	613	1424
0700	368	511	520	533	1932	255	307	312	456	1330	3262
0800	568	552	519	495	2134	438	456	486	520	1900	4034
0900	481	383	417	501	1782	360	440	401	374	1575	3357
1000	437	429	405	481	1752	356	386	436	444	1622	3374
1100	437	448	508	465	1858	490	524	467	561	2042	3900
1200	466	490	472	502	1930	530	512	555	535	2132	4062
1300	470	445	482	462	1859	563	573	522	573	2231	4090
1400	421	402	445	429	1697	519	537	664	682	2402	4099
1500	477	491	457	506	1931	660	716	704	599	2679	4610
1600	488	467	499	438	1892	627	673	656	663	2619	4511
1700	520	498	490	431	1939	746	766	720	717	2949	4888
1800	461	412	348	353	1574	692	552	548	527	2319	3893
1900	318	275	283	278	1154	395	415	388	345	1543	2697
2000	269	257	191	219	936	380	365	286	273	1304	2240
2100	200	179	168	147	694	272	285	241	215	1013	1707
2200	118	115	93	76	402	216	139	139	127	621	1023
2300	82	50	54	51	237	124	105	80	56	365	602
24-Hour Totals:					27214					31929	59143

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	730	2173	800	1900	800	4034
P.M.	1545	1960	1700	2949	1700	4888
Daily	730	2173	1700	2949	1700	4888

Generated by SPS 5.0.45P

Three-Day Approach Count Summary

Project Name: North Lake Boulevard Study
State Project No.: 2013008.018
Location: North Lake Boulevard at I-95 Southbound off Ramp
Direction: SOUTHBOUND (APPROACH)
Date: 3/24/2015-3/26/2015

TIME PERIOD (AM)		WEEKDAY TUES 24-Mar	WEEKDAY WED 25-Mar	WEEKDAY THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
00:00	00:15	41	18	27	29	
00:15	00:30	38	20	28	29	
00:30	00:45	37	18	20	25	
00:45	01:00	11	17	9	12	95
01:00	01:15	15	16	14	15	
01:15	01:30	19	11	12	14	
01:30	01:45	10	9	15	11	
01:45	02:00	11	6	8	8	49
02:00	02:15	9	6	8	8	
02:15	02:30	10	2	5	6	
02:30	02:45	15	8	5	9	
02:45	03:00	22	7	7	12	35
03:00	03:15	9	4	7	7	
03:15	03:30	10	8	7	8	
03:30	03:45	12	7	9	9	
03:45	04:00	9	12	12	11	35
04:00	04:15	9	6	2	6	
04:15	04:30	12	5	11	9	
04:30	04:45	13	17	13	14	
04:45	05:00	20	22	16	19	49
05:00	05:15	19	15	15	16	
05:15	05:30	24	24	29	26	
05:30	05:45	35	33	29	32	
05:45	06:00	56	48	43	49	123
06:00	06:15	49	57	64	57	
06:15	06:30	86	94	87	89	
06:30	06:45	108	98	114	107	
06:45	07:00	141	136	117	131	384
07:00	07:15	149	143	143	145	
07:15	07:30	177	187	154	173	
07:30	07:45	174	189	189	184	
07:45	08:00	295	234	236	255	757
08:00	08:15	226	217	225	223	
08:15	08:30	232	215	213	220	
08:30	08:45	195	199	191	195	
08:45	09:00	229	228	254	237	875
09:00	09:15	162	210	205	192	
09:15	09:30	177	194	175	182	
09:30	09:45	187	191	204	194	
09:45	10:00	185	195	188	189	758
10:00	10:15	155	171	212	179	
10:15	10:30	186	186	200	191	
10:30	10:45	194	198	191	194	
10:45	11:00	200	252	200	217	782
11:00	11:15	161	178	193	177	
11:15	11:30	169	187	205	187	
11:30	11:45	216	187	198	200	
11:45	12:00	220	231	215	222	787

TIME PERIOD (PM)		WEEKDAY TUES 24-Mar	WEEKDAY WED 25-Mar	WEEKDAY THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
12:00	12:15	194	204	239	212	
12:15	12:30	206	185	217	203	
12:30	12:45	211	228	193	211	
12:45	13:00	196	194	210	200	826
13:00	13:15	202	206	189	199	
13:15	13:30	189	228	214	210	
13:30	13:45	183	192	205	193	
13:45	14:00	212	245	212	223	826
14:00	14:15	238	216	233	229	
14:15	14:30	215	204	208	209	
14:30	14:45	238	224	227	230	
14:45	15:00	219	197	219	212	879
15:00	15:15	208	221	237	222	
15:15	15:30	272	212	246	243	
15:30	15:45	162	205	198	188	
15:45	16:00	185	243	228	219	872
16:00	16:15	216	216	186	206	
16:15	16:30	257	221	220	233	
16:30	16:45	232	231	202	222	
16:45	17:00	233	245	210	229	890
17:00	17:15	260	225	254	246	
17:15	17:30	239	249	255	248	
17:30	17:45	195	213	220	209	
17:45	18:00	223	205	237	222	925
18:00	18:15	201	215	204	207	
18:15	18:30	197	217	216	210	
18:30	18:45	201	200	170	190	
18:45	19:00	213	218	184	205	812
19:00	19:15	172	180	160	171	
19:15	19:30	140	179	144	154	
19:30	19:45	144	142	154	147	
19:45	20:00	131	131	120	127	599
20:00	20:15	130	154	127	137	
20:15	20:30	118	124	154	132	
20:30	20:45	104	122	118	115	
20:45	21:00	114	113	115	114	498
21:00	21:15	114	109	101	108	
21:15	21:30	109	100	133	114	
21:30	21:45	82	85	85	84	
21:45	22:00	72	87	79	79	385
22:00	22:15	80	84	87	84	
22:15	22:30	63	51	65	60	
22:30	22:45	56	72	61	63	
22:45	23:00	51	59	67	59	265
23:00	23:15	41	60	58	53	
23:15	23:30	46	49	59	51	
23:30	23:45	34	38	50	41	
23:45	00:00	22	32	51	35	180
DAILY COUNT		12,559	12,746	12,745	12,683	
PEAK HOUR TIME					16:30	
PEAK HOUR COUNT					945	
ESTIMATED K-FACTOR					7.5%	

Three-Day Approach Count Summary

Project Name: North Lake Boulevard Study
State Project No.: 2013008.018
Location: North Lake Boulevard at I-95 Southbound off Ramp
Direction: EASTBOUND (APPROACH)
Date: 3/24/2015-3/26/2015

TIME PERIOD (AM)		WEEKDAY TUES 24-Mar	WEEKDAY WED 25-Mar	WEEKDAY THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
00:00	00:15	40	47	39	42	
00:15	00:30	52	34	39	42	
00:30	00:45	29	20	25	25	
00:45	01:00	24	27	33	28	136
01:00	01:15	27	26	27	27	
01:15	01:30	22	19	23	21	
01:30	01:45	15	15	17	16	
01:45	02:00	19	8	23	17	80
02:00	02:15	23	15	15	18	
02:15	02:30	12	12	15	13	
02:30	02:45	21	14	20	18	
02:45	03:00	14	7	9	10	59
03:00	03:15	10	7	14	10	
03:15	03:30	12	18	16	15	
03:30	03:45	17	19	18	18	
03:45	04:00	19	17	17	18	61
04:00	04:15	12	18	12	14	
04:15	04:30	25	26	21	24	
04:30	04:45	32	33	32	32	
04:45	05:00	46	49	49	48	118
05:00	05:15	41	42	30	38	
05:15	05:30	55	52	46	51	
05:30	05:45	64	75	64	68	
05:45	06:00	104	117	96	106	262
06:00	06:15	129	106	128	121	
06:15	06:30	161	152	164	159	
06:30	06:45	227	234	218	226	
06:45	07:00	296	317	301	305	811
07:00	07:15	429	407	368	401	
07:15	07:30	525	512	511	516	
07:30	07:45	605	540	520	555	
07:45	08:00	582	571	533	562	2,034
08:00	08:15	569	626	568	588	
08:15	08:30	569	576	552	566	
08:30	08:45	561	571	519	550	
08:45	09:00	558	455	495	503	2,206
09:00	09:15	457	401	481	446	
09:15	09:30	449	361	383	398	
09:30	09:45	466	322	417	402	
09:45	10:00	478	361	501	447	1,692
10:00	10:15	387	304	437	376	
10:15	10:30	427	530	429	462	
10:30	10:45	454	400	405	420	
10:45	11:00	424	450	481	452	1,709
11:00	11:15	451	474	437	454	
11:15	11:30	509	399	448	452	
11:30	11:45	468	451	508	476	
11:45	12:00	499	455	465	473	1,855

TIME PERIOD (PM)		WEEKDAY TUES 24-Mar	WEEKDAY WED 25-Mar	WEEKDAY THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
12:00	12:15	467	398	466	444	
12:15	12:30	463	489	490	481	
12:30	12:45	478	475	472	475	
12:45	13:00	522	463	502	496	1,895
13:00	13:15	499	497	470	489	
13:15	13:30	484	462	445	464	
13:30	13:45	542	472	482	499	
13:45	14:00	445	475	462	461	1,912
14:00	14:15	419	398	421	413	
14:15	14:30	461	459	402	441	
14:30	14:45	470	406	445	440	
14:45	15:00	420	502	429	450	1,744
15:00	15:15	489	482	477	483	
15:15	15:30	457	471	491	473	
15:30	15:45	490	464	457	470	
15:45	16:00	487	479	506	491	1,917
16:00	16:15	456	457	488	467	
16:15	16:30	468	476	467	470	
16:30	16:45	481	513	499	498	
16:45	17:00	478	470	438	462	1,897
17:00	17:15	496	515	520	510	
17:15	17:30	540	545	498	528	
17:30	17:45	503	491	490	495	
17:45	18:00	482	445	431	453	1,985
18:00	18:15	460	453	461	458	
18:15	18:30	412	473	412	432	
18:30	18:45	392	456	348	399	
18:45	19:00	390	369	353	371	1,660
19:00	19:15	400	389	318	369	
19:15	19:30	319	324	275	306	
19:30	19:45	298	313	283	298	
19:45	20:00	298	282	278	286	1,259
20:00	20:15	252	295	269	272	
20:15	20:30	217	272	257	249	
20:30	20:45	242	270	191	234	
20:45	21:00	230	279	219	243	998
21:00	21:15	242	257	200	233	
21:15	21:30	216	212	179	202	
21:30	21:45	156	168	168	164	
21:45	22:00	147	146	147	147	746
22:00	22:15	128	123	118	123	
22:15	22:30	118	122	115	118	
22:30	22:45	91	89	93	91	
22:45	23:00	86	72	76	78	410
23:00	23:15	71	75	82	76	
23:15	23:30	51	49	50	50	
23:30	23:45	49	58	54	54	
23:45	00:00	49	44	51	48	228
DAILY COUNT		28,226	27,586	27,214	27,675	
PEAK HOUR TIME					07:30	
PEAK HOUR COUNT					2,270	
ESTIMATED K-FACTOR					8.2%	

Three-Day Approach Count Summary

Project Name: North Lake Boulevard Study
State Project No.: 2013008.018
Location: North Lake Boulevard at I-95 Southbound off Ramp
Direction: WESTBOUND (APPROACH)
Date: 3/24/2015-3/26/2015

TIME PERIOD (AM)		WEEKDAY TUES 24-Mar	WEED 25-Mar	THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
00:00	00:15	65	53	61	60	
00:15	00:30	68	69	69	69	
00:30	00:45	49	29	54	44	
00:45	01:00	52	46	54	51	223
01:00	01:15	39	44	39	41	
01:15	01:30	38	34	23	32	
01:30	01:45	36	26	20	27	
01:45	02:00	33	34	28	32	131
02:00	02:15	27	25	30	27	
02:15	02:30	24	16	22	21	
02:30	02:45	16	20	15	17	
02:45	03:00	22	22	17	20	85
03:00	03:15	25	13	26	21	
03:15	03:30	20	25	18	21	
03:30	03:45	16	23	22	20	
03:45	04:00	13	12	19	15	77
04:00	04:15	12	17	15	15	
04:15	04:30	37	19	26	27	
04:30	04:45	49	30	37	39	
04:45	05:00	44	37	23	35	115
05:00	05:15	37	48	58	48	
05:15	05:30	66	53	76	65	
05:30	05:45	104	106	83	98	
05:45	06:00	100	111	103	105	315
06:00	06:15	146	130	110	129	
06:15	06:30	190	177	202	190	
06:30	06:45	244	227	249	240	
06:45	07:00	295	307	298	300	858
07:00	07:15	399	391	400	397	
07:15	07:30	422	409	473	435	
07:30	07:45	451	441	434	442	
07:45	08:00	494	535	495	508	1,781
08:00	08:15	499	525	576	533	
08:15	08:30	527	530	523	527	
08:30	08:45	440	443	472	452	
08:45	09:00	517	539	477	511	2,023
09:00	09:15	394	456	406	419	
09:15	09:30	373	403	418	398	
09:30	09:45	448	423	415	429	
09:45	10:00	439	393	387	406	1,652
10:00	10:15	341	422	422	395	
10:15	10:30	447	435	465	449	
10:30	10:45	434	449	454	446	
10:45	11:00	492	505	446	481	1,771
11:00	11:15	499	517	453	490	
11:15	11:30	533	500	476	503	
11:30	11:45	542	505	585	544	
11:45	12:00	575	529	561	555	2,092

TIME PERIOD (PM)		WEEKDAY TUES 24-Mar	WED 25-Mar	THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
12:00	12:15	481	496	519	499	
12:15	12:30	598	600	585	594	
12:30	12:45	514	530	569	538	
12:45	13:00	517	524	569	537	2,167
13:00	13:15	559	578	541	559	
13:15	13:30	517	485	532	511	
13:30	13:45	581	610	580	590	
13:45	14:00	546	578	524	549	2,210
14:00	14:15	549	496	515	520	
14:15	14:30	604	669	603	625	
14:30	14:45	549	572	678	600	
14:45	15:00	596	607	696	633	2,378
15:00	15:15	627	616	678	640	
15:15	15:30	578	595	649	607	
15:30	15:45	644	640	708	664	
15:45	16:00	661	669	608	646	2,558
16:00	16:15	676	659	604	646	
16:15	16:30	634	694	648	659	
16:30	16:45	699	698	677	691	
16:45	17:00	654	660	693	669	2,665
17:00	17:15	680	684	702	689	
17:15	17:30	770	785	747	767	
17:30	17:45	756	693	738	729	
17:45	18:00	678	634	617	643	2,828
18:00	18:15	605	649	668	641	
18:15	18:30	572	635	571	593	
18:30	18:45	525	559	469	518	
18:45	19:00	460	504	450	471	2,222
19:00	19:15	539	516	467	507	
19:15	19:30	471	466	405	447	
19:30	19:45	363	415	351	376	
19:45	20:00	408	451	398	419	1,750
20:00	20:15	383	422	352	386	
20:15	20:30	336	354	387	359	
20:30	20:45	371	377	295	348	
20:45	21:00	286	339	279	301	1,394
21:00	21:15	269	293	274	279	
21:15	21:30	251	292	297	280	
21:30	21:45	235	231	226	231	
21:45	22:00	196	228	223	216	1,005
22:00	22:15	193	179	208	193	
22:15	22:30	198	179	169	182	
22:30	22:45	147	161	162	157	
22:45	23:00	139	147	159	148	680
23:00	23:15	100	111	130	114	
23:15	23:30	77	91	113	94	
23:30	23:45	87	84	75	82	
23:45	00:00	84	83	79	82	371
DAILY COUNT		33,096	33,641	33,322	33,353	
PEAK HOUR TIME					16:45	
PEAK HOUR COUNT					2,854	
ESTIMATED K-FACTOR					8.6%	

MECHANICAL COUNTS

PROJECT NAME: North Lake Boulevard Study

LOCATION: North Lake Boulevard at I-95 Southbound off Ramp

Notice to Proceed : 2013008.018

COUNT DATE: 3/24/2015-3/26/2015

NORTHBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	0	0	0	0	0
01:00 AM	0	0	0	0	0
02:00 AM	0	0	0	0	0
03:00 AM	0	0	0	0	0
04:00 AM	0	0	0	0	0
05:00 AM	0	0	0	0	0
06:00 AM	0	0	0	0	0
07:00 AM	0	0	0	0	0
08:00 AM	0	0	0	0	0
09:00 AM	0	0	0	0	0
10:00 AM	0	0	0	0	0
11:00 AM	0	0	0	0	0
12:00 PM	0	0	0	0	0
01:00 PM	0	0	0	0	0
02:00 PM	0	0	0	0	0
03:00 PM	0	0	0	0	0
04:00 PM	0	0	0	0	0
05:00 PM	0	0	0	0	0
06:00 PM	0	0	0	0	0
07:00 PM	0	0	0	0	0
08:00 PM	0	0	0	0	0
09:00 PM	0	0	0	0	0
10:00 PM	0	0	0	0	0
11:00 PM	0	0	0	0	0
			24 Hour Total		0

SOUTHBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	29	29	25	12	95
01:00 AM	15	14	11	8	49
02:00 AM	8	6	9	12	35
03:00 AM	7	8	9	11	35
04:00 AM	6	9	14	19	49
05:00 AM	16	26	32	49	123
06:00 AM	57	89	107	131	384
07:00 AM	145	173	184	255	757
08:00 AM	223	220	195	237	875
09:00 AM	192	182	194	189	758
10:00 AM	179	191	194	217	782
11:00 AM	177	187	200	222	787
12:00 PM	212	203	211	200	826
01:00 PM	199	210	193	223	826
02:00 PM	229	209	230	212	879
03:00 PM	222	243	188	219	872
04:00 PM	206	233	222	229	890
05:00 PM	246	248	209	222	925
06:00 PM	207	210	190	205	812
07:00 PM	171	154	147	127	599
08:00 PM	137	132	115	114	498
09:00 PM	108	114	84	79	385
10:00 PM	84	60	63	59	265
11:00 PM	53	51	41	35	180
			24 Hour Total		12,683

EASTBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	42	42	25	28	136
01:00 AM	27	21	16	17	80
02:00 AM	18	13	18	10	59
03:00 AM	10	15	18	18	61
04:00 AM	14	24	32	48	118
05:00 AM	38	51	68	106	262
06:00 AM	121	159	226	305	811
07:00 AM	401	516	555	562	2034
08:00 AM	588	566	550	503	2206
09:00 AM	446	398	402	447	1692
10:00 AM	376	462	420	452	1709
11:00 AM	454	452	476	473	1855
12:00 PM	444	481	475	496	1895
01:00 PM	489	464	499	461	1912
02:00 PM	413	441	440	450	1744
03:00 PM	483	473	470	491	1917
04:00 PM	467	470	498	462	1897
05:00 PM	510	528	495	453	1985
06:00 PM	458	432	399	371	1660
07:00 PM	369	306	298	286	1259
08:00 PM	272	249	234	243	998
09:00 PM	233	202	164	147	746
10:00 PM	123	118	91	78	410
11:00 PM	76	50	54	48	228
			24 Hour Total		27,675

WESTBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	60	69	44	51	223
01:00 AM	41	32	27	32	131
02:00 AM	27	21	17	20	85
03:00 AM	21	21	20	15	77
04:00 AM	15	27	39	35	115
05:00 AM	48	65	98	105	315
06:00 AM	129	190	240	300	858
07:00 AM	397	435	442	508	1781
08:00 AM	533	527	452	511	2023
09:00 AM	419	398	429	406	1652
10:00 AM	395	449	446	481	1771
11:00 AM	490	503	544	555	2092
12:00 PM	499	594	538	537	2167
01:00 PM	559	511	590	549	2210
02:00 PM	520	625	600	633	2378
03:00 PM	640	607	664	646	2558
04:00 PM	646	659	691	669	2665
05:00 PM	689	767	729	643	2828
06:00 PM	641	593	518	471	2222
07:00 PM	507	447	376	419	1750
08:00 PM	386	359	348	301	1394
09:00 PM	279	280	231	216	1005
10:00 PM	193	182	157	148	680
11:00 PM	114	94	82	82	371
			24 Hour Total		33,353

ALL

TOTAL
454
260
179
174
282
700
2053
4572
5104
4102
4262
4733
4888
4948
5001
5347
5452
5738
4694
3608
2889
2136
1356
779
73,712

DAILY TRAFFIC COUNT SUMMARY

NORTHBOUND

A.M. Peak Hour, Time: 12:00 AM Volume: 0
A.M. "K" Factor: #DIV/0! P.H.F. : #DIV/0!

P.M. Peak Hour, Time: 12:00 PM Volume: 0
P.M. "K" Factor: #DIV/0! P.H.F. : #DIV/0!

SOUTHBOUND

A.M. Peak Hour, Time: 07:45 AM Volume: 893
A.M. "K" Factor: 7.0% P.H.F. : 0.88

P.M. Peak Hour, Time: 04:30 PM Volume: 945
P.M. "K" Factor: 7.5% P.H.F. : 0.95

DAILY TRAFFIC COUNT SUMMARY

EASTBOUND

A.M. Peak Hour, Time: 07:30 AM Volume: 2,270
A.M. "K" Factor: 8.2% P.H.F. : 0.97

P.M. Peak Hour, Time: 04:30 PM Volume: 1,998
P.M. "K" Factor: 7.2% P.H.F. : 0.95

WESTBOUND

A.M. Peak Hour, Time: 11:30 AM Volume: 2,192
A.M. "K" Factor: 6.6% P.H.F. : 0.92

P.M. Peak Hour, Time: 04:45 PM Volume: 2,854
P.M. "K" Factor: 8.6% P.H.F. : 0.93

ALL APPROACHES:

A.M. Peak Hour, Time: 07:45 AM Volume: 5,178
A.M. "K" Factor: 7.0% P.H.F. : 0.96

P.M. Peak Hour, Time: 04:45 PM Volume: 5,781
P.M. "K" Factor: 7.8% P.H.F. : 0.94

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT :FDOT D4
JOB NO :TWO 18
PROJECT :I-95 Interchange PD&E
COUNTY :Palm Beach

File Name : Northlake Blvd at I-95 SB Ramp 03032015
Site Code :
Start Date : 3/3/2015
Page No : 1

Groups Printed- Autos - Heavy Vehicles - Bicycles - Pedestrians

	Northlake Blvd Eastbound				Northlake Blvd Westbound				I-95 SB on-Ramp Northbound		I-95 SB off-Ramp Southbound					
Start Time	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	74	45	0	119	63	70	0	133	0	0	39	0	30	1	70	322
06:15 AM	106	60	0	166	93	79	0	172	0	0	43	1	51	0	95	433
06:30 AM	174	110	0	284	115	116	0	231	0	0	70	0	34	1	105	620
06:45 AM	200	116	0	316	147	165	0	312	0	0	101	0	42	0	143	771
Total	554	331	0	885	418	430	0	848	0	0	253	1	157	2	413	2146
07:00 AM	261	149	0	410	179	200	0	379	2	2	106	0	55	0	161	952
07:15 AM	365	189	0	554	202	188	0	390	1	1	125	0	74	0	199	1144
07:30 AM	380	204	0	584	226	231	0	457	1	1	125	0	56	0	181	1223
07:45 AM	418	168	0	586	256	268	0	524	1	1	169	0	103	0	272	1383
Total	1424	710	0	2134	863	887	0	1750	5	5	525	0	288	0	813	4702
08:00 AM	405	178	0	583	212	276	0	488	0	0	147	0	70	0	217	1288
08:15 AM	422	167	0	589	204	276	0	480	0	0	173	0	79	0	252	1321
08:30 AM	417	137	0	554	241	333	0	574	1	1	103	0	71	0	174	1303
08:45 AM	447	138	0	585	158	327	0	485	4	4	124	0	112	0	236	1310
Total	1691	620	0	2311	815	1212	0	2027	5	5	547	0	332	0	879	5222
*** BREAK ***																
04:00 PM	357	94	0	451	236	466	0	702	2	2	113	0	104	0	217	1372
04:15 PM	333	134	0	467	234	487	0	721	0	0	102	0	122	0	224	1412
04:30 PM	409	129	0	538	209	457	0	666	2	2	106	0	128	0	234	1440
04:45 PM	371	119	0	490	201	476	0	677	3	3	140	0	117	0	257	1427
Total	1470	476	0	1946	880	1886	0	2766	7	7	461	0	471	0	932	5651
05:00 PM	353	190	0	543	249	526	0	775	0	0	115	0	147	0	262	1580
05:15 PM	316	196	0	512	222	572	0	794	0	0	119	0	139	0	258	1564
05:30 PM	289	241	0	530	255	636	0	891	0	0	91	0	98	0	189	1610
05:45 PM	337	269	0	606	215	596	0	811	0	0	106	0	117	0	223	1640
Total	1295	896	0	2191	941	2330	0	3271	0	0	431	0	501	0	932	6394
06:00 PM	217	142	0	359	174	402	0	576	0	0	107	0	108	0	215	1150
06:15 PM	227	95	0	322	186	427	0	613	0	0	81	0	102	0	183	1118
06:30 PM	215	97	0	312	160	377	0	537	0	0	91	0	100	0	191	1040
06:45 PM	259	93	0	352	147	329	0	476	0	0	96	0	98	0	194	1022
Total	918	427	0	1345	667	1535	0	2202	0	0	375	0	408	0	783	4330
Grand Total	7352	3460	0	10812	4584	8280	0	12864	17	17	2592	1	2157	2	4752	28445
Apprch %	68	32	0		35.6	64.4	0		100		54.5	0	45.4	0		
Total %	25.8	12.2	0	38	16.1	29.1	0	45.2	0.1	0.1	9.1	0	7.6	0	16.7	
Autos	7214	3400	0	10614	4496	8117	0	12613	0	0	2529	0	2116	0	4645	27872
% Autos	98.1	98.3	0	98.2	98.1	98	0	98	0	0	97.6	0	98.1	0	97.7	98
Heavy Vehicles	138	60	0	198	88	163	0	251	0	0	63	1	41	0	105	554
% Heavy Vehicles	1.9	1.7	0	1.8	1.9	2	0	2	0	0	2.4	100	1.9	0	2.2	1.9
Bicycles	0	0	0	0	0	0	0	0	6	6	0	0	0	0	0	6
% Bicycles	0	0	0	0	0	0	0	0	35.3	35.3	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	11	11	0	0	0	2	2	13
% Pedestrians	0	0	0	0	0	0	0	0	64.7	64.7	0	0	0	100	0	0

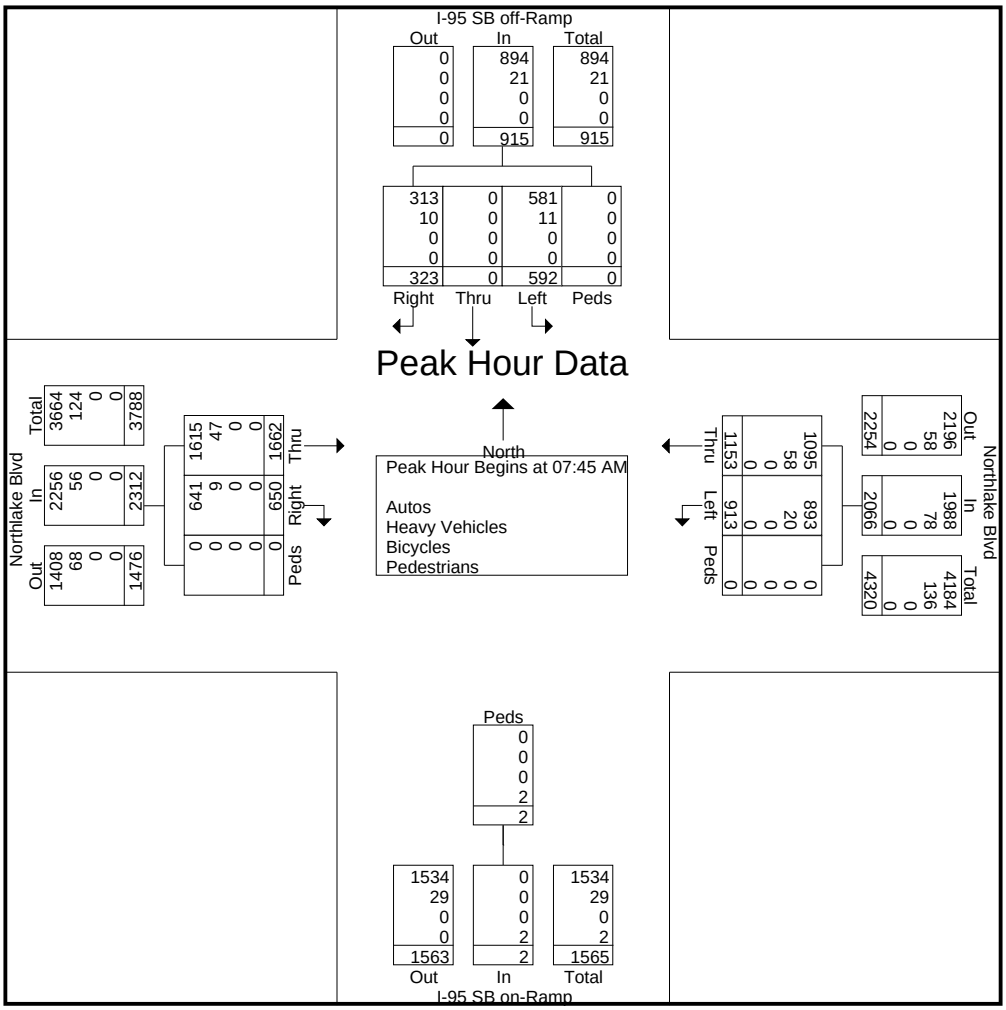
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT :FDOT D4
JOB NO :TWO 18
PROJECT :I-95 Interchange PD&E
COUNTY :Palm Beach

File Name : Northlake Blvd at I-95 SB Ramp 03032015
Site Code :
Start Date : 3/3/2015
Page No : 2

	Northlake Blvd Eastbound				Northlake Blvd Westbound				I-95 SB on-Ramp Northbound		I-95 SB off-Ramp Southbound					
Start Time	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																
Peak Hour for Entire Intersection Begins at 07:45 AM																
07:45 AM	418	168	0	586	256	268	0	524	1	1	169	0	103	0	272	1383
08:00 AM	405	178	0	583	212	276	0	488	0	0	147	0	70	0	217	1288
08:15 AM	422	167	0	589	204	276	0	480	0	0	173	0	79	0	252	1321
08:30 AM	417	137	0	554	241	333	0	574	1	1	103	0	71	0	174	1303
Total Volume	1662	650	0	2312	913	1153	0	2066	2	2	592	0	323	0	915	5295
% App. Total	71.9	28.1	0		44.2	55.8	0		100		64.7	0	35.3	0		
PHF	.985	.913	.000	.981	.892	.866	.000	.900	.500	.500	.855	.000	.784	.000	.841	.957
Autos	1615	641	0	2256	893	1095	0	1988	0	0	581	0	313	0	894	5138
% Autos	97.2	98.6	0	97.6	97.8	95.0	0	96.2	0	0	98.1	0	96.9	0	97.7	97.0
Heavy Vehicles	47	9	0	56	20	58	0	78	0	0	11	0	10	0	21	155
% Heavy Vehicles	2.8	1.4	0	2.4	2.2	5.0	0	3.8	0	0	1.9	0	3.1	0	2.3	2.9
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	2
% Pedestrians	0	0	0	0	0	0	0	0	100	100	0	0	0	0	0	0.0



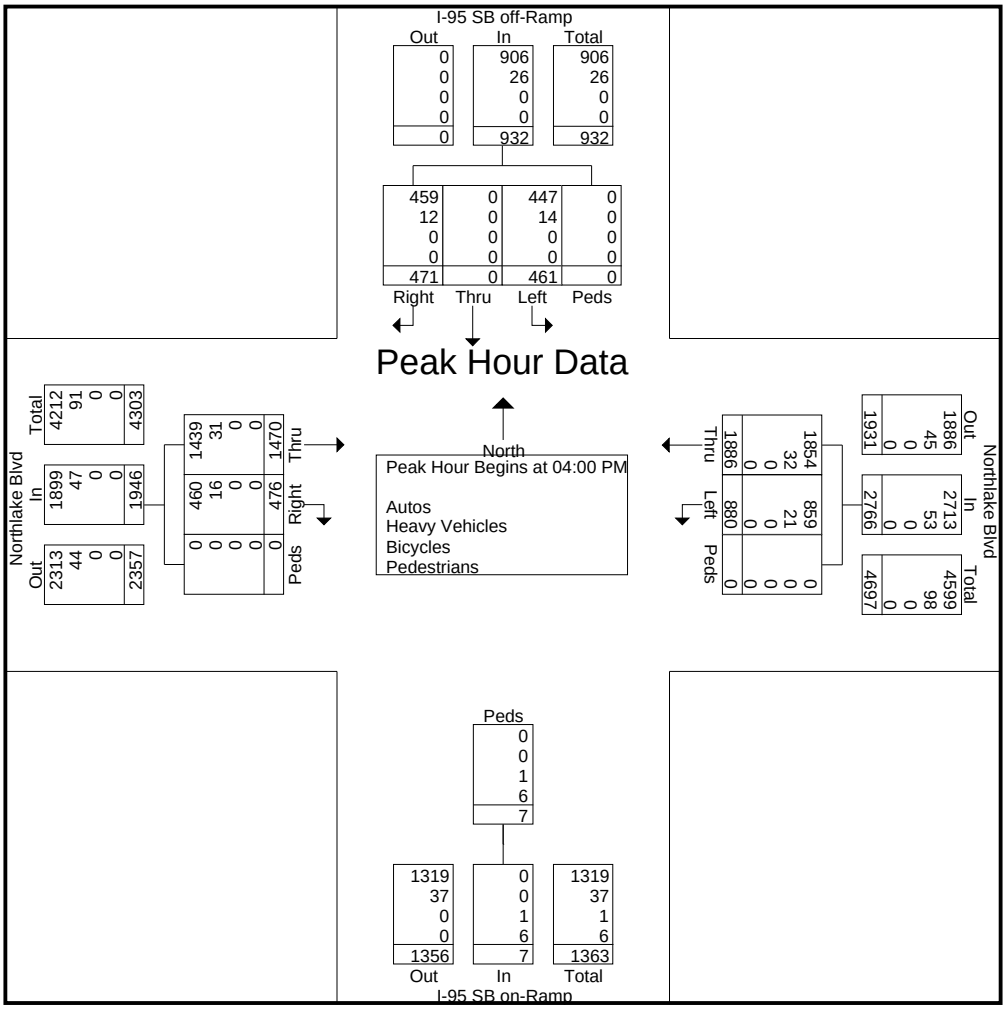
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT :FDOT D4
JOB NO :TWO 18
PROJECT :I-95 Interchange PD&E
COUNTY :Palm Beach

File Name : Northlake Blvd at I-95 SB Ramp 03032015
Site Code :
Start Date : 3/3/2015
Page No : 3

	Northlake Blvd Eastbound				Northlake Blvd Westbound				I-95 SB on-Ramp Northbound		I-95 SB off-Ramp Southbound					
Start Time	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																
Peak Hour for Entire Intersection Begins at 04:00 PM																
04:00 PM	357	94	0	451	236	466	0	702	2	2	113	0	104	0	217	1372
04:15 PM	333	134	0	467	234	487	0	721	0	0	102	0	122	0	224	1412
04:30 PM	409	129	0	538	209	457	0	666	2	2	106	0	128	0	234	1440
04:45 PM	371	119	0	490	201	476	0	677	3	3	140	0	117	0	257	1427
Total Volume	1470	476	0	1946	880	1886	0	2766	7	7	461	0	471	0	932	5651
% App. Total	75.5	24.5	0		31.8	68.2	0		100		49.5	0	50.5	0		
PHF	.899	.888	.000	.904	.932	.968	.000	.959	.583	.583	.823	.000	.920	.000	.907	.981
Autos	1439	460	0	1899	859	1854	0	2713	0	0	447	0	459	0	906	5518
% Autos	97.9	96.6	0	97.6	97.6	98.3	0	98.1	0	0	97.0	0	97.5	0	97.2	97.6
Heavy Vehicles	31	16	0	47	21	32	0	53	0	0	14	0	12	0	26	126
% Heavy Vehicles	2.1	3.4	0	2.4	2.4	1.7	0	1.9	0	0	3.0	0	2.5	0	2.8	2.2
Bicycles	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1
% Bicycles	0	0	0	0	0	0	0	0	14.3	14.3	0	0	0	0	0	0.0
Pedestrians	0	0	0	0	0	0	0	0	6	6	0	0	0	0	0	6
% Pedestrians	0	0	0	0	0	0	0	0	85.7	85.7	0	0	0	0	0	0.1



CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT :FDOT D4
JOB NO :TWO 18
PROJECT :I-95 Interchange PD&E
COUNTY :Palm Beach

File Name : Northlake Blvd at I-95 SB Ramp 03032015
Site Code :
Start Date : 3/3/2015
Page No : 1

Groups Printed- Heavy Vehicles

	Northlake Blvd Eastbound				Northlake Blvd Westbound				I-95 SB on-Ramp Northbound		I-95 SB off-Ramp Southbound					
Start Time	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	5	0	0	5	1	3	0	4	0	0	2	0	0	0	2	11
06:15 AM	5	2	0	7	2	4	0	6	0	0	5	1	0	0	6	19
06:30 AM	4	1	0	5	2	6	0	8	0	0	2	0	0	0	2	15
06:45 AM	3	3	0	6	2	7	0	9	0	0	5	0	1	0	6	21
Total	17	6	0	23	7	20	0	27	0	0	14	1	1	0	16	66
07:00 AM	5	2	0	7	2	5	0	7	0	0	1	0	0	0	1	15
07:15 AM	6	1	0	7	6	4	0	10	0	0	4	0	1	0	5	22
07:30 AM	7	3	0	10	5	8	0	13	0	0	2	0	2	0	4	27
07:45 AM	11	1	0	12	4	9	0	13	0	0	3	0	4	0	7	32
Total	29	7	0	36	17	26	0	43	0	0	10	0	7	0	17	96
08:00 AM	9	3	0	12	3	19	0	22	0	0	2	0	0	0	2	36
08:15 AM	15	3	0	18	6	17	0	23	0	0	6	0	4	0	10	51
08:30 AM	12	2	0	14	7	13	0	20	0	0	0	0	2	0	2	36
08:45 AM	14	3	0	17	4	3	0	7	0	0	0	0	5	0	5	29
Total	50	11	0	61	20	52	0	72	0	0	8	0	11	0	19	152
*** BREAK ***																
04:00 PM	13	5	0	18	8	8	0	16	0	0	4	0	6	0	10	44
04:15 PM	5	2	0	7	4	9	0	13	0	0	2	0	2	0	4	24
04:30 PM	10	8	0	18	7	7	0	14	0	0	5	0	4	0	9	41
04:45 PM	3	1	0	4	2	8	0	10	0	0	3	0	0	0	3	17
Total	31	16	0	47	21	32	0	53	0	0	14	0	12	0	26	126
05:00 PM	2	1	0	3	5	7	0	12	0	0	3	0	4	0	7	22
05:15 PM	2	2	0	4	4	3	0	7	0	0	3	0	3	0	6	17
05:30 PM	1	6	0	7	2	4	0	6	0	0	2	0	2	0	4	17
05:45 PM	1	2	0	3	5	5	0	10	0	0	2	0	1	0	3	16
Total	6	11	0	17	16	19	0	35	0	0	10	0	10	0	20	72
06:00 PM	4	4	0	8	1	5	0	6	0	0	0	0	0	0	0	14
06:15 PM	0	2	0	2	2	5	0	7	0	0	3	0	0	0	3	12
06:30 PM	1	1	0	2	0	2	0	2	0	0	1	0	0	0	1	5
06:45 PM	0	2	0	2	4	2	0	6	0	0	3	0	0	0	3	11
Total	5	9	0	14	7	14	0	21	0	0	7	0	0	0	7	42
Grand Total	138	60	0	198	88	163	0	251	0	0	63	1	41	0	105	554
Apprch %	69.7	30.3	0		35.1	64.9	0		0		60	1	39	0		
Total %	24.9	10.8	0	35.7	15.9	29.4	0	45.3	0	0	11.4	0.2	7.4	0	19	

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at I-95 SB Ramp 03042015
Site Code :
Start Date : 3/4/2015
Page No : 1

Groups Printed- Autos - Heavy Vehicles - Bicycles - Pedestrians

	Eastbound St. Eastbound				Westbound St. Westbound				Northbound St. Northbound		Southbound St. Southbound					
Start Time	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	82	57	0	139	44	58	0	102	0	0	33	5	25	0	63	304
06:15 AM	117	83	0	200	86	69	0	155	0	0	37	0	31	0	68	423
06:30 AM	159	100	0	259	143	101	0	244	0	0	68	0	33	0	101	604
06:45 AM	174	84	0	258	150	130	0	280	0	0	66	0	40	0	106	644
Total	532	324	0	856	423	358	0	781	0	0	204	5	129	0	338	1975
07:00 AM	242	148	0	390	181	162	0	343	1	1	101	0	46	0	147	881
07:15 AM	322	179	0	501	218	188	0	406	0	0	117	0	75	0	192	1099
07:30 AM	400	186	0	586	227	245	0	472	0	0	134	0	70	1	205	1263
07:45 AM	372	192	0	564	238	275	0	513	6	6	144	0	102	0	246	1329
Total	1336	705	0	2041	864	870	0	1734	7	7	496	0	293	1	790	4572
08:00 AM	402	155	0	557	220	278	0	498	0	0	131	0	106	1	238	1293
08:15 AM	417	139	0	556	185	237	0	422	0	0	161	0	88	2	251	1229
08:30 AM	398	128	0	526	217	343	0	560	0	0	114	0	75	7	196	1282
08:45 AM	439	123	0	562	153	310	0	463	0	0	119	0	88	1	208	1233
Total	1656	545	0	2201	775	1168	0	1943	0	0	525	0	357	11	893	5037
BREAK																
04:00 PM	348	123	0	471	241	432	0	673	5	5	122	0	95	0	217	1366
04:15 PM	368	143	0	511	204	441	0	645	0	0	125	0	114	0	239	1395
04:30 PM	378	133	0	511	224	466	0	690	1	1	112	0	147	0	259	1461
04:45 PM	379	147	0	526	228	475	0	703	0	0	115	0	129	0	244	1473
Total	1473	546	0	2019	897	1814	0	2711	6	6	474	0	485	0	959	5695
05:00 PM	415	171	0	586	221	465	0	686	0	0	102	0	127	0	229	1501
05:15 PM	335	146	0	481	237	493	0	730	0	0	146	0	138	0	284	1495
05:30 PM	319	138	0	457	267	498	0	765	0	0	106	1	90	0	197	1419
05:45 PM	364	119	0	483	239	502	0	741	0	0	103	1	100	0	204	1428
Total	1433	574	0	2007	964	1958	0	2922	0	0	457	2	455	0	914	5843
06:00 PM	327	131	0	458	196	420	0	616	0	0	107	0	145	0	252	1326
06:15 PM	288	104	0	392	192	468	0	660	0	0	104	0	97	0	201	1253
06:30 PM	281	117	0	398	122	350	0	472	0	0	109	0	102	0	211	1081
06:45 PM	284	81	0	365	141	320	0	461	0	0	102	0	127	0	229	1055
Total	1180	433	0	1613	651	1558	0	2209	0	0	422	0	471	0	893	4715
Grand Total	7610	3127	0	10737	4574	7726	0	12300	13	13	2578	7	2190	12	4787	27837
Apprch %	70.9	29.1	0		37.2	62.8	0		100		53.9	0.1	45.7	0.3		
Total %	27.3	11.2	0	38.6	16.4	27.8	0	44.2	0	0	9.3	0	7.9	0	17.2	
Autos	7460	3069	0	10529	4500	7590	0	12090	0	0	2524	7	2139	0	4670	27289
% Autos	98	98.1	0	98.1	98.4	98.2	0	98.3	0	0	97.9	100	97.7	0	97.6	98
Heavy Vehicles	150	58	0	208	74	136	0	210	0	0	54	0	51	0	105	523
% Heavy Vehicles	2	1.9	0	1.9	1.6	1.8	0	1.7	0	0	2.1	0	2.3	0	2.2	1.9
Bicycles	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	3
% Bicycles	0	0	0	0	0	0	0	0	23.1	23.1	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	10	10	0	0	0	12	12	22
% Pedestrians	0	0	0	0	0	0	0	0	76.9	76.9	0	0	0	100	0.3	0.1

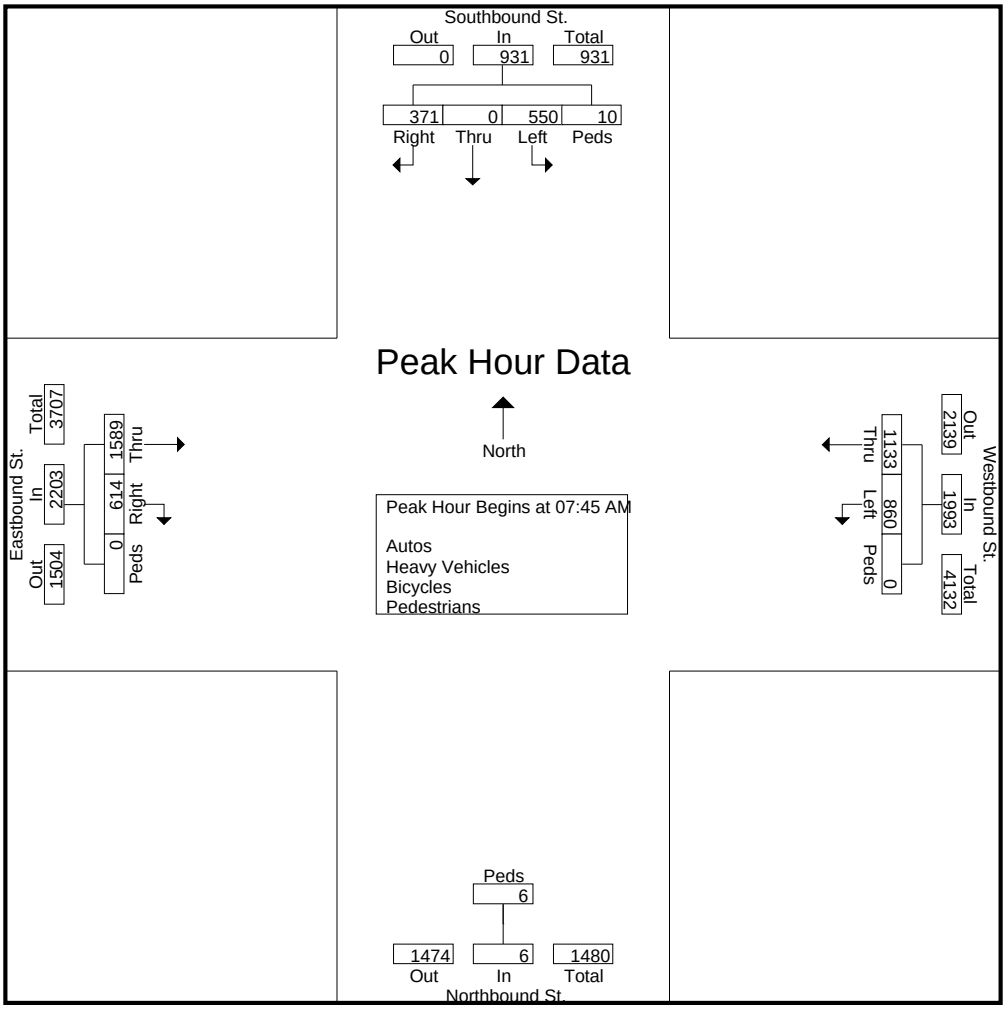
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at I-95 SB Ramp 03042015
Site Code :
Start Date : 3/4/2015
Page No : 2

	Eastbound St. Eastbound				Westbound St. Westbound				Northbound St. Northbound		Southbound St. Southbound					
Start Time	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																
Peak Hour for Entire Intersection Begins at 07:45 AM																
07:45 AM	372	192	0	564	238	275	0	513	6	6	144	0	102	0	246	1329
08:00 AM	402	155	0	557	220	278	0	498	0	0	131	0	106	1	238	1293
08:15 AM	417	139	0	556	185	237	0	422	0	0	161	0	88	2	251	1229
08:30 AM	398	128	0	526	217	343	0	560	0	0	114	0	75	7	196	1282
Total Volume	1589	614	0	2203	860	1133	0	1993	6	6	550	0	371	10	931	5133
% App. Total	72.1	27.9	0		43.2	56.8	0		100		59.1	0	39.8	1.1		
PHF	.953	.799	.000	.977	.903	.826	.000	.890	.250	.250	.854	.000	.875	.357	.927	.966



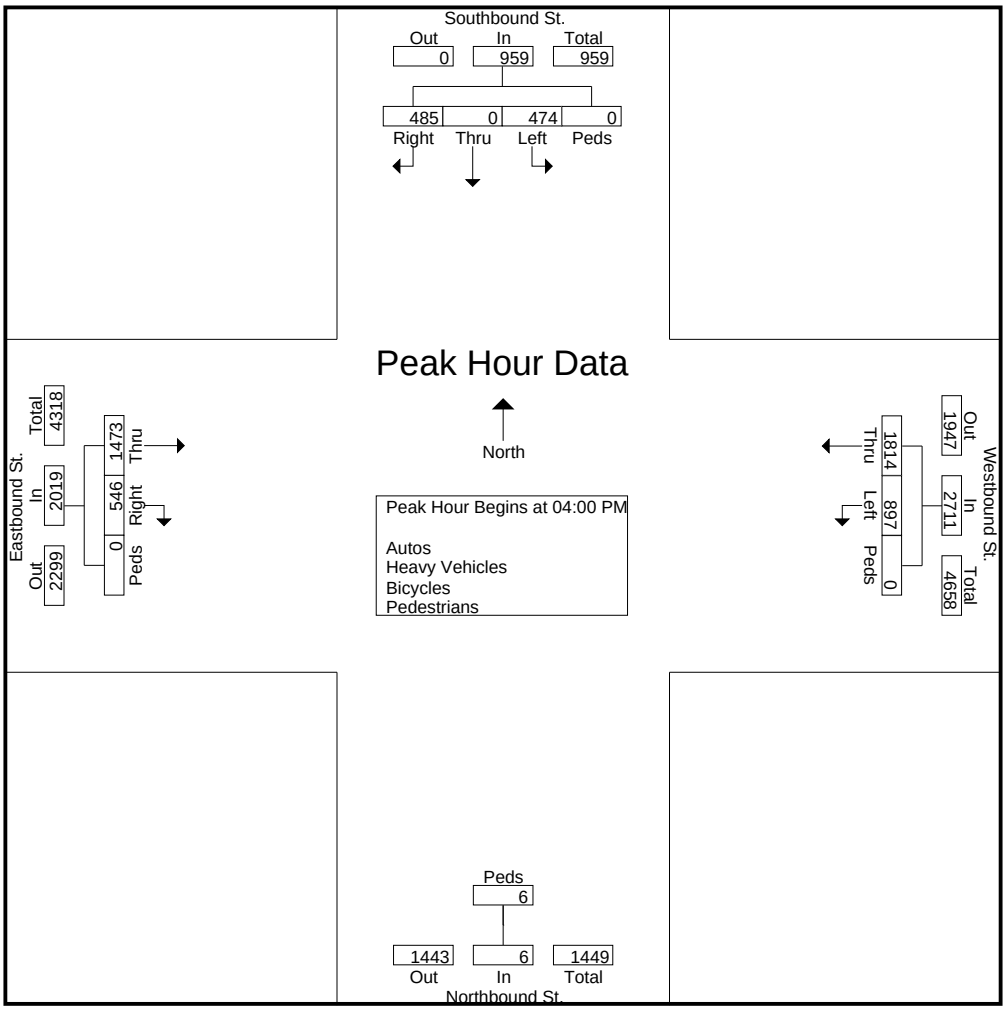
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at I-95 SB Ramp 03042015
Site Code :
Start Date : 3/4/2015
Page No : 3

	Eastbound St. Eastbound				Westbound St. Westbound				Northbound St. Northbound		Southbound St. Southbound					
Start Time	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																
Peak Hour for Entire Intersection Begins at 04:00 PM																
04:00 PM	348	123	0	471	241	432	0	673	5	5	122	0	95	0	217	1366
04:15 PM	368	143	0	511	204	441	0	645	0	0	125	0	114	0	239	1395
04:30 PM	378	133	0	511	224	466	0	690	1	1	112	0	147	0	259	1461
04:45 PM	379	147	0	526	228	475	0	703	0	0	115	0	129	0	244	1473
Total Volume	1473	546	0	2019	897	1814	0	2711	6	6	474	0	485	0	959	5695
% App. Total	73	27	0		33.1	66.9	0		100		49.4	0	50.6	0		
PHF	.972	.929	.000	.960	.930	.955	.000	.964	.300	.300	.948	.000	.825	.000	.926	.967



CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at I-95 SB Ramp 03042015
Site Code :
Start Date : 3/4/2015
Page No : 1

Groups Printed- Heavy Vehicles

	Eastbound St. Eastbound				Westbound St. Westbound				Northbound St. Northbound		Southbound St. Southbound					
Start Time	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	1	0	0	1	2	0	0	2	0	0	1	0	0	0	1	4
06:15 AM	7	1	0	8	0	4	0	4	0	0	2	0	0	0	2	14
06:30 AM	3	1	0	4	1	3	0	4	0	0	1	0	1	0	2	10
06:45 AM	4	2	0	6	4	9	0	13	0	0	2	0	1	0	3	22
Total	15	4	0	19	7	16	0	23	0	0	6	0	2	0	8	50
07:00 AM	5	5	0	10	3	5	0	8	0	0	2	0	0	0	2	20
07:15 AM	12	0	0	12	2	3	0	5	0	0	2	0	1	0	3	20
07:30 AM	9	1	0	10	4	14	0	18	0	0	5	0	3	0	8	36
07:45 AM	10	3	0	13	7	10	0	17	0	0	2	0	3	0	5	35
Total	36	9	0	45	16	32	0	48	0	0	11	0	7	0	18	111
08:00 AM	7	3	0	10	8	13	0	21	0	0	0	0	3	0	3	34
08:15 AM	9	3	0	12	0	8	0	8	0	0	7	0	6	0	13	33
08:30 AM	11	2	0	13	7	8	0	15	0	0	1	0	1	0	2	30
08:45 AM	11	2	0	13	1	7	0	8	0	0	4	0	2	0	6	27
Total	38	10	0	48	16	36	0	52	0	0	12	0	12	0	24	124
BREAK																
04:00 PM	5	3	0	8	6	3	0	9	0	0	3	0	2	0	5	22
04:15 PM	9	2	0	11	3	6	0	9	0	0	2	0	1	0	3	23
04:30 PM	10	2	0	12	4	10	0	14	0	0	2	0	5	0	7	33
04:45 PM	7	4	0	11	2	5	0	7	0	0	1	0	2	0	3	21
Total	31	11	0	42	15	24	0	39	0	0	8	0	10	0	18	99
05:00 PM	5	6	0	11	3	1	0	4	0	0	1	0	3	0	4	19
05:15 PM	8	2	0	10	2	4	0	6	0	0	7	0	3	0	10	26
05:30 PM	4	5	0	9	4	6	0	10	0	0	0	0	1	0	1	20
05:45 PM	3	3	0	6	6	1	0	7	0	0	0	0	4	0	4	17
Total	20	16	0	36	15	12	0	27	0	0	8	0	11	0	19	82
06:00 PM	2	1	0	3	3	8	0	11	0	0	4	0	1	0	5	19
06:15 PM	2	1	0	3	1	6	0	7	0	0	0	0	2	0	2	12
06:30 PM	3	3	0	6	1	2	0	3	0	0	3	0	1	0	4	13
06:45 PM	3	3	0	6	0	0	0	0	0	0	2	0	5	0	7	13
Total	10	8	0	18	5	16	0	21	0	0	9	0	9	0	18	57
Grand Total	150	58	0	208	74	136	0	210	0	0	54	0	51	0	105	523
Apprch %	72.1	27.9	0		35.2	64.8	0		0		51.4	0	48.6	0		
Total %	28.7	11.1	0	39.8	14.1	26	0	40.2	0	0	10.3	0	9.8	0	20.1	

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at I-95 SB Ramp 03052015
Site Code :
Start Date : 3/5/2015
Page No : 1

Groups Printed- Autos - Heavy Vehicles - Bicycles - Pedestrians

	Northlake Blvd Eastbound				Northlake Blvd Westbound				I-95 SB on-Ramp Northbound		I-95 SB off-Ramp Southbound					
Start Time	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	75	55	0	130	69	60	0	129	1	1	31	0	27	0	58	318
06:15 AM	87	68	0	155	112	83	0	195	0	0	48	0	30	0	78	428
06:30 AM	149	100	0	249	109	91	0	200	0	0	91	0	46	0	137	586
06:45 AM	269	108	1	378	150	150	0	300	1	1	94	0	47	0	141	820
Total	580	331	1	912	440	384	0	824	2	2	264	0	150	0	414	2152
07:00 AM	231	143	0	374	177	197	0	374	0	0	92	0	49	0	141	889
07:15 AM	277	158	0	435	189	194	0	383	0	0	103	0	80	0	183	1001
07:30 AM	295	165	0	460	217	245	0	462	0	0	117	0	77	0	194	1116
07:45 AM	368	156	0	524	240	257	0	497	2	2	119	1	106	0	226	1249
Total	1171	622	0	1793	823	893	0	1716	2	2	431	1	312	0	744	4255
08:00 AM	448	182	0	630	163	271	0	434	1	1	138	0	101	0	239	1304
08:15 AM	444	151	0	595	190	271	0	461	0	0	157	0	87	0	244	1300
08:30 AM	417	145	0	562	225	301	0	526	0	0	89	0	79	0	168	1256
08:45 AM	393	134	0	527	157	319	0	476	0	0	111	0	90	0	201	1204
Total	1702	612	0	2314	735	1162	0	1897	1	1	495	0	357	0	852	5064
BREAK																
04:00 PM	341	76	0	417	195	435	0	630	1	1	107	0	110	3	220	1268
04:15 PM	398	82	0	480	208	440	0	648	1	1	107	0	118	0	225	1354
04:30 PM	411	90	0	501	186	364	0	550	0	0	114	0	124	0	238	1289
04:45 PM	323	95	0	418	232	399	0	631	0	0	131	0	136	0	267	1316
Total	1473	343	0	1816	821	1638	0	2459	2	2	459	0	488	3	950	5227
05:00 PM	352	171	0	523	213	451	0	664	0	0	104	1	144	0	249	1436
05:15 PM	376	181	0	557	218	510	0	728	0	0	135	0	134	0	269	1554
05:30 PM	369	137	0	506	230	473	0	703	0	0	124	0	100	0	224	1433
05:45 PM	323	133	0	456	219	502	0	721	0	0	95	0	109	0	204	1381
Total	1420	622	0	2042	880	1936	0	2816	0	0	458	1	487	0	946	5804
06:00 PM	330	164	0	494	193	440	0	633	0	0	129	0	130	0	259	1386
06:15 PM	319	154	0	473	208	424	0	632	0	0	116	0	92	0	208	1313
06:30 PM	278	106	0	384	119	334	0	453	0	0	72	0	92	0	164	1001
06:45 PM	238	98	0	336	131	311	0	442	0	0	82	0	99	0	181	959
Total	1165	522	0	1687	651	1509	0	2160	0	0	399	0	413	0	812	4659
Grand Total	7511	3052	1	10564	4350	7522	0	11872	7	7	2506	2	2207	3	4718	27161
Apprch %	71.1	28.9	0		36.6	63.4	0		100		53.1	0	46.8	0.1		
Total %	27.7	11.2	0	38.9	16	27.7	0	43.7	0	0	9.2	0	8.1	0	17.4	
Autos	7339	3013	0	10352	4281	7360	0	11641	0	0	2441	2	2163	0	4606	26599
% Autos	97.7	98.7	0	98	98.4	97.8	0	98.1	0	0	97.4	100	98	0	97.6	97.9
Heavy Vehicles	172	39	0	211	69	162	0	231	0	0	65	0	44	0	109	551
% Heavy Vehicles	2.3	1.3	0	2	1.6	2.2	0	1.9	0	0	2.6	0	2	0	2.3	2
Bicycles	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1
% Bicycles	0	0	0	0	0	0	0	0	14.3	14.3	0	0	0	0	0	0
Pedestrians	0	0	1	1	0	0	0	0	6	6	0	0	0	3	3	10
% Pedestrians	0	0	100	0	0	0	0	0	85.7	85.7	0	0	0	100	0.1	0

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at I-95 SB Ramp 03052015
Site Code :
Start Date : 3/5/2015
Page No : 2

	Northlake Blvd Eastbound				Northlake Blvd Westbound				I-95 SB on-Ramp Northbound		I-95 SB off-Ramp Southbound					
Start Time	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																
Peak Hour for Entire Intersection Begins at 07:45 AM																
07:45 AM	368	156	0	524	240	257	0	497	2	2	119	1	106	0	226	1249
08:00 AM	448	182	0	630	163	271	0	434	1	1	138	0	101	0	239	1304
08:15 AM	444	151	0	595	190	271	0	461	0	0	157	0	87	0	244	1300
08:30 AM	417	145	0	562	225	301	0	526	0	0	89	0	79	0	168	1256
Total Volume	1677	634	0	2311	818	1100	0	1918	3	3	503	1	373	0	877	5109
% App. Total	72.6	27.4	0		42.6	57.4	0		100		57.4	0.1	42.5	0		
PHF	.936	.871	.000	.917	.852	.914	.000	.912	.375	.375	.801	.250	.880	.000	.899	.979

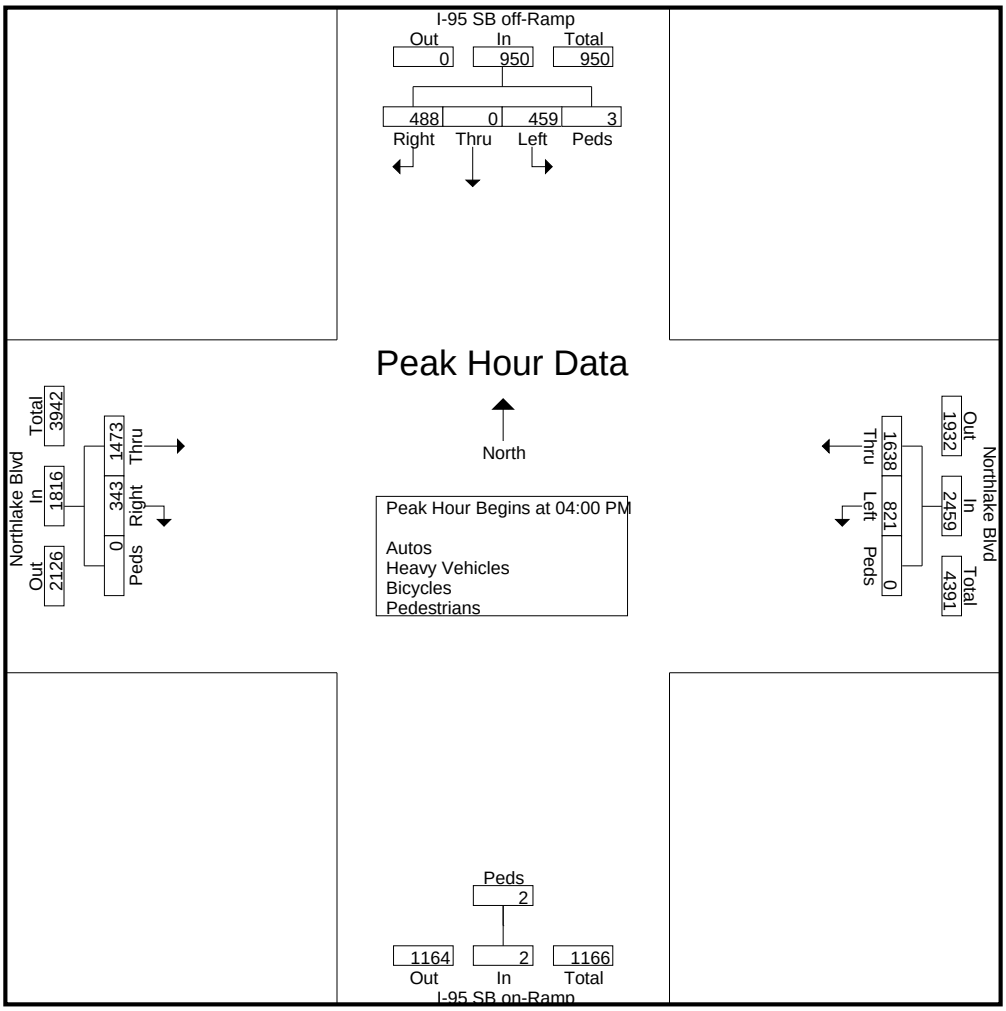
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at I-95 SB Ramp 03052015
Site Code :
Start Date : 3/5/2015
Page No : 3

	Northlake Blvd Eastbound				Northlake Blvd Westbound				I-95 SB on-Ramp Northbound		I-95 SB off-Ramp Southbound					
Start Time	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																
Peak Hour for Entire Intersection Begins at 04:00 PM																
04:00 PM	341	76	0	417	195	435	0	630	1	1	107	0	110	3	220	1268
04:15 PM	398	82	0	480	208	440	0	648	1	1	107	0	118	0	225	1354
04:30 PM	411	90	0	501	186	364	0	550	0	0	114	0	124	0	238	1289
04:45 PM	323	95	0	418	232	399	0	631	0	0	131	0	136	0	267	1316
Total Volume	1473	343	0	1816	821	1638	0	2459	2	2	459	0	488	3	950	5227
% App. Total	81.1	18.9	0		33.4	66.6	0		100		48.3	0	51.4	0.3		
PHF	.896	.903	.000	.906	.885	.931	.000	.949	.500	.500	.876	.000	.897	.250	.890	.965



CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at I-95 SB Ramp 03052015
Site Code :
Start Date : 3/5/2015
Page No : 1

Groups Printed- Heavy Vehicles

	Northlake Blvd Eastbound				Northlake Blvd Westbound				I-95 SB on-Ramp Northbound		I-95 SB off-Ramp Southbound					
Start Time	Thru	Right	Peds	App. Total	Left	Thru	Peds	App. Total	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	3	0	0	3	0	2	0	2	0	0	2	0	0	0	2	7
06:15 AM	1	0	0	1	2	3	0	5	0	0	4	0	0	0	4	10
06:30 AM	4	1	0	5	2	6	0	8	0	0	1	0	0	0	1	14
06:45 AM	5	3	0	8	1	7	0	8	0	0	2	0	2	0	4	20
Total	13	4	0	17	5	18	0	23	0	0	9	0	2	0	11	51
07:00 AM	8	2	0	10	4	11	0	15	0	0	2	0	1	0	3	28
07:15 AM	6	2	0	8	1	11	0	12	0	0	3	0	7	0	10	30
07:30 AM	9	3	0	12	1	12	0	13	0	0	5	0	1	0	6	31
07:45 AM	14	0	0	14	4	10	0	14	0	0	0	0	4	0	4	32
Total	37	7	0	44	10	44	0	54	0	0	10	0	13	0	23	121
08:00 AM	17	2	0	19	1	8	0	9	0	0	3	0	3	0	6	34
08:15 AM	11	2	0	13	6	8	0	14	0	0	6	0	3	0	9	36
08:30 AM	13	2	0	15	4	10	0	14	0	0	3	0	3	0	6	35
08:45 AM	11	1	0	12	3	16	0	19	0	0	1	0	3	0	4	35
Total	52	7	0	59	14	42	0	56	0	0	13	0	12	0	25	140
BREAK																
04:00 PM	11	4	0	15	4	7	0	11	0	0	5	0	0	0	5	31
04:15 PM	9	1	0	10	6	10	0	16	0	0	3	0	0	0	3	29
04:30 PM	11	0	0	11	5	7	0	12	0	0	2	0	4	0	6	29
04:45 PM	8	1	0	9	3	10	0	13	0	0	2	0	3	0	5	27
Total	39	6	0	45	18	34	0	52	0	0	12	0	7	0	19	116
05:00 PM	6	4	0	10	1	3	0	4	0	0	5	0	0	0	5	19
05:15 PM	2	3	0	5	3	3	0	6	0	0	4	0	0	0	4	15
05:30 PM	4	2	0	6	5	5	0	10	0	0	2	0	0	0	2	18
05:45 PM	5	4	0	9	0	4	0	4	0	0	2	0	0	0	2	15
Total	17	13	0	30	9	15	0	24	0	0	13	0	0	0	13	67
06:00 PM	5	0	0	5	3	4	0	7	0	0	4	0	3	0	7	19
06:15 PM	2	0	0	2	6	0	0	6	0	0	2	0	6	0	8	16
06:30 PM	5	0	0	5	2	3	0	5	0	0	2	0	0	0	2	12
06:45 PM	2	2	0	4	2	2	0	4	0	0	0	0	1	0	1	9
Total	14	2	0	16	13	9	0	22	0	0	8	0	10	0	18	56
Grand Total	172	39	0	211	69	162	0	231	0	0	65	0	44	0	109	551
Apprch %	81.5	18.5	0		29.9	70.1	0		0		59.6	0	40.4	0		
Total %	31.2	7.1	0	38.3	12.5	29.4	0	41.9	0	0	11.8	0	8	0	19.8	

North Lake Boulevard at I-95 Northbound off Ramp

County: 93
Station: 3241
Description: I-95 NB ON RAMP FROM NORTHLAKE BLVD
Start Date: 03/24/2015
Start Time: 0000

Direction: N

Time	1st	2nd	3rd	4th	Total
0000	40	42	41	26	149
0100	34	22	19	21	96
0200	24	18	16	16	74
0300	8	14	12	13	47
0400	8	14	18	16	56
0500	17	25	43	50	135
0600	47	51	82	151	331
0700	101	166	153	389	809
0800	330	390	339	345	1404
0900	266	268	259	255	1048
1000	245	238	251	276	1010
1100	260	265	260	317	1102
1200	303	287	297	321	1208
1300	295	295	297	328	1215
1400	279	328	322	371	1300
1500	325	348	346	409	1428
1600	402	430	380	436	1648
1700	427	467	364	375	1633
1800	293	366	310	278	1247
1900	242	188	194	175	799
2000	166	143	130	105	544
2100	99	115	94	105	413
2200	86	66	88	53	293
2300	61	44	38	45	188
24-Hour Totals:					18177

Peak Volume Information

	Hour	Volume
A.M.	745	1448
P.M.	1630	1710
Daily	1630	1710

Truck Percentage 6.77 NaN 6.77

Classification Summary Database

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TotTrk	TotVol
N	106	14616	2224	44	295	711	57	39	51	34	0	0	0	0	0	1231	18177

Generated by SPS 5.0.45P

County: 93
Station: 3241
Description: I-95 NB ON RAMP FROM NORTHLAKE BLVD
Start Date: 03/25/2015
Start Time: 0000

Direction: N

Time	1st	2nd	3rd	4th	Total
0000	40	41	21	21	123
0100	19	19	14	9	61
0200	15	19	6	11	51
0300	10	14	11	9	44
0400	11	7	13	22	53
0500	23	23	35	73	154
0600	42	71	69	114	296
0700	148	181	214	217	760
0800	224	321	266	198	1009
0900	181	161	163	232	737
1000	190	208	229	295	922
1100	268	320	306	281	1175
1200	314	299	353	319	1285
1300	280	265	287	357	1189
1400	290	321	333	333	1277
1500	284	325	391	393	1393
1600	380	360	366	373	1479
1700	404	418	450	348	1620
1800	368	290	261	195	1114
1900	190	203	162	202	757
2000	155	145	130	113	543
2100	113	118	118	93	442
2200	89	75	78	70	312
2300	68	54	48	45	215
24-Hour Totals:					17011

Peak Volume Information

	Hour	Volume
A.M.	745	1028
P.M.	1645	1645
Daily	1645	1645

Truck Percentage 7.07 NaN 7.07

Classification Summary Database

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TotTrk	TotVol
N	136	13776	1896	33	264	726	41	36	47	50	0	6	0	0	0	1203	17011

Generated by SPS 5.0.45P

County: 93
Station: 3241
Description: I-95 NB ON RAMP FROM NORTHLAKE BLVD
Start Date: 03/26/2015
Start Time: 0000

Direction: N

Time	1st	2nd	3rd	4th	Total
0000	32	33	20	25	110
0100	20	15	6	19	60
0200	10	12	12	7	41
0300	5	9	6	8	28
0400	11	11	15	13	50
0500	21	20	31	55	127
0600	53	67	63	111	294
0700	142	159	185	222	708
0800	226	267	245	242	980
0900	166	176	180	177	699
1000	175	207	231	208	821
1100	225	223	244	257	949
1200	245	296	327	320	1188
1300	296	269	284	312	1161
1400	305	302	316	333	1256
1500	358	308	361	351	1378
1600	337	381	387	381	1486
1700	380	381	317	317	1395
1800	292	263	206	231	992
1900	193	222	157	179	751
2000	140	139	152	128	559
2100	124	116	100	86	426
2200	93	89	101	68	351
2300	84	59	52	56	251
24-Hour Totals:					16061

Peak Volume Information

	Hour	Volume
A.M.	800	980
P.M.	1615	1529
Daily	1615	1529

Truck Percentage 7.31 NaN 7.31

Classification Summary Database

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TotTrk	TotVol
N	207	12814	1866	38	258	705	51	20	37	55	0	10	0	0	0	1174	16061

Generated by SPS 5.0.45P

County: 93
Station: 3245
Description: I-95 NB OFF RAMP TO NORTHLAKE BLVD
Start Date: 03/24/2015
Start Time: 0000

Direction: N

Time	1st	2nd	3rd	4th	Total
0000	19	25	17	15	76
0100	11	14	15	7	47
0200	8	8	13	4	33
0300	9	8	5	8	30
0400	7	9	11	30	57
0500	17	24	38	47	126
0600	54	73	117	125	369
0700	148	208	250	226	832
0800	189	235	248	222	894
0900	183	189	186	190	748
1000	191	181	204	227	803
1100	190	208	242	232	872
1200	229	232	227	217	905
1300	235	220	231	223	909
1400	233	220	224	231	908
1500	244	231	297	298	1070
1600	279	251	257	301	1088
1700	304	280	271	286	1141
1800	266	233	205	212	916
1900	171	185	169	144	669
2000	125	118	119	107	469
2100	124	98	84	64	370
2200	60	56	45	34	195
2300	35	27	28	21	111
24-Hour Totals:					13638

Peak Volume Information

	Hour	Volume
A.M.	730	900
P.M.	1645	1156
Daily	1645	1156

Truck Percentage 7.37 NaN 7.37

Classification Summary Database

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TotTrk	TotVol
N	19	8744	3870	70	723	35	42	72	62	1	0	0	0	0	0	1005	13638

Generated by SPS 5.0.45P

County: 93
Station: 3245
Description: I-95 NB OFF RAMP TO NORTHLAKE BLVD
Start Date: 03/25/2015
Start Time: 0000

Direction: N

Time	1st	2nd	3rd	4th	Total
0000	23	13	15	7	58
0100	9	11	7	7	34
0200	5	10	6	11	32
0300	4	8	6	7	25
0400	9	6	16	23	54
0500	29	23	41	47	140
0600	59	71	122	146	398
0700	173	207	280	251	911
0800	234	272	231	217	954
0900	191	154	134	167	646
1000	134	183	230	186	733
1100	198	230	228	233	889
1200	230	242	246	210	928
1300	232	215	232	234	913
1400	191	232	202	253	878
1500	231	249	291	265	1036
1600	277	273	286	308	1144
1700	305	293	285	257	1140
1800	242	264	235	190	931
1900	185	189	168	163	705
2000	170	145	125	126	566
2100	148	117	85	66	416
2200	57	47	40	39	183
2300	32	26	21	27	106
24-Hour Totals:					13820

Peak Volume Information

	Hour	Volume
A.M.	730	1037
P.M.	1630	1192
Daily	1630	1192

Truck Percentage 6.58 NaN 6.58

Classification Summary Database

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TotTrk	TotVol
N	22	8975	3914	46	706	10	16	87	43	1	0	0	0	0	0	909	13820

Generated by SPS 5.0.45P

County: 93
Station: 3245
Description: I-95 NB OFF RAMP TO NORTHLAKE BLVD
Start Date: 03/26/2015
Start Time: 0000

Direction: N

Time	1st	2nd	3rd	4th	Total
0000	12	12	17	12	53
0100	11	6	10	11	38
0200	9	8	13	2	32
0300	8	6	8	6	28
0400	7	5	11	19	42
0500	22	11	37	43	113
0600	57	89	121	125	392
0700	157	238	258	223	876
0800	236	279	241	227	983
0900	184	162	166	199	711
1000	161	172	214	196	743
1100	207	227	197	214	845
1200	189	241	226	273	929
1300	220	209	249	218	896
1400	222	221	207	217	867
1500	230	268	275	278	1051
1600	292	271	276	300	1139
1700	308	293	306	255	1162
1800	214	207	224	159	804
1900	173	155	153	143	624
2000	128	129	106	93	456
2100	115	83	87	79	364
2200	75	62	36	39	212
2300	39	30	26	24	119
24-Hour Totals:					13479

Peak Volume Information

	Hour	Volume
A.M.	730	996
P.M.	1645	1207
Daily	1645	1207

Truck Percentage 7.62 NaN 7.62

Classification Summary Database

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TotTrk	TotVol
N	16	8433	4003	60	725	57	26	93	66	0	0	0	0	0	0	1027	13479

Generated by SPS 5.0.45P

County: 93
Station: 3243
Description: NORTHLAKE BLVD E OF I-95 NB RAMPS
Start Date: 05/05/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	80	92	68	61	301	66	72	47	35	220	521
0100	65	59	44	39	207	41	46	40	39	166	373
0200	27	22	23	24	96	28	20	16	21	85	181
0300	13	22	21	26	82	15	10	17	12	54	136
0400	38	15	35	33	121	14	13	19	20	66	187
0500	52	52	63	82	249	36	38	67	75	216	465
0600	101	109	156	267	633	93	104	151	203	551	1184
0700	342	416	609	607	1974	234	268	336	357	1195	3169
0800	642	648	627	571	2488	411	402	385	402	1600	4088
0900	611	499	457	482	2049	326	375	321	312	1334	3383
1000	514	528	507	502	2051	308	346	341	336	1331	3382
1100	550	479	568	554	2151	370	390	418	389	1567	3718
1200	551	421	385	520	1877	440	427	444	401	1712	3589
1300	489	532	487	553	2061	447	429	383	449	1708	3769
1400	558	588	593	503	2242	391	414	457	426	1688	3930
1500	534	541	521	576	2172	419	529	464	468	1880	4052
1600	503	552	533	577	2165	498	478	444	554	1974	4139
1700	560	588	606	486	2240	520	563	509	439	2031	4271
1800	508	499	479	462	1948	481	449	406	441	1777	3725
1900	438	404	360	340	1542	381	343	352	335	1411	2953
2000	345	274	259	259	1137	313	301	291	281	1186	2323
2100	274	236	212	162	884	280	245	191	177	893	1777
2200	131	168	101	115	515	170	132	127	103	532	1047
2300	84	89	75	64	312	78	48	51	53	230	542
24-Hour Totals:					31497					25407	56904

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	745	2524	800	1600	800	4088
P.M.	1645	2331	1645	2146	1645	4477
Daily	745	2524	1645	2146	1645	4477

Generated by SPS 5.0.45P

County: 93
Station: 3243
Description: NORTHLAKE BLVD E OF I-95 NB RAMPS
Start Date: 05/06/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	63	57	43	38	201	61	31	27	32	151	352
0100	24	42	29	18	113	29	27	25	25	106	219
0200	20	18	28	12	78	17	13	27	11	68	146
0300	17	21	22	34	94	9	15	8	10	42	136
0400	16	42	26	49	133	10	26	18	39	93	226
0500	50	66	78	110	304	40	70	73	96	279	583
0600	116	148	281	324	869	103	151	189	245	688	1557
0700	422	606	590	656	2274	253	321	324	431	1329	3603
0800	704	564	573	608	2449	383	368	400	328	1479	3928
0900	524	430	430	483	1867	361	314	299	289	1263	3130
1000	503	484	456	546	1989	350	323	341	353	1367	3356
1100	501	558	547	566	2172	348	401	365	441	1555	3727
1200	594	609	539	543	2285	451	442	467	420	1780	4065
1300	564	469	558	562	2153	478	444	426	456	1804	3957
1400	538	532	542	531	2143	436	461	460	457	1814	3957
1500	582	599	508	556	2245	464	466	496	530	1956	4201
1600	460	577	580	540	2157	540	529	525	554	2148	4305
1700	485	529	567	550	2131	590	547	550	536	2223	4354
1800	566	525	438	367	1896	576	455	441	428	1900	3796
1900	383	367	387	336	1473	400	364	347	314	1425	2898
2000	346	305	263	233	1147	345	338	281	274	1238	2385
2100	230	230	214	162	836	284	244	198	172	898	1734
2200	164	175	119	98	556	170	161	158	99	588	1144
2300	97	108	65	63	333	85	79	62	48	274	607
24-Hour Totals:					31898					26468	58366

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	715	2556	745	1582	745	4079
P.M.	1200	2285	1645	2241	1715	4421
Daily	715	2556	1645	2241	1715	4421

Generated by SPS 5.0.45P

County: 93
Station: 3243
Description: NORTHLAKE BLVD E OF I-95 NB RAMPS
Start Date: 05/07/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	65	57	49	33	204	61	51	37	45	194	398
0100	34	42	34	24	134	31	22	21	21	95	229
0200	24	28	19	14	85	23	19	14	19	75	160
0300	26	21	30	42	119	11	18	15	18	62	181
0400	13	27	39	54	133	15	11	21	33	80	213
0500	54	60	85	91	290	36	63	77	89	265	555
0600	101	164	253	359	877	104	150	216	222	692	1569
0700	409	611	624	627	2271	283	350	390	391	1414	3685
0800	592	690	568	613	2463	421	401	403	323	1548	4011
0900	473	484	534	545	2036	388	327	325	326	1366	3402
1000	552	530	548	554	2184	341	359	331	387	1418	3602
1100	457	577	561	536	2131	431	435	413	439	1718	3849
1200	602	572	620	664	2458	439	456	490	425	1810	4268
1300	612	630	628	600	2470	513	510	454	475	1952	4422
1400	553	573	584	608	2318	490	485	536	470	1981	4299
1500	624	515	584	639	2362	468	564	521	502	2055	4417
1600	502	573	511	638	2224	526	565	504	505	2100	4324
1700	572	617	584	509	2282	610	568	537	526	2241	4523
1800	427	507	504	429	1867	508	461	431	441	1841	3708
1900	397	386	387	331	1501	379	401	317	320	1417	2918
2000	350	293	265	258	1166	346	312	294	280	1232	2398
2100	242	237	217	182	878	293	249	205	191	938	1816
2200	173	179	127	123	602	181	159	141	117	598	1200
2300	110	116	86	76	388	93	78	71	63	305	693
24-Hour Totals:					33443					27397	60840

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	730	2533	745	1616	730	4136
P.M.	1245	2534	1700	2241	1645	4631
Daily	1245	2534	1700	2241	1645	4631

Generated by SPS 5.0.45P

Three-Day Approach Count Summary

Project Name: North Lake Boulevard Study
Project No.: 2013008.018
Location: North Lake Boulevard at I-95 Northbound off Ramp
Direction: NORTHBOUND (APPROACH)
Date: 3/24/2015-3/26/2015

TIME PERIOD (AM)		WEEKDAY TUES 24-Mar	WEEKDAY WED 25-Mar	WEEKDAY THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
00:00	00:15	19	23	12	18	
00:15	00:30	25	13	12	17	
00:30	00:45	17	15	17	16	
00:45	01:00	15	7	12	11	62
01:00	01:15	11	9	11	10	
01:15	01:30	14	11	6	10	
01:30	01:45	15	7	10	11	
01:45	02:00	7	7	11	8	40
02:00	02:15	8	5	9	7	
02:15	02:30	8	10	8	9	
02:30	02:45	13	6	13	11	
02:45	03:00	4	11	2	6	32
03:00	03:15	9	4	8	7	
03:15	03:30	8	8	6	7	
03:30	03:45	5	6	8	6	
03:45	04:00	8	7	6	7	28
04:00	04:15	7	9	7	8	
04:15	04:30	9	6	5	7	
04:30	04:45	11	16	11	13	
04:45	05:00	30	23	19	24	51
05:00	05:15	17	29	22	23	
05:15	05:30	24	23	11	19	
05:30	05:45	38	41	37	39	
05:45	06:00	47	47	43	46	126
06:00	06:15	54	59	57	57	
06:15	06:30	73	71	89	78	
06:30	06:45	117	122	121	120	
06:45	07:00	125	146	125	132	386
07:00	07:15	148	173	157	159	
07:15	07:30	208	207	238	218	
07:30	07:45	250	280	258	263	
07:45	08:00	226	251	223	233	873
08:00	08:15	189	234	236	220	
08:15	08:30	235	272	279	262	
08:30	08:45	248	231	241	240	
08:45	09:00	222	217	227	222	944
09:00	09:15	183	191	184	186	
09:15	09:30	189	154	162	168	
09:30	09:45	186	134	166	162	
09:45	10:00	190	167	199	185	702
10:00	10:15	191	134	161	162	
10:15	10:30	181	183	172	179	
10:30	10:45	204	230	214	216	
10:45	11:00	227	186	196	203	760
11:00	11:15	190	198	207	198	
11:15	11:30	208	230	227	222	
11:30	11:45	242	228	197	222	
11:45	12:00	232	233	214	226	869

TIME PERIOD (PM)		WEEKDAY TUES 24-Mar	WEEKDAY WED 25-Mar	WEEKDAY THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
12:00	12:15	229	230	189	216	
12:15	12:30	232	242	241	238	
12:30	12:45	227	246	226	233	
12:45	13:00	217	210	273	233	921
13:00	13:15	235	232	220	229	
13:15	13:30	220	215	209	215	
13:30	13:45	231	232	249	237	
13:45	14:00	223	234	218	225	906
14:00	14:15	233	191	222	215	
14:15	14:30	220	232	221	224	
14:30	14:45	224	202	207	211	
14:45	15:00	231	253	217	234	884
15:00	15:15	244	231	230	235	
15:15	15:30	231	249	268	249	
15:30	15:45	297	291	275	288	
15:45	16:00	298	265	278	280	1,052
16:00	16:15	279	277	292	283	
16:15	16:30	251	273	271	265	
16:30	16:45	257	286	276	273	
16:45	17:00	301	308	300	303	1,124
17:00	17:15	304	305	308	306	
17:15	17:30	280	293	293	289	
17:30	17:45	271	285	306	287	
17:45	18:00	286	257	255	266	1,148
18:00	18:15	266	242	214	241	
18:15	18:30	233	264	207	235	
18:30	18:45	205	235	224	221	
18:45	19:00	212	190	159	187	884
19:00	19:15	171	185	173	176	
19:15	19:30	185	189	155	176	
19:30	19:45	169	168	153	163	
19:45	20:00	144	163	143	150	666
20:00	20:15	125	170	128	141	
20:15	20:30	118	145	129	131	
20:30	20:45	119	125	106	117	
20:45	21:00	107	126	93	109	497
21:00	21:15	124	148	115	129	
21:15	21:30	98	117	83	99	
21:30	21:45	84	85	87	85	
21:45	22:00	64	66	79	70	383
22:00	22:15	60	57	75	64	
22:15	22:30	56	47	62	55	
22:30	22:45	45	40	36	40	
22:45	23:00	34	39	39	37	197
23:00	23:15	35	32	39	35	
23:15	23:30	27	26	30	28	
23:30	23:45	28	21	26	25	
23:45	00:00	21	27	24	24	112
DAILY COUNT		13,638	13,820	13,479	13,646	
PEAK HOUR TIME					16:45	
PEAK HOUR COUNT					1,185	
ESTIMATED K-FACTOR					8.7%	

Three-Day Approach Count Summary

Project Name: North Lake Boulevard Study
State Project No.: 2013008.018
Location: North Lake Boulevard at I-95 Northbound off Ramp
Direction: EASTBOUND (APPROACH)
Date: 3/24/2015-3/26/2015

TIME PERIOD (AM)		WEEKDAY TUES 24-Mar	WEEKDAY WED 25-Mar	WEEKDAY THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
00:00	00:15	47	54	33	45	
00:15	00:30	47	31	31	36	
00:30	00:45	30	29	25	28	
00:45	01:00	18	29	35	27	136
01:00	01:15	20	20	25	22	
01:15	01:30	23	17	19	20	
01:30	01:45	21	21	16	19	
01:45	02:00	18	15	22	18	79
02:00	02:15	19	17	15	17	
02:15	02:30	15	18	13	15	
02:30	02:45	23	16	15	18	
02:45	03:00	12	10	10	11	61
03:00	03:15	10	10	14	11	
03:15	03:30	16	21	19	19	
03:30	03:45	18	20	18	19	
03:45	04:00	19	19	20	19	68
04:00	04:15	14	20	7	14	
04:15	04:30	25	16	17	19	
04:30	04:45	26	31	25	27	
04:45	05:00	42	44	42	43	103
05:00	05:15	46	46	32	41	
05:15	05:30	53	44	30	42	
05:30	05:45	54	64	63	60	
05:45	06:00	98	112	81	97	241
06:00	06:15	128	89	115	111	
06:15	06:30	127	118	138	128	
06:30	06:45	220	222	227	223	
06:45	07:00	262	287	262	270	732
07:00	07:15	345	356	335	345	
07:15	07:30	448	432	462	447	
07:30	07:45	596	557	511	555	
07:45	08:00	591	554	544	563	1,910
08:00	08:15	437	500	467	468	
08:15	08:30	545	588	555	563	
08:30	08:45	546	516	518	527	
08:45	09:00	535	416	459	470	2,027
09:00	09:15	424	358	416	399	
09:15	09:30	522	376	422	440	
09:30	09:45	449	368	405	407	
09:45	10:00	478	380	485	448	1,694
10:00	10:15	443	375	445	421	
10:15	10:30	406	492	409	436	
10:30	10:45	495	440	448	461	
10:45	11:00	458	448	489	465	1,783
11:00	11:15	442	443	420	435	
11:15	11:30	523	448	515	495	
11:30	11:45	460	459	456	458	
11:45	12:00	490	433	474	466	1,854

TIME PERIOD (PM)		WEEKDAY TUES 24-Mar	WEEKDAY WED 25-Mar	WEEKDAY THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
12:00	12:15	494	471	498	488	
12:15	12:30	433	452	458	448	
12:30	12:45	518	513	472	501	
12:45	13:00	539	486	496	507	1,943
13:00	13:15	435	437	428	433	
13:15	13:30	526	497	494	506	
13:30	13:45	474	445	437	452	
13:45	14:00	447	418	449	438	1,829
14:00	14:15	452	419	429	433	
14:15	14:30	409	444	395	416	
14:30	14:45	499	421	456	459	
14:45	15:00	422	484	427	444	1,752
15:00	15:15	416	406	392	405	
15:15	15:30	495	489	502	495	
15:30	15:45	453	459	429	447	
15:45	16:00	423	432	477	444	1,791
16:00	16:15	480	463	466	470	
16:15	16:30	429	431	439	433	
16:30	16:45	430	431	443	435	
16:45	17:00	448	458	443	450	1,787
17:00	17:15	487	477	492	485	
17:15	17:30	460	462	443	455	
17:30	17:45	441	423	397	420	
17:45	18:00	476	489	435	467	1,827
18:00	18:15	427	395	357	393	
18:15	18:30	373	416	342	377	
18:30	18:45	390	407	374	390	
18:45	19:00	360	391	315	355	1,516
19:00	19:15	330	325	280	312	
19:15	19:30	307	313	280	300	
19:30	19:45	269	286	265	273	
19:45	20:00	281	248	245	258	1,143
20:00	20:15	223	283	254	253	
20:15	20:30	235	223	212	223	
20:30	20:45	182	219	170	190	
20:45	21:00	214	210	190	205	872
21:00	21:15	195	235	174	201	
21:15	21:30	177	170	148	165	
21:30	21:45	147	165	158	157	
21:45	22:00	133	114	117	121	644
22:00	22:15	115	114	113	114	
22:15	22:30	101	120	84	102	
22:30	22:45	93	87	100	93	
22:45	23:00	84	63	74	74	383
23:00	23:15	64	63	72	66	
23:15	23:30	54	51	46	50	
23:30	23:45	62	59	51	57	
23:45	00:00	48	46	48	47	221
DAILY COUNT		27,034	26,289	25,870	26,398	
PEAK HOUR TIME					07:30	
PEAK HOUR COUNT					2,148	
ESTIMATED K-FACTOR					8.1%	

Three-Day Approach Count Summary

Project Name: North Lake Boulevard Study
State Project No.: 2013008.018
Location: North Lake Boulevard at I-95 Northbound off Ramp
Direction: WESTBOUND (APPROACH)
Date: 3/24/2015-3/26/2015

TIME PERIOD (AM)		WEEKDAY TUES 24-Mar	WEED WED 25-Mar	THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
00:00	00:15	122	136	94	117	
00:15	00:30	108	74	114	99	
00:30	00:45	110	74	90	91	
00:45	01:00	102	80	88	90	397
01:00	01:15	64	72	64	67	
01:15	01:30	82	50	58	63	
01:30	01:45	88	56	44	63	
01:45	02:00	52	42	68	54	247
02:00	02:15	60	42	66	56	
02:15	02:30	60	44	40	48	
02:30	02:45	34	56	30	40	
02:45	03:00	54	32	58	48	192
03:00	03:15	42	42	28	37	
03:15	03:30	26	36	32	31	
03:30	03:45	52	36	44	44	
03:45	04:00	24	30	20	25	137
04:00	04:15	50	38	30	39	
04:15	04:30	74	58	56	63	
04:30	04:45	106	62	68	79	
04:45	05:00	70	92	76	79	260
05:00	05:15	110	110	132	117	
05:15	05:30	168	162	146	159	
05:30	05:45	202	202	176	193	
05:45	06:00	226	248	218	231	700
06:00	06:15	330	330	342	334	
06:15	06:30	438	470	436	448	
06:30	06:45	538	488	538	521	
06:45	07:00	636	686	658	660	1,963
07:00	07:15	756	768	804	776	
07:15	07:30	866	856	926	883	
07:30	07:45	944	1004	946	965	
07:45	08:00	1002	946	1100	1,016	3,639
08:00	08:15	1034	1160	1040	1,078	
08:15	08:30	882	872	952	902	
08:30	08:45	872	926	944	914	
08:45	09:00	966	902	882	917	3,811
09:00	09:15	790	840	870	833	
09:15	09:30	892	786	842	840	
09:30	09:45	828	790	838	819	
09:45	10:00	880	938	826	881	3,373
10:00	10:15	900	1050	1050	1,000	
10:15	10:30	996	1008	1108	1,037	
10:30	10:45	1040	1060	1018	1,039	
10:45	11:00	1136	1170	1104	1,137	4,213
11:00	11:15	1296	1304	1212	1,271	
11:15	11:30	1170	1198	1194	1,187	
11:30	11:45	1364	1160	1244	1,256	
11:45	12:00	1258	1334	1238	1,277	4,991

TIME PERIOD (PM)		WEEKDAY TUES 24-Mar	WED 25-Mar	THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
12:00	12:15	1258	1234	1366	1,286	
12:15	12:30	1410	1428	1524	1,454	
12:30	12:45	1282	1232	1502	1,339	
12:45	13:00	1284	1488	1342	1,371	5,450
13:00	13:15	1378	1344	1430	1,384	
13:15	13:30	1268	1306	1292	1,289	
13:30	13:45	1374	1434	1356	1,388	
13:45	14:00	1292	1168	1394	1,285	5,345
14:00	14:15	1338	1514	1464	1,439	
14:15	14:30	1448	1458	1656	1,521	
14:30	14:45	1364	1434	1528	1,442	
14:45	15:00	1408	1434	1332	1,391	5,793
15:00	15:15	1544	1336	1642	1,507	
15:15	15:30	1396	1300	1540	1,412	
15:30	15:45	1362	1330	1302	1,331	
15:45	16:00	1630	1438	1332	1,467	5,717
16:00	16:15	1506	1604	1456	1,522	
16:15	16:30	1318	1526	1300	1,381	
16:30	16:45	1596	1474	1672	1,581	
16:45	17:00	1528	1546	1682	1,585	6,069
17:00	17:15	1558	1606	1542	1,569	
17:15	17:30	1578	1440	1586	1,535	
17:30	17:45	1568	1422	1520	1,503	
17:45	18:00	1370	1282	1362	1,338	5,945
18:00	18:15	1216	1356	1298	1,290	
18:15	18:30	1074	1366	1176	1,205	
18:30	18:45	1102	1108	978	1,063	
18:45	19:00	924	968	954	949	4,507
19:00	19:15	1168	1006	838	1,004	
19:15	19:30	884	844	866	865	
19:30	19:45	778	872	790	813	
19:45	20:00	816	938	784	846	3,528
20:00	20:15	696	804	720	740	
20:15	20:30	792	736	658	729	
20:30	20:45	690	740	670	700	
20:45	21:00	542	698	642	627	2,796
21:00	21:15	576	584	556	572	
21:15	21:30	466	484	520	490	
21:30	21:45	450	450	474	458	
21:45	22:00	382	414	400	399	1,919
22:00	22:15	330	328	334	331	
22:15	22:30	336	324	304	321	
22:30	22:45	248	254	286	263	
22:45	23:00	248	230	290	256	1,171
23:00	23:15	182	198	258	213	
23:15	23:30	174	162	178	171	
23:30	23:45	134	174	144	151	
23:45	00:00	130	112	132	125	659
DAILY COUNT		72,296	72,848	73,324	72,823	
PEAK HOUR TIME					16:30	
PEAK HOUR COUNT					6,269	
ESTIMATED K-FACTOR					8.6%	

MECHANICAL COUNTS

PROJECT NAME: North Lake Boulevard Study

LOCATION: North Lake Boulevard at I-95 Northbound off Ramp

Notice to Proceed : 2013008.018

COUNT DATE: 3/24/2015-3/26/2015

NORTHBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	18	17	16	11	62
01:00 AM	10	10	11	8	40
02:00 AM	7	9	11	6	32
03:00 AM	7	7	6	7	28
04:00 AM	8	7	13	24	51
05:00 AM	23	19	39	46	126
06:00 AM	57	78	120	132	386
07:00 AM	159	218	263	233	873
08:00 AM	220	262	240	222	944
09:00 AM	186	168	162	185	702
10:00 AM	162	179	216	203	760
11:00 AM	198	222	222	226	869
12:00 PM	216	238	233	233	921
01:00 PM	229	215	237	225	906
02:00 PM	215	224	211	234	884
03:00 PM	235	249	288	280	1052
04:00 PM	283	265	273	303	1124
05:00 PM	306	289	287	266	1148
06:00 PM	241	235	221	187	884
07:00 PM	176	176	163	150	666
08:00 PM	141	131	117	109	497
09:00 PM	129	99	85	70	383
10:00 PM	64	55	40	37	197
11:00 PM	35	28	25	24	112
			24 Hour Total		13,646

SOUTHBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	0	0	0	0	0
01:00 AM	0	0	0	0	0
02:00 AM	0	0	0	0	0
03:00 AM	0	0	0	0	0
04:00 AM	0	0	0	0	0
05:00 AM	0	0	0	0	0
06:00 AM	0	0	0	0	0
07:00 AM	0	0	0	0	0
08:00 AM	0	0	0	0	0
09:00 AM	0	0	0	0	0
10:00 AM	0	0	0	0	0
11:00 AM	0	0	0	0	0
12:00 PM	0	0	0	0	0
01:00 PM	0	0	0	0	0
02:00 PM	0	0	0	0	0
03:00 PM	0	0	0	0	0
04:00 PM	0	0	0	0	0
05:00 PM	0	0	0	0	0
06:00 PM	0	0	0	0	0
07:00 PM	0	0	0	0	0
08:00 PM	0	0	0	0	0
09:00 PM	0	0	0	0	0
10:00 PM	0	0	0	0	0
11:00 PM	0	0	0	0	0
			24 Hour Total		0

EASTBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	45	36	28	27	136
01:00 AM	22	20	19	18	79
02:00 AM	17	15	18	11	61
03:00 AM	11	19	19	19	68
04:00 AM	14	19	27	43	103
05:00 AM	41	42	60	97	241
06:00 AM	111	128	223	270	732
07:00 AM	345	447	555	563	1910
08:00 AM	468	563	527	470	2027
09:00 AM	399	440	407	448	1694
10:00 AM	421	436	461	465	1783
11:00 AM	435	495	458	466	1854
12:00 PM	488	448	501	507	1943
01:00 PM	433	506	452	438	1829
02:00 PM	433	416	459	444	1752
03:00 PM	405	495	447	444	1791
04:00 PM	470	433	435	450	1787
05:00 PM	485	455	420	467	1827
06:00 PM	393	377	390	355	1516
07:00 PM	312	300	273	258	1143
08:00 PM	253	223	190	205	872
09:00 PM	201	165	157	121	644
10:00 PM	114	102	93	74	383
11:00 PM	66	50	57	47	221
			24 Hour Total		26,398

WESTBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	117	99	91	90	397
01:00 AM	67	63	63	54	247
02:00 AM	56	48	40	48	192
03:00 AM	37	31	44	25	137
04:00 AM	39	63	79	79	260
05:00 AM	117	159	193	231	700
06:00 AM	334	448	521	660	1963
07:00 AM	776	883	965	1016	3639
08:00 AM	1078	902	914	917	3811
09:00 AM	833	840	819	881	3373
10:00 AM	1000	1037	1039	1137	4213
11:00 AM	1271	1187	1256	1277	4991
12:00 PM	1286	1454	1339	1371	5450
01:00 PM	1384	1289	1388	1285	5345
02:00 PM	1439	1521	1442	1391	5793
03:00 PM	1507	1412	1331	1467	5717
04:00 PM	1522	1381	1581	1585	6069
05:00 PM	1569	1535	1503	1338	5945
06:00 PM	1290	1205	1063	949	4507
07:00 PM	1004	865	813	846	3528
08:00 PM	740	729	700	627	2796
09:00 PM	572	490	458	399	1919
10:00 PM	331	321	263	256	1171
11:00 PM	213	171	151	125	659
			24 Hour Total		72,823

ALL

TOTAL
596
365
285
233
414
1067
3081
6423
6782
5769
6756
7714
8314
8080
8429
8561
8980
8920
6906
5337
4165
2946
1750
993
112,866

DAILY TRAFFIC COUNT SUMMARY

NORTHBOUND

A.M. Peak Hour, Time: 07:30 AM Volume: 978
A.M. "K" Factor: 7.2% P.H.F. : 0.93

P.M. Peak Hour, Time: 04:45 PM Volume: 1,185
P.M. "K" Factor: 8.7% P.H.F. : 0.97

SOUTHBOUND

A.M. Peak Hour, Time: 12:00 AM Volume: 0
A.M. "K" Factor: #DIV/0! P.H.F. : #DIV/0!

P.M. Peak Hour, Time: 12:00 PM Volume: 0
P.M. "K" Factor: #DIV/0! P.H.F. : #DIV/0!

DAILY TRAFFIC COUNT SUMMARY

EASTBOUND

A.M. Peak Hour, Time: 07:30 AM Volume: 2,148
A.M. "K" Factor: 8.1% P.H.F. : 0.95

P.M. Peak Hour, Time: 12:30 PM Volume: 1,947
P.M. "K" Factor: 7.4% P.H.F. : 0.96

WESTBOUND

A.M. Peak Hour, Time: 11:45 AM Volume: 5,355
A.M. "K" Factor: 7.4% P.H.F. : 0.92

P.M. Peak Hour, Time: 04:30 PM Volume: 6,269
P.M. "K" Factor: 8.6% P.H.F. : 0.99

ALL APPROACHES:

A.M. Peak Hour, Time: 11:45 AM Volume: 8,171
A.M. "K" Factor: 7.2% P.H.F. : 0.95

P.M. Peak Hour, Time: 04:30 PM Volume: 9,264
P.M. "K" Factor: 8.2% P.H.F. : 0.98

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT :FDOT D4
JOB NO :TWO 18
PROJECT :I-95 Interchange PD&E
COUNTY :Palm Beach

File Name : Northlake Blvd at I-95 NB Ramp 03032015
Site Code :
Start Date : 3/3/2015
Page No : 1

Groups Printed- Autos - Heavy Vehicles - Bicycles - Pedestrians

	Northlake Blvd Eastbound				Northlake Blvd Westbound				I-95 NB off-Ramp Northbound					I-95 NB on-Ramp Southbound		
Start Time	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Peds	App. Total	Int. Total
06:00 AM	21	87	0	108	107	23	0	130	25	0	34	0	59	0	0	297
06:15 AM	43	112	0	155	140	31	0	171	24	0	46	0	70	0	0	396
06:30 AM	90	151	0	241	180	51	0	231	50	0	88	0	138	0	0	610
06:45 AM	85	214	0	299	232	41	0	273	82	0	92	0	174	0	0	746
Total	239	564	0	803	659	146	0	805	181	0	260	0	441	0	0	2049
07:00 AM	117	260	0	377	279	82	0	361	87	0	143	0	230	0	0	968
07:15 AM	136	331	0	467	350	79	0	429	95	0	223	0	318	0	0	1214
07:30 AM	200	285	0	485	426	96	0	522	95	0	282	0	377	0	0	1384
07:45 AM	197	387	0	584	376	99	0	475	123	0	241	0	364	0	0	1423
Total	650	1263	0	1913	1431	356	0	1787	400	0	889	0	1289	0	0	4989
08:00 AM	115	423	0	538	358	103	0	461	103	0	232	0	335	0	0	1334
08:15 AM	133	446	0	579	418	89	0	507	125	0	241	0	366	0	0	1452
08:30 AM	144	362	0	506	390	100	0	490	139	0	263	0	402	0	0	1398
08:45 AM	131	438	0	569	363	118	0	481	110	0	237	0	347	0	0	1397
Total	523	1669	0	2192	1529	410	0	1939	477	0	973	0	1450	0	0	5581
*** BREAK ***																
04:00 PM	86	329	0	415	528	155	0	683	145	0	228	0	373	0	0	1471
04:15 PM	108	394	0	502	502	165	0	667	180	0	228	1	409	0	0	1578
04:30 PM	99	391	0	490	516	206	0	722	140	0	193	1	334	0	0	1546
04:45 PM	53	391	0	444	564	124	0	688	116	0	194	0	310	0	0	1442
Total	346	1505	0	1851	2110	650	0	2760	581	0	843	2	1426	0	0	6037
05:00 PM	93	376	0	469	570	159	0	729	56	0	159	0	215	0	0	1413
05:15 PM	95	365	0	460	576	148	0	724	73	0	264	0	337	0	0	1521
05:30 PM	54	346	0	400	557	175	0	732	69	0	228	0	297	0	0	1429
05:45 PM	84	341	0	425	499	150	0	649	64	0	225	0	289	0	0	1363
Total	326	1428	0	1754	2202	632	0	2834	262	0	876	0	1138	0	0	5726
06:00 PM	135	373	0	508	455	145	0	600	126	0	198	0	324	0	0	1432
06:15 PM	100	338	0	438	435	138	0	573	134	0	182	0	316	0	0	1327
06:30 PM	76	254	0	330	426	134	0	560	136	0	222	0	358	0	0	1248
06:45 PM	78	276	0	354	392	115	0	507	178	0	174	0	352	0	0	1213
Total	389	1241	0	1630	1708	532	0	2240	574	0	776	0	1350	0	0	5220
Grand Total	2473	7670	0	10143	9639	2726	0	12365	2475	0	4617	2	7094	0	0	29602
Apprch %	24.4	75.6	0		78	22	0		34.9	0	65.1	0		0		
Total %	8.4	25.9	0	34.3	32.6	9.2	0	41.8	8.4	0	15.6	0	24	0	0	
Autos	2438	7522	0	9960	9493	2659	0	12152	2420	0	4534	0	6954	0	0	29066
% Autos	98.6	98.1	0	98.2	98.5	97.5	0	98.3	97.8	0	98.2	0	98	0	0	98.2
Heavy Vehicles	35	148	0	183	146	67	0	213	55	0	83	0	138	0	0	534
% Heavy Vehicles	1.4	1.9	0	1.8	1.5	2.5	0	1.7	2.2	0	1.8	0	1.9	0	0	1.8
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	2
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0

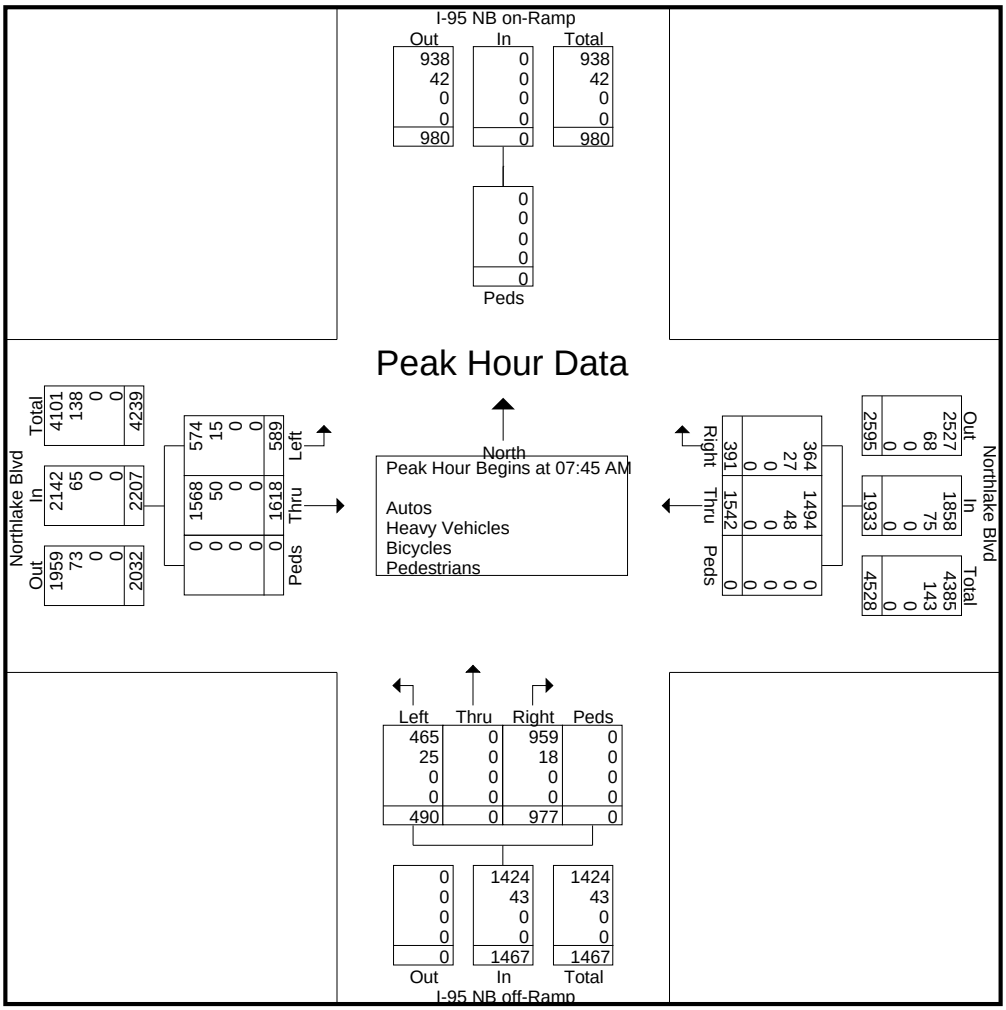
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT :FDOT D4
JOB NO :TWO 18
PROJECT :I-95 Interchange PD&E
COUNTY :Palm Beach

File Name : Northlake Blvd at I-95 NB Ramp 03032015
Site Code :
Start Date : 3/3/2015
Page No : 2

	Northlake Blvd Eastbound				Northlake Blvd Westbound				I-95 NB off-Ramp Northbound					I-95 NB on-Ramp Southbound		
Start Time	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																
Peak Hour for Entire Intersection Begins at 07:45 AM																
07:45 AM	197	387	0	584	376	99	0	475	123	0	241	0	364	0	0	1423
08:00 AM	115	423	0	538	358	103	0	461	103	0	232	0	335	0	0	1334
08:15 AM	133	446	0	579	418	89	0	507	125	0	241	0	366	0	0	1452
08:30 AM	144	362	0	506	390	100	0	490	139	0	263	0	402	0	0	1398
Total Volume	589	1618	0	2207	1542	391	0	1933	490	0	977	0	1467	0	0	5607
% App. Total	26.7	73.3	0		79.8	20.2	0		33.4	0	66.6	0		0		
PHF	.747	.907	.000	.945	.922	.949	.000	.953	.881	.000	.929	.000	.912	.000	.000	.965
Autos	574	1568	0	2142	1494	364	0	1858	465	0	959	0	1424	0	0	5424
% Autos	97.5	96.9	0	97.1	96.9	93.1	0	96.1	94.9	0	98.2	0	97.1	0	0	96.7
Heavy Vehicles	15	50	0	65	48	27	0	75	25	0	18	0	43	0	0	183
% Heavy Vehicles	2.5	3.1	0	2.9	3.1	6.9	0	3.9	5.1	0	1.8	0	2.9	0	0	3.3
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



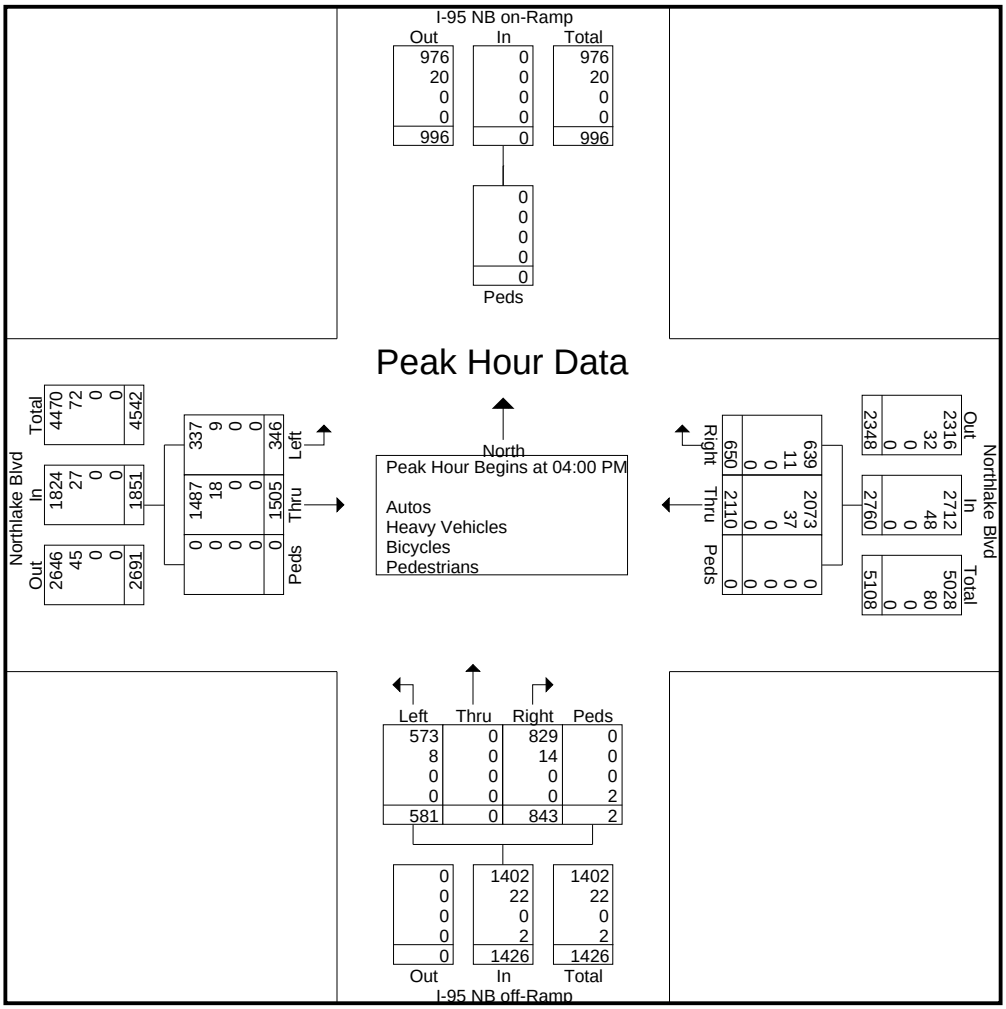
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT :FDOT D4
JOB NO :TWO 18
PROJECT :I-95 Interchange PD&E
COUNTY :Palm Beach

File Name : Northlake Blvd at I-95 NB Ramp 03032015
Site Code :
Start Date : 3/3/2015
Page No : 3

	Northlake Blvd Eastbound				Northlake Blvd Westbound				I-95 NB off-Ramp Northbound					I-95 NB on-Ramp Southbound		
Start Time	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																
Peak Hour for Entire Intersection Begins at 04:00 PM																
04:00 PM	86	329	0	415	528	155	0	683	145	0	228	0	373	0	0	1471
04:15 PM	108	394	0	502	502	165	0	667	180	0	228	1	409	0	0	1578
04:30 PM	99	391	0	490	516	206	0	722	140	0	193	1	334	0	0	1546
04:45 PM	53	391	0	444	564	124	0	688	116	0	194	0	310	0	0	1442
Total Volume	346	1505	0	1851	2110	650	0	2760	581	0	843	2	1426	0	0	6037
% App. Total	18.7	81.3	0		76.4	23.6	0		40.7	0	59.1	0.1		0		
PHF	.801	.955	.000	.922	.935	.789	.000	.956	.807	.000	.924	.500	.872	.000	.000	.956
Autos	337	1487	0	1824	2073	639	0	2712	573	0	829	0	1402	0	0	5938
% Autos	97.4	98.8	0	98.5	98.2	98.3	0	98.3	98.6	0	98.3	0	98.3	0	0	98.4
Heavy Vehicles	9	18	0	27	37	11	0	48	8	0	14	0	22	0	0	97
% Heavy Vehicles	2.6	1.2	0	1.5	1.8	1.7	0	1.7	1.4	0	1.7	0	1.5	0	0	1.6
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	2
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	100	0.1	0	0	0.0



CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT :FDOT D4
JOB NO :TWO 18
PROJECT :I-95 Interchange PD&E
COUNTY :Palm Beach

File Name : Northlake Blvd at I-95 NB Ramp 03032015
Site Code :
Start Date : 3/3/2015
Page No : 1

Groups Printed- Heavy Vehicles

	Northlake Blvd Eastbound				Northlake Blvd Westbound				I-95 NB off-Ramp Northbound					I-95 NB on-Ramp Southbound		
Start Time	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Peds	App. Total	Int. Total
06:00 AM	1	6	0	7	3	0	0	3	1	0	2	0	3	0	0	13
06:15 AM	3	4	0	7	3	0	0	3	3	0	4	0	7	0	0	17
06:30 AM	1	4	0	5	5	6	0	11	2	0	6	0	8	0	0	24
06:45 AM	0	6	0	6	6	2	0	8	3	0	2	0	5	0	0	19
Total	5	20	0	25	17	8	0	25	9	0	14	0	23	0	0	73
07:00 AM	1	6	0	7	3	3	0	6	5	0	8	0	13	0	0	26
07:15 AM	0	7	0	7	4	3	0	7	2	0	2	0	4	0	0	18
07:30 AM	1	6	0	7	14	1	0	15	2	0	4	0	6	0	0	28
07:45 AM	2	15	0	17	12	6	0	18	4	0	3	0	7	0	0	42
Total	4	34	0	38	33	13	0	46	13	0	17	0	30	0	0	114
08:00 AM	2	11	0	13	7	9	0	16	11	0	3	0	14	0	0	43
08:15 AM	4	19	0	23	15	4	0	19	5	0	2	0	7	0	0	49
08:30 AM	7	5	0	12	14	8	0	22	5	0	10	0	15	0	0	49
08:45 AM	1	15	0	16	6	6	0	12	1	0	12	0	13	0	0	41
Total	14	50	0	64	42	27	0	69	22	0	27	0	49	0	0	182
*** BREAK ***																
04:00 PM	5	8	0	13	13	2	0	15	1	0	6	0	7	0	0	35
04:15 PM	2	3	0	5	9	3	0	12	4	0	7	0	11	0	0	28
04:30 PM	2	5	0	7	11	5	0	16	2	0	1	0	3	0	0	26
04:45 PM	0	2	0	2	4	1	0	5	1	0	0	0	1	0	0	8
Total	9	18	0	27	37	11	0	48	8	0	14	0	22	0	0	97
05:00 PM	0	1	0	1	1	3	0	4	0	0	2	0	2	0	0	7
05:15 PM	1	5	0	6	0	1	0	1	0	0	3	0	3	0	0	10
05:30 PM	0	5	0	5	1	1	0	2	0	0	1	0	1	0	0	8
05:45 PM	0	4	0	4	2	2	0	4	0	0	1	0	1	0	0	9
Total	1	15	0	16	4	7	0	11	0	0	7	0	7	0	0	34
06:00 PM	1	4	0	5	3	0	0	3	0	0	2	0	2	0	0	10
06:15 PM	0	4	0	4	3	0	0	3	3	0	1	0	4	0	0	11
06:30 PM	1	1	0	2	5	0	0	5	0	0	0	0	0	0	0	7
06:45 PM	0	2	0	2	2	1	0	3	0	0	1	0	1	0	0	6
Total	2	11	0	13	13	1	0	14	3	0	4	0	7	0	0	34
Grand Total	35	148	0	183	146	67	0	213	55	0	83	0	138	0	0	534
Apprch %	19.1	80.9	0		68.5	31.5	0		39.9	0	60.1	0		0		
Total %	6.6	27.7	0	34.3	27.3	12.5	0	39.9	10.3	0	15.5	0	25.8	0	0	

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT :FDOT D4
JOB NO :TWO 18
PROJECT :I-95 Interchange PD&E
COUNTY :Palm Beach

File Name : Northlake Blvd at I-95 NB Ramp 03042015
Site Code :
Start Date : 3/4/2015
Page No : 1

Groups Printed- Autos - Heavy Vehicles - Bicycles - Pedestrians

	Northlake Blvd Eastbound				Northlake Blvd Westbound				I-95 NB off-Ramp Northbound					I-95 NB on-Ramp Southbound		
Start Time	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Peds	App. Total	Int. Total
06:00 AM	21	81	0	102	104	34	0	138	26	0	37	0	63	0	0	303
06:15 AM	46	105	0	151	111	36	0	147	30	0	58	0	88	0	0	386
06:30 AM	77	146	0	223	216	44	0	260	45	0	115	0	160	0	0	643
06:45 AM	88	182	0	270	205	54	0	259	74	0	133	0	207	0	0	736
Total	232	514	0	746	636	168	0	804	175	0	343	0	518	0	0	2068
07:00 AM	106	257	0	363	263	86	0	349	77	0	168	0	245	0	0	957
07:15 AM	130	332	0	462	353	96	0	449	93	0	223	0	316	0	0	1227
07:30 AM	183	353	0	536	358	107	0	465	104	0	253	0	357	0	0	1358
07:45 AM	192	394	0	586	365	98	0	463	128	0	272	0	400	0	0	1449
Total	611	1336	0	1947	1339	387	0	1726	402	0	916	0	1318	0	0	4991
08:00 AM	125	351	0	476	378	88	0	466	115	0	204	1	320	0	0	1262
08:15 AM	116	450	0	566	394	108	1	503	101	0	223	0	324	0	0	1393
08:30 AM	136	395	0	531	370	102	0	472	129	0	219	0	348	0	0	1351
08:45 AM	147	426	0	573	317	87	0	404	124	0	221	1	346	0	0	1323
Total	524	1622	0	2146	1459	385	1	1845	469	0	867	2	1338	0	0	5329
*** BREAK ***																
04:00 PM	108	368	0	476	512	171	0	683	142	0	216	0	358	0	0	1517
04:15 PM	101	368	0	469	510	173	0	683	141	0	218	0	359	0	0	1511
04:30 PM	131	348	0	479	535	180	0	715	162	0	220	0	382	0	0	1576
04:45 PM	114	419	0	533	574	161	0	735	158	0	268	0	426	0	0	1694
Total	454	1503	0	1957	2131	685	0	2816	603	0	922	0	1525	0	0	6298
05:00 PM	131	390	0	521	614	175	0	789	147	0	248	0	395	0	0	1705
05:15 PM	127	381	0	508	543	151	0	694	195	0	313	0	508	0	0	1710
05:30 PM	135	356	0	491	485	185	0	670	165	0	210	0	375	0	0	1536
05:45 PM	83	340	0	423	513	159	0	672	172	0	236	0	408	0	0	1503
Total	476	1467	0	1943	2155	670	0	2825	679	0	1007	0	1686	0	0	6454
06:00 PM	119	313	0	432	541	144	0	685	145	1	226	0	372	0	0	1489
06:15 PM	136	303	0	439	438	136	0	574	129	0	141	0	270	0	0	1283
06:30 PM	92	301	0	393	433	130	0	563	99	1	150	0	250	0	0	1206
06:45 PM	78	284	0	362	409	114	0	523	86	0	155	0	241	0	0	1126
Total	425	1201	0	1626	1821	524	0	2345	459	2	672	0	1133	0	0	5104
Grand Total	2722	7643	0	10365	9541	2819	1	12361	2787	2	4727	2	7518	0	0	30244
Apprch %	26.3	73.7	0		77.2	22.8	0		37.1	0	62.9	0		0		
Total %	9	25.3	0	34.3	31.5	9.3	0	40.9	9.2	0	15.6	0	24.9	0	0	
Autos	2669	7467	0	10136	9373	2755	0	12128	2727	1	4627	0	7355	0	0	29619
% Autos	98.1	97.7	0	97.8	98.2	97.7	0	98.1	97.8	50	97.9	0	97.8	0	0	97.9
Heavy Vehicles	53	176	0	229	168	64	0	232	60	1	100	0	161	0	0	622
% Heavy Vehicles	1.9	2.3	0	2.2	1.8	2.3	0	1.9	2.2	50	2.1	0	2.1	0	0	2.1
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	1	1	0	0	0	2	2	0	0	3
% Pedestrians	0	0	0	0	0	0	100	0	0	0	0	100	0	0	0	0

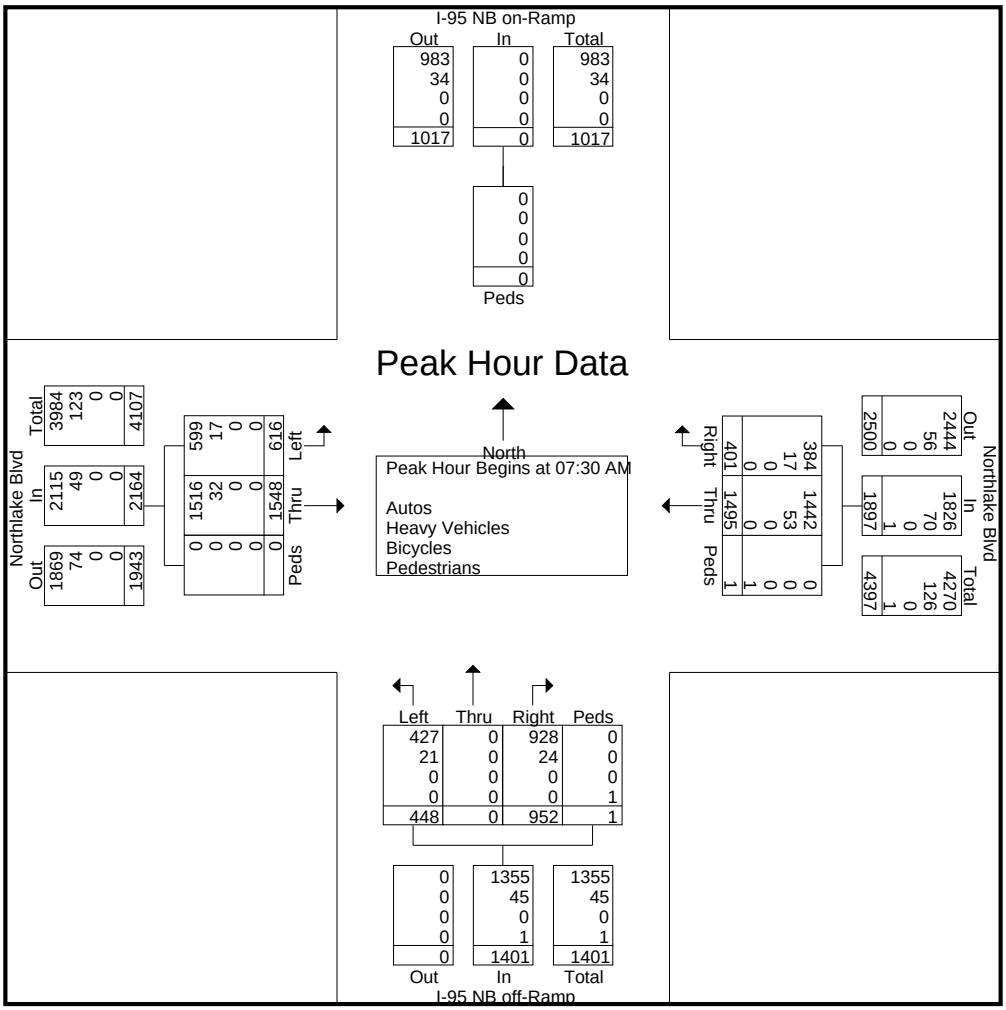
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT :FDOT D4
JOB NO :TWO 18
PROJECT :I-95 Interchange PD&E
COUNTY :Palm Beach

File Name : Northlake Blvd at I-95 NB Ramp 03042015
Site Code :
Start Date : 3/4/2015
Page No : 2

	Northlake Blvd Eastbound				Northlake Blvd Westbound				I-95 NB off-Ramp Northbound					I-95 NB on-Ramp Southbound		
Start Time	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																
Peak Hour for Entire Intersection Begins at 07:30 AM																
07:30 AM	183	353	0	536	358	107	0	465	104	0	253	0	357	0	0	1358
07:45 AM	192	394	0	586	365	98	0	463	128	0	272	0	400	0	0	1449
08:00 AM	125	351	0	476	378	88	0	466	115	0	204	1	320	0	0	1262
08:15 AM	116	450	0	566	394	108	1	503	101	0	223	0	324	0	0	1393
Total Volume	616	1548	0	2164	1495	401	1	1897	448	0	952	1	1401	0	0	5462
% App. Total	28.5	71.5	0		78.8	21.1	0.1		32	0	68	0.1		0		
PHF	.802	.860	.000	.923	.949	.928	.250	.943	.875	.000	.875	.250	.876	.000	.000	.942
Autos	599	1516	0	2115	1442	384	0	1826	427	0	928	0	1355	0	0	5296
% Autos	97.2	97.9	0	97.7	96.5	95.8	0	96.3	95.3	0	97.5	0	96.7	0	0	97.0
Heavy Vehicles	17	32	0	49	53	17	0	70	21	0	24	0	45	0	0	164
% Heavy Vehicles	2.8	2.1	0	2.3	3.5	4.2	0	3.7	4.7	0	2.5	0	3.2	0	0	3.0
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	1	1	0	0	0	1	1	0	0	2
% Pedestrians	0	0	0	0	0	0	100	0.1	0	0	0	100	0.1	0	0	0.0



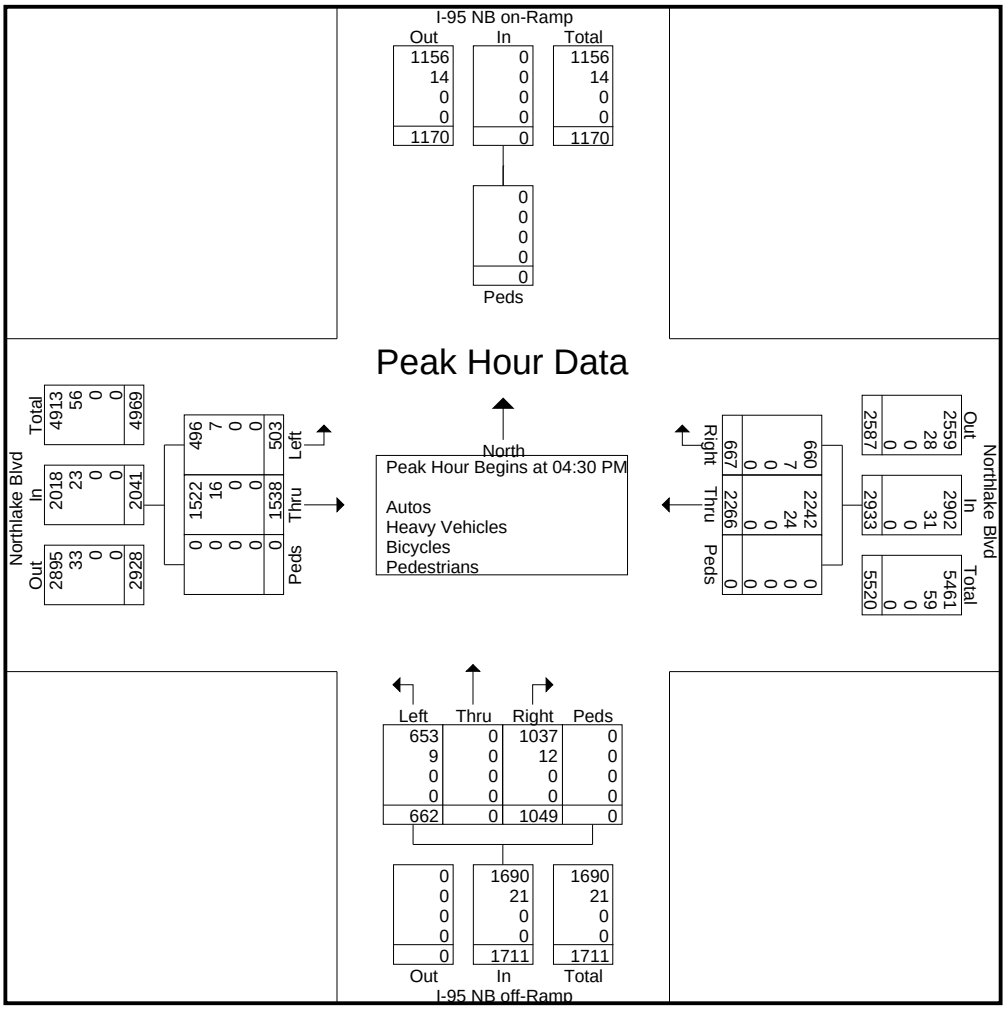
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT :FDOT D4
JOB NO :TWO 18
PROJECT :I-95 Interchange PD&E
COUNTY :Palm Beach

File Name : Northlake Blvd at I-95 NB Ramp 03042015
Site Code :
Start Date : 3/4/2015
Page No : 3

	Northlake Blvd Eastbound				Northlake Blvd Westbound				I-95 NB off-Ramp Northbound					I-95 NB on-Ramp Southbound		
Start Time	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																
Peak Hour for Entire Intersection Begins at 04:30 PM																
04:30 PM	131	348	0	479	535	180	0	715	162	0	220	0	382	0	0	1576
04:45 PM	114	419	0	533	574	161	0	735	158	0	268	0	426	0	0	1694
05:00 PM	131	390	0	521	614	175	0	789	147	0	248	0	395	0	0	1705
05:15 PM	127	381	0	508	543	151	0	694	195	0	313	0	508	0	0	1710
Total Volume	503	1538	0	2041	2266	667	0	2933	662	0	1049	0	1711	0	0	6685
% App. Total	24.6	75.4	0		77.3	22.7	0		38.7	0	61.3	0		0		
PHF	.960	.918	.000	.957	.923	.926	.000	.929	.849	.000	.838	.000	.842	.000	.000	.977
Autos	496	1522	0	2018	2242	660	0	2902	653	0	1037	0	1690	0	0	6610
% Autos	98.6	99.0	0	98.9	98.9	99.0	0	98.9	98.6	0	98.9	0	98.8	0	0	98.9
Heavy Vehicles	7	16	0	23	24	7	0	31	9	0	12	0	21	0	0	75
% Heavy Vehicles	1.4	1.0	0	1.1	1.1	1.0	0	1.1	1.4	0	1.1	0	1.2	0	0	1.1
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT :FDOT D4
JOB NO :TWO 18
PROJECT :I-95 Interchange PD&E
COUNTY :Palm Beach

File Name : Northlake Blvd at I-95 NB Ramp 03042015
Site Code :
Start Date : 3/4/2015
Page No : 1

Groups Printed- Heavy Vehicles

	Northlake Blvd Eastbound				Northlake Blvd Westbound				I-95 NB off-Ramp Northbound					I-95 NB on-Ramp Southbound		
Start Time	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Peds	App. Total	Int. Total
06:00 AM	1	3	0	4	2	0	0	2	0	0	1	0	1	0	0	7
06:15 AM	2	6	0	8	0	1	0	1	4	0	5	0	9	0	0	18
06:30 AM	2	2	0	4	4	1	0	5	0	0	5	0	5	0	0	14
06:45 AM	2	3	0	5	8	2	0	10	4	0	1	0	5	0	0	20
Total	7	14	0	21	14	4	0	18	8	0	12	0	20	0	0	59
07:00 AM	2	5	0	7	7	5	0	12	4	0	3	0	7	0	0	26
07:15 AM	5	10	0	15	10	5	0	15	1	0	7	0	8	0	0	38
07:30 AM	6	7	0	13	17	7	0	24	9	0	3	0	12	0	0	49
07:45 AM	5	7	0	12	15	6	0	21	4	0	6	0	10	0	0	43
Total	18	29	0	47	49	23	0	72	18	0	19	0	37	0	0	156
08:00 AM	4	4	0	8	14	2	0	16	4	0	5	0	9	0	0	33
08:15 AM	2	14	0	16	7	2	0	9	4	0	10	0	14	0	0	39
08:30 AM	2	7	0	9	10	4	0	14	5	0	9	0	14	0	0	37
08:45 AM	6	8	0	14	8	7	0	15	0	0	10	0	10	0	0	39
Total	14	33	0	47	39	15	0	54	13	0	34	0	47	0	0	148
*** BREAK ***																
04:00 PM	1	21	0	22	14	3	0	17	2	0	6	0	8	0	0	47
04:15 PM	2	26	0	28	8	3	0	11	2	0	3	0	5	0	0	44
04:30 PM	3	7	0	10	4	0	0	4	5	0	4	0	9	0	0	23
04:45 PM	1	3	0	4	10	4	0	14	1	0	3	0	4	0	0	22
Total	7	57	0	64	36	10	0	46	10	0	16	0	26	0	0	136
05:00 PM	2	3	0	5	8	0	0	8	3	0	3	0	6	0	0	19
05:15 PM	1	3	0	4	2	3	0	5	0	0	2	0	2	0	0	11
05:30 PM	0	6	0	6	4	1	0	5	2	0	2	0	4	0	0	15
05:45 PM	0	8	0	8	5	1	0	6	0	0	4	0	4	0	0	18
Total	3	20	0	23	19	5	0	24	5	0	11	0	16	0	0	63
06:00 PM	2	8	0	10	4	1	0	5	1	1	4	0	6	0	0	21
06:15 PM	0	5	0	5	4	2	0	6	3	0	0	0	3	0	0	14
06:30 PM	0	6	0	6	3	2	0	5	1	0	4	0	5	0	0	16
06:45 PM	2	4	0	6	0	2	0	2	1	0	0	0	1	0	0	9
Total	4	23	0	27	11	7	0	18	6	1	8	0	15	0	0	60
Grand Total	53	176	0	229	168	64	0	232	60	1	100	0	161	0	0	622
Apprch %	23.1	76.9	0		72.4	27.6	0		37.3	0.6	62.1	0		0		
Total %	8.5	28.3	0	36.8	27	10.3	0	37.3	9.6	0.2	16.1	0	25.9	0	0	

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT :FDOT D4
JOB NO :TWO 18
PROJECT :I-95 Interchange PD&E
COUNTY :Palm Beach

File Name : Northlake Blvd at I-95 NB Ramp 03052015
Site Code :
Start Date : 3/5/2015
Page No : 1

Groups Printed- Autos - Heavy Vehicles - Bicycles - Pedestrians

	Northlake Blvd Eastbound				Northlake Blvd Westbound				I-95 NB off-Ramp Northbound					I-95 NB on-Ramp Southbound		
Start Time	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Peds	App. Total	Int. Total
06:00 AM	36	92	0	128	124	41	0	165	21	0	41	0	62	0	0	355
06:15 AM	53	118	0	171	143	47	0	190	28	0	61	0	89	0	0	450
06:30 AM	65	169	0	234	185	52	0	237	46	0	108	0	154	0	0	625
06:45 AM	94	218	0	312	205	72	1	278	77	0	142	0	219	0	0	809
Total	248	597	0	845	657	212	1	870	172	0	352	0	524	0	0	2239
07:00 AM	106	248	0	354	294	75	0	369	99	0	163	1	263	0	0	986
07:15 AM	95	310	0	405	333	84	0	417	94	0	188	1	283	0	0	1105
07:30 AM	111	266	0	377	340	104	0	444	114	0	265	0	379	0	0	1200
07:45 AM	132	349	2	483	377	73	0	450	108	0	234	3	345	0	0	1278
Total	444	1173	2	1619	1344	336	0	1680	415	0	850	5	1270	0	0	4569
08:00 AM	122	333	0	455	386	89	0	475	105	0	255	0	360	0	0	1290
08:15 AM	125	329	0	454	411	123	1	535	115	0	256	0	371	0	0	1360
08:30 AM	148	289	1	438	375	128	1	504	130	0	329	0	459	0	0	1401
08:45 AM	142	308	2	452	329	104	0	433	119	0	257	0	376	0	0	1261
Total	537	1259	3	1799	1501	444	2	1947	469	0	1097	0	1566	0	0	5312
*** BREAK ***																
04:00 PM	75	363	0	438	428	158	0	586	149	0	235	2	386	0	0	1410
04:15 PM	85	378	0	463	473	137	0	610	173	0	234	0	407	0	0	1480
04:30 PM	89	376	0	465	503	149	0	652	78	0	116	0	194	0	0	1311
04:45 PM	106	392	0	498	520	185	0	705	135	0	220	1	356	0	0	1559
Total	355	1509	0	1864	1924	629	0	2553	535	0	805	3	1343	0	0	5760
05:00 PM	117	379	0	496	533	181	0	714	185	0	256	0	441	0	0	1651
05:15 PM	137	395	0	532	556	188	1	745	173	0	223	0	396	0	0	1673
05:30 PM	96	342	0	438	574	168	0	742	171	0	238	0	409	0	0	1589
05:45 PM	91	312	0	403	521	153	0	674	154	0	236	0	390	0	0	1467
Total	441	1428	0	1869	2184	690	1	2875	683	0	953	0	1636	0	0	6380
06:00 PM	92	349	0	441	370	112	0	482	134	0	148	0	282	0	0	1205
06:15 PM	83	342	0	425	569	139	0	708	105	0	129	0	234	0	0	1367
06:30 PM	101	298	0	399	428	128	0	556	115	0	173	0	288	0	0	1243
06:45 PM	61	269	0	330	352	126	0	478	107	0	156	0	263	0	0	1071
Total	337	1258	0	1595	1719	505	0	2224	461	0	606	0	1067	0	0	4886
Grand Total	2362	7224	5	9591	9329	2816	4	12149	2735	0	4663	8	7406	0	0	29146
Apprch %	24.6	75.3	0.1		76.8	23.2	0		36.9	0	63	0.1		0		
Total %	8.1	24.8	0	32.9	32	9.7	0	41.7	9.4	0	16	0	25.4	0	0	
Autos	2323	7096	0	9419	9168	2754	0	11922	2667	0	4566	0	7233	0	0	28574
% Autos	98.3	98.2	0	98.2	98.3	97.8	0	98.1	97.5	0	97.9	0	97.7	0	0	98
Heavy Vehicles	39	128	0	167	161	62	0	223	68	0	97	0	165	0	0	555
% Heavy Vehicles	1.7	1.8	0	1.7	1.7	2.2	0	1.8	2.5	0	2.1	0	2.2	0	0	1.9
Bicycles	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1
% Bicycles	0	0	0	0	0	0	25	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	5	5	0	0	3	3	0	0	0	8	8	0	0	16
% Pedestrians	0	0	100	0.1	0	0	75	0	0	0	0	100	0.1	0	0	0.1

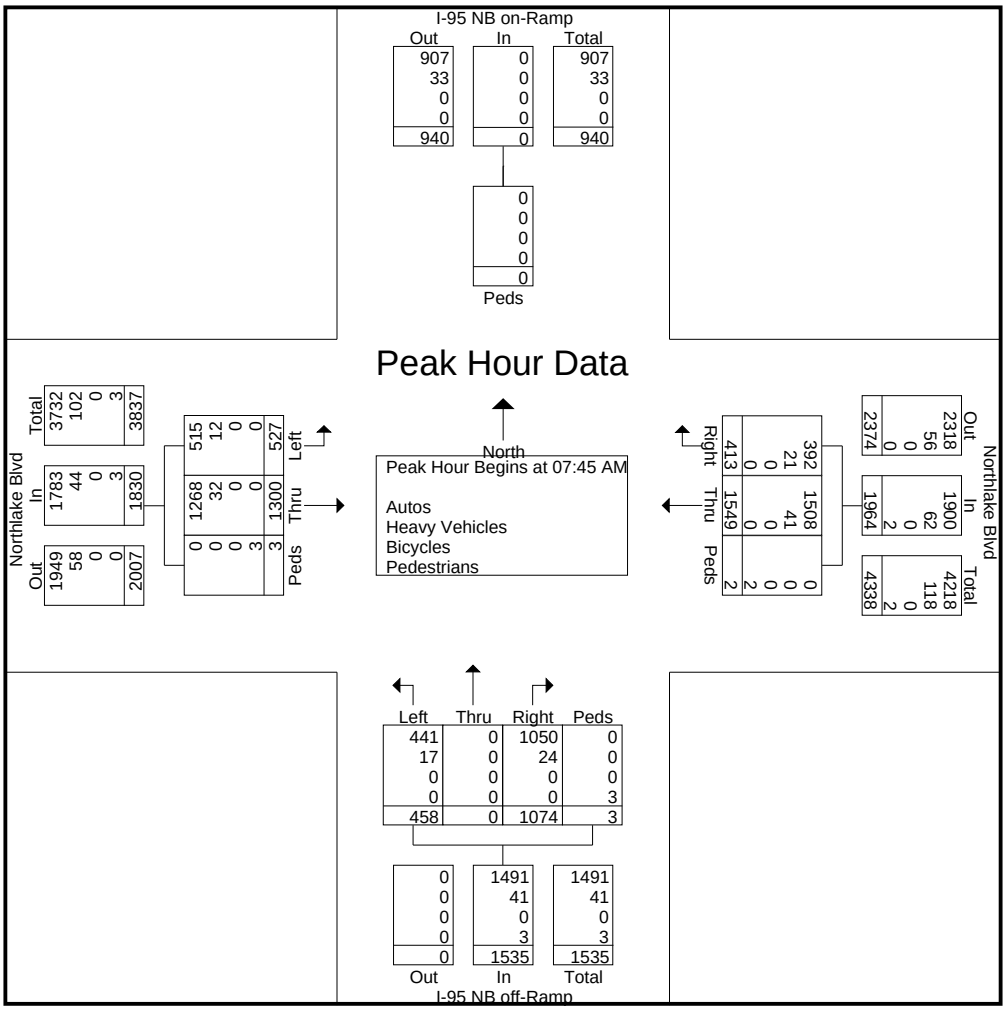
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT :FDOT D4
JOB NO :TWO 18
PROJECT :I-95 Interchange PD&E
COUNTY :Palm Beach

File Name : Northlake Blvd at I-95 NB Ramp 03052015
Site Code :
Start Date : 3/5/2015
Page No : 2

	Northlake Blvd Eastbound				Northlake Blvd Westbound				I-95 NB off-Ramp Northbound					I-95 NB on-Ramp Southbound		
Start Time	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																
Peak Hour for Entire Intersection Begins at 07:45 AM																
07:45 AM	132	349	2	483	377	73	0	450	108	0	234	3	345	0	0	1278
08:00 AM	122	333	0	455	386	89	0	475	105	0	255	0	360	0	0	1290
08:15 AM	125	329	0	454	411	123	1	535	115	0	256	0	371	0	0	1360
08:30 AM	148	289	1	438	375	128	1	504	130	0	329	0	459	0	0	1401
Total Volume	527	1300	3	1830	1549	413	2	1964	458	0	1074	3	1535	0	0	5329
% App. Total	28.8	71	0.2		78.9	21	0.1		29.8	0	70	0.2		0		
PHF	.890	.931	.375	.947	.942	.807	.500	.918	.881	.000	.816	.250	.836	.000	.000	.951
Autos	515	1268	0	1783	1508	392	0	1900	441	0	1050	0	1491	0	0	5174
% Autos	97.7	97.5	0	97.4	97.4	94.9	0	96.7	96.3	0	97.8	0	97.1	0	0	97.1
Heavy Vehicles	12	32	0	44	41	21	0	62	17	0	24	0	41	0	0	147
% Heavy Vehicles	2.3	2.5	0	2.4	2.6	5.1	0	3.2	3.7	0	2.2	0	2.7	0	0	2.8
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	3	3	0	0	2	2	0	0	0	3	3	0	0	8
% Pedestrians	0	0	100	0.2	0	0	100	0.1	0	0	0	100	0.2	0	0	0.2



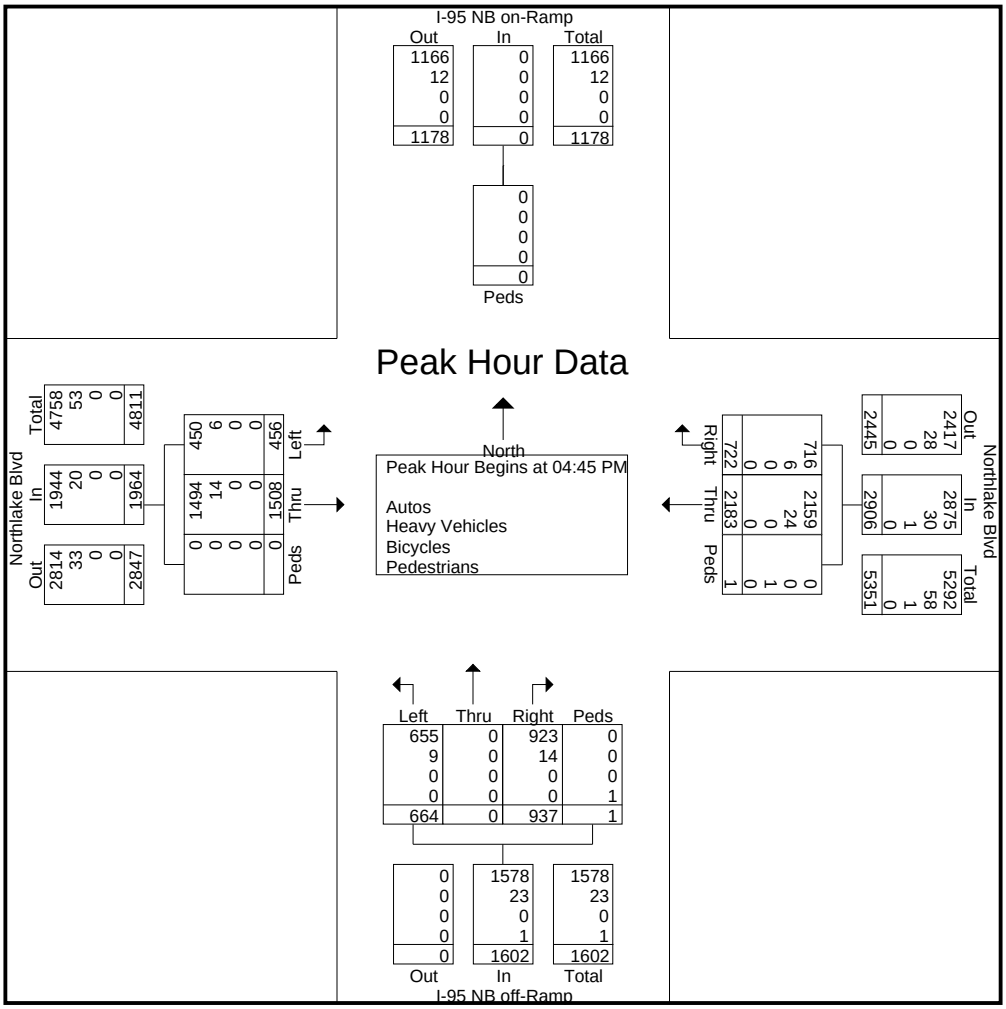
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT :FDOT D4
JOB NO :TWO 18
PROJECT :I-95 Interchange PD&E
COUNTY :Palm Beach

File Name : Northlake Blvd at I-95 NB Ramp 03052015
Site Code :
Start Date : 3/5/2015
Page No : 3

	Northlake Blvd Eastbound				Northlake Blvd Westbound				I-95 NB off-Ramp Northbound					I-95 NB on-Ramp Southbound		
Start Time	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																
Peak Hour for Entire Intersection Begins at 04:45 PM																
04:45 PM	106	392	0	498	520	185	0	705	135	0	220	1	356	0	0	1559
05:00 PM	117	379	0	496	533	181	0	714	185	0	256	0	441	0	0	1651
05:15 PM	137	395	0	532	556	188	1	745	173	0	223	0	396	0	0	1673
05:30 PM	96	342	0	438	574	168	0	742	171	0	238	0	409	0	0	1589
Total Volume	456	1508	0	1964	2183	722	1	2906	664	0	937	1	1602	0	0	6472
% App. Total	23.2	76.8	0		75.1	24.8	0		41.4	0	58.5	0.1		0		
PHF	.832	.954	.000	.923	.951	.960	.250	.975	.897	.000	.915	.250	.908	.000	.000	.967
Autos	450	1494	0	1944	2159	716	0	2875	655	0	923	0	1578	0	0	6397
% Autos	98.7	99.1	0	99.0	98.9	99.2	0	98.9	98.6	0	98.5	0	98.5	0	0	98.8
Heavy Vehicles	6	14	0	20	24	6	0	30	9	0	14	0	23	0	0	73
% Heavy Vehicles	1.3	0.9	0	1.0	1.1	0.8	0	1.0	1.4	0	1.5	0	1.4	0	0	1.1
Bicycles	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1
% Bicycles	0	0	0	0	0	0	100	0.0	0	0	0	0	0	0	0	0.0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	100	0.1	0	0	0.0



CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT :FDOT D4
JOB NO :TWO 18
PROJECT :I-95 Interchange PD&E
COUNTY :Palm Beach

File Name : Northlake Blvd at I-95 NB Ramp 03052015
Site Code :
Start Date : 3/5/2015
Page No : 1

Groups Printed- Heavy Vehicles

	Northlake Blvd Eastbound				Northlake Blvd Westbound				I-95 NB off-Ramp Northbound					I-95 NB on-Ramp Southbound		
Start Time	Left	Thru	Peds	App. Total	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Peds	App. Total	Int. Total
06:00 AM	0	5	0	5	1	2	0	3	2	0	4	0	6	0	0	14
06:15 AM	0	4	0	4	3	4	0	7	3	0	3	0	6	0	0	17
06:30 AM	1	4	0	5	7	2	0	9	2	0	3	0	5	0	0	19
06:45 AM	3	4	0	7	6	2	0	8	4	0	6	0	10	0	0	25
Total	4	17	0	21	17	10	0	27	11	0	16	0	27	0	0	75
07:00 AM	0	11	0	11	10	3	0	13	6	0	6	0	12	0	0	36
07:15 AM	1	10	0	11	10	6	0	16	5	0	3	0	8	0	0	35
07:30 AM	3	7	0	10	11	3	0	14	5	0	5	0	10	0	0	34
07:45 AM	3	9	0	12	5	4	0	9	4	0	3	0	7	0	0	28
Total	7	37	0	44	36	16	0	52	20	0	17	0	37	0	0	133
08:00 AM	2	0	0	2	7	5	0	12	6	0	8	0	14	0	0	28
08:15 AM	4	11	0	15	17	5	0	22	3	0	3	0	6	0	0	43
08:30 AM	3	12	0	15	12	7	0	19	4	0	10	0	14	0	0	48
08:45 AM	5	7	0	12	15	4	0	19	4	0	5	0	9	0	0	40
Total	14	30	0	44	51	21	0	72	17	0	26	0	43	0	0	159
*** BREAK ***																
04:00 PM	1	7	0	8	6	1	0	7	2	0	4	0	6	0	0	21
04:15 PM	1	11	0	12	11	2	0	13	4	0	2	0	6	0	0	31
04:30 PM	4	2	0	6	5	1	0	6	0	0	3	0	3	0	0	15
04:45 PM	0	3	0	3	8	1	0	9	3	0	5	0	8	0	0	20
Total	6	23	0	29	30	5	0	35	9	0	14	0	23	0	0	87
05:00 PM	1	3	0	4	8	3	0	11	2	0	5	0	7	0	0	22
05:15 PM	5	4	0	9	4	2	0	6	3	0	1	0	4	0	0	19
05:30 PM	0	4	0	4	4	0	0	4	1	0	3	0	4	0	0	12
05:45 PM	1	5	0	6	5	2	0	7	1	0	1	0	2	0	0	15
Total	7	16	0	23	21	7	0	28	7	0	10	0	17	0	0	68
06:00 PM	0	2	0	2	0	1	0	1	2	0	4	0	6	0	0	9
06:15 PM	0	2	0	2	0	0	0	0	0	0	3	0	3	0	0	5
06:30 PM	0	0	0	0	3	1	0	4	0	0	4	0	4	0	0	8
06:45 PM	1	1	0	2	3	1	0	4	2	0	3	0	5	0	0	11
Total	1	5	0	6	6	3	0	9	4	0	14	0	18	0	0	33
Grand Total	39	128	0	167	161	62	0	223	68	0	97	0	165	0	0	555
Apprch %	23.4	76.6	0		72.2	27.8	0		41.2	0	58.8	0		0		
Total %	7	23.1	0	30.1	29	11.2	0	40.2	12.3	0	17.5	0	29.7	0	0	

North Lake Boulevard at Sunrise Drive

County: 93
Station: 3251
Description: SUNRISE DR N OF NORTHLAKE BLVD
Start Date: 03/24/2015
Start Time: 0000

	Direction: N					Direction: S					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	4	8	1	4	17	10	14	13	9	46	63
0100	2	3	2	2	9	7	6	1	7	21	30
0200	0	0	0	2	2	4	4	1	2	11	13
0300	0	1	0	1	2	1	3	1	9	14	16
0400	1	1	2	5	9	2	3	4	4	13	22
0500	2	2	0	5	9	5	8	6	21	40	49
0600	5	6	10	15	36	20	20	48	46	134	170
0700	7	19	27	20	73	51	100	75	82	308	381
0800	28	21	19	22	90	102	89	90	86	367	457
0900	29	28	19	24	100	94	68	56	85	303	403
1000	20	24	30	16	90	82	45	68	64	259	349
1100	28	26	22	13	89	64	71	58	67	260	349
1200	42	23	25	28	118	81	75	83	70	309	427
1300	28	18	21	15	82	84	84	83	50	301	383
1400	24	34	22	20	100	65	91	70	69	295	395
1500	33	38	32	23	126	73	109	105	73	360	486
1600	29	21	19	30	99	82	83	59	100	324	423
1700	24	25	23	26	98	77	80	75	89	321	419
1800	25	19	17	14	75	86	66	66	59	277	352
1900	16	18	13	7	54	46	50	40	43	179	233
2000	9	15	9	22	55	47	47	34	31	159	214
2100	12	13	17	11	53	22	35	34	44	135	188
2200	6	12	3	11	32	29	25	11	11	76	108
2300	5	7	7	1	20	10	16	9	8	43	63
24-Hour Totals:					1438					4555	5993

Peak Volume Information

	Direction: N		Direction: S		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	830	98	800	367	800	457
P.M.	1500	126	1515	369	1515	491
Daily	1500	126	1515	369	1515	491

Generated by SPS 5.0.45P

County: 93
Station: 3251
Description: SUNRISE DR N OF NORTHLAKE BLVD
Start Date: 03/25/2015
Start Time: 0000

	Direction: N					Direction: S					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	1	6	5	10	22	6	11	6	10	33	55
0100	2	4	1	2	9	4	6	5	1	16	25
0200	0	0	2	0	2	5	3	5	0	13	15
0300	0	0	3	7	10	1	0	4	5	10	20
0400	0	1	1	6	8	0	1	5	9	15	23
0500	2	0	3	10	15	6	5	13	20	44	59
0600	6	8	17	10	41	29	19	50	51	149	190
0700	7	14	19	20	60	76	57	105	93	331	391
0800	19	21	27	24	91	92	89	71	92	344	435
0900	26	21	15	21	83	52	73	53	83	261	344
1000	16	16	20	18	70	61	61	67	45	234	304
1100	11	15	30	33	89	48	59	79	89	275	364
1200	19	24	25	26	94	81	81	70	82	314	408
1300	19	28	19	14	80	60	61	60	65	246	326
1400	27	26	28	27	108	81	72	81	66	300	408
1500	42	32	36	29	139	75	95	111	86	367	506
1600	23	26	19	43	111	95	79	81	95	350	461
1700	28	35	30	19	112	84	94	79	83	340	452
1800	26	20	15	13	74	78	76	68	54	276	350
1900	17	13	13	18	61	61	44	45	64	214	275
2000	18	14	16	14	62	52	43	60	37	192	254
2100	15	12	5	6	38	54	35	39	29	157	195
2200	7	15	5	10	37	28	30	19	14	91	128
2300	16	5	10	7	38	28	14	11	8	61	99
24-Hour Totals:					1454					4633	6087

Peak Volume Information

	Direction: N		Direction: S		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	815	98	730	379	730	458
P.M.	1500	139	1515	387	1515	507
Daily	1500	139	1515	387	1515	507

Generated by SPS 5.0.45P

County: 93
Station: 3251
Description: SUNRISE DR N OF NORTHLAKE BLVD
Start Date: 03/26/2015
Start Time: 0000

	Direction: N					Direction: S					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	1	6	0	4	11	10	8	1	7	26	37
0100	3	5	2	4	14	10	7	7	3	27	41
0200	6	2	2	0	10	5	5	2	1	13	23
0300	0	2	0	2	4	2	3	0	3	8	12
0400	3	2	4	2	11	1	6	17	4	28	39
0500	2	2	0	8	12	10	4	3	20	37	49
0600	3	5	9	8	25	21	33	46	49	149	174
0700	16	16	16	47	95	50	82	94	78	304	399
0800	48	41	24	34	147	76	93	78	84	331	478
0900	13	20	28	26	87	64	65	79	61	269	356
1000	22	23	22	20	87	62	63	69	69	263	350
1100	29	20	28	24	101	65	61	83	67	276	377
1200	19	33	15	25	92	67	65	42	81	255	347
1300	32	25	23	29	109	75	67	67	84	293	402
1400	27	24	30	19	100	70	94	63	73	300	400
1500	37	29	44	32	142	86	104	89	80	359	501
1600	19	25	23	14	81	69	65	80	67	281	362
1700	43	30	34	22	129	93	117	86	79	375	504
1800	24	19	14	13	70	99	81	62	44	286	356
1900	21	10	12	12	55	55	51	43	38	187	242
2000	18	10	10	13	51	46	38	31	31	146	197
2100	8	19	15	9	51	42	37	43	33	155	206
2200	7	10	5	4	26	43	34	25	24	126	152
2300	7	5	4	3	19	16	13	7	10	46	65
24-Hour Totals:					1529					4540	6069

Peak Volume Information

	Direction: N		Direction: S		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	745	160	730	341	730	493
P.M.	1500	142	1715	381	1700	504
Daily	745	160	1715	381	1700	504

Generated by SPS 5.0.45P

County: 93
Station: 3255
Description: SUNRISE BLVD S OF NORTHLAKE BLVD
Start Date: 04/21/2015
Start Time: 0000

	Direction: N					Direction: S					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	3	4	2	2	11	2	3	2	1	8	19
0100	1	3	2	1	7	2	2	1	2	7	14
0200	2	1	6	4	13	3	4	6	0	13	26
0300	2	0	2	0	4	2	2	3	2	9	13
0400	1	3	6	2	12	1	3	2	4	10	22
0500	1	1	7	4	13	8	12	13	12	45	58
0600	9	13	29	26	77	19	33	36	47	135	212
0700	40	38	54	61	193	50	61	69	80	260	453
0800	54	51	55	50	210	79	73	96	82	330	540
0900	64	47	62	52	225	79	77	83	93	332	557
1000	56	64	65	59	244	101	114	111	108	434	678
1100	65	68	69	76	278	111	100	121	137	469	747
1200	70	78	77	67	292	117	132	128	128	505	797
1300	85	71	63	64	283	131	139	123	142	535	818
1400	61	60	67	55	243	136	120	133	107	496	739
1500	40	56	64	64	224	92	100	111	117	420	644
1600	72	57	67	56	252	115	111	90	138	454	706
1700	58	62	58	47	225	110	98	92	111	411	636
1800	60	37	38	35	170	98	84	81	73	336	506
1900	47	27	32	38	144	63	73	59	55	250	394
2000	35	24	20	23	102	55	53	42	43	193	295
2100	18	19	12	12	61	32	31	27	18	108	169
2200	10	10	8	7	35	10	10	7	9	36	71
2300	8	10	4	0	22	6	6	2	0	14	36
24-Hour Totals:					3340					5810	9150

Peak Volume Information

	Direction: N		Direction: S		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	845	223	830	334	815	550
P.M.	1215	307	1315	540	1215	826
Daily	1215	307	1315	540	1215	826

Generated by SPS 5.0.45P

County: 93
Station: 3255
Description: SUNRISE BLVD S OF NORTHLAKE BLVD
Start Date: 04/22/2015
Start Time: 0000

	Direction: N					Direction: S					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	2	4	4	1	11	3	2	1	0	6	17
0100	3	1	2	0	6	4	2	1	4	11	17
0200	2	2	1	0	5	1	3	0	1	5	10
0300	1	0	0	0	1	0	1	0	2	3	4
0400	0	1	5	5	11	3	1	5	2	11	22
0500	2	2	1	5	10	3	8	14	10	35	45
0600	6	10	14	23	53	8	18	32	40	98	151
0700	26	58	45	60	189	41	53	73	75	242	431
0800	54	66	54	63	237	82	84	73	96	335	572
0900	58	52	54	66	230	92	93	91	76	352	582
1000	73	72	71	62	278	102	123	138	125	488	766
1100	63	68	64	70	265	122	126	118	121	487	752
1200	89	79	64	86	318	140	126	142	133	541	859
1300	59	111	76	74	320	128	149	137	120	534	854
1400	66	71	63	66	266	138	138	132	138	546	812
1500	55	53	68	70	246	140	127	114	139	520	766
1600	68	74	60	88	290	127	133	103	127	490	780
1700	62	62	68	59	251	164	136	121	103	524	775
1800	50	75	41	34	200	110	108	92	97	407	607
1900	35	43	27	38	143	95	62	71	70	298	441
2000	47	40	27	15	129	42	57	61	45	205	334
2100	28	29	16	13	86	49	39	38	32	158	244
2200	13	14	11	8	46	19	8	8	4	39	85
2300	4	9	5	2	20	7	10	2	2	21	41
24-Hour Totals:					3611					6356	9967

Peak Volume Information

	Direction: N		Direction: S		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	815	241	845	372	845	599
P.M.	1245	332	1230	552	1245	879
Daily	1245	332	1230	552	1245	879

Generated by SPS 5.0.45P

County: 93
Station: 3255
Description: SUNRISE BLVD S OF NORTHLAKE BLVD
Start Date: 04/23/2015
Start Time: 0000

	Direction: N					Direction: S					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	0	0	0	0	0	0	0	0	0	0	0
0100	0	0	0	0	0	0	0	0	0	0	0
0200	0	0	0	14	14	0	0	0	10	10	24
0300	0	4	0	3	7	0	2	3	3	8	15
0400	0	1	2	7	10	1	1	2	2	6	16
0500	2	1	1	9	13	5	8	12	15	40	53
0600	4	10	13	35	62	15	21	37	37	110	172
0700	28	34	38	55	155	55	53	60	72	240	395
0800	71	52	54	56	233	86	83	79	104	352	585
0900	50	77	47	66	240	84	78	77	94	333	573
1000	45	53	66	72	236	97	98	111	114	420	656
1100	62	69	77	74	282	110	113	100	132	455	737
1200	76	72	92	79	319	147	123	138	137	545	864
1300	78	79	74	63	294	140	133	152	135	560	854
1400	69	61	64	74	268	157	147	124	142	570	838
1500	60	37	55	67	219	99	82	102	106	389	608
1600	67	78	60	62	267	122	115	126	78	441	708
1700	57	61	65	62	245	137	106	94	94	431	676
1800	49	58	38	43	188	121	102	88	79	390	578
1900	38	53	30	31	152	68	70	81	59	278	430
2000	36	36	25	24	121	67	59	53	44	223	344
2100	22	14	23	13	72	44	31	30	26	131	203
2200	13	8	10	8	39	19	12	12	9	52	91
2300	9	8	13	6	36	11	4	8	2	25	61
24-Hour Totals:					3472					6009	9481

Peak Volume Information

	Direction: N		Direction: S		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	830	237	800	352	800	585
P.M.	1230	328	1330	591	1230	876
Daily	1230	328	1330	591	1230	876

Generated by SPS 5.0.45P

County: 93
Station: 3253
Description: NORTHLAKE BLVD E OF SUNRISE DR
Start Date: 03/24/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	70	43	41	40	194	62	56	49	41	208	402
0100	32	40	28	18	118	37	30	44	17	128	246
0200	33	23	21	13	90	29	19	20	23	91	181
0300	14	15	21	44	94	23	14	17	14	68	162
0400	15	20	33	45	113	11	26	50	34	121	234
0500	34	55	53	100	242	46	59	99	83	287	529
0600	119	119	196	301	735	149	176	290	287	902	1637
0700	328	468	588	624	2008	367	425	525	624	1941	3949
0800	514	531	533	574	2152	556	521	467	522	2066	4218
0900	440	496	419	497	1852	438	397	498	485	1818	3670
1000	448	439	455	481	1823	400	508	491	625	2024	3847
1100	507	536	496	564	2103	612	670	652	696	2630	4733
1200	519	521	502	566	2108	651	733	686	709	2779	4887
1300	527	517	556	559	2159	683	612	735	636	2666	4825
1400	483	517	522	496	2018	687	730	703	659	2779	4797
1500	507	488	590	508	2093	821	695	771	840	3127	5220
1600	485	522	532	500	2039	814	711	824	797	3146	5185
1700	510	567	539	482	2098	811	842	976	774	3403	5501
1800	470	461	428	394	1753	721	673	595	540	2529	4282
1900	379	328	279	320	1306	568	492	425	403	1888	3194
2000	246	252	231	227	956	414	398	377	322	1511	2467
2100	201	204	176	177	758	307	274	247	193	1021	1779
2200	156	125	85	95	461	159	186	143	115	603	1064
2300	72	63	61	63	259	102	87	74	64	327	586
24-Hour Totals:					29532					38063	67595

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	730	2257	730	2226	730	4483
P.M.	1245	2166	1645	3426	1645	5542
Daily	730	2257	1645	3426	1645	5542

Generated by SPS 5.0.45P

County: 93
Station: 3253
Description: NORTHLAKE BLVD E OF SUNRISE DR
Start Date: 03/25/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	47	32	42	24	145	59	64	32	46	201	346
0100	22	13	23	18	76	31	22	32	21	106	182
0200	29	22	19	13	83	17	17	25	19	78	161
0300	10	19	23	27	79	13	27	13	16	69	148
0400	20	14	25	47	106	10	22	25	43	100	206
0500	44	38	49	87	218	55	45	93	98	291	509
0600	96	139	215	310	760	157	183	268	315	923	1683
0700	371	500	594	624	2089	386	402	510	645	1943	4032
0800	565	549	614	522	2250	554	529	456	543	2082	4332
0900	405	413	414	427	1659	512	463	455	448	1878	3537
1000	425	491	424	487	1827	548	575	577	653	2353	4180
1100	612	527	562	548	2249	630	670	664	661	2625	4874
1200	503	615	603	587	2308	620	763	674	686	2743	5051
1300	567	492	597	604	2260	703	664	765	697	2829	5089
1400	477	708	617	662	2464	628	831	681	764	2904	5368
1500	546	538	615	687	2386	749	681	760	835	3025	5411
1600	599	534	506	505	2144	769	888	827	824	3308	5452
1700	513	606	479	469	2067	801	898	862	762	3323	5390
1800	509	461	399	460	1829	716	808	647	599	2770	4599
1900	408	338	333	306	1385	540	518	459	468	1985	3370
2000	272	282	220	234	1008	487	374	415	364	1640	2648
2100	219	232	186	175	812	345	278	260	212	1095	1907
2200	140	132	103	96	471	198	188	162	136	684	1155
2300	74	77	61	62	274	114	94	76	50	334	608
24-Hour Totals:					30949					39289	70238

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	745	2352	730	2238	730	4570
P.M.	1415	2533	1645	3385	1530	5687
Daily	1415	2533	1645	3385	1530	5687

Generated by SPS 5.0.45P

County: 93
Station: 3253
Description: NORTHLAKE BLVD E OF SUNRISE DR
Start Date: 03/26/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	43	45	26	42	156	69	53	39	52	213	369
0100	36	21	24	23	104	35	26	18	25	104	208
0200	16	19	13	13	61	33	22	21	16	92	153
0300	12	17	23	29	81	22	18	13	14	67	148
0400	13	16	30	36	95	10	25	31	31	97	192
0500	39	41	54	99	233	41	71	79	106	297	530
0600	108	148	218	311	785	143	194	305	320	962	1747
0700	339	496	574	636	2045	363	492	508	584	1947	3992
0800	526	527	640	505	2198	667	532	547	470	2216	4414
0900	416	509	490	516	1931	493	493	504	444	1934	3865
1000	490	462	417	544	1913	487	559	574	575	2195	4108
1100	523	484	573	533	2113	636	644	727	712	2719	4832
1200	501	543	519	531	2094	649	794	778	761	2982	5076
1300	562	549	501	605	2217	758	779	667	733	2937	5154
1400	521	592	650	663	2426	648	760	723	709	2840	5266
1500	589	479	555	575	2198	750	815	808	751	3124	5322
1600	493	564	560	461	2078	770	773	818	890	3251	5329
1700	548	565	500	499	2112	842	866	969	724	3401	5513
1800	488	437	395	423	1743	758	767	571	486	2582	4325
1900	332	325	284	309	1250	468	430	446	413	1757	3007
2000	276	285	235	219	1015	423	355	314	317	1409	2424
2100	175	207	180	149	711	298	290	234	192	1014	1725
2200	138	128	111	87	464	199	164	139	155	657	1121
2300	90	79	68	53	290	120	108	87	57	372	662
24-Hour Totals:					30313					39169	69482

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	745	2329	745	2330	745	4659
P.M.	1415	2494	1645	3567	1645	5641
Daily	1415	2494	1645	3567	1645	5641

Generated by SPS 5.0.45P

County: 93
Station: 3257
Description: NORTHLAKE BLVD W OF SUNRISE DR
Start Date: 03/24/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	108	80	92	64	344	122	108	110	102	442	786
0100	86	60	56	58	260	64	82	88	52	286	546
0200	48	34	38	30	150	60	60	34	54	208	358
0300	26	48	80	30	184	42	26	52	24	144	328
0400	46	48	98	84	276	50	74	106	70	300	576
0500	100	110	168	228	606	110	168	202	226	706	1312
0600	220	358	598	666	1842	330	438	538	636	1942	3784
0700	968	1030	1124	1154	4276	756	866	944	1002	3568	7844
0800	1076	1084	1162	956	4278	1034	882	872	966	3754	8032
0900	992	840	1042	876	3750	790	892	828	880	3390	7140
1000	920	860	1054	920	3754	900	996	1040	1136	4072	7826
1100	1034	970	976	1106	4086	1296	1170	1364	1258	5088	9174
1200	956	880	1094	966	3896	1258	1410	1282	1284	5234	9130
1300	1080	1058	986	1040	4164	1378	1268	1374	1292	5312	9476
1400	986	1022	1062	896	3966	1338	1448	1364	1408	5558	9524
1500	1058	1032	1030	964	4084	1544	1396	1362	1630	5932	10016
1600	986	906	980	1006	3878	1506	1318	1596	1528	5948	9826
1700	1082	1038	988	924	4032	1558	1578	1568	1370	6074	10106
1800	922	896	786	754	3358	1216	1074	1102	924	4316	7674
1900	740	562	582	532	2416	1168	884	778	816	3646	6062
2000	504	430	420	424	1778	696	792	690	542	2720	4498
2100	418	384	342	328	1472	576	466	450	382	1874	3346
2200	292	206	212	158	868	330	336	248	248	1162	2030
2300	138	118	118	96	470	182	174	134	130	620	1090
24-Hour Totals:					58188					72296	130484

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	745	4476	730	3862	730	8300
P.M.	1230	4198	1630	6260	1630	10366
Daily	745	4476	1630	6260	1630	10366

Generated by SPS 5.0.45P

County: 93
Station: 3257
Description: NORTHLAKE BLVD W OF SUNRISE DR
Start Date: 03/25/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	70	86	90	38	284	136	74	74	80	364	648
0100	66	36	38	44	184	72	50	56	42	220	404
0200	46	40	28	22	136	42	44	56	32	174	310
0300	32	50	66	44	192	42	36	36	30	144	336
0400	24	36	90	84	234	38	58	62	92	250	484
0500	70	110	148	200	528	110	162	202	248	722	1250
0600	248	342	624	702	1916	330	470	488	686	1974	3890
0700	1008	1114	1140	1136	4398	768	856	1004	946	3574	7972
0800	1120	1080	1114	922	4236	1160	872	926	902	3860	8096
0900	748	794	874	792	3208	840	786	790	938	3354	6562
1000	912	852	972	904	3640	1050	1008	1060	1170	4288	7928
1100	882	992	924	958	3756	1304	1198	1160	1334	4996	8752
1200	968	1018	1074	970	4030	1234	1428	1232	1488	5382	9412
1300	1008	986	942	918	3854	1344	1306	1434	1168	5252	9106
1400	906	1092	1094	954	4046	1514	1458	1434	1434	5840	9886
1500	974	964	966	1102	4006	1336	1300	1330	1438	5404	9410
1600	950	926	1082	964	3922	1604	1526	1474	1546	6150	10072
1700	1002	1076	1008	916	4002	1606	1440	1422	1282	5750	9752
1800	952	850	818	792	3412	1356	1366	1108	968	4798	8210
1900	768	624	570	568	2530	1006	844	872	938	3660	6190
2000	562	444	482	446	1934	804	736	740	698	2978	4912
2100	472	394	328	286	1480	584	484	450	414	1932	3412
2200	274	232	186	162	854	328	324	254	230	1136	1990
2300	150	148	160	92	550	198	162	174	112	646	1196
24-Hour Totals:					57332					72848	130180

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	715	4510	730	3982	715	8476
P.M.	1630	4124	1615	6152	1630	10190
Daily	715	4510	1615	6152	1630	10190

Generated by SPS 5.0.45P

County: 93
Station: 3257
Description: NORTHLAKE BLVD W OF SUNRISE DR
Start Date: 03/26/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	94	72	74	68	308	94	114	90	88	386	694
0100	50	44	56	48	198	64	58	44	68	234	432
0200	38	34	20	26	118	66	40	30	58	194	312
0300	34	46	68	30	178	28	32	44	20	124	302
0400	28	48	52	78	206	30	56	68	76	230	436
0500	92	86	176	234	588	132	146	176	218	672	1260
0600	230	370	604	660	1864	342	436	538	658	1974	3838
0700	972	1040	1122	1206	4340	804	926	946	1100	3776	8116
0800	1050	1060	1074	922	4106	1040	952	944	882	3818	7924
0900	944	860	1088	950	3842	870	842	838	826	3376	7218
1000	854	904	1028	942	3728	1050	1108	1018	1104	4280	8008
1100	1038	1026	948	1080	4092	1212	1194	1244	1238	4888	8980
1200	964	964	1068	960	3956	1366	1524	1502	1342	5734	9690
1300	990	898	908	1042	3838	1430	1292	1356	1394	5472	9310
1400	866	990	1142	996	3994	1464	1656	1528	1332	5980	9974
1500	1018	936	1026	926	3906	1642	1540	1302	1332	5816	9722
1600	920	926	1036	1050	3932	1456	1300	1672	1682	6110	10042
1700	1036	1160	1008	948	4152	1542	1586	1520	1362	6010	10162
1800	830	834	820	700	3184	1298	1176	978	954	4406	7590
1900	672	504	570	586	2332	838	866	790	784	3278	5610
2000	578	434	476	358	1846	720	658	670	642	2690	4536
2100	382	390	304	266	1342	556	520	474	400	1950	3292
2200	240	230	186	184	840	334	304	286	290	1214	2054
2300	168	134	134	110	546	258	178	144	132	712	1258
24-Hour Totals:					57436					73324	130760

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	730	4438	730	4038	730	8476
P.M.	1630	4282	1630	6482	1630	10764
Daily	730	4438	1630	6482	1630	10764

Generated by SPS 5.0.45P

Three-Day Approach Count Summary

Project Name: North Lake Boulevard Study
Project No.: 2013008.018
Location: North Lake Boulevard at Sunrise Drive
Direction: NORTHBOUND (APPROACH)
Date: 3/24/2015-3/26/2015

TIME PERIOD (AM)		WEEKDAY TUES 24-Mar	WEED 25-Mar	THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
00:00	00:15	3	2	0	2	
00:15	00:30	4	4	0	3	
00:30	00:45	2	4	0	2	
00:45	01:00	2	1	0	1	7
01:00	01:15	1	3	0	1	
01:15	01:30	3	1	0	1	
01:30	01:45	2	2	0	1	
01:45	02:00	1	0	0	0	4
02:00	02:15	2	2	0	1	
02:15	02:30	1	2	0	1	
02:30	02:45	6	1	0	2	
02:45	03:00	4	0	14	6	11
03:00	03:15	2	1	0	1	
03:15	03:30	0	0	4	1	
03:30	03:45	2	0	0	1	
03:45	04:00	0	0	3	1	4
04:00	04:15	1	0	0	0	
04:15	04:30	3	1	1	2	
04:30	04:45	6	5	2	4	
04:45	05:00	2	5	7	5	11
05:00	05:15	1	2	2	2	
05:15	05:30	1	2	1	1	
05:30	05:45	7	1	1	3	
05:45	06:00	4	5	9	6	12
06:00	06:15	9	6	4	6	
06:15	06:30	13	10	10	11	
06:30	06:45	29	14	13	19	
06:45	07:00	26	23	35	28	64
07:00	07:15	40	26	28	31	
07:15	07:30	38	58	34	43	
07:30	07:45	54	45	38	46	
07:45	08:00	61	60	55	59	179
08:00	08:15	54	54	71	60	
08:15	08:30	51	66	52	56	
08:30	08:45	55	54	54	54	
08:45	09:00	50	63	56	56	227
09:00	09:15	64	58	50	57	
09:15	09:30	47	52	77	59	
09:30	09:45	62	54	47	54	
09:45	10:00	52	66	66	61	232
10:00	10:15	56	73	45	58	
10:15	10:30	64	72	53	63	
10:30	10:45	65	71	66	67	
10:45	11:00	59	62	72	64	253
11:00	11:15	65	63	62	63	
11:15	11:30	68	68	69	68	
11:30	11:45	69	64	77	70	
11:45	12:00	76	70	74	73	275

TIME PERIOD (PM)		WEEKDAY TUES 24-Mar	WED 25-Mar	THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
12:00	12:15	70	89	76	78	
12:15	12:30	78	79	72	76	
12:30	12:45	77	64	92	78	
12:45	13:00	67	86	79	77	310
13:00	13:15	85	59	78	74	
13:15	13:30	71	111	79	87	
13:30	13:45	63	76	74	71	
13:45	14:00	64	74	63	67	299
14:00	14:15	61	66	69	65	
14:15	14:30	60	71	61	64	
14:30	14:45	67	63	64	65	
14:45	15:00	55	66	74	65	259
15:00	15:15	40	55	60	52	
15:15	15:30	56	53	37	49	
15:30	15:45	64	68	55	62	
15:45	16:00	64	70	67	67	230
16:00	16:15	72	68	67	69	
16:15	16:30	57	74	78	70	
16:30	16:45	67	60	60	62	
16:45	17:00	56	88	62	69	270
17:00	17:15	58	62	57	59	
17:15	17:30	62	62	61	62	
17:30	17:45	58	68	65	64	
17:45	18:00	47	59	62	56	240
18:00	18:15	60	50	49	53	
18:15	18:30	37	75	58	57	
18:30	18:45	38	41	38	39	
18:45	19:00	35	34	43	37	186
19:00	19:15	47	35	38	40	
19:15	19:30	27	43	53	41	
19:30	19:45	32	27	30	30	
19:45	20:00	38	38	31	36	146
20:00	20:15	35	47	36	39	
20:15	20:30	24	40	36	33	
20:30	20:45	20	27	25	24	
20:45	21:00	23	15	24	21	117
21:00	21:15	18	28	22	23	
21:15	21:30	19	29	14	21	
21:30	21:45	12	16	23	17	
21:45	22:00	12	13	13	13	73
22:00	22:15	10	13	13	12	
22:15	22:30	10	14	8	11	
22:30	22:45	8	11	10	10	
22:45	23:00	7	8	8	8	40
23:00	23:15	8	4	9	7	
23:15	23:30	10	9	8	9	
23:30	23:45	4	5	13	7	
23:45	00:00	0	2	6	3	26
DAILY COUNT		3,340	3,611	3,472	3,474	
PEAK HOUR TIME					12:30	
PEAK HOUR COUNT					316	
ESTIMATED K-FACTOR					9.1%	

Three-Day Approach Count Summary

Project Name: North Lake Boulevard Study
State Project No.: 2013008.018
Location: North Lake Boulevard at Sunrise Drive
Direction: SOUTHBOUND (APPROACH)
Date: 3/24/2015-3/26/2015

TIME PERIOD (AM)		WEEKDAY TUES 24-Mar	WEEKDAY WED 25-Mar	WEEKDAY THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
00:00	00:15	10	6	10	9	
00:15	00:30	14	11	8	11	
00:30	00:45	13	6	1	7	
00:45	01:00	9	10	7	9	35
01:00	01:15	7	4	10	7	
01:15	01:30	6	6	7	6	
01:30	01:45	1	5	7	4	
01:45	02:00	7	1	3	4	21
02:00	02:15	4	5	5	5	
02:15	02:30	4	3	5	4	
02:30	02:45	1	5	2	3	
02:45	03:00	2	0	1	1	12
03:00	03:15	1	1	2	1	
03:15	03:30	3	0	3	2	
03:30	03:45	1	4	0	2	
03:45	04:00	9	5	3	6	11
04:00	04:15	2	0	1	1	
04:15	04:30	3	1	6	3	
04:30	04:45	4	5	17	9	
04:45	05:00	4	9	4	6	19
05:00	05:15	5	6	10	7	
05:15	05:30	8	5	4	6	
05:30	05:45	6	13	3	7	
05:45	06:00	21	20	20	20	40
06:00	06:15	20	29	21	23	
06:15	06:30	20	19	33	24	
06:30	06:45	48	50	46	48	
06:45	07:00	46	51	49	49	144
07:00	07:15	51	76	50	59	
07:15	07:30	100	57	82	80	
07:30	07:45	75	105	94	91	
07:45	08:00	82	93	78	84	314
08:00	08:15	102	92	76	90	
08:15	08:30	89	89	93	90	
08:30	08:45	90	71	78	80	
08:45	09:00	86	92	84	87	347
09:00	09:15	94	52	64	70	
09:15	09:30	68	73	65	69	
09:30	09:45	56	53	79	63	
09:45	10:00	85	83	61	76	278
10:00	10:15	82	61	62	68	
10:15	10:30	45	61	63	56	
10:30	10:45	68	67	69	68	
10:45	11:00	64	45	69	59	252
11:00	11:15	64	48	65	59	
11:15	11:30	71	59	61	64	
11:30	11:45	58	79	83	73	
11:45	12:00	67	89	67	74	270

TIME PERIOD (PM)		WEEKDAY TUES 42087	WEEKDAY WED 42088	WEEKDAY THUR 42089	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
12:00	12:15	81	81	67	76	
12:15	12:30	75	81	65	74	
12:30	12:45	83	70	42	65	
12:45	13:00	70	82	81	78	293
13:00	13:15	84	60	75	73	
13:15	13:30	84	61	67	71	
13:30	13:45	83	60	67	70	
13:45	14:00	50	65	84	66	280
14:00	14:15	65	81	70	72	
14:15	14:30	91	72	94	86	
14:30	14:45	70	81	63	71	
14:45	15:00	69	66	73	69	298
15:00	15:15	73	75	86	78	
15:15	15:30	109	95	104	103	
15:30	15:45	105	111	89	102	
15:45	16:00	73	86	80	80	362
16:00	16:15	82	95	69	82	
16:15	16:30	83	79	65	76	
16:30	16:45	59	81	80	73	
16:45	17:00	100	95	67	87	318
17:00	17:15	77	84	93	85	
17:15	17:30	80	94	117	97	
17:30	17:45	75	79	86	80	
17:45	18:00	89	83	79	84	345
18:00	18:15	86	78	99	88	
18:15	18:30	66	76	81	74	
18:30	18:45	66	68	62	65	
18:45	19:00	59	54	44	52	280
19:00	19:15	46	61	55	54	
19:15	19:30	50	44	51	48	
19:30	19:45	40	45	43	43	
19:45	20:00	43	64	38	48	193
20:00	20:15	47	52	46	48	
20:15	20:30	47	43	38	43	
20:30	20:45	34	60	31	42	
20:45	21:00	31	37	31	33	166
21:00	21:15	22	54	42	39	
21:15	21:30	35	35	37	36	
21:30	21:45	34	39	43	39	
21:45	22:00	44	29	33	35	149
22:00	22:15	29	28	43	33	
22:15	22:30	25	30	34	30	
22:30	22:45	11	19	25	18	
22:45	23:00	11	14	24	16	98
23:00	23:15	10	28	16	18	
23:15	23:30	16	14	13	14	
23:30	23:45	9	11	7	9	
23:45	00:00	8	8	10	9	50
DAILY COUNT		4,555	4,633	4,540	4,576	
PEAK HOUR TIME					15:15	
PEAK HOUR COUNT					366	
ESTIMATED K-FACTOR					8.0%	

Three-Day Approach Count Summary

Project Name: North Lake Boulevard Study
State Project No.: 2013008.018
Location: North Lake Boulevard at Sunrise Drive
Direction: EASTBOUND (APPROACH)
Date: 3/24/2015-3/26/2015

TIME PERIOD (AM)		WEEKDAY TUES 24-Mar	WEEKDAY WED 25-Mar	WEEKDAY THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
00:00	00:15	108	70	94	91	
00:15	00:30	80	86	72	79	
00:30	00:45	92	90	74	85	
00:45	01:00	64	38	68	57	312
01:00	01:15	86	66	50	67	
01:15	01:30	60	36	44	47	
01:30	01:45	56	38	56	50	
01:45	02:00	58	44	48	50	214
02:00	02:15	48	46	38	44	
02:15	02:30	34	40	34	36	
02:30	02:45	38	28	20	29	
02:45	03:00	30	22	26	26	135
03:00	03:15	26	32	34	31	
03:15	03:30	48	50	46	48	
03:30	03:45	80	66	68	71	
03:45	04:00	30	44	30	35	185
04:00	04:15	46	24	28	33	
04:15	04:30	48	36	48	44	
04:30	04:45	98	90	52	80	
04:45	05:00	84	84	78	82	239
05:00	05:15	100	70	92	87	
05:15	05:30	110	110	86	102	
05:30	05:45	168	148	176	164	
05:45	06:00	228	200	234	221	574
06:00	06:15	220	248	230	233	
06:15	06:30	358	342	370	357	
06:30	06:45	598	624	604	609	
06:45	07:00	666	702	660	676	1,874
07:00	07:15	968	1008	972	983	
07:15	07:30	1030	1114	1040	1,061	
07:30	07:45	1124	1140	1122	1,129	
07:45	08:00	1154	1136	1206	1,165	4,338
08:00	08:15	1076	1120	1050	1,082	
08:15	08:30	1084	1080	1060	1,075	
08:30	08:45	1162	1114	1074	1,117	
08:45	09:00	956	922	922	933	4,207
09:00	09:15	992	748	944	895	
09:15	09:30	840	794	860	831	
09:30	09:45	1042	874	1088	1,001	
09:45	10:00	876	792	950	873	3,600
10:00	10:15	920	912	854	895	
10:15	10:30	860	852	904	872	
10:30	10:45	1054	972	1028	1,018	
10:45	11:00	920	904	942	922	3,707
11:00	11:15	1034	882	1038	985	
11:15	11:30	970	992	1026	996	
11:30	11:45	976	924	948	949	
11:45	12:00	1106	958	1080	1,048	3,978

TIME PERIOD (PM)		WEEKDAY TUES 24-Mar	WEEKDAY WED 25-Mar	WEEKDAY THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
12:00	12:15	956	968	964	963	
12:15	12:30	880	1018	964	954	
12:30	12:45	1094	1074	1068	1,079	
12:45	13:00	966	970	960	965	3,961
13:00	13:15	1080	1008	990	1,026	
13:15	13:30	1058	986	898	981	
13:30	13:45	986	942	908	945	
13:45	14:00	1040	918	1042	1,000	3,952
14:00	14:15	986	906	866	919	
14:15	14:30	1022	1092	990	1,035	
14:30	14:45	1062	1094	1142	1,099	
14:45	15:00	896	954	996	949	4,002
15:00	15:15	1058	974	1018	1,017	
15:15	15:30	1032	964	936	977	
15:30	15:45	1030	966	1026	1,007	
15:45	16:00	964	1102	926	997	3,999
16:00	16:15	986	950	920	952	
16:15	16:30	906	926	926	919	
16:30	16:45	980	1082	1036	1,033	
16:45	17:00	1006	964	1050	1,007	3,911
17:00	17:15	1082	1002	1036	1,040	
17:15	17:30	1038	1076	1160	1,091	
17:30	17:45	988	1008	1008	1,001	
17:45	18:00	924	916	948	929	4,062
18:00	18:15	922	952	830	901	
18:15	18:30	896	850	834	860	
18:30	18:45	786	818	820	808	
18:45	19:00	754	792	700	749	3,318
19:00	19:15	740	768	672	727	
19:15	19:30	562	624	504	563	
19:30	19:45	582	570	570	574	
19:45	20:00	532	568	586	562	2,426
20:00	20:15	504	562	578	548	
20:15	20:30	430	444	434	436	
20:30	20:45	420	482	476	459	
20:45	21:00	424	446	358	409	1,853
21:00	21:15	418	472	382	424	
21:15	21:30	384	394	390	389	
21:30	21:45	342	328	304	325	
21:45	22:00	328	286	266	293	1,431
22:00	22:15	292	274	240	269	
22:15	22:30	206	232	230	223	
22:30	22:45	212	186	186	195	
22:45	23:00	158	162	184	168	854
23:00	23:15	138	150	168	152	
23:15	23:30	118	148	134	133	
23:30	23:45	118	160	134	137	
23:45	00:00	96	92	110	99	522
DAILY COUNT		58,188	57,332	57,436	57,652	
PEAK HOUR TIME					07:30	
PEAK HOUR COUNT					4,451	
ESTIMATED K-FACTOR					7.7%	

Three-Day Approach Count Summary

Project Name: North Lake Boulevard Study
State Project No.: 2013008.018
Location: North Lake Boulevard at Sunrise Drive
Direction: WESTBOUND (APPROACH)
Date: 3/24/2015-3/26/2015

TIME PERIOD (AM)		WEEKDAY TUES 24-Mar	WEEKDAY WED 25-Mar	WEEKDAY THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
00:00	00:15	62	59	69	63	
00:15	00:30	56	64	53	58	
00:30	00:45	49	32	39	40	
00:45	01:00	41	46	52	46	207
01:00	01:15	37	31	35	34	
01:15	01:30	30	22	26	26	
01:30	01:45	44	32	18	31	
01:45	02:00	17	21	25	21	113
02:00	02:15	29	17	33	26	
02:15	02:30	19	17	22	19	
02:30	02:45	20	25	21	22	
02:45	03:00	23	19	16	19	87
03:00	03:15	23	13	22	19	
03:15	03:30	14	27	18	20	
03:30	03:45	17	13	13	14	
03:45	04:00	14	16	14	15	68
04:00	04:15	11	10	10	10	
04:15	04:30	26	22	25	24	
04:30	04:45	50	25	31	35	
04:45	05:00	34	43	31	36	106
05:00	05:15	46	55	41	47	
05:15	05:30	59	45	71	58	
05:30	05:45	99	93	79	90	
05:45	06:00	83	98	106	96	292
06:00	06:15	149	157	143	150	
06:15	06:30	176	183	194	184	
06:30	06:45	290	268	305	288	
06:45	07:00	287	315	320	307	929
07:00	07:15	367	386	363	372	
07:15	07:30	425	402	492	440	
07:30	07:45	525	510	508	514	
07:45	08:00	624	645	584	618	1,944
08:00	08:15	556	554	667	592	
08:15	08:30	521	529	532	527	
08:30	08:45	467	456	547	490	
08:45	09:00	522	543	470	512	2,121
09:00	09:15	438	512	493	481	
09:15	09:30	397	463	493	451	
09:30	09:45	498	455	504	486	
09:45	10:00	485	448	444	459	1,877
10:00	10:15	400	548	487	478	
10:15	10:30	508	575	559	547	
10:30	10:45	491	577	574	547	
10:45	11:00	625	653	575	618	2,191
11:00	11:15	612	630	636	626	
11:15	11:30	670	670	644	661	
11:30	11:45	652	664	727	681	
11:45	12:00	696	661	712	690	2,658

TIME PERIOD (PM)		WEEKDAY TUES 24-Mar	WEEKDAY WED 25-Mar	WEEKDAY THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
12:00	12:15	651	620	649	640	
12:15	12:30	733	763	794	763	
12:30	12:45	686	674	778	713	
12:45	13:00	709	686	761	719	2,835
13:00	13:15	683	703	758	715	
13:15	13:30	612	664	779	685	
13:30	13:45	735	765	667	722	
13:45	14:00	636	697	733	689	2,811
14:00	14:15	687	628	648	654	
14:15	14:30	730	831	760	774	
14:30	14:45	703	681	723	702	
14:45	15:00	659	764	709	711	2,841
15:00	15:15	821	749	750	773	
15:15	15:30	695	681	815	730	
15:30	15:45	771	760	808	780	
15:45	16:00	840	835	751	809	3,092
16:00	16:15	814	769	770	784	
16:15	16:30	711	888	773	791	
16:30	16:45	824	827	818	823	
16:45	17:00	797	824	890	837	3,235
17:00	17:15	811	801	842	818	
17:15	17:30	842	898	866	869	
17:30	17:45	976	862	969	936	
17:45	18:00	774	762	724	753	3,376
18:00	18:15	721	716	758	732	
18:15	18:30	673	808	767	749	
18:30	18:45	595	647	571	604	
18:45	19:00	540	599	486	542	2,627
19:00	19:15	568	540	468	525	
19:15	19:30	492	518	430	480	
19:30	19:45	425	459	446	443	
19:45	20:00	403	468	413	428	1,877
20:00	20:15	414	487	423	441	
20:15	20:30	398	374	355	376	
20:30	20:45	377	415	314	369	
20:45	21:00	322	364	317	334	1,520
21:00	21:15	307	345	298	317	
21:15	21:30	274	278	290	281	
21:30	21:45	247	260	234	247	
21:45	22:00	193	212	192	199	1,043
22:00	22:15	159	198	199	185	
22:15	22:30	186	188	164	179	
22:30	22:45	143	162	139	148	
22:45	23:00	115	136	155	135	648
23:00	23:15	102	114	120	112	
23:15	23:30	87	94	108	96	
23:30	23:45	74	76	87	79	
23:45	00:00	64	50	57	57	344
DAILY COUNT		38,063	39,289	39,169	38,840	
PEAK HOUR TIME					16:45	
PEAK HOUR COUNT					3,459	
ESTIMATED K-FACTOR					8.9%	

MECHANICAL COUNTS

PROJECT NAME: North Lake Boulevard Study

LOCATION: North Lake Boulevard at Sunrise Drive

Notice to Proceed : 2013008.018

COUNT DATE: 3/24/2015-3/26/2015

NORTHBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	2	3	2	1	7
01:00 AM	1	1	1	0	4
02:00 AM	1	1	2	6	11
03:00 AM	1	1	1	1	4
04:00 AM	0	2	4	5	11
05:00 AM	2	1	3	6	12
06:00 AM	6	11	19	28	64
07:00 AM	31	43	46	59	179
08:00 AM	60	56	54	56	227
09:00 AM	57	59	54	61	232
10:00 AM	58	63	67	64	253
11:00 AM	63	68	70	73	275
12:00 PM	78	76	78	77	310
01:00 PM	74	87	71	67	299
02:00 PM	65	64	65	65	259
03:00 PM	52	49	62	67	230
04:00 PM	69	70	62	69	270
05:00 PM	59	62	64	56	240
06:00 PM	53	57	39	37	186
07:00 PM	40	41	30	36	146
08:00 PM	39	33	24	21	117
09:00 PM	23	21	17	13	73
10:00 PM	12	11	10	8	40
11:00 PM	7	9	7	3	26
			24 Hour Total		3,474

SOUTHBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	9	11	7	9	35
01:00 AM	7	6	4	4	21
02:00 AM	5	4	3	1	12
03:00 AM	1	2	2	6	11
04:00 AM	1	3	9	6	19
05:00 AM	7	6	7	20	40
06:00 AM	23	24	48	49	144
07:00 AM	59	80	91	84	314
08:00 AM	90	90	80	87	347
09:00 AM	70	69	63	76	278
10:00 AM	68	56	68	59	252
11:00 AM	59	64	73	74	270
12:00 PM	76	74	65	78	293
01:00 PM	73	71	70	66	280
02:00 PM	72	86	71	69	298
03:00 PM	78	103	102	80	362
04:00 PM	82	76	73	87	318
05:00 PM	85	97	80	84	345
06:00 PM	88	74	65	52	280
07:00 PM	54	48	43	48	193
08:00 PM	48	43	42	33	166
09:00 PM	39	36	39	35	149
10:00 PM	33	30	18	16	98
11:00 PM	18	14	9	9	50
			24 Hour Total		4,576

EASTBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	91	79	85	57	312
01:00 AM	67	47	50	50	214
02:00 AM	44	36	29	26	135
03:00 AM	31	48	71	35	185
04:00 AM	33	44	80	82	239
05:00 AM	87	102	164	221	574
06:00 AM	233	357	609	676	1874
07:00 AM	983	1061	1129	1165	4338
08:00 AM	1082	1075	1117	933	4207
09:00 AM	895	831	1001	873	3600
10:00 AM	895	872	1018	922	3707
11:00 AM	985	996	949	1048	3978
12:00 PM	963	954	1079	965	3961
01:00 PM	1026	981	945	1000	3952
02:00 PM	919	1035	1099	949	4002
03:00 PM	1017	977	1007	997	3999
04:00 PM	952	919	1033	1007	3911
05:00 PM	1040	1091	1001	929	4062
06:00 PM	901	860	808	749	3318
07:00 PM	727	563	574	562	2426
08:00 PM	548	436	459	409	1853
09:00 PM	424	389	325	293	1431
10:00 PM	269	223	195	168	854
11:00 PM	152	133	137	99	522
			24 Hour Total		57,652

WESTBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	63	58	40	46	207
01:00 AM	34	26	31	21	113
02:00 AM	26	19	22	19	87
03:00 AM	19	20	14	15	68
04:00 AM	10	24	35	36	106
05:00 AM	47	58	90	96	292
06:00 AM	150	184	288	307	929
07:00 AM	372	440	514	618	1944
08:00 AM	592	527	490	512	2121
09:00 AM	481	451	486	459	1877
10:00 AM	478	547	547	618	2191
11:00 AM	626	661	681	690	2658
12:00 PM	640	763	713	719	2835
01:00 PM	715	685	722	689	2811
02:00 PM	654	774	702	711	2841
03:00 PM	773	730	780	809	3092
04:00 PM	784	791	823	837	3235
05:00 PM	818	869	936	753	3376
06:00 PM	732	749	604	542	2627
07:00 PM	525	480	443	428	1877
08:00 PM	441	376	369	334	1520
09:00 PM	317	281	247	199	1043
10:00 PM	185	179	148	135	648
11:00 PM	112	96	79	57	344
			24 Hour Total		38,840

ALL

TOTAL
562
352
245
267
374
918
3011
6775
6902
5986
6403
7181
7398
7342
7400
7682
7734
8023
6411
4642
3656
2697
1640
942
104,543

DAILY TRAFFIC COUNT SUMMARY

NORTHBOUND

A.M. Peak Hour, Time: 11:45 AM Volume: 306
A.M. "K" Factor: 8.8% P.H.F. : 0.98

P.M. Peak Hour, Time: 12:30 PM Volume: 316
P.M. "K" Factor: 9.1% P.H.F. : 0.91

SOUTHBOUND

A.M. Peak Hour, Time: 07:30 AM Volume: 356
A.M. "K" Factor: 7.8% P.H.F. : 0.97

P.M. Peak Hour, Time: 03:15 PM Volume: 366
P.M. "K" Factor: 8.0% P.H.F. : 0.89

DAILY TRAFFIC COUNT SUMMARY

EASTBOUND

A.M. Peak Hour, Time: 07:30 AM Volume: 4,451
A.M. "K" Factor: 7.7% P.H.F. : 0.95

P.M. Peak Hour, Time: 04:30 PM Volume: 4,171
P.M. "K" Factor: 7.2% P.H.F. : 0.96

WESTBOUND

A.M. Peak Hour, Time: 11:45 AM Volume: 2,806
A.M. "K" Factor: 7.2% P.H.F. : 0.92

P.M. Peak Hour, Time: 04:45 PM Volume: 3,459
P.M. "K" Factor: 8.9% P.H.F. : 0.92

ALL APPROACHES:

A.M. Peak Hour, Time: 11:45 AM Volume: 7,444
A.M. "K" Factor: 7.1% P.H.F. : 0.96

P.M. Peak Hour, Time: 04:45 PM Volume: 8,201
P.M. "K" Factor: 7.8% P.H.F. : 0.97

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at Sunrise Drive 03032015
Site Code :
Start Date : 3/3/2015
Page No : 1

Groups Printed- Autos - Heavy Vehicles - Bicycles - Pedestrians

	Northlake Boulevard Eastbound					Northlake Boulevard Westbound					Sandtree Dr Northbound					Sunrise Dr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	2	85	6	0	93	4	114	1	0	119	14	0	11	0	25	4	1	1	0	6	243
06:15 AM	3	132	6	0	141	5	140	7	1	153	27	1	6	0	34	15	3	9	0	27	355
06:30 AM	7	199	13	0	219	11	201	3	0	215	29	1	7	0	37	11	1	7	0	19	490
06:45 AM	6	264	22	0	292	7	237	5	0	249	31	1	8	0	40	17	4	6	0	27	608
Total	18	680	47	0	745	27	692	16	1	736	101	3	32	0	136	47	9	23	0	79	1696
07:00 AM	1	322	31	0	354	10	268	2	0	280	35	1	24	0	60	30	2	11	0	43	737
07:15 AM	6	489	29	0	524	15	349	7	0	371	51	1	16	0	68	21	5	4	0	30	993
07:30 AM	11	462	41	0	514	38	381	7	0	426	47	2	28	0	77	46	1	12	0	59	1076
07:45 AM	7	540	46	0	593	29	378	5	2	414	53	0	30	0	83	41	4	9	0	54	1144
Total	25	1813	147	0	1985	92	1376	21	2	1491	186	4	98	0	288	138	12	36	0	186	3950
08:00 AM	11	526	39	1	577	37	400	15	0	452	47	3	15	0	65	24	6	17	0	47	1141
08:15 AM	15	529	36	1	581	33	320	7	0	360	61	10	24	0	95	30	9	5	0	44	1080
08:30 AM	6	502	37	0	545	53	377	6	1	437	78	5	37	0	120	45	6	13	0	64	1166
08:45 AM	11	520	47	0	578	36	345	5	0	386	70	4	33	0	107	25	3	7	0	35	1106
Total	43	2077	159	2	2281	159	1442	33	1	1635	256	22	109	0	387	124	24	42	0	190	4493
BREAK																					
04:00 PM	12	403	41	1	457	37	618	14	0	669	110	0	76	0	186	24	2	7	0	33	1345
04:15 PM	8	376	55	0	439	73	499	7	0	579	113	4	69	0	186	34	7	16	0	57	1261
04:30 PM	12	415	43	0	470	53	537	4	2	596	114	0	65	0	179	30	3	17	0	50	1295
04:45 PM	23	523	55	0	601	53	617	4	1	675	120	1	49	1	171	34	3	12	0	49	1496
Total	55	1717	194	1	1967	216	2271	29	3	2519	457	5	259	1	722	122	15	52	0	189	5397
05:00 PM	17	410	50	0	477	56	627	6	0	689	128	11	69	1	209	25	5	11	0	41	1416
05:15 PM	17	483	46	0	546	37	509	7	0	553	131	6	52	0	189	19	2	16	0	37	1325
05:30 PM	15	480	54	0	549	40	577	8	1	626	101	1	40	0	142	29	1	17	0	47	1364
05:45 PM	13	419	49	1	482	41	563	7	1	612	87	7	50	0	144	25	4	11	0	40	1278
Total	62	1792	199	1	2054	174	2276	28	2	2480	447	25	211	1	684	98	12	55	0	165	5383
06:00 PM	12	421	42	1	476	34	530	6	0	570	99	0	51	0	150	23	3	5	0	31	1227
06:15 PM	6	405	45	0	456	33	462	4	1	500	90	0	49	0	139	15	8	10	0	33	1128
06:30 PM	12	367	41	0	420	37	461	9	0	507	73	0	43	0	116	24	3	9	0	36	1079
06:45 PM	7	285	34	1	327	40	407	8	0	455	66	0	43	0	109	29	0	6	0	35	926
Total	37	1478	162	2	1679	144	1860	27	1	2032	328	0	186	0	514	91	14	30	0	135	4360
Grand Total	240	9557	908	6	10711	812	9917	154	10	10893	1775	59	895	2	2731	620	86	238	0	944	25279
Apprch %	2.2	89.2	8.5	0.1		7.5	91	1.4	0.1		65	2.2	32.8	0.1		65.7	9.1	25.2	0		
Total %	0.9	37.8	3.6	0	42.4	3.2	39.2	0.6	0	43.1	7	0.2	3.5	0	10.8	2.5	0.3	0.9	0	3.7	
Autos	235	9351	886	0	10472	803	9713	150	0	10666	1742	58	884	0	2684	617	82	228	0	927	24749
% Autos	97.9	97.8	97.6	0	97.8	98.9	97.9	97.4	0	97.9	98.1	98.3	98.8	0	98.3	99.5	95.3	95.8	0	98.2	97.9
Heavy Vehicles	5	206	22	0	233	9	204	4	0	217	33	1	11	0	45	3	4	10	0	17	512
% Heavy Vehicles	2.1	2.2	2.4	0	2.2	1.1	2.1	2.6	0	2	1.9	1.7	1.2	0	1.6	0.5	4.7	4.2	0	1.8	2
Bicycles	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
% Bicycles	0	0	0	16.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	5	5	0	0	0	10	10	0	0	0	2	2	0	0	0	0	0	17
% Pedestrians	0	0	0	83.3	0	0	0	0	100	0.1	0	0	0	100	0.1	0	0	0	0	0	0.1

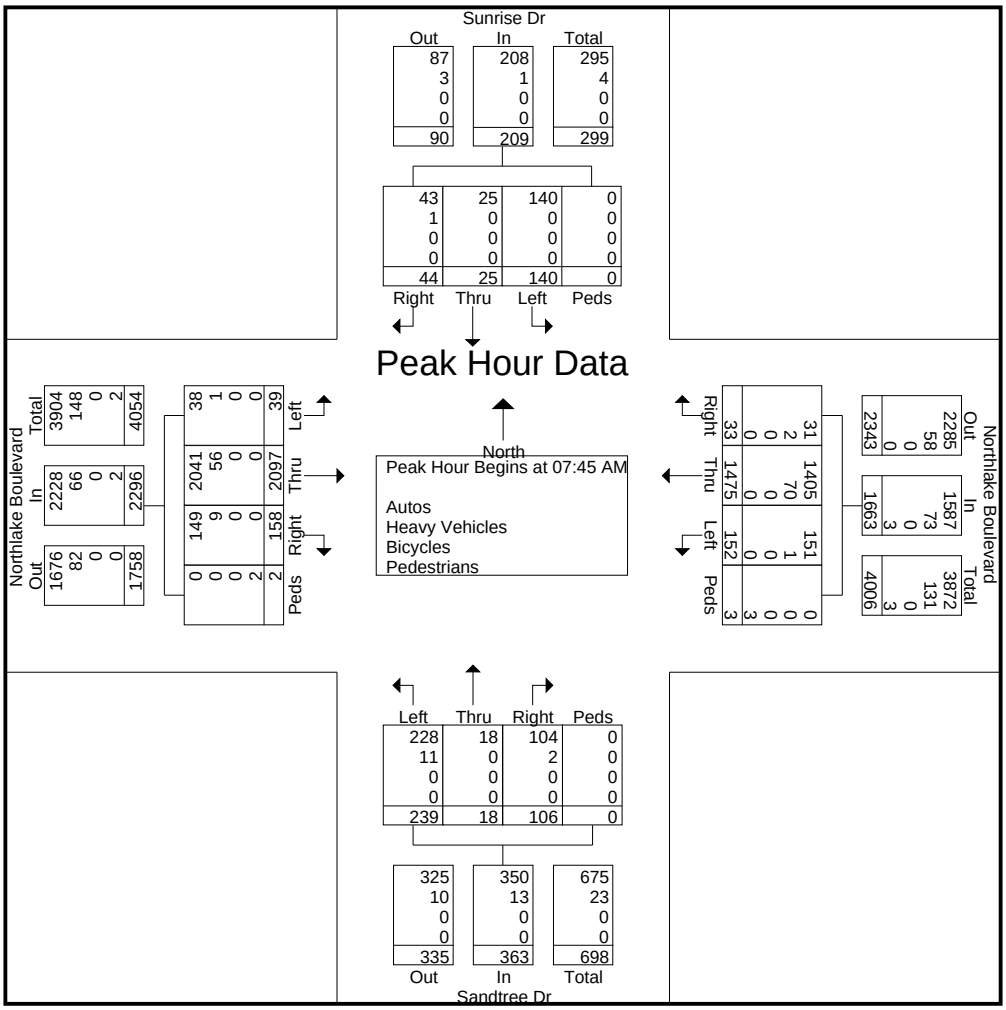
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at Sunrise Drive 03032015
Site Code :
Start Date : 3/3/2015
Page No : 2

	Northlake Boulevard Eastbound					Northlake Boulevard Westbound					Sandtree Dr Northbound					Sunrise Dr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	7	540	46	0	593	29	378	5	2	414	53	0	30	0	83	41	4	9	0	54	1144
08:00 AM	11	526	39	1	577	37	400	15	0	452	47	3	15	0	65	24	6	17	0	47	1141
08:15 AM	15	529	36	1	581	33	320	7	0	360	61	10	24	0	95	30	9	5	0	44	1080
08:30 AM	6	502	37	0	545	53	377	6	1	437	78	5	37	0	120	45	6	13	0	64	1166
Total Volume	39	2097	158	2	2296	152	1475	33	3	1663	239	18	106	0	363	140	25	44	0	209	4531
% App. Total	1.7	91.3	6.9	0.1		9.1	88.7	2	0.2		65.8	5	29.2	0		67	12	21.1	0		
PHF	.650	.971	.859	.500	.968	.717	.922	.550	.375	.920	.766	.450	.716	.000	.756	.778	.694	.647	.000	.816	.971
Autos	38	2041	149	0	2228	151	1405	31	0	1587	228	18	104	0	350	140	25	43	0	208	4373
% Autos	97.4	97.3	94.3	0	97.0	99.3	95.3	93.9	0	95.4	95.4	100	98.1	0	96.4	100	100	97.7	0	99.5	96.5
Heavy Vehicles	1	56	9	0	66	1	70	2	0	73	11	0	2	0	13	0	0	1	0	1	153
% Heavy Vehicles	2.6	2.7	5.7	0	2.9	0.7	4.7	6.1	0	4.4	4.6	0	1.9	0	3.6	0	0	2.3	0	0.5	3.4
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	2	2	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	5
% Pedestrians	0	0	0	100	0.1	0	0	0	100	0.2	0	0	0	0	0	0	0	0	0	0	0.1



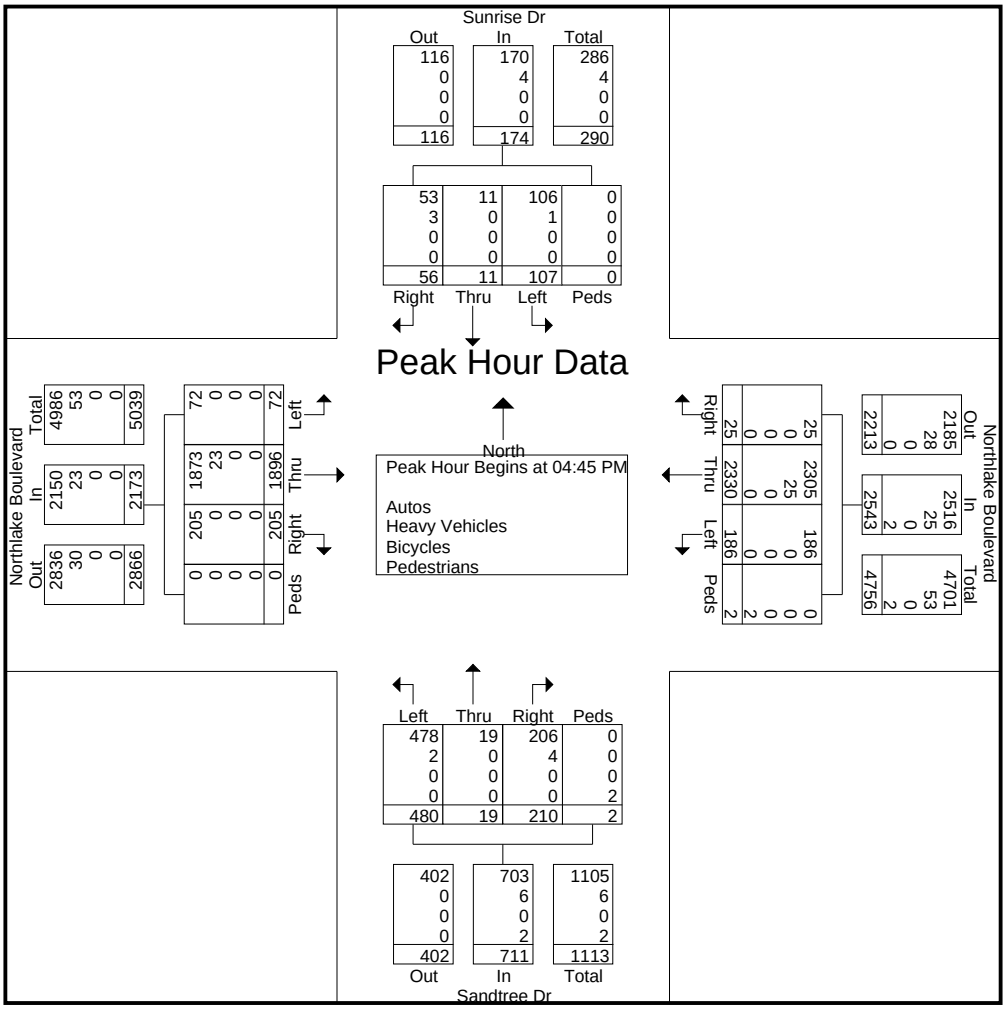
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at Sunrise Drive 03032015
Site Code :
Start Date : 3/3/2015
Page No : 3

	Northlake Boulevard Eastbound					Northlake Boulevard Westbound					Sandtree Dr Northbound					Sunrise Dr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	23	523	55	0	601	53	617	4	1	675	120	1	49	1	171	34	3	12	0	49	1496
05:00 PM	17	410	50	0	477	56	627	6	0	689	128	11	69	1	209	25	5	11	0	41	1416
05:15 PM	17	483	46	0	546	37	509	7	0	553	131	6	52	0	189	19	2	16	0	37	1325
05:30 PM	15	480	54	0	549	40	577	8	1	626	101	1	40	0	142	29	1	17	0	47	1364
Total Volume	72	1896	205	0	2173	186	2330	25	2	2543	480	19	210	2	711	107	11	56	0	174	5601
% App. Total	3.3	87.3	9.4	0		7.3	91.6	1	0.1		67.5	2.7	29.5	0.3		61.5	6.3	32.2	0		
PHF	.783	.906	.932	.000	.904	.830	.929	.781	.500	.923	.916	.432	.761	.500	.850	.787	.550	.824	.000	.888	.936
Autos	72	1873	205	0	2150	186	2305	25	0	2516	478	19	206	0	703	106	11	53	0	170	5539
% Autos	100	98.8	100	0	98.9	100	98.9	100	0	98.9	99.6	100	98.1	0	98.9	99.1	100	94.6	0	97.7	98.9
Heavy Vehicles	0	23	0	0	23	0	25	0	0	25	2	0	4	0	6	1	0	3	0	4	58
% Heavy Vehicles	0	1.2	0	0	1.1	0	1.1	0	0	1.0	0.4	0	1.9	0	0.8	0.9	0	5.4	0	2.3	1.0
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	2	2	0	0	0	2	2	0	0	0	0	0	4
% Pedestrians	0	0	0	0	0	0	0	0	100	0.1	0	0	0	100	0.3	0	0	0	0	0	0.1



CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at Sunrise Drive 03032015
Site Code :
Start Date : 3/3/2015
Page No : 1

Groups Printed- Heavy Vehicles

	Northlake Boulevard Eastbound					Northlake Boulevard Westbound					Sandtree Dr Northbound					Sunrise Dr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	4	3	0	7	1	2	0	0	3	0	0	1	0	1	0	0	0	0	0	11
06:15 AM	0	8	0	0	8	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	11
06:30 AM	1	10	0	0	11	0	7	0	0	7	3	1	0	0	4	0	0	2	0	2	24
06:45 AM	1	6	1	0	8	1	8	0	0	9	1	0	0	0	1	0	0	0	0	0	18
Total	2	28	4	0	34	2	20	0	0	22	4	1	1	0	6	0	0	2	0	2	64
07:00 AM	1	14	0	0	15	1	5	0	0	6	0	0	0	0	0	0	0	1	0	1	22
07:15 AM	0	6	1	0	7	1	12	0	0	13	2	0	0	0	2	0	0	1	0	1	23
07:30 AM	0	10	1	0	11	1	13	0	0	14	2	0	2	0	4	0	0	0	0	0	29
07:45 AM	0	17	0	0	17	1	11	0	0	12	1	0	1	0	2	0	0	0	0	0	31
Total	1	47	2	0	50	4	41	0	0	45	5	0	3	0	8	0	0	2	0	2	105
08:00 AM	1	11	3	0	15	0	24	1	0	25	0	0	1	0	1	0	0	0	0	0	41
08:15 AM	0	16	3	0	19	0	19	0	0	19	5	0	0	0	5	0	0	0	0	0	43
08:30 AM	0	12	3	0	15	0	16	1	0	17	5	0	0	0	5	0	0	1	0	1	38
08:45 AM	1	16	3	0	20	2	8	0	0	10	1	0	2	0	3	0	0	1	0	1	34
Total	2	55	12	0	69	2	67	2	0	71	11	0	3	0	14	0	0	2	0	2	156
BREAK																					
04:00 PM	0	15	0	0	15	0	10	0	0	10	2	0	0	0	2	0	1	0	0	1	28
04:15 PM	0	12	1	0	13	0	9	0	0	9	3	0	0	0	3	2	1	0	0	3	28
04:30 PM	0	9	2	0	11	1	15	1	0	17	2	0	0	0	2	0	1	1	0	2	32
04:45 PM	0	6	0	0	6	0	11	0	0	11	1	0	1	0	2	0	0	1	0	1	20
Total	0	42	3	0	45	1	45	1	0	47	8	0	1	0	9	2	3	2	0	7	108
05:00 PM	0	4	0	0	4	0	8	0	0	8	1	0	1	0	2	0	0	0	0	0	14
05:15 PM	0	7	0	0	7	0	3	0	0	3	0	0	0	0	0	0	0	2	0	2	12
05:30 PM	0	6	0	0	6	0	3	0	0	3	0	0	2	0	2	1	0	0	0	1	12
05:45 PM	0	4	1	0	5	0	5	0	0	5	1	0	0	0	1	0	0	0	0	0	11
Total	0	21	1	0	22	0	19	0	0	19	2	0	3	0	5	1	0	2	0	3	49
06:00 PM	0	8	0	0	8	0	3	0	0	3	2	0	0	0	2	0	0	0	0	0	13
06:15 PM	0	3	0	0	3	0	1	1	0	2	0	0	0	0	0	0	1	0	0	1	6
06:30 PM	0	1	0	0	1	0	3	0	0	3	1	0	0	0	1	0	0	0	0	0	5
06:45 PM	0	1	0	0	1	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	6
Total	0	13	0	0	13	0	12	1	0	13	3	0	0	0	3	0	1	0	0	1	30
Grand Total	5	206	22	0	233	9	204	4	0	217	33	1	11	0	45	3	4	10	0	17	512
Apprch %	2.1	88.4	9.4	0		4.1	94	1.8	0		73.3	2.2	24.4	0		17.6	23.5	58.8	0		
Total %	1	40.2	4.3	0	45.5	1.8	39.8	0.8	0	42.4	6.4	0.2	2.1	0	8.8	0.6	0.8	2	0	3.3	

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at Sunrise Drive 03042015
Site Code :
Start Date : 3/4/2015
Page No : 1

Groups Printed- Autos - Heavy Vehicles - Bicycles - Pedestrians

	Northlake Boulevard Eastbound					Northlake Boulevard Westbound					Sandtree Drive Northbound					Sunrise Drive Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	2	80	10	1	93	4	128	2	0	134	10	0	5	0	15	2	0	3	0	5	247
06:15 AM	19	134	7	0	160	7	140	1	0	148	22	1	3	0	26	3	0	6	0	9	343
06:30 AM	5	205	15	0	225	5	178	2	0	185	26	2	7	0	35	12	0	5	0	17	462
06:45 AM	11	273	13	1	298	14	232	6	0	252	32	0	8	0	40	19	0	12	0	31	621
Total	37	692	45	2	776	30	678	11	0	719	90	3	23	0	116	36	0	26	0	62	1673
07:00 AM	6	308	36	0	350	16	251	4	0	271	41	3	7	0	51	27	2	6	0	35	707
07:15 AM	8	411	39	1	459	17	289	4	0	310	44	0	25	1	70	32	6	9	0	47	886
07:30 AM	10	451	30	0	491	26	322	2	4	354	70	0	28	2	100	36	5	14	0	55	1000
07:45 AM	8	474	45	1	528	33	288	4	1	326	64	2	34	1	101	39	6	9	0	54	1009
Total	32	1644	150	2	1828	92	1150	14	5	1261	219	5	94	4	322	134	19	38	0	191	3602
08:00 AM	14	546	45	1	606	23	389	8	0	420	70	2	39	0	111	31	4	9	0	44	1181
08:15 AM	8	512	37	0	557	6	340	10	0	356	59	0	23	0	82	36	3	12	0	51	1046
08:30 AM	8	546	49	0	603	0	302	11	0	313	66	0	59	0	125	0	6	13	0	19	1060
08:45 AM	20	553	49	2	624	0	383	12	0	395	62	0	36	0	98	0	7	9	0	16	1133
Total	50	2157	180	3	2390	29	1414	41	0	1484	257	2	157	0	416	67	20	43	0	130	4420
BREAK																					
04:00 PM	5	439	37	11	492	43	539	5	0	587	95	4	48	3	150	20	5	16	0	41	1270
04:15 PM	17	411	36	8	472	53	533	14	0	600	125	4	67	0	196	48	3	9	2	62	1330
04:30 PM	17	440	33	10	500	46	561	9	0	616	114	3	44	0	161	25	7	20	3	55	1332
04:45 PM	12	483	54	19	568	49	544	6	2	601	96	2	45	0	143	26	1	11	0	38	1350
Total	51	1773	160	48	2032	191	2177	34	2	2404	430	13	204	3	650	119	16	56	5	196	5282
05:00 PM	15	494	49	2	560	46	587	11	2	646	144	3	67	1	215	22	5	7	0	34	1455
05:15 PM	15	450	32	0	497	38	551	4	0	593	129	4	51	3	187	21	1	12	0	34	1311
05:30 PM	14	413	45	0	472	58	602	11	4	675	103	1	38	0	142	21	4	17	0	42	1331
05:45 PM	10	401	42	1	454	45	535	8	1	589	90	1	43	2	136	34	10	16	0	60	1239
Total	54	1758	168	3	1983	187	2275	34	7	2503	466	9	199	6	680	98	20	52	0	170	5336
06:00 PM	16	392	43	0	451	32	520	4	0	556	114	4	51	0	169	42	5	14	0	61	1237
06:15 PM	6	424	42	0	472	28	489	3	0	520	81	6	40	0	127	28	2	16	0	46	1165
06:30 PM	7	406	33	2	448	33	465	4	0	502	82	1	43	0	126	22	4	11	0	37	1113
06:45 PM	9	326	37	0	372	46	434	5	0	485	75	0	42	0	117	25	3	8	0	36	1010
Total	38	1548	155	2	1743	139	1908	16	0	2063	352	11	176	0	539	117	14	49	0	180	4525
Grand Total	262	9572	858	60	10752	668	9602	150	14	10434	1814	43	853	13	2723	571	89	264	5	929	24838
Apprch %	2.4	89	8	0.6		6.4	92	1.4	0.1		66.6	1.6	31.3	0.5		61.5	9.6	28.4	0.5		
Total %	1.1	38.5	3.5	0.2	43.3	2.7	38.7	0.6	0.1	42	7.3	0.2	3.4	0.1	11	2.3	0.4	1.1	0	3.7	
Autos	251	9453	828	0	10532	662	9442	144	0	10248	1774	41	845	0	2660	565	86	252	0	903	24343
% Autos	95.8	98.8	96.5	0	98	99.1	98.3	96	0	98.2	97.8	95.3	99.1	0	97.7	98.9	96.6	95.5	0	97.2	98
Heavy Vehicles	11	119	30	0	160	6	160	6	0	172	40	2	8	0	50	6	3	12	0	21	403
% Heavy Vehicles	4.2	1.2	3.5	0	1.5	0.9	1.7	4	0	1.6	2.2	4.7	0.9	0	1.8	1.1	3.4	4.5	0	2.3	1.6
Bicycles	0	0	0	11	11	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	13
% Bicycles	0	0	0	18.3	0.1	0	0	0	0	0	0	0	0	7.7	0	0	0	0	20	0.1	0.1
Pedestrians	0	0	0	49	49	0	0	0	14	14	0	0	0	12	12	0	0	0	4	4	79
% Pedestrians	0	0	0	81.7	0.5	0	0	0	100	0.1	0	0	0	92.3	0.4	0	0	0	80	0.4	0.3

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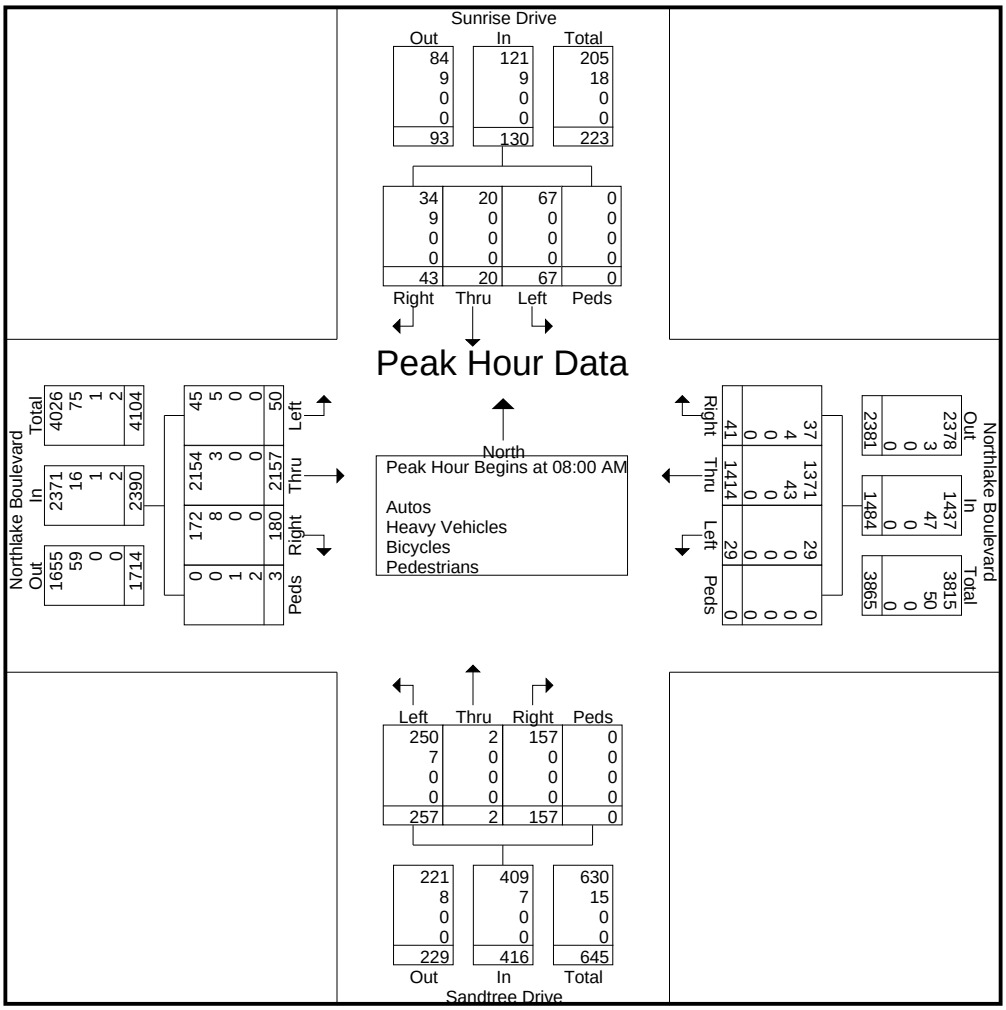
	Northlake Boulevard Eastbound					Northlake Boulevard Westbound					Sandtree Drive Northbound					Sunrise Drive Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	14	546	45	1	606	23	389	8	0	420	70	2	39	0	111	31	4	9	0	44	1181
08:15 AM	8	512	37	0	557	6	340	10	0	356	59	0	23	0	82	36	3	12	0	51	1046
08:30 AM	8	546	49	0	603	0	302	11	0	313	66	0	59	0	125	0	6	13	0	19	1060
08:45 AM	20	553	49	2	624	0	383	12	0	395	62	0	36	0	98	0	7	9	0	16	1133
Total Volume	50	2157	180	3	2390	29	1414	41	0	1484	257	2	157	0	416	67	20	43	0	130	4420
% App. Total	2.1	90.3	7.5	0.1		2	95.3	2.8	0		61.8	0.5	37.7	0		51.5	15.4	33.1	0		
PHF	.625	.975	.918	.375	.958	.315	.909	.854	.000	.883	.918	.250	.665	.000	.832	.465	.714	.827	.000	.637	.936
Autos	45	2154	172	0	2371	29	1371	37	0	1437	250	2	157	0	409	67	20	34	0	121	4338
% Autos	90.0	99.9	95.6	0	99.2	100	97.0	90.2	0	96.8	97.3	100	100	0	98.3	100	100	79.1	0	93.1	98.1
Heavy Vehicles	5	3	8	0	16	0	43	4	0	47	7	0	0	0	7	0	0	9	0	9	79
% Heavy Vehicles	10.0	0.1	4.4	0	0.7	0	3.0	9.8	0	3.2	2.7	0	0	0	1.7	0	0	20.9	0	6.9	1.8
Bicycles	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
% Bicycles	0	0	0	33.3	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0
Pedestrians	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
% Pedestrians	0	0	0	66.7	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0



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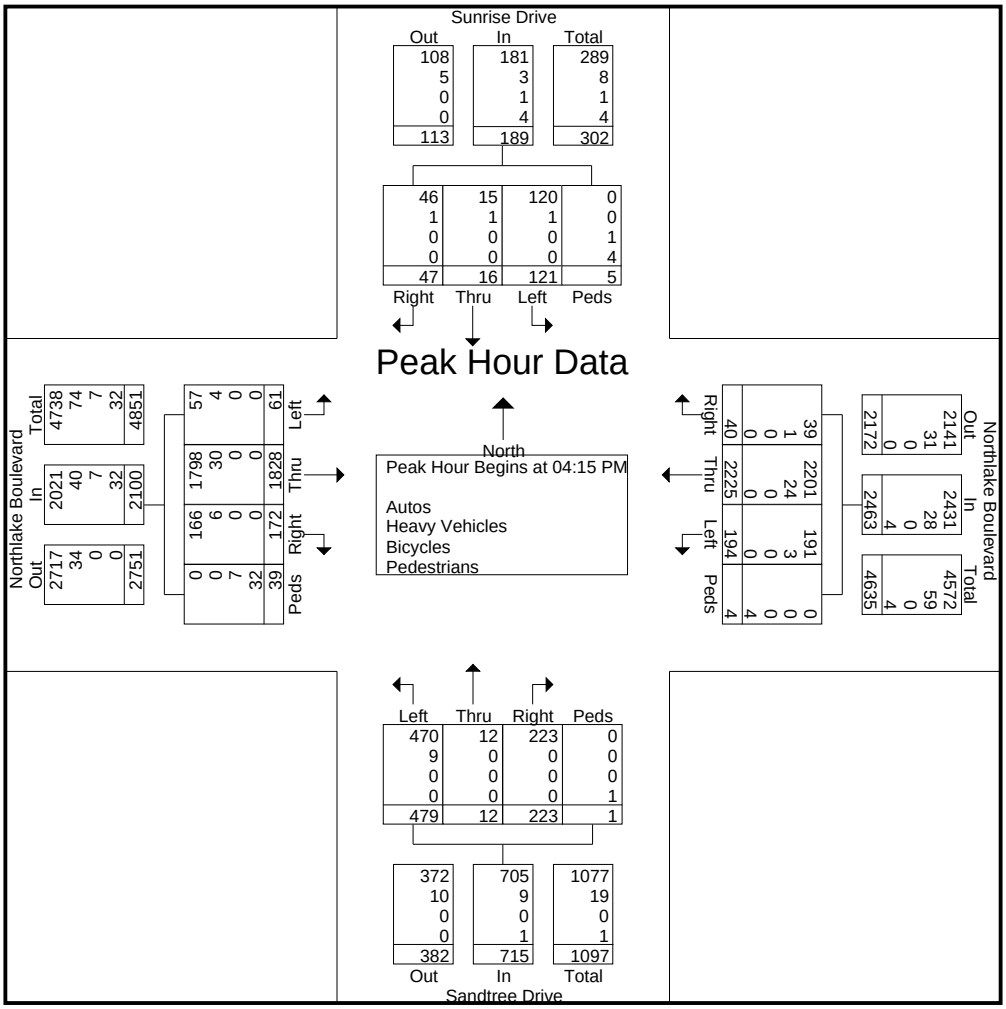
	Northlake Boulevard Eastbound					Northlake Boulevard Westbound					Sandtree Drive Northbound					Sunrise Drive Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	17	411	36	8	472	53	533	14	0	600	125	4	67	0	196	48	3	9	2	62	1330
04:30 PM	17	440	33	10	500	46	561	9	0	616	114	3	44	0	161	25	7	20	3	55	1332
04:45 PM	12	483	54	19	568	49	544	6	2	601	96	2	45	0	143	26	1	11	0	38	1350
05:00 PM	15	494	49	2	560	46	587	11	2	646	144	3	67	1	215	22	5	7	0	34	1455
Total Volume	61	1828	172	39	2100	194	2225	40	4	2463	479	12	223	1	715	121	16	47	5	189	5467
% App. Total	2.9	87	8.2	1.9		7.9	90.3	1.6	0.2		67	1.7	31.2	0.1		64	8.5	24.9	2.6		
PHF	.897	.925	.796	.513	.924	.915	.948	.714	.500	.953	.832	.750	.832	.250	.831	.630	.571	.588	.417	.762	.939
Autos	57	1798	166	0	2021	191	2201	39	0	2431	470	12	223	0	705	120	15	46	0	181	5338
% Autos	93.4	98.4	96.5	0	96.2	98.5	98.9	97.5	0	98.7	98.1	100	100	0	98.6	99.2	93.8	97.9	0	95.8	97.6
Heavy Vehicles	4	30	6	0	40	3	24	1	0	28	9	0	0	0	9	1	1	1	0	3	80
% Heavy Vehicles	6.6	1.6	3.5	0	1.9	1.5	1.1	2.5	0	1.1	1.9	0	0	0	1.3	0.8	6.3	2.1	0	1.6	1.5
Bicycles	0	0	0	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	8
% Bicycles	0	0	0	17.9	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	20.0	0.5	0.1
Pedestrians	0	0	0	32	32	0	0	0	4	4	0	0	0	1	1	0	0	0	4	4	41
% Pedestrians	0	0	0	82.1	1.5	0	0	0	100	0.2	0	0	0	100	0.1	0	0	0	80.0	2.1	0.7



CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at Sunrise Drive 03042015
Site Code :
Start Date : 3/4/2015
Page No : 1

Groups Printed- Heavy Vehicles

	Northlake Boulevard Eastbound					Northlake Boulevard Westbound					Sandtree Drive Northbound					Sunrise Drive Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	2	1	0	3	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	6
06:15 AM	0	8	0	0	8	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	9
06:30 AM	0	5	3	0	8	0	3	0	0	3	2	2	0	0	4	0	0	1	0	1	16
06:45 AM	0	4	1	0	5	0	5	0	0	5	2	0	0	0	2	0	0	0	0	0	12
Total	0	19	5	0	24	0	12	0	0	12	4	2	0	0	6	0	0	1	0	1	43
07:00 AM	0	3	2	0	5	1	8	0	0	9	0	0	0	0	0	0	0	0	0	0	14
07:15 AM	0	10	1	0	11	0	7	0	0	7	4	0	2	0	6	0	0	0	0	0	24
07:30 AM	1	6	1	0	8	0	16	0	0	16	4	0	4	0	8	0	0	0	0	0	32
07:45 AM	0	9	2	0	11	1	10	0	0	11	6	0	0	0	6	0	0	0	0	0	28
Total	1	28	6	0	35	2	41	0	0	43	14	0	6	0	20	0	0	0	0	0	98
08:00 AM	0	1	0	0	1	0	5	1	0	6	2	0	0	0	2	0	0	3	0	3	12
08:15 AM	1	2	3	0	6	0	10	0	0	10	1	0	0	0	1	0	0	4	0	4	21
08:30 AM	0	0	2	0	2	0	14	2	0	16	2	0	0	0	2	0	0	1	0	1	21
08:45 AM	4	0	3	0	7	0	14	1	0	15	2	0	0	0	2	0	0	1	0	1	25
Total	5	3	8	0	16	0	43	4	0	47	7	0	0	0	7	0	0	9	0	9	79
BREAK																					
04:00 PM	0	7	1	0	8	1	5	0	0	6	1	0	1	0	2	2	1	1	0	4	20
04:15 PM	3	6	2	0	11	0	12	1	0	13	4	0	0	0	4	0	0	0	0	0	28
04:30 PM	0	11	0	0	11	0	3	0	0	3	2	0	0	0	2	1	1	0	0	2	18
04:45 PM	0	6	1	0	7	2	5	0	0	7	2	0	0	0	2	0	0	1	0	1	17
Total	3	30	4	0	37	3	25	1	0	29	9	0	1	0	10	3	2	2	0	7	83
05:00 PM	1	7	3	0	11	1	4	0	0	5	1	0	0	0	1	0	0	0	0	0	17
05:15 PM	0	7	1	0	8	0	6	0	0	6	3	0	0	0	3	0	0	0	0	0	17
05:30 PM	0	3	1	0	4	0	8	1	0	9	0	0	0	0	0	1	0	0	0	1	14
05:45 PM	0	3	0	0	3	0	5	0	0	5	0	0	0	0	0	1	0	0	0	1	9
Total	1	20	5	0	26	1	23	1	0	25	4	0	0	0	4	2	0	0	0	2	57
06:00 PM	0	6	1	0	7	0	4	0	0	4	0	0	1	0	1	0	1	0	0	1	13
06:15 PM	0	1	1	0	2	0	2	0	0	2	1	0	0	0	1	1	0	0	0	1	6
06:30 PM	1	7	0	0	8	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	13
06:45 PM	0	5	0	0	5	0	5	0	0	5	1	0	0	0	1	0	0	0	0	0	11
Total	1	19	2	0	22	0	16	0	0	16	2	0	1	0	3	1	1	0	0	2	43
Grand Total	11	119	30	0	160	6	160	6	0	172	40	2	8	0	50	6	3	12	0	21	403
Apprch %	6.9	74.4	18.8	0		3.5	93	3.5	0		80	4	16	0		28.6	14.3	57.1	0		
Total %	2.7	29.5	7.4	0	39.7	1.5	39.7	1.5	0	42.7	9.9	0.5	2	0	12.4	1.5	0.7	3	0	5.2	

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at Sunrise Drive 03052015
Site Code :
Start Date : 3/5/2015
Page No : 1

Groups Printed- Autos - Heavy Vehicles - Bicycles - Pedestrians

	Northlake Boulevard Eastbound					Northlake Boulevard Westbound					Sandtree Drive Northbound					Sunrise Drive Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	1	88	4	0	93	2	142	1	0	145	15	0	4	0	19	12	0	3	0	15	272
06:15 AM	1	120	14	1	136	4	153	1	1	159	22	0	6	0	28	8	0	7	0	15	338
06:30 AM	5	223	11	0	239	7	182	2	0	191	38	1	9	0	48	16	0	6	0	22	500
06:45 AM	8	268	29	0	305	14	242	5	0	261	28	0	9	0	37	29	0	10	0	39	642
Total	15	699	58	1	773	27	719	9	1	756	103	1	28	0	132	65	0	26	0	91	1752
07:00 AM	6	339	27	0	372	15	309	5	0	329	39	0	11	1	51	22	1	14	0	37	789
07:15 AM	4	422	31	0	457	24	283	8	0	315	44	0	14	0	58	23	0	11	0	34	864
07:30 AM	4	418	32	1	455	37	389	9	0	435	49	0	26	0	75	36	4	11	0	51	1016
07:45 AM	11	467	32	0	510	46	332	18	0	396	59	0	35	0	94	34	4	6	0	44	1044
Total	25	1646	122	1	1794	122	1313	40	0	1475	191	0	86	1	278	115	9	42	0	166	3713
08:00 AM	10	569	44	0	623	31	397	17	1	446	70	0	38	1	109	33	3	13	0	49	1227
08:15 AM	18	492	45	0	555	35	361	6	0	402	57	4	39	1	101	41	4	16	0	61	1119
08:30 AM	13	454	45	0	512	53	317	9	0	379	79	5	45	1	130	47	5	8	0	60	1081
08:45 AM	10	453	49	0	512	27	371	7	0	405	80	2	44	0	126	24	3	10	0	37	1080
Total	51	1968	183	0	2202	146	1446	39	1	1632	286	11	166	3	466	145	15	47	0	207	4507
****BREAK****																					
04:00 PM	16	365	34	1	416	31	526	5	0	562	132	0	60	0	192	31	4	7	0	42	1212
04:15 PM	11	244	58	0	313	39	554	4	0	597	101	2	46	0	149	31	4	10	0	45	1104
04:30 PM	15	602	54	0	671	54	536	6	0	596	89	0	48	0	137	26	5	16	0	47	1451
04:45 PM	8	1120	50	0	1178	136	687	9	0	832	98	5	44	0	147	55	2	15	0	72	2229
Total	50	2331	196	1	2578	260	2303	24	0	2587	420	7	198	0	625	143	15	48	0	206	5996
05:00 PM	19	416	40	0	475	57	553	9	0	619	121	7	60	0	188	30	7	17	0	54	1336
05:15 PM	11	508	41	0	560	50	571	6	0	627	111	1	43	0	155	25	1	10	0	36	1378
05:30 PM	6	508	45	0	559	31	598	9	0	638	104	2	49	0	155	20	3	10	0	33	1385
05:45 PM	11	421	36	4	472	45	554	7	0	606	82	4	50	0	136	23	1	10	0	34	1248
Total	47	1853	162	4	2066	183	2276	31	0	2490	418	14	202	0	634	98	12	47	0	157	5347
06:00 PM	14	402	31	0	447	45	494	4	0	543	117	4	56	0	177	33	3	18	0	54	1221
06:15 PM	10	383	41	0	434	34	443	10	0	487	89	0	34	0	123	23	3	14	1	41	1085
06:30 PM	14	379	32	0	425	40	426	5	0	471	88	3	39	0	130	34	5	14	0	53	1079
06:45 PM	4	302	32	0	338	31	420	2	0	453	65	1	36	0	102	22	3	12	0	37	930
Total	42	1466	136	0	1644	150	1783	21	0	1954	359	8	165	0	532	112	14	58	1	185	4315
Grand Total	230	9963	857	7	11057	888	9840	164	2	10894	1777	41	845	4	2667	678	65	268	1	1012	25630
Apprch %	2.1	90.1	7.8	0.1		8.2	90.3	1.5	0		66.6	1.5	31.7	0.1		67	6.4	26.5	0.1		
Total %	0.9	38.9	3.3	0	43.1	3.5	38.4	0.6	0	42.5	6.9	0.2	3.3	0	10.4	2.6	0.3	1	0	3.9	
Autos	225	9769	817	0	10811	877	9642	160	0	10679	1740	40	818	0	2598	671	61	258	0	990	25078
% Autos	97.8	98.1	95.3	0	97.8	98.8	98	97.6	0	98	97.9	97.6	96.8	0	97.4	99	93.8	96.3	0	97.8	97.8
Heavy Vehicles	5	194	40	0	239	11	198	4	0	213	37	1	27	0	65	7	4	10	0	21	538
% Heavy Vehicles	2.2	1.9	4.7	0	2.2	1.2	2	2.4	0	2	2.1	2.4	3.2	0	2.4	1	6.2	3.7	0	2.1	2.1
Bicycles	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
% Bicycles	0	0	0	28.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	5	5	0	0	0	2	2	0	0	0	4	4	0	0	0	1	1	12
% Pedestrians	0	0	0	71.4	0	0	0	0	100	0	0	0	0	100	0.1	0	0	0	100	0.1	0

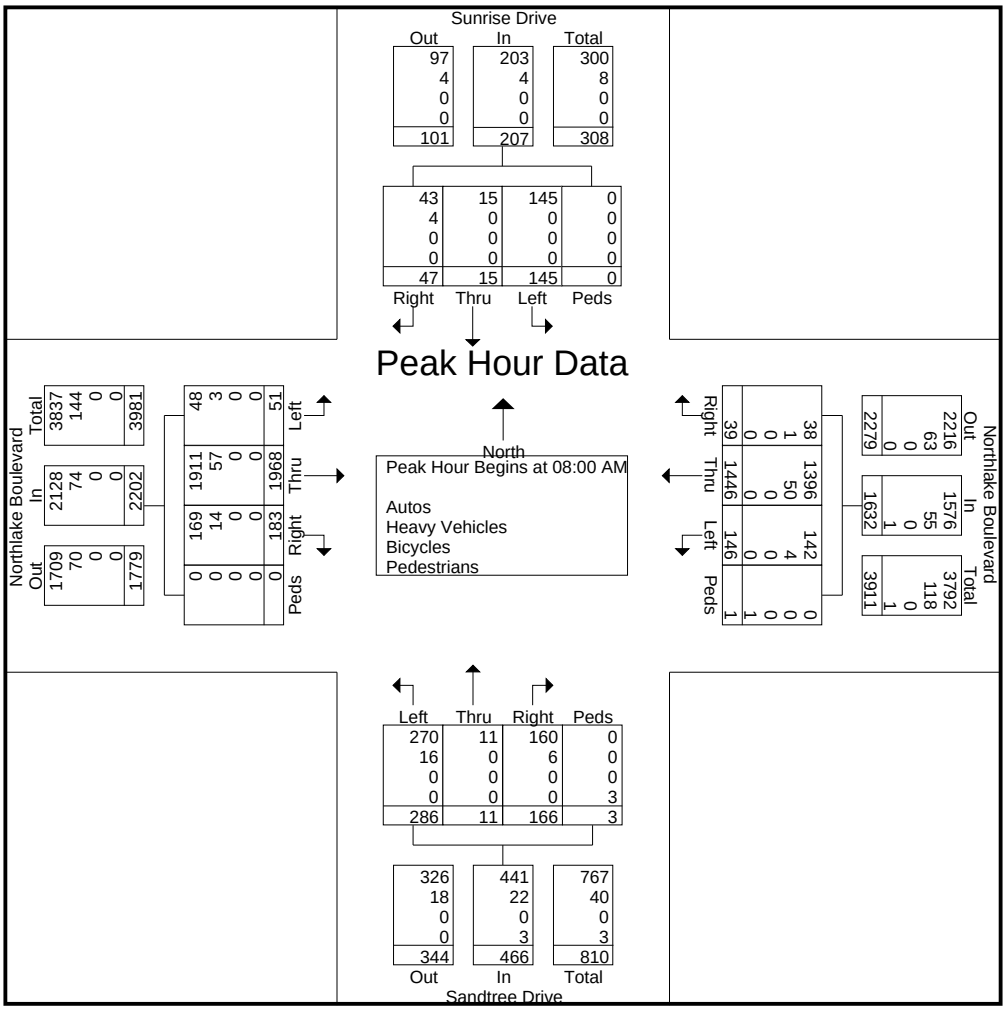
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at Sunrise Drive 03052015
Site Code :
Start Date : 3/5/2015
Page No : 2

	Northlake Boulevard Eastbound					Northlake Boulevard Westbound					Sandtree Drive Northbound					Sunrise Drive Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	10	569	44	0	623	31	397	17	1	446	70	0	38	1	109	33	3	13	0	49	1227
08:15 AM	18	492	45	0	555	35	361	6	0	402	57	4	39	1	101	41	4	16	0	61	1119
08:30 AM	13	454	45	0	512	53	317	9	0	379	79	5	45	1	130	47	5	8	0	60	1081
08:45 AM	10	453	49	0	512	27	371	7	0	405	80	2	44	0	126	24	3	10	0	37	1080
Total Volume	51	1968	183	0	2202	146	1446	39	1	1632	286	11	166	3	466	145	15	47	0	207	4507
% App. Total	2.3	89.4	8.3	0		8.9	88.6	2.4	0.1		61.4	2.4	35.6	0.6		70	7.2	22.7	0		
PHF	.708	.865	.934	.000	.884	.689	.911	.574	.250	.915	.894	.550	.922	.750	.896	.771	.750	.734	.000	.848	.918
Autos	48	1911	169	0	2128	142	1396	38	0	1576	270	11	160	0	441	145	15	43	0	203	4348
% Autos	94.1	97.1	92.3	0	96.6	97.3	96.5	97.4	0	96.6	94.4	100	96.4	0	94.6	100	100	91.5	0	98.1	96.5
Heavy Vehicles	3	57	14	0	74	4	50	1	0	55	16	0	6	0	22	0	0	4	0	4	155
% Heavy Vehicles	5.9	2.9	7.7	0	3.4	2.7	3.5	2.6	0	3.4	5.6	0	3.6	0	4.7	0	0	8.5	0	1.9	3.4
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	1	1	0	0	0	3	3	0	0	0	0	0	4
% Pedestrians	0	0	0	0	0	0	0	0	100	0.1	0	0	0	100	0.6	0	0	0	0	0	0.1



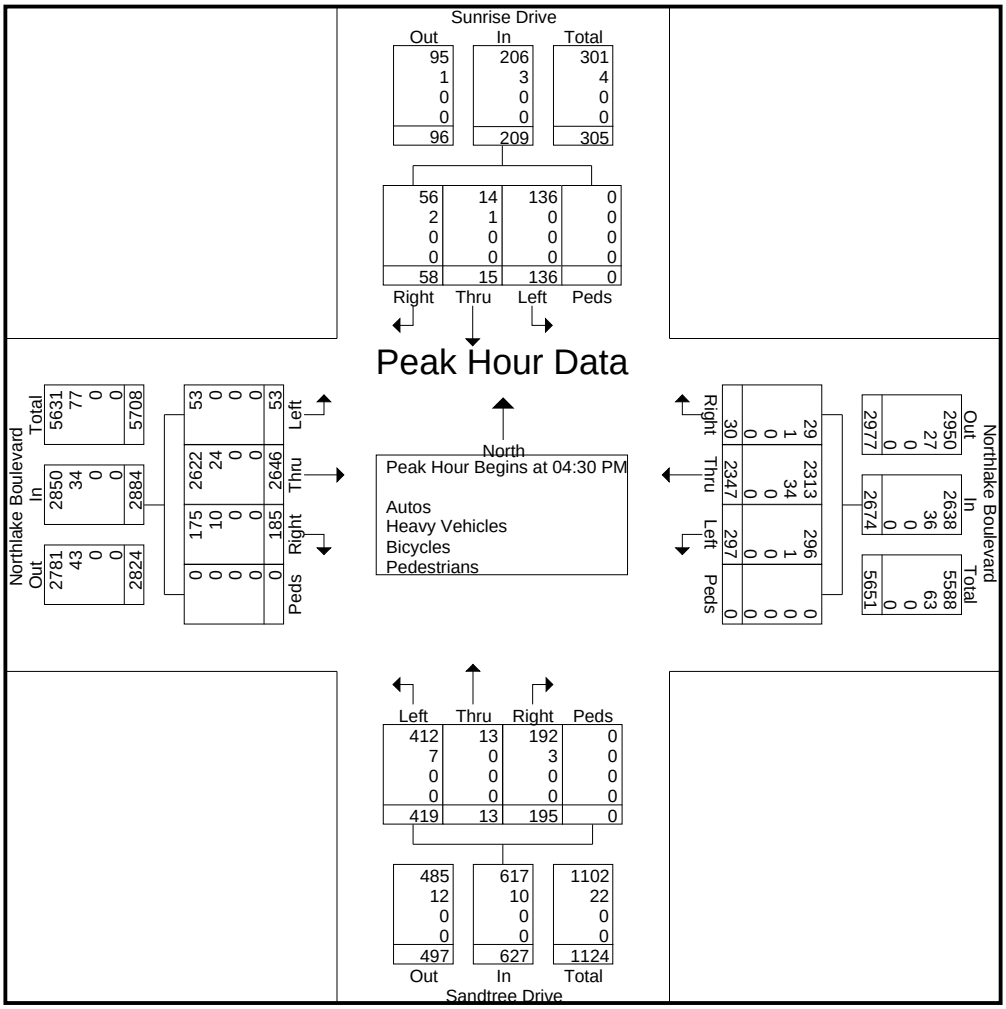
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at Sunrise Drive 03052015
Site Code :
Start Date : 3/5/2015
Page No : 3

	Northlake Boulevard Eastbound					Northlake Boulevard Westbound					Sandtree Drive Northbound					Sunrise Drive Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	15	602	54	0	671	54	536	6	0	596	89	0	48	0	137	26	5	16	0	47	1451
04:45 PM	8	1120	50	0	1178	136	687	9	0	832	98	5	44	0	147	55	2	15	0	72	2229
05:00 PM	19	416	40	0	475	57	553	9	0	619	121	7	60	0	188	30	7	17	0	54	1336
05:15 PM	11	508	41	0	560	50	571	6	0	627	111	1	43	0	155	25	1	10	0	36	1378
Total Volume	53	2646	185	0	2884	297	2347	30	0	2674	419	13	195	0	627	136	15	58	0	209	6394
% App. Total	1.8	91.7	6.4	0		11.1	87.8	1.1	0		66.8	2.1	31.1	0		65.1	7.2	27.8	0		
PHF	.697	.591	.856	.000	.612	.546	.854	.833	.000	.803	.866	.464	.813	.000	.834	.618	.536	.853	.000	.726	.717
Autos	53	2622	175	0	2850	296	2313	29	0	2638	412	13	192	0	617	136	14	56	0	206	6311
% Autos	100	99.1	94.6	0	98.8	99.7	98.6	96.7	0	98.7	98.3	100	98.5	0	98.4	100	93.3	96.6	0	98.6	98.7
Heavy Vehicles	0	24	10	0	34	1	34	1	0	36	7	0	3	0	10	0	1	2	0	3	83
% Heavy Vehicles	0	0.9	5.4	0	1.2	0.3	1.4	3.3	0	1.3	1.7	0	1.5	0	1.6	0	6.7	3.4	0	1.4	1.3
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at Sunrise Drive 03052015
Site Code :
Start Date : 3/5/2015
Page No : 1

Groups Printed- Heavy Vehicles

	Northlake Boulevard Eastbound					Northlake Boulevard Westbound					Sandtree Drive Northbound					Sunrise Drive Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	7	1	0	8	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	10
06:15 AM	0	3	1	0	4	0	9	0	0	9	1	0	0	0	1	0	0	0	0	0	14
06:30 AM	0	6	1	0	7	0	8	0	0	8	2	1	1	0	4	0	0	1	0	1	20
06:45 AM	0	10	0	0	10	0	5	0	0	5	1	0	3	0	4	0	0	1	0	1	20
Total	0	26	3	0	29	0	24	0	0	24	4	1	4	0	9	0	0	2	0	2	64
07:00 AM	0	13	1	0	14	0	12	1	0	13	2	0	2	0	4	0	0	1	0	1	32
07:15 AM	0	14	4	0	18	1	13	0	0	14	0	0	1	0	1	1	0	0	0	1	34
07:30 AM	1	8	2	0	11	2	12	1	0	15	0	0	2	0	2	0	0	1	0	1	29
07:45 AM	0	11	1	0	12	3	10	0	0	13	0	0	2	0	2	0	0	0	0	0	27
Total	1	46	8	0	55	6	47	2	0	55	2	0	7	0	9	1	0	2	0	3	122
08:00 AM	2	20	3	0	25	0	7	0	0	7	4	0	2	0	6	0	0	2	0	2	40
08:15 AM	0	11	4	0	15	1	16	1	0	18	2	0	3	0	5	0	0	1	0	1	39
08:30 AM	1	15	4	0	20	1	11	0	0	12	6	0	1	0	7	0	0	1	0	1	40
08:45 AM	0	11	3	0	14	2	16	0	0	18	4	0	0	0	4	0	0	0	0	0	36
Total	3	57	14	0	74	4	50	1	0	55	16	0	6	0	22	0	0	4	0	4	155
****BREAK****																					
04:00 PM	0	9	0	0	9	0	7	0	0	7	1	0	0	0	1	1	2	0	0	3	20
04:15 PM	1	8	1	0	10	0	13	0	0	13	4	0	0	0	4	2	1	0	0	3	30
04:30 PM	0	8	3	0	11	1	10	1	0	12	4	0	0	0	4	0	1	0	0	1	28
04:45 PM	0	9	1	0	10	0	6	0	0	6	0	0	0	0	0	0	0	2	0	2	18
Total	1	34	5	0	40	1	36	1	0	38	9	0	0	0	9	3	4	2	0	9	96
05:00 PM	0	5	2	0	7	0	12	0	0	12	1	0	3	0	4	0	0	0	0	0	23
05:15 PM	0	2	4	0	6	0	6	0	0	6	2	0	0	0	2	0	0	0	0	0	14
05:30 PM	0	8	1	0	9	0	5	0	0	5	0	0	3	0	3	0	0	0	0	0	17
05:45 PM	0	3	3	0	6	0	9	0	0	9	0	0	3	0	3	2	0	0	0	2	20
Total	0	18	10	0	28	0	32	0	0	32	3	0	9	0	12	2	0	0	0	2	74
06:00 PM	0	5	0	0	5	0	1	0	0	1	1	0	1	0	2	1	0	0	0	1	9
06:15 PM	0	4	0	0	4	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	6
06:30 PM	0	1	0	0	1	0	3	0	0	3	2	0	0	0	2	0	0	0	0	0	6
06:45 PM	0	3	0	0	3	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	6
Total	0	13	0	0	13	0	9	0	0	9	3	0	1	0	4	1	0	0	0	1	27
Grand Total	5	194	40	0	239	11	198	4	0	213	37	1	27	0	65	7	4	10	0	21	538
Apprch %	2.1	81.2	16.7	0		5.2	93	1.9	0		56.9	1.5	41.5	0		33.3	19	47.6	0		
Total %	0.9	36.1	7.4	0	44.4	2	36.8	0.7	0	39.6	6.9	0.2	5	0	12.1	1.3	0.7	1.9	0	3.9	

North Lake Boulevard at Keating Drive

County: 93
Station: 3221
Description: KEATING DR N OF NORTHLAKE BLVD
Start Date: 03/24/2015
Start Time: 0000

	Direction: N					Direction: S					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	6	7	7	2	22	9	11	5	3	28	50
0100	4	2	2	3	11	5	2	4	4	15	26
0200	4	5	0	1	10	7	4	0	2	13	23
0300	2	1	2	1	6	4	2	8	7	21	27
0400	1	2	1	0	4	2	0	4	5	11	15
0500	1	0	0	3	4	9	7	12	12	40	44
0600	3	7	6	6	22	21	18	30	43	112	134
0700	18	12	8	25	63	57	59	58	63	237	300
0800	25	17	33	42	117	68	55	60	80	263	380
0900	28	27	27	29	111	64	74	59	55	252	363
1000	31	38	37	33	139	53	56	52	78	239	378
1100	47	34	45	55	181	54	58	74	106	292	473
1200	47	60	52	46	205	77	96	62	82	317	522
1300	39	56	48	52	195	84	82	67	81	314	509
1400	53	40	49	52	194	75	65	58	64	262	456
1500	43	61	48	58	210	58	85	83	92	318	528
1600	59	68	59	82	268	66	91	74	88	319	587
1700	79	74	87	92	332	113	65	100	89	367	699
1800	75	69	59	58	261	100	83	95	94	372	633
1900	44	55	61	39	199	71	59	71	66	267	466
2000	36	29	47	35	147	42	50	25	48	165	312
2100	26	32	27	23	108	44	35	38	16	133	241
2200	22	22	18	8	70	27	22	15	15	79	149
2300	10	10	5	7	32	19	5	10	16	50	82
24-Hour Totals:					2911					4486	7397

Peak Volume Information

	Direction: N		Direction: S		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	830	130	830	278	830	408
P.M.	1700	332	1730	372	1700	699
Daily	1700	332	1730	372	1700	699

Generated by SPS 5.0.45P

County: 93
Station: 3221
Description: KEATING DR N OF NORTHLAKE BLVD
Start Date: 03/25/2015
Start Time: 0000

	Direction: N					Direction: S					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	6	4	4	5	19	4	4	6	0	14	33
0100	8	2	3	3	16	0	5	5	2	12	28
0200	4	2	2	1	9	0	1	0	3	4	13
0300	1	1	0	2	4	0	1	9	1	11	15
0400	1	4	1	0	6	1	3	8	11	23	29
0500	3	2	2	6	13	7	11	19	14	51	64
0600	4	6	3	11	24	22	21	40	65	148	172
0700	12	16	21	14	63	54	56	63	91	264	327
0800	29	24	24	22	99	81	58	73	89	301	400
0900	29	22	26	23	100	62	58	61	74	255	355
1000	39	32	34	25	130	74	61	68	57	260	390
1100	35	44	51	37	167	78	58	90	81	307	474
1200	41	48	35	32	156	68	80	78	67	293	449
1300	50	38	43	43	174	75	58	71	80	284	458
1400	48	57	52	59	216	77	64	69	69	279	495
1500	58	71	66	54	249	80	87	89	80	336	585
1600	49	70	64	67	250	62	86	96	79	323	573
1700	77	71	82	70	300	90	81	82	89	342	642
1800	69	71	54	53	247	113	86	95	81	375	622
1900	51	52	48	51	202	54	75	63	45	237	439
2000	47	39	36	35	157	73	53	54	53	233	390
2100	32	24	25	35	116	52	30	29	27	138	254
2200	20	19	16	11	66	15	20	17	11	63	129
2300	7	7	4	11	29	9	8	11	12	40	69
24-Hour Totals:					2812					4593	7405

Peak Volume Information

	Direction: N		Direction: S		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	800	99	745	303	800	400
P.M.	1700	300	1745	383	1730	662
Daily	1700	300	1745	383	1730	662

Generated by SPS 5.0.45P

County: 93
Station: 3221
Description: KEATING DR N OF NORTHLAKE BLVD
Start Date: 03/26/2015
Start Time: 0000

	Direction: N					Direction: S					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	6	12	7	8	33	2	6	14	3	25	58
0100	3	3	4	1	11	12	3	5	1	21	32
0200	0	3	3	1	7	6	1	1	6	14	21
0300	2	1	3	2	8	0	2	2	4	8	16
0400	1	3	1	1	6	3	8	5	7	23	29
0500	2	1	1	3	7	5	8	10	17	40	47
0600	2	6	3	7	18	12	26	39	43	120	138
0700	9	14	12	19	54	52	57	57	71	237	291
0800	29	20	26	35	110	60	69	60	73	262	372
0900	32	24	21	24	101	67	67	60	52	246	347
1000	32	37	32	41	142	62	72	63	65	262	404
1100	25	45	48	45	163	75	52	72	72	271	434
1200	30	35	44	38	147	67	52	65	83	267	414
1300	60	36	54	42	192	75	52	71	70	268	460
1400	41	37	43	38	159	59	55	56	37	207	366
1500	61	57	50	63	231	69	56	82	78	285	516
1600	76	54	67	69	266	82	94	83	82	341	607
1700	64	78	102	91	335	80	90	99	77	346	681
1800	72	68	62	59	261	95	88	63	90	336	597
1900	46	51	45	40	182	60	41	49	50	200	382
2000	47	41	39	29	156	61	53	46	31	191	347
2100	20	23	27	18	88	27	29	21	20	97	185
2200	21	7	11	9	48	20	5	18	19	62	110
2300	14	10	8	6	38	13	17	9	4	43	81
24-Hour Totals:					2763					4172	6935

Peak Volume Information

	Direction: N		Direction: S		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	830	117	815	269	830	384
P.M.	1715	343	1715	361	1715	704
Daily	1715	343	1715	361	1715	704

Generated by SPS 5.0.45P

County: 93
Station: 3223
Description: NORTHLAKE BLVD E OF KEATING DR
Start Date: 03/24/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	40	52	29	24	145	61	66	46	34	207	352
0100	27	22	15	19	83	43	26	25	27	121	204
0200	23	12	21	14	70	19	16	13	13	61	131
0300	10	12	17	19	58	18	8	13	8	47	105
0400	12	25	32	46	115	11	17	18	28	74	189
0500	41	55	64	104	264	32	42	68	99	241	505
0600	129	161	227	296	813	99	142	172	268	681	1494
0700	429	525	605	582	2141	266	255	334	464	1319	3460
0800	569	569	561	558	2257	396	431	493	503	1823	4080
0900	457	449	466	478	1850	408	406	379	365	1558	3408
1000	387	427	454	424	1692	330	372	441	445	1588	3280
1100	451	509	468	499	1927	465	475	477	559	1976	3903
1200	467	463	478	522	1930	437	525	577	426	1965	3895
1300	499	484	542	445	1970	493	531	529	541	2094	4064
1400	419	461	470	420	1770	527	504	507	539	2077	3847
1500	489	457	490	487	1923	575	655	609	661	2500	4423
1600	456	468	481	478	1883	655	720	670	628	2673	4556
1700	496	540	503	482	2021	731	760	768	736	2995	5016
1800	460	412	392	390	1654	655	654	582	538	2429	4083
1900	400	319	298	298	1315	537	523	417	430	1907	3222
2000	252	217	242	230	941	448	369	320	345	1482	2423
2100	242	216	156	147	761	272	272	243	208	995	1756
2200	128	118	91	86	423	200	190	129	129	648	1071
2300	71	51	49	49	220	102	77	74	76	329	549
24-Hour Totals:					28226					31790	60016

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	730	2325	815	1835	800	4080
P.M.	1245	2047	1700	2995	1700	5016
Daily	730	2325	1700	2995	1700	5016

Generated by SPS 5.0.45P

County: 93
Station: 3223
Description: NORTHLAKE BLVD E OF KEATING DR
Start Date: 03/25/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	47	34	20	27	128	46	57	23	42	168	296
0100	26	19	15	8	68	39	31	24	25	119	187
0200	15	12	14	7	48	15	14	5	11	45	93
0300	7	18	19	17	61	11	15	11	16	53	114
0400	18	26	33	49	126	12	13	16	25	66	192
0500	42	52	75	117	286	23	39	79	105	246	532
0600	106	152	234	317	809	114	112	162	243	631	1440
0700	407	512	540	571	2030	275	303	340	465	1383	3413
0800	626	576	571	455	2228	468	471	439	529	1907	4135
0900	401	361	322	361	1445	407	400	365	299	1471	2916
1000	304	530	400	450	1684	414	334	404	430	1582	3266
1100	474	399	451	455	1779	441	493	424	536	1894	3673
1200	398	489	475	463	1825	525	479	591	504	2099	3924
1300	497	462	472	475	1906	514	479	485	573	2051	3957
1400	398	459	406	502	1765	518	554	562	602	2236	4001
1500	482	471	464	479	1896	572	659	629	633	2493	4389
1600	457	476	513	470	1916	708	751	694	698	2851	4767
1700	515	545	491	445	1996	702	714	710	721	2847	4843
1800	453	473	456	369	1751	659	651	650	638	2598	4349
1900	389	324	313	282	1308	490	500	467	423	1880	3188
2000	295	272	270	279	1116	444	462	406	367	1679	2795
2100	257	212	168	146	783	307	280	229	254	1070	1853
2200	123	122	89	72	406	176	149	151	128	604	1010
2300	75	49	58	44	226	106	69	88	74	337	563
24-Hour Totals:					27586					32310	59896

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	745	2344	800	1907	745	4187
P.M.	1630	2043	1600	2851	1630	4851
Daily	745	2344	1600	2851	1630	4851

Generated by SPS 5.0.45P

County: 93
Station: 3223
Description: NORTHLAKE BLVD E OF KEATING DR
Start Date: 03/26/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	39	39	25	33	136	48	58	42	55	203	339
0100	27	23	17	23	90	26	20	20	20	86	176
0200	15	15	20	9	59	22	16	9	15	62	121
0300	14	16	18	17	65	10	14	15	12	51	116
0400	12	21	32	49	114	8	10	24	19	61	175
0500	30	46	64	96	236	29	41	62	75	207	443
0600	128	164	218	301	811	99	110	155	249	613	1424
0700	368	511	520	533	1932	255	307	312	456	1330	3262
0800	568	552	519	495	2134	438	456	486	520	1900	4034
0900	481	383	417	501	1782	360	440	401	374	1575	3357
1000	437	429	405	481	1752	356	386	436	444	1622	3374
1100	437	448	508	465	1858	490	524	467	561	2042	3900
1200	466	490	472	502	1930	530	512	555	535	2132	4062
1300	470	445	482	462	1859	563	573	522	573	2231	4090
1400	421	402	445	429	1697	519	537	664	682	2402	4099
1500	477	491	457	506	1931	660	716	704	599	2679	4610
1600	488	467	499	438	1892	627	673	656	663	2619	4511
1700	520	498	490	431	1939	746	766	720	717	2949	4888
1800	461	412	348	353	1574	692	552	548	527	2319	3893
1900	318	275	283	278	1154	395	415	388	345	1543	2697
2000	269	257	191	219	936	380	365	286	273	1304	2240
2100	200	179	168	147	694	272	285	241	215	1013	1707
2200	118	115	93	76	402	216	139	139	127	621	1023
2300	82	50	54	51	237	124	105	80	56	365	602
24-Hour Totals:					27214					31929	59143

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	730	2173	800	1900	800	4034
P.M.	1545	1960	1700	2949	1700	4888
Daily	730	2173	1700	2949	1700	4888

Generated by SPS 5.0.45P

County: 93
Station: 3225
Description: KEATING DR S OF NORTHLAKE BLVD
Start Date: 03/24/2015
Start Time: 0000

	Direction: N					Direction: S					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	4	7	5	7	23	2	2	0	2	6	29
0100	1	9	1	1	12	3	2	1	1	7	19
0200	0	1	0	0	1	0	2	0	0	2	3
0300	0	0	0	0	0	0	0	0	0	0	0
0400	0	0	0	0	0	0	0	3	7	10	10
0500	5	4	2	4	15	3	3	5	12	23	38
0600	3	1	4	12	20	4	1	8	27	40	60
0700	17	9	14	39	79	13	19	33	55	120	199
0800	44	26	42	36	148	53	44	59	84	240	388
0900	44	58	66	71	239	65	71	58	60	254	493
1000	61	82	78	86	307	70	87	91	91	339	646
1100	96	111	120	101	428	101	127	156	155	539	967
1200	124	134	145	152	555	123	169	157	152	601	1156
1300	164	169	192	153	678	133	128	119	137	517	1195
1400	125	120	129	104	478	118	124	94	110	446	924
1500	139	119	119	159	536	103	123	141	151	518	1054
1600	150	132	174	145	601	159	141	148	174	622	1223
1700	153	178	180	148	659	133	181	160	182	656	1315
1800	126	147	150	152	575	154	170	190	141	655	1230
1900	153	156	139	119	567	123	106	134	128	491	1058
2000	130	145	113	90	478	87	89	67	80	323	801
2100	88	69	71	63	291	74	66	52	37	229	520
2200	36	40	39	37	152	22	25	35	15	97	249
2300	23	16	11	18	68	4	3	4	4	15	83
24-Hour Totals:					6910					6750	13660

Peak Volume Information

	Direction: N		Direction: S		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	845	204	830	279	845	482
P.M.	1300	678	1745	696	1700	1315
Daily	1300	678	1745	696	1700	1315

Generated by SPS 5.0.45P

County: 93
Station: 3225
Description: KEATING DR S OF NORTHLAKE BLVD
Start Date: 03/25/2015
Start Time: 0000

	Direction: N					Direction: S					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	11	5	2	6	24	1	0	0	5	6	30
0100	2	1	0	0	3	1	0	0	0	1	4
0200	0	1	0	0	1	0	2	0	0	2	3
0300	0	0	1	0	1	1	0	0	0	1	2
0400	0	0	1	1	2	0	0	5	5	10	12
0500	0	2	0	4	6	2	0	4	30	36	42
0600	2	0	9	9	20	8	2	5	18	33	53
0700	25	18	29	27	99	14	24	37	33	108	207
0800	27	35	50	40	152	44	66	50	73	233	385
0900	72	54	75	71	272	77	79	80	77	313	585
1000	93	80	86	100	359	77	78	84	111	350	709
1100	98	103	154	119	474	98	107	129	157	491	965
1200	127	155	177	190	649	172	157	165	160	654	1303
1300	174	158	133	138	603	132	137	110	117	496	1099
1400	157	144	131	144	576	125	126	128	148	527	1103
1500	137	148	137	155	577	119	166	140	127	552	1129
1600	136	168	130	165	599	177	141	132	151	601	1200
1700	167	168	189	154	678	131	179	188	196	694	1372
1800	152	166	183	149	650	152	163	182	146	643	1293
1900	163	163	193	144	663	132	141	150	106	529	1192
2000	144	112	125	141	522	122	131	125	83	461	983
2100	94	105	83	67	349	60	64	52	40	216	565
2200	56	56	25	30	167	34	31	23	16	104	271
2300	20	9	14	12	55	3	4	3	4	14	69
24-Hour Totals:					7501					7075	14576

Peak Volume Information

	Direction: N		Direction: S		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	845	241	845	309	845	550
P.M.	1230	699	1715	715	1715	1378
Daily	1230	699	1715	715	1715	1378

Generated by SPS 5.0.45P

County: 93
Station: 3225
Description: KEATING DR S OF NORTHLAKE BLVD
Start Date: 03/26/2015
Start Time: 0000

	Direction: N					Direction: S					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	6	11	6	10	33	0	2	0	3	5	38
0100	8	0	2	1	11	2	1	0	2	5	16
0200	2	3	0	0	5	4	2	0	0	6	11
0300	1	0	1	0	2	0	0	3	3	6	8
0400	0	0	1	2	3	2	1	5	14	22	25
0500	0	0	0	1	1	2	3	4	10	19	20
0600	5	4	3	11	23	3	5	6	21	35	58
0700	15	16	31	29	91	34	23	38	38	133	224
0800	51	47	72	46	216	47	71	73	78	269	485
0900	44	62	61	77	244	58	82	77	85	302	546
1000	96	102	99	114	411	81	85	103	111	380	791
1100	87	122	141	109	459	112	121	141	168	542	1001
1200	152	145	157	177	631	174	147	139	149	609	1240
1300	160	163	181	146	650	151	144	118	161	574	1224
1400	147	105	136	130	518	108	111	131	110	460	978
1500	148	161	129	177	615	140	121	123	147	531	1146
1600	160	126	160	123	569	136	119	114	151	520	1089
1700	167	183	192	169	711	134	170	174	191	669	1380
1800	135	174	133	146	588	134	147	141	140	562	1150
1900	161	149	143	147	600	92	130	128	102	452	1052
2000	97	98	125	108	428	116	77	81	59	333	761
2100	102	83	67	66	318	56	47	39	25	167	485
2200	42	35	31	27	135	31	19	28	14	92	227
2300	27	26	18	3	74	6	9	7	5	27	101
24-Hour Totals:					7336					6720	14056

Peak Volume Information

	Direction: N		Direction: S		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	830	224	845	295	830	515
P.M.	1700	711	1700	669	1700	1380
Daily	1700	711	1700	669	1700	1380

Generated by SPS 5.0.45P

County: 93
Station: 3227
Description: NORTHLAKE BLVD W OF KEATING DR
Start Date: 03/24/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	35	30	21	20	106	58	52	39	32	181	287
0100	11	18	13	7	49	25	20	15	21	81	130
0200	3	9	8	10	30	5	13	7	7	32	62
0300	8	9	9	6	32	7	5	7	10	29	61
0400	7	18	21	42	88	8	14	15	16	53	141
0500	27	31	33	55	146	18	35	71	99	223	369
0600	71	69	135	193	468	121	128	201	259	709	1177
0700	258	327	450	399	1434	291	271	324	413	1299	2733
0800	338	391	411	344	1484	307	399	391	370	1467	2951
0900	311	324	291	309	1235	323	307	307	296	1233	2468
1000	282	278	263	275	1098	266	280	333	357	1236	2334
1100	258	294	273	306	1131	374	380	345	399	1498	2629
1200	275	260	302	292	1129	397	403	440	401	1641	2770
1300	293	286	258	254	1091	357	420	422	402	1601	2692
1400	246	261	277	225	1009	470	392	425	488	1775	2784
1500	293	309	303	287	1192	530	556	482	559	2127	3319
1600	266	254	288	264	1072	637	619	558	674	2488	3560
1700	311	316	301	294	1222	656	701	730	640	2727	3949
1800	262	212	189	210	873	644	470	535	445	2094	2967
1900	182	181	156	149	668	442	462	365	353	1622	2290
2000	125	121	121	127	494	315	331	261	251	1158	1652
2100	143	135	85	57	420	276	224	244	163	907	1327
2200	73	70	55	42	240	176	150	113	116	555	795
2300	31	29	27	28	115	88	63	74	56	281	396
24-Hour Totals:					16826					27017	43843

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	730	1578	745	1510	745	3049
P.M.	1700	1222	1645	2761	1645	3953
Daily	730	1578	1645	2761	1645	3953

Generated by SPS 5.0.45P

County: 93
Station: 3227
Description: NORTHLAKE BLVD W OF KEATING DR
Start Date: 03/25/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	27	21	10	18	76	44	39	16	28	127	203
0100	15	7	9	3	34	27	21	16	16	80	114
0200	11	9	9	4	33	12	9	6	8	35	68
0300	2	12	10	10	34	7	10	4	16	37	71
0400	14	20	23	36	93	10	6	19	16	51	144
0500	31	37	56	86	210	8	32	68	77	185	395
0600	64	93	159	206	522	93	102	137	193	525	1047
0700	239	327	422	388	1376	253	257	295	385	1190	2566
0800	374	396	374	310	1454	317	393	333	364	1407	2861
0900	280	256	230	257	1023	357	340	310	260	1267	2290
1000	196	334	260	255	1045	351	289	331	346	1317	2362
1100	302	255	266	271	1094	355	420	353	391	1519	2613
1200	265	326	322	423	1336	453	451	449	446	1799	3135
1300	417	434	419	391	1661	395	455	409	400	1659	3320
1400	391	415	409	461	1676	460	583	362	423	1828	3504
1500	481	457	391	303	1632	424	446	503	502	1875	3507
1600	293	288	312	268	1161	550	702	680	681	2613	3774
1700	332	306	301	292	1231	697	669	773	776	2915	4146
1800	247	261	242	228	978	716	659	749	650	2774	3752
1900	197	165	167	175	704	367	357	335	273	1332	2036
2000	184	159	130	166	639	340	299	331	271	1241	1880
2100	134	124	91	57	406	228	172	141	95	636	1042
2200	65	74	63	34	236	62	71	45	38	216	452
2300	47	26	35	26	134	22	17	18	12	69	203
24-Hour Totals:					18788					26697	45485

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	730	1580	815	1447	730	2970
P.M.	1430	1808	1715	2934	1700	4146
Daily	1430	1808	1715	2934	1700	4146

Generated by SPS 5.0.45P

County: 93
Station: 3227
Description: NORTHLAKE BLVD W OF KEATING DR
Start Date: 03/26/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	22	24	8	15	69	5	9	2	7	23	92
0100	14	16	8	18	56	6	6	4	2	18	74
0200	7	12	15	8	42	7	5	5	3	20	62
0300	7	12	11	9	39	1	1	0	0	2	41
0400	4	12	23	48	87	2	2	0	0	4	91
0500	23	28	45	57	153	4	3	1	5	13	166
0600	77	107	138	190	512	4	8	13	23	48	560
0700	223	347	390	403	1363	59	111	107	127	404	1767
0800	394	427	389	366	1576	103	87	78	113	381	1957
0900	297	309	289	349	1244	71	81	44	69	265	1509
1000	251	274	317	275	1117	100	116	123	99	438	1555
1100	300	276	319	327	1222	134	150	135	138	557	1779
1200	330	325	289	320	1264	314	378	528	552	1772	3036
1300	286	276	289	288	1139	566	607	499	513	2185	3324
1400	261	250	284	233	1028	552	427	582	641	2202	3230
1500	279	304	300	296	1179	634	710	666	585	2595	3774
1600	310	266	326	306	1208	775	684	750	946	3155	4363
1700	392	314	272	276	1254	908	948	899	863	3618	4872
1800	246	278	244	264	1032	701	726	560	435	2422	3454
1900	203	181	199	179	762	423	420	411	334	1588	2350
2000	178	163	120	108	569	366	311	338	305	1320	1889
2100	124	101	128	84	437	303	291	222	191	1007	1444
2200	72	69	66	45	252	232	136	156	108	632	884
2300	56	31	43	38	168	87	82	78	43	290	458
24-Hour Totals:					17772					24959	42731

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	730	1614	715	448	730	2038
P.M.	1630	1338	1645	3701	1645	4985
Daily	730	1614	1645	3701	1645	4985

Generated by SPS 5.0.45P

Three-Day Approach Count Summary

Project Name: North Lake Boulevard Study
Project No.: 2013008.018
Location: North Lake Boulevard at Keating Drive
Direction: NORTHBOUND (APPROACH)
Date: 3/24/2015-3/26/2015

TIME PERIOD (AM)		WEEKDAY TUES 24-Mar	WED 25-Mar	THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
00:00	00:15	4	11	6	7	
00:15	00:30	7	5	11	8	
00:30	00:45	5	2	6	4	
00:45	01:00	7	6	10	8	27
01:00	01:15	1	2	8	4	
01:15	01:30	9	1	0	3	
01:30	01:45	1	0	2	1	
01:45	02:00	1	0	1	1	9
02:00	02:15	0	0	2	1	
02:15	02:30	1	1	3	2	
02:30	02:45	0	0	0	0	
02:45	03:00	0	0	0	0	2
03:00	03:15	0	0	1	0	
03:15	03:30	0	0	0	0	
03:30	03:45	0	1	1	1	
03:45	04:00	0	0	0	0	1
04:00	04:15	0	0	0	0	
04:15	04:30	0	0	0	0	
04:30	04:45	0	1	1	1	
04:45	05:00	0	1	2	1	2
05:00	05:15	5	0	0	2	
05:15	05:30	4	2	0	2	
05:30	05:45	2	0	0	1	
05:45	06:00	4	4	1	3	7
06:00	06:15	3	2	5	3	
06:15	06:30	1	0	4	2	
06:30	06:45	4	9	3	5	
06:45	07:00	12	9	11	11	21
07:00	07:15	17	25	15	19	
07:15	07:30	9	18	16	14	
07:30	07:45	14	29	31	25	
07:45	08:00	39	27	29	32	90
08:00	08:15	44	27	51	41	
08:15	08:30	26	35	47	36	
08:30	08:45	42	50	72	55	
08:45	09:00	36	40	46	41	172
09:00	09:15	44	72	44	53	
09:15	09:30	58	54	62	58	
09:30	09:45	66	75	61	67	
09:45	10:00	71	71	77	73	252
10:00	10:15	61	93	96	83	
10:15	10:30	82	80	102	88	
10:30	10:45	78	86	99	88	
10:45	11:00	86	100	114	100	359
11:00	11:15	96	98	87	94	
11:15	11:30	111	103	122	112	
11:30	11:45	120	154	141	138	
11:45	12:00	101	119	109	110	454

TIME PERIOD (PM)		WEEKDAY TUES 24-Mar	WED 25-Mar	THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
12:00	12:15	124	127	152	134	
12:15	12:30	134	155	145	145	
12:30	12:45	145	177	157	160	
12:45	13:00	152	190	177	173	612
13:00	13:15	164	174	160	166	
13:15	13:30	169	158	163	163	
13:30	13:45	192	133	181	169	
13:45	14:00	153	138	146	146	644
14:00	14:15	125	157	147	143	
14:15	14:30	120	144	105	123	
14:30	14:45	129	131	136	132	
14:45	15:00	104	144	130	126	524
15:00	15:15	139	137	148	141	
15:15	15:30	119	148	161	143	
15:30	15:45	119	137	129	128	
15:45	16:00	159	155	177	164	576
16:00	16:15	150	136	160	149	
16:15	16:30	132	168	126	142	
16:30	16:45	174	130	160	155	
16:45	17:00	145	165	123	144	590
17:00	17:15	153	167	167	162	
17:15	17:30	178	168	183	176	
17:30	17:45	180	189	192	187	
17:45	18:00	148	154	169	157	683
18:00	18:15	126	152	135	138	
18:15	18:30	147	166	174	162	
18:30	18:45	150	183	133	155	
18:45	19:00	152	149	146	149	604
19:00	19:15	153	163	161	159	
19:15	19:30	156	163	149	156	
19:30	19:45	139	193	143	158	
19:45	20:00	119	144	147	137	610
20:00	20:15	130	144	97	124	
20:15	20:30	145	112	98	118	
20:30	20:45	113	125	125	121	
20:45	21:00	90	141	108	113	476
21:00	21:15	88	94	102	95	
21:15	21:30	69	105	83	86	
21:30	21:45	71	83	67	74	
21:45	22:00	63	67	66	65	319
22:00	22:15	36	56	42	45	
22:15	22:30	40	56	35	44	
22:30	22:45	39	25	31	32	
22:45	23:00	37	30	27	31	151
23:00	23:15	23	20	27	23	
23:15	23:30	16	9	26	17	
23:30	23:45	11	14	18	14	
23:45	00:00	18	12	3	11	66
DAILY COUNT		6,910	7,501	7,336	7,249	
PEAK HOUR TIME					17:00	
PEAK HOUR COUNT					683	
ESTIMATED K-FACTOR					9.4%	

Three-Day Approach Count Summary

Project Name: North Lake Boulevard Study
State Project No.: 2013008.018
Location: North Lake Boulevard at Keating Drive
Direction: SOUTHBOUND (APPROACH)
Date: 3/24/2015-3/26/2015

TIME PERIOD (AM)		WEEKDAY TUES 24-Mar	WEEKDAY WED 25-Mar	WEEKDAY THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
00:00	00:15	9	4	2	5	
00:15	00:30	11	4	6	7	
00:30	00:45	5	6	14	8	
00:45	01:00	3	0	3	2	22
01:00	01:15	5	0	12	6	
01:15	01:30	2	5	3	3	
01:30	01:45	4	5	5	5	
01:45	02:00	4	2	1	2	16
02:00	02:15	7	0	6	4	
02:15	02:30	4	1	1	2	
02:30	02:45	0	0	1	0	
02:45	03:00	2	3	6	4	10
03:00	03:15	4	0	0	1	
03:15	03:30	2	1	2	2	
03:30	03:45	8	9	2	6	
03:45	04:00	7	1	4	4	13
04:00	04:15	2	1	3	2	
04:15	04:30	0	3	8	4	
04:30	04:45	4	8	5	6	
04:45	05:00	5	11	7	8	19
05:00	05:15	9	7	5	7	
05:15	05:30	7	11	8	9	
05:30	05:45	12	19	10	14	
05:45	06:00	12	14	17	14	44
06:00	06:15	21	22	12	18	
06:15	06:30	18	21	26	22	
06:30	06:45	30	40	39	36	
06:45	07:00	43	65	43	50	127
07:00	07:15	57	54	52	54	
07:15	07:30	59	56	57	57	
07:30	07:45	58	63	57	59	
07:45	08:00	63	91	71	75	246
08:00	08:15	68	81	60	70	
08:15	08:30	55	58	69	61	
08:30	08:45	60	73	60	64	
08:45	09:00	80	89	73	81	275
09:00	09:15	64	62	67	64	
09:15	09:30	74	58	67	66	
09:30	09:45	59	61	60	60	
09:45	10:00	55	74	52	60	251
10:00	10:15	53	74	62	63	
10:15	10:30	56	61	72	63	
10:30	10:45	52	68	63	61	
10:45	11:00	78	57	65	67	254
11:00	11:15	54	78	75	69	
11:15	11:30	58	58	52	56	
11:30	11:45	74	90	72	79	
11:45	12:00	106	81	72	86	290

TIME PERIOD (PM)		WEEKDAY TUES 24-Mar	WEEKDAY WED 25-Mar	WEEKDAY THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
12:00	12:15	77	68	67	71	
12:15	12:30	96	80	52	76	
12:30	12:45	62	78	65	68	
12:45	13:00	82	67	83	77	292
13:00	13:15	84	75	75	78	
13:15	13:30	82	58	52	64	
13:30	13:45	67	71	71	70	
13:45	14:00	81	80	70	77	289
14:00	14:15	75	77	59	70	
14:15	14:30	65	64	55	61	
14:30	14:45	58	69	56	61	
14:45	15:00	64	69	37	57	249
15:00	15:15	58	80	69	69	
15:15	15:30	85	87	56	76	
15:30	15:45	83	89	82	85	
15:45	16:00	92	80	78	83	313
16:00	16:15	66	62	82	70	
16:15	16:30	91	86	94	90	
16:30	16:45	74	96	83	84	
16:45	17:00	88	79	82	83	328
17:00	17:15	113	90	80	94	
17:15	17:30	65	81	90	79	
17:30	17:45	100	82	99	94	
17:45	18:00	89	89	77	85	352
18:00	18:15	100	113	95	103	
18:15	18:30	83	86	88	86	
18:30	18:45	95	95	63	84	
18:45	19:00	94	81	90	88	361
19:00	19:15	71	54	60	62	
19:15	19:30	59	75	41	58	
19:30	19:45	71	63	49	61	
19:45	20:00	66	45	50	54	235
20:00	20:15	42	73	61	59	
20:15	20:30	50	53	53	52	
20:30	20:45	25	54	46	42	
20:45	21:00	48	53	31	44	196
21:00	21:15	44	52	27	41	
21:15	21:30	35	30	29	31	
21:30	21:45	38	29	21	29	
21:45	22:00	16	27	20	21	123
22:00	22:15	27	15	20	21	
22:15	22:30	22	20	5	16	
22:30	22:45	15	17	18	17	
22:45	23:00	15	11	19	15	68
23:00	23:15	19	9	13	14	
23:15	23:30	5	8	17	10	
23:30	23:45	10	11	9	10	
23:45	00:00	16	12	4	11	44
DAILY COUNT		4,486	4,593	4,172	4,417	
PEAK HOUR TIME					17:30	
PEAK HOUR COUNT					367	
ESTIMATED K-FACTOR					8.3%	

Three-Day Approach Count Summary

Project Name: North Lake Boulevard Study
State Project No.: 2013008.018
Location: North Lake Boulevard at Keating Drive
Direction: EASTBOUND (APPROACH)
Date: 3/24/2015-3/26/2015

TIME PERIOD (AM)		WEEKDAY TUES 24-Mar	WEED 25-Mar	THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
00:00	00:15	35	27	22	28	
00:15	00:30	30	21	24	25	
00:30	00:45	21	10	8	13	
00:45	01:00	20	18	15	18	84
01:00	01:15	11	15	14	13	
01:15	01:30	18	7	16	14	
01:30	01:45	13	9	8	10	
01:45	02:00	7	3	18	9	46
02:00	02:15	3	11	7	7	
02:15	02:30	9	9	12	10	
02:30	02:45	8	9	15	11	
02:45	03:00	10	4	8	7	35
03:00	03:15	8	2	7	6	
03:15	03:30	9	12	12	11	
03:30	03:45	9	10	11	10	
03:45	04:00	6	10	9	8	35
04:00	04:15	7	14	4	8	
04:15	04:30	18	20	12	17	
04:30	04:45	21	23	23	22	
04:45	05:00	42	36	48	42	89
05:00	05:15	27	31	23	27	
05:15	05:30	31	37	28	32	
05:30	05:45	33	56	45	45	
05:45	06:00	55	86	57	66	170
06:00	06:15	71	64	77	71	
06:15	06:30	69	93	107	90	
06:30	06:45	135	159	138	144	
06:45	07:00	193	206	190	196	501
07:00	07:15	258	239	223	240	
07:15	07:30	327	327	347	334	
07:30	07:45	450	422	390	421	
07:45	08:00	399	388	403	397	1,391
08:00	08:15	338	374	394	369	
08:15	08:30	391	396	427	405	
08:30	08:45	411	374	389	391	
08:45	09:00	344	310	366	340	1,505
09:00	09:15	311	280	297	296	
09:15	09:30	324	256	309	296	
09:30	09:45	291	230	289	270	
09:45	10:00	309	257	349	305	1,167
10:00	10:15	282	196	251	243	
10:15	10:30	278	334	274	295	
10:30	10:45	263	260	317	280	
10:45	11:00	275	255	275	268	1,087
11:00	11:15	258	302	300	287	
11:15	11:30	294	255	276	275	
11:30	11:45	273	266	319	286	
11:45	12:00	306	271	327	301	1,149

TIME PERIOD (PM)		WEEKDAY TUES 24-Mar	WED 25-Mar	THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
12:00	12:15	275	265	330	290	
12:15	12:30	260	326	325	304	
12:30	12:45	302	322	289	304	
12:45	13:00	292	423	320	345	1,243
13:00	13:15	293	417	286	332	
13:15	13:30	286	434	276	332	
13:30	13:45	258	419	289	322	
13:45	14:00	254	391	288	311	1,297
14:00	14:15	246	391	261	299	
14:15	14:30	261	415	250	309	
14:30	14:45	277	409	284	323	
14:45	15:00	225	461	233	306	1,238
15:00	15:15	293	481	279	351	
15:15	15:30	309	457	304	357	
15:30	15:45	303	391	300	331	
15:45	16:00	287	303	296	295	1,334
16:00	16:15	266	293	310	290	
16:15	16:30	254	288	266	269	
16:30	16:45	288	312	326	309	
16:45	17:00	264	268	306	279	1,147
17:00	17:15	311	332	392	345	
17:15	17:30	316	306	314	312	
17:30	17:45	301	301	272	291	
17:45	18:00	294	292	276	287	1,236
18:00	18:15	262	247	246	252	
18:15	18:30	212	261	278	250	
18:30	18:45	189	242	244	225	
18:45	19:00	210	228	264	234	961
19:00	19:15	182	197	203	194	
19:15	19:30	181	165	181	176	
19:30	19:45	156	167	199	174	
19:45	20:00	149	175	179	168	711
20:00	20:15	125	184	178	162	
20:15	20:30	121	159	163	148	
20:30	20:45	121	130	120	124	
20:45	21:00	127	166	108	134	567
21:00	21:15	143	134	124	134	
21:15	21:30	135	124	101	120	
21:30	21:45	85	91	128	101	
21:45	22:00	57	57	84	66	421
22:00	22:15	73	65	72	70	
22:15	22:30	70	74	69	71	
22:30	22:45	55	63	66	61	
22:45	23:00	42	34	45	40	243
23:00	23:15	31	47	56	45	
23:15	23:30	29	26	31	29	
23:30	23:45	27	35	43	35	
23:45	00:00	28	26	38	31	139
DAILY COUNT		16,826	18,788	17,772	17,795	
PEAK HOUR TIME					07:30	
PEAK HOUR COUNT					1,591	
ESTIMATED K-FACTOR					8.9%	

Three-Day Approach Count Summary

Project Name: North Lake Boulevard Study
State Project No.: 2013008.018
Location: North Lake Boulevard at Keating Drive
Direction: WESTBOUND (APPROACH)
Date: 3/24/2015-3/26/2015

TIME PERIOD (AM)		WEEKDAY TUES 24-Mar	WEEKDAY WED 25-Mar	WEEKDAY THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
00:00	00:15	61	46	48	52	
00:15	00:30	66	57	58	60	
00:30	00:45	46	23	42	37	
00:45	01:00	34	42	55	44	193
01:00	01:15	43	39	26	36	
01:15	01:30	26	31	20	26	
01:30	01:45	25	24	20	23	
01:45	02:00	27	25	20	24	109
02:00	02:15	19	15	22	19	
02:15	02:30	16	14	16	15	
02:30	02:45	13	5	9	9	
02:45	03:00	13	11	15	13	56
03:00	03:15	18	11	10	13	
03:15	03:30	8	15	14	12	
03:30	03:45	13	11	15	13	
03:45	04:00	8	16	12	12	50
04:00	04:15	11	12	8	10	
04:15	04:30	17	13	10	13	
04:30	04:45	18	16	24	19	
04:45	05:00	28	25	19	24	67
05:00	05:15	32	23	29	28	
05:15	05:30	42	39	41	41	
05:30	05:45	68	79	62	70	
05:45	06:00	99	105	75	93	231
06:00	06:15	99	114	99	104	
06:15	06:30	142	112	110	121	
06:30	06:45	172	162	155	163	
06:45	07:00	268	243	249	253	642
07:00	07:15	266	275	255	265	
07:15	07:30	255	303	307	288	
07:30	07:45	334	340	312	329	
07:45	08:00	464	465	456	462	1,344
08:00	08:15	396	468	438	434	
08:15	08:30	431	471	456	453	
08:30	08:45	493	439	486	473	
08:45	09:00	503	529	520	517	1,877
09:00	09:15	408	407	360	392	
09:15	09:30	406	400	440	415	
09:30	09:45	379	365	401	382	
09:45	10:00	365	299	374	346	1,535
10:00	10:15	330	414	356	367	
10:15	10:30	372	334	386	364	
10:30	10:45	441	404	436	427	
10:45	11:00	445	430	444	440	1,597
11:00	11:15	465	441	490	465	
11:15	11:30	475	493	524	497	
11:30	11:45	477	424	467	456	
11:45	12:00	559	536	561	552	1,971

TIME PERIOD (PM)		WEEKDAY TUES 24-Mar	WEEKDAY WED 25-Mar	WEEKDAY THUR 26-Mar	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
12:00	12:15	437	525	530	497	
12:15	12:30	525	479	512	505	
12:30	12:45	577	591	555	574	
12:45	13:00	426	504	535	488	2,065
13:00	13:15	493	514	563	523	
13:15	13:30	531	479	573	528	
13:30	13:45	529	485	522	512	
13:45	14:00	541	573	573	562	2,125
14:00	14:15	527	518	519	521	
14:15	14:30	504	554	537	532	
14:30	14:45	507	562	664	578	
14:45	15:00	539	602	682	608	2,238
15:00	15:15	575	572	660	602	
15:15	15:30	655	659	716	677	
15:30	15:45	609	629	704	647	
15:45	16:00	661	633	599	631	2,557
16:00	16:15	655	708	627	663	
16:15	16:30	720	751	673	715	
16:30	16:45	670	694	656	673	
16:45	17:00	628	698	663	663	2,714
17:00	17:15	731	702	746	726	
17:15	17:30	760	714	766	747	
17:30	17:45	768	710	720	733	
17:45	18:00	736	721	717	725	2,930
18:00	18:15	655	659	692	669	
18:15	18:30	654	651	552	619	
18:30	18:45	582	650	548	593	
18:45	19:00	538	638	527	568	2,449
19:00	19:15	537	490	395	474	
19:15	19:30	523	500	415	479	
19:30	19:45	417	467	388	424	
19:45	20:00	430	423	345	399	1,777
20:00	20:15	448	444	380	424	
20:15	20:30	369	462	365	399	
20:30	20:45	320	406	286	337	
20:45	21:00	345	367	273	328	1,488
21:00	21:15	272	307	272	284	
21:15	21:30	272	280	285	279	
21:30	21:45	243	229	241	238	
21:45	22:00	208	254	215	226	1,026
22:00	22:15	200	176	216	197	
22:15	22:30	190	149	139	159	
22:30	22:45	129	151	139	140	
22:45	23:00	129	128	127	128	624
23:00	23:15	102	106	124	111	
23:15	23:30	77	69	105	84	
23:30	23:45	74	88	80	81	
23:45	00:00	76	74	56	69	344
DAILY COUNT		31,790	32,310	31,929	32,010	
PEAK HOUR TIME					17:00	
PEAK HOUR COUNT					2,930	
ESTIMATED K-FACTOR					9.2%	

MECHANICAL COUNTS

PROJECT NAME: North Lake Boulevard Study

LOCATION: North Lake Boulevard at Keating Drive

Notice to Proceed : 2013008.018

COUNT DATE: 3/24/2015-3/26/2015

NORTHBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	7	8	4	8	27
01:00 AM	4	3	1	1	9
02:00 AM	1	2	0	0	2
03:00 AM	0	0	1	0	1
04:00 AM	0	0	1	1	2
05:00 AM	2	2	1	3	7
06:00 AM	3	2	5	11	21
07:00 AM	19	14	25	32	90
08:00 AM	41	36	55	41	172
09:00 AM	53	58	67	73	252
10:00 AM	83	88	88	100	359
11:00 AM	94	112	138	110	454
12:00 PM	134	145	160	173	612
01:00 PM	166	163	169	146	644
02:00 PM	143	123	132	126	524
03:00 PM	141	143	128	164	576
04:00 PM	149	142	155	144	590
05:00 PM	162	176	187	157	683
06:00 PM	138	162	155	149	604
07:00 PM	159	156	158	137	610
08:00 PM	124	118	121	113	476
09:00 PM	95	86	74	65	319
10:00 PM	45	44	32	31	151
11:00 PM	23	17	14	11	66
			24 Hour Total		7,249

SOUTHBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	5	7	8	2	22
01:00 AM	6	3	5	2	16
02:00 AM	4	2	0	4	10
03:00 AM	1	2	6	4	13
04:00 AM	2	4	6	8	19
05:00 AM	7	9	14	14	44
06:00 AM	18	22	36	50	127
07:00 AM	54	57	59	75	246
08:00 AM	70	61	64	81	275
09:00 AM	64	66	60	60	251
10:00 AM	63	63	61	67	254
11:00 AM	69	56	79	86	290
12:00 PM	71	76	68	77	292
01:00 PM	78	64	70	77	289
02:00 PM	70	61	61	57	249
03:00 PM	69	76	85	83	313
04:00 PM	70	90	84	83	328
05:00 PM	94	79	94	85	352
06:00 PM	103	86	84	88	361
07:00 PM	62	58	61	54	235
08:00 PM	59	52	42	44	196
09:00 PM	41	31	29	21	123
10:00 PM	21	16	17	15	68
11:00 PM	14	10	10	11	44
			24 Hour Total		4,417

EASTBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	28	25	13	18	84
01:00 AM	13	14	10	9	46
02:00 AM	7	10	11	7	35
03:00 AM	6	11	10	8	35
04:00 AM	8	17	22	42	89
05:00 AM	27	32	45	66	170
06:00 AM	71	90	144	196	501
07:00 AM	240	334	421	397	1391
08:00 AM	369	405	391	340	1505
09:00 AM	296	296	270	305	1167
10:00 AM	243	295	280	268	1087
11:00 AM	287	275	286	301	1149
12:00 PM	290	304	304	345	1243
01:00 PM	332	332	322	311	1297
02:00 PM	299	309	323	306	1238
03:00 PM	351	357	331	295	1334
04:00 PM	290	269	309	279	1147
05:00 PM	345	312	291	287	1236
06:00 PM	252	250	225	234	961
07:00 PM	194	176	174	168	711
08:00 PM	162	148	124	134	567
09:00 PM	134	120	101	66	421
10:00 PM	70	71	61	40	243
11:00 PM	45	29	35	31	139
			24 Hour Total		17,795

WESTBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	52	60	37	44	193
01:00 AM	36	26	23	24	109
02:00 AM	19	15	9	13	56
03:00 AM	13	12	13	12	50
04:00 AM	10	13	19	24	67
05:00 AM	28	41	70	93	231
06:00 AM	104	121	163	253	642
07:00 AM	265	288	329	462	1344
08:00 AM	434	453	473	517	1877
09:00 AM	392	415	382	346	1535
10:00 AM	367	364	427	440	1597
11:00 AM	465	497	456	552	1971
12:00 PM	497	505	574	488	2065
01:00 PM	523	528	512	562	2125
02:00 PM	521	532	578	608	2238
03:00 PM	602	677	647	631	2557
04:00 PM	663	715	673	663	2714
05:00 PM	726	747	733	725	2930
06:00 PM	669	619	593	568	2449
07:00 PM	474	479	424	399	1777
08:00 PM	424	399	337	328	1488
09:00 PM	284	279	238	226	1026
10:00 PM	197	159	140	128	624
11:00 PM	111	84	81	69	344
			24 Hour Total		32,010

ALL

TOTAL
325
180
104
100
177
452
1290
3071
3829
3205
3297
3863
4212
4355
4249
4781
4779
5200
4375
3333
2728
1889
1086
593
61,471

DAILY TRAFFIC COUNT SUMMARY

NORTHBOUND

A.M. Peak Hour, Time: 11:45 AM Volume: 548
A.M. "K" Factor: 7.6% P.H.F. : 0.86

P.M. Peak Hour, Time: 05:00 PM Volume: 683
P.M. "K" Factor: 9.4% P.H.F. : 0.91

SOUTHBOUND

A.M. Peak Hour, Time: 11:30 AM Volume: 312
A.M. "K" Factor: 7.1% P.H.F. : 0.90

P.M. Peak Hour, Time: 05:30 PM Volume: 367
P.M. "K" Factor: 8.3% P.H.F. : 0.89

DAILY TRAFFIC COUNT SUMMARY

EASTBOUND

A.M. Peak Hour, Time: 07:30 AM Volume: 1,591
A.M. "K" Factor: 8.9% P.H.F. : 0.95

P.M. Peak Hour, Time: 02:45 PM Volume: 1,345
P.M. "K" Factor: 7.6% P.H.F. : 0.94

WESTBOUND

A.M. Peak Hour, Time: 11:45 AM Volume: 2,129
A.M. "K" Factor: 6.7% P.H.F. : 0.93

P.M. Peak Hour, Time: 05:00 PM Volume: 2,930
P.M. "K" Factor: 9.2% P.H.F. : 0.98

ALL APPROACHES:

A.M. Peak Hour, Time: 11:45 AM Volume: 4,178
A.M. "K" Factor: 6.8% P.H.F. : 0.94

P.M. Peak Hour, Time: 05:00 PM Volume: 5,200
P.M. "K" Factor: 8.5% P.H.F. : 0.98

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at Keating Drive 03032015
Site Code :
Start Date : 3/3/2015
Page No : 1

Groups Printed- Autos - Heavy Vehicles - Bicycles - Pedestrians

	Northlake Boulevard Eastbound					Northlake Boulevard Westbound					Keating Dr Northbound					Keating Dr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	2	118	1	0	121	6	76	6	0	88	0	0	3	1	4	10	0	2	0	12	225
06:15 AM	0	149	1	0	150	3	113	1	0	117	1	0	3	0	4	16	0	4	0	20	291
06:30 AM	0	271	2	2	275	5	124	3	0	132	0	0	2	0	2	31	0	1	0	32	441
06:45 AM	0	299	8	0	307	11	160	4	0	175	2	2	4	0	8	31	0	0	0	31	521
Total	2	837	12	2	853	25	473	14	0	512	3	2	12	1	18	88	0	7	0	95	1478
07:00 AM	0	362	10	1	373	15	226	12	0	253	3	0	11	0	14	36	2	0	0	38	678
07:15 AM	4	461	14	0	479	15	230	7	0	252	7	2	21	0	30	37	2	6	0	45	806
07:30 AM	5	557	11	3	576	21	275	15	0	311	7	2	18	1	28	38	0	3	0	41	956
07:45 AM	10	562	15	2	589	18	339	11	0	368	9	1	19	0	29	29	1	5	0	35	1021
Total	19	1942	50	6	2017	69	1070	45	0	1184	26	5	69	1	101	140	5	14	0	159	3461
08:00 AM	4	492	28	0	524	17	286	9	0	312	8	1	13	0	22	34	1	9	0	44	902
08:15 AM	3	533	19	0	555	32	331	18	0	381	22	4	18	0	44	40	2	4	0	46	1026
08:30 AM	5	543	23	0	571	24	353	15	0	392	18	0	17	0	35	31	2	9	0	42	1040
08:45 AM	6	511	29	1	547	33	352	17	0	402	15	2	18	2	37	23	2	5	0	30	1016
Total	18	2079	99	1	2197	106	1322	59	0	1487	63	7	66	2	138	128	7	27	0	162	3984
BREAK																					
04:00 PM	11	329	31	1	372	60	429	45	0	534	46	5	48	0	99	28	8	8	0	44	1049
04:15 PM	14	397	74	3	488	51	450	57	1	559	47	8	66	0	121	49	9	14	0	72	1240
04:30 PM	14	314	32	6	366	68	413	33	0	514	65	8	57	1	131	49	9	12	1	71	1082
04:45 PM	14	373	59	2	448	64	366	50	0	480	78	9	46	1	134	26	6	7	0	39	1101
Total	53	1413	196	12	1674	243	1658	185	1	2087	236	30	217	2	485	152	32	41	1	226	4472
05:00 PM	16	432	67	3	518	49	490	54	0	593	52	8	55	1	116	37	16	1	0	54	1281
05:15 PM	12	414	61	2	489	64	453	63	0	580	65	10	58	7	140	45	12	1	0	58	1267
05:30 PM	0	371	68	0	439	72	437	45	2	556	75	10	76	2	163	33	0	0	1	34	1192
05:45 PM	0	427	62	0	489	70	487	48	0	605	66	10	58	1	135	33	0	0	2	35	1264
Total	28	1644	258	5	1935	255	1867	210	2	2334	258	38	247	11	554	148	28	2	3	181	5004
06:00 PM	8	431	59	5	503	60	385	44	0	489	69	11	87	1	168	41	8	15	0	64	1224
06:15 PM	12	368	58	1	439	61	392	48	2	503	65	12	71	1	149	34	10	10	1	55	1146
06:30 PM	8	340	57	3	408	54	399	29	0	482	80	9	59	1	149	25	8	16	1	50	1089
06:45 PM	10	297	44	15	366	58	297	44	0	399	64	1	66	2	133	28	6	4	0	38	936
Total	38	1436	218	24	1716	233	1473	165	2	1873	278	33	283	5	599	128	32	45	2	207	4395
Grand Total	158	9351	833	50	10392	931	7863	678	5	9477	864	115	894	22	1895	784	104	136	6	1030	22794
Apprch %	1.5	90	8	0.5		9.8	83	7.2	0.1		45.6	6.1	47.2	1.2		76.1	10.1	13.2	0.6		
Total %	0.7	41	3.7	0.2	45.6	4.1	34.5	3	0	41.6	3.8	0.5	3.9	0.1	8.3	3.4	0.5	0.6	0	4.5	
Autos	154	9173	828	0	10155	914	7701	670	0	9285	855	114	881	0	1850	767	103	134	0	1004	22294
% Autos	97.5	98.1	99.4	0	97.7	98.2	97.9	98.8	0	98	99	99.1	98.5	0	97.6	97.8	99	98.5	0	97.5	97.8
Heavy Vehicles	4	178	5	0	187	17	162	8	0	187	9	1	13	0	23	17	1	2	0	20	417
% Heavy Vehicles	2.5	1.9	0.6	0	1.8	1.8	2.1	1.2	0	2	1	0.9	1.5	0	1.2	2.2	1	1.5	0	1.9	1.8
Bicycles	0	0	0	24	24	0	0	0	1	1	0	0	0	8	8	0	0	0	0	0	33
% Bicycles	0	0	0	48	0.2	0	0	0	20	0	0	0	0	36.4	0.4	0	0	0	0	0	0.1
Pedestrians	0	0	0	26	26	0	0	0	4	4	0	0	0	14	14	0	0	0	6	6	50
% Pedestrians	0	0	0	52	0.3	0	0	0	80	0	0	0	0	63.6	0.7	0	0	0	100	0.6	0.2

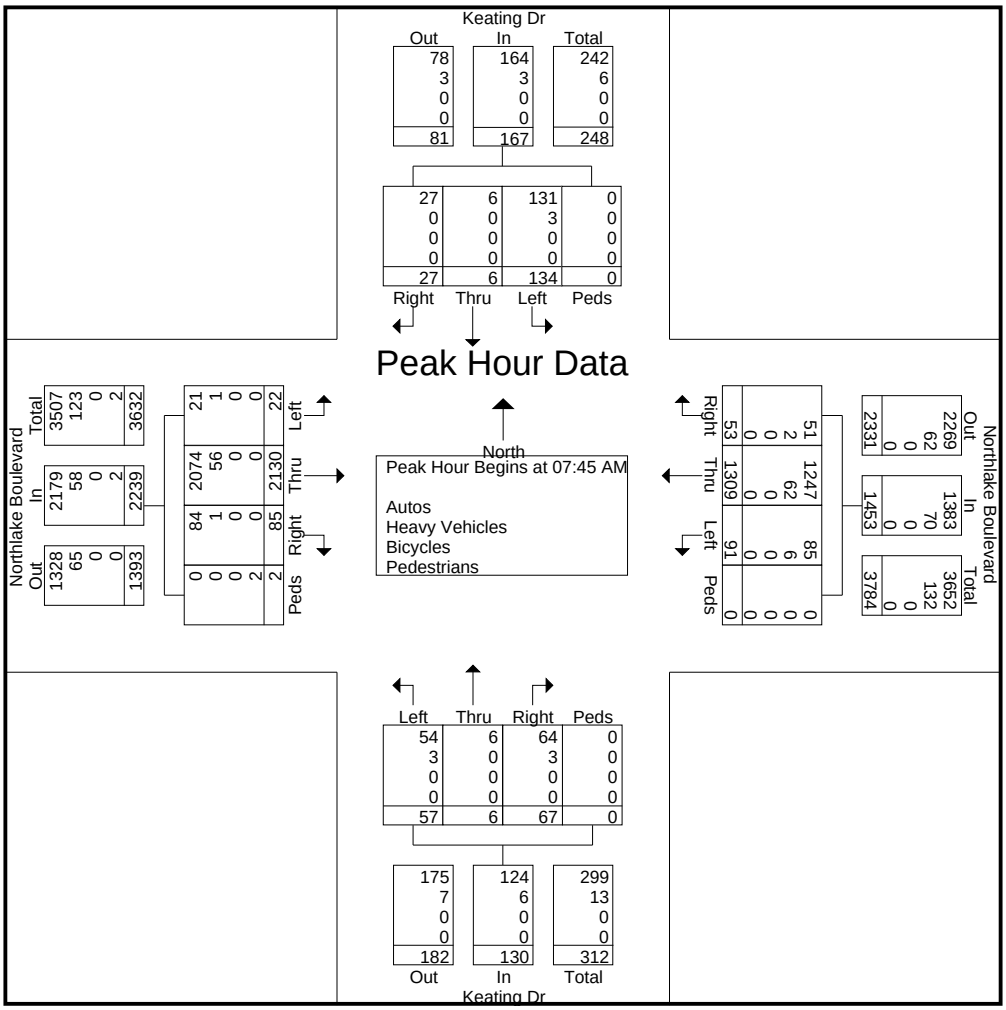
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at Keating Drive 03032015
Site Code :
Start Date : 3/3/2015
Page No : 2

	Northlake Boulevard Eastbound					Northlake Boulevard Westbound					Keating Dr Northbound					Keating Dr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	10	562	15	2	589	18	339	11	0	368	9	1	19	0	29	29	1	5	0	35	1021
08:00 AM	4	492	28	0	524	17	286	9	0	312	8	1	13	0	22	34	1	9	0	44	902
08:15 AM	3	533	19	0	555	32	331	18	0	381	22	4	18	0	44	40	2	4	0	46	1026
08:30 AM	5	543	23	0	571	24	353	15	0	392	18	0	17	0	35	31	2	9	0	42	1040
Total Volume	22	2130	85	2	2239	91	1309	53	0	1453	57	6	67	0	130	134	6	27	0	167	3989
% App. Total	1	95.1	3.8	0.1		6.3	90.1	3.6	0		43.8	4.6	51.5	0		80.2	3.6	16.2	0		
PHF	.550	.948	.759	.250	.950	.711	.927	.736	.000	.927	.648	.375	.882	.000	.739	.838	.750	.750	.000	.908	.959
Autos	21	2074	84	0	2179	85	1247	51	0	1383	54	6	64	0	124	131	6	27	0	164	3850
% Autos	95.5	97.4	98.8	0	97.3	93.4	95.3	96.2	0	95.2	94.7	100	95.5	0	95.4	97.8	100	100	0	98.2	96.5
Heavy Vehicles	1	56	1	0	58	6	62	2	0	70	3	0	3	0	6	3	0	0	0	3	137
% Heavy Vehicles	4.5	2.6	1.2	0	2.6	6.6	4.7	3.8	0	4.8	5.3	0	4.5	0	4.6	2.2	0	0	0	1.8	3.4
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
% Pedestrians	0	0	0	100	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1



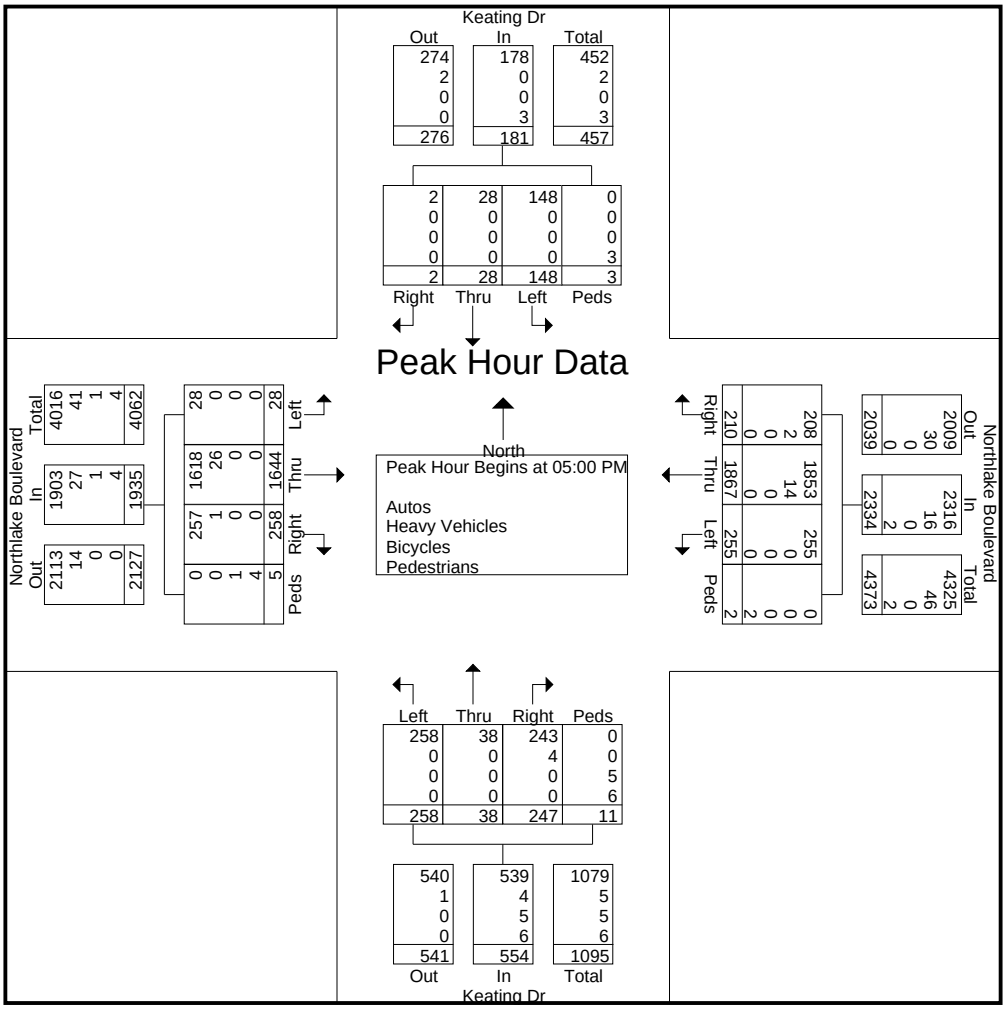
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at Keating Drive 03032015
Site Code :
Start Date : 3/3/2015
Page No : 3

	Northlake Boulevard Eastbound					Northlake Boulevard Westbound					Keating Dr Northbound					Keating Dr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	16	432	67	3	518	49	490	54	0	593	52	8	55	1	116	37	16	1	0	54	1281
05:15 PM	12	414	61	2	489	64	453	63	0	580	65	10	58	7	140	45	12	1	0	58	1267
05:30 PM	0	371	68	0	439	72	437	45	2	556	75	10	76	2	163	33	0	0	1	34	1192
05:45 PM	0	427	62	0	489	70	487	48	0	605	66	10	58	1	135	33	0	0	2	35	1264
Total Volume	28	1644	258	5	1935	255	1867	210	2	2334	258	38	247	11	554	148	28	2	3	181	5004
% App. Total	1.4	85	13.3	0.3		10.9	80	9	0.1		46.6	6.9	44.6	2		81.8	15.5	1.1	1.7		
PHF	.438	.951	.949	.417	.934	.885	.953	.833	.250	.964	.860	.950	.813	.393	.850	.822	.438	.500	.375	.780	.977
Autos	28	1618	257	0	1903	255	1853	208	0	2316	258	38	243	0	539	148	28	2	0	178	4936
% Autos	100	98.4	99.6	0	98.3	100	99.3	99.0	0	99.2	100	100	98.4	0	97.3	100	100	100	0	98.3	98.6
Heavy Vehicles	0	26	1	0	27	0	14	2	0	16	0	0	4	0	4	0	0	0	0	0	47
% Heavy Vehicles	0	1.6	0.4	0	1.4	0	0.7	1.0	0	0.7	0	0	1.6	0	0.7	0	0	0	0	0	0.9
Bicycles	0	0	0	1	1	0	0	0	0	0	0	0	0	5	5	0	0	0	0	0	6
% Bicycles	0	0	0	20.0	0.1	0	0	0	0	0	0	0	0	45.5	0.9	0	0	0	0	0	0.1
Pedestrians	0	0	0	4	4	0	0	0	2	2	0	0	0	6	6	0	0	0	3	3	15
% Pedestrians	0	0	0	80.0	0.2	0	0	0	100	0.1	0	0	0	54.5	1.1	0	0	0	100	1.7	0.3



CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at Keating Drive 03032015
Site Code :
Start Date : 3/3/2015
Page No : 1

Groups Printed- Heavy Vehicles

	Northlake Boulevard Eastbound					Northlake Boulevard Westbound					Keating Dr Northbound					Keating Dr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	1	3	0	0	4	2	2	0	0	4	0	0	1	0	1	0	0	0	0	0	9
06:15 AM	0	6	0	0	6	0	2	0	0	2	0	0	1	0	1	0	0	0	0	0	9
06:30 AM	0	6	0	0	6	1	5	0	0	6	0	0	0	0	0	0	0	0	0	0	12
06:45 AM	0	2	0	0	2	0	8	0	0	8	1	1	0	0	2	1	0	0	0	1	13
Total	1	17	0	0	18	3	17	0	0	20	1	1	2	0	4	1	0	0	0	1	43
07:00 AM	0	8	0	0	8	1	5	0	0	6	0	0	1	0	1	0	0	0	0	0	15
07:15 AM	1	4	0	0	5	1	1	0	0	2	1	0	0	0	1	1	0	0	0	1	9
07:30 AM	0	9	0	0	9	0	10	2	0	12	0	0	0	0	0	2	0	0	0	2	23
07:45 AM	0	13	1	0	14	0	13	1	0	14	1	0	1	0	2	0	0	0	0	0	30
Total	1	34	1	0	36	2	29	3	0	34	2	0	2	0	4	3	0	0	0	3	77
08:00 AM	0	11	0	0	11	3	14	0	0	17	1	0	1	0	2	1	0	0	0	1	31
08:15 AM	0	17	0	0	17	3	20	0	0	23	1	0	0	0	1	1	0	0	0	1	42
08:30 AM	1	15	0	0	16	0	15	1	0	16	0	0	1	0	1	1	0	0	0	1	34
08:45 AM	0	12	1	0	13	1	5	0	0	6	0	0	2	0	2	0	0	0	0	0	21
Total	1	55	1	0	57	7	54	1	0	62	2	0	4	0	6	3	0	0	0	3	128
BREAK																					
04:00 PM	0	8	0	0	8	1	12	1	0	14	0	0	0	0	0	2	1	0	0	3	25
04:15 PM	0	7	0	0	7	1	10	0	0	11	1	0	0	0	1	1	0	1	0	2	21
04:30 PM	0	10	0	0	10	1	8	0	0	9	0	0	0	0	0	4	0	1	0	5	24
04:45 PM	0	5	1	0	6	0	8	1	0	9	1	0	0	0	1	0	0	0	0	0	16
Total	0	30	1	0	31	3	38	2	0	43	2	0	0	0	2	7	1	2	0	10	86
05:00 PM	0	9	0	0	9	0	3	1	0	4	0	0	0	0	0	0	0	0	0	0	13
05:15 PM	0	4	1	0	5	0	5	0	0	5	0	0	2	0	2	0	0	0	0	0	12
05:30 PM	0	6	0	0	6	0	3	1	0	4	0	0	1	0	1	0	0	0	0	0	11
05:45 PM	0	7	0	0	7	0	3	0	0	3	0	0	1	0	1	0	0	0	0	0	11
Total	0	26	1	0	27	0	14	2	0	16	0	0	4	0	4	0	0	0	0	0	47
06:00 PM	1	6	0	0	7	0	5	0	0	5	0	0	0	0	0	1	0	0	0	1	13
06:15 PM	0	3	1	0	4	1	2	0	0	3	1	0	0	0	1	1	0	0	0	1	9
06:30 PM	0	6	0	0	6	1	2	0	0	3	1	0	0	0	1	0	0	0	0	0	10
06:45 PM	0	1	0	0	1	0	1	0	0	1	0	0	1	0	1	1	0	0	0	1	4
Total	1	16	1	0	18	2	10	0	0	12	2	0	1	0	3	3	0	0	0	3	36
Grand Total	4	178	5	0	187	17	162	8	0	187	9	1	13	0	23	17	1	2	0	20	417
Apprch %	2.1	95.2	2.7	0		9.1	86.6	4.3	0		39.1	4.3	56.5	0		85	5	10	0		
Total %	1	42.7	1.2	0	44.8	4.1	38.8	1.9	0	44.8	2.2	0.2	3.1	0	5.5	4.1	0.2	0.5	0	4.8	

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at Keating Drive 03042015
Site Code :
Start Date : 3/4/2015
Page No : 1

Groups Printed- Autos - Heavy Vehicles - Bicycles - Pedestrians

	Northlake Boulevard Eastbound					Northlake Boulevard Westbound					Keating Drive Northbound					Keating Drive Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	116	3	0	119	4	85	6	0	95	1	0	1	0	2	5	0	4	0	9	225
06:15 AM	2	167	2	0	171	4	111	4	0	119	0	0	1	0	1	25	0	2	0	27	318
06:30 AM	0	223	2	0	225	5	126	7	1	139	1	0	3	0	4	22	1	1	0	24	392
06:45 AM	1	297	7	1	306	10	168	9	0	187	1	0	4	1	6	30	0	1	0	31	530
Total	3	803	14	1	821	23	490	26	1	540	3	0	9	1	13	82	1	8	0	91	1465
07:00 AM	3	354	11	0	368	6	199	8	0	213	5	1	2	3	11	30	1	7	0	38	630
07:15 AM	1	451	11	0	463	16	241	12	0	269	12	0	21	0	33	38	2	9	0	49	814
07:30 AM	3	553	11	0	567	24	278	11	0	313	9	1	20	0	30	25	1	12	0	38	948
07:45 AM	3	568	19	2	592	20	344	11	0	375	5	1	10	2	18	33	4	9	0	46	1031
Total	10	1926	52	2	1990	66	1062	42	0	1170	31	3	53	5	92	126	8	37	0	171	3423
08:00 AM	6	470	22	0	498	23	322	13	0	358	7	3	26	0	36	32	5	4	0	41	933
08:15 AM	7	515	25	0	547	26	321	10	1	358	21	0	23	0	44	41	3	8	0	52	1001
08:30 AM	5	504	34	1	544	13	332	22	0	367	21	1	17	0	39	22	4	3	0	29	979
08:45 AM	9	493	33	0	535	39	322	11	0	372	12	1	31	1	45	33	4	8	0	45	997
Total	27	1982	114	1	2124	101	1297	56	1	1455	61	5	97	1	164	128	16	23	0	167	3910
BREAK																					
04:00 PM	16	373	41	0	430	66	394	40	0	500	64	9	53	3	129	32	9	9	3	53	1112
04:15 PM	16	402	40	0	458	58	422	46	0	526	62	7	44	1	114	22	3	17	0	42	1140
04:30 PM	15	361	43	0	419	52	420	42	0	514	59	11	61	0	131	37	12	14	0	63	1127
04:45 PM	24	418	55	0	497	72	419	49	0	540	59	11	72	0	142	35	5	15	1	56	1235
Total	71	1554	179	0	1804	248	1655	177	0	2080	244	38	230	4	516	126	29	55	4	214	4614
05:00 PM	16	410	55	0	481	58	408	51	0	517	61	10	59	6	136	40	14	17	0	71	1205
05:15 PM	11	414	57	1	483	53	445	46	0	544	51	11	71	2	135	39	16	16	0	71	1233
05:30 PM	18	341	61	5	425	72	431	49	0	552	77	16	62	2	157	37	14	14	0	65	1199
05:45 PM	20	409	73	0	502	78	497	42	0	617	57	10	65	3	135	36	10	21	0	67	1321
Total	65	1574	246	6	1891	261	1781	188	0	2230	246	47	257	13	563	152	54	68	0	274	4958
06:00 PM	16	406	64	4	490	56	398	45	0	499	76	11	63	6	156	28	6	9	0	43	1188
06:15 PM	7	369	52	9	437	65	433	47	0	545	85	8	79	2	174	38	10	10	1	59	1215
06:30 PM	3	317	48	4	372	71	391	35	0	497	50	11	85	1	147	28	7	12	0	47	1063
06:45 PM	11	388	55	3	457	54	390	32	1	477	52	7	54	0	113	29	8	13	0	50	1097
Total	37	1480	219	20	1756	246	1612	159	1	2018	263	37	281	9	590	123	31	44	1	199	4563
Grand Total	213	9319	824	30	10386	945	7897	648	3	9493	848	130	927	33	1938	737	139	235	5	1116	22933
Apprch %	2.1	89.7	7.9	0.3		10	83.2	6.8	0		43.8	6.7	47.8	1.7		66	12.5	21.1	0.4		
Total %	0.9	40.6	3.6	0.1	45.3	4.1	34.4	2.8	0	41.4	3.7	0.6	4	0.1	8.5	3.2	0.6	1	0	4.9	
Autos	210	9163	817	0	10190	938	7754	637	0	9329	843	129	919	0	1891	728	134	232	0	1094	22504
% Autos	98.6	98.3	99.2	0	98.1	99.3	98.2	98.3	0	98.3	99.4	99.2	99.1	0	97.6	98.8	96.4	98.7	0	98	98.1
Heavy Vehicles	3	156	7	0	166	7	143	11	0	161	5	1	8	0	14	9	5	3	0	17	358
% Heavy Vehicles	1.4	1.7	0.8	0	1.6	0.7	1.8	1.7	0	1.7	0.6	0.8	0.9	0	0.7	1.2	3.6	1.3	0	1.5	1.6
Bicycles	0	0	0	4	4	0	0	0	0	0	0	0	0	9	9	0	0	0	1	1	14
% Bicycles	0	0	0	13.3	0	0	0	0	0	0	0	0	0	27.3	0.5	0	0	0	20	0.1	0.1
Pedestrians	0	0	0	26	26	0	0	0	3	3	0	0	0	24	24	0	0	0	4	4	57
% Pedestrians	0	0	0	86.7	0.3	0	0	0	100	0	0	0	0	72.7	1.2	0	0	0	80	0.4	0.2

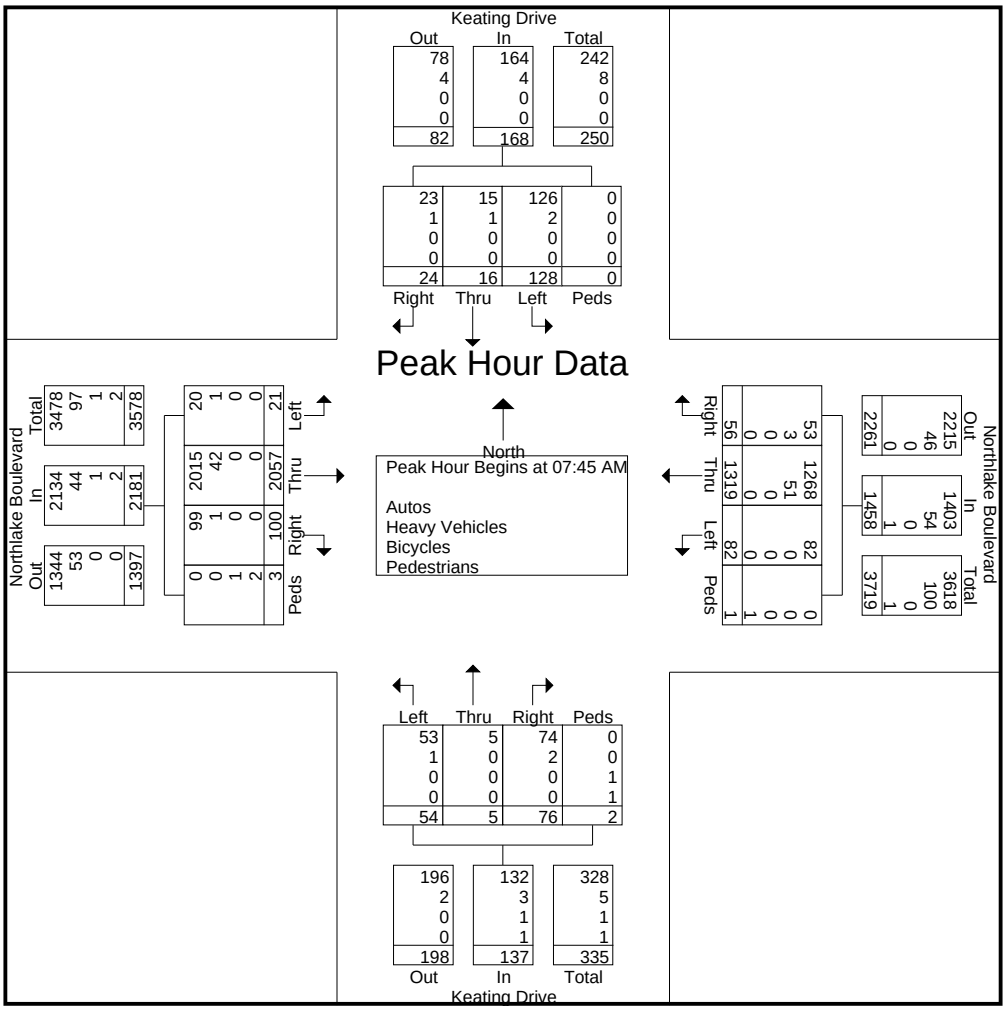
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at Keating Drive 03042015
Site Code :
Start Date : 3/4/2015
Page No : 2

	Northlake Boulevard Eastbound					Northlake Boulevard Westbound					Keating Drive Northbound					Keating Drive Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	3	568	19	2	592	20	344	11	0	375	5	1	10	2	18	33	4	9	0	46	1031
08:00 AM	6	470	22	0	498	23	322	13	0	358	7	3	26	0	36	32	5	4	0	41	933
08:15 AM	7	515	25	0	547	26	321	10	1	358	21	0	23	0	44	41	3	8	0	52	1001
08:30 AM	5	504	34	1	544	13	332	22	0	367	21	1	17	0	39	22	4	3	0	29	979
Total Volume	21	2057	100	3	2181	82	1319	56	1	1458	54	5	76	2	137	128	16	24	0	168	3944
% App. Total	1	94.3	4.6	0.1		5.6	90.5	3.8	0.1		39.4	3.6	55.5	1.5		76.2	9.5	14.3	0		
PHF	.750	.905	.735	.375	.921	.788	.959	.636	.250	.972	.643	.417	.731	.250	.778	.780	.800	.667	.000	.808	.956
Autos	20	2015	99	0	2134	82	1268	53	0	1403	53	5	74	0	132	126	15	23	0	164	3833
% Autos	95.2	98.0	99.0	0	97.8	100	96.1	94.6	0	96.2	98.1	100	97.4	0	96.4	98.4	93.8	95.8	0	97.6	97.2
Heavy Vehicles	1	42	1	0	44	0	51	3	0	54	1	0	2	0	3	2	1	1	0	4	105
% Heavy Vehicles	4.8	2.0	1.0	0	2.0	0	3.9	5.4	0	3.7	1.9	0	2.6	0	2.2	1.6	6.3	4.2	0	2.4	2.7
Bicycles	0	0	0	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
% Bicycles	0	0	0	33.3	0.0	0	0	0	0	0	0	0	0	50.0	0.7	0	0	0	0	0	0.1
Pedestrians	0	0	0	2	2	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0	4
% Pedestrians	0	0	0	66.7	0.1	0	0	0	100	0.1	0	0	0	50.0	0.7	0	0	0	0	0	0.1



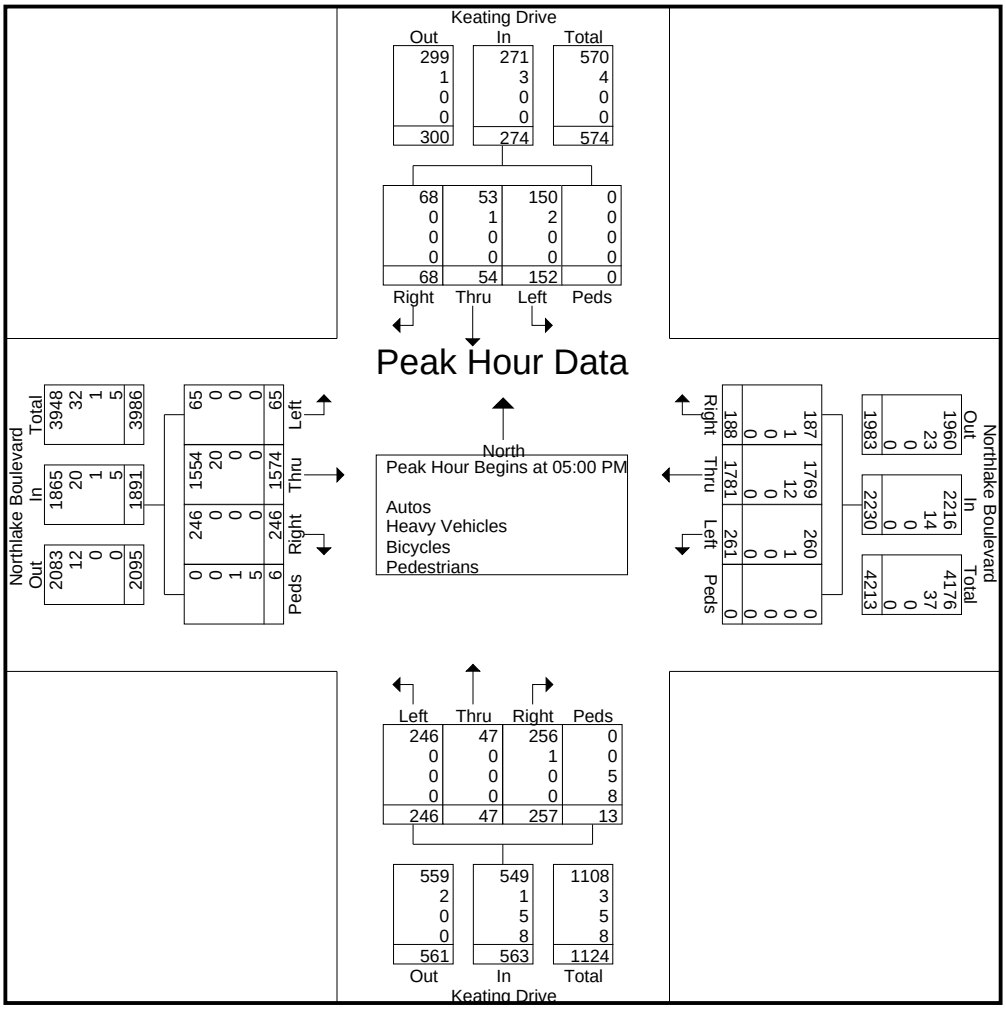
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at Keating Drive 03042015
Site Code :
Start Date : 3/4/2015
Page No : 3

	Northlake Boulevard Eastbound					Northlake Boulevard Westbound					Keating Drive Northbound					Keating Drive Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	16	410	55	0	481	58	408	51	0	517	61	10	59	6	136	40	14	17	0	71	1205
05:15 PM	11	414	57	1	483	53	445	46	0	544	51	11	71	2	135	39	16	16	0	71	1233
05:30 PM	18	341	61	5	425	72	431	49	0	552	77	16	62	2	157	37	14	14	0	65	1199
05:45 PM	20	409	73	0	502	78	497	42	0	617	57	10	65	3	135	36	10	21	0	67	1321
Total Volume	65	1574	246	6	1891	261	1781	188	0	2230	246	47	257	13	563	152	54	68	0	274	4958
% App. Total	3.4	83.2	13	0.3		11.7	79.9	8.4	0		43.7	8.3	45.6	2.3		55.5	19.7	24.8	0		
PHF	.813	.950	.842	.300	.942	.837	.896	.922	.000	.904	.799	.734	.905	.542	.896	.950	.844	.810	.000	.965	.938
Autos	65	1554	246	0	1865	260	1769	187	0	2216	246	47	256	0	549	150	53	68	0	271	4901
% Autos	100	98.7	100	0	98.6	99.6	99.3	99.5	0	99.4	100	100	99.6	0	97.5	98.7	98.1	100	0	98.9	98.9
Heavy Vehicles	0	20	0	0	20	1	12	1	0	14	0	0	1	0	1	2	1	0	0	3	38
% Heavy Vehicles	0	1.3	0	0	1.1	0.4	0.7	0.5	0	0.6	0	0	0.4	0	0.2	1.3	1.9	0	0	1.1	0.8
Bicycles	0	0	0	1	1	0	0	0	0	0	0	0	0	5	5	0	0	0	0	0	6
% Bicycles	0	0	0	16.7	0.1	0	0	0	0	0	0	0	0	38.5	0.9	0	0	0	0	0	0.1
Pedestrians	0	0	0	5	5	0	0	0	0	0	0	0	0	8	8	0	0	0	0	0	13
% Pedestrians	0	0	0	83.3	0.3	0	0	0	0	0	0	0	0	61.5	1.4	0	0	0	0	0	0.3



CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at Keating Drive 03042015
Site Code :
Start Date : 3/4/2015
Page No : 1

Groups Printed- Heavy Vehicles

	Northlake Boulevard Eastbound					Northlake Boulevard Westbound					Keating Drive Northbound					Keating Drive Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
06:15 AM	0	7	0	0	7	1	2	0	0	3	0	0	0	0	0	0	0	0	0	0	10
06:30 AM	0	5	0	0	5	0	3	2	0	5	0	0	0	0	0	0	1	0	0	1	11
06:45 AM	0	8	0	0	8	0	8	1	0	9	1	0	0	0	1	1	0	0	0	1	19
Total	0	21	0	0	21	1	13	3	0	17	1	0	0	0	1	1	1	0	0	2	41
07:00 AM	0	7	0	0	7	0	5	0	0	5	0	0	0	0	0	1	0	0	0	1	13
07:15 AM	0	8	1	0	9	0	4	1	0	5	0	0	0	0	0	0	0	0	0	0	14
07:30 AM	1	7	0	0	8	1	14	1	0	16	0	0	1	0	1	0	0	1	0	1	26
07:45 AM	0	12	1	0	13	0	15	1	0	16	0	0	0	0	0	1	1	1	0	3	32
Total	1	34	2	0	37	1	38	3	0	42	0	0	1	0	1	2	1	2	0	5	85
08:00 AM	0	7	0	0	7	0	13	0	0	13	1	0	1	0	2	0	0	0	0	0	22
08:15 AM	1	11	0	0	12	0	13	0	0	13	0	0	0	0	0	1	0	0	0	1	26
08:30 AM	0	12	0	0	12	0	10	2	0	12	0	0	1	0	1	0	0	0	0	0	25
08:45 AM	0	9	2	0	11	1	8	0	0	9	0	0	1	0	1	0	1	0	0	1	22
Total	1	39	2	0	42	1	44	2	0	47	1	0	3	0	4	1	1	0	0	2	95
BREAK																					
04:00 PM	1	5	0	0	6	0	3	1	0	4	2	0	1	0	3	1	1	0	0	2	15
04:15 PM	0	10	0	0	10	0	7	1	0	8	0	0	1	0	1	0	0	1	0	1	20
04:30 PM	0	7	0	0	7	1	11	0	0	12	0	1	1	0	2	1	0	0	0	1	22
04:45 PM	0	9	1	0	10	0	7	0	0	7	1	0	0	0	1	1	0	0	0	1	19
Total	1	31	1	0	33	1	28	2	0	31	3	1	3	0	7	3	1	1	0	5	76
05:00 PM	0	9	0	0	9	0	2	0	0	2	0	0	0	0	0	1	0	0	0	1	12
05:15 PM	0	1	0	0	1	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	5
05:30 PM	0	3	0	0	3	0	3	0	0	3	0	0	0	0	0	1	0	0	0	1	7
05:45 PM	0	7	0	0	7	1	3	1	0	5	0	0	1	0	1	0	1	0	0	1	14
Total	0	20	0	0	20	1	12	1	0	14	0	0	1	0	1	2	1	0	0	3	38
06:00 PM	0	5	0	0	5	1	4	0	0	5	0	0	0	0	0	0	0	0	0	0	10
06:15 PM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
06:30 PM	0	3	1	0	4	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	6
06:45 PM	0	2	1	0	3	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	5
Total	0	11	2	0	13	2	8	0	0	10	0	0	0	0	0	0	0	0	0	0	23
Grand Total	3	156	7	0	166	7	143	11	0	161	5	1	8	0	14	9	5	3	0	17	358
Apprch %	1.8	94	4.2	0		4.3	88.8	6.8	0		35.7	7.1	57.1	0		52.9	29.4	17.6	0		
Total %	0.8	43.6	2	0	46.4	2	39.9	3.1	0	45	1.4	0.3	2.2	0	3.9	2.5	1.4	0.8	0	4.7	

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at Keating Drive 03052015
Site Code :
Start Date : 3/5/2015
Page No : 1

Groups Printed- Autos - Heavy Vehicles - Bicycles - Pedestrians

	Northlake Boulevard Eastbound					Northlake Boulevard Westbound					Keating Drive Northbound					Keating Drive Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	119	5	0	124	2	95	6	0	103	0	0	4	1	5	8	0	2	0	10	242
06:15 AM	1	138	1	0	140	3	104	2	0	109	1	0	1	0	2	19	1	0	0	20	271
06:30 AM	1	238	1	1	241	6	143	8	0	157	1	1	2	0	4	29	0	0	0	29	431
06:45 AM	2	274	7	1	284	9	204	7	0	220	4	1	3	0	8	29	1	5	1	36	548
Total	4	769	14	2	789	20	546	23	0	589	6	2	10	1	19	85	2	7	1	95	1492
07:00 AM	0	391	14	0	405	6	256	14	0	276	6	1	9	1	17	29	0	5	0	34	732
07:15 AM	1	373	4	1	379	13	242	11	0	266	6	1	10	1	18	29	2	7	0	38	701
07:30 AM	1	418	14	0	433	17	293	17	0	327	9	1	19	0	29	24	3	6	0	33	822
07:45 AM	4	434	21	0	459	18	337	23	0	378	9	1	13	4	27	34	2	8	0	44	908
Total	6	1616	53	1	1676	54	1128	65	0	1247	30	4	51	6	91	116	7	26	0	149	3163
08:00 AM	4	526	26	2	558	28	292	18	0	338	14	2	18	0	34	37	2	10	0	49	979
08:15 AM	4	527	27	2	560	32	336	15	1	384	24	2	25	0	51	34	4	2	2	42	1037
08:30 AM	11	546	25	1	583	24	319	11	0	354	13	0	33	1	47	35	5	2	1	43	1027
08:45 AM	10	475	36	1	522	27	360	14	0	401	19	3	26	2	50	25	2	1	0	28	1001
Total	29	2074	114	6	2223	111	1307	58	1	1477	70	7	102	3	182	131	13	15	3	162	4044
BREAK																					
04:00 PM	8	380	49	1	438	66	449	36	0	551	49	9	65	0	123	29	10	9	0	48	1160
04:15 PM	11	429	50	0	490	60	463	43	0	566	49	5	58	0	112	30	10	7	1	48	1216
04:30 PM	9	354	48	0	411	43	444	55	0	542	54	6	63	0	123	53	3	26	0	82	1158
04:45 PM	11	366	55	2	434	64	533	42	0	639	56	3	58	0	117	28	8	9	0	45	1235
Total	39	1529	202	3	1773	233	1889	176	0	2298	208	23	244	0	475	140	31	51	1	223	4769
05:00 PM	11	440	44	2	497	54	453	42	2	551	66	4	65	2	137	44	9	15	1	69	1254
05:15 PM	17	452	57	2	528	60	431	56	0	547	74	9	65	0	148	42	11	17	0	70	1293
05:30 PM	11	370	54	4	439	65	440	52	0	557	68	17	73	1	159	39	19	10	0	68	1223
05:45 PM	11	411	64	0	486	74	469	45	0	588	60	11	66	0	137	33	14	13	1	61	1272
Total	50	1673	219	8	1950	253	1793	195	2	2243	268	41	269	3	581	158	53	55	2	268	5042
06:00 PM	12	381	53	3	449	54	388	41	0	483	72	10	65	0	147	41	5	10	0	56	1135
06:15 PM	18	318	59	4	399	49	375	41	0	465	63	7	62	0	132	36	11	13	0	60	1056
06:30 PM	8	387	50	4	449	73	356	43	0	472	53	10	60	0	123	39	7	5	0	51	1095
06:45 PM	10	270	52	1	333	53	278	35	0	366	51	12	55	0	118	23	4	3	0	30	847
Total	48	1356	214	12	1630	229	1397	160	0	1786	239	39	242	0	520	139	27	31	0	197	4133
Grand Total	176	9017	816	32	10041	900	8060	677	3	9640	821	116	918	13	1868	769	133	185	7	1094	22643
Apprch %	1.8	89.8	8.1	0.3		9.3	83.6	7	0		44	6.2	49.1	0.7		70.3	12.2	16.9	0.6		
Total %	0.8	39.8	3.6	0.1	44.3	4	35.6	3	0	42.6	3.6	0.5	4.1	0.1	8.2	3.4	0.6	0.8	0	4.8	
Autos	173	8846	814	0	9833	889	7860	668	0	9417	816	116	906	0	1838	761	131	182	0	1074	22162
% Autos	98.3	98.1	99.8	0	97.9	98.8	97.5	98.7	0	97.7	99.4	100	98.7	0	98.4	99	98.5	98.4	0	98.2	97.9
Heavy Vehicles	3	171	2	0	176	11	200	9	0	220	5	0	12	0	17	8	2	3	0	13	426
% Heavy Vehicles	1.7	1.9	0.2	0	1.8	1.2	2.5	1.3	0	2.3	0.6	0	1.3	0	0.9	1	1.5	1.6	0	1.2	1.9
Bicycles	0	0	0	12	12	0	0	0	0	0	0	0	0	2	2	0	0	0	1	1	15
% Bicycles	0	0	0	37.5	0.1	0	0	0	0	0	0	0	0	15.4	0.1	0	0	0	14.3	0.1	0.1
Pedestrians	0	0	0	20	20	0	0	0	3	3	0	0	0	11	11	0	0	0	6	6	40
% Pedestrians	0	0	0	62.5	0.2	0	0	0	100	0	0	0	0	84.6	0.6	0	0	0	85.7	0.5	0.2

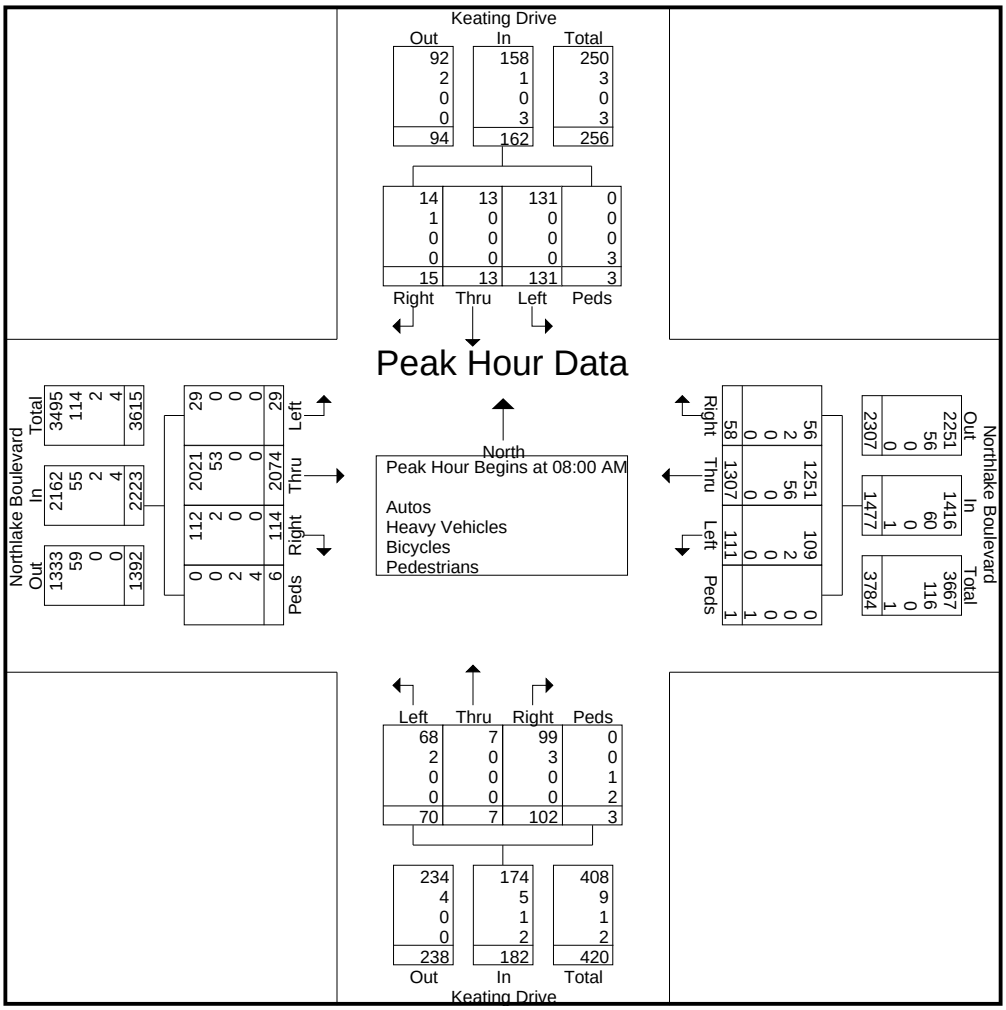
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at Keating Drive 03052015
Site Code :
Start Date : 3/5/2015
Page No : 2

	Northlake Boulevard Eastbound					Northlake Boulevard Westbound					Keating Drive Northbound					Keating Drive Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	4	526	26	2	558	28	292	18	0	338	14	2	18	0	34	37	2	10	0	49	979
08:15 AM	4	527	27	2	560	32	336	15	1	384	24	2	25	0	51	34	4	2	2	42	1037
08:30 AM	11	546	25	1	583	24	319	11	0	354	13	0	33	1	47	35	5	2	1	43	1027
08:45 AM	10	475	36	1	522	27	360	14	0	401	19	3	26	2	50	25	2	1	0	28	1001
Total Volume	29	2074	114	6	2223	111	1307	58	1	1477	70	7	102	3	182	131	13	15	3	162	4044
% App. Total	1.3	93.3	5.1	0.3		7.5	88.5	3.9	0.1		38.5	3.8	56	1.6		80.9	8	9.3	1.9		
PHF	.659	.950	.792	.750	.953	.867	.908	.806	.250	.921	.729	.583	.773	.375	.892	.885	.650	.375	.375	.827	.975
Autos	29	2021	112	0	2162	109	1251	56	0	1416	68	7	99	0	174	131	13	14	0	158	3910
% Autos	100	97.4	98.2	0	97.3	98.2	95.7	96.6	0	95.9	97.1	100	97.1	0	95.6	100	100	93.3	0	97.5	96.7
Heavy Vehicles	0	53	2	0	55	2	56	2	0	60	2	0	3	0	5	0	0	1	0	1	121
% Heavy Vehicles	0	2.6	1.8	0	2.5	1.8	4.3	3.4	0	4.1	2.9	0	2.9	0	2.7	0	0	6.7	0	0.6	3.0
Bicycles	0	0	0	2	2	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	3
% Bicycles	0	0	0	33.3	0.1	0	0	0	0	0	0	0	0	33.3	0.5	0	0	0	0	0	0.1
Pedestrians	0	0	0	4	4	0	0	0	1	1	0	0	0	2	2	0	0	0	3	3	10
% Pedestrians	0	0	0	66.7	0.2	0	0	0	100	0.1	0	0	0	66.7	1.1	0	0	0	100	1.9	0.2



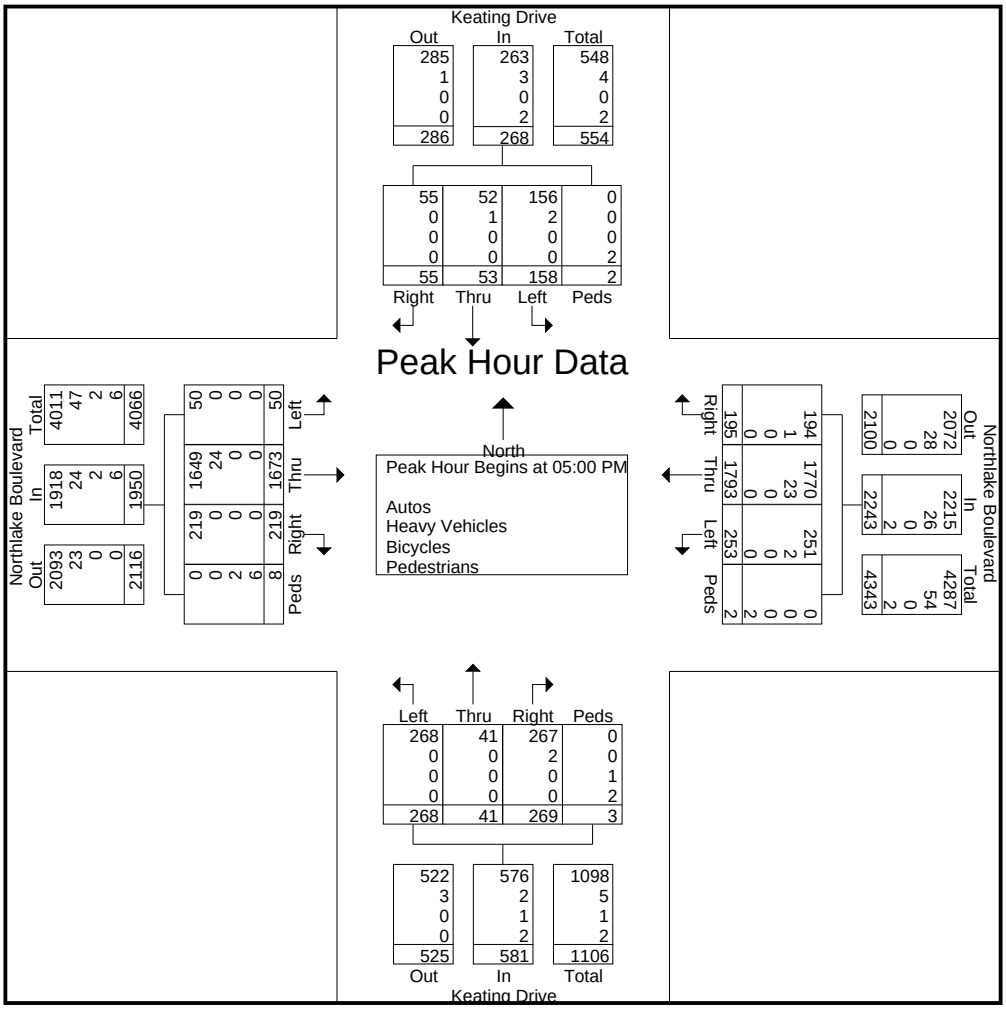
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at Keating Drive 03052015
Site Code :
Start Date : 3/5/2015
Page No : 3

	Northlake Boulevard Eastbound					Northlake Boulevard Westbound					Keating Drive Northbound					Keating Drive Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	11	440	44	2	497	54	453	42	2	551	66	4	65	2	137	44	9	15	1	69	1254
05:15 PM	17	452	57	2	528	60	431	56	0	547	74	9	65	0	148	42	11	17	0	70	1293
05:30 PM	11	370	54	4	439	65	440	52	0	557	68	17	73	1	159	39	19	10	0	68	1223
05:45 PM	11	411	64	0	486	74	469	45	0	588	60	11	66	0	137	33	14	13	1	61	1272
Total Volume	50	1673	219	8	1950	253	1793	195	2	2243	268	41	269	3	581	158	53	55	2	268	5042
% App. Total	2.6	85.8	11.2	0.4		11.3	79.9	8.7	0.1		46.1	7.1	46.3	0.5		59	19.8	20.5	0.7		
PHF	.735	.925	.855	.500	.923	.855	.956	.871	.250	.954	.905	.603	.921	.375	.914	.898	.697	.809	.500	.957	.975
Autos	50	1649	219	0	1918	251	1770	194	0	2215	268	41	267	0	576	156	52	55	0	263	4972
% Autos	100	98.6	100	0	98.4	99.2	98.7	99.5	0	98.8	100	100	99.3	0	99.1	98.7	98.1	100	0	98.1	98.6
Heavy Vehicles	0	24	0	0	24	2	23	1	0	26	0	0	2	0	2	2	1	0	0	3	55
% Heavy Vehicles	0	1.4	0	0	1.2	0.8	1.3	0.5	0	1.2	0	0	0.7	0	0.3	1.3	1.9	0	0	1.1	1.1
Bicycles	0	0	0	2	2	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	3
% Bicycles	0	0	0	25.0	0.1	0	0	0	0	0	0	0	0	33.3	0.2	0	0	0	0	0	0.1
Pedestrians	0	0	0	6	6	0	0	0	2	2	0	0	0	2	2	0	0	0	2	2	12
% Pedestrians	0	0	0	75.0	0.3	0	0	0	100	0.1	0	0	0	66.7	0.3	0	0	0	100	0.7	0.2



CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : Northlake Blvd at Keating Drive 03052015
Site Code :
Start Date : 3/5/2015
Page No : 1

Groups Printed- Heavy Vehicles

	Northlake Boulevard Eastbound					Northlake Boulevard Westbound					Keating Drive Northbound					Keating Drive Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	2	0	0	2	1	4	0	0	5	0	0	1	0	1	0	0	0	0	0	8
06:15 AM	1	1	0	0	2	0	5	0	0	5	0	0	0	0	0	0	1	0	0	1	8
06:30 AM	0	5	0	0	5	0	7	1	0	8	1	0	1	0	2	0	0	0	0	0	15
06:45 AM	0	6	0	0	6	0	12	0	0	12	0	0	0	0	0	0	0	1	0	1	19
Total	1	14	0	0	15	1	28	1	0	30	1	0	2	0	3	0	1	1	0	2	50
07:00 AM	0	9	0	0	9	0	11	0	0	11	0	0	1	0	1	0	0	0	0	0	21
07:15 AM	0	8	0	0	8	1	10	2	0	13	1	0	0	0	1	1	0	0	0	1	23
07:30 AM	0	9	0	0	9	2	12	0	0	14	0	0	2	0	2	0	0	0	0	0	25
07:45 AM	1	12	0	0	13	1	11	0	0	12	0	0	0	0	0	0	0	0	0	0	25
Total	1	38	0	0	39	4	44	2	0	50	1	0	3	0	4	1	0	0	0	1	94
08:00 AM	0	18	1	0	19	0	12	1	0	13	1	0	0	0	1	0	0	0	0	0	33
08:15 AM	0	10	1	0	11	0	12	0	0	12	1	0	1	0	2	0	0	0	0	0	25
08:30 AM	0	13	0	0	13	1	13	1	0	15	0	0	2	0	2	0	0	0	0	0	30
08:45 AM	0	12	0	0	12	1	19	0	0	20	0	0	0	0	0	0	0	1	0	1	33
Total	0	53	2	0	55	2	56	2	0	60	2	0	3	0	5	0	0	1	0	1	121
BREAK																					
04:00 PM	0	4	0	0	4	0	8	0	0	8	0	0	0	0	0	2	0	0	0	2	14
04:15 PM	0	10	0	0	10	1	7	1	0	9	0	0	0	0	0	1	0	0	0	1	20
04:30 PM	0	8	0	0	8	0	11	0	0	11	0	0	1	0	1	0	0	0	0	0	20
04:45 PM	0	5	0	0	5	0	12	0	0	12	1	0	0	0	1	0	0	1	0	1	19
Total	0	27	0	0	27	1	38	1	0	40	1	0	1	0	2	3	0	1	0	4	73
05:00 PM	0	6	0	0	6	0	3	0	0	3	0	0	0	0	0	1	0	0	0	1	10
05:15 PM	0	8	0	0	8	1	5	1	0	7	0	0	0	0	0	0	1	0	0	1	16
05:30 PM	0	4	0	0	4	0	5	0	0	5	0	0	2	0	2	1	0	0	0	1	12
05:45 PM	0	6	0	0	6	1	10	0	0	11	0	0	0	0	0	0	0	0	0	0	17
Total	0	24	0	0	24	2	23	1	0	26	0	0	2	0	2	2	1	0	0	3	55
06:00 PM	1	4	0	0	5	0	1	1	0	2	0	0	1	0	1	0	0	0	0	0	8
06:15 PM	0	3	0	0	3	0	3	1	0	4	0	0	0	0	0	2	0	0	0	2	9
06:30 PM	0	3	0	0	3	1	6	0	0	7	0	0	0	0	0	0	0	0	0	0	10
06:45 PM	0	5	0	0	5	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	6
Total	1	15	0	0	16	1	11	2	0	14	0	0	1	0	1	2	0	0	0	2	33
Grand Total	3	171	2	0	176	11	200	9	0	220	5	0	12	0	17	8	2	3	0	13	426
Apprch %	1.7	97.2	1.1	0		5	90.9	4.1	0		29.4	0	70.6	0		61.5	15.4	23.1	0		
Total %	0.7	40.1	0.5	0	41.3	2.6	46.9	2.1	0	51.6	1.2	0	2.8	0	4	1.9	0.5	0.7	0	3.1	

PGA Boulevard at Military Trail

County: 93
Station: 3101
Description: MILITARY TRAIL N OF PGA BLVD
Start Date: 03/03/2015
Start Time: 0000

	Direction: N					Direction: S					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	43	27	19	16	105	41	35	19	11	106	211
0100	20	22	14	6	62	21	15	22	13	71	133
0200	11	7	7	4	29	6	13	7	8	34	63
0300	14	8	6	4	32	12	6	11	8	37	69
0400	9	3	12	20	44	14	15	11	27	67	111
0500	21	27	52	58	158	23	34	58	85	200	358
0600	60	69	110	166	405	100	111	224	283	718	1123
0700	253	316	324	302	1195	367	394	489	533	1783	2978
0800	342	307	289	352	1290	479	470	453	477	1879	3169
0900	246	295	222	261	1024	405	348	394	381	1528	2552
1000	211	214	244	229	898	345	346	306	357	1354	2252
1100	249	229	231	259	968	334	357	362	353	1406	2374
1200	288	263	285	237	1073	409	390	342	424	1565	2638
1300	286	277	254	268	1085	370	409	358	405	1542	2627
1400	271	292	296	280	1139	348	402	356	444	1550	2689
1500	359	360	337	396	1452	481	493	458	519	1951	3403
1600	320	331	348	419	1418	489	527	505	525	2046	3464
1700	423	459	435	418	1735	522	603	605	614	2344	4079
1800	368	362	338	301	1369	521	445	358	384	1708	3077
1900	274	227	249	220	970	285	322	246	235	1088	2058
2000	203	192	162	169	726	209	209	191	206	815	1541
2100	189	162	128	110	589	204	152	137	107	600	1189
2200	101	74	66	49	290	126	82	75	64	347	637
2300	53	46	44	29	172	71	61	57	48	237	409
24-Hour Totals:					18228					24976	43204

Peak Volume Information

	Direction: N		Direction: S		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	800	1290	730	1971	730	3246
P.M.	1645	1736	1700	2344	1700	4079
Daily	1645	1736	1700	2344	1700	4079

Generated by SPS 5.0.45P

County: 93
Station: 3101
Description: MILITARY TRAIL N OF PGA BLVD
Start Date: 03/04/2015
Start Time: 0000

	Direction: N					Direction: S					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	26	20	20	15	81	34	20	12	6	72	153
0100	20	7	8	7	42	14	13	9	4	40	82
0200	9	3	7	7	26	9	9	9	8	35	61
0300	6	7	9	2	24	4	9	10	9	32	56
0400	7	16	10	21	54	9	19	11	25	64	118
0500	15	22	44	53	134	21	39	60	98	218	352
0600	45	71	148	166	430	102	127	245	299	773	1203
0700	237	307	339	303	1186	351	386	500	532	1769	2955
0800	328	301	330	329	1288	460	506	444	454	1864	3152
0900	219	280	215	245	959	373	351	341	450	1515	2474
1000	218	231	245	227	921	308	343	385	382	1418	2339
1100	252	253	261	278	1044	324	347	390	431	1492	2536
1200	292	300	286	294	1172	376	388	442	396	1602	2774
1300	298	248	235	314	1095	395	362	368	373	1498	2593
1400	265	315	337	280	1197	354	369	366	528	1617	2814
1500	324	371	373	402	1470	561	573	515	550	2199	3669
1600	378	340	377	423	1518	504	542	484	539	2069	3587
1700	431	479	455	399	1764	536	575	591	560	2262	4026
1800	368	323	355	323	1369	576	421	393	392	1782	3151
1900	282	235	234	238	989	345	304	308	243	1200	2189
2000	210	189	182	208	789	195	280	265	176	916	1705
2100	192	157	132	115	596	168	182	148	109	607	1203
2200	99	91	66	76	332	146	130	75	80	431	763
2300	56	49	43	33	181	54	79	55	35	223	404
24-Hour Totals:					18661					25698	44359

Peak Volume Information

	Direction: N		Direction: S		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	800	1288	730	1998	730	3269
P.M.	1645	1788	1715	2302	1645	4029
Daily	1645	1788	1715	2302	1645	4029

Generated by SPS 5.0.45P

County: 93
Station: 3101
Description: MILITARY TRAIL N OF PGA BLVD
Start Date: 03/05/2015
Start Time: 0000

	Direction: N					Direction: S					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	32	27	27	12	98	61	18	31	22	132	230
0100	15	13	11	7	46	12	26	16	6	60	106
0200	12	7	8	1	28	6	5	6	8	25	53
0300	8	2	6	4	20	5	8	8	8	29	49
0400	5	10	17	17	49	14	13	20	28	75	124
0500	19	31	47	60	157	18	41	54	102	215	372
0600	56	73	135	169	433	114	114	216	296	740	1173
0700	244	337	307	287	1175	395	394	483	578	1850	3025
0800	380	297	331	331	1339	475	461	433	459	1828	3167
0900	268	271	217	247	1003	384	362	372	399	1517	2520
1000	219	233	250	228	930	331	374	376	369	1450	2380
1100	231	269	225	270	995	291	328	363	420	1402	2397
1200	316	294	289	277	1176	319	377	375	377	1448	2624
1300	263	283	237	295	1078	432	408	404	391	1635	2713
1400	270	284	319	279	1152	387	431	399	480	1697	2849
1500	365	354	309	404	1432	463	521	399	516	1899	3331
1600	348	392	403	422	1565	479	509	499	496	1983	3548
1700	447	456	444	407	1754	504	589	562	543	2198	3952
1800	415	326	315	298	1354	461	429	338	350	1578	2932
1900	265	236	264	243	1008	324	361	268	228	1181	2189
2000	189	191	150	160	690	230	199	208	201	838	1528
2100	180	137	130	83	530	179	169	153	140	641	1171
2200	124	92	80	81	377	139	86	120	98	443	820
2300	52	48	43	41	184	80	69	65	32	246	430
24-Hour Totals:					18573					25110	43683

Peak Volume Information

	Direction: N		Direction: S		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	800	1339	730	1997	730	3268
P.M.	1645	1769	1700	2198	1700	3952
Daily	1645	1769	1700	2198	1700	3952

Generated by SPS 5.0.45P

County: 93
Station: 3103
Description: PGA BLVD E OF MILITARY TRAIL
Start Date: 03/03/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	43	40	32	23	138	65	48	51	43	207	345
0100	28	20	21	16	85	34	25	17	15	91	176
0200	7	8	11	10	36	19	21	28	9	77	113
0300	19	11	13	19	62	23	21	12	17	73	135
0400	24	18	27	29	98	13	12	17	23	65	163
0500	27	41	69	86	223	38	53	59	76	226	449
0600	102	137	184	287	710	92	122	164	219	597	1307
0700	334	465	605	680	2084	257	347	369	455	1428	3512
0800	661	660	623	618	2562	389	498	380	422	1689	4251
0900	524	477	475	532	2008	345	357	294	396	1392	3400
1000	463	464	480	498	1905	322	386	409	386	1503	3408
1100	471	485	511	425	1892	364	472	440	430	1706	3598
1200	495	475	436	499	1905	391	449	402	462	1704	3609
1300	475	476	446	472	1869	400	462	382	464	1708	3577
1400	486	452	467	464	1869	441	439	463	491	1834	3703
1500	513	478	472	477	1940	451	563	536	614	2164	4104
1600	529	473	485	505	1992	591	599	588	675	2453	4445
1700	615	606	597	583	2401	597	755	750	741	2843	5244
1800	508	465	413	368	1754	557	605	474	505	2141	3895
1900	313	304	278	257	1152	437	408	351	322	1518	2670
2000	260	193	166	188	807	312	327	288	310	1237	2044
2100	184	146	153	117	600	296	276	213	173	958	1558
2200	135	123	97	82	437	178	139	101	89	507	944
2300	88	49	59	39	235	74	84	63	59	280	515
24-Hour Totals:					28764					28401	57165

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	745	2624	745	1722	745	4346
P.M.	1700	2401	1700	2843	1700	5244
Daily	745	2624	1700	2843	1700	5244

Generated by SPS 5.0.45P

County: 93
Station: 3103
Description: PGA BLVD E OF MILITARY TRAIL
Start Date: 03/04/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	48	22	23	14	107	34	29	34	21	118	225
0100	12	8	21	6	47	19	10	11	24	64	111
0200	14	13	13	8	48	8	5	10	11	34	82
0300	6	13	7	15	41	9	13	11	13	46	87
0400	16	18	29	32	95	14	16	18	27	75	170
0500	30	41	69	93	233	28	52	57	84	221	454
0600	90	123	218	281	712	98	117	169	226	610	1322
0700	356	490	673	725	2244	252	337	355	474	1418	3662
0800	674	661	564	683	2582	434	435	372	403	1644	4226
0900	594	543	391	506	2034	350	368	265	348	1331	3365
1000	434	380	508	466	1788	262	322	398	411	1393	3181
1100	441	460	473	498	1872	295	381	376	475	1527	3399
1200	477	533	503	451	1964	410	447	476	433	1766	3730
1300	503	439	459	462	1863	425	449	469	475	1818	3681
1400	417	440	431	480	1768	487	456	506	530	1979	3747
1500	508	473	498	481	1960	469	537	555	564	2125	4085
1600	514	552	517	517	2100	581	548	553	615	2297	4397
1700	557	594	583	592	2326	654	715	710	716	2795	5121
1800	538	494	449	396	1877	720	576	505	540	2341	4218
1900	390	340	304	261	1295	421	392	359	398	1570	2865
2000	247	236	251	201	935	356	359	357	320	1392	2327
2100	196	149	162	114	621	317	250	282	179	1028	1649
2200	140	110	105	80	435	199	164	109	200	672	1107
2300	78	85	68	50	281	100	79	72	62	313	594
24-Hour Totals:					29228					28577	57805

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	730	2733	745	1715	730	4431
P.M.	1700	2326	1715	2861	1715	5168
Daily	730	2733	1715	2861	1715	5168

Generated by SPS 5.0.45P

County: 93
Station: 3103
Description: PGA BLVD E OF MILITARY TRAIL
Start Date: 03/05/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	49	21	32	33	135	53	35	53	30	171	306
0100	18	23	16	10	67	25	23	19	20	87	154
0200	18	12	9	13	52	23	19	11	6	59	111
0300	6	11	10	11	38	12	12	11	11	46	84
0400	16	26	24	34	100	11	19	19	28	77	177
0500	35	50	49	87	221	23	49	54	76	202	423
0600	86	112	194	300	692	98	131	160	195	584	1276
0700	347	462	663	637	2109	279	363	327	540	1509	3618
0800	696	725	646	664	2731	380	424	387	404	1595	4326
0900	515	544	471	458	1988	319	320	258	363	1260	3248
1000	411	455	488	486	1840	279	389	270	398	1336	3176
1100	430	425	463	511	1829	299	401	361	512	1573	3402
1200	522	492	508	507	2029	459	388	480	435	1762	3791
1300	476	505	514	564	2059	416	448	491	532	1887	3946
1400	576	478	499	513	2066	473	496	462	514	1945	4011
1500	530	476	497	520	2023	471	587	589	677	2324	4347
1600	499	585	526	523	2133	571	676	592	692	2531	4664
1700	563	660	596	569	2388	716	733	762	757	2968	5356
1800	559	503	433	393	1888	684	597	523	479	2283	4171
1900	331	336	299	282	1248	416	439	380	351	1586	2834
2000	276	256	225	199	956	364	371	299	274	1308	2264
2100	188	187	163	155	693	303	282	247	231	1063	1756
2200	141	129	108	99	477	214	167	127	124	632	1109
2300	106	87	67	61	321	96	87	75	66	324	645
24-Hour Totals:					30083					29112	59195

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	800	2731	745	1731	745	4435
P.M.	1700	2388	1700	2968	1700	5356
Daily	800	2731	1700	2968	1700	5356

Generated by SPS 5.0.45P

County: 93
Station: 3105
Description: MILITARY TRAIL S OF PGA BLVD
Start Date: 03/03/2015
Start Time: 0000

	Direction: N					Direction: S					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	35	18	19	13	85	46	24	19	10	99	184
0100	31	9	6	10	56	19	8	16	13	56	112
0200	11	8	11	7	37	16	11	8	5	40	77
0300	9	2	10	5	26	9	8	3	7	27	53
0400	4	7	9	9	29	9	9	13	11	42	71
0500	18	13	37	54	122	17	19	31	66	133	255
0600	44	60	135	207	446	64	83	149	186	482	928
0700	253	264	344	475	1336	289	277	355	419	1340	2676
0800	439	433	411	437	1720	425	370	332	393	1520	3240
0900	364	295	282	294	1235	313	292	303	309	1217	2452
1000	256	265	253	292	1066	264	290	262	289	1105	2171
1100	270	282	353	347	1252	297	297	311	324	1229	2481
1200	428	339	388	361	1516	267	308	300	312	1187	2703
1300	371	375	354	331	1431	281	301	316	332	1230	2661
1400	354	354	382	418	1508	306	368	335	384	1393	2901
1500	482	485	475	404	1846	380	410	391	435	1616	3462
1600	499	447	508	528	1982	389	431	408	414	1642	3624
1700	594	602	543	496	2235	459	475	445	503	1882	4117
1800	479	434	421	342	1676	424	368	339	324	1455	3131
1900	320	271	313	242	1146	255	288	205	195	943	2089
2000	195	173	183	182	733	177	215	163	190	745	1478
2100	198	182	129	90	599	170	149	139	103	561	1160
2200	78	72	51	52	253	127	93	69	74	363	616
2300	45	26	37	23	131	70	61	49	42	222	353
24-Hour Totals:					22466					20529	42995

Peak Volume Information

	Direction: N		Direction: S		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	745	1758	730	1569	745	3304
P.M.	1645	2267	1700	1882	1700	4117
Daily	1645	2267	1700	1882	1700	4117

Generated by SPS 5.0.45P

County: 93
Station: 3105
Description: MILITARY TRAIL S OF PGA BLVD
Start Date: 03/04/2015
Start Time: 0000

	Direction: N					Direction: S					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	21	22	14	13	70	35	15	21	14	85	155
0100	13	6	10	7	36	10	17	12	12	51	87
0200	6	5	7	7	25	6	8	6	5	25	50
0300	4	4	10	6	24	7	10	5	7	29	53
0400	15	16	20	25	76	5	14	7	20	46	122
0500	25	45	69	67	206	14	27	39	60	140	346
0600	67	112	210	241	630	59	101	146	229	535	1165
0700	333	449	560	492	1834	272	281	333	362	1248	3082
0800	431	464	519	484	1898	401	422	320	395	1538	3436
0900	438	374	289	325	1426	293	271	288	353	1205	2631
1000	314	329	292	309	1244	249	277	288	305	1119	2363
1100	340	342	352	366	1400	269	264	304	326	1163	2563
1200	435	403	390	384	1612	301	335	323	322	1281	2893
1300	363	347	323	345	1378	343	293	323	327	1286	2664
1400	363	342	360	444	1509	341	367	343	395	1446	2955
1500	443	455	507	475	1880	441	427	385	426	1679	3559
1600	496	412	501	489	1898	419	440	431	423	1713	3611
1700	566	536	583	537	2222	457	470	476	485	1888	4110
1800	465	394	622	606	2087	471	392	356	342	1561	3648
1900	474	359	376	332	1541	269	263	212	206	950	2491
2000	212	197	178	257	844	180	244	204	173	801	1645
2100	253	140	73	68	534	155	157	131	124	567	1101
2200	59	38	43	77	217	138	104	68	100	410	627
2300	49	38	49	50	186	60	65	65	42	232	418
24-Hour Totals:					24777					20998	45775

Peak Volume Information

	Direction: N		Direction: S		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	730	1947	800	1538	730	3465
P.M.	1700	2222	1715	1902	1700	4110
Daily	1700	2222	1715	1902	1700	4110

Generated by SPS 5.0.45P

County: 93
Station: 3105
Description: MILITARY TRAIL S OF PGA BLVD
Start Date: 03/05/2015
Start Time: 0000

	Direction: N					Direction: S					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	28	20	17	13	78	42	17	29	20	108	186
0100	22	8	8	9	47	9	20	10	5	44	91
0200	9	7	9	7	32	3	9	9	6	27	59
0300	7	3	10	6	26	7	7	6	7	27	53
0400	10	12	15	17	54	6	8	7	19	40	94
0500	22	29	53	61	165	19	22	40	68	149	314
0600	56	86	173	224	539	81	73	146	198	498	1037
0700	293	357	452	484	1586	284	314	342	421	1361	2947
0800	435	449	465	461	1810	420	370	306	390	1486	3296
0900	403	328	265	255	1251	297	284	281	305	1167	2418
1000	285	262	255	251	1053	257	296	296	291	1140	2193
1100	295	253	267	297	1112	255	260	282	336	1133	2245
1200	353	267	307	278	1205	260	307	264	316	1147	2352
1300	322	311	277	302	1212	324	318	309	354	1305	2517
1400	306	331	335	320	1292	355	381	356	387	1479	2771
1500	395	387	374	335	1491	414	417	400	417	1648	3139
1600	417	379	450	397	1643	382	453	423	405	1663	3306
1700	417	441	472	499	1829	421	489	424	466	1800	3629
1800	459	406	370	311	1546	386	330	298	297	1311	2857
1900	311	253	233	235	1032	258	291	214	187	950	1982
2000	175	205	213	190	783	212	197	195	172	776	1559
2100	176	170	158	153	657	162	164	151	128	605	1262
2200	115	117	122	102	456	118	79	96	74	367	823
2300	52	50	61	76	239	67	62	59	35	223	462
24-Hour Totals:					21138					20454	41592

Peak Volume Information

	Direction: N		Direction: S		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	745	1833	730	1553	730	3373
P.M.	1715	1871	1700	1800	1715	3636
Daily	1715	1871	1700	1800	1715	3636

Generated by SPS 5.0.45P

County: 93
Station: 3107
Description: PGA BLVD W OF MILITARY TRAIL
Start Date: 03/03/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	36	31	20	19	106	35	27	21	25	108	214
0100	20	10	8	10	48	19	3	9	9	40	88
0200	11	9	10	11	41	10	13	18	6	47	88
0300	8	7	7	14	36	10	8	7	13	38	74
0400	13	10	22	11	56	15	8	20	28	71	127
0500	16	29	36	52	133	36	52	62	68	218	351
0600	67	92	132	190	481	77	111	157	209	554	1035
0700	277	384	526	569	1756	240	363	437	414	1454	3210
0800	537	532	520	590	2179	380	420	399	448	1647	3826
0900	490	425	410	406	1731	406	353	323	353	1435	3166
1000	392	405	416	384	1597	319	351	357	375	1402	2999
1100	415	435	433	493	1776	311	424	415	430	1580	3356
1200	432	428	393	414	1667	429	465	380	438	1712	3379
1300	400	404	447	428	1679	346	438	390	413	1587	3266
1400	486	446	413	391	1736	428	392	377	421	1618	3354
1500	436	422	433	434	1725	379	464	477	482	1802	3527
1600	450	464	478	556	1948	510	541	514	539	2104	4052
1700	469	477	506	495	1947	538	622	609	571	2340	4287
1800	449	394	374	359	1576	487	489	423	408	1807	3383
1900	319	285	262	244	1110	398	348	312	286	1344	2454
2000	211	195	161	182	749	217	247	221	228	913	1662
2100	167	141	155	154	617	241	252	170	138	801	1418
2200	142	108	100	80	430	110	105	70	67	352	782
2300	85	45	47	46	223	44	43	43	30	160	383
24-Hour Totals:					25347					25134	50481

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	800	2179	815	1673	800	3826
P.M.	1645	2008	1700	2340	1645	4316
Daily	800	2179	1700	2340	1645	4316

Generated by SPS 5.0.45P

County: 93
Station: 3107
Description: PGA BLVD W OF MILITARY TRAIL
Start Date: 03/04/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	36	21	20	16	93	23	27	12	7	69	162
0100	10	10	22	13	55	11	4	7	13	35	90
0200	9	11	9	9	38	6	4	5	13	28	66
0300	7	14	2	8	31	3	10	10	11	34	65
0400	6	12	17	22	57	11	13	19	20	63	120
0500	21	26	51	53	151	30	46	61	76	213	364
0600	60	99	159	210	528	99	113	177	211	600	1128
0700	307	409	555	603	1874	235	372	496	456	1559	3433
0800	575	539	500	559	2173	385	393	398	412	1588	3761
0900	518	479	362	425	1784	411	386	266	322	1385	3169
1000	387	357	453	386	1583	274	330	321	365	1290	2873
1100	389	373	438	416	1616	296	340	375	403	1414	3030
1200	428	462	407	454	1751	431	415	404	435	1685	3436
1300	455	373	424	451	1703	402	423	446	397	1668	3371
1400	452	469	427	369	1717	450	419	388	488	1745	3462
1500	435	435	435	466	1771	398	459	493	460	1810	3581
1600	450	501	504	473	1928	553	463	494	536	2046	3974
1700	539	500	507	492	2038	566	562	566	512	2206	4244
1800	437	436	405	386	1664	503	471	440	437	1851	3515
1900	322	307	249	227	1105	359	318	299	311	1287	2392
2000	217	223	172	194	806	272	255	277	285	1089	1895
2100	173	159	154	133	619	258	212	196	118	784	1403
2200	136	104	98	83	421	129	105	93	114	441	862
2300	82	59	56	57	254	67	37	37	38	179	433
24-Hour Totals:					25760					25069	50829

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	730	2272	730	1730	730	4002
P.M.	1700	2038	1645	2230	1645	4249
Daily	730	2272	1645	2230	1645	4249

Generated by SPS 5.0.45P

County: 93
Station: 3107
Description: PGA BLVD W OF MILITARY TRAIL
Start Date: 03/05/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	39	24	27	17	107	30	15	27	16	88	195
0100	12	20	8	5	45	23	15	15	15	68	113
0200	11	14	10	5	40	8	7	5	2	22	62
0300	3	10	4	7	24	6	6	9	2	23	47
0400	3	12	11	27	53	12	14	18	27	71	124
0500	31	21	40	51	143	22	46	56	78	202	345
0600	61	89	149	225	524	82	136	175	183	576	1100
0700	288	392	586	606	1872	243	366	447	470	1526	3398
0800	553	577	591	536	2257	378	400	389	424	1591	3848
0900	501	467	434	403	1805	381	340	290	311	1322	3127
1000	379	412	396	389	1576	294	327	247	365	1233	2809
1100	380	382	411	399	1572	275	359	371	419	1424	2996
1200	474	442	397	448	1761	420	359	427	396	1602	3363
1300	396	425	501	533	1855	399	400	474	444	1717	3572
1400	529	402	457	429	1817	457	428	383	434	1702	3519
1500	449	430	428	418	1725	381	490	498	508	1877	3602
1600	480	507	482	474	1943	504	550	513	551	2118	4061
1700	508	536	474	520	2038	604	570	613	558	2345	4383
1800	427	418	406	377	1628	543	472	451	391	1857	3485
1900	326	321	265	259	1171	346	359	297	308	1310	2481
2000	250	229	250	180	909	302	278	242	224	1046	1955
2100	192	176	167	149	684	249	197	165	209	820	1504
2200	145	128	93	93	459	148	116	102	68	434	893
2300	75	71	61	65	272	75	60	53	37	225	497
24-Hour Totals:					26280					25199	51479

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	745	2327	730	1695	730	4017
P.M.	1700	2038	1700	2345	1700	4383
Daily	745	2327	1700	2345	1700	4383

Generated by SPS 5.0.45P

Three-Day Approach Count Summary

Project Name: PGA Boulevard Study
Project No.: 2013008.018
Location: PGA Boulevard at Military Trail
Direction: NORTHBOUND (APPROACH)
Date: 3/3/2015-3/5/2015

TIME PERIOD (AM)		WEEKDAY TUES 3-Mar	WED 4-Mar	THUR 5-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
00:00	00:15	35	21	28	28	
00:15	00:30	18	22	20	20	
00:30	00:45	19	14	17	17	
00:45	01:00	13	13	13	13	78
01:00	01:15	31	13	22	22	
01:15	01:30	9	6	8	8	
01:30	01:45	6	10	8	8	
01:45	02:00	10	7	9	9	46
02:00	02:15	11	6	9	9	
02:15	02:30	8	5	7	7	
02:30	02:45	11	7	9	9	
02:45	03:00	7	7	7	7	31
03:00	03:15	9	4	7	7	
03:15	03:30	2	4	3	3	
03:30	03:45	10	10	10	10	
03:45	04:00	5	6	6	6	25
04:00	04:15	4	15	10	10	
04:15	04:30	7	16	12	12	
04:30	04:45	9	20	15	15	
04:45	05:00	9	25	17	17	53
05:00	05:15	18	25	22	22	
05:15	05:30	13	45	29	29	
05:30	05:45	37	69	53	53	
05:45	06:00	54	67	61	61	164
06:00	06:15	44	67	56	56	
06:15	06:30	60	112	86	86	
06:30	06:45	135	210	173	173	
06:45	07:00	207	241	224	224	538
07:00	07:15	253	333	293	293	
07:15	07:30	264	449	357	357	
07:30	07:45	344	560	452	452	
07:45	08:00	475	492	484	484	1,585
08:00	08:15	439	431	435	435	
08:15	08:30	433	464	449	449	
08:30	08:45	411	519	465	465	
08:45	09:00	437	484	461	461	1,809
09:00	09:15	364	438	403	402	
09:15	09:30	295	374	328	332	
09:30	09:45	282	289	265	279	
09:45	10:00	294	325	255	291	1,304
10:00	10:15	256	314	285	285	
10:15	10:30	265	329	262	285	
10:30	10:45	253	292	255	267	
10:45	11:00	292	309	251	284	1,121
11:00	11:15	270	340	295	302	
11:15	11:30	282	342	253	292	
11:30	11:45	353	352	267	324	
11:45	12:00	347	366	297	337	1,255

TIME PERIOD (PM)		WEEKDAY TUES 3-Mar	WED 4-Mar	THUR 5-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
12:00	12:15	428	435	353	405	
12:15	12:30	339	403	267	336	
12:30	12:45	388	390	307	362	
12:45	13:00	361	384	278	341	1,444
13:00	13:15	371	363	322	352	
13:15	13:30	375	347	311	344	
13:30	13:45	354	323	277	318	
13:45	14:00	331	345	302	326	1,340
14:00	14:15	354	363	306	341	
14:15	14:30	354	342	331	342	
14:30	14:45	382	360	335	359	
14:45	15:00	418	444	320	394	1,436
15:00	15:15	482	443	395	440	
15:15	15:30	485	455	387	442	
15:30	15:45	475	507	374	452	
15:45	16:00	404	475	335	405	1,739
16:00	16:15	499	496	417	471	
16:15	16:30	447	412	379	413	
16:30	16:45	508	501	450	486	
16:45	17:00	528	489	397	471	1,841
17:00	17:15	594	566	417	526	
17:15	17:30	602	536	441	526	
17:30	17:45	543	583	472	533	
17:45	18:00	496	537	499	511	2,095
18:00	18:15	479	465	459	468	
18:15	18:30	434	394	406	411	
18:30	18:45	421	622	370	471	
18:45	19:00	342	606	311	420	1,770
19:00	19:15	320	474	311	368	
19:15	19:30	271	359	253	294	
19:30	19:45	313	376	233	307	
19:45	20:00	242	332	235	270	1,240
20:00	20:15	195	212	175	194	
20:15	20:30	173	197	205	192	
20:30	20:45	183	178	213	191	
20:45	21:00	182	257	190	210	787
21:00	21:15	198	253	176	209	
21:15	21:30	182	140	170	164	
21:30	21:45	129	73	158	120	
21:45	22:00	90	68	153	104	597
22:00	22:15	78	59	115	84	
22:15	22:30	72	38	117	76	
22:30	22:45	51	43	122	72	
22:45	23:00	52	77	102	77	309
23:00	23:15	45	49	52	49	
23:15	23:30	26	38	50	38	
23:30	23:45	37	49	61	49	
23:45	00:00	23	50	76	50	185
DAILY COUNT		22,466	24,777	21,138	22,794	
PEAK HOUR TIME					17:00	
PEAK HOUR COUNT					2,095	
ESTIMATED K-FACTOR					9.2%	

Three-Day Approach Count Summary

Project Name: PGA Boulevard Study
State Project No.: 2013008.018
Location: PGA Boulevard at Military Trail
Direction: SOUTHBOUND (APPROACH)
Date: 3/3/2015-3/5/2015

TIME PERIOD (AM)		WEEKDAY TUES 3-Mar	WED 4-Mar	THUR 5-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
00:00	00:15	41	34	61	45	
00:15	00:30	35	20	18	24	
00:30	00:45	19	12	31	21	
00:45	01:00	11	6	22	13	103
01:00	01:15	21	14	12	16	
01:15	01:30	15	13	26	18	
01:30	01:45	22	9	16	16	
01:45	02:00	13	4	6	8	57
02:00	02:15	6	9	6	7	
02:15	02:30	13	9	5	9	
02:30	02:45	7	9	6	7	
02:45	03:00	8	8	8	8	31
03:00	03:15	12	4	5	7	
03:15	03:30	6	9	8	8	
03:30	03:45	11	10	8	10	
03:45	04:00	8	9	8	8	33
04:00	04:15	14	9	14	12	
04:15	04:30	15	19	13	16	
04:30	04:45	11	11	20	14	
04:45	05:00	27	25	28	27	69
05:00	05:15	23	21	18	21	
05:15	05:30	34	39	41	38	
05:30	05:45	58	60	54	57	
05:45	06:00	85	98	102	95	211
06:00	06:15	100	102	114	105	
06:15	06:30	111	127	114	117	
06:30	06:45	224	245	216	228	
06:45	07:00	283	299	296	293	744
07:00	07:15	367	351	395	371	
07:15	07:30	394	386	394	391	
07:30	07:45	489	500	483	491	
07:45	08:00	533	532	578	548	1,801
08:00	08:15	479	460	475	471	
08:15	08:30	470	506	461	479	
08:30	08:45	453	444	433	443	
08:45	09:00	477	454	459	463	1,857
09:00	09:15	405	373	384	387	
09:15	09:30	348	351	362	354	
09:30	09:45	394	341	372	369	
09:45	10:00	381	450	399	410	1,520
10:00	10:15	345	308	331	328	
10:15	10:30	346	343	374	354	
10:30	10:45	306	385	376	356	
10:45	11:00	357	382	369	369	1,407
11:00	11:15	334	324	291	316	
11:15	11:30	357	347	328	344	
11:30	11:45	362	390	363	372	
11:45	12:00	353	431	420	401	1,433

TIME PERIOD (PM)		WEEKDAY TUES 3-Mar	WED 4-Mar	THUR 5-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
12:00	12:15	409	376	319	368	
12:15	12:30	390	388	377	385	
12:30	12:45	342	442	375	386	
12:45	13:00	424	396	377	399	1,538
13:00	13:15	370	395	432	399	
13:15	13:30	409	362	408	393	
13:30	13:45	358	368	404	377	
13:45	14:00	405	373	391	390	1,558
14:00	14:15	348	354	387	363	
14:15	14:30	402	369	431	401	
14:30	14:45	356	366	399	374	
14:45	15:00	444	528	480	484	1,621
15:00	15:15	481	561	463	502	
15:15	15:30	493	573	521	529	
15:30	15:45	458	515	399	457	
15:45	16:00	519	550	516	528	2,016
16:00	16:15	489	504	479	491	
16:15	16:30	527	542	509	526	
16:30	16:45	505	484	499	496	
16:45	17:00	525	539	496	520	2,033
17:00	17:15	522	536	504	521	
17:15	17:30	603	575	589	589	
17:30	17:45	605	591	562	586	
17:45	18:00	614	560	543	572	2,268
18:00	18:15	521	576	461	519	
18:15	18:30	445	421	429	432	
18:30	18:45	358	393	338	363	
18:45	19:00	384	392	350	375	1,689
19:00	19:15	285	345	324	318	
19:15	19:30	322	304	361	329	
19:30	19:45	246	308	268	274	
19:45	20:00	235	243	228	235	1,156
20:00	20:15	209	195	230	211	
20:15	20:30	209	280	199	229	
20:30	20:45	191	265	208	221	
20:45	21:00	206	176	201	194	856
21:00	21:15	204	168	179	184	
21:15	21:30	152	182	169	168	
21:30	21:45	137	148	153	146	
21:45	22:00	107	109	140	119	616
22:00	22:15	126	146	139	137	
22:15	22:30	82	130	86	99	
22:30	22:45	75	75	120	90	
22:45	23:00	64	80	98	81	407
23:00	23:15	71	54	80	68	
23:15	23:30	61	79	69	70	
23:30	23:45	57	55	65	59	
23:45	00:00	48	35	32	38	235
DAILY COUNT		24,976	25,698	25,110	25,261	
PEAK HOUR TIME					17:00	
PEAK HOUR COUNT					2,268	
ESTIMATED K-FACTOR					9.0%	

Three-Day Approach Count Summary

Project Name: PGA Boulevard Study
State Project No.: 2013008.018
Location: PGA Boulevard at Military Trail
Direction: EASTBOUND (APPROACH)
Date: 3/3/2015-3/5/2015

TIME PERIOD (AM)		WEEKDAY TUES 3-Mar	WEDNESDAY 4-Mar	THURSDAY 5-Mar	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
00:00	00:15	36	36	39	37	
00:15	00:30	31	21	24	25	
00:30	00:45	20	20	27	22	
00:45	01:00	19	16	17	17	102
01:00	01:15	20	10	12	14	
01:15	01:30	10	10	20	13	
01:30	01:45	8	22	8	13	
01:45	02:00	10	13	5	9	49
02:00	02:15	11	9	11	10	
02:15	02:30	9	11	14	11	
02:30	02:45	10	9	10	10	
02:45	03:00	11	9	5	8	40
03:00	03:15	8	7	3	6	
03:15	03:30	7	14	10	10	
03:30	03:45	7	2	4	4	
03:45	04:00	14	8	7	10	30
04:00	04:15	13	6	3	7	
04:15	04:30	10	12	12	11	
04:30	04:45	22	17	11	17	
04:45	05:00	11	22	27	20	55
05:00	05:15	16	21	31	23	
05:15	05:30	29	26	21	25	
05:30	05:45	36	51	40	42	
05:45	06:00	52	53	51	52	142
06:00	06:15	67	60	61	63	
06:15	06:30	92	99	89	93	
06:30	06:45	132	159	149	147	
06:45	07:00	190	210	225	208	511
07:00	07:15	277	307	288	291	
07:15	07:30	384	409	392	395	
07:30	07:45	526	555	586	556	
07:45	08:00	569	603	606	593	1,834
08:00	08:15	537	575	553	555	
08:15	08:30	532	539	577	549	
08:30	08:45	520	500	591	537	
08:45	09:00	590	559	536	562	2,203
09:00	09:15	490	518	501	503	
09:15	09:30	425	479	467	457	
09:30	09:45	410	362	434	402	
09:45	10:00	406	425	403	411	1,773
10:00	10:15	392	387	379	386	
10:15	10:30	405	357	412	391	
10:30	10:45	416	453	396	422	
10:45	11:00	384	386	389	386	1,585
11:00	11:15	415	389	380	395	
11:15	11:30	435	373	382	397	
11:30	11:45	433	438	411	427	
11:45	12:00	493	416	399	436	1,655

TIME PERIOD (PM)		WEEKDAY TUES 3-Mar	WEDNESDAY 4-Mar	THURSDAY 5-Mar	THREE-DAY AVERAGE 15 Min.	THREE-DAY AVERAGE HOUR
12:00	12:15	432	428	474	445	
12:15	12:30	428	462	442	444	
12:30	12:45	393	407	397	399	
12:45	13:00	414	454	448	439	1,726
13:00	13:15	400	455	396	417	
13:15	13:30	404	373	425	401	
13:30	13:45	447	424	501	457	
13:45	14:00	428	451	533	471	1,746
14:00	14:15	486	452	529	489	
14:15	14:30	446	469	402	439	
14:30	14:45	413	427	457	432	
14:45	15:00	391	369	429	396	1,757
15:00	15:15	436	435	449	440	
15:15	15:30	422	435	430	429	
15:30	15:45	433	435	428	432	
15:45	16:00	434	466	418	439	1,740
16:00	16:15	450	450	480	460	
16:15	16:30	464	501	507	491	
16:30	16:45	478	504	482	488	
16:45	17:00	556	473	474	501	1,940
17:00	17:15	469	539	508	505	
17:15	17:30	477	500	536	504	
17:30	17:45	506	507	474	496	
17:45	18:00	495	492	520	502	2,008
18:00	18:15	449	437	427	438	
18:15	18:30	394	436	418	416	
18:30	18:45	374	405	406	395	
18:45	19:00	359	386	377	374	1,623
19:00	19:15	319	322	326	322	
19:15	19:30	285	307	321	304	
19:30	19:45	262	249	265	259	
19:45	20:00	244	227	259	243	1,129
20:00	20:15	211	217	250	226	
20:15	20:30	195	223	229	216	
20:30	20:45	161	172	250	194	
20:45	21:00	182	194	180	185	821
21:00	21:15	167	173	192	177	
21:15	21:30	141	159	176	159	
21:30	21:45	155	154	167	159	
21:45	22:00	154	133	149	145	640
22:00	22:15	142	136	145	141	
22:15	22:30	108	104	128	113	
22:30	22:45	100	98	93	97	
22:45	23:00	80	83	93	85	437
23:00	23:15	85	82	75	81	
23:15	23:30	45	59	71	58	
23:30	23:45	47	56	61	55	
23:45	00:00	46	57	65	56	250
DAILY COUNT		25,347	25,760	26,280	25,796	
PEAK HOUR TIME					07:30	
PEAK HOUR COUNT					2,253	
ESTIMATED K-FACTOR					8.7%	

Three-Day Approach Count Summary

Project Name: PGA Boulevard Study
State Project No.: 2013008.018
Location: PGA Boulevard at Military Trail
Direction: WESTBOUND (APPROACH)
Date: 3/3/2015-3/5/2015

TIME PERIOD (AM)		WEEKDAY TUES 3-Mar	WED 4-Mar	THUR 5-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
00:00	00:15	65	34	53	51	
00:15	00:30	48	29	35	37	
00:30	00:45	51	34	53	46	
00:45	01:00	43	21	30	31	165
01:00	01:15	34	19	25	26	
01:15	01:30	25	10	23	19	
01:30	01:45	17	11	19	16	
01:45	02:00	15	24	20	20	81
02:00	02:15	19	8	23	17	
02:15	02:30	21	5	19	15	
02:30	02:45	28	10	11	16	
02:45	03:00	9	11	6	9	57
03:00	03:15	23	9	12	15	
03:15	03:30	21	13	12	15	
03:30	03:45	12	11	11	11	
03:45	04:00	17	13	11	14	55
04:00	04:15	13	14	11	13	
04:15	04:30	12	16	19	16	
04:30	04:45	17	18	19	18	
04:45	05:00	23	27	28	26	72
05:00	05:15	38	28	23	30	
05:15	05:30	53	52	49	51	
05:30	05:45	59	57	54	57	
05:45	06:00	76	84	76	79	216
06:00	06:15	92	98	98	96	
06:15	06:30	122	117	131	123	
06:30	06:45	164	169	160	164	
06:45	07:00	219	226	195	213	597
07:00	07:15	257	252	279	263	
07:15	07:30	347	337	363	349	
07:30	07:45	369	355	327	350	
07:45	08:00	455	474	540	490	1,452
08:00	08:15	389	434	380	401	
08:15	08:30	498	435	424	452	
08:30	08:45	380	372	387	380	
08:45	09:00	422	403	404	410	1,643
09:00	09:15	345	350	319	338	
09:15	09:30	357	368	320	348	
09:30	09:45	294	265	258	272	
09:45	10:00	396	348	363	369	1,328
10:00	10:15	322	262	279	288	
10:15	10:30	386	322	389	366	
10:30	10:45	409	398	270	359	
10:45	11:00	386	411	398	398	1,411
11:00	11:15	364	295	299	319	
11:15	11:30	472	381	401	418	
11:30	11:45	440	376	361	392	
11:45	12:00	430	475	512	472	1,602

TIME PERIOD (PM)		WEEKDAY TUES 3-Mar	WED 4-Mar	THUR 5-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
12:00	12:15	391	410	459	420	
12:15	12:30	449	447	388	428	
12:30	12:45	402	476	480	453	
12:45	13:00	462	433	435	443	1,744
13:00	13:15	400	425	416	414	
13:15	13:30	462	449	448	453	
13:30	13:45	382	469	491	447	
13:45	14:00	464	475	532	490	1,804
14:00	14:15	441	487	473	467	
14:15	14:30	439	456	496	464	
14:30	14:45	463	506	462	477	
14:45	15:00	491	530	514	512	1,919
15:00	15:15	451	469	471	464	
15:15	15:30	563	537	587	562	
15:30	15:45	536	555	589	560	
15:45	16:00	614	564	677	618	2,204
16:00	16:15	591	581	571	581	
16:15	16:30	599	548	676	608	
16:30	16:45	588	553	592	578	
16:45	17:00	675	615	692	661	2,427
17:00	17:15	597	654	716	656	
17:15	17:30	755	715	733	734	
17:30	17:45	750	710	762	741	
17:45	18:00	741	716	757	738	2,869
18:00	18:15	557	720	684	654	
18:15	18:30	605	576	597	593	
18:30	18:45	474	505	523	501	
18:45	19:00	505	540	479	508	2,255
19:00	19:15	437	421	416	425	
19:15	19:30	408	392	439	413	
19:30	19:45	351	359	380	363	
19:45	20:00	322	398	351	357	1,558
20:00	20:15	312	356	364	344	
20:15	20:30	327	359	371	352	
20:30	20:45	288	357	299	315	
20:45	21:00	310	320	274	301	1,312
21:00	21:15	296	317	303	305	
21:15	21:30	276	250	282	269	
21:30	21:45	213	282	247	247	
21:45	22:00	173	179	231	194	1,016
22:00	22:15	178	199	214	197	
22:15	22:30	139	164	167	157	
22:30	22:45	101	109	127	112	
22:45	23:00	89	200	124	138	604
23:00	23:15	74	100	96	90	
23:15	23:30	84	79	87	83	
23:30	23:45	63	72	75	70	
23:45	00:00	59	62	66	62	306
DAILY COUNT		28,401	28,577	29,112	28,697	
PEAK HOUR TIME					17:00	
PEAK HOUR COUNT					2,869	
ESTIMATED K-FACTOR					10.0%	

MECHANICAL COUNTS

PROJECT NAME: PGA Boulevard Study

LOCATION: PGA Boulevard at Military Trail

Notice to Proceed : 2013008.018

COUNT DATE: 3/3/2015-3/5/2015

NORTHBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	28	20	17	13	78
01:00 AM	22	8	8	9	46
02:00 AM	9	7	9	7	31
03:00 AM	7	3	10	6	25
04:00 AM	10	12	15	17	53
05:00 AM	22	29	53	61	164
06:00 AM	56	86	173	224	538
07:00 AM	293	357	452	484	1585
08:00 AM	435	449	465	461	1809
09:00 AM	402	332	279	291	1304
10:00 AM	285	285	267	284	1121
11:00 AM	302	292	324	337	1255
12:00 PM	405	336	362	341	1444
01:00 PM	352	344	318	326	1340
02:00 PM	341	342	359	394	1436
03:00 PM	440	442	452	405	1739
04:00 PM	471	413	486	471	1841
05:00 PM	526	526	533	511	2095
06:00 PM	468	411	471	420	1770
07:00 PM	368	294	307	270	1240
08:00 PM	194	192	191	210	787
09:00 PM	209	164	120	104	597
10:00 PM	84	76	72	77	309
11:00 PM	49	38	49	50	185
			24 Hour Total		22,794

SOUTHBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	45	24	21	13	103
01:00 AM	16	18	16	8	57
02:00 AM	7	9	7	8	31
03:00 AM	7	8	10	8	33
04:00 AM	12	16	14	27	69
05:00 AM	21	38	57	95	211
06:00 AM	105	117	228	293	744
07:00 AM	371	391	491	548	1801
08:00 AM	471	479	443	463	1857
09:00 AM	387	354	369	410	1520
10:00 AM	328	354	356	369	1407
11:00 AM	316	344	372	401	1433
12:00 PM	368	385	386	399	1538
01:00 PM	399	393	377	390	1558
02:00 PM	363	401	374	484	1621
03:00 PM	502	529	457	528	2016
04:00 PM	491	526	496	520	2033
05:00 PM	521	589	586	572	2268
06:00 PM	519	432	363	375	1689
07:00 PM	318	329	274	235	1156
08:00 PM	211	229	221	194	856
09:00 PM	184	168	146	119	616
10:00 PM	137	99	90	81	407
11:00 PM	68	70	59	38	235
			24 Hour Total		25,261

EASTBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	37	25	22	17	102
01:00 AM	14	13	13	9	49
02:00 AM	10	11	10	8	40
03:00 AM	6	10	4	10	30
04:00 AM	7	11	17	20	55
05:00 AM	23	25	42	52	142
06:00 AM	63	93	147	208	511
07:00 AM	291	395	556	593	1834
08:00 AM	555	549	537	562	2203
09:00 AM	503	457	402	411	1773
10:00 AM	386	391	422	386	1585
11:00 AM	395	397	427	436	1655
12:00 PM	445	444	399	439	1726
01:00 PM	417	401	457	471	1746
02:00 PM	489	439	432	396	1757
03:00 PM	440	429	432	439	1740
04:00 PM	460	491	488	501	1940
05:00 PM	505	504	496	502	2008
06:00 PM	438	416	395	374	1623
07:00 PM	322	304	259	243	1129
08:00 PM	226	216	194	185	821
09:00 PM	177	159	159	145	640
10:00 PM	141	113	97	85	437
11:00 PM	81	58	55	56	250
			24 Hour Total		25,796

WESTBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	51	37	46	31	165
01:00 AM	26	19	16	20	81
02:00 AM	17	15	16	9	57
03:00 AM	15	15	11	14	55
04:00 AM	13	16	18	26	72
05:00 AM	30	51	57	79	216
06:00 AM	96	123	164	213	597
07:00 AM	263	349	350	490	1452
08:00 AM	401	452	380	410	1643
09:00 AM	338	348	272	369	1328
10:00 AM	288	366	359	398	1411
11:00 AM	319	418	392	472	1602
12:00 PM	420	428	453	443	1744
01:00 PM	414	453	447	490	1804
02:00 PM	467	464	477	512	1919
03:00 PM	464	562	560	618	2204
04:00 PM	581	608	578	661	2427
05:00 PM	656	734	741	738	2869
06:00 PM	654	593	501	508	2255
07:00 PM	425	413	363	357	1558
08:00 PM	344	352	315	301	1312
09:00 PM	305	269	247	194	1016
10:00 PM	197	157	112	138	604
11:00 PM	90	83	70	62	306
			24 Hour Total		28,697

ALL

TOTAL
448
233
159
143
249
734
2390
6672
7512
5925
5524
5945
6453
6449
6734
7700
8240
9240
7337
5083
3777
2869
1756
976
102,547

DAILY TRAFFIC COUNT SUMMARY

NORTHBOUND

A.M. Peak Hour, Time: 07:45 AM Volume: 1,832
A.M. "K" Factor: 8.0% P.H.F. : 0.95

P.M. Peak Hour, Time: 05:00 PM Volume: 2,095
P.M. "K" Factor: 9.2% P.H.F. : 0.98

SOUTHBOUND

A.M. Peak Hour, Time: 07:30 AM Volume: 1,989
A.M. "K" Factor: 7.9% P.H.F. : 0.91

P.M. Peak Hour, Time: 05:00 PM Volume: 2,268
P.M. "K" Factor: 9.0% P.H.F. : 0.96

DAILY TRAFFIC COUNT SUMMARY

EASTBOUND

A.M. Peak Hour, Time: 07:30 AM Volume: 2,253
A.M. "K" Factor: 8.7% P.H.F. : 0.95

P.M. Peak Hour, Time: 05:00 PM Volume: 2,008
P.M. "K" Factor: 7.8% P.H.F. : 0.99

WESTBOUND

A.M. Peak Hour, Time: 11:45 AM Volume: 1,773
A.M. "K" Factor: 6.2% P.H.F. : 0.94

P.M. Peak Hour, Time: 05:00 PM Volume: 2,869
P.M. "K" Factor: 10.0% P.H.F. : 0.97

ALL APPROACHES:

A.M. Peak Hour, Time: 07:30 AM Volume: 7,754
A.M. "K" Factor: 7.6% P.H.F. : 0.92

P.M. Peak Hour, Time: 05:00 PM Volume: 9,240
P.M. "K" Factor: 9.0% P.H.F. : 0.98

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : PGA Blvd at Military Tr 03032015
Site Code :
Start Date : 3/3/2015
Page No : 1

Groups Printed- Autos - Heavy Vehicles - Bicycles - Pedestrians

	PGA Blvd Eastbound					PGA Blvd Westbound					Military Tr Northbound					Military Tr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	2	36	20	0	58	7	51	14	0	72	18	44	15	0	77	40	39	16	0	95	302
06:15 AM	0	53	20	0	73	8	70	25	0	103	23	63	25	0	111	50	67	12	0	129	416
06:30 AM	1	75	36	0	112	16	85	43	0	144	37	83	36	0	156	66	93	23	0	182	594
06:45 AM	15	114	63	0	192	10	89	40	0	139	68	116	49	0	233	102	121	27	0	250	814
Total	18	278	139	0	435	41	295	122	0	458	146	306	125	0	577	258	320	78	0	656	2126
07:00 AM	37	184	71	0	292	29	152	76	0	257	94	153	73	0	320	131	160	19	0	310	1179
07:15 AM	36	244	84	0	364	26	223	97	0	346	171	170	81	4	426	135	154	39	0	328	1464
07:30 AM	49	314	105	0	468	24	188	63	0	275	183	184	124	0	491	155	204	50	0	409	1643
07:45 AM	40	345	127	0	512	39	208	81	0	328	185	216	133	0	534	161	204	42	0	407	1781
Total	162	1087	387	0	1636	118	771	317	0	1206	633	723	411	4	1771	582	722	150	0	1454	6067
08:00 AM	38	372	140	0	550	26	222	72	0	320	109	182	96	0	387	159	201	29	0	389	1646
08:15 AM	34	339	114	0	487	38	230	77	0	345	110	162	96	0	368	179	176	39	0	394	1594
08:30 AM	57	323	85	0	465	28	206	74	0	308	136	221	104	0	461	153	162	35	0	350	1584
08:45 AM	37	318	104	0	459	34	231	60	3	328	141	159	95	1	396	156	157	30	0	343	1526
Total	166	1352	443	0	1961	126	889	283	3	1301	496	724	391	1	1612	647	696	133	0	1476	6350
BREAK																					
04:00 PM	37	249	87	0	373	86	210	90	0	386	133	226	132	0	491	118	208	42	0	368	1618
04:15 PM	41	274	114	0	429	93	270	102	0	465	134	189	88	0	411	119	223	26	0	368	1673
04:30 PM	48	238	102	0	388	89	280	118	0	487	148	247	77	0	472	126	192	35	0	353	1700
04:45 PM	69	276	102	0	447	98	283	136	0	517	149	240	105	0	494	121	215	37	0	373	1831
Total	195	1037	405	0	1637	366	1043	446	0	1855	564	902	402	0	1868	484	838	140	0	1462	6822
05:00 PM	71	299	136	0	506	91	270	131	0	492	181	261	148	0	590	125	231	61	0	417	2005
05:15 PM	59	323	118	0	500	99	272	138	0	509	164	254	131	2	551	131	266	57	0	454	2014
05:30 PM	51	326	117	0	494	83	319	143	0	545	160	237	140	0	537	143	251	59	0	453	2029
05:45 PM	56	337	136	0	529	104	354	135	0	593	144	199	136	1	480	116	270	53	0	439	2041
Total	237	1285	507	0	2029	377	1215	547	0	2139	649	951	555	3	2158	515	1018	230	0	1763	8089
06:00 PM	51	293	97	0	441	89	292	124	0	505	133	187	103	0	423	96	237	68	0	401	1770
06:15 PM	51	255	85	0	391	81	237	102	0	420	131	176	92	0	399	86	188	69	0	343	1553
06:30 PM	34	212	96	0	342	59	218	83	0	360	126	193	90	0	409	90	174	52	0	316	1427
06:45 PM	28	157	96	0	281	63	178	69	0	310	95	155	62	0	312	81	160	48	0	289	1192
Total	164	917	374	0	1455	292	925	378	0	1595	485	711	347	0	1543	353	759	237	0	1349	5942
Grand Total	942	5956	2255	0	9153	1320	5138	2093	3	8554	2973	4317	2231	8	9529	2839	4353	968	0	8160	35396
Apprch %	10.3	65.1	24.6	0		15.4	60.1	24.5	0		31.2	45.3	23.4	0.1		34.8	53.3	11.9	0		
Total %	2.7	16.8	6.4	0	25.9	3.7	14.5	5.9	0	24.2	8.4	12.2	6.3	0	26.9	8	12.3	2.7	0	23.1	
Autos	925	5877	2200	0	9002	1301	5048	2071	0	8420	2902	4237	2185	0	9324	2802	4269	948	0	8019	34765
% Autos	98.2	98.7	97.6	0	98.4	98.6	98.2	98.9	0	98.4	97.6	98.1	97.9	0	97.8	98.7	98.1	97.9	0	98.3	98.2
Heavy Vehicles	17	79	55	0	151	19	90	22	0	131	71	80	46	0	197	37	84	20	0	141	620
% Heavy Vehicles	1.8	1.3	2.4	0	1.6	1.4	1.8	1.1	0	1.5	2.4	1.9	2.1	0	2.1	1.3	1.9	2.1	0	1.7	1.8
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	2
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	25	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	3	3	0	0	0	6	6	0	0	0	0	0	9
% Pedestrians	0	0	0	0	0	0	0	0	100	0	0	0	0	75	0.1	0	0	0	0	0	0

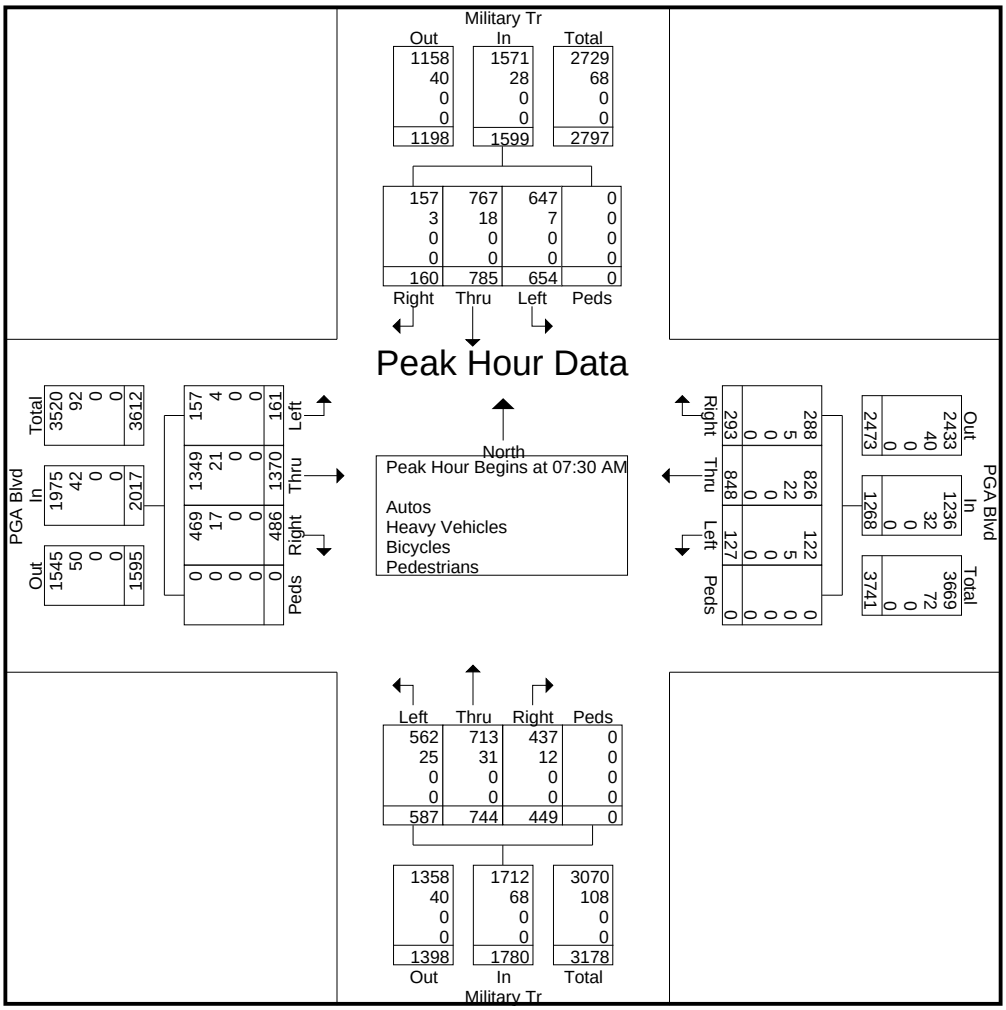
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : PGA Blvd at Military Tr 03032015
Site Code :
Start Date : 3/3/2015
Page No : 2

	PGA Blvd Eastbound					PGA Blvd Westbound					Military Tr Northbound					Military Tr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	49	314	105	0	468	24	188	63	0	275	183	184	124	0	491	155	204	50	0	409	1643
07:45 AM	40	345	127	0	512	39	208	81	0	328	185	216	133	0	534	161	204	42	0	407	1781
08:00 AM	38	372	140	0	550	26	222	72	0	320	109	182	96	0	387	159	201	29	0	389	1646
08:15 AM	34	339	114	0	487	38	230	77	0	345	110	162	96	0	368	179	176	39	0	394	1594
Total Volume	161	1370	486	0	2017	127	848	293	0	1268	587	744	449	0	1780	654	785	160	0	1599	6664
% App. Total	8	67.9	24.1	0		10	66.9	23.1	0		33	41.8	25.2	0		40.9	49.1	10	0		
PHF	.821	.921	.868	.000	.917	.814	.922	.904	.000	.919	.793	.861	.844	.000	.833	.913	.962	.800	.000	.977	.935
Autos	157	1349	469	0	1975	122	826	288	0	1236	562	713	437	0	1712	647	767	157	0	1571	6494
% Autos	97.5	98.5	96.5	0	97.9	96.1	97.4	98.3	0	97.5	95.7	95.8	97.3	0	96.2	98.9	97.7	98.1	0	98.2	97.4
Heavy Vehicles	4	21	17	0	42	5	22	5	0	32	25	31	12	0	68	7	18	3	0	28	170
% Heavy Vehicles	2.5	1.5	3.5	0	2.1	3.9	2.6	1.7	0	2.5	4.3	4.2	2.7	0	3.8	1.1	2.3	1.9	0	1.8	2.6
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



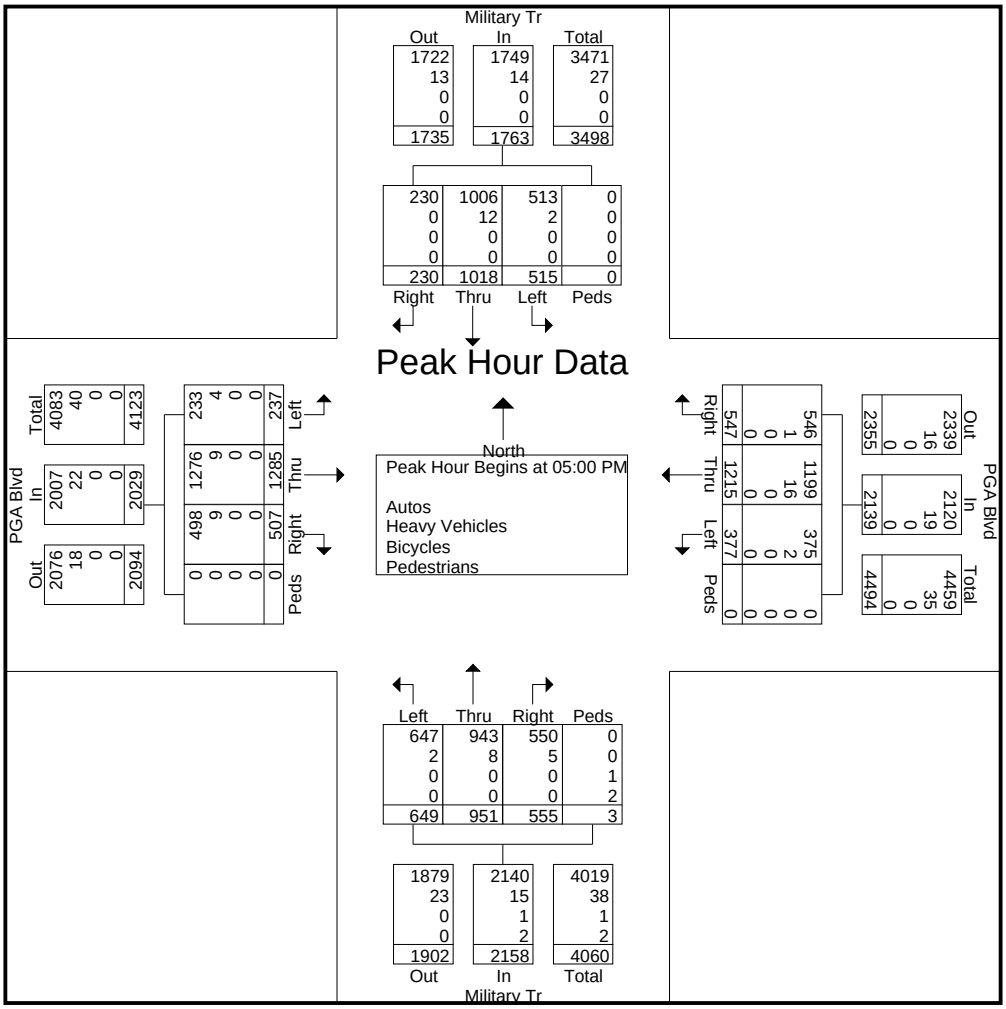
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : PGA Blvd at Military Tr 03032015
Site Code :
Start Date : 3/3/2015
Page No : 3

	PGA Blvd Eastbound					PGA Blvd Westbound					Military Tr Northbound					Military Tr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	71	299	136	0	506	91	270	131	0	492	181	261	148	0	590	125	231	61	0	417	2005
05:15 PM	59	323	118	0	500	99	272	138	0	509	164	254	131	2	551	131	266	57	0	454	2014
05:30 PM	51	326	117	0	494	83	319	143	0	545	160	237	140	0	537	143	251	59	0	453	2029
05:45 PM	56	337	136	0	529	104	354	135	0	593	144	199	136	1	480	116	270	53	0	439	2041
Total Volume	237	1285	507	0	2029	377	1215	547	0	2139	649	951	555	3	2158	515	1018	230	0	1763	8089
% App. Total	11.7	63.3	25	0		17.6	56.8	25.6	0		30.1	44.1	25.7	0.1		29.2	57.7	13	0		
PHF	.835	.953	.932	.000	.959	.906	.858	.956	.000	.902	.896	.911	.938	.375	.914	.900	.943	.943	.000	.971	.991
Autos	233	1276	498	0	2007	375	1199	546	0	2120	647	943	550	0	2140	513	1006	230	0	1749	8016
% Autos	98.3	99.3	98.2	0	98.9	99.5	98.7	99.8	0	99.1	99.7	99.2	99.1	0	99.2	99.6	98.8	100	0	99.2	99.1
Heavy Vehicles	4	9	9	0	22	2	16	1	0	19	2	8	5	0	15	2	12	0	0	14	70
% Heavy Vehicles	1.7	0.7	1.8	0	1.1	0.5	1.3	0.2	0	0.9	0.3	0.8	0.9	0	0.7	0.4	1.2	0	0	0.8	0.9
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	33.3	0.0	0	0	0	0	0	0.0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	2
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	66.7	0.1	0	0	0	0	0	0.0



CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : PGA Blvd at Military Tr 03032015
Site Code :
Start Date : 3/3/2015
Page No : 1

Groups Printed- Heavy Vehicles

	PGA Blvd Eastbound					PGA Blvd Westbound					Military Tr Northbound					Military Tr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	0	1	0	1	0	1	1	0	2	2	1	0	0	3	0	1	0	0	1	7
06:15 AM	0	0	0	0	0	0	0	1	0	1	1	4	1	0	6	0	1	0	0	1	8
06:30 AM	0	2	2	0	4	0	2	2	0	4	0	1	1	0	2	1	1	0	0	2	12
06:45 AM	0	3	2	0	5	0	2	0	0	2	6	1	2	0	9	1	4	3	0	8	24
Total	0	5	5	0	10	0	5	4	0	9	9	7	4	0	20	2	7	3	0	12	51
07:00 AM	0	2	0	0	2	1	4	1	0	6	6	3	1	0	10	2	3	2	0	7	25
07:15 AM	1	1	0	0	2	1	5	2	0	8	2	5	1	0	8	3	7	3	0	13	31
07:30 AM	1	2	1	0	4	1	7	2	0	10	5	3	3	0	11	2	6	2	0	10	35
07:45 AM	1	4	3	0	8	0	4	0	0	4	5	13	1	0	19	2	6	0	0	8	39
Total	3	9	4	0	16	3	20	5	0	28	18	24	6	0	48	9	22	7	0	38	130
08:00 AM	1	12	11	0	24	2	6	0	0	8	10	10	1	0	21	2	2	0	0	4	57
08:15 AM	1	3	2	0	6	2	5	3	0	10	5	5	7	0	17	1	4	1	0	6	39
08:30 AM	1	1	3	0	5	2	8	2	0	12	5	6	5	0	16	3	5	1	0	9	42
08:45 AM	2	11	4	0	17	0	11	1	0	12	7	7	3	0	17	1	3	2	0	6	52
Total	5	27	20	0	52	6	30	6	0	42	27	28	16	0	71	7	14	4	0	25	190
BREAK																					
04:00 PM	1	4	4	0	9	2	1	2	0	5	4	1	6	0	11	3	6	0	0	9	34
04:15 PM	0	6	8	0	14	1	5	1	0	7	5	4	0	0	9	4	8	2	0	14	44
04:30 PM	0	4	4	0	8	1	1	0	0	2	2	2	3	0	7	2	1	1	0	4	21
04:45 PM	0	5	1	0	6	1	2	0	0	3	2	1	0	0	3	3	4	2	0	9	21
Total	1	19	17	0	37	5	9	3	0	17	13	8	9	0	30	12	19	5	0	36	120
05:00 PM	1	2	3	0	6	0	4	0	0	4	1	2	1	0	4	0	2	0	0	2	16
05:15 PM	1	2	4	0	7	1	6	0	0	7	1	2	2	0	5	1	6	0	0	7	26
05:30 PM	1	1	0	0	2	1	4	0	0	5	0	3	1	0	4	1	2	0	0	3	14
05:45 PM	1	4	2	0	7	0	2	1	0	3	0	1	1	0	2	0	2	0	0	2	14
Total	4	9	9	0	22	2	16	1	0	19	2	8	5	0	15	2	12	0	0	14	70
06:00 PM	1	1	0	0	2	0	2	3	0	5	1	1	2	0	4	1	3	0	0	4	15
06:15 PM	1	1	0	0	2	1	1	0	0	2	0	3	2	0	5	2	3	0	0	5	14
06:30 PM	2	4	0	0	6	2	3	0	0	5	0	1	2	0	3	2	3	0	0	5	19
06:45 PM	0	4	0	0	4	0	4	0	0	4	1	0	0	0	1	0	1	1	0	2	11
Total	4	10	0	0	14	3	10	3	0	16	2	5	6	0	13	5	10	1	0	16	59
Grand Total	17	79	55	0	151	19	90	22	0	131	71	80	46	0	197	37	84	20	0	141	620
Apprch %	11.3	52.3	36.4	0		14.5	68.7	16.8	0		36	40.6	23.4	0		26.2	59.6	14.2	0		
Total %	2.7	12.7	8.9	0	24.4	3.1	14.5	3.5	0	21.1	11.5	12.9	7.4	0	31.8	6	13.5	3.2	0	22.7	

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : PGA Blvd at Military Tr 03042015
Site Code :
Start Date : 3/4/2015
Page No : 1

Groups Printed- Autos - Heavy Vehicles - Bicycles - Pedestrians

	PGA Blvd Eastbound					PGA Blvd Westbound					Military Tr Northbound					Military Tr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	5	46	17	0	68	6	66	17	0	89	16	29	17	0	62	33	39	18	0	90	309
06:15 AM	0	62	30	0	92	9	75	18	0	102	21	57	30	0	108	34	53	17	0	104	406
06:30 AM	2	101	37	0	140	13	89	42	0	144	42	105	45	0	192	79	116	33	0	228	704
06:45 AM	4	103	64	0	171	22	122	39	0	183	73	118	51	0	242	86	132	34	0	252	848
Total	11	312	148	0	471	50	352	116	0	518	152	309	143	0	604	232	340	102	0	674	2267
07:00 AM	32	190	76	1	299	26	171	75	0	272	90	134	72	0	296	97	179	23	0	299	1166
07:15 AM	43	248	78	0	369	34	235	89	0	358	137	188	96	1	422	135	153	27	0	315	1464
07:30 AM	38	288	115	0	441	21	222	70	0	313	169	208	109	1	487	201	250	68	0	519	1760
07:45 AM	29	315	128	0	472	32	263	97	2	394	160	179	107	0	446	166	219	34	0	419	1731
Total	142	1041	397	1	1581	113	891	331	2	1337	556	709	384	2	1651	599	801	152	0	1552	6121
08:00 AM	49	295	133	0	477	43	282	99	0	424	100	162	94	0	356	153	172	27	0	352	1609
08:15 AM	24	291	167	0	482	51	267	87	0	405	150	188	99	0	437	154	250	42	0	446	1770
08:30 AM	45	272	93	2	412	44	197	68	0	309	135	239	96	0	470	146	179	35	0	360	1551
08:45 AM	48	254	126	0	428	34	177	65	3	279	136	165	112	1	414	147	165	39	0	351	1472
Total	166	1112	519	2	1799	172	923	319	3	1417	521	754	401	1	1677	600	766	143	0	1509	6402
BREAK																					
04:00 PM	51	205	118	6	380	69	244	121	0	434	158	207	120	1	486	131	223	60	2	416	1716
04:15 PM	49	304	117	1	471	83	260	94	0	437	117	165	91	0	373	127	222	54	0	403	1684
04:30 PM	55	273	125	0	453	63	271	101	0	435	133	255	106	0	494	111	223	56	0	390	1772
04:45 PM	50	273	104	1	428	72	333	126	0	531	152	215	107	0	474	105	252	44	0	401	1834
Total	205	1055	464	8	1732	287	1108	442	0	1837	560	842	424	1	1827	474	920	214	2	1610	7006
05:00 PM	62	282	112	1	457	80	253	99	0	432	140	285	144	0	569	102	233	28	0	363	1821
05:15 PM	58	299	135	0	492	80	261	115	0	456	135	255	111	0	501	120	232	26	0	378	1827
05:30 PM	49	259	143	0	451	81	292	79	0	452	143	266	136	0	545	144	224	38	0	406	1854
05:45 PM	55	263	142	2	462	76	295	96	0	467	129	210	126	0	465	118	229	35	2	384	1778
Total	224	1103	532	3	1862	317	1101	389	0	1807	547	1016	517	0	2080	484	918	127	2	1531	7280
06:00 PM	41	229	115	0	385	93	257	83	0	433	112	192	120	0	424	122	243	44	1	410	1652
06:15 PM	50	272	95	0	417	97	235	69	0	401	108	170	91	0	369	96	177	49	0	322	1509
06:30 PM	43	257	82	0	382	71	217	63	0	351	129	195	87	0	411	81	171	24	0	276	1420
06:45 PM	59	235	58	0	352	74	197	43	0	314	121	166	62	0	349	82	170	41	0	293	1308
Total	193	993	350	0	1536	335	906	258	0	1499	470	723	360	0	1553	381	761	158	1	1301	5889
Grand Total	941	5616	2410	14	8981	1274	5281	1855	5	8415	2806	4353	2229	4	9392	2770	4506	896	5	8177	34965
Apprch %	10.5	62.5	26.8	0.2		15.1	62.8	22	0.1		29.9	46.3	23.7	0		33.9	55.1	11	0.1		
Total %	2.7	16.1	6.9	0	25.7	3.6	15.1	5.3	0	24.1	8	12.4	6.4	0	26.9	7.9	12.9	2.6	0	23.4	
Autos	926	5540	2369	0	8835	1258	5210	1835	0	8303	2743	4290	2191	0	9224	2733	4435	879	0	8047	34409
% Autos	98.4	98.6	98.3	0	98.4	98.7	98.7	98.9	0	98.7	97.8	98.6	98.3	0	98.2	98.7	98.4	98.1	0	98.4	98.4
Heavy Vehicles	15	76	41	0	132	16	71	20	0	107	63	63	38	0	164	37	71	17	0	125	528
% Heavy Vehicles	1.6	1.4	1.7	0	1.5	1.3	1.3	1.1	0	1.3	2.2	1.4	1.7	0	1.7	1.3	1.6	1.9	0	1.5	1.5
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	25	0	0	0	0	0	0	0
Pedestrians	0	0	0	14	14	0	0	0	5	5	0	0	0	3	3	0	0	0	5	5	27
% Pedestrians	0	0	0	100	0.2	0	0	0	100	0.1	0	0	0	75	0	0	0	0	100	0.1	0.1

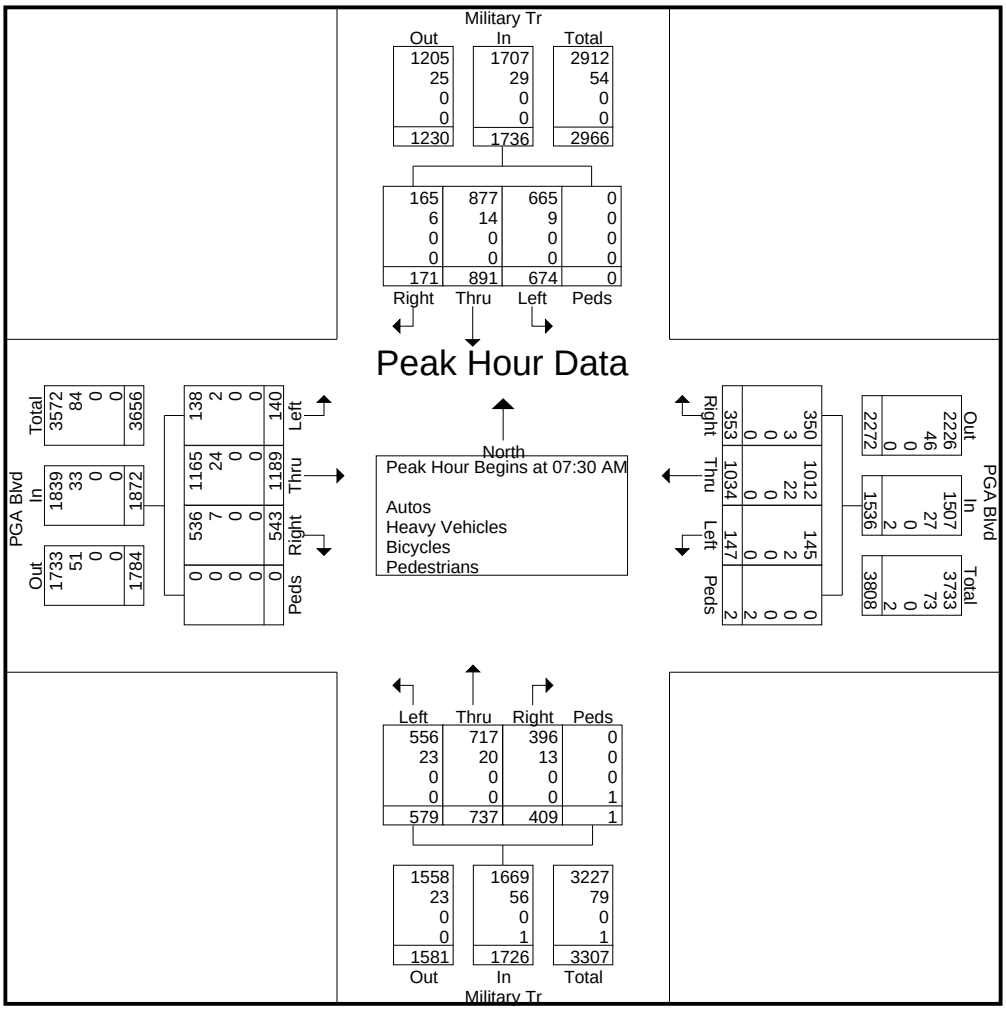
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : PGA Blvd at Military Tr 03042015
Site Code :
Start Date : 3/4/2015
Page No : 2

	PGA Blvd Eastbound					PGA Blvd Westbound					Military Tr Northbound					Military Tr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	38	288	115	0	441	21	222	70	0	313	169	208	109	1	487	201	250	68	0	519	1760
07:45 AM	29	315	128	0	472	32	263	97	2	394	160	179	107	0	446	166	219	34	0	419	1731
08:00 AM	49	295	133	0	477	43	282	99	0	424	100	162	94	0	356	153	172	27	0	352	1609
08:15 AM	24	291	167	0	482	51	267	87	0	405	150	188	99	0	437	154	250	42	0	446	1770
Total Volume	140	1189	543	0	1872	147	1034	353	2	1536	579	737	409	1	1726	674	891	171	0	1736	6870
% App. Total	7.5	63.5	29	0		9.6	67.3	23	0.1		33.5	42.7	23.7	0.1		38.8	51.3	9.9	0		
PHF	.714	.944	.813	.000	.971	.721	.917	.891	.250	.906	.857	.886	.938	.250	.886	.838	.891	.629	.000	.836	.970
Autos	138	1165	536	0	1839	145	1012	350	0	1507	556	717	396	0	1669	665	877	165	0	1707	6722
% Autos	98.6	98.0	98.7	0	98.2	98.6	97.9	99.2	0	98.1	96.0	97.3	96.8	0	96.7	98.7	98.4	96.5	0	98.3	97.8
Heavy Vehicles	2	24	7	0	33	2	22	3	0	27	23	20	13	0	56	9	14	6	0	29	145
% Heavy Vehicles	1.4	2.0	1.3	0	1.8	1.4	2.1	0.8	0	1.8	4.0	2.7	3.2	0	3.2	1.3	1.6	3.5	0	1.7	2.1
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	2	2	0	0	0	1	1	0	0	0	0	0	3
% Pedestrians	0	0	0	0	0	0	0	0	100	0.1	0	0	0	100	0.1	0	0	0	0	0	0.0



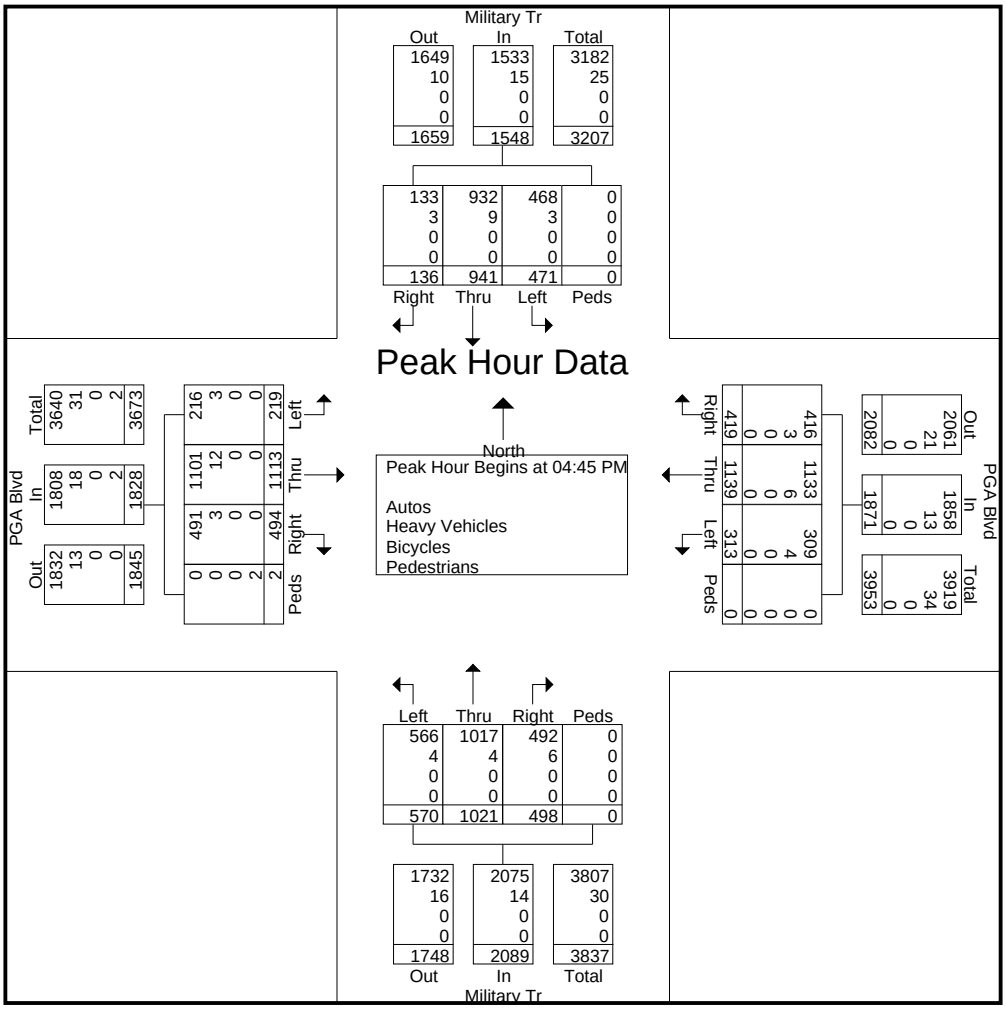
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : PGA Blvd at Military Tr 03042015
Site Code :
Start Date : 3/4/2015
Page No : 3

	PGA Blvd Eastbound					PGA Blvd Westbound					Military Tr Northbound					Military Tr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	50	273	104	1	428	72	333	126	0	531	152	215	107	0	474	105	252	44	0	401	1834
05:00 PM	62	282	112	1	457	80	253	99	0	432	140	285	144	0	569	102	233	28	0	363	1821
05:15 PM	58	299	135	0	492	80	261	115	0	456	135	255	111	0	501	120	232	26	0	378	1827
05:30 PM	49	259	143	0	451	81	292	79	0	452	143	266	136	0	545	144	224	38	0	406	1854
Total Volume	219	1113	494	2	1828	313	1139	419	0	1871	570	1021	498	0	2089	471	941	136	0	1548	7336
% App. Total	12	60.9	27	0.1		16.7	60.9	22.4	0		27.3	48.9	23.8	0		30.4	60.8	8.8	0		
PHF	.883	.931	.864	.500	.929	.966	.855	.831	.000	.881	.938	.896	.865	.000	.918	.818	.934	.773	.000	.953	.989
Autos	216	1101	491	0	1808	309	1133	416	0	1858	566	1017	492	0	2075	468	932	133	0	1533	7274
% Autos	98.6	98.9	99.4	0	98.9	98.7	99.5	99.3	0	99.3	99.3	99.6	98.8	0	99.3	99.4	99.0	97.8	0	99.0	99.2
Heavy Vehicles	3	12	3	0	18	4	6	3	0	13	4	4	6	0	14	3	9	3	0	15	60
% Heavy Vehicles	1.4	1.1	0.6	0	1.0	1.3	0.5	0.7	0	0.7	0.7	0.4	1.2	0	0.7	0.6	1.0	2.2	0	1.0	0.8
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
% Pedestrians	0	0	0	100	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0



CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : PGA Blvd at Military Tr 03042015
Site Code :
Start Date : 3/4/2015
Page No : 1

Groups Printed- Heavy Vehicles

	PGA Blvd Eastbound					PGA Blvd Westbound					Military Tr Northbound					Military Tr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	1	1	0	2	0	0	2	0	2	0	0	0	0	0	0	1	0	0	1	5
06:15 AM	0	1	1	0	2	1	4	0	0	5	2	3	1	0	6	0	0	0	0	0	13
06:30 AM	1	0	3	0	4	0	0	1	0	1	1	3	2	0	6	1	2	0	0	3	14
06:45 AM	0	0	0	0	0	0	2	0	0	2	4	5	1	0	10	1	2	1	0	4	16
Total	1	2	5	0	8	1	6	3	0	10	7	11	4	0	22	2	5	1	0	8	48
07:00 AM	1	3	2	0	6	0	3	0	0	3	6	3	2	0	11	1	3	0	0	4	24
07:15 AM	0	0	0	0	0	1	3	3	0	7	0	3	0	0	3	1	6	1	0	8	18
07:30 AM	1	8	1	0	10	0	2	2	0	4	2	3	1	0	6	3	1	2	0	6	26
07:45 AM	1	5	1	0	7	0	5	0	0	5	10	4	4	0	18	2	7	2	0	11	41
Total	3	16	4	0	23	1	13	5	0	19	18	13	7	0	38	7	17	5	0	29	109
08:00 AM	0	5	2	0	7	0	11	1	0	12	7	6	4	0	17	2	3	2	0	7	43
08:15 AM	0	6	3	0	9	2	4	0	0	6	4	7	4	0	15	2	3	0	0	5	35
08:30 AM	2	7	4	0	13	1	7	0	0	8	5	6	2	0	13	6	4	1	0	11	45
08:45 AM	2	11	6	0	19	3	8	2	0	13	9	5	2	0	16	2	6	1	0	9	57
Total	4	29	15	0	48	6	30	3	0	39	25	24	12	0	61	12	16	4	0	32	180
BREAK																					
04:00 PM	0	4	2	0	6	0	4	3	0	7	4	2	2	0	8	1	3	0	0	4	25
04:15 PM	2	5	3	0	10	2	4	0	0	6	2	3	1	0	6	3	4	0	0	7	29
04:30 PM	0	3	7	0	10	0	3	2	0	5	2	4	3	0	9	6	5	1	0	12	36
04:45 PM	2	4	0	0	6	0	2	0	0	2	2	0	2	0	4	1	4	1	0	6	18
Total	4	16	12	0	32	2	13	5	0	20	10	9	8	0	27	11	16	2	0	29	108
05:00 PM	0	3	2	0	5	1	0	0	0	1	1	3	1	0	5	0	1	0	0	1	12
05:15 PM	1	2	0	0	3	2	3	3	0	8	1	1	2	0	4	0	2	2	0	4	19
05:30 PM	0	3	1	0	4	1	1	0	0	2	0	0	1	0	1	2	2	0	0	4	11
05:45 PM	1	2	0	0	3	1	0	0	0	1	1	1	0	0	2	0	5	3	0	8	14
Total	2	10	3	0	15	5	4	3	0	12	3	5	4	0	12	2	10	5	0	17	56
06:00 PM	0	1	2	0	3	0	0	0	0	0	0	0	1	0	1	2	2	0	0	4	8
06:15 PM	1	0	0	0	1	1	4	1	0	6	0	1	1	0	2	1	1	0	0	2	11
06:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	0	3	0	0	3	5
06:45 PM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	3
Total	1	3	2	0	6	1	5	1	0	7	0	1	3	0	4	3	7	0	0	10	27
Grand Total	15	76	41	0	132	16	71	20	0	107	63	63	38	0	164	37	71	17	0	125	528
Apprch %	11.4	57.6	31.1	0		15	66.4	18.7	0		38.4	38.4	23.2	0		29.6	56.8	13.6	0		
Total %	2.8	14.4	7.8	0	25	3	13.4	3.8	0	20.3	11.9	11.9	7.2	0	31.1	7	13.4	3.2	0	23.7	

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : PGA Blvd at Military Tr 03052015
Site Code :
Start Date : 3/5/2015
Page No : 1

Groups Printed- Autos - Heavy Vehicles - Bicycles - Pedestrians

	PGA Blvd Eastbound					PGA Blvd Westbound					Military Tr Northbound					Military Tr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	4	37	15	0	56	13	50	15	0	78	16	37	15	0	68	30	57	14	0	101	303
06:15 AM	7	42	25	0	74	12	73	18	0	103	39	54	24	0	117	33	44	16	0	93	387
06:30 AM	14	84	39	1	138	9	80	38	0	127	55	91	33	0	179	71	92	20	0	183	627
06:45 AM	14	116	69	0	199	18	102	51	3	174	63	114	58	0	235	88	104	26	0	218	826
Total	39	279	148	1	467	52	305	122	3	482	173	296	130	0	599	222	297	76	0	595	2143
07:00 AM	35	194	61	0	290	23	121	55	1	200	74	161	52	2	289	103	186	21	0	310	1089
07:15 AM	40	260	88	0	388	28	175	71	2	276	123	188	84	0	395	138	182	25	0	345	1404
07:30 AM	42	333	106	0	481	25	168	51	2	246	166	189	86	0	441	195	248	32	0	475	1643
07:45 AM	38	345	154	1	538	37	193	61	2	293	160	193	90	4	447	170	210	6	0	386	1664
Total	155	1132	409	1	1697	113	657	238	7	1015	523	731	312	6	1572	606	826	84	0	1516	5800
08:00 AM	42	415	141	0	598	43	204	104	0	351	117	181	92	0	390	172	183	40	0	395	1734
08:15 AM	22	327	121	0	470	42	212	84	0	338	120	191	105	0	416	165	202	33	0	400	1624
08:30 AM	28	314	113	0	455	38	169	59	0	266	134	211	97	0	442	149	167	32	0	348	1511
08:45 AM	34	308	114	0	456	46	203	64	0	313	131	182	85	0	398	116	196	23	0	335	1502
Total	126	1364	489	0	1979	169	788	311	0	1268	502	765	379	0	1646	602	748	128	0	1478	6371
BREAK																					
04:00 PM	48	228	124	2	402	56	224	101	0	381	153	215	120	0	488	132	223	61	0	416	1687
04:15 PM	63	312	138	1	514	73	296	64	0	433	156	200	91	0	447	125	218	52	0	395	1789
04:30 PM	50	277	123	1	451	85	300	95	0	480	149	248	90	1	488	124	212	60	1	397	1816
04:45 PM	50	279	115	2	446	92	338	103	0	533	151	210	108	0	469	104	221	73	0	398	1846
Total	211	1096	500	6	1813	306	1158	363	0	1827	609	873	409	1	1892	485	874	246	1	1606	7138
05:00 PM	65	270	122	0	457	69	267	101	0	437	163	286	134	0	583	118	195	48	0	361	1838
05:15 PM	78	302	117	1	498	80	245	109	0	434	135	251	135	0	521	134	231	65	0	430	1883
05:30 PM	62	261	102	0	425	71	237	114	0	422	157	269	121	0	547	132	216	66	0	414	1808
05:45 PM	50	306	125	0	481	94	201	129	0	424	149	210	104	1	464	130	199	57	0	386	1755
Total	255	1139	466	1	1861	314	950	453	0	1717	604	1016	494	1	2115	514	841	236	0	1591	7284
06:00 PM	67	295	100	0	462	66	306	125	0	497	132	213	122	2	469	94	193	54	0	341	1769
06:15 PM	59	269	90	0	418	68	269	97	0	434	101	201	90	0	392	109	186	47	0	342	1586
06:30 PM	61	223	82	0	366	30	258	86	0	374	137	199	88	0	424	123	146	27	0	296	1460
06:45 PM	82	186	92	0	360	65	278	89	0	432	107	175	68	2	352	141	132	58	0	331	1475
Total	269	973	364	0	1606	229	1111	397	0	1737	477	788	368	4	1637	467	657	186	0	1310	6290
Grand Total	1055	5983	2376	9	9423	1183	4969	1884	10	8046	2888	4469	2092	12	9461	2896	4243	956	1	8096	35026
Apprch %	11.2	63.5	25.2	0.1		14.7	61.8	23.4	0.1		30.5	47.2	22.1	0.1		35.8	52.4	11.8	0		
Total %	3	17.1	6.8	0	26.9	3.4	14.2	5.4	0	23	8.2	12.8	6	0	27	8.3	12.1	2.7	0	23.1	
Autos	1037	5885	2331	0	9253	1167	4877	1861	0	7905	2834	4397	2047	0	9278	2847	4186	931	0	7964	34400
% Autos	98.3	98.4	98.1	0	98.2	98.6	98.1	98.8	0	98.2	98.1	98.4	97.8	0	98.1	98.3	98.7	97.4	0	98.4	98.2
Heavy Vehicles	18	98	45	0	161	16	92	23	0	131	54	72	45	0	171	49	57	25	0	131	594
% Heavy Vehicles	1.7	1.6	1.9	0	1.7	1.4	1.9	1.2	0	1.6	1.9	1.6	2.2	0	1.8	1.7	1.3	2.6	0	1.6	1.7
Bicycles	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
% Bicycles	0	0	0	11.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	8	8	0	0	0	10	10	0	0	0	12	12	0	0	0	1	1	31
% Pedestrians	0	0	0	88.9	0.1	0	0	0	100	0.1	0	0	0	100	0.1	0	0	0	100	0	0.1

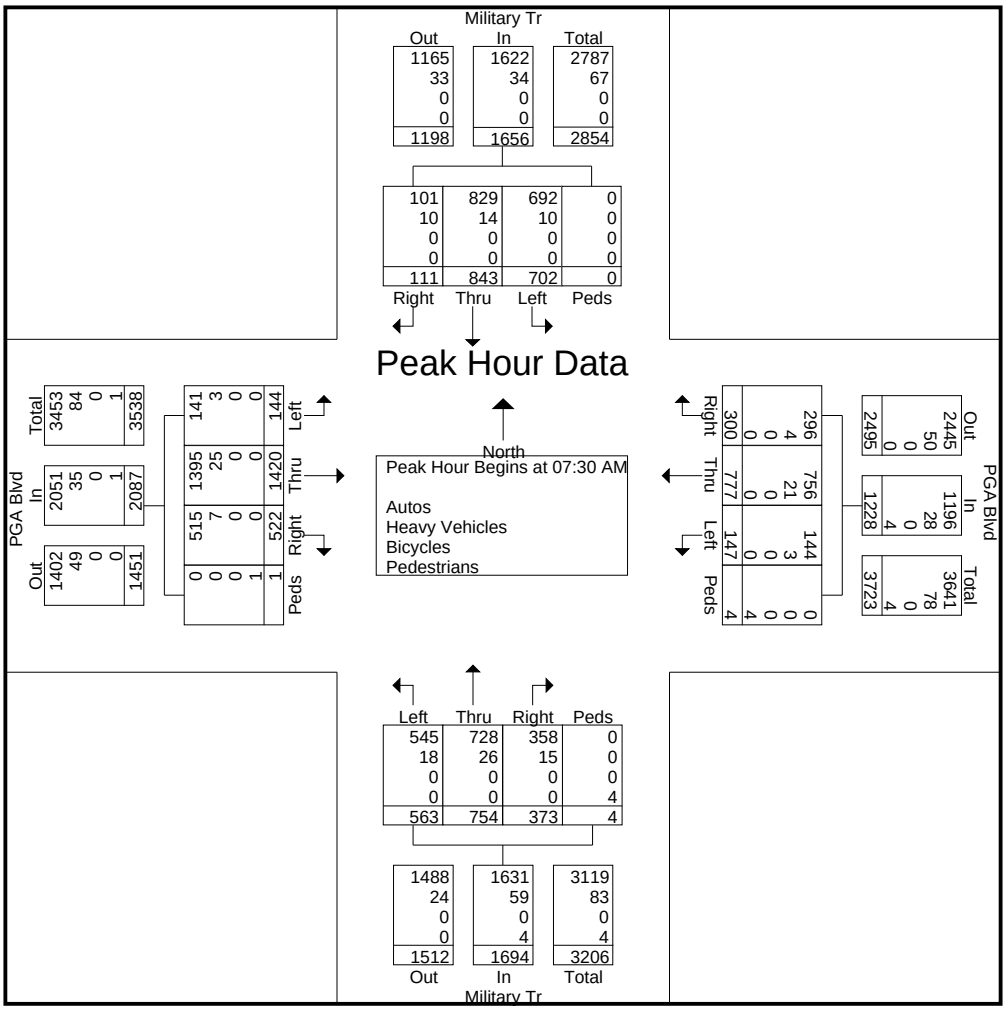
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : PGA Blvd at Military Tr 03052015
Site Code :
Start Date : 3/5/2015
Page No : 2

	PGA Blvd Eastbound					PGA Blvd Westbound					Military Tr Northbound					Military Tr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	42	333	106	0	481	25	168	51	2	246	166	189	86	0	441	195	248	32	0	475	1643
07:45 AM	38	345	154	1	538	37	193	61	2	293	160	193	90	4	447	170	210	6	0	386	1664
08:00 AM	42	415	141	0	598	43	204	104	0	351	117	181	92	0	390	172	183	40	0	395	1734
08:15 AM	22	327	121	0	470	42	212	84	0	338	120	191	105	0	416	165	202	33	0	400	1624
Total Volume	144	1420	522	1	2087	147	777	300	4	1228	563	754	373	4	1694	702	843	111	0	1656	6665
% App. Total	6.9	68	25	0		12	63.3	24.4	0.3		33.2	44.5	22	0.2		42.4	50.9	6.7	0		
PHF	.857	.855	.847	.250	.872	.855	.916	.721	.500	.875	.848	.977	.888	.250	.947	.900	.850	.694	.000	.872	.961
Autos	141	1395	515	0	2051	144	756	296	0	1196	545	728	358	0	1631	692	829	101	0	1622	6500
% Autos	97.9	98.2	98.7	0	98.3	98.0	97.3	98.7	0	97.4	96.8	96.6	96.0	0	96.3	98.6	98.3	91.0	0	97.9	97.5
Heavy Vehicles	3	25	7	0	35	3	21	4	0	28	18	26	15	0	59	10	14	10	0	34	156
% Heavy Vehicles	2.1	1.8	1.3	0	1.7	2.0	2.7	1.3	0	2.3	3.2	3.4	4.0	0	3.5	1.4	1.7	9.0	0	2.1	2.3
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	1	1	0	0	0	4	4	0	0	0	4	4	0	0	0	0	0	9
% Pedestrians	0	0	0	100	0.0	0	0	0	100	0.3	0	0	0	100	0.2	0	0	0	0	0	0.1



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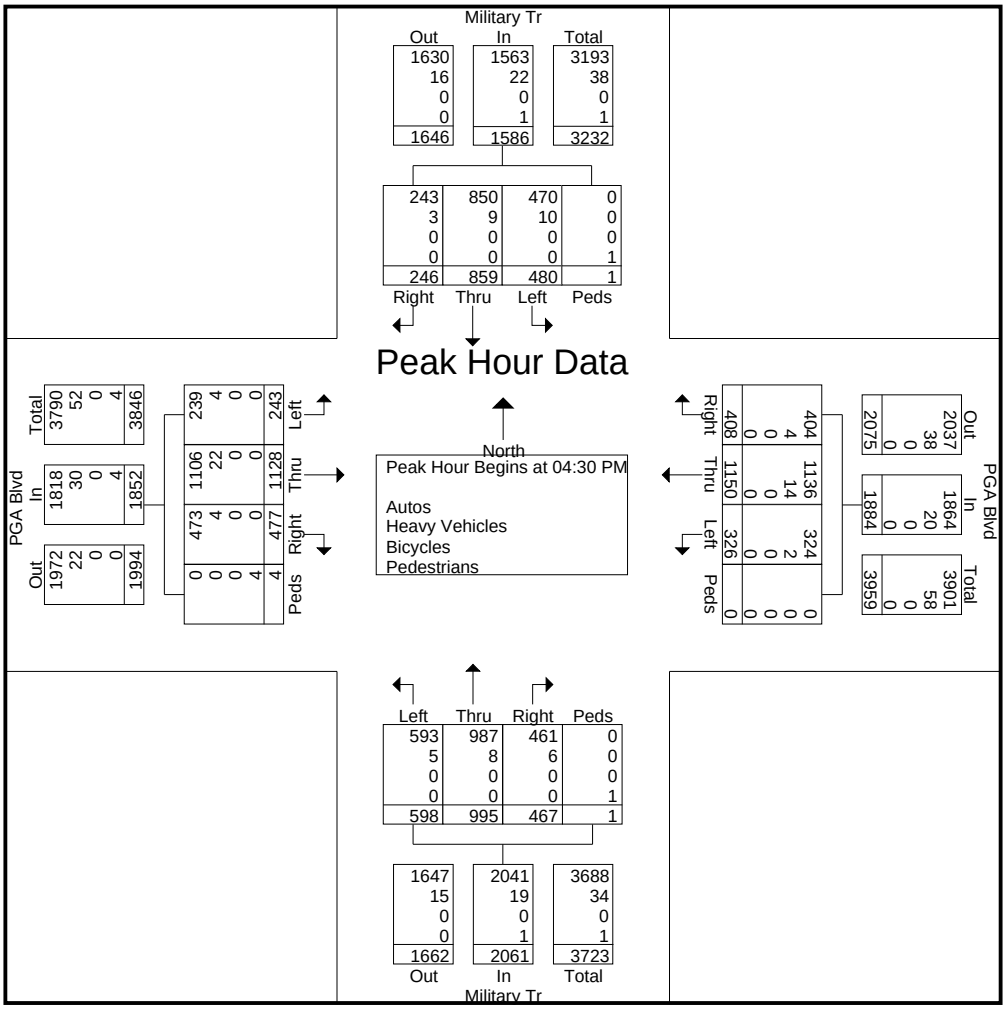
File Name : PGA Blvd at Military Tr 03052015
Site Code :
Start Date : 3/5/2015
Page No : 3

	PGA Blvd Eastbound					PGA Blvd Westbound					Military Tr Northbound					Military Tr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	50	277	123	1	451	85	300	95	0	480	149	248	90	1	488	124	212	60	1	397	1816
04:45 PM	50	279	115	2	446	92	338	103	0	533	151	210	108	0	469	104	221	73	0	398	1846
05:00 PM	65	270	122	0	457	69	267	101	0	437	163	286	134	0	583	118	195	48	0	361	1838
05:15 PM	78	302	117	1	498	80	245	109	0	434	135	251	135	0	521	134	231	65	0	430	1883
Total Volume	243	1128	477	4	1852	326	1150	408	0	1884	598	995	467	1	2061	480	859	246	1	1586	7383
% App. Total	13.1	60.9	25.8	0.2		17.3	61	21.7	0		29	48.3	22.7	0		30.3	54.2	15.5	0.1		
PHF	.779	.934	.970	.500	.930	.886	.851	.936	.000	.884	.917	.870	.865	.250	.884	.896	.930	.842	.250	.922	.980
Autos	239	1106	473	0	1818	324	1136	404	0	1864	593	987	461	0	2041	470	850	243	0	1563	7286
% Autos	98.4	98.0	99.2	0	98.2	99.4	98.8	99.0	0	98.9	99.2	99.2	98.7	0	99.0	97.9	99.0	98.8	0	98.5	98.7
Heavy Vehicles	4	22	4	0	30	2	14	4	0	20	5	8	6	0	19	10	9	3	0	22	91
% Heavy Vehicles	1.6	2.0	0.8	0	1.6	0.6	1.2	1.0	0	1.1	0.8	0.8	1.3	0	0.9	2.1	1.0	1.2	0	1.4	1.2
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	4	4	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	6
% Pedestrians	0	0	0	100	0.2	0	0	0	0	0	0	0	0	100	0.0	0	0	0	100	0.1	0.1



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CLIENT : FDOT D4
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PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : PGA Blvd at Military Tr 03052015
Site Code :
Start Date : 3/5/2015
Page No : 1

Groups Printed- Heavy Vehicles

	PGA Blvd Eastbound					PGA Blvd Westbound					Military Tr Northbound					Military Tr Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	2	1	0	3	0	1	1	0	2	1	0	0	0	1	1	1	0	0	2	8
06:15 AM	0	0	0	0	0	1	5	0	0	6	0	3	0	0	3	2	0	0	0	2	11
06:30 AM	0	1	3	0	4	1	6	1	0	8	1	2	1	0	4	0	2	0	0	2	18
06:45 AM	0	2	4	0	6	0	1	3	0	4	3	2	3	0	8	3	0	3	0	6	24
Total	0	5	8	0	13	2	13	5	0	20	5	7	4	0	16	6	3	3	0	12	61
07:00 AM	1	3	4	0	8	1	3	3	0	7	6	6	2	0	14	1	3	1	0	5	34
07:15 AM	2	3	4	0	9	1	7	0	0	8	1	5	0	0	6	4	1	3	0	8	31
07:30 AM	1	3	0	0	4	0	5	0	0	5	3	8	1	0	12	2	2	1	0	5	26
07:45 AM	0	8	0	0	8	2	1	0	0	3	3	4	5	0	12	2	3	0	0	5	28
Total	4	17	8	0	29	4	16	3	0	23	13	23	8	0	44	9	9	5	0	23	119
08:00 AM	1	6	5	0	12	0	6	3	0	9	5	10	2	0	17	2	5	6	0	13	51
08:15 AM	1	8	2	0	11	1	9	1	0	11	7	4	7	0	18	4	4	3	0	11	51
08:30 AM	1	7	2	0	10	1	6	0	0	7	3	5	4	0	12	3	8	1	0	12	41
08:45 AM	1	13	2	0	16	2	8	1	0	11	9	7	2	0	18	3	3	1	0	7	52
Total	4	34	11	0	49	4	29	5	0	38	24	26	15	0	65	12	20	11	0	43	195
BREAK																					
04:00 PM	0	8	5	0	13	1	4	2	0	7	3	1	1	0	5	4	5	0	0	9	34
04:15 PM	2	9	5	0	16	0	7	1	0	8	0	6	3	0	9	2	6	3	0	11	44
04:30 PM	0	7	2	0	9	0	5	0	0	5	2	3	3	0	8	5	5	1	0	11	33
04:45 PM	1	6	1	0	8	1	3	0	0	4	1	0	1	0	2	4	2	1	0	7	21
Total	3	30	13	0	46	2	19	3	0	24	6	10	8	0	24	15	18	5	0	38	132
05:00 PM	3	5	1	0	9	0	1	2	0	3	0	1	1	0	2	0	1	1	0	2	16
05:15 PM	0	4	0	0	4	1	5	2	0	8	2	4	1	0	7	1	1	0	0	2	21
05:30 PM	2	1	3	0	6	2	3	0	0	5	0	0	2	0	2	2	1	0	0	3	16
05:45 PM	0	0	0	0	0	0	3	2	0	5	1	0	3	0	4	2	0	0	0	2	11
Total	5	10	4	0	19	3	12	6	0	21	3	5	7	0	15	5	3	1	0	9	64
06:00 PM	1	1	0	0	2	0	1	1	0	2	1	0	0	0	1	2	3	0	0	5	10
06:15 PM	1	1	0	0	2	1	0	0	0	1	1	0	1	0	2	0	0	0	0	0	5
06:30 PM	0	0	0	0	0	0	2	0	0	2	1	1	2	0	4	0	1	0	0	1	7
06:45 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	2	2	1	0	5	1	3	1	0	5	3	1	3	0	7	2	4	0	0	6	23
Grand Total	18	98	45	0	161	16	92	23	0	131	54	72	45	0	171	49	57	25	0	131	594
Apprch %	11.2	60.9	28	0		12.2	70.2	17.6	0		31.6	42.1	26.3	0		37.4	43.5	19.1	0		
Total %	3	16.5	7.6	0	27.1	2.7	15.5	3.9	0	22.1	9.1	12.1	7.6	0	28.8	8.2	9.6	4.2	0	22.1	

PGA Boulevard at I-95 Southbound off Ramp

County: 93
Station: 3121
Description: I-95 SB OFF RAMP TO PGA BLVD
Start Date: 03/03/2015
Start Time: 0000

Direction: S

Time	1st	2nd	3rd	4th	Total
0000	7	7	5	6	25
0100	3	4	2	3	12
0200	3	2	2	3	10
0300	2	6	5	4	17
0400	1	2	6	8	17
0500	7	12	12	31	62
0600	19	36	53	109	217
0700	111	143	201	263	718
0800	227	221	176	195	819
0900	168	149	133	115	565
1000	106	111	147	137	501
1100	102	100	103	101	406
1200	97	93	97	88	375
1300	94	82	96	117	389
1400	76	87	95	99	357
1500	97	103	107	108	415
1600	102	110	128	96	436
1700	92	106	104	123	425
1800	102	86	68	70	326
1900	52	53	49	33	187
2000	36	27	31	26	120
2100	27	23	24	19	93
2200	21	11	15	22	69
2300	13	14	10	6	43
24-Hour Totals:					6604

Peak Volume Information

	Hour	Volume
A.M.	730	912
P.M.	1545	448
Daily	730	912

Truck Percentage 2.92 NaN 2.92

Classification Summary Database

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TotTrk	TotVol
S	24	5538	849	17	93	33	21	11	17	1	0	0	0	0	0	193	6604

Generated by SPS 5.0.45P

County: 93
Station: 3121
Description: I-95 SB OFF RAMP TO PGA BLVD
Start Date: 03/04/2015
Start Time: 0000

Direction: S

Time	1st	2nd	3rd	4th	Total
0000	8	4	3	6	21
0100	2	0	2	2	6
0200	2	1	1	2	6
0300	2	5	5	1	13
0400	2	7	5	16	30
0500	4	14	18	31	67
0600	31	39	55	95	220
0700	97	154	201	272	724
0800	204	210	186	202	802
0900	192	160	96	119	567
1000	104	97	123	132	456
1100	105	89	102	120	416
1200	108	108	118	113	447
1300	105	80	96	96	377
1400	81	101	98	109	389
1500	104	93	105	94	396
1600	93	105	115	108	421
1700	111	98	97	101	407
1800	92	101	94	84	371
1900	67	60	49	46	222
2000	46	45	47	28	166
2100	28	28	22	16	94
2200	18	26	15	24	83
2300	10	10	15	7	42
24-Hour Totals:					6743

Peak Volume Information

	Hour	Volume
A.M.	730	887
P.M.	1200	447
Daily	730	887

Truck Percentage 3.14 NaN 3.14

Classification Summary Database

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TotTrk	TotVol
S	21	5526	984	19	112	21	16	23	20	1	0	0	0	0	0	212	6743

Generated by SPS 5.0.45P

County: 93
Station: 3121
Description: I-95 SB OFF RAMP TO PGA BLVD
Start Date: 03/05/2015
Start Time: 0000

Direction: S

Time	1st	2nd	3rd	4th	Total
0000	5	7	6	3	21
0100	2	7	1	3	13
0200	3	2	2	3	10
0300	1	3	7	7	18
0400	5	4	7	9	25
0500	6	8	24	28	66
0600	16	35	58	97	206
0700	88	141	200	257	686
0800	202	219	185	199	805
0900	141	159	118	130	548
1000	117	101	134	151	503
1100	102	93	92	95	382
1200	97	98	99	87	381
1300	76	88	124	95	383
1400	103	124	114	124	465
1500	117	83	97	93	390
1600	92	73	91	87	343
1700	107	112	114	96	429
1800	106	109	89	82	386
1900	61	58	50	41	210
2000	42	37	40	27	146
2100	29	26	24	19	98
2200	20	20	16	24	80
2300	12	14	13	7	46
24-Hour Totals:					6640

Peak Volume Information

	Hour	Volume
A.M.	730	878
P.M.	1415	479
Daily	730	878

Truck Percentage 3.66 NaN 3.66

Classification Summary Database

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TotTrk	TotVol
S	19	5429	949	23	114	44	11	31	18	2	0	0	0	0	0	243	6640

Generated by SPS 5.0.45P

County: 93
Station: 3125
Description: I-95 SB ON RAMP FROM PGA BLVD EB
Start Date: 03/03/2015
Start Time: 0000

Direction: S

Time	1st	2nd	3rd	4th	Total
0000	33	29	20	18	100
0100	11	6	8	10	35
0200	11	9	9	5	34
0300	5	10	6	8	29
0400	10	14	29	25	78
0500	19	17	26	48	110
0600	51	71	99	130	351
0700	171	215	266	272	924
0800	334	257	232	260	1083
0900	234	202	176	154	766
1000	156	167	163	144	630
1100	127	170	165	169	631
1200	135	186	174	167	662
1300	170	150	158	188	666
1400	164	180	185	186	715
1500	239	196	187	193	815
1600	216	218	245	234	913
1700	276	301	296	258	1131
1800	248	187	177	160	772
1900	131	94	106	104	435
2000	83	100	81	79	343
2100	76	80	97	56	309
2200	83	41	55	39	218
2300	40	27	37	20	124
24-Hour Totals:					11874

Peak Volume Information

	Hour	Volume
A.M.	730	1129
P.M.	1700	1131
Daily	1700	1131

Truck Percentage 3.27 NaN 3.27

Classification Summary Database

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TotTrk	TotVol
S	16	9755	1715	80	238	11	0	21	37	0	1	0	0	0	0	388	11874

Generated by SPS 5.0.45P

County: 93
Station: 3125
Description: I-95 SB ON RAMP FROM PGA BLVD EB
Start Date: 03/04/2015
Start Time: 0000

Direction: S

Time	1st	2nd	3rd	4th	Total
0000	25	10	23	17	75
0100	9	8	5	3	25
0200	5	6	7	6	24
0300	4	2	12	14	32
0400	12	13	14	20	59
0500	30	19	37	54	140
0600	61	80	94	139	374
0700	174	216	271	253	914
0800	293	240	285	211	1029
0900	208	192	165	178	743
1000	160	170	183	172	685
1100	175	157	190	159	681
1200	158	175	131	151	615
1300	202	159	151	152	664
1400	161	166	211	170	708
1500	230	193	200	183	806
1600	204	217	252	218	891
1700	280	283	258	237	1058
1800	213	196	167	131	707
1900	137	123	110	90	460
2000	115	101	90	100	406
2100	104	93	91	102	390
2200	74	58	54	55	241
2300	56	35	43	26	160
24-Hour Totals:					11887

Peak Volume Information

	Hour	Volume
A.M.	745	1071
P.M.	1700	1058
Daily	745	1071

Truck Percentage 3.37 NaN 3.37

Classification Summary Database

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TotTrk	TotVol
S	22	9797	1667	87	239	11	1	34	27	1	1	0	0	0	0	401	11887

Generated by SPS 5.0.45P

County: 93
Station: 3125
Description: I-95 SB ON RAMP FROM PGA BLVD EB
Start Date: 03/05/2015
Start Time: 0000

Direction: S

Time	1st	2nd	3rd	4th	Total
0000	27	22	12	9	70
0100	9	10	7	6	32
0200	12	6	1	6	25
0300	6	3	4	11	24
0400	10	12	15	23	60
0500	27	19	33	46	125
0600	64	70	89	106	329
0700	154	202	291	266	913
0800	310	244	235	228	1017
0900	215	220	166	167	768
1000	186	174	179	156	695
1100	152	162	158	158	630
1200	201	204	179	170	754
1300	190	188	168	174	720
1400	171	191	184	180	726
1500	228	190	208	182	808
1600	186	234	235	230	885
1700	285	277	288	251	1101
1800	235	168	171	121	695
1900	131	120	114	81	446
2000	102	94	97	86	379
2100	93	86	85	74	338
2200	81	70	68	53	272
2300	58	58	43	36	195
24-Hour Totals:					12007

Peak Volume Information

	Hour	Volume
A.M.	730	1111
P.M.	1700	1101
Daily	730	1111

Truck Percentage 4.33 NaN 4.33

Classification Summary Database

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TotTrk	TotVol
S	27	9406	2054	79	247	108	1	39	45	1	0	0	0	0	0	520	12007

Generated by SPS 5.0.45P

County: 93
Station: 3127
Description: PGA BLVD W OF I-95 SB RAMPS
Start Date: 03/03/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	43	40	32	23	138	65	48	51	43	207	345
0100	28	20	21	16	85	34	25	17	15	91	176
0200	7	8	11	10	36	19	21	28	9	77	113
0300	19	11	13	19	62	23	21	12	17	73	135
0400	24	18	27	29	98	13	12	17	23	65	163
0500	27	41	69	86	223	38	53	59	76	226	449
0600	102	137	184	287	710	92	122	164	219	597	1307
0700	334	465	605	680	2084	257	347	369	455	1428	3512
0800	661	660	623	618	2562	389	498	380	422	1689	4251
0900	524	477	475	532	2008	345	357	294	396	1392	3400
1000	463	464	480	498	1905	322	386	409	386	1503	3408
1100	471	485	511	425	1892	364	472	440	430	1706	3598
1200	495	475	436	499	1905	391	449	402	462	1704	3609
1300	475	476	446	472	1869	400	462	382	464	1708	3577
1400	486	452	467	464	1869	441	439	463	491	1834	3703
1500	513	478	472	477	1940	451	563	536	614	2164	4104
1600	529	473	485	505	1992	591	599	588	675	2453	4445
1700	615	606	597	583	2401	597	755	750	741	2843	5244
1800	508	465	413	368	1754	557	605	474	505	2141	3895
1900	313	304	278	257	1152	437	408	351	322	1518	2670
2000	260	193	166	188	807	312	327	288	310	1237	2044
2100	184	146	153	117	600	296	276	213	173	958	1558
2200	135	123	97	82	437	178	139	101	89	507	944
2300	88	49	59	39	235	74	84	63	59	280	515
24-Hour Totals:					28764					28401	57165

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	745	2624	745	1722	745	4346
P.M.	1700	2401	1700	2843	1700	5244
Daily	745	2624	1700	2843	1700	5244

Generated by SPS 5.0.45P

County: 93
Station: 3127
Description: PGA BLVD W OF I-95 SB RAMPS
Start Date: 03/04/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	48	22	23	14	107	34	29	34	21	118	225
0100	12	8	21	6	47	19	10	11	24	64	111
0200	14	13	13	8	48	8	5	10	11	34	82
0300	6	13	7	15	41	9	13	11	13	46	87
0400	16	18	29	32	95	14	16	18	27	75	170
0500	30	41	69	93	233	28	52	57	84	221	454
0600	90	123	218	281	712	98	117	169	226	610	1322
0700	356	490	673	725	2244	252	337	355	474	1418	3662
0800	674	661	564	683	2582	434	435	372	403	1644	4226
0900	594	543	391	506	2034	350	368	265	348	1331	3365
1000	434	380	508	466	1788	262	322	398	411	1393	3181
1100	441	460	473	498	1872	295	381	376	475	1527	3399
1200	477	533	503	451	1964	410	447	476	433	1766	3730
1300	503	439	459	462	1863	425	449	469	475	1818	3681
1400	417	440	431	480	1768	487	456	506	530	1979	3747
1500	508	473	498	481	1960	469	537	555	564	2125	4085
1600	514	552	517	517	2100	581	548	553	615	2297	4397
1700	557	594	583	592	2326	654	715	710	716	2795	5121
1800	538	494	449	396	1877	720	576	505	540	2341	4218
1900	390	340	304	261	1295	421	392	359	398	1570	2865
2000	247	236	251	201	935	356	359	357	320	1392	2327
2100	196	149	162	114	621	317	250	282	179	1028	1649
2200	140	110	105	80	435	199	164	109	200	672	1107
2300	78	85	68	50	281	100	79	72	62	313	594
24-Hour Totals:					29228					28577	57805

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	730	2733	745	1715	730	4431
P.M.	1700	2326	1715	2861	1715	5168
Daily	730	2733	1715	2861	1715	5168

Generated by SPS 5.0.45P

County: 93
Station: 3127
Description: PGA BLVD W OF I-95 SB RAMPS
Start Date: 03/05/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	49	21	32	33	135	53	35	53	30	171	306
0100	18	23	16	10	67	25	23	19	20	87	154
0200	18	12	9	13	52	23	19	11	6	59	111
0300	6	11	10	11	38	12	12	11	11	46	84
0400	16	26	24	34	100	11	19	19	28	77	177
0500	35	50	49	87	221	23	49	54	76	202	423
0600	86	112	194	300	692	98	131	160	195	584	1276
0700	347	462	663	637	2109	279	363	327	540	1509	3618
0800	696	725	646	664	2731	380	424	387	404	1595	4326
0900	515	544	471	458	1988	319	320	258	363	1260	3248
1000	411	455	488	486	1840	279	389	270	398	1336	3176
1100	430	425	463	511	1829	299	401	361	512	1573	3402
1200	522	492	508	507	2029	459	388	480	435	1762	3791
1300	476	505	514	564	2059	416	448	491	532	1887	3946
1400	576	478	499	513	2066	473	496	462	514	1945	4011
1500	530	476	497	520	2023	471	587	589	677	2324	4347
1600	499	585	526	523	2133	571	676	592	692	2531	4664
1700	563	660	596	569	2388	716	733	762	757	2968	5356
1800	559	503	433	393	1888	684	597	523	479	2283	4171
1900	331	336	299	282	1248	416	439	380	351	1586	2834
2000	276	256	225	199	956	364	371	299	274	1308	2264
2100	188	187	163	155	693	303	282	247	231	1063	1756
2200	141	129	108	99	477	214	167	127	124	632	1109
2300	106	87	67	61	321	96	87	75	66	324	645
24-Hour Totals:					30083					29112	59195

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	800	2731	745	1731	745	4435
P.M.	1700	2388	1700	2968	1700	5356
Daily	800	2731	1700	2968	1700	5356

Generated by SPS 5.0.45P

County: 93
Station: 3137
Description: PGA BLVD BTWN I-95 NB & SB RAMPS
Start Date: 03/03/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	28	18	19	16	81	62	56	41	31	190	271
0100	13	7	6	3	29	45	26	26	24	121	150
0200	3	12	6	8	29	16	13	18	6	53	82
0300	9	6	10	8	33	9	6	17	12	44	77
0400	14	8	13	13	48	23	7	24	29	83	131
0500	19	31	38	69	157	37	43	63	67	210	367
0600	91	118	179	223	611	73	83	119	169	444	1055
0700	337	421	520	605	1883	225	292	335	417	1269	3152
0800	586	558	503	559	2206	356	355	308	346	1365	3571
0900	495	476	443	375	1789	313	302	307	291	1213	3002
1000	373	362	438	483	1656	266	306	306	377	1255	2911
1100	342	392	415	381	1530	295	341	391	397	1424	2954
1200	366	402	412	406	1586	431	448	424	408	1711	3297
1300	339	384	383	366	1472	351	411	449	499	1710	3182
1400	332	420	345	360	1457	469	438	387	456	1750	3207
1500	357	330	372	356	1415	434	590	504	468	1996	3411
1600	353	370	362	390	1475	548	553	486	615	2202	3677
1700	383	379	404	425	1591	689	735	706	704	2834	4425
1800	399	347	320	322	1388	567	550	562	435	2114	3502
1900	291	259	247	202	999	445	437	333	314	1529	2528
2000	174	176	160	142	652	342	273	323	305	1243	1895
2100	136	113	118	95	462	300	319	247	197	1063	1525
2200	78	69	73	60	280	180	143	101	83	507	787
2300	41	38	30	13	122	76	54	59	34	223	345
24-Hour Totals:					22951					26553	49504

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	730	2269	730	1463	730	3732
P.M.	1715	1607	1700	2834	1700	4425
Daily	730	2269	1700	2834	1700	4425

Generated by SPS 5.0.45P

County: 93
Station: 3137
Description: PGA BLVD BTWN I-95 NB & SB RAMPS
Start Date: 03/04/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	23	19	17	10	69	32	44	34	20	130	199
0100	13	12	8	7	40	38	23	18	15	94	134
0200	8	9	8	6	31	6	7	7	7	27	58
0300	11	5	8	8	32	9	12	8	4	33	65
0400	11	13	11	16	51	17	8	10	31	66	117
0500	22	29	43	72	166	38	45	42	64	189	355
0600	75	109	160	208	552	68	90	117	164	439	991
0700	302	388	503	603	1796	225	309	370	398	1302	3098
0800	528	558	518	556	2160	367	384	361	392	1504	3664
0900	509	433	408	358	1708	323	313	252	264	1152	2860
1000	341	356	414	410	1521	265	282	301	351	1199	2720
1100	364	362	361	413	1500	315	353	408	415	1491	2991
1200	388	408	369	373	1538	411	460	441	426	1738	3276
1300	358	366	346	389	1459	444	453	453	506	1856	3315
1400	265	344	369	395	1373	470	497	436	508	1911	3284
1500	336	355	315	341	1347	457	550	555	618	2180	3527
1600	349	354	344	340	1387	577	590	487	686	2340	3727
1700	314	358	372	387	1431	711	723	689	722	2845	4276
1800	373	331	268	294	1266	582	589	496	455	2122	3388
1900	230	200	213	182	825	409	393	321	337	1460	2285
2000	168	158	138	114	578	330	340	319	295	1284	1862
2100	114	118	98	76	406	258	264	242	207	971	1377
2200	88	66	57	49	260	163	141	94	91	489	749
2300	54	51	31	20	156	93	78	54	36	261	417
24-Hour Totals:					21652					27083	48735

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	745	2207	730	1519	745	3717
P.M.	1200	1538	1700	2845	1700	4276
Daily	745	2207	1700	2845	1700	4276

Generated by SPS 5.0.45P

County: 93
Station: 3137
Description: PGA BLVD BTWN I-95 NB & SB RAMPS
Start Date: 03/05/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	26	13	15	10	64	57	35	33	24	149	213
0100	8	5	2	5	20	34	20	11	18	83	103
0200	10	6	10	4	30	11	10	6	11	38	68
0300	12	4	6	7	29	5	9	5	13	32	61
0400	7	18	9	19	53	7	14	16	21	58	111
0500	25	27	44	73	169	29	42	50	60	181	350
0600	59	83	137	193	472	55	105	126	171	457	929
0700	266	354	486	601	1707	229	285	324	399	1237	2944
0800	469	557	532	553	2111	327	414	355	298	1394	3505
0900	460	436	373	383	1652	279	348	275	285	1187	2839
1000	355	309	399	415	1478	262	290	288	355	1195	2673
1100	353	314	380	357	1404	299	357	374	427	1457	2861
1200	382	384	393	419	1578	379	390	374	410	1553	3131
1300	315	308	357	383	1363	382	384	444	455	1665	3028
1400	338	316	343	396	1393	396	557	512	527	1992	3385
1500	361	313	314	356	1344	564	611	517	532	2224	3568
1600	291	348	327	327	1293	587	502	537	559	2185	3478
1700	357	407	381	370	1515	624	676	594	595	2489	4004
1800	378	360	296	269	1303	493	548	421	377	1839	3142
1900	260	245	237	166	908	367	328	371	304	1370	2278
2000	165	127	147	127	566	334	297	268	230	1129	1695
2100	127	128	92	88	435	237	253	236	183	909	1344
2200	75	83	66	66	290	170	138	107	120	535	825
2300	57	32	30	25	144	85	79	71	52	287	431
24-Hour Totals:					21321					25645	46966

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	745	2159	745	1495	745	3654
P.M.	1200	1578	1700	2489	1700	4004
Daily	745	2159	1700	2489	1700	4004

Generated by SPS 5.0.45P

Three-Day Approach Count Summary

Project Name: PGA Boulevard Study
State Project No.: 2013008.018

Location: PGA Boulevard at I-95 Southbound off Ramp
Direction: SOUTHBOUND (APPROACH)

Date: 3/3/2015-3/5/2015

TIME PERIOD (AM)		WEEKDAY TUES 3-Mar	WEED 4-Mar	THUR 5-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
00:00	00:15	7	8	5	7	
00:15	00:30	7	4	7	6	
00:30	00:45	5	3	6	5	
00:45	01:00	6	6	3	5	22
01:00	01:15	3	2	2	2	
01:15	01:30	4	0	7	4	
01:30	01:45	2	2	1	2	
01:45	02:00	3	2	3	3	10
02:00	02:15	3	2	3	3	
02:15	02:30	2	1	2	2	
02:30	02:45	2	1	2	2	
02:45	03:00	3	2	3	3	9
03:00	03:15	2	2	1	2	
03:15	03:30	6	5	3	5	
03:30	03:45	5	5	7	6	
03:45	04:00	4	1	7	4	16
04:00	04:15	1	2	5	3	
04:15	04:30	2	7	4	4	
04:30	04:45	6	5	7	6	
04:45	05:00	8	16	9	11	24
05:00	05:15	7	4	6	6	
05:15	05:30	12	14	8	11	
05:30	05:45	12	18	24	18	
05:45	06:00	31	31	28	30	65
06:00	06:15	19	31	16	22	
06:15	06:30	36	39	35	37	
06:30	06:45	53	55	58	55	
06:45	07:00	109	95	97	100	214
07:00	07:15	111	97	88	99	
07:15	07:30	143	154	141	146	
07:30	07:45	201	201	200	201	
07:45	08:00	263	272	257	264	709
08:00	08:15	227	204	202	211	
08:15	08:30	221	210	219	217	
08:30	08:45	176	186	185	182	
08:45	09:00	195	202	199	199	809
09:00	09:15	168	192	141	167	
09:15	09:30	149	160	159	156	
09:30	09:45	133	96	118	116	
09:45	10:00	115	119	130	121	560
10:00	10:15	106	104	117	109	
10:15	10:30	111	97	101	103	
10:30	10:45	147	123	134	135	
10:45	11:00	137	132	151	140	487
11:00	11:15	102	105	102	103	
11:15	11:30	100	89	93	94	
11:30	11:45	103	102	92	99	
11:45	12:00	101	120	95	105	401

TIME PERIOD (PM)		WEEKDAY TUES 3-Mar	WED 4-Mar	THUR 5-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
12:00	12:15	97	108	97	101	
12:15	12:30	93	108	98	100	
12:30	12:45	97	118	99	105	
12:45	13:00	88	113	87	96	401
13:00	13:15	94	105	76	92	
13:15	13:30	82	80	88	83	
13:30	13:45	96	96	124	105	
13:45	14:00	117	96	95	103	383
14:00	14:15	76	81	103	87	
14:15	14:30	87	101	124	104	
14:30	14:45	95	98	114	102	
14:45	15:00	99	109	124	111	404
15:00	15:15	97	104	117	106	
15:15	15:30	103	93	83	93	
15:30	15:45	107	105	97	103	
15:45	16:00	108	94	93	98	400
16:00	16:15	102	93	92	96	
16:15	16:30	110	105	73	96	
16:30	16:45	128	115	91	111	
16:45	17:00	96	108	87	97	400
17:00	17:15	92	111	107	103	
17:15	17:30	106	98	112	105	
17:30	17:45	104	97	114	105	
17:45	18:00	123	101	96	107	420
18:00	18:15	102	92	106	100	
18:15	18:30	86	101	109	99	
18:30	18:45	68	94	89	84	
18:45	19:00	70	84	82	79	361
19:00	19:15	52	67	61	60	
19:15	19:30	53	60	58	57	
19:30	19:45	49	49	50	49	
19:45	20:00	33	46	41	40	206
20:00	20:15	36	46	42	41	
20:15	20:30	27	45	37	36	
20:30	20:45	31	47	40	39	
20:45	21:00	26	28	27	27	144
21:00	21:15	27	28	29	28	
21:15	21:30	23	28	26	26	
21:30	21:45	24	22	24	23	
21:45	22:00	19	16	19	18	95
22:00	22:15	21	18	20	20	
22:15	22:30	11	26	20	19	
22:30	22:45	15	15	16	15	
22:45	23:00	22	24	24	23	77
23:00	23:15	13	10	12	12	
23:15	23:30	14	10	14	13	
23:30	23:45	10	15	13	13	
23:45	00:00	6	7	7	7	44
DAILY COUNT		6,604	6,743	6,640	6,662	
PEAK HOUR TIME					07:30	
PEAK HOUR COUNT					892	
ESTIMATED K-FACTOR					13.4%	

Three-Day Approach Count Summary

Project Name: PGA Boulevard Study
State Project No.: 2013008.018
Location: PGA Boulevard at I-95 Southbound off Ramp
Direction: EASTBOUND (APPROACH)
Date: 3/3/2015-3/5/2015

TIME PERIOD (AM)		WEEKDAY TUES 3-Mar	WED 4-Mar	THUR 5-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
00:00	00:15	43	48	49	47	
00:15	00:30	40	22	21	28	
00:30	00:45	32	23	32	29	
00:45	01:00	23	14	33	23	127
01:00	01:15	28	12	18	19	
01:15	01:30	20	8	23	17	
01:30	01:45	21	21	16	19	
01:45	02:00	16	6	10	11	66
02:00	02:15	7	14	18	13	
02:15	02:30	8	13	12	11	
02:30	02:45	11	13	9	11	
02:45	03:00	10	8	13	10	45
03:00	03:15	19	6	6	10	
03:15	03:30	11	13	11	12	
03:30	03:45	13	7	10	10	
03:45	04:00	19	15	11	15	47
04:00	04:15	24	16	16	19	
04:15	04:30	18	18	26	21	
04:30	04:45	27	29	24	27	
04:45	05:00	29	32	34	32	98
05:00	05:15	27	30	35	31	
05:15	05:30	41	41	50	44	
05:30	05:45	69	69	49	62	
05:45	06:00	86	93	87	89	226
06:00	06:15	102	90	86	93	
06:15	06:30	137	123	112	124	
06:30	06:45	184	218	194	199	
06:45	07:00	287	281	300	289	705
07:00	07:15	334	356	347	346	
07:15	07:30	465	490	462	472	
07:30	07:45	605	673	663	647	
07:45	08:00	680	725	637	681	2,146
08:00	08:15	661	674	696	677	
08:15	08:30	660	661	725	682	
08:30	08:45	623	564	646	611	
08:45	09:00	618	683	664	655	2,625
09:00	09:15	524	594	515	544	
09:15	09:30	477	543	544	521	
09:30	09:45	475	391	471	446	
09:45	10:00	532	506	458	499	2,010
10:00	10:15	463	434	411	436	
10:15	10:30	464	380	455	433	
10:30	10:45	480	508	488	492	
10:45	11:00	498	466	486	483	1,844
11:00	11:15	471	441	430	447	
11:15	11:30	485	460	425	457	
11:30	11:45	511	473	463	482	
11:45	12:00	425	498	511	478	1,864

TIME PERIOD (PM)		WEEKDAY TUES 3-Mar	WED 4-Mar	THUR 5-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
12:00	12:15	495	477	522	498	
12:15	12:30	475	533	492	500	
12:30	12:45	436	503	508	482	
12:45	13:00	499	451	507	486	1,966
13:00	13:15	475	503	476	485	
13:15	13:30	476	439	505	473	
13:30	13:45	446	459	514	473	
13:45	14:00	472	462	564	499	1,930
14:00	14:15	486	417	576	493	
14:15	14:30	452	440	478	457	
14:30	14:45	467	431	499	466	
14:45	15:00	464	480	513	486	1,901
15:00	15:15	513	508	530	517	
15:15	15:30	478	473	476	476	
15:30	15:45	472	498	497	489	
15:45	16:00	477	481	520	493	1,974
16:00	16:15	529	514	499	514	
16:15	16:30	473	552	585	537	
16:30	16:45	485	517	526	509	
16:45	17:00	505	517	523	515	2,075
17:00	17:15	615	557	563	578	
17:15	17:30	606	594	660	620	
17:30	17:45	597	583	596	592	
17:45	18:00	583	592	569	581	2,372
18:00	18:15	508	538	559	535	
18:15	18:30	465	494	503	487	
18:30	18:45	413	449	433	432	
18:45	19:00	368	396	393	386	1,840
19:00	19:15	313	390	331	345	
19:15	19:30	304	340	336	327	
19:30	19:45	278	304	299	294	
19:45	20:00	257	261	282	267	1,232
20:00	20:15	260	247	276	261	
20:15	20:30	193	236	256	228	
20:30	20:45	166	251	225	214	
20:45	21:00	188	201	199	196	899
21:00	21:15	184	196	188	189	
21:15	21:30	146	149	187	161	
21:30	21:45	153	162	163	159	
21:45	22:00	117	114	155	129	638
22:00	22:15	135	140	141	139	
22:15	22:30	123	110	129	121	
22:30	22:45	97	105	108	103	
22:45	23:00	82	80	99	87	450
23:00	23:15	88	78	106	91	
23:15	23:30	49	85	87	74	
23:30	23:45	59	68	67	65	
23:45	00:00	39	50	61	50	279
DAILY COUNT		28,764	29,228	30,083	29,358	
PEAK HOUR TIME					07:30	
PEAK HOUR COUNT					2,687	
ESTIMATED K-FACTOR					9.2%	

Three-Day Approach Count Summary

Project Name: PGA Boulevard Study
State Project No.: 2013008.018
Location: PGA Boulevard at I-95 Southbound off Ramp
Direction: WESTBOUND (APPROACH)
Date: 3/3/2015-3/5/2015

TIME PERIOD (AM)		WEEKDAY TUES 3-Mar	WED 4-Mar	THUR 5-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
00:00	00:15	62	32	57	50	
00:15	00:30	56	44	35	45	
00:30	00:45	41	34	33	36	
00:45	01:00	31	20	24	25	156
01:00	01:15	45	38	34	39	
01:15	01:30	26	23	20	23	
01:30	01:45	26	18	11	18	
01:45	02:00	24	15	18	19	99
02:00	02:15	16	6	11	11	
02:15	02:30	13	7	10	10	
02:30	02:45	18	7	6	10	
02:45	03:00	6	7	11	8	39
03:00	03:15	9	9	5	8	
03:15	03:30	6	12	9	9	
03:30	03:45	17	8	5	10	
03:45	04:00	12	4	13	10	36
04:00	04:15	23	17	7	16	
04:15	04:30	7	8	14	10	
04:30	04:45	24	10	16	17	
04:45	05:00	29	31	21	27	69
05:00	05:15	37	38	29	35	
05:15	05:30	43	45	42	43	
05:30	05:45	63	42	50	52	
05:45	06:00	67	64	60	64	193
06:00	06:15	73	68	55	65	
06:15	06:30	83	90	105	93	
06:30	06:45	119	117	126	121	
06:45	07:00	169	164	171	168	447
07:00	07:15	225	225	229	226	
07:15	07:30	292	309	285	295	
07:30	07:45	335	370	324	343	
07:45	08:00	417	398	399	405	1,269
08:00	08:15	356	367	327	350	
08:15	08:30	355	384	414	384	
08:30	08:45	308	361	355	341	
08:45	09:00	346	392	298	345	1,421
09:00	09:15	313	323	279	305	
09:15	09:30	302	313	348	321	
09:30	09:45	307	252	275	278	
09:45	10:00	291	264	285	280	1,184
10:00	10:15	266	265	262	264	
10:15	10:30	306	282	290	293	
10:30	10:45	306	301	288	298	
10:45	11:00	377	351	355	361	1,216
11:00	11:15	295	315	299	303	
11:15	11:30	341	353	357	350	
11:30	11:45	391	408	374	391	
11:45	12:00	397	415	427	413	1,457

TIME PERIOD (PM)		WEEKDAY TUES 3-Mar	WED 4-Mar	THUR 5-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
12:00	12:15	431	411	379	407	
12:15	12:30	448	460	390	433	
12:30	12:45	424	441	374	413	
12:45	13:00	408	426	410	415	1,667
13:00	13:15	351	444	382	392	
13:15	13:30	411	453	384	416	
13:30	13:45	449	453	444	449	
13:45	14:00	499	506	455	487	1,744
14:00	14:15	469	470	396	445	
14:15	14:30	438	497	557	497	
14:30	14:45	387	436	512	445	
14:45	15:00	456	508	527	497	1,884
15:00	15:15	434	457	564	485	
15:15	15:30	590	550	611	584	
15:30	15:45	504	555	517	525	
15:45	16:00	468	618	532	539	2,133
16:00	16:15	548	577	587	571	
16:15	16:30	553	590	502	548	
16:30	16:45	486	487	537	503	
16:45	17:00	615	686	559	620	2,242
17:00	17:15	689	711	624	675	
17:15	17:30	735	723	676	711	
17:30	17:45	706	689	594	663	
17:45	18:00	704	722	595	674	2,723
18:00	18:15	567	582	493	547	
18:15	18:30	550	589	548	562	
18:30	18:45	562	496	421	493	
18:45	19:00	435	455	377	422	2,025
19:00	19:15	445	409	367	407	
19:15	19:30	437	393	328	386	
19:30	19:45	333	321	371	342	
19:45	20:00	314	337	304	318	1,453
20:00	20:15	342	330	334	335	
20:15	20:30	273	340	297	303	
20:30	20:45	323	319	268	303	
20:45	21:00	305	295	230	277	1,219
21:00	21:15	300	258	237	265	
21:15	21:30	319	264	253	279	
21:30	21:45	247	242	236	242	
21:45	22:00	197	207	183	196	981
22:00	22:15	180	163	170	171	
22:15	22:30	143	141	138	141	
22:30	22:45	101	94	107	101	
22:45	23:00	83	91	120	98	510
23:00	23:15	76	93	85	85	
23:15	23:30	54	78	79	70	
23:30	23:45	59	54	71	61	
23:45	00:00	34	36	52	41	257
DAILY COUNT		26,553	27,083	25,645	26,427	
PEAK HOUR TIME					17:00	
PEAK HOUR COUNT					2,723	
ESTIMATED K-FACTOR					10.3%	

MECHANICAL COUNTS

PROJECT NAME: PGA Boulevard Study

LOCATION: PGA Boulevard at I-95 Southbound off Ramp

Notice to Proceed : 2013008.018

COUNT DATE: 3/3/2015-3/5/2015

NORTHBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	0	0	0	0	0
01:00 AM	0	0	0	0	0
02:00 AM	0	0	0	0	0
03:00 AM	0	0	0	0	0
04:00 AM	0	0	0	0	0
05:00 AM	0	0	0	0	0
06:00 AM	0	0	0	0	0
07:00 AM	0	0	0	0	0
08:00 AM	0	0	0	0	0
09:00 AM	0	0	0	0	0
10:00 AM	0	0	0	0	0
11:00 AM	0	0	0	0	0
12:00 PM	0	0	0	0	0
01:00 PM	0	0	0	0	0
02:00 PM	0	0	0	0	0
03:00 PM	0	0	0	0	0
04:00 PM	0	0	0	0	0
05:00 PM	0	0	0	0	0
06:00 PM	0	0	0	0	0
07:00 PM	0	0	0	0	0
08:00 PM	0	0	0	0	0
09:00 PM	0	0	0	0	0
10:00 PM	0	0	0	0	0
11:00 PM	0	0	0	0	0
			24 Hour Total		0

SOUTHBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	7	6	5	5	22
01:00 AM	2	4	2	3	10
02:00 AM	3	2	2	3	9
03:00 AM	2	5	6	4	16
04:00 AM	3	4	6	11	24
05:00 AM	6	11	18	30	65
06:00 AM	22	37	55	100	214
07:00 AM	99	146	201	264	709
08:00 AM	211	217	182	199	809
09:00 AM	167	156	116	121	560
10:00 AM	109	103	135	140	487
11:00 AM	103	94	99	105	401
12:00 PM	101	100	105	96	401
01:00 PM	92	83	105	103	383
02:00 PM	87	104	102	111	404
03:00 PM	106	93	103	98	400
04:00 PM	96	96	111	97	400
05:00 PM	103	105	105	107	420
06:00 PM	100	99	84	79	361
07:00 PM	60	57	49	40	206
08:00 PM	41	36	39	27	144
09:00 PM	28	26	23	18	95
10:00 PM	20	19	15	23	77
11:00 PM	12	13	13	7	44
			24 Hour Total		6,662

EASTBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	47	28	29	23	127
01:00 AM	19	17	19	11	66
02:00 AM	13	11	11	10	45
03:00 AM	10	12	10	15	47
04:00 AM	19	21	27	32	98
05:00 AM	31	44	62	89	226
06:00 AM	93	124	199	289	705
07:00 AM	346	472	647	681	2146
08:00 AM	677	682	611	655	2625
09:00 AM	544	521	446	499	2010
10:00 AM	436	433	492	483	1844
11:00 AM	447	457	482	478	1864
12:00 PM	498	500	482	486	1966
01:00 PM	485	473	473	499	1930
02:00 PM	493	457	466	486	1901
03:00 PM	517	476	489	493	1974
04:00 PM	514	537	509	515	2075
05:00 PM	578	620	592	581	2372
06:00 PM	535	487	432	386	1840
07:00 PM	345	327	294	267	1232
08:00 PM	261	228	214	196	899
09:00 PM	189	161	159	129	638
10:00 PM	139	121	103	87	450
11:00 PM	91	74	65	50	279
			24 Hour Total		29,358

WESTBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	50	45	36	25	156
01:00 AM	39	23	18	19	99
02:00 AM	11	10	10	8	39
03:00 AM	8	9	10	10	36
04:00 AM	16	10	17	27	69
05:00 AM	35	43	52	64	193
06:00 AM	65	93	121	168	447
07:00 AM	226	295	343	405	1269
08:00 AM	350	384	341	345	1421
09:00 AM	305	321	278	280	1184
10:00 AM	264	293	298	361	1216
11:00 AM	303	350	391	413	1457
12:00 PM	407	433	413	415	1667
01:00 PM	392	416	449	487	1744
02:00 PM	445	497	445	497	1884
03:00 PM	485	584	525	539	2133
04:00 PM	571	548	503	620	2242
05:00 PM	675	711	663	674	2723
06:00 PM	547	562	493	422	2025
07:00 PM	407	386	342	318	1453
08:00 PM	335	303	303	277	1219
09:00 PM	265	279	242	196	981
10:00 PM	171	141	101	98	510
11:00 PM	85	70	61	41	257
			24 Hour Total		26,427

ALL

TOTAL
305
176
93
99
191
484
1366
4124
4855
3754
3547
3723
4034
4057
4189
4508
4717
5515
4226
2891
2262
1714
1037
580
62,448

DAILY TRAFFIC COUNT SUMMARY

NORTHBOUND

A.M. Peak Hour, Time: 12:00 AM Volume: 0
A.M. "K" Factor: #DIV/0! P.H.F. : #DIV/0!

P.M. Peak Hour, Time: 12:00 PM Volume: 0
P.M. "K" Factor: #DIV/0! P.H.F. : #DIV/0!

SOUTHBOUND

A.M. Peak Hour, Time: 07:30 AM Volume: 892
A.M. "K" Factor: 13.4% P.H.F. : 0.85

P.M. Peak Hour, Time: 02:15 PM Volume: 423
P.M. "K" Factor: 6.3% P.H.F. : 0.96

DAILY TRAFFIC COUNT SUMMARY

EASTBOUND

A.M. Peak Hour, Time: 07:30 AM Volume: 2,687
A.M. "K" Factor: 9.2% P.H.F. : 0.98

P.M. Peak Hour, Time: 05:00 PM Volume: 2,372
P.M. "K" Factor: 8.1% P.H.F. : 0.96

WESTBOUND

A.M. Peak Hour, Time: 11:45 AM Volume: 1,666
A.M. "K" Factor: 6.3% P.H.F. : 0.96

P.M. Peak Hour, Time: 05:00 PM Volume: 2,723
P.M. "K" Factor: 10.3% P.H.F. : 0.96

ALL APPROACHES:

A.M. Peak Hour, Time: 07:30 AM Volume: 5,061
A.M. "K" Factor: 8.1% P.H.F. : 0.94

P.M. Peak Hour, Time: 05:00 PM Volume: 5,515
P.M. "K" Factor: 8.8% P.H.F. : 0.96

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : PGA at I-95 SB Ramp 03032015
Site Code : 00000000
Start Date : 3/3/2015
Page No : 1

Groups Printed- Auto - Heavy Vehicles

	PGA BLVD Eastbound					PGA BLVD Westbound					I-95 SB ON RAMP Northbound					I-95 SB OFF RAMP Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	41	49	0	90	0	80	0	0	80	0	0	0	0	0	21	0	0	0	21	191
06:15 AM	0	40	77	0	117	0	105	0	0	105	0	0	0	0	0	30	0	10	0	40	262
06:30 AM	0	87	97	0	184	0	129	0	0	129	0	0	0	0	0	45	0	7	0	52	365
06:45 AM	0	107	145	0	252	0	156	0	0	156	0	0	0	0	0	103	0	6	0	109	517
Total	0	275	368	0	643	0	470	0	0	470	0	0	0	0	0	199	0	23	0	222	1335
07:00 AM	0	164	187	0	351	0	242	0	0	242	0	0	0	0	0	98	0	11	0	109	702
07:15 AM	0	242	225	0	467	0	326	0	0	326	0	0	0	0	0	182	0	13	0	195	988
07:30 AM	0	270	276	0	546	0	319	0	0	319	0	0	0	0	0	162	0	14	0	176	1041
07:45 AM	0	281	227	0	508	0	367	0	0	367	0	0	0	0	0	367	0	25	0	392	1267
Total	0	957	915	0	1872	0	1254	0	0	1254	0	0	0	0	0	809	0	63	0	872	3998
08:00 AM	0	335	249	0	584	0	314	0	0	314	0	0	0	0	0	302	0	18	0	320	1218
08:15 AM	0	392	204	0	596	0	356	0	0	356	0	0	0	0	0	214	0	16	0	230	1182
08:30 AM	0	285	203	0	488	0	295	0	0	295	0	0	0	0	0	234	0	26	0	260	1043
08:45 AM	0	325	174	0	499	0	327	0	0	327	0	0	0	0	0	233	0	13	0	246	1072
Total	0	1337	830	0	2167	0	1292	0	0	1292	0	0	0	0	0	983	0	73	0	1056	4515
*** BREAK ***																					
04:00 PM	0	196	194	0	390	0	442	0	0	442	0	0	0	0	0	84	0	27	0	111	943
04:15 PM	0	214	195	0	409	0	462	0	0	462	0	0	0	0	0	77	0	18	0	95	966
04:30 PM	0	224	218	0	442	0	511	0	0	511	0	0	0	0	0	99	0	15	0	114	1067
04:45 PM	0	289	273	0	562	0	572	0	0	572	0	0	0	0	0	96	0	16	0	112	1246
Total	0	923	880	0	1803	0	1987	0	0	1987	0	0	0	0	0	356	0	76	0	432	4222
05:00 PM	0	303	294	0	597	0	519	0	0	519	0	0	0	0	0	91	0	14	0	105	1221
05:15 PM	0	319	224	0	543	0	590	0	0	590	0	0	0	0	0	100	0	15	0	115	1248
05:30 PM	0	311	225	0	536	0	546	0	0	546	0	0	0	0	0	85	0	10	0	95	1177
05:45 PM	0	315	203	0	518	0	543	0	0	543	0	0	0	0	0	117	0	8	0	125	1186
Total	0	1248	946	0	2194	0	2198	0	0	2198	0	0	0	0	0	393	0	47	0	440	4832
06:00 PM	0	294	195	0	489	0	376	0	0	376	0	0	0	0	0	108	0	20	0	128	993
06:15 PM	0	246	138	0	384	0	360	0	0	360	0	0	0	0	0	99	0	14	0	113	857
06:30 PM	0	230	120	0	350	0	324	0	0	324	0	0	0	0	0	65	0	18	0	83	757
06:45 PM	0	137	91	0	228	0	340	0	0	340	0	0	0	0	0	92	0	9	0	101	669
Total	0	907	544	0	1451	0	1400	0	0	1400	0	0	0	0	0	364	0	61	0	425	3276
Grand Total	0	5647	4483	0	10130	0	8601	0	0	8601	0	0	0	0	0	3104	0	343	0	3447	22178
Apprch %	0	55.7	44.3	0		0	100	0	0		0	0	0	0		90	0	10	0		
Total %	0	25.5	20.2	0	45.7	0	38.8	0	0	38.8	0	0	0	0	0	14	0	1.5	0	15.5	
Auto	0	5612	4446	0	10058	0	8539	0	0	8539	0	0	0	0	0	3093	0	339	0	3432	22029
% Auto	0	99.4	99.2	0	99.3	0	99.3	0	0	99.3	0	0	0	0	0	99.6	0	98.8	0	99.6	99.3
Heavy Vehicles	0	35	37	0	72	0	62	0	0	62	0	0	0	0	0	11	0	4	0	15	149
% Heavy Vehicles	0	0.6	0.8	0	0.7	0	0.7	0	0	0.7	0	0	0	0	0	0.4	0	1.2	0	0.4	0.7

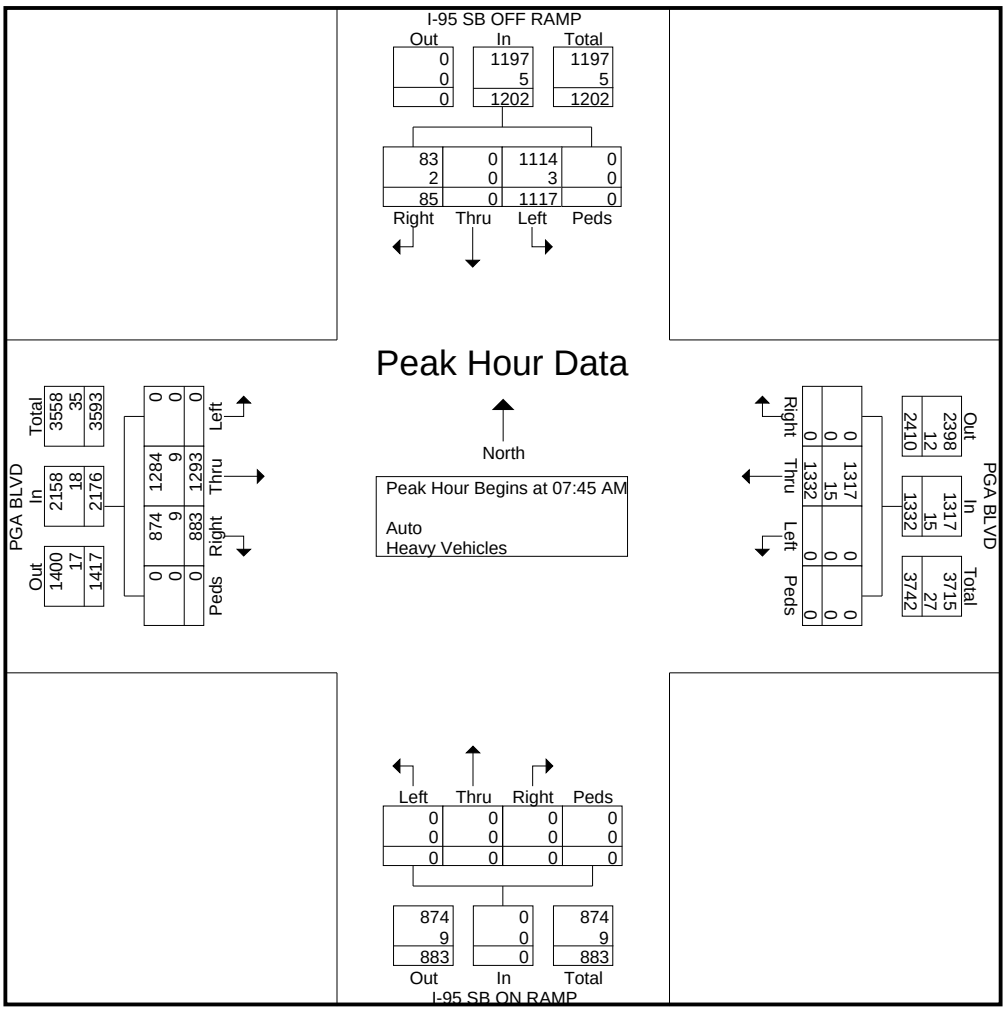
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : PGA at I-95 SB Ramp 03032015
Site Code : 00000000
Start Date : 3/3/2015
Page No : 2

	PGA BLVD Eastbound					PGA BLVD Westbound					I-95 SB ON RAMP Northbound					I-95 SB OFF RAMP Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	281	227	0	508	0	367	0	0	367	0	0	0	0	0	367	0	25	0	392	1267
08:00 AM	0	335	249	0	584	0	314	0	0	314	0	0	0	0	0	302	0	18	0	320	1218
08:15 AM	0	392	204	0	596	0	356	0	0	356	0	0	0	0	0	214	0	16	0	230	1182
08:30 AM	0	285	203	0	488	0	295	0	0	295	0	0	0	0	0	234	0	26	0	260	1043
Total Volume	0	1293	883	0	2176	0	1332	0	0	1332	0	0	0	0	0	1117	0	85	0	1202	4710
% App. Total	0	59.4	40.6	0		0	100	0	0		0	0	0	0		92.9	0	7.1	0		
PHF	.000	.825	.887	.000	.913	.000	.907	.000	.000	.907	.000	.000	.000	.000	.000	.761	.000	.817	.000	.767	.929
Auto	0	1284	874	0	2158	0	1317	0	0	1317	0	0	0	0	0	1114	0	83	0	1197	4672
% Auto	0	99.3	99.0	0	99.2	0	98.9	0	0	98.9	0	0	0	0	0	99.7	0	97.6	0	99.6	99.2
Heavy Vehicles	0	9	9	0	18	0	15	0	0	15	0	0	0	0	0	3	0	2	0	5	38
% Heavy Vehicles	0	0.7	1.0	0	0.8	0	1.1	0	0	1.1	0	0	0	0	0	0.3	0	2.4	0	0.4	0.8



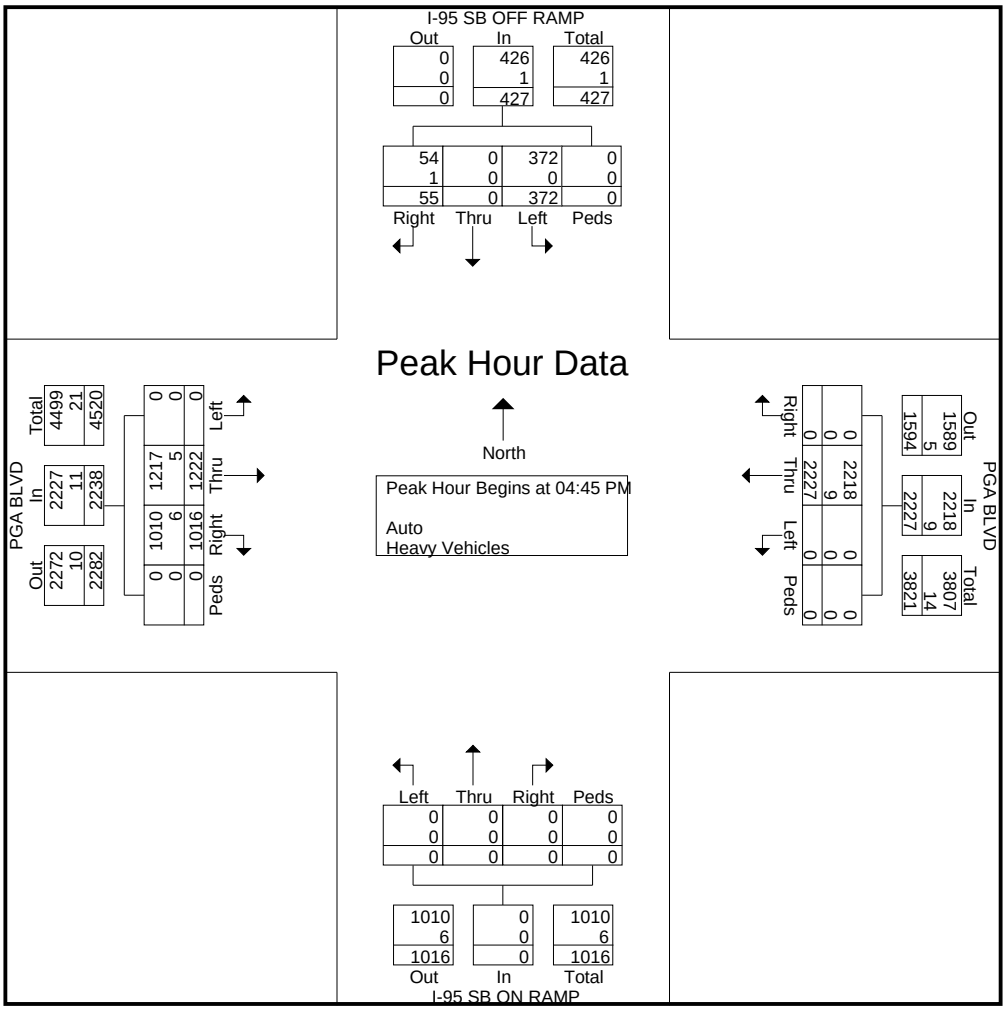
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : PGA at I-95 SB Ramp 03032015
Site Code : 00000000
Start Date : 3/3/2015
Page No : 3

	PGA BLVD Eastbound					PGA BLVD Westbound					I-95 SB ON RAMP Northbound					I-95 SB OFF RAMP Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	289	273	0	562	0	572	0	0	572	0	0	0	0	0	96	0	16	0	112	1246
05:00 PM	0	303	294	0	597	0	519	0	0	519	0	0	0	0	0	91	0	14	0	105	1221
05:15 PM	0	319	224	0	543	0	590	0	0	590	0	0	0	0	0	100	0	15	0	115	1248
05:30 PM	0	311	225	0	536	0	546	0	0	546	0	0	0	0	0	85	0	10	0	95	1177
Total Volume	0	1222	1016	0	2238	0	2227	0	0	2227	0	0	0	0	0	372	0	55	0	427	4892
% App. Total	0	54.6	45.4	0		0	100	0	0		0	0	0	0		87.1	0	12.9	0		
PHF	.000	.958	.864	.000	.937	.000	.944	.000	.000	.944	.000	.000	.000	.000	.000	.930	.000	.859	.000	.928	.980
Auto	0	1217	1010	0	2227	0	2218	0	0	2218	0	0	0	0	0	372	0	54	0	426	4871
% Auto	0	99.6	99.4	0	99.5	0	99.6	0	0	99.6	0	0	0	0	0	100	0	98.2	0	99.8	99.6
Heavy Vehicles	0	5	6	0	11	0	9	0	0	9	0	0	0	0	0	0	0	1	0	1	21
% Heavy Vehicles	0	0.4	0.6	0	0.5	0	0.4	0	0	0.4	0	0	0	0	0	0	0	1.8	0	0.2	0.4



CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : PGA at I-95 SB Ramp 03032015
Site Code : 00000000
Start Date : 3/3/2015
Page No : 1

Groups Printed- Heavy Vehicles

	PGA BLVD Eastbound					PGA BLVD Westbound					I-95 SB ON RAMP Northbound					I-95 SB OFF RAMP Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3
06:15 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	1	0	0	0	1	4
06:30 AM	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
06:45 AM	0	3	1	0	4	0	2	0	0	2	0	0	0	0	0	1	0	0	0	1	7
Total	0	4	2	0	6	0	5	0	0	5	0	0	0	0	0	5	0	0	0	5	16
07:00 AM	0	2	1	0	3	0	2	0	0	2	0	0	0	0	0	2	0	0	0	2	7
07:15 AM	0	1	1	0	2	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	6
07:30 AM	0	1	5	0	6	0	2	0	0	2	0	0	0	0	0	0	0	1	0	1	9
07:45 AM	0	2	3	0	5	0	2	0	0	2	0	0	0	0	0	1	0	0	0	1	8
Total	0	6	10	0	16	0	10	0	0	10	0	0	0	0	0	3	0	1	0	4	30
08:00 AM	0	2	1	0	3	0	2	0	0	2	0	0	0	0	0	2	0	0	0	2	7
08:15 AM	0	1	3	0	4	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	9
08:30 AM	0	4	2	0	6	0	6	0	0	6	0	0	0	0	0	0	0	2	0	2	14
08:45 AM	0	3	4	0	7	0	11	0	0	11	0	0	0	0	0	1	0	0	0	1	19
Total	0	10	10	0	20	0	24	0	0	24	0	0	0	0	0	3	0	2	0	5	49
*** BREAK ***																					
04:00 PM	0	1	2	0	3	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	7
04:15 PM	0	2	2	0	4	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	5
04:30 PM	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
04:45 PM	0	1	4	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Total	0	4	9	0	13	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	19
05:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
05:15 PM	0	3	1	0	4	0	9	0	0	9	0	0	0	0	0	0	0	0	0	0	13
05:30 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	4	4	0	8	0	9	0	0	9	0	0	0	0	0	0	0	1	0	1	18
06:00 PM	0	2	0	0	2	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	7
06:15 PM	0	2	2	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
06:30 PM	0	2	0	0	2	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	5
06:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	7	2	0	9	0	8	0	0	8	0	0	0	0	0	0	0	0	0	0	17
Grand Total	0	35	37	0	72	0	62	0	0	62	0	0	0	0	0	11	0	4	0	15	149
Apprch %	0	48.6	51.4	0		0	100	0	0		0	0	0	0		73.3	0	26.7	0		
Total %	0	23.5	24.8	0	48.3	0	41.6	0	0	41.6	0	0	0	0	0	7.4	0	2.7	0	10.1	

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : PGA at I-95 SB Ramp 03042015
Site Code : 00000000
Start Date : 3/4/2015
Page No : 1

Groups Printed- Auto - Heavy Vehicles

	PGA BLVD Eastbound					PGA BLVD Westbound					I-95 SB ON RAMP Northbound					I-95 SB OFF RAMP Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	41	60	0	101	0	82	0	0	82	0	0	0	0	0	22	0	2	0	24	207
06:15 AM	0	62	77	0	139	0	89	0	0	89	0	0	0	0	0	40	0	5	0	45	273
06:30 AM	0	77	97	0	174	0	137	0	0	137	0	0	0	0	0	53	0	9	0	62	373
06:45 AM	0	102	127	0	229	0	160	0	0	160	0	0	0	0	0	132	0	7	0	139	528
Total	0	282	361	0	643	0	468	0	0	468	0	0	0	0	0	247	0	23	0	270	1381
07:00 AM	0	174	156	0	330	0	211	0	0	211	0	0	0	0	0	101	0	9	0	110	651
07:15 AM	0	226	195	0	421	0	338	0	0	338	0	0	0	0	0	204	0	11	0	215	974
07:30 AM	0	270	240	0	510	0	364	0	0	364	0	0	0	0	0	280	0	18	0	298	1172
07:45 AM	0	263	211	0	474	0	484	0	0	484	0	0	0	0	0	300	0	17	0	317	1275
Total	0	933	802	0	1735	0	1397	0	0	1397	0	0	0	0	0	885	0	55	0	940	4072
08:00 AM	0	280	187	0	467	0	364	0	0	364	0	0	0	0	0	255	0	14	0	269	1100
08:15 AM	0	284	168	0	452	0	375	0	0	375	0	0	0	0	0	287	0	15	0	302	1129
08:30 AM	0	253	187	0	440	0	324	0	0	324	0	0	0	0	0	203	0	29	0	232	996
08:45 AM	0	241	191	0	432	0	321	0	0	321	0	0	0	0	0	288	0	21	0	309	1062
Total	0	1058	733	0	1791	0	1384	0	0	1384	0	0	0	0	0	1033	0	79	0	1112	4287
*** BREAK ***																					
04:00 PM	0	237	183	0	420	0	482	0	0	482	0	0	0	0	0	110	0	16	0	126	1028
04:15 PM	0	245	193	0	438	0	485	0	0	485	0	0	0	0	0	92	0	20	0	112	1035
04:30 PM	0	261	222	0	483	0	456	0	0	456	0	0	0	0	0	123	0	22	0	145	1084
04:45 PM	0	247	212	0	459	0	486	0	0	486	0	0	0	0	0	100	0	22	0	122	1067
Total	0	990	810	0	1800	0	1909	0	0	1909	0	0	0	0	0	425	0	80	0	505	4214
05:00 PM	0	227	212	0	439	0	490	0	0	490	0	0	0	0	0	101	0	17	0	118	1047
05:15 PM	0	265	232	0	497	0	532	0	0	532	0	0	0	0	0	107	0	14	0	121	1150
05:30 PM	0	285	239	0	524	0	482	0	0	482	0	0	0	0	0	91	0	11	0	102	1108
05:45 PM	0	303	209	0	512	0	449	0	0	449	0	0	0	0	0	93	0	16	0	109	1070
Total	0	1080	892	0	1972	0	1953	0	0	1953	0	0	0	0	0	392	0	58	0	450	4375
06:00 PM	1	329	245	0	575	0	397	0	0	397	0	0	0	0	0	77	0	19	0	96	1068
06:15 PM	0	321	216	0	537	0	376	0	0	376	0	0	0	0	0	87	0	7	0	94	1007
06:30 PM	0	269	199	0	468	0	330	0	0	330	0	0	0	0	0	64	0	14	0	78	876
06:45 PM	0	226	159	0	385	0	319	0	0	319	0	0	0	0	0	54	0	17	0	71	775
Total	1	1145	819	0	1965	0	1422	0	0	1422	0	0	0	0	0	282	0	57	0	339	3726
Grand Total	1	5488	4417	0	9906	0	8533	0	0	8533	0	0	0	0	0	3264	0	352	0	3616	22055
Apprch %	0	55.4	44.6	0		0	100	0	0		0	0	0	0		90.3	0	9.7	0		
Total %	0	24.9	20	0	44.9	0	38.7	0	0	38.7	0	0	0	0	0	14.8	0	1.6	0	16.4	
Auto	1	5452	4378	0	9831	0	8472	0	0	8472	0	0	0	0	0	3257	0	346	0	3603	21906
% Auto	100	99.3	99.1	0	99.2	0	99.3	0	0	99.3	0	0	0	0	0	99.8	0	98.3	0	99.6	99.3
Heavy Vehicles	0	36	39	0	75	0	61	0	0	61	0	0	0	0	0	7	0	6	0	13	149
% Heavy Vehicles	0	0.7	0.9	0	0.8	0	0.7	0	0	0.7	0	0	0	0	0	0.2	0	1.7	0	0.4	0.7

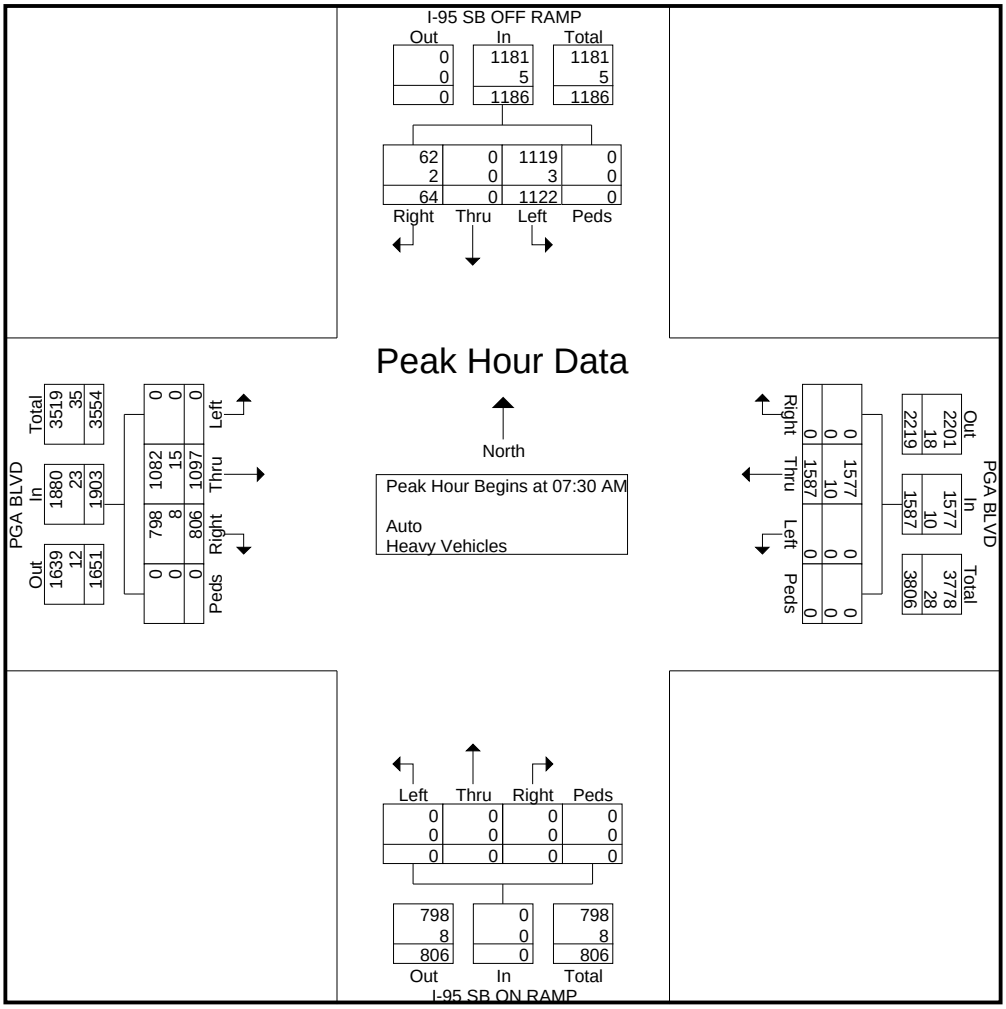
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : PGA at I-95 SB Ramp 03042015
Site Code : 00000000
Start Date : 3/4/2015
Page No : 2

	PGA BLVD Eastbound					PGA BLVD Westbound					I-95 SB ON RAMP Northbound					I-95 SB OFF RAMP Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	270	240	0	510	0	364	0	0	364	0	0	0	0	0	280	0	18	0	298	1172
07:45 AM	0	263	211	0	474	0	484	0	0	484	0	0	0	0	0	300	0	17	0	317	1275
08:00 AM	0	280	187	0	467	0	364	0	0	364	0	0	0	0	0	255	0	14	0	269	1100
08:15 AM	0	284	168	0	452	0	375	0	0	375	0	0	0	0	0	287	0	15	0	302	1129
Total Volume	0	1097	806	0	1903	0	1587	0	0	1587	0	0	0	0	0	1122	0	64	0	1186	4676
% App. Total	0	57.6	42.4	0		0	100	0	0		0	0	0	0		94.6	0	5.4	0		
PHF	.000	.966	.840	.000	.933	.000	.820	.000	.000	.820	.000	.000	.000	.000	.000	.935	.000	.889	.000	.935	.917
Auto	0	1082	798	0	1880	0	1577	0	0	1577	0	0	0	0	0	1119	0	62	0	1181	4638
% Auto	0	98.6	99.0	0	98.8	0	99.4	0	0	99.4	0	0	0	0	0	99.7	0	96.9	0	99.6	99.2
Heavy Vehicles	0	15	8	0	23	0	10	0	0	10	0	0	0	0	0	3	0	2	0	5	38
% Heavy Vehicles	0	1.4	1.0	0	1.2	0	0.6	0	0	0.6	0	0	0	0	0	0.3	0	3.1	0	0.4	0.8



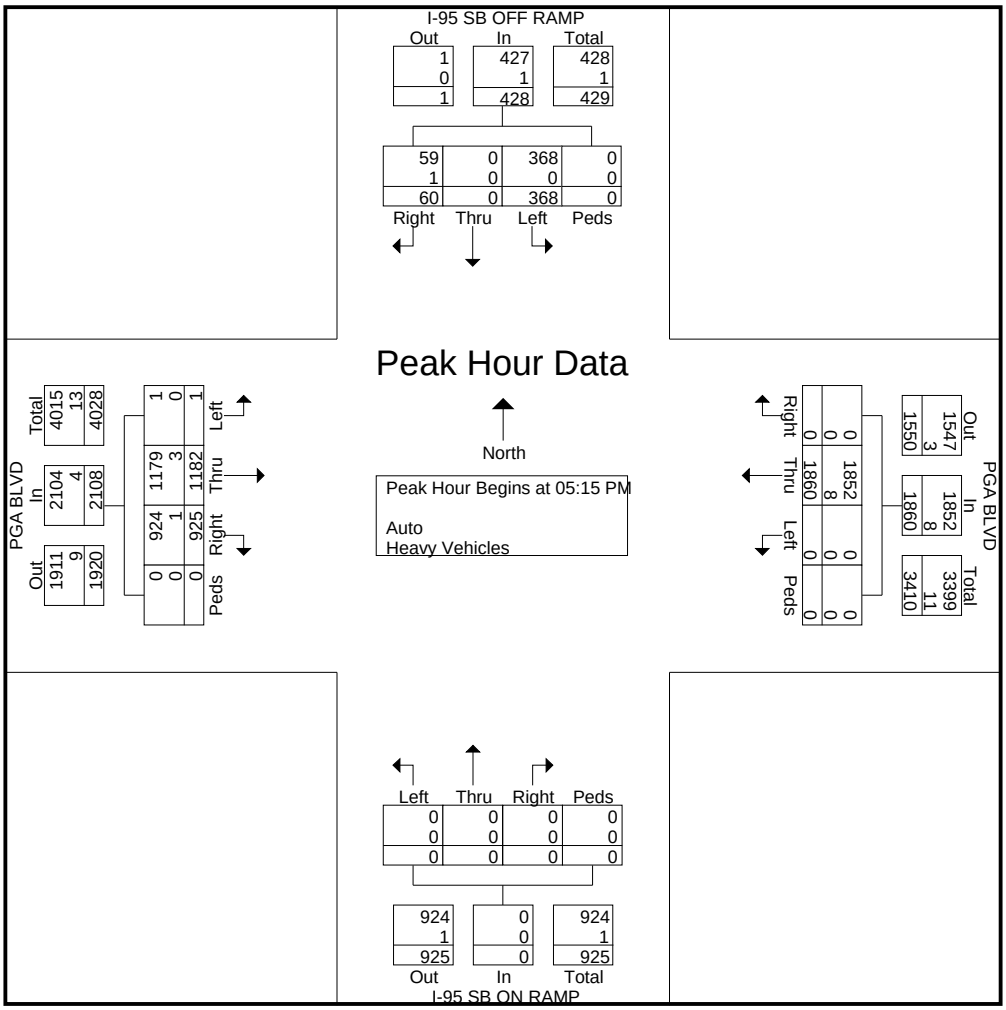
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : PGA at I-95 SB Ramp 03042015
Site Code : 00000000
Start Date : 3/4/2015
Page No : 3

	PGA BLVD Eastbound					PGA BLVD Westbound					I-95 SB ON RAMP Northbound					I-95 SB OFF RAMP Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:15 PM																					
05:15 PM	0	265	232	0	497	0	532	0	0	532	0	0	0	0	0	107	0	14	0	121	1150
05:30 PM	0	285	239	0	524	0	482	0	0	482	0	0	0	0	0	91	0	11	0	102	1108
05:45 PM	0	303	209	0	512	0	449	0	0	449	0	0	0	0	0	93	0	16	0	109	1070
06:00 PM	1	329	245	0	575	0	397	0	0	397	0	0	0	0	0	77	0	19	0	96	1068
Total Volume	1	1182	925	0	2108	0	1860	0	0	1860	0	0	0	0	0	368	0	60	0	428	4396
% App. Total	0	56.1	43.9	0		0	100	0	0		0	0	0	0		86	0	14	0		
PHF	.250	.898	.944	.000	.917	.000	.874	.000	.000	.874	.000	.000	.000	.000	.000	.860	.000	.789	.000	.884	.956
Auto	1	1179	924	0	2104	0	1852	0	0	1852	0	0	0	0	0	368	0	59	0	427	4383
% Auto	100	99.7	99.9	0	99.8	0	99.6	0	0	99.6	0	0	0	0	0	100	0	98.3	0	99.8	99.7
Heavy Vehicles	0	3	1	0	4	0	8	0	0	8	0	0	0	0	0	0	0	1	0	1	13
% Heavy Vehicles	0	0.3	0.1	0	0.2	0	0.4	0	0	0.4	0	0	0	0	0	0	0	1.7	0	0.2	0.3



CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : PGA at I-95 SB Ramp 03042015
Site Code : 00000000
Start Date : 3/4/2015
Page No : 1

Groups Printed- Heavy Vehicles

	PGA BLVD Eastbound					PGA BLVD Westbound					I-95 SB ON RAMP Northbound					I-95 SB OFF RAMP Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	3
06:15 AM	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	3
06:30 AM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	2	0	0	0	2	4
06:45 AM	0	3	1	0	4	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	5
Total	0	4	2	0	6	0	6	0	0	6	0	0	0	0	0	3	0	0	0	3	15
07:00 AM	0	1	1	0	2	0	2	0	0	2	0	0	0	0	0	1	0	0	0	1	5
07:15 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	3
07:30 AM	0	1	3	0	4	0	2	0	0	2	0	0	0	0	0	1	0	1	0	2	8
07:45 AM	0	5	3	0	8	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	11
Total	0	7	7	0	14	0	10	0	0	10	0	0	0	0	0	2	0	1	0	3	27
08:00 AM	0	4	0	0	4	0	4	0	0	4	0	0	0	0	0	1	0	0	0	1	9
08:15 AM	0	5	2	0	7	0	1	0	0	1	0	0	0	0	0	1	0	1	0	2	10
08:30 AM	0	2	5	0	7	0	3	0	0	3	0	0	0	0	0	0	0	3	0	3	13
08:45 AM	0	2	8	0	10	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	16
Total	0	13	15	0	28	0	14	0	0	14	0	0	0	0	0	2	0	4	0	6	48
*** BREAK ***																					
04:00 PM	0	4	1	0	5	0	8	0	0	8	0	0	0	0	0	0	0	0	0	0	13
04:15 PM	0	3	4	0	7	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	13
04:30 PM	0	1	6	0	7	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	9
04:45 PM	0	0	3	0	3	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	6
Total	0	8	14	0	22	0	19	0	0	19	0	0	0	0	0	0	0	0	0	0	41
05:00 PM	0	1	0	0	1	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	4
05:15 PM	0	2	0	0	2	0	6	0	0	6	0	0	0	0	0	0	0	0	0	0	8
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
05:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	4	0	0	4	0	9	0	0	9	0	0	0	0	0	0	0	1	0	1	14
06:00 PM	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	3
06:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
*** BREAK ***																					
Total	0	0	1	0	1	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	4
Grand Total	0	36	39	0	75	0	61	0	0	61	0	0	0	0	0	7	0	6	0	13	149
Apprch %	0	48	52	0		0	100	0	0		0	0	0	0		53.8	0	46.2	0		
Total %	0	24.2	26.2	0	50.3	0	40.9	0	0	40.9	0	0	0	0	0	4.7	0	4	0	8.7	

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : PGA at I-95 SB Ramp 03052015
Site Code : 00000000
Start Date : 3/5/2015
Page No : 1

Groups Printed- Auto - Heavy Vehicles

	PGA BLVD Eastbound					PGA BLVD Westbound					I-95 SB ON RAMP Northbound					I-95 SB OFF RAMP Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	31	53	0	84	0	80	0	0	80	0	0	0	0	0	24	1	1	0	26	190
06:15 AM	0	41	67	0	108	0	112	0	0	112	0	0	0	0	0	34	0	6	0	40	260
06:30 AM	0	63	84	0	147	0	132	0	0	132	0	0	0	0	0	48	0	3	0	51	330
06:45 AM	0	131	109	0	240	0	139	0	0	139	0	0	0	0	0	82	0	10	0	92	471
Total	0	266	313	0	579	0	463	0	0	463	0	0	0	0	0	188	1	20	0	209	1251
07:00 AM	0	218	156	0	374	0	211	0	0	211	0	0	0	0	0	87	0	7	0	94	679
07:15 AM	0	267	179	0	446	0	293	0	0	293	0	0	0	0	0	131	0	19	0	150	889
07:30 AM	0	276	220	0	496	0	276	0	0	276	0	0	0	0	0	159	0	10	0	169	941
07:45 AM	0	300	246	0	546	0	350	0	0	350	0	0	0	0	0	198	0	25	0	223	1119
Total	0	1061	801	0	1862	0	1130	0	0	1130	0	0	0	0	0	575	0	61	0	636	3628
08:00 AM	0	325	263	0	588	0	337	0	0	337	0	0	0	0	0	146	0	16	0	162	1087
08:15 AM	0	346	204	0	550	0	340	0	0	340	0	0	0	0	0	162	0	22	0	184	1074
08:30 AM	0	387	210	0	597	0	310	0	0	310	0	0	0	0	0	147	0	13	0	160	1067
08:45 AM	0	340	197	0	537	0	349	0	0	349	0	0	0	0	0	162	0	13	0	175	1061
Total	0	1398	874	0	2272	0	1336	0	0	1336	0	0	0	0	0	617	0	64	0	681	4289
*** BREAK ***																					
04:00 PM	0	221	182	0	403	0	380	0	0	380	0	0	0	0	0	63	0	18	0	81	864
04:15 PM	0	292	217	0	509	0	478	0	0	478	0	0	0	0	0	83	0	16	0	99	1086
04:30 PM	0	234	189	0	423	0	525	0	0	525	0	0	0	0	0	71	0	21	0	92	1040
04:45 PM	0	226	231	0	457	0	519	0	0	519	0	0	0	0	0	68	0	19	0	87	1063
Total	0	973	819	0	1792	0	1902	0	0	1902	0	0	0	0	0	285	0	74	0	359	4053
05:00 PM	0	257	250	0	507	0	410	0	0	410	0	0	0	0	0	63	0	22	0	85	1002
05:15 PM	0	299	224	0	523	0	388	0	0	388	0	0	0	0	0	64	0	18	0	82	993
05:30 PM	0	254	252	0	506	0	360	0	0	360	0	0	0	0	0	83	0	9	0	92	958
05:45 PM	0	282	184	0	466	0	334	1	0	335	0	0	0	0	0	83	0	24	0	107	908
Total	0	1092	910	0	2002	0	1492	1	0	1493	0	0	0	0	0	293	0	73	0	366	3861
06:00 PM	0	276	188	0	464	0	464	0	0	464	0	0	0	0	0	74	0	22	0	96	1024
06:15 PM	0	248	188	0	436	0	434	0	0	434	0	0	0	0	0	79	0	23	0	102	972
06:30 PM	0	223	162	0	385	0	349	0	0	349	0	0	0	0	0	65	0	15	0	80	814
06:45 PM	0	163	135	0	298	0	339	0	0	339	0	0	0	0	0	48	0	8	0	56	693
Total	0	910	673	0	1583	0	1586	0	0	1586	0	0	0	0	0	266	0	68	0	334	3503
Grand Total	0	5700	4390	0	10090	0	7909	1	0	7910	0	0	0	0	0	2224	1	360	0	2585	20585
Apprch %	0	56.5	43.5	0		0	100	0	0		0	0	0	0		86	0	13.9	0		
Total %	0	27.7	21.3	0	49	0	38.4	0	0	38.4	0	0	0	0	0	10.8	0	1.7	0	12.6	
Auto	0	5670	4353	0	10023	0	7843	1	0	7844	0	0	0	0	0	2211	1	351	0	2563	20430
% Auto	0	99.5	99.2	0	99.3	0	99.2	100	0	99.2	0	0	0	0	0	99.4	100	97.5	0	99.1	99.2
Heavy Vehicles	0	30	37	0	67	0	66	0	0	66	0	0	0	0	0	13	0	9	0	22	155
% Heavy Vehicles	0	0.5	0.8	0	0.7	0	0.8	0	0	0.8	0	0	0	0	0	0.6	0	2.5	0	0.9	0.8

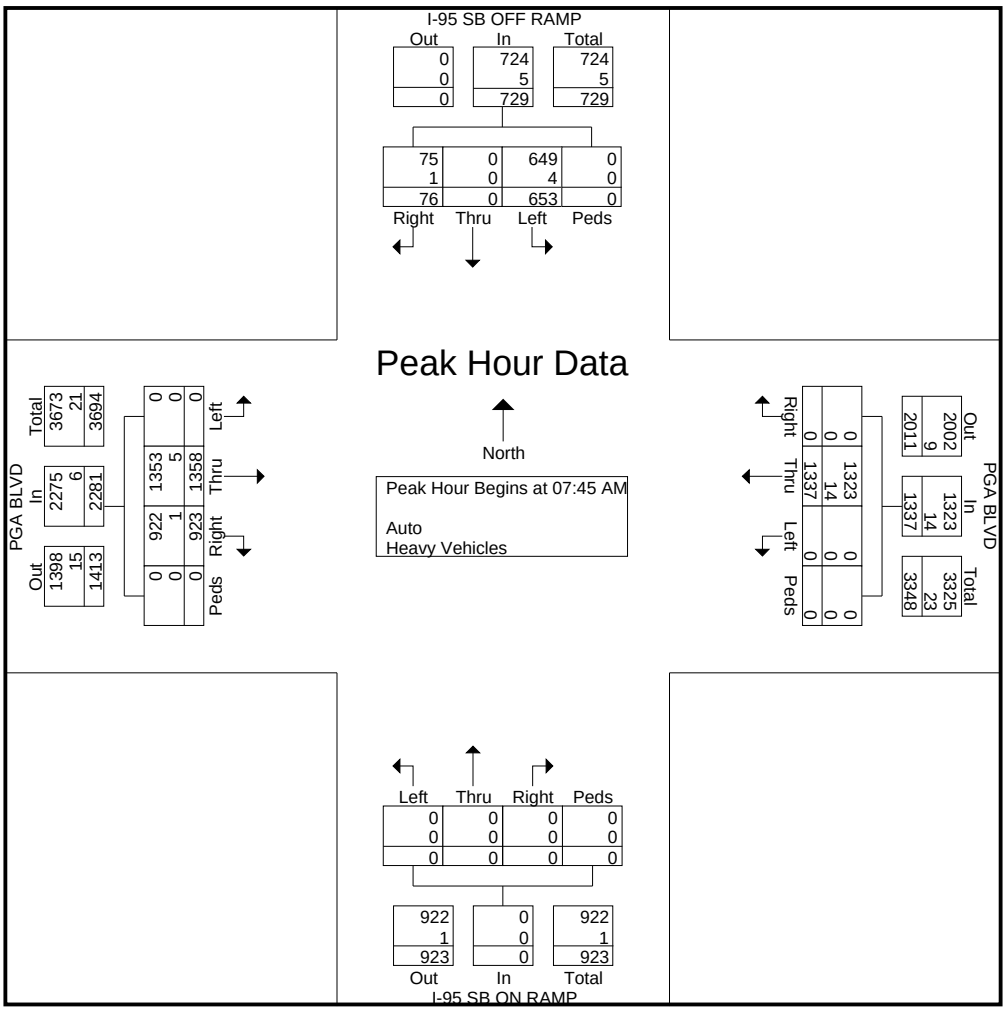
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : PGA at I-95 SB Ramp 03052015
Site Code : 00000000
Start Date : 3/5/2015
Page No : 2

	PGA BLVD Eastbound					PGA BLVD Westbound					I-95 SB ON RAMP Northbound					I-95 SB OFF RAMP Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	300	246	0	546	0	350	0	0	350	0	0	0	0	0	198	0	25	0	223	1119
08:00 AM	0	325	263	0	588	0	337	0	0	337	0	0	0	0	0	146	0	16	0	162	1087
08:15 AM	0	346	204	0	550	0	340	0	0	340	0	0	0	0	0	162	0	22	0	184	1074
08:30 AM	0	387	210	0	597	0	310	0	0	310	0	0	0	0	0	147	0	13	0	160	1067
Total Volume	0	1358	923	0	2281	0	1337	0	0	1337	0	0	0	0	0	653	0	76	0	729	4347
% App. Total	0	59.5	40.5	0		0	100	0	0		0	0	0	0		89.6	0	10.4	0		
PHF	.000	.877	.877	.000	.955	.000	.955	.000	.000	.955	.000	.000	.000	.000	.000	.824	.000	.760	.000	.817	.971
Auto	0	1353	922	0	2275	0	1323	0	0	1323	0	0	0	0	0	649	0	75	0	724	4322
% Auto	0	99.6	99.9	0	99.7	0	99.0	0	0	99.0	0	0	0	0	0	99.4	0	98.7	0	99.3	99.4
Heavy Vehicles	0	5	1	0	6	0	14	0	0	14	0	0	0	0	0	4	0	1	0	5	25
% Heavy Vehicles	0	0.4	0.1	0	0.3	0	1.0	0	0	1.0	0	0	0	0	0	0.6	0	1.3	0	0.7	0.6



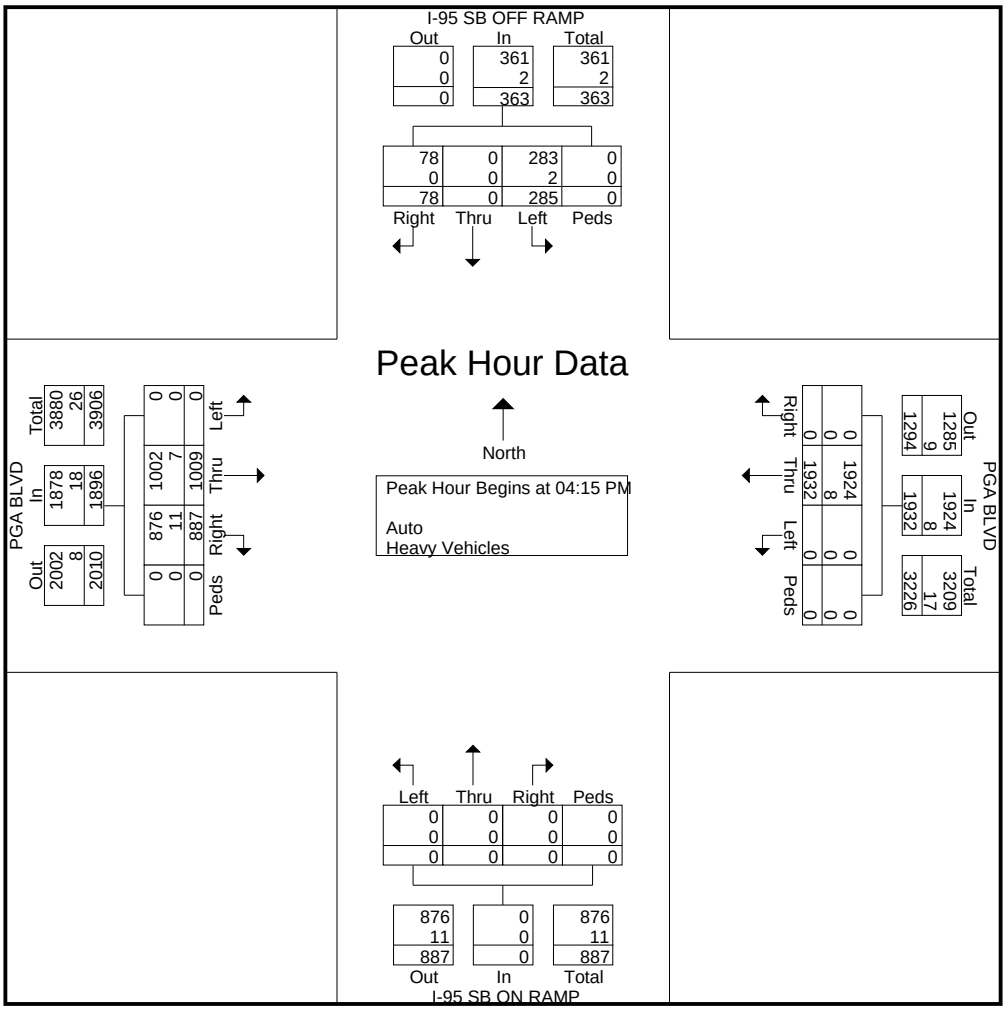
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : PGA at I-95 SB Ramp 03052015
Site Code : 00000000
Start Date : 3/5/2015
Page No : 3

	PGA BLVD Eastbound					PGA BLVD Westbound					I-95 SB ON RAMP Northbound					I-95 SB OFF RAMP Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	0	292	217	0	509	0	478	0	0	478	0	0	0	0	0	83	0	16	0	99	1086
04:30 PM	0	234	189	0	423	0	525	0	0	525	0	0	0	0	0	71	0	21	0	92	1040
04:45 PM	0	226	231	0	457	0	519	0	0	519	0	0	0	0	0	68	0	19	0	87	1063
05:00 PM	0	257	250	0	507	0	410	0	0	410	0	0	0	0	0	63	0	22	0	85	1002
Total Volume	0	1009	887	0	1896	0	1932	0	0	1932	0	0	0	0	0	285	0	78	0	363	4191
% App. Total	0	53.2	46.8	0		0	100	0	0		0	0	0	0		78.5	0	21.5	0		
PHF	.000	.864	.887	.000	.931	.000	.920	.000	.000	.920	.000	.000	.000	.000	.000	.858	.000	.886	.000	.917	.965
Auto	0	1002	876	0	1878	0	1924	0	0	1924	0	0	0	0	0	283	0	78	0	361	4163
% Auto	0	99.3	98.8	0	99.1	0	99.6	0	0	99.6	0	0	0	0	0	99.3	0	100	0	99.4	99.3
Heavy Vehicles	0	7	11	0	18	0	8	0	0	8	0	0	0	0	0	2	0	0	0	2	28
% Heavy Vehicles	0	0.7	1.2	0	0.9	0	0.4	0	0	0.4	0	0	0	0	0	0.7	0	0	0	0.6	0.7



CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : PGA at I-95 SB Ramp 03052015
Site Code : 00000000
Start Date : 3/5/2015
Page No : 1

Groups Printed- Heavy Vehicles

	PGA BLVD Eastbound					PGA BLVD Westbound					I-95 SB ON RAMP Northbound					I-95 SB OFF RAMP Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	2	0	0	2	0	3	0	0	3	0	0	0	0	0	2	0	0	0	2	7
06:15 AM	0	0	2	0	2	0	4	0	0	4	0	0	0	0	0	2	0	3	0	5	11
06:30 AM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	5
06:45 AM	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	3
Total	0	2	3	0	5	0	14	0	0	14	0	0	0	0	0	4	0	3	0	7	26
07:00 AM	0	2	0	0	2	0	5	0	0	5	0	0	0	0	0	1	0	0	0	1	8
07:15 AM	0	0	1	0	1	0	7	0	0	7	0	0	0	0	0	1	0	1	0	2	10
07:30 AM	0	1	1	0	2	0	4	0	0	4	0	0	0	0	0	1	0	0	0	1	7
07:45 AM	0	2	0	0	2	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	5
Total	0	5	2	0	7	0	19	0	0	19	0	0	0	0	0	3	0	1	0	4	30
08:00 AM	0	2	0	0	2	0	6	0	0	6	0	0	0	0	0	4	0	0	0	4	12
08:15 AM	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	3
08:30 AM	0	0	1	0	1	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	5
08:45 AM	0	5	6	0	11	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	15
Total	0	8	7	0	15	0	15	0	0	15	0	0	0	0	0	4	0	1	0	5	35
*** BREAK ***																					
04:00 PM	0	3	4	0	7	0	6	0	0	6	0	0	0	0	0	0	0	1	0	1	14
04:15 PM	0	1	1	0	2	0	2	0	0	2	0	0	0	0	0	1	0	0	0	1	5
04:30 PM	0	2	4	0	6	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	8
04:45 PM	0	1	6	0	7	0	3	0	0	3	0	0	0	0	0	1	0	0	0	1	11
Total	0	7	15	0	22	0	13	0	0	13	0	0	0	0	0	2	0	1	0	3	38
05:00 PM	0	3	0	0	3	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	4
05:15 PM	0	1	3	0	4	0	2	0	0	2	0	0	0	0	0	0	0	1	0	1	7
05:30 PM	0	1	2	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
05:45 PM	0	1	1	0	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3
Total	0	6	6	0	12	0	4	0	0	4	0	0	0	0	0	0	0	1	0	1	17
06:00 PM	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	4
06:15 PM	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
*** BREAK ***																					
06:45 PM	0	2	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Total	0	2	4	0	6	0	1	0	0	1	0	0	0	0	0	0	0	2	0	2	9
Grand Total	0	30	37	0	67	0	66	0	0	66	0	0	0	0	0	13	0	9	0	22	155
Apprch %	0	44.8	55.2	0		0	100	0	0		0	0	0	0		59.1	0	40.9	0		
Total %	0	19.4	23.9	0	43.2	0	42.6	0	0	42.6	0	0	0	0	0	8.4	0	5.8	0	14.2	

PGA Boulevard at I-95 Northbound off Ramp

County: 93
Station: 3135
Description: I-95 NB OFF RAMP TO PGA BLVD EB
Start Date: 03/03/2015
Start Time: 0000

Direction: N

Time	1st	2nd	3rd	4th	Total
0000	78	53	49	46	226
0100	32	23	26	22	103
0200	19	18	19	10	66
0300	17	11	21	20	69
0400	16	16	22	27	81
0500	35	47	62	95	239
0600	102	112	179	309	702
0700	275	369	528	633	1805
0800	551	566	567	559	2243
0900	475	445	391	398	1709
1000	312	314	338	413	1377
1100	338	341	336	383	1398
1200	364	383	381	378	1506
1300	311	356	402	386	1455
1400	345	294	384	385	1408
1500	338	363	360	440	1501
1600	368	408	415	361	1552
1700	395	401	465	394	1655
1800	387	393	315	295	1390
1900	248	250	228	210	936
2000	193	194	150	145	682
2100	144	137	131	111	523
2200	102	101	106	95	404
2300	66	54	44	59	223
24-Hour Totals:					23253

Peak Volume Information

	Hour	Volume
A.M.	745	2317
P.M.	1700	1655
Daily	745	2317

Truck Percentage 2.78 NaN 2.78

Classification Summary Database

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TotTrk	TotVol
N	52	20303	2252	62	243	103	119	86	21	10	2	0	0	0	0	646	23253

Generated by SPS 5.0.45P

County: 93
Station: 3135
Description: I-95 NB OFF RAMP TO PGA BLVD EB
Start Date: 03/04/2015
Start Time: 0000

Direction: N

Time	1st	2nd	3rd	4th	Total
0000	34	37	33	31	135
0100	22	20	18	24	84
0200	8	9	4	6	27
0300	8	8	15	18	49
0400	11	10	25	33	79
0500	36	38	80	95	249
0600	96	110	173	269	648
0700	277	369	517	587	1750
0800	537	594	551	548	2230
0900	448	500	375	368	1691
1000	323	336	379	416	1454
1100	319	339	376	384	1418
1200	354	423	404	395	1576
1300	322	340	343	387	1392
1400	353	354	387	388	1482
1500	329	328	364	420	1441
1600	377	350	390	396	1513
1700	439	466	418	434	1757
1800	374	394	351	311	1430
1900	277	232	249	202	960
2000	226	170	169	148	713
2100	131	120	149	125	525
2200	95	116	111	91	413
2300	77	52	50	48	227
24-Hour Totals:					23243

Peak Volume Information

	Hour	Volume
A.M.	745	2269
P.M.	1700	1757
Daily	745	2269

Truck Percentage 2.69 NaN 2.69

Classification Summary Database

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TotTrk	TotVol
N	35	20163	2419	59	270	54	114	100	27	2	0	0	0	0	0	626	23243

Generated by SPS 5.0.45P

County: 93
Station: 3135
Description: I-95 NB OFF RAMP TO PGA BLVD EB
Start Date: 03/05/2015
Start Time: 0000

Direction: N

Time	1st	2nd	3rd	4th	Total
0000	58	53	24	36	171
0100	17	21	10	14	62
0200	10	10	16	5	41
0300	7	9	10	17	43
0400	23	10	19	24	76
0500	29	37	69	106	241
0600	102	111	202	274	689
0700	288	382	499	619	1788
0800	489	597	501	520	2107
0900	464	419	349	380	1612
1000	318	354	343	392	1407
1100	369	335	367	389	1460
1200	359	383	366	369	1477
1300	331	341	415	390	1477
1400	355	345	370	385	1455
1500	332	345	380	436	1493
1600	366	380	414	407	1567
1700	427	449	404	424	1704
1800	375	400	309	300	1384
1900	276	278	208	214	976
2000	207	194	190	166	757
2100	192	148	166	158	664
2200	122	140	133	122	517
2300	106	98	77	82	363
24-Hour Totals:					23531

Peak Volume Information

	Hour	Volume
A.M.	745	2206
P.M.	1700	1704
Daily	745	2206

Truck Percentage 2.63 NaN 2.63

Classification Summary Database

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TotTrk	TotVol
N	54	20327	2531	76	264	43	108	103	22	3	0	0	0	0	0	619	23531

Generated by SPS 5.0.45P

County: 93
Station: 3131
Description: I-95 NB ON RAMP FROM PGA BLVD
Start Date: 03/03/2015
Start Time: 0000

Direction: N

Time	1st	2nd	3rd	4th	Total
0000	9	6	7	9	31
0100	4	5	3	1	13
0200	4	4	4	8	20
0300	4	2	4	3	13
0400	6	3	4	4	17
0500	3	7	9	20	39
0600	23	22	29	44	118
0700	58	80	60	66	264
0800	59	80	63	58	260
0900	54	56	61	64	235
1000	65	66	68	73	272
1100	66	99	85	84	334
1200	119	109	105	77	410
1300	81	123	89	93	386
1400	93	106	121	130	450
1500	128	122	149	125	524
1600	184	157	162	151	654
1700	197	175	159	144	675
1800	121	132	119	98	470
1900	89	90	107	74	360
2000	102	93	68	61	324
2100	86	85	74	46	291
2200	42	36	20	25	123
2300	19	13	22	10	64
24-Hour Totals:					6347

Peak Volume Information

	Hour	Volume
A.M.	745	268
P.M.	1630	685
Daily	1630	685

Truck Percentage 2.85 NaN 2.85

Classification Summary Database

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TotTrk	TotVol
N	14	5104	1048	24	117	5	0	17	18	0	0	0	0	0	0	181	6347

Generated by SPS 5.0.45P

County: 93
Station: 3131
Description: I-95 NB ON RAMP FROM PGA BLVD
Start Date: 03/04/2015
Start Time: 0000

Direction: N

Time	1st	2nd	3rd	4th	Total
0000	9	6	7	5	27
0100	6	5	7	3	21
0200	1	2	1	2	6
0300	1	3	1	2	7
0400	6	3	4	2	15
0500	7	4	4	14	29
0600	25	24	29	44	122
0700	58	74	70	78	280
0800	72	78	59	56	265
0900	57	78	63	60	258
1000	84	93	76	101	354
1100	84	83	82	72	321
1200	88	113	105	94	400
1300	82	115	102	97	396
1400	110	101	109	121	441
1500	120	149	138	140	547
1600	145	161	143	171	620
1700	202	183	160	137	682
1800	139	133	129	119	520
1900	104	100	91	94	389
2000	95	105	100	83	383
2100	90	68	60	55	273
2200	27	54	31	24	136
2300	25	16	17	16	74
24-Hour Totals:					6566

Peak Volume Information

	Hour	Volume
A.M.	730	298
P.M.	1645	716
Daily	1645	716

Truck Percentage 3.09 NaN 3.09

Classification Summary Database

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TotTrk	TotVol
N	21	5278	1064	22	146	6	0	18	11	0	0	0	0	0	0	203	6566

Generated by SPS 5.0.45P

County: 93
Station: 3131
Description: I-95 NB ON RAMP FROM PGA BLVD
Start Date: 03/05/2015
Start Time: 0000

Direction: N

Time	1st	2nd	3rd	4th	Total
0000	12	13	6	8	39
0100	10	4	4	4	22
0200	7	7	2	4	20
0300	1	1	3	5	10
0400	7	3	8	2	20
0500	6	4	12	12	34
0600	13	27	25	43	108
0700	61	68	66	73	268
0800	58	72	64	66	260
0900	49	58	62	68	237
1000	55	66	64	71	256
1100	80	95	78	81	334
1200	99	90	88	97	374
1300	83	95	89	92	359
1400	100	122	105	108	435
1500	105	128	154	142	529
1600	156	164	156	146	622
1700	209	182	142	137	670
1800	115	109	96	110	430
1900	69	103	80	76	328
2000	84	72	90	52	298
2100	64	64	63	62	253
2200	40	38	29	34	141
2300	26	24	13	12	75
24-Hour Totals:					6122

Peak Volume Information

	Hour	Volume
A.M.	730	269
P.M.	1630	693
Daily	1630	693

Truck Percentage 3.20 NaN 3.20

Classification Summary Database

Dir	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TotTrk	TotVol
N	5	4877	1044	20	125	10	0	17	24	0	0	0	0	0	0	196	6122

Generated by SPS 5.0.45P

County: 93
Station: 3133
Description: PGA BLVD E OF I-95 NB RAMPS
Start Date: 03/03/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	74	68	64	50	256	67	51	53	44	215	471
0100	45	34	30	25	134	43	45	33	35	156	290
0200	21	22	29	25	97	34	23	27	33	117	214
0300	21	17	17	29	84	26	19	14	18	77	161
0400	21	23	30	41	115	14	16	21	23	74	189
0500	41	51	90	131	313	27	41	51	54	173	486
0600	97	120	209	283	709	68	80	113	139	400	1109
0700	317	411	567	688	1983	190	206	240	276	912	2895
0800	549	620	627	943	2739	272	258	262	354	1146	3885
0900	929	839	753	656	3177	339	344	339	320	1342	4519
1000	592	653	735	771	2751	400	433	422	506	1761	4512
1100	650	697	708	764	2819	443	466	535	537	1981	4800
1200	767	789	687	678	2921	599	606	518	544	2267	5188
1300	645	649	655	747	2696	500	620	645	641	2406	5102
1400	529	632	649	754	2564	620	667	657	663	2607	5171
1500	642	716	678	653	2689	634	740	690	711	2775	5464
1600	692	695	719	732	2838	747	746	688	798	2979	5817
1700	720	808	800	757	3085	802	841	704	693	3040	6125
1800	724	697	571	580	2572	679	618	538	533	2368	4940
1900	507	411	392	386	1696	508	472	458	475	1913	3609
2000	325	333	295	235	1188	443	488	403	471	1805	2993
2100	233	261	227	184	905	411	423	351	232	1417	2322
2200	203	139	130	130	602	244	192	147	118	701	1303
2300	109	97	79	76	361	130	94	96	72	392	753
24-Hour Totals:					39294					33024	72318

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	845	3464	845	1376	845	4840
P.M.	1715	3089	1645	3145	1645	6205
Daily	845	3464	1645	3145	1645	6205

Generated by SPS 5.0.45P

County: 93
Station: 3133
Description: PGA BLVD E OF I-95 NB RAMPS
Start Date: 03/04/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	69	46	53	30	198	58	31	35	32	156	354
0100	31	18	15	11	75	30	34	23	24	111	186
0200	15	12	23	11	61	22	15	21	16	74	135
0300	13	7	10	23	53	19	11	4	11	45	98
0400	19	21	31	46	117	9	16	18	27	70	187
0500	47	58	106	154	365	40	56	56	63	215	580
0600	115	145	282	373	915	90	109	161	188	548	1463
0700	457	594	846	1038	2935	250	282	340	381	1253	4188
0800	846	916	858	970	3590	373	336	316	316	1341	4931
0900	792	770	646	723	2931	314	313	308	286	1221	4152
1000	633	558	708	752	2651	310	422	386	513	1631	4282
1100	674	591	688	709	2662	441	485	468	463	1857	4519
1200	700	747	699	713	2859	561	608	476	583	2228	5087
1300	596	621	689	682	2588	526	591	643	546	2306	4894
1400	632	633	662	713	2640	616	632	619	668	2535	5175
1500	670	594	624	733	2621	687	691	633	715	2726	5347
1600	665	663	718	760	2806	725	747	684	821	2977	5783
1700	746	808	833	805	3192	842	776	741	768	3127	6319
1800	748	718	619	564	2649	663	647	575	493	2378	5027
1900	522	470	471	379	1842	534	478	477	443	1932	3774
2000	329	295	293	264	1181	492	437	427	424	1780	2961
2100	261	265	205	225	956	462	429	371	291	1553	2509
2200	185	189	180	148	702	249	197	149	145	740	1442
2300	130	104	98	85	417	167	77	118	74	436	853
24-Hour Totals:					41006					33240	74246

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	745	3658	730	1430	730	5076
P.M.	1715	3194	1645	3180	1645	6327
Daily	745	3658	1645	3180	1645	6327

Generated by SPS 5.0.45P

County: 93
Station: 3133
Description: PGA BLVD E OF I-95 NB RAMPS
Start Date: 03/05/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	85	83	61	58	287	71	72	59	39	241	528
0100	52	25	36	18	131	42	37	41	32	152	283
0200	18	20	22	28	88	34	30	31	43	138	226
0300	20	14	22	21	77	21	20	27	20	88	165
0400	20	23	31	40	114	17	18	27	20	82	196
0500	47	64	85	143	339	29	43	76	66	214	553
0600	120	160	250	349	879	88	93	143	187	511	1390
0700	422	591	730	866	2609	258	263	303	377	1201	3810
0800	708	862	850	902	3322	337	320	322	330	1309	4631
0900	713	751	632	715	2811	297	311	331	346	1285	4096
1000	595	583	656	696	2530	353	407	433	430	1623	4153
1100	668	673	685	746	2772	392	485	526	534	1937	4709
1200	687	694	669	695	2745	530	566	507	579	2182	4927
1300	666	628	649	670	2613	531	605	590	519	2245	4858
1400	636	638	749	717	2740	609	608	637	668	2522	5262
1500	678	734	663	660	2735	674	715	695	623	2707	5442
1600	658	636	681	696	2671	693	733	707	701	2834	5505
1700	741	736	763	779	3019	791	726	671	619	2807	5826
1800	721	689	645	629	2684	606	573	567	507	2253	4937
1900	599	541	443	429	2012	448	464	419	402	1733	3745
2000	407	362	344	287	1400	494	418	385	410	1707	3107
2100	287	252	299	225	1063	493	422	391	349	1655	2718
2200	245	226	199	180	850	362	326	233	202	1123	1973
2300	169	129	125	146	569	228	157	190	148	723	1292
24-Hour Totals:					41060					33272	74332

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	815	3327	745	1356	745	4642
P.M.	1700	3019	1615	2932	1700	5826
Daily	815	3327	1615	2932	1700	5826

Generated by SPS 5.0.45P

County: 93
Station: 3137
Description: PGA BLVD BTWN I-95 NB & SB RAMPS
Start Date: 03/03/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	28	18	19	16	81	62	56	41	31	190	271
0100	13	7	6	3	29	45	26	26	24	121	150
0200	3	12	6	8	29	16	13	18	6	53	82
0300	9	6	10	8	33	9	6	17	12	44	77
0400	14	8	13	13	48	23	7	24	29	83	131
0500	19	31	38	69	157	37	43	63	67	210	367
0600	91	118	179	223	611	73	83	119	169	444	1055
0700	337	421	520	605	1883	225	292	335	417	1269	3152
0800	586	558	503	559	2206	356	355	308	346	1365	3571
0900	495	476	443	375	1789	313	302	307	291	1213	3002
1000	373	362	438	483	1656	266	306	306	377	1255	2911
1100	342	392	415	381	1530	295	341	391	397	1424	2954
1200	366	402	412	406	1586	431	448	424	408	1711	3297
1300	339	384	383	366	1472	351	411	449	499	1710	3182
1400	332	420	345	360	1457	469	438	387	456	1750	3207
1500	357	330	372	356	1415	434	590	504	468	1996	3411
1600	353	370	362	390	1475	548	553	486	615	2202	3677
1700	383	379	404	425	1591	689	735	706	704	2834	4425
1800	399	347	320	322	1388	567	550	562	435	2114	3502
1900	291	259	247	202	999	445	437	333	314	1529	2528
2000	174	176	160	142	652	342	273	323	305	1243	1895
2100	136	113	118	95	462	300	319	247	197	1063	1525
2200	78	69	73	60	280	180	143	101	83	507	787
2300	41	38	30	13	122	76	54	59	34	223	345
24-Hour Totals:					22951					26553	49504

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	730	2269	730	1463	730	3732
P.M.	1715	1607	1700	2834	1700	4425
Daily	730	2269	1700	2834	1700	4425

Generated by SPS 5.0.45P

County: 93
Station: 3137
Description: PGA BLVD BTWN I-95 NB & SB RAMPS
Start Date: 03/04/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	23	19	17	10	69	32	44	34	20	130	199
0100	13	12	8	7	40	38	23	18	15	94	134
0200	8	9	8	6	31	6	7	7	7	27	58
0300	11	5	8	8	32	9	12	8	4	33	65
0400	11	13	11	16	51	17	8	10	31	66	117
0500	22	29	43	72	166	38	45	42	64	189	355
0600	75	109	160	208	552	68	90	117	164	439	991
0700	302	388	503	603	1796	225	309	370	398	1302	3098
0800	528	558	518	556	2160	367	384	361	392	1504	3664
0900	509	433	408	358	1708	323	313	252	264	1152	2860
1000	341	356	414	410	1521	265	282	301	351	1199	2720
1100	364	362	361	413	1500	315	353	408	415	1491	2991
1200	388	408	369	373	1538	411	460	441	426	1738	3276
1300	358	366	346	389	1459	444	453	453	506	1856	3315
1400	265	344	369	395	1373	470	497	436	508	1911	3284
1500	336	355	315	341	1347	457	550	555	618	2180	3527
1600	349	354	344	340	1387	577	590	487	686	2340	3727
1700	314	358	372	387	1431	711	723	689	722	2845	4276
1800	373	331	268	294	1266	582	589	496	455	2122	3388
1900	230	200	213	182	825	409	393	321	337	1460	2285
2000	168	158	138	114	578	330	340	319	295	1284	1862
2100	114	118	98	76	406	258	264	242	207	971	1377
2200	88	66	57	49	260	163	141	94	91	489	749
2300	54	51	31	20	156	93	78	54	36	261	417
24-Hour Totals:					21652					27083	48735

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	745	2207	730	1519	745	3717
P.M.	1200	1538	1700	2845	1700	4276
Daily	745	2207	1700	2845	1700	4276

Generated by SPS 5.0.45P

County: 93
Station: 3137
Description: PGA BLVD BTWN I-95 NB & SB RAMPS
Start Date: 03/05/2015
Start Time: 0000

	Direction: E					Direction: W					Combined
Time	1st	2nd	3rd	4th	Total	1st	2nd	3rd	4th	Total	Total
0000	26	13	15	10	64	57	35	33	24	149	213
0100	8	5	2	5	20	34	20	11	18	83	103
0200	10	6	10	4	30	11	10	6	11	38	68
0300	12	4	6	7	29	5	9	5	13	32	61
0400	7	18	9	19	53	7	14	16	21	58	111
0500	25	27	44	73	169	29	42	50	60	181	350
0600	59	83	137	193	472	55	105	126	171	457	929
0700	266	354	486	601	1707	229	285	324	399	1237	2944
0800	469	557	532	553	2111	327	414	355	298	1394	3505
0900	460	436	373	383	1652	279	348	275	285	1187	2839
1000	355	309	399	415	1478	262	290	288	355	1195	2673
1100	353	314	380	357	1404	299	357	374	427	1457	2861
1200	382	384	393	419	1578	379	390	374	410	1553	3131
1300	315	308	357	383	1363	382	384	444	455	1665	3028
1400	338	316	343	396	1393	396	557	512	527	1992	3385
1500	361	313	314	356	1344	564	611	517	532	2224	3568
1600	291	348	327	327	1293	587	502	537	559	2185	3478
1700	357	407	381	370	1515	624	676	594	595	2489	4004
1800	378	360	296	269	1303	493	548	421	377	1839	3142
1900	260	245	237	166	908	367	328	371	304	1370	2278
2000	165	127	147	127	566	334	297	268	230	1129	1695
2100	127	128	92	88	435	237	253	236	183	909	1344
2200	75	83	66	66	290	170	138	107	120	535	825
2300	57	32	30	25	144	85	79	71	52	287	431
24-Hour Totals:					21321					25645	46966

Peak Volume Information

	Direction: E		Direction: W		Combined Directions	
	Hour	Volume	Hour	Volume	Hour	Volume
A.M.	745	2159	745	1495	745	3654
P.M.	1200	1578	1700	2489	1700	4004
Daily	745	2159	1700	2489	1700	4004

Generated by SPS 5.0.45P

Three-Day Approach Count Summary

Project Name: PGA Boulevard Study
Project No.: 2013008.018
Location: PGA Boulevard at I-95 Northbound off Ramp
Direction: NORTHBOUND (APPROACH)
Date: 3/3/2015-3/5/2015

TIME PERIOD (AM)		WEEKDAY TUES 3-Mar	WED 4-Mar	THUR 5-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
00:00	00:15	78	34	58	57	
00:15	00:30	53	37	53	48	
00:30	00:45	49	33	24	35	
00:45	01:00	46	31	36	38	177
01:00	01:15	32	22	17	24	
01:15	01:30	23	20	21	21	
01:30	01:45	26	18	10	18	
01:45	02:00	22	24	14	20	83
02:00	02:15	19	8	10	12	
02:15	02:30	18	9	10	12	
02:30	02:45	19	4	16	13	
02:45	03:00	10	6	5	7	45
03:00	03:15	17	8	7	11	
03:15	03:30	11	8	9	9	
03:30	03:45	21	15	10	15	
03:45	04:00	20	18	17	18	54
04:00	04:15	16	11	23	17	
04:15	04:30	16	10	10	12	
04:30	04:45	22	25	19	22	
04:45	05:00	27	33	24	28	79
05:00	05:15	35	36	29	33	
05:15	05:30	47	38	37	41	
05:30	05:45	62	80	69	70	
05:45	06:00	95	95	106	99	243
06:00	06:15	102	96	102	100	
06:15	06:30	112	110	111	111	
06:30	06:45	179	173	202	185	
06:45	07:00	309	269	274	284	680
07:00	07:15	275	277	288	280	
07:15	07:30	369	369	382	373	
07:30	07:45	528	517	499	515	
07:45	08:00	633	587	619	613	1,781
08:00	08:15	551	537	489	526	
08:15	08:30	566	594	597	586	
08:30	08:45	567	551	501	540	
08:45	09:00	559	548	520	542	2,193
09:00	09:15	475	448	464	462	
09:15	09:30	445	500	419	455	
09:30	09:45	391	375	349	372	
09:45	10:00	398	368	380	382	1,671
10:00	10:15	312	323	318	318	
10:15	10:30	314	336	354	335	
10:30	10:45	338	379	343	353	
10:45	11:00	413	416	392	407	1,413
11:00	11:15	338	319	369	342	
11:15	11:30	341	339	335	338	
11:30	11:45	336	376	367	360	
11:45	12:00	383	384	389	385	1,425

TIME PERIOD (PM)		WEEKDAY TUES 3-Mar	WED 4-Mar	THUR 5-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
12:00	12:15	364	354	359	359	
12:15	12:30	383	423	383	396	
12:30	12:45	381	404	366	384	
12:45	13:00	378	395	369	381	1,520
13:00	13:15	311	322	331	321	
13:15	13:30	356	340	341	346	
13:30	13:45	402	343	415	387	
13:45	14:00	386	387	390	388	1,441
14:00	14:15	345	353	355	351	
14:15	14:30	294	354	345	331	
14:30	14:45	384	387	370	380	
14:45	15:00	385	388	385	386	1,448
15:00	15:15	338	329	332	333	
15:15	15:30	363	328	345	345	
15:30	15:45	360	364	380	368	
15:45	16:00	440	420	436	432	1,478
16:00	16:15	368	377	366	370	
16:15	16:30	408	350	380	379	
16:30	16:45	415	390	414	406	
16:45	17:00	361	396	407	388	1,544
17:00	17:15	395	439	427	420	
17:15	17:30	401	466	449	439	
17:30	17:45	465	418	404	429	
17:45	18:00	394	434	424	417	1,705
18:00	18:15	387	374	375	379	
18:15	18:30	393	394	400	396	
18:30	18:45	315	351	309	325	
18:45	19:00	295	311	300	302	1,401
19:00	19:15	248	277	276	267	
19:15	19:30	250	232	278	253	
19:30	19:45	228	249	208	228	
19:45	20:00	210	202	214	209	957
20:00	20:15	193	226	207	209	
20:15	20:30	194	170	194	186	
20:30	20:45	150	169	190	170	
20:45	21:00	145	148	166	153	717
21:00	21:15	144	131	192	156	
21:15	21:30	137	120	148	135	
21:30	21:45	131	149	166	149	
21:45	22:00	111	125	158	131	571
22:00	22:15	102	95	122	106	
22:15	22:30	101	116	140	119	
22:30	22:45	106	111	133	117	
22:45	23:00	95	91	122	103	445
23:00	23:15	66	77	106	83	
23:15	23:30	54	52	98	68	
23:30	23:45	44	50	77	57	
23:45	00:00	59	48	82	63	271
DAILY COUNT		23,253	23,243	23,531	23,342	
PEAK HOUR TIME					07:45	
PEAK HOUR COUNT					2,264	
ESTIMATED K-FACTOR					9.7%	

Three-Day Approach Count Summary

Project Name: PGA Boulevard Study
State Project No.: 2013008.018
Location: PGA Boulevard at I-95 Northbound off Ramp
Direction: EASTBOUND (APPROACH)
Date: 3/3/2015-3/5/2015

TIME PERIOD (AM)		WEEKDAY TUES 3-Mar	WED 4-Mar	THUR 5-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
00:00	00:15	28	23	26	26	
00:15	00:30	18	19	13	17	
00:30	00:45	19	17	15	17	
00:45	01:00	16	10	10	12	71
01:00	01:15	13	13	8	11	
01:15	01:30	7	12	5	8	
01:30	01:45	6	8	2	5	
01:45	02:00	3	7	5	5	30
02:00	02:15	3	8	10	7	
02:15	02:30	12	9	6	9	
02:30	02:45	6	8	10	8	
02:45	03:00	8	6	4	6	30
03:00	03:15	9	11	12	11	
03:15	03:30	6	5	4	5	
03:30	03:45	10	8	6	8	
03:45	04:00	8	8	7	8	31
04:00	04:15	14	11	7	11	
04:15	04:30	8	13	18	13	
04:30	04:45	13	11	9	11	
04:45	05:00	13	16	19	16	51
05:00	05:15	19	22	25	22	
05:15	05:30	31	29	27	29	
05:30	05:45	38	43	44	42	
05:45	06:00	69	72	73	71	164
06:00	06:15	91	75	59	75	
06:15	06:30	118	109	83	103	
06:30	06:45	179	160	137	159	
06:45	07:00	223	208	193	208	545
07:00	07:15	337	302	266	302	
07:15	07:30	421	388	354	388	
07:30	07:45	520	503	486	503	
07:45	08:00	605	603	601	603	1,795
08:00	08:15	586	528	469	528	
08:15	08:30	558	558	557	558	
08:30	08:45	503	518	532	518	
08:45	09:00	559	556	553	556	2,159
09:00	09:15	495	509	460	488	
09:15	09:30	476	433	436	448	
09:30	09:45	443	408	373	408	
09:45	10:00	375	358	383	372	1,716
10:00	10:15	373	341	355	356	
10:15	10:30	362	356	309	342	
10:30	10:45	438	414	399	417	
10:45	11:00	483	410	415	436	1,552
11:00	11:15	342	364	353	353	
11:15	11:30	392	362	314	356	
11:30	11:45	415	361	380	385	
11:45	12:00	381	413	357	384	1,478

TIME PERIOD (PM)		WEEKDAY TUES 3-Mar	WED 4-Mar	THUR 5-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
12:00	12:15	366	388	382	379	
12:15	12:30	402	408	384	398	
12:30	12:45	412	369	393	391	
12:45	13:00	406	373	419	399	1,567
13:00	13:15	339	358	315	337	
13:15	13:30	384	366	308	353	
13:30	13:45	383	346	357	362	
13:45	14:00	366	389	383	379	1,431
14:00	14:15	332	265	338	312	
14:15	14:30	420	344	316	360	
14:30	14:45	345	369	343	352	
14:45	15:00	360	395	396	384	1,408
15:00	15:15	357	336	361	351	
15:15	15:30	330	355	313	333	
15:30	15:45	372	315	314	334	
15:45	16:00	356	341	356	351	1,369
16:00	16:15	353	349	291	331	
16:15	16:30	370	354	348	357	
16:30	16:45	362	344	327	344	
16:45	17:00	390	340	327	352	1,385
17:00	17:15	383	314	357	351	
17:15	17:30	379	358	407	381	
17:30	17:45	404	372	381	386	
17:45	18:00	425	387	370	394	1,512
18:00	18:15	399	373	378	383	
18:15	18:30	347	331	360	346	
18:30	18:45	320	268	296	295	
18:45	19:00	322	294	269	295	1,319
19:00	19:15	291	230	260	260	
19:15	19:30	259	200	245	235	
19:30	19:45	247	213	237	232	
19:45	20:00	202	182	166	183	911
20:00	20:15	174	168	165	169	
20:15	20:30	176	158	127	154	
20:30	20:45	160	138	147	148	
20:45	21:00	142	114	127	128	599
21:00	21:15	136	114	127	126	
21:15	21:30	113	118	128	120	
21:30	21:45	118	98	92	103	
21:45	22:00	95	76	88	86	434
22:00	22:15	78	88	75	80	
22:15	22:30	69	66	83	73	
22:30	22:45	73	57	66	65	
22:45	23:00	60	49	66	58	277
23:00	23:15	41	54	57	51	
23:15	23:30	38	51	32	40	
23:30	23:45	30	31	30	30	
23:45	00:00	13	20	25	19	141
DAILY COUNT		22,951	21,652	21,321	21,975	
PEAK HOUR TIME					07:45	
PEAK HOUR COUNT					2,206	
ESTIMATED K-FACTOR					10.0%	

Three-Day Approach Count Summary

Project Name: PGA Boulevard Study
State Project No.: 2013008.018
Location: PGA Boulevard at I-95 Northbound off Ramp
Direction: WESTBOUND (APPROACH)
Date: 3/3/2015-3/5/2015

TIME PERIOD (AM)		WEEKDAY TUES 3-Mar	WED 4-Mar	THUR 5-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
00:00	00:15	67	58	71	65	
00:15	00:30	51	31	72	51	
00:30	00:45	53	35	59	49	
00:45	01:00	44	32	39	38	204
01:00	01:15	43	30	42	38	
01:15	01:30	45	34	37	39	
01:30	01:45	33	23	41	32	
01:45	02:00	35	24	32	30	140
02:00	02:15	34	22	34	30	
02:15	02:30	23	15	30	23	
02:30	02:45	27	21	31	26	
02:45	03:00	33	16	43	31	110
03:00	03:15	26	19	21	22	
03:15	03:30	19	11	20	17	
03:30	03:45	14	4	27	15	
03:45	04:00	18	11	20	16	70
04:00	04:15	14	9	17	13	
04:15	04:30	16	16	18	17	
04:30	04:45	21	18	27	22	
04:45	05:00	23	27	20	23	75
05:00	05:15	27	40	29	32	
05:15	05:30	41	56	43	47	
05:30	05:45	51	56	76	61	
05:45	06:00	54	63	66	61	201
06:00	06:15	68	90	88	82	
06:15	06:30	80	109	93	94	
06:30	06:45	113	161	143	139	
06:45	07:00	139	188	187	171	486
07:00	07:15	190	250	258	233	
07:15	07:30	206	282	263	250	
07:30	07:45	240	340	303	294	
07:45	08:00	276	381	377	345	1,122
08:00	08:15	272	373	337	327	
08:15	08:30	258	336	320	305	
08:30	08:45	262	316	322	300	
08:45	09:00	354	316	330	333	1,265
09:00	09:15	339	314	297	317	
09:15	09:30	344	313	311	323	
09:30	09:45	339	308	331	326	
09:45	10:00	320	286	346	317	1,283
10:00	10:15	400	310	353	354	
10:15	10:30	433	422	407	421	
10:30	10:45	422	386	433	414	
10:45	11:00	506	513	430	483	1,672
11:00	11:15	443	441	392	425	
11:15	11:30	466	485	485	479	
11:30	11:45	535	468	526	510	
11:45	12:00	537	463	534	511	1,925

TIME PERIOD (PM)		WEEKDAY TUES 3-Mar	WED 4-Mar	THUR 5-Mar	THREE-DAY AVERAGE 15 Min.	HOUR
12:00	12:15	599	561	530	563	
12:15	12:30	606	608	566	593	
12:30	12:45	518	476	507	500	
12:45	13:00	544	583	579	569	2,226
13:00	13:15	500	526	531	519	
13:15	13:30	620	591	605	605	
13:30	13:45	645	643	590	626	
13:45	14:00	641	546	519	569	2,319
14:00	14:15	620	616	609	615	
14:15	14:30	667	632	608	636	
14:30	14:45	657	619	637	638	
14:45	15:00	663	668	668	666	2,555
15:00	15:15	634	687	674	665	
15:15	15:30	740	691	715	715	
15:30	15:45	690	633	695	673	
15:45	16:00	711	715	623	683	2,736
16:00	16:15	747	725	693	722	
16:15	16:30	746	747	733	742	
16:30	16:45	688	684	707	693	
16:45	17:00	798	821	701	773	2,930
17:00	17:15	802	842	791	812	
17:15	17:30	841	776	726	781	
17:30	17:45	704	741	671	705	
17:45	18:00	693	768	619	693	2,991
18:00	18:15	679	663	606	649	
18:15	18:30	618	647	573	613	
18:30	18:45	538	575	567	560	
18:45	19:00	533	493	507	511	2,333
19:00	19:15	508	534	448	497	
19:15	19:30	472	478	464	471	
19:30	19:45	458	477	419	451	
19:45	20:00	475	443	402	440	1,859
20:00	20:15	443	492	494	476	
20:15	20:30	488	437	418	448	
20:30	20:45	403	427	385	405	
20:45	21:00	471	424	410	435	1,764
21:00	21:15	411	462	493	455	
21:15	21:30	423	429	422	425	
21:30	21:45	351	371	391	371	
21:45	22:00	232	291	349	291	1,542
22:00	22:15	244	249	362	285	
22:15	22:30	192	197	326	238	
22:30	22:45	147	149	233	176	
22:45	23:00	118	145	202	155	855
23:00	23:15	130	167	228	175	
23:15	23:30	94	77	157	109	
23:30	23:45	96	118	190	135	
23:45	00:00	72	74	148	98	517
DAILY COUNT		33,024	33,240	33,272	33,179	
PEAK HOUR TIME					16:45	
PEAK HOUR COUNT					3,071	
ESTIMATED K-FACTOR					9.3%	

MECHANICAL COUNTS

PROJECT NAME: PGA Boulevard Study

LOCATION: PGA Boulevard at I-95 Northbound off Ramp

Notice to Proceed : 2013008.018

COUNT DATE: 3/3/2015-3/5/2015

NORTHBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	57	48	35	38	177
01:00 AM	24	21	18	20	83
02:00 AM	12	12	13	7	45
03:00 AM	11	9	15	18	54
04:00 AM	17	12	22	28	79
05:00 AM	33	41	70	99	243
06:00 AM	100	111	185	284	680
07:00 AM	280	373	515	613	1781
08:00 AM	526	586	540	542	2193
09:00 AM	462	455	372	382	1671
10:00 AM	318	335	353	407	1413
11:00 AM	342	338	360	385	1425
12:00 PM	359	396	384	381	1520
01:00 PM	321	346	387	388	1441
02:00 PM	351	331	380	386	1448
03:00 PM	333	345	368	432	1478
04:00 PM	370	379	406	388	1544
05:00 PM	420	439	429	417	1705
06:00 PM	379	396	325	302	1401
07:00 PM	267	253	228	209	957
08:00 PM	209	186	170	153	717
09:00 PM	156	135	149	131	571
10:00 PM	106	119	117	103	445
11:00 PM	83	68	57	63	271
			24 Hour Total		23,342

SOUTHBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	0	0	0	0	0
01:00 AM	0	0	0	0	0
02:00 AM	0	0	0	0	0
03:00 AM	0	0	0	0	0
04:00 AM	0	0	0	0	0
05:00 AM	0	0	0	0	0
06:00 AM	0	0	0	0	0
07:00 AM	0	0	0	0	0
08:00 AM	0	0	0	0	0
09:00 AM	0	0	0	0	0
10:00 AM	0	0	0	0	0
11:00 AM	0	0	0	0	0
12:00 PM	0	0	0	0	0
01:00 PM	0	0	0	0	0
02:00 PM	0	0	0	0	0
03:00 PM	0	0	0	0	0
04:00 PM	0	0	0	0	0
05:00 PM	0	0	0	0	0
06:00 PM	0	0	0	0	0
07:00 PM	0	0	0	0	0
08:00 PM	0	0	0	0	0
09:00 PM	0	0	0	0	0
10:00 PM	0	0	0	0	0
11:00 PM	0	0	0	0	0
			24 Hour Total		0

EASTBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	26	17	17	12	71
01:00 AM	11	8	5	5	30
02:00 AM	7	9	8	6	30
03:00 AM	11	5	8	8	31
04:00 AM	11	13	11	16	51
05:00 AM	22	29	42	71	164
06:00 AM	75	103	159	208	545
07:00 AM	302	388	503	603	1795
08:00 AM	528	558	518	556	2159
09:00 AM	488	448	408	372	1716
10:00 AM	356	342	417	436	1552
11:00 AM	353	356	385	384	1478
12:00 PM	379	398	391	399	1567
01:00 PM	337	353	362	379	1431
02:00 PM	312	360	352	384	1408
03:00 PM	351	333	334	351	1369
04:00 PM	331	357	344	352	1385
05:00 PM	351	381	386	394	1512
06:00 PM	383	346	295	295	1319
07:00 PM	260	235	232	183	911
08:00 PM	169	154	148	128	599
09:00 PM	126	120	103	86	434
10:00 PM	80	73	65	58	277
11:00 PM	51	40	30	19	141
			24 Hour Total		21,975

WESTBOUND

TIME	1st ¼	2nd ¼	3rd ¼	4th ¼	TOTAL
12:00 AM	65	51	49	38	204
01:00 AM	38	39	32	30	140
02:00 AM	30	23	26	31	110
03:00 AM	22	17	15	16	70
04:00 AM	13	17	22	23	75
05:00 AM	32	47	61	61	201
06:00 AM	82	94	139	171	486
07:00 AM	233	250	294	345	1122
08:00 AM	327	305	300	333	1265
09:00 AM	317	323	326	317	1283
10:00 AM	354	421	414	483	1672
11:00 AM	425	479	510	511	1925
12:00 PM	563	593	500	569	2226
01:00 PM	519	605	626	569	2319
02:00 PM	615	636	638	666	2555
03:00 PM	665	715	673	683	2736
04:00 PM	722	742	693	773	2930
05:00 PM	812	781	705	693	2991
06:00 PM	649	613	560	511	2333
07:00 PM	497	471	451	440	1859
08:00 PM	476	448	405	435	1764
09:00 PM	455	425	371	291	1542
10:00 PM	285	238	176	155	855
11:00 PM	175	109	135	98	517
			24 Hour Total		33,179

ALL

TOTAL
453
252
184
155
205
608
1711
4698
5618
4670
4636
4828
5313
5192
5411
5583
5859
6209
5053
3727
3080
2547
1576
929
78,496

DAILY TRAFFIC COUNT SUMMARY

NORTHBOUND

A.M. Peak Hour, Time: 07:45 AM Volume: 2,264
A.M. "K" Factor: 9.7% P.H.F. : 0.92

P.M. Peak Hour, Time: 05:00 PM Volume: 1,705
P.M. "K" Factor: 7.3% P.H.F. : 0.97

SOUTHBOUND

A.M. Peak Hour, Time: 12:00 AM Volume: 0
A.M. "K" Factor: #DIV/0! P.H.F. : #DIV/0!

P.M. Peak Hour, Time: 12:00 PM Volume: 0
P.M. "K" Factor: #DIV/0! P.H.F. : #DIV/0!

DAILY TRAFFIC COUNT SUMMARY

EASTBOUND

A.M. Peak Hour, Time: 07:45 AM Volume: 2,206
A.M. "K" Factor: 10.0% P.H.F. : 0.91

P.M. Peak Hour, Time: 12:00 PM Volume: 1,567
P.M. "K" Factor: 7.1% P.H.F. : 0.98

WESTBOUND

A.M. Peak Hour, Time: 11:30 AM Volume: 2,178
A.M. "K" Factor: 6.6% P.H.F. : 0.92

P.M. Peak Hour, Time: 04:45 PM Volume: 3,071
P.M. "K" Factor: 9.3% P.H.F. : 0.95

ALL APPROACHES:

A.M. Peak Hour, Time: 07:45 AM Volume: 5,747
A.M. "K" Factor: 7.3% P.H.F. : 0.92

P.M. Peak Hour, Time: 04:45 PM Volume: 6,218
P.M. "K" Factor: 7.9% P.H.F. : 0.97

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT :FDOT D4
JOB NO :TWO 18
PROJECT :I-95 Interchange PD&E
COUNTY :Palm Beach

File Name : PGA Blvd at I-95 NB off Ramp 03032015
Site Code :
Start Date : 3/3/2015
Page No : 1

Groups Printed- Autos - Heavy Vehicles - Bicycles - Pedestrians

	PGA Blvd Eastbound			PGA Blvd Westbound			I-95 NB off-Ramp Northbound				
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
06:00 AM	59	0	59	88	0	88	0	100	0	100	247
06:15 AM	80	0	80	105	0	105	0	127	0	127	312
06:30 AM	122	0	122	129	0	129	0	192	2	194	445
06:45 AM	197	0	197	138	0	138	0	303	3	306	641
Total	458	0	458	460	0	460	0	722	5	727	1645
07:00 AM	255	0	255	247	0	247	0	276	1	277	779
07:15 AM	411	0	411	333	0	333	0	355	0	355	1099
07:30 AM	462	0	462	326	0	326	0	522	2	524	1312
07:45 AM	622	0	622	374	0	374	0	676	1	677	1673
Total	1750	0	1750	1280	0	1280	0	1829	4	1833	4863
08:00 AM	610	0	610	325	0	325	0	577	1	578	1513
08:15 AM	574	0	574	361	0	361	0	601	0	601	1536
08:30 AM	565	0	565	295	0	295	0	546	0	546	1406
08:45 AM	551	0	551	323	0	323	0	585	1	586	1460
Total	2300	0	2300	1304	0	1304	0	2309	2	2311	5915
BREAK											
04:00 PM	354	0	354	445	0	445	0	380	1	381	1180
04:15 PM	326	0	326	472	0	472	0	389	1	390	1188
04:30 PM	342	0	342	515	0	515	0	376	2	378	1235
04:45 PM	314	0	314	573	0	573	0	389	0	389	1276
Total	1336	0	1336	2005	0	2005	0	1534	4	1538	4879
05:00 PM	402	0	402	519	0	519	0	386	1	387	1308
05:15 PM	393	0	393	594	0	594	0	441	1	442	1429
05:30 PM	446	0	446	551	0	551	0	474	2	476	1473
05:45 PM	450	0	450	544	0	544	0	396	5	401	1395
Total	1691	0	1691	2208	0	2208	0	1697	9	1706	5605
06:00 PM	322	0	322	375	0	375	0	450	2	452	1149
06:15 PM	340	0	340	357	0	357	0	417	1	418	1115
06:30 PM	284	0	284	327	0	327	0	319	0	319	930
06:45 PM	272	0	272	354	0	354	0	324	0	324	950
Total	1218	0	1218	1413	0	1413	0	1510	3	1513	4144
Grand Total	8753	0	8753	8670	0	8670	0	9601	27	9628	27051
Apprch %	100	0		100	0		0	99.7	0.3		
Total %	32.4	0	32.4	32.1	0	32.1	0	35.5	0.1	35.6	
Autos	8637	0	8637	8529	0	8529	0	9439	0	9439	26605
% Autos	98.7	0	98.7	98.4	0	98.4	0	98.3	0	98	98.4
Heavy Vehicles	116	0	116	141	0	141	0	162	0	162	419
% Heavy Vehicles	1.3	0	1.3	1.6	0	1.6	0	1.7	0	1.7	1.5
Bicycles	0	0	0	0	0	0	0	0	10	10	10
% Bicycles	0	0	0	0	0	0	0	0	37	0.1	0
Pedestrians	0	0	0	0	0	0	0	0	17	17	17
% Pedestrians	0	0	0	0	0	0	0	0	63	0.2	0.1

CTS Engineering, Inc.

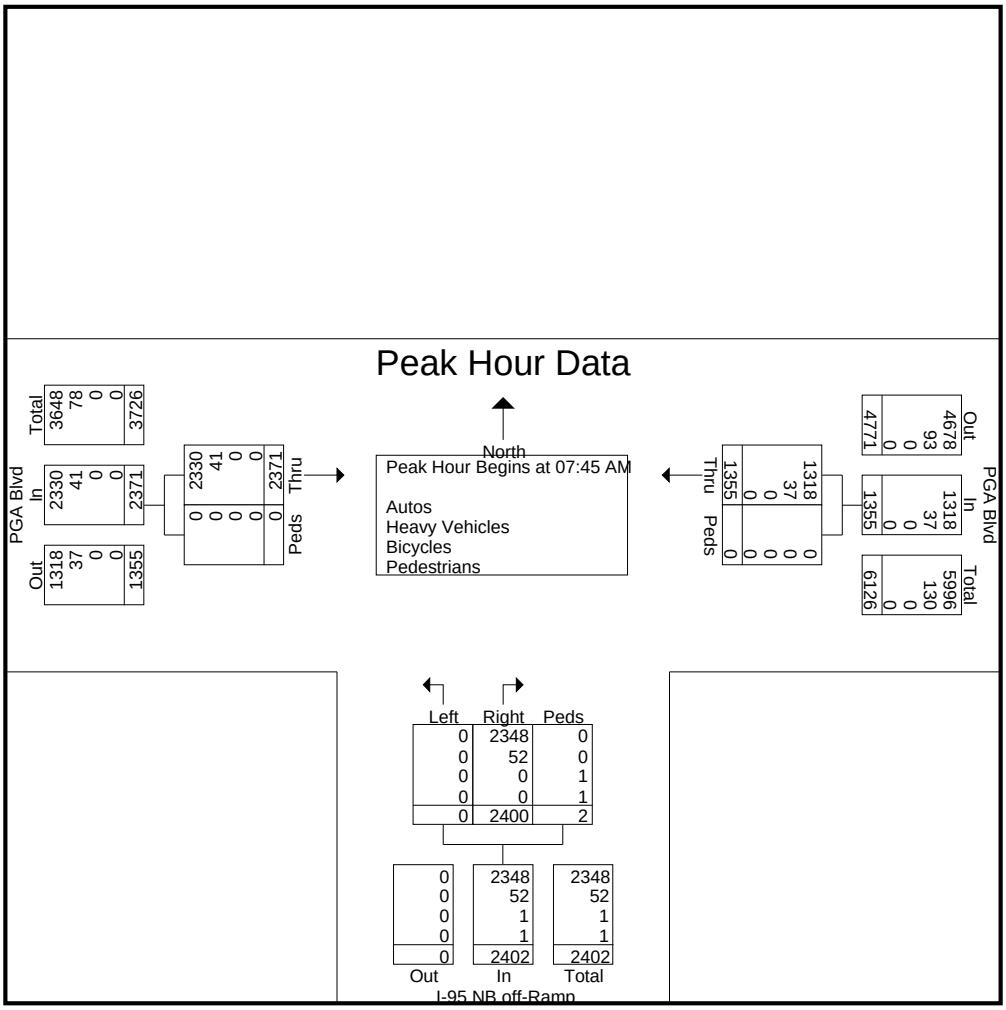
8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT :FDOT D4
JOB NO :TWO 18
PROJECT :I-95 Interchange PD&E
COUNTY :Palm Beach

File Name : PGA Blvd at I-95 NB off Ramp 03032015
Site Code :
Start Date : 3/3/2015
Page No : 2

	PGA Blvd Eastbound			PGA Blvd Westbound			I-95 NB off-Ramp Northbound				
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 07:45 AM											
07:45 AM	622	0	622	374	0	374	0	676	1	677	1673
08:00 AM	610	0	610	325	0	325	0	577	1	578	1513
08:15 AM	574	0	574	361	0	361	0	601	0	601	1536
08:30 AM	565	0	565	295	0	295	0	546	0	546	1406
Total Volume	2371	0	2371	1355	0	1355	0	2400	2	2402	6128
% App. Total	100	0		100	0		0	99.9	0.1		
PHF	.953	.000	.953	.906	.000	.906	.000	.888	.500	.887	.916
Autos	2330	0	2330	1318	0	1318	0	2348	0	2348	5996
% Autos	98.3	0	98.3	97.3	0	97.3	0	97.8	0	97.8	97.8
Heavy Vehicles	41	0	41	37	0	37	0	52	0	52	130
% Heavy Vehicles	1.7	0	1.7	2.7	0	2.7	0	2.2	0	2.2	2.1
Bicycles	0	0	0	0	0	0	0	0	1	1	1
% Bicycles	0	0	0	0	0	0	0	0	50.0	0.0	0.0
Pedestrians	0	0	0	0	0	0	0	0	1	1	1
% Pedestrians	0	0	0	0	0	0	0	0	50.0	0.0	0.0

Peak Hour Data



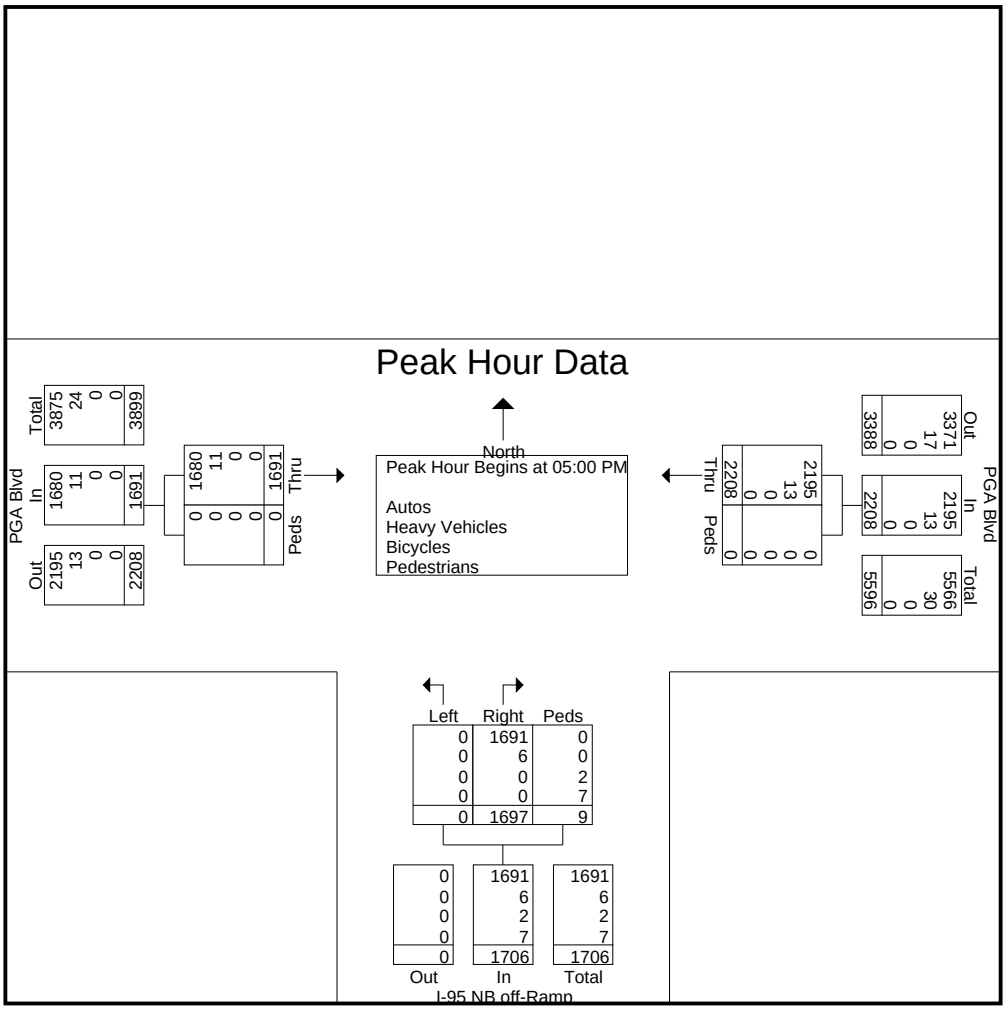
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT :FDOT D4
JOB NO :TWO 18
PROJECT :I-95 Interchange PD&E
COUNTY :Palm Beach

File Name : PGA Blvd at I-95 NB off Ramp 03032015
Site Code :
Start Date : 3/3/2015
Page No : 3

	PGA Blvd Eastbound			PGA Blvd Westbound			I-95 NB off-Ramp Northbound				
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 05:00 PM											
05:00 PM	402	0	402	519	0	519	0	386	1	387	1308
05:15 PM	393	0	393	594	0	594	0	441	1	442	1429
05:30 PM	446	0	446	551	0	551	0	474	2	476	1473
05:45 PM	450	0	450	544	0	544	0	396	5	401	1395
Total Volume	1691	0	1691	2208	0	2208	0	1697	9	1706	5605
% App. Total	100	0		100	0		0	99.5	0.5		
PHF	.939	.000	.939	.929	.000	.929	.000	.895	.450	.896	.951
Autos	1680	0	1680	2195	0	2195	0	1691	0	1691	5566
% Autos	99.3	0	99.3	99.4	0	99.4	0	99.6	0	99.1	99.3
Heavy Vehicles	11	0	11	13	0	13	0	6	0	6	30
% Heavy Vehicles	0.7	0	0.7	0.6	0	0.6	0	0.4	0	0.4	0.5
Bicycles	0	0	0	0	0	0	0	0	2	2	2
% Bicycles	0	0	0	0	0	0	0	0	22.2	0.1	0.0
Pedestrians	0	0	0	0	0	0	0	0	7	7	7
% Pedestrians	0	0	0	0	0	0	0	0	77.8	0.4	0.1



CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT :FDOT D4
JOB NO :TWO 18
PROJECT :I-95 Interchange PD&E
COUNTY :Palm Beach

File Name : PGA Blvd at I-95 NB off Ramp 03032015
Site Code :
Start Date : 3/3/2015
Page No : 1

Groups Printed- Heavy Vehicles

	PGA Blvd Eastbound			PGA Blvd Westbound			I-95 NB off-Ramp Northbound				
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
06:00 AM	4	0	4	4	0	4	0	9	0	9	17
06:15 AM	2	0	2	2	0	2	0	7	0	7	11
06:30 AM	1	0	1	3	0	3	0	5	0	5	9
06:45 AM	6	0	6	3	0	3	0	8	0	8	17
Total	13	0	13	12	0	12	0	29	0	29	54
07:00 AM	9	0	9	6	0	6	0	4	0	4	19
07:15 AM	7	0	7	8	0	8	0	14	0	14	29
07:30 AM	2	0	2	7	0	7	0	13	0	13	22
07:45 AM	6	0	6	5	0	5	0	19	0	19	30
Total	24	0	24	26	0	26	0	50	0	50	100
08:00 AM	13	0	13	10	0	10	0	11	0	11	34
08:15 AM	15	0	15	12	0	12	0	8	0	8	35
08:30 AM	7	0	7	10	0	10	0	14	0	14	31
08:45 AM	7	0	7	11	0	11	0	19	0	19	37
Total	42	0	42	43	0	43	0	52	0	52	137
BREAK											
04:00 PM	4	0	4	9	0	9	0	3	0	3	16
04:15 PM	3	0	3	8	0	8	0	8	0	8	19
04:30 PM	3	0	3	2	0	2	0	4	0	4	9
04:45 PM	4	0	4	4	0	4	0	3	0	3	11
Total	14	0	14	23	0	23	0	18	0	18	55
05:00 PM	2	0	2	2	0	2	0	3	0	3	7
05:15 PM	3	0	3	9	0	9	0	2	0	2	14
05:30 PM	5	0	5	0	0	0	0	0	0	0	5
05:45 PM	1	0	1	2	0	2	0	1	0	1	4
Total	11	0	11	13	0	13	0	6	0	6	30
06:00 PM	3	0	3	6	0	6	0	1	0	1	10
06:15 PM	3	0	3	4	0	4	0	1	0	1	8
06:30 PM	1	0	1	5	0	5	0	4	0	4	10
06:45 PM	5	0	5	9	0	9	0	1	0	1	15
Total	12	0	12	24	0	24	0	7	0	7	43
Grand Total	116	0	116	141	0	141	0	162	0	162	419
Apprch %	100	0		100	0		0	100	0		
Total %	27.7	0	27.7	33.7	0	33.7	0	38.7	0	38.7	

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : PGA Blvd at I-95 NB off Ramp 03042015
Site Code :
Start Date : 3/4/2015
Page No : 1

Groups Printed- Autos - Heavy Vehicles - Bicycles - Pedestrians

	PGA Blvd Eastbound			PGA Blvd Westbound			I-95 NB off-Ramp Northbound				
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
06:00 AM	51	0	51	85	0	85	0	108	0	108	244
06:15 AM	85	0	85	87	0	87	0	138	0	138	310
06:30 AM	151	0	151	137	0	137	0	183	0	183	471
06:45 AM	243	0	243	155	0	155	0	326	0	326	724
Total	530	0	530	464	0	464	0	755	0	755	1749
07:00 AM	326	0	326	211	0	211	0	286	0	286	823
07:15 AM	422	0	422	335	0	335	0	441	0	441	1198
07:30 AM	516	0	516	366	0	366	0	559	0	559	1441
07:45 AM	536	0	536	488	0	488	0	669	0	669	1693
Total	1800	0	1800	1400	0	1400	0	1955	0	1955	5155
08:00 AM	522	0	522	367	0	367	0	553	0	553	1442
08:15 AM	569	0	569	382	0	382	0	653	0	653	1604
08:30 AM	464	0	464	332	0	332	0	570	0	570	1366
08:45 AM	553	0	553	331	0	331	0	551	1	552	1436
Total	2108	0	2108	1412	0	1412	0	2327	1	2328	5848
BREAK											
04:00 PM	345	0	345	484	0	484	0	344	0	344	1173
04:15 PM	389	0	389	488	0	488	0	377	0	377	1254
04:30 PM	355	0	355	455	0	455	0	415	0	415	1225
04:45 PM	355	0	355	490	0	490	0	444	0	444	1289
Total	1444	0	1444	1917	0	1917	0	1580	0	1580	4941
05:00 PM	300	0	300	487	0	487	0	435	3	438	1225
05:15 PM	398	0	398	534	0	534	0	457	2	459	1391
05:30 PM	347	0	347	484	0	484	0	414	2	416	1247
05:45 PM	417	0	417	457	0	457	0	468	3	471	1345
Total	1462	0	1462	1962	0	1962	0	1774	10	1784	5208
06:00 PM	374	0	374	401	0	401	0	398	1	399	1174
06:15 PM	384	0	384	382	0	382	0	358	1	359	1125
06:30 PM	323	0	323	333	0	333	0	316	3	319	975
06:45 PM	294	0	294	326	0	326	0	302	2	304	924
Total	1375	0	1375	1442	0	1442	0	1374	7	1381	4198
Grand Total	8719	0	8719	8597	0	8597	0	9765	18	9783	27099
Apprch %	100	0		100	0		0	99.8	0.2		
Total %	32.2	0	32.2	31.7	0	31.7	0	36	0.1	36.1	
Autos	8594	0	8594	8498	0	8498	0	9630	0	9630	26722
% Autos	98.6	0	98.6	98.8	0	98.8	0	98.6	0	98.4	98.6
Heavy Vehicles	125	0	125	99	0	99	0	135	0	135	359
% Heavy Vehicles	1.4	0	1.4	1.2	0	1.2	0	1.4	0	1.4	1.3
Bicycles	0	0	0	0	0	0	0	0	6	6	6
% Bicycles	0	0	0	0	0	0	0	0	33.3	0.1	0
Pedestrians	0	0	0	0	0	0	0	0	12	12	12
% Pedestrians	0	0	0	0	0	0	0	0	66.7	0.1	0

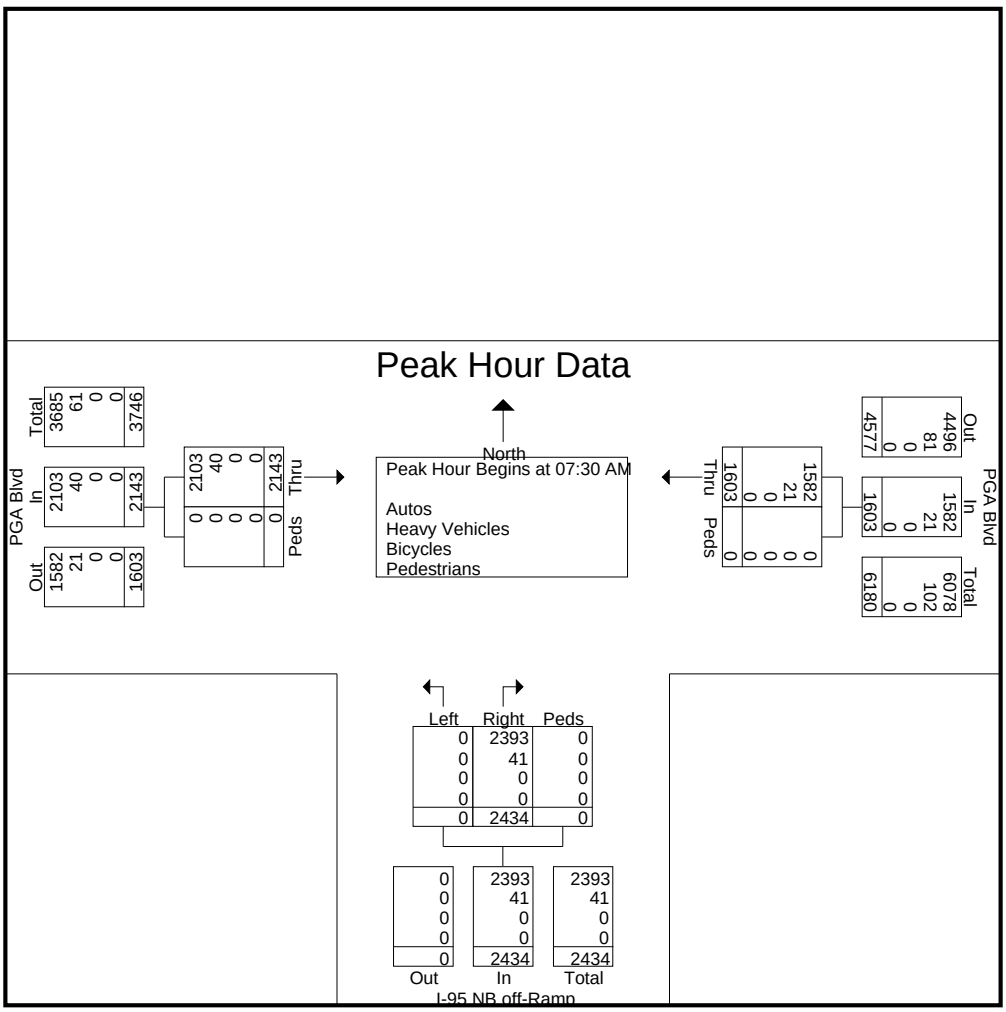
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : PGA Blvd at I-95 NB off Ramp 03042015
Site Code :
Start Date : 3/4/2015
Page No : 2

	PGA Blvd Eastbound			PGA Blvd Westbound			I-95 NB off-Ramp Northbound				
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 07:30 AM											
07:30 AM	516	0	516	366	0	366	0	559	0	559	1441
07:45 AM	536	0	536	488	0	488	0	669	0	669	1693
08:00 AM	522	0	522	367	0	367	0	553	0	553	1442
08:15 AM	569	0	569	382	0	382	0	653	0	653	1604
Total Volume	2143	0	2143	1603	0	1603	0	2434	0	2434	6180
% App. Total	100	0		100	0		0	100	0		
PHF	.942	.000	.942	.821	.000	.821	.000	.910	.000	.910	.913
Autos	2103	0	2103	1582	0	1582	0	2393	0	2393	6078
% Autos	98.1	0	98.1	98.7	0	98.7	0	98.3	0	98.3	98.3
Heavy Vehicles	40	0	40	21	0	21	0	41	0	41	102
% Heavy Vehicles	1.9	0	1.9	1.3	0	1.3	0	1.7	0	1.7	1.7
Bicycles	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0



CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
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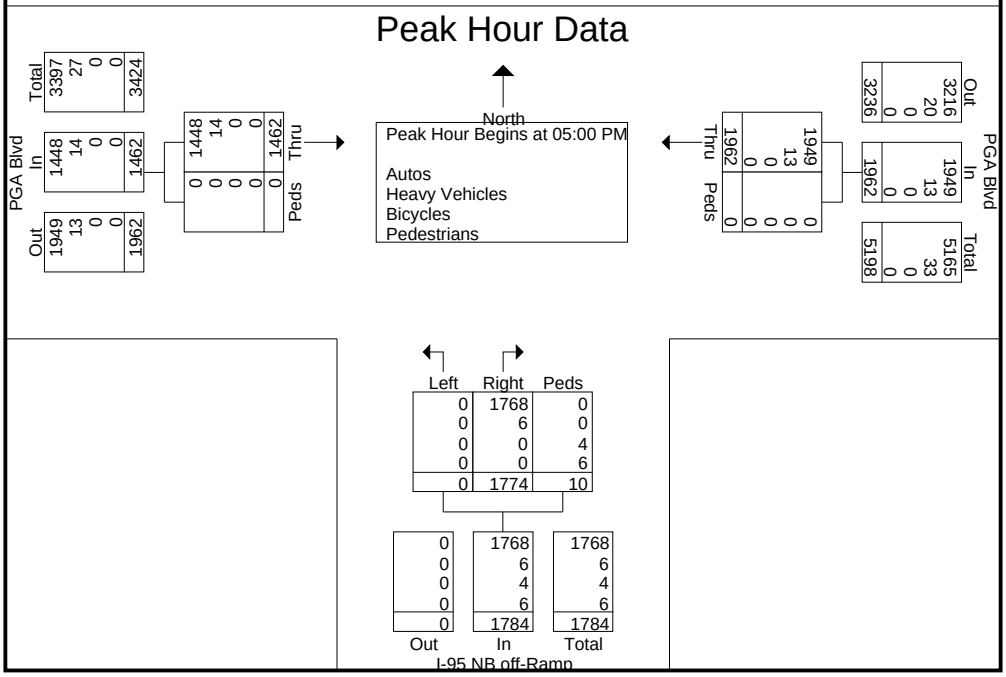
CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : PGA Blvd at I-95 NB off Ramp 03042015
Site Code :
Start Date : 3/4/2015
Page No : 3

	PGA Blvd Eastbound			PGA Blvd Westbound			I-95 NB off-Ramp Northbound				
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 05:00 PM											
05:00 PM	300	0	300	487	0	487	0	435	3	438	1225
05:15 PM	398	0	398	534	0	534	0	457	2	459	1391
05:30 PM	347	0	347	484	0	484	0	414	2	416	1247
05:45 PM	417	0	417	457	0	457	0	468	3	471	1345
Total Volume	1462	0	1462	1962	0	1962	0	1774	10	1784	5208
% App. Total	100	0		100	0		0	99.4	0.6		
PHF	.876	.000	.876	.919	.000	.919	.000	.948	.833	.947	.936
Autos	1448	0	1448	1949	0	1949	0	1768	0	1768	5165
% Autos	99.0	0	99.0	99.3	0	99.3	0	99.7	0	99.1	99.2
Heavy Vehicles	14	0	14	13	0	13	0	6	0	6	33
% Heavy Vehicles	1.0	0	1.0	0.7	0	0.7	0	0.3	0	0.3	0.6
Bicycles	0	0	0	0	0	0	0	0	4	4	4
% Bicycles	0	0	0	0	0	0	0	0	40.0	0.2	0.1
Pedestrians	0	0	0	0	0	0	0	0	6	6	6
% Pedestrians	0	0	0	0	0	0	0	0	60.0	0.3	0.1

Peak Hour Data



CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : PGA Blvd at I-95 NB off Ramp 03042015
Site Code :
Start Date : 3/4/2015
Page No : 1

Groups Printed- Heavy Vehicles

	PGA Blvd Eastbound			PGA Blvd Westbound			I-95 NB off-Ramp Northbound				
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
06:00 AM	0	0	0	5	0	5	0	9	0	9	14
06:15 AM	1	0	1	3	0	3	0	6	0	6	10
06:30 AM	5	0	5	2	0	2	0	3	0	3	10
06:45 AM	2	0	2	3	0	3	0	7	0	7	12
Total	8	0	8	13	0	13	0	25	0	25	46
07:00 AM	9	0	9	3	0	3	0	6	0	6	18
07:15 AM	10	0	10	3	0	3	0	7	0	7	20
07:30 AM	3	0	3	0	0	0	0	13	0	13	16
07:45 AM	13	0	13	2	0	2	0	9	0	9	24
Total	35	0	35	8	0	8	0	35	0	35	78
08:00 AM	11	0	11	12	0	12	0	9	0	9	32
08:15 AM	13	0	13	7	0	7	0	10	0	10	30
08:30 AM	9	0	9	10	0	10	0	8	0	8	27
08:45 AM	11	0	11	12	0	12	0	12	0	12	35
Total	44	0	44	41	0	41	0	39	0	39	124
BREAK											
04:00 PM	7	0	7	7	0	7	0	8	0	8	22
04:15 PM	4	0	4	7	0	7	0	5	0	5	16
04:30 PM	2	0	2	3	0	3	0	5	0	5	10
04:45 PM	4	0	4	1	0	1	0	5	0	5	10
Total	17	0	17	18	0	18	0	23	0	23	58
05:00 PM	2	0	2	3	0	3	0	1	0	1	6
05:15 PM	4	0	4	5	0	5	0	5	0	5	14
05:30 PM	6	0	6	1	0	1	0	0	0	0	7
05:45 PM	2	0	2	4	0	4	0	0	0	0	6
Total	14	0	14	13	0	13	0	6	0	6	33
06:00 PM	2	0	2	2	0	2	0	3	0	3	7
06:15 PM	1	0	1	4	0	4	0	1	0	1	6
06:30 PM	2	0	2	0	0	0	0	2	0	2	4
06:45 PM	2	0	2	0	0	0	0	1	0	1	3
Total	7	0	7	6	0	6	0	7	0	7	20
Grand Total	125	0	125	99	0	99	0	135	0	135	359
Apprch %	100	0		100	0		0	100	0		
Total %	34.8	0	34.8	27.6	0	27.6	0	37.6	0	37.6	

CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : PGA Blvd at I-95 NB off Ramp 03052015
Site Code :
Start Date : 3/5/2015
Page No : 1

Groups Printed- Autos - Heavy Vehicles - Bicycles - Pedestrians

	PGA Blvd Eastbound			PGA Blvd Westbound			I-95 NB off-Ramp Northbound				
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
06:00 AM	57	0	57	79	0	79	0	106	0	106	242
06:15 AM	74	0	74	107	0	107	0	131	0	131	312
06:30 AM	122	0	122	134	0	134	0	188	0	188	444
06:45 AM	210	0	210	140	0	140	0	268	0	268	618
Total	463	0	463	460	0	460	0	693	0	693	1616
07:00 AM	233	0	233	214	0	214	0	286	1	287	734
07:15 AM	370	0	370	296	0	296	0	373	0	373	1039
07:30 AM	491	0	491	284	0	284	0	444	1	445	1220
07:45 AM	510	0	510	357	0	357	0	416	2	418	1285
Total	1604	0	1604	1151	0	1151	0	1519	4	1523	4278
08:00 AM	531	0	531	343	0	343	0	550	0	550	1424
08:15 AM	509	0	509	343	0	343	0	548	0	548	1400
08:30 AM	524	0	524	319	0	319	0	509	0	509	1352
08:45 AM	496	0	496	360	0	360	0	533	0	533	1389
Total	2060	0	2060	1365	0	1365	0	2140	0	2140	5565
BREAK											
04:00 PM	291	0	291	388	0	388	0	443	3	446	1125
04:15 PM	356	0	356	480	0	480	0	409	2	411	1247
04:30 PM	330	0	330	535	0	535	0	430	2	432	1297
04:45 PM	308	0	308	524	0	524	0	520	1	521	1353
Total	1285	0	1285	1927	0	1927	0	1802	8	1810	5022
05:00 PM	312	0	312	410	0	410	0	391	1	392	1114
05:15 PM	342	0	342	396	0	396	0	347	1	348	1086
05:30 PM	346	0	346	359	0	359	0	346	2	348	1053
05:45 PM	375	0	375	333	0	333	0	330	3	333	1041
Total	1375	0	1375	1498	0	1498	0	1414	7	1421	4294
06:00 PM	445	0	445	461	0	461	0	352	0	352	1258
06:15 PM	402	0	402	437	0	437	0	354	0	354	1193
06:30 PM	221	0	221	356	0	356	0	298	0	298	875
06:45 PM	130	0	130	336	0	336	0	291	0	291	757
Total	1198	0	1198	1590	0	1590	0	1295	0	1295	4083
Grand Total	7985	0	7985	7991	0	7991	0	8863	19	8882	24858
Apprch %	100	0		100	0		0	99.8	0.2		
Total %	32.1	0	32.1	32.1	0	32.1	0	35.7	0.1	35.7	
Autos	7855	0	7855	7835	0	7835	0	8721	0	8721	24411
% Autos	98.4	0	98.4	98	0	98	0	98.4	0	98.2	98.2
Heavy Vehicles	130	0	130	156	0	156	0	142	0	142	428
% Heavy Vehicles	1.6	0	1.6	2	0	2	0	1.6	0	1.6	1.7
Bicycles	0	0	0	0	0	0	0	0	10	10	10
% Bicycles	0	0	0	0	0	0	0	0	52.6	0.1	0
Pedestrians	0	0	0	0	0	0	0	0	9	9	9
% Pedestrians	0	0	0	0	0	0	0	0	47.4	0.1	0

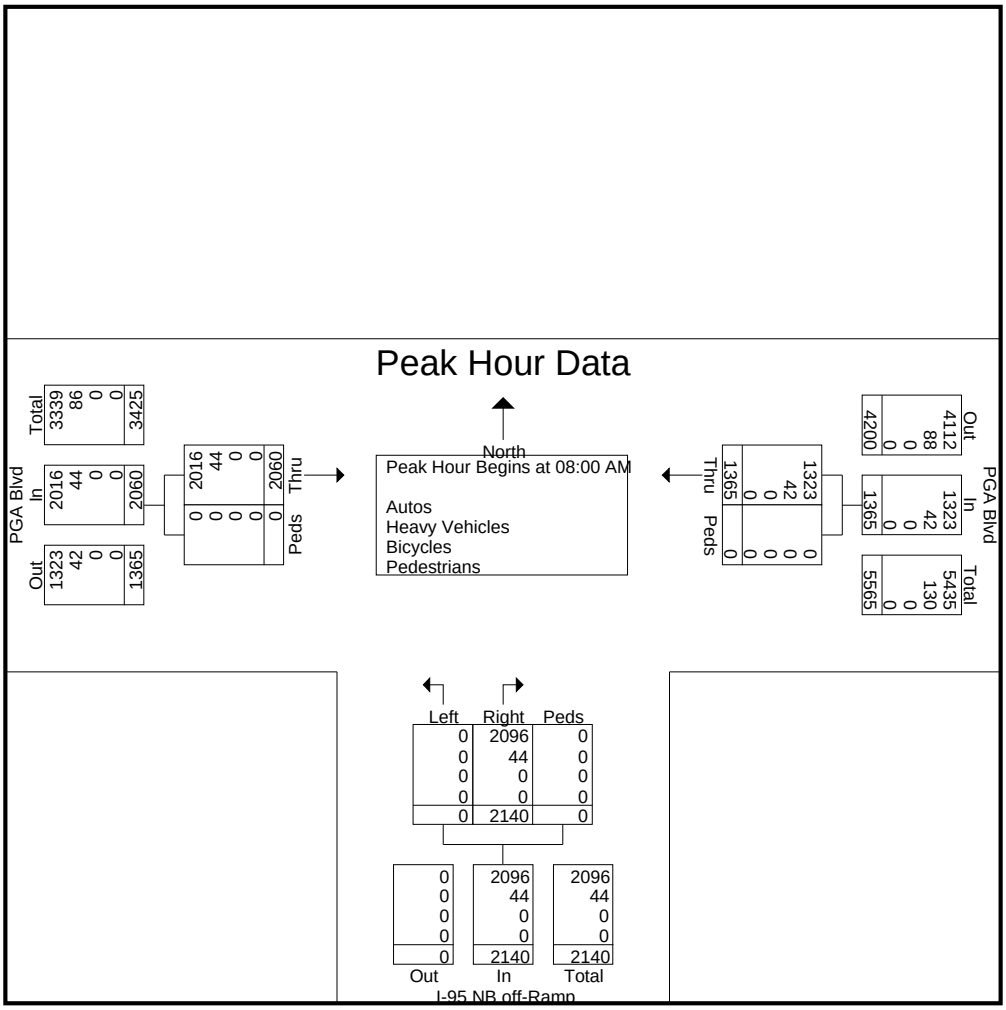
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : PGA Blvd at I-95 NB off Ramp 03052015
Site Code :
Start Date : 3/5/2015
Page No : 2

	PGA Blvd Eastbound			PGA Blvd Westbound			I-95 NB off-Ramp Northbound				
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 08:00 AM											
08:00 AM	531	0	531	343	0	343	0	550	0	550	1424
08:15 AM	509	0	509	343	0	343	0	548	0	548	1400
08:30 AM	524	0	524	319	0	319	0	509	0	509	1352
08:45 AM	496	0	496	360	0	360	0	533	0	533	1389
Total Volume	2060	0	2060	1365	0	1365	0	2140	0	2140	5565
% App. Total	100	0		100	0		0	100	0		
PHF	.970	.000	.970	.948	.000	.948	.000	.973	.000	.973	.977
Autos	2016	0	2016	1323	0	1323	0	2096	0	2096	5435
% Autos	97.9	0	97.9	96.9	0	96.9	0	97.9	0	97.9	97.7
Heavy Vehicles	44	0	44	42	0	42	0	44	0	44	130
% Heavy Vehicles	2.1	0	2.1	3.1	0	3.1	0	2.1	0	2.1	2.3
Bicycles	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0



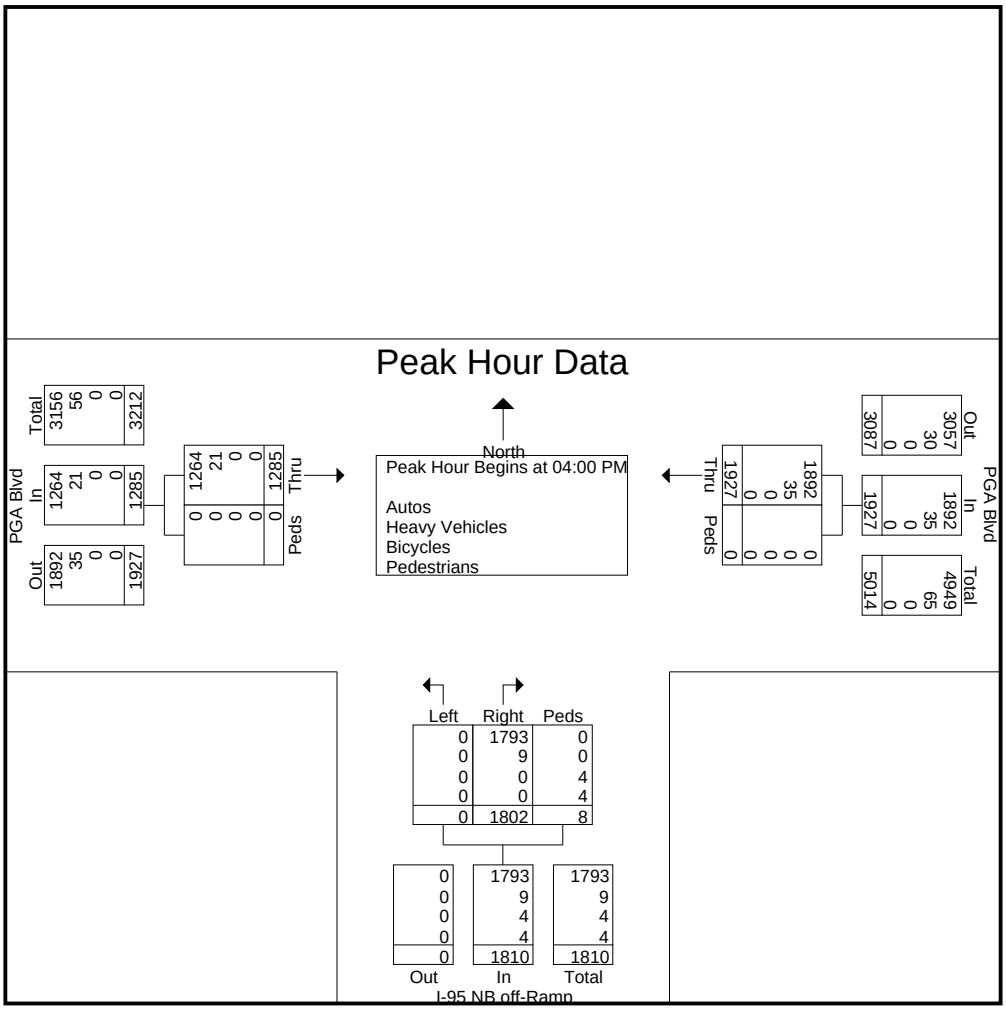
CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : PGA Blvd at I-95 NB off Ramp 03052015
Site Code :
Start Date : 3/5/2015
Page No : 3

	PGA Blvd Eastbound			PGA Blvd Westbound			I-95 NB off-Ramp Northbound				
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 04:00 PM											
04:00 PM	291	0	291	388	0	388	0	443	3	446	1125
04:15 PM	356	0	356	480	0	480	0	409	2	411	1247
04:30 PM	330	0	330	535	0	535	0	430	2	432	1297
04:45 PM	308	0	308	524	0	524	0	520	1	521	1353
Total Volume	1285	0	1285	1927	0	1927	0	1802	8	1810	5022
% App. Total	100	0		100	0		0	99.6	0.4		
PHF	.902	.000	.902	.900	.000	.900	.000	.866	.667	.869	.928
Autos	1264	0	1264	1892	0	1892	0	1793	0	1793	4949
% Autos	98.4	0	98.4	98.2	0	98.2	0	99.5	0	99.1	98.5
Heavy Vehicles	21	0	21	35	0	35	0	9	0	9	65
% Heavy Vehicles	1.6	0	1.6	1.8	0	1.8	0	0.5	0	0.5	1.3
Bicycles	0	0	0	0	0	0	0	0	4	4	4
% Bicycles	0	0	0	0	0	0	0	0	50.0	0.2	0.1
Pedestrians	0	0	0	0	0	0	0	0	4	4	4
% Pedestrians	0	0	0	0	0	0	0	0	50.0	0.2	0.1



CTS Engineering, Inc.

8095 NW 12 Street, Suite 315
Miami, FL 33126

CLIENT : FDOT D4
JOB NO : TWO 18
PROJECT: I-95 Interchange PD&E
COUNTY : Palm Beach

File Name : PGA Blvd at I-95 NB off Ramp 03052015
Site Code :
Start Date : 3/5/2015
Page No : 1

Groups Printed- Heavy Vehicles

	PGA Blvd Eastbound			PGA Blvd Westbound			I-95 NB off-Ramp Northbound				
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Left	Right	Peds	App. Total	Int. Total
06:00 AM	5	0	5	5	0	5	0	11	0	11	21
06:15 AM	2	0	2	5	0	5	0	12	0	12	19
06:30 AM	0	0	0	8	0	8	0	7	0	7	15
06:45 AM	6	0	6	4	0	4	0	6	0	6	16
Total	13	0	13	22	0	22	0	36	0	36	71
07:00 AM	7	0	7	11	0	11	0	10	0	10	28
07:15 AM	8	0	8	8	0	8	0	9	0	9	25
07:30 AM	4	0	4	7	0	7	0	12	0	12	23
07:45 AM	12	0	12	8	0	8	0	7	0	7	27
Total	31	0	31	34	0	34	0	38	0	38	103
08:00 AM	13	0	13	13	0	13	0	13	0	13	39
08:15 AM	10	0	10	7	0	7	0	9	0	9	26
08:30 AM	10	0	10	9	0	9	0	8	0	8	27
08:45 AM	11	0	11	13	0	13	0	14	0	14	38
Total	44	0	44	42	0	42	0	44	0	44	130
BREAK											
04:00 PM	5	0	5	15	0	15	0	2	0	2	22
04:15 PM	4	0	4	7	0	7	0	5	0	5	16
04:30 PM	6	0	6	10	0	10	0	1	0	1	17
04:45 PM	6	0	6	3	0	3	0	1	0	1	10
Total	21	0	21	35	0	35	0	9	0	9	65
05:00 PM	6	0	6	2	0	2	0	4	0	4	12
05:15 PM	3	0	3	6	0	6	0	4	0	4	13
05:30 PM	3	0	3	4	0	4	0	3	0	3	10
05:45 PM	3	0	3	3	0	3	0	1	0	1	7
Total	15	0	15	15	0	15	0	12	0	12	42
06:00 PM	1	0	1	3	0	3	0	0	0	0	4
06:15 PM	1	0	1	3	0	3	0	0	0	0	4
06:30 PM	2	0	2	2	0	2	0	2	0	2	6
06:45 PM	2	0	2	0	0	0	0	1	0	1	3
Total	6	0	6	8	0	8	0	3	0	3	17
Grand Total	130	0	130	156	0	156	0	142	0	142	428
Apprch %	100	0		100	0		0	100	0		
Total %	30.4	0	30.4	36.4	0	36.4	0	33.2	0	33.2	

PGA Boulevard Westbound to I-95 Southbound

County: 93
Station: 3136
Description: PGA BLVD WB TO I-95 SB
Start Date: 03/03/2015
Start Time: 0000

Direction: S

Time	1st	2nd	3rd	4th	Total
0000	77	51	69	42	239
0100	40	14	12	8	74
0200	5	7	9	2	23
0300	10	5	2	8	25
0400	1	8	16	16	41
0500	21	23	26	40	110
0600	54	39	89	93	275
0700	123	126	152	170	571
0800	196	185	154	144	679
0900	141	171	156	167	635
1000	155	183	203	220	761
1100	191	223	213	256	883
1200	175	218	288	233	914
1300	224	278	238	288	1028
1400	302	284	230	249	1065
1500	295	324	268	309	1196
1600	302	313	297	302	1214
1700	327	292	298	318	1235
1800	323	317	222	224	1086
1900	235	222	231	158	846
2000	209	207	213	177	806
2100	202	186	138	134	660
2200	111	82	78	73	344
2300	77	60	66	44	247
24-Hour Totals:					14957

Peak Volume Information

	Hour	Volume
A.M.	745	705
P.M.	1730	1256
Daily	1730	1256

Generated by SPS 5.0.45P

County: 93
Station: 3136
Description: PGA BLVD WB TO I-95 SB
Start Date: 03/04/2015
Start Time: 0000

Direction: S

Time	1st	2nd	3rd	4th	Total
0000	25	26	13	12	76
0100	17	12	8	15	52
0200	5	5	5	4	19
0300	6	9	6	8	29
0400	8	12	11	19	50
0500	27	20	24	43	114
0600	41	51	76	85	253
0700	116	127	149	156	548
0800	148	205	148	159	660
0900	169	183	171	158	681
1000	169	185	190	252	796
1100	189	256	233	233	911
1200	220	257	249	226	952
1300	263	269	218	319	1069
1400	292	292	248	271	1103
1500	296	335	317	271	1219
1600	281	283	304	257	1125
1700	312	309	308	317	1246
1800	315	293	274	222	1104
1900	209	218	209	207	843
2000	233	199	190	173	795
2100	198	197	179	131	705
2200	123	104	101	75	403
2300	87	80	63	30	260
24-Hour Totals:					15013

Peak Volume Information

	Hour	Volume
A.M.	845	682
P.M.	1715	1249
Daily	1715	1249

Generated by SPS 5.0.45P

County: 93
Station: 3136
Description: PGA BLVD WB TO I-95 SB
Start Date: 03/05/2015
Start Time: 0000

Direction: S

Time	1st	2nd	3rd	4th	Total
0000	43	25	25	18	111
0100	23	13	10	16	62
0200	15	9	11	12	47
0300	9	9	5	9	32
0400	11	12	20	15	58
0500	17	24	38	36	115
0600	40	43	69	98	250
0700	124	118	153	147	542
0800	169	144	170	178	661
0900	154	179	160	154	647
1000	143	171	180	224	718
1100	185	242	213	258	898
1200	202	274	240	264	980
1300	242	241	277	315	1075
1400	269	277	254	264	1064
1500	319	320	307	314	1260
1600	303	312	302	327	1244
1700	316	316	318	327	1277
1800	282	287	245	224	1038
1900	212	214	203	201	830
2000	191	184	234	217	826
2100	193	241	184	127	745
2200	146	131	106	90	473
2300	88	79	101	55	323
24-Hour Totals:					15276

Peak Volume Information

	Hour	Volume
A.M.	830	681
P.M.	1645	1277
Daily	1645	1277

Generated by SPS 5.0.45P

I-95 Northbound to PGA Boulevard Westbound

County: 93
Station: 3138
Description: I-95 NB OFF RAMP TO PGA BLVD WB
Start Date: 03/03/2015
Start Time: 0000

Direction: W

Time	1st	2nd	3rd	4th	Total
0000	27	24	26	26	103
0100	27	15	20	11	73
0200	12	9	8	8	37
0300	8	5	2	5	20
0400	4	7	6	15	32
0500	13	23	25	39	100
0600	38	52	64	113	267
0700	96	163	211	216	686
0800	210	192	196	197	795
0900	154	105	130	154	543
1000	122	130	131	119	502
1100	104	137	126	166	533
1200	133	126	134	148	541
1300	126	147	161	140	574
1400	159	152	158	156	625
1500	160	156	177	210	703
1600	213	191	186	201	791
1700	231	257	235	204	927
1800	223	186	174	173	756
1900	139	139	131	99	508
2000	113	115	120	82	430
2100	102	114	72	62	350
2200	78	51	59	46	234
2300	33	44	37	32	146
24-Hour Totals:					10276

Peak Volume Information

	Hour	Volume
A.M.	730	829
P.M.	1700	927
Daily	1700	927

Generated by SPS 5.0.45P

County: 93
Station: 3138
Description: I-95 NB OFF RAMP TO PGA BLVD WB
Start Date: 03/04/2015
Start Time: 0000

Direction: W

Time	1st	2nd	3rd	4th	Total
0000	18	26	19	22	85
0100	17	9	5	16	47
0200	7	6	8	6	27
0300	10	3	4	5	22
0400	4	4	13	14	35
0500	7	20	27	49	103
0600	49	51	70	96	266
0700	104	176	209	191	680
0800	206	226	206	206	844
0900	148	139	127	130	544
1000	123	109	124	136	492
1100	114	150	124	158	546
1200	142	129	142	157	570
1300	139	148	146	151	584
1400	148	137	146	155	586
1500	154	186	185	225	750
1600	219	216	203	204	842
1700	227	249	246	219	941
1800	203	192	171	157	723
1900	147	115	137	123	522
2000	99	92	87	111	389
2100	70	85	74	76	305
2200	68	67	48	41	224
2300	45	27	25	32	129
24-Hour Totals:					10256

Peak Volume Information

	Hour	Volume
A.M.	800	844
P.M.	1700	941
Daily	1700	941

Generated by SPS 5.0.45P

County: 93
Station: 3138
Description: I-95 NB OFF RAMP TO PGA BLVD WB
Start Date: 03/05/2015
Start Time: 0000

Direction: W

Time	1st	2nd	3rd	4th	Total
0000	20	18	18	15	71
0100	19	8	7	12	46
0200	10	4	5	5	24
0300	4	1	5	8	18
0400	7	3	11	14	35
0500	13	22	28	39	102
0600	48	47	75	99	269
0700	107	151	197	226	681
0800	199	188	199	215	801
0900	135	152	120	128	535
1000	125	113	112	125	475
1100	127	138	144	184	593
1200	150	145	159	160	614
1300	135	143	149	149	576
1400	136	143	169	160	608
1500	174	192	197	187	750
1600	184	202	220	202	808
1700	231	250	225	221	927
1800	208	203	173	132	716
1900	127	146	150	105	528
2000	96	107	96	97	396
2100	93	103	84	65	345
2200	70	70	87	51	278
2300	58	44	40	39	181
24-Hour Totals:					10377

Peak Volume Information

	Hour	Volume
A.M.	745	812
P.M.	1700	927
Daily	1700	927

Generated by SPS 5.0.45P

PGA Boulevard Eastbound to I-95 Southbound

County: 93
Station: 3139
Description: PGA BLVD EB TO I-95 SB ON RAMP
Start Date: 03/03/2015
Start Time: 0000

Direction: S

Time	1st	2nd	3rd	4th	Total
0000	33	29	20	18	100
0100	11	6	8	10	35
0200	11	9	9	5	34
0300	5	10	6	8	29
0400	10	14	29	25	78
0500	19	17	26	48	110
0600	51	71	99	130	351
0700	171	215	266	272	924
0800	334	257	232	260	1083
0900	234	202	176	154	766
1000	156	167	163	144	630
1100	127	170	165	169	631
1200	135	186	174	167	662
1300	170	150	158	188	666
1400	164	180	185	186	715
1500	239	196	187	193	815
1600	216	218	245	234	913
1700	276	301	296	258	1131
1800	248	187	177	160	772
1900	131	94	106	104	435
2000	83	100	81	79	343
2100	76	80	97	56	309
2200	83	41	55	39	218
2300	40	27	37	20	124
24-Hour Totals:					11874

Peak Volume Information

	Hour	Volume
A.M.	730	1129
P.M.	1700	1131
Daily	1700	1131

Generated by SPS 5.0.45P

County: 93
Station: 3139
Description: PGA BLVD EB TO I-95 SB ON RAMP
Start Date: 03/04/2015
Start Time: 0000

Direction: S

Time	1st	2nd	3rd	4th	Total
0000	25	10	23	17	75
0100	9	8	5	3	25
0200	5	6	7	6	24
0300	4	2	12	14	32
0400	12	13	14	20	59
0500	30	19	37	54	140
0600	61	80	94	139	374
0700	174	216	271	253	914
0800	293	240	285	211	1029
0900	208	192	165	178	743
1000	160	170	183	172	685
1100	175	157	190	159	681
1200	158	175	131	151	615
1300	202	159	151	152	664
1400	161	166	211	170	708
1500	230	193	200	183	806
1600	204	217	252	218	891
1700	280	283	258	237	1058
1800	213	196	167	131	707
1900	137	123	110	90	460
2000	115	101	90	100	406
2100	104	93	91	102	390
2200	74	58	54	55	241
2300	56	35	43	26	160
24-Hour Totals:					11887

Peak Volume Information

	Hour	Volume
A.M.	745	1071
P.M.	1700	1058
Daily	745	1071

Generated by SPS 5.0.45P

County: 93
Station: 3139
Description: PGA BLVD EB TO I-95 SB ON RAMP
Start Date: 03/05/2015
Start Time: 0000

Direction: S

Time	1st	2nd	3rd	4th	Total
0000	27	22	12	9	70
0100	9	10	7	6	32
0200	12	6	1	6	25
0300	6	3	4	11	24
0400	10	12	15	23	60
0500	27	19	33	46	125
0600	64	70	89	106	329
0700	154	202	291	266	913
0800	310	244	235	228	1017
0900	215	220	166	167	768
1000	186	174	179	156	695
1100	152	162	158	158	630
1200	201	204	179	170	754
1300	190	188	168	174	720
1400	171	191	184	180	726
1500	228	190	208	182	808
1600	186	234	235	230	885
1700	285	277	288	251	1101
1800	235	168	171	121	695
1900	131	120	114	81	446
2000	102	94	97	86	379
2100	93	86	85	74	338
2200	81	70	68	53	272
2300	58	58	43	36	195
24-Hour Totals:					12007

Peak Volume Information

	Hour	Volume
A.M.	730	1111
P.M.	1700	1101
Daily	730	1111

Generated by SPS 5.0.45P

APPENDIX E

(Excerpts from FHWA Guide for Highway Capacity and Operations Analysis)

Table of Contents

Guide for Highway Capacity and Operations Analysis of Active Transportation and Demand Management Strategies

Appendix G: Speed/Capacity for HOV/HOT Lane Strategies

This Appendix provides details on the free-flow speed and capacity adjustments associated with the HOV and HOT lane strategies.

CONVERT MIXED-FLOW TO HOV

This strategy converts one or more mixed-flow lanes to HOVs only for a fixed period of time and for a fixed set of freeway sections. This strategy, although not strictly an ATDM strategy, is included to overcome the inability to model existing HOV lanes in the current HCM 2010 freeway method.

The operation and performance of barrier separated (painted or physical), limited access HOV lanes cannot be evaluated with current HCM 2010 freeway methods. The HOV lane must be analyzed as completely integrated with the freeway, with HOVs allowed to enter or leave the HOV lane at any point.

The analyst must specify the number of HOVs plus violators that will use the HOV lane. This value can be approximated as the percent of eligible HOVs on the facility, perhaps discounted a bit in recognition that not all eligible HOVs will use the HOV lane.

The HOV lane or lanes are assumed to be on the left most lane or lanes of the freeway.

The default capacity of an HOV lane is 1,600 vehicles per hour (based on unpublished NCHRP 3-96 research). For two-lane HOV facilities a slightly higher capacity of 1,800 vph/lane may be used. These default values can be overridden in the software by the analyst.

Since, the HCM 2010 freeway method does not recognize individual lane capacities, it is necessary to compute an average capacity for freeway sections with HOV lanes, across all lanes. For the case when there are not enough eligible HOVs plus violators to fill up the HOV lanes, then the capacity of the HOV lane is set at the lower value, the number of eligible HOVs plus violators.

$$AveCap(s) = \frac{CapHOV(s) * HOVlanes(s) + CapMFLanes * MFLanes(s)}{HOVlanes(s) + MFLanes(s)}$$

Where:

AveCap(s) = average capacity per lane for section(s) (vph/ln)
CapHOV(s) = Min (Capacity per HOV Lane, Eligible HOVs per HOV lane) (vph/ln)
HOVlanes(s) = Number of HOV lanes in section(s).
CapMFLanes = capacity per mixed-flow lane (vph/ln).
MFLanes(s) = Number of mixed-flow lanes in section(s)

The free-flow speed and speed-flow curve for HOV lanes are assumed to be the same as for mixed-flow lanes, with the only difference being the capacity of the HOV lanes.

HOV LANES OPENED TO ALL

This strategy opens up the HOV lane(s) to all vehicles. It might be employed in the case of a special event, weather event, incident, or work zone.

Since the HCM 2010 method cannot evaluate barrier separated HOV lane operations, the HOV lane is assumed to be completely accessible to and from the adjacent mixed-flow lanes.

Under this strategy the HOV lanes become just like mixed-flow lanes. The capacity and free-flow speed of the HOV lanes under this strategy then reverts to that of the adjacent mixed-flow lanes.

CONVERT LANES TO HOT LANES

This strategy converts one or more mixed-flow lanes to high-occupancy toll (HOT) lanes for a user specified fixed period of time and set of freeway sections.

It is assumed that the toll will be set as necessary to guarantee that the HOT lane(s) are fully utilized. Thus regardless of the number of eligible HOVs that can use the HOT lane for free (or a reduced rate) it is assumed that the HOT lane will always carry its user designated capacity, as long as the adjacent mixed-flow lanes are carrying equal or higher volumes.

Since, the HCM 2010 freeway method does not recognize individual lane capacities, it is necessary to compute an average capacity for freeway sections with HOV lanes, across all lanes.

$$AveCap(s) = \frac{CapHOT(s) * HOTlanes(s) + CapMFLanes * MFLanes(s)}{HOTlanes(s) + MFLanes(s)}$$

Where:

AveCap(s) = average capacity per lane for section (s) (vph/ln)
CapHOT(s) = capacity per HOT lane (vph/ln)
HOTlanes(s) = Number of HOT lanes in section(s).
CapMFLanes = capacity per mixed-flow lane (vph/ln).
MFLanes(s) = Number of mixed-flow lanes in section(s)

The free-flow speed and speed-flow curve for HOT lanes are assumed to be the same as for mixed-flow lanes, with the only difference being the capacity of the HOV lanes.

HOT LANES OPENED TO ALL

This strategy opens up the HOT lane(s) toll free to all vehicles in the case of a special event, weather event, incident, or work zone. The analysis approach and assumptions are the same as for an HOV lane opened to all vehicles.

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APPENDIX F

(Existing Freeways & Ramps Operational Analysis Results)

FREEWAY SEGMENTS

BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*Godfrey Lamptey, P.E., PTOE*	Highway/Direction of Travel	*I-95 Northbound*
Agency or Company	*Goal Associates*	From/To	*Northlake Blvd to PGA Blvd*
Date Performed	*7/21/2016*	Jurisdiction	*Palm Beach County*
Analysis Time Period	*AM Peak Period*	Analysis Year	*2015 Existing Conditions*

Project Description *SR-9/I-95 at Northlake Boulevard Interchange PD&E Study*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4655*	veh/h	Peak-Hour Factor, PHF	*0.95*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs			Calc Speed Adj and FFS		
Lane Width		ft			
Rt-Side Lat. Clearance		ft	f_{LW}		mph
Number of Lanes, N	*4*		f_{LC}		mph
Total Ramp Density, TRD		ramps/mi	TRD Adjustment		mph
FFS (measured)	*65.0*	mph	FFS	*65.0*	mph
Base free-flow Speed, BFFS		mph			

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1250*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	*65.0*	mph	S	mph
D = v_p / S	*19.2*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits 11-10, 11-12	f_{LW} - Exhibit 11-8
V - Hourly volume	D - Density	E_T - Exhibits 11-10, 11-11, 11-13	f_{LC} - Exhibit 11-9
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 11-18	TRD - Page 11-11
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 11-2, 11-3	
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*Godfrey Lamptey, P.E., PTOE*	Highway/Direction of Travel	*I-95 Southbound*
Agency or Company	*Goal Associates*	From/To	*Northlake Blvd to PGA Blvd*
Date Performed	*7/21/2016*	Jurisdiction	*Palm Beach County*
Analysis Time Period	*AM Peak Period*	Analysis Year	*2015 Existing Conditions*

Project Description *SR-9/I-95 at Northlake Boulevard Interchange PD&E Study*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6407*	veh/h	Peak-Hour Factor, PHF	*0.95*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs

Lane Width		ft
Rt-Side Lat. Clearance		ft
Number of Lanes, N	*5*	
Total Ramp Density, TRD		ramps/mi
FFS (measured)	*65.0*	mph
Base free-flow Speed, BFFS		mph

Calc Speed Adj and FFS

f_{LW}		mph
f_{LC}		mph
TRD Adjustment		mph
FFS	*65.0*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1376*	pc/h/ln
S	*65.0*	mph
D = v_p / S	*21.2*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h/ln
S		mph
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed
DDHV - Directional design hour volume

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*Godfrey Lamptey, P.E., PTOE*	Highway/Direction of Travel	*I-95 Northbound*
Agency or Company	*Goal Associates*	From/To	*Blue Heron Blvd. to Northlake*
Date Performed	*7/21/2016*	Jurisdiction	*Palm Beach County*
Analysis Time Period	*PM Peak Period*	Analysis Year	*2015 Existing Conditions*

Project Description *SR-9/I-95 at Northlake Boulevard Interchange PD&E Study*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6730*	veh/h	Peak-Hour Factor, PHF	*0.95*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs			Calc Speed Adj and FFS		
Lane Width		ft			
Rt-Side Lat. Clearance		ft	f_{LW}		mph
Number of Lanes, N	*5*		f_{LC}		mph
Total Ramp Density, TRD		ramps/mi	TRD Adjustment		mph
FFS (measured)	*65.0*	mph	FFS	*65.0*	mph
Base free-flow Speed, BFFS		mph			

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1445*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	*65.0*	mph	S	mph
D = v_p / S	*22.2*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits 11-10, 11-12	f_{LW} - Exhibit 11-8
V - Hourly volume	D - Density	E_T - Exhibits 11-10, 11-11, 11-13	f_{LC} - Exhibit 11-9
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 11-18	TRD - Page 11-11
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 11-2, 11-3	
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*Godfrey Lamptey, P.E., PTOE*	Highway/Direction of Travel	*I-95 Southbound*
Agency or Company	*Goal Associates*	From/To	*Blue Heron Blvd. to Northlake*
Date Performed	*7/21/2016*	Jurisdiction	*Palm Beach County*
Analysis Time Period	*PM Peak Period*	Analysis Year	*2015 Existing Conditions*

Project Description *SR-9/I-95 at Northlake Boulevard Interchange PD&E Study*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4710*	veh/h	Peak-Hour Factor, PHF	*0.95*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs			Calc Speed Adj and FFS		
Lane Width		ft			
Rt-Side Lat. Clearance		ft	f_{LW}		mph
Number of Lanes, N	*5*		f_{LC}		mph
Total Ramp Density, TRD		ramps/mi	TRD Adjustment		mph
FFS (measured)	*65.0*	mph	FFS	*65.0*	mph
Base free-flow Speed, BFFS		mph			

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1011*	pc/h/ln	Design LOS	
S	*65.0*	mph	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
D = v_p / S	*15.6*	pc/mi/ln	S	mph
LOS	*B*		D = v_p / S	pc/mi/ln
			Required Number of Lanes, N	

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits 11-10, 11-12	f_{LW} - Exhibit 11-8
V - Hourly volume	D - Density	E_T - Exhibits 11-10, 11-11, 11-13	f_{LC} - Exhibit 11-9
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 11-18	TRD - Page 11-11
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 11-2, 11-3	
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*Godfrey Lamptey, P.E., PTOE*	Highway/Direction of Travel	*I-95 Northbound*
Agency or Company	*Goal Associates*	From/To	*Between NLB Ramps*
Date Performed	*7/21/2016*	Jurisdiction	*Palm Beach County*
Analysis Time Period	*PM Peak Period*	Analysis Year	*2015 Existing Conditions*

Project Description *SR-9/I-95 at Northlake Boulevard Interchange PD&E Study*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5113*	veh/h	Peak-Hour Factor, PHF	*0.95*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs

Lane Width		ft
Rt-Side Lat. Clearance		ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD		ramps/mi
FFS (measured)	*65.0*	mph
Base free-flow Speed, BFFS		mph

Calc Speed Adj and FFS

f_{LW}		mph
f_{LC}		mph
TRD Adjustment		mph
FFS	*65.0*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1372*	pc/h/ln
S	*65.0*	mph
D = v_p / S	*21.1*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h/ln
S		mph
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed
DDHV - Directional design hour volume

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*Godfrey Lamptey, P.E., PTOE*	Highway/Direction of Travel	*I-95 Southbound*
Agency or Company	*Goal Associates*	From/To	*Between NLB Ramps*
Date Performed	*7/21/2016*	Jurisdiction	*Palm Beach County*
Analysis Time Period	*PM Peak Period*	Analysis Year	*2015 Existing Conditions*

Project Description *SR-9/I-95 at Northlake Boulevard Interchange PD&E Study*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*3085*	veh/h	Peak-Hour Factor, PHF	*0.95*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs

Lane Width		ft
Rt-Side Lat. Clearance		ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD		ramps/mi
FFS (measured)	*65.0*	mph
Base free-flow Speed, BFFS		mph

Calc Speed Adj and FFS

f_{LW}		mph
f_{LC}		mph
TRD Adjustment		mph
FFS	*65.0*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*828*	pc/h/ln
S	*65.0*	mph
D = v_p / S	*12.7*	pc/mi/ln
LOS	*B*	

Design (N)

Design (N)

Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h/ln
S		mph
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed
DDHV - Directional design hour volume

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*Godfrey Lamptey, P.E., PTOE*	Highway/Direction of Travel	*I-95 Northbound*
Agency or Company	*Goal Associates*	From/To	*Northlake Blvd to PGA Blvd*
Date Performed	*7/21/2016*	Jurisdiction	*Palm Beach County*
Analysis Time Period	*PM Peak Period*	Analysis Year	*2015 Existing Conditions*

Project Description *SR-9/I-95 at Northlake Boulevard Interchange PD&E Study*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6191*	veh/h	Peak-Hour Factor, PHF	*0.95*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs			Calc Speed Adj and FFS		
Lane Width		ft			
Rt-Side Lat. Clearance		ft	f_{LW}		mph
Number of Lanes, N	*4*		f_{LC}		mph
Total Ramp Density, TRD		ramps/mi	TRD Adjustment		mph
FFS (measured)	*65.0*	mph	FFS	*65.0*	mph
Base free-flow Speed, BFFS		mph			

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1662*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	*64.0*	mph	S	mph
D = v_p / S	*26.0*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits 11-10, 11-12	f_{LW} - Exhibit 11-8
V - Hourly volume	D - Density	E_T - Exhibits 11-10, 11-11, 11-13	f_{LC} - Exhibit 11-9
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 11-18	TRD - Page 11-11
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 11-2, 11-3	
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*Godfrey Lamptey, P.E., PTOE*	Highway/Direction of Travel	*I-95 Southbound*
Agency or Company	*Goal Associates*	From/To	*Northlake Blvd to PGA Blvd*
Date Performed	*7/21/2016*	Jurisdiction	*Palm Beach County*
Analysis Time Period	*PM Peak Period*	Analysis Year	*2015 Existing Conditions*

Project Description *SR-9/I-95 at Northlake Boulevard Interchange PD&E Study*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4021*	veh/h	Peak-Hour Factor, PHF	*0.95*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs

Lane Width		ft
Rt-Side Lat. Clearance		ft
Number of Lanes, N	*5*	
Total Ramp Density, TRD		ramps/mi
FFS (measured)	*65.0*	mph
Base free-flow Speed, BFFS		mph

Calc Speed Adj and FFS

f_{LW}		mph
f_{LC}		mph
TRD Adjustment		mph
FFS	*65.0*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*863*	pc/h/ln
S	*65.0*	mph
D = v_p / S	*13.3*	pc/mi/ln
LOS	*B*	

Design (N)

Design (N)

Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h/ln
S		mph
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed
DDHV - Directional design hour volume

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*Godfrey Lamptey, P.E., PTOE*	Highway/Direction of Travel	*I-95 Northbound*
Agency or Company	*Goal Associates*	From/To	*Blue Heron Blvd. to Northlake*
Date Performed	*7/21/2016*	Jurisdiction	*Palm Beach County*
Analysis Time Period	*AM Peak Period*	Analysis Year	*2015 Existing Conditions*

Project Description *SR-9/I-95 at Northlake Boulevard Interchange PD&E Study*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5077*	veh/h	Peak-Hour Factor, PHF	*0.95*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs

Lane Width		ft
Rt-Side Lat. Clearance		ft
Number of Lanes, N	*5*	
Total Ramp Density, TRD		ramps/mi
FFS (measured)	*65.0*	mph
Base free-flow Speed, BFFS		mph

Calc Speed Adj and FFS

f_{LW}		mph
f_{LC}		mph
TRD Adjustment		mph
FFS	*65.0*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1090*	pc/h/ln
S	*65.0*	mph
D = v_p / S	*16.8*	pc/mi/ln
LOS	*B*	

Design (N)

Design (N)

Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h/ln
S		mph
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed
DDHV - Directional design hour volume

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*Godfrey Lamptey, P.E., PTOE*	Highway/Direction of Travel	*I-95 Southbound*
Agency or Company	*Goal Associates*	From/To	*Blue Heron Blvd. to Northlake*
Date Performed	*7/21/2016*	Jurisdiction	*Palm Beach County*
Analysis Time Period	*AM Peak Period*	Analysis Year	*2015 Existing Conditions*
Project Description	*SR-9/I-95 at Northlake Boulevard Interchange PD&E Study*		

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*7059*	veh/h	Peak-Hour Factor, PHF	*0.95*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs			Calc Speed Adj and FFS		
Lane Width		ft			
Rt-Side Lat. Clearance		ft	f_{LW}		mph
Number of Lanes, N	*5*		f_{LC}		mph
Total Ramp Density, TRD		ramps/mi	TRD Adjustment		mph
FFS (measured)	*65.0*	mph	FFS	*65.0*	mph
Base free-flow Speed, BFFS		mph			

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1516*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	*64.8*	mph	S	mph
D = v_p / S	*23.4*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed
DDHV - Directional design hour volume

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*Godfrey Lamptey, P.E., PTOE*	Highway/Direction of Travel	*I-95 Northbound*
Agency or Company	*Goal Associates*	From/To	*Between NLB Ramps*
Date Performed	*7/21/2016*	Jurisdiction	*Palm Beach County*
Analysis Time Period	*AM Peak Period*	Analysis Year	*2015 Existing Conditions*

Project Description *SR-9/I-95 at Northlake Boulevard Interchange PD&E Study*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*3646*	veh/h	Peak-Hour Factor, PHF	*0.95*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs

Lane Width		ft
Rt-Side Lat. Clearance		ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD		ramps/mi
FFS (measured)	*65.0*	mph
Base free-flow Speed, BFFS		mph

Calc Speed Adj and FFS

f_{LW}		mph
f_{LC}		mph
TRD Adjustment		mph
FFS	*65.0*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*979*	pc/h/ln
S	*65.0*	mph
D = v_p / S	*15.1*	pc/mi/ln
LOS	*B*	

Design (N)

Design (N)

Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h/ln
S		mph
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed
DDHV - Directional design hour volume

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*Godfrey Lamptey, P.E., PTOE*	Highway/Direction of Travel	*I-95 Southbound*
Agency or Company	*Goal Associates*	From/To	*Between NLB Ramps*
Date Performed	*7/21/2016*	Jurisdiction	*Palm Beach County*
Analysis Time Period	*AM Peak Period*	Analysis Year	*2015 Existing Conditions*
Project Description	*SR-9/I-95 at Northlake Boulevard Interchange PD&E Study*		

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5487*	veh/h	Peak-Hour Factor, PHF	*0.95*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs

Lane Width		ft
Rt-Side Lat. Clearance		ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD		ramps/mi
FFS (measured)	*65.0*	mph
Base free-flow Speed, BFFS		mph

Calc Speed Adj and FFS

f_{LW}		mph
f_{LC}		mph
TRD Adjustment		mph
FFS	*65.0*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1473*	pc/h/ln
S	*64.9*	mph
D = v_p / S	*22.7*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h/ln
S		mph
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed
DDHV - Directional design hour volume

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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MERGE LOCATIONS

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Northbound
Agency or Company	Goal Associates	Junction	Northlake Blvd. NB On-Ramp
Date Performed	7/15/2016	Jurisdiction	Palm Beach County
Analysis Time Period	AM Peak Period	Analysis Year	2015 Existing Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	4
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	500
Deceleration Lane Length L_D	
Freeway Volume, V_F	3646
Ramp Volume, V_R	1009
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	40.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3646	0.95	Level	4	0	0.980	1.00	3915
Ramp	1009	0.95	Level	4	0	0.980	1.00	1083
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.082 using Equation 0 (Exhibit 13-6)

V_{12} = 323 pc/h

V_3 or V_{av34} 1796 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 1566 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4998	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2649	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 22.5 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.336 (Exibit 13-11)

S_R= 57.3 mph (Exhibit 13-11)

S_0= 62.6 mph (Exhibit 13-11)

S = 59.6 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Southbound
Agency or Company	Goal Associates	Junction	Northlake Blvd. SB On-Ramp
Date Performed	7/15/2016	Jurisdiction	Palm Beach County
Analysis Time Period	AM Peak Period	Analysis Year	2015 Existing Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 2	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 500	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 5487	
	Ramp Volume, V_R: 1572	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 40.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5487	0.95	Grade	4	0	0.980	1.00	5891
Ramp	1572	0.95	Level	3	0	0.985	1.00	1680
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.209 using Equation 0 (Exhibit 13-6)

V_{12} = 936 pc/h

V_3 or V_{av34} 1771 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 1791 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6158	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3471	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 22.4 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.326 (Exibit 13-11)

S_R= 57.5 mph (Exhibit 13-11)

S_0= 62.0 mph (Exhibit 13-11)

S = 59.4 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Northbound
Agency or Company	Goal Associates	Junction	Northlake Blvd. NB On-Ramp
Date Performed	7/15/2016	Jurisdiction	Palm Beach County
Analysis Time Period	PM Peak Period	Analysis Year	2015 Existing Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 4	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 500	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 5113	
	Ramp Volume, V_R: 1078	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 40.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5113	0.95	Level	4	0	0.980	1.00	5490
Ramp	1078	0.95	Level	4	0	0.980	1.00	1157
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.073 using Equation 0 (Exhibit 13-6)

V_{12} = 402 pc/h

V_3 or V_{av34} 2544 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 2196 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6647	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3353	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 28.0 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.392 (Exibit 13-11)

S_R= 56.0 mph (Exhibit 13-11)

S_0= 60.9 mph (Exhibit 13-11)

S = 58.3 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Southbound
Agency or Company	Goal Associates	Junction	Northlake Blvd. SB On-Ramp
Date Performed	7/15/2016	Jurisdiction	Palm Beach County
Analysis Time Period	PM Peak Period	Analysis Year	2015 Existing Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 4	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 2	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 500	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D	V_D = veh/h
	Freeway Volume, V_F: 3085	
	Ramp Volume, V_R: 1625	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 40.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3085	0.95	Level	4	0	0.980	1.00	3312
Ramp	1625	0.95	Level	3	0	0.985	1.00	1736
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.209 using Equation 0 (Exhibit 13-6)

V_{12} = 692 pc/h

V_3 or V_{av34} 1310 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 1324 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5048	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3060	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 19.1 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.284 (Exibit 13-11)

S_R= 58.5 mph (Exhibit 13-11)

S_0= 63.2 mph (Exhibit 13-11)

S = 60.2 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Southbound
Agency or Company	Goal Associates	Junction	PGA Blvd. EB-SB On-Ramp
Date Performed	7/15/2016	Jurisdiction	Palm Beach County
Analysis Time Period	AM Peak Period	Analysis Year	2015 Existing Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☑ Yes ☑ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☐ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = 400 ft	Acceleration Lane Length, L_A: 500	L_{down} = ft
V_u = 658 veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 5509	
	Ramp Volume, V_R: 898	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 40.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5509	0.95	Level	4	0	0.980	1.00	5915
Ramp	898	0.95	Level	3	0	0.985	1.00	959
UpStream	658	0.95	Level	3	0	0.985	1.00	703
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.098 using Equation 0 (Exhibit 13-6)

V_{12} = 440 pc/h

V_3 or V_{av34} 2028 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 1798 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5455	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2757	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 23.4 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.342 (Exibit 13-11)

S_R= 57.1 mph (Exhibit 13-11)

S_0= 61.9 mph (Exhibit 13-11)

S = 59.4 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Southbound
Agency or Company	Goal Associates	Junction	PGA Blvd. WB-SB On-Ramp
Date Performed	7/15/2016	Jurisdiction	Palm Beach County
Analysis Time Period	AM Peak Period	Analysis Year	2015 Existing Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 4	☑ Yes ☑ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☐ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 450	L_{down} = 400 ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = 898 veh/h
	Freeway Volume, V_F: 4851	
	Ramp Volume, V_R: 658	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 40.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	4851	0.95	Level	4	0	0.980	1.00	5208
Ramp	658	0.95	Level	3	0	0.985	1.00	703
UpStream								
DownStream	898	0.95	Level	3	0	0.985	1.00	959

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.130 using Equation 0 (Exhibit 13-6)

V_{12} = 677 pc/h

V_3 or V_{av34} 2265 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 2083 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5911	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2786	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 24.1 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.348 (Exibit 13-11)

S_R= 57.0 mph (Exhibit 13-11)

S_0= 61.2 mph (Exhibit 13-11)

S = 59.1 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Southbound
Agency or Company	Goal Associates	Junction	PGA Blvd. EB-SB On-Ramp
Date Performed	7/15/2016	Jurisdiction	Palm Beach County
Analysis Time Period	PM Peak Period	Analysis Year	2015 Existing Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☑ Yes ☑ On	Freeway Number of Lanes, N: 4	☐ Yes ☐ On
☐ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = 400 ft	Acceleration Lane Length, L_A: 500	L_{down} = ft
V_u = 1253 veh/h	Deceleration Lane Length L_D	V_D = veh/h
	Freeway Volume, V_F: 3105	
	Ramp Volume, V_R: 916	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 40.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3105	0.95	Level	4	0	0.980	1.00	3334
Ramp	916	0.95	Level	3	0	0.985	1.00	979
UpStream	1253	0.95	Level	3	0	0.985	1.00	1339
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.095 using Equation 0 (Exhibit 13-6)

V_{12} = 318 pc/h

V_3 or V_{av34} 1508 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4313	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	1297	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 12.0 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.295 (Exibit 13-11)

S_R= 58.2 mph (Exhibit 13-11)

S_0= 61.4 mph (Exhibit 13-11)

S = 60.4 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Southbound
Agency or Company	Goal Associates	Junction	PGA Blvd. WB-SB On-Ramp
Date Performed	7/15/2016	Jurisdiction	Palm Beach County
Analysis Time Period	PM Peak Period	Analysis Year	2015 Existing Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 4	☑ Yes ☑ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☐ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 450	L_{down} = 400 ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = 916 veh/h
	Freeway Volume, V_F: 1852	
	Ramp Volume, V_R: 1253	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 40.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	1852	0.95	Level	4	0	0.980	1.00	1988
Ramp	1253	0.95	Level	3	0	0.985	1.00	1339
UpStream								
DownStream	916	0.95	Level	3	0	0.985	1.00	979

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.176 using Equation 0 (Exhibit 13-6)

V_{12} = 350 pc/h

V_3 or V_{av34} 819 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 795 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	3327	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2134	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 18.7 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.318 (Exibit 13-11)

S_R= 57.7 mph (Exhibit 13-11)

S_0= 64.7 mph (Exhibit 13-11)

S = 60.0 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Northbound
Agency or Company	Goal Associates	Junction	Blue Heron Blvd. NB On-Ramp
Date Performed	7/15/2016	Jurisdiction	Palm Beach County
Analysis Time Period	AM Peak Period	Analysis Year	2015 Existing Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 4	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 2	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 500	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 4400	
	Ramp Volume, V_R: 677	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 40.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	4400	0.95	Level	4	0	0.980	1.00	4724
Ramp	677	0.95	Level	4	0	0.980	1.00	727
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.209 using Equation 0 (Exhibit 13-6)

V_{12} = 987 pc/h

V_3 or V_{av34} 1868 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 1889 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5451	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2616	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 16.1 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.254 (Exibit 13-11)

S_R= 59.1 mph (Exhibit 13-11)

S_0= 61.7 mph (Exhibit 13-11)

S = 60.4 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Northbound
Agency or Company	Goal Associates	Junction	Blue Heron Blvd. NB On-Ramp
Date Performed	7/15/2016	Jurisdiction	Palm Beach County
Analysis Time Period	PM Peak Period	Analysis Year	2020 Future conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	4
Ramp Number of Lanes, N	2
Acceleration Lane Length, L_A	500
Deceleration Lane Length L_D	
Freeway Volume, V_F	5664
Ramp Volume, V_R	1066
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	40.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5664	0.95	Level	4	0	0.980	1.00	6081
Ramp	1066	0.95	Level	4	0	0.980	1.00	1145
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.209 using Equation 0 (Exhibit 13-6)

V_{12} = 1271 pc/h

V_3 or V_{av34} 2405 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 2432 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	7226	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3577	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 23.4 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.340 (Exibit 13-11)

S_R= 57.2 mph (Exhibit 13-11)

S_0= 60.2 mph (Exhibit 13-11)

S = 58.7 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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DIVERGE LOCATIONS

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Northbound
Agency or Company	Goal Associates	Junction	Northlake Blvd. NB Off-Ramp
Date Performed	7/18/2016	Jurisdiction	Palm Beach County
Analysis Time Period	AM Peak Period	Analysis Year	2015 Existing Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	2
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	500
Freeway Volume, V_F	5077
Ramp Volume, V_R	1431
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	40.0

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5077	0.95	Level	4	0	0.980	1.00	5451
Ramp	1431	0.95	Level	4	0	0.980	1.00	1536
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)
P_{FM} = using Equation (Exhibit 13-6)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)
LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)
S_R= mph (Exhibit 13-11)
S_0= mph (Exhibit 13-11)
S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)
P_{FD} = 0.260 using Equation 0 (Exhibit 13-7)
V_{12} = 2412 pc/h
V_3 or V_{av34} 1247 pc/h (Equation 13-14 or 13-17)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No
If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4906	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	3370	Exhibit 13-8	9400	No
V_R	1536	Exhibit 13-10	4200	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2412	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 11.5 (pc/mi/ln)
LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.501 (Exhibit 13-12)
S_R= 53.5 mph (Exhibit 13-12)
S_0= 70.3 mph (Exhibit 13-12)
S = 60.9 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Southbound
Agency or Company	Goal Associates	Junction	Northlake Blvd. SB Off-Ramp
Date Performed	7/18/2016	Jurisdiction	Palm Beach County
Analysis Time Period	AM Peak Period	Analysis Year	2015 Existing Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	2
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	500
Freeway Volume, V_F	6407
Ramp Volume, V_R	920
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	40.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	6407	0.95	Level	4	0	0.980	1.00	6879
Ramp	920	0.95	Level	3	0	0.985	1.00	983
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.260 using Equation 0 (Exhibit 13-7)

V_{12} = 2248 pc/h

V_3 or V_{av34} 1800 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 2339 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	5848	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	4865	Exhibit 13-8	9400	No
V_R	983	Exhibit 13-10	4200	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2248	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 10.9 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.451 (Exhibit 13-12)

S_R= 54.6 mph (Exhibit 13-12)

S_0= 68.4 mph (Exhibit 13-12)

S = 62.1 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Northbound
Agency or Company	Goal Associates	Junction	Northlake Blvd. NB Off-Ramp
Date Performed	7/18/2016	Jurisdiction	Palm Beach County
Analysis Time Period	PM Peak Period	Analysis Year	2015 Existing Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	2
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	500
Freeway Volume, V_F	6730
Ramp Volume, V_R	1617
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	40.0

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	6730	0.95	Level	4	0	0.980	1.00	7226
Ramp	1617	0.95	Level	4	0	0.980	1.00	1736
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)
P_{FM} = using Equation (Exhibit 13-6)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)
LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)
S_R= mph (Exhibit 13-11)
S_0= mph (Exhibit 13-11)
S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)
P_{FD} = 0.260 using Equation 0 (Exhibit 13-7)
V_{12} = 2788 pc/h
V_3 or V_{av34} 1496 pc/h (Equation 13-14 or 13-17)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No
If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	5781	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	4045	Exhibit 13-8	9400	No
V_R	1736	Exhibit 13-10	4200	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2788	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 14.7 (pc/mi/ln)
LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.519 (Exhibit 13-12)
S_R= 53.1 mph (Exhibit 13-12)
S_0= 69.4 mph (Exhibit 13-12)
S = 60.4 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Southbound
Agency or Company	Goal Associates	Junction	Northlake Blvd. SB Off-Ramp
Date Performed	7/18/2016	Jurisdiction	Palm Beach County
Analysis Time Period	PM Peak Period	Analysis Year	2015 Existing Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp
- ☐ Yes ☐ On
- ☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	2
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	500
Freeway Volume, V_F	4021
Ramp Volume, V_R	936
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	40.0

Downstream Adj Ramp
- ☐ Yes ☐ On
- ☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	4021	0.95	Level	4	0	0.980	1.00	4317
Ramp	936	0.95	Level	3	0	0.985	1.00	1000
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.260 using Equation 0 (Exhibit 13-7)

V_{12} = 1750 pc/h

V_3 or V_{av34} 1068 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	3886	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	2886	Exhibit 13-8	9400	No
V_R	1000	Exhibit 13-10	4200	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	1750	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 5.8 (pc/mi/ln)

LOS = A (Exhibit 13-2)

Speed Determination

D_s = 0.453 (Exhibit 13-12)

S_R= 54.6 mph (Exhibit 13-12)

S_0= 71.0 mph (Exhibit 13-12)

S = 62.5 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Northbound
Agency or Company	Goal Associates	Junction	PGA Blvd. NB-EB Off-Ramp
Date Performed	7/18/2016	Jurisdiction	Palm Beach County
Analysis Time Period	AM Peak Period	Analysis Year	2015 Existing Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	4
Ramp Number of Lanes, N	2
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	500
Freeway Volume, V_F	4655
Ramp Volume, V_R	2256
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	40.0

Downstream Adj Ramp

☑ Yes ☐ On

☐ No ☑ Off

L_{down} = 1050 ft

V_D = 824 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	4655	0.95	Level	4	0	0.980	1.00	4998
Ramp	2256	0.95	Grade	4	0	0.980	1.00	2422
UpStream								
DownStream	824	0.95	Grade	4	0	0.980	1.00	885

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.260 using Equation 0 (Exhibit 13-7)

V_{12} = 3092 pc/h

V_3 or V_{av34} 953 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4998	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	2576	Exhibit 13-8	9400	No
V_R	2422	Exhibit 13-10	4200	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3092	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 17.3 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.581 (Exhibit 13-12)

S_R= 51.6 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 57.7 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Northbound
Agency or Company	Goal Associates	Junction	PGA Blvd. NB-WB Off-Ramp
Date Performed	7/18/2016	Jurisdiction	Palm Beach County
Analysis Time Period	AM Peak Period	Analysis Year	2015 Existing conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp

☑ Yes ☐ On

☐ No ☑ Off

L_{up} = 1050 ft

V_u = 2256 veh/h

Freeway Number of Lanes, N	4
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	500
Freeway Volume, V_F	2399
Ramp Volume, V_R	824
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	30.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	2399	0.95	Level	4	0	0.980	1.00	2576
Ramp	824	0.95	Level	4	0	0.980	1.00	885
UpStream	2256	0.95	Level	4	0	0.980	1.00	2422
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation 0 (Exhibit 13-7)

V_{12} = 1622 pc/h

V_3 or V_{av34} 477 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	2576	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	1691	Exhibit 13-8	9400	No
V_R	885	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	1622	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 13.7 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.573 (Exhibit 13-12)

S_R= 51.8 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 57.7 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Northbound
Agency or Company	Goal Associates	Junction	PGA Blvd. NB-EB Off-Ramp
Date Performed	7/18/2016	Jurisdiction	Palm Beach County
Analysis Time Period	PM Peak Period	Analysis Year	2015 Existing Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	4
Ramp Number of Lanes, N	2
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	500
Freeway Volume, V_F	6191
Ramp Volume, V_R	1628
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	40.0

Downstream Adj Ramp

☑ Yes ☐ On

☐ No ☑ Off

L_{down} = 1050 ft

V_D = 932 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	6191	0.95	Level	4	0	0.980	1.00	6647
Ramp	1628	0.95	Level	4	0	0.980	1.00	1748
UpStream								
DownStream	932	0.95	Level	4	0	0.980	1.00	1001

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.260 using Equation 0 (Exhibit 13-7)

V_{12} = 3022 pc/h

V_3 or V_{av34} 1812 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	6647	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	4899	Exhibit 13-8	9400	No
V_R	1748	Exhibit 13-10	4200	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3022	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 16.7 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.520 (Exhibit 13-12)

S_R= 53.0 mph (Exhibit 13-12)

S_0= 68.1 mph (Exhibit 13-12)

S = 60.3 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Northbound
Agency or Company	Goal Associates	Junction	PGA Blvd. NB-WB Off-Ramp
Date Performed	7/18/2016	Jurisdiction	Palm Beach County
Analysis Time Period	PM Peak Period	Analysis Year	2015 Existing Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp

☑ Yes ☐ On

☐ No ☑ Off

L_{up} = 1050 ft

V_u = 1628 veh/h

Freeway Number of Lanes, N	4
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	500
Freeway Volume, V_F	4563
Ramp Volume, V_R	932
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	30.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	4563	0.95	Level	4	0	0.980	1.00	4899
Ramp	932	0.95	Level	4	0	0.980	1.00	1001
UpStream	1628	0.95	Level	4	0	0.980	1.00	1748
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation 0 (Exhibit 13-7)

V_{12} = 2701 pc/h

V_3 or V_{av34} 1099 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4899	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	3898	Exhibit 13-8	9400	No
V_R	1001	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2701	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 23.0 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.583 (Exhibit 13-12)

S_R= 51.6 mph (Exhibit 13-12)

S_0= 70.9 mph (Exhibit 13-12)

S = 58.8 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Southbound
Agency or Company	Goal Associates	Junction	Blue Heron Blvd. SB Off-Ramp
Date Performed	7/18/2016	Jurisdiction	Palm Beach County
Analysis Time Period	AM Peak Period	Analysis Year	2015 Existing conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp		Freeway Number of Lanes, N	5	Downstream Adj Ramp	
☐ Yes	☐ On	Ramp Number of Lanes, N	2	☐ Yes	☐ On
☑ No	☐ Off	Acceleration Lane Length, L_A		☑ No	☐ Off
L_{up} =	ft	Deceleration Lane Length L_D	500	L_{down} =	ft
V_u =	veh/h	Freeway Volume, V_F	7059	V_D =	veh/h
		Ramp Volume, V_R	1099		
		Freeway Free-Flow Speed, S_{FF}	65.0		
		Ramp Free-Flow Speed, S_{FR}	40.0		

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	7059	0.95	Level	4	0	0.980	1.00	7579
Ramp	1099	0.95	Level	3	0	0.985	1.00	1174
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.260 using Equation 0 (Exhibit 13-7)

V_{12} = 2445 pc/h

V_3 or V_{av34} 1809 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	6064	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	4890	Exhibit 13-8	9400	No
V_R	1174	Exhibit 13-10	4200	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2445	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 11.8 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.469 (Exhibit 13-12)

S_R= 54.2 mph (Exhibit 13-12)

S_0= 68.1 mph (Exhibit 13-12)

S = 61.8 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Southbound
Agency or Company	Goal Associates	Junction	Blue Heron Blvd. SB Off-Ramp
Date Performed	7/18/2016	Jurisdiction	Palm Beach County
Analysis Time Period	PM Peak Period	Analysis Year	2015 Existing Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	2
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	500
Freeway Volume, V_F	4710
Ramp Volume, V_R	513
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	40.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	4710	0.95	Level	4	0	0.980	1.00	5057
Ramp	513	0.95	Level	3	0	0.985	1.00	548
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.260 using Equation 0 (Exhibit 13-7)

V_{12} = 1589 pc/h

V_3 or V_{av34} 1481 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 1820 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4552	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	4004	Exhibit 13-8	9400	No
V_R	548	Exhibit 13-10	4200	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	1589	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 6.4 (pc/mi/ln)

LOS = A (Exhibit 13-2)

Speed Determination

D_s = 0.412 (Exhibit 13-12)

S_R= 55.5 mph (Exhibit 13-12)

S_0= 69.9 mph (Exhibit 13-12)

S = 63.3 mph (Exhibit 13-13)

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APPENDIX G

(Existing Signalized Intersections Operational Analysis Results)

Northlake Boulevard

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	632	1372	247	263	635	203	758	258	335	623	236
Future Volume (vph)	632	1372	247	263	635	203	758	258	335	623	236
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	1	6		5	2	7	4	5	3	8	1
Permitted Phases			6					4			8
Detector Phase	1	6	6	5	2	7	4	5	3	8	1
Switch Phase											
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	4.0	6.0	4.0	4.0	6.0	4.0
Minimum Split (s)	22.0	48.0	48.0	11.0	52.0	11.0	43.5	11.0	21.0	47.0	22.0
Total Split (s)	46.0	70.0	70.0	28.0	52.0	24.0	44.0	28.0	28.0	48.0	46.0
Total Split (%)	27.1%	41.2%	41.2%	16.5%	30.6%	14.1%	25.9%	16.5%	16.5%	28.2%	27.1%
Yellow Time (s)	4.0	4.5	4.5	4.0	4.5	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.5	2.5	3.0	2.5	3.0	2.5	3.0	3.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	7.0	7.0	7.0	7.0	7.0	6.5	7.0	7.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?											
Recall Mode	None	Max	Max	None	C-Max	Max	None	None	None	None	None
Act Effct Green (s)	37.4	70.4	70.4	18.6	52.6	17.0	33.2	58.3	20.3	37.1	80.4
Actuated g/C Ratio	0.22	0.41	0.41	0.11	0.31	0.10	0.20	0.34	0.12	0.22	0.47
v/c Ratio	0.88	0.69	0.37	0.75	0.64	0.63	0.82	0.45	0.86	0.59	0.31
Control Delay	78.1	43.9	26.8	116.4	40.7	82.8	72.9	26.8	93.4	61.6	14.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.1	43.9	26.8	116.4	40.7	82.8	72.9	26.8	93.4	61.6	14.6
LOS	E	D	C	F	D	F	E	C	F	E	B
Approach Delay		51.6			57.9		64.8			61.2	
Approach LOS		D			E		E			E	

Intersection Summary

Cycle Length: 170
Actuated Cycle Length: 170
Offset: 115 (68%), Referenced to phase 2:WBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 57.6 — Intersection LOS: E
Intersection Capacity Utilization 82.5% — ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 1: Military Trail & Northlake Boulevard

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	632	1372	247	263	635	263	203	758	258	335	623	236
Future Volume (veh/h)	632	1372	247	263	635	263	203	758	258	335	623	236
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1810	1810	1900	1810	1810	1810	1845	1845	1845
Adj Flow Rate, veh/h	658	1429	257	274	661	274	211	790	269	349	649	246
Adj No. of Lanes	2	3	1	2	3	0	2	3	1	2	3	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	5	5	5	5	5	5	3	3	3
Cap, veh/h	712	2149	669	314	1096	446	334	1005	457	389	1096	669
Arrive On Green	0.21	0.43	0.43	0.19	0.64	0.64	0.10	0.20	0.20	0.11	0.22	0.22
Sat Flow, veh/h	3408	5036	1568	3343	3449	1406	3343	4940	1538	3408	5036	1568
Grp Volume(v), veh/h	658	1429	257	274	631	304	211	790	269	349	649	246
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1672	1647	1561	1672	1647	1538	1704	1679	1568
Q Serve(g_s), s	32.2	38.6	19.1	13.5	19.2	19.8	10.3	25.8	25.3	17.2	19.7	18.1
Cycle Q Clear(g_c), s	32.2	38.6	19.1	13.5	19.2	19.8	10.3	25.8	25.3	17.2	19.7	18.1
Prop In Lane	1.00		1.00	1.00		0.90	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	712	2149	669	314	1046	496	334	1005	457	389	1096	669
V/C Ratio(X)	0.92	0.66	0.38	0.87	0.60	0.61	0.63	0.79	0.59	0.90	0.59	0.37
Avail Cap(c_a), veh/h	802	2149	669	413	1046	496	334	1090	484	421	1244	715
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.93	0.93	0.93	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.9	39.0	33.4	68.0	24.7	24.8	73.5	64.2	50.9	74.3	59.7	33.2
Incr Delay (d2), s/veh	15.3	1.6	1.7	13.9	2.4	5.2	8.7	3.6	1.7	20.4	0.6	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	23.4	25.2	13.3	11.0	13.7	14.0	8.9	17.8	16.5	14.2	14.2	12.5
LnGrp Delay(d),s/veh	81.2	40.6	35.1	82.0	27.1	30.0	82.2	67.8	52.6	94.7	60.3	33.5
LnGrp LOS	F	D	D	F	C	C	F	E	D	F	E	C
Approach Vol, veh/h		2344			1209			1270			1244	
Approach Delay, s/veh		51.4			40.3			67.0			64.7	
Approach LOS		D			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	41.5	61.0	26.4	41.1	23.0	79.5	24.0	43.5
Change Period (Y+Rc), s	6.0	7.0	7.0	6.5	7.0	7.0	7.0	* 6.5
Max Green Setting (Gmax), s	40.0	45.0	21.0	37.5	21.0	63.0	17.0	* 42
Max Q Clear Time (g_c+I1), s	34.2	21.8	19.2	27.8	15.5	40.6	12.3	21.7
Green Ext Time (p_c), s	1.3	17.4	0.2	6.8	0.4	17.0	0.3	11.3

Intersection Summary	
HCM 2010 Ctrl Delay	55.2
HCM 2010 LOS	E

Notes

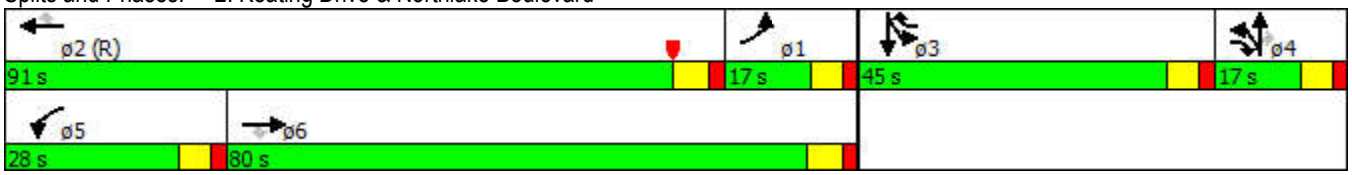
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT
Lane Configurations										
Traffic Volume (vph)	18	2052	79	92	1251	57	48	6	74	9
Future Volume (vph)	18	2052	79	92	1251	57	48	6	74	9
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Split	NA	Perm	NA
Protected Phases	1	6	4	5	2	3	4	4		3
Permitted Phases			6			2			4	
Detector Phase	1	6	4	5	2	3	4	4	4	3
Switch Phase										
Minimum Initial (s)	4.0	20.0	5.0	4.0	20.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	45.0	11.0	22.0	39.5	43.0	11.0	11.0	11.0	43.0
Total Split (s)	17.0	80.0	17.0	28.0	91.0	45.0	17.0	17.0	17.0	45.0
Total Split (%)	10.0%	47.1%	10.0%	16.5%	53.5%	26.5%	10.0%	10.0%	10.0%	26.5%
Yellow Time (s)	4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.5	6.0	6.0	6.5	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead
Lead-Lag Optimize?			Yes			Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	C-Max	None	None	None	None	None
Act Effct Green (s)	8.9	107.5	116.9	14.7	118.0	135.4	8.8	8.8	8.8	14.4
Actuated g/C Ratio	0.05	0.63	0.69	0.09	0.69	0.80	0.05	0.05	0.05	0.08
v/c Ratio	0.20	0.66	0.07	0.64	0.38	0.05	0.33	0.32	0.57	0.93dl
Control Delay	64.4	14.2	2.5	91.2	6.6	2.8	86.4	86.1	41.9	84.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.4	14.2	2.5	91.2	6.6	2.8	86.4	86.1	41.9	84.9
LOS	E	B	A	F	A	A	F	F	D	F
Approach Delay		14.2			12.1			60.6		84.9
Approach LOS		B			B			E		F

Intersection Summary

Cycle Length: 170
Actuated Cycle Length: 170
Offset: 123 (72%), Referenced to phase 2:WBT, Start of Yellow
Natural Cycle: 135
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 18.1 — Intersection LOS: B
Intersection Capacity Utilization 74.3% — ICU Level of Service D
Analysis Period (min) 15

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 2: Keating Drive & Northlake Boulevard



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	2052	79	92	1251	57	48	6	74	134	9	27
Future Volume (vph)	18	2052	79	92	1251	57	48	6	74	134	9	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.5	6.0	6.0	6.5	6.0	6.0	6.0	6.0		6.0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95	1.00		0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00		0.96	
Satd. Flow (prot)	1770	5085	1583	1736	4988	1553	1665	1686	1568		3324	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00		0.96	
Satd. Flow (perm)	1770	5085	1583	1736	4988	1553	1665	1686	1568		3324	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	19	2138	82	96	1303	59	50	6	77	140	9	28
RTOR Reduction (vph)	0	0	7	0	0	2	0	0	55	0	0	0
Lane Group Flow (vph)	19	2138	75	96	1303	57	28	28	22	0	177	0
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Split	NA	Perm	Split	NA	
Protected Phases	1	6	4	5	2	3	4	4		3	3	
Permitted Phases			6			2			4			
Actuated Green, G (s)	6.6	107.6	116.4	14.7	115.7	130.1	8.8	8.8	8.8		14.4	
Effective Green, g (s)	6.6	107.6	116.4	14.7	115.7	130.1	8.8	8.8	8.8		14.4	
Actuated g/C Ratio	0.04	0.63	0.68	0.09	0.68	0.77	0.05	0.05	0.05		0.08	
Clearance Time (s)	6.0	6.5	6.0	6.0	6.5	6.0	6.0	6.0	6.0		6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	68	3218	1083	150	3394	1188	86	87	81		281	
v/s Ratio Prot	0.01	c0.42	0.00	c0.06	0.26	0.00	c0.02	0.02			c0.05	
v/s Ratio Perm			0.04			0.03			0.01			
v/c Ratio	0.28	0.66	0.07	0.64	0.38	0.05	0.33	0.32	0.27		0.93dl	
Uniform Delay, d1	79.4	19.8	8.9	75.1	11.7	4.9	77.7	77.7	77.5		75.2	
Progression Factor	0.79	0.63	0.63	0.98	0.52	1.06	1.00	1.00	1.00		1.00	
Incremental Delay, d2	1.8	0.4	0.0	8.5	0.3	0.0	2.2	2.1	1.8		4.4	
Delay (s)	64.9	12.8	5.6	82.3	6.4	5.1	79.9	79.9	79.3		79.6	
Level of Service	E	B	A	F	A	A	E	E	E		E	
Approach Delay (s)		13.0			11.3			79.6			79.6	
Approach LOS		B			B			E			E	

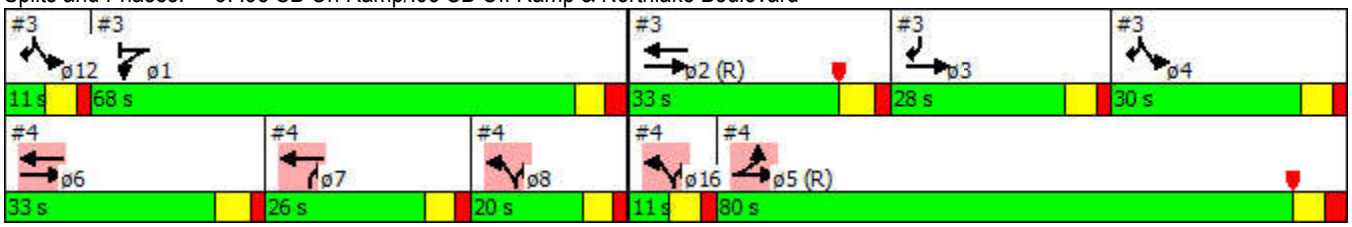
Intersection Summary			
HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	24.5
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR	ø2	ø3	ø4	ø5	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	1590	681	891	1083	572	348						
Future Volume (vph)	1590	681	891	1083	572	348						
Turn Type	NA	Free	Prot	NA	Prot	custom						
Protected Phases	3 2		1	1 2	4 12	4 3 12	2	3	4	5	6	7
Permitted Phases		Free				4						
Detector Phase	3 2		1	1 2	4 12	4 3 12						
Switch Phase												
Minimum Initial (s)			4.0				4.0	5.0	6.0	4.0	4.0	10.0
Minimum Split (s)			23.0				22.5	22.5	12.0	23.0	22.5	22.0
Total Split (s)			68.0				33.0	28.0	30.0	80.0	33.0	26.0
Total Split (%)			40.0%				19%	16%	18%	47%	19%	15%
Yellow Time (s)			4.0				4.5	4.0	4.0	4.0	4.5	4.0
All-Red Time (s)			3.0				2.0	2.0	2.0	3.0	2.0	2.0
Lost Time Adjust (s)			0.0									
Total Lost Time (s)			7.0									
Lead/Lag			Lag				Lead	Lag		Lag	Lead	Lag
Lead-Lag Optimize?								Yes			Yes	Yes
Recall Mode			None				C-Max	None	None	C-Max	Max	None
Act Effct Green (s)	55.0	170.0	61.0	94.0	35.0	63.0						
Actuated g/C Ratio	0.32	1.00	0.36	0.55	0.21	0.37						
v/c Ratio	0.67	0.44	0.76	0.40	0.84	0.32						
Control Delay	44.4	0.8	9.9	0.5	76.2	39.3						
Queue Delay	0.0	0.0	8.2	0.6	0.0	0.0						
Total Delay	44.5	0.8	18.0	1.2	76.2	39.3						
LOS	D	A	B	A	E	D						
Approach Delay	31.4			8.8								
Approach LOS	C			A								

Intersection Summary	
Cycle Length: 170	
Actuated Cycle Length: 170	
Offset: 80 (47%), Referenced to phase 2:EBWB and 5:, Start of Yellow	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.28	
Intersection Signal Delay: 28.2	Intersection LOS: C
Intersection Capacity Utilization 82.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: I95 SB On Ramp/I95 SB Off Ramp & Northlake Boulevard



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	5.0	5.0
Minimum Split (s)	12.0	11.0	11.0
Total Split (s)	20.0	11.0	11.0
Total Split (%)	12%	6%	6%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	Lead
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

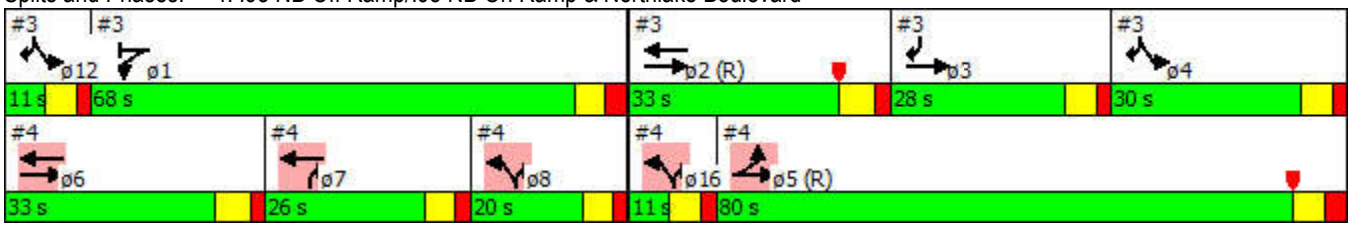
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1590	681	891	1083	0	0	0	0	572	0	348
Future Volume (vph)	0	1590	681	891	1083	0	0	0	0	572	0	348
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	7.0	7.0					6.0		6.0
Lane Util. Factor		0.81	1.00	0.97	0.91					0.97		*0.95
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		7544	1583	3367	4988					3433		3008
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		7544	1583	3367	4988					3433		3008
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	1639	702	919	1116	0	0	0	0	590	0	359
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1639	702	919	1116	0	0	0	0	590	0	359
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	0%	0%	0%	2%	2%	2%
Turn Type		NA	Free	Prot	NA					Prot		custom
Protected Phases		3 2		1	1 2					4 12		4 3 12
Permitted Phases			Free									4
Actuated Green, G (s)		55.0	170.0	61.0	94.5					35.0		63.0
Effective Green, g (s)		48.5	170.0	61.0	94.5					35.0		63.0
Actuated g/C Ratio		0.29	1.00	0.36	0.56					0.21		0.37
Clearance Time (s)				7.0								
Vehicle Extension (s)				3.0								
Lane Grp Cap (vph)		2152	1583	1208	2772					706		1114
v/s Ratio Prot		c0.22		c0.27	0.22					c0.17		0.12
v/s Ratio Perm			0.44									
v/c Ratio		0.76	0.44	0.76	0.40					0.84		0.32
Uniform Delay, d1		55.5	0.0	48.1	21.6					64.7		38.2
Progression Factor		0.87	1.00	0.15	0.01					1.00		1.00
Incremental Delay, d2		1.3	0.7	1.8	0.0					8.8		0.2
Delay (s)		49.4	0.7	8.8	0.4					73.6		38.5
Level of Service		D	A	A	A					E		D
Approach Delay (s)		34.8			4.1			0.0			60.3	
Approach LOS		C			A			A			E	

Intersection Summary			
HCM 2000 Control Delay	27.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	37.0
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR	ø1	ø2	ø3	ø4	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	617	1545	1529	392	445	986						
Future Volume (vph)	617	1545	1529	392	445	986						
Turn Type	Prot	NA	NA	Free	Prot	custom						
Protected Phases	5	5 6	6 7		8 16	8 7 16	1	2	3	4	6	7
Permitted Phases				Free								
Detector Phase	5	5 6	6 7		8 16	8 7 16						
Switch Phase												
Minimum Initial (s)	4.0						4.0	4.0	5.0	6.0	4.0	10.0
Minimum Split (s)	23.0						23.0	22.5	22.5	12.0	22.5	22.0
Total Split (s)	80.0						68.0	33.0	28.0	30.0	33.0	26.0
Total Split (%)	47.1%						40%	19%	16%	18%	19%	15%
Yellow Time (s)	4.0						4.0	4.5	4.0	4.0	4.5	4.0
All-Red Time (s)	3.0						3.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0											
Total Lost Time (s)	7.0											
Lead/Lag	Lag						Lag	Lead	Lag		Lead	Lag
Lead-Lag Optimize?									Yes		Yes	Yes
Recall Mode	C-Max						None	C-Max	None	None	Max	None
Act Effct Green (s)	73.0	106.0	52.5	170.0	25.0	51.0						
Actuated g/C Ratio	0.43	0.62	0.31	1.00	0.15	0.30						
v/c Ratio	0.49	0.58	0.78	0.30	1.05	1.28						
Control Delay	4.7	3.0	48.3	0.6	124.0	181.3						
Queue Delay	1.1	0.8	2.5	0.0	0.0	0.0						
Total Delay	5.9	3.8	50.7	0.6	124.0	181.3						
LOS	A	A	D	A	F	F						
Approach Delay		4.4	40.5									
Approach LOS		A	D									

Intersection Summary	
Cycle Length: 170	
Actuated Cycle Length: 170	
Offset: 80 (47%), Referenced to phase 2:EBWB and 5:, Start of Yellow	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.28	
Intersection Signal Delay: 58.3	Intersection LOS: E
Intersection Capacity Utilization 82.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 4: I95 NB Off Ramp/I95 NB On Ramp & Northlake Boulevard



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	5.0	5.0
Minimum Split (s)	12.0	11.0	11.0
Total Split (s)	20.0	11.0	11.0
Total Split (%)	12%	6%	6%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	Lead
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	617	1545	0	0	1529	392	445	0	986	0	0	0
Future Volume (vph)	617	1545	0	0	1529	392	445	0	986	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0			6.5	4.0	6.0		6.0			
Lane Util. Factor	0.97	0.91			0.81	1.00	0.97		*0.95			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	3060	4532			6724	1384	3030		2707			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3060	4532			6724	1384	3030		2707			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	649	1626	0	0	1609	413	468	0	1038	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	649	1626	0	0	1609	413	468	0	1038	0	0	0
Heavy Vehicles (%)	3%	3%	0%	0%	3%	5%	4%	0%	2%	0%	0%	0%
Turn Type	Prot	NA			NA	Free	Prot		custom			
Protected Phases	5	5 6			6 7		8 16		8 7 16			
Permitted Phases						Free						
Actuated Green, G (s)	73.0	106.5			53.0	170.0	25.0		51.0			
Effective Green, g (s)	73.0	106.5			53.0	170.0	25.0		51.0			
Actuated g/C Ratio	0.43	0.63			0.31	1.00	0.15		0.30			
Clearance Time (s)	7.0											
Vehicle Extension (s)	3.0											
Lane Grp Cap (vph)	1314	2839			2096	1384	445		812			
v/s Ratio Prot	0.21	c0.36			c0.24		0.15		c0.38			
v/s Ratio Perm						0.30						
v/c Ratio	0.49	0.57			0.77	0.30	1.05		1.28			
Uniform Delay, d1	35.1	18.5			52.9	0.0	72.5		59.5			
Progression Factor	0.10	0.13			0.85	1.00	1.00		1.00			
Incremental Delay, d2	1.0	0.6			1.7	0.5	56.9		134.7			
Delay (s)	4.7	2.9			46.6	0.5	129.4		194.2			
Level of Service	A	A			D	A	F		F			
Approach Delay (s)		3.4			37.2			174.1			0.0	
Approach LOS		A			D			F			A	

Intersection Summary			
HCM 2000 Control Delay	59.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	37.0
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	SBR
Lane Configurations					
Traffic Volume (vph)	40	2310	1600	50	50
Future Volume (vph)	40	2310	1600	50	50
Turn Type	Prot	NA	NA	Perm	Perm
Protected Phases	1	6	2		
Permitted Phases				2	6
Detector Phase	1	6	2	2	6
Switch Phase					
Minimum Initial (s)	4.0	20.0	20.0	20.0	20.0
Minimum Split (s)	12.0	26.5	27.5	27.5	26.5
Total Split (s)	33.0	170.0	137.0	137.0	170.0
Total Split (%)	19.4%	100.0%	80.6%	80.6%	100.0%
Yellow Time (s)	4.0	4.5	4.5	4.5	4.5
All-Red Time (s)	4.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0	6.5	6.5	6.5	6.5
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	10.5	170.0	149.2	149.2	170.0
Actuated g/C Ratio	0.06	1.00	0.88	0.88	1.00
v/c Ratio	0.49	0.39	0.24	0.04	0.03
Control Delay	76.1	0.1	0.4	0.2	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	76.1	0.1	0.4	0.2	0.0
LOS	E	A	A	A	A
Approach Delay		1.7	0.4		
Approach LOS		A	A		

Intersection Summary	
Cycle Length: 170	
Actuated Cycle Length: 170	
Offset: 76 (45%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.49	
Intersection Signal Delay: 1.1	Intersection LOS: A
Intersection Capacity Utilization 54.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 5: Northlake Boulevard & Roan Lane

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	10	40	2310	0	0	1600	50	0	0	0	0	0
Future Volume (vph)	10	40	2310	0	0	1600	50	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.0	6.5			6.5	6.5					
Lane Util. Factor		1.00	0.86			0.76	1.00					
Frt		1.00	1.00			1.00	0.85					
Flt Protected		0.95	1.00			1.00	1.00					
Satd. Flow (prot)		1784	6471			8412	1615					
Flt Permitted		0.95	1.00			1.00	1.00					
Satd. Flow (perm)		1784	6471			8412	1615					
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	43	2511	0	0	1739	54	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	54	2511	0	0	1739	54	0	0	0	0	0
Heavy Vehicles (%)	2%	1%	1%	1%	0%	3%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	Prot	NA			NA	Perm					
Protected Phases	1	1	6			2						
Permitted Phases							2					
Actuated Green, G (s)		9.2	170.0			146.3	146.3					
Effective Green, g (s)		9.2	170.0			146.3	146.3					
Actuated g/C Ratio		0.05	1.00			0.86	0.86					
Clearance Time (s)		8.0	6.5			6.5	6.5					
Vehicle Extension (s)		3.0	3.0			3.0	3.0					
Lane Grp Cap (vph)		96	6471			7239	1389					
v/s Ratio Prot		0.03	c0.39			0.21						
v/s Ratio Perm							0.03					
v/c Ratio		0.56	0.39			0.24	0.04					
Uniform Delay, d1		78.4	0.0			2.1	1.7					
Progression Factor		0.90	1.00			0.15	0.06					
Incremental Delay, d2		3.7	0.1			0.1	0.0					
Delay (s)		74.1	0.1			0.4	0.1					
Level of Service		E	A			A	A					
Approach Delay (s)			1.6			0.4			0.0			0.0
Approach LOS			A			A			A			A

Intersection Summary			
HCM 2000 Control Delay	1.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

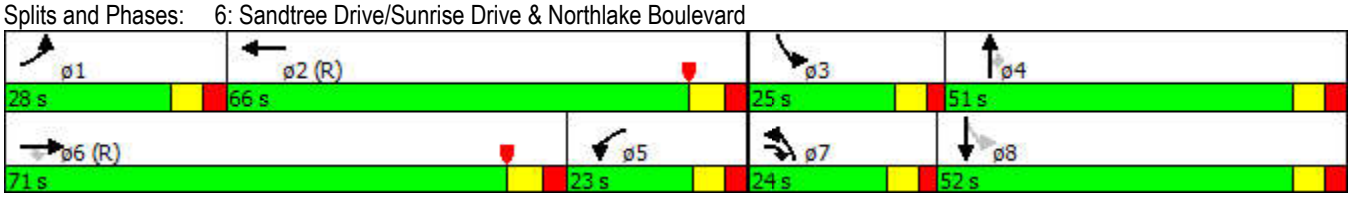
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	50
Future Volume (vph)	50
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.5
Lane Util. Factor	1.00
Frt	0.86
Flt Protected	1.00
Satd. Flow (prot)	1644
Flt Permitted	1.00
Satd. Flow (perm)	1644
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	54
RTOR Reduction (vph)	0
Lane Group Flow (vph)	54
Heavy Vehicles (%)	0%
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	170.0
Effective Green, g (s)	170.0
Actuated g/C Ratio	1.00
Clearance Time (s)	6.5
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	1644
v/s Ratio Prot	
v/s Ratio Perm	0.03
v/c Ratio	0.03
Uniform Delay, d1	0.0
Progression Factor	1.00
Incremental Delay, d2	0.0
Delay (s)	0.0
Level of Service	A
Approach Delay (s)	
Approach LOS	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	42	1995	157	125	1432	235	8	120	142	18
Future Volume (vph)	42	1995	157	125	1432	235	8	120	142	18
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Perm	pm+pt	NA
Protected Phases	1	6	7	5	2	7	4		3	8
Permitted Phases			6					4	8	
Detector Phase	1	6	7	5	2	7	4	4	3	8
Switch Phase										
Minimum Initial (s)	4.0	20.0	4.0	4.0	20.0	4.0	6.0	6.0	4.0	6.0
Minimum Split (s)	12.5	38.5	12.5	12.5	32.5	12.5	42.0	42.0	12.5	51.0
Total Split (s)	28.0	71.0	24.0	23.0	66.0	24.0	51.0	51.0	25.0	52.0
Total Split (%)	16.5%	41.8%	14.1%	13.5%	38.8%	14.1%	30.0%	30.0%	14.7%	30.6%
Yellow Time (s)	4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	2.5	3.0	3.0	2.5	3.0	3.0	2.5	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.5	6.5	7.0	7.5	6.5	7.0	7.0	6.5	7.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?										
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	None	None
Act Effct Green (s)	9.7	90.0	107.2	16.0	98.9	16.2	19.3	19.3	37.0	19.8
Actuated g/C Ratio	0.06	0.53	0.63	0.09	0.58	0.10	0.11	0.11	0.22	0.12
v/c Ratio	0.45	0.79	0.16	0.42	0.54	0.77	0.04	0.72	0.45	0.35
Control Delay	93.1	28.0	4.7	77.1	24.5	91.4	64.0	94.2	55.1	72.3
Queue Delay	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	93.1	28.4	4.7	77.1	24.5	91.4	64.0	94.2	55.1	72.3
LOS	F	C	A	E	C	F	E	F	E	E
Approach Delay		28.0			28.6		91.7			60.4
Approach LOS		C			C		F			E

Intersection Summary	
Cycle Length: 170	
Actuated Cycle Length: 170	
Offset: 160 (94%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 35.1	Intersection LOS: D
Intersection Capacity Utilization 74.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 6: Sandtree Drive/Sunrise Drive & Northlake Boulevard



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	1995	157	125	1432	36	235	8	120	142	18	44
Future Volume (veh/h)	42	1995	157	125	1432	36	235	8	120	142	18	44
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1827	1827	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	45	2122	167	133	1523	38	250	9	128	151	19	47
Adj No. of Lanes	1	3	1	2	3	0	2	1	1	1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	4	4	4	3	3	3	3	3	3
Cap, veh/h	65	1900	727	1069	3285	82	292	90	77	261	27	66
Arrive On Green	0.07	0.75	0.75	0.32	0.66	0.66	0.09	0.05	0.05	0.09	0.06	0.06
Sat Flow, veh/h	1774	5085	1583	3375	5005	125	3408	1845	1568	1757	472	1167
Grp Volume(v), veh/h	45	2122	167	133	1012	549	250	9	128	151	0	66
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1688	1663	1805	1704	1845	1568	1757	0	1639
Q Serve(g_s), s	4.2	63.5	0.9	4.8	25.5	25.5	12.3	0.8	4.8	13.7	0.0	6.7
Cycle Q Clear(g_c), s	4.2	63.5	0.9	4.8	25.5	25.5	12.3	0.8	4.8	13.7	0.0	6.7
Prop In Lane	1.00		1.00	1.00		0.07	1.00		1.00	1.00		0.71
Lane Grp Cap(c), veh/h	65	1900	727	1069	2183	1185	292	90	77	261	0	92
V/C Ratio(X)	0.69	1.12	0.23	0.12	0.46	0.46	0.86	0.10	1.67	0.58	0.00	0.71
Avail Cap(c_a), veh/h	219	1900	727	1069	2183	1185	351	477	406	288	0	434
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	0.93	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	77.8	21.5	5.0	41.3	14.4	14.4	76.7	77.2	26.9	68.5	0.0	78.9
Incr Delay (d2), s/veh	11.3	60.1	0.7	0.1	0.7	1.3	16.2	0.5	311.6	2.4	0.0	9.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.1	70.9	2.4	4.0	17.5	19.0	10.6	0.8	15.7	11.1	0.0	6.0
LnGrp Delay(d),s/veh	89.1	81.6	5.7	41.4	15.1	15.7	92.9	77.7	338.6	70.8	0.0	88.7
LnGrp LOS	F	F	A	D	B	B	F	E	F	E		F
Approach Vol, veh/h		2334			1694			387			217	
Approach Delay, s/veh		76.3			17.4			173.8			76.3	
Approach LOS		E			B			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.3	119.1	22.3	15.3	61.4	71.0	21.1	16.6
Change Period (Y+Rc), s	7.0	7.5	6.5	7.0	7.5	* 7.5	6.5	7.0
Max Green Setting (Gmax), s	21.0	58.5	18.5	44.0	16.0	* 64	17.5	45.0
Max Q Clear Time (g_c+I1), s	6.2	27.5	15.7	6.8	6.8	65.5	14.3	8.7
Green Ext Time (p_c), s	0.1	13.2	0.1	0.9	0.5	0.0	0.3	0.9

Intersection Summary	
HCM 2010 Ctrl Delay	62.9
HCM 2010 LOS	E

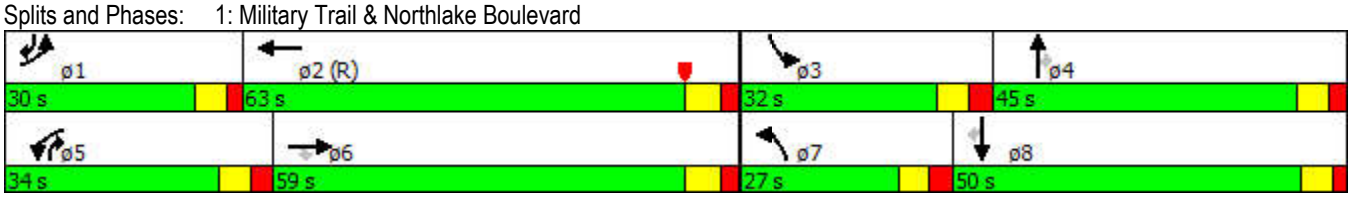
Notes

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	419	954	185	316	1343	365	706	362	395	833	613
Future Volume (vph)	419	954	185	316	1343	365	706	362	395	833	613
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	1	6		5	2	7	4	5	3	8	1
Permitted Phases			6					4			8
Detector Phase	1	6	6	5	2	7	4	5	3	8	1
Switch Phase											
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	4.0	6.0	4.0	4.0	6.0	4.0
Minimum Split (s)	10.0	48.0	48.0	23.0	52.0	23.0	43.5	23.0	11.0	47.0	10.0
Total Split (s)	30.0	59.0	59.0	34.0	63.0	27.0	45.0	34.0	32.0	50.0	30.0
Total Split (%)	17.6%	34.7%	34.7%	20.0%	37.1%	15.9%	26.5%	20.0%	18.8%	29.4%	17.6%
Yellow Time (s)	4.0	4.5	4.5	4.0	4.5	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.5	2.5	3.0	2.5	3.0	2.5	3.0	3.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	7.0	7.0	7.0	7.0	7.0	6.5	7.0	7.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?											
Recall Mode	None	Max	Max	None	C-Max	Max	None	None	None	None	None
Act Effct Green (s)	26.6	65.7	65.7	21.5	61.6	20.0	31.7	59.7	23.6	35.8	68.4
Actuated g/C Ratio	0.16	0.39	0.39	0.13	0.36	0.12	0.19	0.35	0.14	0.21	0.40
v/c Ratio	0.80	0.50	0.28	0.74	0.94	0.92	0.76	0.57	0.86	0.80	0.81
Control Delay	81.0	42.0	20.1	91.4	42.8	102.3	71.1	28.4	88.9	69.8	35.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.0	42.0	20.1	91.4	42.8	102.3	71.1	28.4	88.9	69.8	35.4
LOS	F	D	C	F	D	F	E	C	F	E	D
Approach Delay		49.9			50.5		68.3			62.4	
Approach LOS		D			D		E			E	

Intersection Summary

Cycle Length: 170
Actuated Cycle Length: 170
Offset: 129 (76%), Referenced to phase 2:WBT, Start of Yellow
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 57.3 — Intersection LOS: E
Intersection Capacity Utilization 97.9% — ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 1: Military Trail & Northlake Boulevard



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	419	954	185	316	1343	312	365	706	362	395	833	613
Future Volume (veh/h)	419	954	185	316	1343	312	365	706	362	395	833	613
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1881	1881	1900	1881	1881	1881	1863	1863	1863
Adj Flow Rate, veh/h	432	984	191	326	1385	322	376	728	373	407	859	632
Adj No. of Lanes	2	3	1	2	3	0	2	3	1	2	3	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	1	1	1	1	1	1	2	2	2
Cap, veh/h	470	1804	562	372	1379	320	409	1260	563	451	1316	626
Arrive On Green	0.14	0.35	0.35	0.21	0.66	0.66	0.12	0.25	0.25	0.13	0.26	0.26
Sat Flow, veh/h	3442	5085	1583	3476	4168	967	3476	5136	1599	3442	5085	1583
Grp Volume(v), veh/h	432	984	191	326	1137	570	376	728	373	407	859	632
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1738	1712	1711	1738	1712	1599	1721	1695	1583
Q Serve(g_s), s	21.1	26.3	15.0	15.4	56.3	56.3	18.2	21.2	33.5	19.8	25.6	44.0
Cycle Q Clear(g_c), s	21.1	26.3	15.0	15.4	56.3	56.3	18.2	21.2	33.5	19.8	25.6	44.0
Prop In Lane	1.00		1.00	1.00		0.57	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	470	1804	562	372	1133	566	409	1260	563	451	1316	626
V/C Ratio(X)	0.92	0.55	0.34	0.88	1.00	1.01	0.92	0.58	0.66	0.90	0.65	1.01
Avail Cap(c_a), veh/h	486	1804	562	552	1133	566	409	1260	563	506	1316	626
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.70	0.70	0.70	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.4	43.9	40.2	65.7	28.7	28.7	74.2	56.4	46.5	72.8	56.2	51.4
Incr Delay (d2), s/veh	22.2	1.2	1.6	7.6	23.3	33.3	28.3	0.7	2.9	18.1	1.2	38.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	17.0	18.3	11.1	11.7	53.6	56.4	15.7	15.3	21.7	15.9	17.9	64.8
LnGrp Delay(d),s/veh	94.6	45.1	41.9	73.3	52.1	62.0	102.5	57.1	49.4	90.8	57.3	89.7
LnGrp LOS	F	D	D	E	F	F	F	E	D	F	E	F
Approach Vol, veh/h		1607			2033			1477			1898	
Approach Delay, s/veh		58.0			58.3			66.7			75.3	
Approach LOS		E			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.2	63.3	29.3	48.2	25.2	67.3	27.0	50.5
Change Period (Y+Rc), s	6.0	7.0	7.0	6.5	7.0	7.0	7.0	* 6.5
Max Green Setting (Gmax), s	24.0	56.0	25.0	38.5	27.0	52.0	20.0	* 44
Max Q Clear Time (g_c+I1), s	23.1	58.3	21.8	35.5	17.4	28.3	20.2	46.0
Green Ext Time (p_c), s	0.2	0.0	0.5	2.7	0.8	19.2	0.0	0.0

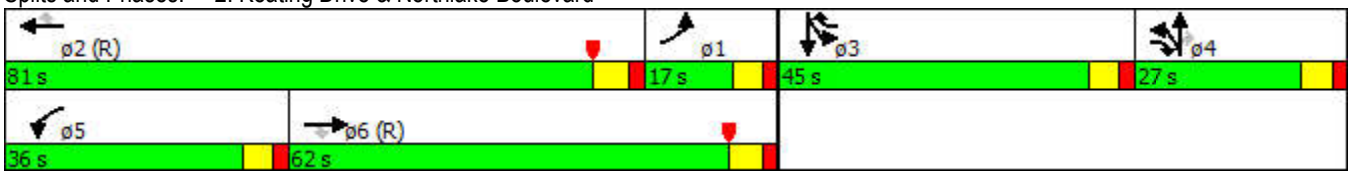
Intersection Summary	
HCM 2010 Ctrl Delay	64.6
HCM 2010 LOS	E

Notes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT
Lane Configurations										
Traffic Volume (vph)	48	1630	241	253	1814	198	257	42	258	45
Future Volume (vph)	48	1630	241	253	1814	198	257	42	258	45
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Split	NA	Perm	NA
Protected Phases	1	6	4	5	2	3	4	4		3
Permitted Phases			6			2			4	
Detector Phase	1	6	4	5	2	3	4	4	4	3
Switch Phase										
Minimum Initial (s)	4.0	20.0	5.0	4.0	20.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	36.5	11.0	10.0	39.5	43.0	11.0	11.0	11.0	43.0
Total Split (s)	17.0	62.0	27.0	36.0	81.0	45.0	27.0	27.0	27.0	45.0
Total Split (%)	10.0%	36.5%	15.9%	21.2%	47.6%	26.5%	15.9%	15.9%	15.9%	26.5%
Yellow Time (s)	4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.5	6.0	6.0	6.5	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead
Lead-Lag Optimize?										
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	None	None
Act Effct Green (s)	10.0	73.2	98.3	29.1	94.7	114.9	24.7	24.7	24.7	18.5
Actuated g/C Ratio	0.06	0.43	0.58	0.17	0.56	0.68	0.15	0.15	0.15	0.11
v/c Ratio	0.48	0.77	0.26	0.86	0.66	0.19	0.63	0.63	0.75	0.68
Control Delay	86.1	41.1	6.2	81.0	39.3	6.3	78.6	78.3	44.0	82.1
Queue Delay	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0
Total Delay	86.1	41.1	6.2	81.0	40.2	6.3	78.6	78.3	44.0	82.1
LOS	F	D	A	F	D	A	E	E	D	F
Approach Delay		37.9			41.8			62.5		82.1
Approach LOS		D			D			E		F

Intersection Summary	
Cycle Length: 170	
Actuated Cycle Length: 170	
Offset: 103 (61%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 135	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 44.6	Intersection LOS: D
Intersection Capacity Utilization 76.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: Keating Drive & Northlake Boulevard



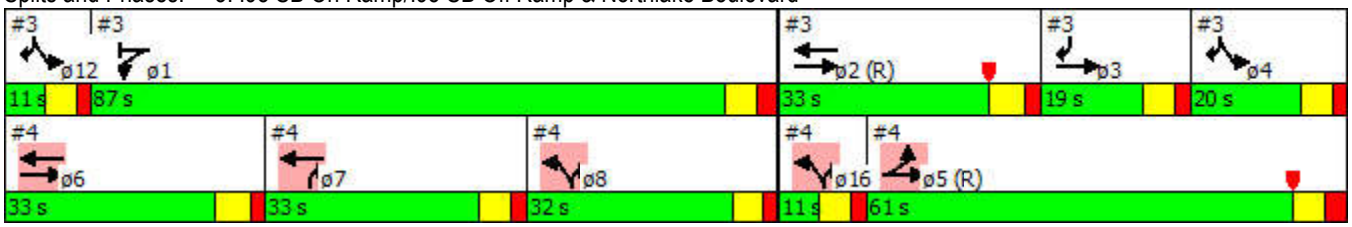
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	1630	241	253	1814	198	257	42	258	153	45	42
Future Volume (vph)	48	1630	241	253	1814	198	257	42	258	153	45	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.5	6.0	6.0	6.5	6.0	6.0	6.0	6.0		6.0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95	1.00		0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		0.97	
Satd. Flow (prot)	1787	5136	1599	1787	5136	1599	1698	1725	1599		3373	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		0.97	
Satd. Flow (perm)	1787	5136	1599	1787	5136	1599	1698	1725	1599		3373	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	50	1698	251	264	1890	206	268	44	269	159	47	44
RTOR Reduction (vph)	0	0	44	0	0	24	0	0	125	0	0	0
Lane Group Flow (vph)	50	1698	207	264	1890	182	155	157	144	0	250	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Split	NA	Perm	Split	NA	
Protected Phases	1	6	4	5	2	3	4	4		3	3	
Permitted Phases			6			2			4			
Actuated Green, G (s)	8.8	73.2	97.9	29.1	93.5	112.0	24.7	24.7	24.7		18.5	
Effective Green, g (s)	8.8	73.2	97.9	29.1	93.5	112.0	24.7	24.7	24.7		18.5	
Actuated g/C Ratio	0.05	0.43	0.58	0.17	0.55	0.66	0.15	0.15	0.15		0.11	
Clearance Time (s)	6.0	6.5	6.0	6.0	6.5	6.0	6.0	6.0	6.0		6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	92	2211	920	305	2824	1053	246	250	232		367	
v/s Ratio Prot	0.03	c0.33	0.03	c0.15	0.37	0.02	c0.09	0.09			c0.07	
v/s Ratio Perm			0.10			0.10			0.09			
v/c Ratio	0.54	0.77	0.22	0.87	0.67	0.17	0.63	0.63	0.62		0.68	
Uniform Delay, d1	78.6	41.2	17.6	68.5	27.2	11.2	68.4	68.3	68.3		72.9	
Progression Factor	0.95	0.90	1.00	0.87	1.30	1.28	1.00	1.00	1.00		1.00	
Incremental Delay, d2	5.6	2.3	0.1	18.2	1.0	0.1	5.2	4.9	5.1		5.1	
Delay (s)	80.0	39.2	17.7	77.8	36.5	14.4	73.5	73.2	73.4		78.1	
Level of Service	F	D	B	E	D	B	E	E	E		E	
Approach Delay (s)		37.6			39.2			73.4			78.1	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	44.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	24.5
Intersection Capacity Utilization	76.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR	ø2	ø3	ø4	ø5	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	1400	697	928	1945	455	481						
Future Volume (vph)	1400	697	928	1945	455	481						
Turn Type	NA	Free	Prot	NA	Prot	custom						
Protected Phases	2 3		1	1 2	4 12	4 3 12	2	3	4	5	6	7
Permitted Phases		Free				4						
Detector Phase	2 3		1	1 2	4 12	4 3 12						
Switch Phase												
Minimum Initial (s)			4.0				4.0	5.0	6.0	4.0	4.0	10.0
Minimum Split (s)			22.0				11.5	11.0	12.0	22.0	10.5	22.0
Total Split (s)			87.0				33.0	19.0	20.0	61.0	33.0	33.0
Total Split (%)			51.2%				19%	11%	12%	36%	19%	19%
Yellow Time (s)			4.0				4.5	4.0	4.0	4.0	4.5	4.0
All-Red Time (s)			3.0				2.0	2.0	2.0	3.0	2.0	2.0
Lost Time Adjust (s)			0.0									
Total Lost Time (s)			7.0									
Lead/Lag			Lag				Lead	Lag		Lag	Lead	Lag
Lead-Lag Optimize?			Yes				Yes	Yes		Yes	Yes	Yes
Recall Mode			Max				C-Max	None	None	C-Max	None	None
Act Effct Green (s)	45.5	170.0	80.0	113.0	25.0	44.0						
Actuated g/C Ratio	0.27	1.00	0.47	0.66	0.15	0.26						
v/c Ratio	0.71	0.45	0.59	0.59	0.93	0.64						
Control Delay	81.2	3.8	1.9	0.7	96.6	60.3						
Queue Delay	0.1	0.0	4.5	2.9	0.0	0.6						
Total Delay	81.3	3.8	6.4	3.7	96.6	60.9						
LOS	F	A	A	A	F	E						
Approach Delay	55.6			4.6								
Approach LOS	E			A								

Intersection Summary	
Cycle Length: 170	
Actuated Cycle Length: 170	
Offset: 51 (30%), Referenced to phase 2:EBWB and 5:, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 34.3	Intersection LOS: C
Intersection Capacity Utilization 79.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: I95 SB On Ramp/I95 SB Off Ramp & Northlake Boulevard



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	5.0	5.0
Minimum Split (s)	12.0	11.0	11.0
Total Split (s)	32.0	11.0	11.0
Total Split (%)	19%	6%	6%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	Lead
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

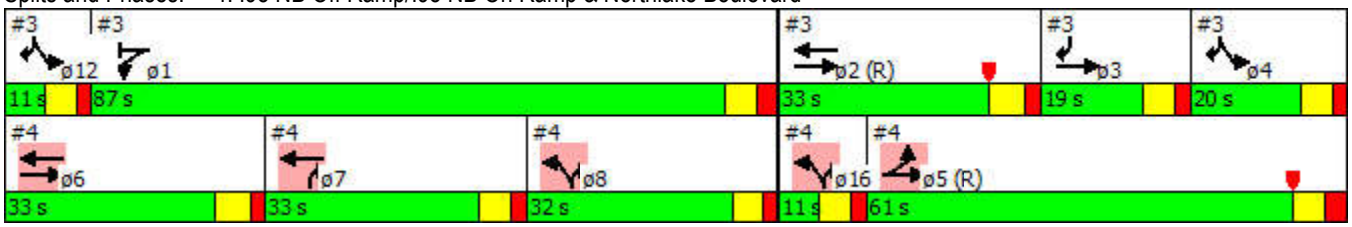
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1400	697	928	1945	0	0	0	0	455	0	481
Future Volume (vph)	0	1400	697	928	1945	0	0	0	0	455	0	481
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	4.0	7.0	7.0					6.0		6.0
Lane Util. Factor		0.81	1.00	0.97	0.91					0.97		*0.95
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		7544	1583	3433	5085					3400		2979
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		7544	1583	3433	5085					3400		2979
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1429	711	947	1985	0	0	0	0	464	0	491
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1429	711	947	1985	0	0	0	0	464	0	491
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	0%	0%	0%	3%	3%	3%
Turn Type		NA	Free	Prot	NA					Prot		custom
Protected Phases		2 3		1	1 2					4 12		4 3 12
Permitted Phases			Free									4
Actuated Green, G (s)		46.0	170.0	80.0	113.5					25.0		44.0
Effective Green, g (s)		46.0	170.0	80.0	113.5					25.0		44.0
Actuated g/C Ratio		0.27	1.00	0.47	0.67					0.15		0.26
Clearance Time (s)				7.0								
Vehicle Extension (s)				3.0								
Lane Grp Cap (vph)		2041	1583	1615	3394					500		771
v/s Ratio Prot		c0.19		c0.28	c0.39					c0.14		0.16
v/s Ratio Perm			0.45									
v/c Ratio		0.70	0.45	0.59	0.58					0.93		0.64
Uniform Delay, d1		55.8	0.0	32.9	15.4					71.6		55.9
Progression Factor		1.41	1.00	0.04	0.03					1.00		1.00
Incremental Delay, d2		0.8	0.6	0.5	0.2					23.5		1.7
Delay (s)		79.7	0.6	1.9	0.7					95.1		57.6
Level of Service		E	A	A	A					F		E
Approach Delay (s)		53.4			1.1			0.0			75.8	
Approach LOS		D			A			A			E	

Intersection Summary			
HCM 2000 Control Delay	31.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	37.0
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR	ø1	ø2	ø3	ø4	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	414	1440	2201	664	672	945						
Future Volume (vph)	414	1440	2201	664	672	945						
Turn Type	Prot	NA	NA	Free	Prot	custom						
Protected Phases	5	5 6	6 7		8 16	8 7 16	1	2	3	4	6	7
Permitted Phases				Free								
Detector Phase	5	5 6	6 7		8 16	8 7 16						
Switch Phase												
Minimum Initial (s)	4.0						4.0	4.0	5.0	6.0	4.0	10.0
Minimum Split (s)	22.0						22.0	11.5	11.0	12.0	10.5	22.0
Total Split (s)	61.0						87.0	33.0	19.0	20.0	33.0	33.0
Total Split (%)	35.9%						51%	19%	11%	12%	19%	19%
Yellow Time (s)	4.0						4.0	4.5	4.0	4.0	4.5	4.0
All-Red Time (s)	3.0						3.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0											
Total Lost Time (s)	7.0											
Lead/Lag	Lag						Lag	Lead	Lag		Lead	Lag
Lead-Lag Optimize?	Yes						Yes	Yes	Yes		Yes	Yes
Recall Mode	C-Max						Max	C-Max	None	None	None	None
Act Effct Green (s)	54.0	87.0	59.5	170.0	37.0	70.0						
Actuated g/C Ratio	0.32	0.51	0.35	1.00	0.22	0.41						
v/c Ratio	0.43	0.63	0.95	0.48	1.02	0.87						
Control Delay	2.6	5.0	79.6	1.8	103.7	55.1						
Queue Delay	0.0	3.5	11.9	0.0	0.0	0.0						
Total Delay	2.6	8.5	91.4	1.8	103.7	55.1						
LOS	A	A	F	A	F	E						
Approach Delay		7.2	70.7									
Approach LOS		A	E									

Intersection Summary	
Cycle Length: 170	
Actuated Cycle Length: 170	
Offset: 51 (30%), Referenced to phase 2:EBWB and 5:, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 53.3	Intersection LOS: D
Intersection Capacity Utilization 79.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 4: I95 NB Off Ramp/I95 NB On Ramp & Northlake Boulevard



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	5.0	5.0
Minimum Split (s)	12.0	11.0	11.0
Total Split (s)	32.0	11.0	11.0
Total Split (%)	19%	6%	6%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	Lead
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	414	1440	0	0	2201	664	672	0	945	0	0	0
Future Volume (vph)	414	1440	0	0	2201	664	672	0	945	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0			6.5	4.0	6.0		6.0			
Lane Util. Factor	0.97	0.91			0.81	1.00	0.97		*0.95			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	3120	4622			6857	1439	3120		2734			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3120	4622			6857	1439	3120		2734			
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	427	1485	0	0	2269	685	693	0	974	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	427	1485	0	0	2269	685	693	0	974	0	0	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	0%	0%	0%
Turn Type	Prot	NA			NA	Free	Prot		custom			
Protected Phases	5	5 6			6 7		8 16		8 7 16			
Permitted Phases						Free						
Actuated Green, G (s)	54.0	87.5			60.0	170.0	37.0		70.0			
Effective Green, g (s)	54.0	87.5			60.0	170.0	37.0		70.0			
Actuated g/C Ratio	0.32	0.51			0.35	1.00	0.22		0.41			
Clearance Time (s)	7.0											
Vehicle Extension (s)	3.0											
Lane Grp Cap (vph)	991	2378			2420	1439	679		1125			
v/s Ratio Prot	0.14	c0.32			c0.33		c0.22		0.36			
v/s Ratio Perm						0.48						
v/c Ratio	0.43	0.62			0.94	0.48	1.02		0.87			
Uniform Delay, d1	45.9	29.5			53.2	0.0	66.5		45.7			
Progression Factor	0.03	0.14			1.33	1.00	1.00		1.00			
Incremental Delay, d2	1.0	0.3			7.2	1.0	39.8		7.2			
Delay (s)	2.6	4.5			77.7	1.0	106.3		52.9			
Level of Service	A	A			E	A	F		D			
Approach Delay (s)		4.1			60.0			75.1			0.0	
Approach LOS		A			E			E			A	

Intersection Summary			
HCM 2000 Control Delay	47.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	37.0
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	SBR
Lane Configurations					
Traffic Volume (vph)	120	2430	2680	110	100
Future Volume (vph)	120	2430	2680	110	100
Turn Type	Prot	NA	NA	Perm	Perm
Protected Phases	1	6	2		
Permitted Phases				2	6
Detector Phase	1	6	2	2	6
Switch Phase					
Minimum Initial (s)	4.0	20.0	20.0	20.0	20.0
Minimum Split (s)	12.0	26.5	27.5	27.5	26.5
Total Split (s)	33.0	170.0	137.0	137.0	170.0
Total Split (%)	19.4%	100.0%	80.6%	80.6%	100.0%
Yellow Time (s)	4.0	4.5	4.5	4.5	4.5
All-Red Time (s)	4.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0	6.5	6.5	6.5	6.5
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	19.4	170.0	136.1	136.1	170.0
Actuated g/C Ratio	0.11	1.00	0.80	0.80	1.00
v/c Ratio	0.75	0.44	0.45	0.10	0.07
Control Delay	80.5	0.2	0.8	0.9	0.1
Queue Delay	0.0	0.1	0.2	0.0	0.1
Total Delay	80.5	0.2	1.0	0.9	0.1
LOS	F	A	A	A	A
Approach Delay		4.3	1.0		
Approach LOS		A	A		

Intersection Summary	
Cycle Length: 170	
Actuated Cycle Length: 170	
Offset: 77 (45%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 2.5	Intersection LOS: A
Intersection Capacity Utilization 67.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 5: Northlake Boulevard & Roan Lane

Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	10	120	2430	0	0	2680	110	0	0	0	0	0
Future Volume (vph)	10	120	2430	0	0	2680	110	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.0	6.5			6.5	6.5					
Lane Util. Factor		1.00	0.86			0.76	1.00					
Frt		1.00	1.00			1.00	0.85					
Flt Protected		0.95	1.00			1.00	1.00					
Satd. Flow (prot)		1787	6471			8578	1599					
Flt Permitted		0.95	1.00			1.00	1.00					
Satd. Flow (perm)		1787	6471			8578	1599					
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	12	140	2826	0	0	3116	128	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	152	2826	0	0	3116	128	0	0	0	0	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	4%	4%	4%	1%	4%
Turn Type	Prot	Prot	NA			NA	Perm					
Protected Phases	1	1	6			2						
Permitted Phases							2					
Actuated Green, G (s)		19.4	170.0			136.1	136.1					
Effective Green, g (s)		19.4	170.0			136.1	136.1					
Actuated g/C Ratio		0.11	1.00			0.80	0.80					
Clearance Time (s)		8.0	6.5			6.5	6.5					
Vehicle Extension (s)		3.0	3.0			3.0	3.0					
Lane Grp Cap (vph)		203	6471			6867	1280					
v/s Ratio Prot		c0.09	c0.44			0.36						
v/s Ratio Perm							0.08					
v/c Ratio		0.75	0.44			0.45	0.10					
Uniform Delay, d1		72.9	0.0			5.3	3.7					
Progression Factor		0.86	1.00			0.14	0.21					
Incremental Delay, d2		11.5	0.2			0.0	0.0					
Delay (s)		74.5	0.2			0.8	0.8					
Level of Service		E	A			A	A					
Approach Delay (s)			4.0			0.8			0.0			0.1
Approach LOS			A			A			A			A

Intersection Summary			
HCM 2000 Control Delay	2.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	67.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

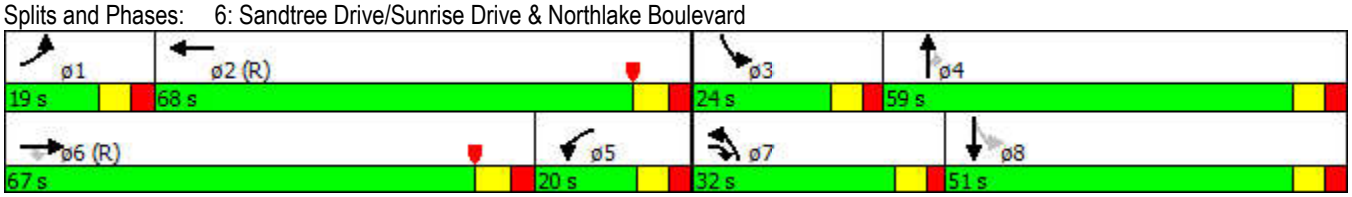
Movement	SBR
Lane Configurations	
Traffic Volume (vph)	100
Future Volume (vph)	100
Ideal Flow (vphpl)	1900
Total Lost time (s)	6.5
Lane Util. Factor	1.00
Frt	0.86
Flt Protected	1.00
Satd. Flow (prot)	1627
Flt Permitted	1.00
Satd. Flow (perm)	1627
Peak-hour factor, PHF	0.86
Adj. Flow (vph)	116
RTOR Reduction (vph)	0
Lane Group Flow (vph)	116
Heavy Vehicles (%)	1%
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Actuated Green, G (s)	170.0
Effective Green, g (s)	170.0
Actuated g/C Ratio	1.00
Clearance Time (s)	6.5
Vehicle Extension (s)	3.0
Lane Grp Cap (vph)	1627
v/s Ratio Prot	
v/s Ratio Perm	0.07
v/c Ratio	0.07
Uniform Delay, d1	0.0
Progression Factor	1.00
Incremental Delay, d2	0.1
Delay (s)	0.1
Level of Service	A
Approach Delay (s)	
Approach LOS	

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	54	1801	176	181	2276	444	16	204	98	15
Future Volume (vph)	54	1801	176	181	2276	444	16	204	98	15
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Perm	pm+pt	NA
Protected Phases	1	6	7	5	2	7	4		3	8
Permitted Phases			6					4	8	
Detector Phase	1	6	7	5	2	7	4	4	3	8
Switch Phase										
Minimum Initial (s)	4.0	20.0	4.0	4.0	20.0	4.0	6.0	6.0	4.0	6.0
Minimum Split (s)	12.5	38.5	12.5	12.5	32.5	12.5	13.0	13.0	12.5	13.0
Total Split (s)	19.0	67.0	32.0	20.0	68.0	32.0	59.0	59.0	24.0	51.0
Total Split (%)	11.2%	39.4%	18.8%	11.8%	40.0%	18.8%	34.7%	34.7%	14.1%	30.0%
Yellow Time (s)	4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	2.5	3.0	3.0	2.5	3.0	3.0	2.5	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.5	6.5	7.0	7.5	6.5	7.0	7.0	6.5	7.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?										
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	None	None
Act Effct Green (s)	10.4	83.9	110.4	13.0	86.5	25.5	31.4	31.4	33.8	19.6
Actuated g/C Ratio	0.06	0.49	0.65	0.08	0.51	0.15	0.18	0.18	0.20	0.12
v/c Ratio	0.58	0.83	0.19	0.79	1.03	0.99	0.05	0.80	0.37	0.40
Control Delay	87.7	43.7	7.3	98.0	65.4	108.2	54.1	86.1	46.2	73.1
Queue Delay	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	87.7	44.5	7.3	98.0	65.4	108.2	54.1	86.1	46.2	73.1
LOS	F	D	A	F	E	F	D	F	D	E
Approach Delay		42.4			67.8		100.1			57.0
Approach LOS		D			E		F			E

Intersection Summary	
Cycle Length: 170	
Actuated Cycle Length: 170	
Offset: 17 (10%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 61.8	Intersection LOS: E
Intersection Capacity Utilization 85.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 6: Sandtree Drive/Sunrise Drive & Northlake Boulevard



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	1801	176	181	2276	31	444	16	204	98	15	51
Future Volume (veh/h)	54	1801	176	181	2276	31	444	16	204	98	15	51
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1881	1881	1881	1900	1881	1881	1881	1863	1863	1900
Adj Flow Rate, veh/h	63	2094	205	210	2647	36	516	19	237	114	17	59
Adj No. of Lanes	1	3	1	2	3	0	2	1	1	1	1	0
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	2	2	2
Cap, veh/h	79	1797	800	928	3007	41	521	271	230	242	24	83
Arrive On Green	0.09	0.70	0.70	0.27	0.58	0.58	0.15	0.14	0.14	0.07	0.07	0.07
Sat Flow, veh/h	1792	5136	1599	3476	5222	71	3476	1881	1599	1774	366	1272
Grp Volume(v), veh/h	63	2094	205	210	1733	950	516	19	237	114	0	76
Grp Sat Flow(s),veh/h/ln	1792	1712	1599	1738	1712	1869	1738	1881	1599	1774	0	1638
Q Serve(g_s), s	5.9	59.5	1.4	8.0	73.9	74.6	25.2	1.5	14.4	10.1	0.0	7.7
Cycle Q Clear(g_c), s	5.9	59.5	1.4	8.0	73.9	74.6	25.2	1.5	14.4	10.1	0.0	7.7
Prop In Lane	1.00		1.00	1.00		0.04	1.00		1.00	1.00		0.78
Lane Grp Cap(c), veh/h	79	1797	800	928	1972	1076	521	271	230	242	0	107
V/C Ratio(X)	0.80	1.16	0.26	0.23	0.88	0.88	0.99	0.07	1.03	0.47	0.00	0.71
Avail Cap(c_a), veh/h	126	1797	800	928	1972	1076	521	575	489	298	0	424
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.90	0.90	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	76.8	25.5	4.5	48.6	30.9	31.1	72.1	62.9	25.2	67.7	0.0	77.9
Incr Delay (d2), s/veh	15.0	80.1	0.7	0.1	6.0	10.5	36.7	0.1	35.5	1.4	0.0	8.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.8	73.1	2.9	7.0	46.2	52.0	21.1	1.4	15.5	8.7	0.0	6.8
LnGrp Delay(d),s/veh	91.8	105.6	5.2	48.7	36.9	41.6	108.8	63.0	60.8	69.1	0.0	86.3
LnGrp LOS	F	F	A	D	D	D	F	E	F	E		F
Approach Vol, veh/h		2362			2893			772			190	
Approach Delay, s/veh		96.6			39.3			92.9			76.0	
Approach LOS		F			D			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.5	105.4	18.6	31.5	52.9	67.0	32.0	18.1
Change Period (Y+Rc), s	7.0	7.5	6.5	7.0	7.5	* 7.5	6.5	7.0
Max Green Setting (Gmax), s	12.0	60.5	17.5	52.0	13.0	* 60	25.5	44.0
Max Q Clear Time (g_c+I1), s	7.9	76.6	12.1	16.4	10.0	61.5	27.2	9.7
Green Ext Time (p_c), s	0.0	0.0	0.1	1.4	0.2	0.0	0.0	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	68.8
HCM 2010 LOS	E

Notes

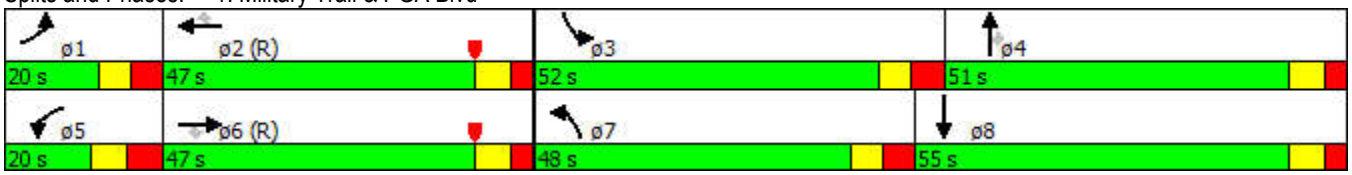
PGA Boulevard

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	148	1326	517	140	886	315	576	745	410	677	840
Future Volume (vph)	148	1326	517	140	886	315	576	745	410	677	840
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	1	6		5	2		7	4		3	8
Permitted Phases			6			2			4		
Detector Phase	1	6	6	5	2	2	7	4	4	3	8
Switch Phase											
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	20.0	4.0	10.0	10.0	4.0	10.0
Minimum Split (s)	13.0	47.0	47.0	14.0	46.5	46.5	13.0	47.5	47.5	13.5	54.5
Total Split (s)	20.0	47.0	47.0	20.0	47.0	47.0	48.0	51.0	51.0	52.0	55.0
Total Split (%)	11.8%	27.6%	27.6%	11.8%	27.6%	27.6%	28.2%	30.0%	30.0%	30.6%	32.4%
Yellow Time (s)	4.0	4.5	4.5	4.5	4.5	4.5	4.0	4.5	4.5	4.0	4.5
All-Red Time (s)	4.0	3.0	3.0	4.5	3.0	3.0	4.0	3.0	3.0	4.5	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0	7.5	7.5	9.0	7.5	7.5	8.0	7.5	7.5	8.5	7.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)	11.4	41.7	41.7	10.6	41.9	41.9	35.1	45.7	45.7	39.5	50.6
Actuated g/C Ratio	0.07	0.25	0.25	0.06	0.25	0.25	0.21	0.27	0.27	0.23	0.30
v/c Ratio	0.68	1.12	1.26	0.69	0.75	0.76	0.87	0.58	0.94	0.89	0.70
Control Delay	92.6	121.4	177.8	94.7	64.0	61.6	79.0	56.2	80.1	77.6	55.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	92.6	121.4	177.8	94.7	64.0	61.6	79.0	56.2	80.1	77.6	55.7
LOS	F	F	F	F	E	E	E	E	F	E	E
Approach Delay		133.9			66.6			69.5			64.6
Approach LOS		F			E			E			E

Intersection Summary

Cycle Length: 170
Actuated Cycle Length: 170
Offset: 70 (41%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.26
Intersection Signal Delay: 86.8 — Intersection LOS: F
Intersection Capacity Utilization 91.8% — ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 1: Military Trail & PGA Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	148	1326	517	140	886	315	576	745	410	677	840	147
Future Volume (veh/h)	148	1326	517	140	886	315	576	745	410	677	840	147
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1827	1827	1827	1863	1863	1900
Adj Flow Rate, veh/h	156	1396	0	147	933	0	606	784	0	713	884	155
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	4	4	4	2	2	2
Cap, veh/h	196	1564	487	187	1580	492	663	1111	346	772	1105	193
Arrive On Green	0.06	0.31	0.00	0.05	0.31	0.00	0.20	0.22	0.00	0.22	0.25	0.25
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3375	4988	1553	3442	4358	761
Grp Volume(v), veh/h	156	1396	0	147	933	0	606	784	0	713	687	352
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1688	1663	1553	1721	1695	1729
Q Serve(g_s), s	7.6	44.5	0.0	7.2	26.3	0.0	29.9	24.6	0.0	34.5	32.2	32.5
Cycle Q Clear(g_c), s	7.6	44.5	0.0	7.2	26.3	0.0	29.9	24.6	0.0	34.5	32.2	32.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.44
Lane Grp Cap(c), veh/h	196	1564	487	187	1580	492	663	1111	346	772	860	438
V/C Ratio(X)	0.79	0.89	0.00	0.79	0.59	0.00	0.91	0.71	0.00	0.92	0.80	0.80
Avail Cap(c_a), veh/h	243	1564	487	223	1580	492	794	1276	397	881	947	483
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.56	0.56	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	79.2	56.2	0.0	79.4	49.5	0.0	66.9	60.9	0.0	64.5	59.4	59.5
Incr Delay (d2), s/veh	13.5	8.2	0.0	8.6	0.9	0.0	13.5	1.5	0.0	14.1	4.5	8.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.2	29.7	0.0	6.0	16.8	0.0	21.6	17.0	0.0	24.9	22.1	23.3
LnGrp Delay(d),s/veh	92.7	64.4	0.0	88.0	50.4	0.0	80.4	62.4	0.0	78.6	63.9	68.3
LnGrp LOS	F	E		F	D		F	E		E	E	E
Approach Vol, veh/h		1552			1080			1390			1752	
Approach Delay, s/veh		67.2			55.5			70.3			70.8	
Approach LOS		E			E			E			E	

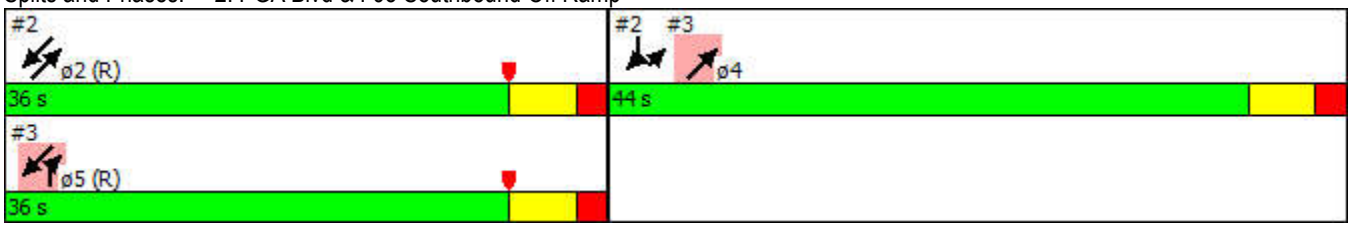
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.7	60.3	46.6	45.4	18.2	59.8	41.4	50.6
Change Period (Y+Rc), s	8.0	7.5	8.5	7.5	9.0	7.5	8.0	7.5
Max Green Setting (Gmax), s	12.0	39.5	43.5	43.5	11.0	39.5	40.0	47.5
Max Q Clear Time (g_c+I1), s	9.6	28.3	36.5	26.6	9.2	46.5	31.9	34.5
Green Ext Time (p_c), s	0.1	9.2	1.7	10.4	0.1	0.0	1.5	8.6

Intersection Summary	
HCM 2010 Ctrl Delay	66.8
HCM 2010 LOS	E

Lane Group	SBL	SBR	NET	SWT	ø5
Lane Configurations					
Traffic Volume (vph)	944	70	1207	1439	
Future Volume (vph)	944	70	1207	1439	
Turn Type	Prot	Prot	NA	NA	
Protected Phases	4	4	2	2	5
Permitted Phases					
Detector Phase	4	4	2	2	
Switch Phase					
Minimum Initial (s)	20.0	20.0	4.0	4.0	4.0
Minimum Split (s)	26.0	26.0	24.0	24.0	11.0
Total Split (s)	44.0	44.0	36.0	36.0	36.0
Total Split (%)	55.0%	55.0%	45.0%	45.0%	45%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	38.0	38.0	30.0	30.0	
Actuated g/C Ratio	0.48	0.48	0.38	0.38	
v/c Ratio	0.61	0.06	0.66	0.79	
Control Delay	17.5	11.5	22.8	8.4	
Queue Delay	2.4	0.0	0.0	0.0	
Total Delay	19.9	11.5	22.8	8.4	
LOS	B	B	C	A	
Approach Delay	19.3		22.8	8.4	
Approach LOS	B		C	A	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 45 (56%), Referenced to phase 2:NESW and 5:, Start of Yellow	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.63	
Intersection Signal Delay: 16.2	Intersection LOS: B
Intersection Capacity Utilization 104.2%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 2: PGA Blvd & I-95 Southbound Off Ramp



Movement	SBL	SBR	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (vph)	944	70	0	1207	1439	0
Future Volume (vph)	944	70	0	1207	1439	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		0.91	0.91	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3467	2803		5187	5136	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3467	2803		5187	5136	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	1004	74	0	1284	1531	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1004	74	0	1284	1531	0
Heavy Vehicles (%)	1%	1%	0%	0%	1%	0%
Bus Blockages (#/hr)	0	2	0	0	0	0
Turn Type	Prot	Prot		NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases						
Actuated Green, G (s)	38.0	38.0		30.0	30.0	
Effective Green, g (s)	38.0	38.0		30.0	30.0	
Actuated g/C Ratio	0.48	0.48		0.38	0.38	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1646	1331		1945	1926	
v/s Ratio Prot	c0.29	0.03		0.25	c0.30	
v/s Ratio Perm						
v/c Ratio	0.61	0.06		0.66	0.79	
Uniform Delay, d1	15.5	11.3		20.8	22.3	
Progression Factor	1.00	1.00		1.00	0.28	
Incremental Delay, d2	0.6	0.0		1.8	2.0	
Delay (s)	16.2	11.3		22.5	8.4	
Level of Service	B	B		C	A	
Approach Delay (s)	15.8			22.5	8.4	
Approach LOS	B			C	A	

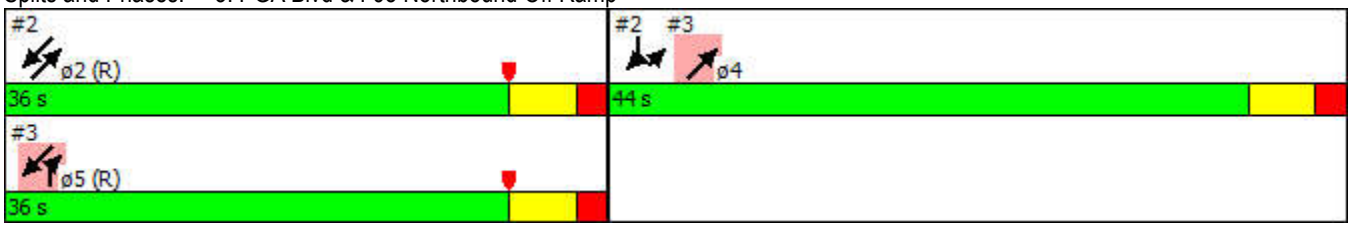
Intersection Summary			
HCM 2000 Control Delay	15.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	104.2%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	NBR	NET	SWT	ø2
Lane Configurations				
Traffic Volume (vph)	2256	2151	1439	
Future Volume (vph)	2256	2151	1439	
Turn Type	Prot	NA	NA	
Protected Phases	5	4	5	2
Permitted Phases				
Detector Phase	5	4	5	
Switch Phase				
Minimum Initial (s)	4.0	20.0	4.0	4.0
Minimum Split (s)	11.0	26.0	11.0	24.0
Total Split (s)	36.0	44.0	36.0	36.0
Total Split (%)	45.0%	55.0%	45.0%	45%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	C-Max	None	C-Max	C-Max
Act Effct Green (s)	30.0	38.0	30.0	
Actuated g/C Ratio	0.38	0.48	0.38	
v/c Ratio	1.63	0.95	0.80	
Control Delay	309.7	30.6	26.4	
Queue Delay	0.0	7.0	0.0	
Total Delay	309.7	37.6	26.4	
LOS	F	D	C	
Approach Delay		37.6	26.4	
Approach LOS		D	C	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 45 (56%), Referenced to phase 2:NESW and 5:, Start of Yellow	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.63	
Intersection Signal Delay: 139.8	Intersection LOS: F
Intersection Capacity Utilization 104.2%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 3: PGA Blvd & I-95 Northbound Off Ramp



Movement	NBL	NBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	0	2256	2151	0	0	1439
Future Volume (vph)	0	2256	2151	0	0	1439
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0			6.0
Lane Util. Factor		0.76	0.91			0.91
Frt		0.85	1.00			1.00
Flt Protected		1.00	1.00			1.00
Satd. Flow (prot)		3610	5085			5085
Flt Permitted		1.00	1.00			1.00
Satd. Flow (perm)		3610	5085			5085
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	2400	2288	0	0	1531
RTOR Reduction (vph)	0	118	0	0	0	0
Lane Group Flow (vph)	0	2283	2288	0	0	1531
Heavy Vehicles (%)	0%	2%	2%	0%	0%	2%
Turn Type		Prot	NA			NA
Protected Phases		5	4			5
Permitted Phases						
Actuated Green, G (s)		30.0	38.0			30.0
Effective Green, g (s)		30.0	38.0			30.0
Actuated g/C Ratio		0.38	0.48			0.38
Clearance Time (s)		6.0	6.0			6.0
Vehicle Extension (s)		3.0	3.0			3.0
Lane Grp Cap (vph)		1353	2415			1906
v/s Ratio Prot		c0.63	c0.45			0.30
v/s Ratio Perm						
v/c Ratio		1.69	0.95			0.80
Uniform Delay, d1		25.0	20.0			22.4
Progression Factor		1.00	1.10			1.00
Incremental Delay, d2		312.4	7.2			3.7
Delay (s)		337.4	29.2			26.1
Level of Service		F	C			C
Approach Delay (s)	337.4		29.2			26.1
Approach LOS	F		C			C

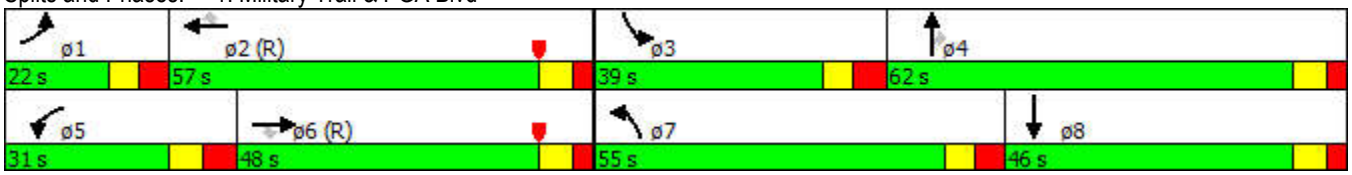
Intersection Summary			
HCM 2000 Control Delay	147.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.27		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	104.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	239	1176	502	336	1089	463	600	994	522	504	926
Future Volume (vph)	239	1176	502	336	1089	463	600	994	522	504	926
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	1	6		5	2		7	4		3	8
Permitted Phases			6			2			4		
Detector Phase	1	6	6	5	2	2	7	4	4	3	8
Switch Phase											
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	20.0	4.0	10.0	10.0	4.0	10.0
Minimum Split (s)	13.0	48.0	48.0	14.0	46.5	46.5	13.0	47.5	47.5	13.5	46.0
Total Split (s)	22.0	48.0	48.0	31.0	57.0	57.0	55.0	62.0	62.0	39.0	46.0
Total Split (%)	12.2%	26.7%	26.7%	17.2%	31.7%	31.7%	30.6%	34.4%	34.4%	21.7%	25.6%
Yellow Time (s)	4.0	4.5	4.5	4.5	4.5	4.5	4.0	4.5	4.5	4.0	4.5
All-Red Time (s)	4.0	3.0	3.0	4.5	3.0	3.0	4.0	3.0	3.0	4.5	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0	7.5	7.5	9.0	7.5	7.5	8.0	7.5	7.5	8.5	7.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)	14.0	41.6	41.6	20.9	49.5	49.5	36.8	55.7	55.7	29.3	48.7
Actuated g/C Ratio	0.08	0.23	0.23	0.12	0.28	0.28	0.20	0.31	0.31	0.16	0.27
v/c Ratio	0.90	1.00	1.22	0.84	0.78	0.97	0.86	0.63	0.99	0.90	0.83
Control Delay	114.4	94.1	167.5	96.5	64.8	88.9	81.3	55.7	88.5	93.7	67.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	114.4	94.1	167.5	96.5	64.8	88.9	81.3	55.7	88.5	93.7	67.5
LOS	F	F	F	F	E	F	F	E	F	F	E
Approach Delay		115.8			76.3			71.1			75.6
Approach LOS		F			E			E			E

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 165 (92%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.22
Intersection Signal Delay: 84.7 — Intersection LOS: F
Intersection Capacity Utilization 98.4% — ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 1: Military Trail & PGA Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	239	1176	502	336	1089	463	600	994	522	504	926	198
Future Volume (veh/h)	239	1176	502	336	1089	463	600	994	522	504	926	198
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1881	1881	1881	1881	1881	1881	1881	1881	1881	1900
Adj Flow Rate, veh/h	241	1188	0	339	1100	0	606	1004	0	509	935	200
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	0
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	270	1524	475	379	1714	534	668	1310	408	550	950	202
Arrive On Green	0.08	0.30	0.00	0.11	0.33	0.00	0.19	0.26	0.00	0.16	0.22	0.22
Sat Flow, veh/h	3476	5136	1599	3476	5136	1599	3476	5136	1599	3476	4241	904
Grp Volume(v), veh/h	241	1188	0	339	1100	0	606	1004	0	509	754	381
Grp Sat Flow(s),veh/h/ln	1738	1712	1599	1738	1712	1599	1738	1712	1599	1738	1712	1722
Q Serve(g_s), s	12.4	38.1	0.0	17.3	32.7	0.0	30.7	32.6	0.0	26.0	39.5	39.7
Cycle Q Clear(g_c), s	12.4	38.1	0.0	17.3	32.7	0.0	30.7	32.6	0.0	26.0	39.5	39.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.53
Lane Grp Cap(c), veh/h	270	1524	475	379	1714	534	668	1310	408	550	767	386
V/C Ratio(X)	0.89	0.78	0.00	0.89	0.64	0.00	0.91	0.77	0.00	0.92	0.98	0.99
Avail Cap(c_a), veh/h	270	1524	475	425	1714	534	908	1555	484	589	767	386
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.39	0.39	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	82.2	57.9	0.0	79.1	50.8	0.0	71.1	62.1	0.0	74.7	69.5	69.6
Incr Delay (d2), s/veh	28.6	4.0	0.0	9.0	0.7	0.0	10.1	2.0	0.0	19.9	28.3	42.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	11.4	25.7	0.0	11.9	19.7	0.0	22.2	22.2	0.0	20.2	29.3	31.4
LnGrp Delay(d),s/veh	110.9	61.9	0.0	88.1	51.6	0.0	81.2	64.0	0.0	94.6	97.8	112.0
LnGrp LOS	F	E		F	D		F	E		F	F	F
Approach Vol, veh/h		1429			1439			1610			1644	
Approach Delay, s/veh		70.2			60.2			70.5			100.1	
Approach LOS		E			E			E			F	

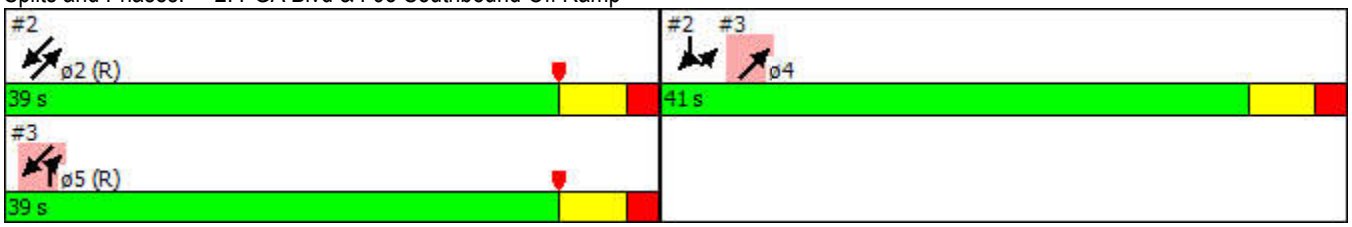
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	67.6	37.0	53.4	28.7	60.9	42.6	47.8
Change Period (Y+Rc), s	8.0	7.5	8.5	7.5	9.0	7.5	8.0	7.5
Max Green Setting (Gmax), s	14.0	49.5	30.5	54.5	22.0	40.5	47.0	38.5
Max Q Clear Time (g_c+I1), s	14.4	34.7	28.0	34.6	19.3	40.1	32.7	41.7
Green Ext Time (p_c), s	0.0	11.5	0.5	11.3	0.3	0.4	1.9	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	76.0
HCM 2010 LOS	E

Lane Group	SBL	SBR	NET	SWT	ø5
Lane Configurations					
Traffic Volume (vph)	359	59	1150	1889	
Future Volume (vph)	359	59	1150	1889	
Turn Type	Prot	Prot	NA	NA	
Protected Phases	4	4	2	2	5
Permitted Phases					
Detector Phase	4	4	2	2	
Switch Phase					
Minimum Initial (s)	20.0	20.0	4.0	4.0	4.0
Minimum Split (s)	26.0	26.0	24.0	24.0	11.0
Total Split (s)	41.0	41.0	39.0	39.0	39.0
Total Split (%)	51.3%	51.3%	48.8%	48.8%	49%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	34.0	34.0	34.0	34.0	
Actuated g/C Ratio	0.42	0.42	0.42	0.42	
v/c Ratio	0.25	0.05	0.54	0.88	
Control Delay	15.1	13.2	18.6	11.0	
Queue Delay	0.0	0.0	0.0	0.0	
Total Delay	15.1	13.2	18.6	11.0	
LOS	B	B	B	B	
Approach Delay	14.8		18.6	11.0	
Approach LOS	B		B	B	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 40 (50%), Referenced to phase 2:NESW and 5:, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 14.0	Intersection LOS: B
Intersection Capacity Utilization 77.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: PGA Blvd & I-95 Southbound Off Ramp



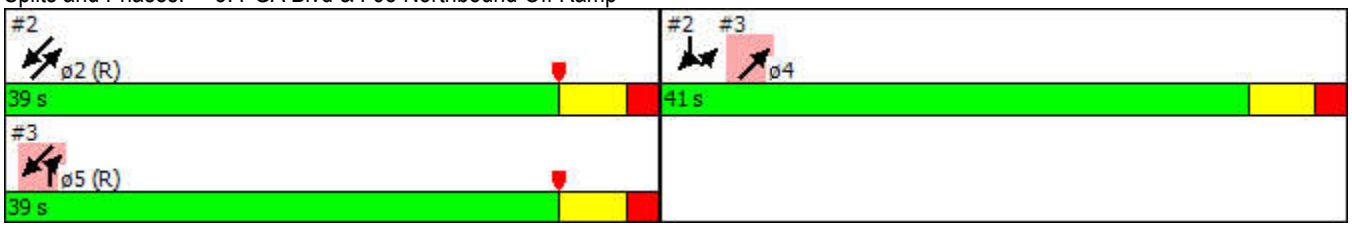
Movement	SBL	SBR	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (vph)	359	59	0	1150	1889	0
Future Volume (vph)	359	59	0	1150	1889	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		0.91	0.91	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3467	2814		5187	5187	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3467	2814		5187	5187	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	370	61	0	1186	1947	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	370	61	0	1186	1947	0
Heavy Vehicles (%)	1%	1%	0%	0%	0%	0%
Turn Type	Prot	Prot		NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases						
Actuated Green, G (s)	34.0	34.0		34.0	34.0	
Effective Green, g (s)	34.0	34.0		34.0	34.0	
Actuated g/C Ratio	0.42	0.42		0.42	0.42	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1473	1195		2204	2204	
v/s Ratio Prot	c0.11	0.02		0.23	c0.38	
v/s Ratio Perm						
v/c Ratio	0.25	0.05		0.54	0.88	
Uniform Delay, d1	14.8	13.5		17.1	21.2	
Progression Factor	1.00	1.00		1.00	0.36	
Incremental Delay, d2	0.1	0.0		0.9	2.2	
Delay (s)	14.9	13.5		18.1	9.8	
Level of Service	B	B		B	A	
Approach Delay (s)	14.7			18.1	9.8	
Approach LOS	B			B	A	

Intersection Summary			
HCM 2000 Control Delay	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	NBR	NET	SWT	ø2
Lane Configurations				
Traffic Volume (vph)	1628	1509	1889	
Future Volume (vph)	1628	1509	1889	
Turn Type	Prot	NA	NA	
Protected Phases	5	4	5	2
Permitted Phases				
Detector Phase	5	4	5	
Switch Phase				
Minimum Initial (s)	4.0	20.0	4.0	4.0
Minimum Split (s)	11.0	26.0	11.0	24.0
Total Split (s)	39.0	41.0	39.0	39.0
Total Split (%)	48.8%	51.3%	48.8%	49%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	C-Max	None	C-Max	C-Max
Act Effct Green (s)	34.0	34.0	34.0	
Actuated g/C Ratio	0.42	0.42	0.42	
v/c Ratio	1.01	0.73	0.92	
Control Delay	46.4	28.7	31.0	
Queue Delay	0.0	0.2	1.1	
Total Delay	46.4	29.0	32.0	
LOS	D	C	C	
Approach Delay		29.0	32.0	
Approach LOS		C	C	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 40 (50%), Referenced to phase 2:NESW and 5:, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 35.8	Intersection LOS: D
Intersection Capacity Utilization 77.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: PGA Blvd & I-95 Northbound Off Ramp



Movement	NBL	NBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	0	1628	1509	0	0	1889
Future Volume (vph)	0	1628	1509	0	0	1889
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0			6.0
Lane Util. Factor		0.76	0.91			0.91
Frt		0.85	1.00			1.00
Flt Protected		1.00	1.00			1.00
Satd. Flow (prot)		3682	5136			5136
Flt Permitted		1.00	1.00			1.00
Satd. Flow (perm)		3682	5136			5136
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	1732	1605	0	0	2010
RTOR Reduction (vph)	0	149	0	0	0	0
Lane Group Flow (vph)	0	1583	1605	0	0	2010
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%
Turn Type		Prot	NA			NA
Protected Phases		5	4			5
Permitted Phases						
Actuated Green, G (s)		34.0	34.0			34.0
Effective Green, g (s)		34.0	34.0			34.0
Actuated g/C Ratio		0.42	0.42			0.42
Clearance Time (s)		6.0	6.0			6.0
Vehicle Extension (s)		3.0	3.0			3.0
Lane Grp Cap (vph)		1564	2182			2182
v/s Ratio Prot		c0.43	c0.31			0.39
v/s Ratio Perm						
v/c Ratio		1.01	0.74			0.92
Uniform Delay, d1		23.0	19.2			21.7
Progression Factor		1.00	1.39			1.00
Incremental Delay, d2		25.8	1.2			7.9
Delay (s)		48.8	27.9			29.6
Level of Service		D	C			C
Approach Delay (s)	48.8		27.9			29.6
Approach LOS	D		C			C

Intersection Summary			
HCM 2000 Control Delay	35.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

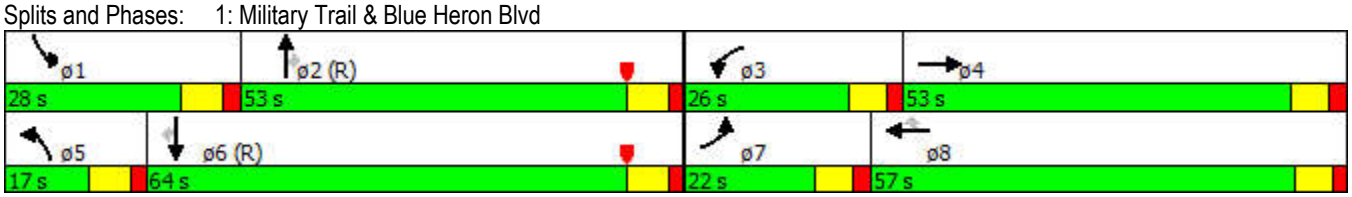
Blue Heron Boulevard

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	100	592	384	733	336	84	796	491	396	658	94
Future Volume (vph)	100	592	384	733	336	84	796	491	396	658	94
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	4.0	10.0	4.0	10.0	10.0	4.0	20.0	20.0	4.0	20.0	20.0
Minimum Split (s)	12.0	51.0	12.0	52.0	52.0	12.0	52.0	52.0	12.0	48.0	48.0
Total Split (s)	22.0	53.0	26.0	57.0	57.0	17.0	53.0	53.0	28.0	64.0	64.0
Total Split (%)	13.8%	33.1%	16.3%	35.6%	35.6%	10.6%	33.1%	33.1%	17.5%	40.0%	40.0%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.5	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	7.0	6.5	6.5	6.5	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	10.4	32.8	19.5	42.4	42.4	9.1	55.7	55.7	24.5	71.1	71.1
Actuated g/C Ratio	0.06	0.20	0.12	0.26	0.26	0.06	0.35	0.35	0.15	0.44	0.44
v/c Ratio	0.49	0.65	1.01	0.60	0.79	0.46	0.49	0.90	0.81	0.31	0.14
Control Delay	79.5	60.3	115.8	60.5	62.8	80.8	43.6	63.6	77.7	30.7	14.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.5	60.3	115.8	60.5	62.8	80.8	43.6	63.6	77.7	30.7	14.1
LOS	E	E	F	E	E	F	D	E	E	C	B
Approach Delay		62.9		75.7			53.0			45.5	
Approach LOS		E		E			D			D	

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 59 (37%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.01
Intersection Signal Delay: 59.7 — Intersection LOS: E
Intersection Capacity Utilization 73.8% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 1: Military Trail & Blue Heron Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	592	25	384	733	336	84	796	491	396	658	94
Future Volume (veh/h)	100	592	25	384	733	336	84	796	491	396	658	94
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1810	1827	1827	1827	1845	1845	1845
Adj Flow Rate, veh/h	106	630	27	409	780	357	89	847	522	421	700	100
Adj No. of Lanes	2	3	0	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	5	5	5	5	4	4	4	3	3	3
Cap, veh/h	148	1024	44	407	1424	443	129	1817	566	447	2303	717
Arrive On Green	0.04	0.21	0.21	0.04	0.10	0.10	0.04	0.36	0.36	0.13	0.46	0.46
Sat Flow, veh/h	3343	4859	207	3343	4940	1538	3375	4988	1553	3408	5036	1568
Grp Volume(v), veh/h	106	426	231	409	780	357	89	847	522	421	700	100
Grp Sat Flow(s),veh/h/ln	1672	1647	1773	1672	1647	1538	1688	1663	1553	1704	1679	1568
Q Serve(g_s), s	5.0	18.8	18.9	19.5	24.1	36.4	4.2	20.8	51.5	19.6	14.0	5.9
Cycle Q Clear(g_c), s	5.0	18.8	18.9	19.5	24.1	36.4	4.2	20.8	51.5	19.6	14.0	5.9
Prop In Lane	1.00		0.12	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	148	694	374	407	1424	443	129	1817	566	447	2303	717
V/C Ratio(X)	0.71	0.61	0.62	1.00	0.55	0.81	0.69	0.47	0.92	0.94	0.30	0.14
Avail Cap(c_a), veh/h	324	947	510	407	1559	485	211	1817	566	447	2303	717
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.89	0.89	0.89	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	75.4	57.2	57.3	76.8	62.4	68.0	76.0	38.9	48.7	68.9	27.4	25.2
Incr Delay (d2), s/veh	6.2	0.9	1.7	43.0	0.3	8.0	6.4	0.9	22.9	28.3	0.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.4	13.4	14.5	20.6	16.2	22.8	3.7	14.8	33.9	16.4	10.8	4.7
LnGrp Delay(d),s/veh	81.7	58.1	59.0	119.8	62.7	76.0	82.4	39.8	71.6	97.1	27.7	25.6
LnGrp LOS	F	E	E	F	E	E	F	D	E	F	C	C
Approach Vol, veh/h		763			1546			1458			1221	
Approach Delay, s/veh		61.7			80.9			53.8			51.5	
Approach LOS		E			F			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.0	65.3	26.0	40.7	13.1	80.2	13.6	53.1
Change Period (Y+Rc), s	7.0	7.0	6.5	7.0	7.0	7.0	6.5	* 7
Max Green Setting (Gmax), s	21.0	46.0	19.5	46.0	10.0	57.0	15.5	* 51
Max Q Clear Time (g_c+I1), s	21.6	53.5	21.5	20.9	6.2	16.0	7.0	38.4
Green Ext Time (p_c), s	0.0	0.0	0.0	12.1	0.1	18.9	0.2	7.7

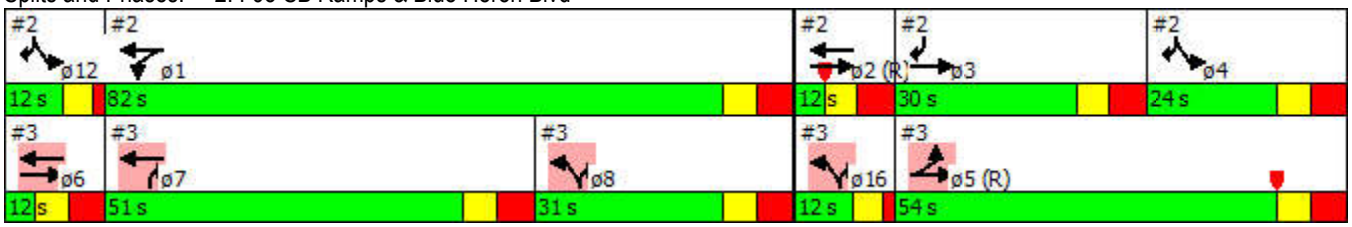
Intersection Summary	
HCM 2010 Ctrl Delay	62.8
HCM 2010 LOS	E

Notes

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR	ø2	ø3	ø4	ø5	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	910	753	784	1082	642	457						
Future Volume (vph)	910	753	784	1082	642	457						
Turn Type	NA	Free	Prot	NA	Prot	custom						
Protected Phases	3 2		1	1 2	4 12	4 3 12	2	3	4	5	6	7
Permitted Phases		Free				4						
Detector Phase	3 2		1	1 2	4 12	4 3 12						
Switch Phase												
Minimum Initial (s)			10.0				3.0	3.0	4.0	10.0	3.0	3.0
Minimum Split (s)			25.0				12.0	12.0	13.5	24.0	12.0	13.5
Total Split (s)			82.0				12.0	30.0	24.0	54.0	12.0	51.0
Total Split (%)			51.3%				8%	19%	15%	34%	8%	32%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			4.5				4.5	4.5	4.5	4.5	4.5	4.5
Lost Time Adjust (s)			0.0									
Total Lost Time (s)			8.5									
Lead/Lag			Lag				Lead	Lag		Lag	Lead	Lag
Lead-Lag Optimize?			Yes				Yes	Yes		Yes	Yes	Yes
Recall Mode			None				C-Max	None	None	C-Max	Max	None
Act Effct Green (s)	34.3	160.0	72.7	85.5	27.5	57.5						
Actuated g/C Ratio	0.21	1.00	0.45	0.53	0.17	0.36						
v/c Ratio	0.62	0.52	0.56	0.44	1.18	0.49						
Control Delay	51.4	3.1	18.0	4.4	153.5	42.1						
Queue Delay	0.0	0.0	0.7	0.3	0.0	0.0						
Total Delay	51.4	3.1	18.6	4.7	153.5	42.1						
LOS	D	A	B	A	F	D						
Approach Delay	29.5			10.6								
Approach LOS	C			B								

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 0 (0%), Referenced to phase 2:EBWB and 5:, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay: 40.3	Intersection LOS: D
Intersection Capacity Utilization 72.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 2: I-95 SB Ramps & Blue Heron Blvd



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	4.0	5.0	5.0
Minimum Split (s)	13.5	10.0	10.0
Total Split (s)	31.0	12.0	12.0
Total Split (%)	19%	8%	8%
Yellow Time (s)	4.0	3.5	3.5
All-Red Time (s)	4.5	1.5	1.5
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	Lead
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

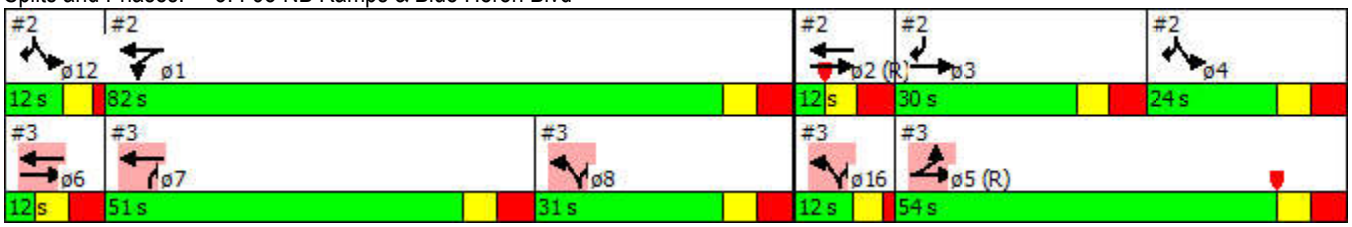
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	910	753	784	1082	0	0	0	0	642	0	457
Future Volume (vph)	0	910	753	784	1082	0	0	0	0	642	0	457
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.5	4.0	8.5	8.5					8.5		8.5
Lane Util. Factor		0.81	1.00	0.97	0.91					0.97		0.88
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		7329	1538	3303	4893					3367		2733
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		7329	1538	3303	4893					3367		2733
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	968	801	834	1151	0	0	0	0	683	0	486
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	968	801	834	1151	0	0	0	0	683	0	486
Heavy Vehicles (%)	5%	5%	5%	6%	6%	6%	0%	0%	0%	4%	4%	4%
Turn Type		NA	Free	Prot	NA					Prot		custom
Protected Phases		3 2		1	1 2					4 12		4 3 12
Permitted Phases			Free									4
Actuated Green, G (s)		34.3	160.0	72.7	85.5					31.0		61.0
Effective Green, g (s)		34.3	160.0	72.7	85.5					31.0		61.0
Actuated g/C Ratio		0.21	1.00	0.45	0.53					0.19		0.38
Clearance Time (s)				8.5								
Vehicle Extension (s)				3.0								
Lane Grp Cap (vph)		1571	1538	1500	2614					652		1041
v/s Ratio Prot		c0.13		c0.25	0.24					c0.20		0.18
v/s Ratio Perm			c0.52									
v/c Ratio		0.62	0.52	0.56	0.44					1.05		0.47
Uniform Delay, d1		56.9	0.0	31.9	22.7					64.5		37.3
Progression Factor		0.87	1.00	0.52	0.17					1.00		1.00
Incremental Delay, d2		0.6	1.0	0.4	0.1					48.3		0.3
Delay (s)		50.3	1.0	17.1	4.1					112.8		37.6
Level of Service		D	A	B	A					F		D
Approach Delay (s)		28.0			9.5			0.0			81.5	
Approach LOS		C			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	33.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	51.0
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR	ø1	ø2	ø3	ø4	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	321	1231	1348	356	518	685						
Future Volume (vph)	321	1231	1348	356	518	685						
Turn Type	Prot	NA	NA	Free	Prot	custom						
Protected Phases	5	5 6	6 7		8 16	8 7 16	1	2	3	4	6	7
Permitted Phases				Free		8						
Detector Phase	5	5 6	6 7		8 16	8 7 16						
Switch Phase												
Minimum Initial (s)	10.0						10.0	3.0	3.0	4.0	3.0	3.0
Minimum Split (s)	24.0						25.0	12.0	12.0	13.5	12.0	13.5
Total Split (s)	54.0						82.0	12.0	30.0	24.0	12.0	51.0
Total Split (%)	33.8%						51%	8%	19%	15%	8%	32%
Yellow Time (s)	4.0						4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	4.5						4.5	4.5	4.5	4.5	4.5	4.5
Lost Time Adjust (s)	0.0											
Total Lost Time (s)	8.5											
Lead/Lag	Lag						Lag	Lead	Lag		Lead	Lag
Lead-Lag Optimize?	Yes						Yes	Yes	Yes		Yes	Yes
Recall Mode	C-Max						None	C-Max	None	None	Max	None
Act Effct Green (s)	46.0	58.0	53.5	160.0	35.0	85.0						
Actuated g/C Ratio	0.29	0.36	0.33	1.00	0.22	0.53						
v/c Ratio	0.35	0.71	0.58	0.24	0.73	0.49						
Control Delay	36.9	21.1	55.5	0.3	64.8	25.0						
Queue Delay	0.0	0.8	0.0	0.0	0.0	0.0						
Total Delay	36.9	21.9	55.5	0.3	64.8	25.0						
LOS	D	C	E	A	E	C						
Approach Delay		25.0	44.0									
Approach LOS		C	D									

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 0 (0%), Referenced to phase 2:EBWB and 5:, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay: 36.9	Intersection LOS: D
Intersection Capacity Utilization 72.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: I-95 NB Ramps & Blue Heron Blvd



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	4.0	5.0	5.0
Minimum Split (s)	13.5	10.0	10.0
Total Split (s)	31.0	12.0	12.0
Total Split (%)	19%	8%	8%
Yellow Time (s)	4.0	3.5	3.5
All-Red Time (s)	4.5	1.5	1.5
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	Lead
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	321	1231	0	0	1348	356	518	0	685	0	0	0
Future Volume (vph)	321	1231	0	0	1348	356	518	0	685	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.5	8.5			8.5	4.0	8.5		8.5			
Lane Util. Factor	0.97	0.91			0.81	1.00	0.97		0.88			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	3335	4940			7192	1509	3367		2733			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3335	4940			7192	1509	3367		2733			
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	331	1269	0	0	1390	367	534	0	706	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	331	1269	0	0	1390	367	534	0	706	0	0	0
Heavy Vehicles (%)	5%	5%	5%	7%	7%	7%	4%	4%	4%	0%	0%	0%
Turn Type	Prot	NA			NA	Free	Prot		custom			
Protected Phases	5	5 6			6 7		8 16		8 7 16			
Permitted Phases						Free			8			
Actuated Green, G (s)	46.0	58.0			53.5	160.0	38.5		88.5			
Effective Green, g (s)	46.0	58.0			53.5	160.0	38.5		88.5			
Actuated g/C Ratio	0.29	0.36			0.33	1.00	0.24		0.55			
Clearance Time (s)	8.5											
Vehicle Extension (s)	3.0											
Lane Grp Cap (vph)	958	1790			2404	1509	810		1511			
v/s Ratio Prot	0.10	c0.26			c0.19		c0.16		0.26			
v/s Ratio Perm						c0.24						
v/c Ratio	0.35	0.71			0.58	0.24	0.66		0.47			
Uniform Delay, d1	45.1	43.8			43.9	0.0	54.8		21.5			
Progression Factor	0.80	0.45			1.25	1.00	1.00		1.00			
Incremental Delay, d2	0.5	1.2			0.3	0.3	2.0		0.2			
Delay (s)	36.6	20.9			55.0	0.3	56.8		21.8			
Level of Service	D	C			E	A	E		C			
Approach Delay (s)		24.2			43.6			36.8			0.0	
Approach LOS		C			D			D			A	

Intersection Summary			
HCM 2000 Control Delay	35.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	51.0
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	206	1515	143	1415	97	81	74	74	108
Future Volume (vph)	206	1515	143	1415	97	81	74	74	108
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+ov
Protected Phases	1	6	5	2	7	4	3	8	1
Permitted Phases	6		2		4		8		8
Detector Phase	1	6	5	2	7	4	3	8	1
Switch Phase									
Minimum Initial (s)	4.0	20.0	4.0	20.0	4.0	6.0	4.0	6.0	4.0
Minimum Split (s)	12.0	32.0	12.0	32.0	12.0	35.0	12.0	35.0	12.0
Total Split (s)	40.0	85.0	17.0	62.0	17.0	41.0	17.0	41.0	40.0
Total Split (%)	25.0%	53.1%	10.6%	38.8%	10.6%	25.6%	10.6%	25.6%	25.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	None	None	None	None
Act Effct Green (s)	103.5	84.9	94.7	79.6	32.3	22.5	31.8	22.2	49.6
Actuated g/C Ratio	0.65	0.53	0.59	0.50	0.20	0.14	0.20	0.14	0.31
v/c Ratio	0.76	0.70	0.68	0.68	0.41	0.78	0.41	0.34	0.24
Control Delay	39.4	46.7	48.6	34.3	53.0	84.8	52.8	64.4	18.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.4	46.7	48.6	34.3	53.0	84.8	52.8	64.4	18.4
LOS	D	D	D	C	D	F	D	E	B
Approach Delay		45.9		35.5		72.8		41.7	
Approach LOS		D		D		E		D	

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 30 (19%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow
Natural Cycle: 105
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 43.1 — Intersection LOS: D
Intersection Capacity Utilization 78.1% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 4: Garden Road & Blue Heron Blvd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	206	1515	189	143	1415	125	97	81	80	74	74	108
Future Volume (veh/h)	206	1515	189	143	1415	125	97	81	80	74	74	108
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1792	1792	1900	1624	1624	1900	1652	1652	1652
Adj Flow Rate, veh/h	219	1612	201	152	1505	133	103	86	85	79	79	115
Adj No. of Lanes	1	3	0	1	3	0	1	1	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	5	6	6	6	17	17	17	15	15	15
Cap, veh/h	275	2611	325	271	2582	228	226	100	99	154	207	279
Arrive On Green	0.15	1.00	1.00	0.05	0.56	0.56	0.06	0.13	0.13	0.05	0.13	0.13
Sat Flow, veh/h	1723	4451	554	1707	4579	404	1547	751	742	1573	1652	1404
Grp Volume(v), veh/h	219	1192	621	152	1072	566	103	0	171	79	79	115
Grp Sat Flow(s),veh/h/ln	1723	1647	1712	1707	1631	1721	1547	0	1493	1573	1652	1404
Q Serve(g_s), s	9.1	0.0	0.0	6.0	34.1	34.2	9.3	0.0	17.9	6.9	7.0	11.4
Cycle Q Clear(g_c), s	9.1	0.0	0.0	6.0	34.1	34.2	9.3	0.0	17.9	6.9	7.0	11.4
Prop In Lane	1.00		0.32	1.00		0.24	1.00		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	275	1931	1004	271	1840	971	226	0	200	154	207	279
V/C Ratio(X)	0.80	0.62	0.62	0.56	0.58	0.58	0.46	0.00	0.86	0.51	0.38	0.41
Avail Cap(c_a), veh/h	504	1931	1004	291	1840	971	226	0	317	167	351	401
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.74	0.74	0.74	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.4	0.0	0.0	13.1	22.7	22.7	56.7	0.0	67.8	57.6	64.3	56.0
Incr Delay (d2), s/veh	3.9	1.1	2.1	2.1	1.4	2.6	1.4	0.0	12.5	2.6	1.2	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.6	0.5	1.1	5.3	22.2	23.6	7.3	0.0	12.8	5.6	5.9	8.0
LnGrp Delay(d),s/veh	25.3	1.1	2.1	15.1	24.0	25.2	58.1	0.0	80.3	60.2	65.4	56.9
LnGrp LOS	C	A	A	B	C	C	E		F	E	E	E
Approach Vol, veh/h		2032			1790			274			273	
Approach Delay, s/veh		4.0			23.6			72.0			60.3	
Approach LOS		A			C			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.7	97.2	15.7	28.4	15.1	100.8	17.0	27.1
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Max Green Setting (Gmax), s	33.0	55.0	10.0	34.0	10.0	78.0	10.0	34.0
Max Q Clear Time (g_c+I1), s	11.1	36.2	8.9	19.9	8.0	2.0	11.3	13.4
Green Ext Time (p_c), s	0.6	17.5	0.0	1.5	0.1	58.4	0.0	1.7

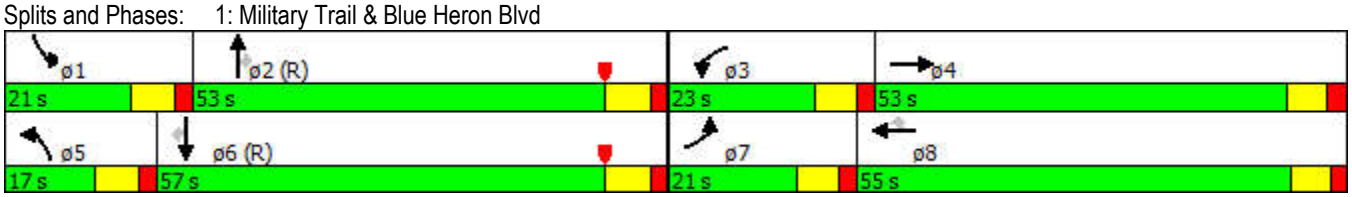
Intersection Summary	
HCM 2010 Ctrl Delay	19.8
HCM 2010 LOS	B

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	130	518	431	792	339	35	779	373	288	910	112
Future Volume (vph)	130	518	431	792	339	35	779	373	288	910	112
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	4.0	10.0	4.0	10.0	10.0	4.0	20.0	20.0	4.0	20.0	20.0
Minimum Split (s)	12.0	51.0	12.0	52.0	52.0	13.0	52.0	52.0	12.0	48.0	48.0
Total Split (s)	21.0	53.0	23.0	55.0	55.0	17.0	53.0	53.0	21.0	57.0	57.0
Total Split (%)	14.0%	35.3%	15.3%	36.7%	36.7%	11.3%	35.3%	35.3%	14.0%	38.0%	38.0%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.5	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	7.0	6.5	6.5	6.5	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	11.3	46.0	16.5	51.7	51.7	7.0	46.0	46.0	14.0	55.5	55.5
Actuated g/C Ratio	0.08	0.31	0.11	0.34	0.34	0.05	0.31	0.31	0.09	0.37	0.37
v/c Ratio	0.53	0.36	1.18	0.47	0.60	0.23	0.51	0.72	0.92	0.49	0.18
Control Delay	74.0	41.1	159.5	39.8	38.6	71.8	44.1	47.7	100.0	38.3	17.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	74.0	41.1	159.5	39.8	38.6	71.8	44.1	47.7	100.0	38.3	17.4
LOS	E	D	F	D	D	E	D	D	F	D	B
Approach Delay		47.5		72.5			46.1			50.1	
Approach LOS		D		E			D			D	

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 148 (99%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.18
Intersection Signal Delay: 56.1 — Intersection LOS: E
Intersection Capacity Utilization 70.5% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 1: Military Trail & Blue Heron Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	518	17	431	792	339	35	779	373	288	910	112
Future Volume (veh/h)	130	518	17	431	792	339	35	779	373	288	910	112
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1845	1845	1845	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	133	529	17	440	808	346	36	795	381	294	929	114
Adj No. of Lanes	2	3	0	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	4	4	4	3	3	3	2	2	2	2	2	2
Cap, veh/h	180	1523	49	375	1830	570	71	1559	486	321	1929	601
Arrive On Green	0.05	0.31	0.31	0.11	0.36	0.36	0.02	0.31	0.31	0.09	0.38	0.38
Sat Flow, veh/h	3375	4965	159	3408	5036	1568	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	133	354	192	440	808	346	36	795	381	294	929	114
Grp Sat Flow(s),veh/h/ln	1688	1663	1799	1704	1679	1568	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	5.8	12.4	12.5	16.5	18.2	27.0	1.6	19.3	33.0	12.7	20.8	7.2
Cycle Q Clear(g_c), s	5.8	12.4	12.5	16.5	18.2	27.0	1.6	19.3	33.0	12.7	20.8	7.2
Prop In Lane	1.00		0.09	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	180	1020	552	375	1830	570	71	1559	486	321	1929	601
V/C Ratio(X)	0.74	0.35	0.35	1.17	0.44	0.61	0.50	0.51	0.78	0.92	0.48	0.19
Avail Cap(c_a), veh/h	326	1020	552	375	1830	570	229	1559	486	321	1929	601
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.89	0.89	0.89	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.0	40.3	40.4	66.8	36.2	39.0	72.7	42.7	47.5	67.4	35.4	31.1
Incr Delay (d2), s/veh	5.9	0.9	1.7	100.6	0.1	1.7	5.4	1.2	12.0	29.6	0.9	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.2	9.8	10.6	23.4	13.0	17.3	1.4	14.2	22.6	11.8	15.0	5.9
LnGrp Delay(d),s/veh	75.9	41.3	42.1	167.4	36.3	40.7	78.1	43.9	59.5	97.0	36.2	31.8
LnGrp LOS	E	D	D	F	D	D	E	D	E	F	D	C
Approach Vol, veh/h		679			1594			1212			1337	
Approach Delay, s/veh		48.3			73.5			49.8			49.2	
Approach LOS		D			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	53.0	23.0	53.0	10.1	63.9	14.5	61.5
Change Period (Y+Rc), s	7.0	7.0	6.5	7.0	7.0	7.0	6.5	* 7
Max Green Setting (Gmax), s	14.0	46.0	16.5	46.0	10.0	50.0	14.5	* 49
Max Q Clear Time (g_c+I1), s	14.7	35.0	18.5	14.5	3.6	22.8	7.8	29.0
Green Ext Time (p_c), s	0.0	8.4	0.0	12.4	0.0	16.2	0.2	10.0

Intersection Summary	
HCM 2010 Ctrl Delay	57.3
HCM 2010 LOS	E

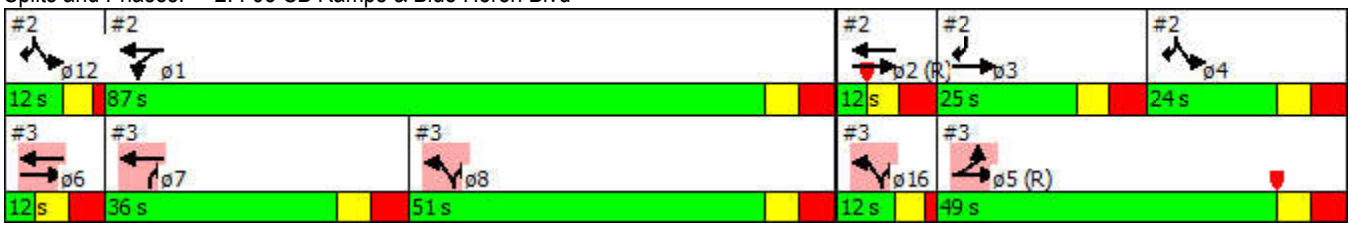
Notes

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR	ø2	ø3	ø4	ø5	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	815	559	1244	1298	286	277						
Future Volume (vph)	815	559	1244	1298	286	277						
Turn Type	NA	Free	Prot	NA	Prot	custom						
Protected Phases	3 2		1	1 2	4 12	4 3 12	2	3	4	5	6	7
Permitted Phases		Free										
Detector Phase	3 2		1	1 2	4 12	4 3 12						
Switch Phase												
Minimum Initial (s)			10.0				3.0	3.0	4.0	10.0	3.0	3.0
Minimum Split (s)			25.0				12.0	25.0	13.5	24.0	12.0	13.5
Total Split (s)			87.0				12.0	25.0	24.0	49.0	12.0	36.0
Total Split (%)			54.4%				8%	16%	15%	31%	8%	23%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			4.5				4.5	4.5	4.5	4.5	4.5	4.5
Lost Time Adjust (s)			0.0									
Total Lost Time (s)			8.5									
Lead/Lag			Lag				Lead	Lag		Lag	Lead	Lag
Lead-Lag Optimize?			Yes				Yes	Yes		Yes	Yes	Yes
Recall Mode			None				C-Max	None	None	C-Max	Max	None
Act Effct Green (s)	29.7	160.0	77.7	90.9	27.1	52.1						
Actuated g/C Ratio	0.19	1.00	0.49	0.57	0.17	0.33						
v/c Ratio	0.62	0.37	0.78	0.47	0.58	0.36						
Control Delay	62.5	0.7	9.4	1.6	66.2	42.7						
Queue Delay	0.0	0.0	48.2	0.9	0.0	0.0						
Total Delay	62.5	0.7	57.6	2.5	66.2	42.7						
LOS	E	A	E	A	E	D						
Approach Delay	37.3			29.5								
Approach LOS	D			C								

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 49 (31%), Referenced to phase 2:EBWB and 5:, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.10
Intersection Signal Delay: 35.0 — Intersection LOS: D
Intersection Capacity Utilization 74.3% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 2: I-95 SB Ramps & Blue Heron Blvd



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	4.0	5.0	5.0
Minimum Split (s)	13.5	10.0	10.0
Total Split (s)	51.0	12.0	12.0
Total Split (%)	32%	8%	8%
Yellow Time (s)	4.0	3.5	3.5
All-Red Time (s)	4.5	1.5	1.5
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	Lead
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

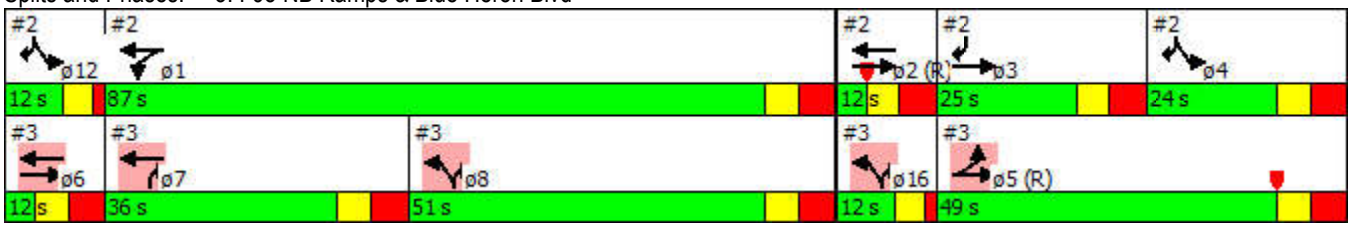
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	815	559	1244	1298	0	0	0	0	286	0	277
Future Volume (vph)	0	815	559	1244	1298	0	0	0	0	286	0	277
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.5	4.0	8.5	8.5					8.5		8.5
Lane Util. Factor		0.81	1.00	0.97	0.91					0.97		0.88
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		7399	1553	3433	5085					3045		2472
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		7399	1553	3433	5085					3045		2472
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	0	849	582	1296	1352	0	0	0	0	298	0	289
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	849	582	1296	1352	0	0	0	0	298	0	289
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	0%	0%	0%	15%	15%	15%
Turn Type		NA	Free	Prot	NA					Prot		custom
Protected Phases		3 2		1	1 2					4 12		4 3 12
Permitted Phases			Free									
Actuated Green, G (s)		29.6	160.0	77.7	90.8					30.7		55.7
Effective Green, g (s)		29.6	160.0	77.7	90.8					30.7		55.7
Actuated g/C Ratio		0.19	1.00	0.49	0.57					0.19		0.35
Clearance Time (s)				8.5								
Vehicle Extension (s)				3.0								
Lane Grp Cap (vph)		1368	1553	1667	2885					584		860
v/s Ratio Prot		c0.11		c0.38	0.27					c0.10		0.12
v/s Ratio Perm			c0.37									
v/c Ratio		0.62	0.37	0.78	0.47					0.51		0.34
Uniform Delay, d1		60.0	0.0	34.0	20.4					57.9		38.5
Progression Factor		1.00	1.00	0.24	0.07					1.00		1.00
Incremental Delay, d2		0.9	0.7	0.7	0.0					0.8		0.2
Delay (s)		60.9	0.7	8.9	1.5					58.7		38.7
Level of Service		E	A	A	A					E		D
Approach Delay (s)		36.4			5.1			0.0			48.9	
Approach LOS		D			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	20.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	51.0
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR	ø1	ø2	ø3	ø4	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	350	751	1922	716	620	616						
Future Volume (vph)	350	751	1922	716	620	616						
Turn Type	Prot	NA	NA	Free	Prot	custom						
Protected Phases	5	5 6	6 7		8 16	8 7 16	1	2	3	4	6	7
Permitted Phases				Free		8						
Detector Phase	5	5 6	6 7		8 16	8 7 16						
Switch Phase												
Minimum Initial (s)	10.0						10.0	3.0	3.0	4.0	3.0	3.0
Minimum Split (s)	24.0						25.0	12.0	25.0	13.5	12.0	13.5
Total Split (s)	49.0						87.0	12.0	25.0	24.0	12.0	36.0
Total Split (%)	30.6%						54%	8%	16%	15%	8%	23%
Yellow Time (s)	4.0						4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	4.5						4.5	4.5	4.5	4.5	4.5	4.5
Lost Time Adjust (s)	0.0											
Total Lost Time (s)	8.5											
Lead/Lag	Lag						Lag	Lead	Lag		Lead	Lag
Lead-Lag Optimize?	Yes						Yes	Yes	Yes		Yes	Yes
Recall Mode	C-Max						None	C-Max	None	None	Max	None
Act Effct Green (s)	41.5	53.5	39.5	160.0	53.5	89.5						
Actuated g/C Ratio	0.26	0.33	0.25	1.00	0.33	0.56						
v/c Ratio	0.44	0.49	1.10	0.48	0.58	0.42						
Control Delay	23.0	6.0	121.4	1.6	46.2	21.3						
Queue Delay	0.0	0.0	1.5	0.0	0.0	0.0						
Total Delay	23.0	6.0	123.0	1.6	46.2	21.3						
LOS	C	A	F	A	D	C						
Approach Delay		11.4	90.0									
Approach LOS		B	F									

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 49 (31%), Referenced to phase 2:EBWB and 5:, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.10	
Intersection Signal Delay: 58.6	Intersection LOS: E
Intersection Capacity Utilization 74.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: I-95 NB Ramps & Blue Heron Blvd



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	4.0	5.0	5.0
Minimum Split (s)	13.5	10.0	10.0
Total Split (s)	51.0	12.0	12.0
Total Split (%)	32%	8%	8%
Yellow Time (s)	4.0	3.5	3.5
All-Red Time (s)	4.5	1.5	1.5
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	Lead
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

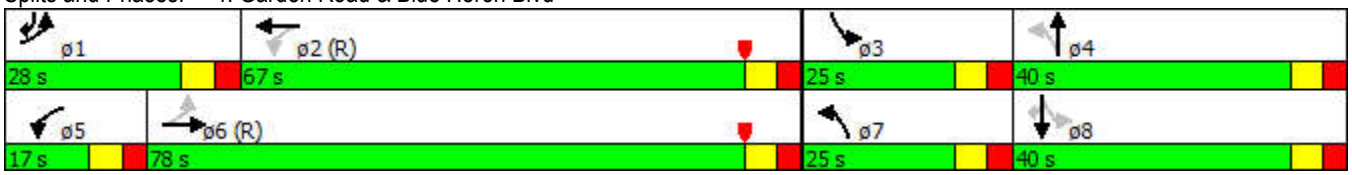
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	350	751	0	0	1922	716	620	0	616	0	0	0
Future Volume (vph)	350	751	0	0	1922	716	620	0	616	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.5	8.5			8.5	4.0	8.5		8.5			
Lane Util. Factor	0.97	0.91			0.81	1.00	0.97		0.88			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	3242	4803			7471	1568	3367		2733			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3242	4803			7471	1568	3367		2733			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	368	791	0	0	2023	754	653	0	648	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	368	791	0	0	2023	754	653	0	648	0	0	0
Heavy Vehicles (%)	8%	8%	8%	3%	3%	3%	4%	4%	4%	0%	0%	0%
Turn Type	Prot	NA			NA	Free	Prot		custom			
Protected Phases	5	5 6			6 7		8 16		8 7 16			
Permitted Phases						Free			8			
Actuated Green, G (s)	41.4	53.4			39.5	160.0	57.1		93.1			
Effective Green, g (s)	41.4	53.4			39.5	160.0	57.1		93.1			
Actuated g/C Ratio	0.26	0.33			0.25	1.00	0.36		0.58			
Clearance Time (s)	8.5											
Vehicle Extension (s)	3.0											
Lane Grp Cap (vph)	838	1603			1844	1568	1201		1590			
v/s Ratio Prot	0.11	c0.16			c0.27		c0.19		0.24			
v/s Ratio Perm						c0.48						
v/c Ratio	0.44	0.49			1.10	0.48	0.54		0.41			
Uniform Delay, d1	49.6	42.5			60.2	0.0	41.1		18.3			
Progression Factor	0.43	0.12			1.34	1.00	1.00		1.00			
Incremental Delay, d2	1.3	0.9			49.8	0.7	0.5		0.2			
Delay (s)	22.7	6.0			130.7	0.7	41.6		18.5			
Level of Service	C	A			F	A	D		B			
Approach Delay (s)		11.3			95.4			30.1			0.0	
Approach LOS		B			F			C			A	

Intersection Summary			
HCM 2000 Control Delay	60.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	51.0
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	87	1319	72	2005	147	67	106	66	284
Future Volume (vph)	87	1319	72	2005	147	67	106	66	284
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+ov
Protected Phases	1	6	5	2	7	4	3	8	1
Permitted Phases	6		2		4		8		8
Detector Phase	1	6	5	2	7	4	3	8	1
Switch Phase									
Minimum Initial (s)	4.0	20.0	4.0	20.0	4.0	6.0	4.0	6.0	4.0
Minimum Split (s)	12.0	32.0	12.0	32.0	12.0	35.0	12.0	35.0	12.0
Total Split (s)	28.0	78.0	17.0	67.0	25.0	40.0	25.0	40.0	28.0
Total Split (%)	17.5%	48.8%	10.6%	41.9%	15.6%	25.0%	15.6%	25.0%	17.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	None	None	None	None
Act Effct Green (s)	92.1	82.0	88.5	80.2	44.0	28.3	39.4	26.0	43.1
Actuated g/C Ratio	0.58	0.51	0.55	0.50	0.28	0.18	0.25	0.16	0.27
v/c Ratio	0.60	0.60	0.40	0.88	0.41	0.86	0.47	0.24	0.66
Control Delay	36.6	23.5	21.3	41.5	44.6	86.7	46.7	58.6	47.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.6	23.5	21.3	41.5	44.6	86.7	46.7	58.6	47.2
LOS	D	C	C	D	D	F	D	E	D
Approach Delay		24.2		40.9		70.6		48.8	
Approach LOS		C		D		E		D	

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 35 (22%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 38.7	Intersection LOS: D
Intersection Capacity Utilization 88.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 4: Garden Road & Blue Heron Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	1319	87	72	2005	77	147	67	169	106	66	284
Future Volume (veh/h)	87	1319	87	72	2005	77	147	67	169	106	66	284
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1845	1845	1900	1810	1810	1900	1810	1810	1810
Adj Flow Rate, veh/h	93	1403	93	77	2133	82	156	71	180	113	70	302
Adj No. of Lanes	1	3	0	1	3	0	1	1	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	5	5	3	3	3	5	5	5	5	5	5
Cap, veh/h	134	2402	159	277	2494	96	355	100	253	239	362	368
Arrive On Green	0.08	1.00	1.00	0.03	0.50	0.50	0.08	0.22	0.22	0.06	0.20	0.20
Sat Flow, veh/h	1723	4734	314	1757	4978	191	1723	454	1152	1723	1810	1538
Grp Volume(v), veh/h	93	976	520	77	1436	779	156	0	251	113	70	302
Grp Sat Flow(s),veh/h/ln	1723	1647	1754	1757	1679	1811	1723	0	1606	1723	1810	1538
Q Serve(g_s), s	4.3	0.0	0.0	3.4	59.7	60.2	11.4	0.0	23.1	8.3	5.2	29.7
Cycle Q Clear(g_c), s	4.3	0.0	0.0	3.4	59.7	60.2	11.4	0.0	23.1	8.3	5.2	29.7
Prop In Lane	1.00		0.18	1.00		0.11	1.00		0.72	1.00		1.00
Lane Grp Cap(c), veh/h	134	1671	890	277	1682	907	355	0	353	239	362	368
V/C Ratio(X)	0.69	0.58	0.58	0.28	0.85	0.86	0.44	0.00	0.71	0.47	0.19	0.82
Avail Cap(c_a), veh/h	292	1671	890	328	1682	907	403	0	353	321	373	378
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.89	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.1	0.0	0.0	18.2	34.8	34.9	45.1	0.0	57.7	47.7	53.3	57.6
Incr Delay (d2), s/veh	5.6	1.3	2.5	0.5	5.8	10.3	0.9	0.0	6.5	1.5	0.3	13.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.9	0.6	1.1	3.0	37.7	42.0	9.3	0.0	16.3	7.2	4.7	20.1
LnGrp Delay(d),s/veh	39.7	1.3	2.5	18.7	40.6	45.3	46.0	0.0	64.2	49.2	53.5	70.7
LnGrp LOS	D	A	A	B	D	D	D		E	D	D	E
Approach Vol, veh/h		1589			2292			407			485	
Approach Delay, s/veh		4.0			41.4			57.2			63.2	
Approach LOS		A			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.3	87.2	17.3	42.2	12.3	88.2	20.5	39.0
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Max Green Setting (Gmax), s	21.0	60.0	18.0	33.0	10.0	71.0	18.0	33.0
Max Q Clear Time (g_c+I1), s	6.3	62.2	10.3	25.1	5.4	2.0	13.4	31.7
Green Ext Time (p_c), s	0.2	0.0	0.1	1.9	0.1	58.2	0.1	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	32.5
HCM 2010 LOS	C

APPENDIX H

(Existing Conditions SIMTRAFFIC Queue Analysis Results)

Intersection: 1: Military Trail & Northlake Boulevard

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	T	R	L	L	T	T	TR	L
Maximum Queue (ft)	350	400	942	884	860	320	227	242	273	346	452	214
Average Queue (ft)	329	391	665	544	443	194	135	157	118	165	238	123
95th Queue (ft)	388	430	1041	857	698	408	208	228	245	300	411	220
Link Distance (ft)			932	932	932				1617	1617	1617	
Upstream Blk Time (%)			6	0	0							
Queuing Penalty (veh)			0	0	0							
Storage Bay Dist (ft)	300	300				270	450	450				190
Storage Blk Time (%)	13	42	11		26	0						1
Queuing Penalty (veh)	64	200	72		66	0						3

Intersection: 1: Military Trail & Northlake Boulevard

Movement	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	290	576	538	438	230	340	390	655	558	299	225
Average Queue (ft)	221	338	295	240	168	281	324	350	275	170	77
95th Queue (ft)	337	484	428	381	275	392	437	622	506	261	177
Link Distance (ft)		1096	1096	1096				1433	1433	1433	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	190				180	290	290				175
Storage Blk Time (%)	4	41		11	9	7	30	1		6	0
Queuing Penalty (veh)	12	85		30	23	15	65	4		14	0

Intersection: 2: Keating Drive & Northlake Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	T	R	L	LT
Maximum Queue (ft)	109	606	743	885	250	246	332	324	346	48	55	145
Average Queue (ft)	27	316	393	524	67	106	125	127	136	9	13	54
95th Queue (ft)	74	529	638	782	232	202	284	283	301	35	41	113
Link Distance (ft)		1617	1617	1617			610	610	610			283
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	165				200	490				365	145	
Storage Blk Time (%)		23		34	0							1
Queuing Penalty (veh)		4		28	0							1

Intersection: 2: Keating Drive & Northlake Boulevard

Movement	NB	SB	SB
Directions Served	R	LT	TR
Maximum Queue (ft)	138	254	131
Average Queue (ft)	63	152	23
95th Queue (ft)	117	244	72
Link Distance (ft)		339	339
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	115		
Storage Blk Time (%)	3		
Queuing Penalty (veh)	2		

Intersection: 3: I95 SB On Ramp/I95 SB Off Ramp & Northlake Boulevard

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	SB
Directions Served	T	T	T	T	T	R	L	L	T	T	T	L
Maximum Queue (ft)	324	636	607	496	304	245	412	439	403	243	228	839
Average Queue (ft)	276	319	296	242	197	8	184	214	46	19	17	477
95th Queue (ft)	354	490	469	364	283	103	383	438	241	153	139	825
Link Distance (ft)		610	610	610	610		372	372	372	372	372	1317
Upstream Blk Time (%)		0	0	0			3	4	2	1	0	
Queuing Penalty (veh)		2	1	0			14	16	7	6	1	
Storage Bay Dist (ft)	275					480						
Storage Blk Time (%)	18	13										
Queuing Penalty (veh)	59	41										

Intersection: 3: I95 SB On Ramp/I95 SB Off Ramp & Northlake Boulevard

Movement	SB	SB	SB
Directions Served	L	R	R
Maximum Queue (ft)	868	450	194
Average Queue (ft)	472	200	6
95th Queue (ft)	844	555	81
Link Distance (ft)	1317		
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)		350	350
Storage Blk Time (%)	27	0	0
Queuing Penalty (veh)	97	1	0

Intersection: 4: I95 NB Off Ramp/I95 NB On Ramp & Northlake Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	T	T	T	T	T	T	R	L
Maximum Queue (ft)	410	416	408	379	285	399	411	410	374	348	357	1149
Average Queue (ft)	125	72	60	26	29	332	348	330	264	225	121	1091
95th Queue (ft)	317	279	285	182	145	419	419	430	397	347	344	1320
Link Distance (ft)	372	372	372	372	372	350	350	350	350	350	350	1126
Upstream Blk Time (%)	0	0	1	0	0	11	19	13	2	0	0	17
Queuing Penalty (veh)	1	2	2	1	0	32	58	38	5	1	1	0
Storage Bay Dist (ft)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 4: I95 NB Off Ramp/I95 NB On Ramp & Northlake Boulevard

Movement	NB	NB	NB
Directions Served	L	R	R
Maximum Queue (ft)	1182	775	725
Average Queue (ft)	1148	774	722
95th Queue (ft)	1163	780	734
Link Distance (ft)	1126		
Upstream Blk Time (%)	70		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)		675	675
Storage Blk Time (%)	39	72	62
Queuing Penalty (veh)	405	168	144

Intersection: 5: Northlake Boulevard & Roan Lane

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	WB	SB
Directions Served	UL	T	T	T	T	T	T	T	T	T	R	R
Maximum Queue (ft)	136	40	39	9	206	251	254	174	182	205	58	91
Average Queue (ft)	57	1	1	0	69	105	76	54	33	45	6	29
95th Queue (ft)	115	28	28	6	190	237	214	162	121	138	30	84
Link Distance (ft)		350	350	350			556	556	556			132
Upstream Blk Time (%)							0					2
Queuing Penalty (veh)							0					0
Storage Bay Dist (ft)	270				275	275				270	270	
Storage Blk Time (%)						0	0					
Queuing Penalty (veh)						1	2					

Intersection: 6: Sandtree Drive/Sunrise Drive & Northlake Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	R	L	L	T	T	TR	L	L
Maximum Queue (ft)	120	339	340	372	85	138	279	496	396	327	257	272
Average Queue (ft)	31	203	215	234	24	40	111	249	190	161	145	151
95th Queue (ft)	79	311	328	361	63	119	228	426	354	297	241	247
Link Distance (ft)		556	556	556	556			1068	1068	1068		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	370					180	180				325	325
Storage Blk Time (%)		0					0	14				
Queuing Penalty (veh)		0					1	18				

Intersection: 6: Sandtree Drive/Sunrise Drive & Northlake Boulevard

Movement	NB	NB	SB	SB
Directions Served	T	R	L	TR
Maximum Queue (ft)	44	189	303	150
Average Queue (ft)	8	85	167	53
95th Queue (ft)	30	159	288	116
Link Distance (ft)	525		390	390
Upstream Blk Time (%)			1	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)		190		
Storage Blk Time (%)		0		
Queuing Penalty (veh)		1		

Intersection: 15: Bend

Movement	SB	SB	SB
Directions Served	T	T	
Maximum Queue (ft)	495	469	262
Average Queue (ft)	91	90	9
95th Queue (ft)	384	377	111
Link Distance (ft)	486	486	486
Upstream Blk Time (%)	0	0	0
Queuing Penalty (veh)	1	0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 18: Bend

Movement	NB	NB
Directions Served	T	
Maximum Queue (ft)	487	112
Average Queue (ft)	126	4
95th Queue (ft)	462	79
Link Distance (ft)	459	459
Upstream Blk Time (%)	1	0
Queuing Penalty (veh)	3	1
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 1820

Intersection: 1: Military Trail & Northlake Boulevard

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	T	R	L	L	T	T	TR	L
Maximum Queue (ft)	349	400	857	848	876	320	264	499	882	959	965	240
Average Queue (ft)	244	313	578	661	699	230	155	253	527	579	634	223
95th Queue (ft)	372	460	1048	1161	1207	440	245	522	1199	1250	1270	279
Link Distance (ft)			932	932	932				1617	1617	1617	
Upstream Blk Time (%)			7	10	40				0	0	0	
Queuing Penalty (veh)			0	0	0				2	2	3	
Storage Bay Dist (ft)	300	300				270	450	450				190
Storage Blk Time (%)	6	14	27		63	0			14			32
Queuing Penalty (veh)	18	48	116		120	0			44			78

Intersection: 1: Military Trail & Northlake Boulevard

Movement	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	290	831	770	630	230	340	390	1245	1168	942	225
Average Queue (ft)	273	538	462	285	197	293	352	710	657	455	219
95th Queue (ft)	330	1020	908	508	278	409	452	1399	1312	777	258
Link Distance (ft)		1096	1096	1096				1433	1433	1433	
Upstream Blk Time (%)		2	0					5	1	0	
Queuing Penalty (veh)		0	0					0	0	0	
Storage Bay Dist (ft)	190				180	290	290				175
Storage Blk Time (%)	56	21		11	20	15	53	5		18	40
Queuing Penalty (veh)	136	80		42	49	44	151	20		113	113

Intersection: 2: Keating Drive & Northlake Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	T	R	L	LT
Maximum Queue (ft)	215	1659	1669	1650	250	540	678	737	721	415	195	313
Average Queue (ft)	63	1234	1442	1552	161	375	515	517	519	226	156	301
95th Queue (ft)	177	1819	1863	1780	333	596	669	722	718	541	245	317
Link Distance (ft)		1617	1617	1617			610	610	610			283
Upstream Blk Time (%)		1	4	10			3	2	2			62
Queuing Penalty (veh)		4	21	58			22	15	19			0
Storage Bay Dist (ft)	165				200	490				365	145	
Storage Blk Time (%)	0	47		60		0	10		24		5	68
Queuing Penalty (veh)	0	23		150		2	26		49		21	275

Intersection: 2: Keating Drive & Northlake Boulevard

Movement	NB	SB	SB
Directions Served	R	LT	TR
Maximum Queue (ft)	165	341	218
Average Queue (ft)	157	200	73
95th Queue (ft)	197	321	190
Link Distance (ft)		339	339
Upstream Blk Time (%)		1	
Queuing Penalty (veh)		0	
Storage Bay Dist (ft)	115		
Storage Blk Time (%)	15		
Queuing Penalty (veh)	45		

Intersection: 3: I95 SB On Ramp/I95 SB Off Ramp & Northlake Boulevard

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	SB
Directions Served	T	T	T	T	T	R	L	L	T	T	T	L
Maximum Queue (ft)	325	510	421	393	398	61	232	262	205	142	187	1338
Average Queue (ft)	277	341	328	302	281	2	64	85	35	13	16	1109
95th Queue (ft)	373	459	409	377	363	43	166	198	143	90	112	1599
Link Distance (ft)		610	610	610	610		364	364	364	364	364	1310
Upstream Blk Time (%)								0	0		0	23
Queuing Penalty (veh)								0	0		0	0
Storage Bay Dist (ft)	275					480						
Storage Blk Time (%)	18	30										
Queuing Penalty (veh)	53	85										

Intersection: 3: I95 SB On Ramp/I95 SB Off Ramp & Northlake Boulevard

Movement	SB	SB	SB
Directions Served	L	R	R
Maximum Queue (ft)	1360	450	398
Average Queue (ft)	1162	434	225
95th Queue (ft)	1608	538	389
Link Distance (ft)	1310		
Upstream Blk Time (%)	49		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)		350	350
Storage Blk Time (%)	82	6	4
Queuing Penalty (veh)	400	14	10

Intersection: 4: I95 NB Off Ramp/I95 NB On Ramp & Northlake Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	T	T	T	T	T	T	R	L
Maximum Queue (ft)	200	238	404	399	325	365	393	412	377	387	370	1144
Average Queue (ft)	38	22	58	41	25	327	350	350	339	349	201	991
95th Queue (ft)	122	160	247	219	173	376	389	395	388	393	416	1409
Link Distance (ft)	364	364	364	364	364	350	350	350	350	350	350	1126
Upstream Blk Time (%)	0	1	1	1	0	7	19	19	15	19	2	15
Queuing Penalty (veh)	0	2	2	2	0	38	103	105	82	101	13	0
Storage Bay Dist (ft)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 4: I95 NB Off Ramp/I95 NB On Ramp & Northlake Boulevard

Movement	NB	NB	NB
Directions Served	L	R	R
Maximum Queue (ft)	1179	775	649
Average Queue (ft)	1002	712	437
95th Queue (ft)	1433	919	616
Link Distance (ft)	1126		
Upstream Blk Time (%)	41		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)		675	675
Storage Blk Time (%)	48	1	0
Queuing Penalty (veh)	471	2	0

Intersection: 5: Northlake Boulevard & Roan Lane

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	WB
Directions Served	UL	T	T	T	T	T	T	T	T	T	T	R
Maximum Queue (ft)	307	364	461	410	38	194	238	294	344	360	308	178
Average Queue (ft)	174	76	84	48	1	57	75	89	95	103	105	19
95th Queue (ft)	287	289	355	248	27	145	175	205	224	233	227	89
Link Distance (ft)		350	350	350				556	556	556		
Upstream Blk Time (%)		2	5	2					0	0		
Queuing Penalty (veh)		15	40	14					0	0		
Storage Bay Dist (ft)	270				150	275	275				270	270
Storage Blk Time (%)	2	4		0	0	0	0	0		0	1	
Queuing Penalty (veh)	17	7		1	0	0	0	3		3	4	

Intersection: 5: Northlake Boulevard & Roan Lane

Movement	SB
Directions Served	R
Maximum Queue (ft)	150
Average Queue (ft)	111
95th Queue (ft)	179
Link Distance (ft)	132
Upstream Blk Time (%)	17
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Sandtree Drive/Sunrise Drive & Northlake Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	R	L	L	T	T	TR	L	L
Maximum Queue (ft)	378	574	580	560	89	218	280	1107	1108	1104	375	425
Average Queue (ft)	97	350	372	378	34	108	195	1073	1068	1049	358	410
95th Queue (ft)	293	607	603	591	76	225	347	1210	1217	1246	423	477
Link Distance (ft)		556	556	556	556			1068	1068	1068		
Upstream Blk Time (%)		1	1	1				39	26	22		
Queuing Penalty (veh)		9	10	9				0	0	0		
Storage Bay Dist (ft)	370					180	180				325	325
Storage Blk Time (%)		9				4	8	39			36	60
Queuing Penalty (veh)		5				37	75	81			93	153

Intersection: 6: Sandtree Drive/Sunrise Drive & Northlake Boulevard

Movement	NB	NB	SB	SB
Directions Served	T	R	L	TR
Maximum Queue (ft)	554	240	256	185
Average Queue (ft)	486	159	112	73
95th Queue (ft)	745	255	207	146
Link Distance (ft)	525		390	390
Upstream Blk Time (%)	47			
Queuing Penalty (veh)	0			
Storage Bay Dist (ft)		190		
Storage Blk Time (%)	0	13		
Queuing Penalty (veh)	0	71		

Intersection: 15: Bend

Movement	SB	SB	SB
Directions Served	T	T	
Maximum Queue (ft)	509	505	420
Average Queue (ft)	163	189	31
95th Queue (ft)	530	563	232
Link Distance (ft)	486	486	486
Upstream Blk Time (%)	0	0	0
Queuing Penalty (veh)	1	1	2
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 18: Bend

Movement	NB	NB
Directions Served	T	
Maximum Queue (ft)	457	267
Average Queue (ft)	74	9
95th Queue (ft)	348	112
Link Distance (ft)	459	459
Upstream Blk Time (%)	0	0
Queuing Penalty (veh)	1	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 4053

APPENDIX I

(Crash Data & collision Diagram)

Military at Northlake

Crash Type	2010	2011	2012	2013	2014	Sum	%
Unknown/Not Coded	0	1	0	0	0	1	0%
Rear-End	27	38	34	44	50	193	57%
Head-On	0	0	0	0	4	4	1%
Angle	0	7	13	11	23	54	16%
Left-Turn	1	0	0	0	0	1	0%
Right-Turn	2	0	1	1	0	4	1%
Sideswipe	12	14	11	9	8	54	16%
Backed Into	0	0	0	0	0	0	0%
Collision with Pedestrian	0	1	0	4	1	6	2%
Collision with Bicycle	2	0	1	1	1	5	1%
Hit Concrete Barrier Wall	0	0	0	0	0	0	0%
Hit Bridge/Pier/Abutment/Rail	0	0	0	0	0	0	0%
Hit Tree/Shrubbery	0	0	0	0	0	0	0%
Hit Curb	0	1	0	0	6	7	2%
Collision with Fixed Object Above Road	3	0	0	0	0	3	1%
Hit Other Fixed Object	0	0	0	0	0	0	0%
Other Post/Pole	0	1	0	0	1	2	1%
Median Crossover	0	0	0	0	0	0	0%
All Other	0	1	0	2	0	3	1%
Blank	2	0	0	0	0	2	1%
N/A	0	0	0	0	0	0	0%
Collision with Parked Car	0	0	0	0	0	0	0%
Collision with MV on Roadway	0	0	0	0	0	0	0%
Hit Utility/Light Pole	0	0	0	0	0	0	0%
Hit Guardrail	0	0	0	0	0	0	0%
Collision with crash attenuators	0	0	0	0	0	0	0%
Collision with moveable object on road	0	0	0	0	0	0	0%
Overturned	0	0	0	0	0	0	0%
	49	64	60	72	94	339	

Keating Dr

Crash Type	2010	2011	2012	2013	2014	%
Unknown/Not Coded	0	0	1	0	0	1%
Rear-End	23	14	16	14	19	70%
Head-On	0	0	0	0	0	0%
Angle	0	1	5	5	5	13%
Left-Turn	1	0	0	0	0	1%
Right-Turn	2	0	0	0	0	2%
Sideswipe	3	3	4	0	2	10%
Backed Into	0	0	0	0	0	0%
Collision with Pedestrian	0	0	0	1	1	2%
Collision with Bicycle	0	0	1	1	0	2%
Hit Concrete Barrier Wall	0	0	0	0	0	0%
Hit Bridge/Pier/Abutment/Rail	0	0	0	0	0	0%
Hit Tree/Shrubbery	0	0	0	0	0	0%
Hit Curb	0	0	0	0	0	0%
Collision with Fixed Object Above Road	0	0	0	0	0	0%
Hit Other Fixed Object	0	0	0	0	0	0%
Other Post/Pole	0	0	0	1	0	1%
Median Crossover	0	0	0	0	0	0%
All Other	0	0	0	0	0	0%
Blank	0	0	0	0	0	0%
N/A	0	0	0	0	0	0%
Total	29	18	27	22	27	

I-95 at Norhtlake

Crash Type	2010	2011	2012	2013	2014	%
Unknown/Not Coded	3	4	3	6	0	4%
Rear-End	38	21	32	36	45	43%
Head-On	0	0	1	1	0	0%
Angle	7	6	9	8	17	12%
Left-Turn	4	1	0	0	9	3%
Right-Turn	0	0	0	1	0	0%
Sideswipe	15	5	4	7	0	8%
Backed Into	0	0	0	0	0	0%
Collision with Pedestrian	0	1	0	0	0	0%
Collision with Bicycle	1	0	1	1	0	1%
Hit Concrete Barrier Wall	8	5	4	7	13	9%
Hit Bridge/Pier/Abutment/Rail	0	0	1	1	0	0%
Hit Tree/Shrubbery	0	0	0	0	0	0%
Hit Curb	0	1	2	0	6	2%
Collision with Fixed Object Above Road	0	0	0	0	0	0%
Hit Other Fixed Object	0	1	0	0	0	0%
Other Post/Pole	0	0	0	0	0	0%
Median Crossover	0	0	0	0	0	0%
All Other	0	2	4	3	11	5%
Blank	0	0	0	0	0	0%
N/A	0	0	0	0	0	0%
Collision with Parked Car	0	1	0	0	1	0%
Collision with MV on Roadway	1	7	4	11	0	6%
Hit Utility/light pole	0	0	0	0	1	0%
Hit Guardrail	0	1	0	0	2	1%
Collision with crash attenuators	0	1	0	0	1	0%
Collision with moveable object on road	3	0	1	0	0	1%
Overturned	0	0	1	0	2	1%
Cargo loss or shift	3	1	0	2	1	2%
Separation of Units	0	1	0	0	0	0%
Total	83	59	67	84	109	

Roan Lane

Crash Type	2010	2011	2012	2013	2014	%
Unknown/Not Coded	0	0	1	0	0	1%
Rear-End	5	7	7	2	8	42%
Head-On	0	0	0	0	0	0%
Angle	1	4	5	3	7	29%
Left-Turn	4	0	0	0	0	6%
Right-Turn	0	0	0	0	0	0%
Sideswipe	7	1	1	1	2	17%
Backed Into	0	0	0	0	0	0%
Collision with Pedestrian	0	0	0	0	0	0%
Collision with Bicycle	0	0	0	0	0	0%
Hit Concrete Barrier Wall	0	0	0	0	0	0%
Hit Bridge/Pier/Abutment/Rail	0	0	0	0	0	0%
Hit Tree/Shrubbery	0	0	0	0	0	0%
Hit Curb	0	1	0	0	0	1%
Collision with Fixed Object Above Road	0	0	0	0	0	0%
Hit Other Fixed Object	0	0	0	0	0	0%
Other Post/Pole	0	0	0	0	0	0%
Median Crossover	0	0	0	0	0	0%
All Other	0	0	1	0	1	3%
Blank	0	0	0	0	0	0%
N/A	0	0	0	0	0	0%
Total	17	13	15	6	18	100%

Sunrise Dr and Sandtree Dr

Crash Type	**2010**	**2011**	**2012**	**2013**	**2014**	%
Unknown/Not Coded	0	0	0	0	0	0%
Rear-End	10	17	19	23	25	64%
Head-On	1	0	0	0	1	1%
Angle	1	4	1	4	2	8%
Left-Turn	0	0	0	0	0	0%
Right-Turn	3	0	0	0	0	2%
Sideswipe	5	4	4	4	8	17%
Backed Into	0	0	0	0	0	0%
Collision with Pedestrian	0	0	1	0	0	1%
Collision with Bicycle	2	0	0	1	1	3%
Hit Concrete Barrier Wall	0	0	0	0	0	0%
Hit Bridge/Pier/Abutment/Rail	0	0	0	0	0	0%
Hit Tree/Shrubbery	0	0	0	0	0	0%
Hit Curb	0	1	1	1	0	2%
Collision with Fixed Object Above Road	0	0	0	0	0	0%
Hit Other Fixed Object	0	0	1	0	0	1%
Other Post/Pole	0	0	0	0	0	0%
Median Crossover	0	0	0	0	0	0%
All Other	0	0	1	1	0	1%
Blank	0	0	0	0	0	0%
N/A	0	0	0	0	0	0%
Total	22	26	28	34	37	

Military Trail

Crash Type	**2010**	**2011**	**2012**	**2013**	**2014**
Unknown/Not Coded	0	1	0	0	0
Rear-End	27	38	34	44	50
Head-On	0	0	0	0	4
Angle	2	7	13	11	23
Left-Turn	1	0	0	0	1
Right-Turn	2	0	1	1	0
Sideswipe	12	14	11	9	7
Backed Into	0	0	0	0	0
Collision with Pedestrian	0	1	0	4	0
Collision with Bicycle	2	0	1	1	1
Hit Concrete Barrier Wall	0	0	0	0	0
Hit Bridge/Pier/Abutment/Rail	0	0	0	0	0
Hit Tree/Shrubbery	0	0	0	0	0
Hit Curb	0	1	0	0	4
Collision with Fixed Object Above Road	3	0	0	0	0
Hit Other Fixed Object	0	0	0	0	0
Other Post/Pole	0	1	0	0	1
Median Crossover	0	0	0	0	0
All Other	0	1	0	2	3
Blank	0	0	0	0	0
N/A	0	0	0	0	0
Collision with Parked Car	0	0	0	0	0
Collision with MV on Roadway	0	0	0	0	0
Hit Utility/Light Pole	0	0	0	0	0
Hit Guardrail	0	0	0	0	0
Collision with crash attenuators	0	0	0	0	0
Collision with moveable object on road	0	0	0	0	0
Overturned	0	0	0	0	0
Total	49	64	60	72	94

Facility Type	2010	2011	2012	2013	2014	Total
Non-junction	48	29	32	53	67	229
Intersection	13	17	26	9	10	75
Intersection related	18	8	8	11	4	49
Entrance/exit Ramp	2	2	1	10	26	41
Unknown/Other	2	3	0	1	2	8
Total	83	59	67	84	109	402

Pavement Condition	2010	2011	2012	2013	2014	Total
Dry	121	121	113	39	87	481
Wet	19	11	10	14	18	72
Slippery	1	0	0	0	0	1
Icy	0	0	0	0	0	0
Other	0	0	0	0	0	0
Unknown	6	7	2	3	0	18

Site Location	2010	2011	2012	2013	2014
Non-Junction	29	24	26	40	72
Intersection	33	79	99	29	55
Intersection-Related	72	36	33	73	41
Driveway/Alley Access Related	5	3	4	17	5
Entrance/Exit Ramp	1	1	1	2	3
Crossover Related	0	0	0	1	0
Through Roadway	0	2	2	0	1
Other	2	1	0	1	0
Unknown	5	6	2	0	8
n/a	1	0	0	0	0
Total	148	152	167	163	185

Lighting Condition	2010	2011	2012	2013	2014
Daylight	112	120	137	119	124
Dusk	8	3	1	1	12
Dawn	0	2	1	0	3
Dark-Lighted	20	18	24	26	32
Dark-Not Lighted	1	0	1	1	0
Dark-Unknown	0	0	1	0	1
Not Coded	6	7	2	6	0
Total	148	152	167	163	185

I-95 @ PGA Blvd - Mainline

	2010	2011	2012	2013	2014	Total
Property Damage Only	45	30	11	19	25	130
Severity 2-4	31	26	11	9	13	90
Fatalities	0	0	0	0	0	0
Total	76	56	22	28	38	220

	2010	2011	2012	2013	2014	Total
Daylight	49	39	13	19	30	150
Dusk	5	5	2	2	2	16
Dawn	1	1	1	1	0	4
Dark-Lighted	20	11	6	3	4	44
Dark-Not Lighted	1	0	0	3	2	6
Dark-Unknown	0	0	0	0	0	0
Total	76	56	22	28	38	220

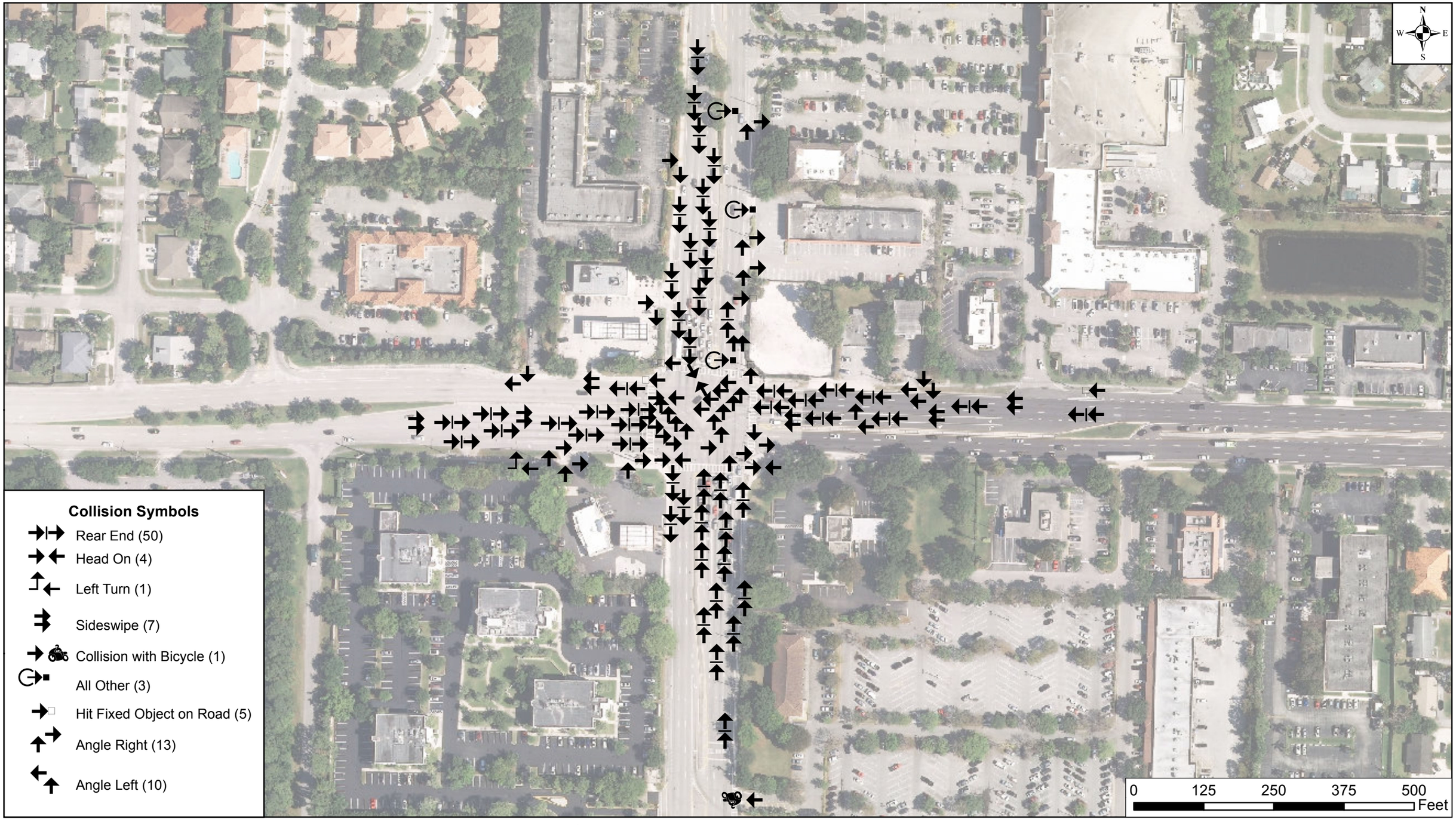
	2010	2011	2012	2013	2014	Total
Dry	56	36	16	18	22	148
Wet	20	20	6	10	16	72
Slippery	0	0	0	0	0	0
Icy	0	0	0	0	0	0
Other	0	0	0	0	0	0
Total	76	56	22	28	38	220

PGA Blvd - Ramps

	2010	2011	2012	2013	2014	Total
Property Damage Only	0	2	3	1	5	11
Severity 2-4	2	4	2	1	2	11
Fatalities	0	1	0	1	0	2
Total	2	7	5	3	7	24

	2010	2011	2012	2013	2014	Total
Daylight	1	4	3	1	2	11
Dusk	0	0	0	0	2	2
Dawn	0	1	0	0	0	1
Dark-Lighted	1	0	1	1	2	5
Dark-Not Lighted	0	2	1	1	1	5
Dark-Unknown	0	0	0	0	0	0
Total	2	7	5	3	7	24

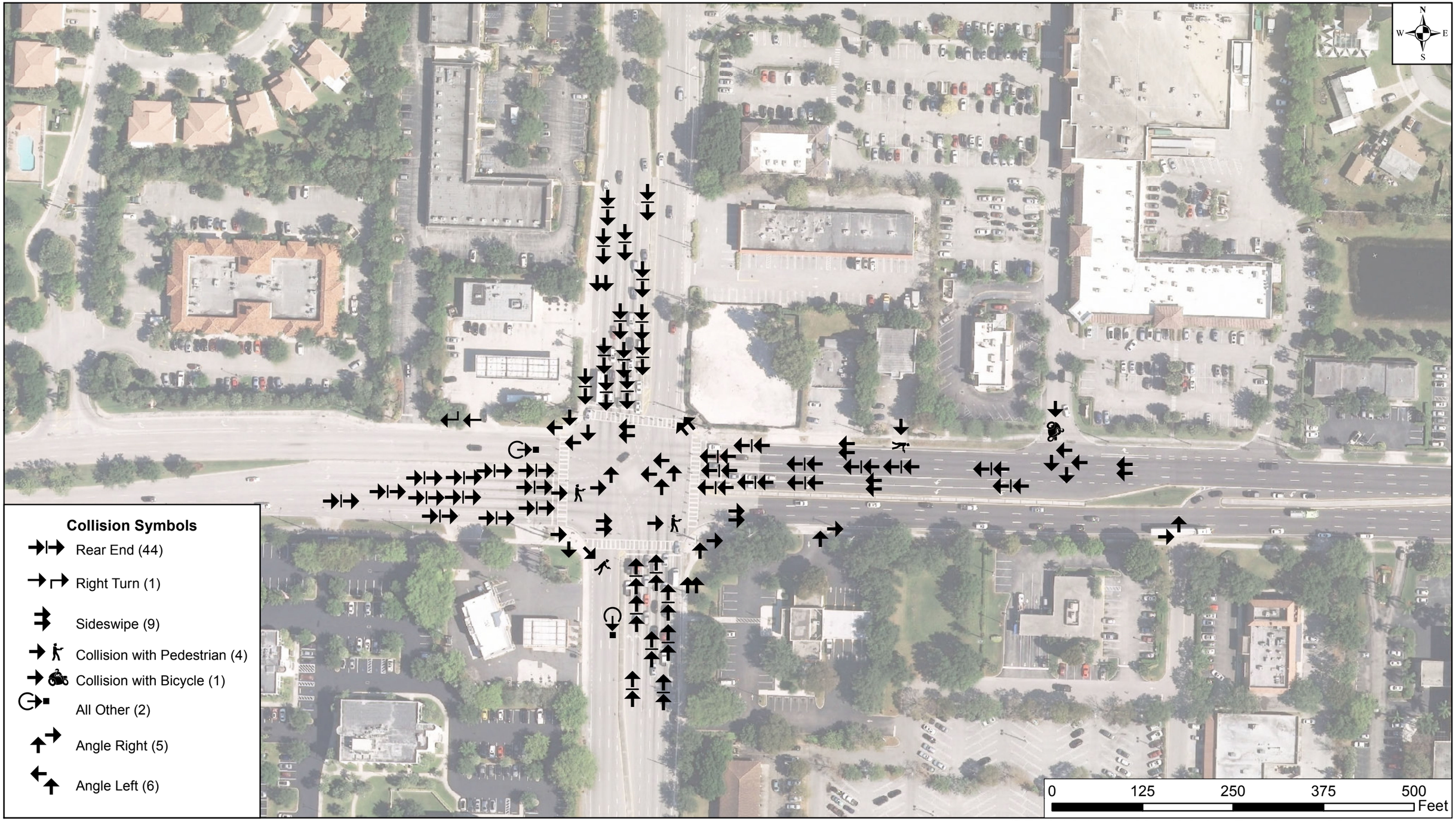
	2010	2011	2012	2013	2014	Total
Dry	2	4	5	1	2	14
Wet	0	3	0	2	5	10
Slippery	0	0	0	0	0	0
Icy	0	0	0	0	0	0
Other	0	0	0	0	0	0
Total	2	7	5	3	7	24



Military Trail at Northlake Blvd. Collision Diagram 2014

SR 9 / I-95 at Northlake Boulevard Interchange
Project Development and Environment (PD&E) Study

FM Number: 435803-1-22-02 **ETDM: 14182**



Military Trail at Northlake Blvd. Collision Diagram 2013

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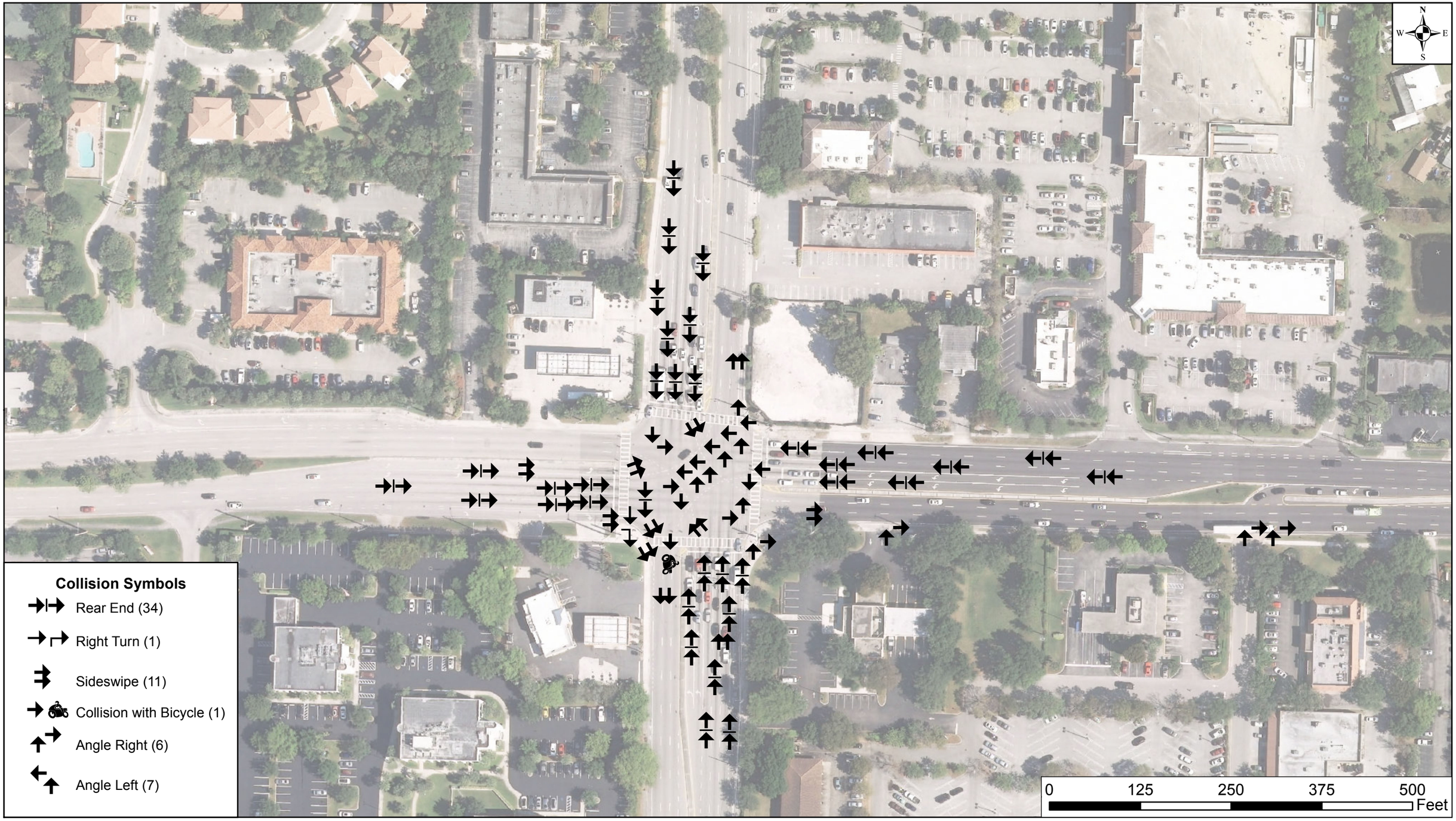

Military Trail at Northlake Blvd. Collision Diagram 2012

SR 9 / I-95 at Northlake Boulevard Interchange
Project Development and Environment (PD&E) Study

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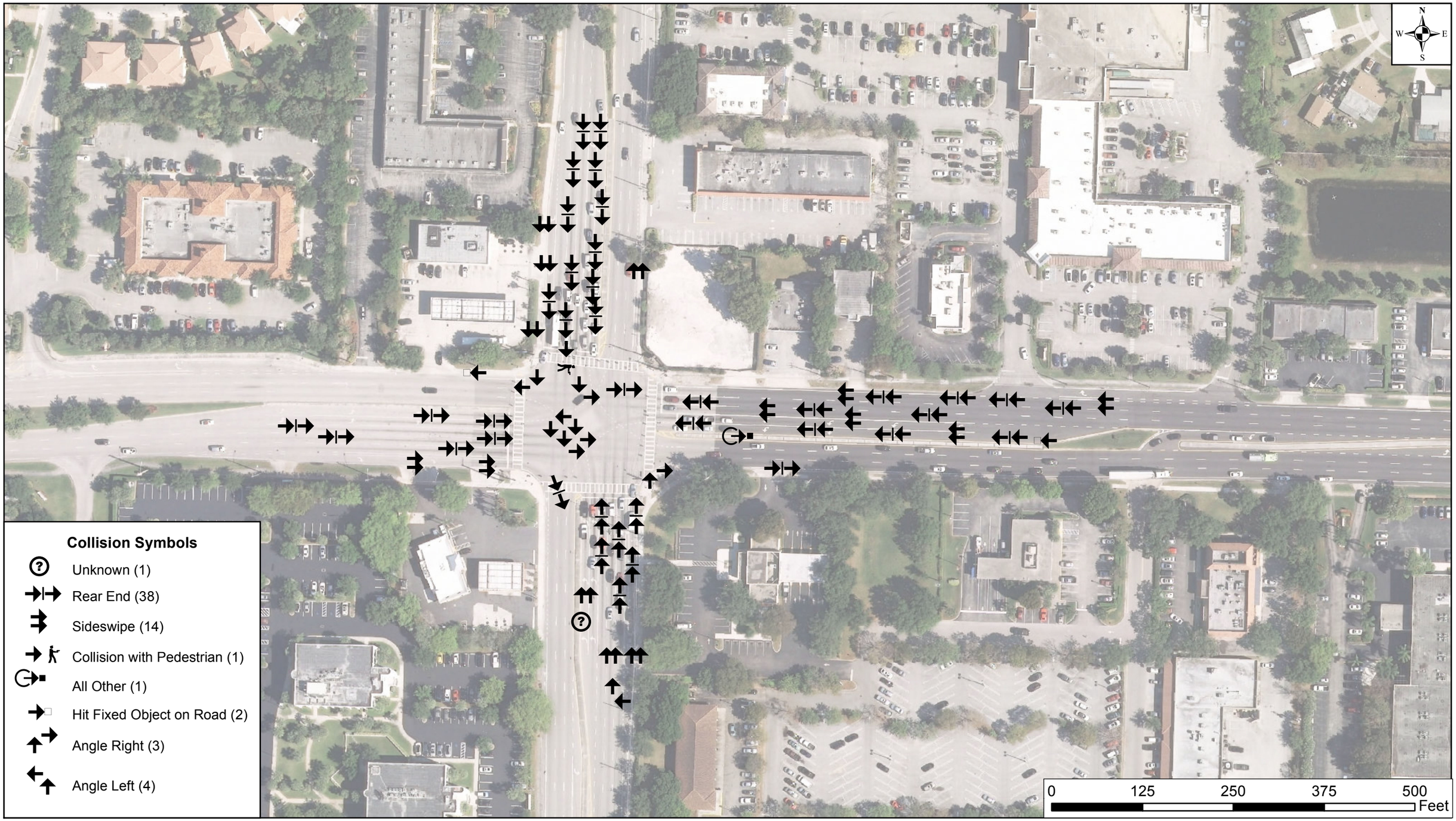

Military Trail at Northlake Blvd. Collision Diagram 2011

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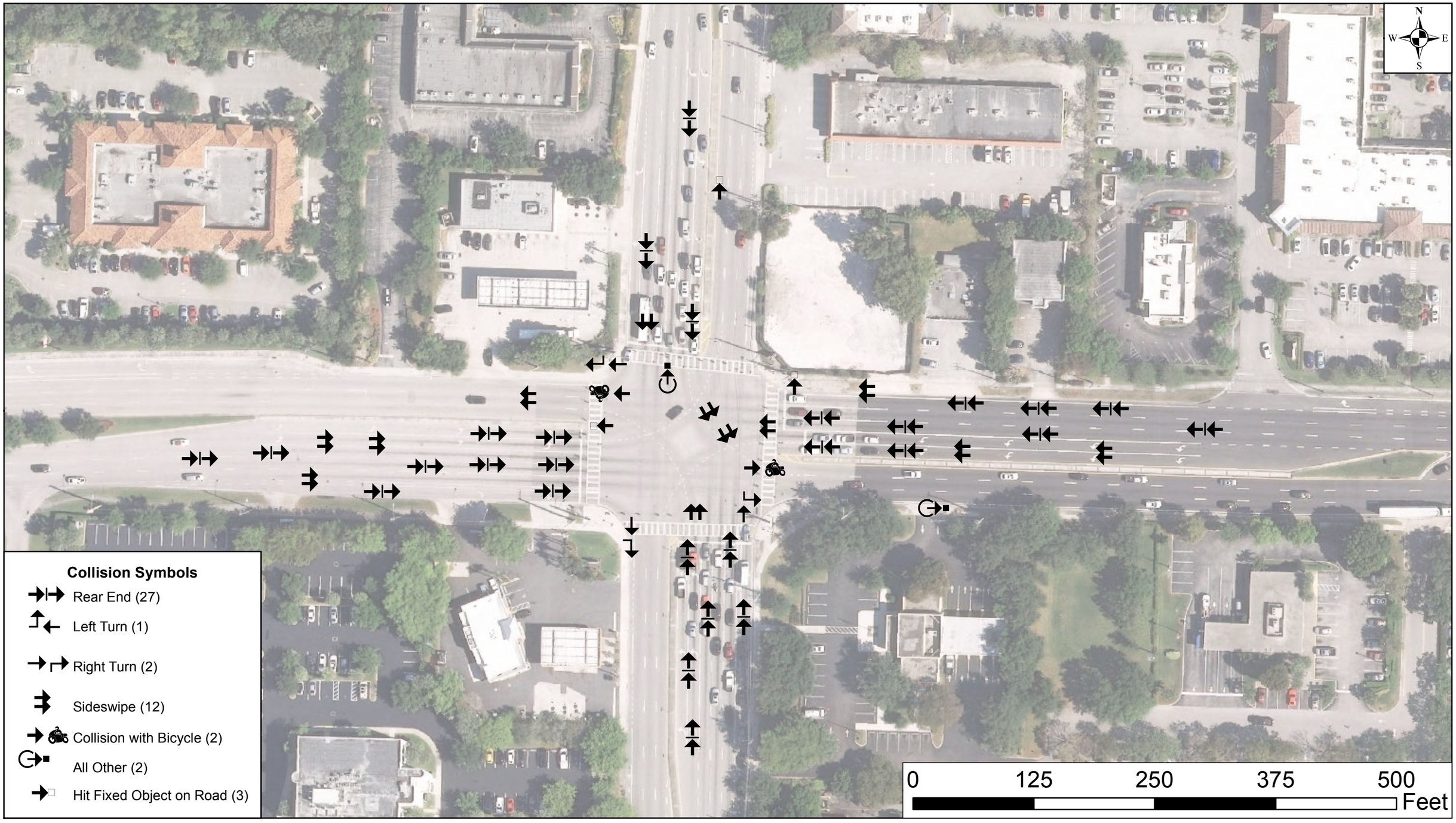


Military Trail at Northlake Blvd.
Collision Diagram 2010

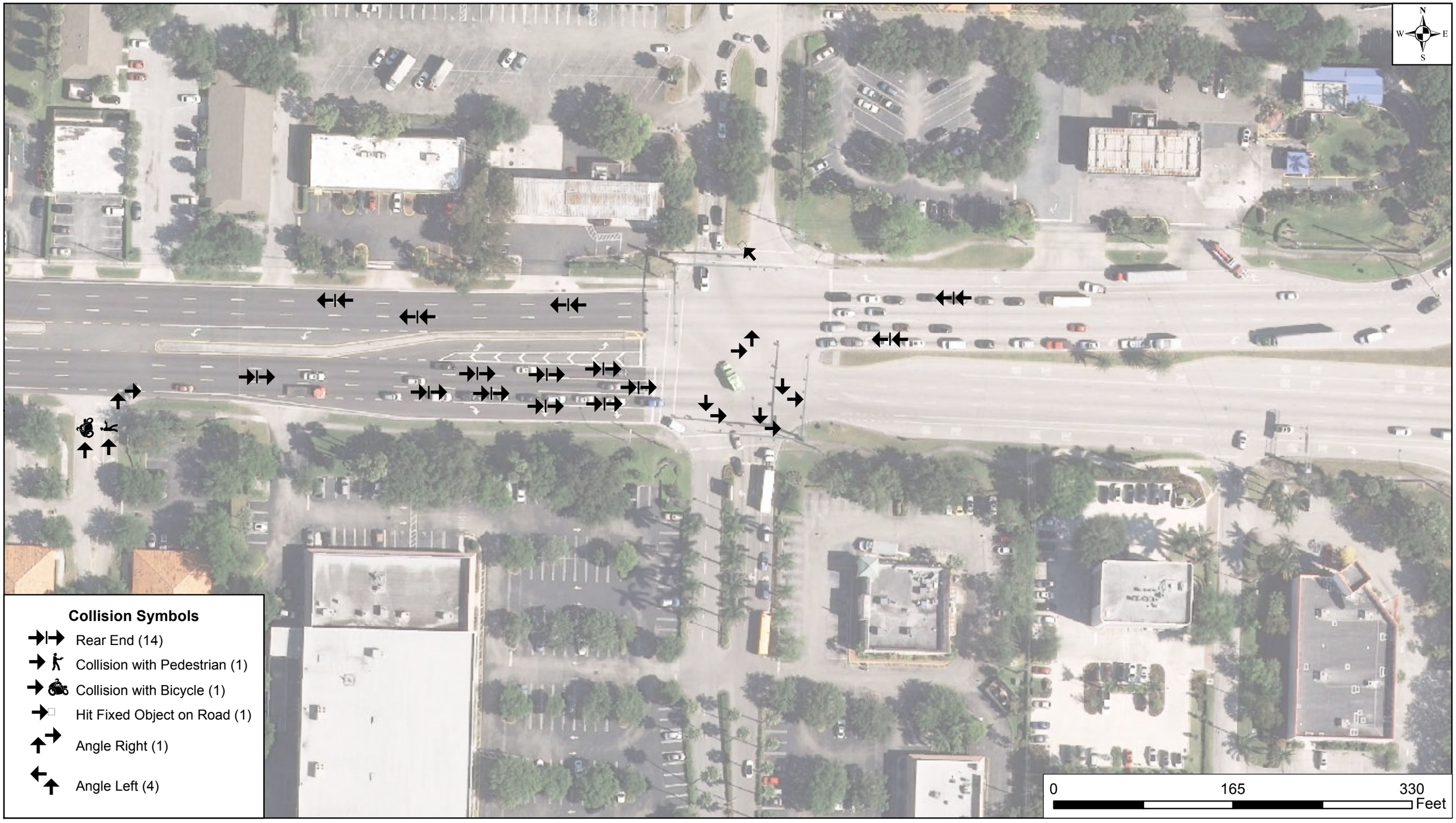
SR 9 / I-95 at Northlake Boulevard Interchange
Project Development and Environment (PD&E) Study

FM Number: 435803-1-22-02 **ETDM: 14182**

Keating Dr. at Northlake Blvd. Collision Diagram 2014

SR 9 / I-95 at Northlake Boulevard Interchange
Project Development and Environment (PD&E) Study

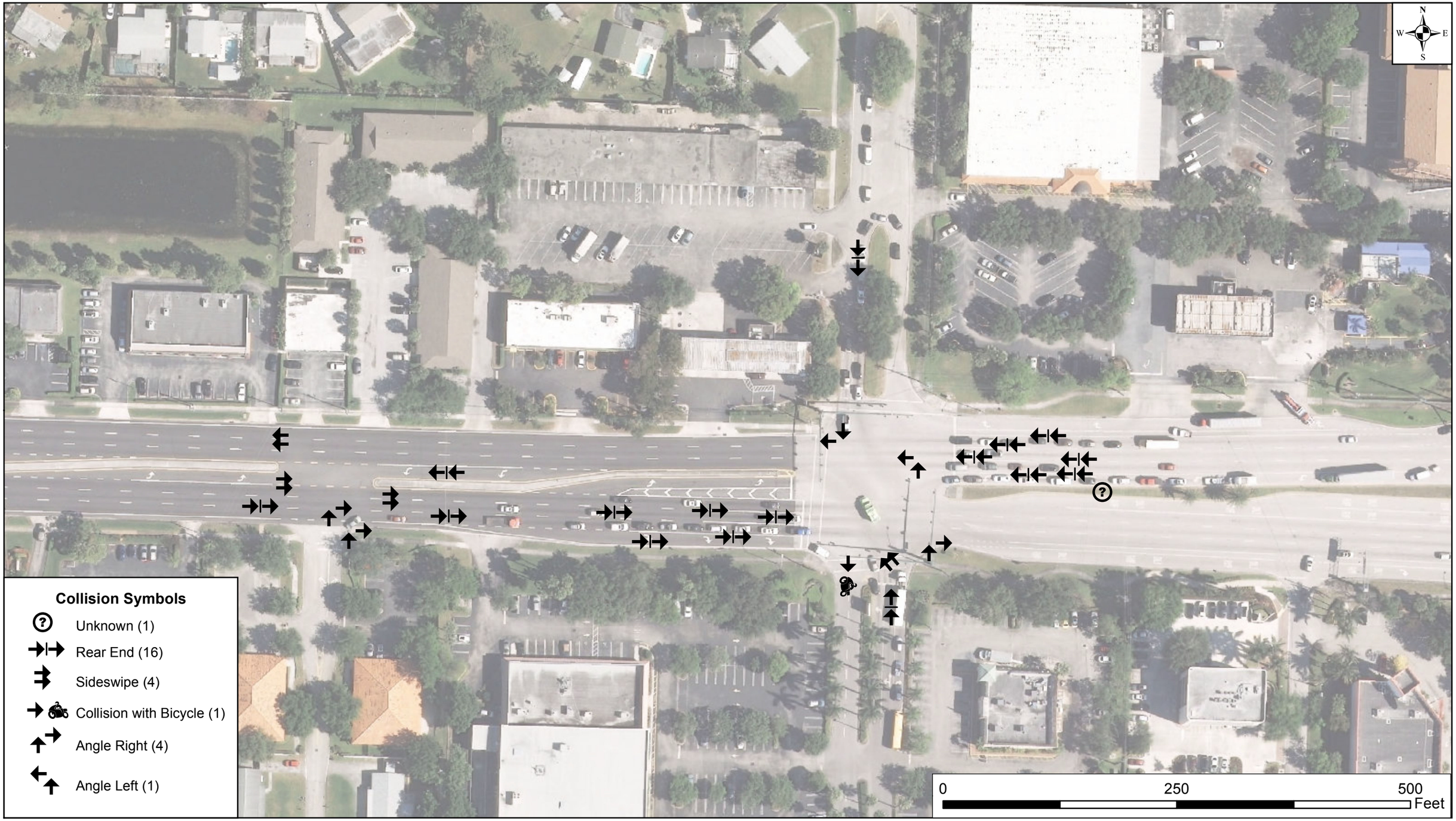
FM Number: 435803-1-22-02 ETDM: 14182



Keating Dr. at Northlake Blvd. Collision Diagram 2013

SR 9 / I-95 at Northlake Boulevard Interchange
Project Development and Environment (PD&E) Study

FM Number: 435803-1-22-02 ETDM: 14182



Keating Dr. at Northlake Blvd. Collision Diagram 2012

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Project Development and Environment (PD&E) Study

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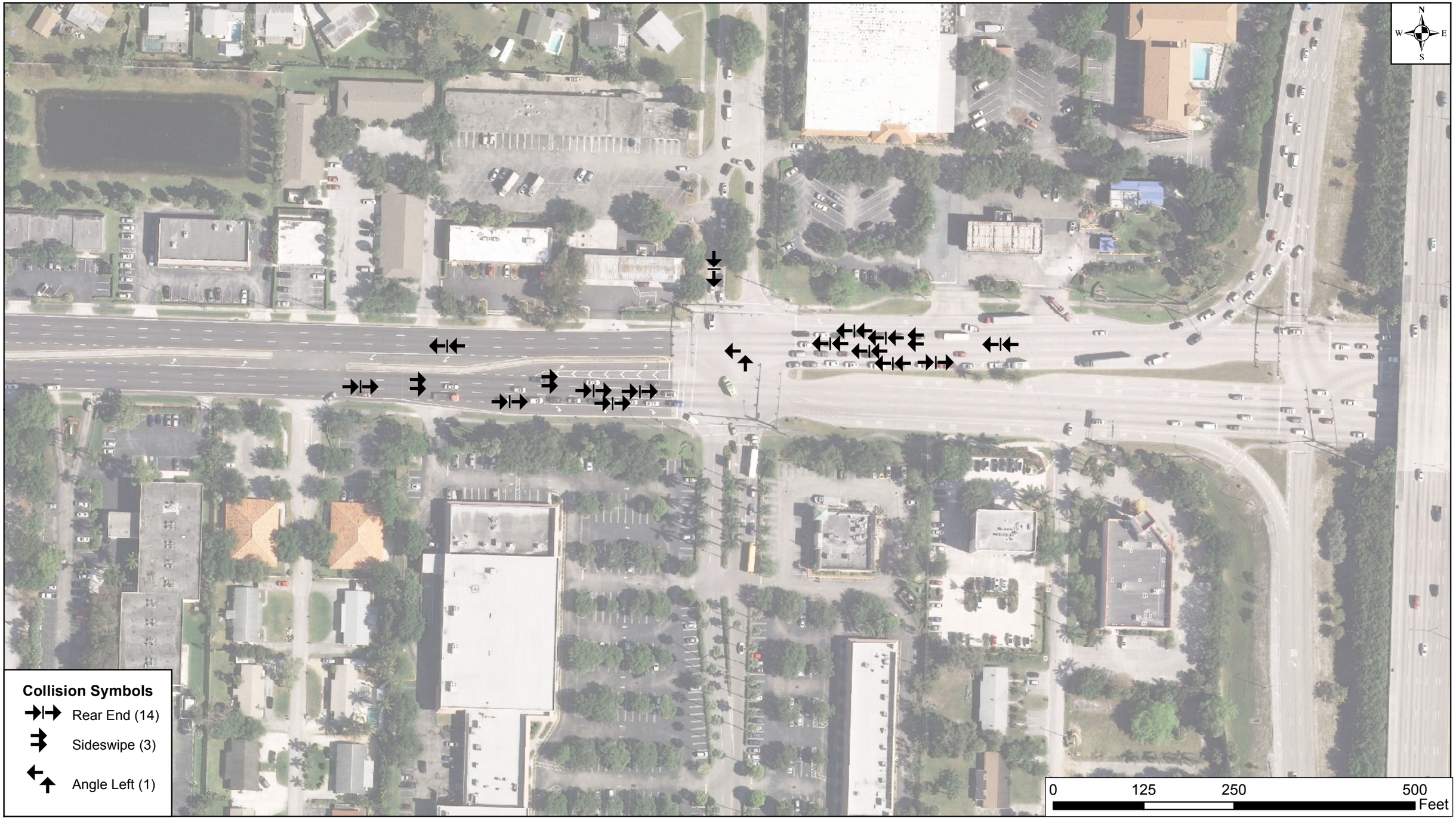

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Project Development and Environment (PD&E) Study

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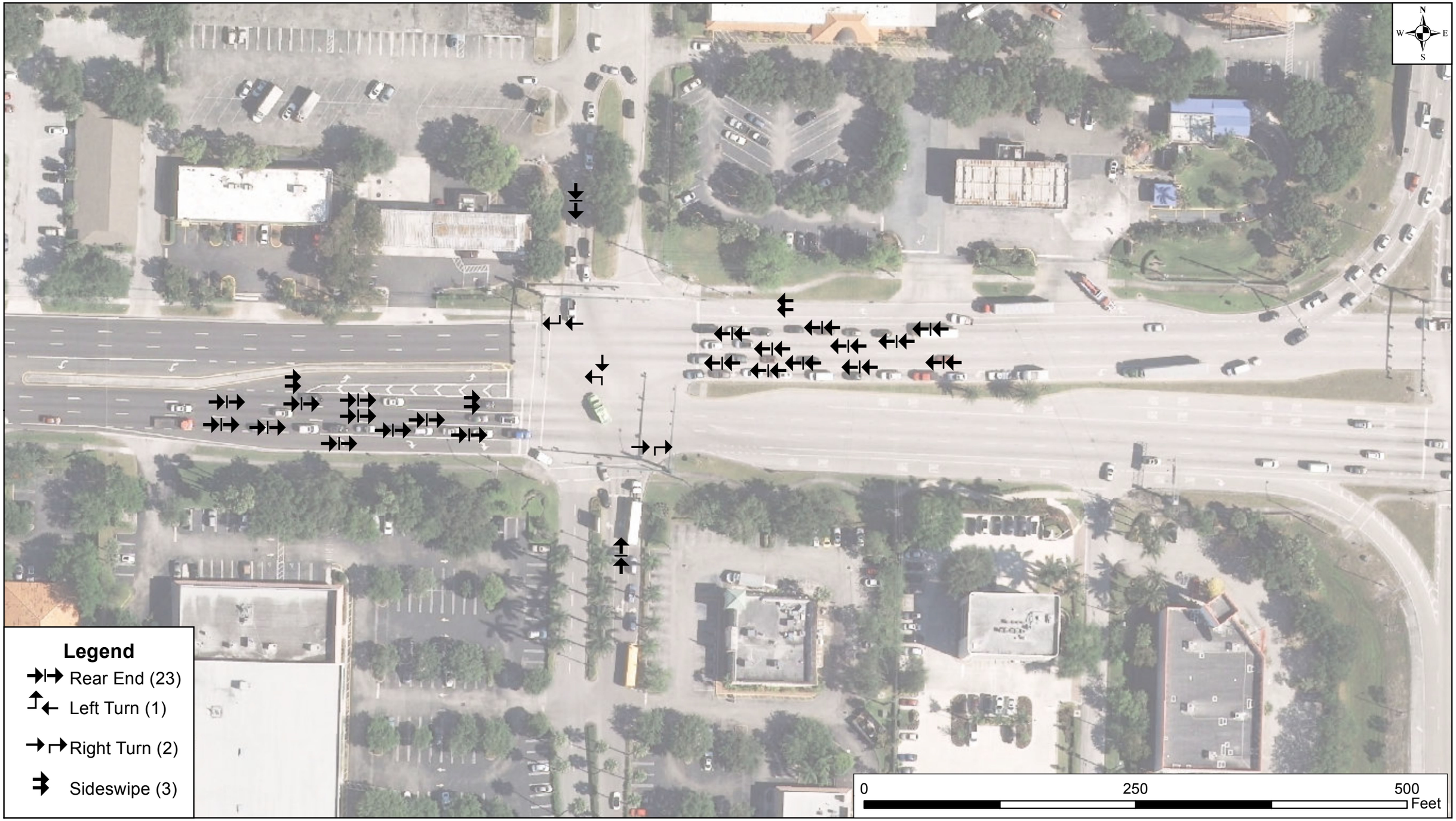
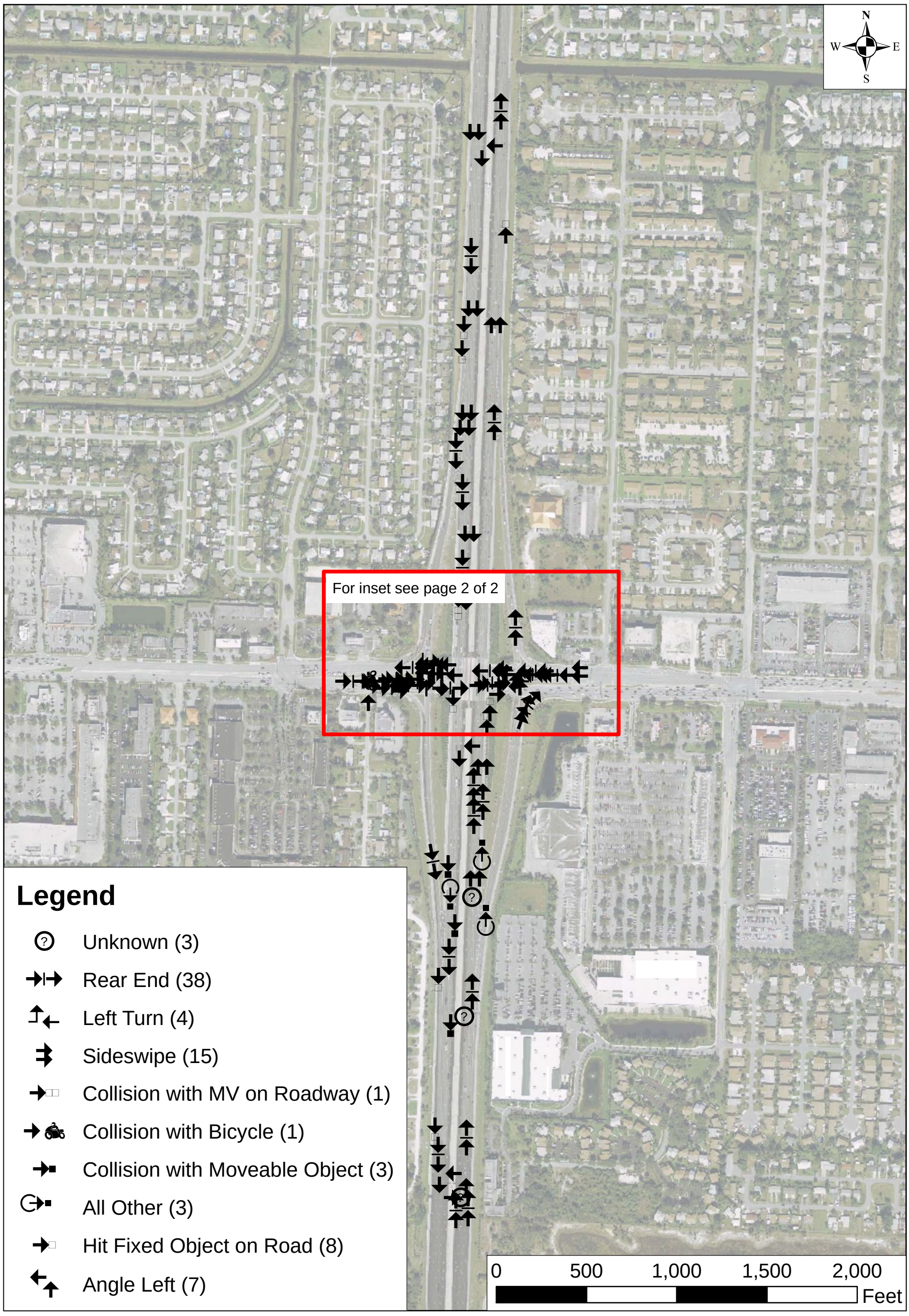


Keating Dr. at Northlake Blvd. Collision Diagram 2010

SR 9 / I-95 at Northlake Boulevard Interchange
Project Development and Environment (PD&E) Study

FM Number: 435803-1-22-02 ETDM: 14182



Legend

- Unknown (3)
- Rear End (38)
- Left Turn (4)
- Sideswipe (15)
- Collision with MV on Roadway (1)
- Collision with Bicycle (1)
- Collision with Moveable Object (3)
- All Other (3)
- Hit Fixed Object on Road (8)
- Angle Left (7)

SR 9/I-95 at Northlake Boulevard Collision Diagram 2010 (1 of 2)

SR 9 / I-95 at Northlake Boulevard Interchange
Project Development and Environment (PD&E) Study

FM Number: 435803-1-22-02
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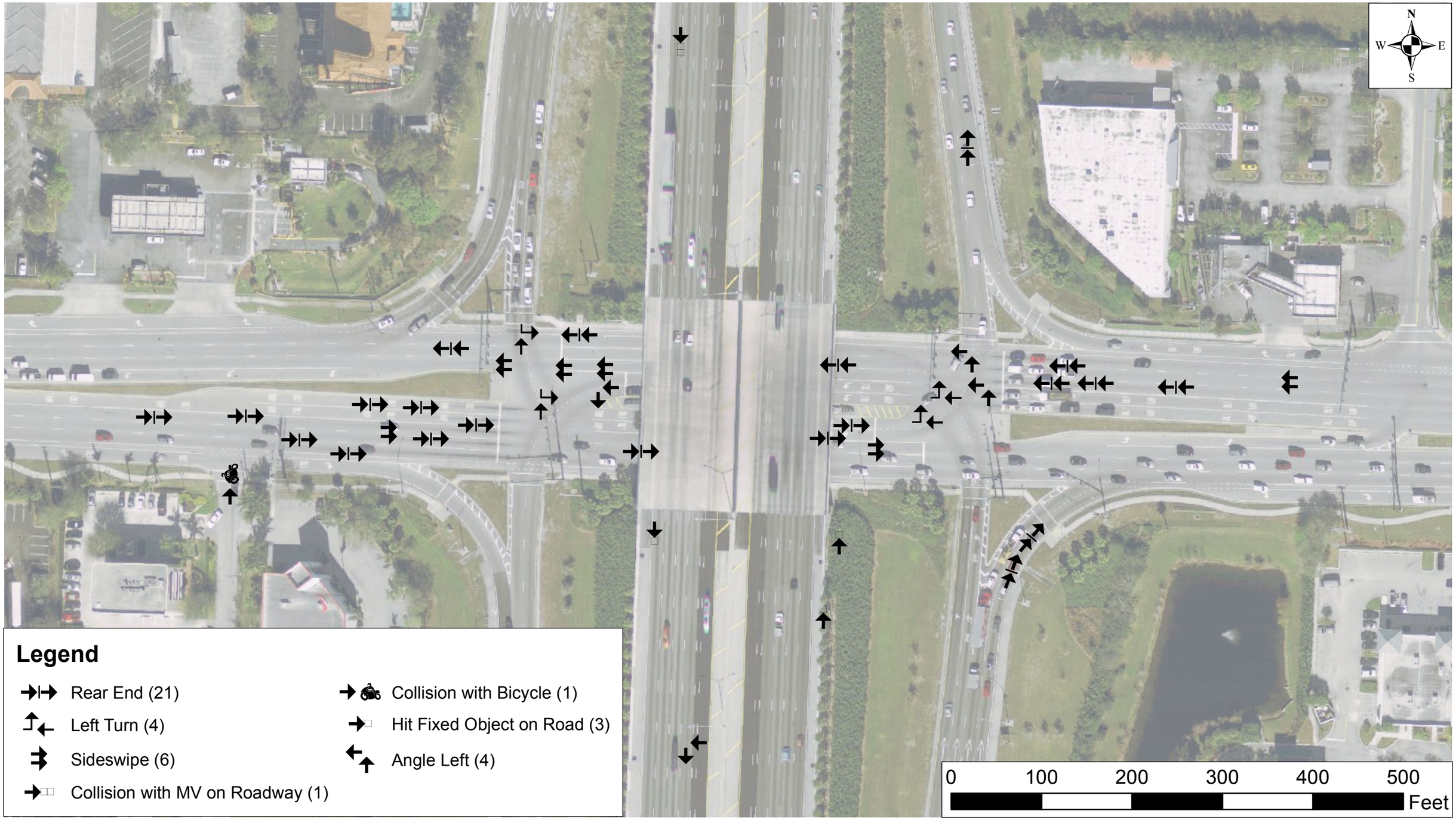
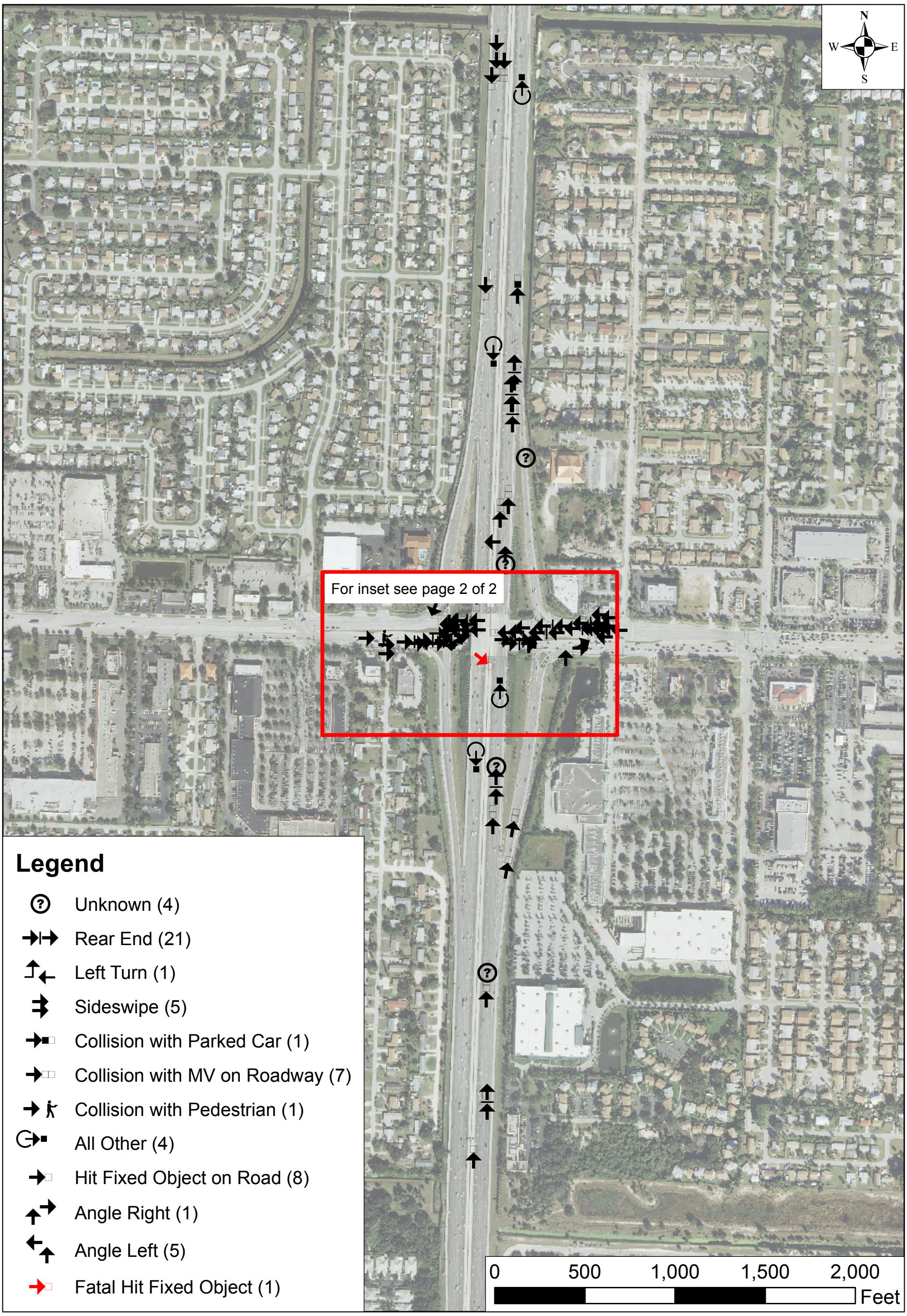


SR 9/I-95 at Northlake Boulevard Collision Diagram 2010 (2 of 2)

SR 9 / I-95 at Northlake Boulevard Interchange
Project Development and Environment (PD&E) Study

FM Number: 435803-1-22-02 ETDM: 14182

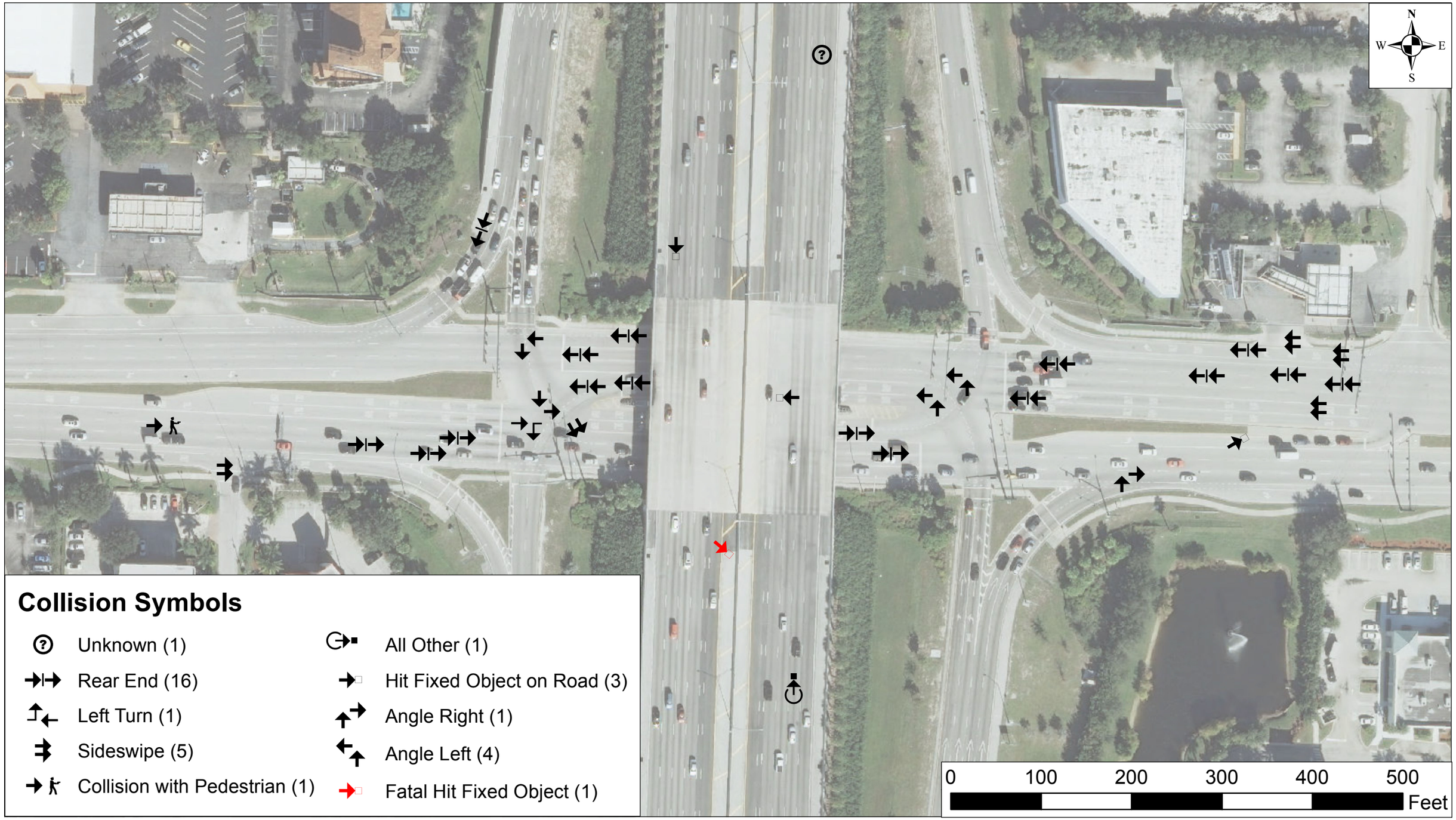


SR 9/I-95 at Northlake Boulevard Collision Diagram 2011 (1 of 2)

SR 9 / I-95 at Northlake Boulevard Interchange
Project Development and Environment (PD&E) Study

FDOT

FM Number: 435803-1-22-02
ETDM: 14182



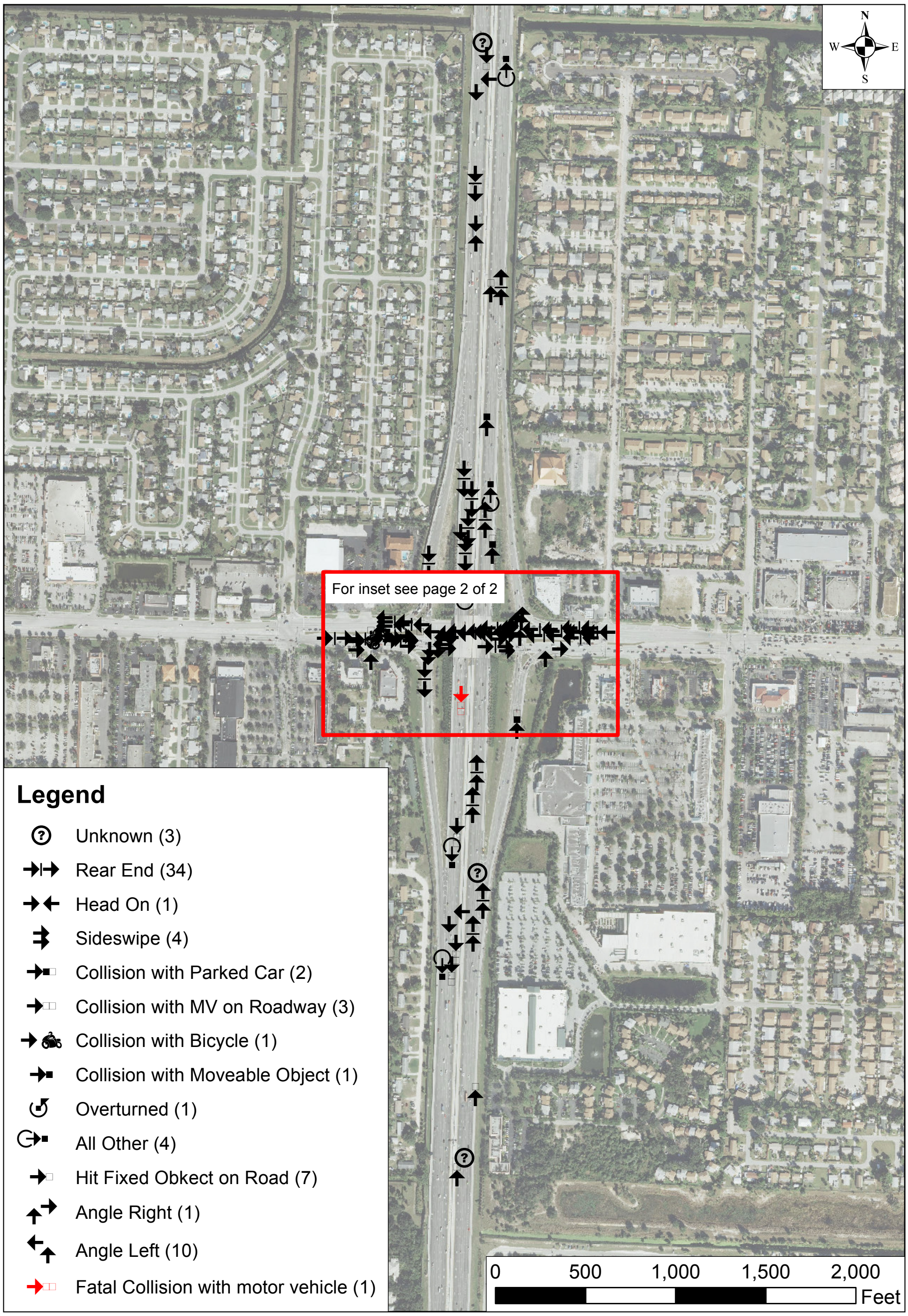
Collision Symbols

- Unknown (1)
- Rear End (16)
- Left Turn (1)
- Sideswipe (5)
- Collision with Pedestrian (1)
- All Other (1)
- Hit Fixed Object on Road (3)
- Angle Right (1)
- Angle Left (4)
- Fatal Hit Fixed Object (1)

SR 9/I-95 at Northlake Boulevard Collision Diagram 2011 (2 of 2)

SR 9 / I-95 at Northlake Boulevard Interchange
Project Development and Environment (PD&E) Study

FM Number: 435803-1-22-02 **ETDM: 14182**



SR 9/I-95 at Northlake Boulevard Collision Diagram 2012 (1 of 2)

SR 9 / I-95 at Northlake Boulevard Interchange
Project Development and Environment (PD&E) Study

FDOT

FM Number: 435803-1-22-02
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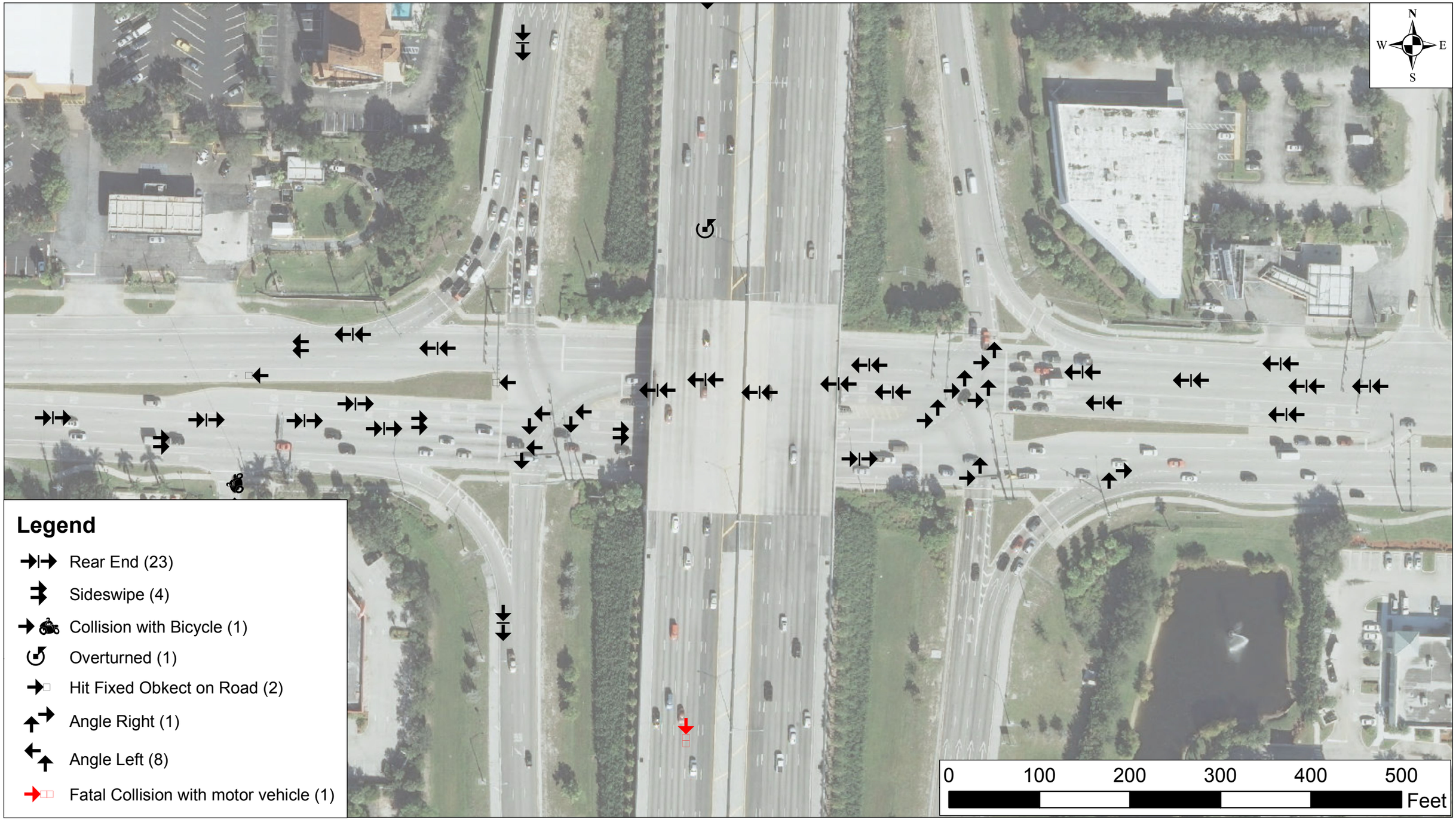

SR 9/I-95 at Northlake Boulevard Collision Diagram 2012 (2 of 2)

SR 9 / I-95 at Northlake Boulevard Interchange
Project Development and Environment (PD&E) Study

FM Number: 435803-1-22-02 **ETDM: 14182**

SR 9/I-95 at Northlake Boulevard Collision Diagram 2013 (1 of 2)

SR 9 / I-95 at Northlake Boulevard Interchange
Project Development and Environment (PD&E) Study

FM Number: 435803-1-22-02
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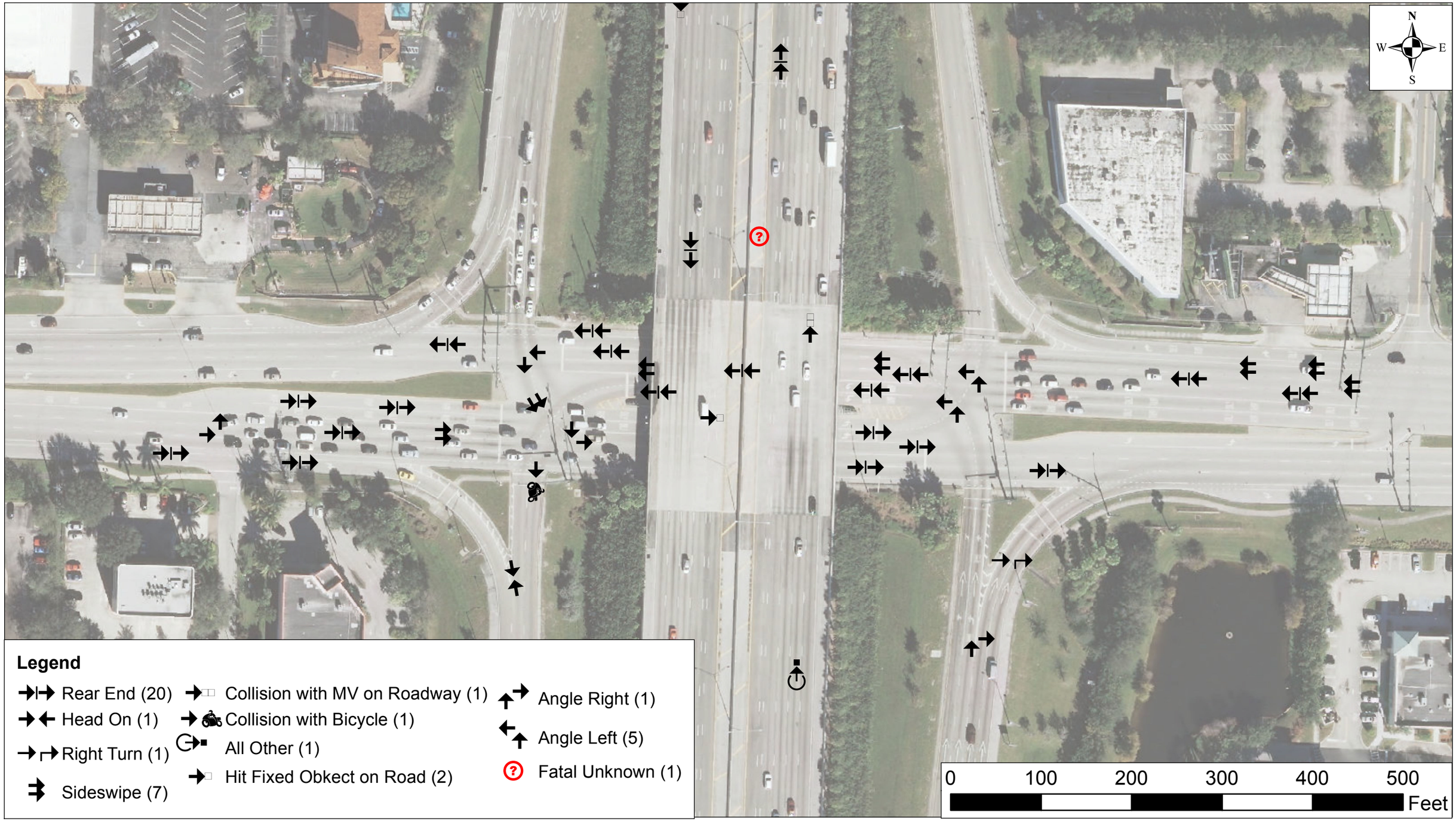
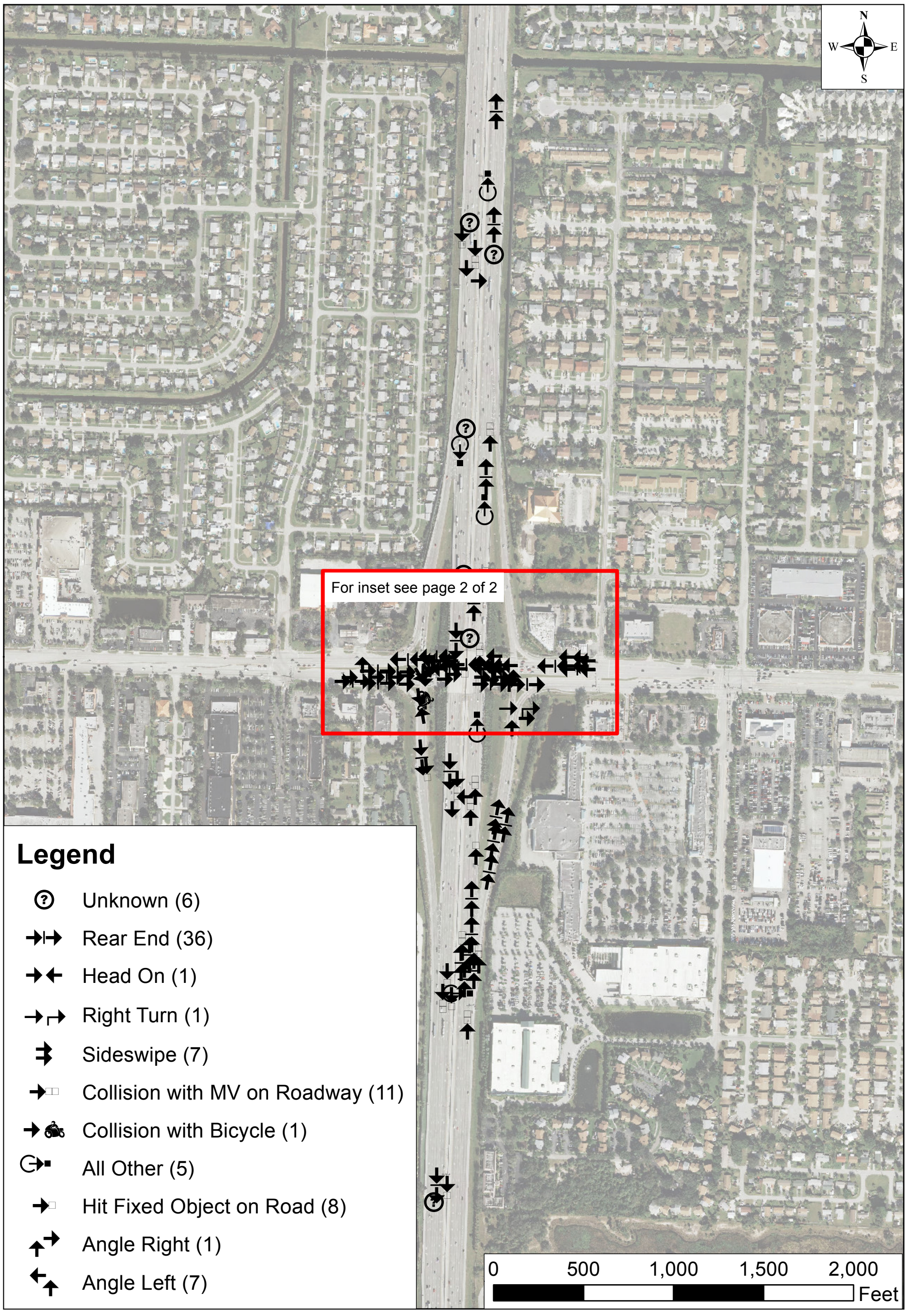


SR 9/I-95 at Northlake Boulevard Collision Diagram 2013 (2 of 2)

FDOT

SR 9 / I-95 at Northlake Boulevard Interchange
Project Development and Environment (PD&E) Study

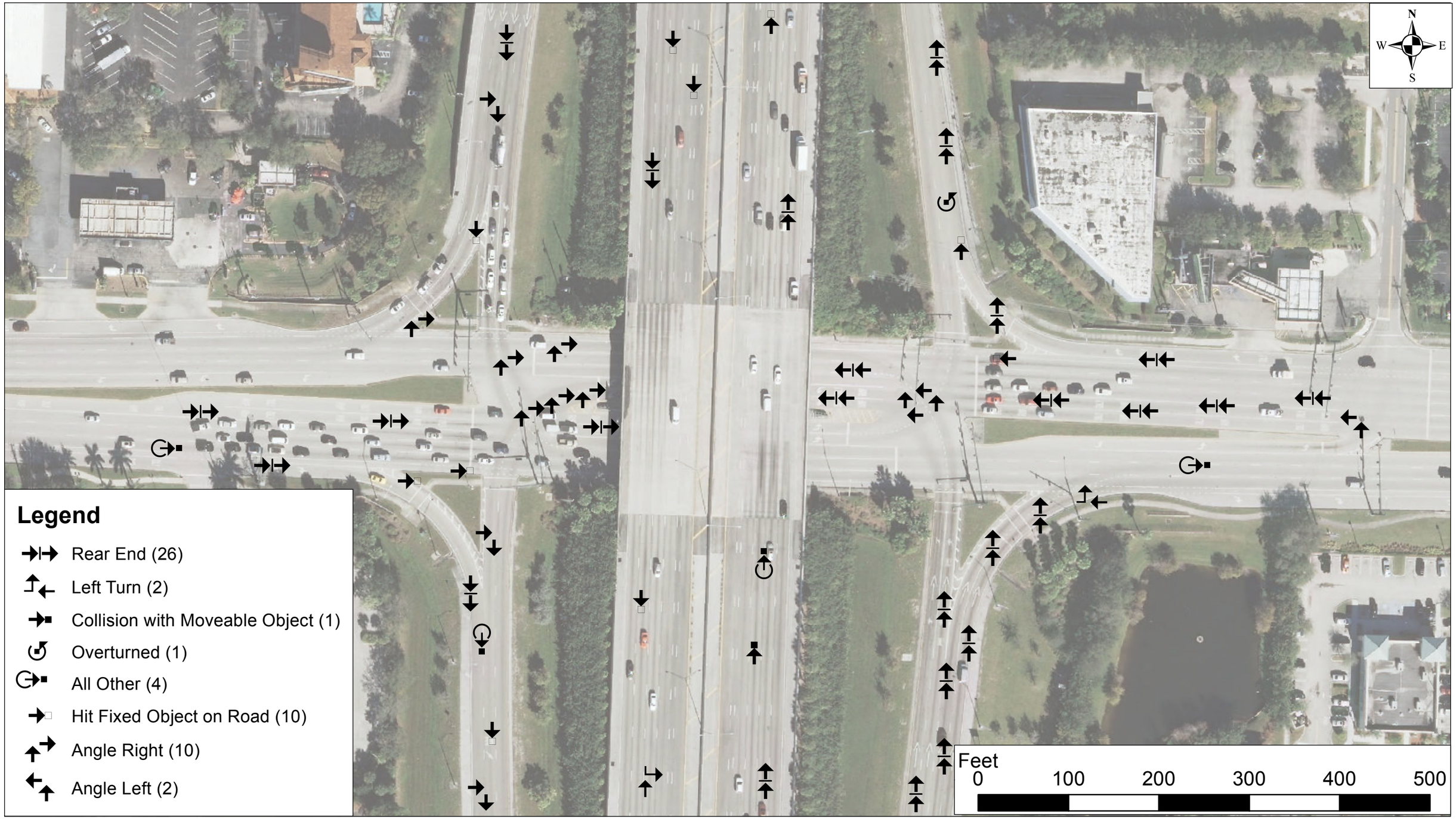
FM Number: 435803-1-22-02 **ETDM: 14182**



SR 9/I-95 at Northlake Boulevard Collision Diagram 2014 (1 of 2)

SR 9 / I-95 at Northlake Boulevard Interchange
Project Development and Environment (PD&E) Study

FM Number: 435803-1-22-02
ETDM: 14182

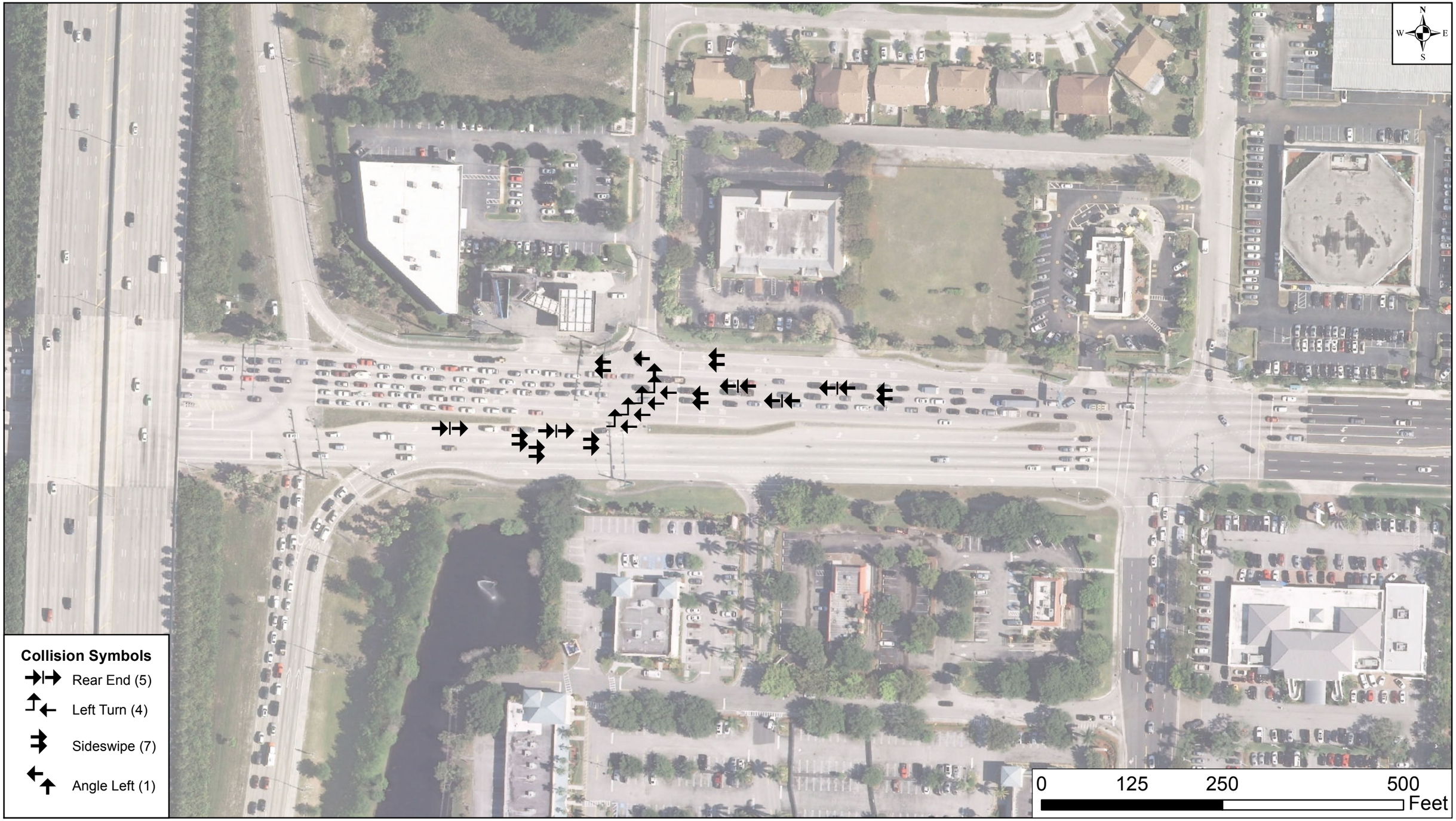


SR 9/I-95 at Northlake Boulevard Collision Diagram 2014 (2 of 2)

FDOT

SR 9 / I-95 at Northlake Boulevard Interchange
Project Development and Environment (PD&E) Study

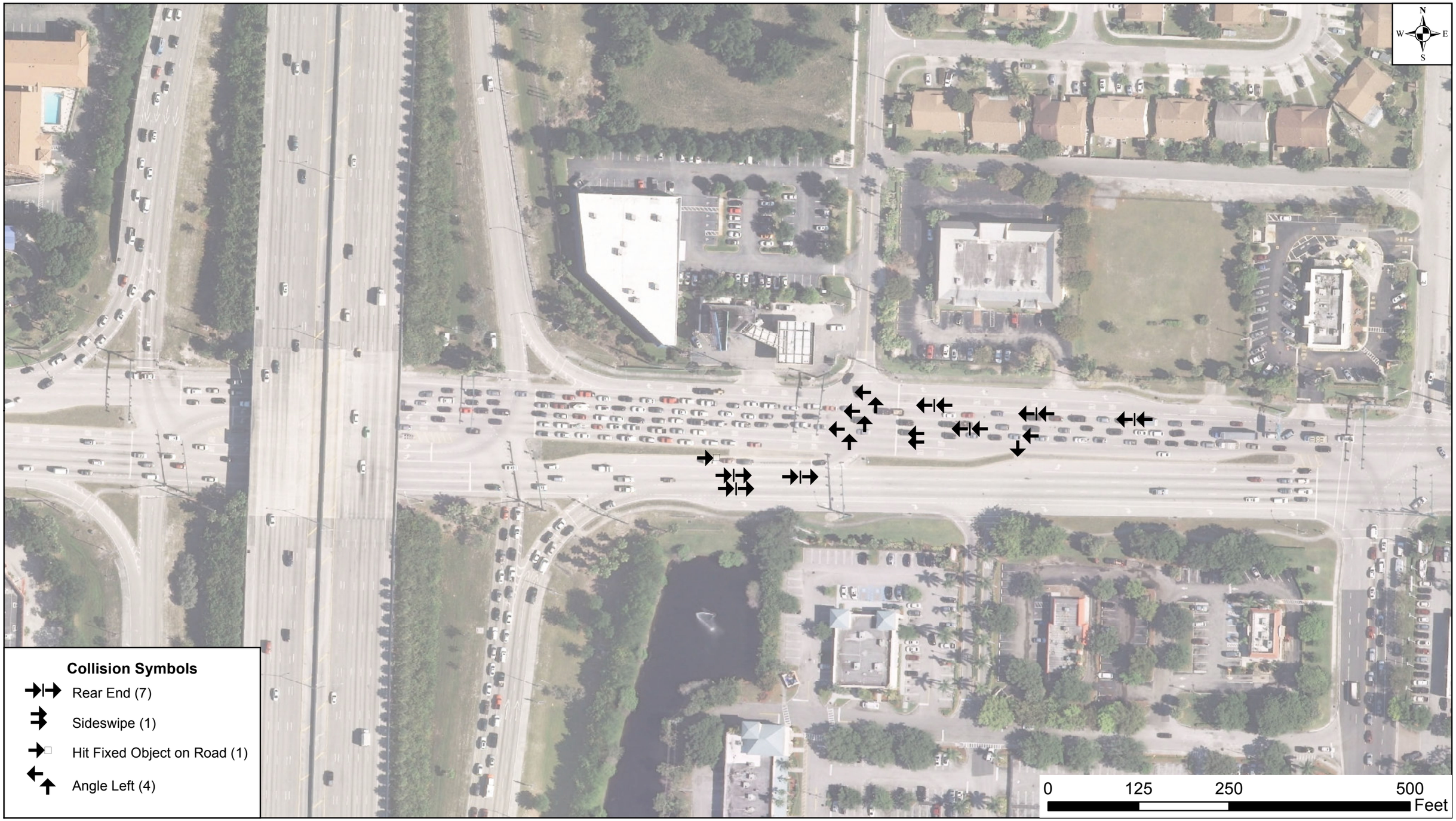
FM Number: 435803-1-22-02 ETDM: 14182



Roan Ln. at Northlake Blvd. Collision Diagram 2010

SR 9 / I-95 at Northlake Boulevard Interchange
Project Development and Environment (PD&E) Study

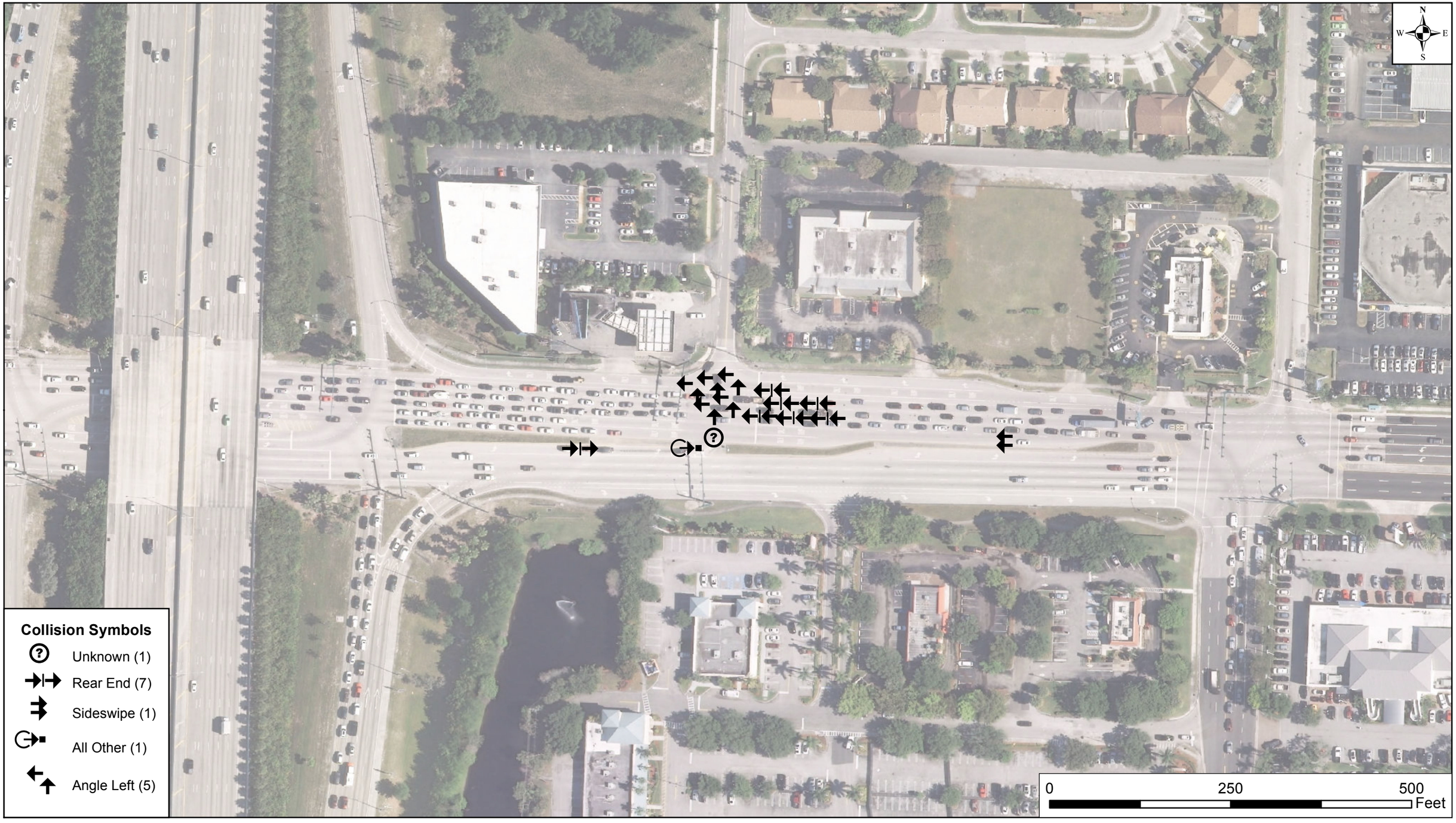
FM Number: 435803-1-22-02 ETDM: 14182



Roan Ln. at Northlake Blvd. Collision Diagram 2011

SR 9 / I-95 at Northlake Boulevard Interchange
Project Development and Environment (PD&E) Study

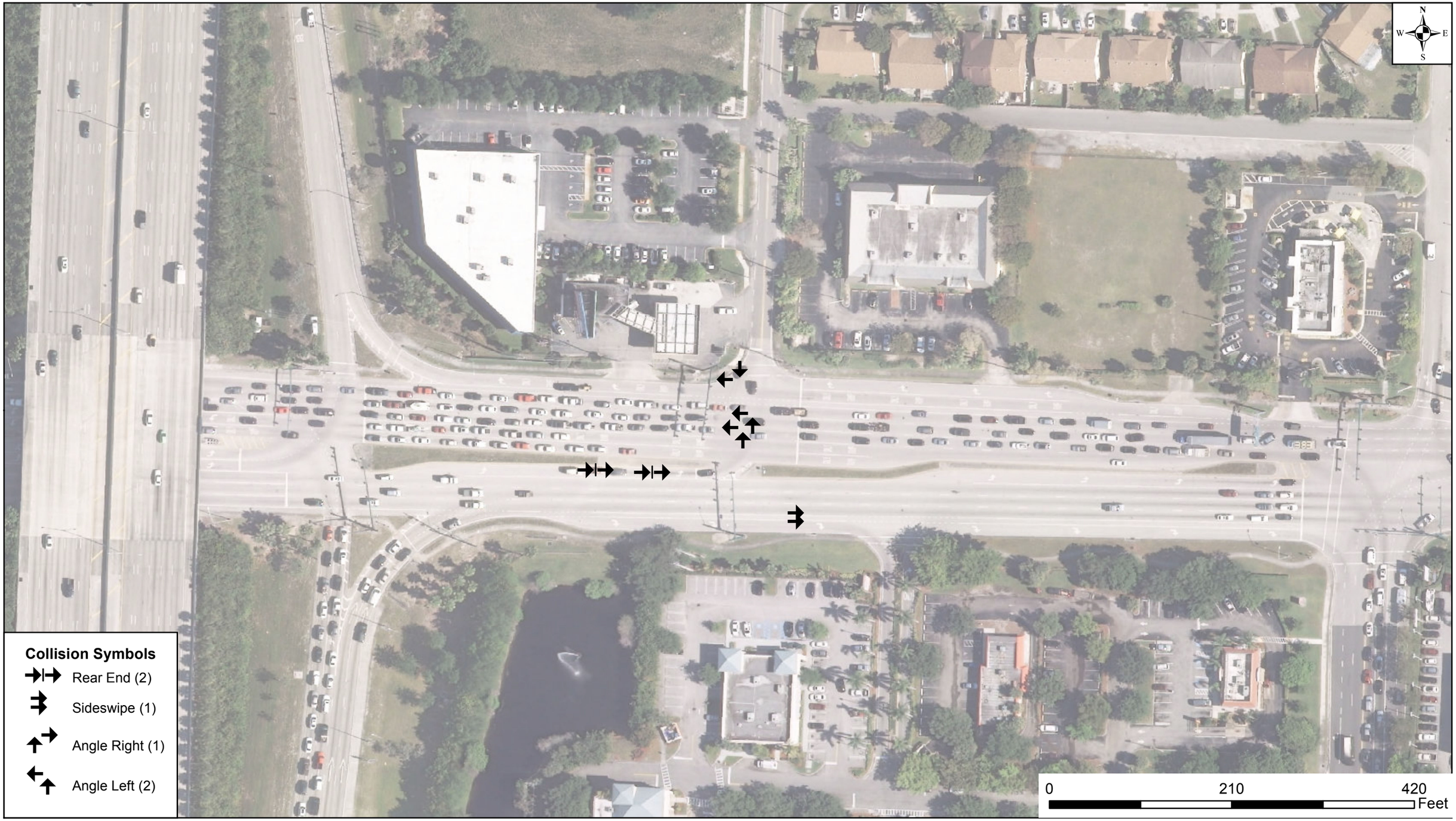
FM Number: 435803-1-22-02 ETDM: 14182



Roan Ln. at Northlake Blvd. Collision Diagram 2012

SR 9 / I-95 at Northlake Boulevard Interchange
Project Development and Environment (PD&E) Study

FM Number: 435803-1-22-01 **ETDM: 14182**



Roan Ln. at Northlake Blvd. Collision Diagram 2013

SR 9 / I-95 at Northlake Boulevard Interchange
Project Development and Environment (PD&E) Study

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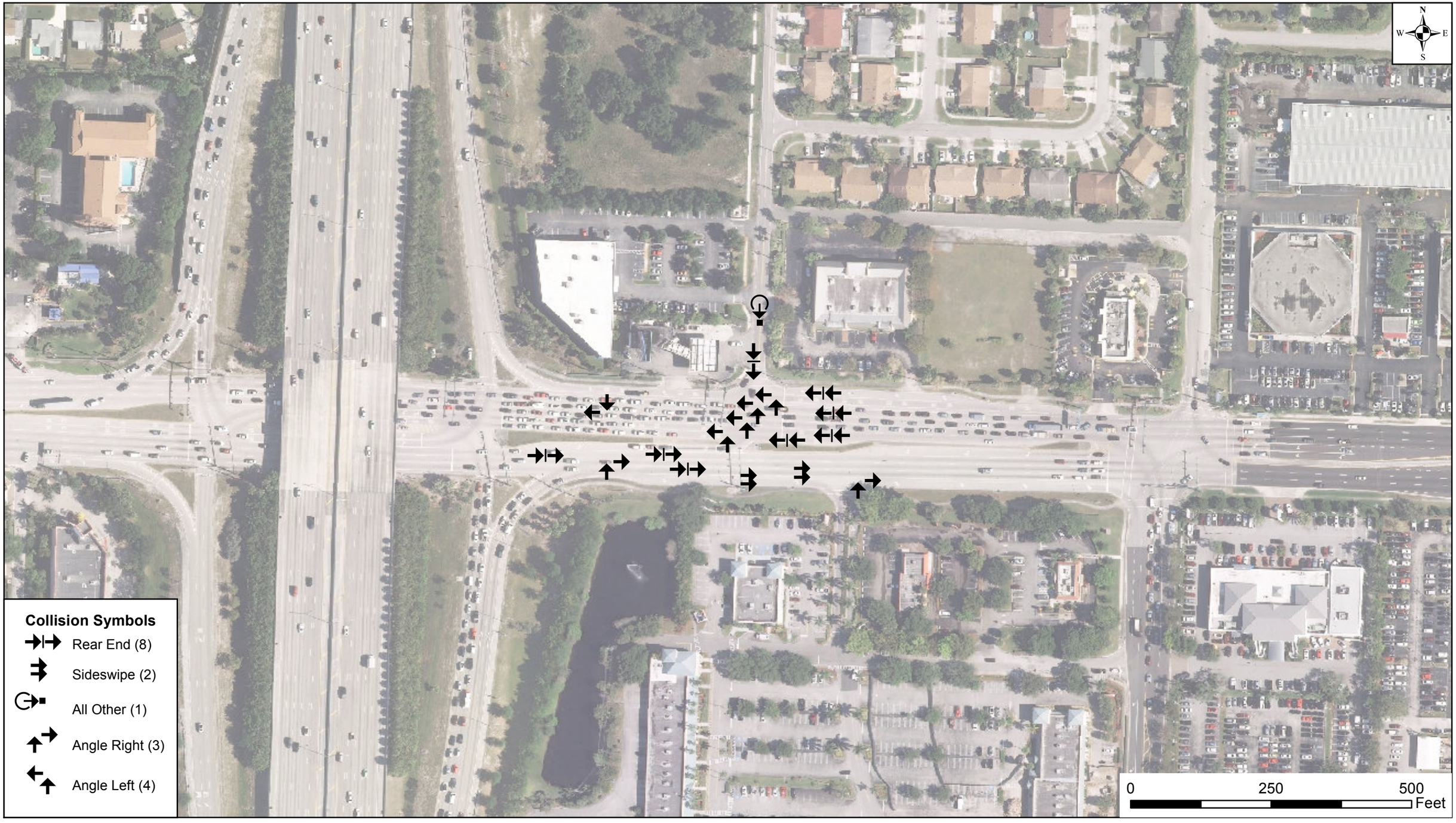
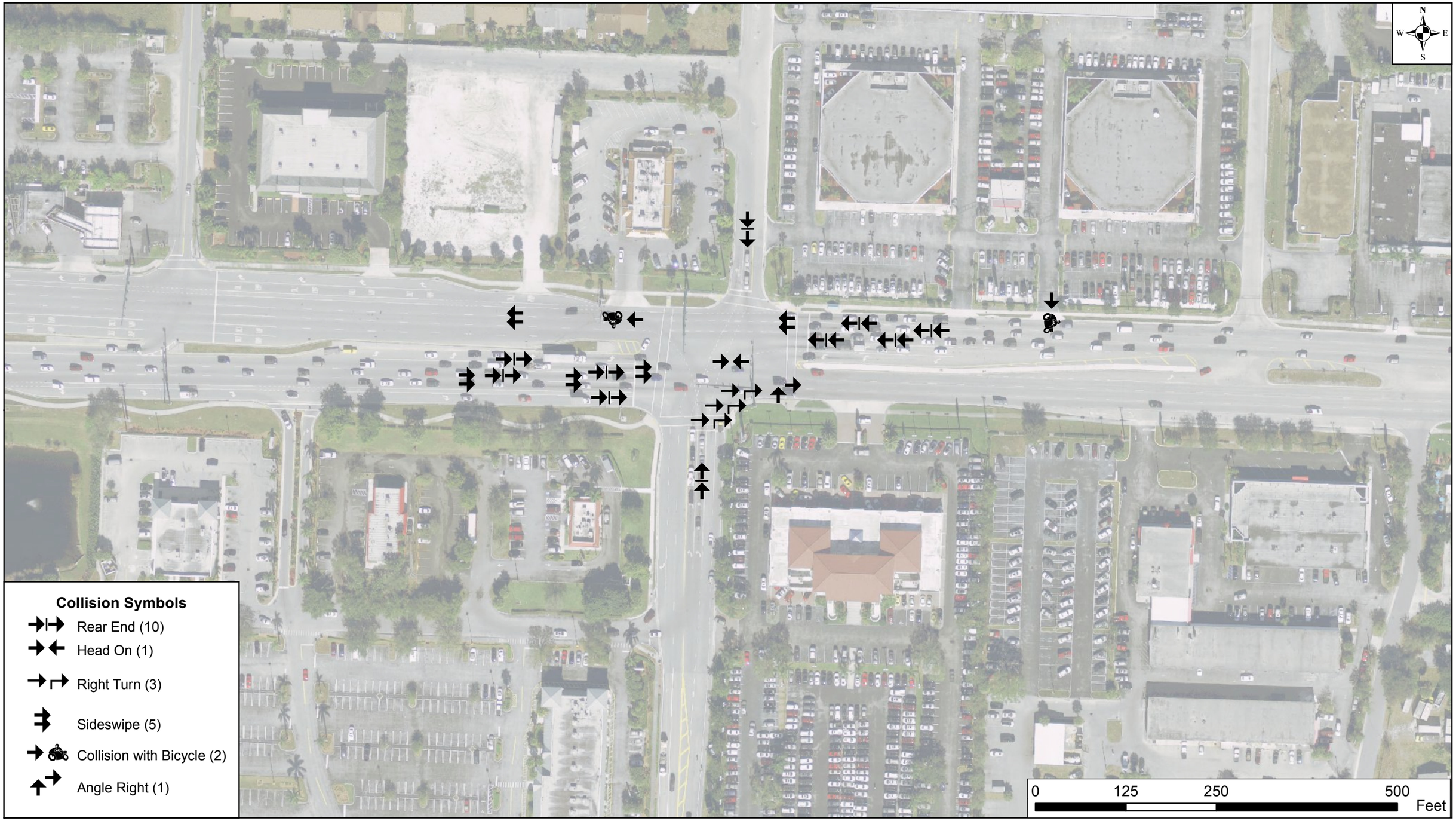


Roan Ln. at Northlake Blvd. Collision Diagram 2014

SR 9 / I-95 at Northlake Boulevard Interchange
Project Development and Environment (PD&E) Study

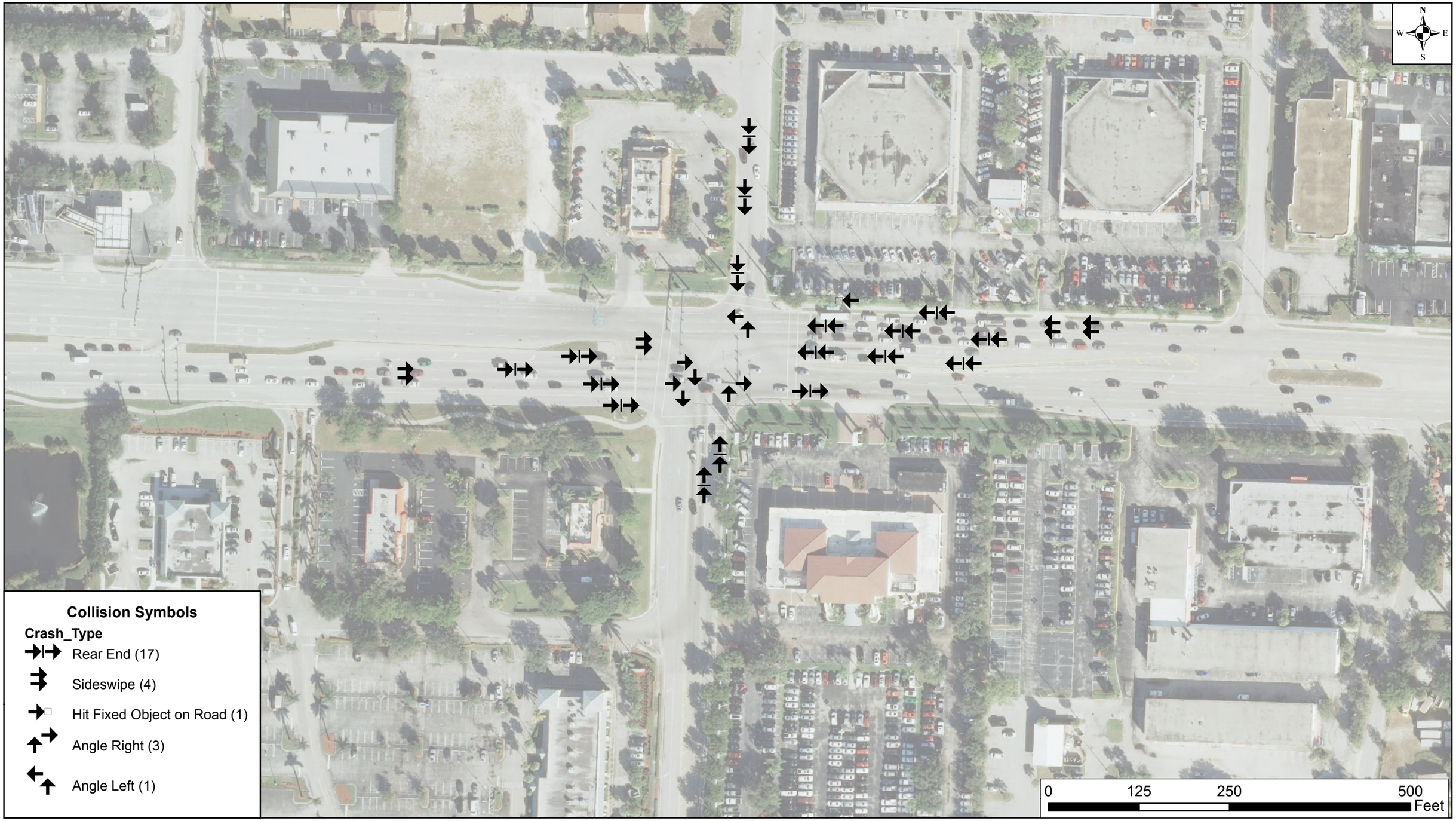
FM Number: 435803-1-22-02 ETDM: 14182



Sunrise/Sandtree Dr. at Northlake Blvd.
Collision Diagram 2010

SR 9 / I-95 at Northlake Boulevard Interchange
Project Development and Environment (PD&E) Study

FM Number: 435803-1-22-02 ETDM: 14182

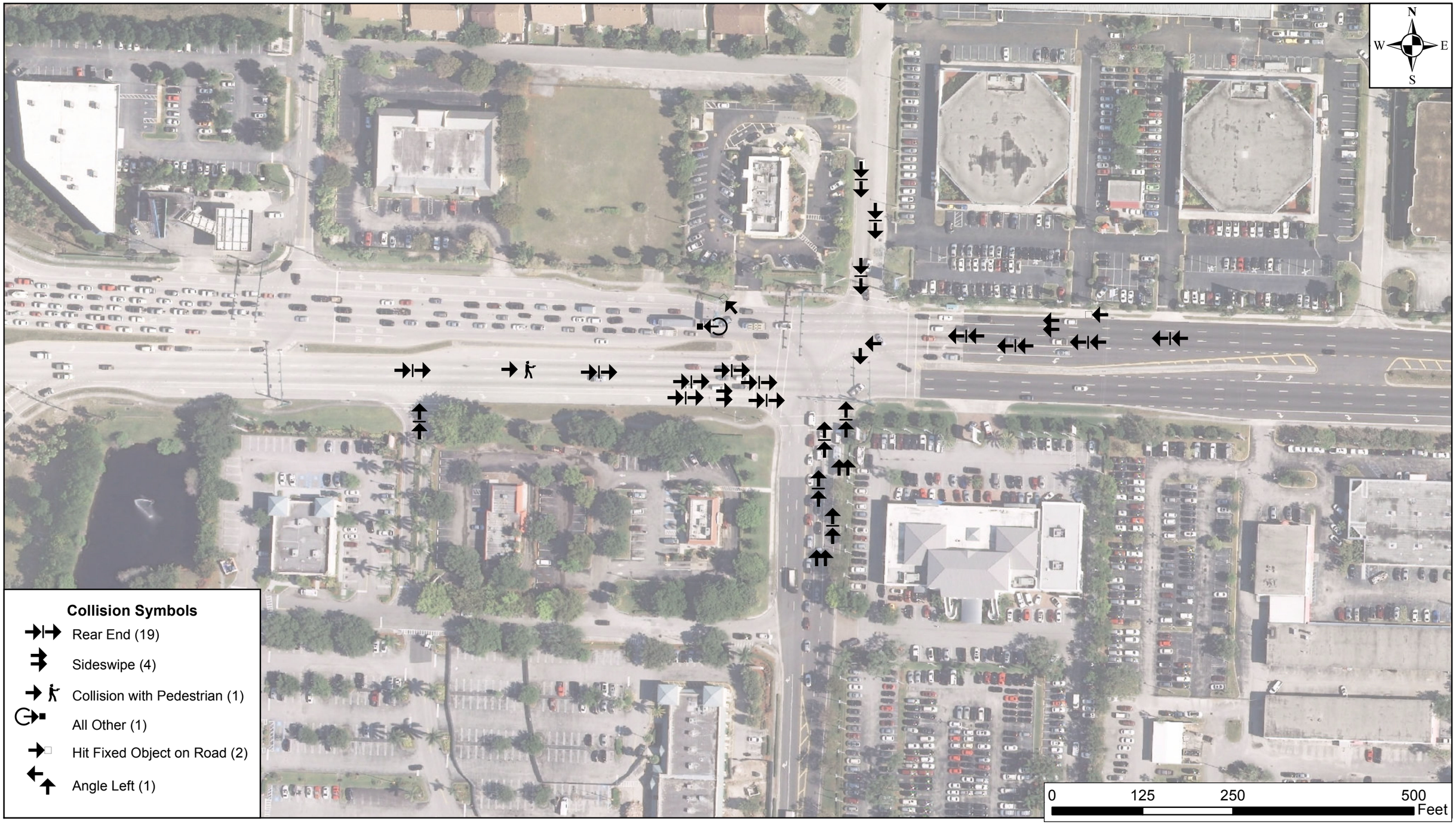


Sunrise/Sandtree Drive at Northlake Boulevard Collision Diagram 2011

FDOT

SR 9 / I-95 at Northlake Boulevard Interchange
Project Development and Environment (PD&E) Study

FM Number: 435803-1-22-02 **ETDM: 14182**

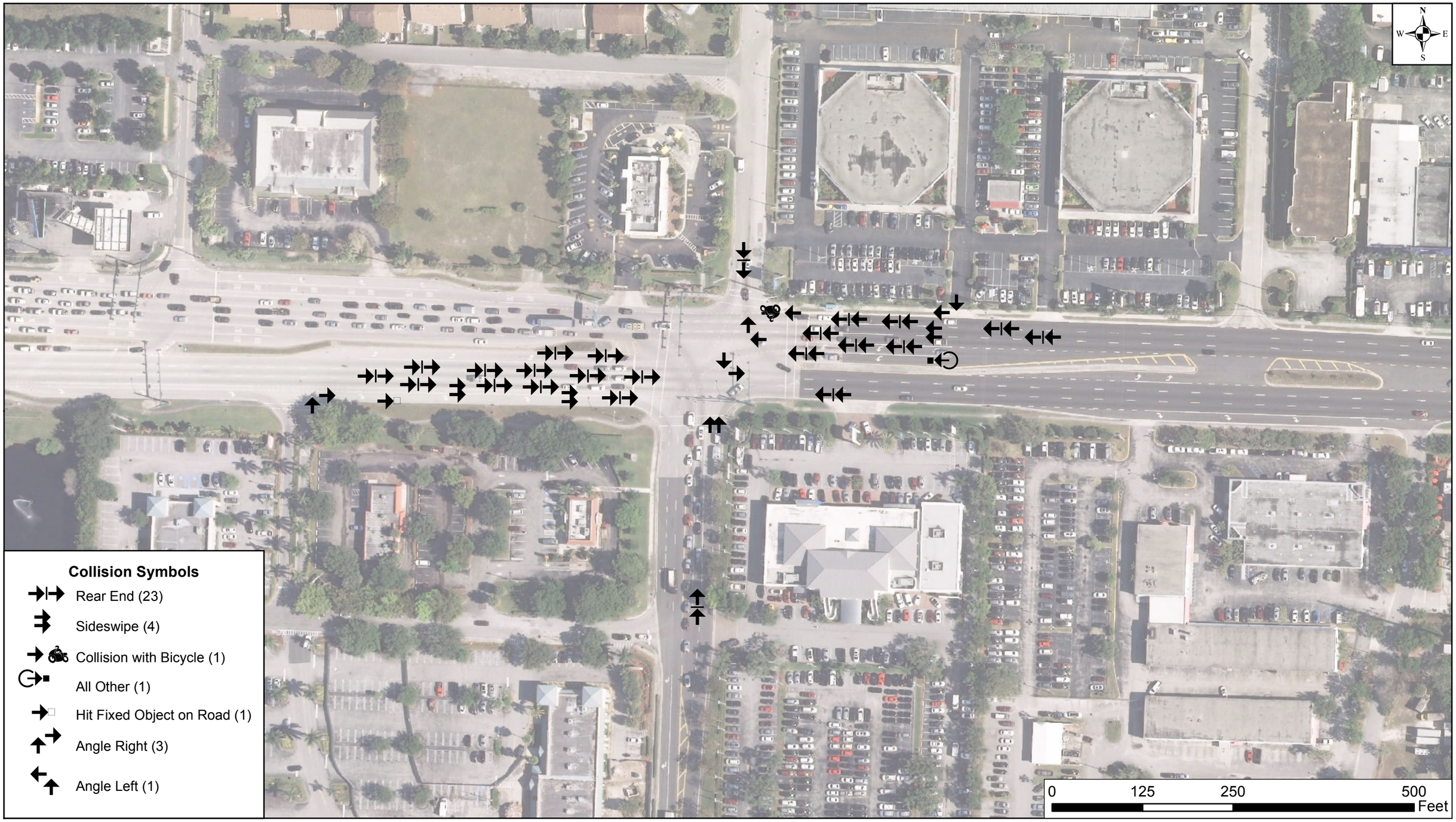


Sunrise/Sandtree Drive at Northlake Boulevard Collision Diagram 2012

FDOT

SR 9 / I-95 at Northlake Boulevard Interchange
Project Development and Environment (PD&E) Study

FM Number: 435803-1-22-02 ETDM: 14182



Sunrise/Sandtree Dr. at Northlake Blvd.
Collision Diagram 2013

FDOT

SR 9 / I-95 at Northlake Boulevard Interchange
Project Development and Environment (PD&E) Study

FM Number: 435803-1-22-02 ETDM: 14182

Sunrise/Sandtree Dr. at Northlake Blvd.
Collision Diagram 2014

FDOT

SR 9 / I-95 at Northlake Boulevard Interchange
Project Development and Environment (PD&E) Study

FM Number: 435803-1-22-02 **ETDM: 14182**

APPENDIX J

(Excerpts from FDOT Traffic Data Collection & Traffic Projections Report)

4. TRAVEL DEMAND MODEL REVIEW

SERPM 7.0 was officially released in February 2015 and it is the first Activity Based Model in Florida. The model structure has been dramatically changed comparing with the travel demand model structure of SERPM 6.5. The base year of SERPM 7.0 is 2010, and the future year is 2040. SERPM 7.0 adopted the region's 2040 Long Range Transportation Plan (LRTP). Based on the Department's guidance, SERPM 7.0 was used to develop the future 2040 traffic projections for these I-95 Interchange PD&E Studies. Therefore, this effort becomes the region's first practical application of SERPM 7.0. To evaluate the model performance, the output from SERPM 7.0 was summarized and compared with the traffic projection performed using I-95 Corridor Design Consultant (CDC) Corridor Model (which is also known as I-95 Corridor model and used in the Palm Beach County and Broward County I-95 Interchange Master Plan) and traffic projections from SERPM 6.5 (the last version of the 4-step trip based model).

The SERPM 6.5 model structure has the base year of 2005 and the future planning horizon year of 2035. The base year for the I-95 Corridor Model is 2010, and future year is 2040. The lane geometries and the model output volumes from SERPM 6.5, I-95 Corridor Model, and SERPM 7.0 were obtained and compared under this study. The population and employment data in Palm Beach County, Broward County, and Miami-Dade County, and the TAZs within the 2-mile buffer area of the study interchanges were also compared for the three models. The socioeconomic data comparison results are shown in **Tables 3** through **Table 6**. In addition, **Appendix B** documents the model output comparison among SERPM 7.0 (February 2015 vision), I-95 Corridor Model, and SERPM 6.5. It should be noted that SERPM 7.0 network was slightly modified based on this comparison effort from this study in April 2015 and the output of loaded network from the latest SERPM 7.0 (April 2015 vision) is included in **Appendix C** and **D** of this report.

Table 3 SERPM 2010 County-level TAZ Socioeconomic Data Comparison

2010		Household	Population	Workers	Employment
I-95 Corridor Model	Palm Beach	543,471	1,288,230	566,307	587,169
	Broward	686,678	1,747,482	840,414	781,736
	Miami-Dade	876,788	2,480,423	1,294,206	1,481,940
	Total	2,106,937	5,516,135	2,700,927	2,850,845
SERPM 7	Palm Beach	567,663	1,257,066	548,401	638,760
	Broward	702,250	1,669,066	813,278	867,263
	Miami-Dade	907,410	2,362,042	1,075,576	1,125,068
	Total	2,177,323	5,288,174	2,437,255	2,631,091
Difference %	Palm Beach	4.5%	-2.4%	-3.2%	8.8%
	Broward	2.3%	-4.5%	-3.2%	10.9%
	Dade	3.5%	-4.8%	-16.9%	-24.1%
	Total	3.3%	-4.1%	-9.8%	-7.7%

Table 4 SERPM 2040 County-level TAZ Socioeconomic Data Comparison

2040		Household	Population	Workers	Employment
I-95 Corridor Model	Palm Beach	718,520	1,760,093	786,514	844,197
	Broward	852,331	2,305,707	1,072,545	1,057,300
	Miami-Dade	1,193,652	3,380,973	1,729,260	2,106,389
	Total	2,764,503	7,446,773	3,588,319	4,007,886
SERPM 7	Palm Beach	684,927	1,621,873	905,721	837,467
	Broward	831,494	2,181,344	1,149,846	921,369
	Miami-Dade	1,156,810	3,090,336	1,417,296	1,636,614
	Total	2,673,231	6,893,553	3,472,863	3,395,450
Difference %	Palm Beach	-4.7%	-7.9%	15.2%	-0.8%
	Broward	-2.4%	-5.4%	7.2%	-12.9%
	Miami-Dade	-3.1%	-8.6%	-18.0%	-22.3%
	Total	-3.3%	-7.4%	-3.2%	-15.3%

Table 5 SERPM 2010 TAZ Socioeconomic Comparison (within 2-Mile Buffer of Study Interchanges)

2010		Household	Population	Workers	Employment
I-95 Corridor Model	Northlake Blvd	42,060	101,952	47,262	75,718
	SR-80	37,856	89,803	41,653	80,593
	Woolbright Road to Hypoluxo Road	49,156	112,480	51,924	42,824
	I-95 in Palm Beach	287,438	653,052	300,834	432,269
	I-95 in Broward County	272,613	651,979	308,731	405,538
SERPM 7	Northlake Blvd	42,278	93,345	43,189	76,912
	SR-80	41,109	88,701	37,517	78,465
	Woolbright Road to Hypoluxo Road	52,028	110,762	46,620	44,586
	I-95 in Palm Beach	299,677	628,186	278,058	452,321
	I-95 in Broward County	282,630	607,505	292,311	434,351
%	Northlake Blvd	0.5%	-8.4%	-8.6%	1.6%
	SR-80	8.6%	-1.2%	-9.9%	-2.6%
	Woolbright Road to Hypoluxo Road	5.8%	-1.5%	-10.2%	4.1%
	I-95 in Palm Beach	4.3%	-3.8%	-7.6%	4.6%
	I-95 in Broward County	3.7%	-6.8%	-5.3%	7.1%

Table 6 SERPM 2040 TAZ Socioeconomic Comparison (within 2-Mile Buffer of Study Interchanges)

2040		Household	Population	Workers	Employment
I-95 Corridor Model	Northlake Blvd	55,982	141,401	66,213	127,294
	SR-80	54,604	130,224	60,829	114,699
	Woolbright Road to Hypoluxo Road	64,288	151,831	72,525	67,635
	I-95 in Palm Beach	380,143	905,605	423,396	622,177
	I-95 in Broward County	344,184	882,044	402,780	530,690
SERPM 7	Northlake Blvd	52,513	140,421	58,819	116,304
	SR-80	47,273	109,635	65,564	107,327
	Woolbright Road to Hypoluxo Road	60,041	138,241	60,454	56,047
	I-95 in Palm Beach	346,998	797,110	389,641	585,172
	I-95 in Broward County	334,314	844,669	410,723	475,439
%	Northlake Blvd	-6.2%	-0.7%	-11.2%	-8.6%
	SR-80	-13.4%	-15.8%	7.8%	-6.4%
	Woolbright Road to Hypoluxo Road	-6.6%	-9.0%	-16.6%	-17.1%
	I-95 in Palm Beach	-8.7%	-12.0%	-8.0%	-5.9%
	I-95 in Broward County	-2.9%	-4.2%	2.0%	-10.4%

5. TRAFFIC FORECASTING

Various traffic forecasting methodologies have been evaluated and summarized under this study. The purpose of this effort is to recommend the most reasonable forecasting method for the study interchanges to develop consistent traffic projections. The forecast methodologies that were reviewed include:

- Regression analysis of at least 5 years of the most recent historical AADTs from FDOT count sites using FDOT Trend analysis spreadsheet (**Appendix F**);
- Regression analysis of at least 5 years of the most recent historical AADTs from FDOT count sites and the 2040 model volumes from the SERPM 7.0 projections using FDOT Trend analysis spreadsheet (**Appendix F**);
- Socioeconomic growth for TAZs within 2-mile buffer of the study interchanges between the base year 2010 and future year 2040, and;
- Comprehensive traffic forecasting method, which first calculated the difference between the 2015 AADT from field data and the projected 2015 AADT interpolated from 2010 and 2040 SERPM 7.0 projections, and then maintained this difference and applied to 2040 SERPM 7.0 projections to calculate 2040 AADT.

The growth rates of historical counts, historical counts plus model projections, SERPM socioeconomic growth, and the comprehensive model to model projections methodology were summarized and compared with each other. The growth rates comparison results were shown in **Table 7**. It could be concluded that the historical growth rates of I-95 north of Gateway Boulevard, I-95 north of Hypoluxo Road, I-95 south of Forest Hill Boulevard, I-95 north of Forest Hill Boulevard, I-95 north of Belvedere Road, SR 80 west of I-95 southbound ramps, Gateway Boulevard west of I-95 southbound ramps are much higher than the growth rates from other methodologies. By closely looking into the traffic data in the Trend Analysis, it appears that the roadway volumes have increased significantly from 2009. The main reason caused such traffic include could be that I-95 widening project in Palm Beach County was completed in 2008. Therefore, the growth rates based on the historical counts are high using the 10 year historical data because of the increase from 2009.

Based on the comparison and discussions with FDOT Project Manager, the comprehensive traffic forecasting method was used to develop the AADT for these PD&E studies. The traffic forecasting methodology used for each approach of each intersection was based on the 2015 AADT (from field), and 2010 and 2040 SERPM 7.0 model volumes. The 2015 model volume was interpolated using 2010 and 2040 model volumes. Then the differences of 2015 AADT and interpolated 2015 forecasted AADT from model was calculated. The recommended 2040 AADT were calculated by applying this difference to the 2040 SERPM 7.0 model volumes. Then the 2020 and 2030 volumes were interpolated using 2015 AADT and recommended 2040 volumes. For the roadway segments where the SERPM 7 2040 model volumes are lower than the SERPM 7 2010 model volumes, or are not included in the SERPM 7 network, the future 2020, 2030, and 2040 AADTs were calculated using 2015 AADT and a compound growth factor of 0.5%. For all the roadway links, the 2015 and 2040 AADT has been compared, and a minimum compound growth rate of 0.5% has been adopted. The recommended future AADTs are summarized in **Table 8**. The AADT projection are depicted in **Figures 23** through **32.**

Table 7 Growth Rates Summary (Cont'd)

Interchange	Intersection	Location	Historical	Historical + Model	SERPM 7 Model Volumes			TAZ (2-Mile Buffer)					
								Population			Employment		
					2010	2040	Model Growth Rate	2010	2040	Growth Rate	2010	2040	Growth Rate
I-95		**I-95 South of Blue Heron Blvd**	**0.90%**	**0.61%**	**162,242**	**196,640**	**0.64%**						
Blue Heron Blvd	I-95 NB Ramps	I-95 NB Off Ramp			11,903	16,437	1.08%						
		I-95 NB On Ramp			9,940	12,803	0.85%						
		Blue Heron Blvd East of I-95 NB ramps	-2.45%	-0.61%	29,830	37,856	0.80%						
		Blue Heron Blvd Between I-95 NB & SB Ramps			33,548	42,090	0.76%						
	I-95 SB Ramps	I-95 SB Off Ramp			10,097	14,419	1.19%						
		I-95 SB On Ramp			15,067	17,586	0.52%						
		Blue Heron Blvd Between I-95 NB & SB Ramps			33,548	42,090	0.76%						
		Blue Heron West of I-95 SB Ramps	0.27%	1.94%	37,409	52,844	1.16%						
	Military Trail	Military Trail North of Blue Heron Blvd	-1.15%	0.39%	26,573	31,358	0.55%						
		Blue Heron Blvd East of Military Trail			35,821	50,866	1.18%						
		Military Trail South Of Blue Heron Blvd	1.75%	1.75%	36,018	47,311	0.91%						
		Blue Heron Blvd West of Military Trail	-0.19%	1.14%	15,659	22,303	1.19%						
	Garden Rd	Garden Rd North of Blue Heron Blvd			3,962	2,608	-1.38%						
		Blue Heron Blvd East of Garden Rd			20,838	28,200	1.01%						
		Garden Rd South of Blue Heron Blvd			2,691	5,068	2.13%						
		Blue Heron Blvd West of Garden Rd			22,207	29,914	1.00%						
I-95		**I-95 North of Blue Heron Blvd**	**-**	**-**	**155,309**	**189,838**	**0.67%**						
Northlake Blvd	I-95 NB Ramps	I-95 NB On Ramp			12,981	17,894	1.08%						
		I-95 NB Off Ramp			16,157	14,488	-0.36%						
		Northlake Blvd East of I-95 NB Ramps			45,706	56,055	0.68%						
	I-95 SB Ramps	I-95 SB Off Ramp to Northlake Blvd			9,964	17,223	1.84%						
		I-95 SB On Ramp from Northlake Blvd			16,627	17,363	0.14%						
		Northlake Blvd between I-95 NB & SB Ramps			41,293	50,817	0.69%						
		Northlake Blvd West of I-95 SB Ramps			37,712	49,619	0.92%						
	Military Trail	Military Trail North of Northlake Blvd			33,461	36,379	0.28%	110,762	138,241	0.7%	44,586	56,047	0.8%
		Northlake Blvd East of Military Trail			31,339	41,808	0.97%						
		Military Trail South of Northlake Blvd	-1.40%	-1.61%	21,814	25,182	0.48%						
		Northlake Blvd West of Military Trail			35,092	46,255	0.92%						
	Sunrise Drive	Sunrise Drive North of Northlake Blvd			-	-	-						
		Northlake Blvd East of Sunrise Drive			41,013	50,825	0.72%						
		Sunrise Drive South of Northlake Blvd			-	-	-						
		Northlake Blvd West of Sunrise Drive			45,706	56,055	0.68%						
	Keating Drive	Keating Drive North of Northlake Blvd			-	-	-						
		Northlake Blvd East of Keating Drive			37,712	49,619	0.92%						
		Keating Drive South of Northlake Blvd			-	-	-						
		Northlake Blvd West of Keating Drive			31,339	41,808	0.97%						
I-95		**I-95 North of Northlake Blvd**	**2.20%**	**1.35%**	**145,470**	**193,105**	**0.95%**						
PGA Blvd	I-95 NB Ramps	I-95 NB Off Ramp			28,667	28,225	-0.05%						
		I-95 NB On Ramp			8,946	12,709	1.18%						
		PGA Blvd East of I-95 NB Ramps	0.81%	0.16%	69,413	73,953	0.21%						
		I-95 Flyover Ramp			20,465	21,292	0.13%						
	I-95 SB Ramps	PGA Blvd Between I-95 NB & SB Ramps			42,318	41,726	-0.05%						
		I-95 NB Off Loop Ramp			9,802	7,897	-0.72%						
		I-95 SB Off Ramp			8,594	11,210	0.89%						
		I-95 SB On Ramp			15,878	15,966	0.02%						
		PGA Blvd West of I-95 SB Ramps	-0.08%	0.12%	56,406	54,406	-0.12%						
	Military Trail	Military Trail North of PGA Blvd	1.35%	0.19%	31,708	35,555	0.38%						
		PGA Blvd East of Military Trail			53,315	51,554	-0.11%						
		Military Trail South of PGA Blvd	0.84%	0.10%	30,488	33,568	0.32%						
		PGA Blvd West of Military Trail			39,560	40,668	0.09%						
I-95		**I-95 North of PGA Blvd**	**-0.71%**	**1.38%**	**91,709**	**148,652**	**1.62%**						

Table 8 Recommended Future AADT (Cont'd)

Interchange	Intersection	Location	SERPM 7 Model Volumes				2015 AADT	Future Forecasted AADT			
			2010	2040	Growth Rate	2015 Interpolated		2020	2030	2040	2045
I-95		**I-95 South of Blue Heron Blvd**	**162,242**	**196,640**	**0.64%**	**167,526**	**165,000**	**170,000**	**182,000**	**193,000**	**199,000**
Blue Heron Blvd	**I-95 NB Ramps**	I-95 NB Off Ramp	11,903	16,437	1.08%	12,561	9,600	10,000	12,000	13,000	14,000
		I-95 NB On Ramp	9,940	12,803	0.85%	10,368	18,000	19,000	20,000	22,000	23,000
		Blue Heron Blvd East of I-95 NB ramps	29,830	37,856	0.80%	31,038	48,000	50,000	54,000	59,000	61,000
		Blue Heron Blvd Between I-95 NB & SB Ramps	33,548	42,090	0.76%	34,841	44,000	46,000	49,000	53,000	55,000
	I-95 SB Ramps	I-95 SB Off Ramp	10,097	14,419	1.19%	10,715	9,500	10,000	11,000	13,000	14,000
		I-95 SB On Ramp	15,067	17,586	0.52%	15,460	17,000	17,000	18,000	19,000	19,000
		Blue Heron Blvd Between I-95 NB & SB Ramps	33,548	42,090	0.76%	34,841	44,000	46,000	49,000	53,000	55,000
		Blue Heron West of I-95 SB Ramps	37,409	52,844	1.16%	39,626	38,000	40,000	45,000	51,000	54,000
	Military Trail	Military Trail North of Blue Heron Blvd	26,573	31,358	0.55%	27,317	28,000	29,000	30,000	32,000	33,000
		Blue Heron Blvd East of Military Trail	35,821	50,866	1.18%	37,977	38,000	40,000	45,000	51,000	54,000
		Military Trail South Of Blue Heron	36,018	47,311	0.91%	37,693	29,000	30,000	33,000	36,000	38,000
		Blue Heron Blvd West of Military Trail	15,659	22,303	1.19%	16,610	19,000	20,000	23,000	26,000	28,000
	Garden Rd	Garden Rd North of Blue Heron Blvd	3,962	2,608	-1.38%	3,695	8,400	8,600	9,000	9,500	9,700
		Blue Heron Blvd East of Garden Rd	20,838	28,200	1.01%	21,916	42,000	44,000	49,000	54,000	57,000
		Garden Rd South of Blue Heron Blvd	2,691	5,068	2.13%	2,990	13,000	14,000	18,000	22,000	24,000
		Blue Heron Blvd West of Garden Rd	22,207	29,914	1.00%	23,337	48,000	51,000	56,000	62,000	65,000
I-95		**I-95 North of Blue Heron Blvd**	**155,309**	**189,838**	**0.67%**	**160,593**	**166,000**	**172,000**	**183,000**	**196,000**	**203,000**
Northlake Blvd	**I-95 NB Ramps**	I-95 NB On Ramp	12,981	17,894	1.08%	13,694	16,000	17,000	19,000	21,000	22,000
		I-95 NB Off Ramp	16,157	14,488	-0.36%	15,866	12,000	12,000	13,000	14,000	14,000
		Northlake Blvd East of I-95 NB Ramps	45,706	56,055	0.68%	47,288	55,000	57,000	61,000	65,000	67,000
	I-95 SB Ramps	I-95 SB Off Ramp to Northlake Blvd	9,964	17,223	1.84%	10,916	12,000	13,000	16,000	19,000	21,000
		I-95 SB On Ramp from Northlake Blvd	16,627	17,363	0.14%	16,747	16,000	16,000	17,000	18,000	18,000
		Northlake Blvd between I-95 NB & SB Ramps	41,293	50,817	0.69%	42,746	54,000	56,000	60,000	64,000	66,000
		Northlake Blvd West of I-95 SB Ramps	37,712	49,619	0.92%	39,477	54,000	57,000	62,000	68,000	71,000
	Military Trail	Military Trail North of Northlake Blvd	33,461	36,379	0.28%	33,931	36,000	37,000	39,000	41,000	42,000
		Northlake Blvd East of Military Trail	31,339	41,808	0.97%	32,881	40,000	42,000	46,000	51,000	54,000
		Military Trail South of Northlake Blvd	21,814	25,182	0.48%	22,342	31,000	32,000	33,000	35,000	36,000
		Northlake Blvd West of Military Trail	35,092	46,255	0.92%	36,745	43,000	45,000	49,000	54,000	57,000
	Sunrise Drive	Sunrise Drive North of Northlake Blvd	-	-	-	-	5,500	5,600	5,900	6,200	6,400
		Northlake Blvd East of Sunrise Drive	41,013	50,825	0.72%	42,506	62,000	64,000	69,000	74,000	77,000
		Sunrise Drive South of Northlake Blvd	-	-	-	-	8,800	9,000	9,500	10,000	10,000
		Northlake Blvd West of Sunrise Drive	45,706	56,055	0.68%	47,288	56,000	58,000	62,000	66,000	68,000
	Keating Drive	Keating Drive North of Northlake Blvd	-	-	-	-	6,500	6,700	7,000	7,400	7,600
		Northlake Blvd East of Keating Drive	37,712	49,619	0.92%	39,477	54,000	57,000	62,000	68,000	71,000
		Keating Drive South of Northlake Blvd	-	-	-	-	13,000	13,000	14,000	15,000	15,000
		Northlake Blvd West of Keating Drive	31,339	41,808	0.97%	32,881	40,000	42,000	46,000	51,000	54,000
I-95		**I-95 North of Northlake Blvd**	**145,470**	**193,105**	**0.95%**	**152,502**	**166,000**	**174,000**	**188,000**	**204,000**	**214,000**
PGA Blvd	**I-95 NB Ramps**	I-95 NB Off Ramp	28,667	28,225	-0.05%	28,593	22,000	23,000	24,000	25,000	26,000
		I-95 NB On Ramp	8,946	12,709	1.18%	9,485	6,000	6,400	7,100	8,000	8,500
		PGA Blvd East of I-95 NB Ramps	69,413	73,953	0.21%	70,150	67,000	69,000	72,000	76,000	78,000
		I-95 Flyover Ramp	20,465	21,292	0.13%	20,601	14,000	14,000	15,000	16,000	16,000
	I-95 SB Ramps	PGA Blvd Between I-95 NB & SB Ramps	42,318	41,726	-0.05%	42,219	44,000	45,000	48,000	50,000	51,000
		I-95 NB Off Loop Ramp	9,802	7,897	-0.72%	9,455	9,400	9,700	10,000	11,000	11,000
		I-95 SB Off Ramp	8,594	11,210	0.89%	8,983	6,300	6,600	7,200	7,900	8,300
		I-95 SB On Ramp	15,878	15,966	0.02%	15,893	11,000	11,000	12,000	12,000	12,000
		PGA Blvd West of I-95 SB Ramps	56,406	54,406	-0.12%	56,068	53,000	54,000	57,000	60,000	62,000
	Military Trail	Military Trail North of PGA Blvd	31,708	35,555	0.38%	32,319	40,000	41,000	43,000	45,000	46,000
		PGA Blvd East of Military Trail	53,315	51,554	-0.11%	53,017	53,000	54,000	57,000	60,000	62,000
		Military Trail South of PGA Blvd	30,488	33,568	0.32%	30,981	40,000	41,000	43,000	45,000	46,000
		PGA Blvd West of Military Trail	39,560	40,668	0.09%	39,743	46,000	47,000	50,000	52,000	53,000
I-95		**I-95 North of PGA Blvd**	**91,709**	**148,652**	**1.62%**	**99,397**	**122,000**	**129,300**	**141,000**	**156,000**	**166,000**

Note: The highlighted cell (in red) indicates where the SERPM 7 2040 model volume is lower than the 2010 model volume.

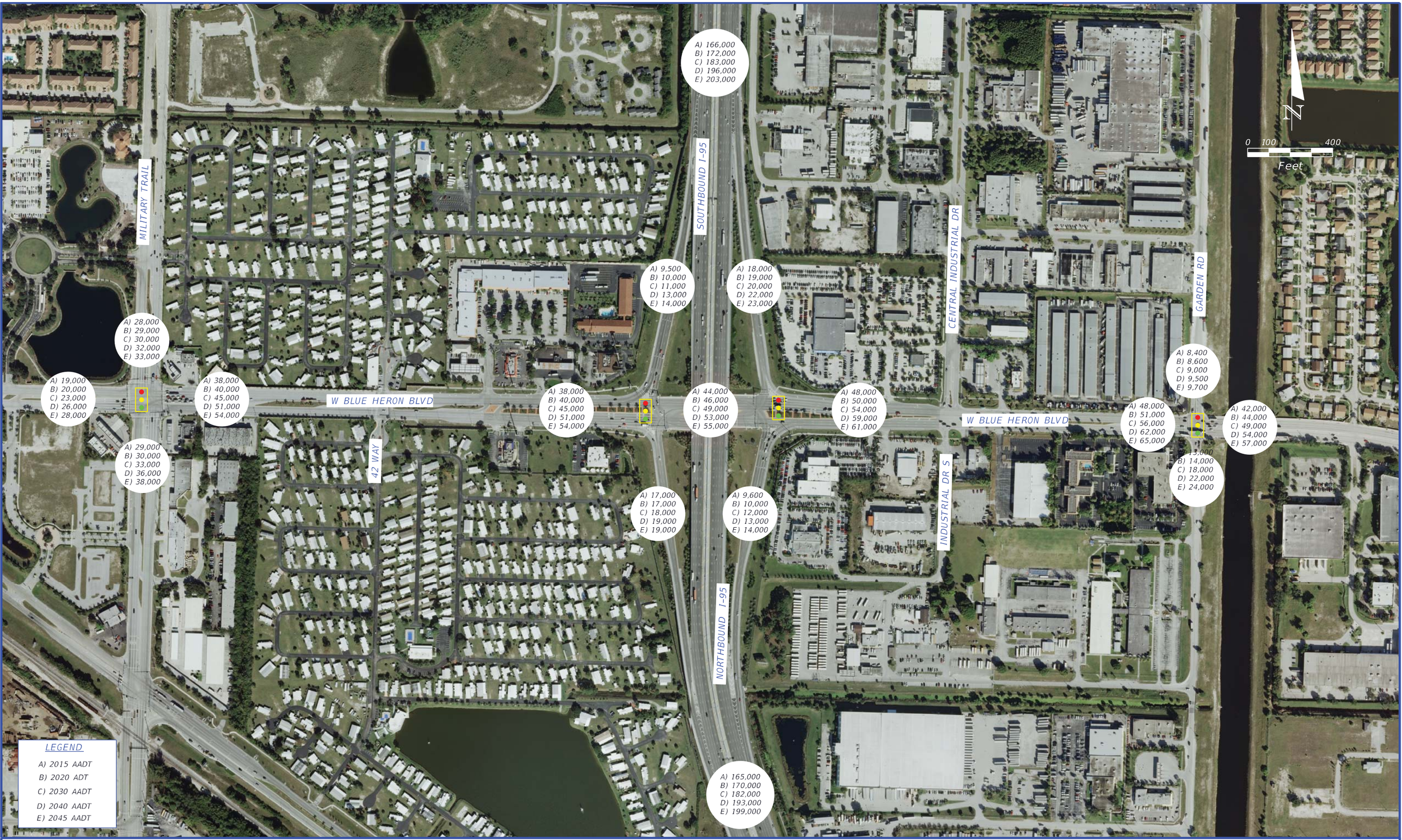


FIGURE 30 FORECASTED FUTURE AADT I-95 AT BLUE HERON BLVD INTERCHANGE

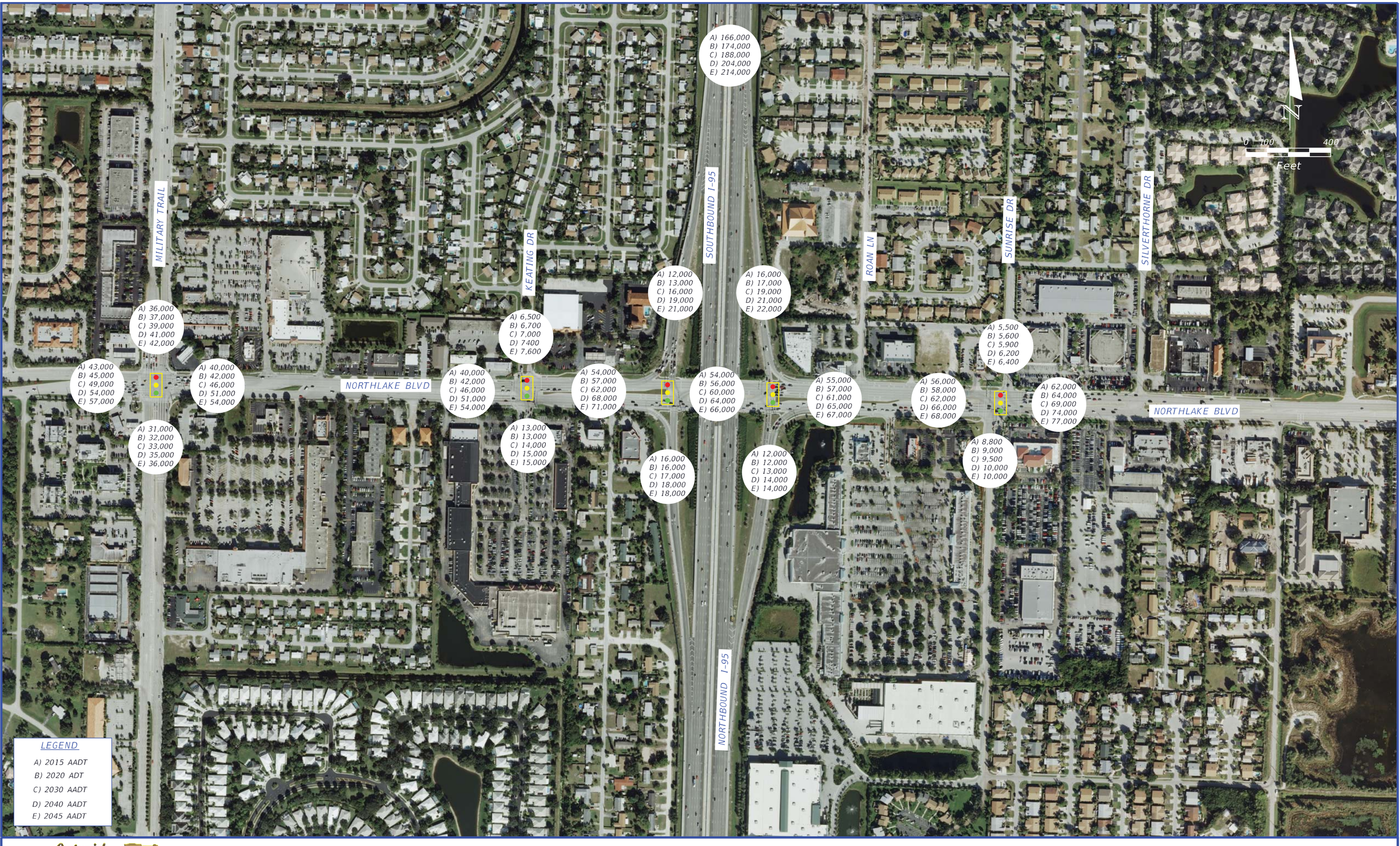


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FIGURE 31 FORECASTED FUTURE AADT I-95 AT NORTHLAKE ROAD INTERCHANGE

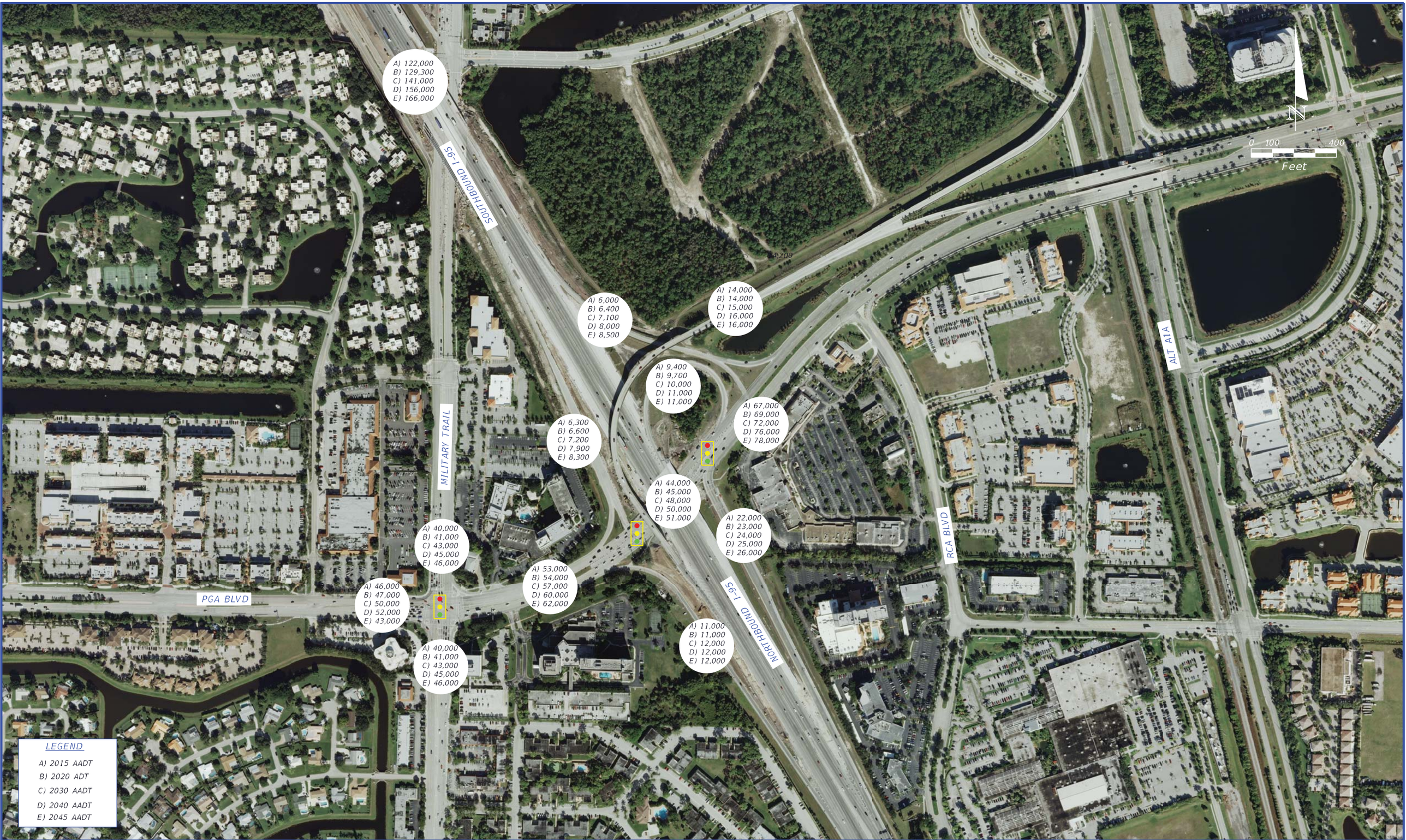


FIGURE 32 FORECASTED FUTURE AADT I-95 AT PGA BLVD INTERCHANGE

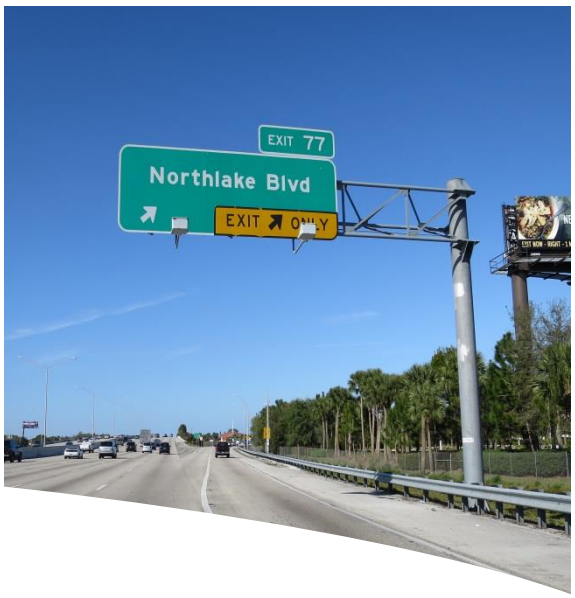
APPENDIX K

(Project Traffic Forecast Memorandum)

Project Development & Environment (PD&E) Study For SR 9/I-95 @ Northlake Boulevard Interchange In Palm Beach County

Project Traffic Forecast Memorandum

FM No: 435803-1-22-02 **ETDM No: 14182**



January 2016

Florida Department of Transportation | District IV

3400 West Commercial Boulevard | Fort Lauderdale, FL 33309

Date: December 18, 2015 (Revised January 22, 2016)

To: Scott Thurman, P.E., FDOT Project Manager

From: Godfrey Lamptey, P.E., PTOE, Senior Traffic Engineer

Reference: **Project Traffic Forecast Memorandum**
SR-9/I-95 at Northlake Boulevard Interchange PD&E Study
Palm Beach County, Florida
FM No.: 435803-1-22-02| ETDM No.: 14182

Attachments: Attachment A – Existing Traffic Data
Attachment B – Future AADT Forecast Volumes
Attachment C – Traffic Factors and Future DDHV Forecast
Attachment D – TMTOOLS Output

INTRODUCTION

In June 2015, the Florida Department of Transportation (FDOT) District 4 initiated the SR-9/I-95 at Northlake Boulevard Interchange Project Development and Environment (PD&E) Study. The SR-9/I-95 at Northlake Boulevard interchange is located on SR-9/I-95 (MP 34.34 to MP 34.776) between the PGA Boulevard (SR 786) interchange (1.73 miles to the north) and the Blue Heron Boulevard (SR 708) interchange (1.76 miles to the south) within the City of Palm Beach Gardens in eastern Palm Beach County.

The existing interchange currently experiences congestion during the AM and PM peak periods with several of the individual through and turning movements at the intersections (which include the SR-9/I-95 on/off-ramp approaches) operating at LOS F. These conditions along Northlake Boulevard are anticipated to deteriorate below acceptable LOS standards if no improvements occur by 2040; the interchange will have insufficient capacity to accommodate the projected travel demand.

The purpose of the project is to improve overall traffic operations at the existing interchange of SR-9/I-95 and Northlake Boulevard by providing improvements to achieve acceptable Levels of Service (LOS) at the interchange in the future condition (2040 Design Year), address traffic spillback onto SR-9/I-95, reduce congestion, and increase safety.

The existing traffic data collection and travel demand forecast for this project was performed by FDOT District 4 for the traffic study area using the latest Southeast Regional Planning Model (SERPM) approved by the Palm Beach Metropolitan Planning Organization (MPO). Future AADT forecast volumes for the freeway and arterial segments were also provided by FDOT District 4 and documented in the I-95 Interchange PD&E Studies Traffic Data Collection & Traffic Projections Report.

This memorandum presents the future Directional Design Hour Volumes (DDHV) for the freeway, ramps and arterials segments as well as the Turning Movement Volumes (TMV) for the study intersections within the study area for the 2020 opening and 2040 design years.

AREA OF INFLUENCE

The area of influence for this IMR study defines the area that is anticipated to experience substantial changes in traffic operating characteristics as the result of the access proposal. In urban areas, the area of influence as defined in the Interchange Access Request Users Guide, includes one adjacent interchange in each direction and signalized intersections within half-a-mile of the interchanges.

The project area of influence is along SR 9/I-95 from Blue Heron Boulevard Interchange (MP 32.565 to MP 33.036) to PGA Boulevard Interchange (MP 36.50 to MP 36.962) including the following freeway segments, arterial segment, and signalized intersections:

- **Freeway Segments**
    a. I-95 NB and SB between Blue Heron Boulevard and Northlake Boulevard
    b. I-95 NB and SB between Northlake Boulevard and PGA Boulevard

- **Arterial Segment**
    a. Northlake Boulevard between Military Trail and Mac Arthur Boulevard

- **Signalized Intersections**
    a. Northlake Boulevard
        i. Northlake Boulevard at N Military Trail
        ii. Northlake Boulevard at Keating Dr.
        iii. Northlake Boulevard at I-95 SB ramp terminal
        iv. Northlake Boulevard at I-95 NB ramp terminal
        v. Northlake Boulevard at Sunrise Dr.

    b. Blue Heron Boulevard
        i. Blue Heron Boulevard at Military Trail
        ii. Blue Heron Boulevard at I-95 SB ramp terminal
        iii. Blue Heron Boulevard at I-95 NB ramp terminal
        iv. Blue Heron Boulevard at Garden Rd.

    c. PGA Boulevard
        i. PGA Boulevard at N Military Trail.
        ii. PGA Boulevard at I-95 SB ramp terminal
        iii. PGA Boulevard at I-95 NB ramp terminal

The area of influence for this IMR Study is shown in **Figure 1**. Two intersections within the influence area were not included in the study:

1. Northlake Boulevard at Roan Lane
2. PGA Boulevard at Lake Victoria Gardens

The Northlake Boulevard at Roan Lane intersection was not included since the signal only controls the eastbound left turn movement and does not impact traffic coming off from the interstate. The PGA Boulevard at Lake Victoria Gardens intersection of was not included since any improvements needed at this location will be included as part of the ongoing PGA/Central Blvd PD&E study (FM# 413265-1). The

existing freeway and arterial volumes as well as the intersection turning movement counts are provided **Attachment A**.

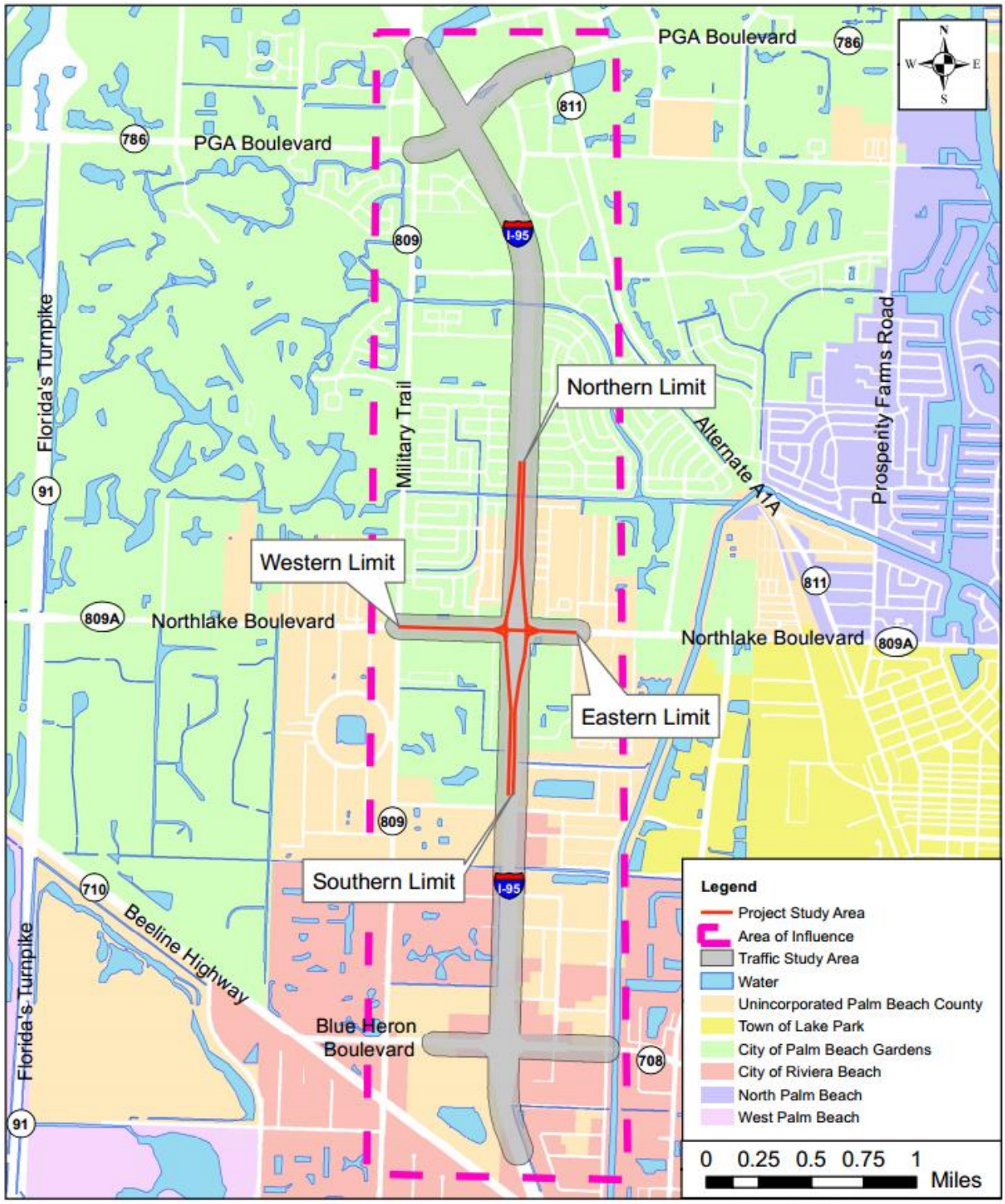


Figure 1– Project Location Map and Study Area

TRAVEL DEMAND MODEL

The travel demand forecast for this IMR Study was performed by FDOT using the MPO approved Southeast Florida Regional Planning Model - SERPM 7.0 with a base year of 2010 and horizon year of 2040. The SERPM 7 Model is an Activity-Based Model (ABM) based on the Coordinated Travel Regional Activity-Based Modeling Platform (CT-RAMP). The SERPM 7.0 ABM operates on micro-zones (MAZs). The current South East Florida MAZ system design consists of approximately 12,000 zones. However, to avoid computational burden, SERPM 7.0 relies on a 4,200 Transportation Analysis Zone (TAZ) system for highway skims and assignment, but performs transit calculations at the more detailed MAZ level.

Model Validation

Model validation was performed as part of the future traffic forecast analysis. To evaluate the model performance, the output from SERPM 7.0 was summarized and compared with the traffic projection performed using I-95 Corridor Design Consultant (CDC) Corridor Model (which is also known as I -95 Corridor model used in the Palm Beach County and Broward County I -95 Interchange Master Plan) and traffic projections from SERPM 6.5 (the last version of the 4-step trip based model). The lane geometries and the model output volumes from SERPM 6.5, I -95 Corridor Model, and SERPM 7.0 were obtained and compared under this study. The population and employment data in Palm Beach County, Broward County, and Miami-Dade County, and the TAZs within the 2-mile buffer area of the study interchanges were also compared for the three models. The detailed model validation methodology is documented in the I-95 Interchange PD&E Studies Traffic Data Collection & Traffic Projections Report.

Adjustment Procedures

The model adjustment procedures utilized in the future traffic forecast analysis are consistent with established methodologies documented in FDOT's *FSUTMS-Cube Framework Phase II, Model Calibration and Validation Standards: Model Validation Guidelines and Standards (2008)*. The detailed adjustment procedures are documented in the *I-95 Interchange PD&E Studies Traffic Data Collection & Traffic Projections Report*.

PROJECT TRAFFIC FORECAST

Future Annual Average Daily Traffic (AADT) Forecasts

The AADT forecast volumes for this IMR Study was developed by FDOT District 4. The traffic forecasting methodology used for each intersection approach was based on the 2015 AADT (from field), and 2010 and 2040 SERPM 7.0 model volumes. The 2015 model volume was interpolated using 2010 and 2040 model volumes. Then the differences of 2015 AADT and interpolated 2015 forecasted AADT from model was calculated. The recommended 2040 AADT were calculated by applying this difference to the 2040 SERPM 7.0 model volumes. Then the 2020 and 2030 volumes were interpolated using 2015 AADT and recommended 2040 volumes. For the roadway segments where the SERPM 7 2040 model volumes are lower than the SERPM 7 2010 model volumes, or are not included in the SERPM 7 network, the future 2020, 2030, and 2040 AADTs were calculated using 2015 AADT and a compound growth factor of 0.5%. For all the roadway links, the 2015 and 2040 AADT has been compared, and a minimum compound growth rate of 0.5% has been adopted. The recommended future AADTs are provided in **Attachment B**.

Traffic Factors

Directional Distribution (D) and Daily Truck (T_{24}) factors were estimated from the average of the historical data from the FDOT stations and the existing machine counts obtained from the I-95 Interchange PD&E Studies Traffic Data Collection & Traffic Projections Report. The recommended K, D and T_{24} factors for the I-95 mainline, ramps and arterial segments are provided in the **Table 1** below.

Table 1
Traffic Factors

Roadway	K (1)	D (2)	T_{24} (3)	PHF (1)	MOCF
I-95 Mainline	8.0%	56.9%	7.4%	0.95	N/A
I-95 NB Ramps	9.0%	100%	7.1%	0.95	N/A
I-95 SB Ramps	9.0%	100%	5.4%	0.95	N/A
Northlake Blvd.	9.0%	56.6%	8.0%	0.95	N/A
Military Trail	9.0%	56.3%	4.4%	0.95	N/A
Sunrise Drive	9.0%	65.0%	4.3%	0.95	N/A
Keating Drive	9.0%	55.4%	4.3%	0.95	N/A

Sources:
1. Project Traffic Forecasting Handbook
2. Based on average from Traffic Counts Data Collected for PD&E Study and FDOT Traffic online 2014
3. Traffic Counts Data Collected for PD&E Study

Note that the D factors shown in Table 1 are different from the values from the MLOU for this study. This is due to the fact that the D Factors used in the MLOU was based on the existing traffic counts information. However, during the development and balancing the volumes along I-95 with the interchange ramp volumes it was necessary to adjust the D factors to be able to balance the volumes. The new

recommended D factors are based on the based on the average from the Traffic Counts Data Collected for PD&E Study and the FDOT Traffic online 2014 data.

Future Freeway and Arterial Design Hour Traffic Volumes

The 2040 future directional design year volumes were calculated from the future AADTs previously discussed using the recommended D-factor and the standard K-factor by applying AADT x K x D. The existing ratio of AM to PM peak hour volumes were maintained for future years. The development of future year turning movement volumes for the signalized intersections was based upon the existing turning movement percentages obtained from the field. The TMTOOL spreadsheet was used to estimate turning movement volumes for the 2020 Opening Year and 2040 Design Year based on projected link volumes and existing turning movements. The Directional Design Hour Volumes (DDHV) obtained were then balanced and smoothened to ensure consistency between the freeways, ramp and intersection volumes. The 2020 and 2040 DDHVs for the various freeway and arterial segments are provided in **Table 2** through **Table 5** below. **Figures 2 and 3** show the DDHVs for the I-95 mainline and ramps. The detailed analysis are provided in **Attachment C.**

Table 2
2020 & 2040 Directional Design Hour Volume (DDHV) For I-95 Mainline and Ramps

Roadway Segment			AADT		Standard K Factor	Rec'd D Factor	Peak Period	Peak Direction During Peak Period	DDHV [1,2]							
									2020				2040			
									AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			2020	2040					NB	SB	NB	SB	NB	SB	NB	SB
1	I-95 Mainline	Blue Heron Blvd to Northlake Blvd	172,000	196,000	8.0%	56.9%	AM	SB	6,719	8,745	8,484	6,404	6,758	8,922	8,990	6,690
2	I-95 Mainline	Between I-95 Ramps at Northlake Blvd	144,000	164,000	8.0%	56.9%	AM	SB	5,127	7,168	6,752	4,748	5,113	7,321	7,172	4,909
3	I-95 Mainline	Northlake Blvd to PGA Blvd	174,000	204,000	8.0%	56.9%	AM	SB	6,348	8,300	8,088	5,859	6,916	9,286	9,533	6,716
4	Northlake Blvd Ramps	NB Off-Ramp	12,000	14,000	9.0%	100%	PM	NB	1,592	-	1,732	-	1,645	-	1,818	-
5	Northlake Blvd Ramps	SB On-Ramp	16,000	18,000	9.0%	100%	PM	SB	-	1,577	-	1,656	-	1,601	-	1,781
6	Northlake Blvd Ramps	NB On-Ramp	17,000	21,000	9.0%	100%	PM	NB	1,221	-	1,336	-	1,803	-	2,361	-
7	Northlake Blvd Ramps	SB Off-Ramp	13,000	19,000	9.0%	100%	PM	SB	-	1,132	-	1,111	-	1,965	-	1,807
8	Blue Heron Blvd Ramps	NB On-Ramp	19,000	22,000	9.0%	100%	PM	NB	737	-	1,193	-	1,158	-	1,904	-
9	Blue Heron Blvd Ramps	SB Off-Ramp	10,000	13,000	9.0%	100%	PM	SB	-	1,208	-	579	-	1,700	-	947
10	PGA Blvd Ramps	NB-EB Off-Ramp	23,000	25,000	9.0%	100%	AM	NB	2,357	-	1,755	-	2,783	-	2,342	-
11	PGA Blvd Ramps	NB-WB Off-Ramp	9,700	11,000	9.0%	100%	PM	NB	832	-	947	-	850	-	1,025	-
12	PGA Blvd Ramps	EB-SB On-Ramp	14,000	16,000	9.0%	100%	PM	SB	-	906	-	940	-	924	-	998
13	PGA Blvd Ramps	WB-SB On-Ramp	14,000	16,000	9.0%	100%	PM	SB	-	742	-	1,339	-	1,062	-	1,671

Notes:
1. Freeway DDHVs adjusted and balanced
2. Ramp DDHVs adjusted and balanced for consistency with ramp terminal volumes

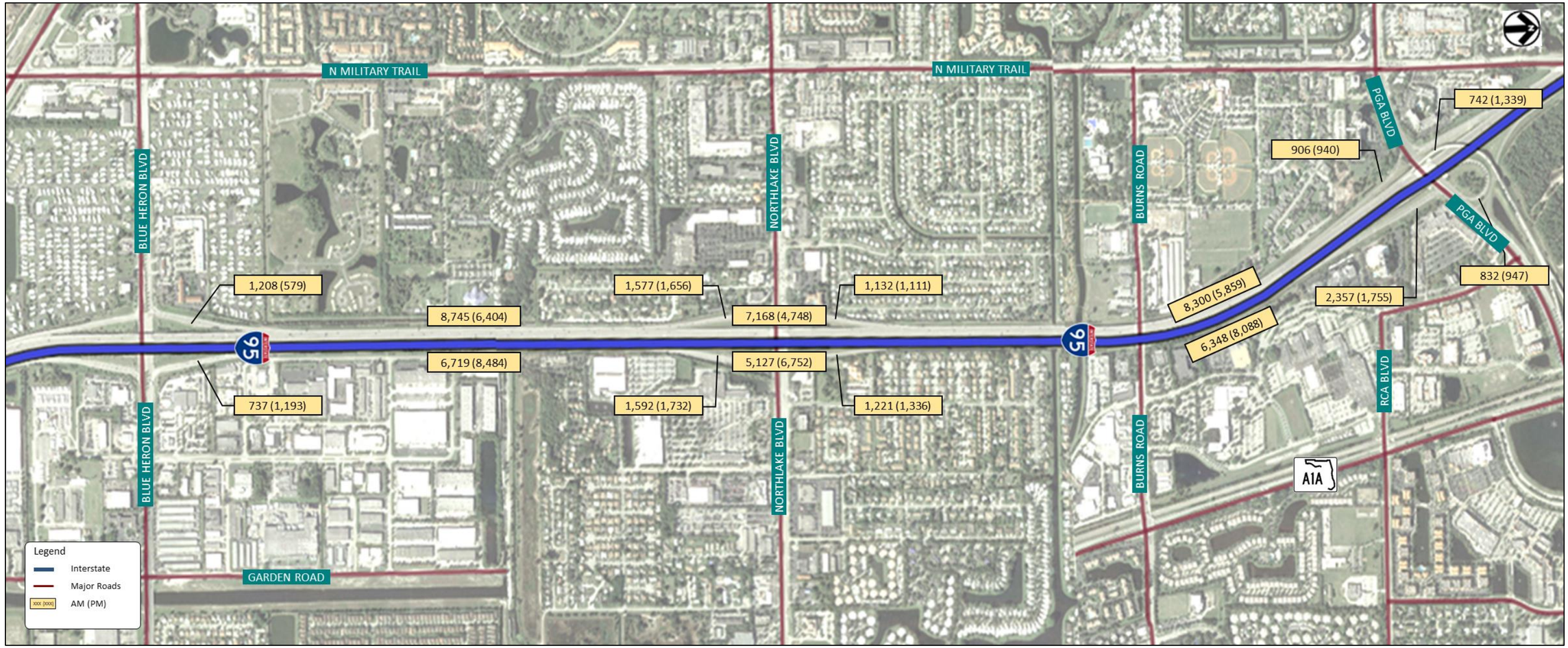


Figure 2 – 2020 I-95 Mainline and Ramps Design Hour Traffic Volumes

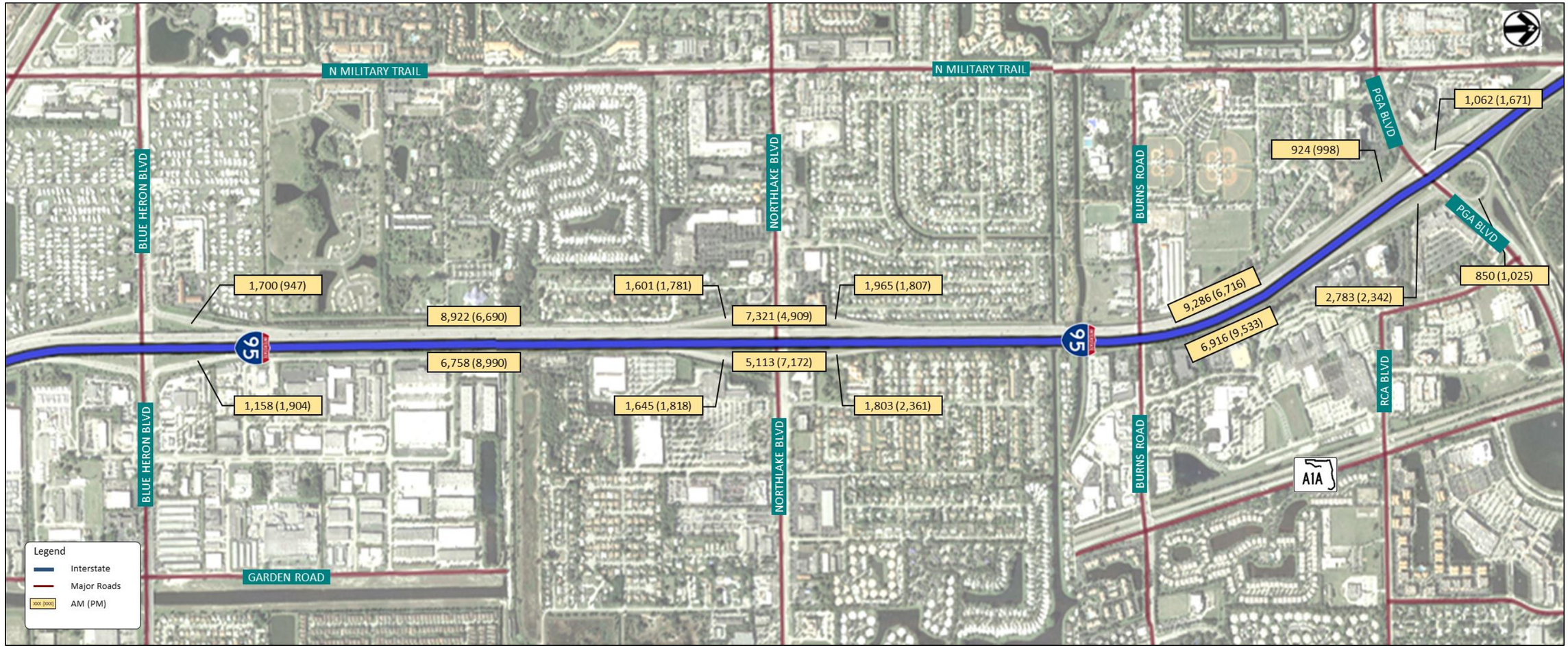


Figure 3 – 2040 I-95 Mainline and Ramps Design Hour Traffic Volumes

Table 3
2020 & 2040 Directional Design Hour Volume (DDHV) For Northlake Boulevard

Roadway Segment			AADT		Standard K Factor	Rec'd D Factor	Peak Period	Peak Direction During Peak Period	DDHV			
			2020	2040					2020		2040	
									EB/NB	WB/SB	EB/NB	WB/SB
1	Northlake Blvd	West of Military Trail	45,000	54,000	9.0%	56.6%	PM	WB	1,780	2,270	2,109	2,751
2	Northlake Blvd	Military Trail to Keating Drive	42,000	51,000	9.0%	56.6%	PM	WB	1,661	2,119	1,992	2,598
3	Northlake Blvd	Keating Drive to I-95 SB Ramps	57,000	68,000	9.0%	56.6%	PM	WB	2,128	2,715	2,656	3,464
4	Northlake Blvd	I-95 SB Ramps to I-95 NB Ramps	56,000	64,000	9.0%	56.6%	PM	WB	2,135	2,723	2,500	3,260
5	Northlake Blvd	I-95 NB Ramps to Sunrise Drive	58,000	66,000	9.0%	56.6%	PM	WB	2,294	2,926	2,578	3,362
6	Northlake Blvd	East of Sunrise Drive	64,000	74,000	9.0%	56.6%	PM	WB	2,172	2,770	2,890	3,770
7	Military Trail	North of Northlake Blvd	37,000	41,000	9.0%	56.3%	PM	SB	1,516	1,814	1,614	2,076
8	Military Trail	South of Northlake Blvd	32,000	35,000	9.0%	56.3%	PM	NB	1,560	1,303	1,772	1,378
9	Keating Drive	North of Northlake Blvd	6,700	7,400	9.0%	55.4%	PM	NB	297	261	369	297
10	Keating Drive	South of Northlake Blvd	13,000	15,000	9.0%	55.4%	PM	NB	593	521	747	603
11	Sunrise Drive	North of Northlake Blvd	5,600	6,200	9.0%	65.0%	AM	SB	112	225	195	363
12	Sunrise Drive	South of Northlake Blvd	9,000	10,000	9.0%	65.0%	PM	NB	540	270	585	315

Table 4
2020 & 2040 Directional Design Hour Volume (DDHV) For Blue Heron Boulevard

Roadway Segment			AADT		Standard K Factor	Rec'd D Factor	Peak Period	Peak Direction During Peak Period	DDHV			
			2020	2040					2020		2040	
									EB/NB	WB/SB	EB/NB	WB/SB
1	Blue Heron Blvd	West of Military Trail	20,000	26,000	9.0%	54.9%	AM	WB	794	939	1,056	1,284
2	Blue Heron Blvd	Military Trail to I-95 SB Ramps	40,000	51,000			AM	EB	1,855	1,568	2,518	2,072
3	Blue Heron Blvd	I-95 SB Ramps to I-95 NB Ramps	46,000	53,000	9.0%	63.4%	PM	WB	1,376	2,464	1,744	3,026
4	Blue Heron Blvd	I-95 NB Ramps to Garden Road	51,000	62,000			PM	WB	1,550	2,776	2,040	3,540
5	Blue Heron Blvd	East of Garden Road	44,000	54,000			PM	WB	1,410	2,525	1,777	3,083
6	Military Trail	North of Blue Heron Blvd	29,000	32,000	9.0%	55.1%	PM	SB	1,230	1,380	1,293	1,587
7	Military Trail	South of Blue Heron Blvd	30,000	36,000			PM	SB	1,249	1,401	1,454	1,786
8	Garden Rd.	North of Blue Heron Blvd	8,600	9,500	9.0%	61.7%	PM	SB	265	455	328	527
9	Garden Rd.	South of Blue Heron Blvd	14,000	22,000			AM	SB	303	518	759	1,221

Table 5
2020 & 2040 Directional Design Hour Volume (DDHV) For PGA Boulevard

Roadway Segment			AADT		Standard K Factor	Rec'd D Factor	Peak Period	Peak Direction During Peak Period	DDHV			
			2020	2040					2020		2040	
									EB/NB	WB/SB	EB/NB	WB/SB
1	PGA Blvd	West of Military Trail	47,000	52,000	9.0%	56.2%	PM	EB	2,145	1,807	2,629	2,051
2	PGA Blvd	Military Trail to I-95 SB Ramps	54,000	60,000	9.0%	56.2%	PM	EB	2,355	1,983	3,033	2,367
3	PGA Blvd	I-95 SB Ramps to I-95 NB Ramps	45,000	50,000	9.0%	56.2%	AM	EB	2,034	1,713	2,528	1,972
4	PGA Blvd	East of I-95 NB Ramps	69,000	76,000	9.0%	56.2%	PM	EB	3,366	2,835	3,842	2,998
5	Military Trail	North of PGA Blvd	41,000	45,000	9.0%	55.4%	PM	NB	1,844	1,617	2,244	1,806
6	Military Trail	South of PGA Blvd	41,000	45,000	9.0%	55.4%	PM	NB	1,966	1,724	2,244	1,806

Future Intersection Turning Movement Volumes

The development of future year turning movement volumes (TMV) for the signalized intersections was based upon the existing turning movement percentages obtained from the field. The latest TMTOOL spreadsheet (Version 2) was used to estimate balanced turning movement volumes for the 2020 Opening Year and 2040 Design Year based on projected link volumes and existing turning movements. The TMTOOLS analysis sheets are provided in **Attachment D**. **Figure 4** to **Figure 9** show the TMVs at the study intersections for the 2020 opening and 2040 design year.

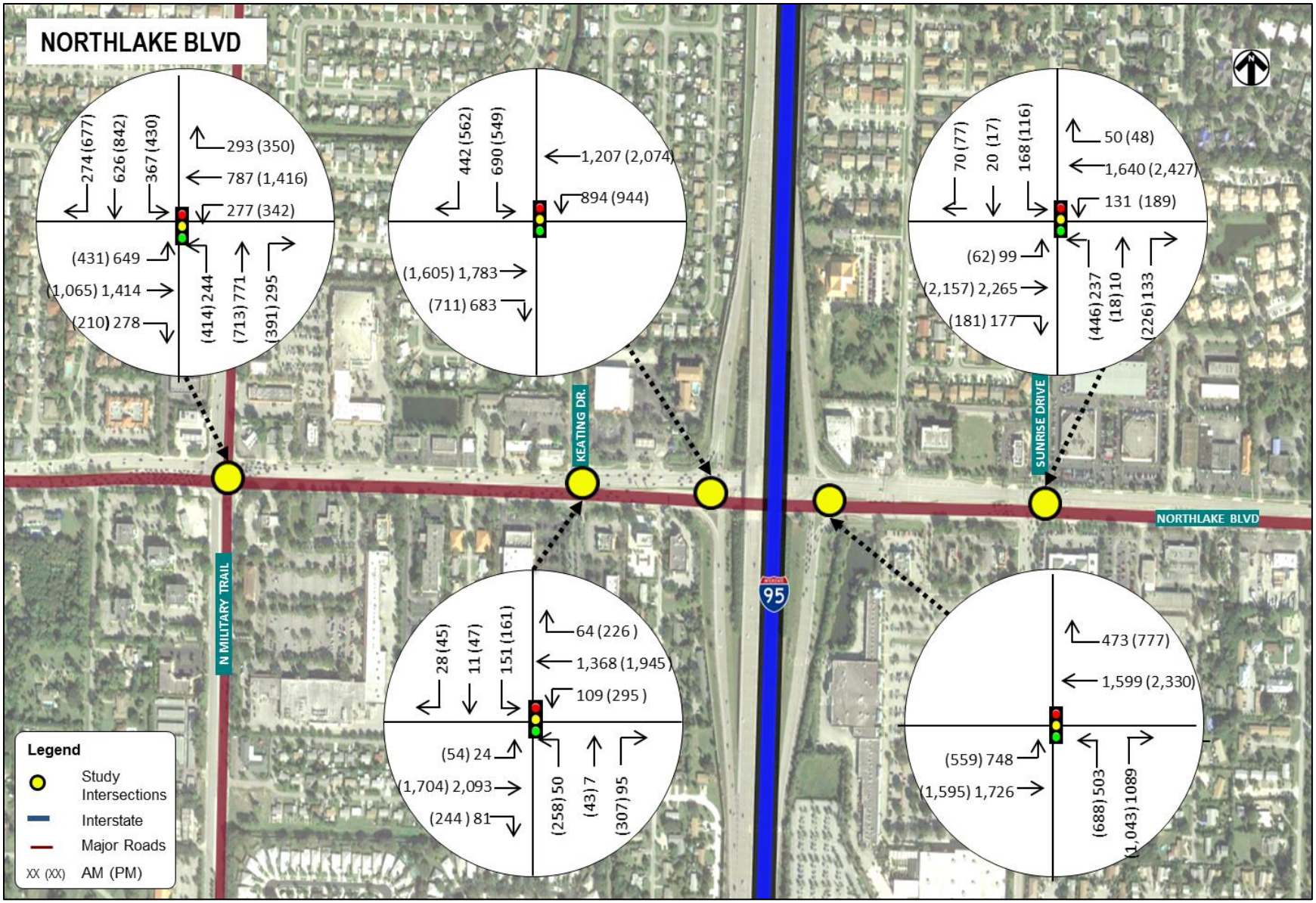


Figure 4 – 2020 Northlake Blvd Future Build Intersection Turning Movement Volumes

Figure 5 – 2020 Blue Heron Blvd Future Build Intersection Turning Movement Volumes

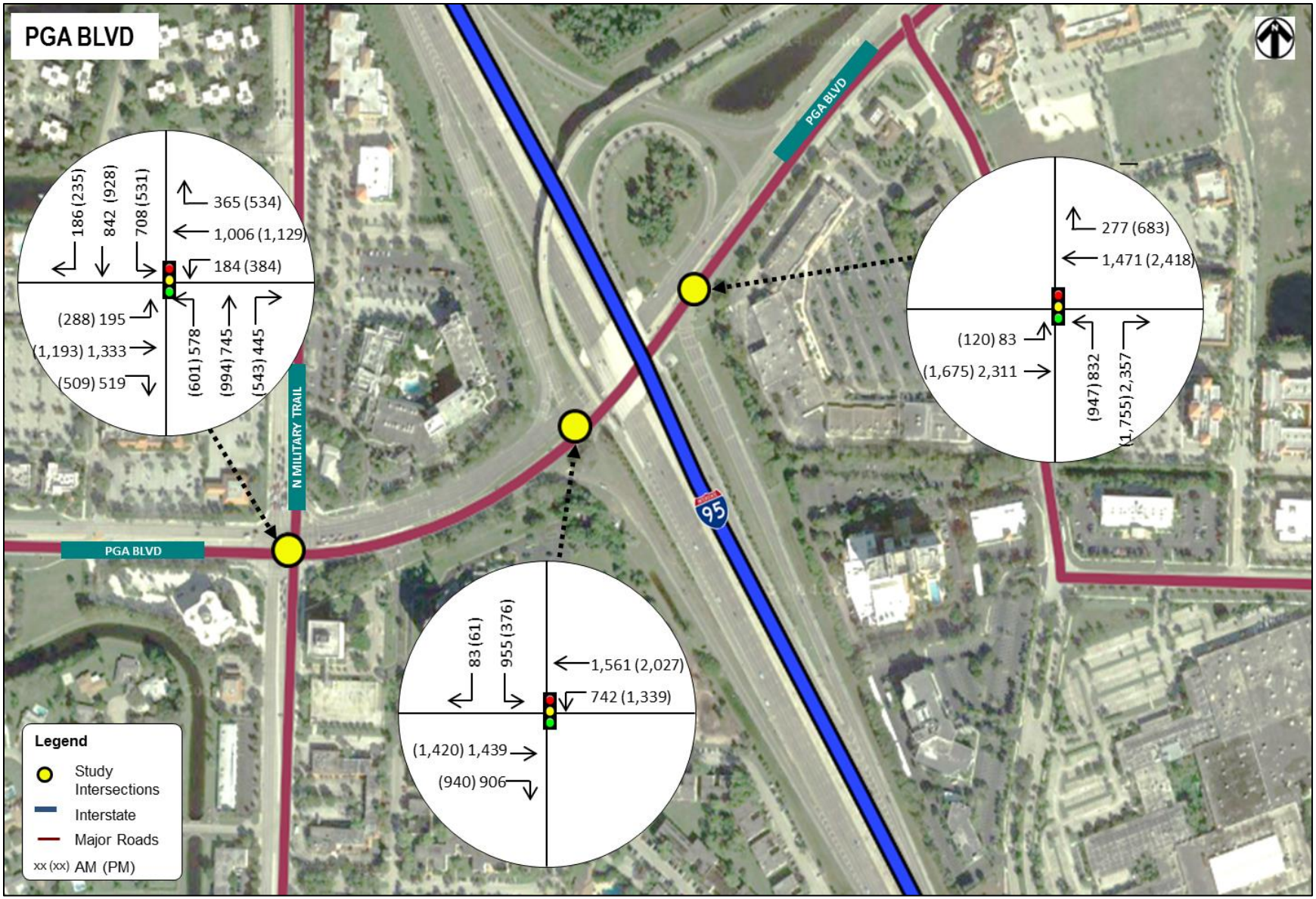


Figure 6 – 2020 PGA Blvd Future Build Intersection Turning Movement Volumes

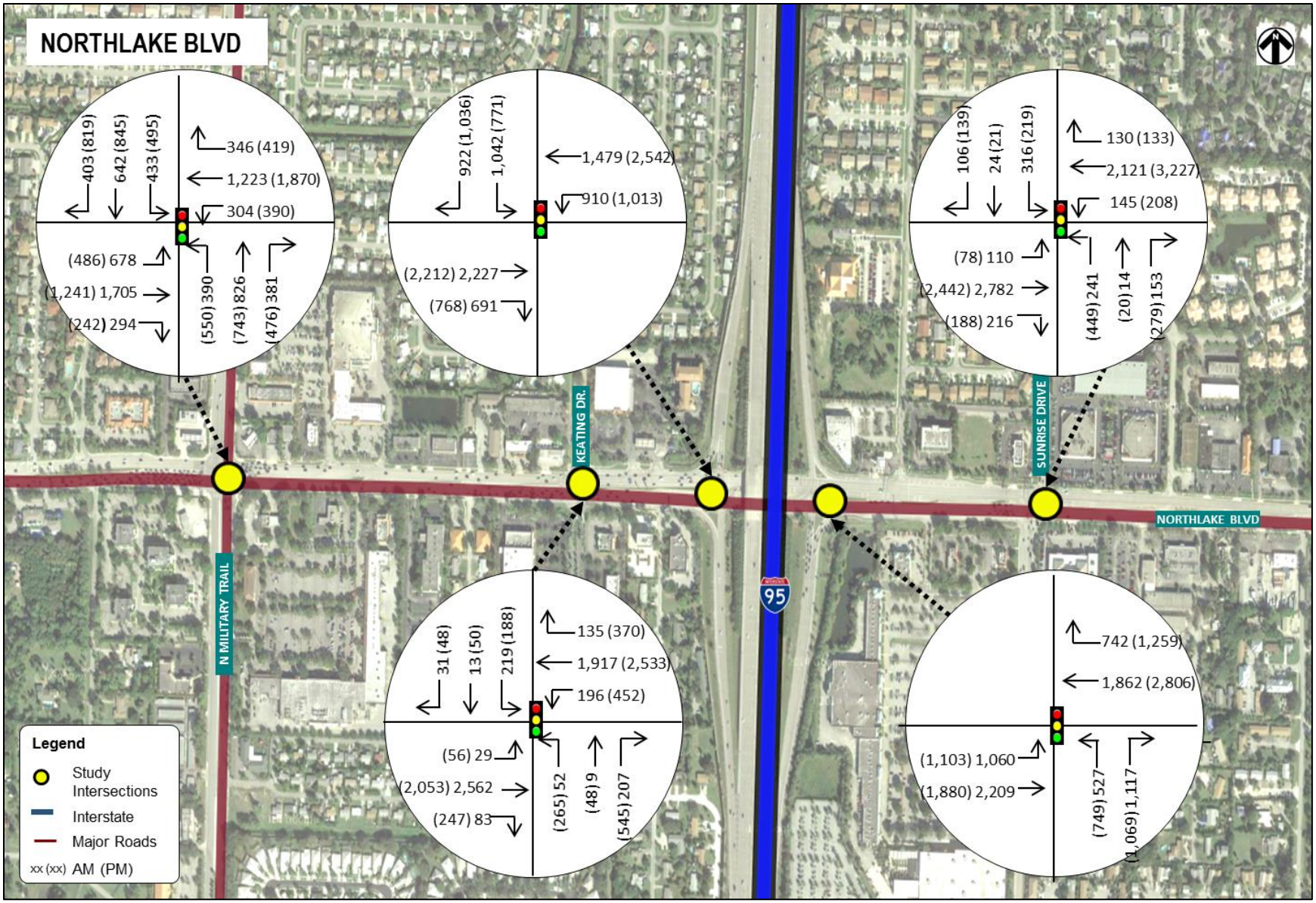


Figure 7 – 2040 Northlake Blvd Future Build Intersection Turning Movement Volumes

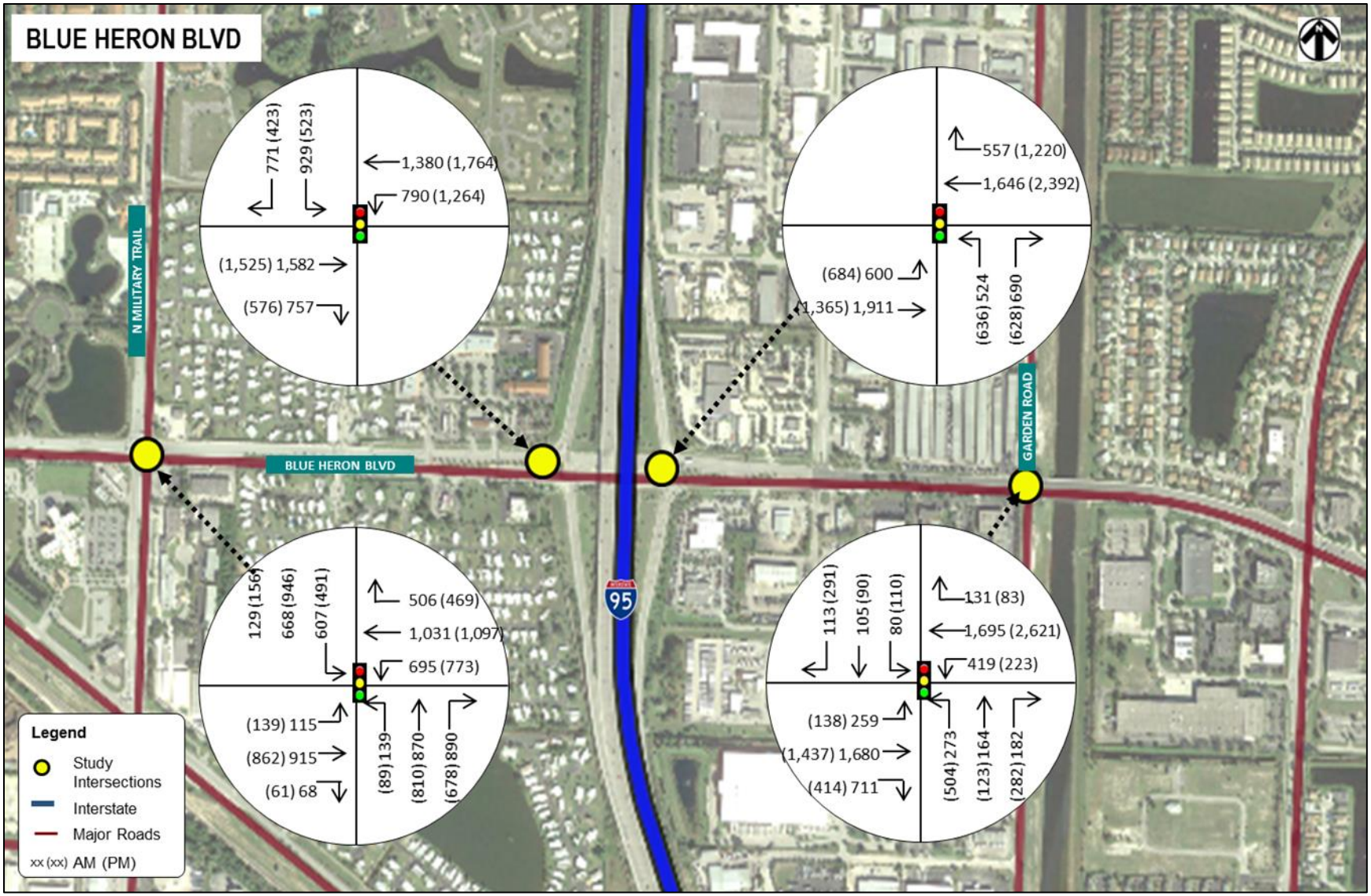


Figure 8 – 2040 Blue Heron Blvd Future Build Intersection Turning Movement Volumes

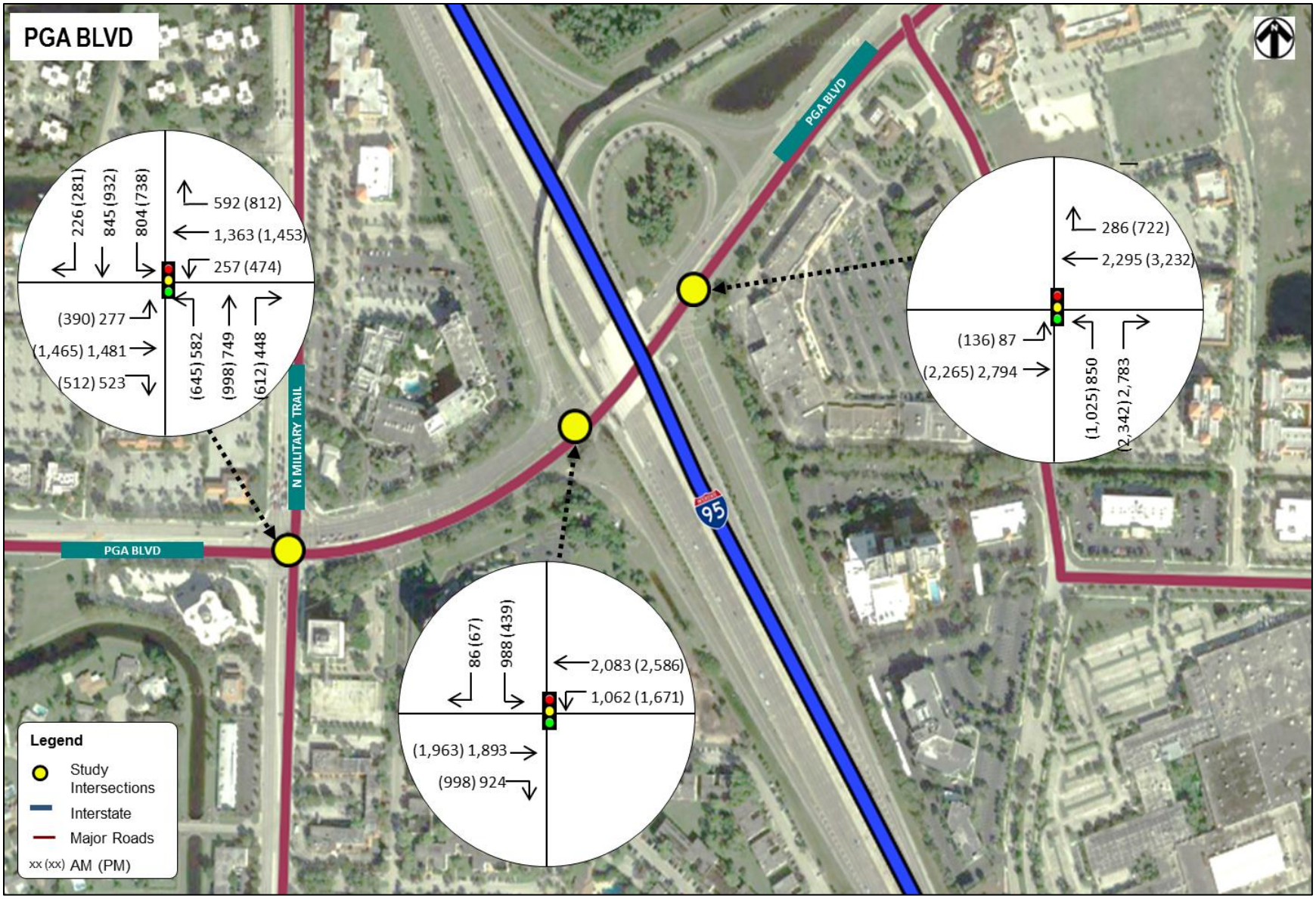


Figure 9 – 2040 PGA Blvd Future Build Intersection Turning Movement Volumes

ATTACHMENT A

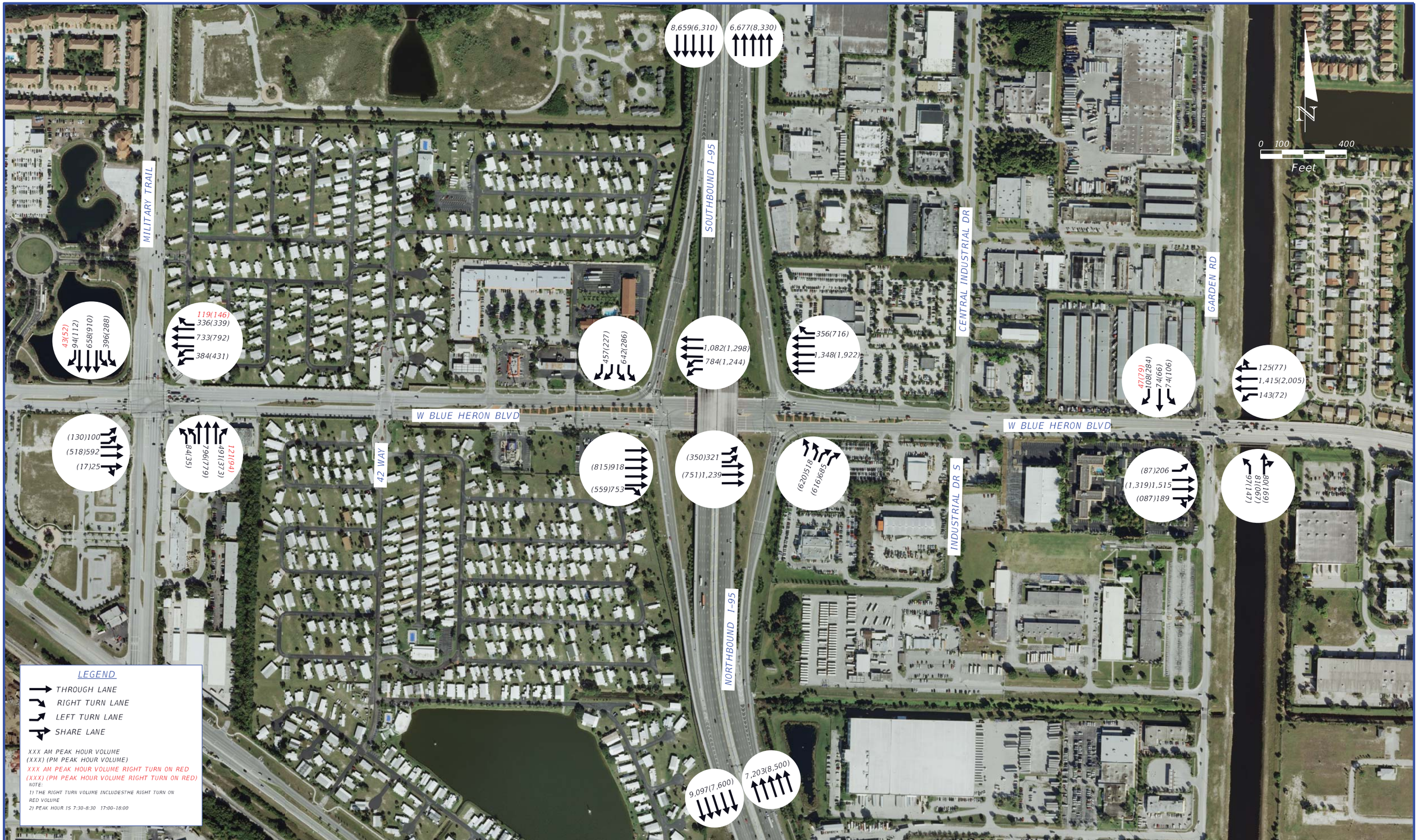


FIGURE 20 BALANCED INTERSECTION TURNING MOVEMENT COUNTS I-95 AT BLUE HERON BLVD INTERCHANGE

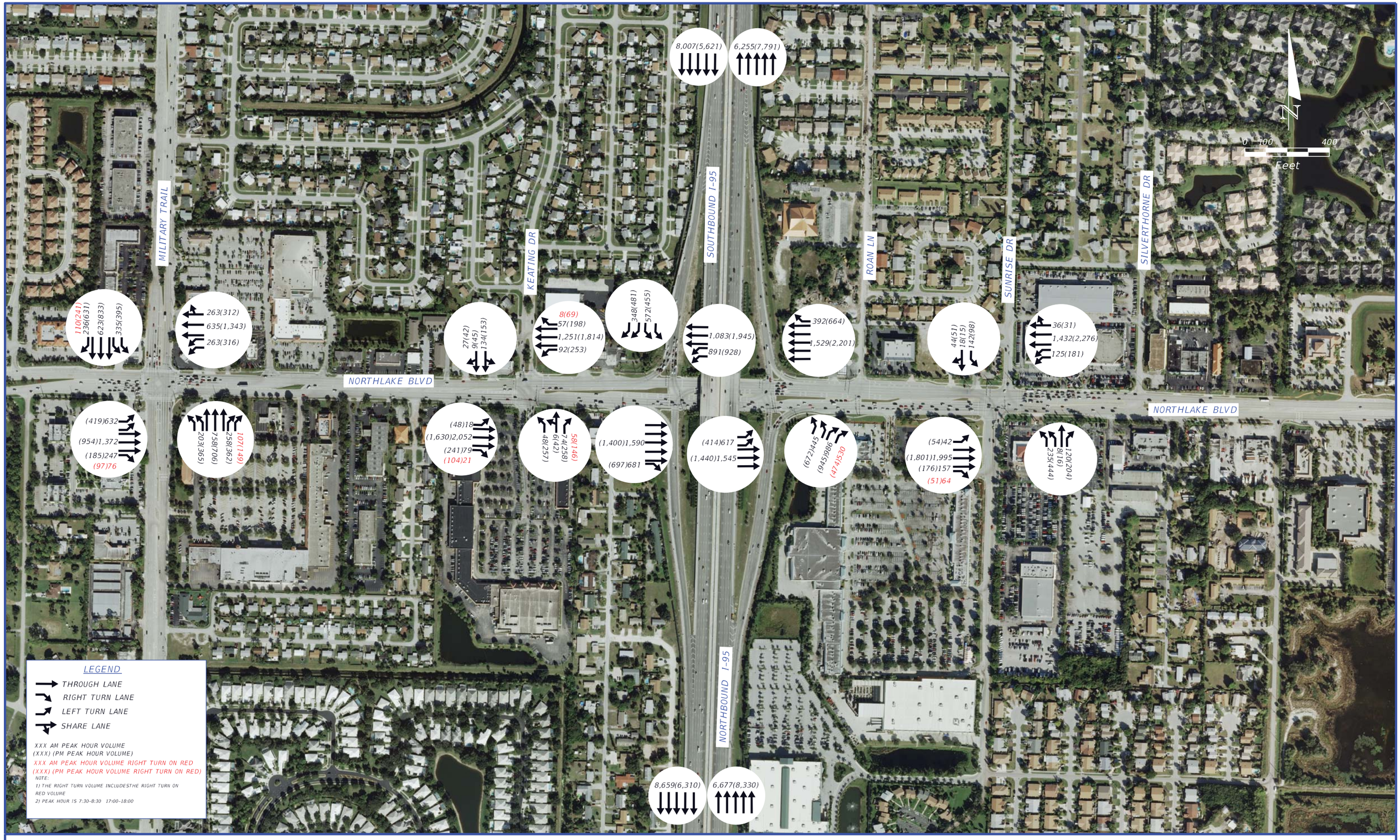


FIGURE 21 BALANCED INTERSECTION TURNING MOVEMENT COUNTS I-95 AT NORTHLAKE BLVD EXCHANGE

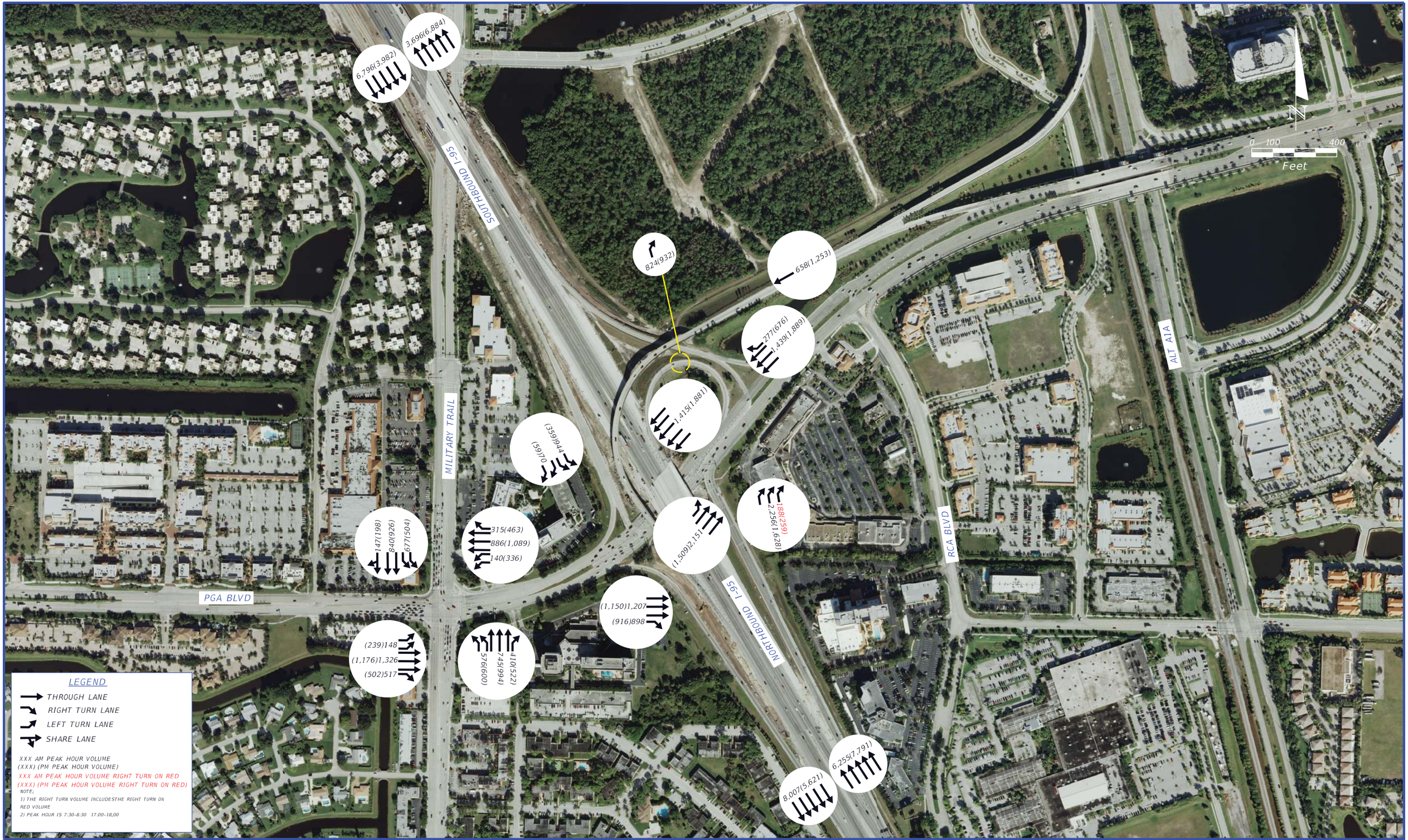
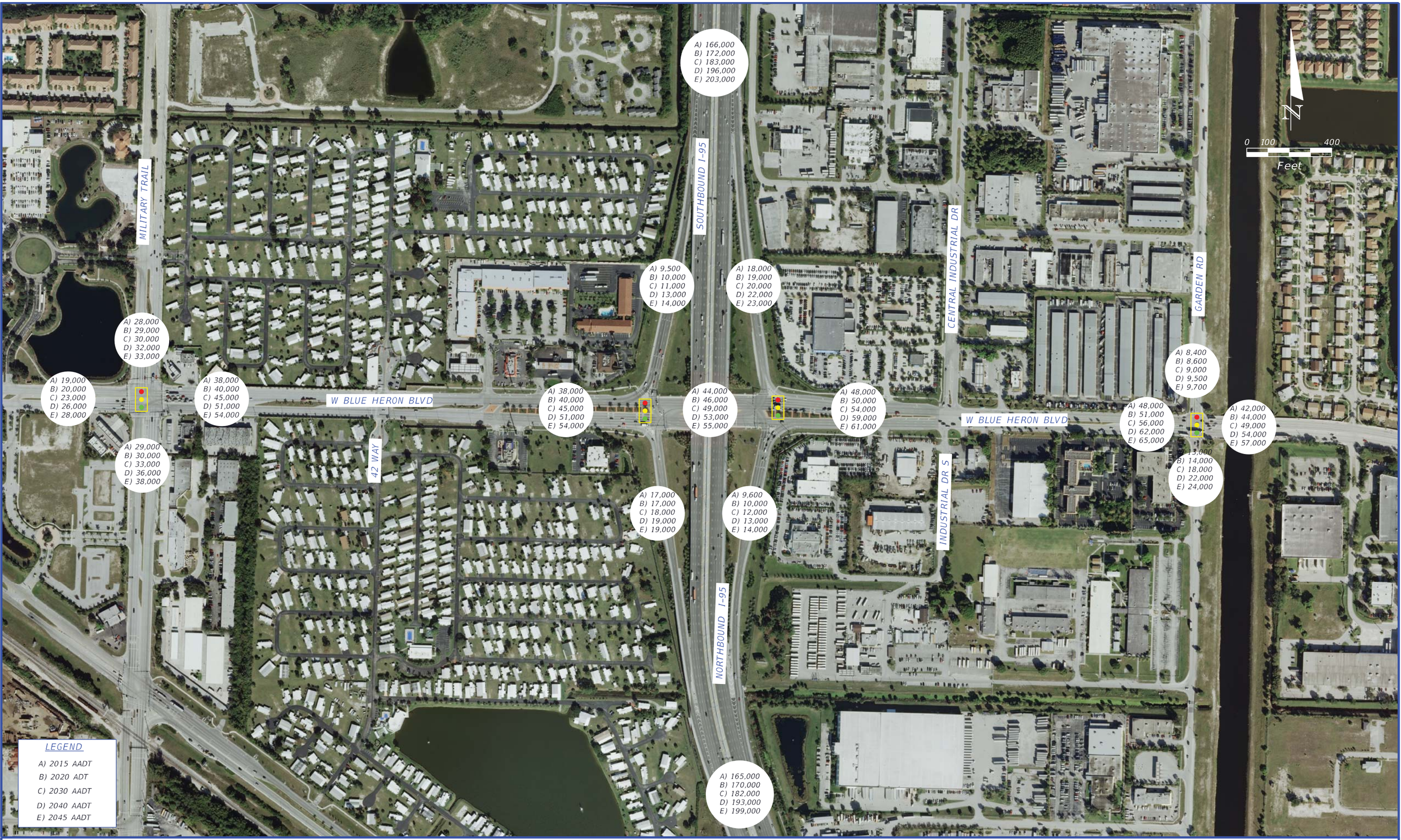


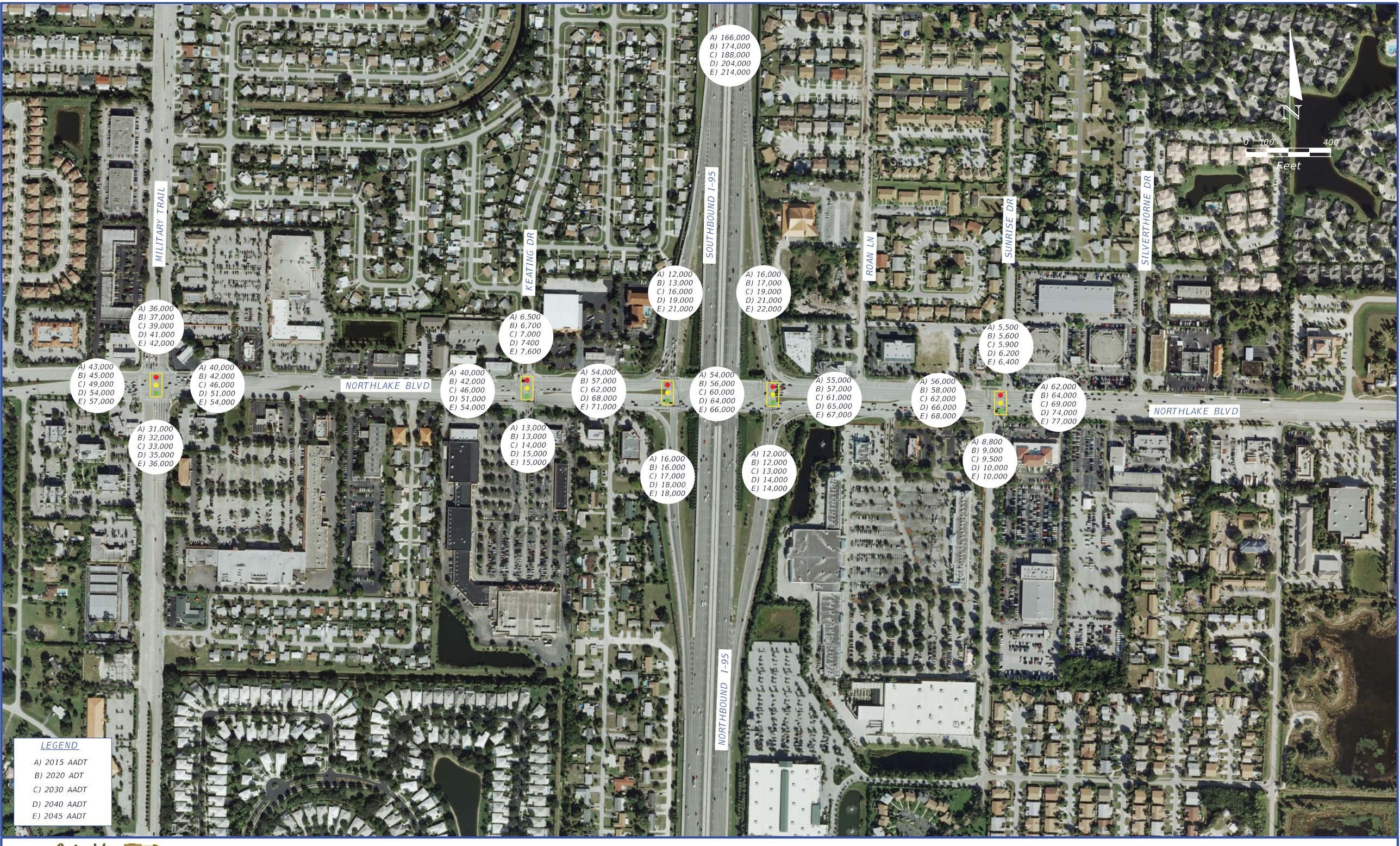
FIGURE 22 BALANCED INTERSECTION TURNING MOVEMENT COUNTS I-95 AT PGA BLVD INTERCHANGE

ATTACHMENT B



Centennial FDOT 1915 ★ 2015

FIGURE 30 FORECASTED FUTURE AADT I-95 AT BLUE HERON BLVD INTERCHANGE



Centennial FDOT 1915★2015

FIGURE 31 FORECASTED FUTURE AADT I-95 AT NORTHLAKE ROAD INTERCHANGE

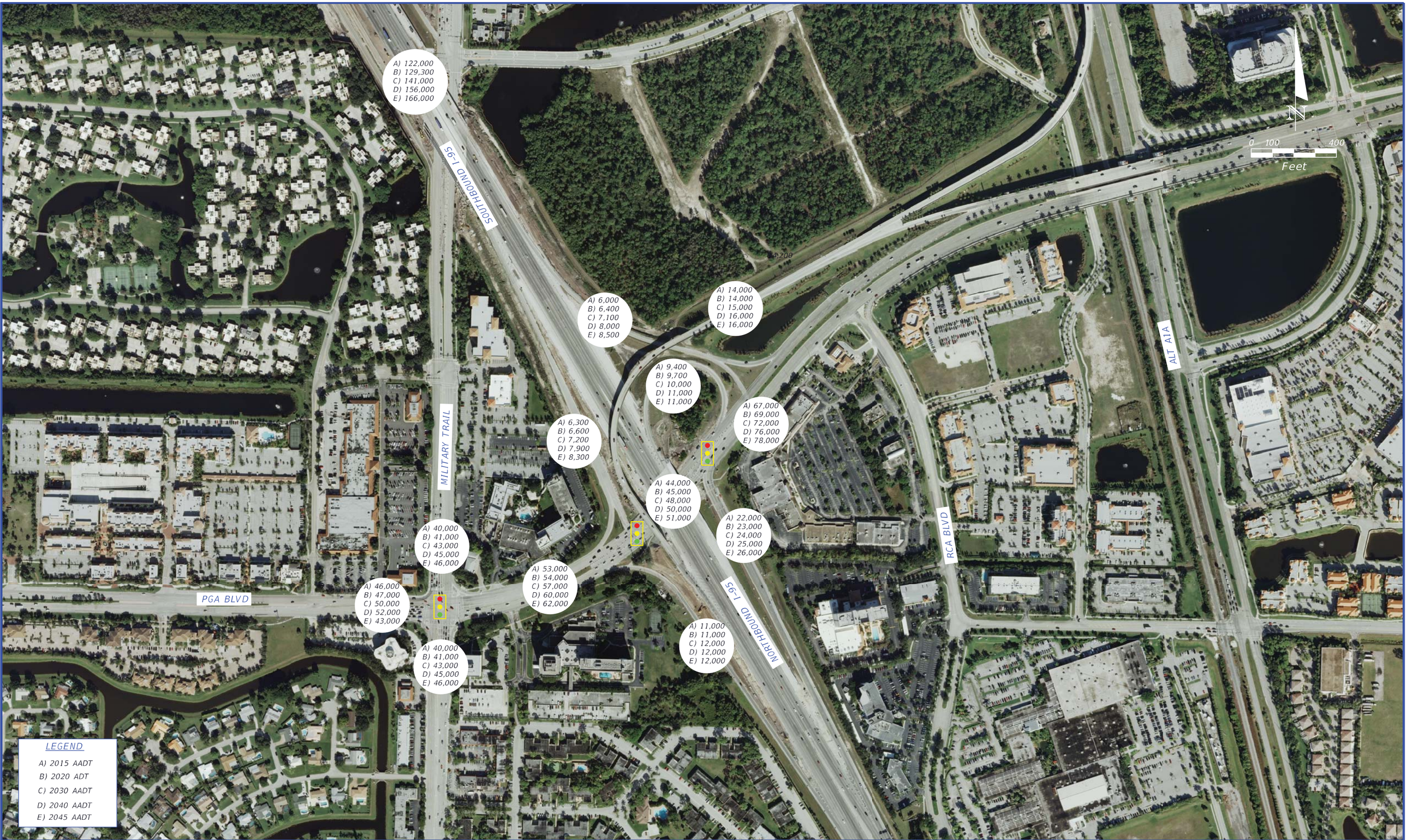


FIGURE 32 FORECASTED FUTURE AADT I-95 AT PGA BLVD INTERCHANGE

ATTACHMENT C

I-95 MAINLINE AND RAMPS
Directional Distribution Traffic Factors Evaluation

	Roadway Segment			2015 AADT	Peak Hour Volumes				Existing K Factors	D Factors From Counts Data							Existing D Factors	FDOT D Factors	Recommended D Factor
					Average AM Peak Volume		Average PM Peak Volume			AM Peak Hour		PM Peak Hour		Peak Period	Peak Direction During Peak Period	Peak Period D Factor			
					EB/NB	WB/SB	EB/NB	WB/SB		EB/NB	WB/SB	EB/NB	WB/SB						
1	I-95 Mainline	Blue Heron Blvd to Northlake Blvd		166,000	6,677	8,659	8,330	6,310	9.2%	43.5%	56.5%	56.9%	43.1%	AM	SB	56.5%	56.5%	57.7%	**56.9%**
2	I-95 Mainline	Between I-95 Ramps at Northlake Blvd		138,000	5,246	7,087	6,713	4,685	8.9%	42.5%	57.5%	58.9%	41.1%	AM	SB	57.5%	57.5%		
3	I-95 Mainline	Northlake Blvd to PGA Blvd		166,000	6,255	8,007	7,791	5,621	8.6%	43.9%	56.1%	58.1%	41.9%	AM	SB	56.1%	56.1%		
4	Northlake Blvd Ramps	NB Off-Ramp		12,000	1,431		1,617		13.5%	100.0%	0.0%	100.0%	0.0%	PM	NB	100.0%	100.0%	100.0%	**100.0%**
5	Northlake Blvd Ramps	SB On-Ramp		16,000		1,572		1,625	10.2%	0.0%	100.0%	0.0%	100.0%	PM	SB	100.0%	100.0%	100.0%	**100.0%**
6	Northlake Blvd Ramps	NB On-Ramp		16,000	1,009		1,078		6.7%	100.0%	0.0%	100.0%	0.0%	PM	NB	100.0%	100.0%	100.0%	**100.0%**
7	Northlake Blvd Ramps	SB Off-Ramp		12,000		920		1,764	14.7%	0.0%	100.0%	0.0%	100.0%	PM	SB	100.0%	100.0%	100.0%	**100.0%**
10	Blue Heron Blvd Ramps	NB On-Ramp		11,000	677		1,066		9.7%	100.0%	0.0%	100.0%	0.0%	PM	NB	100.0%	100.0%	100.0%	**100.0%**
11	Blue Heron Blvd Ramps	SB Off-Ramp		9,500		1,099		513	11.6%	0.0%	100.0%	0.0%	100.0%	AM	SB	100.0%	100.0%	100.0%	**100.0%**
12	PGA Blvd Ramps	NB-EB Off-Ramp		22,000	2,256		1,628		10.3%	100.0%	0.0%	100.0%	0.0%	AM	NB	100.0%	100.0%	100.0%	**100.0%**
13	PGA Blvd Ramps	NB-WB Off-Ramp		9,400	824		932		9.9%	100.0%	0.0%	100.0%	0.0%	PM	NB	100.0%	100.0%	100.0%	**100.0%**
14	PGA Blvd Ramps	EB-SB On-Ramp		14,000		898		916	6.5%	0.0%	100.0%	0.0%	100.0%	PM	SB	100.0%	100.0%	100.0%	**100.0%**
15	PGA Blvd Ramps	WB-SB On-Ramp		14,000		658		1253	9.0%	0.0%	100.0%	0.0%	100.0%	PM	SB	100.0%	100.0%	100.0%	**100.0%**

NORTHLAKE BOULEVARD
Directional Distribution Traffic Factors Evaluation

	Roadway Segment		2015 AADT	Peak Hour Volumes				Existing K Factors	D Factors From Counts Data							Existing D Factors	FDOT D Factors	Recommended D Factor
				Average AM Peak Volume		Average PM Peak Volume			AM Peak Hour		PM Peak Hour		Peak Period	Peak Direction During Peak Period	Peak Period D Factor			
				EB/NB	WB/SB	EB/NB	WB/SB		EB/NB	WB/SB	EB/NB	WB/SB						
1	Northlake Blvd	West of Military Trail	43,000	2,251	1,079	1,558	2,342	9.1%	67.6%	32.4%	39.9%	60.1%	PM	WB	60.1%	55.9%	60.7%	**56.6%**
2	Northlake Blvd	Military Trail to Keating Drive	40,000	2,149	1,331	1,919	2,111	10.1%	61.8%	38.2%	47.6%	52.4%	PM	WB	52.4%			
3	Northlake Blvd	Keating Drive to I-95 SB Ramps	54,000	2,271	1,429	2,097	2,423	8.4%	61.4%	38.6%	46.4%	53.6%	PM	WB	53.6%			
4	Northlake Blvd	I-95 SB Ramps to I-95 NB Ramps	55,000	2,162	1,974	1,854	2,873	8.6%	52.3%	47.7%	39.2%	60.8%	PM	WB	60.8%			
5	Northlake Blvd	I-95 NB Ramps to Sunrise Drive	54,000	2,529	1,921	2,395	2,865	9.7%	56.8%	43.2%	45.5%	54.5%	PM	WB	54.5%			
6	Northlake Blvd	East of Sunrise Drive	62,000	2,257	1,593	2,102	2,488	7.4%	58.6%	41.4%	45.8%	54.2%	PM	WB	54.2%			
7	Military Trail	North of Northlake Blvd	36,000	1,656	1,194	1,441	1,859	9.2%	58.1%	41.9%	43.7%	56.3%	PM	SB	56.3%	54.0%	60.7%	**56.3%**
8	Military Trail	South of Northlake Blvd	31,000	1,219	1,131	1,433	1,337	8.9%	51.9%	48.1%	51.7%	48.3%	PM	NB	51.7%			
9	Keating Drive	North of Northlake Blvd	6,500	80	170	290	240	8.2%	32.0%	68.0%	54.7%	45.3%	PM	NB	54.7%	52.7%	60.7%	**55.4%**
10	Keating Drive	South of Northlake Blvd	13,000	128	182	557	543	8.5%	41.3%	58.7%	50.6%	49.4%	PM	NB	50.6%			
15	Sunrise Drive	North of Northlake Blvd	5,500	86	204	106	164	5.3%	29.7%	70.3%	39.3%	60.7%	AM	SB	70.3%	67.1%	60.7%	**65.0%**
16	Sunrise Drive	South of Northlake Blvd	8,800	363	297	664	376	11.8%	55.0%	45.0%	63.8%	36.2%	PM	NB	63.8%			

BLUE HERON BOULEVARD
Directional Distribution Traffic Factors Evaluation

	Roadway Segment		2015 AADT	Peak Hour Volumes				Existing K Factors	D Factors From Counts Data							Existing D Factors	FDOT D Factors	Recommended D Factor
				Average AM Peak Volume		Average PM Peak Volume			AM Peak Hour		PM Peak Hour		Peak Period	Peak Direction During Peak Period	Peak Period D Factor			
				EB/NB	WB/SB	EB/NB	WB/SB		EB/NB	WB/SB	EB/NB	WB/SB						
1	Blue Heron Blvd	West of Military Trail	19,000	717	913	665	935	8.6%	44.0%	56.0%	41.6%	58.4%	AM	WB	56.0%	54.0%	56.5%	**54.9%**
2	Blue Heron Blvd	Military Trail to I-95 SB Ramps	38,000	1,671	1,539	1,374	1,526	8.4%	52.1%	47.9%	47.4%	52.6%	AM	EB	52.1%			
3	Blue Heron Blvd	I-95 SB Ramps to I-95 NB Ramps	44,000	1,560	1,866	1,087	2,515	8.2%	45.5%	54.5%	30.2%	69.8%	PM	WB	69.8%	64.3%	60.7%	**63.4%**
4	Blue Heron Blvd	I-95 NB Ramps to Garden Road	48,000	1,926	1,704	1,372	2,638	8.4%	53.1%	46.9%	34.2%	65.8%	PM	WB	65.8%			
5	Blue Heron Blvd	East of Garden Road	42,000	1,667	1,683	1,596	2,154	8.9%	49.8%	50.2%	42.6%	57.4%	PM	WB	57.4%			
6	Military Trail	North of Blue Heron Blvd	28,000	1,232	1,148	1,250	1,310	9.1%	51.8%	48.2%	48.8%	51.2%	PM	SB	51.2%	52.3%	60.7%	**55.1%**
7	Military Trail	South of Blue Heron Blvd	29,000	1,371	1,069	1,187	1,363	8.8%	56.2%	43.8%	46.5%	53.5%	PM	SB	53.5%			
12	Garden Rd.	North of Blue Heron Blvd	8,400	414	256	234	456	8.2%	61.8%	38.2%	33.9%	66.1%	PM	SB	66.1%	63.5%	58.0%	**61.7%**
13	Garden Rd.	South of Blue Heron Blvd	13,000	258	402	383	227	5.1%	39.1%	60.9%	62.8%	37.2%	AM	SB	60.9%			

PGA BOULEVARD
Directional Distribution Traffic Factors Evaluation

Roadway Segment			2015 AADT	Peak Hour Volumes				Existing K Factors	D Factors From Counts Data							Existing D Factors	FDOT D Factors	Recommended D Factor
				Average AM Peak Volume		Average PM Peak Volume			AM Peak Hour		PM Peak Hour		Peak Period	Peak Direction During Peak Period	Peak Period D Factor			
				EB/NB	WB/SB	EB/NB	WB/SB		EB/NB	WB/SB	EB/NB	WB/SB						
1	PGA Blvd	West of Military Trail	46,000	1,991	1,609	1,917	1,883	8.3%	55.3%	44.7%	50.4%	49.6%	PM	EB	50.4%	53.8%	60.7%	**56.2%**
2	PGA Blvd	Military Trail to I-95 SB Ramps	53,000	2,187	1,513	2,181	1,949	7.8%	59.1%	40.9%	52.8%	47.2%	PM	EB	52.8%		56.5%	
3	PGA Blvd	I-95 SB Ramps to I-95 NB Ramps	44,000	2,151	1,439	1,509	1,889	8.2%	59.9%	40.1%	44.4%	55.6%	AM	EB	59.9%		60.7%	
4	PGA Blvd	East of I-95 NB Ramps	67,000	4,410	1,550	3,134	2,886	9.0%	74.0%	26.0%	52.1%	47.9%	PM	EB	52.1%			
7	Military Trail	North of PGA Blvd	40,000	1,206	1,664	1,692	1,628	8.3%	42.0%	58.0%	51.0%	49.0%	PM	NB	51.0%	52.7%	60.7%	**55.4%**
8	Military Trail	South of PGA Blvd	40,000	1,731	1,499	2,116	1,764	9.7%	53.6%	46.4%	54.5%	45.5%	PM	NB	54.5%			

ATTACHMENT D

2020 AM

Military Trail

	SBR	SBT	SBL		
	274	626	367		
EBL	649			293	WBR
EBT	1,414			787	WBT
EBR	278			277	WBL
	244	771	295		
	NBL	NBT	NBR		

Keaton Drive

	SBR	SBT	SBL		
	28	11	151		
EBL	24			64	WBR
EBT	2,093			1,368	WBT
EBR	81			109	WBL
	50	7	95		
	NBL	NBT	NBR		

WB: 1,357 1,446 — 7%
6% — 2077 2,198
EB

I-95 SB Ramps

	SBR	SBT	SBL		
	442		690		
EBL					WBR
EBT	1,783			1,207	WBT
EBR	683			894	WBL
	NBL	NBT	NBR		

WB: 1,542 1,649 — 7%
5% — 2339 2,466
EB

I-95 NB Ramps

	SBR	SBT	SBL		
EBL	748			473	WBR
EBT	1,726			1,599	WBT
EBR					WBL
	503		1,089		
	NBL	NBT	NBR		

WB: 2,101 2,101 — 0%
0% — 2473 2,473
EB

Surise Drive

	SBR	SBT	SBL		
	70	20	168		
EBL	99			50	WBR
EBT	2,265			1,640	WBT
EBR	177			131	WBL
	237	10	133		
	NBL	NBT	NBR		

WB: 2,072 1,947 — 6%
11% — 2815 2,542
EB

2040 AM

Military Trail

	SBR	SBT	SBL		
	403	642	433		
EBL	678			346	WBR
EBT	1,705			1,223	WBT
EBR	294			304	WBL
	390	826	381		
	NBL	NBT	NBR		

Keaton Drive

	SBR	SBT	SBL		
	31	13	219		
EBL	29			135	WBR
EBT	2,562			1,917	WBT
EBR	83			196	WBL
	52	9	207		
	NBL	NBT	NBR		

WB: 1,874 2,000 — 7%
6% — 2519 2,674
EB

I-95 SB Ramps

	SBR	SBT	SBL		
	922		1,042		
EBL					WBR
EBT	2,227			1,479	WBT
EBR	691			910	WBL
	NBL	NBT	NBR		

WB: 2,248 2,401 — 7%
2% — 2988 2,918
EB

I-95 NB Ramps

	SBR	SBT	SBL		
EBL	1,060			742	WBR
EBT	2,209			1,862	WBT
EBR					WBL
	527		1,117		
	NBL	NBT	NBR		

WB: 2,389 2,389 — 0%
0% — 3269 3,269
EB

Surise Drive

	SBR	SBT	SBL		
	106	24	316		
EBL	110			130	WBR
EBT	2,782			2,121	WBT
EBR	216			145	WBL
	241	14	153		
	NBL	NBT	NBR		

WB: 2,604 2,468 — 6%
7% — 3,326 3,108
EB

2020 PM

Military Trail

	SBR	SBT	SBL		
	677	842	430		
EBL	431			350	WBR
EBT	1,065			1,416	WBT
EBR	210			342	WBL
	414	713	391		
	NBL	NBT	NBR		

Keaton Drive

	SBR	SBT	SBL		
	45	47	161		
EBL	54			226	WBR
EBT	1,704			1,945	WBT
EBR	244			295	WBL
	258	43	307		
	NBL	NBT	NBR		

WB: 2,108 2,247 — 7%
6% — 1,886 2,002
EB

I-95 SB Ramps

	SBR	SBT	SBL		
	562		549		
EBL					WBR
EBT	1,605			2,074	WBT
EBR	711			944	WBL
	NBL	NBT	NBR		

WB: 2,465 2,636 — 7%
7% — 2172 2,316
EB

I-95 NB Ramps

	SBR	SBT	SBL		
EBL	559			777	WBR
EBT	1,595			2,330	WBT
EBR					WBL
	688		1,043		
	NBL	NBT	NBR		

WB: 3,018 3,018 — 0%
0% — 2153 2,153
EB

Surise Drive

	SBR	SBT	SBL		
	77	17	116		
EBL	62			48	WBR
EBT	2,157			2,427	WBT
EBR	181			189	WBL
	446	18	226		
	NBL	NBT	NBR		

WB: 3,107 2,950 — 5%
10% — 2638 2,401
EB

2040 PM

Military Trail

	SBR	SBT	SBL		
	819	845	495		
EBL	486			419	WBR
EBT	1,241			1,870	WBT
EBR	242			390	WBL
	550	743	476		
	NBL	NBT	NBR		

Keaton Drive

	SBR	SBT	SBL		
	48	50	188		
EBL	56			370	WBR
EBT	2,053			2,533	WBT
EBR	247			452	WBL
	265	48	545		
	NBL	NBT	NBR		

WB: 2,679 2,847 — 6%
6% — 2,212 2,355
EB

I-95 SB Ramps

	SBR	SBT	SBL		
	1,036		771		
EBL					WBR
EBT	2,212			2,542	WBT
EBR	768			1,013	WBL
	NBL	NBT	NBR		

WB: 3,355 3,578 — 7%
7% — 2786 2,980
EB

I-95 NB Ramps

	SBR	SBT	SBL		
EBL	1,103			1,259	WBR
EBT	1,880			2,806	WBT
EBR					WBL
	749		1,069		
	NBL	NBT	NBR		

WB: 3,555 3,555 — 0%
0% — 2,982 2,982
EB

Surise Drive

	SBR	SBT	SBL		
	139	21	219		
EBL	78			133	WBR
EBT	2,442			3,227	WBT
EBR	188			208	WBL
	449	20	279		
	NBL	NBT	NBR		

WB: 4,065 3,814 — 7%
9% — 2,949 2,709
EB

2020 AM

Military Trail

	SBR	SBT	SBL		
	109	661	443		
EBL	110			382	WBR
EBT	683			780	WBT
EBR	46			445	WBL
	109	812	566		
	NBL	NBT	NBR		

I-95 SB Ramps

	SBR	SBT	SBL		
	505		703		
EBL					WBR
EBT	1,052			1,153	WBT
EBR	754			786	WBL
	NBL	NBT	NBR		

WB 1607 1658 — 3%

7% 1,691 1806 — EB

I-95 NB Ramps

	SBR	SBT	SBL		
EBL	355			382	WBR
EBT	1,399			1,419	WBT
EBR					WBL
	520		687		
	NBL	NBT	NBR		

WB 1939 1939 — 0%

0% 1754 1754 — EB

Garden Road

	SBR	SBT	SBL		
	110	75	76		
EBL	222			128	WBR
EBT	1,548			1,481	WBT
EBR	263			185	WBL
	128	89	97		
	NBL	NBT	NBR		

WB 1801 1,718 — 5%

3% 2,086 2,033 — EB

2040 AM

Military Trail

	SBR	SBT	SBL		
	129	668	607		
EBL	115			506	WBR
EBT	915			1,031	WBT
EBR	68			695	WBL
	139	870	890		
	NBL	NBT	NBR		

I-95 SB Ramps

	SBR	SBT	SBL		
	771		929		
EBL					WBR
EBT	1,582			1,380	WBT
EBR	757			790	WBL
	NBL	NBT	NBR		

WB 2233 2151 — 4%

3% 2411 2339 — EB

I-95 NB Ramps

	SBR	SBT	SBL		
EBL	600			557	WBR
EBT	1,911			1,646	WBT
EBR					WBL
	524		690		
	NBL	NBT	NBR		

WB 2170 2170 — 0%

0% 2511 2511 — EB

Garden Road

	SBR	SBT	SBL		
	113	105	80		
EBL	259			131	WBR
EBT	1,680			1,695	WBT
EBR	711			419	WBL
	273	164	182		
	NBL	NBT	NBR		

WB 2203 2081 — 6%

2% 2,601 2650 — EB

2020 PM

Military Trail

	SBR	SBT	SBL		
	129	914	337		
EBL	136			378	WBR
EBT	660			837	WBT
EBR	38			501	WBL
	60	788	430		
	NBL	NBT	NBR		

I-95 SB Ramps

	SBR	SBT	SBL		
	255		323		
EBL					WBR
EBT	936			1,402	WBT
EBR	563			1,250	WBL
	NBL	NBT	NBR		

WB 1,717 1657 — 4%

5% 1,427 1499 — EB

I-95 NB Ramps

	SBR	SBT	SBL		
EBL	397			795	WBR
EBT	862			2,028	WBT
EBR					WBL
	624		620		
	NBL	NBT	NBR		

WB 2652 2652 — 0%

0% 1259 1259 — EB

Garden Road

	SBR	SBT	SBL		
	288	70	107		
EBL	100			80	WBR
EBT	1,344			2,145	WBT
EBR	130			104	WBL
	207	70	190		
	NBL	NBT	NBR		

WB 2823 2,640 — 7%

6% 1482 1,574 — EB

2040 PM

Military Trail

	SBR	SBT	SBL		
	156	946	491		
EBL	139			469	WBR
EBT	862			1,097	WBT
EBR	61			773	WBL
	89	810	678		
	NBL	NBT	NBR		

I-95 SB Ramps

	SBR	SBT	SBL		
	423		523		
EBL					WBR
EBT	1,525			1,764	WBT
EBR	576			1,264	WBL
	NBL	NBT	NBR		

WB 2,338 2187 — 7%

3% 2,031 2102 — EB

I-95 NB Ramps

	SBR	SBT	SBL		
EBL	684			1,220	WBR
EBT	1,365			2,392	WBT
EBR					WBL
	636		628		
	NBL	NBT	NBR		

WB 3028 3028 — 0%

0% 2049 2049 — EB

Garden Road

	SBR	SBT	SBL		
	291	90	110		
EBL	138			83	WBR
EBT	1,437			2,621	WBT
EBR	414			223	WBL
	504	123	282		
	NBL	NBT	NBR		

WB 3612 3415 — 6%

0% 1993 1989 — EB

2020 AM

Military Trail

	SBR	SBT	SBL		
	186	842	708		
EBL	195			365	WBR
EBT	1,333			1,006	WBT
EBR	519			184	WBL
	578	745	445		
	NBL	NBT	NBR		

I-95 SB Ramps

	SBR	SBT	SBL		
WB	83		955		
1,555 1,644					
6%	EBL				WBR
	EBT	1,439		1,561	WBT
6%	EBR	906		742	WBL
2,486 2345					
EB					
	NBL	NBT	NBR		

I-95 NB Ramps

	SBR	SBT	SBL		
WB					
2303 2303					
0%	EBL	83		277	WBR
	EBT	2,311		1,471	WBT
0%	EBR				WBL
2394 2394					
EB	832		2,357		
	NBL	NBT	NBR		

2040 AM

Military Trail

	SBR	SBT	SBL		
	226	845	804		
EBL	277			592	WBR
EBT	1,481			1,363	WBT
EBR	523			257	WBL
	582	749	448		
	NBL	NBT	NBR		

I-95 SB Ramps

	SBR	SBT	SBL		
WB	86		988		
2211 2169					
2%	EBL				WBR
	EBT	1,893		2,083	WBT
3%	EBR	924		1,062	WBL
2733 2817					
EB					
	NBL	NBT	NBR		

I-95 NB Ramps

	SBR	SBT	SBL		
WB					
3145 3145					
0%	EBL	87		286	WBR
	EBT	2,794		2,295	WBT
0%	EBR				WBL
2,881 2881					
EB	850		2,783		
	NBL	NBT	NBR		

2020 PM

Military Trail

	SBR	SBT	SBL		
	235	928	531		
EBL	288			534	WBR
EBT	1,193			1,129	WBT
EBR	509			384	WBL
	601	994	543		
	NBL	NBT	NBR		

I-95 SB Ramps

	SBR	SBT	SBL		
WB	61		376		
2,047 2088					
2%	EBL				WBR
	EBT	1,420		2,027	WBT
4%	EBR	940		1,339	WBL
2267 2360					
EB					
	NBL	NBT	NBR		

I-95 NB Ramps

	SBR	SBT	SBL		
WB					
3366 3366					
0%	EBL	120		683	WBR
	EBT	1,675		2,418	WBT
0%	EBR				WBL
1795 1795					
EB	947		1,755		
	NBL	NBT	NBR		

2040 PM

Military Trail

	SBR	SBT	SBL		
	281	932	738		
EBL	390			812	WBR
EBT	1,465			1,453	WBT
EBR	512			474	WBL
	645	998	612		
	NBL	NBT	NBR		

I-95 SB Ramps

	SBR	SBT	SBL		
WB	67		439		
2,739 2653					
3%	EBL				WBR
	EBT	1,963		2,586	WBT
5%	EBR	998		1,671	WBL
2,815 2960					
EB					
	NBL	NBT	NBR		

I-95 NB Ramps

	SBR	SBT	SBL		
WB					
4257 4257					
0%	EBL	136		722	WBR
	EBT	2,265		3,232	WBT
0%	EBR				WBL
2401 2401					
EB	1,025		2,342		
	NBL	NBT	NBR		

TMTOOL INPUT SHEET

Project Description:

SECTION NO:	93680000	PREPARED BY:	Jesus Jimenez
FM NO.:	435803-1	FILE:	Version 1
PROJECT LIMITS:	I-95 @ Northlake Blvd. PD&E Study	DATE:	5/16/2017
DESIGN YEAR:	2040		
INTERSECTION:	Northlake Blvd & Military Trail		

NOTES:

Historical AADTs:

	YEAR	NORTH LEG AADT	EAST LEG AADT	SOUTH LEG AADT	WEST LEG AADT
	2011				
	2012				
	2013				
	2015	36,000	40,000	31,000	43,000
Model Volume:	2040	41,000	51,000	35,000	54,000

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
Base Year Model to Future Year Model GR =								
Recommended Growth Rate:	0.52%	CGR	0.98%	CGR	0.49%	CGR	0.92%	CGR

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years

2 = Linear Growth Throughout All Years

3 = Blend of Compound Growth First Ten Years, Linear Growth Thereafter (Based Upon the Base Year AADT)

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
			1		1		1		1	
		2015		36,000		40,000		31,000		43,000
NO. YEARS	5	2020	1.026	36,900	1.050	42,000	1.025	31,800	1.047	45,000
NO. YEARS	15	2030	1.081	38,900	1.158	46,300	1.076	33,400	1.147	49,300
NO. YEARS	25	2040	1.138	41,000	1.276	51,000	1.130	35,000	1.256	54,000

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
A.M.	2-Way Pk Hr Vol:		2,847			3,126			2,352			3,325		
7/20/2014		236	623	335	263	635	263	258	758	203	247	1,372	632	5,825
% TURNS:		20%	52%	28%	23%	55%	23%	21%	62%	17%	11%	61%	28%	
P.M.	2-Way Pk Hr Vol:		3,296			3,682			2,767			3,897		
7/20/2014		631	833	395	312	1,343	316	362	706	365	185	954	419	6,821
% TURNS:		34%	45%	21%	16%	68%	16%	25%	49%	25%	12%	61%	27%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

	NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.												
2015	20%	52%	28%	23%	55%	23%	21%	62%	17%	11%	61%	28%
2020	22%	50%	29%	24%	53%	23%	22%	59%	19%	13%	59%	29%
2030	22%	49%	29%	24%	53%	23%	23%	58%	19%	13%	58%	29%
2040	23%	48%	29%	24%	53%	23%	23%	56%	20%	14%	57%	29%
P.M.												
2015	34%	45%	21%	16%	68%	16%	25%	49%	25%	12%	61%	27%
2020	34%	43%	23%	17%	65%	17%	26%	47%	27%	14%	59%	28%
2030	34%	42%	23%	18%	65%	17%	26%	47%	27%	14%	58%	28%
2040	35%	42%	24%	18%	64%	18%	27%	46%	27%	14%	58%	28%

K & D FACTORS:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
	AM	PM	AM	PM	AM	PM	AM	PM
K FACTOR								
2015	7.9%	9.2%	7.8%	9.2%	7.6%	8.9%	7.7%	9.1%
2020	7.9%	9.1%	7.8%	9.2%	7.6%	8.9%	7.7%	9.1%
2030	7.8%	9.1%	7.7%	9.1%	7.6%	9.0%	7.7%	9.0%
2040	7.8%	9.0%	7.6%	9.0%	7.7%	9.0%	7.7%	9.0%
D FACTOR								
2015	41.9%	56.4%	37.1%	53.5%	51.8%	51.8%	67.7%	40.0%
2020	41.9%	56.4%	37.8%	54.1%	52.7%	52.7%	65.5%	39.0%
2030	41.9%	56.3%	39.0%	55.4%	54.5%	54.5%	61.0%	37.0%
2040	41.8%	56.3%	40.2%	56.6%	56.3%	56.3%	56.6%	35.0%

TMTOOL "TURNS" REPORT

DESIGN HOUR TURNS CALCULATIONS

SECTION NO: 93680000
FM NO.: 435803-1
PROJECT LIMITS: I-95 @ Northlake Blvd. PD&E Study
DESIGN YEAR: 2040
INTERSECTION: Northlake Blvd & Military Trail
PREPARED BY: Jesus Jimenez
FILE: Version 1

DATE: 5/16/2017
NOTES:

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
24 HR EST. AADT	2015	36,000	40,000	31,000	43,000
24 HR EST. AADT	2020	36,900	42,000	31,800	45,000
24 HR EST. AADT	2030	38,900	46,300	33,400	49,300
24 HR EST. AADT	2040	41,000	51,000	35,000	54,000

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
2015 2-WAY ADT		36,000			40,000			31,000			43,000		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	43,000	31,000	40,000	36,000	43,000	31,000	40,000	36,000	43,000	31,000	40,000	36,000
	38%	27%	35%	33%	39%	28%	34%	30%	36%	29%	37%	34%
2020 2-WAY ADT		36,900			42,000			31,800			45,000		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	45,000	31,800	42,000	36,900	45,000	31,800	42,000	36,900	45,000	31,800	42,000	36,900
	38%	27%	35%	32%	40%	28%	34%	30%	36%	29%	38%	33%
2030 2-WAY ADT		38,900			46,300			33,400			49,300		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	49,300	33,400	46,300	38,900	49,300	33,400	46,300	38,900	49,300	33,400	46,300	38,900
	38%	26%	36%	32%	41%	27%	34%	29%	37%	28%	39%	33%
2040 2-WAY ADT		41,000			51,000			35,000			54,000		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	54,000	35,000	51,000	41,000	54,000	35,000	51,000	41,000	54,000	35,000	51,000	41,000
	39%	25%	36%	32%	42%	27%	35%	28%	37%	28%	40%	32%

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M. DESIGN HR. TURNS													
2015	EST. TURNS	238	622	336	263	638	262	258	759	204	246	1,375	634
2020	EST. TURNS	274	626	367	293	787	277	295	771	244	278	1,414	649
2030	EST. TURNS	333	636	396	314	981	290	334	791	310	286	1,563	662
2040	EST. TURNS	403	642	433	346	1,223	304	381	826	390	294	1,705	678
P.M. DESIGN HR. TURNS													
2015	EST. TURNS	632	835	394	313	1,344	316	361	708	366	186	953	421
2020	EST. TURNS	677	842	430	350	1,416	342	391	713	414	210	1,065	431
2030	EST. TURNS	744	844	457	380	1,583	366	431	723	477	224	1,134	455
2040	EST. TURNS	819	845	495	419	1,870	390	476	743	550	242	1,241	486

LINK VOLUME CHECK		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
DESIGN HOUR A.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		1,194	1,656	2,850	1,161	1,969	3,130	1,219	1,131	2,350	2,251	1,079	3,330
2015	TURN SUMMARY	1,196	1,656	2,852	1,163	1,969	3,132	1,221	1,131	2,352	2,255	1,079	3,334
CONTROL LINK VOLUMES		1,218	1,692	2,910	1,233	2,037	3,270	1,275	1,145	2,420	2,275	1,195	3,470
2020	TURN SUMMARY	1,268	1,712	2,980	1,357	2,077	3,434	1,310	1,181	2,491	2,341	1,305	3,646
CONTROL LINK VOLUMES		1,273	1,767	3,040	1,388	2,172	3,560	1,389	1,161	2,550	2,316	1,474	3,790
2030	TURN SUMMARY	1,365	1,767	3,132	1,585	2,292	3,877	1,434	1,211	2,645	2,510	1,624	4,134
CONTROL LINK VOLUMES		1,330	1,850	3,180	1,561	2,319	3,880	1,510	1,170	2,680	2,344	1,796	4,140
2040	TURN SUMMARY	1,477	1,850	3,327	1,874	2,519	4,393	1,597	1,240	2,837	2,676	2,016	4,692
DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		1,859	1,441	3,300	1,971	1,709	3,680	1,433	1,337	2,770	1,558	2,342	3,900
2015	TURN SUMMARY	1,861	1,441	3,302	1,973	1,709	3,682	1,435	1,337	2,772	1,560	2,342	3,902
CONTROL LINK VOLUMES		1,898	1,472	3,370	2,084	1,766	3,850	1,498	1,342	2,840	1,588	2,482	4,070
2020	TURN SUMMARY	1,949	1,494	3,443	2,108	1,886	3,994	1,518	1,395	2,913	1,706	2,507	4,213
CONTROL LINK VOLUMES		1,986	1,544	3,530	2,328	1,872	4,200	1,632	1,368	3,000	1,646	2,804	4,450
2030	TURN SUMMARY	2,045	1,558	3,603	2,329	2,022	4,351	1,631	1,434	3,065	1,813	2,804	4,617
CONTROL LINK VOLUMES		2,077	1,613	3,690	2,598	1,992	4,590	1,772	1,378	3,150	1,701	3,159	4,860
2040	TURN SUMMARY	2,159	1,648	3,807	2,679	2,212	4,891	1,770	1,477	3,247	1,968	3,239	5,207

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

SECTION NO:	93680000	PREPARED BY:	Jesus Jimenez
FM NO.:	435803-1	FILE:	Version 1
PROJECT LIMITS:	I-95 @ Northlake Blvd. PD&E Study	DATE:	5/16/2017
DESIGN YEAR:	2040		
INTERSECTION:	Northlake Blvd & Keating Drive		

NOTES:

Historical AADTs:

	YEAR	NORTH LEG AADT	EAST LEG AADT	SOUTH LEG AADT	WEST LEG AADT
	2011				
	2012				
	2013				
	2015	6,500	54,000	13,000	40,000
Model Volume:	2040	7,400	68,000	15,000	51,000

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
Base Year Model to Future Year Model GR =								
Recommended Growth Rate:	**0.52%**	**CGR**	**0.93%**	**CGR**	**0.57%**	**CGR**	**0.98%**	**CGR**

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years — NORTH LEG: **1**; EAST LEG: **1**; SOUTH LEG: **1**; WEST LEG: **1**

2 = Linear Growth Throughout All Years

3 = Blend of Compound Growth First Ten Years, Linear Growth Thereafter (Based Upon the Base Year AADT)

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
		2015		6,500		54,000		13,000		40,000
NO. YEARS	5	2020	1.026	6,700	1.047	56,500	1.029	13,400	1.050	42,000
NO. YEARS	15	2030	1.081	7,000	1.148	62,000	1.089	14,200	1.158	46,300
NO. YEARS	25	2040	1.138	7,400	1.259	68,000	1.153	15,000	1.276	51,000

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
A.M.	2-Way Pk Hr Vol:	251			3,660			308			3,475		
7/20/2014	27	9	134	57	1,251	92	74	6	48	79	2,052	18	3,847
% TURNS:	16%	5%	79%	4%	89%	7%	58%	5%	38%	4%	95%	1%	
P.M.	2-Way Pk Hr Vol:	528			4,306			1,096			4,032		
7/20/2014	42	45	153	198	1,814	253	258	42	257	241	1,630	48	4,981
% TURNS:	18%	19%	64%	9%	80%	11%	46%	8%	46%	13%	85%	3%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

	NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.												
2015	16%	5%	79%	4%	89%	7%	58%	5%	38%	4%	95%	1%
2020	18%	6%	76%	5%	87%	8%	57%	5%	38%	5%	93%	2%
2030	19%	6%	75%	5%	87%	8%	57%	5%	38%	5%	93%	2%
2040	20%	6%	74%	5%	86%	9%	57%	5%	38%	6%	92%	2%
P.M.												
2015	18%	19%	64%	9%	80%	11%	46%	8%	46%	13%	85%	3%
2020	20%	18%	62%	9%	79%	12%	47%	7%	46%	13%	84%	3%
2030	20%	18%	62%	9%	79%	12%	47%	7%	45%	13%	84%	3%
2040	21%	17%	62%	9%	78%	13%	48%	7%	45%	13%	83%	3%

K & D FACTORS:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
	AM	PM	AM	PM	AM	PM	AM	PM
K FACTOR								
2015	3.9%	8.1%	6.8%	8.0%	2.4%	8.4%	8.7%	10.1%
2020	4.0%	8.3%	7.0%	8.2%	2.5%	8.5%	8.5%	9.9%
2030	4.4%	8.6%	7.4%	8.6%	2.7%	8.8%	8.0%	9.4%
2040	4.7%	9.0%	7.8%	9.0%	2.9%	9.0%	7.6%	9.0%
D FACTOR								
2015	67.7%	45.5%	38.3%	52.6%	41.6%	50.8%	61.8%	47.6%
2020	65.3%	43.0%	39.1%	53.4%	42.5%	51.7%	60.8%	46.5%
2030	60.3%	38.1%	40.7%	55.0%	44.3%	53.6%	58.7%	44.4%
2040	55.4%	33.1%	42.3%	56.6%	46.1%	55.4%	56.6%	42.4%

TMTOOL "TURNS" REPORT

DESIGN HOUR TURNS CALCULATIONS

SECTION NO: 93680000
FM NO.: 435803-1
PROJECT LIMITS: I-95 @ Northlake Blvd. PD&E Study
DESIGN YEAR: 2040
INTERSECTION: Northlake Blvd & Keating Drive
PREPARED BY: Jesus Jimenez
FILE: Version 1

DATE: 5/16/2017
NOTES:

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
24 HR EST. AADT	2015	6,500	54,000	13,000	40,000
24 HR EST. AADT	2020	6,700	56,500	13,400	42,000
24 HR EST. AADT	2030	7,000	62,000	14,200	46,300
24 HR EST. AADT	2040	7,400	68,000	15,000	51,000

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
2015 2-WAY ADT		6,500			54,000			13,000			40,000		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		40,000	13,000	54,000	6,500	40,000	13,000	54,000	6,500	40,000	13,000	54,000	6,500
		37%	12%	50%	11%	67%	22%	54%	6%	40%	18%	73%	9%
2020 2-WAY ADT		6,700			56,500			13,400			42,000		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		42,000	13,400	56,500	6,700	42,000	13,400	56,500	6,700	42,000	13,400	56,500	6,700
		38%	12%	50%	11%	68%	22%	54%	6%	40%	17%	74%	9%
2030 2-WAY ADT		7,000			62,000			14,200			46,300		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		46,300	14,200	62,000	7,000	46,300	14,200	62,000	7,000	46,300	14,200	62,000	7,000
		38%	12%	51%	10%	69%	21%	54%	6%	40%	17%	75%	8%
2040 2-WAY ADT		7,400			68,000			15,000			51,000		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		51,000	15,000	68,000	7,400	51,000	15,000	68,000	7,400	51,000	15,000	68,000	7,400
		38%	11%	51%	10%	69%	20%	54%	6%	40%	17%	75%	8%

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M. DESIGN HR. TURNS													
2015	EST. TURNS	27	9	134	56	1,255	93	74	6	48	80	2,052	18
2020	EST. TURNS	28	11	151	64	1,368	109	95	7	50	81	2,093	24
2030	EST. TURNS	30	12	182	99	1,603	150	144	8	51	82	2,315	27
2040	EST. TURNS	31	13	219	135	1,917	196	207	9	52	83	2,562	29
P.M. DESIGN HR. TURNS													
2015	EST. TURNS	42	45	153	200	1,813	255	259	42	256	242	1,632	48
2020	EST. TURNS	45	47	161	226	1,945	295	307	43	258	244	1,704	54
2030	EST. TURNS	46	49	175	292	2,236	379	416	46	261	246	1,860	55
2040	EST. TURNS	48	50	188	370	2,533	452	545	48	265	247	2,053	56

LINK VOLUME CHECK		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
DESIGN HOUR A.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		170	80	250	1,400	2,260	3,660	128	182	310	2,149	1,331	3,480
2015	TURN SUMMARY	170	80	250	1,404	2,260	3,664	128	182	310	2,151	1,331	3,482
CONTROL LINK VOLUMES		177	93	270	1,541	2,409	3,950	141	189	330	2,163	1,397	3,560
2020	TURN SUMMARY	190	95	285	1,542	2,339	3,881	152	201	353	2,198	1,446	3,644
CONTROL LINK VOLUMES		185	125	310	1,863	2,717	4,580	171	209	380	2,185	1,535	3,720
2030	TURN SUMMARY	224	135	359	1,852	2,642	4,494	204	244	448	2,425	1,684	4,109
CONTROL LINK VOLUMES		194	156	350	2,242	3,068	5,310	203	237	440	2,196	1,684	3,880
2040	TURN SUMMARY	263	173	436	2,248	2,988	5,236	268	292	560	2,674	2,000	4,674
DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		240	290	530	2,265	2,045	4,310	557	543	1,100	1,919	2,111	4,030
2015	TURN SUMMARY	240	290	530	2,268	2,045	4,313	558	543	1,101	1,923	2,111	4,034
CONTROL LINK VOLUMES		239	321	560	2,468	2,152	4,620	592	548	1,140	1,928	2,212	4,140
2020	TURN SUMMARY	253	323	576	2,465	2,172	4,637	608	586	1,194	2,002	2,247	4,249
CONTROL LINK VOLUMES		230	380	610	2,929	2,401	5,330	667	583	1,250	1,941	2,429	4,370
2030	TURN SUMMARY	270	393	663	2,907	2,451	5,358	723	673	1,396	2,160	2,544	4,704
CONTROL LINK VOLUMES		221	449	670	3,464	2,656	6,120	748	602	1,350	1,944	2,646	4,590
2040	TURN SUMMARY	286	474	760	3,355	2,786	6,141	859	749	1,608	2,355	2,847	5,202

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

SECTION NO:	93680000	PREPARED BY:	Jesus Jimenez
FM NO.:	435803-1	FILE:	Version 1
PROJECT LIMITS:	I-95 @ Northlake Blvd. PD&E Study	DATE:	5/16/2017
DESIGN YEAR:	2040		
INTERSECTION:	Northlake Blvd & I-95 SB/NB Ramps		

NOTES:

Historical AADTs:

	YEAR	NORTH LEG AADT	EAST LEG AADT	SOUTH LEG AADT	WEST LEG AADT
	2011				
	2012				
	2013				
	2015	28,000	56,000	28,000	54,000
Model Volume:	2040	40,000	66,000	32,000	68,000

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
Base Year Model to Future Year Model GR =								
Recommended Growth Rate:	1.44%	CGR	0.66%	CGR	0.54%	CGR	0.93%	CGR

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years

2 = Linear Growth Throughout All Years

3 = Blend of Compound Growth First Ten Years, Linear Growth Thereafter (Based Upon the Base Year AADT)

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
				1		1		1		1
		2015		28,000		56,000		28,000		54,000
NO. YEARS	5	2020	1.074	30,100	1.033	57,900	1.027	28,800	1.047	56,500
NO. YEARS	15	2030	1.239	34,700	1.104	61,800	1.084	30,400	1.148	62,000
NO. YEARS	25	2040	1.430	40,000	1.179	66,000	1.144	32,000	1.259	68,000

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
A.M.	2-Way Pk Hr Vol:		1,929			4,452			3,003			3,702		
7/20/2014		348	0	572	392	638	891	986	0	445	681	973	617	6,543
% TURNS:		38%	0%	62%	20%	33%	46%	69%	0%	31%	30%	43%	27%	
P.M.	2-Way Pk Hr Vol:		2,014			5,251			3,242			4,523		
7/20/2014		481	0	455	664	1,273	928	945	0	672	697	986	414	7,515
% TURNS:		51%	0%	49%	23%	44%	32%	58%	0%	42%	33%	47%	20%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.													
	2015	38%	0%	62%	20%	33%	46%	69%	0%	31%	30%	43%	27%
	2020	38%	2%	60%	21%	35%	44%	66%	2%	32%	29%	44%	27%
	2030	38%	2%	59%	21%	35%	44%	65%	3%	32%	29%	44%	27%
	2040	38%	3%	58%	22%	36%	42%	64%	4%	32%	29%	44%	27%
P.M.													
	2015	51%	0%	49%	23%	44%	32%	58%	0%	42%	33%	47%	20%
	2020	50%	2%	48%	23%	45%	32%	57%	2%	41%	32%	47%	20%
	2030	50%	2%	48%	24%	45%	31%	56%	3%	41%	32%	47%	21%
	2040	50%	3%	47%	24%	45%	31%	55%	4%	41%	32%	47%	21%

K & D FACTORS:

		NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
		AM	PM	AM	PM	AM	PM	AM	PM
K FACTOR									
	2015	6.9%	7.2%	8.0%	9.4%	10.7%	11.6%	6.9%	8.4%
	2020	7.3%	7.6%	7.9%	9.3%	10.2%	11.1%	7.0%	8.5%
	2030	8.0%	8.3%	7.7%	9.2%	9.2%	10.0%	7.2%	8.8%
	2040	8.7%	9.0%	7.6%	9.0%	8.1%	9.0%	7.5%	9.0%
D FACTOR									
	2015	47.7%	46.5%	43.1%	54.6%	47.7%	49.9%	61.3%	46.4%
	2020	47.7%	46.5%	43.6%	55.0%	47.7%	49.9%	60.4%	45.4%
	2030	47.7%	46.5%	44.4%	55.8%	47.7%	49.9%	58.5%	43.5%
	2040	47.7%	46.5%	45.2%	56.6%	47.7%	49.9%	56.6%	41.6%

TMTOOL "TURNS" REPORT

DESIGN HOUR TURNS CALCULATIONS

SECTION NO: 93680000
FM NO.: 435803-1
PROJECT LIMITS: I-95 @ Northlake Blvd. PD&E Study
DESIGN YEAR: 2040
INTERSECTION: Northlake Blvd & I-95 SB/NB Ramps
PREPARED BY: Jesus Jimenez
FILE: Version 1

DATE: 5/16/2017
NOTES:

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
24 HR EST. AADT	2015	28,000	56,000	28,000	54,000
24 HR EST. AADT	2020	30,100	57,900	28,800	56,500
24 HR EST. AADT	2030	34,700	61,800	30,400	62,000
24 HR EST. AADT	2040	40,000	66,000	32,000	68,000

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
2015 2-WAY ADT		28,000			56,000			28,000			54,000		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		54,000	28,000	56,000	28,000	54,000	28,000	56,000	28,000	54,000	28,000	56,000	28,000
		39%	20%	41%	25%	49%	25%	41%	20%	39%	25%	50%	25%
2020 2-WAY ADT		30,100			57,900			28,800			56,500		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		56,500	28,800	57,900	30,100	56,500	28,800	57,900	30,100	56,500	28,800	57,900	30,100
		39%	20%	40%	26%	49%	25%	40%	21%	39%	25%	50%	26%
2030 2-WAY ADT		34,700			61,800			30,400			62,000		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		62,000	30,400	61,800	34,700	62,000	30,400	61,800	34,700	62,000	30,400	61,800	34,700
		40%	20%	40%	27%	49%	24%	39%	22%	39%	24%	49%	27%
2040 2-WAY ADT		40,000			66,000			32,000			68,000		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		68,000	32,000	66,000	40,000	68,000	32,000	66,000	40,000	68,000	32,000	66,000	40,000
		41%	19%	40%	29%	49%	23%	38%	23%	39%	23%	48%	29%

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M. DESIGN HR. TURNS													
2015	EST. TURNS	347	0	572	393	637	890	985	0	444	679	972	617
2020	EST. TURNS	442	0	690	473	705	894	1,089	0	503	683	1,035	748
2030	EST. TURNS	681	0	867	589	821	901	1,103	0	515	687	1,099	922
2040	EST. TURNS	922	0	1,042	742	951	910	1,117	0	527	691	1,166	1,060
P.M. DESIGN HR. TURNS													
2015	EST. TURNS	480	0	455	662	1,272	927	944	0	671	696	986	412
2020	EST. TURNS	562	0	549	777	1,385	944	1,043	0	688	711	1,046	559
2030	EST. TURNS	797	0	668	1,011	1,584	975	1,056	0	723	737	1,095	824
2040	EST. TURNS	1,036	0	771	1,259	1,793	1,013	1,069	0	749	768	1,109	1,103

LINK VOLUME CHECK		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
DESIGN HOUR A.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		920	1,010	1,930	1,921	2,529	4,450	1,431	1,569	3,000	2,271	1,429	3,700
2015	TURN SUMMARY	919	1,010	1,929	1,919	2,529	4,448	1,430	1,569	2,999	2,269	1,429	3,698
CONTROL LINK VOLUMES		1,041	1,139	2,180	1,986	2,574	4,560	1,401	1,539	2,940	2,382	1,558	3,940
2020	TURN SUMMARY	1,132	1,221	2,353	2,072	2,815	4,887	1,592	1,577	3,169	2,466	1,649	4,115
CONTROL LINK VOLUMES		1,320	1,450	2,770	2,118	2,652	4,770	1,330	1,460	2,790	2,622	1,858	4,480
2030	TURN SUMMARY	1,548	1,511	3,059	2,312	3,069	5,381	1,618	1,589	3,206	2,708	2,017	4,725
CONTROL LINK VOLUMES		1,659	1,821	3,480	2,259	2,741	5,000	1,242	1,368	2,610	2,879	2,211	5,090
2040	TURN SUMMARY	1,965	1,803	3,767	2,604	3,326	5,930	1,645	1,601	3,246	2,918	2,401	5,319
DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		936	1,074	2,010	2,865	2,385	5,250	1,617	1,623	3,240	2,097	2,423	4,520
2015	TURN SUMMARY	935	1,074	2,009	2,861	2,385	5,246	1,615	1,623	3,238	2,094	2,423	4,517
CONTROL LINK VOLUMES		1,057	1,213	2,270	2,960	2,430	5,390	1,589	1,601	3,190	2,181	2,619	4,800
2020	TURN SUMMARY	1,111	1,336	2,447	3,107	2,638	5,745	1,732	1,656	3,388	2,316	2,636	4,952
CONTROL LINK VOLUMES		1,335	1,535	2,870	3,155	2,505	5,660	1,521	1,529	3,050	2,361	3,069	5,430
2030	TURN SUMMARY	1,465	1,835	3,300	3,570	2,819	6,389	1,779	1,711	3,490	2,657	3,104	5,761
CONTROL LINK VOLUMES		1,673	1,927	3,600	3,362	2,578	5,940	1,436	1,444	2,880	2,547	3,573	6,120
2040	TURN SUMMARY	1,807	2,361	4,169	4,065	2,949	7,014	1,818	1,781	3,599	2,980	3,578	6,558

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

SECTION NO:	93680000	PREPARED BY:	Jesus Jimenez
FM NO.:	435803-1	FILE:	Version 1
PROJECT LIMITS:	I-95 @ Northlake Blvd. PD&E Study	DATE:	5/16/2017
DESIGN YEAR:	2040		
INTERSECTION:	NorthLake Blvd & Sunrise Blvd		

NOTES:

Historical AADTs:

	YEAR	NORTH LEG AADT	EAST LEG AADT	SOUTH LEG AADT	WEST LEG AADT
	2011				
	2012				
	2013				
	2015	5,500	62,000	8,800	56,000
Model Volume:	2040	6,200	74,000	10,000	66,000

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
Base Year Model to Future Year Model GR =								
Recommended Growth Rate:	**0.48%**	**CGR**	**0.71%**	**CGR**	**0.51%**	**CGR**	**0.66%**	**CGR**

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years

2 = Linear Growth Throughout All Years

3 = Blend of Compound Growth First Ten Years, Linear Growth Thereafter (Based Upon the Base Year AADT)

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
				1		**1**		**1**		**1**
		2015		5,500		62,000		8,800		56,000
NO. YEARS	5	2020	1.024	5,600	1.036	64,200	1.026	9,000	1.033	57,900
NO. YEARS	15	2030	1.074	5,900	1.112	68,900	1.080	9,500	1.104	61,800
NO. YEARS	25	2040	1.127	6,200	1.193	74,000	1.136	10,000	1.179	66,000

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
A.M.	2-Way Pk Hr Vol:		290			3,850			663			3,905		
7/20/2014		44	18	142	36	1,432	125	120	8	235	157	1,995	42	4,354
% TURNS:		22%	9%	70%	2%	90%	8%	33%	2%	65%	7%	91%	2%	
P.M.	2-Way Pk Hr Vol:		265			4,591			1,036			4,802		
7/20/2014		51	15	98	31	2,276	181	204	16	444	176	1,801	54	5,347
% TURNS:		31%	9%	60%	1%	91%	7%	31%	2%	67%	9%	89%	3%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.													
	2015	22%	9%	70%	2%	90%	8%	33%	2%	65%	7%	91%	2%
	2020	24%	9%	68%	3%	89%	8%	35%	2%	63%	8%	90%	2%
	2030	24%	9%	67%	3%	89%	8%	35%	2%	62%	8%	90%	3%
	2040	25%	8%	66%	3%	88%	9%	36%	3%	61%	8%	89%	3%
P.M.													
	2015	31%	9%	60%	1%	91%	7%	31%	2%	67%	9%	89%	3%
	2020	32%	9%	59%	2%	90%	8%	33%	3%	65%	9%	88%	3%
	2030	33%	9%	58%	2%	90%	8%	33%	3%	64%	9%	88%	3%
	2040	33%	9%	58%	2%	90%	8%	34%	3%	63%	9%	88%	3%

K & D FACTORS:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
	AM	PM	AM	PM	AM	PM	AM	PM
K FACTOR								
2015	5.3%	4.8%	6.2%	7.4%	7.5%	11.8%	7.0%	8.6%
2020	6.0%	5.6%	6.5%	7.7%	7.0%	11.2%	7.1%	8.7%
2030	7.5%	7.1%	7.2%	8.4%	5.9%	10.1%	7.2%	8.8%
2040	9.0%	8.5%	7.8%	9.0%	4.8%	9.0%	7.4%	9.0%
D FACTOR								
2015	70.3%	61.9%	41.4%	54.2%	54.8%	64.1%	56.2%	42.3%
2020	69.3%	60.8%	41.9%	54.7%	54.9%	64.3%	56.3%	42.4%
2030	67.1%	58.7%	42.8%	55.6%	55.3%	64.6%	56.4%	42.5%
2040	65.0%	56.5%	43.8%	56.6%	55.7%	65.0%	56.6%	42.7%

TMTOOL "TURNS" REPORT

DESIGN HOUR TURNS CALCULATIONS

SECTION NO: 93680000
FM NO.: 435803-1
PROJECT LIMITS: I-95 @ Northlake Blvd. PD&E Study
DESIGN YEAR: 2040
INTERSECTION: NorthLake Blvd & Sunrise Blvd
PREPARED BY: Jesus Jimenez
FILE: Version 1

DATE: 5/16/2017
NOTES:

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
24 HR EST. AADT	2015	5,500	62,000	8,800	56,000
24 HR EST. AADT	2020	5,600	64,200	9,000	57,900
24 HR EST. AADT	2030	5,900	68,900	9,500	61,800
24 HR EST. AADT	2040	6,200	74,000	10,000	66,000

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
2015	2-WAY ADT		5,500			62,000			8,800			56,000	
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		56,000	8,800	62,000	5,500	56,000	8,800	62,000	5,500	56,000	8,800	62,000	5,500
		44%	7%	49%	8%	80%	13%	50%	4%	45%	12%	81%	7%
2020	2-WAY ADT		5,600			64,200			9,000			57,900	
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		57,900	9,000	64,200	5,600	57,900	9,000	64,200	5,600	57,900	9,000	64,200	5,600
		44%	7%	49%	8%	80%	12%	50%	4%	45%	11%	81%	7%
2030	2-WAY ADT		5,900			68,900			9,500			61,800	
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		61,800	9,500	68,900	5,900	61,800	9,500	68,900	5,900	61,800	9,500	68,900	5,900
		44%	7%	49%	8%	80%	12%	50%	4%	45%	11%	82%	7%
2040	2-WAY ADT		6,200			74,000			10,000			66,000	
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		66,000	10,000	74,000	6,200	66,000	10,000	74,000	6,200	66,000	10,000	74,000	6,200
		44%	7%	49%	8%	80%	12%	51%	4%	45%	11%	82%	7%

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M. DESIGN HR. TURNS													
2015	EST. TURNS	44	18	142	36	1,436	123	119	8	236	156	1,996	42
2020	EST. TURNS	70	20	168	50	1,640	131	133	10	237	177	2,265	99
2030	EST. TURNS	87	22	238	81	1,864	139	147	12	239	196	2,521	104
2040	EST. TURNS	106	24	316	130	2,121	145	153	14	241	216	2,782	110
P.M. DESIGN HR. TURNS													
2015	EST. TURNS	51	15	98	33	2,274	183	204	17	444	178	1,800	57
2020	EST. TURNS	77	17	116	48	2,427	189	226	18	446	181	2,157	62
2030	EST. TURNS	107	19	165	85	2,785	201	253	19	448	186	2,307	72
2040	EST. TURNS	139	21	219	133	3,227	208	279	20	449	188	2,442	78

LINK VOLUME CHECK		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
DESIGN HOUR A.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		204	86	290	1,593	2,257	3,850	363	297	660	2,194	1,716	3,910
2015	TURN SUMMARY	204	86	290	1,595	2,257	3,852	363	297	660	2,194	1,716	3,910
CONTROL LINK VOLUMES		233	107	340	1,754	2,436	4,190	345	285	630	2,299	1,791	4,090
2020	TURN SUMMARY	258	159	417	1,821	2,566	4,387	380	329	709	2,542	1,947	4,489
CONTROL LINK VOLUMES		297	143	440	2,114	2,826	4,940	308	252	560	2,521	1,949	4,470
2030	TURN SUMMARY	346	197	543	2,084	2,906	4,990	398	358	756	2,822	2,190	5,012
CONTROL LINK VOLUMES		363	197	560	2,529	3,251	5,780	265	215	480	2,764	2,116	4,880
2040	TURN SUMMARY	446	253	699	2,396	3,251	5,647	407	385	792	3,108	2,468	5,576
DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		164	106	270	2,488	2,102	4,590	664	376	1,040	2,031	2,769	4,800
2015	TURN SUMMARY	164	106	270	2,490	2,102	4,592	665	376	1,041	2,034	2,769	4,803
CONTROL LINK VOLUMES		189	121	310	2,711	2,249	4,960	649	361	1,010	2,125	2,885	5,010
2020	TURN SUMMARY	210	129	339	2,665	2,499	5,164	690	388	1,077	2,401	2,950	5,351
CONTROL LINK VOLUMES		244	176	420	3,205	2,555	5,760	621	339	960	2,322	3,138	5,460
2030	TURN SUMMARY	291	176	467	3,072	2,725	5,797	720	406	1,126	2,564	3,340	5,904
CONTROL LINK VOLUMES		300	230	530	3,770	2,890	6,660	585	315	900	2,537	3,403	5,940
2040	TURN SUMMARY	379	231	610	3,567	2,940	6,507	747	417	1,164	2,709	3,814	6,523

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

SECTION NO:	93001000	PREPARED BY:	Jesus Jimenez
FM NO.:	435803-1	FILE:	Version 1
PROJECT LIMITS:	I-95 @ Northlake Blvd. PD&E Study	DATE:	5/16/2017
DESIGN YEAR:	2040		
INTERSECTION:	PGA Blvd & Military Trail		

NOTES:

Historical AADTs:

	YEAR	NORTH LEG AADT	EAST LEG AADT	SOUTH LEG AADT	WEST LEG AADT
	2011				
	2012				
	2013				
	2015	40,000	53,000	40,000	46,000
Model Volume:	2040	45,000	60,000	45,000	52,000

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
Base Year Model to Future Year Model GR =								
Recommended Growth Rate:	**0.47%**	**CGR**	**0.50%**	**CGR**	**0.47%**	**CGR**	**0.49%**	**CGR**

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years

2 = Linear Growth Throughout All Years

3 = Blend of Compound Growth First Ten Years, Linear Growth Thereafter (Based Upon the Base Year AADT)

			NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
			1		**1**		**1**		**1**	
		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
		2015		40,000		53,000		40,000		46,000
NO. YEARS	5	2020	1.024	40,900	1.025	54,300	1.024	40,900	1.025	47,100
NO. YEARS	15	2030	1.073	42,900	1.078	57,100	1.073	42,900	1.076	49,500
NO. YEARS	25	2040	1.124	45,000	1.133	60,000	1.124	45,000	1.130	52,000

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
A.M.	2-Way Pk Hr Vol:		2,872			3,754			3,228			3,600		
7/20/2014		147	840	677	315	886	140	410	745	576	517	1,326	148	6,727
% TURNS:		9%	50%	41%	23%	66%	10%	24%	43%	33%	26%	67%	7%	
P.M.	2-Way Pk Hr Vol:		3,324			4,090			3,880			3,804		
7/20/2014		198	926	504	463	1,089	336	522	994	600	502	1,176	239	7,549
% TURNS:		12%	57%	31%	25%	58%	18%	25%	47%	28%	26%	61%	12%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

	NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.												
2015	9%	50%	41%	23%	66%	10%	24%	43%	33%	26%	67%	7%
2020	11%	48%	40%	24%	63%	13%	25%	42%	33%	26%	64%	10%
2030	12%	48%	40%	25%	62%	13%	25%	41%	33%	26%	63%	10%
2040	13%	47%	40%	25%	61%	14%	26%	41%	33%	27%	62%	11%
P.M.												
2015	12%	57%	31%	25%	58%	18%	25%	47%	28%	26%	61%	12%
2020	14%	54%	32%	25%	56%	19%	26%	45%	29%	27%	59%	14%
2030	15%	53%	32%	25%	55%	20%	26%	45%	29%	27%	59%	15%
2040	16%	52%	32%	26%	54%	20%	27%	44%	29%	27%	58%	15%

K & D FACTORS:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
	AM	PM	AM	PM	AM	PM	AM	PM
K FACTOR								
2015	7.2%	8.3%	7.1%	7.7%	8.1%	9.7%	7.8%	8.3%
2020	7.3%	8.4%	7.3%	8.0%	7.9%	9.6%	8.0%	8.4%
2030	7.6%	8.7%	7.9%	8.5%	7.7%	9.3%	8.3%	8.7%
2040	7.9%	9.0%	8.4%	9.0%	7.4%	9.0%	8.6%	9.0%
D FACTOR								
2015	57.9%	49.0%	35.7%	46.2%	53.6%	54.5%	55.3%	50.4%
2020	57.4%	48.5%	37.7%	48.2%	53.8%	54.7%	55.5%	50.6%
2030	56.4%	47.5%	41.7%	52.2%	54.1%	55.1%	55.8%	50.9%
2040	55.4%	46.4%	45.8%	56.2%	54.5%	55.4%	56.2%	51.3%

TMTOOL "TURNS" REPORT

DESIGN HOUR TURNS CALCULATIONS

SECTION NO: 93001000
FM NO.: 435803-1
PROJECT LIMITS: I-95 @ Northlake Blvd. PD&E Study
DESIGN YEAR: 2040
INTERSECTION: PGA Blvd & Military Trail
PREPARED BY: Jesus Jimenez
FILE: Version 1

DATE: 5/16/2017
NOTES:

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
24 HR EST. AADT	2015	40,000	53,000	40,000	46,000
24 HR EST. AADT	2020	40,900	54,300	40,900	47,100
24 HR EST. AADT	2030	42,900	57,100	42,900	49,500
24 HR EST. AADT	2040	45,000	60,000	45,000	52,000

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
2015 2-WAY ADT			40,000			53,000			40,000			46,000	
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		46,000	40,000	53,000	40,000	46,000	40,000	53,000	40,000	46,000	40,000	53,000	40,000
		33%	29%	38%	32%	37%	32%	38%	29%	33%	30%	40%	30%
2020 2-WAY ADT			40,900			54,300			40,900			47,100	
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		47,100	40,900	54,300	40,900	47,100	40,900	54,300	40,900	47,100	40,900	54,300	40,900
		33%	29%	38%	32%	37%	32%	38%	29%	33%	30%	40%	30%
2030 2-WAY ADT			42,900			57,100			42,900			49,500	
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		49,500	42,900	57,100	42,900	49,500	42,900	57,100	42,900	49,500	42,900	57,100	42,900
		33%	29%	38%	32%	37%	32%	38%	29%	33%	30%	40%	30%
2040 2-WAY ADT			45,000			60,000			45,000			52,000	
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		52,000	45,000	60,000	45,000	52,000	45,000	60,000	45,000	52,000	45,000	60,000	45,000
		33%	29%	38%	32%	37%	32%	38%	29%	33%	30%	40%	30%

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M. DESIGN HR. TURNS													
2015	EST. TURNS	147	841	675	314	886	140	410	744	576	518	1,324	148
2020	EST. TURNS	186	842	708	365	1,006	184	445	745	578	519	1,333	195
2030	EST. TURNS	203	844	757	472	1,181	215	446	747	580	521	1,413	232
2040	EST. TURNS	226	845	804	592	1,363	257	448	749	582	523	1,481	277
P.M. DESIGN HR. TURNS													
2015	EST. TURNS	197	926	504	462	1,087	337	523	992	599	502	1,175	238
2020	EST. TURNS	235	928	531	534	1,129	384	543	994	601	509	1,193	288
2030	EST. TURNS	254	930	663	663	1,294	427	574	996	623	510	1,329	332
2040	EST. TURNS	281	932	738	812	1,453	474	612	998	645	512	1,465	390

LINK VOLUME CHECK		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
DESIGN HOUR A.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		1,664	1,206	2,870	1,341	2,409	3,750	1,731	1,499	3,230	1,991	1,609	3,600
2015	TURN SUMMARY	1,663	1,206	2,869	1,340	2,409	3,749	1,730	1,499	3,229	1,990	1,609	3,599
CONTROL LINK VOLUMES		1,719	1,271	2,990	1,504	2,486	3,990	1,745	1,495	3,240	2,083	1,667	3,750
2020	TURN SUMMARY	1,736	1,305	3,041	1,555	2,486	4,041	1,768	1,545	3,313	2,047	1,770	3,817
CONTROL LINK VOLUMES		1,838	1,422	3,260	1,872	2,608	4,480	1,777	1,503	3,280	2,284	1,806	4,090
2030	TURN SUMMARY	1,804	1,451	3,255	1,868	2,616	4,484	1,773	1,580	3,353	2,166	1,964	4,130
CONTROL LINK VOLUMES		1,962	1,578	3,540	2,297	2,723	5,020	1,807	1,513	3,320	2,501	1,949	4,450
2040	TURN SUMMARY	1,875	1,618	3,493	2,211	2,733	4,944	1,779	1,625	3,404	2,281	2,170	4,451
DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		1,628	1,692	3,320	1,888	2,202	4,090	2,116	1,764	3,880	1,917	1,883	3,800
2015	TURN SUMMARY	1,626	1,692	3,318	1,886	2,202	4,088	2,114	1,764	3,878	1,915	1,883	3,798
CONTROL LINK VOLUMES		1,675	1,785	3,460	2,086	2,244	4,330	2,139	1,771	3,910	2,005	1,955	3,960
2020	TURN SUMMARY	1,693	1,815	3,508	2,047	2,267	4,314	2,138	1,821	3,959	1,990	1,964	3,954
CONTROL LINK VOLUMES		1,776	1,964	3,740	2,529	2,321	4,850	2,192	1,788	3,980	2,195	2,115	4,310
2030	TURN SUMMARY	1,848	1,990	3,838	2,384	2,565	4,949	2,192	1,868	4,060	2,170	2,171	4,341
CONTROL LINK VOLUMES		1,881	2,169	4,050	3,035	2,365	5,400	2,244	1,806	4,050	2,400	2,280	4,680
2040	TURN SUMMARY	1,952	2,200	4,152	2,739	2,815	5,554	2,256	1,919	4,175	2,367	2,380	4,747

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

SECTION NO:	93001000	PREPARED BY:	Jesus Jimenez
FM NO.:	435803-1	FILE:	Version 1
PROJECT LIMITS:	I-95 @ Northlake Blvd. PD&E Study	DATE:	5/16/2017
DESIGN YEAR:	2040		
INTERSECTION:	PGA Blvd & SB/NB Ramps		

NOTES:

Historical AADTs:

	YEAR	NORTH LEG AADT	EAST LEG AADT	SOUTH LEG AADT	WEST LEG AADT
	2011				
	2012				
	2013				
	2015	12,300	81,000	56,400	53,000
Model Volume:	2040	15,900	92,000	64,000	60,000

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
Base Year Model to Future Year Model GR =								
Recommended Growth Rate:	1.03%	CGR	0.51%	CGR	0.51%	CGR	0.50%	CGR

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years

2 = Linear Growth Throughout All Years

3 = Blend of Compound Growth First Ten Years, Linear Growth Thereafter (Based Upon the Base Year AADT)

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
		2015		12,300		81,000		56,400		53,000
NO. YEARS	5	2020	1.053	12,900	1.026	83,100	1.026	57,800	1.025	54,300
NO. YEARS	15	2030	1.166	14,300	1.079	87,400	1.079	60,800	1.077	57,100
NO. YEARS	25	2040	1.292	15,900	1.136	92,000	1.135	64,000	1.132	60,000

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
A.M.	2-Way Pk Hr Vol:	1,373			5,957			4,636			3,696		
7/20/2014	70	0	944	277	615	658	2,256	0	824	898	1,207	82	7,831
% TURNS:	7%	0%	93%	18%	40%	42%	73%	0%	27%	41%	55%	4%	
P.M.	2-Way Pk Hr Vol:	1,209			6,023			4,729			4,129		
7/20/2014	59	0	359	676	957	1,253	1,628	0	932	916	1,150	115	8,045
% TURNS:	14%	0%	86%	23%	33%	43%	64%	0%	36%	42%	53%	5%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

	NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.												
2015	7%	0%	93%	18%	40%	42%	73%	0%	27%	41%	55%	4%
2020	9%	3%	88%	17%	40%	43%	71%	1%	28%	41%	55%	4%
2030	10%	4%	87%	17%	40%	43%	71%	1%	28%	41%	55%	4%
2040	10%	5%	85%	17%	40%	43%	70%	2%	28%	40%	55%	5%
P.M.												
2015	14%	0%	86%	23%	33%	43%	64%	0%	36%	42%	53%	5%
2020	15%	3%	82%	22%	34%	44%	63%	1%	36%	42%	53%	6%
2030	16%	4%	80%	22%	34%	44%	63%	1%	36%	41%	53%	6%
2040	16%	5%	79%	21%	35%	44%	62%	2%	36%	41%	53%	6%

K & D FACTORS:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
	AM	PM	AM	PM	AM	PM	AM	PM
K FACTOR								
2015	11.2%	9.8%	7.4%	7.4%	8.2%	8.4%	7.0%	7.8%
2020	10.7%	9.4%	7.7%	7.7%	8.3%	8.5%	7.2%	8.0%
2030	9.9%	8.5%	8.3%	8.4%	8.6%	8.8%	7.7%	8.5%
2040	9.0%	7.7%	8.9%	9.0%	8.8%	9.0%	8.2%	9.0%
D FACTOR								
2015	73.9%	34.6%	26.0%	47.9%	66.4%	54.1%	59.2%	52.8%
2020	73.9%	34.6%	27.4%	47.1%	66.4%	54.1%	58.6%	52.5%
2030	73.9%	34.6%	30.2%	45.4%	66.4%	54.1%	57.4%	51.7%
2040	73.9%	34.6%	33.0%	43.8%	66.4%	54.1%	56.2%	51.0%

TMTOOL "TURNS" REPORT

DESIGN HOUR TURNS CALCULATIONS

SECTION NO: 93001000
FM NO.: 435803-1
PROJECT LIMITS: I-95 @ Northlake Blvd. PD&E Study
DESIGN YEAR: 2040
INTERSECTION: PGA Blvd & SB/NB Ramps
PREPARED BY: Jesus Jimenez
FILE: Version 1

DATE: 5/16/2017
NOTES:

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
24 HR EST. AADT	2015	12,300	81,000	56,400	53,000
24 HR EST. AADT	2020	12,900	83,100	57,800	54,300
24 HR EST. AADT	2030	14,300	87,400	60,800	57,100
24 HR EST. AADT	2040	15,900	92,000	64,000	60,000

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
2015 2-WAY ADT		12,300			81,000			56,400			53,000		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	53,000	56,400	81,000	12,300	53,000	56,400	81,000	12,300	53,000	56,400	81,000	12,300
	28%	30%	43%	10%	44%	46%	55%	8%	36%	38%	54%	8%
2020 2-WAY ADT		12,900			83,100			57,800			54,300		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	54,300	57,800	83,100	12,900	54,300	57,800	83,100	12,900	54,300	57,800	83,100	12,900
	28%	30%	43%	10%	43%	46%	55%	9%	36%	38%	54%	8%
2030 2-WAY ADT		14,300			87,400			60,800			57,100		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	57,100	60,800	87,400	14,300	57,100	60,800	87,400	14,300	57,100	60,800	87,400	14,300
	28%	30%	43%	11%	43%	46%	55%	9%	36%	37%	54%	9%
2040 2-WAY ADT		15,900			92,000			64,000			60,000		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	60,000	64,000	92,000	15,900	60,000	64,000	92,000	15,900	60,000	64,000	92,000	15,900
	28%	30%	43%	11%	43%	46%	55%	9%	36%	37%	54%	9%

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M. DESIGN HR. TURNS													
2015	EST. TURNS	70	0	945	275	617	660	2,257	0	826	900	1,208	81
2020	EST. TURNS	83	0	955	277	729	742	2,357	0	832	906	1,356	83
2030	EST. TURNS	84	0	971	281	964	893	2,565	0	841	915	1,579	85
2040	EST. TURNS	86	0	988	286	1,232	1,062	2,783	0	850	924	1,806	87
P.M. DESIGN HR. TURNS													
2015	EST. TURNS	59	0	359	677	957	1,253	1,627	0	933	917	1,149	115
2020	EST. TURNS	61	0	376	683	1,079	1,339	1,755	0	947	940	1,299	120
2030	EST. TURNS	64	0	406	707	1,308	1,495	2,029	0	984	984	1,574	129
2040	EST. TURNS	67	0	439	722	1,561	1,671	2,342	0	1,025	998	1,827	136

LINK VOLUME CHECK		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
DESIGN HOUR A.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		1,014	356	1,370	1,550	4,410	5,960	3,080	1,560	4,640	2,187	1,513	3,700
2015	TURN SUMMARY	1,015	356	1,371	1,552	4,410	5,962	3,083	1,560	4,643	2,189	1,513	3,702
CONTROL LINK VOLUMES		1,022	358	1,380	1,747	4,623	6,370	3,204	1,616	4,820	2,295	1,625	3,920
2020	TURN SUMMARY	1,038	360	1,398	1,748	4,668	6,416	3,189	1,647	4,836	2,345	1,644	3,989
CONTROL LINK VOLUMES		1,042	368	1,410	2,189	5,061	7,250	3,469	1,751	5,220	2,523	1,877	4,400
2030	TURN SUMMARY	1,055	365	1,421	2,137	5,115	7,252	3,406	1,808	5,214	2,579	1,889	4,468
CONTROL LINK VOLUMES		1,057	373	1,430	2,708	5,502	8,210	3,757	1,893	5,650	2,759	2,151	4,910
2040	TURN SUMMARY	1,074	373	1,447	2,581	5,577	8,158	3,633	1,986	5,619	2,817	2,169	4,986
DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		418	792	1,210	2,886	3,134	6,020	2,560	2,170	4,730	2,181	1,949	4,130
2015	TURN SUMMARY	418	792	1,210	2,886	3,134	6,020	2,560	2,170	4,730	2,181	1,949	4,130
CONTROL LINK VOLUMES		419	791	1,210	3,032	3,408	6,440	2,662	2,258	4,920	2,288	2,072	4,360
2020	TURN SUMMARY	437	803	1,240	3,101	3,430	6,531	2,703	2,280	4,982	2,360	2,088	4,448
CONTROL LINK VOLUMES		422	798	1,220	3,326	3,994	7,320	2,881	2,439	5,320	2,515	2,345	4,860
2030	TURN SUMMARY	471	836	1,307	3,510	4,009	7,519	3,012	2,479	5,492	2,687	2,356	5,043
CONTROL LINK VOLUMES		421	799	1,220	3,627	4,653	8,280	3,118	2,642	5,760	2,754	2,646	5,400
2040	TURN SUMMARY	506	858	1,363	3,954	4,607	8,561	3,366	2,669	6,035	2,960	2,653	5,613

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

SECTION NO:	93012000	PREPARED BY:	Jesus Jimenez
FM NO.:	435803-1	FILE:	Version 1
PROJECT LIMITS:	I-95 @ Northlake Blvd. PD&E Study	DATE:	5/16/2017
DESIGN YEAR:	2040		
INTERSECTION:	Blue Heron Blvd & Military Trail		

NOTES:

Historical AADTs:

	YEAR	NORTH LEG AADT	EAST LEG AADT	SOUTH LEG AADT	WEST LEG AADT
	2011				
	2012				
	2013				
	2015	28,000	38,000	29,000	19,000
Model Volume:	2040	32,000	51,000	36,000	26,000

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
Base Year Model to Future Year Model GR =								
Recommended Growth Rate:	0.54%	CGR	1.18%	CGR	0.87%	CGR	1.26%	CGR

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years

2 = Linear Growth Throughout All Years

3 = Blend of Compound Growth First Ten Years, Linear Growth Thereafter (Based Upon the Base Year AADT)

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
			1		1		1		1	
		2015		28,000		38,000		29,000		19,000
NO. YEARS	5	2020	1.027	28,800	1.060	40,300	1.044	30,300	1.065	20,200
NO. YEARS	15	2030	1.084	30,400	1.192	45,300	1.139	33,000	1.207	22,900
NO. YEARS	25	2040	1.144	32,000	1.341	51,000	1.242	36,000	1.368	26,000

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
A.M.	2-Way Pk Hr Vol:		2,380			2,932			2,438			1,628		
7/20/2014		94	658	396	336	733	384	491	796	84	25	592	100	4,689
% TURNS:		8%	57%	34%	23%	50%	26%	36%	58%	6%	3%	83%	14%	
P.M.	2-Way Pk Hr Vol:		2,558			2,741			2,545			1,604		
7/20/2014		112	910	288	339	792	431	373	779	35	17	518	130	4,724
% TURNS:		9%	69%	22%	22%	51%	28%	31%	66%	3%	3%	78%	20%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

	NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.												
2015	8%	57%	34%	23%	50%	26%	36%	58%	6%	3%	83%	14%
2020	10%	55%	35%	24%	48%	28%	37%	55%	8%	6%	78%	15%
2030	10%	54%	36%	25%	47%	28%	37%	55%	8%	7%	77%	16%
2040	11%	53%	36%	25%	47%	28%	38%	53%	9%	8%	76%	16%
P.M.												
2015	9%	69%	22%	22%	51%	28%	31%	66%	3%	3%	78%	20%
2020	10%	66%	24%	23%	48%	29%	33%	62%	5%	5%	74%	20%
2030	10%	65%	25%	23%	48%	29%	33%	61%	5%	6%	73%	21%
2040	11%	63%	26%	24%	47%	29%	34%	60%	6%	7%	72%	21%

K & D FACTORS:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
	AM	PM	AM	PM	AM	PM	AM	PM
K FACTOR								
2015	8.5%	9.1%	7.7%	7.2%	8.4%	8.8%	8.6%	8.4%
2020	8.5%	9.1%	8.0%	7.5%	8.5%	8.8%	8.7%	8.5%
2030	8.4%	9.1%	8.5%	8.0%	8.5%	8.9%	8.8%	8.7%
2040	8.4%	9.0%	9.0%	8.5%	8.6%	9.0%	9.0%	8.9%
D FACTOR								
2015	48.2%	51.2%	49.6%	57.0%	56.2%	46.6%	44.0%	41.5%
2020	48.4%	52.0%	49.1%	56.6%	56.0%	46.4%	44.3%	41.7%
2030	48.7%	53.5%	48.3%	55.7%	55.6%	46.0%	44.7%	42.1%
2040	49.0%	55.1%	47.5%	54.9%	55.1%	45.5%	45.1%	42.5%

TMTOOL "TURNS" REPORT

DESIGN HOUR TURNS CALCULATIONS

SECTION NO: 93012000
FM NO.: 435803-1
PROJECT LIMITS: I-95 @ Northlake Blvd. PD&E Study
DESIGN YEAR: 2040
INTERSECTION: Blue Heron Blvd & Military Trail
PREPARED BY: Jesus Jimenez
FILE: Version 1

DATE: 5/16/2017
NOTES:

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
24 HR EST. AADT	2015	28,000	38,000	29,000	19,000
24 HR EST. AADT	2020	28,800	40,300	30,300	20,200
24 HR EST. AADT	2030	30,400	45,300	33,000	22,900
24 HR EST. AADT	2040	32,000	51,000	36,000	26,000

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
2015 2-WAY ADT		28,000			38,000			29,000			19,000		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		19,000	29,000	38,000	28,000	19,000	29,000	38,000	28,000	19,000	29,000	38,000	28,000
		22%	34%	44%	37%	25%	38%	45%	33%	22%	31%	40%	29%
2020 2-WAY ADT		28,800			40,300			30,300			20,200		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		20,200	30,300	40,300	28,800	20,200	30,300	40,300	28,800	20,200	30,300	40,300	28,800
		22%	33%	44%	36%	25%	38%	45%	32%	23%	30%	41%	29%
2030 2-WAY ADT		30,400			45,300			33,000			22,900		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		22,900	33,000	45,300	30,400	22,900	33,000	45,300	30,400	22,900	33,000	45,300	30,400
		23%	33%	45%	35%	27%	38%	46%	31%	23%	30%	42%	28%
2040 2-WAY ADT		32,000			51,000			36,000			26,000		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		26,000	36,000	51,000	32,000	26,000	36,000	51,000	32,000	26,000	36,000	51,000	32,000
		23%	32%	45%	34%	28%	38%	47%	29%	24%	30%	43%	27%

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M. DESIGN HR. TURNS													
2015	EST. TURNS	94	660	395	335	734	384	490	797	84	25	592	100
2020	EST. TURNS	109	661	443	382	780	445	566	812	109	46	683	110
2030	EST. TURNS	118	664	516	438	885	558	711	842	121	55	806	112
2040	EST. TURNS	129	668	607	506	1,031	695	890	870	139	68	915	115
P.M. DESIGN HR. TURNS													
2015	EST. TURNS	111	912	287	340	789	434	373	780	35	17	518	130
2020	EST. TURNS	129	914	337	378	837	501	430	788	60	38	660	136
2030	EST. TURNS	142	931	406	421	946	624	544	799	71	46	754	137
2040	EST. TURNS	156	946	491	469	1,097	773	678	810	89	61	862	139

LINK VOLUME CHECK		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
DESIGN HOUR A.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		1,148	1,232	2,380	1,453	1,477	2,930	1,371	1,069	2,440	717	913	1,630
2015	TURN SUMMARY	1,149	1,232	2,381	1,454	1,477	2,931	1,371	1,069	2,440	717	913	1,630
CONTROL LINK VOLUMES		1,181	1,259	2,440	1,579	1,631	3,210	1,434	1,126	2,560	774	976	1,750
2020	TURN SUMMARY	1,213	1,304	2,517	1,607	1,691	3,298	1,487	1,152	2,639	839	998	1,837
CONTROL LINK VOLUMES		1,246	1,314	2,560	1,857	1,983	3,840	1,566	1,254	2,820	903	1,117	2,020
2030	TURN SUMMARY	1,299	1,392	2,691	1,881	2,033	3,914	1,674	1,277	2,951	973	1,125	2,098
CONTROL LINK VOLUMES		1,312	1,368	2,680	2,179	2,411	4,590	1,712	1,398	3,110	1,055	1,285	2,340
2040	TURN SUMMARY	1,404	1,491	2,895	2,233	2,411	4,644	1,898	1,432	3,330	1,098	1,299	2,397
DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		1,310	1,250	2,560	1,562	1,178	2,740	1,187	1,363	2,550	665	935	1,600
2015	TURN SUMMARY	1,311	1,250	2,561	1,563	1,178	2,741	1,187	1,363	2,550	665	935	1,600
CONTROL LINK VOLUMES		1,364	1,256	2,620	1,703	1,307	3,010	1,240	1,430	2,670	718	1,002	1,720
2020	TURN SUMMARY	1,380	1,302	2,682	1,717	1,427	3,144	1,278	1,454	2,732	834	1,027	1,861
CONTROL LINK VOLUMES		1,474	1,276	2,750	2,016	1,604	3,620	1,351	1,589	2,940	839	1,151	1,990
2030	TURN SUMMARY	1,480	1,357	2,837	1,990	1,704	3,694	1,414	1,602	3,016	938	1,159	2,097
CONTROL LINK VOLUMES		1,587	1,293	2,880	2,379	1,951	4,330	1,474	1,766	3,240	981	1,329	2,310
2040	TURN SUMMARY	1,592	1,418	3,010	2,338	2,031	4,369	1,576	1,779	3,355	1,062	1,341	2,403

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

SECTION NO:	93012000	PREPARED BY:	Jesus Jimenez
FM NO.:	435803-1	FILE:	Version 1
PROJECT LIMITS:	I-95 @ Northlake Blvd. PD&E Study	DATE:	5/16/2017
DESIGN YEAR:	2040		
INTERSECTION:	Blue Heron Blvd & I-95 SB/NB Ramps		

NOTES:

Historical AADTs:

	YEAR	NORTH LEG AADT	EAST LEG AADT	SOUTH LEG AADT	WEST LEG AADT
	2011				
	2012				
	2013				
	2015	27,500	48,000	26,600	38,000
Model Volume:	2040	35,000	59,000	32,000	51,000

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
Base Year Model to Future Year Model GR =								
Recommended Growth Rate:	0.97%	CGR	0.83%	CGR	0.74%	CGR	1.18%	CGR

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years

2 = Linear Growth Throughout All Years

3 = Blend of Compound Growth First Ten Years, Linear Growth Thereafter (Based Upon the Base Year AADT)

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
			1		1		1		1	
		2015		27,500		48,000		26,600		38,000
NO. YEARS	5	2020	1.049	28,900	1.042	50,000	1.038	27,600	1.060	40,300
NO. YEARS	15	2030	1.156	31,800	1.132	54,300	1.117	29,700	1.192	45,300
NO. YEARS	25	2040	1.273	35,000	1.230	59,000	1.202	32,000	1.341	51,000

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
A.M.	2-Way Pk Hr Vol:		1,776			3,628			2,740			3,210		
7/20/2014		457	0	642	356	564	784	685	0	518	753	597	321	5,677
% TURNS:		42%	0%	58%	21%	33%	46%	57%	0%	43%	45%	36%	19%	
P.M.	2-Way Pk Hr Vol:		1,579			4,005			3,039			2,899		
7/20/2014		227	0	286	716	678	1,244	616	0	620	559	465	350	5,761
% TURNS:		44%	0%	56%	27%	26%	47%	50%	0%	50%	41%	34%	25%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.													
	2015	42%	0%	58%	21%	33%	46%	57%	0%	43%	45%	36%	19%
	2020	41%	2%	57%	22%	34%	44%	55%	2%	42%	43%	37%	20%
	2030	41%	3%	56%	22%	34%	44%	55%	3%	42%	43%	37%	20%
	2040	41%	4%	56%	22%	35%	43%	54%	4%	42%	42%	38%	21%
P.M.													
	2015	44%	0%	56%	27%	26%	47%	50%	0%	50%	41%	34%	25%
	2020	43%	2%	54%	27%	27%	45%	49%	2%	49%	39%	35%	26%
	2030	43%	3%	54%	27%	28%	45%	49%	3%	48%	39%	35%	26%
	2040	43%	4%	53%	28%	29%	44%	48%	4%	48%	38%	36%	26%

K & D FACTORS:

		NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
		AM	PM	AM	PM	AM	PM	AM	PM
K FACTOR									
	2015	6.5%	5.7%	7.6%	8.3%	10.3%	11.4%	8.4%	7.6%
	2020	7.0%	6.3%	7.7%	8.5%	9.8%	10.9%	8.6%	7.7%
	2030	8.0%	7.3%	8.0%	8.7%	8.8%	10.0%	8.8%	8.0%
	2040	9.0%	8.3%	8.2%	9.0%	7.9%	9.0%	9.0%	8.2%
D FACTOR									
	2015	61.9%	32.5%	47.0%	65.9%	43.9%	40.7%	52.1%	47.4%
	2020	61.9%	32.5%	46.5%	65.4%	43.9%	40.7%	52.6%	47.7%
	2030	61.9%	32.5%	45.5%	64.4%	43.9%	40.7%	53.8%	48.4%
	2040	61.9%	32.5%	44.5%	63.4%	43.9%	40.7%	54.9%	49.0%

TMTOOL "TURNS" REPORT

DESIGN HOUR TURNS CALCULATIONS

SECTION NO: 93012000
FM NO.: 435803-1
PROJECT LIMITS: I-95 @ Northlake Blvd. PD&E Study
DESIGN YEAR: 2040
INTERSECTION: Blue Heron Blvd & I-95 SB/NB Ramps
PREPARED BY: Jesus Jimenez
FILE: Version 1

DATE: 5/16/2017
NOTES:

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
24 HR EST. AADT	2015	27,500	48,000	26,600	38,000
24 HR EST. AADT	2020	28,900	50,000	27,600	40,300
24 HR EST. AADT	2030	31,800	54,300	29,700	45,300
24 HR EST. AADT	2040	35,000	59,000	32,000	51,000

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
2015 2-WAY ADT		27,500			48,000			26,600			38,000		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	38,000	26,600	48,000	27,500	38,000	26,600	48,000	27,500	38,000	26,600	48,000	27,500
	34%	24%	43%	30%	41%	29%	42%	24%	33%	26%	47%	27%
2020 2-WAY ADT		28,900			50,000			27,600			40,300		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	40,300	27,600	50,000	28,900	40,300	27,600	50,000	28,900	40,300	27,600	50,000	28,900
	34%	23%	42%	30%	42%	29%	42%	24%	34%	26%	47%	27%
2030 2-WAY ADT		31,800			54,300			29,700			45,300		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	45,300	29,700	54,300	31,800	45,300	29,700	54,300	31,800	45,300	29,700	54,300	31,800
	35%	23%	42%	30%	42%	28%	41%	24%	34%	26%	47%	27%
2040 2-WAY ADT		35,000			59,000			32,000			51,000		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
	51,000	32,000	59,000	35,000	51,000	32,000	59,000	35,000	51,000	32,000	59,000	35,000
	36%	23%	42%	30%	43%	27%	41%	24%	35%	25%	47%	28%

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M. DESIGN HR. TURNS													
2015	EST. TURNS	457	0	643	358	564	784	686	0	518	753	597	323
2020	EST. TURNS	505	0	703	382	633	786	687	0	520	754	696	355
2030	EST. TURNS	630	0	844	468	739	788	688	0	522	755	869	468
2040	EST. TURNS	771	0	929	557	856	790	690	0	524	757	982	600
P.M. DESIGN HR. TURNS													
2015	EST. TURNS	227	0	287	717	679	1,245	618	0	620	559	467	350
2020	EST. TURNS	255	0	323	795	778	1,250	620	0	624	563	538	397
2030	EST. TURNS	333	0	415	994	942	1,258	623	0	630	572	675	526
2040	EST. TURNS	423	0	523	1,220	1,128	1,264	628	0	636	576	842	684

LINK VOLUME CHECK		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
DESIGN HOUR A.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		1,099	681	1,780	1,704	1,926	3,630	1,203	1,537	2,740	1,671	1,539	3,210
2015	TURN SUMMARY	1,100	681	1,781	1,706	1,926	3,632	1,204	1,537	2,741	1,673	1,539	3,212
CONTROL LINK VOLUMES		1,246	764	2,010	1,787	2,053	3,840	1,189	1,521	2,710	1,815	1,635	3,450
2020	TURN SUMMARY	1,208	737	1,945	1,801	2,086	3,887	1,207	1,540	2,746	1,806	1,658	3,464
CONTROL LINK VOLUMES		1,571	969	2,540	1,964	2,356	4,320	1,153	1,477	2,630	2,138	1,842	3,980
2030	TURN SUMMARY	1,474	935	2,410	1,996	2,401	4,397	1,210	1,543	2,753	2,091	1,891	3,982
CONTROL LINK VOLUMES		1,949	1,201	3,150	2,157	2,693	4,850	1,107	1,413	2,520	2,520	2,070	4,590
2040	TURN SUMMARY	1,700	1,158	2,858	2,203	2,601	4,804	1,214	1,547	2,761	2,339	2,151	4,490
DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		513	1,067	1,580	2,638	1,372	4,010	1,236	1,804	3,040	1,374	1,526	2,900
2015	TURN SUMMARY	514	1,067	1,581	2,642	1,372	4,014	1,238	1,804	3,042	1,376	1,526	2,902
CONTROL LINK VOLUMES		587	1,223	1,810	2,770	1,470	4,240	1,228	1,792	3,020	1,488	1,632	3,120
2020	TURN SUMMARY	579	1,193	1,771	2,823	1,482	4,305	1,244	1,813	3,057	1,499	1,657	3,156
CONTROL LINK VOLUMES		751	1,559	2,310	3,055	1,685	4,740	1,204	1,756	2,960	1,744	1,866	3,610
2030	TURN SUMMARY	748	1,519	2,267	3,194	1,713	4,907	1,253	1,830	3,083	1,773	1,905	3,678
CONTROL LINK VOLUMES		942	1,958	2,900	3,367	1,943	5,310	1,171	1,709	2,880	2,045	2,125	4,170
2040	TURN SUMMARY	947	1,904	2,850	3,612	1,993	5,605	1,264	1,840	3,104	2,102	2,187	4,289

Note: Boxed number indicates manual adjustment.

TMTOOL INPUT SHEET

Project Description:

SECTION NO:	93012000	PREPARED BY:	Jesus Jimenez
FM NO.:	435803-1	FILE:	Version 1
PROJECT LIMITS:	I-95 @ Northlake Blvd. PD&E Study	DATE:	5/16/2017
DESIGN YEAR:	2040		
INTERSECTION:	Blue Heron Blvd & Garden Road		

NOTES:

Historical AADTs:

	YEAR	NORTH LEG AADT	EAST LEG AADT	SOUTH LEG AADT	WEST LEG AADT
	2011				
	2012				
	2013				
	2015	8,400	42,000	13,000	48,000
Model Volume:	2040	9,500	54,000	22,000	62,000

Growth Rates:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
Historic Trend GR =								
Historic + Model Trend GR =								
Base Year Model to Future Year Model GR =								
Recommended Growth Rate:	**0.49%**	**CGR**	**1.01%**	**CGR**	**2.13%**	**CGR**	**1.03%**	**CGR**

Choose Methodology for Calculating Growth Factor on Each Leg (Input 1, 2 or 3)

1 = Compound Growth Throughout All Years

2 = Linear Growth Throughout All Years

3 = Blend of Compound Growth First Ten Years, Linear Growth Thereafter (Based Upon the Base Year AADT)

		YEAR	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT	FACTOR	AADT
		2015		8,400		42,000		13,000		48,000
NO. YEARS	5	2020	1.025	8,600	1.052	44,200	1.111	14,400	1.053	50,500
NO. YEARS	15	2030	1.076	9,000	1.163	48,800	1.372	17,800	1.166	56,000
NO. YEARS	25	2040	1.130	9,500	1.286	54,000	1.694	22,000	1.292	62,000

Percent Turns Calculated From Base Year TMCs:

TURN STUDY		FROM NORTH LEG (Southbound)			FROM EAST LEG (Westbound)			FROM SOUTH LEG (Northbound)			FROM WEST LEG (Eastbound)			
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	TOTAL
A.M.	2-Way Pk Hr Vol:		668			3,352			664			3,530		
7/20/2014		108	74	74	125	1,415	143	80	81	97	189	1,515	206	4,107
% TURNS:		42%	29%	29%	7%	84%	8%	31%	31%	38%	10%	79%	11%	
P.M.	2-Way Pk Hr Vol:		687			3,748			608			3,929		
7/20/2014		284	66	106	77	2,005	72	169	67	147	87	1,319	87	4,486
% TURNS:		62%	14%	23%	4%	93%	3%	44%	17%	38%	6%	88%	6%	

Est. % Turns Calculated From Base Year AADTs & TMCs:

SUGGESTED STARTING POINTS

	NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M.												
2015	42%	29%	29%	7%	84%	8%	31%	31%	38%	10%	79%	11%
2020	43%	27%	30%	8%	83%	10%	32%	29%	39%	11%	78%	11%
2030	43%	27%	30%	8%	82%	10%	32%	28%	39%	12%	77%	11%
2040	43%	27%	31%	8%	81%	11%	33%	27%	40%	13%	77%	11%
P.M.												
2015	62%	14%	23%	4%	93%	3%	44%	17%	38%	6%	88%	6%
2020	61%	14%	25%	4%	91%	5%	44%	17%	39%	7%	86%	7%
2030	60%	14%	25%	4%	90%	6%	44%	16%	40%	8%	85%	7%
2040	59%	15%	26%	5%	89%	7%	44%	16%	40%	9%	84%	7%

K & D FACTORS:

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG	
	AM	PM	AM	PM	AM	PM	AM	PM
K FACTOR								
2015	8.0%	8.2%	8.0%	8.9%	5.1%	4.7%	7.4%	8.2%
2020	8.1%	8.3%	8.0%	8.9%	5.9%	5.5%	7.5%	8.3%
2030	8.4%	8.7%	8.0%	9.0%	7.4%	7.0%	7.8%	8.7%
2040	8.8%	9.0%	8.1%	9.0%	9.0%	8.6%	8.2%	9.0%
D FACTOR								
2015	38.3%	66.4%	50.2%	57.5%	38.9%	63.0%	54.1%	38.0%
2020	37.4%	65.4%	51.4%	58.7%	38.6%	62.7%	56.0%	39.9%
2030	35.5%	63.6%	53.8%	61.0%	38.1%	62.2%	59.7%	43.6%
2040	33.6%	61.7%	56.1%	63.4%	37.6%	61.7%	63.4%	47.3%

TMTOOL "TURNS" REPORT

DESIGN HOUR TURNS CALCULATIONS

SECTION NO: 93012000
FM NO.: 435803-1
PROJECT LIMITS: I-95 @ Northlake Blvd. PD&E Study
DESIGN YEAR: 2040
INTERSECTION: Blue Heron Blvd & Garden Road
PREPARED BY: Jesus Jimenez
FILE: Version 1

DATE: 5/16/2017
NOTES:

ESTIMATED TWO-WAY 24 HOUR AADT FOR EACH LEG OF THE INTERSECTION:

	YEAR	NORTH LEG	EAST LEG	SOUTH LEG	WEST LEG
24 HR EST. AADT	2015	8,400	42,000	13,000	48,000
24 HR EST. AADT	2020	8,600	44,200	14,400	50,500
24 HR EST. AADT	2030	9,000	48,800	17,800	56,000
24 HR EST. AADT	2040	9,500	54,000	22,000	62,000

Percent Turns Calculated From Base Year AADTs:

JKTURNS		FROM NORTH LEG			FROM EAST LEG			FROM SOUTH LEG			FROM WEST LEG		
2015 2-WAY ADT		8,400			42,000			13,000			48,000		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		48,000	13,000	42,000	8,400	48,000	13,000	42,000	8,400	48,000	13,000	42,000	8,400
		47%	13%	41%	12%	69%	19%	43%	9%	49%	21%	66%	13%
2020 2-WAY ADT		8,600			44,200			14,400			50,500		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		50,500	14,400	44,200	8,600	50,500	14,400	44,200	8,600	50,500	14,400	44,200	8,600
		46%	13%	41%	12%	69%	20%	43%	8%	49%	21%	66%	13%
2030 2-WAY ADT		9,000			48,800			17,800			56,000		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		56,000	17,800	48,800	9,000	56,000	17,800	48,800	9,000	56,000	17,800	48,800	9,000
		46%	15%	40%	11%	68%	21%	43%	8%	49%	24%	65%	12%
2040 2-WAY ADT		9,500			54,000			22,000			62,000		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
		62,000	22,000	54,000	9,500	62,000	22,000	54,000	9,500	62,000	22,000	54,000	9,500
		45%	16%	39%	10%	66%	24%	43%	8%	49%	26%	63%	11%

		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
		RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT	RIGHT	THRU	LEFT
A.M. DESIGN HR. TURNS													
2015	EST. TURNS	108	73	74	126	1,415	141	80	81	97	187	1,513	207
2020	EST. TURNS	110	75	76	128	1,481	185	97	89	128	263	1,548	222
2030	EST. TURNS	112	91	78	129	1,588	279	133	123	193	445	1,625	242
2040	EST. TURNS	113	105	80	131	1,695	419	182	164	273	711	1,680	259
P.M. DESIGN HR. TURNS													
2015	EST. TURNS	284	67	106	78	2,006	73	169	68	147	88	1,320	88
2020	EST. TURNS	288	70	107	80	2,145	104	190	70	207	130	1,344	100
2030	EST. TURNS	290	77	109	81	2,379	152	233	94	339	244	1,402	118
2040	EST. TURNS	291	90	110	83	2,621	223	282	123	504	414	1,437	138

LINK VOLUME CHECK		NORTH LEG			EAST LEG			SOUTH LEG			WEST LEG		
DESIGN HOUR A.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		256	414	670	1,683	1,667	3,350	258	402	660	1,910	1,620	3,530
2015	TURN SUMMARY	256	414	670	1,682	1,667	3,349	258	402	660	1,908	1,620	3,528
CONTROL LINK VOLUMES		261	439	700	1,816	1,714	3,530	327	523	850	2,125	1,675	3,800
2020	TURN SUMMARY	261	439	700	1,793	1,721	3,514	314	523	837	2,033	1,718	3,751
CONTROL LINK VOLUMES		270	490	760	2,106	1,814	3,920	505	815	1,320	2,621	1,769	4,390
2030	TURN SUMMARY	281	494	775	1,995	1,837	3,832	449	815	1,264	2,312	1,892	4,204
CONTROL LINK VOLUMES		280	550	830	2,442	1,908	4,350	744	1,236	1,980	3,211	1,849	5,060
2040	TURN SUMMARY	299	554	853	2,245	1,942	4,187	619	1,236	1,855	2,650	2,081	4,731
DESIGN HOUR P.M.:		FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK	FROM	TO	LINK
CONTROL LINK VOLUMES		456	234	690	2,154	1,596	3,750	383	227	610	1,493	2,437	3,930
2015	TURN SUMMARY	457	234	691	2,157	1,596	3,753	384	227	611	1,496	2,437	3,933
CONTROL LINK VOLUMES		470	250	720	2,318	1,632	3,950	493	297	790	1,680	2,540	4,220
2020	TURN SUMMARY	465	250	715	2,329	1,641	3,970	468	304	772	1,574	2,640	4,214
CONTROL LINK VOLUMES		496	284	780	2,671	1,709	4,380	777	473	1,250	2,117	2,743	4,860
2030	TURN SUMMARY	476	293	769	2,612	1,745	4,357	667	473	1,140	1,764	3,008	4,772
CONTROL LINK VOLUMES		528	332	860	3,081	1,779	4,860	1,163	727	1,890	2,639	2,941	5,580
2040	TURN SUMMARY	490	344	834	2,927	1,829	4,756	909	727	1,636	1,989	3,415	5,404

Note: Boxed number indicates manual adjustment.

APPENDIX L

(LOS Results for Preliminary Alternatives Analysis)

Alternative 1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	678	1705	294	304	1223	346	390	826	381	433	642	403
Future Volume (veh/h)	678	1705	294	304	1223	346	390	826	381	433	642	403
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1845	1845	1792	1776	1743	1827	1845	1845	1863	1827
Adj Flow Rate, veh/h	714	1795	309	320	1287	364	411	869	401	456	676	424
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	3	3	6	7	9	4	3	3	2	4
Cap, veh/h	745	1875	764	461	1407	641	382	1040	539	469	1156	689
Arrive On Green	0.22	0.37	0.37	0.14	0.29	0.29	0.12	0.21	0.21	0.14	0.23	0.23
Sat Flow, veh/h	3442	5085	1568	3408	4893	1509	3221	4988	1568	3408	5085	1553
Grp Volume(v), veh/h	714	1795	309	320	1287	364	411	869	401	456	676	424
Grp Sat Flow(s),veh/h/ln	1721	1695	1568	1704	1631	1509	1610	1663	1568	1704	1695	1553
Q Serve(g_s), s	32.8	55.1	10.4	14.3	40.7	7.2	19.0	26.7	14.4	21.3	19.0	9.4
Cycle Q Clear(g_c), s	32.8	55.1	10.4	14.3	40.7	7.2	19.0	26.7	14.4	21.3	19.0	9.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	745	1875	764	461	1407	641	382	1040	539	469	1156	689
V/C Ratio(X)	0.96	0.96	0.40	0.69	0.91	0.57	1.07	0.84	0.74	0.97	0.58	0.62
Avail Cap(c_a), veh/h	745	1875	764	461	1407	641	382	1185	584	469	1303	734
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.0	49.3	10.0	66.0	55.1	34.9	70.5	60.7	46.3	68.7	55.1	14.3
Incr Delay (d2), s/veh	23.2	12.9	1.6	4.5	10.7	3.6	67.4	4.8	4.7	34.5	0.5	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	24.9	36.7	8.4	11.4	27.0	6.4	21.6	18.6	11.3	18.1	13.9	13.3
LnGrp Delay(d),s/veh	85.1	62.1	11.5	70.5	65.8	38.5	137.9	65.5	51.0	103.2	55.6	15.7
LnGrp LOS	F	E	B	E	E	D	F	E	D	F	E	B
Approach Vol, veh/h		2818			1971			1681			1556	
Approach Delay, s/veh		62.4			61.5			79.7			58.7	
Approach LOS		E			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	40.6	52.0	28.0	39.4	27.6	65.0	25.0	42.4
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	30.0	46.0	22.0	38.0	17.0	59.0	19.0	41.0
Max Q Clear Time (g_c+I1), s	34.8	42.7	23.3	28.7	16.3	57.1	21.0	21.0
Green Ext Time (p_c), s	0.0	2.5	0.0	4.6	0.3	1.7	0.0	7.7

Intersection Summary	
HCM 2010 Ctrl Delay	65.1
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	2562	83	196	1917	135	52	9	207	219	13	31
Future Volume (veh/h)	29	2562	83	196	1917	135	52	9	207	219	13	31
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1863	1881	1845	1827	1827	1845	1900	1845	1881	1837	1900
Adj Flow Rate, veh/h	31	2697	87	206	2018	142	55	9	218	231	14	33
Adj No. of Lanes	1	4	1	2	4	1	1	1	2	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	2	1	3	4	4	3	0	3	1	2	2
Cap, veh/h	144	4102	1184	249	3967	1105	176	107	357	280	18	42
Arrive On Green	0.16	1.00	1.00	0.15	1.00	1.00	0.10	0.06	0.06	0.08	0.04	0.04
Sat Flow, veh/h	1757	6408	1599	3408	6285	1553	1757	1900	2760	3476	487	1148
Grp Volume(v), veh/h	31	2697	87	206	2018	142	55	9	218	231	0	47
Grp Sat Flow(s),veh/h/ln	1757	1602	1599	1704	1571	1553	1757	1900	1380	1738	0	1635
Q Serve(g_s), s	2.4	0.0	0.0	9.4	0.0	0.0	4.7	0.7	9.0	10.5	0.0	4.6
Cycle Q Clear(g_c), s	2.4	0.0	0.0	9.4	0.0	0.0	4.7	0.7	9.0	10.5	0.0	4.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.70
Lane Grp Cap(c), veh/h	144	4102	1184	249	3967	1105	176	107	357	280	0	60
V/C Ratio(X)	0.22	0.66	0.07	0.83	0.51	0.13	0.31	0.08	0.61	0.82	0.00	0.79
Avail Cap(c_a), veh/h	144	4102	1184	362	3967	1105	176	107	357	413	0	184
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.71	0.71	0.71	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	62.4	0.0	0.0	67.3	0.0	0.0	66.8	71.6	41.5	72.4	0.0	76.5
Incr Delay (d2), s/veh	0.7	0.8	0.1	7.2	0.3	0.2	1.0	0.3	3.0	8.5	0.0	19.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.2	0.4	0.1	7.6	0.2	0.1	4.2	0.7	7.7	9.2	0.0	4.3
LnGrp Delay(d),s/veh	63.2	0.8	0.1	74.6	0.3	0.2	67.8	71.9	44.6	80.9	0.0	96.4
LnGrp LOS	E	A	A	E	A	A	E	E	D	F		F
Approach Vol, veh/h		2815			2366			282			278	
Approach Delay, s/veh		1.5			6.8			50.0			83.5	
Approach LOS		A			A			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.7	108.4	22.0	11.8	19.1	107.0	18.9	15.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	17.0	91.0	10.0	18.0	7.0	101.0	19.0	9.0
Max Q Clear Time (g_c+I1), s	11.4	2.0	6.7	6.6	4.4	2.0	12.5	11.0
Green Ext Time (p_c), s	0.3	56.7	0.3	0.1	0.0	31.6	0.4	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	10.0
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2227	691	910	1479	0	0	0	0	1042	0	922
Future Volume (vph)	0	2227	691	910	1479	0	0	0	0	1042	0	922
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	6.0	6.0					6.0		6.0
Lane Util. Factor		0.81	1.00	0.97	0.91					*1.00		*1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		7471	1599	3433	4940					5309		4704
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		7471	1599	3433	4940					5309		4704
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	2344	727	958	1557	0	0	0	0	1097	0	971
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	2344	727	958	1557	0	0	0	0	1097	0	971
Heavy Vehicles (%)	0%	3%	1%	2%	5%	0%	0%	0%	0%	2%	0%	3%
Turn Type		NA	Free	Prot	NA					Prot		custom
Protected Phases		2 3		1	1 2					4 12		3 4 12
Permitted Phases			Free									
Actuated Green, G (s)		49.5	160.0	38.0	65.0					48.5		71.0
Effective Green, g (s)		49.5	160.0	38.0	65.0					48.5		71.0
Actuated g/C Ratio		0.31	1.00	0.24	0.41					0.30		0.44
Clearance Time (s)				6.0								
Vehicle Extension (s)				3.0								
Lane Grp Cap (vph)		2311	1599	815	2006					1609		2087
v/s Ratio Prot		c0.31		c0.28	0.32					c0.21		0.21
v/s Ratio Perm			c0.45									
v/c Ratio		1.01	0.45	1.18	0.78					0.68		0.47
Uniform Delay, d1		55.2	0.0	61.0	41.2					49.0		31.2
Progression Factor		0.60	1.00	0.56	0.95					1.00		1.00
Incremental Delay, d2		19.7	0.7	80.3	1.4					1.2		0.2
Delay (s)		52.9	0.7	114.5	40.6					50.2		31.4
Level of Service		D	A	F	D					D		C
Approach Delay (s)		40.6			68.8			0.0			41.4	
Approach LOS		D			E			A			D	

Intersection Summary			
HCM 2000 Control Delay	50.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	36.0
Intersection Capacity Utilization	106.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1060	2209	0	0	1862	742	527	0	999	0	0	0
Future Volume (vph)	1060	2209	0	0	1862	742	527	0	999	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0	4.0	6.0		6.0			
Lane Util. Factor	0.97	0.91			0.81	1.00	*1.00		*1.00			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	3060	4532			6724	1384	4686		4275			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3060	4532			6724	1384	4686		4275			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1116	2325	0	0	1960	781	555	0	1052	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	1116	2325	0	0	1960	781	555	0	1052	0	0	0
Heavy Vehicles (%)	3%	3%	0%	0%	3%	5%	4%	0%	2%	0%	0%	0%
Turn Type	Prot	NA			NA	Free	Prot		custom			
Protected Phases	5	5 6			6 7		8 16		7 8 16			
Permitted Phases						Free						
Actuated Green, G (s)	55.5	77.5			44.0	160.0	36.5		58.5			
Effective Green, g (s)	55.5	77.5			44.0	160.0	36.5		58.5			
Actuated g/C Ratio	0.35	0.48			0.28	1.00	0.23		0.37			
Clearance Time (s)	6.0											
Vehicle Extension (s)	3.0											
Lane Grp Cap (vph)	1061	2195			1849	1384	1068		1563			
v/s Ratio Prot	0.36	c0.51			c0.29		0.12		c0.25			
v/s Ratio Perm						c0.56						
v/c Ratio	1.05	1.06			1.06	0.56	0.52		0.67			
Uniform Delay, d1	52.2	41.2			58.0	0.0	54.1		42.7			
Progression Factor	0.25	0.60			0.73	1.00	1.00		1.00			
Incremental Delay, d2	26.1	32.5			38.4	1.6	0.4		1.3			
Delay (s)	39.0	57.2			80.9	1.6	54.5		44.0			
Level of Service	D	E			F	A	D		D			
Approach Delay (s)		51.3			58.3			47.6			0.0	
Approach LOS		D			E			D			A	

Intersection Summary			
HCM 2000 Control Delay	53.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	36.0
Intersection Capacity Utilization	106.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	3153	0	0	2538	65	0	0	0	0	0	66
Future Volume (vph)	55	3153	0	0	2538	65	0	0	0	0	0	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0	6.0						6.0
Lane Util. Factor	1.00	0.86			0.76	1.00						1.00
Frt	1.00	1.00			1.00	0.85						0.86
Flt Protected	0.95	1.00			1.00	1.00						1.00
Satd. Flow (prot)	1787	6471			8412	1615						1644
Flt Permitted	0.95	1.00			1.00	1.00						1.00
Satd. Flow (perm)	1787	6471			8412	1615						1644
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	58	3319	0	0	2672	68	0	0	0	0	0	69
RTOR Reduction (vph)	0	0	0	0	0	12	0	0	0	0	0	0
Lane Group Flow (vph)	58	3319	0	0	2672	56	0	0	0	0	0	69
Heavy Vehicles (%)	1%	1%	1%	0%	3%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA			NA	Perm						Perm
Protected Phases	1	6			2							
Permitted Phases						2						6
Actuated Green, G (s)	16.8	160.0			131.2	131.2						160.0
Effective Green, g (s)	16.8	160.0			131.2	131.2						160.0
Actuated g/C Ratio	0.11	1.00			0.82	0.82						1.00
Clearance Time (s)	6.0	6.0			6.0	6.0						6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0						3.0
Lane Grp Cap (vph)	187	6471			6897	1324						1644
v/s Ratio Prot	0.03	c0.51			0.32							
v/s Ratio Perm						0.03						0.04
v/c Ratio	0.31	0.51			0.39	0.04						0.04
Uniform Delay, d1	66.2	0.0			3.8	2.7						0.0
Progression Factor	1.03	1.00			0.11	0.00						1.00
Incremental Delay, d2	0.3	0.1			0.1	0.0						0.0
Delay (s)	68.9	0.1			0.5	0.0						0.0
Level of Service	E	A			A	A						A
Approach Delay (s)		1.3			0.5			0.0			0.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	0.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	2782	216	145	2121	130	241	14	153	316	24	106
Future Volume (veh/h)	110	2782	216	145	2121	130	241	14	153	316	24	106
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1863	1792	1881	1825	1900	1827	1900	1863	1900	1756	1900
Adj Flow Rate, veh/h	116	2928	227	153	2233	137	254	15	161	333	25	112
Adj No. of Lanes	1	3	1	2	4	0	2	1	2	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	6	2	6	1	4	4	4	0	2	0	0	0
Cap, veh/h	134	2463	874	491	3352	205	300	225	723	274	30	135
Arrive On Green	0.16	0.97	0.97	0.14	0.55	0.55	0.09	0.12	0.12	0.08	0.11	0.11
Sat Flow, veh/h	1707	5085	1524	3476	6094	373	3375	1900	2787	3510	280	1255
Grp Volume(v), veh/h	116	2928	227	153	1725	645	254	15	161	333	0	137
Grp Sat Flow(s),veh/h/ln	1707	1695	1524	1738	1569	1759	1688	1900	1393	1755	0	1535
Q Serve(g_s), s	10.6	77.5	0.3	6.3	41.6	41.7	11.9	1.1	1.2	12.5	0.0	14.0
Cycle Q Clear(g_c), s	10.6	77.5	0.3	6.3	41.6	41.7	11.9	1.1	1.2	12.5	0.0	14.0
Prop In Lane	1.00		1.00	1.00		0.21	1.00		1.00	1.00		0.82
Lane Grp Cap(c), veh/h	134	2463	874	491	2590	968	300	225	723	274	0	165
V/C Ratio(X)	0.86	1.19	0.26	0.31	0.67	0.67	0.85	0.07	0.22	1.21	0.00	0.83
Avail Cap(c_a), veh/h	160	2463	874	491	2590	968	399	416	1003	274	0	274
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.85	0.85	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	66.6	2.5	0.3	61.7	25.6	25.6	71.8	62.7	25.2	73.8	0.0	70.0
Incr Delay (d2), s/veh	28.1	88.7	0.6	0.4	1.4	3.6	12.1	0.1	0.2	125.1	0.0	10.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	9.7	75.8	0.5	5.5	25.4	28.8	10.1	1.1	3.7	19.5	0.0	10.6
LnGrp Delay(d),s/veh	94.7	91.2	0.9	62.1	26.9	29.2	83.9	62.8	25.3	198.8	0.0	80.3
LnGrp LOS	F	F	A	E	C	C	F	E	C	F		F
Approach Vol, veh/h		3271			2523			430			470	
Approach Delay, s/veh		85.0			29.6			61.2			164.3	
Approach LOS		F			C			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.6	95.5	19.0	25.9	30.1	85.0	20.7	24.2
Change Period (Y+Rc), s	7.0	7.5	6.5	7.0	7.5	* 7.5	6.5	7.0
Max Green Setting (Gmax), s	15.0	69.5	12.5	35.0	7.0	* 78	18.9	28.6
Max Q Clear Time (g_c+I1), s	12.6	43.7	14.5	3.2	8.3	79.5	13.9	16.0
Green Ext Time (p_c), s	0.1	19.0	0.0	1.6	0.0	0.0	0.4	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	68.2
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	486	1241	242	390	1870	419	550	743	476	495	845	819
Future Volume (veh/h)	486	1241	242	390	1870	419	550	743	476	495	845	819
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1863	1845	1881	1881	1881	1881	1881	1881	1881	1863	1881
Adj Flow Rate, veh/h	512	1306	255	411	1968	441	579	782	501	521	889	862
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	2	3	1	1	1	1	1	1	1	2	1
Cap, veh/h	278	1526	690	417	1746	854	487	1161	553	674	1424	576
Arrive On Green	0.08	0.30	0.30	0.16	0.45	0.45	0.14	0.23	0.23	0.19	0.28	0.28
Sat Flow, veh/h	3476	5085	1568	3476	5136	1599	3476	5136	1599	3476	5085	1599
Grp Volume(v), veh/h	512	1306	255	411	1968	441	579	782	501	521	889	862
Grp Sat Flow(s),veh/h/ln	1738	1695	1568	1738	1712	1599	1738	1712	1599	1738	1695	1599
Q Serve(g_s), s	12.0	36.3	9.3	17.7	51.0	6.5	21.0	20.9	26.8	21.3	22.9	42.0
Cycle Q Clear(g_c), s	12.0	36.3	9.3	17.7	51.0	6.5	21.0	20.9	26.8	21.3	22.9	42.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	278	1526	690	417	1746	854	487	1161	553	674	1424	576
V/C Ratio(X)	1.84	0.86	0.37	0.99	1.13	0.52	1.19	0.67	0.91	0.77	0.62	1.50
Avail Cap(c_a), veh/h	278	1526	690	417	1746	854	487	1370	618	674	1424	576
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	69.0	49.4	11.5	62.9	41.1	6.9	64.5	53.0	46.7	57.3	47.1	48.0
Incr Delay (d2), s/veh	392.3	6.4	1.5	40.1	65.2	2.2	104.4	1.0	15.9	5.5	0.9	232.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	37.6	24.8	7.7	16.2	62.2	9.6	30.8	15.1	20.4	16.2	16.2	109.9
LnGrp Delay(d),s/veh	461.3	55.8	13.0	103.0	106.3	9.2	168.9	54.0	62.6	62.9	48.0	280.9
LnGrp LOS	F	E	B	F	F	A	F	D	E	E	D	F
Approach Vol, veh/h		2073			2820			1862			2272	
Approach Delay, s/veh		150.7			90.6			92.1			139.8	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	57.0	35.1	39.9	24.0	51.0	27.0	48.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	12.0	51.0	23.0	40.0	18.0	45.0	21.0	42.0
Max Q Clear Time (g_c+I1), s	14.0	53.0	23.3	28.8	19.7	38.3	23.0	44.0
Green Ext Time (p_c), s	0.0	0.0	0.0	5.2	0.0	4.5	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	117.1
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	2053	247	452	2533	370	265	48	545	188	50	48
Future Volume (veh/h)	56	2053	247	452	2533	370	265	48	545	188	50	48
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1881	1900	1900	1881	1881	1900	1900	1881	1881	1890	1900
Adj Flow Rate, veh/h	59	2161	260	476	2666	389	279	51	574	198	53	51
Adj No. of Lanes	1	4	1	2	4	1	1	1	2	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	1	0	0	1	1	0	0	1	1	1	1
Cap, veh/h	225	2891	996	530	3063	903	308	287	850	317	64	62
Arrive On Green	0.25	0.89	0.89	0.10	0.32	0.32	0.17	0.15	0.15	0.09	0.07	0.07
Sat Flow, veh/h	1810	6471	1615	3510	6471	1599	1810	1900	2814	3476	887	853
Grp Volume(v), veh/h	59	2161	260	476	2666	389	279	51	574	198	0	104
Grp Sat Flow(s),veh/h/ln	1810	1618	1615	1755	1618	1599	1810	1900	1407	1738	0	1740
Q Serve(g_s), s	3.9	16.1	1.3	20.1	58.3	13.4	22.7	3.5	18.7	8.2	0.0	8.8
Cycle Q Clear(g_c), s	3.9	16.1	1.3	20.1	58.3	13.4	22.7	3.5	18.7	8.2	0.0	8.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.49
Lane Grp Cap(c), veh/h	225	2891	996	530	3063	903	308	287	850	317	0	126
V/C Ratio(X)	0.26	0.75	0.26	0.90	0.87	0.43	0.91	0.18	0.68	0.62	0.00	0.83
Avail Cap(c_a), veh/h	225	2891	996	585	3063	903	362	380	988	348	0	174
HCM Platoon Ratio	2.00	2.00	2.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.14	0.14	0.14	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	50.8	5.3	0.7	66.3	46.9	26.5	61.1	55.5	23.9	65.7	0.0	68.6
Incr Delay (d2), s/veh	0.6	1.8	0.6	2.8	0.5	0.2	23.4	0.3	1.5	3.0	0.0	20.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.6	11.3	1.0	11.9	29.3	7.5	19.4	3.4	11.9	7.4	0.0	8.6
LnGrp Delay(d),s/veh	51.4	7.1	1.4	69.0	47.4	26.7	84.5	55.8	25.4	68.7	0.0	88.7
LnGrp LOS	D	A	A	E	D	C	F	E	C	E		F
Approach Vol, veh/h		2480			3531			904			302	
Approach Delay, s/veh		7.6			48.0			45.4			75.6	
Approach LOS		A			D			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.6	73.0	31.5	16.9	24.6	77.0	19.7	28.7
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	25.0	56.0	30.0	15.0	10.0	71.0	15.0	30.0
Max Q Clear Time (g_c+I1), s	22.1	18.1	24.7	10.8	5.9	60.3	10.2	20.7
Green Ext Time (p_c), s	0.5	25.0	0.8	0.1	2.6	10.0	0.8	2.0

Intersection Summary	
HCM 2010 Ctrl Delay	34.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2212	768	1013	2542	0	0	0	0	771	0	1036
Future Volume (vph)	0	2212	768	1013	2542	0	0	0	0	771	0	1036
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	6.0	6.0					6.0		6.0
Lane Util. Factor		0.81	1.00	0.97	0.91					*1.00		*1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		7544	1568	3433	5085					5257		4845
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		7544	1568	3433	5085					5257		4845
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	2328	808	1066	2676	0	0	0	0	812	0	1091
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	2328	808	1066	2676	0	0	0	0	812	0	1091
Heavy Vehicles (%)	0%	2%	3%	2%	2%	0%	0%	0%	0%	3%	2%	0%
Turn Type		NA	Free	Prot	NA					Prot		custom
Protected Phases		2 3		1	1 2					4 12		3 4 12
Permitted Phases			Free									
Actuated Green, G (s)		47.0	150.0	47.0	69.5					32.0		56.5
Effective Green, g (s)		47.0	150.0	47.0	69.5					32.0		56.5
Actuated g/C Ratio		0.31	1.00	0.31	0.46					0.21		0.38
Clearance Time (s)				6.0								
Vehicle Extension (s)				3.0								
Lane Grp Cap (vph)		2363	1568	1075	2356					1121		1824
v/s Ratio Prot		c0.31		0.31	c0.53					c0.15		c0.23
v/s Ratio Perm			c0.52									
v/c Ratio		0.99	0.52	0.99	1.14					0.72		0.60
Uniform Delay, d1		51.2	0.0	51.3	40.2					54.9		37.6
Progression Factor		0.64	1.00	0.56	0.72					1.00		1.00
Incremental Delay, d2		12.1	0.8	6.5	61.7					2.4		0.6
Delay (s)		44.7	0.8	35.3	90.6					57.2		38.2
Level of Service		D	A	D	F					E		D
Approach Delay (s)		33.4			74.8			0.0			46.4	
Approach LOS		C			E			A			D	

Intersection Summary			
HCM 2000 Control Delay	53.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	36.0
Intersection Capacity Utilization	101.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1103	1880	0	0	2806	1259	749	0	998	0	0	0
Future Volume (vph)	1103	1880	0	0	2806	1259	749	0	998	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0	4.0	6.0		6.0			
Lane Util. Factor	0.97	0.91			0.81	1.00	*1.00		*1.00			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	3090	4622			6857	1439	4825		4317			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3090	4622			6857	1439	4825		4317			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1161	1979	0	0	2954	1325	788	0	1051	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	1161	1979	0	0	2954	1325	788	0	1051	0	0	0
Heavy Vehicles (%)	2%	1%	0%	0%	1%	1%	1%	0%	1%	0%	0%	0%
Turn Type	Prot	NA			NA	Free	Prot		custom			
Protected Phases	5	5 6			6 7		8 16		7 8 16			
Permitted Phases						Free						
Actuated Green, G (s)	45.0	77.0			55.0	150.0	26.0		49.0			
Effective Green, g (s)	45.0	77.0			55.0	150.0	26.0		49.0			
Actuated g/C Ratio	0.30	0.51			0.37	1.00	0.17		0.33			
Clearance Time (s)	6.0											
Vehicle Extension (s)	3.0											
Lane Grp Cap (vph)	927	2372			2514	1439	836		1410			
v/s Ratio Prot	c0.38	0.43			c0.43		0.16		0.24			
v/s Ratio Perm						c0.92						
v/c Ratio	1.25	0.83			1.18	0.92	0.94		0.75			
Uniform Delay, d1	52.5	31.1			47.5	0.0	61.3		44.9			
Progression Factor	0.34	0.95			0.54	1.00	1.00		1.00			
Incremental Delay, d2	116.0	1.2			82.5	9.3	18.6		2.2			
Delay (s)	134.1	30.9			108.1	9.3	79.8		47.1			
Level of Service	F	C			F	A	E		D			
Approach Delay (s)		69.0			77.5			61.2			0.0	
Approach LOS		E			E			E			A	

Intersection Summary			
HCM 2000 Control Delay	71.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.39		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	36.0
Intersection Capacity Utilization	101.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	2728	0	0	3945	140	0	0	0	0	0	120
Future Volume (vph)	150	2728	0	0	3945	140	0	0	0	0	0	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0	6.0						6.0
Lane Util. Factor	1.00	0.86			0.76	1.00						1.00
Frt	1.00	1.00			1.00	0.85						0.86
Flt Protected	0.95	1.00			1.00	1.00						1.00
Satd. Flow (prot)	1787	6471			8578	1599						1627
Flt Permitted	0.95	1.00			1.00	1.00						1.00
Satd. Flow (perm)	1787	6471			8578	1599						1627
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	158	2872	0	0	4153	147	0	0	0	0	0	126
RTOR Reduction (vph)	0	0	0	0	0	30	0	0	0	0	0	0
Lane Group Flow (vph)	158	2872	0	0	4153	117	0	0	0	0	0	126
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	4%	4%	4%	1%	4%	1%
Turn Type	Prot	NA			NA	Perm						Perm
Protected Phases	1	6			2							
Permitted Phases						2						6
Actuated Green, G (s)	18.6	150.0			119.4	119.4						150.0
Effective Green, g (s)	18.6	150.0			119.4	119.4						150.0
Actuated g/C Ratio	0.12	1.00			0.80	0.80						1.00
Clearance Time (s)	6.0	6.0			6.0	6.0						6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0						3.0
Lane Grp Cap (vph)	221	6471			6828	1272						1627
v/s Ratio Prot	c0.09	0.44			c0.48							
v/s Ratio Perm						0.07						0.08
v/c Ratio	0.71	0.44			0.61	0.09						0.08
Uniform Delay, d1	63.2	0.0			6.1	3.4						0.0
Progression Factor	1.16	1.00			0.12	0.00						1.00
Incremental Delay, d2	6.1	0.1			0.1	0.0						0.1
Delay (s)	79.4	0.1			0.9	0.1						0.1
Level of Service	E	A			A	A						A
Approach Delay (s)		4.3			0.8			0.0			0.1	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	2.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	2442	188	208	3227	133	449	20	279	219	21	139
Future Volume (veh/h)	78	2442	188	208	3227	133	449	20	279	219	21	139
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1881	1845	1881	1880	1900	1881	1900	1881	1881	1827	1900
Adj Flow Rate, veh/h	82	2571	198	219	3397	140	473	21	294	231	22	146
Adj No. of Lanes	1	3	1	2	4	0	2	1	2	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	1	3	1	1	1	1	0	1	1	4	4
Cap, veh/h	83	2345	956	271	3157	128	532	403	816	220	25	164
Arrive On Green	0.09	0.91	0.91	0.08	0.49	0.49	0.15	0.21	0.21	0.06	0.12	0.12
Sat Flow, veh/h	1774	5136	1568	3476	6424	261	3476	1900	2814	3476	207	1377
Grp Volume(v), veh/h	82	2571	198	219	2555	982	473	21	294	231	0	168
Grp Sat Flow(s),veh/h/ln	1774	1712	1568	1738	1617	1834	1738	1900	1407	1738	0	1584
Q Serve(g_s), s	6.9	68.5	0.0	9.3	73.7	73.7	20.0	1.3	1.9	9.5	0.0	15.7
Cycle Q Clear(g_c), s	6.9	68.5	0.0	9.3	73.7	73.7	20.0	1.3	1.9	9.5	0.0	15.7
Prop In Lane	1.00		1.00	1.00		0.14	1.00		1.00	1.00		0.87
Lane Grp Cap(c), veh/h	83	2345	956	271	2384	901	532	403	816	220	0	188
V/C Ratio(X)	0.99	1.10	0.21	0.81	1.07	1.09	0.89	0.05	0.36	1.05	0.00	0.89
Avail Cap(c_a), veh/h	83	2345	956	271	2384	901	572	443	876	220	0	209
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.90	0.90	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	68.0	6.5	1.9	68.0	38.1	38.1	62.3	47.1	22.5	70.3	0.0	65.1
Incr Delay (d2), s/veh	90.4	50.1	0.4	16.3	41.1	57.4	15.2	0.1	0.3	74.2	0.0	32.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	9.1	69.6	1.1	8.8	75.5	93.0	16.1	1.3	6.2	12.3	0.0	13.4
LnGrp Delay(d),s/veh	158.4	56.6	2.3	84.4	79.3	95.5	77.5	47.2	22.7	144.5	0.0	97.7
LnGrp LOS	F	F	A	F	F	F	E	D	C	F		F
Approach Vol, veh/h		2851			3756			788			399	
Approach Delay, s/veh		55.7			83.8			56.2			124.8	
Approach LOS		E			F			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	81.2	16.0	38.8	19.2	76.0	29.9	24.8
Change Period (Y+Rc), s	7.0	7.5	6.5	7.0	7.5	* 7.5	7.0	* 7
Max Green Setting (Gmax), s	7.0	70.5	9.5	35.0	9.0	* 69	24.7	* 20
Max Q Clear Time (g_c+I1), s	8.9	75.7	11.5	3.9	11.3	70.5	22.0	17.7
Green Ext Time (p_c), s	0.0	0.0	0.0	3.2	0.0	0.0	0.9	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	72.9
HCM 2010 LOS	E

Notes

Alternative 2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	678	1705	294	304	1223	346	390	826	381	433	642	403
Future Volume (veh/h)	678	1705	294	304	1223	346	390	826	381	433	642	403
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1845	1845	1792	1776	1743	1827	1845	1845	1863	1827
Adj Flow Rate, veh/h	714	1795	309	320	1287	364	411	869	401	456	676	424
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	3	3	6	7	9	4	3	3	2	4
Cap, veh/h	836	1843	774	487	1285	396	423	1064	559	447	1085	709
Arrive On Green	0.24	0.36	0.36	0.05	0.09	0.09	0.13	0.21	0.21	0.13	0.21	0.21
Sat Flow, veh/h	3442	5085	1568	3408	4893	1509	3221	4988	1568	3408	5085	1553
Grp Volume(v), veh/h	714	1795	309	320	1287	364	411	869	401	456	676	424
Grp Sat Flow(s),veh/h/ln	1721	1695	1568	1704	1631	1509	1610	1663	1568	1704	1695	1553
Q Serve(g_s), s	31.7	55.6	9.9	14.8	42.0	38.3	20.3	26.6	12.5	21.0	19.3	10.1
Cycle Q Clear(g_c), s	31.7	55.6	9.9	14.8	42.0	38.3	20.3	26.6	12.5	21.0	19.3	10.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	836	1843	774	487	1285	396	423	1064	559	447	1085	709
V/C Ratio(X)	0.85	0.97	0.40	0.66	1.00	0.92	0.97	0.82	0.72	1.02	0.62	0.60
Avail Cap(c_a), veh/h	836	1843	774	487	1285	396	423	1278	626	447	1303	775
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.9	50.2	9.5	72.4	73.1	71.4	69.2	60.0	44.5	69.5	57.1	13.0
Incr Delay (d2), s/veh	8.6	15.6	1.5	3.2	25.6	28.8	36.4	3.6	3.5	47.5	0.7	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	22.6	37.6	8.0	11.6	39.7	26.4	16.7	18.4	9.9	23.1	14.1	12.3
LnGrp Delay(d),s/veh	66.5	65.9	11.0	75.6	98.6	100.1	105.7	63.5	48.0	117.0	57.8	14.1
LnGrp LOS	E	E	B	E	F	F	F	E	D	F	E	B
Approach Vol, veh/h		2818			1971			1681			1556	
Approach Delay, s/veh		60.0			95.2			70.1			63.2	
Approach LOS		E			F			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.9	64.0	27.0	40.1	44.9	48.0	27.0	40.1
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	16.0	58.0	21.0	41.0	32.0	42.0	21.0	41.0
Max Q Clear Time (g_c+I1), s	16.8	57.6	22.3	21.3	33.7	44.0	23.0	28.6
Green Ext Time (p_c), s	0.0	0.3	0.0	7.6	0.0	0.0	0.0	5.6

Intersection Summary	
HCM 2010 Ctrl Delay	71.4
HCM 2010 LOS	E

Movement	EBL	EBR	EBR2	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	2562	83	196	1917	135	52	9	207	219	13	31
Future Volume (vph)	29	2562	83	196	1917	135	52	9	207	219	13	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	*0.86	1.00	0.97	0.86	1.00	1.00	1.00	0.88	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	6346	1599	3400	6285	1553	1752	1900	2760	3467	1644	
Flt Permitted	0.08	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	147	6346	1599	3400	6285	1553	1752	1900	2760	3467	1644	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	31	2697	87	206	2018	142	55	9	218	231	14	33
RTOR Reduction (vph)	0	0	36	0	0	35	0	0	48	0	29	0
Lane Group Flow (vph)	31	2697	51	206	2018	107	55	9	170	231	18	0
Heavy Vehicles (%)	3%	2%	1%	3%	4%	4%	3%	0%	3%	1%	2%	4%
Turn Type	pm+pt	Prot	pm+ov	Prot	NA	custom	Split	NA	custom	Split	NA	
Protected Phases	5	2	8	1	6	4	8	8	1	4	4	
Permitted Phases	2		2			6			8			
Actuated Green, G (s)	89.3	84.2	94.6	24.4	103.5	120.5	10.4	10.4	34.8	17.0	17.0	
Effective Green, g (s)	89.3	84.2	94.6	24.4	103.5	120.5	10.4	10.4	34.8	17.0	17.0	
Actuated g/C Ratio	0.56	0.53	0.59	0.15	0.65	0.75	0.07	0.07	0.22	0.11	0.11	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	133	3339	945	518	4065	1227	113	123	703	368	174	
v/s Ratio Prot	0.01	c0.42	0.00	c0.06	c0.32	0.01	c0.03	0.00	0.04	c0.07	0.01	
v/s Ratio Perm	0.12		0.03			0.06			0.02			
v/c Ratio	0.23	0.81	0.05	0.40	0.50	0.09	0.49	0.07	0.24	0.63	0.10	
Uniform Delay, d1	15.9	31.2	13.8	61.2	14.7	5.2	72.2	70.3	51.7	68.5	64.6	
Progression Factor	0.75	0.52	1.04	0.93	0.65	0.29	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.5	0.8	0.0	2.1	0.4	0.1	3.3	0.3	0.2	7.9	1.2	
Delay (s)	12.4	16.9	14.4	59.0	9.9	1.6	75.5	70.5	51.9	76.3	65.7	
Level of Service	B	B	B	E	A	A	E	E	D	E	E	
Approach Delay (s)					13.7			57.1			74.6	
Approach LOS					B			E			E	

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NWL	NWR	NEL	NER
Lane Configurations								
Traffic Volume (vph)	0	0	0	0	1479	0	0	2227
Future Volume (vph)	0	0	0	0	1479	0	0	2227
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.0			6.0
Lane Util. Factor					0.91			*0.91
Frt					1.00			1.00
Flt Protected					1.00			1.00
Satd. Flow (prot)					6587			6715
Flt Permitted					1.00			1.00
Satd. Flow (perm)					6587			6715
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	0	1557	0	0	2344
RTOR Reduction (vph)	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1557	0	0	2344
Heavy Vehicles (%)	0%	0%	0%	0%	5%	0%	0%	3%
Turn Type					Prot			custom
Protected Phases					1 3			2 4
Permitted Phases								
Actuated Green, G (s)					35.0			33.0
Effective Green, g (s)					35.0			33.0
Actuated g/C Ratio					0.44			0.41
Clearance Time (s)								
Vehicle Extension (s)								
Lane Grp Cap (vph)					2881			2769
v/s Ratio Prot					c0.24			c0.35
v/s Ratio Perm								
v/c Ratio					0.54			0.85
Uniform Delay, d1					16.6			21.2
Progression Factor					0.96			1.01
Incremental Delay, d2					0.2			1.6
Delay (s)					16.1			23.0
Level of Service					B			C
Approach Delay (s)	0.0			0.0	16.1		23.0	
Approach LOS	A			A	B		C	

Intersection Summary			
HCM 2000 Control Delay	20.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	44.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SEL	SER	SWL	SWR
Lane Configurations								
Traffic Volume (vph)	0	0	0	0	2209	0	0	1862
Future Volume (vph)	0	0	0	0	2209	0	0	1862
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.0			6.0
Lane Util. Factor					0.91			*0.91
Frt					1.00			1.00
Flt Protected					1.00			1.00
Satd. Flow (prot)					6715			6715
Flt Permitted					1.00			1.00
Satd. Flow (perm)					6715			6715
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	0	2325	0	0	1960
RTOR Reduction (vph)	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	2325	0	0	1960
Heavy Vehicles (%)	0%	0%	0%	0%	3%	0%	0%	3%
Turn Type					Prot			custom
Protected Phases					5 7			6 8
Permitted Phases								
Actuated Green, G (s)					35.0			33.0
Effective Green, g (s)					35.0			33.0
Actuated g/C Ratio					0.44			0.41
Clearance Time (s)								
Vehicle Extension (s)								
Lane Grp Cap (vph)					2937			2769
v/s Ratio Prot					c0.35			c0.29
v/s Ratio Perm								
v/c Ratio					0.79			0.71
Uniform Delay, d1					19.4			19.5
Progression Factor					0.95			1.10
Incremental Delay, d2					1.4			0.7
Delay (s)					19.8			22.1
Level of Service					B			C
Approach Delay (s)		0.0	0.0		19.8		22.1	
Approach LOS		A	A		B		C	

Intersection Summary			
HCM 2000 Control Delay	20.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	37.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	165	2782	216	145	2121	130	241	14	153	316	24	106
Future Volume (veh/h)	165	2782	216	145	2121	130	241	14	153	316	24	106
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1863	1792	1881	1825	1900	1827	1900	1863	1900	1756	1900
Adj Flow Rate, veh/h	174	2928	227	153	2233	137	254	15	161	333	25	112
Adj No. of Lanes	2	3	1	2	4	0	2	1	2	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	6	2	6	1	4	4	4	0	2	0	0	0
Cap, veh/h	290	3083	1067	174	3466	212	316	226	331	591	28	125
Arrive On Green	0.09	0.61	0.61	0.05	0.57	0.57	0.09	0.12	0.12	0.08	0.10	0.10
Sat Flow, veh/h	3312	5085	1524	3476	6094	373	3375	1900	2787	3510	280	1255
Grp Volume(v), veh/h	174	2928	227	153	1725	645	254	15	161	333	0	137
Grp Sat Flow(s),veh/h/ln	1656	1695	1524	1738	1569	1759	1688	1900	1393	1755	0	1535
Q Serve(g_s), s	8.1	85.5	3.9	7.0	39.9	40.0	11.8	1.1	7.4	12.0	0.0	14.1
Cycle Q Clear(g_c), s	8.1	85.5	3.9	7.0	39.9	40.0	11.8	1.1	7.4	12.0	0.0	14.1
Prop In Lane	1.00		1.00	1.00		0.21	1.00		1.00	1.00		0.82
Lane Grp Cap(c), veh/h	290	3083	1067	174	2678	1000	316	226	331	591	0	153
V/C Ratio(X)	0.60	0.95	0.21	0.88	0.64	0.65	0.80	0.07	0.49	0.56	0.00	0.89
Avail Cap(c_a), veh/h	290	3083	1067	174	2678	1000	316	226	331	591	0	153
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.00	0.97
Uniform Delay (d), s/veh	70.3	29.2	2.5	75.5	23.5	23.5	71.0	62.6	48.6	60.2	0.0	71.2
Incr Delay (d2), s/veh	8.9	8.1	0.5	42.6	1.2	3.2	19.0	0.1	1.1	1.2	0.0	42.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.3	52.8	3.1	7.8	24.4	27.6	10.5	1.1	5.2	10.8	0.0	12.3
LnGrp Delay(d),s/veh	79.2	37.4	3.0	118.1	24.7	26.7	90.1	62.7	49.7	61.4	0.0	113.1
LnGrp LOS	E	D	A	F	C	C	F	E	D	E		F
Approach Vol, veh/h		3329			2523			430			470	
Approach Delay, s/veh		37.2			30.9			74.0			76.5	
Approach LOS		D			C			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	103.0	21.0	22.0	20.0	97.0	18.0	25.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	8.0	97.0	15.0	16.0	14.0	91.0	12.0	19.0
Max Q Clear Time (g_c+I1), s	9.0	87.5	13.8	16.1	10.1	42.0	14.0	9.4
Green Ext Time (p_c), s	0.0	9.1	0.1	0.0	0.2	30.3	0.0	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	39.9
HCM 2010 LOS	D

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	13	22	55	253	424	22
Future Volume (vph)	13	22	55	253	424	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0	6.0	6.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.92		1.00	1.00	0.99	
Flt Protected	0.98		0.95	1.00	1.00	
Satd. Flow (prot)	1658		1752	1845	1832	
Flt Permitted	0.98		0.49	1.00	1.00	
Satd. Flow (perm)	1658		909	1845	1832	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	14	23	58	266	446	23
RTOR Reduction (vph)	22	0	0	0	1	0
Lane Group Flow (vph)	15	0	58	266	468	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	6.2		141.8	141.8	141.8	
Effective Green, g (s)	6.2		141.8	141.8	141.8	
Actuated g/C Ratio	0.04		0.89	0.89	0.89	
Clearance Time (s)	6.0		6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	64		805	1635	1623	
v/s Ratio Prot	c0.01			0.14	c0.26	
v/s Ratio Perm			0.06			
v/c Ratio	0.23		0.07	0.16	0.29	
Uniform Delay, d1	74.6		1.1	1.2	1.4	
Progression Factor	1.00		0.25	0.96	1.00	
Incremental Delay, d2	1.9		0.2	0.2	0.4	
Delay (s)	76.5		0.4	1.4	1.8	
Level of Service	E		A	A	A	
Approach Delay (s)	76.5			1.2	1.8	
Approach LOS	E			A	A	

Intersection Summary			
HCM 2000 Control Delay	4.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	45.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	0	0	1479	0	0	922
Future Volume (vph)	0	0	1479	0	0	922
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	8	12	12	12	12
Total Lost time (s)			4.0			6.0
Lane Util. Factor			0.86			0.76
Frt			1.00			0.85
Flt Protected			1.00			1.00
Satd. Flow (prot)			6225			3575
Flt Permitted			1.00			1.00
Satd. Flow (perm)			6225			3575
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	1557	0	0	971
RTOR Reduction (vph)	0	0	0	0	0	188
Lane Group Flow (vph)	0	0	1557	0	0	783
Heavy Vehicles (%)	0%	0%	5%	3%	0%	3%
Turn Type			NA			custom
Protected Phases			Free!			2 4!
Permitted Phases						
Actuated Green, G (s)			80.0			33.0
Effective Green, g (s)			80.0			33.0
Actuated g/C Ratio			1.00			0.41
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)			6225			1474
v/s Ratio Prot			0.25			c0.22
v/s Ratio Perm						
v/c Ratio			0.25			0.53
Uniform Delay, d1			0.0			17.7
Progression Factor			1.00			1.00
Incremental Delay, d2			0.1			0.4
Delay (s)			0.1			18.1
Level of Service			A			B
Approach Delay (s)		0.0	0.1		18.1	
Approach LOS		A	A		B	

Intersection Summary			
HCM 2000 Control Delay	7.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	51.3%	ICU Level of Service	A
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Traffic Volume (vph)	0	2227	0	0	1042	0
Future Volume (vph)	0	2227	0	0	1042	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			6.0	
Lane Util. Factor		0.86			0.94	
Frt		1.00			1.00	
Flt Protected		1.00			0.95	
Satd. Flow (prot)		6346			4990	
Flt Permitted		1.00			0.95	
Satd. Flow (perm)		6346			4990	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	2344	0	0	1097	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	2344	0	0	1097	0
Heavy Vehicles (%)	0%	3%	0%	0%	2%	0%
Turn Type		NA			Prot	
Protected Phases		Free!			1 3!	
Permitted Phases						
Actuated Green, G (s)		80.0			35.0	
Effective Green, g (s)		80.0			35.0	
Actuated g/C Ratio		1.00			0.44	
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)		6346			2183	
v/s Ratio Prot		0.37			c0.22	
v/s Ratio Perm						
v/c Ratio		0.37			0.50	
Uniform Delay, d1		0.0			16.2	
Progression Factor		1.00			1.00	
Incremental Delay, d2		0.1			0.2	
Delay (s)		0.1			16.4	
Level of Service		A			B	
Approach Delay (s)		0.1	0.0		16.4	
Approach LOS		A	A		B	

Intersection Summary			
HCM 2000 Control Delay	5.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Volume (vph)	0	0	0	1862	527	0
Future Volume (vph)	0	0	0	1862	527	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	6.0	
Lane Util. Factor				0.86	0.94	
Frt				1.00	1.00	
Flt Protected				1.00	0.95	
Satd. Flow (prot)				6346	4894	
Flt Permitted				1.00	0.95	
Satd. Flow (perm)				6346	4894	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	1960	555	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	1960	555	0
Heavy Vehicles (%)	0%	0%	0%	3%	4%	0%
Turn Type				NA	Prot	
Protected Phases				Free!	7 5!	
Permitted Phases						
Actuated Green, G (s)				80.0	35.0	
Effective Green, g (s)				80.0	35.0	
Actuated g/C Ratio				1.00	0.44	
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)				6346	2141	
v/s Ratio Prot				0.31	0.11	
v/s Ratio Perm						
v/c Ratio				0.31	0.26	
Uniform Delay, d1				0.0	14.3	
Progression Factor				1.00	1.00	
Incremental Delay, d2				0.1	0.1	
Delay (s)				0.1	14.3	
Level of Service				A	B	
Approach Delay (s)	0.0			0.1	14.3	
Approach LOS	A			A	B	

Intersection Summary			
HCM 2000 Control Delay	3.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	45.3%	ICU Level of Service	A
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	2209	0	0	0	0	999
Future Volume (vph)	2209	0	0	0	0	999
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0					6.0
Lane Util. Factor	0.86					0.76
Frt	1.00					0.85
Flt Protected	1.00					1.00
Satd. Flow (prot)	6346					3610
Flt Permitted	1.00					1.00
Satd. Flow (perm)	6346					3610
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2325	0	0	0	0	1052
RTOR Reduction (vph)	0	0	0	0	0	65
Lane Group Flow (vph)	2325	0	0	0	0	987
Heavy Vehicles (%)	3%	0%	0%	0%	0%	2%
Turn Type	NA					custom
Protected Phases	Free!					6 8!
Permitted Phases						
Actuated Green, G (s)	80.0					33.0
Effective Green, g (s)	80.0					33.0
Actuated g/C Ratio	1.00					0.41
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)	6346					1489
v/s Ratio Prot	0.37					c0.27
v/s Ratio Perm						
v/c Ratio	0.37					0.66
Uniform Delay, d1	0.0					19.0
Progression Factor	1.00					1.00
Incremental Delay, d2	0.1					1.1
Delay (s)	0.1					20.1
Level of Service	A					C
Approach Delay (s)	0.1			0.0	20.1	
Approach LOS	A			A	C	

Intersection Summary			
HCM 2000 Control Delay	6.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	63.6%	ICU Level of Service	B
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	486	1241	242	390	1870	419	550	743	476	495	845	819
Future Volume (veh/h)	486	1241	242	390	1870	419	550	743	476	495	845	819
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1863	1845	1881	1881	1881	1881	1881	1881	1881	1863	1881
Adj Flow Rate, veh/h	512	1306	255	411	1968	441	579	782	501	521	889	862
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	2	3	1	1	1	1	1	1	1	2	1
Cap, veh/h	371	1695	700	440	1814	565	394	1405	640	371	1357	597
Arrive On Green	0.11	0.33	0.33	0.04	0.12	0.12	0.11	0.27	0.27	0.11	0.27	0.27
Sat Flow, veh/h	3476	5085	1568	3476	5136	1599	3476	5136	1599	3476	5085	1599
Grp Volume(v), veh/h	512	1306	255	411	1968	441	579	782	501	521	889	862
Grp Sat Flow(s),veh/h/ln	1738	1695	1568	1738	1712	1599	1738	1712	1599	1738	1695	1599
Q Serve(g_s), s	16.0	34.6	0.0	17.7	53.0	40.2	17.0	19.6	16.6	16.0	23.3	35.2
Cycle Q Clear(g_c), s	16.0	34.6	0.0	17.7	53.0	40.2	17.0	19.6	16.6	16.0	23.3	35.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	371	1695	700	440	1814	565	394	1405	640	371	1357	597
V/C Ratio(X)	1.38	0.77	0.36	0.93	1.09	0.78	1.47	0.56	0.78	1.41	0.66	1.44
Avail Cap(c_a), veh/h	371	1695	700	440	1814	565	394	1438	650	371	1390	608
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.0	44.9	27.4	71.3	66.3	60.6	66.5	46.7	20.7	67.0	48.9	21.3
Incr Delay (d2), s/veh	187.5	3.4	1.5	27.3	48.3	10.3	224.9	0.5	6.1	197.9	1.1	208.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	31.2	23.5	11.6	15.4	59.9	26.7	36.8	14.3	13.1	32.2	16.5	90.1
LnGrp Delay(d),s/veh	254.5	48.3	28.9	98.5	114.6	70.9	291.4	47.2	26.8	264.9	49.9	230.2
LnGrp LOS	F	D	C	F	F	E	F	D	C	F	D	F
Approach Vol, veh/h		2073			2820			1862			2272	
Approach Delay, s/veh		96.9			105.4			117.6			167.6	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.0	56.0	23.0	46.0	22.0	59.0	22.0	47.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	18.0	50.0	17.0	41.0	16.0	52.0	16.0	42.0
Max Q Clear Time (g_c+I1), s	19.7	36.6	19.0	37.2	18.0	55.0	18.0	21.6
Green Ext Time (p_c), s	0.0	7.6	0.0	2.9	0.0	0.0	0.0	9.5

Intersection Summary	
HCM 2010 Ctrl Delay	121.6
HCM 2010 LOS	F

Movement	EBL	EBR	EBR2	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	2053	247	452	2533	370	265	48	545	188	50	48
Future Volume (vph)	56	2053	247	452	2533	370	265	48	545	188	50	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	*0.86	1.00	0.97	0.86	1.00	1.00	1.00	0.88	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1805	6346	1615	3502	6471	1599	1805	1900	2814	3467	1751	
Flt Permitted	0.08	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	146	6346	1615	3502	6471	1599	1805	1900	2814	3467	1751	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	59	2161	260	476	2666	389	279	51	574	198	53	51
RTOR Reduction (vph)	0	0	90	0	0	103	0	0	70	0	23	0
Lane Group Flow (vph)	59	2161	170	476	2666	286	279	51	504	198	81	0
Heavy Vehicles (%)	0%	1%	0%	0%	1%	1%	0%	0%	1%	1%	1%	0%
Turn Type	pm+pt	Prot	pm+ov	Prot	NA	custom	Split	NA	custom	Split	NA	
Protected Phases	5	2	8	1	6	4	8	8	1	4	4	
Permitted Phases	2		2			6			8			
Actuated Green, G (s)	56.0	56.0	82.3	27.5	79.5	95.7	26.3	26.3	53.8	16.2	16.2	
Effective Green, g (s)	56.0	56.0	82.3	27.5	79.5	95.7	26.3	26.3	53.8	16.2	16.2	
Actuated g/C Ratio	0.37	0.37	0.55	0.18	0.53	0.64	0.18	0.18	0.36	0.11	0.11	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	98	2369	886	642	3429	1020	316	333	1121	374	189	
v/s Ratio Prot	0.02	c0.34	0.03	0.14	c0.41	0.03	c0.15	0.03	0.08	c0.06	0.05	
v/s Ratio Perm	0.21		0.07			0.15			0.10			
v/c Ratio	0.60	0.91	0.19	0.74	0.78	0.28	0.88	0.15	0.45	0.53	0.43	
Uniform Delay, d1	52.6	44.7	17.1	57.9	28.2	12.0	60.3	52.4	36.8	63.3	62.6	
Progression Factor	1.01	1.01	3.29	0.94	0.88	1.42	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	5.2	3.2	0.1	6.6	1.6	0.6	23.9	0.2	0.3	5.3	6.9	
Delay (s)	58.4	48.3	56.2	61.0	26.5	17.6	84.2	52.6	37.1	68.6	69.5	
Level of Service	E	D	E	E	C	B	F	D	D	E	E	
Approach Delay (s)					30.1			52.5			68.9	
Approach LOS					C			D			E	

Intersection Summary			
HCM 2000 Control Delay	41.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NWL	NWR	NEL	NER
Lane Configurations								
Traffic Volume (vph)	0	0	0	0	2542	0	0	2212
Future Volume (vph)	0	0	0	0	2542	0	0	2212
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.0			6.0
Lane Util. Factor					0.91			*0.91
Frt					1.00			1.00
Flt Protected					1.00			1.00
Satd. Flow (prot)					6587			6715
Flt Permitted					1.00			1.00
Satd. Flow (perm)					6587			6715
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	0	2676	0	0	2328
RTOR Reduction (vph)	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	2676	0	0	2328
Heavy Vehicles (%)	0%	0%	0%	0%	5%	0%	0%	3%
Turn Type					Prot			custom
Protected Phases					1 3			2 4
Permitted Phases								
Actuated Green, G (s)					35.0			28.0
Effective Green, g (s)					35.0			28.0
Actuated g/C Ratio					0.47			0.37
Clearance Time (s)								
Vehicle Extension (s)								
Lane Grp Cap (vph)					3073			2506
v/s Ratio Prot					c0.41			c0.35
v/s Ratio Perm								
v/c Ratio					0.87			0.93
Uniform Delay, d1					18.0			22.5
Progression Factor					0.93			1.96
Incremental Delay, d2					2.8			4.5
Delay (s)					19.4			48.6
Level of Service					B			D
Approach Delay (s)	0.0			0.0	19.4		48.6	
Approach LOS	A			A	B		D	

Intersection Summary			
HCM 2000 Control Delay	33.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SEL	SER	SWL	SWR
Lane Configurations								
Traffic Volume (vph)	0	0	0	0	2806	0	0	1880
Future Volume (vph)	0	0	0	0	2806	0	0	1880
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.0			6.0
Lane Util. Factor					0.91			*0.91
Frt					1.00			1.00
Flt Protected					1.00			1.00
Satd. Flow (prot)					6715			6715
Flt Permitted					1.00			1.00
Satd. Flow (perm)					6715			6715
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	0	2954	0	0	1979
RTOR Reduction (vph)	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	2954	0	0	1979
Heavy Vehicles (%)	0%	0%	0%	0%	3%	0%	0%	3%
Turn Type					Prot			custom
Protected Phases					5 7			6 8
Permitted Phases								
Actuated Green, G (s)					35.0			28.0
Effective Green, g (s)					35.0			28.0
Actuated g/C Ratio					0.47			0.37
Clearance Time (s)								
Vehicle Extension (s)								
Lane Grp Cap (vph)					3133			2506
v/s Ratio Prot					c0.44			c0.29
v/s Ratio Perm								
v/c Ratio					0.94			0.79
Uniform Delay, d1					19.0			20.9
Progression Factor					1.03			1.48
Incremental Delay, d2					6.7			0.8
Delay (s)					26.3			31.6
Level of Service					C			C
Approach Delay (s)		0.0	0.0		26.3		31.6	
Approach LOS		A	A		C		C	

Intersection Summary			
HCM 2000 Control Delay	28.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	45.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	228	2442	188	208	3227	133	449	20	279	219	21	139
Future Volume (veh/h)	228	2442	188	208	3227	133	449	20	279	219	21	139
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1881	1845	1881	1880	1900	1881	1900	1881	1881	1827	1900
Adj Flow Rate, veh/h	240	2571	198	219	3397	140	473	21	294	231	22	146
Adj No. of Lanes	2	3	1	2	4	0	2	1	2	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	1	3	1	1	1	1	0	1	1	4	4
Cap, veh/h	252	2739	1045	232	3384	138	463	355	525	503	22	147
Arrive On Green	0.07	0.53	0.53	0.07	0.53	0.53	0.13	0.19	0.19	0.05	0.11	0.11
Sat Flow, veh/h	3442	5136	1568	3476	6424	261	3476	1900	2814	3476	207	1377
Grp Volume(v), veh/h	240	2571	198	219	2555	982	473	21	294	231	0	168
Grp Sat Flow(s),veh/h/ln	1721	1712	1568	1738	1617	1834	1738	1900	1407	1738	0	1584
Q Serve(g_s), s	10.4	70.2	3.2	9.4	79.0	79.0	20.0	1.4	11.7	8.0	0.0	15.9
Cycle Q Clear(g_c), s	10.4	70.2	3.2	9.4	79.0	79.0	20.0	1.4	11.7	8.0	0.0	15.9
Prop In Lane	1.00		1.00	1.00		0.14	1.00		1.00	1.00		0.87
Lane Grp Cap(c), veh/h	252	2739	1045	232	2555	966	463	355	525	503	0	169
V/C Ratio(X)	0.95	0.94	0.19	0.95	1.00	1.02	1.02	0.06	0.56	0.46	0.00	0.99
Avail Cap(c_a), veh/h	252	2739	1045	232	2555	966	463	355	525	503	0	169
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.00	0.98
Uniform Delay (d), s/veh	69.2	32.7	2.8	69.7	35.5	35.5	65.0	50.2	37.2	56.7	0.0	67.0
Incr Delay (d2), s/veh	45.3	7.8	0.4	46.4	17.8	33.2	47.1	0.1	1.3	0.6	0.0	66.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	10.8	44.8	2.7	10.1	49.5	87.5	22.7	1.3	8.2	0.9	0.0	15.2
LnGrp Delay(d),s/veh	114.5	40.5	3.2	116.2	53.3	68.7	112.1	50.2	38.6	57.4	0.0	133.6
LnGrp LOS	F	D	A	F	D	F	F	D	D	E		F
Approach Vol, veh/h		3009			3756			788			399	
Approach Delay, s/veh		44.0			61.0			83.0			89.5	
Approach LOS		D			E			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	86.0	26.0	22.0	17.0	85.0	14.0	34.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	10.0	80.0	20.0	16.0	11.0	79.0	8.0	28.0
Max Q Clear Time (g_c+I1), s	11.4	72.2	22.0	17.9	12.4	81.0	10.0	13.7
Green Ext Time (p_c), s	0.0	7.3	0.0	0.0	0.0	0.0	0.0	1.9

Intersection Summary	
HCM 2010 Ctrl Delay	58.2
HCM 2010 LOS	E

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	10	25	175	206	354	25
Future Volume (vph)	10	25	175	206	354	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0	6.0	6.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.91		1.00	1.00	0.99	
Flt Protected	0.99		0.95	1.00	1.00	
Satd. Flow (prot)	1645		1752	1845	1828	
Flt Permitted	0.99		0.53	1.00	1.00	
Satd. Flow (perm)	1645		972	1845	1828	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	11	26	184	217	373	26
RTOR Reduction (vph)	25	0	0	0	2	0
Lane Group Flow (vph)	12	0	184	217	397	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	4.3		63.7	63.7	63.7	
Effective Green, g (s)	4.3		63.7	63.7	63.7	
Actuated g/C Ratio	0.05		0.80	0.80	0.80	
Clearance Time (s)	6.0		6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	88		773	1469	1455	
v/s Ratio Prot	c0.01			0.12	c0.22	
v/s Ratio Perm			0.19			
v/c Ratio	0.14		0.24	0.15	0.27	
Uniform Delay, d1	36.1		2.0	1.9	2.1	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.7		0.7	0.2	0.5	
Delay (s)	36.8		2.8	2.1	2.6	
Level of Service	D		A	A	A	
Approach Delay (s)	36.8			2.4	2.6	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay	4.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	0	0	2542	0	0	1036
Future Volume (vph)	0	0	2542	0	0	1036
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	8	12	12	12	12
Total Lost time (s)			4.0			6.0
Lane Util. Factor			0.86			0.76
Frt			1.00			0.85
Flt Protected			1.00			1.00
Satd. Flow (prot)			6408			3610
Flt Permitted			1.00			1.00
Satd. Flow (perm)			6408			3610
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	2676	0	0	1091
RTOR Reduction (vph)	0	0	0	0	0	42
Lane Group Flow (vph)	0	0	2676	0	0	1049
Heavy Vehicles (%)	0%	0%	2%	3%	0%	2%
Turn Type			NA			custom
Protected Phases			Free!			2 4!
Permitted Phases						
Actuated Green, G (s)			75.0			28.0
Effective Green, g (s)			75.0			28.0
Actuated g/C Ratio			1.00			0.37
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)			6408			1347
v/s Ratio Prot			0.42			c0.29
v/s Ratio Perm						
v/c Ratio			0.42			0.78
Uniform Delay, d1			0.0			20.8
Progression Factor			1.00			1.00
Incremental Delay, d2			0.1			2.9
Delay (s)			0.1			23.7
Level of Service			A			C
Approach Delay (s)		0.0	0.1		23.7	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	6.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Traffic Volume (vph)	0	2212	0	0	771	0
Future Volume (vph)	0	2212	0	0	771	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			6.0	
Lane Util. Factor		0.86			0.94	
Frt		1.00			1.00	
Flt Protected		1.00			0.95	
Satd. Flow (prot)		6408			4942	
Flt Permitted		1.00			0.95	
Satd. Flow (perm)		6408			4942	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	2328	0	0	812	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	2328	0	0	812	0
Heavy Vehicles (%)	0%	2%	0%	0%	3%	0%
Turn Type		NA			Prot	
Protected Phases		Free!			1 3!	
Permitted Phases						
Actuated Green, G (s)		75.0			35.0	
Effective Green, g (s)		75.0			35.0	
Actuated g/C Ratio		1.00			0.47	
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)		6408			2306	
v/s Ratio Prot		0.36			0.16	
v/s Ratio Perm						
v/c Ratio		0.36			0.35	
Uniform Delay, d1		0.0			12.8	
Progression Factor		1.00			1.00	
Incremental Delay, d2		0.1			0.1	
Delay (s)		0.1			12.9	
Level of Service		A			B	
Approach Delay (s)		0.1	0.0		12.9	
Approach LOS		A	A		B	

Intersection Summary			
HCM 2000 Control Delay	3.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Volume (vph)	0	0	0	2806	749	0
Future Volume (vph)	0	0	0	2806	749	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	6.0	
Lane Util. Factor				0.86	0.94	
Frt				1.00	1.00	
Flt Protected				1.00	0.95	
Satd. Flow (prot)				6471	5040	
Flt Permitted				1.00	0.95	
Satd. Flow (perm)				6471	5040	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	2954	788	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	2954	788	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	0%
Turn Type				NA	Prot	
Protected Phases				Free!	7 5!	
Permitted Phases						
Actuated Green, G (s)				75.0	35.0	
Effective Green, g (s)				75.0	35.0	
Actuated g/C Ratio				1.00	0.47	
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)				6471	2352	
v/s Ratio Prot				0.46	0.16	
v/s Ratio Perm						
v/c Ratio				0.46	0.34	
Uniform Delay, d1				0.0	12.6	
Progression Factor				1.00	1.00	
Incremental Delay, d2				0.2	0.1	
Delay (s)				0.2	12.7	
Level of Service				A	B	
Approach Delay (s)	0.0			0.2	12.7	
Approach LOS	A			A	B	

Intersection Summary			
HCM 2000 Control Delay	2.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	1880	0	0	0	0	998
Future Volume (vph)	1880	0	0	0	0	998
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0					6.0
Lane Util. Factor	0.86					0.76
Frt	1.00					0.85
Flt Protected	1.00					1.00
Satd. Flow (prot)	6471					3646
Flt Permitted	1.00					1.00
Satd. Flow (perm)	6471					3646
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1979	0	0	0	0	1051
RTOR Reduction (vph)	0	0	0	0	0	112
Lane Group Flow (vph)	1979	0	0	0	0	939
Heavy Vehicles (%)	1%	0%	0%	0%	0%	1%
Turn Type	NA					custom
Protected Phases	Free!					6 8!
Permitted Phases						
Actuated Green, G (s)	75.0					28.0
Effective Green, g (s)	75.0					28.0
Actuated g/C Ratio	1.00					0.37
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)	6471					1361
v/s Ratio Prot	0.31					c0.26
v/s Ratio Perm						
v/c Ratio	0.31					0.69
Uniform Delay, d1	0.0					19.8
Progression Factor	1.00					1.00
Incremental Delay, d2	0.0					1.5
Delay (s)	0.0					21.4
Level of Service	A					C
Approach Delay (s)	0.0			0.0	21.4	
Approach LOS	A			A	C	

Intersection Summary			
HCM 2000 Control Delay	7.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

Alternative 3

Alternative 3A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	678	1705	294	304	1223	346	390	826	381	433	642	403
Future Volume (veh/h)	678	1705	294	304	1223	346	390	826	381	433	642	403
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1845	1845	1792	1776	1743	1827	1845	1845	1863	1827
Adj Flow Rate, veh/h	714	1795	309	320	1287	364	411	869	401	456	676	424
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	3	3	6	7	9	4	3	3	2	4
Cap, veh/h	676	1919	592	335	1381	426	395	1147	361	481	1279	391
Arrive On Green	0.20	0.38	0.38	0.10	0.28	0.28	0.12	0.23	0.23	0.14	0.25	0.25
Sat Flow, veh/h	3442	5085	1568	3408	4893	1509	3221	4988	1568	3408	5085	1553
Grp Volume(v), veh/h	714	1795	309	320	1287	364	411	869	401	456	676	424
Grp Sat Flow(s),veh/h/ln	1721	1695	1568	1704	1631	1509	1610	1663	1568	1704	1695	1553
Q Serve(g_s), s	32.0	55.4	24.9	15.2	41.8	25.7	20.0	26.5	37.5	21.6	18.7	26.5
Cycle Q Clear(g_c), s	32.0	55.4	24.9	15.2	41.8	25.7	20.0	26.5	37.5	21.6	18.7	26.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	676	1919	592	335	1381	426	395	1147	361	481	1279	391
V/C Ratio(X)	1.06	0.94	0.52	0.96	0.93	0.85	1.04	0.76	1.11	0.95	0.53	1.09
Avail Cap(c_a), veh/h	676	1919	592	335	1381	426	395	1147	361	481	1279	391
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.5	48.8	39.4	73.2	57.0	26.5	71.5	58.5	62.7	69.4	52.7	25.6
Incr Delay (d2), s/veh	50.6	10.1	3.3	37.7	12.6	19.2	56.1	2.6	81.0	28.1	1.6	70.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.9	27.7	11.3	9.0	20.4	13.0	12.0	12.4	24.4	12.1	8.9	19.0
LnGrp Delay(d),s/veh	116.1	58.9	42.6	110.8	69.6	45.7	127.6	61.2	143.8	97.5	54.2	96.0
LnGrp LOS	F	E	D	F	E	D	F	E	F	F	D	F
Approach Vol, veh/h		2818			1971			1681			1556	
Approach Delay, s/veh		71.6			71.9			97.1			78.3	
Approach LOS		E			E			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	38.0	53.0	29.0	43.0	23.0	68.0	26.0	46.0
Change Period (Y+Rc), s	6.0	7.0	6.0	5.5	7.0	* 6.5	6.0	* 5
Max Green Setting (Gmax), s	32.0	45.0	21.0	37.5	16.0	* 62	20.0	* 41
Max Q Clear Time (g_c+I1), s	34.0	43.8	23.6	39.5	17.2	57.4	22.0	28.5
Green Ext Time (p_c), s	0.0	1.1	0.0	0.0	0.0	3.8	0.0	3.4

Intersection Summary	
HCM 2010 Ctrl Delay	78.3
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	2562	83	196	1917	135	52	9	207	219	13	31
Future Volume (veh/h)	29	2562	83	196	1917	135	52	9	207	219	13	31
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1863	1881	1845	1827	1827	1845	1860	1845	1900	1874	1900
Adj Flow Rate, veh/h	31	2697	87	206	2018	142	61	0	218	231	14	33
Adj No. of Lanes	1	4	1	2	4	1	2	0	2	0	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	2	1	3	4	4	3	0	3	2	2	2
Cap, veh/h	431	3524	879	375	3002	742	528	0	533	270	77	181
Arrive On Green	0.18	0.55	0.55	0.11	0.48	0.48	0.17	0.00	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1757	6408	1599	3408	6285	1553	2680	0	3136	1165	452	1065
Grp Volume(v), veh/h	31	2697	87	206	2018	142	61	0	218	231	0	47
Grp Sat Flow(s),veh/h/ln	1757	1602	1599	1704	1571	1553	1340	0	1568	1165	0	1517
Q Serve(g_s), s	0.0	32.7	2.6	5.7	24.7	5.3	2.0	0.0	6.2	17.0	0.0	2.7
Cycle Q Clear(g_c), s	0.0	32.7	2.6	5.7	24.7	5.3	4.6	0.0	6.2	17.0	0.0	2.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.70
Lane Grp Cap(c), veh/h	431	3524	879	375	3002	742	528	0	533	270	0	258
V/C Ratio(X)	0.07	0.77	0.10	0.55	0.67	0.19	0.12	0.00	0.41	0.86	0.00	0.18
Avail Cap(c_a), veh/h	431	3524	879	375	3896	963	528	0	533	270	0	258
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.83	0.83	0.83	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.2	17.5	10.7	42.2	20.1	15.0	37.5	0.0	37.0	42.7	0.0	35.5
Incr Delay (d2), s/veh	0.1	1.6	0.2	1.4	0.2	0.1	0.1	0.0	0.5	22.6	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	14.6	1.2	2.8	10.7	2.3	0.7	0.0	2.7	8.0	0.0	1.1
LnGrp Delay(d),s/veh	22.3	19.1	10.9	43.6	20.3	15.1	37.6	0.0	37.5	65.3	0.0	35.9
LnGrp LOS	C	B	B	D	C	B	D		D	E		D
Approach Vol, veh/h		2815			2366			279			278	
Approach Delay, s/veh		18.9			22.1			37.5			60.3	
Approach LOS		B			C			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	17.0	60.0		23.0	24.2	52.8		23.0
Change Period (Y+Rc), s	6.0	5.0		6.0	6.0	5.0		6.0
Max Green Setting (Gmax), s	11.0	55.0		17.0	4.0	62.0		17.0
Max Q Clear Time (g_c+I1), s	7.7	34.7		19.0	2.0	26.7		8.2
Green Ext Time (p_c), s	0.2	17.9		0.0	0.1	21.1		2.0

Intersection Summary	
HCM 2010 Ctrl Delay	23.1
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2227	691	91	1479	0	0	0	0	1042	0	922
Future Volume (vph)	0	2227	691	91	1479	0	0	0	0	1042	0	922
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	6.0	6.0					6.0		6.0
Lane Util. Factor		0.81	1.00	1.00	0.86					0.94		*0.95
Frt		1.00	0.85	1.00	1.00					1.00		0.95
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		7222	1546	1711	6017					4824		4828
Flt Permitted		1.00	1.00	0.09	1.00					0.95		1.00
Satd. Flow (perm)		7222	1546	164	6017					4824		4828
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	2344	727	96	1557	0	0	0	0	1097	0	971
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	2344	727	96	1557	0	0	0	0	1097	0	971
Heavy Vehicles (%)	0%	3%	1%	2%	5%	0%	0%	0%	0%	2%	0%	3%
Turn Type		NA	Free	Perm	NA					Prot		custom
Protected Phases		1 3			1					4 12		3 4 12
Permitted Phases			Free	1								
Actuated Green, G (s)		56.3	100.0	44.0	44.0					31.7		44.0
Effective Green, g (s)		56.3	100.0	44.0	44.0					31.7		44.0
Actuated g/C Ratio		0.56	1.00	0.44	0.44					0.32		0.44
Clearance Time (s)				6.0	6.0							
Vehicle Extension (s)				3.0	3.0							
Lane Grp Cap (vph)		4065	1546	72	2647					1529		2124
v/s Ratio Prot		0.32			0.26					c0.23		0.20
v/s Ratio Perm			c0.47	c0.59								
v/c Ratio		0.58	0.47	1.33	0.59					0.72		0.46
Uniform Delay, d1		14.1	0.0	28.0	21.2					30.2		19.6
Progression Factor		0.43	1.00	0.64	0.24					1.00		1.00
Incremental Delay, d2		0.2	0.7	197.7	0.7					1.6		0.2
Delay (s)		6.2	0.7	215.7	5.8					31.8		19.8
Level of Service		A	A	F	A					C		B
Approach Delay (s)		4.9			17.9			0.0			26.2	
Approach LOS		A			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1060	2209	0	0	1043	742	527	0	999	0	0	0
Future Volume (vph)	1060	2209	0	0	1043	742	527	0	999	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0	4.0	6.0		6.0			
Lane Util. Factor	0.97	0.91			0.86	1.00	0.94		*0.95			
Frt	1.00	1.00			1.00	0.85	1.00		0.95			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	2958	4381			5521	1338	4258		4388			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	2958	4381			5521	1338	4258		4388			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1116	2325	0	0	1098	781	555	0	1052	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	1116	2325	0	0	1098	781	555	0	1052	0	0	0
Heavy Vehicles (%)	3%	3%	0%	0%	3%	5%	4%	0%	2%	0%	0%	0%
Turn Type	Prot	NA			NA	Free	Prot		Prot			
Protected Phases	5	5 6			6		8		8			
Permitted Phases						Free						
Actuated Green, G (s)	30.0	62.2			26.2	100.0	25.8		25.8			
Effective Green, g (s)	30.0	62.2			26.2	100.0	25.8		25.8			
Actuated g/C Ratio	0.30	0.62			0.26	1.00	0.26		0.26			
Clearance Time (s)	6.0				6.0		6.0		6.0			
Vehicle Extension (s)	3.0				3.0		4.0		4.0			
Lane Grp Cap (vph)	887	2724			1446	1338	1098		1132			
v/s Ratio Prot	c0.38	c0.53			0.20		0.13		c0.24			
v/s Ratio Perm						0.58						
v/c Ratio	1.26	0.85			0.76	0.58	0.51		0.93			
Uniform Delay, d1	35.0	15.2			34.0	0.0	31.7		36.2			
Progression Factor	0.96	0.90			0.92	1.00	1.00		1.00			
Incremental Delay, d2	123.8	2.8			3.7	1.8	0.5		13.1			
Delay (s)	157.5	16.5			35.1	1.8	32.2		49.3			
Level of Service	F	B			D	A	C		D			
Approach Delay (s)		62.3			21.2			43.4			0.0	
Approach LOS		E			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	46.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	3153	0	0	1719	65	0	0	0	0	0	66
Future Volume (vph)	55	3153	0	0	1719	65	0	0	0	0	0	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0	6.0						6.0
Lane Util. Factor	1.00	0.86			0.81	1.00						1.00
Frt	1.00	1.00			1.00	0.85						0.86
Flt Protected	0.95	1.00			1.00	1.00						1.00
Satd. Flow (prot)	1728	6256			7222	1561						1589
Flt Permitted	0.95	1.00			1.00	1.00						1.00
Satd. Flow (perm)	1728	6256			7222	1561						1589
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	58	3319	0	0	1809	68	0	0	0	0	0	69
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	58	3319	0	0	1809	68	0	0	0	0	0	69
Heavy Vehicles (%)	1%	1%	1%	0%	3%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA			NA	Perm						Perm
Protected Phases	1	6			2							
Permitted Phases						2						6
Actuated Green, G (s)	7.6	100.0			80.4	80.4						100.0
Effective Green, g (s)	7.6	100.0			80.4	80.4						100.0
Actuated g/C Ratio	0.08	1.00			0.80	0.80						1.00
Clearance Time (s)	6.0	6.0			6.0	6.0						6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0						3.0
Lane Grp Cap (vph)	131	6256			5806	1255						1589
v/s Ratio Prot	0.03	c0.53			0.25							
v/s Ratio Perm						0.04						0.04
v/c Ratio	0.44	0.53			0.31	0.05						0.04
Uniform Delay, d1	44.2	0.0			2.6	2.0						0.0
Progression Factor	0.97	1.00			1.00	1.00						1.00
Incremental Delay, d2	1.1	0.1			0.1	0.1						0.1
Delay (s)	44.2	0.1			2.7	2.1						0.1
Level of Service	D	A			A	A						A
Approach Delay (s)		0.9			2.7			0.0			0.1	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	1.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	2782	216	145	2121	130	241	14	153	316	24	106
Future Volume (veh/h)	110	2782	216	145	2121	130	241	14	153	316	24	106
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1863	1792	1881	1825	1900	1827	1900	1863	1900	1756	1900
Adj Flow Rate, veh/h	116	2928	227	153	2233	137	254	15	161	333	25	112
Adj No. of Lanes	1	3	1	2	4	0	2	1	2	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	6	2	6	1	4	4	4	0	2	0	0	0
Cap, veh/h	174	2973	1028	133	3173	194	304	201	401	325	30	136
Arrive On Green	0.10	0.58	0.58	0.04	0.52	0.52	0.09	0.11	0.11	0.09	0.11	0.11
Sat Flow, veh/h	1707	5085	1524	3476	6094	373	3375	1900	2787	3510	280	1255
Grp Volume(v), veh/h	116	2928	227	153	1725	645	254	15	161	333	0	137
Grp Sat Flow(s),veh/h/ln	1707	1695	1524	1738	1569	1759	1688	1900	1393	1755	0	1535
Q Serve(g_s), s	10.2	88.2	4.2	6.0	43.4	43.5	11.6	1.1	1.4	14.5	0.0	13.7
Cycle Q Clear(g_c), s	10.2	88.2	4.2	6.0	43.4	43.5	11.6	1.1	1.4	14.5	0.0	13.7
Prop In Lane	1.00		1.00	1.00		0.21	1.00		1.00	1.00		0.82
Lane Grp Cap(c), veh/h	174	2973	1028	133	2452	916	304	201	401	325	0	166
V/C Ratio(X)	0.67	0.99	0.22	1.15	0.70	0.70	0.84	0.07	0.40	1.02	0.00	0.82
Avail Cap(c_a), veh/h	175	2973	1028	133	2452	916	442	425	730	325	0	284
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	67.7	31.8	2.8	75.2	28.4	28.4	70.1	63.1	34.9	71.0	0.0	68.3
Incr Delay (d2), s/veh	9.2	13.2	0.1	123.3	1.7	4.5	9.0	0.2	0.6	56.1	0.0	9.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	44.8	2.4	5.2	19.1	22.1	5.8	0.6	3.1	9.5	0.0	6.3
LnGrp Delay(d),s/veh	76.9	45.0	2.9	198.5	30.1	32.9	79.1	63.3	35.5	127.2	0.0	78.1
LnGrp LOS	E	D	A	F	C	C	E	E	D	F		E
Approach Vol, veh/h		3271			2523			430			470	
Approach Delay, s/veh		43.2			41.0			62.2			112.9	
Approach LOS		D			D			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	99.0	20.6	23.9	23.0	89.0	21.0	23.5
Change Period (Y+Rc), s	7.0	7.5	6.5	7.0	7.0	7.5	6.5	7.0
Max Green Setting (Gmax), s	6.0	91.5	20.5	29.0	16.0	81.5	14.5	35.0
Max Q Clear Time (g_c+I1), s	8.0	90.2	13.6	15.7	12.2	45.5	16.5	3.4
Green Ext Time (p_c), s	0.0	1.2	0.5	1.3	0.3	23.2	0.0	1.6

Intersection Summary	
HCM 2010 Ctrl Delay	48.5
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	486	1241	242	390	1870	419	550	743	476	495	845	819
Future Volume (veh/h)	486	1241	242	390	1870	419	550	743	476	495	845	819
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1863	1845	1881	1881	1881	1881	1881	1881	1881	1863	1881
Adj Flow Rate, veh/h	512	1306	255	411	1968	441	579	782	501	521	889	862
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	2	3	1	1	1	1	1	1	1	2	1
Cap, veh/h	1124	2653	818	456	1662	517	368	1260	392	558	1585	499
Arrive On Green	0.32	0.52	0.52	0.13	0.32	0.32	0.11	0.25	0.25	0.16	0.31	0.31
Sat Flow, veh/h	3476	5085	1568	3476	5136	1599	3476	5136	1599	3476	5085	1599
Grp Volume(v), veh/h	512	1306	255	411	1968	441	579	782	501	521	889	862
Grp Sat Flow(s),veh/h/ln	1738	1695	1568	1738	1712	1599	1738	1712	1599	1738	1695	1599
Q Serve(g_s), s	19.9	28.1	15.8	19.8	55.0	41.4	18.0	23.0	41.7	25.2	24.8	38.1
Cycle Q Clear(g_c), s	19.9	28.1	15.8	19.8	55.0	41.4	18.0	23.0	41.7	25.2	24.8	38.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1124	2653	818	456	1662	517	368	1260	392	558	1585	499
V/C Ratio(X)	0.46	0.49	0.31	0.90	1.18	0.85	1.57	0.62	1.28	0.93	0.56	1.73
Avail Cap(c_a), veh/h	1124	2653	818	511	1662	517	368	1260	392	572	1585	499
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.6	26.2	23.2	72.8	57.5	48.0	76.0	57.1	64.1	70.5	48.8	30.2
Incr Delay (d2), s/veh	0.1	0.7	1.0	17.8	89.5	16.2	270.8	0.7	143.2	21.9	1.4	336.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.5	13.3	7.0	10.7	39.8	20.7	22.5	11.0	34.0	13.8	11.8	63.3
LnGrp Delay(d),s/veh	45.7	26.8	24.2	90.6	147.0	64.2	346.8	57.8	207.3	92.3	50.2	366.6
LnGrp LOS	D	C	C	F	F	E	F	E	F	F	D	F
Approach Vol, veh/h		2073			2820			1862			2272	
Approach Delay, s/veh		31.2			125.8			187.9			179.9	
Approach LOS		C			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	62.4	62.0	33.3	47.2	28.3	96.1	22.0	58.5
Change Period (Y+Rc), s	6.5	* 7	6.0	5.5	6.0	6.5	4.0	* 5.5
Max Green Setting (Gmax), s	22.0	* 55	28.0	40.5	25.0	52.5	18.0	* 53
Max Q Clear Time (g_c+I1), s	21.9	57.0	27.2	43.7	21.8	30.1	20.0	40.1
Green Ext Time (p_c), s	0.0	0.0	0.1	0.0	0.5	14.6	0.0	9.3

Intersection Summary	
HCM 2010 Ctrl Delay	130.5
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	2053	247	452	2533	370	265	48	545	188	50	48
Future Volume (veh/h)	56	2053	247	452	2533	370	265	48	545	188	50	48
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1881	1900	1900	1881	1881	1900	1900	1881	1900	1884	1900
Adj Flow Rate, veh/h	59	2161	260	476	2666	389	315	0	574	198	53	51
Adj No. of Lanes	1	4	1	2	4	1	2	0	2	0	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	1	0	0	1	1	0	0	1	1	1	1
Cap, veh/h	103	2665	665	790	3886	960	638	0	841	265	212	204
Arrive On Green	0.01	0.14	0.14	0.23	0.60	0.60	0.26	0.00	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1810	6471	1615	3510	6471	1599	2621	0	3198	845	804	774
Grp Volume(v), veh/h	59	2161	260	476	2666	389	315	0	574	198	0	104
Grp Sat Flow(s),veh/h/ln	1810	1618	1615	1755	1618	1599	1311	0	1599	845	0	1578
Q Serve(g_s), s	3.5	55.1	25.0	20.7	47.6	21.8	18.3	0.0	27.4	38.3	0.0	8.8
Cycle Q Clear(g_c), s	3.5	55.1	25.0	20.7	47.6	21.8	27.2	0.0	27.4	38.3	0.0	8.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.49
Lane Grp Cap(c), veh/h	103	2665	665	790	3886	960	638	0	841	265	0	415
V/C Ratio(X)	0.58	0.81	0.39	0.60	0.69	0.41	0.49	0.00	0.68	0.75	0.00	0.25
Avail Cap(c_a), veh/h	133	2665	665	790	3886	960	719	0	941	291	0	464
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.65	0.65	0.65	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.2	67.0	54.0	59.0	23.1	17.9	60.1	0.0	56.3	60.3	0.0	49.4
Incr Delay (d2), s/veh	5.0	2.8	1.7	0.8	0.3	0.2	0.6	0.0	1.8	9.3	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	25.3	11.5	10.1	21.2	9.7	6.7	0.0	12.3	9.7	0.0	3.9
LnGrp Delay(d),s/veh	49.2	69.8	55.7	59.9	23.4	18.1	60.7	0.0	58.0	69.6	0.0	49.7
LnGrp LOS	D	E	E	E	C	B	E		E	E		D
Approach Vol, veh/h		2480			3531			889			302	
Approach Delay, s/veh		67.9			27.7			59.0			62.8	
Approach LOS		E			C			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	44.3	75.0		50.7	11.2	108.1		50.7
Change Period (Y+Rc), s	6.0	5.0		6.0	6.0	* 6		6.0
Max Green Setting (Gmax), s	33.0	70.0		50.0	8.0	* 95		50.0
Max Q Clear Time (g_c+I1), s	22.7	57.1		40.3	5.5	49.6		29.4
Green Ext Time (p_c), s	8.7	10.7		4.4	0.0	38.8		6.4

Intersection Summary	
HCM 2010 Ctrl Delay	46.9
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2212	768	111	2542	0	0	0	0	771	0	1036
Future Volume (vph)	0	2212	768	111	2542	0	0	0	0	771	0	1036
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	6.0	6.0					6.0		6.0
Lane Util. Factor		0.81	1.00	1.00	0.86					0.94		*0.95
Frt		1.00	0.85	1.00	1.00					1.00		0.95
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		7293	1516	1711	6194					4777		4973
Flt Permitted		1.00	1.00	0.05	1.00					0.95		1.00
Satd. Flow (perm)		7293	1516	87	6194					4777		4973
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	2328	808	117	2676	0	0	0	0	812	0	1091
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	2328	808	117	2676	0	0	0	0	812	0	1091
Heavy Vehicles (%)	0%	2%	3%	2%	2%	0%	0%	0%	0%	3%	2%	0%
Turn Type		NA	Free	Perm	NA					Prot		custom
Protected Phases		1 3			1					4 12		3 4 12
Permitted Phases			Free	1								
Actuated Green, G (s)		117.0	170.0	104.0	104.0					29.0		54.0
Effective Green, g (s)		117.0	170.0	104.0	104.0					29.0		54.0
Actuated g/C Ratio		0.69	1.00	0.61	0.61					0.17		0.32
Clearance Time (s)				6.0	6.0							
Vehicle Extension (s)				3.0	3.0							
Lane Grp Cap (vph)		5019	1516	53	3789					814		1579
v/s Ratio Prot		0.32			0.43					c0.17		c0.22
v/s Ratio Perm			0.53	c1.35								
v/c Ratio		0.46	0.53	2.21	0.71					1.00		0.69
Uniform Delay, d1		12.1	0.0	33.0	22.6					70.5		50.7
Progression Factor		1.60	1.00	0.80	0.12					1.00		1.00
Incremental Delay, d2		0.1	1.0	563.7	0.5					30.7		1.4
Delay (s)		19.4	1.0	590.3	3.2					101.2		52.1
Level of Service		B	A	F	A					F		D
Approach Delay (s)		14.7			27.8			0.0			73.1	
Approach LOS		B			C			A			E	

Intersection Summary			
HCM 2000 Control Delay	33.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.86		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	96.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1103	1880	0	0	1904	1259	749	0	998	0	0	0
Future Volume (vph)	1103	1880	0	0	1904	1259	749	0	998	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0	4.0	6.0		6.0			
Lane Util. Factor	0.97	0.91			0.86	1.00	0.94		*0.95			
Frt	1.00	1.00			1.00	0.85	1.00		0.95			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	2987	4468			5630	1391	4385		4431			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	2987	4468			5630	1391	4385		4431			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1161	1979	0	0	2004	1325	788	0	1051	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	1161	1979	0	0	2004	1325	788	0	1051	0	0	0
Heavy Vehicles (%)	2%	1%	0%	0%	1%	1%	1%	0%	1%	0%	0%	0%
Turn Type	Prot	NA			NA	Free	Prot		Prot			
Protected Phases	5	5 6			6		8		8			
Permitted Phases						Free						
Actuated Green, G (s)	42.0	111.2			63.2	170.0	46.8		46.8			
Effective Green, g (s)	42.0	111.2			63.2	170.0	46.8		46.8			
Actuated g/C Ratio	0.25	0.65			0.37	1.00	0.28		0.28			
Clearance Time (s)	6.0				6.0		6.0		6.0			
Vehicle Extension (s)	3.0				3.0		4.0		4.0			
Lane Grp Cap (vph)	737	2922			2093	1391	1207		1219			
v/s Ratio Prot	c0.39	0.44			0.36		0.18		0.24			
v/s Ratio Perm						c0.95						
v/c Ratio	1.58	0.68			0.96	0.95	0.65		0.86			
Uniform Delay, d1	64.0	18.3			52.1	0.0	54.4		58.5			
Progression Factor	1.37	0.16			0.52	1.00	1.00		1.00			
Incremental Delay, d2	264.8	0.9			10.2	13.1	1.4		6.7			
Delay (s)	352.2	3.9			37.4	13.1	55.8		65.2			
Level of Service	F	A			D	B	E		E			
Approach Delay (s)		132.7			27.7			61.2			0.0	
Approach LOS		F			C			E			A	

Intersection Summary			
HCM 2000 Control Delay	74.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	96.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	2728	0	0	3043	140	0	0	0	0	0	120
Future Volume (vph)	150	2728	0	0	3043	140	0	0	0	0	0	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0	6.0						6.0
Lane Util. Factor	1.00	0.86			0.81	1.00						1.00
Frt	1.00	1.00			1.00	0.85						0.86
Flt Protected	0.95	1.00			1.00	1.00						1.00
Satd. Flow (prot)	1728	6256			7365	1546						1573
Flt Permitted	0.95	1.00			1.00	1.00						1.00
Satd. Flow (perm)	1728	6256			7365	1546						1573
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	158	2872	0	0	3203	147	0	0	0	0	0	126
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	158	2872	0	0	3203	147	0	0	0	0	0	126
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	4%	4%	4%	1%	4%	1%
Turn Type	Prot	NA			NA	Perm						Perm
Protected Phases	1	6			2							
Permitted Phases						2						6
Actuated Green, G (s)	37.0	170.0			121.0	121.0						170.0
Effective Green, g (s)	37.0	170.0			121.0	121.0						170.0
Actuated g/C Ratio	0.22	1.00			0.71	0.71						1.00
Clearance Time (s)	6.0	6.0			6.0	6.0						6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0						3.0
Lane Grp Cap (vph)	376	6256			5242	1100						1573
v/s Ratio Prot	0.09	c0.46			c0.43							
v/s Ratio Perm						0.10						0.08
v/c Ratio	0.42	0.46			0.61	0.13						0.08
Uniform Delay, d1	57.3	0.0			12.5	7.8						0.0
Progression Factor	1.05	1.00			0.12	0.15						1.00
Incremental Delay, d2	0.5	0.2			0.2	0.1						0.1
Delay (s)	60.6	0.2			1.7	1.3						0.1
Level of Service	E	A			A	A						A
Approach Delay (s)		3.3			1.7			0.0			0.1	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	2.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	2442	188	208	3227	133	449	20	279	219	21	139
Future Volume (veh/h)	78	2442	188	208	3227	133	449	20	279	219	21	139
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1881	1845	1881	1880	1900	1881	1900	1881	1881	1827	1900
Adj Flow Rate, veh/h	82	2571	198	219	3397	140	473	21	294	231	22	146
Adj No. of Lanes	1	3	1	2	4	0	2	1	2	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	1	3	1	1	1	1	0	1	1	4	4
Cap, veh/h	86	2583	1026	251	3382	138	526	377	762	215	22	146
Arrive On Green	0.05	0.50	0.50	0.07	0.53	0.53	0.15	0.20	0.20	0.06	0.11	0.11
Sat Flow, veh/h	1774	5136	1568	3476	6424	261	3476	1900	2814	3476	207	1377
Grp Volume(v), veh/h	82	2571	198	219	2555	982	473	21	294	231	0	168
Grp Sat Flow(s),veh/h/ln	1774	1712	1568	1738	1617	1834	1738	1900	1407	1738	0	1584
Q Serve(g_s), s	7.8	84.7	0.0	10.6	89.5	89.5	22.7	1.5	2.0	10.5	0.0	18.0
Cycle Q Clear(g_c), s	7.8	84.7	0.0	10.6	89.5	89.5	22.7	1.5	2.0	10.5	0.0	18.0
Prop In Lane	1.00		1.00	1.00		0.14	1.00		1.00	1.00		0.87
Lane Grp Cap(c), veh/h	86	2583	1026	251	2554	966	526	377	762	215	0	168
V/C Ratio(X)	0.95	1.00	0.19	0.87	1.00	1.02	0.90	0.06	0.39	1.08	0.00	1.00
Avail Cap(c_a), veh/h	86	2583	1026	251	2554	966	562	391	783	215	0	168
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	80.6	42.1	11.6	78.1	40.2	40.3	70.9	55.2	29.4	79.8	0.0	76.0
Incr Delay (d2), s/veh	79.5	16.7	0.4	26.7	17.9	33.3	16.8	0.1	0.3	83.1	0.0	69.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	44.0	3.7	6.0	44.0	54.0	12.1	0.8	4.2	7.5	0.0	11.1
LnGrp Delay(d),s/veh	160.2	58.7	12.1	104.7	58.1	73.5	87.7	55.3	29.7	162.8	0.0	145.9
LnGrp LOS	F	E	B	F	F	F	F	E	C	F		F
Approach Vol, veh/h		2851			3756			788			399	
Approach Delay, s/veh		58.4			64.9			65.2			155.7	
Approach LOS		E			E			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.3	93.0	32.7	25.0	15.3	97.0	17.0	40.7
Change Period (Y+Rc), s	7.0	7.5	7.0	* 7	7.0	7.5	6.5	7.0
Max Green Setting (Gmax), s	11.0	85.5	27.5	* 18	7.0	89.5	10.5	35.0
Max Q Clear Time (g_c+I1), s	12.6	86.7	24.7	20.0	9.8	91.5	12.5	4.0
Green Ext Time (p_c), s	0.0	0.0	1.0	0.0	0.0	0.0	0.0	3.3

Intersection Summary	
HCM 2010 Ctrl Delay	67.2
HCM 2010 LOS	E

Notes

Alternative 3B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	678	1705	294	304	1223	346	390	826	381	433	642	403
Future Volume (veh/h)	678	1705	294	304	1223	346	390	826	381	433	642	403
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1845	1845	1792	1776	1743	1827	1845	1845	1863	1827
Adj Flow Rate, veh/h	714	1795	309	320	1287	364	411	869	401	456	676	424
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	3	3	6	7	9	4	3	3	2	4
Cap, veh/h	729	1974	802	397	1433	442	398	1023	504	508	1173	687
Arrive On Green	0.21	0.39	0.39	0.12	0.29	0.29	0.12	0.21	0.21	0.15	0.23	0.23
Sat Flow, veh/h	3442	5085	1568	3408	4893	1509	3221	4988	1568	3408	5085	1553
Grp Volume(v), veh/h	714	1795	309	320	1287	364	411	869	401	456	676	424
Grp Sat Flow(s),veh/h/ln	1721	1695	1568	1704	1631	1509	1610	1663	1568	1704	1695	1553
Q Serve(g_s), s	35.1	56.7	11.1	15.6	42.9	26.3	21.0	28.5	19.8	22.3	20.1	35.6
Cycle Q Clear(g_c), s	35.1	56.7	11.1	15.6	42.9	26.3	21.0	28.5	19.8	22.3	20.1	35.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	729	1974	802	397	1433	442	398	1023	504	508	1173	687
V/C Ratio(X)	0.98	0.91	0.39	0.81	0.90	0.82	1.03	0.85	0.80	0.90	0.58	0.62
Avail Cap(c_a), veh/h	729	1974	802	397	1433	442	398	1144	542	508	1226	703
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.6	49.2	9.9	73.2	57.7	26.6	74.5	65.0	52.6	71.1	58.0	36.4
Incr Delay (d2), s/veh	28.2	7.7	1.4	11.6	9.2	15.8	53.9	5.7	7.6	18.6	0.6	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.5	28.0	5.1	8.0	20.5	13.0	12.3	13.7	9.6	11.8	9.5	15.6
LnGrp Delay(d),s/veh	94.8	56.8	11.3	84.9	66.9	42.5	128.4	70.7	60.2	89.7	58.6	37.9
LnGrp LOS	F	E	B	F	E	D	F	E	E	F	E	D
Approach Vol, veh/h		2818			1971			1681			1556	
Approach Delay, s/veh		61.5			65.3			82.3			62.1	
Approach LOS		E			E			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	42.0	55.8	31.3	40.9	25.8	72.0	27.0	45.2
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	36.0	48.0	23.0	39.0	18.0	66.0	21.0	41.0
Max Q Clear Time (g_c+I1), s	37.1	44.9	24.3	30.5	17.6	58.7	23.0	37.6
Green Ext Time (p_c), s	0.0	2.5	0.0	4.4	0.4	5.9	0.0	1.6

Intersection Summary	
HCM 2010 Ctrl Delay	66.9
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	2562	83	196	1495	135	52	9	207	219	13	31
Future Volume (veh/h)	29	2562	83	196	1495	135	52	9	207	219	13	31
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1863	1881	1845	1827	1827	1845	1860	1845	1881	1837	1900
Adj Flow Rate, veh/h	31	2697	87	206	1574	142	61	0	218	231	14	33
Adj No. of Lanes	1	4	1	2	3	1	2	0	2	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	2	1	3	4	4	3	0	3	1	2	2
Cap, veh/h	213	3619	1018	634	3139	1101	252	0	673	277	18	42
Arrive On Green	0.12	0.56	0.56	0.37	1.00	1.00	0.07	0.00	0.03	0.08	0.04	0.04
Sat Flow, veh/h	1757	6408	1599	3408	4988	1553	3514	0	3136	3476	487	1148
Grp Volume(v), veh/h	31	2697	87	206	1574	142	61	0	218	231	0	47
Grp Sat Flow(s),veh/h/ln	1757	1602	1599	1704	1663	1553	1757	0	1568	1738	0	1635
Q Serve(g_s), s	2.7	53.8	0.0	7.3	0.0	0.0	2.8	0.0	1.5	11.1	0.0	4.8
Cycle Q Clear(g_c), s	2.7	53.8	0.0	7.3	0.0	0.0	2.8	0.0	1.5	11.1	0.0	4.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.70
Lane Grp Cap(c), veh/h	213	3619	1018	634	3139	1101	252	0	673	277	0	60
V/C Ratio(X)	0.15	0.75	0.09	0.33	0.50	0.13	0.24	0.00	0.32	0.83	0.00	0.79
Avail Cap(c_a), veh/h	213	3619	1018	634	3139	1101	252	0	804	409	0	221
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.84	0.84	0.84	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	66.8	27.8	11.9	45.8	0.0	0.0	74.5	0.0	34.1	77.1	0.0	81.2
Incr Delay (d2), s/veh	0.3	1.4	0.2	0.2	0.5	0.2	0.5	0.0	0.3	9.3	0.0	19.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	24.1	1.6	3.5	0.1	0.1	1.4	0.0	3.3	5.7	0.0	2.5
LnGrp Delay(d),s/veh	67.1	29.2	12.0	46.0	0.5	0.2	75.0	0.0	34.4	86.4	0.0	101.1
LnGrp LOS	E	C	B	D	A	A	E		C	F		F
Approach Vol, veh/h		2815			1922			279			278	
Approach Delay, s/veh		29.1			5.3			43.3			88.9	
Approach LOS		C			A			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	37.6	102.0	18.2	12.2	26.6	113.0	19.5	10.9
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	18.0	96.0	9.0	23.0	7.0	107.0	20.0	12.0
Max Q Clear Time (g_c+I1), s	9.3	55.8	4.8	6.8	4.7	2.0	13.1	3.5
Green Ext Time (p_c), s	0.5	32.0	0.4	0.1	0.2	18.5	0.4	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	24.4
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2227	691	910	1057	0	0	0	0	1042	0	922
Future Volume (vph)	0	2227	691	910	1057	0	0	0	0	1042	0	922
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	6.0	6.0					6.0		6.0
Lane Util. Factor		0.81	1.00	0.97	0.91					0.94		*0.95
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		7471	1599	3433	4940					4990		4469
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		7471	1599	3433	4940					4990		4469
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	2344	727	958	1113	0	0	0	0	1097	0	971
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	2344	727	958	1113	0	0	0	0	1097	0	971
Heavy Vehicles (%)	0%	3%	1%	2%	5%	0%	0%	0%	0%	2%	0%	3%
Turn Type		NA	Free	Prot	NA					Prot		custom
Protected Phases		2 3		1	1 2					4 12		3 4 12
Permitted Phases			Free									
Actuated Green, G (s)		55.0	170.0	54.6	87.6					36.4		58.4
Effective Green, g (s)		55.0	170.0	54.6	87.6					36.4		58.4
Actuated g/C Ratio		0.32	1.00	0.32	0.52					0.21		0.34
Clearance Time (s)				6.0								
Vehicle Extension (s)				3.0								
Lane Grp Cap (vph)		2417	1599	1102	2545					1068		1535
v/s Ratio Prot		c0.31		c0.28	0.23					c0.22		0.22
v/s Ratio Perm			c0.45									
v/c Ratio		0.97	0.45	0.87	0.44					1.03		0.63
Uniform Delay, d1		56.7	0.0	54.3	25.8					66.8		46.8
Progression Factor		0.59	1.00	0.17	0.37					1.00		1.00
Incremental Delay, d2		9.8	0.7	4.9	0.3					34.7		1.0
Delay (s)		43.2	0.7	14.1	9.8					101.5		47.8
Level of Service		D	A	B	A					F		D
Approach Delay (s)		33.1			11.8			0.0			76.3	
Approach LOS		C			B			A			E	

Intersection Summary			
HCM 2000 Control Delay	39.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	36.0
Intersection Capacity Utilization	106.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1060	2209	0	0	1862	742	105	0	999	0	0	0
Future Volume (vph)	1060	2209	0	0	1862	742	105	0	999	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0	4.0	6.0		6.0			
Lane Util. Factor	0.97	0.91			0.81	1.00	1.00		*0.95			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	3060	4532			6724	1384	1562		4061			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3060	4532			6724	1384	1562		4061			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1116	2325	0	0	1960	781	111	0	1052	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	1116	2325	0	0	1960	781	111	0	1052	0	0	0
Heavy Vehicles (%)	3%	3%	0%	0%	3%	5%	4%	0%	2%	0%	0%	0%
Turn Type	Prot	NA			NA	Free	Prot		custom			
Protected Phases	5	5 6			6 7		8 16		7 8 16			
Permitted Phases						Free						
Actuated Green, G (s)	66.0	85.0			58.0	170.0	22.0		61.0			
Effective Green, g (s)	66.0	85.0			58.0	170.0	22.0		61.0			
Actuated g/C Ratio	0.39	0.50			0.34	1.00	0.13		0.36			
Clearance Time (s)	6.0											
Vehicle Extension (s)	3.0											
Lane Grp Cap (vph)	1188	2266			2294	1384	202		1457			
v/s Ratio Prot	0.36	c0.51			c0.29		0.07		c0.26			
v/s Ratio Perm						c0.56						
v/c Ratio	0.94	1.03			0.85	0.56	0.55		0.72			
Uniform Delay, d1	50.1	42.5			52.1	0.0	69.4		47.2			
Progression Factor	0.19	0.83			0.70	1.00	1.00		1.00			
Incremental Delay, d2	5.6	16.7			3.2	1.6	3.0		1.9			
Delay (s)	15.3	51.9			39.4	1.6	72.4		49.1			
Level of Service	B	D			D	A	E		D			
Approach Delay (s)		40.0			28.6			51.3			0.0	
Approach LOS		D			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	37.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	36.0
Intersection Capacity Utilization	106.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	3153	0	0	2538	65	0	0	0	0	0	66
Future Volume (vph)	55	3153	0	0	2538	65	0	0	0	0	0	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0	6.0						6.0
Lane Util. Factor	1.00	0.86			0.76	1.00						1.00
Frt	1.00	1.00			1.00	0.85						0.86
Flt Protected	0.95	1.00			1.00	1.00						1.00
Satd. Flow (prot)	1787	6471			8412	1615						1644
Flt Permitted	0.95	1.00			1.00	1.00						1.00
Satd. Flow (perm)	1787	6471			8412	1615						1644
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	58	3319	0	0	2672	68	0	0	0	0	0	69
RTOR Reduction (vph)	0	0	0	0	0	12	0	0	0	0	0	0
Lane Group Flow (vph)	58	3319	0	0	2672	56	0	0	0	0	0	69
Heavy Vehicles (%)	1%	1%	1%	0%	3%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA			NA	Perm						Perm
Protected Phases	1	6			2							
Permitted Phases						2						6
Actuated Green, G (s)	17.6	170.0			140.4	140.4						170.0
Effective Green, g (s)	17.6	170.0			140.4	140.4						170.0
Actuated g/C Ratio	0.10	1.00			0.83	0.83						1.00
Clearance Time (s)	6.0	6.0			6.0	6.0						6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0						3.0
Lane Grp Cap (vph)	185	6471			6947	1333						1644
v/s Ratio Prot	0.03	c0.51			0.32							
v/s Ratio Perm						0.03						0.04
v/c Ratio	0.31	0.51			0.38	0.04						0.04
Uniform Delay, d1	70.6	0.0			3.8	2.7						0.0
Progression Factor	1.02	1.00			0.29	0.23						1.00
Incremental Delay, d2	0.3	0.1			0.1	0.0						0.0
Delay (s)	72.1	0.1			1.2	0.7						0.0
Level of Service	E	A			A	A						A
Approach Delay (s)		1.3			1.2			0.0			0.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	1.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	2782	216	145	2121	130	241	14	153	316	24	106
Future Volume (veh/h)	110	2782	216	145	2121	130	241	14	153	316	24	106
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1863	1792	1881	1825	1900	1827	1900	1863	1900	1756	1900
Adj Flow Rate, veh/h	116	2928	227	153	2233	137	254	15	161	333	25	112
Adj No. of Lanes	1	3	1	2	4	0	2	1	1	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	6	2	6	1	4	4	4	0	2	0	0	0
Cap, veh/h	133	2558	904	464	3421	210	304	210	387	299	29	129
Arrive On Green	0.16	1.00	1.00	0.13	0.56	0.56	0.09	0.11	0.11	0.09	0.10	0.10
Sat Flow, veh/h	1707	5085	1524	3476	6094	373	3375	1900	1583	3510	280	1255
Grp Volume(v), veh/h	116	2928	227	153	1725	645	254	15	161	333	0	137
Grp Sat Flow(s),veh/h/ln	1707	1695	1524	1738	1569	1759	1688	1900	1583	1755	0	1535
Q Serve(g_s), s	11.3	0.0	0.0	6.8	43.1	43.2	12.6	1.2	2.4	14.5	0.0	14.9
Cycle Q Clear(g_c), s	11.3	0.0	0.0	6.8	43.1	43.2	12.6	1.2	2.4	14.5	0.0	14.9
Prop In Lane	1.00		1.00	1.00		0.21	1.00		1.00	1.00		0.82
Lane Grp Cap(c), veh/h	133	2558	904	464	2643	987	304	210	387	299	0	158
V/C Ratio(X)	0.87	1.14	0.25	0.33	0.65	0.65	0.83	0.07	0.42	1.11	0.00	0.87
Avail Cap(c_a), veh/h	154	2558	904	464	2643	987	393	391	537	299	0	268
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.85	0.85	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	70.9	0.0	0.0	66.8	25.8	25.8	76.1	67.8	29.8	77.8	0.0	75.1
Incr Delay (d2), s/veh	31.0	69.6	0.6	0.4	1.3	3.4	11.5	0.1	0.7	85.6	0.0	14.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	16.5	0.1	3.3	19.0	21.9	6.4	0.6	4.7	10.6	0.0	7.0
LnGrp Delay(d),s/veh	101.8	69.6	0.6	67.2	27.1	29.2	87.6	67.9	30.5	163.4	0.0	89.3
LnGrp LOS	F	F	A	E	C	C	F	E	C	F		F
Approach Vol, veh/h		3271			2523			430			470	
Approach Delay, s/veh		65.9			30.1			65.5			141.8	
Approach LOS		E			C			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.3	102.9	21.0	25.8	30.2	93.0	22.3	24.5
Change Period (Y+Rc), s	7.0	7.5	6.5	7.0	7.5	* 7.5	7.0	* 7
Max Green Setting (Gmax), s	15.3	77.2	14.5	35.0	7.0	* 86	19.8	* 30
Max Q Clear Time (g_c+I1), s	13.3	45.2	16.5	4.4	8.8	2.0	14.6	16.9
Green Ext Time (p_c), s	0.0	22.2	0.0	1.5	0.0	63.6	0.7	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	57.7
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	486	1241	242	390	1870	419	550	743	476	495	845	819
Future Volume (veh/h)	486	1241	242	390	1870	419	550	743	476	495	845	819
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1863	1845	1881	1881	1881	1881	1881	1881	1881	1863	1881
Adj Flow Rate, veh/h	512	1306	255	411	1968	441	579	782	501	521	889	862
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	2	3	1	1	1	1	1	1	1	2	1
Cap, veh/h	409	1705	747	498	1853	577	491	1016	545	634	1216	571
Arrive On Green	0.12	0.34	0.34	0.14	0.36	0.36	0.14	0.20	0.20	0.18	0.24	0.24
Sat Flow, veh/h	3476	5085	1568	3476	5136	1599	3476	5136	1599	3476	5085	1599
Grp Volume(v), veh/h	512	1306	255	411	1968	441	579	782	501	521	889	862
Grp Sat Flow(s),veh/h/ln	1738	1695	1568	1738	1712	1599	1738	1712	1599	1738	1695	1599
Q Serve(g_s), s	20.0	39.0	0.0	19.5	61.3	25.0	24.0	24.5	26.8	24.5	27.4	37.4
Cycle Q Clear(g_c), s	20.0	39.0	0.0	19.5	61.3	25.0	24.0	24.5	26.8	24.5	27.4	37.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	409	1705	747	498	1853	577	491	1016	545	634	1216	571
V/C Ratio(X)	1.25	0.77	0.34	0.83	1.06	0.76	1.18	0.77	0.92	0.82	0.73	1.51
Avail Cap(c_a), veh/h	409	1705	747	498	1853	577	491	1178	596	634	1226	574
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	75.0	50.5	27.8	70.8	54.3	17.5	73.0	64.5	53.8	66.8	59.6	24.9
Incr Delay (d2), s/veh	132.2	3.3	1.2	11.0	39.6	9.3	100.4	2.7	18.6	8.5	2.2	238.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.1	18.8	7.8	10.2	35.8	12.5	18.4	11.8	14.6	12.5	13.1	54.2
LnGrp Delay(d),s/veh	207.2	53.9	29.1	81.7	94.0	26.8	173.4	67.2	72.3	75.3	61.9	263.6
LnGrp LOS	F	D	C	F	F	C	F	E	E	E	E	F
Approach Vol, veh/h		2073			2820			1862			2272	
Approach Delay, s/veh		88.7			81.7			101.6			141.5	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	67.3	37.0	39.6	30.3	63.0	30.0	46.7
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	20.0	61.0	26.0	39.0	24.0	57.0	24.0	41.0
Max Q Clear Time (g_c+I1), s	22.0	63.3	26.5	28.8	21.5	41.0	26.0	39.4
Green Ext Time (p_c), s	0.0	0.0	0.0	4.9	2.3	8.5	0.0	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	102.5
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	2053	247	452	2034	370	265	48	545	188	50	48
Future Volume (veh/h)	56	2053	247	452	2034	370	265	48	545	188	50	48
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1881	1900	1900	1881	1881	1900	1900	1881	1881	1890	1900
Adj Flow Rate, veh/h	59	2161	260	476	2141	389	315	0	574	198	53	51
Adj No. of Lanes	1	4	1	2	3	1	2	0	2	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	1	0	0	1	1	0	0	1	1	1	1
Cap, veh/h	218	3220	1026	534	2719	964	499	0	921	254	63	61
Arrive On Green	0.12	0.50	0.50	0.05	0.17	0.17	0.14	0.00	0.14	0.07	0.07	0.07
Sat Flow, veh/h	1810	6471	1615	3510	5136	1599	3619	0	3198	3476	887	853
Grp Volume(v), veh/h	59	2161	260	476	2141	389	315	0	574	198	0	104
Grp Sat Flow(s),veh/h/ln	1810	1618	1615	1755	1712	1599	1810	0	1599	1738	0	1740
Q Serve(g_s), s	5.0	42.8	6.1	22.9	67.8	23.6	14.0	0.0	19.8	9.5	0.0	10.0
Cycle Q Clear(g_c), s	5.0	42.8	6.1	22.9	67.8	23.6	14.0	0.0	19.8	9.5	0.0	10.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.49
Lane Grp Cap(c), veh/h	218	3220	1026	534	2719	964	499	0	921	254	0	124
V/C Ratio(X)	0.27	0.67	0.25	0.89	0.79	0.40	0.63	0.00	0.62	0.78	0.00	0.84
Avail Cap(c_a), veh/h	218	3220	1026	640	2719	964	575	0	1013	348	0	184
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.58	0.58	0.58	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	68.0	32.2	4.7	79.3	61.0	37.3	69.2	0.0	30.6	77.4	0.0	78.0
Incr Delay (d2), s/veh	0.7	1.1	0.6	8.2	1.4	0.7	1.8	0.0	1.0	7.5	0.0	18.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	19.3	2.8	11.8	32.5	10.6	7.1	0.0	8.9	4.9	0.0	5.5
LnGrp Delay(d),s/veh	68.7	33.3	5.3	87.5	62.4	38.1	71.0	0.0	31.7	84.9	0.0	96.9
LnGrp LOS	E	C	A	F	E	D	E		C	F		F
Approach Vol, veh/h		2480			3006			889			302	
Approach Delay, s/veh		31.2			63.2			45.6			89.0	
Approach LOS		C			E			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	31.8	90.6	29.4	18.1	26.4	96.0	18.4	29.1
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	31.0	70.0	27.0	18.0	11.0	90.0	17.0	28.0
Max Q Clear Time (g_c+I1), s	24.9	44.8	16.0	12.0	7.0	69.8	11.5	21.8
Green Ext Time (p_c), s	0.9	18.7	1.4	0.2	0.1	15.8	0.9	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	50.2
HCM 2010 LOS	D

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2212	768	1013	1943	0	0	0	0	771	0	1036
Future Volume (vph)	0	2212	768	1013	1943	0	0	0	0	771	0	1036
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	6.0	6.0					6.0		6.0
Lane Util. Factor		0.81	1.00	0.97	0.91					0.94		*0.95
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		7544	1568	3433	5085					4942		4603
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		7544	1568	3433	5085					4942		4603
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	2328	808	1066	2045	0	0	0	0	812	0	1091
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	2328	808	1066	2045	0	0	0	0	812	0	1091
Heavy Vehicles (%)	0%	2%	3%	2%	2%	0%	0%	0%	0%	3%	2%	0%
Turn Type		NA	Free	Prot	NA					Prot		custom
Protected Phases		2 3		1	1 2					4 12		3 4 12
Permitted Phases			Free									
Actuated Green, G (s)		58.0	170.0	66.4	100.4					21.6		45.6
Effective Green, g (s)		58.0	170.0	66.4	100.4					21.6		45.6
Actuated g/C Ratio		0.34	1.00	0.39	0.59					0.13		0.27
Clearance Time (s)				6.0								
Vehicle Extension (s)				3.0								
Lane Grp Cap (vph)		2573	1568	1340	3003					627		1234
v/s Ratio Prot		c0.31		c0.31	0.40					c0.16		0.24
v/s Ratio Perm			c0.52									
v/c Ratio		0.90	0.52	0.80	0.68					1.30		0.88
Uniform Delay, d1		53.4	0.0	45.8	23.8					74.2		59.7
Progression Factor		0.59	1.00	0.23	0.52					1.00		1.00
Incremental Delay, d2		3.8	0.9	0.5	0.1					144.4		8.0
Delay (s)		35.2	0.9	10.8	12.6					218.6		67.7
Level of Service		D	A	B	B					F		E
Approach Delay (s)		26.4			12.0			0.0			132.1	
Approach LOS		C			B			A			F	

Intersection Summary			
HCM 2000 Control Delay	45.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	36.0
Intersection Capacity Utilization	95.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1103	1880	0	0	2806	1259	150	0	998	0	0	0
Future Volume (vph)	1103	1880	0	0	2806	1259	150	0	998	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0	4.0	6.0		6.0			
Lane Util. Factor	0.97	0.91			0.81	1.00	1.00		*0.95			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	3090	4622			6857	1439	1608		4101			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3090	4622			6857	1439	1608		4101			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1161	1979	0	0	2954	1325	158	0	1051	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	1161	1979	0	0	2954	1325	158	0	1051	0	0	0
Heavy Vehicles (%)	2%	1%	0%	0%	1%	1%	1%	0%	1%	0%	0%	0%
Turn Type	Prot	NA			NA	Free	Prot		custom			
Protected Phases	5	5 6			6 7		8 16		7 8 16			
Permitted Phases						Free						
Actuated Green, G (s)	53.0	87.0			67.0	170.0	26.0		59.0			
Effective Green, g (s)	53.0	87.0			67.0	170.0	26.0		59.0			
Actuated g/C Ratio	0.31	0.51			0.39	1.00	0.15		0.35			
Clearance Time (s)	6.0											
Vehicle Extension (s)	3.0											
Lane Grp Cap (vph)	963	2365			2702	1439	245		1423			
v/s Ratio Prot	c0.38	0.43			c0.43		0.10		0.26			
v/s Ratio Perm						c0.92						
v/c Ratio	1.21	0.84			1.09	0.92	0.64		0.74			
Uniform Delay, d1	58.5	35.4			51.5	0.0	67.7		48.7			
Progression Factor	0.31	0.50			0.64	1.00	1.00		1.00			
Incremental Delay, d2	96.8	0.3			47.6	9.4	5.7		2.2			
Delay (s)	115.0	17.9			80.6	9.4	73.4		50.9			
Level of Service	F	B			F	A	E		D			
Approach Delay (s)		53.8			58.6			53.8			0.0	
Approach LOS		D			E			D			A	

Intersection Summary			
HCM 2000 Control Delay	56.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.29		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	36.0
Intersection Capacity Utilization	95.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	2728	0	0	3945	140	0	0	0	0	0	120
Future Volume (vph)	150	2728	0	0	3945	140	0	0	0	0	0	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0	6.0						6.0
Lane Util. Factor	1.00	0.86			0.76	1.00						1.00
Frt	1.00	1.00			1.00	0.85						0.86
Flt Protected	0.95	1.00			1.00	1.00						1.00
Satd. Flow (prot)	1787	6471			8578	1599						1627
Flt Permitted	0.95	1.00			1.00	1.00						1.00
Satd. Flow (perm)	1787	6471			8578	1599						1627
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	158	2872	0	0	4153	147	0	0	0	0	0	126
RTOR Reduction (vph)	0	0	0	0	0	28	0	0	0	0	0	0
Lane Group Flow (vph)	158	2872	0	0	4153	119	0	0	0	0	0	126
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	4%	4%	4%	1%	4%	1%
Turn Type	Prot	NA			NA	Perm						Perm
Protected Phases	1	6			2							
Permitted Phases						2						6
Actuated Green, G (s)	20.3	170.0			137.7	137.7						170.0
Effective Green, g (s)	20.3	170.0			137.7	137.7						170.0
Actuated g/C Ratio	0.12	1.00			0.81	0.81						1.00
Clearance Time (s)	6.0	6.0			6.0	6.0						6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0						3.0
Lane Grp Cap (vph)	213	6471			6948	1295						1627
v/s Ratio Prot	c0.09	0.44			c0.48							
v/s Ratio Perm						0.07						0.08
v/c Ratio	0.74	0.44			0.60	0.09						0.08
Uniform Delay, d1	72.3	0.0			5.9	3.3						0.0
Progression Factor	1.10	1.00			0.14	0.00						1.00
Incremental Delay, d2	7.7	0.1			0.2	0.1						0.1
Delay (s)	87.4	0.1			1.0	0.1						0.1
Level of Service	F	A			A	A						A
Approach Delay (s)		4.7			1.0			0.0			0.1	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	2.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	2442	188	208	3227	133	449	20	279	219	21	139
Future Volume (veh/h)	78	2442	188	208	3227	133	449	20	279	219	21	139
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1881	1845	1881	1880	1900	1881	1900	1881	1881	1827	1900
Adj Flow Rate, veh/h	82	2571	198	219	3397	140	473	21	294	231	22	146
Adj No. of Lanes	1	3	1	2	4	0	2	1	1	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	1	3	1	1	1	1	0	1	1	4	4
Cap, veh/h	90	2535	1011	257	3340	136	526	375	434	235	23	152
Arrive On Green	0.10	0.99	0.99	0.07	0.52	0.52	0.15	0.20	0.20	0.07	0.11	0.11
Sat Flow, veh/h	1774	5136	1568	3476	6424	261	3476	1900	1599	3476	207	1377
Grp Volume(v), veh/h	82	2571	198	219	2555	982	473	21	294	231	0	168
Grp Sat Flow(s),veh/h/ln	1774	1712	1568	1738	1617	1834	1738	1900	1599	1738	0	1584
Q Serve(g_s), s	7.8	83.9	0.0	10.6	88.4	88.4	22.7	1.5	12.1	11.3	0.0	17.9
Cycle Q Clear(g_c), s	7.8	83.9	0.0	10.6	88.4	88.4	22.7	1.5	12.1	11.3	0.0	17.9
Prop In Lane	1.00		1.00	1.00		0.14	1.00		1.00	1.00		0.87
Lane Grp Cap(c), veh/h	90	2535	1011	257	2523	954	526	375	434	235	0	175
V/C Ratio(X)	0.91	1.01	0.20	0.85	1.01	1.03	0.90	0.06	0.68	0.98	0.00	0.96
Avail Cap(c_a), veh/h	90	2535	1011	257	2523	954	566	391	448	235	0	175
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.90	0.90	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	76.0	1.1	0.3	77.8	40.8	40.8	70.9	55.4	35.9	79.1	0.0	75.2
Incr Delay (d2), s/veh	62.9	20.6	0.4	22.8	21.2	37.0	16.7	0.1	3.9	53.6	0.0	55.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.4	8.6	0.2	5.9	44.4	54.6	12.1	0.8	5.7	7.2	0.0	10.6
LnGrp Delay(d),s/veh	138.9	21.7	0.7	100.6	62.0	77.8	87.5	55.5	39.8	132.7	0.0	131.1
LnGrp LOS	F	F	A	F	F	F	F	E	D	F		F
Approach Vol, veh/h		2851			3756			788			399	
Approach Delay, s/veh		23.6			68.4			68.9			132.0	
Approach LOS		C			E			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.6	95.9	18.0	40.5	20.1	91.4	32.7	25.8
Change Period (Y+Rc), s	7.0	7.5	6.5	7.0	7.5	* 7.5	7.0	* 7
Max Green Setting (Gmax), s	8.6	86.9	11.5	35.0	11.6	* 84	27.7	* 19
Max Q Clear Time (g_c+I1), s	9.8	90.4	13.3	14.1	12.6	85.9	24.7	19.9
Green Ext Time (p_c), s	0.0	0.0	0.0	2.8	0.0	0.0	1.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	55.3
HCM 2010 LOS	E

Notes

Alternative 3C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	678	1705	294	304	1223	346	390	826	381	433	642	403
Future Volume (veh/h)	678	1705	294	304	1223	346	390	826	381	433	642	403
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1845	1845	1792	1776	1743	1827	1845	1845	1863	1827
Adj Flow Rate, veh/h	714	1795	309	320	1287	364	411	869	401	456	676	424
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	3	3	6	7	9	4	3	3	2	4
Cap, veh/h	709	1974	609	1608	3230	996	417	1130	355	501	1226	375
Arrive On Green	0.21	0.39	0.39	0.47	0.66	0.66	0.13	0.23	0.23	0.15	0.24	0.24
Sat Flow, veh/h	3442	5085	1568	3408	4893	1509	3221	4988	1568	3408	5085	1553
Grp Volume(v), veh/h	714	1795	309	320	1287	364	411	869	401	456	676	424
Grp Sat Flow(s),veh/h/ln	1721	1695	1568	1704	1631	1509	1610	1663	1568	1704	1695	1553
Q Serve(g_s), s	35.0	56.7	33.2	9.3	20.6	27.3	21.6	27.7	38.5	22.4	19.8	41.0
Cycle Q Clear(g_c), s	35.0	56.7	33.2	9.3	20.6	27.3	21.6	27.7	38.5	22.4	19.8	41.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	709	1974	609	1608	3230	996	417	1130	355	501	1226	375
V/C Ratio(X)	1.01	0.91	0.51	0.20	0.40	0.37	0.99	0.77	1.13	0.91	0.55	1.13
Avail Cap(c_a), veh/h	709	1974	609	1608	3230	996	417	1130	355	501	1226	375
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.5	49.2	67.0	26.2	13.3	28.7	73.8	61.6	65.8	71.4	56.4	64.5
Incr Delay (d2), s/veh	35.7	7.7	3.0	0.1	0.4	1.0	40.8	3.3	87.6	20.6	0.5	87.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.1	28.0	14.9	4.4	9.4	11.7	12.0	13.1	25.4	12.0	9.3	26.7
LnGrp Delay(d),s/veh	103.2	56.8	70.0	26.2	13.7	29.7	114.6	64.9	153.3	92.0	57.0	152.0
LnGrp LOS	F	E	E	C	B	C	F	E	F	F	E	F
Approach Vol, veh/h		2818			1971			1681			1556	
Approach Delay, s/veh		70.0			18.7			98.1			93.1	
Approach LOS		E			B			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	41.0	120.5	32.0	45.0	88.5	73.0	29.0	48.0
Change Period (Y+Rc), s	6.0	7.0	7.0	6.5	7.0	* 7	7.0	* 7
Max Green Setting (Gmax), s	35.0	46.0	24.0	38.5	17.0	* 66	22.0	* 41
Max Q Clear Time (g_c+I1), s	37.0	29.3	24.4	40.5	11.3	58.7	23.6	43.0
Green Ext Time (p_c), s	0.0	10.1	0.0	0.0	3.0	5.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	67.8
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	1608	83	196	1917	135	52	9	207	219	13	31
Future Volume (veh/h)	29	1608	83	196	1917	135	52	9	207	219	13	31
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1863	1881	1845	1827	1827	1845	1860	1845	1881	1837	1900
Adj Flow Rate, veh/h	31	1693	87	206	2018	142	61	0	218	231	14	33
Adj No. of Lanes	1	4	1	2	4	1	2	0	2	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	2	1	3	4	4	3	0	3	1	2	2
Cap, veh/h	40	2665	814	1058	4422	1221	328	0	1120	288	18	42
Arrive On Green	0.02	0.42	0.42	0.62	1.00	1.00	0.09	0.00	0.05	0.08	0.04	0.04
Sat Flow, veh/h	1757	6408	1599	3408	6285	1553	3514	0	3136	3476	487	1148
Grp Volume(v), veh/h	31	1693	87	206	2018	142	61	0	218	231	0	47
Grp Sat Flow(s),veh/h/ln	1757	1602	1599	1704	1571	1553	1757	0	1568	1738	0	1635
Q Serve(g_s), s	3.0	35.7	3.4	4.4	0.0	0.0	2.7	0.0	5.8	11.1	0.0	4.8
Cycle Q Clear(g_c), s	3.0	35.7	3.4	4.4	0.0	0.0	2.7	0.0	5.8	11.1	0.0	4.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.70
Lane Grp Cap(c), veh/h	40	2665	814	1058	4422	1221	328	0	1120	288	0	59
V/C Ratio(X)	0.78	0.64	0.11	0.19	0.46	0.12	0.19	0.00	0.19	0.80	0.00	0.79
Avail Cap(c_a), veh/h	93	2665	814	1058	4422	1221	765	0	1158	797	0	115
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.72	0.72	0.72	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	82.7	39.4	11.2	23.1	0.0	0.0	71.1	0.0	20.1	76.6	0.0	81.3
Incr Delay (d2), s/veh	27.4	0.5	0.1	0.1	0.1	0.0	0.3	0.0	0.1	5.1	0.0	20.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	15.8	1.5	2.1	0.0	0.0	1.3	0.0	2.5	5.6	0.0	2.5
LnGrp Delay(d),s/veh	110.1	39.9	11.3	23.1	0.1	0.0	71.4	0.0	20.2	81.7	0.0	102.0
LnGrp LOS	F	D	B	C	A	A	E		C	F		F
Approach Vol, veh/h		1811			2366			279			278	
Approach Delay, s/veh		39.7			2.1			31.4			85.2	
Approach LOS		D			A			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	58.8	77.2	21.9	12.2	9.8	126.1	20.1	13.9
Change Period (Y+Rc), s	6.0	6.5	6.0	6.0	6.0	6.5	6.0	6.0
Max Green Setting (Gmax), s	26.0	70.5	37.0	12.0	9.0	87.5	39.0	10.0
Max Q Clear Time (g_c+I1), s	6.4	37.7	4.7	6.8	5.0	2.0	13.1	7.8
Green Ext Time (p_c), s	0.6	30.6	1.0	0.1	0.0	71.9	1.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	23.1
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1273	691	910	1479	0	0	0	0	1042	0	922
Future Volume (vph)	0	1273	691	910	1479	0	0	0	0	1042	0	922
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	4.0	6.5	6.5					6.0		6.0
Lane Util. Factor		0.81	1.00	0.97	0.91					0.94		*0.95
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		7222	1546	3319	4775					4824		4320
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		7222	1546	3319	4775					4824		4320
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1340	727	958	1557	0	0	0	0	1097	0	971
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1340	727	958	1557	0	0	0	0	1097	0	971
Heavy Vehicles (%)	0%	3%	1%	2%	5%	0%	0%	0%	0%	2%	0%	3%
Turn Type		NA	Free	Prot	NA					Prot		Prot
Protected Phases		2		1	1 2					4		4
Permitted Phases			Free									4
Actuated Green, G (s)		36.5	170.0	71.6	115.1					42.4		42.4
Effective Green, g (s)		36.5	170.0	71.6	108.1					42.4		42.4
Actuated g/C Ratio		0.21	1.00	0.42	0.64					0.25		0.25
Clearance Time (s)		7.0		6.5						6.0		6.0
Vehicle Extension (s)		3.0		3.0						4.0		4.0
Lane Grp Cap (vph)		1550	1546	1397	3036					1203		1077
v/s Ratio Prot		c0.19		c0.29	0.33					c0.23		0.22
v/s Ratio Perm			0.47									
v/c Ratio		0.86	0.47	0.69	0.51					0.91		0.90
Uniform Delay, d1		64.4	0.0	40.0	16.7					62.0		61.8
Progression Factor		0.48	1.00	1.37	0.51					1.00		1.00
Incremental Delay, d2		5.6	0.9	1.1	0.1					10.7		10.6
Delay (s)		36.4	0.9	56.0	8.7					72.7		72.4
Level of Service		D	A	E	A					E		E
Approach Delay (s)		23.9			26.7			0.0			72.5	
Approach LOS		C			C			A			E	

Intersection Summary			
HCM 2000 Control Delay	40.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	25.5
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	2209	0	0	1862	742	527	0	999	0	0	0
Future Volume (vph)	106	2209	0	0	1862	742	527	0	999	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.5			6.5	4.0	6.0		6.0			
Lane Util. Factor	1.00	0.86			0.81	1.00	0.94		*0.95			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	1525	5521			6500	1338	4258		3926			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	1525	5521			6500	1338	4258		3926			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	112	2325	0	0	1960	781	555	0	1052	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	112	2325	0	0	1960	781	555	0	1052	0	0	0
Heavy Vehicles (%)	3%	3%	0%	0%	3%	5%	4%	0%	2%	0%	0%	0%
Turn Type	Prot	NA			NA	Free	Prot		Prot			
Protected Phases	16	5 6			5 6		8		8			
Permitted Phases						Free						
Actuated Green, G (s)	17.4	84.5			84.5	170.0	49.6		49.6			
Effective Green, g (s)	17.4	84.5			84.5	170.0	49.6		49.6			
Actuated g/C Ratio	0.10	0.50			0.50	1.00	0.29		0.29			
Clearance Time (s)	6.0						6.0		6.0			
Vehicle Extension (s)	4.0						4.0		4.0			
Lane Grp Cap (vph)	156	2744			3230	1338	1242		1145			
v/s Ratio Prot	0.07	c0.42			0.30		0.13		c0.27			
v/s Ratio Perm						c0.58						
v/c Ratio	0.72	0.85			0.61	0.58	0.45		0.92			
Uniform Delay, d1	73.9	37.1			30.8	0.0	49.0		58.3			
Progression Factor	1.43	0.28			0.39	1.00	1.00		1.00			
Incremental Delay, d2	7.8	1.6			0.8	1.7	0.4		11.8			
Delay (s)	113.9	12.1			12.7	1.7	49.4		70.0			
Level of Service	F	B			B	A	D		E			
Approach Delay (s)		16.8			9.6			62.9			0.0	
Approach LOS		B			A			E			A	

Intersection Summary			
HCM 2000 Control Delay	24.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	25.5
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	3153	0	0	2538	65	0	0	0	0	0	66
Future Volume (vph)	55	3153	0	0	2538	65	0	0	0	0	0	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	6.5			6.5	6.5						6.5
Lane Util. Factor	1.00	0.86			0.81	1.00						1.00
Frt	1.00	1.00			1.00	0.85						0.86
Flt Protected	0.95	1.00			1.00	1.00						1.00
Satd. Flow (prot)	1728	6256			7222	1561						1589
Flt Permitted	0.95	1.00			1.00	1.00						1.00
Satd. Flow (perm)	1728	6256			7222	1561						1589
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	58	3319	0	0	2672	68	0	0	0	0	0	69
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	58	3319	0	0	2672	68	0	0	0	0	0	69
Heavy Vehicles (%)	1%	1%	1%	0%	3%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA			NA	Perm						Perm
Protected Phases	1	6			2							
Permitted Phases						2						6
Actuated Green, G (s)	17.6	170.0			137.9	137.9						170.0
Effective Green, g (s)	17.6	170.0			137.9	137.9						170.0
Actuated g/C Ratio	0.10	1.00			0.81	0.81						1.00
Clearance Time (s)	8.0	6.5			6.5	6.5						6.5
Vehicle Extension (s)	3.0	3.0			3.0	3.0						3.0
Lane Grp Cap (vph)	178	6256			5858	1266						1589
v/s Ratio Prot	0.03	c0.53			0.37							
v/s Ratio Perm						0.04						0.04
v/c Ratio	0.33	0.53			0.46	0.05						0.04
Uniform Delay, d1	70.7	0.0			4.8	3.2						0.0
Progression Factor	0.92	1.00			0.06	0.08						1.00
Incremental Delay, d2	0.5	0.0			0.2	0.1						0.0
Delay (s)	65.8	0.0			0.5	0.3						0.0
Level of Service	E	A			A	A						A
Approach Delay (s)		1.2			0.5			0.0			0.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	0.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	56.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	2782	216	145	2121	130	241	14	153	316	24	106
Future Volume (veh/h)	110	2782	216	145	2121	130	241	14	153	316	24	106
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1863	1792	1881	1825	1900	1827	1900	1863	1900	1756	1900
Adj Flow Rate, veh/h	116	2928	227	153	2233	137	254	15	161	333	25	112
Adj No. of Lanes	1	3	1	2	4	0	2	1	2	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	6	2	6	1	4	4	4	0	2	0	0	0
Cap, veh/h	322	2588	914	452	2742	168	307	211	672	299	29	129
Arrive On Green	0.19	0.51	0.51	0.13	0.45	0.45	0.09	0.11	0.11	0.09	0.10	0.10
Sat Flow, veh/h	1707	5085	1524	3476	6094	373	3375	1900	2787	3510	280	1255
Grp Volume(v), veh/h	116	2928	227	153	1725	645	254	15	161	333	0	137
Grp Sat Flow(s),veh/h/ln	1707	1695	1524	1738	1569	1759	1688	1900	1393	1755	0	1535
Q Serve(g_s), s	10.1	86.5	0.0	6.8	54.0	54.2	12.6	1.2	1.3	14.5	0.0	14.9
Cycle Q Clear(g_c), s	10.1	86.5	0.0	6.8	54.0	54.2	12.6	1.2	1.3	14.5	0.0	14.9
Prop In Lane	1.00		1.00	1.00		0.21	1.00		1.00	1.00		0.82
Lane Grp Cap(c), veh/h	322	2588	914	452	2119	792	307	211	672	299	0	158
V/C Ratio(X)	0.36	1.13	0.25	0.34	0.81	0.82	0.83	0.07	0.24	1.11	0.00	0.87
Avail Cap(c_a), veh/h	322	2588	914	452	2119	792	411	391	936	299	0	260
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.83	0.83	0.83	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	60.0	41.8	16.0	67.3	40.6	40.6	76.0	67.7	29.0	77.8	0.0	75.2
Incr Delay (d2), s/veh	0.6	63.8	0.5	0.4	3.6	9.1	10.0	0.1	0.2	85.6	0.0	15.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	55.5	5.1	3.3	24.0	28.3	6.3	0.6	2.2	10.6	0.0	7.0
LnGrp Delay(d),s/veh	60.6	105.6	16.5	67.7	44.1	49.7	86.0	67.8	29.1	163.4	0.0	90.7
LnGrp LOS	E	F	B	E	D	D	F	E	C	F		F
Approach Vol, veh/h		3271			2523			430			470	
Approach Delay, s/veh		97.8			47.0			64.1			142.2	
Approach LOS		F			D			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	39.1	84.0	21.0	25.9	29.1	94.0	22.5	24.5
Change Period (Y+Rc), s	7.0	7.5	6.5	7.0	7.0	7.5	7.0	* 7
Max Green Setting (Gmax), s	16.0	76.5	14.5	35.0	6.0	86.5	20.7	* 29
Max Q Clear Time (g_c+I1), s	12.1	56.2	16.5	3.3	8.8	88.5	14.6	16.9
Green Ext Time (p_c), s	0.3	15.4	0.0	1.6	0.0	0.0	0.9	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	79.6
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	486	1241	242	390	1870	419	550	743	476	495	845	819
Future Volume (veh/h)	486	1241	242	390	1870	419	550	743	476	495	845	819
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1863	1845	1881	1881	1881	1881	1881	1881	1881	1863	1881
Adj Flow Rate, veh/h	512	1306	255	411	1968	441	579	782	501	521	889	862
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	2	3	1	1	1	1	1	1	1	2	1
Cap, veh/h	409	1645	507	769	2224	693	371	1193	372	552	1462	460
Arrive On Green	0.12	0.32	0.32	0.22	0.43	0.43	0.11	0.23	0.23	0.16	0.29	0.29
Sat Flow, veh/h	3476	5085	1568	3476	5136	1599	3476	5136	1599	3476	5085	1599
Grp Volume(v), veh/h	512	1306	255	411	1968	441	579	782	501	521	889	862
Grp Sat Flow(s),veh/h/ln	1738	1695	1568	1738	1712	1599	1738	1712	1599	1738	1695	1599
Q Serve(g_s), s	20.0	39.7	22.3	17.8	59.9	27.4	18.1	23.4	39.5	25.2	25.7	42.7
Cycle Q Clear(g_c), s	20.0	39.7	22.3	17.8	59.9	27.4	18.1	23.4	39.5	25.2	25.7	42.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	409	1645	507	769	2224	693	371	1193	372	552	1462	460
V/C Ratio(X)	1.25	0.79	0.50	0.53	0.88	0.64	1.56	0.66	1.35	0.94	0.61	1.88
Avail Cap(c_a), veh/h	409	1645	507	769	2224	693	371	1193	372	552	1526	480
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	75.0	52.3	46.5	58.4	44.3	21.1	75.9	59.1	65.3	70.7	52.3	46.2
Incr Delay (d2), s/veh	132.2	4.0	3.5	0.7	5.6	4.4	265.6	1.3	173.7	25.1	0.7	402.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.1	19.2	10.2	8.6	29.4	13.0	22.4	11.2	35.4	14.1	12.1	70.2
LnGrp Delay(d),s/veh	207.2	56.4	50.0	59.2	49.9	25.5	341.5	60.4	239.0	95.8	53.0	448.3
LnGrp LOS	F	E	D	E	D	C	F	E	F	F	D	F
Approach Vol, veh/h		2073			2820			1862			2272	
Approach Delay, s/veh		92.8			47.4			195.9			212.8	
Approach LOS		F			D			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	81.0	34.0	46.0	45.0	62.0	25.0	55.0
Change Period (Y+Rc), s	6.0	7.0	7.0	6.5	7.0	* 7	7.0	6.0
Max Green Setting (Gmax), s	20.0	57.0	27.0	39.5	24.0	* 55	16.0	51.0
Max Q Clear Time (g_c+I1), s	22.0	61.9	27.2	41.5	19.8	41.7	20.1	44.7
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	1.6	7.6	0.0	4.4

Intersection Summary	
HCM 2010 Ctrl Delay	130.1
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	1072	247	452	2533	370	265	48	545	188	50	48
Future Volume (veh/h)	56	1072	247	452	2533	370	265	48	545	188	50	48
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1881	1900	1900	1881	1881	1900	1900	1881	1900	1884	1900
Adj Flow Rate, veh/h	59	1128	260	476	2666	389	315	0	574	198	53	51
Adj No. of Lanes	1	4	1	2	4	1	2	0	2	0	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	1	0	0	1	1	0	0	1	1	1	1
Cap, veh/h	468	2538	800	1105	2881	778	374	0	1351	0	84	71
Arrive On Green	0.26	0.39	0.39	0.63	0.89	0.89	0.10	0.00	0.11	0.04	0.05	0.05
Sat Flow, veh/h	1810	6471	1615	3510	6471	1599	3619	0	3198	0	1834	1564
Grp Volume(v), veh/h	59	1128	260	476	2666	389	315	0	574	0	52	52
Grp Sat Flow(s),veh/h/ln	1810	1618	1615	1755	1618	1599	1810	0	1599	0	1790	1608
Q Serve(g_s), s	4.2	21.8	11.4	11.7	43.6	0.0	14.5	0.0	16.0	0.0	4.8	5.5
Cycle Q Clear(g_c), s	4.2	21.8	11.4	11.7	43.6	0.0	14.5	0.0	16.0	0.0	4.8	5.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	0.00		0.97
Lane Grp Cap(c), veh/h	468	2538	800	1105	2881	778	374	0	1351	0	82	73
V/C Ratio(X)	0.13	0.44	0.32	0.43	0.93	0.50	0.84	0.00	0.42	0.00	0.63	0.72
Avail Cap(c_a), veh/h	468	2538	800	1105	3102	833	788	0	1364	0	200	180
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.38	0.38	0.38	1.00	0.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	48.3	38.0	13.1	23.8	7.6	4.7	74.8	0.0	19.8	0.0	79.7	80.0
Incr Delay (d2), s/veh	0.1	0.1	0.2	0.1	2.2	0.2	5.2	0.0	0.2	0.0	7.8	12.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	9.8	5.1	5.6	18.2	2.0	7.5	0.0	7.1	0.0	2.6	2.7
LnGrp Delay(d),s/veh	48.4	38.2	13.3	23.9	9.7	4.8	80.0	0.0	20.0	0.0	87.6	92.2
LnGrp LOS	D	D	B	C	A	A	E		C		F	F
Approach Vol, veh/h		1447			3531			889			104	
Approach Delay, s/veh		34.1			11.1			41.3			89.9	
Approach LOS		C			B			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	59.5	73.2	23.6	13.7	50.5	82.2	13.0	24.3
Change Period (Y+Rc), s	6.0	6.5	6.0	6.0	6.5	* 6.5	6.0	6.0
Max Green Setting (Gmax), s	36.0	53.5	37.0	19.0	8.0	* 82	37.0	19.0
Max Q Clear Time (g_c+I1), s	13.7	23.8	16.5	7.5	6.2	45.6	0.0	18.0
Green Ext Time (p_c), s	1.6	10.0	1.0	0.3	0.1	30.0	0.0	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	22.5
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1231	768	1013	2542	0	0	0	0	771	0	1036
Future Volume (vph)	0	1231	768	1013	2542	0	0	0	0	771	0	1036
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.0	4.0	6.5	6.5					6.0		6.0
Lane Util. Factor		0.81	1.00	0.97	0.91					0.94		*0.95
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		7293	1516	3319	4916					4777		4449
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		7293	1516	3319	4916					4777		4449
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1296	808	1066	2676	0	0	0	0	812	0	1091
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1296	808	1066	2676	0	0	0	0	812	0	1091
Heavy Vehicles (%)	0%	2%	3%	2%	2%	0%	0%	0%	0%	3%	2%	0%
Turn Type		NA	Free	Prot	NA					Prot		Prot
Protected Phases		2		1	1 2					4		4
Permitted Phases			Free									4
Actuated Green, G (s)		40.0	170.0	53.5	100.0					57.0		57.0
Effective Green, g (s)		40.0	170.0	53.5	100.0					57.0		57.0
Actuated g/C Ratio		0.24	1.00	0.31	0.59					0.34		0.34
Clearance Time (s)		7.0		6.5						6.0		6.0
Vehicle Extension (s)		3.0		3.0						4.0		4.0
Lane Grp Cap (vph)		1716	1516	1044	2891					1601		1491
v/s Ratio Prot		0.18		c0.32	c0.54					0.17		c0.25
v/s Ratio Perm			0.53									
v/c Ratio		0.76	0.53	1.02	0.93					0.51		0.73
Uniform Delay, d1		60.4	0.0	58.2	31.6					45.3		49.8
Progression Factor		0.61	1.00	1.04	1.04					1.00		1.00
Incremental Delay, d2		2.8	1.2	30.5	4.0					0.3		2.0
Delay (s)		39.9	1.2	90.9	36.9					45.6		51.8
Level of Service		D	A	F	D					D		D
Approach Delay (s)		25.1			52.3			0.0			49.1	
Approach LOS		C			D			A			D	

Intersection Summary			
HCM 2000 Control Delay	44.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	25.5
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	122	1880	0	0	2806	1259	749	0	998	0	0	0
Future Volume (vph)	122	1880	0	0	2806	1259	749	0	998	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5			6.5	4.0	6.0		6.0			
Lane Util. Factor	1.00	0.86			0.81	1.00	0.94		*0.95			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	1540	5630			6628	1391	4385		3965			
Flt Permitted	0.03	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	50	5630			6628	1391	4385		3965			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	128	1979	0	0	2954	1325	788	0	1051	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	128	1979	0	0	2954	1325	788	0	1051	0	0	0
Heavy Vehicles (%)	2%	1%	0%	0%	1%	1%	1%	0%	1%	0%	0%	0%
Turn Type	Perm	NA			NA	Free	Prot		Prot			
Protected Phases		5 6			5 6		8		8			
Permitted Phases	5 6					Free						
Actuated Green, G (s)	128.5	128.5			128.5	170.0	29.0		29.0			
Effective Green, g (s)	128.5	128.5			128.5	170.0	29.0		29.0			
Actuated g/C Ratio	0.76	0.76			0.76	1.00	0.17		0.17			
Clearance Time (s)							6.0		6.0			
Vehicle Extension (s)							4.0		4.0			
Lane Grp Cap (vph)	37	4255			5009	1391	748		676			
v/s Ratio Prot		0.35			0.45		0.18		c0.27			
v/s Ratio Perm	c2.54					0.95						
v/c Ratio	3.46	0.47			0.59	0.95	1.05		1.55			
Uniform Delay, d1	20.8	7.8			9.1	0.0	70.5		70.5			
Progression Factor	2.51	0.17			0.18	1.00	1.00		1.00			
Incremental Delay, d2	1148.6	0.3			0.3	11.4	47.9		256.9			
Delay (s)	1200.6	1.6			2.0	11.4	118.4		327.4			
Level of Service	F	A			A	B	F		F			
Approach Delay (s)		74.5			4.9			237.8			0.0	
Approach LOS		E			A			F			A	

Intersection Summary			
HCM 2000 Control Delay	74.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	3.32		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	25.5
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	2728	0	0	3945	140	0	0	0	0	0	120
Future Volume (vph)	150	2728	0	0	3945	140	0	0	0	0	0	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	6.5			6.5							6.5
Lane Util. Factor	1.00	0.86			0.81							1.00
Frt	1.00	1.00			0.99							0.86
Flt Protected	0.95	1.00			1.00							1.00
Satd. Flow (prot)	1728	6256			7327							1573
Flt Permitted	0.95	1.00			1.00							1.00
Satd. Flow (perm)	1728	6256			7327							1573
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	158	2872	0	0	4153	147	0	0	0	0	0	126
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	158	2872	0	0	4300	0	0	0	0	0	0	126
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	4%	4%	4%	1%	4%	1%
Turn Type	Prot	NA			NA							Perm
Protected Phases	1	6			2							
Permitted Phases												6
Actuated Green, G (s)	21.0	170.0			134.5							170.0
Effective Green, g (s)	21.0	170.0			134.5							170.0
Actuated g/C Ratio	0.12	1.00			0.79							1.00
Clearance Time (s)	8.0	6.5			6.5							6.5
Vehicle Extension (s)	3.0	3.0			3.0							3.0
Lane Grp Cap (vph)	213	6256			5796							1573
v/s Ratio Prot	c0.09	0.46			c0.59							
v/s Ratio Perm												0.08
v/c Ratio	0.74	0.46			0.74							0.08
Uniform Delay, d1	71.9	0.0			9.0							0.0
Progression Factor	1.15	1.00			0.19							1.00
Incremental Delay, d2	6.9	0.0			0.3							0.0
Delay (s)	89.4	0.0			2.0							0.0
Level of Service	F	A			A							A
Approach Delay (s)		4.7			2.0			0.0			0.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	3.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	75.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	2442	188	208	3227	133	449	20	279	219	21	139
Future Volume (veh/h)	78	2442	188	208	3227	133	449	20	279	219	21	139
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1881	1845	1881	1880	1900	1881	1900	1881	1881	1827	1900
Adj Flow Rate, veh/h	82	2571	198	219	3397	140	473	21	294	231	22	146
Adj No. of Lanes	1	3	1	2	4	0	2	1	2	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	1	3	1	1	1	1	0	1	1	4	4
Cap, veh/h	73	2583	1027	249	3446	140	528	372	753	215	21	142
Arrive On Green	0.04	0.50	0.50	0.07	0.54	0.54	0.15	0.20	0.20	0.06	0.10	0.10
Sat Flow, veh/h	1774	5136	1568	3476	6424	261	3476	1900	2814	3476	207	1377
Grp Volume(v), veh/h	82	2571	198	219	2555	982	473	21	294	231	0	168
Grp Sat Flow(s),veh/h/ln	1774	1712	1568	1738	1617	1834	1738	1900	1407	1738	0	1584
Q Serve(g_s), s	7.0	84.7	0.0	10.6	87.7	90.8	22.7	1.5	2.0	10.5	0.0	17.5
Cycle Q Clear(g_c), s	7.0	84.7	0.0	10.6	87.7	90.8	22.7	1.5	2.0	10.5	0.0	17.5
Prop In Lane	1.00		1.00	1.00		0.14	1.00		1.00	1.00		0.87
Lane Grp Cap(c), veh/h	73	2583	1027	249	2602	984	528	372	753	215	0	163
V/C Ratio(X)	1.12	1.00	0.19	0.88	0.98	1.00	0.90	0.06	0.39	1.08	0.00	1.03
Avail Cap(c_a), veh/h	73	2583	1027	249	2602	984	572	391	781	215	0	163
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.89	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	81.5	42.1	11.6	78.2	38.6	39.3	70.8	55.6	29.4	79.8	0.0	76.3
Incr Delay (d2), s/veh	136.2	15.6	0.4	28.1	13.9	28.3	16.0	0.1	0.3	83.1	0.0	78.7
Initial Q Delay(d3),s/veh	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
%ile BackOfQ(50%),veh/ln	6.2	43.7	3.7	6.1	42.4	53.6	12.1	0.8	4.2	7.5	0.0	11.2
LnGrp Delay(d),s/veh	217.8	57.7	12.0	106.3	52.5	67.6	86.7	55.6	29.7	162.8	0.0	155.2
LnGrp LOS	F	E	B	F	D	E	F	E	C	F		F
Approach Vol, veh/h		2851			3756			788			399	
Approach Delay, s/veh		59.1			59.5			64.6			159.6	
Approach LOS		E			E			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	98.7	17.0	40.3	19.7	93.0	32.8	24.5
Change Period (Y+Rc), s	7.0	7.5	6.5	7.0	7.5	* 7.5	7.0	* 7
Max Green Setting (Gmax), s	7.0	89.5	10.5	35.0	11.0	* 86	28.0	* 18
Max Q Clear Time (g_c+I1), s	9.0	92.8	12.5	4.0	12.6	86.7	24.7	19.5
Green Ext Time (p_c), s	0.0	0.0	0.0	3.2	0.0	0.0	1.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	65.0
HCM 2010 LOS	E

Notes

Alternative 3D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	678	1705	294	304	1223	346	390	826	381	433	642	403
Future Volume (veh/h)	678	1705	294	304	1223	346	390	826	381	433	642	403
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1845	1845	1792	1776	1743	1827	1845	1845	1863	1827
Adj Flow Rate, veh/h	714	1795	309	320	1287	364	411	869	401	456	676	424
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	3	3	6	7	9	4	3	3	2	4
Cap, veh/h	812	1974	802	444	1382	426	398	1023	526	461	1103	703
Arrive On Green	0.24	0.39	0.39	0.13	0.28	0.28	0.12	0.21	0.21	0.14	0.22	0.22
Sat Flow, veh/h	3442	5085	1568	3408	4893	1509	3221	4988	1568	3408	5085	1553
Grp Volume(v), veh/h	714	1795	309	320	1287	364	411	869	401	456	676	424
Grp Sat Flow(s),veh/h/ln	1721	1695	1568	1704	1631	1509	1610	1663	1568	1704	1695	1553
Q Serve(g_s), s	34.0	56.7	10.5	15.3	43.5	38.8	21.0	28.5	16.7	22.7	20.4	10.1
Cycle Q Clear(g_c), s	34.0	56.7	10.5	15.3	43.5	38.8	21.0	28.5	16.7	22.7	20.4	10.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	812	1974	802	444	1382	426	398	1023	526	461	1103	703
V/C Ratio(X)	0.88	0.91	0.39	0.72	0.93	0.85	1.03	0.85	0.76	0.99	0.61	0.60
Avail Cap(c_a), veh/h	812	1974	802	444	1382	426	398	1144	564	461	1226	741
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.6	49.2	9.6	71.0	59.4	57.7	74.5	65.0	50.5	73.4	60.1	14.7
Incr Delay (d2), s/veh	10.9	7.7	1.4	5.7	12.6	19.1	53.9	5.7	5.7	38.9	0.8	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	17.4	28.0	4.9	7.6	21.3	18.4	12.3	13.7	8.0	13.2	9.7	8.8
LnGrp Delay(d),s/veh	73.5	56.8	11.0	76.6	72.0	76.8	128.4	70.7	56.2	112.3	60.9	16.0
LnGrp LOS	E	E	B	E	E	E	F	E	E	F	E	B
Approach Vol, veh/h		2818			1971			1681			1556	
Approach Delay, s/veh		56.0			73.6			81.4			63.7	
Approach LOS		E			E			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	46.1	54.0	29.0	40.9	28.1	72.0	27.0	42.9
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	36.0	48.0	23.0	39.0	18.0	66.0	21.0	41.0
Max Q Clear Time (g_c+I1), s	36.0	45.5	24.7	30.5	17.3	58.7	23.0	22.4
Green Ext Time (p_c), s	0.0	1.9	0.0	4.4	0.3	5.9	0.0	7.4

Intersection Summary	
HCM 2010 Ctrl Delay	67.1
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	2562	83	196	1917	135	52	9	207	219	13	31
Future Volume (veh/h)	29	2562	83	196	1917	135	52	9	207	219	13	31
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1863	1881	1845	1827	1827	1845	1860	1845	1881	1837	1900
Adj Flow Rate, veh/h	31	2697	87	206	2018	142	61	0	218	231	14	33
Adj No. of Lanes	1	4	1	2	4	1	2	0	2	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	2	1	3	4	4	3	0	3	1	2	2
Cap, veh/h	152	4117	1197	250	3956	1101	373	0	428	277	18	42
Arrive On Green	0.17	1.00	1.00	0.05	0.42	0.42	0.11	0.00	0.06	0.08	0.04	0.04
Sat Flow, veh/h	1757	6408	1599	3408	6285	1553	3514	0	3136	3476	487	1148
Grp Volume(v), veh/h	31	2697	87	206	2018	142	61	0	218	231	0	47
Grp Sat Flow(s),veh/h/ln	1757	1602	1599	1704	1571	1553	1757	0	1568	1738	0	1635
Q Serve(g_s), s	2.6	0.0	0.0	10.2	40.2	0.0	2.7	0.0	8.6	11.1	0.0	4.8
Cycle Q Clear(g_c), s	2.6	0.0	0.0	10.2	40.2	0.0	2.7	0.0	8.6	11.1	0.0	4.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.70
Lane Grp Cap(c), veh/h	152	4117	1197	250	3956	1101	373	0	428	277	0	60
V/C Ratio(X)	0.20	0.66	0.07	0.82	0.51	0.13	0.16	0.00	0.51	0.83	0.00	0.79
Avail Cap(c_a), veh/h	152	4117	1197	361	3956	1101	373	0	452	409	0	221
HCM Platoon Ratio	2.00	2.00	2.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.74	0.74	0.74	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	65.3	0.0	0.0	79.7	29.8	13.1	69.1	0.0	43.2	77.1	0.0	81.2
Incr Delay (d2), s/veh	0.7	0.8	0.1	7.4	0.4	0.2	0.2	0.0	0.9	9.2	0.0	19.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.2	0.0	5.1	17.5	3.6	1.3	0.0	3.8	5.7	0.0	2.5
LnGrp Delay(d),s/veh	65.9	0.8	0.1	87.2	30.2	13.3	69.3	0.0	44.1	86.3	0.0	101.1
LnGrp LOS	E	A	A	F	C	B	E		D	F		F
Approach Vol, veh/h		2815			2366			279			278	
Approach Delay, s/veh		1.5			34.1			49.6			88.8	
Approach LOS		A			C			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.5	115.2	24.1	12.2	20.7	113.0	19.6	16.7
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	18.0	96.0	9.0	23.0	7.0	107.0	20.0	12.0
Max Q Clear Time (g_c+I1), s	12.2	2.0	4.7	6.8	4.6	42.2	13.1	10.6
Green Ext Time (p_c), s	0.3	58.5	0.4	0.1	0.0	28.2	0.4	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	21.5
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2227	691	910	1479	0	0	0	0	208	0	922
Future Volume (vph)	0	2227	691	910	1479	0	0	0	0	208	0	922
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	6.0	6.0					6.0		6.0
Lane Util. Factor		0.81	1.00	0.97	0.91					1.00		*0.95
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		7471	1599	3433	4940					1770		4469
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		7471	1599	3433	4940					1770		4469
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	2344	727	958	1557	0	0	0	0	219	0	971
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	2344	727	958	1557	0	0	0	0	219	0	971
Heavy Vehicles (%)	0%	3%	1%	2%	5%	0%	0%	0%	0%	2%	0%	3%
Turn Type		NA	Free	Prot	NA					Prot		custom
Protected Phases		2 3		1	1 2					4 12		3 4 12
Permitted Phases			Free									
Actuated Green, G (s)		56.8	170.0	60.3	93.1					28.9		52.9
Effective Green, g (s)		56.8	170.0	60.3	93.1					28.9		52.9
Actuated g/C Ratio		0.33	1.00	0.35	0.55					0.17		0.31
Clearance Time (s)				6.0								
Vehicle Extension (s)				3.0								
Lane Grp Cap (vph)		2496	1599	1217	2705					300		1390
v/s Ratio Prot		c0.31		c0.28	0.32					c0.12		c0.22
v/s Ratio Perm			c0.45									
v/c Ratio		0.94	0.45	0.79	0.58					0.73		0.70
Uniform Delay, d1		54.9	0.0	49.1	25.4					66.9		51.5
Progression Factor		0.58	1.00	0.05	0.86					1.00		1.00
Incremental Delay, d2		6.0	0.7	2.5	0.3					8.6		1.7
Delay (s)		37.8	0.7	5.1	22.1					75.5		53.2
Level of Service		D	A	A	C					E		D
Approach Delay (s)		29.1			15.7			0.0			57.3	
Approach LOS		C			B			A			E	

Intersection Summary			
HCM 2000 Control Delay	29.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	36.0
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1060	1375	0	0	1862	742	527	0	999	0	0	0
Future Volume (vph)	1060	1375	0	0	1862	742	527	0	999	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0	4.0	6.0		6.0			
Lane Util. Factor	0.97	0.91			0.81	1.00	0.94		*0.95			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	3060	4532			6724	1384	4405		4061			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3060	4532			6724	1384	4405		4061			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1116	1447	0	0	1960	781	555	0	1052	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	1116	1447	0	0	1960	781	555	0	1052	0	0	0
Heavy Vehicles (%)	3%	3%	0%	0%	3%	5%	4%	0%	2%	0%	0%	0%
Turn Type	Prot	NA			NA	Free	Prot		custom			
Protected Phases	5	5 6			6 7		8 16		7 8 16			
Permitted Phases						Free						
Actuated Green, G (s)	68.0	88.0			57.0	170.0	21.0		58.0			
Effective Green, g (s)	68.0	88.0			57.0	170.0	21.0		58.0			
Actuated g/C Ratio	0.40	0.52			0.34	1.00	0.12		0.34			
Clearance Time (s)	6.0											
Vehicle Extension (s)	3.0											
Lane Grp Cap (vph)	1224	2345			2254	1384	544		1385			
v/s Ratio Prot	c0.36	0.32			c0.29		c0.13		c0.26			
v/s Ratio Perm						c0.56						
v/c Ratio	0.91	0.62			0.87	0.56	1.02		0.76			
Uniform Delay, d1	48.2	29.1			53.0	0.0	74.5		49.8			
Progression Factor	0.17	0.24			0.70	1.00	1.00		1.00			
Incremental Delay, d2	4.7	0.2			3.7	1.6	43.8		2.6			
Delay (s)	13.0	7.1			40.7	1.6	118.3		52.4			
Level of Service	B	A			D	A	F		D			
Approach Delay (s)		9.6			29.5			75.2			0.0	
Approach LOS		A			C			E			A	

Intersection Summary			
HCM 2000 Control Delay	32.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	36.0
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBR2	NER
Lane Configurations						
Traffic Volume (vph)	55	2319	2538	65	66	834
Future Volume (vph)	55	2319	2538	65	66	834
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.91	0.76	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	0.86	0.86
Flt Protected	0.95	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1787	5136	8412	1615	1644	1596
Flt Permitted	0.95	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1787	5136	8412	1615	1644	1596
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	58	2441	2672	68	69	878
RTOR Reduction (vph)	0	0	0	9	0	0
Lane Group Flow (vph)	58	2441	2672	59	69	878
Heavy Vehicles (%)	1%	1%	3%	0%	0%	3%
Turn Type	Prot	NA	NA	Perm	Perm	Perm
Protected Phases	1	6	2			
Permitted Phases				2	6	2
Actuated Green, G (s)	11.2	170.0	146.8	146.8	170.0	146.8
Effective Green, g (s)	11.2	170.0	146.8	146.8	170.0	146.8
Actuated g/C Ratio	0.07	1.00	0.86	0.86	1.00	0.86
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	117	5136	7264	1394	1644	1378
v/s Ratio Prot	0.03	c0.48	0.32			
v/s Ratio Perm				0.04	0.04	c0.55
v/c Ratio	0.50	0.48	0.37	0.04	0.04	0.64
Uniform Delay, d1	76.7	0.0	2.3	1.6	0.0	3.5
Progression Factor	1.00	1.00	0.16	0.07	1.00	1.00
Incremental Delay, d2	2.4	0.2	0.1	0.0	0.0	2.3
Delay (s)	79.0	0.2	0.5	0.2	0.0	5.8
Level of Service	E	A	A	A	A	A
Approach Delay (s)		2.1	0.5			
Approach LOS		A	A			

Intersection Summary			
HCM 2000 Control Delay	1.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	106.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	2782	216	145	2121	130	241	14	153	316	24	106
Future Volume (veh/h)	110	2782	216	145	2121	130	241	14	153	316	24	106
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1863	1792	1881	1825	1900	1827	1900	1863	1900	1756	1900
Adj Flow Rate, veh/h	116	2928	227	153	2233	137	254	15	161	333	25	112
Adj No. of Lanes	1	3	1	2	4	0	2	1	1	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	6	2	6	1	4	4	4	0	2	0	0	0
Cap, veh/h	133	2558	904	464	3421	210	304	210	387	299	29	129
Arrive On Green	0.16	1.00	1.00	0.13	0.56	0.56	0.09	0.11	0.11	0.09	0.10	0.10
Sat Flow, veh/h	1707	5085	1524	3476	6094	373	3375	1900	1583	3510	280	1255
Grp Volume(v), veh/h	116	2928	227	153	1725	645	254	15	161	333	0	137
Grp Sat Flow(s),veh/h/ln	1707	1695	1524	1738	1569	1759	1688	1900	1583	1755	0	1535
Q Serve(g_s), s	11.3	0.0	0.0	6.8	43.1	43.2	12.6	1.2	2.4	14.5	0.0	14.9
Cycle Q Clear(g_c), s	11.3	0.0	0.0	6.8	43.1	43.2	12.6	1.2	2.4	14.5	0.0	14.9
Prop In Lane	1.00		1.00	1.00		0.21	1.00		1.00	1.00		0.82
Lane Grp Cap(c), veh/h	133	2558	904	464	2643	987	304	210	387	299	0	158
V/C Ratio(X)	0.87	1.14	0.25	0.33	0.65	0.65	0.83	0.07	0.42	1.11	0.00	0.87
Avail Cap(c_a), veh/h	154	2558	904	464	2643	987	393	391	537	299	0	268
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.85	0.85	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	70.9	0.0	0.0	66.8	25.8	25.8	76.1	67.8	29.8	77.8	0.0	75.1
Incr Delay (d2), s/veh	30.9	69.6	0.6	0.4	1.3	3.4	11.5	0.1	0.7	85.6	0.0	14.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.4	16.5	0.1	3.3	19.0	21.9	6.4	0.6	4.7	10.6	0.0	7.0
LnGrp Delay(d),s/veh	101.8	69.6	0.6	67.2	27.1	29.2	87.6	67.9	30.5	163.4	0.0	89.3
LnGrp LOS	F	F	A	E	C	C	F	E	C	F		F
Approach Vol, veh/h		3271			2523			430			470	
Approach Delay, s/veh		65.9			30.1			65.5			141.8	
Approach LOS		E			C			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.3	102.9	21.0	25.8	30.2	93.0	22.3	24.5
Change Period (Y+Rc), s	7.0	7.5	6.5	7.0	7.5	* 7.5	7.0	* 7
Max Green Setting (Gmax), s	15.3	77.2	14.5	35.0	7.0	* 86	19.8	* 30
Max Q Clear Time (g_c+I1), s	13.3	45.2	16.5	4.4	8.8	2.0	14.6	16.9
Green Ext Time (p_c), s	0.0	22.2	0.0	1.5	0.0	63.6	0.7	0.5

Intersection Summary	
HCM 2010 Ctrl Delay	57.7
HCM 2010 LOS	E

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	486	1241	242	390	1870	419	550	743	476	495	845	819
Future Volume (veh/h)	486	1241	242	390	1870	419	550	743	476	495	845	819
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1863	1845	1881	1881	1881	1881	1881	1881	1881	1863	1881
Adj Flow Rate, veh/h	512	1306	255	411	1968	441	579	782	501	521	889	862
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	2	3	1	1	1	1	1	1	1	2	1
Cap, veh/h	511	1705	747	552	1782	555	491	972	557	610	1137	593
Arrive On Green	0.15	0.34	0.34	0.32	0.69	0.69	0.14	0.19	0.19	0.18	0.22	0.22
Sat Flow, veh/h	3476	5085	1568	3476	5136	1599	3476	5136	1599	3476	5085	1599
Grp Volume(v), veh/h	512	1306	255	411	1968	441	579	782	501	521	889	862
Grp Sat Flow(s),veh/h/ln	1738	1695	1568	1738	1712	1599	1738	1712	1599	1738	1695	1599
Q Serve(g_s), s	25.0	39.0	8.5	18.0	59.0	32.0	24.0	24.8	23.6	24.7	28.0	30.9
Cycle Q Clear(g_c), s	25.0	39.0	8.5	18.0	59.0	32.0	24.0	24.8	23.6	24.7	28.0	30.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	511	1705	747	552	1782	555	491	972	557	610	1137	593
V/C Ratio(X)	1.00	0.77	0.34	0.74	1.10	0.79	1.18	0.80	0.90	0.85	0.78	1.45
Avail Cap(c_a), veh/h	511	1705	747	552	1782	555	491	1178	621	610	1226	621
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.5	50.5	10.6	54.9	26.0	21.9	73.0	65.9	52.6	68.0	62.1	30.3
Incr Delay (d2), s/veh	40.2	3.3	1.2	5.4	55.9	11.2	100.4	3.5	15.2	11.4	3.1	213.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.9	18.8	3.9	9.0	36.3	15.4	18.4	12.0	12.7	12.8	13.4	48.8
LnGrp Delay(d),s/veh	112.7	53.9	11.9	60.4	81.9	33.1	173.4	69.4	67.8	79.4	65.2	244.2
LnGrp LOS	F	D	B	E	F	C	F	E	E	E	E	F
Approach Vol, veh/h		2073			2820			1862			2272	
Approach Delay, s/veh		63.2			71.1			101.3			136.4	
Approach LOS		E			E			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	31.0	65.0	35.8	38.2	33.0	63.0	30.0	44.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	22.0	59.0	26.0	39.0	24.0	57.0	24.0	41.0
Max Q Clear Time (g_c+I1), s	27.0	61.0	26.7	26.8	20.0	41.0	26.0	32.9
Green Ext Time (p_c), s	0.0	0.0	0.0	5.4	1.4	8.5	0.0	5.1

Intersection Summary	
HCM 2010 Ctrl Delay	91.9
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	2053	247	452	2533	370	265	48	545	188	50	48
Future Volume (veh/h)	56	2053	247	452	2533	370	265	48	545	188	50	48
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1881	1900	1900	1881	1881	1900	1900	1881	1881	1890	1900
Adj Flow Rate, veh/h	59	2161	260	476	2666	389	315	0	574	198	53	51
Adj No. of Lanes	1	4	1	2	4	1	2	0	2	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	1	0	0	1	1	0	0	1	1	1	1
Cap, veh/h	75	3223	1027	531	3936	1089	500	0	922	252	63	61
Arrive On Green	0.08	1.00	1.00	0.10	0.41	0.41	0.14	0.00	0.14	0.07	0.07	0.07
Sat Flow, veh/h	1810	6471	1615	3510	6471	1599	3619	0	3198	3476	887	853
Grp Volume(v), veh/h	59	2161	260	476	2666	389	315	0	574	198	0	104
Grp Sat Flow(s),veh/h/ln	1810	1618	1615	1755	1618	1599	1810	0	1599	1738	0	1740
Q Serve(g_s), s	5.4	0.6	0.1	22.8	57.3	9.3	14.0	0.0	19.8	9.5	0.0	10.0
Cycle Q Clear(g_c), s	5.4	0.6	0.1	22.8	57.3	9.3	14.0	0.0	19.8	9.5	0.0	10.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.49
Lane Grp Cap(c), veh/h	75	3223	1027	531	3936	1089	500	0	922	252	0	124
V/C Ratio(X)	0.79	0.67	0.25	0.90	0.68	0.36	0.63	0.00	0.62	0.79	0.00	0.84
Avail Cap(c_a), veh/h	117	3223	1027	640	3936	1089	575	0	1030	327	0	184
HCM Platoon Ratio	2.00	2.00	2.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.34	0.34	0.34	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	77.3	0.2	0.0	75.1	36.7	8.4	69.2	0.0	30.7	77.5	0.0	78.0
Incr Delay (d2), s/veh	17.2	1.1	0.6	5.3	0.3	0.3	1.8	0.0	1.0	9.1	0.0	18.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.3	0.2	11.5	25.7	4.2	7.1	0.0	8.9	4.9	0.0	5.5
LnGrp Delay(d),s/veh	94.5	1.3	0.6	80.3	37.0	8.7	70.9	0.0	31.7	86.7	0.0	96.9
LnGrp LOS	F	A	A	F	D	A	E		C	F		F
Approach Vol, veh/h		2480			3531			889			302	
Approach Delay, s/veh		3.4			39.7			45.6			90.2	
Approach LOS		A			D			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	31.7	90.7	29.5	18.1	13.0	109.4	18.3	29.3
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	31.0	70.0	27.0	18.0	11.0	90.0	16.0	29.0
Max Q Clear Time (g_c+I1), s	24.8	2.6	16.0	12.0	7.4	59.3	11.5	21.8
Green Ext Time (p_c), s	0.9	66.2	1.4	0.2	0.0	30.4	0.8	1.4

Intersection Summary	
HCM 2010 Ctrl Delay	30.1
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2212	768	1013	2542	0	0	0	0	170	0	1036
Future Volume (vph)	0	2212	768	1013	2542	0	0	0	0	170	0	1036
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	6.0	6.0					6.0		6.0
Lane Util. Factor		0.81	1.00	0.97	0.91					1.00		*0.95
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		7544	1568	3433	5085					1752		4603
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		7544	1568	3433	5085					1752		4603
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	2328	808	1066	2676	0	0	0	0	179	0	1091
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	2328	808	1066	2676	0	0	0	0	179	0	1091
Heavy Vehicles (%)	0%	2%	3%	2%	2%	0%	0%	0%	0%	3%	2%	0%
Turn Type		NA	Free	Prot	NA					Prot		custom
Protected Phases		2 3		1	1 2					4 12		3 4 12
Permitted Phases			Free									
Actuated Green, G (s)		55.0	170.0	72.2	100.2					18.8		45.8
Effective Green, g (s)		55.0	170.0	72.2	100.2					18.8		45.8
Actuated g/C Ratio		0.32	1.00	0.42	0.59					0.11		0.27
Clearance Time (s)				6.0								
Vehicle Extension (s)				3.0								
Lane Grp Cap (vph)		2440	1568	1458	2997					193		1240
v/s Ratio Prot		c0.31		0.31	c0.53					c0.10		c0.24
v/s Ratio Perm			0.52									
v/c Ratio		0.95	0.52	0.73	0.89					0.93		0.88
Uniform Delay, d1		56.3	0.0	40.8	30.2					74.9		59.5
Progression Factor		0.73	1.00	0.00	0.36					1.00		1.00
Incremental Delay, d2		7.6	0.9	0.3	0.4					44.2		7.6
Delay (s)		48.6	0.9	0.3	11.2					119.1		67.1
Level of Service		D	A	A	B					F		E
Approach Delay (s)		36.3			8.1			0.0			74.4	
Approach LOS		D			A			A			E	

Intersection Summary			
HCM 2000 Control Delay	29.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	36.0
Intersection Capacity Utilization	101.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1103	1279	0	0	2806	1259	749	0	998	0	0	0
Future Volume (vph)	1103	1279	0	0	2806	1259	749	0	998	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0	4.0	6.0		6.0			
Lane Util. Factor	0.97	0.91			0.81	1.00	0.94		*0.95			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	3090	4622			6857	1439	4536		4101			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3090	4622			6857	1439	4536		4101			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1161	1346	0	0	2954	1325	788	0	1051	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	1161	1346	0	0	2954	1325	788	0	1051	0	0	0
Heavy Vehicles (%)	2%	1%	0%	0%	1%	1%	1%	0%	1%	0%	0%	0%
Turn Type	Prot	NA			NA	Free	Prot		custom			
Protected Phases	5	5 6			6 7		8 16		7 8 16			
Permitted Phases						Free						
Actuated Green, G (s)	60.0	94.0			62.0	170.0	24.0		52.0			
Effective Green, g (s)	60.0	94.0			62.0	170.0	24.0		52.0			
Actuated g/C Ratio	0.35	0.55			0.36	1.00	0.14		0.31			
Clearance Time (s)	6.0											
Vehicle Extension (s)	3.0											
Lane Grp Cap (vph)	1090	2555			2500	1439	640		1254			
v/s Ratio Prot	c0.38	0.29			c0.43		c0.17		0.26			
v/s Ratio Perm						c0.92						
v/c Ratio	1.07	0.53			1.18	0.92	1.23		0.84			
Uniform Delay, d1	55.0	24.0			54.0	0.0	73.0		55.1			
Progression Factor	0.24	0.26			0.58	1.00	1.00		1.00			
Incremental Delay, d2	36.3	0.1			85.4	9.4	117.3		5.3			
Delay (s)	49.3	6.3			116.5	9.4	190.3		60.4			
Level of Service	D	A			F	A	F		E			
Approach Delay (s)		26.2			83.4			116.1			0.0	
Approach LOS		C			F			F			A	

Intersection Summary			
HCM 2000 Control Delay	73.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.30		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	36.0
Intersection Capacity Utilization	101.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	WBT	WBR	SBR2	NER
Lane Configurations						
Traffic Volume (vph)	150	2127	3945	140	120	601
Future Volume (vph)	150	2127	3945	140	120	601
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	0.91	0.76	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	0.86	0.86
Flt Protected	0.95	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1787	5136	8578	1599	1627	1596
Flt Permitted	0.95	1.00	1.00	1.00	1.00	1.00
Satd. Flow (perm)	1787	5136	8578	1599	1627	1596
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	158	2239	4153	147	126	633
RTOR Reduction (vph)	0	0	0	28	0	0
Lane Group Flow (vph)	158	2239	4153	119	126	633
Heavy Vehicles (%)	1%	1%	1%	1%	1%	3%
Turn Type	Prot	NA	NA	Perm	Perm	Perm
Protected Phases	1	6	2			
Permitted Phases				2	6	2
Actuated Green, G (s)	20.3	170.0	137.7	137.7	170.0	137.7
Effective Green, g (s)	20.3	170.0	137.7	137.7	170.0	137.7
Actuated g/C Ratio	0.12	1.00	0.81	0.81	1.00	0.81
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	213	5136	6948	1295	1627	1292
v/s Ratio Prot	c0.09	0.44	c0.48			
v/s Ratio Perm				0.07	0.08	0.40
v/c Ratio	0.74	0.44	0.60	0.09	0.08	0.49
Uniform Delay, d1	72.3	0.0	5.9	3.3	0.0	5.1
Progression Factor	1.19	1.00	0.08	0.00	1.00	1.00
Incremental Delay, d2	9.9	0.2	0.2	0.1	0.1	1.3
Delay (s)	95.6	0.2	0.6	0.1	0.1	6.4
Level of Service	F	A	A	A	A	A
Approach Delay (s)		6.5	0.6			
Approach LOS		A	A			

Intersection Summary			
HCM 2000 Control Delay	3.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	88.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	2442	188	208	3227	133	449	20	279	219	21	139
Future Volume (veh/h)	78	2442	188	208	3227	133	449	20	279	219	21	139
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1881	1845	1881	1880	1900	1881	1900	1881	1881	1827	1900
Adj Flow Rate, veh/h	82	2571	198	219	3397	140	473	21	294	231	22	146
Adj No. of Lanes	1	3	1	2	4	0	2	1	1	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	1	3	1	1	1	1	0	1	1	4	4
Cap, veh/h	105	2535	1011	268	3284	134	526	375	438	235	23	152
Arrive On Green	0.12	0.99	0.99	0.08	0.51	0.51	0.15	0.20	0.20	0.07	0.11	0.11
Sat Flow, veh/h	1774	5136	1568	3476	6424	261	3476	1900	1599	3476	207	1377
Grp Volume(v), veh/h	82	2571	198	219	2555	982	473	21	294	231	0	168
Grp Sat Flow(s),veh/h/ln	1774	1712	1568	1738	1617	1834	1738	1900	1599	1738	0	1584
Q Serve(g_s), s	7.6	83.9	0.0	10.6	86.9	86.9	22.7	1.5	11.6	11.3	0.0	17.9
Cycle Q Clear(g_c), s	7.6	83.9	0.0	10.6	86.9	86.9	22.7	1.5	11.6	11.3	0.0	17.9
Prop In Lane	1.00		1.00	1.00		0.14	1.00		1.00	1.00		0.87
Lane Grp Cap(c), veh/h	105	2535	1011	268	2480	938	526	375	438	235	0	175
V/C Ratio(X)	0.78	1.01	0.20	0.82	1.03	1.05	0.90	0.06	0.67	0.98	0.00	0.96
Avail Cap(c_a), veh/h	105	2535	1011	268	2480	938	566	391	452	235	0	175
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.89	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	73.8	1.1	0.3	77.3	41.5	41.6	70.9	55.4	35.6	79.1	0.0	75.2
Incr Delay (d2), s/veh	27.5	20.6	0.4	17.8	26.4	42.6	16.7	0.1	3.7	53.6	0.0	55.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	8.6	0.2	5.7	44.6	54.8	12.1	0.8	5.5	7.2	0.0	10.6
LnGrp Delay(d),s/veh	101.4	21.7	0.7	95.1	67.9	84.1	87.5	55.5	39.3	132.7	0.0	131.1
LnGrp LOS	F	F	A	F	F	F	F	E	D	F		F
Approach Vol, veh/h		2851			3756			788			399	
Approach Delay, s/veh		22.5			73.7			68.7			132.0	
Approach LOS		C			E			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.1	94.4	18.0	40.5	20.1	91.4	32.7	25.8
Change Period (Y+Rc), s	7.0	7.5	6.5	7.0	7.0	7.5	7.0	* 7
Max Green Setting (Gmax), s	8.6	86.9	11.5	35.0	11.6	83.9	27.7	* 19
Max Q Clear Time (g_c+I1), s	9.6	88.9	13.3	13.6	12.6	85.9	24.7	19.9
Green Ext Time (p_c), s	0.0	0.0	0.0	2.9	0.0	0.0	1.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	57.5
HCM 2010 LOS	E

Notes

Alternative 3E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	678	1705	294	304	1223	346	390	826	381	433	642	403
Future Volume (veh/h)	678	1705	294	304	1223	346	390	826	381	433	642	403
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1845	1845	1792	1776	1743	1827	1845	1845	1863	1827
Adj Flow Rate, veh/h	714	1795	309	320	1287	364	411	869	401	456	676	424
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	3	3	6	7	9	4	3	3	2	4
Cap, veh/h	645	1875	764	416	1484	458	382	1040	518	514	1223	665
Arrive On Green	0.19	0.37	0.37	0.12	0.30	0.30	0.12	0.21	0.21	0.15	0.24	0.24
Sat Flow, veh/h	3442	5085	1568	3408	4893	1509	3221	4988	1568	3408	5085	1553
Grp Volume(v), veh/h	714	1795	309	320	1287	364	411	869	401	456	676	424
Grp Sat Flow(s),veh/h/ln	1721	1695	1568	1704	1631	1509	1610	1663	1568	1704	1695	1553
Q Serve(g_s), s	30.0	55.1	10.9	14.6	39.8	23.9	19.0	26.7	17.3	21.0	18.6	34.4
Cycle Q Clear(g_c), s	30.0	55.1	10.9	14.6	39.8	23.9	19.0	26.7	17.3	21.0	18.6	34.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	645	1875	764	416	1484	458	382	1040	518	514	1223	665
V/C Ratio(X)	1.11	0.96	0.40	0.77	0.87	0.80	1.07	0.84	0.77	0.89	0.55	0.64
Avail Cap(c_a), veh/h	645	1875	764	416	1484	458	382	1185	564	514	1303	689
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.0	49.3	10.2	68.1	52.7	23.4	70.5	60.7	48.2	66.6	53.2	36.0
Incr Delay (d2), s/veh	68.3	12.9	1.6	8.5	7.1	13.3	67.4	4.8	6.1	17.1	0.4	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	36.7	36.7	8.7	11.8	26.0	17.2	21.6	18.6	13.0	16.6	13.7	21.5
LnGrp Delay(d),s/veh	133.3	62.1	11.8	76.6	59.8	36.7	137.9	65.5	54.3	83.7	53.7	37.9
LnGrp LOS	F	E	B	E	E	D	F	E	D	F	D	D
Approach Vol, veh/h		2818			1971			1681			1556	
Approach Delay, s/veh		74.6			58.2			80.5			58.2	
Approach LOS		E			E			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	36.0	54.5	30.1	39.4	25.5	65.0	25.0	44.5
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	30.0	46.0	22.0	38.0	17.0	59.0	19.0	41.0
Max Q Clear Time (g_c+I1), s	32.0	41.8	23.0	28.7	16.6	57.1	21.0	36.4
Green Ext Time (p_c), s	0.0	3.4	0.0	4.6	0.4	1.7	0.0	2.1

Intersection Summary	
HCM 2010 Ctrl Delay	68.7
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	1608	83	196	1917	135	52	9	207	219	13	31
Future Volume (veh/h)	29	1608	83	196	1917	135	52	9	207	219	13	31
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1863	1881	1845	1827	1827	1845	1900	1845	1881	1837	1900
Adj Flow Rate, veh/h	31	1693	87	206	2018	142	55	9	218	231	14	33
Adj No. of Lanes	1	4	1	2	4	1	1	1	2	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	2	1	3	4	4	3	0	3	1	2	2
Cap, veh/h	271	3998	1182	251	3417	971	203	134	399	283	18	42
Arrive On Green	0.15	0.62	0.62	0.15	1.00	1.00	0.12	0.07	0.07	0.08	0.04	0.04
Sat Flow, veh/h	1757	6408	1599	3408	6285	1553	1757	1900	2760	3476	487	1148
Grp Volume(v), veh/h	31	1693	87	206	2018	142	55	9	218	231	0	47
Grp Sat Flow(s),veh/h/ln	1757	1602	1599	1704	1571	1553	1757	1900	1380	1738	0	1635
Q Serve(g_s), s	2.4	21.6	1.0	9.4	0.0	0.0	4.6	0.7	9.1	10.5	0.0	4.6
Cycle Q Clear(g_c), s	2.4	21.6	1.0	9.4	0.0	0.0	4.6	0.7	9.1	10.5	0.0	4.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.70
Lane Grp Cap(c), veh/h	271	3998	1182	251	3417	971	203	134	399	283	0	60
V/C Ratio(X)	0.11	0.42	0.07	0.82	0.59	0.15	0.27	0.07	0.55	0.81	0.00	0.78
Avail Cap(c_a), veh/h	271	3998	1182	447	3417	971	203	166	445	521	0	245
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.76	0.76	0.76	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	58.3	15.4	1.5	67.2	0.0	0.0	64.6	69.4	39.2	72.3	0.0	76.4
Incr Delay (d2), s/veh	0.2	0.3	0.1	5.0	0.6	0.2	0.7	0.2	1.2	5.7	0.0	19.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.1	14.7	0.8	7.7	0.2	0.1	4.1	0.7	6.3	9.0	0.0	4.3
LnGrp Delay(d),s/veh	58.5	15.7	1.6	72.2	0.6	0.2	65.3	69.6	40.4	77.9	0.0	95.9
LnGrp LOS	E	B	A	E	A	A	E	E	D	E		F
Approach Vol, veh/h		1811			2366			282			278	
Approach Delay, s/veh		15.8			6.8			46.2			81.0	
Approach LOS		B			A			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.8	105.8	24.5	11.9	30.6	93.0	19.0	17.3
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	21.0	77.0	14.0	24.0	11.0	87.0	24.0	14.0
Max Q Clear Time (g_c+I1), s	11.4	23.6	6.6	6.6	4.4	2.0	12.5	11.1
Green Ext Time (p_c), s	0.4	19.0	0.6	0.1	0.1	30.6	0.6	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	16.9
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1273	691	91	1479	0	0	0	0	1042	0	922
Future Volume (vph)	0	1273	691	91	1479	0	0	0	0	1042	0	922
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		6.0	4.0	6.0	6.0					6.0		6.0
Lane Util. Factor		0.81	1.00	1.00	0.86					*1.00		*1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		7471	1599	1770	6225					5309		4704
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		7471	1599	1770	6225					5309		4704
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1340	727	96	1557	0	0	0	0	1097	0	971
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1340	727	96	1557	0	0	0	0	1097	0	971
Heavy Vehicles (%)	0%	3%	1%	2%	5%	0%	0%	0%	0%	2%	0%	3%
Turn Type		NA	Free	Prot	NA					Prot		custom
Protected Phases		2 3		1	1 2					4 12		3 4 12
Permitted Phases			Free									
Actuated Green, G (s)		46.2	160.0	31.0	55.2					58.8		80.8
Effective Green, g (s)		46.2	160.0	31.0	55.2					58.8		80.8
Actuated g/C Ratio		0.29	1.00	0.19	0.35					0.37		0.50
Clearance Time (s)				6.0								
Vehicle Extension (s)				3.0								
Lane Grp Cap (vph)		2157	1599	342	2147					1951		2375
v/s Ratio Prot		c0.18		0.05	c0.25					c0.21		0.21
v/s Ratio Perm			c0.45									
v/c Ratio		0.62	0.45	0.28	0.73					0.56		0.41
Uniform Delay, d1		49.3	0.0	55.0	45.8					40.3		24.7
Progression Factor		0.56	1.00	0.35	0.46					1.00		1.00
Incremental Delay, d2		0.6	0.9	1.7	1.9					0.4		0.2
Delay (s)		28.4	0.9	20.8	23.0					40.7		24.9
Level of Service		C	A	C	C					D		C
Approach Delay (s)		18.7			22.9			0.0			33.3	
Approach LOS		B			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	25.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	36.0
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	2209	0	0	1043	742	527	0	999	0	0	0
Future Volume (vph)	106	2209	0	0	1043	742	527	0	999	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	6.0	6.0			6.0	4.0	6.0		6.0			
Lane Util. Factor	1.00	0.86			0.81	1.00	*1.00		*1.00			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	1577	5711			6724	1384	4686		4275			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	1577	5711			6724	1384	4686		4275			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	112	2325	0	0	1098	781	555	0	1052	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	112	2325	0	0	1098	781	555	0	1052	0	0	0
Heavy Vehicles (%)	3%	3%	0%	0%	3%	5%	4%	0%	2%	0%	0%	0%
Turn Type	Prot	NA			NA	Free	Prot		custom			
Protected Phases	5	5 6			6 7		8 16		7 8 16			
Permitted Phases						Free						
Actuated Green, G (s)	50.8	64.8			46.0	160.0	39.2		71.2			
Effective Green, g (s)	50.8	64.8			46.0	160.0	39.2		71.2			
Actuated g/C Ratio	0.32	0.40			0.29	1.00	0.25		0.45			
Clearance Time (s)	6.0											
Vehicle Extension (s)	3.0											
Lane Grp Cap (vph)	500	2312			1933	1384	1148		1902			
v/s Ratio Prot	0.07	c0.41			c0.16		0.12		0.25			
v/s Ratio Perm						c0.56						
v/c Ratio	0.22	1.01			0.57	0.56	0.48		0.55			
Uniform Delay, d1	40.1	47.6			48.5	0.0	51.7		32.7			
Progression Factor	0.02	0.67			0.70	1.00	1.00		1.00			
Incremental Delay, d2	0.8	18.2			0.4	1.6	0.3		0.4			
Delay (s)	1.6	50.3			34.4	1.6	52.1		33.1			
Level of Service	A	D			C	A	D		C			
Approach Delay (s)		48.1			20.8			39.7			0.0	
Approach LOS		D			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	37.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	36.0
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	3153	0	0	1719	65	0	0	0	0	0	66
Future Volume (vph)	55	3153	0	0	1719	65	0	0	0	0	0	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	6.0	6.0			6.0	6.0						6.0
Lane Util. Factor	1.00	0.86			0.81	1.00						1.00
Frt	1.00	1.00			1.00	0.85						0.86
Flt Protected	0.95	1.00			1.00	1.00						1.00
Satd. Flow (prot)	1787	6471			7471	1615						1644
Flt Permitted	0.95	1.00			1.00	1.00						1.00
Satd. Flow (perm)	1787	6471			7471	1615						1644
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	58	3319	0	0	1809	68	0	0	0	0	0	69
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	58	3319	0	0	1809	68	0	0	0	0	0	69
Heavy Vehicles (%)	1%	1%	1%	0%	3%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA			NA	Perm						Perm
Protected Phases	1	6			2							
Permitted Phases						2						6
Actuated Green, G (s)	9.3	160.0			138.7	138.7						160.0
Effective Green, g (s)	9.3	160.0			138.7	138.7						160.0
Actuated g/C Ratio	0.06	1.00			0.87	0.87						1.00
Clearance Time (s)	6.0	6.0			6.0	6.0						6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0						3.0
Lane Grp Cap (vph)	103	6471			6476	1400						1644
v/s Ratio Prot	0.03	c0.51			0.24							
v/s Ratio Perm						0.04						0.04
v/c Ratio	0.56	0.51			0.28	0.05						0.04
Uniform Delay, d1	73.4	0.0			1.9	1.5						0.0
Progression Factor	0.89	1.00			0.09	0.10						1.00
Incremental Delay, d2	3.3	0.1			0.1	0.1						0.0
Delay (s)	68.3	0.1			0.2	0.2						0.0
Level of Service	E	A			A	A						A
Approach Delay (s)		1.3			0.2			0.0			0.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	0.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	2782	216	145	2121	130	241	14	153	316	24	106
Future Volume (veh/h)	110	2782	216	145	2121	130	241	14	153	316	24	106
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1863	1792	1881	1825	1900	1827	1900	1863	1900	1756	1900
Adj Flow Rate, veh/h	116	2928	227	153	2233	137	254	15	161	333	25	112
Adj No. of Lanes	1	3	1	2	4	0	2	1	2	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	6	2	6	1	4	4	4	0	2	0	0	0
Cap, veh/h	136	2463	874	491	3347	205	300	225	723	274	30	135
Arrive On Green	0.08	0.48	0.48	0.14	0.55	0.55	0.09	0.12	0.12	0.08	0.11	0.11
Sat Flow, veh/h	1707	5085	1524	3476	6094	373	3375	1900	2787	3510	280	1255
Grp Volume(v), veh/h	116	2928	227	153	1725	645	254	15	161	333	0	137
Grp Sat Flow(s),veh/h/ln	1707	1695	1524	1738	1569	1759	1688	1900	1393	1755	0	1535
Q Serve(g_s), s	10.7	77.5	4.2	6.3	41.7	41.8	11.9	1.1	1.2	12.5	0.0	14.0
Cycle Q Clear(g_c), s	10.7	77.5	4.2	6.3	41.7	41.8	11.9	1.1	1.2	12.5	0.0	14.0
Prop In Lane	1.00		1.00	1.00		0.21	1.00		1.00	1.00		0.82
Lane Grp Cap(c), veh/h	136	2463	874	491	2586	966	300	225	723	274	0	165
V/C Ratio(X)	0.86	1.19	0.26	0.31	0.67	0.67	0.85	0.07	0.22	1.21	0.00	0.83
Avail Cap(c_a), veh/h	157	2463	874	491	2586	966	399	416	1003	274	0	274
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	72.7	41.2	5.5	61.7	25.6	25.7	71.8	62.7	25.2	73.8	0.0	70.0
Incr Delay (d2), s/veh	31.4	89.3	0.7	0.4	1.4	3.7	12.1	0.1	0.2	125.1	0.0	10.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	10.3	101.9	4.2	5.5	25.4	28.8	10.1	1.1	3.7	19.5	0.0	10.6
LnGrp Delay(d),s/veh	104.1	130.5	6.2	62.1	27.0	29.3	83.9	62.8	25.3	198.8	0.0	80.3
LnGrp LOS	F	F	A	E	C	C	F	E	C	F		F
Approach Vol, veh/h		3271			2523			430			470	
Approach Delay, s/veh		121.0			29.7			61.2			164.3	
Approach LOS		F			C			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.7	95.4	19.0	25.9	30.1	85.0	20.7	24.2
Change Period (Y+Rc), s	7.0	7.5	6.5	7.0	7.5	* 7.5	6.5	7.0
Max Green Setting (Gmax), s	14.7	69.8	12.5	35.0	7.0	* 78	18.9	28.6
Max Q Clear Time (g_c+I1), s	12.7	43.8	14.5	3.2	8.3	79.5	13.9	16.0
Green Ext Time (p_c), s	0.0	19.1	0.0	1.6	0.0	0.0	0.4	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	85.8
HCM 2010 LOS	F

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	486	1241	242	390	1870	419	550	743	476	495	845	819
Future Volume (veh/h)	486	1241	242	390	1870	419	550	743	476	495	845	819
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1863	1845	1881	1881	1881	1881	1881	1881	1881	1863	1881
Adj Flow Rate, veh/h	512	1306	255	411	1968	441	579	782	501	521	889	862
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	2	3	1	1	1	1	1	1	1	2	1
Cap, veh/h	470	1735	747	491	1782	555	470	1178	593	511	1226	602
Arrive On Green	0.14	0.34	0.34	0.14	0.35	0.35	0.14	0.23	0.23	0.15	0.24	0.24
Sat Flow, veh/h	3476	5085	1568	3476	5136	1599	3476	5136	1599	3476	5085	1599
Grp Volume(v), veh/h	512	1306	255	411	1968	441	579	782	501	521	889	862
Grp Sat Flow(s),veh/h/ln	1738	1695	1568	1738	1712	1599	1738	1712	1599	1738	1695	1599
Q Serve(g_s), s	23.0	38.7	0.0	19.6	59.0	42.3	23.0	23.5	19.3	25.0	27.3	39.2
Cycle Q Clear(g_c), s	23.0	38.7	0.0	19.6	59.0	42.3	23.0	23.5	19.3	25.0	27.3	39.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	470	1735	747	491	1782	555	470	1178	593	511	1226	602
V/C Ratio(X)	1.09	0.75	0.34	0.84	1.10	0.79	1.23	0.66	0.85	1.02	0.72	1.43
Avail Cap(c_a), veh/h	470	1735	747	491	1782	555	470	1178	593	511	1226	602
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	73.5	49.6	27.8	71.1	55.5	50.0	73.5	59.5	24.7	72.5	59.3	23.9
Incr Delay (d2), s/veh	67.7	3.1	1.2	12.1	55.9	11.2	121.5	1.4	10.9	44.8	2.2	203.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	27.8	25.7	12.3	15.5	66.8	27.7	34.2	16.8	15.4	27.3	19.0	92.4
LnGrp Delay(d),s/veh	141.2	52.7	29.1	83.2	111.4	61.2	195.0	61.0	35.6	117.3	61.5	227.7
LnGrp LOS	F	D	C	F	F	E	F	E	D	F	E	F
Approach Vol, veh/h		2073			2820			1862			2272	
Approach Delay, s/veh		71.7			99.4			95.8			137.3	
Approach LOS		E			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	29.0	65.0	31.0	45.0	30.0	64.0	29.0	47.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	23.0	59.0	25.0	39.0	24.0	58.0	23.0	41.0
Max Q Clear Time (g_c+I1), s	25.0	61.0	27.0	25.5	21.6	40.7	25.0	41.2
Green Ext Time (p_c), s	0.0	0.0	0.0	7.5	2.3	8.9	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	101.8
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	1072	247	452	2533	370	265	48	545	188	50	48
Future Volume (veh/h)	56	1072	247	452	2533	370	265	48	545	188	50	48
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1881	1900	1900	1881	1881	1900	1900	1881	1881	1890	1900
Adj Flow Rate, veh/h	59	1128	260	476	2666	389	279	51	574	198	53	51
Adj No. of Lanes	1	4	1	2	4	1	1	1	2	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	1	0	0	1	1	0	0	1	1	1	1
Cap, veh/h	225	3026	1029	529	3198	929	307	292	856	302	63	61
Arrive On Green	0.12	0.47	0.47	0.15	0.49	0.49	0.17	0.15	0.15	0.09	0.07	0.07
Sat Flow, veh/h	1810	6471	1615	3510	6471	1599	1810	1900	2814	3476	887	853
Grp Volume(v), veh/h	59	1128	260	476	2666	389	279	51	574	198	0	104
Grp Sat Flow(s),veh/h/ln	1810	1618	1615	1755	1618	1599	1810	1900	1407	1738	0	1740
Q Serve(g_s), s	5.0	19.1	6.1	22.7	60.3	8.1	25.7	4.0	21.9	9.4	0.0	10.0
Cycle Q Clear(g_c), s	5.0	19.1	6.1	22.7	60.3	8.1	25.7	4.0	21.9	9.4	0.0	10.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.49
Lane Grp Cap(c), veh/h	225	3026	1029	529	3198	929	307	292	856	302	0	124
V/C Ratio(X)	0.26	0.37	0.25	0.90	0.83	0.42	0.91	0.17	0.67	0.66	0.00	0.84
Avail Cap(c_a), veh/h	225	3026	1029	640	3198	929	383	402	1020	327	0	164
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.54	0.54	0.54	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	67.4	29.2	4.6	70.9	37.0	19.7	69.3	62.6	28.6	75.2	0.0	78.0
Incr Delay (d2), s/veh	0.6	0.4	0.6	8.4	1.5	0.8	22.0	0.3	1.3	4.2	0.0	24.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.6	13.4	5.1	15.7	33.5	6.0	21.0	3.8	13.5	8.2	0.0	9.6
LnGrp Delay(d),s/veh	68.0	29.5	5.2	79.3	38.5	20.5	91.4	62.8	29.9	79.4	0.0	102.5
LnGrp LOS	E	C	A	E	D	C	F	E	C	E		F
Approach Vol, veh/h		1447			3531			904			302	
Approach Delay, s/veh		26.7			42.0			50.8			87.3	
Approach LOS		C			D			D			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	31.6	85.5	34.8	18.1	27.1	90.0	20.8	32.1
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	31.0	63.0	36.0	16.0	10.0	84.0	16.0	36.0
Max Q Clear Time (g_c+I1), s	24.7	21.1	27.7	12.0	7.0	62.3	11.4	23.9
Green Ext Time (p_c), s	1.0	10.8	1.1	0.1	0.1	19.4	0.7	2.2

Intersection Summary	
HCM 2010 Ctrl Delay	41.9
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1231	768	111	2542	0	0	0	0	771	0	1036
Future Volume (vph)	0	1231	768	111	2542	0	0	0	0	771	0	1036
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		6.0	4.0	6.0	6.0					6.0		6.0
Lane Util. Factor		0.81	1.00	1.00	0.86					*1.00		*1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		7544	1568	1770	6408					5257		4845
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		7544	1568	1770	6408					5257		4845
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1296	808	117	2676	0	0	0	0	812	0	1091
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1296	808	117	2676	0	0	0	0	812	0	1091
Heavy Vehicles (%)	0%	2%	3%	2%	2%	0%	0%	0%	0%	3%	2%	0%
Turn Type		NA	Free	Prot	NA					Prot		custom
Protected Phases		2 3		1	1 2					4 12		3 4 12
Permitted Phases			Free									
Actuated Green, G (s)		48.0	170.0	60.0	85.0					38.0		61.0
Effective Green, g (s)		48.0	170.0	60.0	85.0					38.0		61.0
Actuated g/C Ratio		0.28	1.00	0.35	0.50					0.22		0.36
Clearance Time (s)				6.0								
Vehicle Extension (s)				3.0								
Lane Grp Cap (vph)		2130	1568	624	3204					1175		1738
v/s Ratio Prot		0.17		0.07	c0.42					c0.15		c0.23
v/s Ratio Perm			c0.52									
v/c Ratio		0.61	0.52	0.19	0.84					0.69		0.63
Uniform Delay, d1		52.9	0.0	38.1	36.5					60.6		45.1
Progression Factor		1.18	1.00	0.20	0.44					1.00		1.00
Incremental Delay, d2		0.5	1.1	0.4	1.6					1.8		0.8
Delay (s)		63.0	1.1	8.1	17.6					62.4		45.9
Level of Service		E	A	A	B					E		D
Approach Delay (s)		39.3			17.2			0.0			52.9	
Approach LOS		D			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	34.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	36.0
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	122	1880	0	0	1904	1259	749	0	998	0	0	0
Future Volume (vph)	122	1880	0	0	1904	1259	749	0	998	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	6.0	6.0			6.0	4.0	6.0		6.0			
Lane Util. Factor	1.00	0.86			0.81	1.00	*1.00		*1.00			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	1593	5824			6857	1439	4825		4317			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	1593	5824			6857	1439	4825		4317			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	128	1979	0	0	2004	1325	788	0	1051	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	128	1979	0	0	2004	1325	788	0	1051	0	0	0
Heavy Vehicles (%)	2%	1%	0%	0%	1%	1%	1%	0%	1%	0%	0%	0%
Turn Type	Prot	NA			NA	Free	Prot		custom			
Protected Phases	5	5 6			6 7		8 16		7 8 16			
Permitted Phases						Free						
Actuated Green, G (s)	48.6	82.6			61.0	170.0	36.4		63.4			
Effective Green, g (s)	48.6	82.6			61.0	170.0	36.4		63.4			
Actuated g/C Ratio	0.29	0.49			0.36	1.00	0.21		0.37			
Clearance Time (s)	6.0											
Vehicle Extension (s)	3.0											
Lane Grp Cap (vph)	455	2829			2460	1439	1033		1609			
v/s Ratio Prot	0.08	0.34			0.29		0.16		0.24			
v/s Ratio Perm						c0.92						
v/c Ratio	0.28	0.70			0.81	0.92	0.76		0.65			
Uniform Delay, d1	47.1	34.0			49.4	0.0	62.7		44.2			
Progression Factor	0.08	1.03			1.21	1.00	1.00		1.00			
Incremental Delay, d2	1.2	0.6			1.8	9.5	3.4		1.1			
Delay (s)	5.0	35.6			61.6	9.5	66.1		45.3			
Level of Service	A	D			E	A	E		D			
Approach Delay (s)		33.7			40.9			54.2			0.0	
Approach LOS		C			D			D			A	

Intersection Summary			
HCM 2000 Control Delay	42.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	36.0
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	2728	0	0	3043	140	0	0	0	0	0	120
Future Volume (vph)	150	2728	0	0	3043	140	0	0	0	0	0	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	6.0	6.0			6.0	6.0						6.0
Lane Util. Factor	1.00	0.86			0.81	1.00						1.00
Frt	1.00	1.00			1.00	0.85						0.86
Flt Protected	0.95	1.00			1.00	1.00						1.00
Satd. Flow (prot)	1787	6471			7619	1599						1627
Flt Permitted	0.95	1.00			1.00	1.00						1.00
Satd. Flow (perm)	1787	6471			7619	1599						1627
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	158	2872	0	0	3203	147	0	0	0	0	0	126
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	158	2872	0	0	3203	147	0	0	0	0	0	126
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	4%	4%	4%	1%	4%	1%
Turn Type	Prot	NA			NA	Perm						Perm
Protected Phases	1	6			2							
Permitted Phases						2						6
Actuated Green, G (s)	36.0	170.0			122.0	122.0						170.0
Effective Green, g (s)	36.0	170.0			122.0	122.0						170.0
Actuated g/C Ratio	0.21	1.00			0.72	0.72						1.00
Clearance Time (s)	6.0	6.0			6.0	6.0						6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0						3.0
Lane Grp Cap (vph)	378	6471			5467	1147						1627
v/s Ratio Prot	0.09	c0.44			c0.42							
v/s Ratio Perm						0.09						0.08
v/c Ratio	0.42	0.44			0.59	0.13						0.08
Uniform Delay, d1	57.9	0.0			11.7	7.5						0.0
Progression Factor	0.73	1.00			0.43	0.59						1.00
Incremental Delay, d2	0.5	0.2			0.2	0.1						0.1
Delay (s)	42.6	0.2			5.3	4.5						0.1
Level of Service	D	A			A	A						A
Approach Delay (s)		2.4			5.2			0.0			0.1	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	3.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	2442	188	208	3227	133	449	20	279	219	21	139
Future Volume (veh/h)	78	2442	188	208	3227	133	449	20	279	219	21	139
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1881	1845	1881	1880	1900	1881	1900	1881	1881	1827	1900
Adj Flow Rate, veh/h	82	2571	198	219	3397	140	473	21	294	231	22	146
Adj No. of Lanes	1	3	1	2	4	0	2	1	2	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	1	3	1	1	1	1	0	1	1	4	4
Cap, veh/h	85	2556	1013	257	3384	138	516	370	757	229	23	155
Arrive On Green	0.05	0.50	0.50	0.07	0.53	0.53	0.15	0.19	0.19	0.07	0.11	0.11
Sat Flow, veh/h	1774	5136	1568	3476	6424	261	3476	1900	2814	3476	207	1377
Grp Volume(v), veh/h	82	2571	198	219	2555	982	473	21	294	231	0	168
Grp Sat Flow(s),veh/h/ln	1774	1712	1568	1738	1617	1834	1738	1900	1407	1738	0	1584
Q Serve(g_s), s	7.8	84.6	3.8	10.6	89.5	89.6	22.8	1.5	2.1	11.2	0.0	17.9
Cycle Q Clear(g_c), s	7.8	84.6	3.8	10.6	89.5	89.6	22.8	1.5	2.1	11.2	0.0	17.9
Prop In Lane	1.00		1.00	1.00		0.14	1.00		1.00	1.00		0.87
Lane Grp Cap(c), veh/h	85	2556	1013	257	2556	966	516	370	757	229	0	178
V/C Ratio(X)	0.97	1.01	0.20	0.85	1.00	1.02	0.92	0.06	0.39	1.01	0.00	0.94
Avail Cap(c_a), veh/h	85	2556	1013	257	2556	966	554	391	787	229	0	178
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	80.8	42.7	3.6	77.8	40.2	40.2	71.3	55.7	28.9	79.4	0.0	74.9
Incr Delay (d2), s/veh	87.6	19.2	0.4	23.3	17.7	33.1	19.4	0.1	0.3	61.7	0.0	51.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	9.9	80.2	3.1	9.9	54.8	97.2	18.1	1.5	7.5	13.2	0.0	15.7
LnGrp Delay(d),s/veh	168.5	61.9	4.1	101.1	57.9	73.3	90.7	55.8	29.2	141.2	0.0	126.2
LnGrp LOS	F	F	A	F	E	F	F	E	C	F		F
Approach Vol, veh/h		2851			3756			788			399	
Approach Delay, s/veh		61.0			64.5			66.9			134.9	
Approach LOS		E			E			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.1	97.1	17.7	40.1	20.1	92.1	31.7	26.1
Change Period (Y+Rc), s	7.0	7.5	6.5	7.0	7.5	* 7.5	6.5	7.0
Max Green Setting (Gmax), s	8.1	87.7	11.2	35.0	11.2	* 85	27.1	19.1
Max Q Clear Time (g_c+I1), s	9.8	91.6	13.2	4.1	12.6	86.6	24.8	19.9
Green Ext Time (p_c), s	0.0	0.0	0.0	2.4	0.0	0.0	0.4	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	67.1
HCM 2010 LOS	E

Notes

APPENDIX M

(FDOT Generalized LOS Tables)

TABLE 1

Generalized **Annual Average Daily** Volumes for Florida's **Urbanized Areas**

12/18/12

INTERRUPTED FLOW FACILITIES

STATE SIGNALIZED ARTERIALS

Class I (40 mph or higher posted speed limit)

Lanes	Median	B	C	D	E
2	Undivided	*	16,800	17,700	**
4	Divided	*	37,900	39,800	**
6	Divided	*	58,400	59,900	**
8	Divided	*	78,800	80,100	**

Class II (35 mph or slower posted speed limit)

Lanes	Median	B	C	D	E
2	Undivided	*	7,300	14,800	15,600
4	Divided	*	14,500	32,400	33,800
6	Divided	*	23,300	50,000	50,900
8	Divided	*	32,000	67,300	68,100

Non-State Signalized Roadway Adjustments

(Alter corresponding state volumes by the indicated percent.)

Non-State Signalized Roadways - 10%

Median & Turn Lane Adjustments

Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors
2	Divided	Yes	No	+5%
2	Undivided	No	No	-20%
Multi	Undivided	Yes	No	-5%
Multi	Undivided	No	No	-25%
–	–	–	Yes	+ 5%

One-Way Facility Adjustment

Multiply the corresponding two-directional volumes in this table by 0.6

BICYCLE MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	2,900	7,600	19,700
50-84%	2,100	6,700	19,700	>19,700
85-100%	9,300	19,700	>19,700	**

PEDESTRIAN MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Sidewalk Coverage	B	C	D	E
0-49%	*	*	2,800	9,500
50-84%	*	1,600	8,700	15,800
85-100%	3,800	10,700	17,400	>19,700

BUS MODE (Scheduled Fixed Route)[3]

(Buses in peak hour in peak direction)

Sidewalk Coverage	B	C	D	E
0-84%	> 5	≥ 4	≥ 3	≥ 2
85-100%	> 4	≥ 3	≥ 2	≥ 1

UNINTERRUPTED FLOW FACILITIES

FREEWAYS

Core Urbanized

Lanes	B	C	D	E
4	47,400	64,000	77,900	84,600
6	69,900	95,200	116,600	130,600
8	92,500	126,400	154,300	176,600
10	115,100	159,700	194,500	222,700
12	162,400	216,700	256,600	268,900

Urbanized

Lanes	B	C	D	E
4	45,800	61,500	74,400	79,900
6	68,100	93,000	111,800	123,300
8	91,500	123,500	148,700	166,800
10	114,800	156,000	187,100	210,300

Freeway Adjustments

Auxiliary Lanes Present in Both Directions	Ramp Metering
+ 20,000	+ 5%

UNINTERRUPTED FLOW HIGHWAYS

Lanes	Median	B	C	D	E
2	Undivided	8,600	17,000	24,200	33,300
4	Divided	36,700	51,800	65,600	72,600
6	Divided	55,000	77,700	98,300	108,800

Uninterrupted Flow Highway Adjustments

Lanes	Median	Exclusive left lanes	Adjustment factors
2	Divided	Yes	+5%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

[1]Values shown are presented as two-way annual average daily volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the Highway Capacity Manual and the Transit Capacity and Quality of Service Manual.

[2] Level of service for the bicycle and pedestrian modes in this table is based on number of motorized vehicles, not number of bicyclists or pedestrians using the facility.

[3] Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

Source:
Florida Department of Transportation
Systems Planning Office
www.dot.state.fl.us/planning/systems/sm/los/default.shtm

TABLE 4

Generalized **Peak Hour Two-Way** Volumes for Florida's **Urbanized Areas**[1]

12/18/12

INTERRUPTED FLOW FACILITIES

STATE SIGNALIZED ARTERIALS

Class I (40 mph or higher posted speed limit)

Lanes	Median	B	C	D	E
2	Undivided	*	1,510	1,600	**
4	Divided	*	3,420	3,580	**
6	Divided	*	5,250	5,390	**
8	Divided	*	7,090	7,210	**

Class II (35 mph or slower posted speed limit)

Lanes	Median	B	C	D	E
2	Undivided	*	660	1,330	1,410
4	Divided	*	1,310	2,920	3,040
6	Divided	*	2,090	4,500	4,590
8	Divided	*	2,880	6,060	6,130

Non-State Signalized Roadway Adjustments

(Alter corresponding state volumes by the indicated percent.)

Non-State Signalized Roadways - 10%

Median & Turn Lane Adjustments

Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors
2	Divided	Yes	No	+5%
2	Undivided	No	No	-20%
Multi	Undivided	Yes	No	-5%
Multi	Undivided	No	No	-25%
–	–	–	Yes	+ 5%

One-Way Facility Adjustment

Multiply the corresponding two-directional volumes in this table by 0.6

BICYCLE MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	260	680	1,770
50-84%	190	600	1,770	>1,770
85-100%	830	1,770	>1,770	**

PEDESTRIAN MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Sidewalk Coverage	B	C	D	E
0-49%	*	*	250	850
50-84%	*	150	780	1,420
85-100%	340	960	1,560	>1,770

BUS MODE (Scheduled Fixed Route)[3]

(Buses in peak hour in peak direction)

Sidewalk Coverage	B	C	D	E
0-84%	> 5	≥ 4	≥ 3	≥ 2
85-100%	> 4	≥ 3	≥ 2	≥ 1

UNINTERRUPTED FLOW FACILITIES

FREEWAYS

Lanes	B	C	D	E
4	4,120	5,540	6,700	7,190
6	6,130	8,370	10,060	11,100
8	8,230	11,100	13,390	15,010
10	10,330	14,040	16,840	18,930
12	14,450	18,880	22,030	22,860

Freeway Adjustments

Auxiliary Lanes Present in Both Directions	Ramp Metering
+ 1,800	+ 5%

UNINTERRUPTED FLOW HIGHWAYS

Lanes	Median	B	C	D	E
2	Undivided	770	1,530	2,170	2,990
4	Divided	3,300	4,660	5,900	6,530
6	Divided	4,950	6,990	8,840	9,790

Uninterrupted Flow Highway Adjustments

Lanes	Median	Exclusive left lanes	Adjustment factors
2	Divided	Yes	+5%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

[1] Values shown are presented as peak hour two-way volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the Highway Capacity Manual and the Transit Capacity and Quality of Service Manual.

[2] Level of service for the bicycle and pedestrian modes in this table is based on number of motorized vehicles, not number of bicyclists or pedestrians using the facility.

[3] Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

Source:
Florida Department of Transportation
Systems Planning Office
www.dot.state.fl.us/planning/systems/sm/los/default.shtm

TABLE 7

Generalized **Peak Hour Directional** Volumes for Florida's **Urbanized Areas**[1]

12/18/12

INTERRUPTED FLOW FACILITIES

STATE SIGNALIZED ARTERIALS

Class I (40 mph or higher posted speed limit)

Lanes	Median	B	C	D	E
1	Undivided	*	830	880	**
2	Divided	*	1,910	2,000	**
3	Divided	*	2,940	3,020	**
4	Divided	*	3,970	4,040	**

Class II (35 mph or slower posted speed limit)

Lanes	Median	B	C	D	E
1	Undivided	*	370	750	800
2	Divided	*	730	1,630	1,700
3	Divided	*	1,170	2,520	2,560
4	Divided	*	1,610	3,390	3,420

Non-State Signalized Roadway Adjustments

(Alter corresponding state volumes by the indicated percent.)

Non-State Signalized Roadways - 10%

Median & Turn Lane Adjustments

Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors
1	Divided	Yes	No	+5%
1	Undivided	No	No	-20%
Multi	Undivided	Yes	No	-5%
Multi	Undivided	No	No	-25%
–	–	–	Yes	+ 5%

One-Way Facility Adjustment

Multiply the corresponding directional volumes in this table by 1.2

BICYCLE MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	150	390	1,000
50-84%	110	340	1,000	>1,000
85-100%	470	1,000	>1,000	**

PEDESTRIAN MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Sidewalk Coverage	B	C	D	E
0-49%	*	*	140	480
50-84%	*	80	440	800
85-100%	200	540	880	>1,000

BUS MODE (Scheduled Fixed Route)[3]

(Buses in peak hour in peak direction)

Sidewalk Coverage	B	C	D	E
0-84%	> 5	≥ 4	≥ 3	≥ 2
85-100%	> 4	≥ 3	≥ 2	≥ 1

UNINTERRUPTED FLOW FACILITIES

FREEWAYS

Lanes	B	C	D	E
2	2,260	3,020	3,660	3,940
3	3,360	4,580	5,500	6,080
4	4,500	6,080	7,320	8,220
5	5,660	7,680	9,220	10,360
6	7,900	10,320	12,060	12,500

Freeway Adjustments

Auxiliary Lane	Ramp Metering
+ 1,000	+ 5%

UNINTERRUPTED FLOW HIGHWAYS

Lanes	Median	B	C	D	E
1	Undivided	420	840	1,190	1,640
2	Divided	1,810	2,560	3,240	3,590
3	Divided	2,720	3,840	4,860	5,380

Uninterrupted Flow Highway Adjustments

Lanes	Median	Exclusive left lanes	Adjustment factors
1	Divided	Yes	+5%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

[1] Values shown are presented as peak hour directional volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the Highway Capacity Manual and the Transit Capacity and Quality of Service Manual.

[2] Level of service for the bicycle and pedestrian modes in this table is based on number of motorized vehicles, not number of bicyclists or pedestrians using the facility.

[3] Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

Source:
Florida Department of Transportation
Systems Planning Office
www.dot.state.fl.us/planning/systems/sm/los/default.shtm

APPENDIX N

(Future No-Build Freeways & Ramps Operational Analysis Results)

FREEWAY SEGMENTS

2020 Opening Year

BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*Godfrey Lamptey, P.E., PTOE*	Highway/Direction of Travel	*I-95 Northbound*
Agency or Company	*Goal Associates*	From/To	*Blue Heron Blvd. to Northlake*
Date Performed	*7/21/2016*	Jurisdiction	*Palm Beach County*
Analysis Time Period	*AM Peak Period*	Analysis Year	*2020 Future Conditions*

Project Description *SR-9/I-95 at Northlake Boulevard Interchange PD&E Study*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5119*	veh/h	Peak-Hour Factor, PHF	*0.95*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs			Calc Speed Adj and FFS		
Lane Width		ft			
Rt-Side Lat. Clearance		ft	f_{LW}		mph
Number of Lanes, N	*5*		f_{LC}		mph
Total Ramp Density, TRD		ramps/mi	TRD Adjustment		mph
FFS (measured)	*65.0*	mph	FFS	*65.0*	mph
Base free-flow Speed, BFFS		mph			

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1099*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	*65.0*	mph	S	mph
D = v_p / S	*16.9*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*B*		Required Number of Lanes, N	

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits 11-10, 11-12	f_{LW} - Exhibit 11-8
V - Hourly volume	D - Density	E_T - Exhibits 11-10, 11-11, 11-13	f_{LC} - Exhibit 11-9
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 11-18	TRD - Page 11-11
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 11-2, 11-3	
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*Godfrey Lamptey, P.E., PTOE*	Highway/Direction of Travel	*I-95 Southbound*
Agency or Company	*Goal Associates*	From/To	*Blue Heron Blvd. to Northlake*
Date Performed	*7/21/2016*	Jurisdiction	*Palm Beach County*
Analysis Time Period	*AM Peak Period*	Analysis Year	*2020 Future Conditions*

Project Description *SR-9/I-95 at Northlake Boulevard Interchange PD&E Study*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*7145*	veh/h	Peak-Hour Factor, PHF	*0.95*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs			Calc Speed Adj and FFS		
Lane Width		ft			
Rt-Side Lat. Clearance		ft	f_{LW}		mph
Number of Lanes, N	*5*		f_{LC}		mph
Total Ramp Density, TRD		ramps/mi	TRD Adjustment		mph
FFS (measured)	*65.0*	mph	FFS	*65.0*	mph
Base free-flow Speed, BFFS		mph			

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1534*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	*64.7*	mph	S	mph
D = v_p / S	*23.7*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits 11-10, 11-12	f_{LW} - Exhibit 11-8
V - Hourly volume	D - Density	E_T - Exhibits 11-10, 11-11, 11-13	f_{LC} - Exhibit 11-9
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 11-18	TRD - Page 11-11
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 11-2, 11-3	
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*Godfrey Lamptey, P.E., PTOE*	Highway/Direction of Travel	*I-95 Northbound*
Agency or Company	*Goal Associates*	From/To	*Between NLB Ramps*
Date Performed	*7/21/2016*	Jurisdiction	*Palm Beach County*
Analysis Time Period	*AM Peak Period*	Analysis Year	*2020 Future Conditions*

Project Description *SR-9/I-95 at Northlake Boulevard Interchange PD&E Study*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*3527*	veh/h	Peak-Hour Factor, PHF	*0.95*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs

Lane Width		ft
Rt-Side Lat. Clearance		ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD		ramps/mi
FFS (measured)	*65.0*	mph
Base free-flow Speed, BFFS		mph

Calc Speed Adj and FFS

f_{LW}		mph
f_{LC}		mph
TRD Adjustment		mph
FFS	*65.0*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*947*	pc/h/ln
S	*65.0*	mph
D = v_p / S	*14.6*	pc/mi/ln
LOS	*B*	

Design (N)

Design (N)

Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h/ln
S		mph
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed
DDHV - Directional design hour volume

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*Godfrey Lamptey, P.E., PTOE*	Highway/Direction of Travel	*I-95 Southbound*
Agency or Company	*Goal Associates*	From/To	*Between NLB Ramps*
Date Performed	*7/21/2016*	Jurisdiction	*Palm Beach County*
Analysis Time Period	*AM Peak Period*	Analysis Year	*2020 Future Conditions*

Project Description *SR-9/I-95 at Northlake Boulevard Interchange PD&E Study*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5568*	veh/h	Peak-Hour Factor, PHF	*0.95*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs

Lane Width		ft
Rt-Side Lat. Clearance		ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD		ramps/mi
FFS (measured)	*65.0*	mph
Base free-flow Speed, BFFS		mph

Calc Speed Adj and FFS

f_{LW}		mph
f_{LC}		mph
TRD Adjustment		mph
FFS	*65.0*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1495*	pc/h/ln
S	*64.9*	mph
D = v_p / S	*23.0*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h/ln
S		mph
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed
DDHV - Directional design hour volume

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*Godfrey Lamptey, P.E., PTOE*	Highway/Direction of Travel	*I-95 Northbound*
Agency or Company	*Goal Associates*	From/To	*Northlake Blvd to PGA Blvd*
Date Performed	*7/21/2016*	Jurisdiction	*Palm Beach County*
Analysis Time Period	*AM Peak Period*	Analysis Year	*2020 Future Conditions*

Project Description *SR-9/I-95 at Northlake Boulevard Interchange PD&E Study*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4748*	veh/h	Peak-Hour Factor, PHF	*0.95*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length	*mi*
			Up/Down %	

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs			Calc Speed Adj and FFS		
Lane Width		ft			
Rt-Side Lat. Clearance		ft	f_{LW}		mph
Number of Lanes, N	*4*		f_{LC}		mph
Total Ramp Density, TRD		ramps/mi	TRD Adjustment		mph
FFS (measured)	*65.0*	mph	FFS	*65.0*	mph
Base free-flow Speed, BFFS		mph			

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1274*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	*65.0*	mph	S	mph
D = v_p / S	*19.6*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits 11-10, 11-12	f_{LW} - Exhibit 11-8
V - Hourly volume	D - Density	E_T - Exhibits 11-10, 11-11, 11-13	f_{LC} - Exhibit 11-9
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 11-18	TRD - Page 11-11
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 11-2, 11-3	
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*Godfrey Lamptey, P.E., PTOE*	Highway/Direction of Travel	*I-95 Southbound*
Agency or Company	*Goal Associates*	From/To	*Northlake Blvd to PGA Blvd*
Date Performed	*7/21/2016*	Jurisdiction	*Palm Beach County*
Analysis Time Period	*AM Peak Period*	Analysis Year	*2020 Future Conditions*

Project Description *SR-9/I-95 at Northlake Boulevard Interchange PD&E Study*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6700*	veh/h	Peak-Hour Factor, PHF	*0.95*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs

Lane Width		ft
Rt-Side Lat. Clearance		ft
Number of Lanes, N	*5*	
Total Ramp Density, TRD		ramps/mi
FFS (measured)	*65.0*	mph
Base free-flow Speed, BFFS		mph

Calc Speed Adj and FFS

f_{LW}		mph
f_{LC}		mph
TRD Adjustment		mph
FFS	*65.0*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1439*	pc/h/ln
S	*65.0*	mph
D = v_p / S	*22.1*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h/ln
S		mph
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed
DDHV - Directional design hour volume

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*Godfrey Lamptey, P.E., PTOE*	Highway/Direction of Travel	*I-95 Northbound*
Agency or Company	*Goal Associates*	From/To	*Blue Heron Blvd. to Northlake*
Date Performed	*7/21/2016*	Jurisdiction	*Palm Beach County*
Analysis Time Period	*PM Peak Period*	Analysis Year	*2020 Future Conditions*

Project Description *SR-9/I-95 at Northlake Boulevard Interchange PD&E Study*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6884*	veh/h	Peak-Hour Factor, PHF	*0.95*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs			Calc Speed Adj and FFS		
Lane Width		ft			
Rt-Side Lat. Clearance		ft	f_{LW}		mph
Number of Lanes, N	*5*		f_{LC}		mph
Total Ramp Density, TRD		ramps/mi	TRD Adjustment		mph
FFS (measured)	*65.0*	mph	FFS	*65.0*	mph
Base free-flow Speed, BFFS		mph			

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1478*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	*64.9*	mph	S	mph
D = v_p / S	*22.8*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed
DDHV - Directional design hour volume

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*Godfrey Lamptey, P.E., PTOE*	Highway/Direction of Travel	*I-95 Southbound*
Agency or Company	*Goal Associates*	From/To	*Blue Heron Blvd. to Northlake*
Date Performed	*7/21/2016*	Jurisdiction	*Palm Beach County*
Analysis Time Period	*PM Peak Period*	Analysis Year	*2020 Future Conditions*

Project Description *SR-9/I-95 at Northlake Boulevard Interchange PD&E Study*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4804*	veh/h	Peak-Hour Factor, PHF	*0.95*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs

Lane Width		ft
Rt-Side Lat. Clearance		ft
Number of Lanes, N	*5*	
Total Ramp Density, TRD		ramps/mi
FFS (measured)	*65.0*	mph
Base free-flow Speed, BFFS		mph

Calc Speed Adj and FFS

f_{LW}		mph
f_{LC}		mph
TRD Adjustment		mph
FFS	*65.0*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1032*	pc/h/ln
S	*65.0*	mph
D = v_p / S	*15.9*	pc/mi/ln
LOS	*B*	

Design (N)

Design (N)

Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h/ln
S		mph
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed
DDHV - Directional design hour volume

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*Godfrey Lamptey, P.E., PTOE*	Highway/Direction of Travel	*I-95 Northbound*
Agency or Company	*Goal Associates*	From/To	*Between NLB Ramps*
Date Performed	*7/21/2016*	Jurisdiction	*Palm Beach County*
Analysis Time Period	*PM Peak Period*	Analysis Year	*2020 Future Conditions*

Project Description *SR-9/I-95 at Northlake Boulevard Interchange PD&E Study*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5152*	veh/h	Peak-Hour Factor, PHF	*0.95*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs

Lane Width		ft
Rt-Side Lat. Clearance		ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD		ramps/mi
FFS (measured)	*65.0*	mph
Base free-flow Speed, BFFS		mph

Calc Speed Adj and FFS

f_{LW}		mph
f_{LC}		mph
TRD Adjustment		mph
FFS	*65.0*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1383*	pc/h/ln
S	*65.0*	mph
D = v_p / S	*21.3*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h/ln
S		mph
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed
DDHV - Directional design hour volume

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*Godfrey Lamptey, P.E., PTOE*	Highway/Direction of Travel	*I-95 Southbound*
Agency or Company	*Goal Associates*	From/To	*Between NLB Ramps*
Date Performed	*7/21/2016*	Jurisdiction	*Palm Beach County*
Analysis Time Period	*PM Peak Period*	Analysis Year	*2020 Future Conditions*

Project Description *SR-9/I-95 at Northlake Boulevard Interchange PD&E Study*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*3148*	veh/h	Peak-Hour Factor, PHF	*0.95*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs

Lane Width		ft
Rt-Side Lat. Clearance		ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD		ramps/mi
FFS (measured)	*65.0*	mph
Base free-flow Speed, BFFS		mph

Calc Speed Adj and FFS

f_{LW}		mph
f_{LC}		mph
TRD Adjustment		mph
FFS	*65.0*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*845*	pc/h/ln
S	*65.0*	mph
D = v_p / S	*13.0*	pc/mi/ln
LOS	*B*	

Design (N)

Design (N)

Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h/ln
S		mph
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed
DDHV - Directional design hour volume

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*Godfrey Lamptey, P.E., PTOE*	Highway/Direction of Travel	*I-95 Northbound*
Agency or Company	*Goal Associates*	From/To	*Northlake Blvd to PGA Blvd*
Date Performed	*7/21/2016*	Jurisdiction	*Palm Beach County*
Analysis Time Period	*PM Peak Period*	Analysis Year	*2020 Future Conditions*

Project Description *SR-9/I-95 at Northlake Boulevard Interchange PD&E Study*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*6488*	veh/h	Peak-Hour Factor, PHF	*0.95*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs

Lane Width		ft
Rt-Side Lat. Clearance		ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD		ramps/mi
FFS (measured)	*65.0*	mph
Base free-flow Speed, BFFS		mph

Calc Speed Adj and FFS

f_{LW}		mph
f_{LC}		mph
TRD Adjustment		mph
FFS	*65.0*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1742*	pc/h/ln
S	*63.3*	mph
D = v_p / S	*27.5*	pc/mi/ln
LOS	*D*	

Design (N)

Design (N)

Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h/ln
S		mph
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed
DDHV - Directional design hour volume

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*Godfrey Lamptey, P.E., PTOE*	Highway/Direction of Travel	*I-95 Southbound*
Agency or Company	*Goal Associates*	From/To	*Northlake Blvd to PGA Blvd*
Date Performed	*7/21/2016*	Jurisdiction	*Palm Beach County*
Analysis Time Period	*PM Peak Period*	Analysis Year	*2020 Future Conditions*

Project Description *SR-9/I-95 at Northlake Boulevard Interchange PD&E Study*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*4259*	veh/h	Peak-Hour Factor, PHF	*0.95*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs

Lane Width		ft
Rt-Side Lat. Clearance		ft
Number of Lanes, N	*5*	
Total Ramp Density, TRD		ramps/mi
FFS (measured)	*65.0*	mph
Base free-flow Speed, BFFS		mph

Calc Speed Adj and FFS

f_{LW}		mph
f_{LC}		mph
TRD Adjustment		mph
FFS	*65.0*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*915*	pc/h/ln
S	*65.0*	mph
D = v_p / S	*14.1*	pc/mi/ln
LOS	*B*	

Design (N)

Design (N)

Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h/ln
S		mph
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed
DDHV - Directional design hour volume

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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2040 Design Year

BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*Godfrey Lamptey, P.E., PTOE*	Highway/Direction of Travel	*I-95 Northbound*
Agency or Company	*Goal Associates*	From/To	*Blue Heron Blvd. to Northlake*
Date Performed	*7/21/2016*	Jurisdiction	*Palm Beach County*
Analysis Time Period	*AM Peak Period*	Analysis Year	*2040 Future Conditions*

Project Description *SR-9/I-95 at Northlake Boulevard Interchange PD&E Study*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5158*	veh/h	Peak-Hour Factor, PHF	*0.95*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs			Calc Speed Adj and FFS		
Lane Width		ft			
Rt-Side Lat. Clearance		ft	f_{LW}		mph
Number of Lanes, N	*5*		f_{LC}		mph
Total Ramp Density, TRD		ramps/mi	TRD Adjustment		mph
FFS (measured)	*65.0*	mph	FFS	*65.0*	mph
Base free-flow Speed, BFFS		mph			

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1108*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	*65.0*	mph	S	mph
D = v_p / S	*17.0*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*B*		Required Number of Lanes, N	

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits 11-10, 11-12	f_{LW} - Exhibit 11-8
V - Hourly volume	D - Density	E_T - Exhibits 11-10, 11-11, 11-13	f_{LC} - Exhibit 11-9
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 11-18	TRD - Page 11-11
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 11-2, 11-3	
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*Godfrey Lamptey, P.E., PTOE*	Highway/Direction of Travel	*I-95 Southbound*
Agency or Company	*Goal Associates*	From/To	*Blue Heron Blvd. to Northlake*
Date Performed	*7/21/2016*	Jurisdiction	*Palm Beach County*
Analysis Time Period	*AM Peak Period*	Analysis Year	*2040 Future Conditions*

Project Description *SR-9/I-95 at Northlake Boulevard Interchange PD&E Study*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*7322*	veh/h	Peak-Hour Factor, PHF	*0.95*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs			Calc Speed Adj and FFS		
Lane Width		ft			
Rt-Side Lat. Clearance		ft	f_{LW}		mph
Number of Lanes, N	*5*		f_{LC}		mph
Total Ramp Density, TRD		ramps/mi	TRD Adjustment		mph
FFS (measured)	*65.0*	mph	FFS	*65.0*	mph
Base free-flow Speed, BFFS		mph			

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1572*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	*64.6*	mph	S	mph
D = v_p / S	*24.3*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits 11-10, 11-12	f_{LW} - Exhibit 11-8
V - Hourly volume	D - Density	E_T - Exhibits 11-10, 11-11, 11-13	f_{LC} - Exhibit 11-9
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 11-18	TRD - Page 11-11
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 11-2, 11-3	
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*Godfrey Lamptey, P.E., PTOE*	Highway/Direction of Travel	*I-95 Northbound*
Agency or Company	*Goal Associates*	From/To	*Between NLB Ramps*
Date Performed	*7/21/2016*	Jurisdiction	*Palm Beach County*
Analysis Time Period	*AM Peak Period*	Analysis Year	*2040 Future Conditions*

Project Description *SR-9/I-95 at Northlake Boulevard Interchange PD&E Study*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*3513*	veh/h	Peak-Hour Factor, PHF	*0.95*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs

Lane Width		ft
Rt-Side Lat. Clearance		ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD		ramps/mi
FFS (measured)	*65.0*	mph
Base free-flow Speed, BFFS		mph

Calc Speed Adj and FFS

f_{LW}		mph
f_{LC}		mph
TRD Adjustment		mph
FFS	*65.0*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*943*	pc/h/ln
S	*65.0*	mph
D = v_p / S	*14.5*	pc/mi/ln
LOS	*B*	

Design (N)

Design (N)

Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h/ln
S		mph
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed
DDHV - Directional design hour volume

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*Godfrey Lamptey, P.E., PTOE*	Highway/Direction of Travel	*I-95 Southbound*
Agency or Company	*Goal Associates*	From/To	*Between NLB Ramps*
Date Performed	*7/21/2016*	Jurisdiction	*Palm Beach County*
Analysis Time Period	*AM Peak Period*	Analysis Year	*2040 Future Conditions*

Project Description *SR-9/I-95 at Northlake Boulevard Interchange PD&E Study*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5721*	veh/h	Peak-Hour Factor, PHF	*0.95*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs

Lane Width		ft
Rt-Side Lat. Clearance		ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD		ramps/mi
FFS (measured)	*65.0*	mph
Base free-flow Speed, BFFS		mph

Calc Speed Adj and FFS

f_{LW}		mph
f_{LC}		mph
TRD Adjustment		mph
FFS	*65.0*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1536*	pc/h/ln
S	*64.7*	mph
D = v_p / S	*23.7*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h/ln
S		mph
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed
DDHV - Directional design hour volume

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*Godfrey Lamptey, P.E., PTOE*	Highway/Direction of Travel	*I-95 Northbound*
Agency or Company	*Goal Associates*	From/To	*Northlake Blvd to PGA Blvd*
Date Performed	*7/21/2016*	Jurisdiction	*Palm Beach County*
Analysis Time Period	*AM Peak Period*	Analysis Year	*2040 Future Conditions*

Project Description *SR-9/I-95 at Northlake Boulevard Interchange PD&E Study*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5316*	veh/h	Peak-Hour Factor, PHF	*0.95*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs

Lane Width		ft
Rt-Side Lat. Clearance		ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD		ramps/mi
FFS (measured)	*65.0*	mph
Base free-flow Speed, BFFS		mph

Calc Speed Adj and FFS

f_{LW}		mph
f_{LC}		mph
TRD Adjustment		mph
FFS	*65.0*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1427*	pc/h/ln
S	*65.0*	mph
D = v_p / S	*22.0*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h/ln
S		mph
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed
DDHV - Directional design hour volume

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*Godfrey Lamptey, P.E., PTOE*	Highway/Direction of Travel	*I-95 Southbound*
Agency or Company	*Goal Associates*	From/To	*Northlake Blvd to PGA Blvd*
Date Performed	*7/21/2016*	Jurisdiction	*Palm Beach County*
Analysis Time Period	*AM Peak Period*	Analysis Year	*2040 Future Conditions*

Project Description *SR-9/I-95 at Northlake Boulevard Interchange PD&E Study*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*7686*	veh/h	Peak-Hour Factor, PHF	*0.95*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs

Lane Width		ft
Rt-Side Lat. Clearance		ft
Number of Lanes, N	*5*	
Total Ramp Density, TRD		ramps/mi
FFS (measured)	*65.0*	mph
Base free-flow Speed, BFFS		mph

Calc Speed Adj and FFS

f_{LW}		mph
f_{LC}		mph
TRD Adjustment		mph
FFS	*65.0*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1650*	pc/h/ln
S	*64.1*	mph
D = v_p / S	*25.7*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h/ln
S		mph
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed
DDHV - Directional design hour volume

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*Godfrey Lamptey, P.E., PTOE*	Highway/Direction of Travel	*I-95 Northbound*
Agency or Company	*Goal Associates*	From/To	*Blue Heron Blvd. to Northlake*
Date Performed	*7/21/2016*	Jurisdiction	*Palm Beach County*
Analysis Time Period	*PM Peak Period*	Analysis Year	*2040 Future Conditions*

Project Description *SR-9/I-95 at Northlake Boulevard Interchange PD&E Study*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*7390*	veh/h	Peak-Hour Factor, PHF	*0.95*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs			Calc Speed Adj and FFS		
Lane Width		ft			
Rt-Side Lat. Clearance		ft	f_{LW}		mph
Number of Lanes, N	*5*		f_{LC}		mph
Total Ramp Density, TRD		ramps/mi	TRD Adjustment		mph
FFS (measured)	*65.0*	mph	FFS	*65.0*	mph
Base free-flow Speed, BFFS		mph			

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1587*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	*64.5*	mph	S	mph
D = v_p / S	*24.6*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*C*		Required Number of Lanes, N	

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits 11-10, 11-12	f_{LW} - Exhibit 11-8
V - Hourly volume	D - Density	E_T - Exhibits 11-10, 11-11, 11-13	f_{LC} - Exhibit 11-9
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 11-18	TRD - Page 11-11
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 11-2, 11-3	
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*Godfrey Lamptey, P.E., PTOE*	Highway/Direction of Travel	*I-95 Southbound*
Agency or Company	*Goal Associates*	From/To	*Blue Heron Blvd. to Northlake*
Date Performed	*7/21/2016*	Jurisdiction	*Palm Beach County*
Analysis Time Period	*PM Peak Period*	Analysis Year	*2040 Future Conditions*

Project Description *SR-9/I-95 at Northlake Boulevard Interchange PD&E Study*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5090*	veh/h	Peak-Hour Factor, PHF	*0.95*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs			Calc Speed Adj and FFS		
Lane Width		ft			
Rt-Side Lat. Clearance		ft	f_{LW}		mph
Number of Lanes, N	*5*		f_{LC}		mph
Total Ramp Density, TRD		ramps/mi	TRD Adjustment		mph
FFS (measured)	*65.0*	mph	FFS	*65.0*	mph
Base free-flow Speed, BFFS		mph			

LOS and Performance Measures			Design (N)	
Operational (LOS)			Design (N)	
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1093*	pc/h/ln	Design LOS	
			v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	pc/h/ln
S	*65.0*	mph	S	mph
D = v_p / S	*16.8*	pc/mi/ln	D = v_p / S	pc/mi/ln
LOS	*B*		Required Number of Lanes, N	

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits 11-10, 11-12	f_{LW} - Exhibit 11-8
V - Hourly volume	D - Density	E_T - Exhibits 11-10, 11-11, 11-13	f_{LC} - Exhibit 11-9
v_p - Flow rate	FFS - Free-flow speed	f_p - Page 11-18	TRD - Page 11-11
LOS - Level of service	BFFS - Base free-flow speed	LOS, S, FFS, v_p - Exhibits 11-2, 11-3	
DDHV - Directional design hour volume			

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*Godfrey Lamptey, P.E., PTOE*	Highway/Direction of Travel	*I-95 Northbound*
Agency or Company	*Goal Associates*	From/To	*Between NLB Ramps*
Date Performed	*7/21/2016*	Jurisdiction	*Palm Beach County*
Analysis Time Period	*PM Peak Period*	Analysis Year	*2040 Future Conditions*

Project Description *SR-9/I-95 at Northlake Boulevard Interchange PD&E Study*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5572*	veh/h	Peak-Hour Factor, PHF	*0.95*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs

Lane Width		ft
Rt-Side Lat. Clearance		ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD		ramps/mi
FFS (measured)	*65.0*	mph
Base free-flow Speed, BFFS		mph

Calc Speed Adj and FFS

f_{LW}		mph
f_{LC}		mph
TRD Adjustment		mph
FFS	*65.0*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1496*	pc/h/ln
S	*64.9*	mph
D = v_p / S	*23.1*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h/ln
S		mph
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed
DDHV - Directional design hour volume

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*Godfrey Lamptey, P.E., PTOE*	Highway/Direction of Travel	*I-95 Southbound*
Agency or Company	*Goal Associates*	From/To	*Between NLB Ramps*
Date Performed	*7/21/2016*	Jurisdiction	*Palm Beach County*
Analysis Time Period	*PM Peak Period*	Analysis Year	*2040 Future Conditions*

Project Description *SR-9/I-95 at Northlake Boulevard Interchange PD&E Study*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*3309*	veh/h	Peak-Hour Factor, PHF	*0.95*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs

Lane Width		ft
Rt-Side Lat. Clearance		ft
Number of Lanes, N	*4*	
Total Ramp Density, TRD		ramps/mi
FFS (measured)	*65.0*	mph
Base free-flow Speed, BFFS		mph

Calc Speed Adj and FFS

f_{LW}		mph
f_{LC}		mph
TRD Adjustment		mph
FFS	*65.0*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*888*	pc/h/ln
S	*65.0*	mph
D = v_p / S	*13.7*	pc/mi/ln
LOS	*B*	

Design (N)

Design (N)

Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h/ln
S		mph
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed
DDHV - Directional design hour volume

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*Godfrey Lamptey, P.E., PTOE*	Highway/Direction of Travel	*I-95 Southbound*
Agency or Company	*Goal Associates*	From/To	*Northlake Blvd to PGA Blvd*
Date Performed	*7/21/2016*	Jurisdiction	*Palm Beach County*
Analysis Time Period	*PM Peak Period*	Analysis Year	*2040 Future Conditions*

Project Description *SR-9/I-95 at Northlake Boulevard Interchange PD&E Study*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*5116*	veh/h	Peak-Hour Factor, PHF	*0.95*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs

Lane Width		ft
Rt-Side Lat. Clearance		ft
Number of Lanes, N	*5*	
Total Ramp Density, TRD		ramps/mi
FFS (measured)	*65.0*	mph
Base free-flow Speed, BFFS		mph

Calc Speed Adj and FFS

f_{LW}		mph
f_{LC}		mph
TRD Adjustment		mph
FFS	*65.0*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1099*	pc/h/ln
S	*65.0*	mph
D = v_p / S	*16.9*	pc/mi/ln
LOS	*B*	

Design (N)

Design (N)

Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h/ln
S		mph
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed
DDHV - Directional design hour volume

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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MERGE LOCATIONS

2020 Opening Year

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Northbound
Agency or Company	Goal Associates	Junction	Blue Heron Blvd. NB On-Ramp
Date Performed	7/15/2016	Jurisdiction	Palm Beach County
Analysis Time Period	AM Peak Period	Analysis Year	2020 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 4	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 2	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 500	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 4382	
	Ramp Volume, V_R: 737	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 40.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	4382	0.95	Level	4	0	0.980	1.00	4705
Ramp	737	0.95	Level	4	0	0.980	1.00	791
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.209 using Equation 0 (Exhibit 13-6)

V_{12} = 983 pc/h

V_3 or V_{av34} 1861 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 1882 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5496	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2673	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 16.6 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.257 (Exibit 13-11)

S_R= 59.1 mph (Exhibit 13-11)

S_0= 61.7 mph (Exhibit 13-11)

S = 60.4 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Northbound
Agency or Company	Goal Associates	Junction	Northlake Blvd. NB On-Ramp
Date Performed	7/15/2016	Jurisdiction	Palm Beach County
Analysis Time Period	AM Peak Period	Analysis Year	2020 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	4
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	500
Deceleration Lane Length L_D	
Freeway Volume, V_F	3527
Ramp Volume, V_R	1221
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	40.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3527	0.95	Level	4	0	0.980	1.00	3787
Ramp	1221	0.95	Level	4	0	0.980	1.00	1311
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.054 using Equation 0 (Exhibit 13-6)

V_{12} = 204 pc/h

V_3 or V_{av34} 1791 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 1514 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5098	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2825	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 23.8 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.347 (Exibit 13-11)

S_R= 57.0 mph (Exhibit 13-11)

S_0= 62.7 mph (Exhibit 13-11)

S = 59.4 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Southbound
Agency or Company	Goal Associates	Junction	Northlake Blvd. SB On-Ramp
Date Performed	7/15/2016	Jurisdiction	Palm Beach County
Analysis Time Period	AM Peak Period	Analysis Year	2020 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	2
Acceleration Lane Length, L_A	500
Deceleration Lane Length L_D	
Freeway Volume, V_F	5568
Ramp Volume, V_R	1577
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	40.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5568	0.95	Level	4	0	0.980	1.00	5978
Ramp	1577	0.95	Level	3	0	0.985	1.00	1685
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.209 using Equation 0 (Exhibit 13-6)

V_{12} = 950 pc/h

V_3 or V_{av34} 1797 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 1817 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6229	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3502	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 22.6 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.330 (Exibit 13-11)

S_R= 57.4 mph (Exhibit 13-11)

S_0= 61.9 mph (Exhibit 13-11)

S = 59.3 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Southbound
Agency or Company	Goal Associates	Junction	PGA Blvd. EB-SB On-Ramp
Date Performed	7/15/2016	Jurisdiction	Palm Beach County
Analysis Time Period	AM Peak Period	Analysis Year	2020 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☑ Yes ☑ On	Freeway Number of Lanes, N: 5	☐ Yes ☐ On
☐ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = 400 ft	Acceleration Lane Length, L_A: 500	L_{down} = ft
V_u = 742 veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 5794	
	Ramp Volume, V_R: 906	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 40.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5794	0.95	Level	4	0	0.980	1.00	6221
Ramp	906	0.95	Level	3	0	0.985	1.00	968
UpStream	742	0.95	Level	3	0	0.985	1.00	793
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.097 using Equation 0 (Exhibit 13-6)

V_{12} = 458 pc/h

V_3 or V_{av34} 2135 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 1891 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5696	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2859	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 24.2 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.349 (Exibit 13-11)

S_R= 57.0 mph (Exhibit 13-11)

S_0= 61.7 mph (Exhibit 13-11)

S = 59.2 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Southbound
Agency or Company	Goal Associates	Junction	PGA Blvd. WB-SB On-Ramp
Date Performed	7/15/2016	Jurisdiction	Palm Beach County
Analysis Time Period	AM Peak Period	Analysis Year	2020 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	4
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	450
Deceleration Lane Length L_D	
Freeway Volume, V_F	5052
Ramp Volume, V_R	742
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	40.0

Downstream Adj Ramp

☑ Yes ☑ On

☐ No ☐ Off

L_{down} = 400 ft

V_D = 906 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5052	0.95	Level	4	0	0.980	1.00	5424
Ramp	742	0.95	Level	3	0	0.985	1.00	793
UpStream								
DownStream	906	0.95	Level	3	0	0.985	1.00	968

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.119 using Equation 0 (Exhibit 13-6)

V_{12} = 644 pc/h

V_3 or V_{av34} 2390 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 2169 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6217	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2962	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 25.4 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.360 (Exibit 13-11)

S_R= 56.7 mph (Exhibit 13-11)

S_0= 60.9 mph (Exhibit 13-11)

S = 58.9 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Northbound
Agency or Company	Goal Associates	Junction	Blue Heron Blvd. NB On-Ramp
Date Performed	7/15/2016	Jurisdiction	Palm Beach County
Analysis Time Period	PM Peak Period	Analysis Year	2020 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 4	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 2	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 500	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 5691	
	Ramp Volume, V_R: 1193	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 40.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5691	0.95	Level	4	0	0.980	1.00	6110
Ramp	1193	0.95	Level	4	0	0.980	1.00	1281
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.209 using Equation 0 (Exhibit 13-6)

V_{12} = 1277 pc/h

V_3 or V_{av34} 2416 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 2444 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	7391	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3725	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 24.5 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.363 (Exibit 13-11)

S_R= 56.7 mph (Exhibit 13-11)

S_0= 60.2 mph (Exhibit 13-11)

S = 58.4 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Northbound
Agency or Company	Goal Associates	Junction	Northlake Blvd. NB On-Ramp
Date Performed	7/15/2016	Jurisdiction	Palm Beach County
Analysis Time Period	PM Peak Period	Analysis Year	2020 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 4	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 500	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 5152	
	Ramp Volume, V_R: 1336	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 40.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5152	0.95	Level	4	0	0.980	1.00	5532
Ramp	1336	0.95	Level	4	0	0.980	1.00	1434
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.039 using Equation 0 (Exhibit 13-6)

V_{12} = 213 pc/h

V_3 or V_{av34} 2659 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 2212 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6966	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3646	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 30.1 (pc/mi/ln)

LOS = D (Exhibit 13-2)

Speed Determination

M_S = 0.430 (Exibit 13-11)

S_R= 55.1 mph (Exhibit 13-11)

S_0= 60.8 mph (Exhibit 13-11)

S = 57.7 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Southbound
Agency or Company	Goal Associates	Junction	Northlake Blvd. SB On-Ramp
Date Performed	7/15/2016	Jurisdiction	Palm Beach County
Analysis Time Period	PM Peak Period	Analysis Year	2020 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 4	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 2	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 500	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 3148	
	Ramp Volume, V_R: 1656	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 40.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3148	0.95	Level	4	0	0.980	1.00	3380
Ramp	1656	0.95	Level	3	0	0.985	1.00	1769
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.209 using Equation 0 (Exhibit 13-6)

V_{12} = 706 pc/h

V_3 or V_{av34} 1337 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 1352 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5149	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3121	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 19.6 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.289 (Exibit 13-11)

S_R= 58.3 mph (Exhibit 13-11)

S_0= 63.1 mph (Exhibit 13-11)

S = 60.1 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Southbound
Agency or Company	Goal Associates	Junction	PGA Blvd. EB-SB On-Ramp
Date Performed	7/15/2016	Jurisdiction	Palm Beach County
Analysis Time Period	PM Peak Period	Analysis Year	2020 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☑ Yes ☑ On	Freeway Number of Lanes, N: 4	☐ Yes ☐ On
☐ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = 400 ft	Acceleration Lane Length, L_A: 500	L_{down} = ft
V_u = 1339 veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 3319	
	Ramp Volume, V_R: 940	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 40.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3319	0.95	Level	4	0	0.980	1.00	3564
Ramp	940	0.95	Level	3	0	0.985	1.00	1004
UpStream	1339	0.95	Level	3	0	0.985	1.00	1431
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.092 using Equation 0 (Exhibit 13-6)

V_{12} = 329 pc/h

V_3 or V_{av34} 1617 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 1425 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4568	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2429	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 20.8 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.325 (Exibit 13-11)

S_R= 57.5 mph (Exhibit 13-11)

S_0= 63.0 mph (Exhibit 13-11)

S = 59.9 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Southbound
Agency or Company	Goal Associates	Junction	PGA Blvd. WB-SB On-Ramp
Date Performed	7/15/2016	Jurisdiction	Palm Beach County
Analysis Time Period	PM Peak Period	Analysis Year	2020 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	4
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	450
Deceleration Lane Length L_D	
Freeway Volume, V_F	1980
Ramp Volume, V_R	1339
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	40.0

Downstream Adj Ramp

☑ Yes ☑ On

☐ No ☐ Off

L_{down} = 400 ft

V_D = 940 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	1980	0.95	Level	4	0	0.980	1.00	2126
Ramp	1339	0.95	Level	3	0	0.985	1.00	1431
UpStream								
DownStream	940	0.95	Level	3	0	0.985	1.00	1004

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.164 using Equation 0 (Exhibit 13-6)

V_{12} = 349 pc/h

V_3 or V_{av34} 888 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 850 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	3557	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2281	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 19.8 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.323 (Exibit 13-11)

S_R= 57.6 mph (Exhibit 13-11)

S_0= 64.5 mph (Exhibit 13-11)

S = 59.9 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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2040 Design Year

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information		Site Information	
Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Northbound
Agency or Company	Goal Associates	Junction	Blue Heron Blvd. NB On-Ramp
Date Performed	7/15/2016	Jurisdiction	Palm Beach County
Analysis Time Period	AM Peak Period	Analysis Year	2040 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 4	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 2	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 500	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 4000	
	Ramp Volume, V_R: 1158	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 40.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	4000	0.95	Level	4	0	0.980	1.00	4295
Ramp	1158	0.95	Level	4	0	0.980	1.00	1243
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.209 using Equation 0 (Exhibit 13-6)

V_{12} = 898 pc/h

V_3 or V_{av34} 1698 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 1718 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5538	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2961	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 18.6 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.276 (Exibit 13-11)

S_R= 58.6 mph (Exhibit 13-11)

S_0= 62.2 mph (Exhibit 13-11)

S = 60.2 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Southbound
Agency or Company	Goal Associates	Junction	Northlake Blvd. SB On-Ramp
Date Performed	7/15/2016	Jurisdiction	Palm Beach County
Analysis Time Period	AM Peak Period	Analysis Year	2040 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	2
Acceleration Lane Length, L_A	500
Deceleration Lane Length L_D	
Freeway Volume, V_F	5721
Ramp Volume, V_R	1601
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	40.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5721	0.95	Level	4	0	0.980	1.00	6143
Ramp	1601	0.95	Level	3	0	0.985	1.00	1711
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.209 using Equation 0 (Exhibit 13-6)

V_{12} = 976 pc/h

V_3 or V_{av34} 1846 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 1867 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6380	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3578	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 23.2 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.341 (Exibit 13-11)

S_R= 57.2 mph (Exhibit 13-11)

S_0= 61.8 mph (Exhibit 13-11)

S = 59.1 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Southbound
Agency or Company	Goal Associates	Junction	PGA Blvd. EB-SB On-Ramp
Date Performed	7/15/2016	Jurisdiction	Palm Beach County
Analysis Time Period	AM Peak Period	Analysis Year	2040 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp

☑ Yes ☑ On

☐ No ☐ Off

L_{up} = 400 ft

V_u = 1062 veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	500
Deceleration Lane Length L_D	
Freeway Volume, V_F	6762
Ramp Volume, V_R	924
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	40.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	6762	0.95	Level	4	0	0.980	1.00	7260
Ramp	924	0.95	Level	3	0	0.985	1.00	987
UpStream	1062	0.95	Level	3	0	0.985	1.00	1135
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.094 using Equation 0 (Exhibit 13-6)

V_{12} = 500 pc/h

V_3 or V_{av34} 2400 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 2120 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6287	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3107	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 26.1 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.368 (Exibit 13-11)

S_R= 56.5 mph (Exhibit 13-11)

S_0= 61.1 mph (Exhibit 13-11)

S = 58.7 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Southbound
Agency or Company	Goal Associates	Junction	PGA Blvd. WB-SB On-Ramp
Date Performed	7/15/2016	Jurisdiction	Palm Beach County
Analysis Time Period	AM Peak Period	Analysis Year	2040 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	4
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	450
Deceleration Lane Length L_D	
Freeway Volume, V_F	5700
Ramp Volume, V_R	1062
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	40.0

Downstream Adj Ramp

☑ Yes ☑ On

☐ No ☐ Off

L_{down} = 400 ft

V_D = 924 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5700	0.95	Level	4	0	0.980	1.00	6120
Ramp	1062	0.95	Level	3	0	0.985	1.00	1135
UpStream								
DownStream	924	0.95	Level	3	0	0.985	1.00	987

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.076 using Equation 0 (Exhibit 13-6)

V_{12} = 465 pc/h

V_3 or V_{av34} 2827 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☑ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 2448 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	7255	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3583	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 30.1 (pc/mi/ln)

LOS = D (Exhibit 13-2)

Speed Determination

M_S = 0.425 (Exibit 13-11)

S_R= 55.2 mph (Exhibit 13-11)

S_0= 60.2 mph (Exhibit 13-11)

S = 57.6 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Northbound
Agency or Company	Goal Associates	Junction	Blue Heron Blvd. NB On-Ramp
Date Performed	7/15/2016	Jurisdiction	Palm Beach County
Analysis Time Period	PM Peak Period	Analysis Year	2040 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 4	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 2	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 500	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 5486	
	Ramp Volume, V_R: 1904	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 40.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5486	0.95	Level	4	0	0.980	1.00	5890
Ramp	1904	0.95	Level	4	0	0.980	1.00	2044
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$ (Equation 13-6 or 13-7)

L_{EQ} =

P_{FM} = 0.209 using Equation 0 (Exhibit 13-6)

V_{12} = 1231 pc/h

V_3 or V_{av34} 2329 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 2356 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	7934	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	4400	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 29.4 (pc/mi/ln)

LOS = D (Exhibit 13-2)

Speed Determination

M_S = 0.519 (Exibit 13-11)

S_R= 53.1 mph (Exhibit 13-11)

S_0= 60.4 mph (Exhibit 13-11)

S = 56.1 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$ (Equation 13-12 or 13-13)

L_{EQ} =

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Northbound
Agency or Company	Goal Associates	Junction	Northlake Blvd. NB On-Ramp
Date Performed	7/15/2016	Jurisdiction	Palm Beach County
Analysis Time Period	PM Peak Period	Analysis Year	2040 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 4	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 500	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 5572	
	Ramp Volume, V_R: 2361	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 40.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5572	0.95	Level	4	0	0.980	1.00	5983
Ramp	2361	0.95	Level	4	0	0.980	1.00	2535
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = -0.099 using Equation 0 (Exhibit 13-6)

V_{12} = -592 pc/h

V_3 or V_{av34} 3287 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☑ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 2393 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	8518	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	4928	Exhibit 13-8	4600:All	Yes

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 39.6 (pc/mi/ln)

LOS = E (Exhibit 13-2)

Speed Determination

M_S = 0.820 (Exibit 13-11)

S_R= 46.1 mph (Exhibit 13-11)

S_0= 60.3 mph (Exhibit 13-11)

S = 51.2 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Southbound
Agency or Company	Goal Associates	Junction	Northlake Blvd. SB On-Ramp
Date Performed	7/15/2016	Jurisdiction	Palm Beach County
Analysis Time Period	PM Peak Period	Analysis Year	2040 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 4	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 2	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 500	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 3309	
	Ramp Volume, V_R: 1781	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 40.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3309	0.95	Level	4	0	0.980	1.00	3553
Ramp	1781	0.95	Level	3	0	0.985	1.00	1903
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.209 using Equation 0 (Exhibit 13-6)

V_{12} = 743 pc/h

V_3 or V_{av34} 1405 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 1421 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5456	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3324	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 21.1 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.309 (Exibit 13-11)

S_R= 57.9 mph (Exhibit 13-11)

S_0= 63.0 mph (Exhibit 13-11)

S = 59.8 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Southbound
Agency or Company	Goal Associates	Junction	PGA Blvd. EB-SB On-Ramp
Date Performed	7/15/2016	Jurisdiction	Palm Beach County
Analysis Time Period	PM Peak Period	Analysis Year	2040 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☑ Yes ☑ On	Freeway Number of Lanes, N: 4	☐ Yes ☐ On
☐ No ☐ Off	Ramp Number of Lanes, N: 1	☑ No ☐ Off
L_{up} = 400 ft	Acceleration Lane Length, L_A: 500	L_{down} = ft
V_u = 1671 veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 4118	
	Ramp Volume, V_R: 998	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 40.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	4118	0.95	Level	4	0	0.980	1.00	4421
Ramp	998	0.95	Level	3	0	0.985	1.00	1066
UpStream	1671	0.95	Level	3	0	0.985	1.00	1785
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.085 using Equation 0 (Exhibit 13-6)

V_{12} = 374 pc/h

V_3 or V_{av34} 2023 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 1768 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5487	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2834	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 24.0 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.347 (Exibit 13-11)

S_R= 57.0 mph (Exhibit 13-11)

S_0= 62.0 mph (Exhibit 13-11)

S = 59.3 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Southbound
Agency or Company	Goal Associates	Junction	PGA Blvd. WB-SB On-Ramp
Date Performed	7/15/2016	Jurisdiction	Palm Beach County
Analysis Time Period	PM Peak Period	Analysis Year	2040 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	4
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	450
Deceleration Lane Length L_D	
Freeway Volume, V_F	2447
Ramp Volume, V_R	1671
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	40.0

Downstream Adj Ramp

☑ Yes ☑ On

☐ No ☐ Off

L_{down} = 400 ft

V_D = 998 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	2447	0.95	Level	4	0	0.980	1.00	2627
Ramp	1671	0.95	Level	3	0	0.985	1.00	1785
UpStream								
DownStream	998	0.95	Level	3	0	0.985	1.00	1066

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.120 using Equation 0 (Exhibit 13-6)

V_{12} = 316 pc/h

V_3 or V_{av34} 1155 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 1050 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4412	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2835	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 23.9 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.351 (Exibit 13-11)

S_R= 56.9 mph (Exhibit 13-11)

S_0= 64.0 mph (Exhibit 13-11)

S = 59.3 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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DIVERGE LOCATIONS

2020 Opening Year

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Southbound
Agency or Company	Goal Associates	Junction	Blue Heron Blvd. SB Off-Ramp
Date Performed	7/18/2016	Jurisdiction	Palm Beach County
Analysis Time Period	AM Peak Period	Analysis Year	2020 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	2
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	500
Freeway Volume, V_F	7145
Ramp Volume, V_R	1208
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	40.0

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	7145	0.95	Level	4	0	0.980	1.00	7671
Ramp	1208	0.95	Level	3	0	0.985	1.00	1291
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)
P_{FM} = using Equation (Exhibit 13-6)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)
LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)
S_R= mph (Exhibit 13-11)
S_0= mph (Exhibit 13-11)
S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)
P_{FD} = 0.260 using Equation 0 (Exhibit 13-7)
V_{12} = 2551 pc/h
V_3 or V_{av34} 1793 pc/h (Equation 13-14 or 13-17)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No
If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	6137	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	4846	Exhibit 13-8	9400	No
V_R	1291	Exhibit 13-10	4200	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2551	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 12.7 (pc/mi/ln)
LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.479 (Exhibit 13-12)
S_R= 54.0 mph (Exhibit 13-12)
S_0= 68.2 mph (Exhibit 13-12)
S = 61.5 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Northbound
Agency or Company	Goal Associates	Junction	Northlake Blvd. NB Off-Ramp
Date Performed	7/18/2016	Jurisdiction	Palm Beach County
Analysis Time Period	AM Peak Period	Analysis Year	2020 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	2
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	500
Freeway Volume, V_F	5119
Ramp Volume, V_R	1592
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	40.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5119	0.95	Level	4	0	0.980	1.00	5496
Ramp	1592	0.95	Level	4	0	0.980	1.00	1709
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.260 using Equation 0 (Exhibit 13-7)

V_{12} = 2551 pc/h

V_3 or V_{av34} 1198 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4947	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	3238	Exhibit 13-8	9400	No
V_R	1709	Exhibit 13-10	4200	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2551	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 12.7 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.517 (Exhibit 13-12)

S_R= 53.1 mph (Exhibit 13-12)

S_0= 70.5 mph (Exhibit 13-12)

S = 60.3 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Southbound
Agency or Company	Goal Associates	Junction	Northlake Blvd. SB Off-Ramp
Date Performed	7/18/2016	Jurisdiction	Palm Beach County
Analysis Time Period	AM Peak Period	Analysis Year	2020 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	2
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	500
Freeway Volume, V_F	6700
Ramp Volume, V_R	1132
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	40.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	6700	0.95	Level	4	0	0.980	1.00	7194
Ramp	1132	0.95	Level	3	0	0.985	1.00	1209
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.260 using Equation 0 (Exhibit 13-7)

V_{12} = 2391 pc/h

V_3 or V_{av34} 1682 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	5756	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	4547	Exhibit 13-8	9400	No
V_R	1209	Exhibit 13-10	4200	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2391	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 11.3 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.472 (Exhibit 13-12)

S_R= 54.1 mph (Exhibit 13-12)

S_0= 68.6 mph (Exhibit 13-12)

S = 61.8 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Northbound
Agency or Company	Goal Associates	Junction	PGA Blvd. NB-EB Off-Ramp
Date Performed	7/18/2016	Jurisdiction	Palm Beach County
Analysis Time Period	AM Peak Period	Analysis Year	2020 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	4
Ramp Number of Lanes, N	2
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	500
Freeway Volume, V_F	4748
Ramp Volume, V_R	2357
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	40.0

Downstream Adj Ramp

☑ Yes ☐ On

☐ No ☑ Off

L_{down} = 1050 ft

V_D = 832 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	4748	0.95	Level	4	0	0.980	1.00	5098
Ramp	2357	0.95	Level	4	0	0.980	1.00	2531
UpStream								
DownStream	832	0.95	Level	4	0	0.980	1.00	893

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.260 using Equation 0 (Exhibit 13-7)

V_{12} = 3198 pc/h

V_3 or V_{av34} 950 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	5098	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	2567	Exhibit 13-8	9400	No
V_R	2531	Exhibit 13-10	4200	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3198	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 18.3 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.591 (Exhibit 13-12)

S_R= 51.4 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 57.4 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Northbound
Agency or Company	Goal Associates	Junction	PGA Blvd. NB-WB Off-Ramp
Date Performed	7/18/2016	Jurisdiction	Palm Beach County
Analysis Time Period	AM Peak Period	Analysis Year	2020 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp

☑ Yes ☐ On

☐ No ☑ Off

L_{up} = 1050 ft

V_u = 2357 veh/h

Freeway Number of Lanes, N	4
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	500
Freeway Volume, V_F	2391
Ramp Volume, V_R	832
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	30.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	2391	0.95	Level	4	0	0.980	1.00	2567
Ramp	832	0.95	Level	4	0	0.980	1.00	893
UpStream	2357	0.95	Level	4	0	0.980	1.00	2531
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation 0 (Exhibit 13-7)

V_{12} = 1623 pc/h

V_3 or V_{av34} 472 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	2567	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	1674	Exhibit 13-8	9400	No
V_R	893	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	1623	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 13.7 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.573 (Exhibit 13-12)

S_R= 51.8 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 57.6 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Southbound
Agency or Company	Goal Associates	Junction	Blue Heron Blvd. SB Off-Ramp
Date Performed	7/18/2016	Jurisdiction	Palm Beach County
Analysis Time Period	PM Peak Period	Analysis Year	2020 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	2
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	500
Freeway Volume, V_F	4804
Ramp Volume, V_R	579
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	40.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	4804	0.95	Level	4	0	0.980	1.00	5158
Ramp	579	0.95	Level	3	0	0.985	1.00	619
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.260 using Equation 0 (Exhibit 13-7)

V_{12} = 1665 pc/h

V_3 or V_{av34} 1489 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 1857 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4643	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	4024	Exhibit 13-8	9400	No
V_R	619	Exhibit 13-10	4200	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	1665	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 6.7 (pc/mi/ln)

LOS = A (Exhibit 13-2)

Speed Determination

D_s = 0.419 (Exhibit 13-12)

S_R= 55.4 mph (Exhibit 13-12)

S_0= 69.8 mph (Exhibit 13-12)

S = 63.2 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Northbound
Agency or Company	Goal Associates	Junction	Northlake Blvd. NB Off-Ramp
Date Performed	7/18/2016	Jurisdiction	Palm Beach County
Analysis Time Period	PM Peak Period	Analysis Year	2020 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	2
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	500
Freeway Volume, V_F	6884
Ramp Volume, V_R	1732
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	40.0

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	6884	0.95	Level	4	0	0.980	1.00	7391
Ramp	1732	0.95	Level	4	0	0.980	1.00	1860
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)
P_{FM} = using Equation (Exhibit 13-6)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)
LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)
S_R= mph (Exhibit 13-11)
S_0= mph (Exhibit 13-11)
S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)
P_{FD} = 0.260 using Equation 0 (Exhibit 13-7)
V_{12} = 2914 pc/h
V_3 or V_{av34} 1499 pc/h (Equation 13-14 or 13-17)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No
If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	5913	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	4053	Exhibit 13-8	9400	No
V_R	1860	Exhibit 13-10	4200	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2914	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 15.8 (pc/mi/ln)
LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.530 (Exhibit 13-12)
S_R= 52.8 mph (Exhibit 13-12)
S_0= 69.4 mph (Exhibit 13-12)
S = 60.1 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Southbound
Agency or Company	Goal Associates	Junction	Northlake Blvd. SB Off-Ramp
Date Performed	7/18/2016	Jurisdiction	Palm Beach County
Analysis Time Period	PM Peak Period	Analysis Year	2020 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	2
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	500
Freeway Volume, V_F	4259
Ramp Volume, V_R	1111
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	40.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	4259	0.95	Level	4	0	0.980	1.00	4573
Ramp	1111	0.95	Level	3	0	0.985	1.00	1187
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.260 using Equation 0 (Exhibit 13-7)

V_{12} = 1949 pc/h

V_3 or V_{av34} 1083 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4116	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	2929	Exhibit 13-8	9400	No
V_R	1187	Exhibit 13-10	4200	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	1949	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 7.5 (pc/mi/ln)

LOS = A (Exhibit 13-2)

Speed Determination

D_s = 0.470 (Exhibit 13-12)

S_R= 54.2 mph (Exhibit 13-12)

S_0= 71.0 mph (Exhibit 13-12)

S = 61.9 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Northbound
Agency or Company	Goal Associates	Junction	PGA Blvd. NB-EB Off-Ramp
Date Performed	7/18/2016	Jurisdiction	Palm Beach County
Analysis Time Period	PM Peak Period	Analysis Year	2020 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	4
Ramp Number of Lanes, N	2
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	500
Freeway Volume, V_F	6488
Ramp Volume, V_R	1755
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	40.0

Downstream Adj Ramp

☑ Yes ☐ On

☐ No ☑ Off

L_{down} = 1050 ft

V_D = 947 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	6488	0.95	Level	4	0	0.980	1.00	6966
Ramp	1755	0.95	Level	4	0	0.980	1.00	1884
UpStream								
DownStream	947	0.95	Level	4	0	0.980	1.00	1017

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.260 using Equation 0 (Exhibit 13-7)

V_{12} = 3205 pc/h

V_3 or V_{av34} 1880 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	6966	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	5082	Exhibit 13-8	9400	No
V_R	1884	Exhibit 13-10	4200	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3205	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 18.3 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.533 (Exhibit 13-12)

S_R= 52.8 mph (Exhibit 13-12)

S_0= 67.9 mph (Exhibit 13-12)

S = 60.0 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Northbound
Agency or Company	Goal Associates	Junction	PGA Blvd. NB-WB Off-Ramp
Date Performed	7/18/2016	Jurisdiction	Palm Beach County
Analysis Time Period	PM Peak Period	Analysis Year	2020 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp

☑ Yes ☐ On

☐ No ☑ Off

L_{up} = 1050 ft

V_u = 1755 veh/h

Freeway Number of Lanes, N	4
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	500
Freeway Volume, V_F	4733
Ramp Volume, V_R	947
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	30.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	4733	0.95	Level	4	0	0.980	1.00	5082
Ramp	947	0.95	Level	4	0	0.980	1.00	1017
UpStream	1755	0.95	Level	4	0	0.980	1.00	1884
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation 0 (Exhibit 13-7)

V_{12} = 2789 pc/h

V_3 or V_{av34} 1146 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	5082	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	4065	Exhibit 13-8	9400	No
V_R	1017	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2789	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 23.7 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.585 (Exhibit 13-12)

S_R= 51.6 mph (Exhibit 13-12)

S_0= 70.7 mph (Exhibit 13-12)

S = 58.7 mph (Exhibit 13-13)

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2040 Design Year

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Southbound
Agency or Company	Goal Associates	Junction	Blue Heron Blvd. SB Off-Ramp
Date Performed	7/18/2016	Jurisdiction	Palm Beach County
Analysis Time Period	AM Peak Period	Analysis Year	2040 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	2
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	500
Freeway Volume, V_F	7322
Ramp Volume, V_R	1700
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	40.0

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	7322	0.95	Level	4	0	0.980	1.00	7862
Ramp	1700	0.95	Level	3	0	0.985	1.00	1816
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)
P_{FM} = using Equation (Exhibit 13-6)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)
LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)
S_R= mph (Exhibit 13-11)
S_0= mph (Exhibit 13-11)
S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)
P_{FD} = 0.260 using Equation 0 (Exhibit 13-7)
V_{12} = 2979 pc/h
V_3 or V_{av34} 1655 pc/h (Equation 13-14 or 13-17)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No
If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	6290	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	4474	Exhibit 13-8	9400	No
V_R	1816	Exhibit 13-10	4200	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2979	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 16.4 (pc/mi/ln)
LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.526 (Exhibit 13-12)
S_R= 52.9 mph (Exhibit 13-12)
S_0= 68.8 mph (Exhibit 13-12)
S = 60.2 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Northbound
Agency or Company	Goal Associates	Junction	Northlake Blvd. NB Off-Ramp
Date Performed	7/18/2016	Jurisdiction	Palm Beach County
Analysis Time Period	AM Peak Period	Analysis Year	2040 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	2
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	500
Freeway Volume, V_F	5158
Ramp Volume, V_R	1645
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	40.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5158	0.95	Level	4	0	0.980	1.00	5538
Ramp	1645	0.95	Level	4	0	0.980	1.00	1766
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.260 using Equation 0 (Exhibit 13-7)

V_{12} = 2531 pc/h

V_3 or V_{av34} 1088 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4708	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	2942	Exhibit 13-8	9400	No
V_R	1766	Exhibit 13-10	4200	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2531	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 12.5 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.522 (Exhibit 13-12)

S_R= 53.0 mph (Exhibit 13-12)

S_0= 71.0 mph (Exhibit 13-12)

S = 60.0 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Southbound
Agency or Company	Goal Associates	Junction	Northlake Blvd. SB Off-Ramp
Date Performed	7/18/2016	Jurisdiction	Palm Beach County
Analysis Time Period	AM Peak Period	Analysis Year	2040 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	2
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	500
Freeway Volume, V_F	7686
Ramp Volume, V_R	1965
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	40.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	7686	0.95	Level	4	0	0.980	1.00	8252
Ramp	1965	0.95	Level	3	0	0.985	1.00	2099
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.260 using Equation 0 (Exhibit 13-7)

V_{12} = 3270 pc/h

V_3 or V_{av34} 1666 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	6602	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	4503	Exhibit 13-8	9400	No
V_R	2099	Exhibit 13-10	4200	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3270	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 18.9 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.552 (Exhibit 13-12)

S_R= 52.3 mph (Exhibit 13-12)

S_0= 68.7 mph (Exhibit 13-12)

S = 59.5 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Northbound
Agency or Company	Goal Associates	Junction	PGA Blvd. NB-EB Off-Ramp
Date Performed	7/18/2016	Jurisdiction	Palm Beach County
Analysis Time Period	AM Peak Period	Analysis Year	2040 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	4
Ramp Number of Lanes, N	2
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	500
Freeway Volume, V_F	5316
Ramp Volume, V_R	2783
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	40.0

Downstream Adj Ramp

☑ Yes ☐ On

☐ No ☑ Off

L_{down} = 1050 ft

V_D = 850 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5316	0.95	Level	4	0	0.980	1.00	5708
Ramp	2783	0.95	Level	4	0	0.980	1.00	2988
UpStream								
DownStream	850	0.95	Level	4	0	0.980	1.00	913

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.260 using Equation 0 (Exhibit 13-7)

V_{12} = 3695 pc/h

V_3 or V_{av34} 1006 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	5708	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	2720	Exhibit 13-8	9400	No
V_R	2988	Exhibit 13-10	4200	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3695	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 22.5 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.632 (Exhibit 13-12)

S_R= 50.5 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 56.3 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Northbound
Agency or Company	Goal Associates	Junction	PGA Blvd. NB-WB Off-Ramp
Date Performed	7/18/2016	Jurisdiction	Palm Beach County
Analysis Time Period	AM Peak Period	Analysis Year	2040 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp

☑ Yes ☐ On

☐ No ☑ Off

L_{up} = 1050 ft

V_u = 2783 veh/h

Freeway Number of Lanes, N	4
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	500
Freeway Volume, V_F	2533
Ramp Volume, V_R	850
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	30.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	2533	0.95	Level	4	0	0.980	1.00	2720
Ramp	850	0.95	Level	4	0	0.980	1.00	913
UpStream	2783	0.95	Level	4	0	0.980	1.00	2988
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation 0 (Exhibit 13-7)

V_{12} = 1701 pc/h

V_3 or V_{av34} 509 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	2720	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	1807	Exhibit 13-8	9400	No
V_R	913	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	1701	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 14.4 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.575 (Exhibit 13-12)

S_R= 51.8 mph (Exhibit 13-12)

S_0= 71.3 mph (Exhibit 13-12)

S = 57.7 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Southbound
Agency or Company	Goal Associates	Junction	Blue Heron Blvd. SB Off-Ramp
Date Performed	7/18/2016	Jurisdiction	Palm Beach County
Analysis Time Period	PM Peak Period	Analysis Year	2040 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	2
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	500
Freeway Volume, V_F	5090
Ramp Volume, V_R	947
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	40.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5090	0.95	Level	4	0	0.980	1.00	5465
Ramp	947	0.95	Level	3	0	0.985	1.00	1012
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.260 using Equation 0 (Exhibit 13-7)

V_{12} = 2028 pc/h

V_3 or V_{av34} 1445 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4919	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	3907	Exhibit 13-8	9400	No
V_R	1012	Exhibit 13-10	4200	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2028	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 8.2 (pc/mi/ln)

LOS = A (Exhibit 13-2)

Speed Determination

D_s = 0.454 (Exhibit 13-12)

S_R= 54.6 mph (Exhibit 13-12)

S_0= 69.6 mph (Exhibit 13-12)

S = 62.5 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Northbound
Agency or Company	Goal Associates	Junction	Northlake Blvd. NB Off-Ramp
Date Performed	7/18/2016	Jurisdiction	Palm Beach County
Analysis Time Period	PM Peak Period	Analysis Year	2040 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	2
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	500
Freeway Volume, V_F	7390
Ramp Volume, V_R	1818
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	40.0

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	7390	0.95	Level	4	0	0.980	1.00	7935
Ramp	1818	0.95	Level	4	0	0.980	1.00	1952
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)
P_{FM} = using Equation (Exhibit 13-6)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)
LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)
S_R= mph (Exhibit 13-11)
S_0= mph (Exhibit 13-11)
S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)
P_{FD} = 0.260 using Equation 0 (Exhibit 13-7)
V_{12} = 3095 pc/h
V_3 or V_{av34} 1626 pc/h (Equation 13-14 or 13-17)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No
If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	6348	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	4396	Exhibit 13-8	9400	No
V_R	1952	Exhibit 13-10	4200	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3095	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 17.4 (pc/mi/ln)
LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.539 (Exhibit 13-12)
S_R= 52.6 mph (Exhibit 13-12)
S_0= 68.9 mph (Exhibit 13-12)
S = 59.8 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Southbound
Agency or Company	Goal Associates	Junction	Northlake Blvd. SB Off-Ramp
Date Performed	7/18/2016	Jurisdiction	Palm Beach County
Analysis Time Period	PM Peak Period	Analysis Year	2040 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{up} = ft
V_u = veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	2
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	500
Freeway Volume, V_F	5116
Ramp Volume, V_R	1807
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	40.0

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
L_{down} = ft
V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5116	0.95	Level	4	0	0.980	1.00	5493
Ramp	1807	0.95	Level	3	0	0.985	1.00	1931
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)
P_{FM} = using Equation (Exhibit 13-6)
V_{12} = pc/h
V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No
If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)
LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)
S_R= mph (Exhibit 13-11)
S_0= mph (Exhibit 13-11)
S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)
P_{FD} = 0.260 using Equation 0 (Exhibit 13-7)
V_{12} = 2714 pc/h
V_3 or V_{av34} 1115 pc/h (Equation 13-14 or 13-17)
Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No
Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No
If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	4944	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	3013	Exhibit 13-8	9400	No
V_R	1931	Exhibit 13-10	4200	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	2714	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 14.1 (pc/mi/ln)
LOS = B (Exhibit 13-2)

Speed Determination

D_s = 0.537 (Exhibit 13-12)
S_R= 52.7 mph (Exhibit 13-12)
S_0= 70.9 mph (Exhibit 13-12)
S = 59.6 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Northbound
Agency or Company	Goal Associates	Junction	PGA Blvd. NB-EB Off-Ramp
Date Performed	7/18/2016	Jurisdiction	Palm Beach County
Analysis Time Period	PM Peak Period	Analysis Year	2040 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{up} = ft

V_u = veh/h

Freeway Number of Lanes, N	4
Ramp Number of Lanes, N	2
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	500
Freeway Volume, V_F	7933
Ramp Volume, V_R	2342
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	40.0

Downstream Adj Ramp

☑ Yes ☐ On

☐ No ☑ Off

L_{down} = 1050 ft

V_D = 1025 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	7933	0.95	Level	4	0	0.980	1.00	8518
Ramp	2342	0.95	Level	4	0	0.980	1.00	2515
UpStream								
DownStream	1025	0.95	Level	4	0	0.980	1.00	1101

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.260 using Equation 0 (Exhibit 13-7)

V_{12} = 4076 pc/h

V_3 or V_{av34} 2221 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	8518	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	6003	Exhibit 13-8	9400	No
V_R	2515	Exhibit 13-10	4200	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	4076	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 25.8 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.589 (Exhibit 13-12)

S_R= 51.4 mph (Exhibit 13-12)

S_0= 66.5 mph (Exhibit 13-12)

S = 58.3 mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Northbound
Agency or Company	Goal Associates	Junction	PGA Blvd. NB-WB Off-Ramp
Date Performed	7/18/2016	Jurisdiction	Palm Beach County
Analysis Time Period	PM Peak Period	Analysis Year	2040 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp

☑ Yes ☐ On

☐ No ☑ Off

L_{up} = 1050 ft

V_u = 2342 veh/h

Freeway Number of Lanes, N	4
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	
Deceleration Lane Length L_D	500
Freeway Volume, V_F	5591
Ramp Volume, V_R	1025
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	30.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5591	0.95	Level	4	0	0.980	1.00	6003
Ramp	1025	0.95	Level	4	0	0.980	1.00	1101
UpStream	2342	0.95	Level	4	0	0.980	1.00	2515
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = using Equation (Exhibit 13-6)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}		Exhibit 13-8		

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

M_S = (Exibit 13-11)

S_R= mph (Exhibit 13-11)

S_0= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.436 using Equation 0 (Exhibit 13-7)

V_{12} = 3238 pc/h

V_3 or V_{av34} 1382 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☑ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F	6003	Exhibit 13-8	9400	No
$V_{FO} = V_F - V_R$	4902	Exhibit 13-8	9400	No
V_R	1101	Exhibit 13-10	2000	No

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}	3238	Exhibit 13-8	4400:All	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 27.6 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

D_s = 0.592 (Exhibit 13-12)

S_R= 51.4 mph (Exhibit 13-12)

S_0= 69.8 mph (Exhibit 13-12)

S = 58.5 mph (Exhibit 13-13)

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APPENDIX O

(Future No-Build Signalized Intersections Operational Analysis Results)

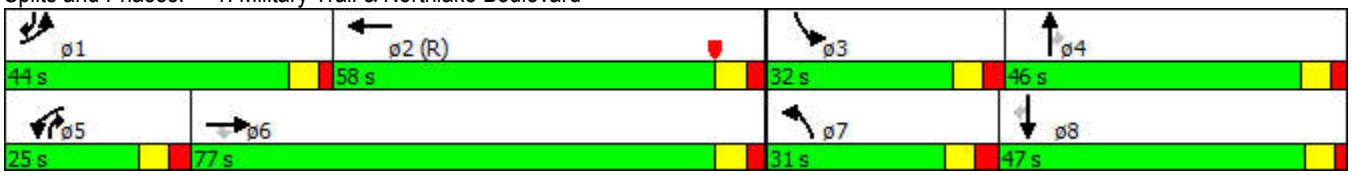
Northlake Boulevard

2020 Opening Year

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	649	1414	278	277	787	244	771	295	367	626	274
Future Volume (vph)	649	1414	278	277	787	244	771	295	367	626	274
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	1	6		5	2	7	4	5	3	8	1
Permitted Phases			6					4			8
Detector Phase	1	6	6	5	2	7	4	5	3	8	1
Switch Phase											
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	4.0	6.0	4.0	4.0	6.0	4.0
Minimum Split (s)	22.0	48.0	48.0	11.0	52.0	11.0	43.5	11.0	21.0	47.0	22.0
Total Split (s)	44.0	77.0	77.0	25.0	58.0	31.0	46.0	25.0	32.0	47.0	44.0
Total Split (%)	24.4%	42.8%	42.8%	13.9%	32.2%	17.2%	25.6%	13.9%	17.8%	26.1%	24.4%
Yellow Time (s)	4.0	4.5	4.5	4.0	4.5	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.5	2.5	3.0	2.5	3.0	2.5	3.0	3.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	7.0	7.0	7.0	7.0	7.0	6.5	7.0	7.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?											
Recall Mode	None	Max	Max	None	C-Max	Max	None	None	None	None	None
Act Effct Green (s)	38.9	74.7	74.7	18.8	55.6	24.0	35.3	60.6	23.7	35.5	80.4
Actuated g/C Ratio	0.22	0.42	0.42	0.10	0.31	0.13	0.20	0.34	0.13	0.20	0.45
v/c Ratio	0.92	0.71	0.42	0.82	0.79	0.60	0.83	0.52	0.86	0.66	0.38
Control Delay	87.1	46.6	30.2	107.5	50.8	80.0	77.4	33.3	95.4	69.5	20.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	87.1	46.6	30.2	107.5	50.8	80.0	77.4	33.3	95.4	69.5	20.5
LOS	F	D	C	F	D	E	E	C	F	E	C
Approach Delay		55.9			62.4		67.9			66.4	
Approach LOS		E			E		E			E	

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 129 (72%), Referenced to phase 2:WBT, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 61.9	Intersection LOS: E
Intersection Capacity Utilization 87.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: Military Trail & Northlake Boulevard



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	649	1414	278	277	787	293	244	771	295	367	626	274
Future Volume (vph)	649	1414	278	277	787	293	244	771	295	367	626	274
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	7.0	7.0	7.0	7.0		7.0	6.5	7.0	7.0	6.0	6.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91		0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1568	3400	4682		3213	4988	1568	3400	5085	1553
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1568	3400	4682		3213	4988	1568	3400	5085	1553
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	683	1488	293	292	828	308	257	812	311	386	659	288
RTOR Reduction (vph)	0	0	44	0	0	0	0	0	75	0	0	65
Lane Group Flow (vph)	683	1488	249	292	1136	0	257	812	236	386	659	223
Heavy Vehicles (%)	2%	2%	3%	3%	6%	7%	9%	4%	3%	3%	2%	4%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	1	6		5	2		7	4	5	3	8	1
Permitted Phases			6						4			8
Actuated Green, G (s)	38.9	74.7	74.7	18.8	55.6		24.0	35.3	54.1	23.7	35.5	74.4
Effective Green, g (s)	38.9	74.7	74.7	18.8	55.6		24.0	35.3	54.1	23.7	35.5	74.4
Actuated g/C Ratio	0.22	0.42	0.42	0.10	0.31		0.13	0.20	0.30	0.13	0.20	0.41
Clearance Time (s)	6.0	7.0	7.0	7.0	7.0		7.0	6.5	7.0	7.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	741	2110	650	355	1446		428	978	471	447	1002	693
v/s Ratio Prot	c0.20	0.29		0.09	c0.24		0.08	c0.16	0.05	c0.11	0.13	0.07
v/s Ratio Perm			0.16						0.10			0.07
v/c Ratio	0.92	0.71	0.38	0.82	0.79		0.60	0.83	0.50	0.86	0.66	0.32
Uniform Delay, d1	69.1	43.5	36.6	79.0	56.8		73.5	69.5	51.8	76.6	66.6	35.7
Progression Factor	1.00	1.00	1.00	1.15	0.81		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	16.9	2.0	1.7	13.4	4.1		6.1	6.1	0.8	15.7	1.6	0.3
Delay (s)	85.9	45.6	38.3	104.2	49.8		79.6	75.5	52.7	92.3	68.2	36.0
Level of Service	F	D	D	F	D		E	E	D	F	E	D
Approach Delay (s)		55.9			61.0			71.1			68.2	
Approach LOS		E			E			E			E	

Intersection Summary			
HCM 2000 Control Delay	62.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	27.5
Intersection Capacity Utilization	87.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	649	1414	278	277	787	293	244	771	295	367	626	274
Future Volume (veh/h)	649	1414	278	277	787	293	244	771	295	367	626	274
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1845	1845	1788	1900	1743	1827	1845	1845	1863	1827
Adj Flow Rate, veh/h	683	1488	293	292	828	308	257	812	311	386	659	288
Adj No. of Lanes	2	3	1	2	3	0	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	3	3	6	6	9	4	3	3	2	4
Cap, veh/h	717	2114	652	325	1083	400	429	1052	480	426	1031	639
Arrive On Green	0.21	0.42	0.42	0.19	0.62	0.62	0.13	0.21	0.21	0.13	0.20	0.20
Sat Flow, veh/h	3442	5085	1568	3408	3513	1299	3221	4988	1568	3408	5085	1553
Grp Volume(v), veh/h	683	1488	293	292	767	369	257	812	311	386	659	288
Grp Sat Flow(s),veh/h/ln	1721	1695	1568	1704	1627	1559	1610	1663	1568	1704	1695	1553
Q Serve(g_s), s	35.3	43.5	24.2	15.1	30.8	31.1	13.5	27.6	30.9	20.1	21.4	24.1
Cycle Q Clear(g_c), s	35.3	43.5	24.2	15.1	30.8	31.1	13.5	27.6	30.9	20.1	21.4	24.1
Prop In Lane	1.00		1.00	1.00		0.83	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	717	2114	652	325	1003	480	429	1052	480	426	1031	639
V/C Ratio(X)	0.95	0.70	0.45	0.90	0.76	0.77	0.60	0.77	0.65	0.91	0.64	0.45
Avail Cap(c_a), veh/h	727	2114	652	341	1003	480	429	1094	494	473	1158	677
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.92	0.92	0.92	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.4	43.4	37.8	72.0	29.8	29.8	73.5	66.9	54.0	77.7	65.7	38.3
Incr Delay (d2), s/veh	22.3	2.0	2.2	23.1	5.1	10.4	6.0	3.3	2.8	19.6	1.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	19.0	20.8	10.8	8.1	14.3	14.5	6.4	13.0	13.8	10.7	10.1	10.4
LnGrp Delay(d),s/veh	92.6	45.4	40.0	95.1	34.9	40.2	79.5	70.3	56.9	97.3	66.7	38.8
LnGrp LOS	F	D	D	F	C	D	E	E	E	F	E	D
Approach Vol, veh/h		2464			1428			1380			1333	
Approach Delay, s/veh		57.9			48.6			69.0			69.5	
Approach LOS		E			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	43.5	62.5	29.5	44.5	24.2	81.8	31.0	43.0
Change Period (Y+Rc), s	6.0	7.0	7.0	6.5	7.0	7.0	7.0	* 6.5
Max Green Setting (Gmax), s	38.0	51.0	25.0	39.5	18.0	70.0	24.0	* 41
Max Q Clear Time (g_c+I1), s	37.3	33.1	22.1	32.9	17.1	45.5	15.5	26.1
Green Ext Time (p_c), s	0.2	15.1	0.4	5.1	0.1	19.7	0.5	9.7

Intersection Summary	
HCM 2010 Ctrl Delay	60.5
HCM 2010 LOS	E

Notes

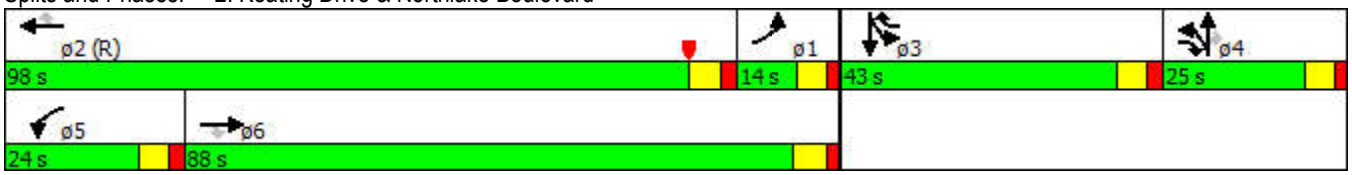
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT
Lane Configurations										
Traffic Volume (vph)	24	2093	81	109	1368	64	50	7	95	11
Future Volume (vph)	24	2093	81	109	1368	64	50	7	95	11
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Split	NA	Perm	NA
Protected Phases	1	6	4	5	2	3	4	4		3
Permitted Phases			6			2			4	
Detector Phase	1	6	4	5	2	3	4	4	4	3
Switch Phase										
Minimum Initial (s)	4.0	20.0	5.0	4.0	20.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	45.0	11.0	22.0	39.5	43.0	11.0	11.0	11.0	43.0
Total Split (s)	14.0	88.0	25.0	24.0	98.0	43.0	25.0	25.0	25.0	43.0
Total Split (%)	7.8%	48.9%	13.9%	13.3%	54.4%	23.9%	13.9%	13.9%	13.9%	23.9%
Yellow Time (s)	4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.5	6.0	6.0	6.5	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead
Lead-Lag Optimize?			Yes			Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	C-Max	None	None	None	None	None
Act Effct Green (s)	7.3	111.5	122.8	17.1	126.2	145.2	10.8	10.8	10.8	16.1
Actuated g/C Ratio	0.04	0.62	0.68	0.10	0.70	0.81	0.06	0.06	0.06	0.09
v/c Ratio	0.36	0.70	0.08	0.69	0.41	0.05	0.30	0.30	0.68	1.00dl
Control Delay	77.3	16.7	2.6	113.7	7.8	1.2	86.7	86.3	58.3	90.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.3	16.7	2.6	113.7	7.9	1.2	86.7	86.3	58.3	90.2
LOS	E	B	A	F	A	A	F	F	E	F
Approach Delay		16.8			15.1			68.9		90.2
Approach LOS		B			B			E		F

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 133 (74%), Referenced to phase 2:WBT, Start of Yellow
Natural Cycle: 135
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 21.5 — Intersection LOS: C
Intersection Capacity Utilization 76.9% — ICU Level of Service D
Analysis Period (min) 15

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 2: Keating Drive & Northlake Boulevard



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	2093	81	109	1368	64	50	7	95	151	11	28
Future Volume (vph)	24	2093	81	109	1368	64	50	7	95	151	11	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.5	6.0	6.0	6.5	6.0	6.0	6.0	6.0		6.0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95	1.00		0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00		0.96	
Satd. Flow (prot)	1752	5085	1599	1752	4988	1553	1665	1699	1568		3346	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.96	1.00		0.96	
Satd. Flow (perm)	1752	5085	1599	1752	4988	1553	1665	1699	1568		3346	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	25	2203	85	115	1440	67	53	7	100	159	12	29
RTOR Reduction (vph)	0	0	7	0	0	2	0	0	55	0	0	0
Lane Group Flow (vph)	25	2203	78	115	1440	65	30	30	45	0	200	0
Heavy Vehicles (%)	3%	2%	1%	3%	4%	4%	3%	0%	3%	1%	2%	4%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Split	NA	Perm	Split	NA	
Protected Phases	1	6	4	5	2	3	4	4		3	3	
Permitted Phases			6			2			4			
Actuated Green, G (s)	4.8	111.5	122.3	17.1	123.8	139.9	10.8	10.8	10.8		16.1	
Effective Green, g (s)	4.8	111.5	122.3	17.1	123.8	139.9	10.8	10.8	10.8		16.1	
Actuated g/C Ratio	0.03	0.62	0.68	0.10	0.69	0.78	0.06	0.06	0.06		0.09	
Clearance Time (s)	6.0	6.5	6.0	6.0	6.5	6.0	6.0	6.0	6.0		6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	46	3149	1086	166	3430	1207	99	101	94		299	
v/s Ratio Prot	0.01	c0.43	0.00	c0.07	0.29	0.00	0.02	0.02			c0.06	
v/s Ratio Perm			0.04			0.04			c0.03			
v/c Ratio	0.54	0.70	0.07	0.69	0.42	0.05	0.30	0.30	0.48		1.00dl	
Uniform Delay, d1	86.5	23.0	9.7	78.9	12.3	4.7	81.0	81.0	81.9		79.4	
Progression Factor	0.80	0.63	0.59	1.21	0.59	0.43	1.00	1.00	1.00		1.00	
Incremental Delay, d2	9.4	0.5	0.0	10.7	0.3	0.0	1.7	1.6	3.9		5.6	
Delay (s)	78.3	15.0	5.7	105.9	7.6	2.0	82.7	82.6	85.8		84.9	
Level of Service	E	B	A	F	A	A	F	F	F		F	
Approach Delay (s)		15.3			14.3			84.6			84.9	
Approach LOS		B			B			F			F	

Intersection Summary			
HCM 2000 Control Delay	20.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	24.5
Intersection Capacity Utilization	76.9%	ICU Level of Service	D
Analysis Period (min)	15		

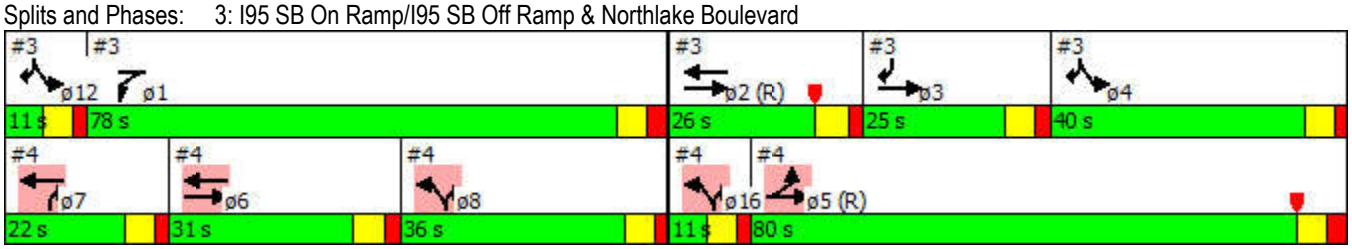
dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR	ø2	ø3	ø4	ø5	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	1783	683	894	1207	690	442						
Future Volume (vph)	1783	683	894	1207	690	442						
Turn Type	NA	Free	Prot	NA	Prot	custom						
Protected Phases	3 2		1	1 2	4 12	4 3 12	2	3	4	5	6	7
Permitted Phases		Free				4						
Detector Phase	3 2		1	1 2	4 12	4 3 12						
Switch Phase												
Minimum Initial (s)			4.0				4.0	5.0	6.0	4.0	4.0	10.0
Minimum Split (s)			23.0				22.5	22.5	12.0	23.0	22.5	22.0
Total Split (s)			78.0				26.0	25.0	40.0	80.0	31.0	22.0
Total Split (%)			43.3%				14%	14%	22%	44%	17%	12%
Yellow Time (s)			4.0				4.5	4.0	4.0	4.0	4.5	4.0
All-Red Time (s)			3.0				2.0	2.0	2.0	3.0	2.0	2.0
Lost Time Adjust (s)			0.0									
Total Lost Time (s)			7.0									
Lead/Lag			Lag				Lead	Lag		Lag	Lag	Lead
Lead-Lag Optimize?								Yes			Yes	Yes
Recall Mode			None				C-Max	None	None	C-Max	Max	None
Act Effct Green (s)	45.0	180.0	71.0	97.0	45.0	70.0						
Actuated g/C Ratio	0.25	1.00	0.39	0.54	0.25	0.39						
v/c Ratio	0.86	0.45	0.69	0.48	0.85	0.43						
Control Delay	47.5	0.7	8.1	0.6	74.5	42.0						
Queue Delay	3.8	0.0	50.6	0.7	0.0	0.0						
Total Delay	51.3	0.7	58.7	1.4	74.5	42.0						
LOS	D	A	E	A	E	D						
Approach Delay	37.3			25.7								
Approach LOS	D			C								

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 132 (73%), Referenced to phase 2:EBWB and 5:, Start of Yellow
Natural Cycle: 135
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.44
Intersection Signal Delay: 37.9 — Intersection LOS: D
Intersection Capacity Utilization 90.2% — ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 3: I95 SB On Ramp/I95 SB Off Ramp & Northlake Boulevard



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	5.0	5.0
Minimum Split (s)	12.0	11.0	11.0
Total Split (s)	36.0	11.0	11.0
Total Split (%)	20%	6%	6%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	Lead
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

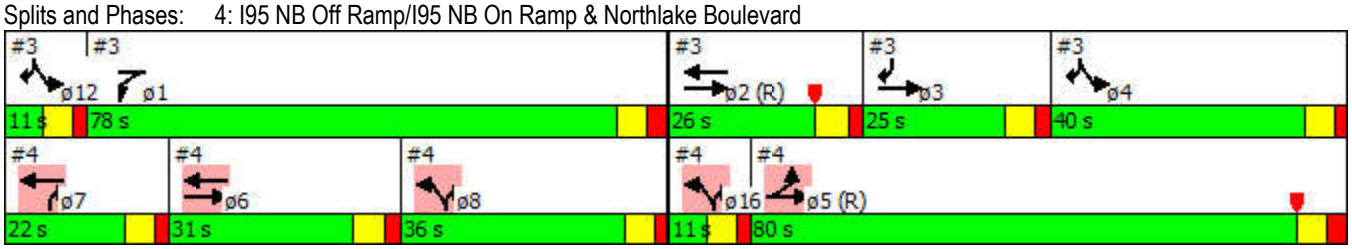
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1783	683	894	1207	0	0	0	0	690	0	442
Future Volume (vph)	0	1783	683	894	1207	0	0	0	0	690	0	442
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	7.0	7.0					6.0		6.0
Lane Util. Factor		*0.95	1.00	0.97	0.91					0.97		0.88
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		8762	1599	3433	4940					3433		2760
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		8762	1599	3433	4940					3433		2760
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1877	719	941	1271	0	0	0	0	726	0	465
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1877	719	941	1271	0	0	0	0	726	0	465
Heavy Vehicles (%)	0%	3%	1%	2%	5%	0%	0%	0%	0%	2%	0%	3%
Turn Type		NA	Free	Prot	NA					Prot		custom
Protected Phases		3 2		1	1 2					4 12		4 3 12
Permitted Phases			Free									4
Actuated Green, G (s)		45.0	180.0	71.0	97.5					45.0		70.0
Effective Green, g (s)		38.5	180.0	71.0	97.5					45.0		70.0
Actuated g/C Ratio		0.21	1.00	0.39	0.54					0.25		0.39
Clearance Time (s)				7.0								
Vehicle Extension (s)				3.0								
Lane Grp Cap (vph)		1874	1599	1354	2675					858		1073
v/s Ratio Prot		c0.21		c0.27	0.26					c0.21		0.17
v/s Ratio Perm			0.45									
v/c Ratio		1.00	0.45	0.69	0.48					0.85		0.43
Uniform Delay, d1		70.8	0.0	45.5	25.5					64.2		40.4
Progression Factor		0.68	1.00	0.16	0.01					1.00		1.00
Incremental Delay, d2		18.7	0.7	0.5	0.1					8.0		0.4
Delay (s)		66.7	0.7	7.7	0.4					72.2		40.8
Level of Service		E	A	A	A					E		D
Approach Delay (s)		48.5			3.5			0.0			60.0	
Approach LOS		D			A			A			E	

Intersection Summary			
HCM 2000 Control Delay	34.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	37.0
Intersection Capacity Utilization	90.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR	ø1	ø2	ø3	ø4	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	748	1726	1599	473	503	1089						
Future Volume (vph)	748	1726	1599	473	503	1089						
Turn Type	Prot	NA	NA	Free	Prot	custom						
Protected Phases	5	5 6	6 7		8 16	8 7 16	1	2	3	4	6	7
Permitted Phases				Free								
Detector Phase	5	5 6	6 7		8 16	8 7 16						
Switch Phase												
Minimum Initial (s)	4.0						4.0	4.0	5.0	6.0	4.0	10.0
Minimum Split (s)	23.0						23.0	22.5	22.5	12.0	22.5	22.0
Total Split (s)	80.0						78.0	26.0	25.0	40.0	31.0	22.0
Total Split (%)	44.4%						43%	14%	14%	22%	17%	12%
Yellow Time (s)	4.0						4.0	4.5	4.0	4.0	4.5	4.0
All-Red Time (s)	3.0						3.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0											
Total Lost Time (s)	7.0											
Lead/Lag	Lag						Lag	Lead	Lag		Lag	Lead
Lead-Lag Optimize?									Yes		Yes	Yes
Recall Mode	C-Max						None	C-Max	None	None	Max	None
Act Effct Green (s)	73.0	97.0	46.5	180.0	41.0	57.0						
Actuated g/C Ratio	0.41	0.54	0.26	1.00	0.23	0.32						
v/c Ratio	0.63	0.74	0.97	0.36	0.77	1.44						
Control Delay	9.5	8.2	64.5	0.8	73.5	243.9						
Queue Delay	51.6	0.9	28.4	0.0	0.0	0.0						
Total Delay	61.2	9.1	92.9	0.8	73.5	243.9						
LOS	E	A	F	A	E	F						
Approach Delay		24.8	71.8									
Approach LOS		C	E									

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 132 (73%), Referenced to phase 2:EBWB and 5:, Start of Yellow	
Natural Cycle: 135	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.44	
Intersection Signal Delay: 83.5	Intersection LOS: F
Intersection Capacity Utilization 90.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 4: I95 NB Off Ramp/I95 NB On Ramp & Northlake Boulevard



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	5.0	5.0
Minimum Split (s)	12.0	11.0	11.0
Total Split (s)	36.0	11.0	11.0
Total Split (%)	20%	6%	6%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	Lead
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	748	1726	0	0	1599	473	503	0	1089	0	0	0
Future Volume (vph)	748	1726	0	0	1599	473	503	0	1089	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0			6.5	4.0	6.0		6.0			
Lane Util. Factor	0.97	0.91			0.81	1.00	0.97		0.88			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	3060	4532			6724	1384	3030		2508			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3060	4532			6724	1384	3030		2508			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	787	1817	0	0	1683	498	529	0	1146	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	787	1817	0	0	1683	498	529	0	1146	0	0	0
Heavy Vehicles (%)	3%	3%	0%	0%	3%	5%	4%	0%	2%	0%	0%	0%
Turn Type	Prot	NA			NA	Free	Prot		custom			
Protected Phases	5	5 6			6 7		8 16		8 7 16			
Permitted Phases						Free						
Actuated Green, G (s)	73.0	97.5			46.5	180.0	41.0		57.0			
Effective Green, g (s)	73.0	97.5			40.5	180.0	41.0		57.0			
Actuated g/C Ratio	0.41	0.54			0.22	1.00	0.23		0.32			
Clearance Time (s)	7.0											
Vehicle Extension (s)	3.0											
Lane Grp Cap (vph)	1241	2454			1512	1384	690		794			
v/s Ratio Prot	0.26	c0.40			c0.25		0.17		c0.46			
v/s Ratio Perm						0.36						
v/c Ratio	0.63	0.74			1.11	0.36	0.77		1.44			
Uniform Delay, d1	42.8	31.6			69.8	0.0	65.0		61.5			
Progression Factor	0.19	0.41			0.75	1.00	1.00		1.00			
Incremental Delay, d2	1.2	1.0			60.5	0.7	5.4		206.6			
Delay (s)	9.4	13.9			112.7	0.7	70.4		268.1			
Level of Service	A	B			F	A	E		F			
Approach Delay (s)		12.6			87.2			205.7			0.0	
Approach LOS		B			F			F			A	

Intersection Summary			
HCM 2000 Control Delay	87.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	37.0
Intersection Capacity Utilization	90.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	SBR
Lane Configurations					
Traffic Volume (vph)	43	2772	2020	56	52
Future Volume (vph)	43	2772	2020	56	52
Turn Type	Prot	NA	NA	Perm	Perm
Protected Phases	1	6	2		
Permitted Phases				2	6
Detector Phase	1	6	2	2	6
Switch Phase					
Minimum Initial (s)	4.0	20.0	20.0	20.0	20.0
Minimum Split (s)	12.0	26.5	27.5	27.5	26.5
Total Split (s)	32.0	180.0	148.0	148.0	180.0
Total Split (%)	17.8%	100.0%	82.2%	82.2%	100.0%
Yellow Time (s)	4.0	4.5	4.5	4.5	4.5
All-Red Time (s)	4.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0	6.5	6.5	6.5	6.5
Lead/Lag	Lag		Lead	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	20.4	180.0	149.2	149.2	180.0
Actuated g/C Ratio	0.11	1.00	0.83	0.83	1.00
v/c Ratio	0.22	0.45	0.30	0.04	0.03
Control Delay	76.4	0.0	0.4	0.4	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	76.4	0.0	0.4	0.4	0.0
LOS	E	A	A	A	A
Approach Delay		1.2	0.4		
Approach LOS		A	A		

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 93 (52%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.45	
Intersection Signal Delay: 0.9	Intersection LOS: A
Intersection Capacity Utilization 57.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 5: Northlake Boulevard & Roan Lane

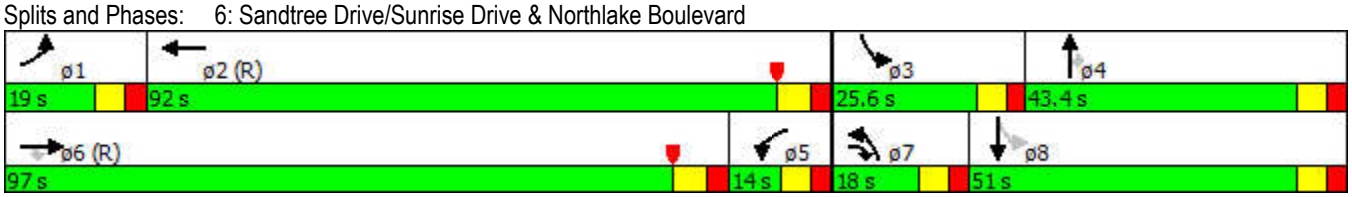
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	2772	0	0	2020	56	0	0	0	0	0	52
Future Volume (vph)	43	2772	0	0	2020	56	0	0	0	0	0	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	6.5			6.5	6.5						6.5
Lane Util. Factor	1.00	0.86			0.76	1.00						1.00
Frt	1.00	1.00			1.00	0.85						0.86
Flt Protected	0.95	1.00			1.00	1.00						1.00
Satd. Flow (prot)	1787	6471			8412	1615						1644
Flt Permitted	0.95	1.00			1.00	1.00						1.00
Satd. Flow (perm)	1787	6471			8412	1615						1644
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	45	2918	0	0	2126	59	0	0	0	0	0	55
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	45	2918	0	0	2126	59	0	0	0	0	0	55
Heavy Vehicles (%)	1%	1%	1%	0%	3%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA			NA	Perm						Perm
Protected Phases	1	6			2							
Permitted Phases						2						6
Actuated Green, G (s)	19.2	180.0			146.3	146.3						180.0
Effective Green, g (s)	19.2	180.0			146.3	146.3						180.0
Actuated g/C Ratio	0.11	1.00			0.81	0.81						1.00
Clearance Time (s)	8.0	6.5			6.5	6.5						6.5
Vehicle Extension (s)	3.0	3.0			3.0	3.0						3.0
Lane Grp Cap (vph)	190	6471			6837	1312						1644
v/s Ratio Prot	0.03	c0.45			0.25							
v/s Ratio Perm						0.04						0.03
v/c Ratio	0.24	0.45			0.31	0.04						0.03
Uniform Delay, d1	73.7	0.0			4.2	3.3						0.0
Progression Factor	1.08	1.00			0.07	0.08						1.00
Incremental Delay, d2	0.1	0.0			0.1	0.0						0.0
Delay (s)	79.8	0.0			0.4	0.3						0.0
Level of Service	E	A			A	A						A
Approach Delay (s)		1.2			0.4			0.0			0.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	0.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	99	2265	177	131	1640	237	10	133	168	20
Future Volume (vph)	99	2265	177	131	1640	237	10	133	168	20
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Perm	pm+pt	NA
Protected Phases	1	6	7	5	2	7	4		3	8
Permitted Phases			6					4	8	
Detector Phase	1	6	7	5	2	7	4	4	3	8
Switch Phase										
Minimum Initial (s)	4.0	20.0	4.0	4.0	20.0	4.0	6.0	6.0	4.0	6.0
Minimum Split (s)	12.5	38.5	12.5	12.5	32.5	12.5	42.0	42.0	12.5	51.0
Total Split (s)	19.0	97.0	18.0	14.0	92.0	18.0	43.4	43.4	25.6	51.0
Total Split (%)	10.6%	53.9%	10.0%	7.8%	51.1%	10.0%	24.1%	24.1%	14.2%	28.3%
Yellow Time (s)	4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	2.5	3.0	3.0	2.5	3.0	3.0	2.5	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.5	6.5	7.0	7.5	6.5	7.0	7.0	6.5	7.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?										
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	None	None
Act Effct Green (s)	17.6	105.9	118.4	7.0	95.3	11.5	21.3	21.3	45.3	27.6
Actuated g/C Ratio	0.10	0.59	0.66	0.04	0.53	0.06	0.12	0.12	0.25	0.15
v/c Ratio	0.63	0.80	0.18	1.03	0.68	1.16	0.05	0.75	0.51	0.40
Control Delay	102.0	22.8	2.8	165.6	34.0	179.3	67.3	99.8	59.4	71.9
Queue Delay	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	102.0	23.0	2.8	165.6	34.0	179.3	67.3	99.8	59.4	71.9
LOS	F	C	A	F	C	F	E	F	E	E
Approach Delay		24.7			43.5		148.4			63.8
Approach LOS		C			D		F			E

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 23 (13%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.16	
Intersection Signal Delay: 42.9	Intersection LOS: D
Intersection Capacity Utilization 81.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 6: Sandtree Drive/Sunrise Drive & Northlake Boulevard



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	99	2265	177	131	1640	50	237	10	133	168	20	70
Future Volume (vph)	99	2265	177	131	1640	50	237	10	133	168	20	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.5	6.5	7.0	7.5		6.5	7.0	7.0	6.5	7.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91		0.97	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1703	5085	1524	3467	4962		3367	1900	1583	1805	1557	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.58	1.00	
Satd. Flow (perm)	1703	5085	1524	3467	4962		3367	1900	1583	1096	1557	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	104	2384	186	138	1726	53	249	11	140	177	21	74
RTOR Reduction (vph)	0	0	22	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	104	2384	164	138	1779	0	249	11	140	177	95	0
Heavy Vehicles (%)	6%	2%	6%	1%	4%	6%	4%	0%	2%	0%	0%	10%
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	Perm	pm+pt	NA	
Protected Phases	1	6	7	5	2		7	4		3	8	
Permitted Phases			6						4	8		
Actuated Green, G (s)	17.6	105.8	117.3	7.0	95.2		11.5	21.3	21.3	45.6	27.7	
Effective Green, g (s)	17.6	105.8	117.3	7.0	95.2		11.5	21.3	21.3	45.6	27.7	
Actuated g/C Ratio	0.10	0.59	0.65	0.04	0.53		0.06	0.12	0.12	0.25	0.15	
Clearance Time (s)	7.0	7.5	6.5	7.0	7.5		6.5	7.0	7.0	6.5	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	166	2988	993	134	2624		215	224	187	348	239	
v/s Ratio Prot	0.06	c0.47	0.01	c0.04	0.36		c0.07	0.01		c0.05	0.06	
v/s Ratio Perm			0.10						c0.09	0.08		
v/c Ratio	0.63	0.80	0.16	1.03	0.68		1.16	0.05	0.75	0.51	0.40	
Uniform Delay, d1	78.0	28.8	12.2	86.5	31.1		84.2	70.4	76.8	55.8	68.6	
Progression Factor	1.11	0.69	0.50	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.5	2.1	0.1	85.9	1.4		110.6	0.1	15.1	1.2	1.1	
Delay (s)	93.4	22.0	6.2	172.4	32.6		194.9	70.5	91.8	56.9	69.7	
Level of Service	F	C	A	F	C		F	E	F	E	E	
Approach Delay (s)		23.7			42.6			155.4			61.4	
Approach LOS		C			D			F			E	

Intersection Summary			
HCM 2000 Control Delay	42.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	81.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	2265	177	131	1640	50	237	10	133	168	20	70
Future Volume (veh/h)	99	2265	177	131	1640	50	237	10	133	168	20	70
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1863	1792	1881	1826	1900	1827	1900	1863	1900	1763	1900
Adj Flow Rate, veh/h	104	2384	186	138	1726	53	249	11	140	177	21	74
Adj No. of Lanes	1	3	1	2	3	0	2	1	1	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	6	2	6	1	4	4	4	0	2	0	0	0
Cap, veh/h	114	2529	855	635	3061	94	216	115	96	292	34	118
Arrive On Green	0.13	0.99	0.99	0.18	0.62	0.62	0.06	0.06	0.06	0.10	0.10	0.10
Sat Flow, veh/h	1707	5085	1524	3476	4970	153	3375	1900	1583	1810	343	1207
Grp Volume(v), veh/h	104	2384	186	138	1154	625	249	11	140	177	0	95
Grp Sat Flow(s),veh/h/ln	1707	1695	1524	1738	1662	1799	1688	1900	1583	1810	0	1550
Q Serve(g_s), s	10.8	7.5	0.0	6.1	36.8	36.8	11.5	1.0	7.9	16.1	0.0	10.6
Cycle Q Clear(g_c), s	10.8	7.5	0.0	6.1	36.8	36.8	11.5	1.0	7.9	16.1	0.0	10.6
Prop In Lane	1.00		1.00	1.00		0.08	1.00		1.00	1.00		0.78
Lane Grp Cap(c), veh/h	114	2529	855	635	2047	1108	216	115	96	292	0	152
V/C Ratio(X)	0.91	0.94	0.22	0.22	0.56	0.56	1.15	0.10	1.46	0.61	0.00	0.63
Avail Cap(c_a), veh/h	114	2529	855	635	2047	1108	216	384	320	302	0	379
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.89	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	77.5	0.3	0.1	62.6	20.3	20.3	84.3	79.9	43.8	68.3	0.0	78.0
Incr Delay (d2), s/veh	54.1	8.0	0.5	0.2	1.1	2.1	109.3	0.4	217.0	3.3	0.0	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	2.1	0.1	2.9	17.1	18.9	8.6	0.5	9.2	8.3	0.0	4.7
LnGrp Delay(d),s/veh	131.6	8.3	0.6	62.8	21.5	22.4	193.5	80.2	260.8	71.5	0.0	82.2
LnGrp LOS	F	A	A	E	C	C	F	F	F	E		F
Approach Vol, veh/h		2674			1917			400			272	
Approach Delay, s/veh		12.5			24.7			213.9			75.3	
Approach LOS		B			C			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	118.4	24.7	17.9	40.4	97.0	18.0	24.6
Change Period (Y+Rc), s	7.0	7.5	6.5	7.0	7.5	* 7.5	6.5	7.0
Max Green Setting (Gmax), s	12.0	84.5	19.1	36.4	7.0	* 90	11.5	44.0
Max Q Clear Time (g_c+I1), s	12.8	38.8	18.1	9.9	8.1	9.5	13.5	12.6
Green Ext Time (p_c), s	0.0	18.6	0.0	1.0	0.0	43.1	0.0	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	35.5
HCM 2010 LOS	D

Notes

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	431	1065	210	342	1416	414	713	391	430	842	677
Future Volume (vph)	431	1065	210	342	1416	414	713	391	430	842	677
Turn Type	Prot	NA	Perm	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	1	6		5	2	7	4	5	3	8	1
Permitted Phases			6					4			8
Detector Phase	1	6	6	5	2	7	4	5	3	8	1
Switch Phase											
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	4.0	6.0	4.0	4.0	6.0	4.0
Minimum Split (s)	22.0	48.0	48.0	11.0	52.0	11.0	43.5	11.0	21.0	47.0	22.0
Total Split (s)	33.0	70.0	70.0	35.0	72.0	28.0	47.0	35.0	28.0	47.0	33.0
Total Split (%)	18.3%	38.9%	38.9%	19.4%	40.0%	15.6%	26.1%	19.4%	15.6%	26.1%	18.3%
Yellow Time (s)	4.0	4.5	4.5	4.0	4.5	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.5	2.5	3.0	2.5	3.0	2.5	3.0	3.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	7.0	7.0	7.0	7.0	7.0	6.5	7.0	7.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?											
Recall Mode	None	Max	Max	None	C-Max	Max	None	None	None	None	None
Act Effct Green (s)	30.5	70.3	70.3	24.2	65.0	21.0	37.0	67.7	21.0	37.5	74.0
Actuated g/C Ratio	0.17	0.39	0.39	0.13	0.36	0.12	0.21	0.38	0.12	0.21	0.41
v/c Ratio	0.78	0.56	0.34	0.79	1.09	1.17	0.73	0.63	1.14	0.84	1.01
Control Delay	81.7	45.2	27.5	96.8	80.7	165.0	71.3	36.9	157.2	76.1	80.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.7	45.2	27.5	96.8	80.7	165.0	71.3	36.9	157.2	76.1	80.8
LOS	F	D	C	F	F	F	E	D	F	E	F
Approach Delay		52.3			83.3		88.0			95.6	
Approach LOS		D			F		F			F	

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 102 (57%), Referenced to phase 2:WBT, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.17	
Intersection Signal Delay: 80.3	Intersection LOS: F
Intersection Capacity Utilization 105.6%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 1: Military Trail & Northlake Boulevard

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	431	1065	210	342	1416	350	414	713	391	430	842	677
Future Volume (vph)	431	1065	210	342	1416	350	414	713	391	430	842	677
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	7.0	7.0	7.0	7.0		7.0	6.5	7.0	7.0	6.0	6.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91		0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1568	3400	4739		3213	4988	1568	3400	5085	1553
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1568	3400	4739		3213	4988	1568	3400	5085	1553
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	454	1121	221	360	1491	368	436	751	412	453	886	713
RTOR Reduction (vph)	0	0	46	0	0	0	0	0	71	0	0	68
Lane Group Flow (vph)	454	1121	175	360	1859	0	436	751	341	453	886	645
Heavy Vehicles (%)	2%	2%	3%	3%	6%	7%	9%	4%	3%	3%	2%	4%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	1	6		5	2		7	4	5	3	8	1
Permitted Phases			6						4			8
Actuated Green, G (s)	30.5	70.3	70.3	24.2	65.0		21.0	37.0	61.2	21.0	37.5	68.0
Effective Green, g (s)	30.5	70.3	70.3	24.2	65.0		21.0	37.0	61.2	21.0	37.5	68.0
Actuated g/C Ratio	0.17	0.39	0.39	0.13	0.36		0.12	0.21	0.34	0.12	0.21	0.38
Clearance Time (s)	6.0	7.0	7.0	7.0	7.0		7.0	6.5	7.0	7.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	581	1985	612	457	1711		374	1025	533	396	1059	638
v/s Ratio Prot	0.13	c0.22		0.11	c0.39		c0.14	0.15	0.09	0.13	0.17	c0.17
v/s Ratio Perm			0.11						0.13			0.24
v/c Ratio	0.78	0.56	0.29	0.79	1.09		1.17	0.73	0.64	1.14	0.84	1.01
Uniform Delay, d1	71.6	42.9	37.6	75.4	57.5		79.5	66.9	50.1	79.5	68.3	56.0
Progression Factor	1.00	1.00	1.00	1.17	0.61		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.8	1.2	1.2	6.1	46.5		99.9	2.7	2.6	90.6	5.9	38.2
Delay (s)	78.3	44.1	38.8	94.2	81.3		179.4	69.6	52.7	170.1	74.2	94.2
Level of Service	E	D	D	F	F		F	E	D	F	E	F
Approach Delay (s)		52.1			83.4			95.2			102.3	
Approach LOS		D			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	83.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	27.5
Intersection Capacity Utilization	105.6%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	431	1065	210	342	1416	350	414	713	391	430	842	677
Future Volume (veh/h)	431	1065	210	342	1416	350	414	713	391	430	842	677
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1845	1845	1789	1900	1743	1827	1845	1845	1863	1827
Adj Flow Rate, veh/h	454	1121	221	360	1491	368	436	751	412	453	886	713
Adj No. of Lanes	2	3	1	2	3	0	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	3	3	6	6	9	4	3	3	2	4
Cap, veh/h	492	1958	604	401	1430	351	376	1136	542	398	1158	576
Arrive On Green	0.14	0.39	0.39	0.24	0.73	0.73	0.12	0.23	0.23	0.12	0.23	0.23
Sat Flow, veh/h	3442	5085	1568	3408	3915	961	3221	4988	1568	3408	5085	1553
Grp Volume(v), veh/h	454	1121	221	360	1239	620	436	751	412	453	886	713
Grp Sat Flow(s),veh/h/ln	1721	1695	1568	1704	1628	1620	1610	1663	1568	1704	1695	1553
Q Serve(g_s), s	23.4	31.3	18.2	18.4	65.8	65.8	21.0	24.6	41.0	21.0	29.3	41.0
Cycle Q Clear(g_c), s	23.4	31.3	18.2	18.4	65.8	65.8	21.0	24.6	41.0	21.0	29.3	41.0
Prop In Lane	1.00		1.00	1.00		0.59	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	492	1958	604	401	1190	592	376	1136	542	398	1158	576
V/C Ratio(X)	0.92	0.57	0.37	0.90	1.04	1.05	1.16	0.66	0.76	1.14	0.76	1.24
Avail Cap(c_a), veh/h	516	1958	604	530	1190	592	376	1136	542	398	1158	576
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.60	0.60	0.60	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	76.1	43.7	39.6	67.8	24.2	24.2	79.5	63.2	52.3	79.5	65.0	56.6
Incr Delay (d2), s/veh	21.8	1.2	1.7	9.7	31.9	42.3	97.8	1.4	6.2	88.8	3.1	121.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.6	14.9	8.1	9.2	34.0	35.5	14.4	11.5	19.1	14.8	14.1	48.1
LnGrp Delay(d),s/veh	97.9	44.9	41.3	77.4	56.1	66.5	177.3	64.6	58.5	168.3	68.1	178.2
LnGrp LOS	F	D	D	E	F	F	F	E	E	F	E	F
Approach Vol, veh/h		1796			2219			1599			2052	
Approach Delay, s/veh		57.8			62.5			93.8			128.5	
Approach LOS		E			E			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	31.7	72.8	28.0	47.5	28.2	76.3	28.0	47.5
Change Period (Y+Rc), s	6.0	7.0	7.0	6.5	7.0	7.0	7.0	* 6.5
Max Green Setting (Gmax), s	27.0	65.0	21.0	40.5	28.0	63.0	21.0	* 41
Max Q Clear Time (g_c+I1), s	25.4	67.8	23.0	43.0	20.4	33.3	23.0	43.0
Green Ext Time (p_c), s	0.3	0.0	0.0	0.0	0.8	24.9	0.0	0.0

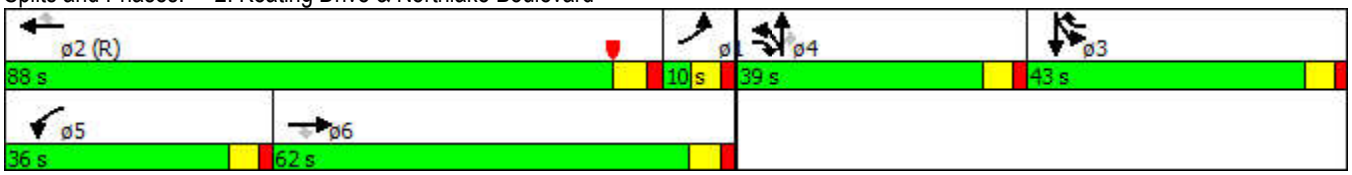
Intersection Summary	
HCM 2010 Ctrl Delay	85.6
HCM 2010 LOS	F

Notes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT
Lane Configurations										
Traffic Volume (vph)	54	1704	244	295	1945	226	258	43	307	47
Future Volume (vph)	54	1704	244	295	1945	226	258	43	307	47
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Split	NA	Perm	NA
Protected Phases	1	6	4	5	2	3	4	4		3
Permitted Phases			6			2			4	
Detector Phase	1	6	4	5	2	3	4	4	4	3
Switch Phase										
Minimum Initial (s)	4.0	20.0	5.0	4.0	20.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	45.0	11.0	22.0	39.5	43.0	11.0	11.0	11.0	43.0
Total Split (s)	10.0	62.0	39.0	36.0	88.0	43.0	39.0	39.0	39.0	43.0
Total Split (%)	5.6%	34.4%	21.7%	20.0%	48.9%	23.9%	21.7%	21.7%	21.7%	23.9%
Yellow Time (s)	4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.5	6.0	6.0	6.5	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead	Lead	Lead	Lag
Lead-Lag Optimize?			Yes			Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	C-Max	None	None	None	None	None
Act Effct Green (s)	4.0	59.6	98.9	42.8	98.3	125.1	32.9	32.9	32.9	20.3
Actuated g/C Ratio	0.02	0.33	0.55	0.24	0.55	0.70	0.18	0.18	0.18	0.11
v/c Ratio	1.50	1.07	0.29	0.75	0.75	0.22	0.52	0.51	0.97	0.70
Control Delay	352.8	91.0	20.5	82.3	34.5	12.7	73.4	72.9	100.4	86.9
Queue Delay	0.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0
Total Delay	352.8	91.0	20.5	82.3	35.4	12.7	73.4	72.9	100.4	86.9
LOS	F	F	C	F	D	B	E	E	F	F
Approach Delay		89.5			39.0			86.9		86.9
Approach LOS		F			D			F		F

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 76 (42%), Referenced to phase 2:WBT, Start of Yellow	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.50	
Intersection Signal Delay: 65.7	Intersection LOS: E
Intersection Capacity Utilization 80.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: Keating Drive & Northlake Boulevard



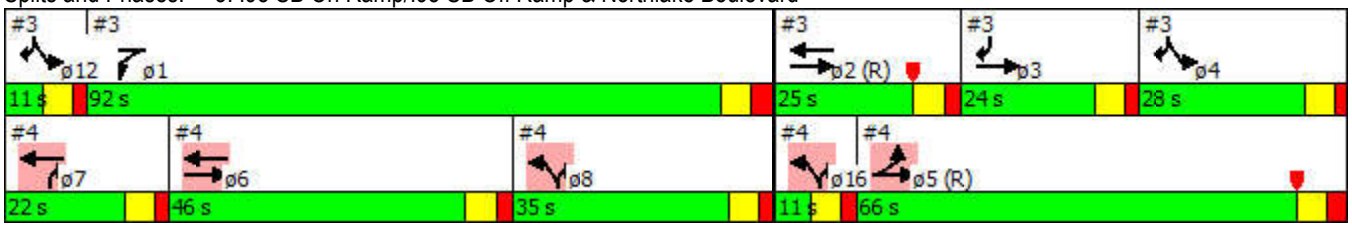
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	1704	244	295	1945	226	258	43	307	161	47	45
Future Volume (vph)	54	1704	244	295	1945	226	258	43	307	161	47	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.5	6.0	6.0	6.5	6.0	6.0	6.0	6.0		6.0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95	1.00		0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		0.97	
Satd. Flow (prot)	1752	5085	1599	1752	4988	1553	1665	1706	1568		3348	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		0.97	
Satd. Flow (perm)	1752	5085	1599	1752	4988	1553	1665	1706	1568		3348	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	57	1794	257	311	2047	238	272	45	323	169	49	47
RTOR Reduction (vph)	0	0	10	0	0	3	0	0	47	0	0	0
Lane Group Flow (vph)	57	1794	247	311	2047	235	158	159	276	0	265	0
Heavy Vehicles (%)	3%	2%	1%	3%	4%	4%	3%	0%	3%	1%	2%	4%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Split	NA	Perm	Split	NA	
Protected Phases	1	6	4	5	2	3	4	4		3	3	
Permitted Phases			6			2			4			
Actuated Green, G (s)	4.1	59.5	92.4	42.8	98.2	118.5	32.9	32.9	32.9		20.3	
Effective Green, g (s)	4.1	59.5	92.4	42.8	98.2	118.5	32.9	32.9	32.9		20.3	
Actuated g/C Ratio	0.02	0.33	0.51	0.24	0.55	0.66	0.18	0.18	0.18		0.11	
Clearance Time (s)	6.0	6.5	6.0	6.0	6.5	6.0	6.0	6.0	6.0		6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	39	1680	820	416	2721	1074	304	311	286		377	
v/s Ratio Prot	0.03	c0.35	0.05	0.18	c0.41	0.02	0.09	0.09			c0.08	
v/s Ratio Perm			0.10			0.13			c0.18			
v/c Ratio	1.46	1.07	0.30	0.75	0.75	0.22	0.52	0.51	0.96		0.70	
Uniform Delay, d1	88.0	60.2	25.2	63.6	31.5	12.3	66.4	66.3	73.0		76.9	
Progression Factor	0.96	0.92	0.97	1.15	1.03	1.28	1.00	1.00	1.00		1.00	
Incremental Delay, d2	286.4	40.1	0.2	5.0	1.4	0.1	1.5	1.4	43.0		5.8	
Delay (s)	370.8	95.4	24.6	78.4	33.7	15.8	67.9	67.7	116.0		82.8	
Level of Service	F	F	C	E	C	B	E	E	F		F	
Approach Delay (s)		94.2			37.4			92.1			82.8	
Approach LOS		F			D			F			F	

Intersection Summary			
HCM 2000 Control Delay	67.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	24.5
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR	ø2	ø3	ø4	ø5	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	1605	711	944	2074	549	562						
Future Volume (vph)	1605	711	944	2074	549	562						
Turn Type	NA	Free	Prot	NA	Prot	custom						
Protected Phases	3 2		1	1 2	4 12	4 3 12	2	3	4	5	6	7
Permitted Phases		Free				4						
Detector Phase	3 2		1	1 2	4 12	4 3 12						
Switch Phase												
Minimum Initial (s)			4.0				4.0	5.0	6.0	4.0	4.0	10.0
Minimum Split (s)			23.0				22.5	22.5	12.0	23.0	22.5	22.0
Total Split (s)			92.0				25.0	24.0	28.0	66.0	46.0	22.0
Total Split (%)			51.1%				14%	13%	16%	37%	26%	12%
Yellow Time (s)			4.0				4.5	4.0	4.0	4.0	4.5	4.0
All-Red Time (s)			3.0				2.0	2.0	2.0	3.0	2.0	2.0
Lost Time Adjust (s)			0.0									
Total Lost Time (s)			7.0									
Lead/Lag			Lag				Lead	Lag		Lag	Lag	Lead
Lead-Lag Optimize?								Yes			Yes	Yes
Recall Mode			None				C-Max	None	None	C-Max	Max	None
Act Effct Green (s)	43.0	180.0	85.0	110.0	33.0	57.0						
Actuated g/C Ratio	0.24	1.00	0.47	0.61	0.18	0.32						
v/c Ratio	0.81	0.47	0.61	0.72	0.92	0.68						
Control Delay	59.5	4.1	2.0	1.3	92.3	58.2						
Queue Delay	4.4	0.0	16.6	25.2	0.0	0.3						
Total Delay	63.8	4.1	18.6	26.5	92.3	58.4						
LOS	E	A	B	C	F	E						
Approach Delay	45.5			24.0								
Approach LOS	D			C								

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 137 (76%), Referenced to phase 2:EBWB and 5:, Start of Yellow	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.41	
Intersection Signal Delay: 40.6	Intersection LOS: D
Intersection Capacity Utilization 85.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: I95 SB On Ramp/I95 SB Off Ramp & Northlake Boulevard



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	5.0	5.0
Minimum Split (s)	12.0	11.0	11.0
Total Split (s)	35.0	11.0	11.0
Total Split (%)	19%	6%	6%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	Lead
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

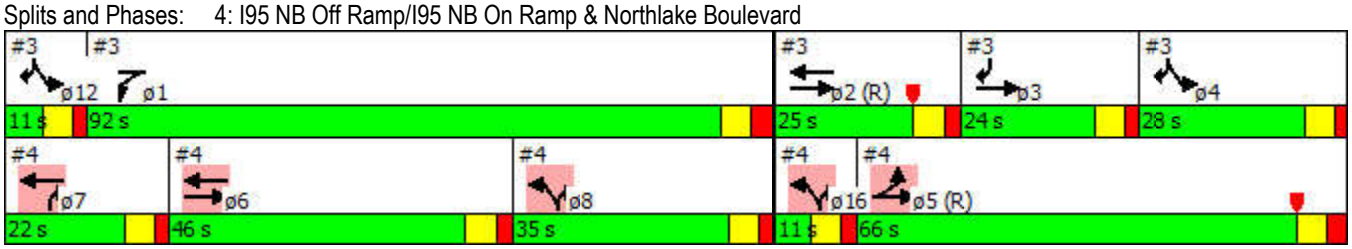
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1605	711	944	2074	0	0	0	0	549	0	562
Future Volume (vph)	0	1605	711	944	2074	0	0	0	0	549	0	562
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	7.0	7.0					6.0		6.0
Lane Util. Factor		*0.95	1.00	0.97	0.91					0.97		0.88
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		8762	1599	3433	4940					3433		2760
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		8762	1599	3433	4940					3433		2760
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1689	748	994	2183	0	0	0	0	578	0	592
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1689	748	994	2183	0	0	0	0	578	0	592
Heavy Vehicles (%)	0%	3%	1%	2%	5%	0%	0%	0%	0%	2%	0%	3%
Turn Type		NA	Free	Prot	NA					Prot		custom
Protected Phases		3 2		1	1 2					4 12		4 3 12
Permitted Phases			Free									4
Actuated Green, G (s)		43.0	180.0	85.0	110.5					33.0		57.0
Effective Green, g (s)		36.5	180.0	85.0	110.5					33.0		57.0
Actuated g/C Ratio		0.20	1.00	0.47	0.61					0.18		0.32
Clearance Time (s)				7.0								
Vehicle Extension (s)				3.0								
Lane Grp Cap (vph)		1776	1599	1621	3032					629		874
v/s Ratio Prot		c0.19		0.29	c0.44					c0.17		0.21
v/s Ratio Perm			0.47									
v/c Ratio		0.95	0.47	0.61	0.72					0.92		0.68
Uniform Delay, d1		70.9	0.0	35.3	24.0					72.2		53.5
Progression Factor		0.90	1.00	0.05	0.05					1.00		1.00
Incremental Delay, d2		5.1	0.3	0.1	0.1					18.7		2.3
Delay (s)		68.8	0.3	1.9	1.2					90.9		55.8
Level of Service		E	A	A	A					F		E
Approach Delay (s)		47.8			1.4			0.0			73.1	
Approach LOS		D			A			A			E	

Intersection Summary			
HCM 2000 Control Delay	30.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	37.0
Intersection Capacity Utilization	85.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR	ø1	ø2	ø3	ø4	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	559	1595	2330	777	688	1043						
Future Volume (vph)	559	1595	2330	777	688	1043						
Turn Type	Prot	NA	NA	Free	Prot	custom						
Protected Phases	5	5 6	6 7		8 16	8 7 16	1	2	3	4	6	7
Permitted Phases				Free								
Detector Phase	5	5 6	6 7		8 16	8 7 16						
Switch Phase												
Minimum Initial (s)	4.0						4.0	4.0	5.0	6.0	4.0	10.0
Minimum Split (s)	23.0						23.0	22.5	22.5	12.0	22.5	22.0
Total Split (s)	66.0						92.0	25.0	24.0	28.0	46.0	22.0
Total Split (%)	36.7%						51%	14%	13%	16%	26%	12%
Yellow Time (s)	4.0						4.0	4.5	4.0	4.0	4.5	4.0
All-Red Time (s)	3.0						3.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0											
Total Lost Time (s)	7.0											
Lead/Lag	Lag						Lag	Lead	Lag		Lag	Lead
Lead-Lag Optimize?									Yes		Yes	Yes
Recall Mode	C-Max						None	C-Max	None	None	Max	None
Act Effct Green (s)	59.0	98.0	61.5	180.0	40.0	56.0						
Actuated g/C Ratio	0.33	0.54	0.34	1.00	0.22	0.31						
v/c Ratio	0.59	0.68	1.07	0.59	1.08	1.41						
Control Delay	5.9	11.8	76.4	3.8	120.5	227.2						
Queue Delay	5.5	0.6	13.7	0.0	0.0	0.0						
Total Delay	11.4	12.4	90.0	3.8	120.5	227.2						
LOS	B	B	F	A	F	F						
Approach Delay		12.2	68.5									
Approach LOS		B	E									

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 137 (76%), Referenced to phase 2:EBWB and 5:, Start of Yellow	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.41	
Intersection Signal Delay: 79.9	Intersection LOS: E
Intersection Capacity Utilization 85.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 4: I95 NB Off Ramp/I95 NB On Ramp & Northlake Boulevard



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	5.0	5.0
Minimum Split (s)	12.0	11.0	11.0
Total Split (s)	35.0	11.0	11.0
Total Split (%)	19%	6%	6%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	Lead
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	559	1595	0	0	2330	777	688	0	1043	0	0	0
Future Volume (vph)	559	1595	0	0	2330	777	688	0	1043	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0			6.5	4.0	6.0		6.0			
Lane Util. Factor	0.97	0.91			0.81	1.00	0.97		0.88			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	3060	4532			6724	1384	3030		2508			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3060	4532			6724	1384	3030		2508			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	588	1679	0	0	2453	818	724	0	1098	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	588	1679	0	0	2453	818	724	0	1098	0	0	0
Heavy Vehicles (%)	3%	3%	0%	0%	3%	5%	4%	0%	2%	0%	0%	0%
Turn Type	Prot	NA			NA	Free	Prot		custom			
Protected Phases	5	5 6			6 7		8 16		8 7 16			
Permitted Phases						Free						
Actuated Green, G (s)	59.0	98.5			61.5	180.0	40.0		56.0			
Effective Green, g (s)	59.0	98.5			55.5	180.0	40.0		56.0			
Actuated g/C Ratio	0.33	0.55			0.31	1.00	0.22		0.31			
Clearance Time (s)	7.0											
Vehicle Extension (s)	3.0											
Lane Grp Cap (vph)	1003	2480			2073	1384	673		780			
v/s Ratio Prot	0.19	c0.37			c0.36		0.24		c0.44			
v/s Ratio Perm						c0.59						
v/c Ratio	0.59	0.68			1.18	0.59	1.08		1.41			
Uniform Delay, d1	50.3	29.3			62.2	0.0	70.0		62.0			
Progression Factor	0.09	0.68			0.64	1.00	1.00		1.00			
Incremental Delay, d2	1.4	0.8			87.3	1.7	56.9		191.1			
Delay (s)	5.9	20.7			127.4	1.7	126.9		253.1			
Level of Service	A	C			F	A	F		F			
Approach Delay (s)		16.9			96.0			202.9			0.0	
Approach LOS		B			F			F			A	

Intersection Summary			
HCM 2000 Control Delay	98.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	37.0
Intersection Capacity Utilization	85.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	SBR
Lane Configurations					
Traffic Volume (vph)	128	2510	3005	116	102
Future Volume (vph)	128	2510	3005	116	102
Turn Type	Prot	NA	NA	Perm	Perm
Protected Phases	1	6	2		
Permitted Phases				2	6
Detector Phase	1	6	2	2	6
Switch Phase					
Minimum Initial (s)	4.0	20.0	20.0	20.0	20.0
Minimum Split (s)	12.0	26.5	27.5	27.5	26.5
Total Split (s)	42.0	180.0	138.0	138.0	180.0
Total Split (%)	23.3%	100.0%	76.7%	76.7%	100.0%
Yellow Time (s)	4.0	4.5	4.5	4.5	4.5
All-Red Time (s)	4.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0	6.5	6.5	6.5	6.5
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	18.9	180.0	146.6	146.6	180.0
Actuated g/C Ratio	0.10	1.00	0.81	0.81	1.00
v/c Ratio	0.72	0.41	0.46	0.09	0.07
Control Delay	100.3	0.1	1.0	0.9	0.1
Queue Delay	0.0	0.0	0.2	0.0	0.0
Total Delay	100.3	0.1	1.1	0.9	0.1
LOS	F	A	A	A	A
Approach Delay		4.9	1.1		
Approach LOS		A	A		

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 72 (40%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 2.8	Intersection LOS: A
Intersection Capacity Utilization 70.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 5: Northlake Boulevard & Roan Lane

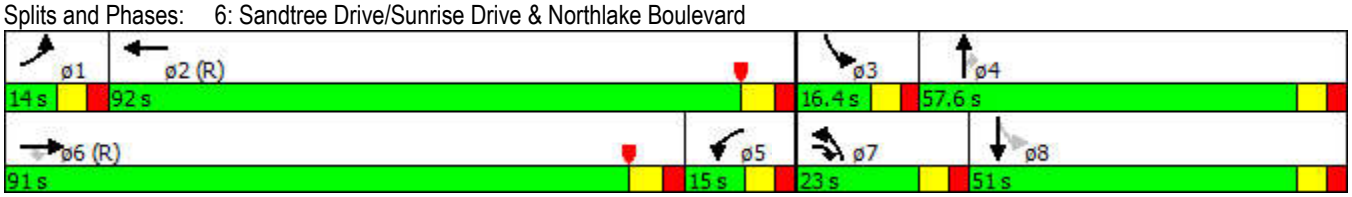
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	128	2510	0	0	3005	116	0	0	0	0	0	102
Future Volume (vph)	128	2510	0	0	3005	116	0	0	0	0	0	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	6.5			6.5	6.5						6.5
Lane Util. Factor	1.00	0.86			0.76	1.00						1.00
Frt	1.00	1.00			1.00	0.85						0.86
Flt Protected	0.95	1.00			1.00	1.00						1.00
Satd. Flow (prot)	1787	6471			8412	1615						1644
Flt Permitted	0.95	1.00			1.00	1.00						1.00
Satd. Flow (perm)	1787	6471			8412	1615						1644
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	135	2642	0	0	3163	122	0	0	0	0	0	107
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	135	2642	0	0	3163	122	0	0	0	0	0	107
Heavy Vehicles (%)	1%	1%	1%	0%	3%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA			NA	Perm						Perm
Protected Phases	1	6			2							
Permitted Phases						2						6
Actuated Green, G (s)	18.9	180.0			146.6	146.6						180.0
Effective Green, g (s)	18.9	180.0			146.6	146.6						180.0
Actuated g/C Ratio	0.10	1.00			0.81	0.81						1.00
Clearance Time (s)	8.0	6.5			6.5	6.5						6.5
Vehicle Extension (s)	3.0	3.0			3.0	3.0						3.0
Lane Grp Cap (vph)	187	6471			6851	1315						1644
v/s Ratio Prot	c0.08	0.41			c0.38							
v/s Ratio Perm						0.08						0.07
v/c Ratio	0.72	0.41			0.46	0.09						0.07
Uniform Delay, d1	78.0	0.0			5.0	3.4						0.0
Progression Factor	1.21	1.00			0.17	0.24						1.00
Incremental Delay, d2	4.0	0.1			0.1	0.0						0.1
Delay (s)	98.4	0.1			0.9	0.8						0.1
Level of Service	F	A			A	A						A
Approach Delay (s)		4.8			0.9			0.0			0.1	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	2.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	62	2157	181	189	2427	446	18	226	116	17
Future Volume (vph)	62	2157	181	189	2427	446	18	226	116	17
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Perm	pm+pt	NA
Protected Phases	1	6	7	5	2	7	4		3	8
Permitted Phases			6					4	8	
Detector Phase	1	6	7	5	2	7	4	4	3	8
Switch Phase										
Minimum Initial (s)	4.0	20.0	4.0	4.0	20.0	4.0	6.0	6.0	4.0	6.0
Minimum Split (s)	12.5	38.5	12.5	12.5	32.5	12.5	42.0	42.0	12.5	51.0
Total Split (s)	14.0	91.0	23.0	15.0	92.0	23.0	57.6	57.6	16.4	51.0
Total Split (%)	7.8%	50.6%	12.8%	8.3%	51.1%	12.8%	32.0%	32.0%	9.1%	28.3%
Yellow Time (s)	4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	2.5	3.0	3.0	2.5	3.0	3.0	2.5	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.5	6.5	7.0	7.5	6.5	7.0	7.0	6.5	7.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?										
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	None	None
Act Effct Green (s)	14.0	101.5	119.0	8.0	95.5	16.5	32.6	32.6	36.4	26.0
Actuated g/C Ratio	0.08	0.56	0.66	0.04	0.53	0.09	0.18	0.18	0.20	0.14
v/c Ratio	0.49	0.79	0.19	1.29	0.99	1.52	0.06	0.83	0.40	0.45
Control Delay	104.7	21.3	1.7	232.4	55.8	299.9	57.5	94.1	54.9	75.1
Queue Delay	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	104.7	21.6	1.7	232.4	55.8	299.9	57.5	94.1	54.9	75.1
LOS	F	C	A	F	E	F	E	F	D	E
Approach Delay		22.2			68.3		226.1			64.0
Approach LOS		C			E		F			E

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 24 (13%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.52	
Intersection Signal Delay: 67.9	Intersection LOS: E
Intersection Capacity Utilization 88.7%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 6: Sandtree Drive/Sunrise Drive & Northlake Boulevard



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	2157	181	189	2427	48	446	18	226	116	17	77
Future Volume (vph)	62	2157	181	189	2427	48	446	18	226	116	17	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.5	6.5	7.0	7.5		6.5	7.0	7.0	6.5	7.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91		0.97	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1703	5085	1524	3467	4971		3367	1900	1583	1805	1541	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.75	1.00	
Satd. Flow (perm)	1703	5085	1524	3467	4971		3367	1900	1583	1416	1541	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	65	2271	191	199	2555	51	469	19	238	122	18	81
RTOR Reduction (vph)	0	0	22	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	65	2271	169	199	2606	0	469	19	238	122	99	0
Heavy Vehicles (%)	6%	2%	6%	1%	4%	6%	4%	0%	2%	0%	0%	10%
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	Perm	pm+pt	NA	
Protected Phases	1	6	7	5	2		7	4		3	8	
Permitted Phases			6						4	8		
Actuated Green, G (s)	14.0	101.5	118.0	8.0	95.5		16.5	32.6	32.6	35.9	26.0	
Effective Green, g (s)	14.0	101.5	118.0	8.0	95.5		16.5	32.6	32.6	35.9	26.0	
Actuated g/C Ratio	0.08	0.56	0.66	0.04	0.53		0.09	0.18	0.18	0.20	0.14	
Clearance Time (s)	7.0	7.5	6.5	7.0	7.5		6.5	7.0	7.0	6.5	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	132	2867	999	154	2637		308	344	286	303	222	
v/s Ratio Prot	0.04	c0.45	0.02	c0.06	c0.52		c0.14	0.01		0.02	0.06	
v/s Ratio Perm			0.10						c0.15	0.06		
v/c Ratio	0.49	0.79	0.17	1.29	0.99		1.52	0.06	0.83	0.40	0.45	
Uniform Delay, d1	79.6	30.9	12.0	86.0	41.7		81.8	61.0	71.1	61.9	70.4	
Progression Factor	1.17	0.59	0.28	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.7	2.2	0.1	171.2	15.0		251.2	0.1	18.3	0.9	1.4	
Delay (s)	95.6	20.5	3.5	257.2	56.7		332.9	61.0	89.4	62.7	71.8	
Level of Service	F	C	A	F	E		F	E	F	E	E	
Approach Delay (s)		21.2			70.9			246.0			66.8	
Approach LOS		C			E			F			E	

Intersection Summary			
HCM 2000 Control Delay	71.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	88.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	2157	181	189	2427	48	446	18	226	116	17	77
Future Volume (veh/h)	62	2157	181	189	2427	48	446	18	226	116	17	77
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1792	1863	1792	1881	1826	1900	1827	1900	1863	1900	1756	1900
Adj Flow Rate, veh/h	65	2271	191	199	2555	51	469	19	238	122	18	81
Adj No. of Lanes	1	3	1	2	3	0	2	1	1	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	6	2	6	1	4	4	4	0	2	0	0	0
Cap, veh/h	66	2359	846	707	3176	63	309	227	189	234	23	104
Arrive On Green	0.08	0.93	0.93	0.20	0.63	0.63	0.09	0.12	0.12	0.05	0.08	0.08
Sat Flow, veh/h	1707	5085	1524	3476	5032	100	3375	1900	1583	1810	279	1256
Grp Volume(v), veh/h	65	2271	191	199	1684	922	469	19	238	122	0	99
Grp Sat Flow(s),veh/h/ln	1707	1695	1524	1738	1662	1809	1688	1900	1583	1810	0	1535
Q Serve(g_s), s	6.8	54.3	0.5	8.7	68.2	69.0	16.5	1.6	14.6	9.9	0.0	11.4
Cycle Q Clear(g_c), s	6.8	54.3	0.5	8.7	68.2	69.0	16.5	1.6	14.6	9.9	0.0	11.4
Prop In Lane	1.00		1.00	1.00		0.06	1.00		1.00	1.00		0.82
Lane Grp Cap(c), veh/h	66	2359	846	707	2098	1141	309	227	189	234	0	127
V/C Ratio(X)	0.98	0.96	0.23	0.28	0.80	0.81	1.52	0.08	1.26	0.52	0.00	0.78
Avail Cap(c_a), veh/h	66	2359	846	707	2098	1141	309	534	445	234	0	375
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.92	0.92	0.92	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	82.9	5.4	0.9	60.6	24.8	25.0	81.8	70.5	36.4	71.8	0.0	80.9
Incr Delay (d2), s/veh	98.4	10.9	0.6	0.2	3.4	6.2	248.1	0.2	127.9	2.1	0.0	9.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.0	24.3	0.4	4.2	32.1	36.3	18.4	0.9	13.1	0.8	0.0	5.2
LnGrp Delay(d),s/veh	181.3	16.4	1.5	60.8	28.2	31.2	329.8	70.7	164.3	73.9	0.0	90.8
LnGrp LOS	F	B	A	E	C	C	F	E	F	E		F
Approach Vol, veh/h		2527			2805			726			221	
Approach Delay, s/veh		19.5			31.5			268.8			81.5	
Approach LOS		B			C			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	121.1	16.4	28.5	44.1	91.0	23.0	21.9
Change Period (Y+Rc), s	7.0	7.5	6.5	7.0	7.5	* 7.5	6.5	7.0
Max Green Setting (Gmax), s	7.0	84.5	9.9	50.6	8.0	* 84	16.5	44.0
Max Q Clear Time (g_c+I1), s	8.8	71.0	11.9	16.6	10.7	56.3	18.5	13.4
Green Ext Time (p_c), s	0.0	12.0	0.0	1.5	0.0	20.3	0.0	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	55.9
HCM 2010 LOS	E

Notes

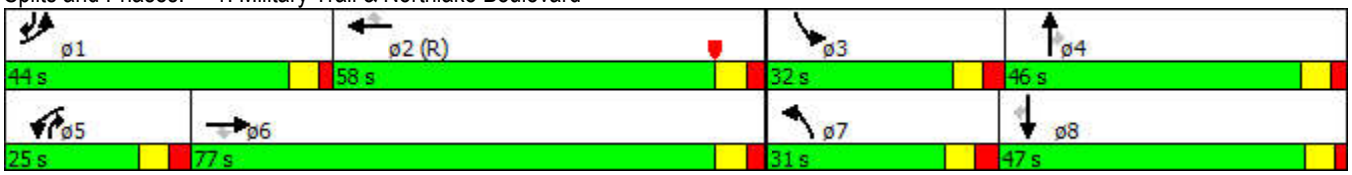
2040 Opening Year

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	678	1705	294	304	1223	346	390	826	381	433	642	403
Future Volume (vph)	678	1705	294	304	1223	346	390	826	381	433	642	403
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	1	6		5	2		7	4	5	3	8	1
Permitted Phases			6			2			4			8
Detector Phase	1	6	6	5	2	2	7	4	5	3	8	1
Switch Phase												
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	20.0	4.0	6.0	4.0	4.0	6.0	4.0
Minimum Split (s)	22.0	48.0	48.0	11.0	52.0	52.0	11.0	43.5	11.0	21.0	47.0	22.0
Total Split (s)	44.0	77.0	77.0	25.0	58.0	58.0	31.0	46.0	25.0	32.0	47.0	44.0
Total Split (%)	24.4%	42.8%	42.8%	13.9%	32.2%	32.2%	17.2%	25.6%	13.9%	17.8%	26.1%	24.4%
Yellow Time (s)	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.5	2.5	3.0	2.5	2.5	3.0	2.5	3.0	3.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	7.0	7.0	7.0	7.0	7.0	7.0	6.5	7.0	7.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?												
Recall Mode	None	Max	Max	None	C-Max	C-Max	Max	None	None	None	None	None
Act Effct Green (s)	39.9	71.2	71.2	19.3	51.6	51.6	24.0	37.0	62.8	25.0	38.5	84.4
Actuated g/C Ratio	0.22	0.40	0.40	0.11	0.29	0.29	0.13	0.21	0.35	0.14	0.21	0.47
v/c Ratio	0.95	0.90	0.47	0.90	0.91	0.75	0.93	0.86	0.70	0.97	0.63	0.55
Control Delay	90.1	58.5	35.1	132.4	42.7	29.9	103.6	78.2	49.6	109.3	66.9	32.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	90.1	58.5	35.1	132.4	42.7	29.9	103.6	78.2	49.6	109.3	66.9	32.0
LOS	F	E	D	F	D	C	F	E	D	F	E	C
Approach Delay		63.9			54.9			77.6			69.8	
Approach LOS		E			D			E			E	

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 129 (72%), Referenced to phase 2:WBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 65.7 — Intersection LOS: E
Intersection Capacity Utilization 92.6% — ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 1: Military Trail & Northlake Boulevard



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	678	1705	294	304	1223	346	390	826	381	433	642	403
Future Volume (vph)	678	1705	294	304	1223	346	390	826	381	433	642	403
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	7.0	7.0	7.0	7.0	7.0	7.0	6.5	7.0	7.0	6.0	6.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	5036	1568	3335	4940	1538	3335	4940	1538	3400	5036	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3400	5036	1568	3335	4940	1538	3335	4940	1538	3400	5036	1568
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	714	1795	309	320	1287	364	411	869	401	456	676	424
RTOR Reduction (vph)	0	0	36	0	0	43	0	0	41	0	0	34
Lane Group Flow (vph)	714	1795	273	320	1287	321	411	869	360	456	676	390
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	5%	5%	5%	3%	3%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	1	6		5	2		7	4	5	3	8	1
Permitted Phases			6			2			4			8
Actuated Green, G (s)	39.9	71.2	71.2	19.3	51.6	51.6	24.0	37.0	56.3	25.0	38.5	78.4
Effective Green, g (s)	39.9	71.2	71.2	19.3	51.6	51.6	24.0	37.0	56.3	25.0	38.5	78.4
Actuated g/C Ratio	0.22	0.40	0.40	0.11	0.29	0.29	0.13	0.21	0.31	0.14	0.21	0.44
Clearance Time (s)	6.0	7.0	7.0	7.0	7.0	7.0	7.0	6.5	7.0	7.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	753	1992	620	357	1416	440	444	1015	481	472	1077	735
v/s Ratio Prot	c0.21	c0.36		0.10	0.26		0.12	c0.18	0.08	c0.13	0.13	0.12
v/s Ratio Perm			0.17			0.21			0.15			0.13
v/c Ratio	0.95	0.90	0.44	0.90	0.91	0.73	0.93	0.86	0.75	0.97	0.63	0.53
Uniform Delay, d1	69.0	51.1	39.8	79.4	61.9	57.9	77.1	68.9	55.5	77.1	64.2	37.3
Progression Factor	1.00	1.00	1.00	1.46	0.56	0.45	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	20.9	7.1	2.3	18.3	7.6	7.4	27.6	7.2	6.3	32.5	1.2	0.7
Delay (s)	89.9	58.2	42.1	134.2	42.3	33.7	104.8	76.2	61.8	109.6	65.4	38.0
Level of Service	F	E	D	F	D	C	F	E	E	F	E	D
Approach Delay (s)		64.5			55.6			79.7			70.9	
Approach LOS		E			E			E			E	

Intersection Summary			
HCM 2000 Control Delay	66.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	27.5
Intersection Capacity Utilization	92.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	678	1705	294	304	1223	346	390	826	381	433	642	403
Future Volume (veh/h)	678	1705	294	304	1223	346	390	826	381	433	642	403
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1810	1810	1810	1810	1810	1810	1845	1845	1845
Adj Flow Rate, veh/h	714	1795	309	320	1287	364	411	869	401	456	676	424
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	5	5	5	5	5	5	3	3	3
Cap, veh/h	720	2110	657	334	1548	482	446	1089	493	473	1138	685
Arrive On Green	0.21	0.42	0.42	0.20	0.63	0.63	0.13	0.22	0.22	0.14	0.23	0.23
Sat Flow, veh/h	3408	5036	1568	3343	4940	1538	3343	4940	1538	3408	5036	1568
Grp Volume(v), veh/h	714	1795	309	320	1287	364	411	869	401	456	676	424
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1672	1647	1538	1672	1647	1538	1704	1679	1568
Q Serve(g_s), s	37.6	57.9	25.7	17.0	36.5	30.2	21.9	30.0	39.7	23.9	21.6	37.6
Cycle Q Clear(g_c), s	37.6	57.9	25.7	17.0	36.5	30.2	21.9	30.0	39.7	23.9	21.6	37.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	720	2110	657	334	1548	482	446	1089	493	473	1138	685
V/C Ratio(X)	0.99	0.85	0.47	0.96	0.83	0.76	0.92	0.80	0.81	0.96	0.59	0.62
Avail Cap(c_a), veh/h	720	2110	657	334	1548	482	446	1089	493	473	1147	688
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.64	0.64	0.64	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.9	47.2	37.8	71.6	29.9	28.7	77.1	66.4	56.2	77.0	62.3	39.1
Incr Delay (d2), s/veh	31.5	4.6	2.4	28.8	3.5	7.0	27.0	4.3	10.1	32.0	0.8	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	28.4	36.3	17.1	13.1	22.4	18.4	17.4	20.3	27.0	19.4	15.3	23.3
LnGrp Delay(d),s/veh	102.4	51.8	40.3	100.5	33.4	35.6	104.1	70.7	66.3	109.1	63.1	40.8
LnGrp LOS	F	D	D	F	C	D	F	E	E	F	E	D
Approach Vol, veh/h		2818			1971			1681			1556	
Approach Delay, s/veh		63.3			44.7			77.8			70.5	
Approach LOS		E			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	44.0	63.6	32.0	46.2	25.0	82.6	31.0	47.2
Change Period (Y+Rc), s	6.0	7.0	7.0	6.5	7.0	7.0	7.0	* 6.5
Max Green Setting (Gmax), s	38.0	51.0	25.0	39.5	18.0	70.0	24.0	* 41
Max Q Clear Time (g_c+I1), s	39.6	38.5	25.9	41.7	19.0	59.9	23.9	39.6
Green Ext Time (p_c), s	0.0	11.8	0.0	0.0	0.0	9.7	0.0	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	63.2
HCM 2010 LOS	E

Notes

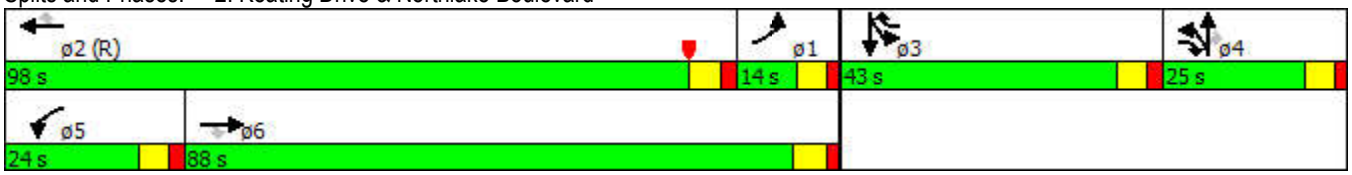
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT
Lane Configurations										
Traffic Volume (vph)	29	2562	83	196	1917	135	52	9	207	13
Future Volume (vph)	29	2562	83	196	1917	135	52	9	207	13
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Split	NA	Perm	NA
Protected Phases	1	6	4	5	2	3	4	4		3
Permitted Phases			6			2			4	
Detector Phase	1	6	4	5	2	3	4	4	4	3
Switch Phase										
Minimum Initial (s)	4.0	20.0	5.0	4.0	20.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	45.0	11.0	22.0	39.5	43.0	11.0	11.0	11.0	43.0
Total Split (s)	14.0	88.0	25.0	24.0	98.0	43.0	25.0	25.0	25.0	43.0
Total Split (%)	7.8%	48.9%	13.9%	13.3%	54.4%	23.9%	13.9%	13.9%	13.9%	23.9%
Yellow Time (s)	4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.5	6.0	6.0	6.5	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead
Lead-Lag Optimize?			Yes			Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	C-Max	None	None	None	None	None
Act Effct Green (s)	7.5	81.5	109.8	25.5	101.8	124.2	27.8	27.8	27.8	20.7
Actuated g/C Ratio	0.04	0.45	0.61	0.14	0.57	0.69	0.15	0.15	0.15	0.12
v/c Ratio	0.42	1.17	0.09	0.84	0.72	0.13	0.12	0.12	0.75	1.14dl
Control Delay	77.4	110.8	1.8	97.7	26.2	3.5	65.9	65.8	68.2	87.8
Queue Delay	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0
Total Delay	77.4	110.8	1.8	97.7	26.4	3.5	65.9	65.8	68.2	87.8
LOS	E	F	A	F	C	A	E	E	E	F
Approach Delay		107.1			31.2			67.7		87.8
Approach LOS		F			C			E		F

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 133 (74%), Referenced to phase 2:WBT, Start of Yellow
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.17
Intersection Signal Delay: 73.0 — Intersection LOS: E
Intersection Capacity Utilization 94.6% — ICU Level of Service F
Analysis Period (min) 15

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 2: Keating Drive & Northlake Boulevard



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	2562	83	196	1917	135	52	9	207	219	13	31
Future Volume (vph)	29	2562	83	196	1917	135	52	9	207	219	13	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.5	6.0	6.0	6.5	6.0	6.0	6.0	6.0		6.0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95	1.00		0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		0.96	
Satd. Flow (prot)	1770	5085	1583	1736	4988	1553	1665	1692	1568		3338	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		0.96	
Satd. Flow (perm)	1770	5085	1583	1736	4988	1553	1665	1692	1568		3338	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	31	2697	87	206	2018	142	55	9	218	231	14	33
RTOR Reduction (vph)	0	0	22	0	0	20	0	0	51	0	0	0
Lane Group Flow (vph)	31	2697	65	206	2018	122	32	32	167	0	278	0
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Split	NA	Perm	Split	NA	
Protected Phases	1	6	4	5	2	3	4	4		3	3	
Permitted Phases			6			2			4			
Actuated Green, G (s)	6.4	81.5	109.3	25.5	100.6	121.3	27.8	27.8	27.8		20.7	
Effective Green, g (s)	6.4	81.5	109.3	25.5	100.6	121.3	27.8	27.8	27.8		20.7	
Actuated g/C Ratio	0.04	0.45	0.61	0.14	0.56	0.67	0.15	0.15	0.15		0.11	
Clearance Time (s)	6.0	6.5	6.0	6.0	6.5	6.0	6.0	6.0	6.0		6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	62	2302	961	245	2787	1046	257	261	242		383	
v/s Ratio Prot	0.02	c0.53	0.01	c0.12	0.40	0.01	0.02	0.02			c0.08	
v/s Ratio Perm			0.03			0.07			c0.11			
v/c Ratio	0.50	1.17	0.07	0.84	0.72	0.12	0.12	0.12	0.69		1.14dl	
Uniform Delay, d1	85.2	49.2	14.5	75.3	29.4	10.4	65.6	65.6	72.0		76.9	
Progression Factor	0.81	0.65	0.60	1.05	0.82	0.92	1.00	1.00	1.00		1.00	
Incremental Delay, d2	3.3	79.9	0.0	17.2	1.2	0.0	0.2	0.2	8.2		6.7	
Delay (s)	72.2	112.0	8.7	96.6	25.4	9.6	65.8	65.8	80.3		83.6	
Level of Service	E	F	A	F	C	A	E	E	F		F	
Approach Delay (s)		108.4			30.7			77.0			83.6	
Approach LOS		F			C			E			F	

Intersection Summary			
HCM 2000 Control Delay	73.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	24.5
Intersection Capacity Utilization	94.6%	ICU Level of Service	F
Analysis Period (min)	15		

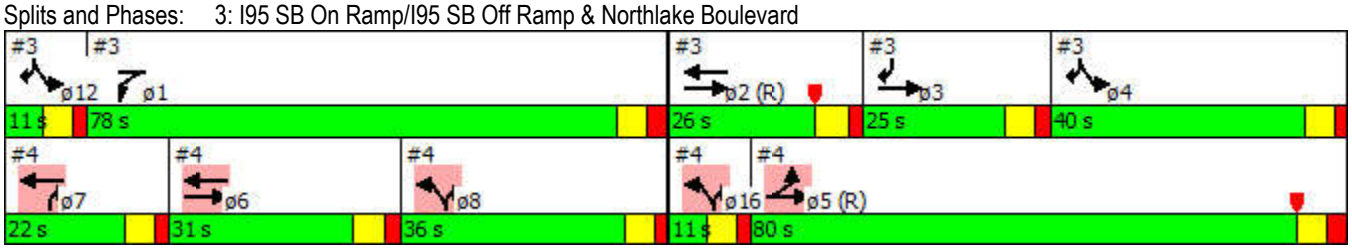
dl Defacto Left Lane. Recode with 1 though lane as a left lane.
c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR	ø2	ø3	ø4	ø5	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	2227	691	910	1479	1042	922						
Future Volume (vph)	2227	691	910	1479	1042	922						
Turn Type	NA	Free	Prot	NA	Prot	custom						
Protected Phases	3 2		1	1 2	4 12	4 3 12	2	3	4	5	6	7
Permitted Phases		Free				4						
Detector Phase	3 2		1	1 2	4 12	4 3 12						
Switch Phase												
Minimum Initial (s)			4.0				4.0	5.0	6.0	4.0	4.0	10.0
Minimum Split (s)			23.0				22.5	22.5	12.0	23.0	22.5	22.0
Total Split (s)			78.0				26.0	25.0	40.0	80.0	31.0	22.0
Total Split (%)			43.3%				14%	14%	22%	44%	17%	12%
Yellow Time (s)			4.0				4.5	4.0	4.0	4.0	4.5	4.0
All-Red Time (s)			3.0				2.0	2.0	2.0	3.0	2.0	2.0
Lost Time Adjust (s)			0.0									
Total Lost Time (s)			7.0									
Lead/Lag			Lag				Lead	Lag		Lag	Lag	Lead
Lead-Lag Optimize?								Yes			Yes	Yes
Recall Mode			None				C-Max	None	None	C-Max	Max	None
Act Effct Green (s)	45.0	180.0	71.0	97.0	45.0	70.0						
Actuated g/C Ratio	0.25	1.00	0.39	0.54	0.25	0.39						
v/c Ratio	1.06	0.46	0.72	0.58	1.28	0.80						
Control Delay	61.1	0.6	7.5	0.8	185.8	55.0						
Queue Delay	17.3	0.0	50.6	2.2	0.0	0.0						
Total Delay	78.4	0.6	58.0	3.0	185.8	55.0						
LOS	E	A	E	A	F	D						
Approach Delay	60.0			24.0								
Approach LOS	E			C								

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 132 (73%), Referenced to phase 2:EBWB and 5:, Start of Yellow
Natural Cycle: 135
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.50
Intersection Signal Delay: 65.5 — Intersection LOS: E
Intersection Capacity Utilization 101.7% — ICU Level of Service G
Analysis Period (min) 15

Splits and Phases: 3: I95 SB On Ramp/I95 SB Off Ramp & Northlake Boulevard



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	5.0	5.0
Minimum Split (s)	12.0	11.0	11.0
Total Split (s)	36.0	11.0	11.0
Total Split (%)	20%	6%	6%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	Lead
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

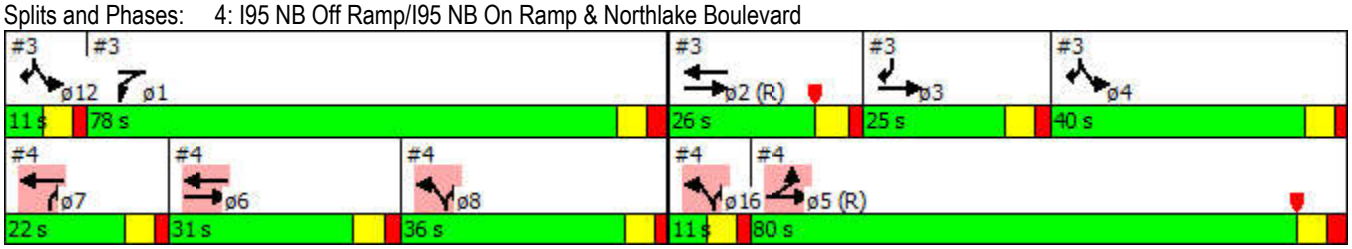
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2227	691	910	1479	0	0	0	0	1042	0	922
Future Volume (vph)	0	2227	691	910	1479	0	0	0	0	1042	0	922
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	7.0	7.0					6.0		6.0
Lane Util. Factor		*0.95	1.00	0.97	0.91					0.97		0.88
Frt		1.00	0.85	1.00	1.00					1.00		0.95
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		8848	1583	3367	4988					3433		3115
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		8848	1583	3367	4988					3433		3115
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	2344	727	958	1557	0	0	0	0	1097	0	971
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	2344	727	958	1557	0	0	0	0	1097	0	971
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	0%	0%	0%	2%	2%	2%
Turn Type		NA	Free	Prot	NA					Prot		custom
Protected Phases		3 2		1	1 2					4 12		4 3 12
Permitted Phases			Free									4
Actuated Green, G (s)		45.0	180.0	71.0	97.5					45.0		70.0
Effective Green, g (s)		38.5	180.0	71.0	97.5					45.0		70.0
Actuated g/C Ratio		0.21	1.00	0.39	0.54					0.25		0.39
Clearance Time (s)				7.0								
Vehicle Extension (s)				3.0								
Lane Grp Cap (vph)		1892	1583	1328	2701					858		1211
v/s Ratio Prot		c0.26		c0.28	0.31					c0.32		0.31
v/s Ratio Perm			0.46									
v/c Ratio		1.24	0.46	0.72	0.58					1.28		0.80
Uniform Delay, d1		70.8	0.0	46.1	27.5					67.5		48.8
Progression Factor		0.49	1.00	0.15	0.03					1.00		1.00
Incremental Delay, d2		107.9	0.1	0.2	0.0					134.3		4.1
Delay (s)		142.8	0.1	7.3	0.7					201.8		53.0
Level of Service		F	A	A	A					F		D
Approach Delay (s)		109.0			3.2			0.0			131.9	
Approach LOS		F			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	80.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	37.0
Intersection Capacity Utilization	101.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR	ø1	ø2	ø3	ø4	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	1060	2209	1862	742	527	1117						
Future Volume (vph)	1060	2209	1862	742	527	1117						
Turn Type	Prot	NA	NA	Free	Prot	custom						
Protected Phases	5	5 6	6 7		8 16	8 7 16	1	2	3	4	6	7
Permitted Phases				Free								
Detector Phase	5	5 6	6 7		8 16	8 7 16						
Switch Phase												
Minimum Initial (s)	4.0						4.0	4.0	5.0	6.0	4.0	10.0
Minimum Split (s)	23.0						23.0	22.5	22.5	12.0	22.5	22.0
Total Split (s)	80.0						78.0	26.0	25.0	40.0	31.0	22.0
Total Split (%)	44.4%						43%	14%	14%	22%	17%	12%
Yellow Time (s)	4.0						4.0	4.5	4.0	4.0	4.5	4.0
All-Red Time (s)	3.0						3.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0											
Total Lost Time (s)	7.0											
Lead/Lag	Lag						Lag	Lead	Lag		Lag	Lead
Lead-Lag Optimize?									Yes		Yes	Yes
Recall Mode	C-Max						None	C-Max	None	None	Max	None
Act Effct Green (s)	73.0	97.0	46.5	180.0	41.0	57.0						
Actuated g/C Ratio	0.41	0.54	0.26	1.00	0.23	0.32						
v/c Ratio	0.90	0.95	1.14	0.56	0.80	1.50						
Control Delay	16.6	12.7	113.1	3.9	75.2	266.1						
Queue Delay	48.8	42.0	0.2	0.0	0.0	0.0						
Total Delay	65.4	54.8	113.3	3.9	75.2	266.1						
LOS	E	D	F	A	E	F						
Approach Delay		58.2	82.1									
Approach LOS		E	F									

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 132 (73%), Referenced to phase 2:EBWB and 5:, Start of Yellow	
Natural Cycle: 135	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.50	
Intersection Signal Delay: 98.6	Intersection LOS: F
Intersection Capacity Utilization 101.7%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 4: I95 NB Off Ramp/I95 NB On Ramp & Northlake Boulevard



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	5.0	5.0
Minimum Split (s)	12.0	11.0	11.0
Total Split (s)	36.0	11.0	11.0
Total Split (%)	20%	6%	6%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	Lead
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1060	2209	0	0	1862	742	527	0	1117	0	0	0
Future Volume (vph)	1060	2209	0	0	1862	742	527	0	1117	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0			6.5	4.0	6.0		6.0			
Lane Util. Factor	0.97	0.91			0.81	1.00	0.97		0.88			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	3060	4532			6659	1398	3060		2484			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3060	4532			6659	1398	3060		2484			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1116	2325	0	0	1960	781	555	0	1176	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	1116	2325	0	0	1960	781	555	0	1176	0	0	0
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	3%	3%	3%	0%	0%	0%
Turn Type	Prot	NA			NA	Free	Prot		custom			
Protected Phases	5	5 6			6 7		8 16		8 7 16			
Permitted Phases						Free						
Actuated Green, G (s)	73.0	97.5			46.5	180.0	41.0		57.0			
Effective Green, g (s)	73.0	97.5			40.5	180.0	41.0		57.0			
Actuated g/C Ratio	0.41	0.54			0.22	1.00	0.23		0.32			
Clearance Time (s)	7.0											
Vehicle Extension (s)	3.0											
Lane Grp Cap (vph)	1241	2454			1498	1398	697		786			
v/s Ratio Prot	0.36	c0.51			c0.29		0.18		c0.47			
v/s Ratio Perm						0.56						
v/c Ratio	0.90	0.95			1.31	0.56	0.80		1.50			
Uniform Delay, d1	50.1	38.8			69.8	0.0	65.6		61.5			
Progression Factor	0.30	0.44			0.71	1.00	1.00		1.00			
Incremental Delay, d2	1.1	1.1			143.4	1.5	6.6		230.0			
Delay (s)	16.0	18.0			193.1	1.5	72.2		291.5			
Level of Service	B	B			F	A	E		F			
Approach Delay (s)		17.4			138.5			221.2			0.0	
Approach LOS		B			F			F			A	

Intersection Summary			
HCM 2000 Control Delay	103.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.30		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	37.0
Intersection Capacity Utilization	101.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	SBR
Lane Configurations					
Traffic Volume (vph)	55	3271	2538	65	66
Future Volume (vph)	55	3271	2538	65	66
Turn Type	Prot	NA	NA	Perm	Perm
Protected Phases	1	6	2		
Permitted Phases				2	6
Detector Phase	1	6	2	2	6
Switch Phase					
Minimum Initial (s)	4.0	20.0	20.0	20.0	20.0
Minimum Split (s)	12.0	26.5	27.5	27.5	26.5
Total Split (s)	32.0	180.0	148.0	148.0	180.0
Total Split (%)	17.8%	100.0%	82.2%	82.2%	100.0%
Yellow Time (s)	4.0	4.5	4.5	4.5	4.5
All-Red Time (s)	4.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0	6.5	6.5	6.5	6.5
Lead/Lag	Lag		Lead	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	20.6	180.0	149.2	149.2	180.0
Actuated g/C Ratio	0.11	1.00	0.83	0.83	1.00
v/c Ratio	0.28	0.53	0.38	0.05	0.04
Control Delay	74.9	0.0	0.4	0.3	0.0
Queue Delay	0.0	0.1	0.1	0.0	0.0
Total Delay	74.9	0.1	0.5	0.3	0.1
LOS	E	A	A	A	A
Approach Delay		1.3	0.5		
Approach LOS		A	A		

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 93 (52%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.53	
Intersection Signal Delay: 1.0	Intersection LOS: A
Intersection Capacity Utilization 62.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 5: Northlake Boulevard & Roan Lane

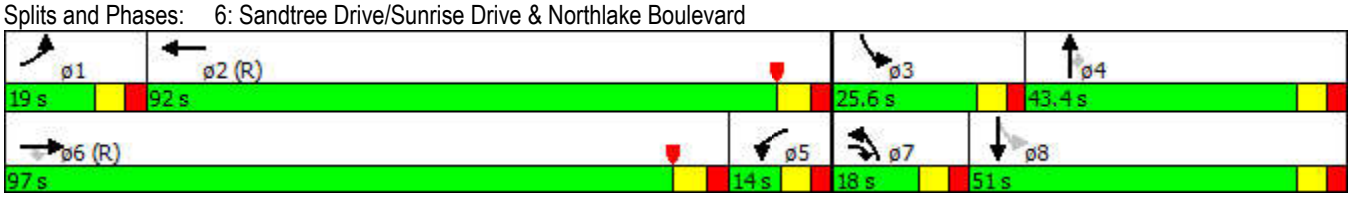
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	3271	0	0	2538	65	0	0	0	0	0	66
Future Volume (vph)	55	3271	0	0	2538	65	0	0	0	0	0	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	6.5			6.5	6.5						6.5
Lane Util. Factor	1.00	0.86			0.76	1.00						1.00
Frt	1.00	1.00			1.00	0.85						0.86
Flt Protected	0.95	1.00			1.00	1.00						1.00
Satd. Flow (prot)	1787	6471			8412	1615						1644
Flt Permitted	0.95	1.00			1.00	1.00						1.00
Satd. Flow (perm)	1787	6471			8412	1615						1644
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	58	3443	0	0	2672	68	0	0	0	0	0	69
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	58	3443	0	0	2672	68	0	0	0	0	0	69
Heavy Vehicles (%)	1%	1%	1%	0%	3%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA			NA	Perm						Perm
Protected Phases	1	6			2							
Permitted Phases						2						6
Actuated Green, G (s)	19.2	180.0			146.3	146.3						180.0
Effective Green, g (s)	19.2	180.0			146.3	146.3						180.0
Actuated g/C Ratio	0.11	1.00			0.81	0.81						1.00
Clearance Time (s)	8.0	6.5			6.5	6.5						6.5
Vehicle Extension (s)	3.0	3.0			3.0	3.0						3.0
Lane Grp Cap (vph)	190	6471			6837	1312						1644
v/s Ratio Prot	0.03	c0.53			0.32							
v/s Ratio Perm						0.04						0.04
v/c Ratio	0.31	0.53			0.39	0.05						0.04
Uniform Delay, d1	74.2	0.0			4.6	3.3						0.0
Progression Factor	1.05	1.00			0.06	0.07						1.00
Incremental Delay, d2	0.1	0.0			0.1	0.0						0.0
Delay (s)	77.8	0.0			0.4	0.3						0.0
Level of Service	E	A			A	A						A
Approach Delay (s)		1.3			0.4			0.0			0.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	0.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	110	2782	216	145	2121	241	14	153	316	24
Future Volume (vph)	110	2782	216	145	2121	241	14	153	316	24
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Perm	pm+pt	NA
Protected Phases	1	6	7	5	2	7	4		3	8
Permitted Phases			6					4	8	
Detector Phase	1	6	7	5	2	7	4	4	3	8
Switch Phase										
Minimum Initial (s)	4.0	20.0	4.0	4.0	20.0	4.0	6.0	6.0	4.0	6.0
Minimum Split (s)	12.5	38.5	12.5	12.5	32.5	12.5	42.0	42.0	12.5	51.0
Total Split (s)	19.0	97.0	18.0	14.0	92.0	18.0	43.4	43.4	25.6	51.0
Total Split (%)	10.6%	53.9%	10.0%	7.8%	51.1%	10.0%	24.1%	24.1%	14.2%	28.3%
Yellow Time (s)	4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	2.5	3.0	3.0	2.5	3.0	3.0	2.5	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.5	6.5	7.0	7.5	6.5	7.0	7.0	6.5	7.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?										
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	None	None
Act Effct Green (s)	19.6	108.5	121.0	7.0	95.9	11.5	17.4	17.4	43.5	25.0
Actuated g/C Ratio	0.11	0.60	0.67	0.04	0.53	0.06	0.10	0.10	0.24	0.14
v/c Ratio	0.60	0.96	0.21	1.18	0.90	1.17	0.08	0.79	1.04	0.61
Control Delay	92.4	34.0	4.5	202.6	44.0	182.7	71.2	73.9	121.6	83.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	92.4	34.0	4.5	202.6	44.0	182.7	71.2	73.9	121.6	83.6
LOS	F	C	A	F	D	F	E	E	F	F
Approach Delay		34.0			53.6		138.1			110.6
Approach LOS		C			D		F			F

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 23 (13%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay: 53.5	Intersection LOS: D
Intersection Capacity Utilization 103.7%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 6: Sandtree Drive/Sunrise Drive & Northlake Boulevard



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	2782	216	145	2121	130	241	14	153	316	24	106
Future Volume (vph)	110	2782	216	145	2121	130	241	14	153	316	24	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.5	6.5	7.0	7.5		6.5	7.0	7.0	6.5	7.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91		0.97	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1583	3367	4944		3400	1845	1568	1752	1618	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.54	1.00	
Satd. Flow (perm)	1770	5085	1583	3367	4944		3400	1845	1568	1004	1618	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	116	2928	227	153	2233	137	254	15	161	333	25	112
RTOR Reduction (vph)	0	0	20	0	0	0	0	0	54	0	0	0
Lane Group Flow (vph)	116	2928	207	153	2370	0	254	15	107	333	137	0
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	Perm	pm+pt	NA	
Protected Phases	1	6	7	5	2		7	4		3	8	
Permitted Phases			6						4	8		
Actuated Green, G (s)	19.6	108.5	120.0	7.0	95.9		11.5	17.4	17.4	43.0	25.0	
Effective Green, g (s)	19.6	108.5	120.0	7.0	95.9		11.5	17.4	17.4	43.0	25.0	
Actuated g/C Ratio	0.11	0.60	0.67	0.04	0.53		0.06	0.10	0.10	0.24	0.14	
Clearance Time (s)	7.0	7.5	6.5	7.0	7.5		6.5	7.0	7.0	6.5	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	192	3065	1055	130	2634		217	178	151	319	224	
v/s Ratio Prot	0.07	c0.58	0.01	c0.05	0.48		0.07	0.01		c0.11	0.08	
v/s Ratio Perm			0.12						0.07	c0.14		
v/c Ratio	0.60	0.96	0.20	1.18	0.90		1.17	0.08	0.71	1.04	0.61	
Uniform Delay, d1	76.5	33.5	11.5	86.5	37.7		84.2	74.0	78.8	66.9	72.9	
Progression Factor	1.06	0.77	0.83	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.5	7.8	0.1	134.2	5.5		114.8	0.2	14.1	62.3	4.9	
Delay (s)	85.5	33.4	9.6	220.7	43.2		199.0	74.2	92.9	129.2	77.8	
Level of Service	F	C	A	F	D		F	E	F	F	E	
Approach Delay (s)		33.6			54.0			154.9			114.2	
Approach LOS		C			D			F			F	

Intersection Summary			
HCM 2000 Control Delay	54.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	103.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	2782	216	145	2121	130	241	14	153	316	24	106
Future Volume (veh/h)	110	2782	216	145	2121	130	241	14	153	316	24	106
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1827	1827	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	116	2928	227	153	2233	137	254	15	161	333	25	112
Adj No. of Lanes	1	3	1	2	3	0	2	1	1	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	4	4	4	3	3	3	3	3	3
Cap, veh/h	118	2529	888	556	2875	175	218	136	116	305	34	153
Arrive On Green	0.13	0.99	0.99	0.16	0.60	0.60	0.06	0.07	0.07	0.11	0.12	0.12
Sat Flow, veh/h	1774	5085	1583	3375	4808	293	3408	1845	1568	1757	294	1318
Grp Volume(v), veh/h	116	2928	227	153	1539	831	254	15	161	333	0	137
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1688	1663	1775	1704	1845	1568	1757	0	1612
Q Serve(g_s), s	11.7	89.5	0.1	7.1	62.4	63.7	11.5	1.4	9.8	19.1	0.0	14.8
Cycle Q Clear(g_c), s	11.7	89.5	0.1	7.1	62.4	63.7	11.5	1.4	9.8	19.1	0.0	14.8
Prop In Lane	1.00		1.00	1.00		0.16	1.00		1.00	1.00		0.82
Lane Grp Cap(c), veh/h	118	2529	888	556	1988	1062	218	136	116	305	0	187
V/C Ratio(X)	0.98	1.16	0.26	0.28	0.77	0.78	1.17	0.11	1.39	1.09	0.00	0.73
Avail Cap(c_a), veh/h	118	2529	888	556	1988	1062	218	373	317	305	0	394
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.83	0.83	0.83	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	77.9	0.5	0.1	65.8	27.1	27.3	84.3	77.9	45.1	73.3	0.0	76.9
Incr Delay (d2), s/veh	69.4	75.2	0.6	0.3	3.0	5.8	113.2	0.4	188.8	77.8	0.0	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	12.3	32.1	0.3	6.0	38.1	42.3	15.9	1.3	18.5	22.6	0.0	11.2
LnGrp Delay(d),s/veh	147.3	75.7	0.6	66.1	30.1	33.1	197.5	78.2	233.9	151.1	0.0	82.3
LnGrp LOS	F	F	A	E	C	C	F	E	F	F		F
Approach Vol, veh/h		3271			2523			430			470	
Approach Delay, s/veh		73.0			33.3			206.9			131.1	
Approach LOS		E			C			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	115.2	25.6	20.2	37.2	97.0	18.0	27.8
Change Period (Y+Rc), s	7.0	7.5	6.5	7.0	7.5	* 7.5	6.5	7.0
Max Green Setting (Gmax), s	12.0	84.5	19.1	36.4	7.0	* 90	11.5	44.0
Max Q Clear Time (g_c+I1), s	13.7	65.7	21.1	11.8	9.1	91.5	13.5	16.8
Green Ext Time (p_c), s	0.0	15.2	0.0	1.5	0.0	0.0	0.0	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	70.7
HCM 2010 LOS	E

Notes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	486	1241	242	390	1870	419	550	743	476	495	845	819
Future Volume (vph)	486	1241	242	390	1870	419	550	743	476	495	845	819
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	1	6		5	2		7	4	5	3	8	1
Permitted Phases			6			2			4			8
Detector Phase	1	6	6	5	2	2	7	4	5	3	8	1
Switch Phase												
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	20.0	4.0	6.0	4.0	4.0	6.0	4.0
Minimum Split (s)	22.0	48.0	48.0	11.0	52.0	52.0	11.0	43.5	11.0	21.0	47.0	22.0
Total Split (s)	33.0	70.0	70.0	35.0	72.0	72.0	28.0	47.0	35.0	28.0	47.0	33.0
Total Split (%)	18.3%	38.9%	38.9%	19.4%	40.0%	40.0%	15.6%	26.1%	19.4%	15.6%	26.1%	18.3%
Yellow Time (s)	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.5	2.5	3.0	2.5	2.5	3.0	2.5	3.0	3.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	7.0	7.0	7.0	7.0	7.0	7.0	6.5	7.0	7.0	6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?												
Recall Mode	None	Max	Max	None	C-Max	C-Max	Max	None	None	None	None	None
Act Effct Green (s)	30.5	68.7	68.7	25.8	65.0	65.0	21.0	37.0	69.3	21.0	37.5	74.0
Actuated g/C Ratio	0.17	0.38	0.38	0.14	0.36	0.36	0.12	0.21	0.38	0.12	0.21	0.41
v/c Ratio	0.88	0.67	0.40	0.83	1.06	0.72	1.43	0.74	0.77	1.30	0.84	1.26
Control Delay	89.2	49.3	33.8	101.7	60.8	17.6	260.0	71.4	50.3	210.8	76.1	167.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	89.2	49.3	33.8	101.7	60.8	17.6	260.0	71.4	50.3	210.8	76.1	167.5
LOS	F	D	C	F	E	B	F	E	D	F	E	F
Approach Delay		57.2			60.0			124.4			141.7	
Approach LOS		E			E			F			F	

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 102 (57%), Referenced to phase 2:WBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.43
Intersection Signal Delay: 93.2 — Intersection LOS: F
Intersection Capacity Utilization 118.8% — ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 1: Military Trail & Northlake Boulevard

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	486	1241	242	390	1870	419	550	743	476	495	845	819
Future Volume (vph)	486	1241	242	390	1870	419	550	743	476	495	845	819
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	7.0	7.0	7.0	7.0	7.0	7.0	6.5	7.0	7.0	6.0	6.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3467	5136	1599	3467	5136	1599	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3467	5136	1599	3467	5136	1599	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	512	1306	255	411	1968	441	579	782	501	521	889	862
RTOR Reduction (vph)	0	0	37	0	0	38	0	0	39	0	0	37
Lane Group Flow (vph)	512	1306	218	411	1968	403	579	782	462	521	889	825
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	1	6		5	2		7	4	5	3	8	1
Permitted Phases			6			2			4			8
Actuated Green, G (s)	30.5	68.7	68.7	25.8	65.0	65.0	21.0	37.0	62.8	21.0	37.5	68.0
Effective Green, g (s)	30.5	68.7	68.7	25.8	65.0	65.0	21.0	37.0	62.8	21.0	37.5	68.0
Actuated g/C Ratio	0.17	0.38	0.38	0.14	0.36	0.36	0.12	0.21	0.35	0.12	0.21	0.38
Clearance Time (s)	6.0	7.0	7.0	7.0	7.0	7.0	7.0	6.5	7.0	7.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	581	1940	604	496	1854	577	404	1055	557	400	1059	650
v/s Ratio Prot	0.15	c0.26		0.12	c0.38		c0.17	0.15	0.12	0.15	0.17	c0.21
v/s Ratio Perm			0.14			0.25			0.17			0.31
v/c Ratio	0.88	0.67	0.36	0.83	1.06	0.70	1.43	0.74	0.83	1.30	0.84	1.27
Uniform Delay, d1	73.0	46.3	39.9	75.0	57.5	49.1	79.5	67.0	53.7	79.5	68.4	56.0
Progression Factor	1.00	1.00	1.00	1.28	0.48	0.35	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.6	1.9	1.7	4.2	32.7	2.5	208.7	2.8	9.9	153.3	6.0	132.8
Delay (s)	87.6	48.2	41.6	100.2	60.4	19.7	288.2	69.9	63.6	232.8	74.3	188.8
Level of Service	F	D	D	F	E	B	F	E	E	F	E	F
Approach Delay (s)		57.1			59.8			136.1			154.1	
Approach LOS		E			E			F			F	

Intersection Summary			
HCM 2000 Control Delay	98.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.27		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	27.5
Intersection Capacity Utilization	118.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	486	1241	242	390	1870	419	550	743	476	495	845	819
Future Volume (veh/h)	486	1241	242	390	1870	419	550	743	476	495	845	819
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1881	1881	1881	1881	1881	1881	1863	1863	1863
Adj Flow Rate, veh/h	512	1306	255	411	1968	441	579	782	501	521	889	862
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	1	1	1	1	1	1	2	2	2
Cap, veh/h	516	2377	740	451	2325	724	406	1170	572	402	1158	598
Arrive On Green	0.15	0.47	0.47	0.26	0.91	0.91	0.12	0.23	0.23	0.12	0.23	0.23
Sat Flow, veh/h	3442	5085	1583	3476	5136	1599	3476	5136	1599	3442	5085	1583
Grp Volume(v), veh/h	512	1306	255	411	1968	441	579	782	501	521	889	862
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1738	1712	1599	1738	1712	1599	1721	1695	1583
Q Serve(g_s), s	26.7	33.1	18.4	20.6	27.9	10.5	21.0	25.0	41.0	21.0	29.4	41.0
Cycle Q Clear(g_c), s	26.7	33.1	18.4	20.6	27.9	10.5	21.0	25.0	41.0	21.0	29.4	41.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	516	2377	740	451	2325	724	406	1170	572	402	1158	598
V/C Ratio(X)	0.99	0.55	0.34	0.91	0.85	0.61	1.43	0.67	0.88	1.30	0.77	1.44
Avail Cap(c_a), veh/h	516	2377	740	541	2325	724	406	1170	572	402	1158	598
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.19	0.19	0.19	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	76.4	34.3	30.4	65.6	6.0	5.1	79.5	63.3	54.1	79.5	65.0	56.0
Incr Delay (d2), s/veh	37.4	0.9	1.3	4.3	0.8	0.7	206.4	1.5	14.3	151.2	3.2	207.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	21.8	22.2	13.1	12.5	14.7	5.9	39.1	17.6	33.9	33.1	20.3	115.7
LnGrp Delay(d),s/veh	113.8	35.3	31.7	70.0	6.8	5.9	285.9	64.8	68.4	230.7	68.2	263.9
LnGrp LOS	F	D	C	E	A	A	F	E	E	F	E	F
Approach Vol, veh/h		2073			2820			1862			2272	
Approach Delay, s/veh		54.2			15.8			134.5			179.7	
Approach LOS		D			B			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	33.0	89.0	28.0	47.5	30.4	91.6	28.0	47.5
Change Period (Y+Rc), s	6.0	7.0	7.0	6.5	7.0	7.0	7.0	* 6.5
Max Green Setting (Gmax), s	27.0	65.0	21.0	40.5	28.0	63.0	21.0	* 41
Max Q Clear Time (g_c+I1), s	28.7	29.9	23.0	43.0	22.6	35.1	23.0	43.0
Green Ext Time (p_c), s	0.0	32.0	0.0	0.0	0.7	25.8	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	90.4
HCM 2010 LOS	F

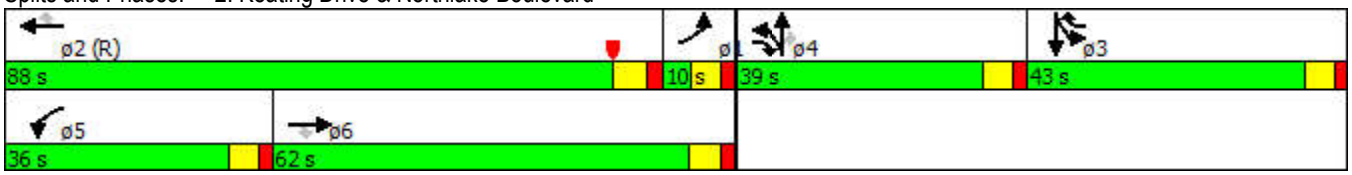
Notes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBT
Lane Configurations										
Traffic Volume (vph)	56	2053	247	452	2533	370	265	48	545	50
Future Volume (vph)	56	2053	247	452	2533	370	265	48	545	50
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Split	NA	Perm	NA
Protected Phases	1	6	4	5	2	3	4	4		3
Permitted Phases			6			2			4	
Detector Phase	1	6	4	5	2	3	4	4	4	3
Switch Phase										
Minimum Initial (s)	4.0	20.0	5.0	4.0	20.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	45.0	11.0	22.0	39.5	43.0	11.0	11.0	11.0	43.0
Total Split (s)	10.0	62.0	39.0	36.0	88.0	43.0	39.0	39.0	39.0	43.0
Total Split (%)	5.6%	34.4%	21.7%	20.0%	48.9%	23.9%	21.7%	21.7%	21.7%	23.9%
Yellow Time (s)	4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.5	6.0	6.0	6.5	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lead	Lead	Lead	Lag
Lead-Lag Optimize?			Yes			Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	C-Max	None	None	None	None	None
Act Effct Green (s)	4.0	55.5	95.0	43.3	94.8	125.0	33.0	33.0	33.0	23.7
Actuated g/C Ratio	0.02	0.31	0.53	0.24	0.53	0.69	0.18	0.18	0.18	0.13
v/c Ratio	1.51	1.37	0.29	1.11	0.99	0.34	0.53	0.52	1.68	0.68
Control Delay	346.1	211.7	13.3	124.3	48.8	12.6	73.6	73.1	353.7	82.1
Queue Delay	0.0	0.0	0.0	0.0	40.8	0.8	0.0	0.0	0.0	0.0
Total Delay	346.1	211.7	13.3	124.3	89.6	13.4	73.6	73.1	353.7	82.1
LOS	F	F	B	F	F	B	E	E	F	F
Approach Delay		194.1			85.9			251.4		82.1
Approach LOS		F			F			F		F

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 76 (42%), Referenced to phase 2:WBT, Start of Yellow
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.68
Intersection Signal Delay: 143.6 — Intersection LOS: F
Intersection Capacity Utilization 99.2% — ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 2: Keating Drive & Northlake Boulevard



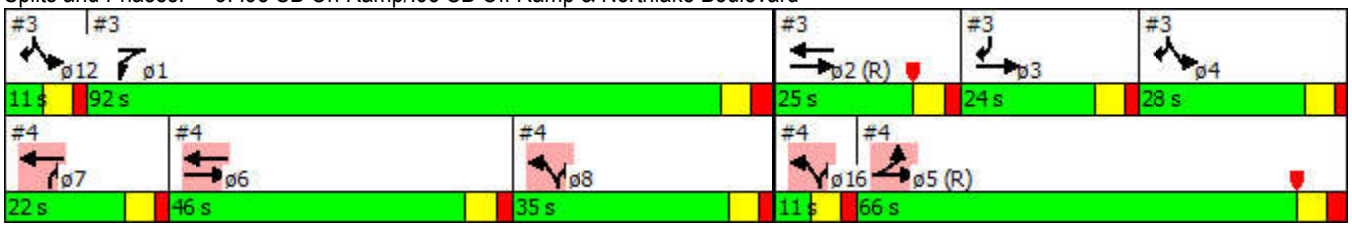
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	2053	247	452	2533	370	265	48	545	188	50	48
Future Volume (vph)	56	2053	247	452	2533	370	265	48	545	188	50	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.5	6.0	6.0	6.5	6.0	6.0	6.0	6.0		6.0	
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95	1.00		0.95	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85		0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		0.97	
Satd. Flow (prot)	1787	5136	1599	1787	5136	1599	1698	1727	1599		3373	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.97	1.00		0.97	
Satd. Flow (perm)	1787	5136	1599	1787	5136	1599	1698	1727	1599		3373	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	59	2161	260	476	2666	389	279	51	574	198	53	51
RTOR Reduction (vph)	0	0	56	0	0	21	0	0	49	0	0	0
Lane Group Flow (vph)	59	2161	204	476	2666	369	165	165	525	0	302	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Split	NA	Perm	Split	NA	
Protected Phases	1	6	4	5	2	3	4	4		3	3	
Permitted Phases			6			2			4			
Actuated Green, G (s)	4.0	55.5	88.5	43.3	94.8	118.5	33.0	33.0	33.0		23.7	
Effective Green, g (s)	4.0	55.5	88.5	43.3	94.8	118.5	33.0	33.0	33.0		23.7	
Actuated g/C Ratio	0.02	0.31	0.49	0.24	0.53	0.66	0.18	0.18	0.18		0.13	
Clearance Time (s)	6.0	6.5	6.0	6.0	6.5	6.0	6.0	6.0	6.0		6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	39	1583	786	429	2704	1105	311	316	293		444	
v/s Ratio Prot	0.03	c0.42	0.05	c0.27	0.52	0.04	0.10	0.10			c0.09	
v/s Ratio Perm			0.08			0.19			c0.33			
v/c Ratio	1.51	1.37	0.26	1.11	0.99	0.33	0.53	0.52	1.79		0.68	
Uniform Delay, d1	88.0	62.2	26.6	68.3	41.9	13.5	66.5	66.4	73.5		74.5	
Progression Factor	1.02	0.99	0.98	1.09	1.01	1.34	1.00	1.00	1.00		1.00	
Incremental Delay, d2	295.0	166.8	0.1	61.3	7.5	0.1	1.7	1.6	369.7		4.3	
Delay (s)	385.0	228.6	26.2	136.1	49.8	18.1	68.2	67.9	443.2		78.8	
Level of Service	F	F	C	F	D	B	E	E	F		E	
Approach Delay (s)		211.1			57.9			306.3			78.8	
Approach LOS		F			E			F			E	

Intersection Summary			
HCM 2000 Control Delay	142.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.28		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	24.5
Intersection Capacity Utilization	99.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR	ø2	ø3	ø4	ø5	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	2212	768	1013	2542	771	1036						
Future Volume (vph)	2212	768	1013	2542	771	1036						
Turn Type	NA	Free	Prot	NA	Prot	custom						
Protected Phases	3 2		1	1 2	4 12	4 3 12	2	3	4	5	6	7
Permitted Phases		Free				4						
Detector Phase	3 2		1	1 2	4 12	4 3 12						
Switch Phase												
Minimum Initial (s)			4.0				4.0	5.0	6.0	4.0	4.0	10.0
Minimum Split (s)			23.0				22.5	22.5	12.0	23.0	22.5	22.0
Total Split (s)			92.0				25.0	24.0	28.0	66.0	46.0	22.0
Total Split (%)			51.1%				14%	13%	16%	37%	26%	12%
Yellow Time (s)			4.0				4.5	4.0	4.0	4.0	4.5	4.0
All-Red Time (s)			3.0				2.0	2.0	2.0	3.0	2.0	2.0
Lost Time Adjust (s)			0.0									
Total Lost Time (s)			7.0									
Lead/Lag			Lag				Lead	Lag		Lag	Lag	Lead
Lead-Lag Optimize?								Yes			Yes	Yes
Recall Mode			None				C-Max	None	None	C-Max	Max	None
Act Effct Green (s)	43.0	180.0	85.0	110.0	33.0	57.0						
Actuated g/C Ratio	0.24	1.00	0.47	0.61	0.18	0.32						
v/c Ratio	1.10	0.51	0.66	0.86	1.30	1.12						
Control Delay	99.6	5.1	3.1	6.0	201.9	121.4						
Queue Delay	0.5	0.0	49.9	46.5	0.0	6.7						
Total Delay	100.0	5.1	53.1	52.6	201.9	128.1						
LOS	F	A	D	D	F	F						
Approach Delay	75.6			52.7								
Approach LOS	E			D								

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 137 (76%), Referenced to phase 2:EBWB and 5:, Start of Yellow	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.33	
Intersection Signal Delay: 84.0	Intersection LOS: F
Intersection Capacity Utilization 111.1%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 3: I95 SB On Ramp/I95 SB Off Ramp & Northlake Boulevard



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	5.0	5.0
Minimum Split (s)	12.0	11.0	11.0
Total Split (s)	35.0	11.0	11.0
Total Split (%)	19%	6%	6%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	Lead
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

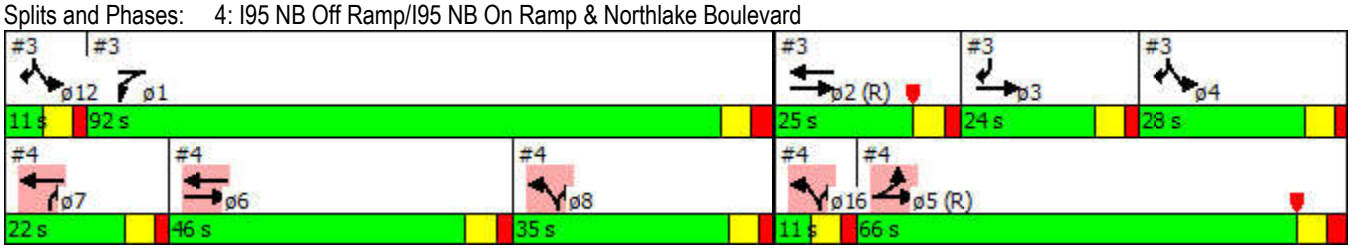
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2212	768	1013	2542	0	0	0	0	771	0	1036
Future Volume (vph)	0	2212	768	1013	2542	0	0	0	0	771	0	1036
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	7.0	7.0					6.0		6.0
Lane Util. Factor		*0.95	1.00	0.97	0.91					0.97		0.88
Frt		1.00	0.85	1.00	1.00					1.00		0.95
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		8848	1583	3433	5085					3400		3084
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		8848	1583	3433	5085					3400		3084
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	2328	808	1066	2676	0	0	0	0	812	0	1091
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	2328	808	1066	2676	0	0	0	0	812	0	1091
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	0%	0%	0%	3%	3%	3%
Turn Type		NA	Free	Prot	NA					Prot		custom
Protected Phases		3 2		1	1 2					4 12		4 3 12
Permitted Phases			Free									4
Actuated Green, G (s)		43.0	180.0	85.0	110.5					33.0		57.0
Effective Green, g (s)		36.5	180.0	85.0	110.5					33.0		57.0
Actuated g/C Ratio		0.20	1.00	0.47	0.61					0.18		0.32
Clearance Time (s)				7.0								
Vehicle Extension (s)				3.0								
Lane Grp Cap (vph)		1794	1583	1621	3121					623		976
v/s Ratio Prot		c0.26		0.31	c0.53					c0.24		c0.35
v/s Ratio Perm			0.51									
v/c Ratio		1.30	0.51	0.66	0.86					1.30		1.12
Uniform Delay, d1		71.8	0.0	36.4	28.3					73.5		61.5
Progression Factor		0.85	1.00	0.08	0.20					1.00		1.00
Incremental Delay, d2		134.3	0.1	0.1	0.2					148.0		66.9
Delay (s)		195.4	0.1	3.0	5.8					221.5		128.4
Level of Service		F	A	A	A					F		F
Approach Delay (s)		145.1			5.0			0.0			168.1	
Approach LOS		F			A			A			F	

Intersection Summary			
HCM 2000 Control Delay	90.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	37.0
Intersection Capacity Utilization	111.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR	ø1	ø2	ø3	ø4	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	1103	1880	2806	1259	749	998						
Future Volume (vph)	1103	1880	2806	1259	749	998						
Turn Type	Prot	NA	NA	Free	Prot	custom						
Protected Phases	5	5 6	6 7		8 16	8 7 16	1	2	3	4	6	7
Permitted Phases				Free								
Detector Phase	5	5 6	6 7		8 16	8 7 16						
Switch Phase												
Minimum Initial (s)	4.0						4.0	4.0	5.0	6.0	4.0	10.0
Minimum Split (s)	23.0						23.0	22.5	22.5	12.0	22.5	22.0
Total Split (s)	66.0						92.0	25.0	24.0	28.0	46.0	22.0
Total Split (%)	36.7%						51%	14%	13%	16%	26%	12%
Yellow Time (s)	4.0						4.0	4.5	4.0	4.0	4.5	4.0
All-Red Time (s)	3.0						3.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0											
Total Lost Time (s)	7.0											
Lead/Lag	Lag						Lag	Lead	Lag		Lag	Lead
Lead-Lag Optimize?									Yes		Yes	Yes
Recall Mode	C-Max						None	C-Max	None	None	Max	None
Act Effct Green (s)	59.0	98.0	61.5	180.0	40.0	56.0						
Actuated g/C Ratio	0.33	0.54	0.34	1.00	0.22	0.31						
v/c Ratio	1.14	0.79	1.26	0.92	1.14	1.33						
Control Delay	78.7	12.3	153.7	32.0	138.7	196.6						
Queue Delay	2.4	3.1	0.2	0.0	0.0	0.0						
Total Delay	81.1	15.5	153.8	32.0	138.7	196.6						
LOS	F	B	F	C	F	F						
Approach Delay		39.7	116.1									
Approach LOS		D	F									

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 137 (76%), Referenced to phase 2:EBWB and 5:, Start of Yellow	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.33	
Intersection Signal Delay: 101.3	Intersection LOS: F
Intersection Capacity Utilization 111.1%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 4: I95 NB Off Ramp/I95 NB On Ramp & Northlake Boulevard



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	5.0	5.0
Minimum Split (s)	12.0	11.0	11.0
Total Split (s)	35.0	11.0	11.0
Total Split (%)	19%	6%	6%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	Lead
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1103	1880	0	0	2806	1259	749	0	998	0	0	0
Future Volume (vph)	1103	1880	0	0	2806	1259	749	0	998	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0			6.5	4.0	6.0		6.0			
Lane Util. Factor	0.97	0.91			0.81	1.00	0.97		0.88			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	3120	4622			6857	1439	3120		2533			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3120	4622			6857	1439	3120		2533			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1161	1979	0	0	2954	1325	788	0	1051	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	1161	1979	0	0	2954	1325	788	0	1051	0	0	0
Heavy Vehicles (%)	1%	1%	1%	0%	1%	1%	1%	1%	1%	0%	0%	0%
Turn Type	Prot	NA			NA	Free	Prot		custom			
Protected Phases	5	5 6			6 7		8 16		8 7 16			
Permitted Phases						Free						
Actuated Green, G (s)	59.0	98.5			61.5	180.0	40.0		56.0			
Effective Green, g (s)	59.0	98.5			55.5	180.0	40.0		56.0			
Actuated g/C Ratio	0.33	0.55			0.31	1.00	0.22		0.31			
Clearance Time (s)	7.0											
Vehicle Extension (s)	3.0											
Lane Grp Cap (vph)	1022	2529			2114	1439	693		788			
v/s Ratio Prot	c0.37	0.43			c0.43		0.25		c0.41			
v/s Ratio Perm						c0.92						
v/c Ratio	1.14	0.78			1.40	0.92	1.14		1.33			
Uniform Delay, d1	60.5	32.3			62.2	0.0	70.0		62.0			
Progression Factor	0.20	0.68			0.63	1.00	1.00		1.00			
Incremental Delay, d2	62.5	0.2			181.2	9.3	78.6		158.8			
Delay (s)	74.8	22.0			220.2	9.3	148.6		220.8			
Level of Service	E	C			F	A	F		F			
Approach Delay (s)		41.5			154.9			189.9			0.0	
Approach LOS		D			F			F			A	

Intersection Summary			
HCM 2000 Control Delay	123.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.38		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	37.0
Intersection Capacity Utilization	111.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	SBR
Lane Configurations					
Traffic Volume (vph)	150	2728	3945	140	120
Future Volume (vph)	150	2728	3945	140	120
Turn Type	Prot	NA	NA	Perm	Perm
Protected Phases	1	6	2		
Permitted Phases				2	6
Detector Phase	1	6	2	2	6
Switch Phase					
Minimum Initial (s)	4.0	20.0	20.0	20.0	20.0
Minimum Split (s)	12.0	26.5	27.5	27.5	26.5
Total Split (s)	42.0	180.0	138.0	138.0	180.0
Total Split (%)	23.3%	100.0%	76.7%	76.7%	100.0%
Yellow Time (s)	4.0	4.5	4.5	4.5	4.5
All-Red Time (s)	4.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0	6.5	6.5	6.5	6.5
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	21.2	180.0	144.3	144.3	180.0
Actuated g/C Ratio	0.12	1.00	0.80	0.80	1.00
v/c Ratio	0.75	0.44	0.62	0.11	0.08
Control Delay	93.6	0.1	1.2	1.1	0.1
Queue Delay	0.0	0.0	0.6	0.0	0.0
Total Delay	93.6	0.1	1.8	1.1	0.1
LOS	F	A	A	A	A
Approach Delay		4.9	1.8		
Approach LOS		A	A		

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 72 (40%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 3.0	Intersection LOS: A
Intersection Capacity Utilization 80.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 5: Northlake Boulevard & Roan Lane

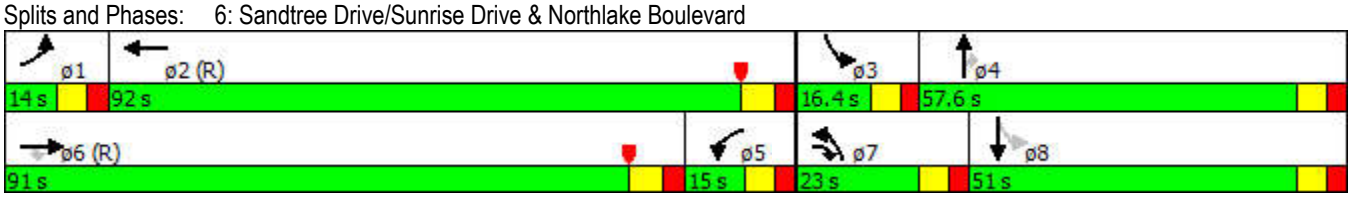
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	2728	0	0	3945	140	0	0	0	0	0	120
Future Volume (vph)	150	2728	0	0	3945	140	0	0	0	0	0	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	6.5			6.5	6.5						6.5
Lane Util. Factor	1.00	0.86			0.76	1.00						1.00
Frt	1.00	1.00			1.00	0.85						0.86
Flt Protected	0.95	1.00			1.00	1.00						1.00
Satd. Flow (prot)	1787	6471			8412	1615						1644
Flt Permitted	0.95	1.00			1.00	1.00						1.00
Satd. Flow (perm)	1787	6471			8412	1615						1644
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	158	2872	0	0	4153	147	0	0	0	0	0	126
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	158	2872	0	0	4153	147	0	0	0	0	0	126
Heavy Vehicles (%)	1%	1%	1%	0%	3%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA			NA	Perm						Perm
Protected Phases	1	6			2							
Permitted Phases						2						6
Actuated Green, G (s)	21.2	180.0			144.3	144.3						180.0
Effective Green, g (s)	21.2	180.0			144.3	144.3						180.0
Actuated g/C Ratio	0.12	1.00			0.80	0.80						1.00
Clearance Time (s)	8.0	6.5			6.5	6.5						6.5
Vehicle Extension (s)	3.0	3.0			3.0	3.0						3.0
Lane Grp Cap (vph)	210	6471			6743	1294						1644
v/s Ratio Prot	c0.09	0.44			c0.49							
v/s Ratio Perm						0.09						0.08
v/c Ratio	0.75	0.44			0.62	0.11						0.08
Uniform Delay, d1	76.9	0.0			7.0	3.9						0.0
Progression Factor	1.14	1.00			0.16	0.25						1.00
Incremental Delay, d2	4.2	0.1			0.0	0.0						0.1
Delay (s)	92.0	0.1			1.1	1.0						0.1
Level of Service	F	A			A	A						A
Approach Delay (s)		4.9			1.1			0.0			0.1	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	2.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	14.5
Intersection Capacity Utilization	80.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	78	2442	188	208	3227	449	20	279	219	21
Future Volume (vph)	78	2442	188	208	3227	449	20	279	219	21
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	Perm	pm+pt	NA
Protected Phases	1	6	7	5	2	7	4		3	8
Permitted Phases			6					4	8	
Detector Phase	1	6	7	5	2	7	4	4	3	8
Switch Phase										
Minimum Initial (s)	4.0	20.0	4.0	4.0	20.0	4.0	6.0	6.0	4.0	6.0
Minimum Split (s)	12.5	38.5	12.5	12.5	32.5	12.5	42.0	42.0	12.5	51.0
Total Split (s)	14.0	91.0	23.0	15.0	92.0	23.0	57.6	57.6	16.4	51.0
Total Split (%)	7.8%	50.6%	12.8%	8.3%	51.1%	12.8%	32.0%	32.0%	9.1%	28.3%
Yellow Time (s)	4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	2.5	3.0	3.0	2.5	3.0	3.0	2.5	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.5	6.5	7.0	7.5	6.5	7.0	7.0	6.5	7.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?										
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	None	None
Act Effct Green (s)	16.6	100.9	118.4	8.0	92.3	16.5	33.2	33.2	37.0	26.6
Actuated g/C Ratio	0.09	0.56	0.66	0.04	0.51	0.09	0.18	0.18	0.21	0.15
v/c Ratio	0.50	0.89	0.18	1.42	1.35	1.49	0.06	0.85	0.75	0.70
Control Delay	97.7	28.2	3.6	278.1	196.2	287.5	56.6	78.2	75.5	87.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	97.7	28.2	3.6	278.1	196.2	287.5	56.6	78.2	75.5	87.3
LOS	F	C	A	F	F	F	E	E	E	F
Approach Delay		28.5			201.0		203.3			80.5
Approach LOS		C			F		F			F

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 24 (13%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.49	
Intersection Signal Delay: 131.9	Intersection LOS: F
Intersection Capacity Utilization 115.5%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 6: Sandtree Drive/Sunrise Drive & Northlake Boulevard



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	78	2442	188	208	3227	133	449	20	279	219	21	139
Future Volume (vph)	78	2442	188	208	3227	133	449	20	279	219	21	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.5	6.5	7.0	7.5		6.5	7.0	7.0	6.5	7.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91		0.97	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1787	5136	1599	3467	5105		3467	1881	1599	1770	1620	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.74	1.00	
Satd. Flow (perm)	1787	5136	1599	3467	5105		3467	1881	1599	1385	1620	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	82	2571	198	219	3397	140	473	21	294	231	22	146
RTOR Reduction (vph)	0	0	21	0	0	0	0	0	49	0	0	0
Lane Group Flow (vph)	82	2571	177	219	3537	0	473	21	245	231	168	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	Perm	pm+pt	NA	
Protected Phases	1	6	7	5	2		7	4		3	8	
Permitted Phases			6						4	8		
Actuated Green, G (s)	16.6	100.9	117.4	8.0	92.3		16.5	33.2	33.2	36.5	26.6	
Effective Green, g (s)	16.6	100.9	117.4	8.0	92.3		16.5	33.2	33.2	36.5	26.6	
Actuated g/C Ratio	0.09	0.56	0.65	0.04	0.51		0.09	0.18	0.18	0.20	0.15	
Clearance Time (s)	7.0	7.5	6.5	7.0	7.5		6.5	7.0	7.0	6.5	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	164	2879	1042	154	2617		317	346	294	302	239	
v/s Ratio Prot	0.05	c0.50	0.02	0.06	c0.69		c0.14	0.01		0.04	0.10	
v/s Ratio Perm			0.10						c0.15	0.11		
v/c Ratio	0.50	0.89	0.17	1.42	1.35		1.49	0.06	0.83	0.76	0.70	
Uniform Delay, d1	77.8	34.8	12.2	86.0	43.9		81.8	60.5	70.7	66.6	72.9	
Progression Factor	1.12	0.66	0.62	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.2	4.4	0.1	223.4	160.8		237.5	0.1	18.0	11.0	9.0	
Delay (s)	89.4	27.2	7.7	309.4	204.6		319.3	60.6	88.7	77.6	82.0	
Level of Service	F	C	A	F	F		F	E	F	E	F	
Approach Delay (s)		27.6			210.8			226.4			79.4	
Approach LOS		C			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	138.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.27		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	115.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	2442	188	208	3227	133	449	20	279	219	21	139
Future Volume (veh/h)	78	2442	188	208	3227	133	449	20	279	219	21	139
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1881	1881	1881	1900	1881	1881	1881	1863	1863	1900
Adj Flow Rate, veh/h	82	2571	198	219	3397	140	473	21	294	231	22	146
Adj No. of Lanes	1	3	1	2	3	0	2	1	1	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	2	2	2
Cap, veh/h	70	2382	888	559	2981	121	319	304	259	270	26	176
Arrive On Green	0.08	0.93	0.93	0.16	0.59	0.59	0.09	0.16	0.16	0.05	0.13	0.13
Sat Flow, veh/h	1792	5136	1599	3476	5063	206	3476	1881	1599	1774	211	1404
Grp Volume(v), veh/h	82	2571	198	219	2283	1254	473	21	294	231	0	168
Grp Sat Flow(s),veh/h/ln	1792	1712	1599	1738	1712	1845	1738	1881	1599	1774	0	1615
Q Serve(g_s), s	7.0	83.5	0.7	10.2	106.0	106.0	16.5	1.7	20.7	9.9	0.0	18.3
Cycle Q Clear(g_c), s	7.0	83.5	0.7	10.2	106.0	106.0	16.5	1.7	20.7	9.9	0.0	18.3
Prop In Lane	1.00		1.00	1.00		0.11	1.00		1.00	1.00		0.87
Lane Grp Cap(c), veh/h	70	2382	888	559	2016	1086	319	304	259	270	0	202
V/C Ratio(X)	1.18	1.08	0.22	0.39	1.13	1.15	1.48	0.07	1.14	0.85	0.00	0.83
Avail Cap(c_a), veh/h	70	2382	888	559	2016	1086	319	529	449	270	0	395
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.90	0.90	0.90	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	83.0	6.5	0.8	67.6	37.0	37.0	81.8	63.9	38.2	71.9	0.0	76.9
Incr Delay (d2), s/veh	157.5	43.2	0.5	0.4	66.5	80.4	234.2	0.1	81.3	22.5	0.0	8.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	11.7	78.3	0.7	8.6	123.2	140.3	32.9	1.6	27.0	13.1	0.0	13.5
LnGrp Delay(d),s/veh	240.5	49.7	1.4	68.1	103.5	117.4	315.9	64.0	119.5	94.4	0.0	85.4
LnGrp LOS	F	F	A	E	F	F	F	E	F	F		F
Approach Vol, veh/h		2851			3756			788			399	
Approach Delay, s/veh		51.9			106.1			235.9			90.6	
Approach LOS		D			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	113.5	16.4	36.1	36.5	91.0	23.0	29.5
Change Period (Y+Rc), s	7.0	7.5	6.5	7.0	7.5	* 7.5	6.5	7.0
Max Green Setting (Gmax), s	7.0	84.5	9.9	50.6	8.0	* 84	16.5	44.0
Max Q Clear Time (g_c+I1), s	9.0	108.0	11.9	22.7	12.2	85.5	18.5	20.3
Green Ext Time (p_c), s	0.0	0.0	0.0	2.3	0.0	0.0	0.0	2.2

Intersection Summary	
HCM 2010 Ctrl Delay	98.6
HCM 2010 LOS	F

Notes

PGA Boulevard

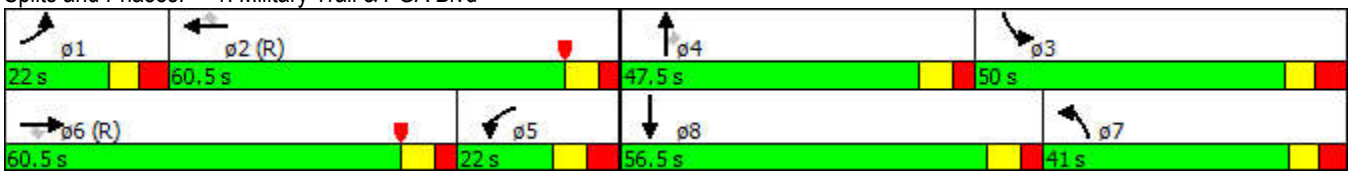
2020 Opening Year

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	195	1333	519	184	1006	365	578	745	445	708	842
Future Volume (vph)	195	1333	519	184	1006	365	578	745	445	708	842
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	1	6		5	2		7	4		3	8
Permitted Phases			6			2			4		
Detector Phase	1	6	6	5	2	2	7	4	4	3	8
Switch Phase											
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	20.0	4.0	10.0	10.0	4.0	10.0
Minimum Split (s)	13.0	47.0	47.0	14.0	46.5	46.5	13.0	47.5	47.5	13.5	54.5
Total Split (s)	22.0	60.5	60.5	22.0	60.5	60.5	41.0	47.5	47.5	50.0	56.5
Total Split (%)	12.2%	33.6%	33.6%	12.2%	33.6%	33.6%	22.8%	26.4%	26.4%	27.8%	31.4%
Yellow Time (s)	4.0	4.5	4.5	4.5	4.5	4.5	4.0	4.5	4.5	4.0	4.5
All-Red Time (s)	4.0	3.0	3.0	4.5	3.0	3.0	4.0	3.0	3.0	4.5	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0	7.5	7.5	9.0	7.5	7.5	8.0	7.5	7.5	8.5	7.5
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)	13.6	53.7	53.7	13.0	54.0	54.0	35.7	40.0	40.0	40.8	45.7
Actuated g/C Ratio	0.08	0.30	0.30	0.07	0.30	0.30	0.20	0.22	0.22	0.23	0.25
v/c Ratio	0.79	0.93	1.06	0.79	0.69	0.74	0.91	0.71	1.20	0.96	0.86
Control Delay	102.7	72.2	109.2	70.6	28.4	26.5	88.5	68.7	160.1	91.2	71.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	102.7	72.2	109.2	70.6	28.4	26.5	88.5	68.7	160.1	91.2	71.0
LOS	F	E	F	E	C	C	F	E	F	F	E
Approach Delay		84.5			32.9			98.1			79.2
Approach LOS		F			C			F			E

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 166 (92%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.20
Intersection Signal Delay: 75.3 — Intersection LOS: E
Intersection Capacity Utilization 94.2% — ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 1: Military Trail & PGA Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	195	1333	519	184	1006	365	578	745	445	708	842	186
Future Volume (vph)	195	1333	519	184	1006	365	578	745	445	708	842	186
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	7.5	7.5	9.0	7.5	7.5	8.0	7.5	7.5	8.5	7.5	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3367	4988	1553	3433	4947	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3367	4988	1553	3433	4947	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	205	1403	546	194	1059	384	608	784	468	745	886	196
RTOR Reduction (vph)	0	0	42	0	0	42	0	0	47	0	7	0
Lane Group Flow (vph)	205	1403	504	194	1059	342	608	784	421	745	1075	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	4%	4%	4%	2%	2%	2%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2			4			
Actuated Green, G (s)	13.6	53.6	53.6	13.0	54.0	54.0	35.7	40.0	40.0	40.9	45.7	
Effective Green, g (s)	13.6	53.6	53.6	13.0	54.0	54.0	35.7	40.0	40.0	40.9	45.7	
Actuated g/C Ratio	0.08	0.30	0.30	0.07	0.30	0.30	0.20	0.22	0.22	0.23	0.25	
Clearance Time (s)	8.0	7.5	7.5	9.0	7.5	7.5	8.0	7.5	7.5	8.5	7.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	259	1514	471	247	1525	474	667	1108	345	780	1255	
v/s Ratio Prot	0.06	0.28		0.06	0.21		0.18	0.16		c0.22	0.22	
v/s Ratio Perm			c0.32			c0.22			c0.27			
v/c Ratio	0.79	0.93	1.07	0.79	0.69	0.72	0.91	0.71	1.22	0.96	0.86	
Uniform Delay, d1	81.8	61.3	63.2	82.1	55.7	56.3	70.6	64.6	70.0	68.6	64.0	
Progression Factor	1.00	1.00	1.00	0.63	0.47	0.39	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	15.1	11.2	61.4	12.5	2.1	7.5	16.8	2.1	122.9	21.8	5.9	
Delay (s)	96.9	72.5	124.6	64.6	28.2	29.4	87.4	66.7	192.9	90.4	70.0	
Level of Service	F	E	F	E	C	C	F	E	F	F	E	
Approach Delay (s)		88.0			32.8			105.2			78.3	
Approach LOS		F			C			F			E	

Intersection Summary			
HCM 2000 Control Delay	77.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	32.5
Intersection Capacity Utilization	94.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	195	1333	519	184	1006	365	578	745	445	708	842	186
Future Volume (veh/h)	195	1333	519	184	1006	365	578	745	445	708	842	186
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1827	1827	1827	1863	1863	1900
Adj Flow Rate, veh/h	205	1403	0	194	1059	0	608	784	0	745	886	196
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	4	4	4	2	2	2
Cap, veh/h	243	1497	466	342	1630	508	619	915	285	834	1011	223
Arrive On Green	0.07	0.29	0.00	0.10	0.32	0.00	0.18	0.18	0.00	0.24	0.24	0.24
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3375	4988	1553	3442	4172	919
Grp Volume(v), veh/h	205	1403	0	194	1059	0	608	784	0	745	719	363
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1688	1663	1553	1721	1695	1701
Q Serve(g_s), s	10.6	48.4	0.0	9.7	32.2	0.0	32.3	27.4	0.0	37.7	36.7	37.0
Cycle Q Clear(g_c), s	10.6	48.4	0.0	9.7	32.2	0.0	32.3	27.4	0.0	37.7	36.7	37.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.54
Lane Grp Cap(c), veh/h	243	1497	466	342	1630	508	619	915	285	834	822	412
V/C Ratio(X)	0.85	0.94	0.00	0.57	0.65	0.00	0.98	0.86	0.00	0.89	0.88	0.88
Avail Cap(c_a), veh/h	268	1497	466	342	1630	508	619	1108	345	834	923	463
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.78	0.78	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	82.7	61.9	0.0	77.4	52.5	0.0	73.2	71.2	0.0	66.0	65.6	65.7
Incr Delay (d2), s/veh	19.9	12.4	0.0	1.7	1.6	0.0	31.6	5.8	0.0	12.1	8.7	16.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	24.5	0.0	4.7	15.3	0.0	17.8	13.1	0.0	19.3	18.2	19.3
LnGrp Delay(d),s/veh	102.6	74.3	0.0	79.1	54.1	0.0	104.9	77.0	0.0	78.0	74.3	82.0
LnGrp LOS	F	E		E	D		F	E		E	E	F
Approach Vol, veh/h		1608			1253			1392			1827	
Approach Delay, s/veh		77.9			57.9			89.2			77.4	
Approach LOS		E			E			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.7	66.7	52.1	40.5	26.9	60.5	41.5	51.1
Change Period (Y+Rc), s	8.0	* 9	8.5	7.5	9.0	7.5	8.5	* 7.5
Max Green Setting (Gmax), s	14.0	* 53	41.5	40.0	13.0	53.0	33.0	* 49
Max Q Clear Time (g_c+I1), s	12.6	34.2	39.7	29.4	11.7	50.4	34.3	39.0
Green Ext Time (p_c), s	0.1	7.4	1.1	3.6	0.9	1.9	0.0	4.6

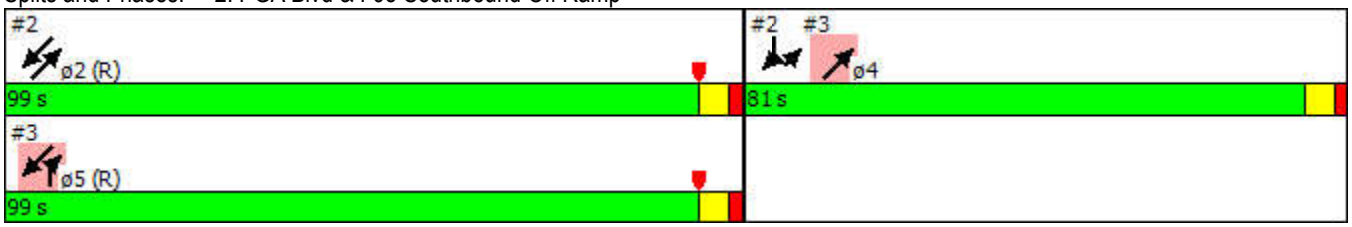
Intersection Summary	
HCM 2010 Ctrl Delay	76.2
HCM 2010 LOS	E

Notes

Lane Group	SBL	SBR	NET	SWT	ø5
Lane Configurations					
Traffic Volume (vph)	955	83	1439	1561	
Future Volume (vph)	955	83	1439	1561	
Turn Type	Prot	Prot	NA	NA	
Protected Phases	4	4	2	2	5
Permitted Phases					
Detector Phase	4	4	2	2	
Switch Phase					
Minimum Initial (s)	20.0	20.0	4.0	4.0	4.0
Minimum Split (s)	26.0	26.0	24.0	24.0	11.0
Total Split (s)	81.0	81.0	99.0	99.0	99.0
Total Split (%)	45.0%	45.0%	55.0%	55.0%	55%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	75.0	75.0	93.0	93.0	
Actuated g/C Ratio	0.42	0.42	0.52	0.52	
v/c Ratio	0.70	0.08	0.57	0.62	
Control Delay	46.6	31.9	9.6	4.2	
Queue Delay	29.5	0.0	44.1	0.0	
Total Delay	76.0	31.9	53.8	4.2	
LOS	E	C	D	A	
Approach Delay	72.5		53.8	4.2	
Approach LOS	E		D	A	

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 0 (0%), Referenced to phase 2:NESW and 5:, Start of Yellow	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.27	
Intersection Signal Delay: 39.4	Intersection LOS: D
Intersection Capacity Utilization 111.2%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 2: PGA Blvd & I-95 Southbound Off Ramp



Movement	SBL	SBR	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (vph)	955	83	0	1439	1561	0
Future Volume (vph)	955	83	0	1439	1561	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		0.91	0.91	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3433	2776		5136	5136	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3433	2776		5136	5136	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1005	87	0	1515	1643	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1005	87	0	1515	1643	0
Heavy Vehicles (%)	2%	2%	0%	1%	1%	0%
Bus Blockages (#/hr)	0	2	0	0	0	0
Turn Type	Prot	Prot		NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases						
Actuated Green, G (s)	75.0	75.0		93.0	93.0	
Effective Green, g (s)	75.0	75.0		93.0	93.0	
Actuated g/C Ratio	0.42	0.42		0.52	0.52	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1430	1156		2653	2653	
v/s Ratio Prot	c0.29	0.03		0.29	c0.32	
v/s Ratio Perm						
v/c Ratio	0.70	0.08		0.57	0.62	
Uniform Delay, d1	43.3	31.6		29.8	30.9	
Progression Factor	1.00	1.00		0.31	0.11	
Incremental Delay, d2	1.6	0.0		0.2	0.9	
Delay (s)	44.9	31.6		9.6	4.2	
Level of Service	D	C		A	A	
Approach Delay (s)	43.8			9.6	4.2	
Approach LOS	D			A	A	

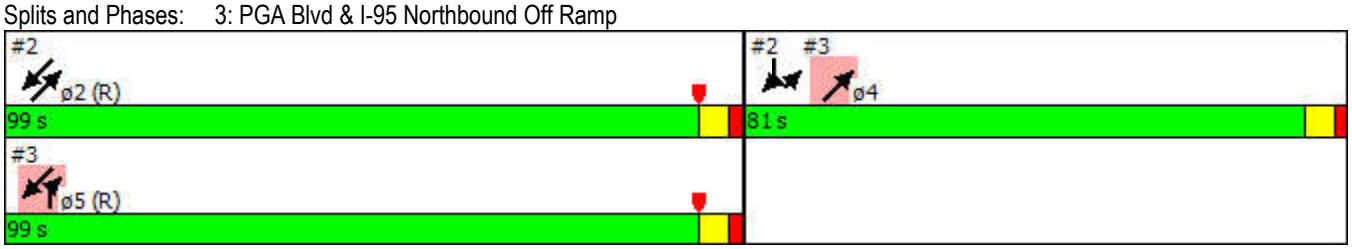
Intersection Summary			
HCM 2000 Control Delay	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	111.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	NBR	NET	SWT	ø2
Lane Configurations				
Traffic Volume (vph)	2357	2394	1561	
Future Volume (vph)	2357	2394	1561	
Turn Type	Prot	NA	NA	
Protected Phases	5	4	5	2
Permitted Phases				
Detector Phase	5	4	5	
Switch Phase				
Minimum Initial (s)	4.0	20.0	4.0	4.0
Minimum Split (s)	11.0	26.0	11.0	24.0
Total Split (s)	99.0	81.0	99.0	99.0
Total Split (%)	55.0%	45.0%	55.0%	55%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	C-Max	None	C-Max	C-Max
Act Effct Green (s)	93.0	75.0	93.0	
Actuated g/C Ratio	0.52	0.42	0.52	
v/c Ratio	1.27	1.19	0.63	
Control Delay	158.2	137.7	32.4	
Queue Delay	0.0	0.6	0.0	
Total Delay	158.2	138.2	32.4	
LOS	F	F	C	
Approach Delay		138.2	32.4	
Approach LOS		F	C	

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 0 (0%), Referenced to phase 2:NESW and 5:, Start of Yellow	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.27	
Intersection Signal Delay: 119.5	Intersection LOS: F
Intersection Capacity Utilization 111.2%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 3: PGA Blvd & I-95 Northbound Off Ramp



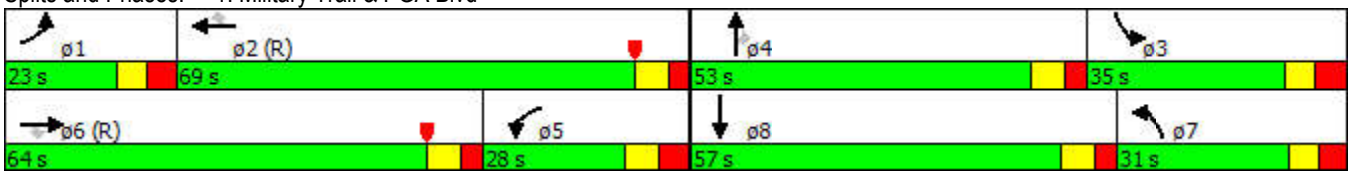
Movement	NBL	NBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	0	2357	2394	0	0	1561
Future Volume (vph)	0	2357	2394	0	0	1561
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0			6.0
Lane Util. Factor		0.76	0.91			0.91
Frt		0.85	1.00			1.00
Flt Protected		1.00	1.00			1.00
Satd. Flow (prot)		3610	5085			5085
Flt Permitted		1.00	1.00			1.00
Satd. Flow (perm)		3610	5085			5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	2481	2520	0	0	1643
RTOR Reduction (vph)	0	96	0	0	0	0
Lane Group Flow (vph)	0	2385	2520	0	0	1643
Heavy Vehicles (%)	0%	2%	2%	0%	0%	2%
Turn Type		Prot	NA			NA
Protected Phases		5	4			5
Permitted Phases						
Actuated Green, G (s)		93.0	75.0			93.0
Effective Green, g (s)		93.0	75.0			93.0
Actuated g/C Ratio		0.52	0.42			0.52
Clearance Time (s)		6.0	6.0			6.0
Vehicle Extension (s)		3.0	3.0			3.0
Lane Grp Cap (vph)		1865	2118			2627
v/s Ratio Prot		c0.66	c0.50			0.32
v/s Ratio Perm						
v/c Ratio		1.28	1.19			0.63
Uniform Delay, d1		43.5	52.5			31.1
Progression Factor		1.00	1.09			1.00
Incremental Delay, d2		129.8	89.4			1.1
Delay (s)		173.3	146.4			32.2
Level of Service		F	F			C
Approach Delay (s)	173.3		146.4			32.2
Approach LOS	F		F			C

Intersection Summary			
HCM 2000 Control Delay	128.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	111.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	288	1193	509	384	1129	534	601	994	543	531	928
Future Volume (vph)	288	1193	509	384	1129	534	601	994	543	531	928
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	1	6		5	2		7	4		3	8
Permitted Phases			6			2			4		
Detector Phase	1	6	6	5	2	2	7	4	4	3	8
Switch Phase											
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	20.0	4.0	10.0	10.0	4.0	10.0
Minimum Split (s)	13.0	47.0	47.0	14.0	46.5	46.5	13.0	47.5	47.5	13.5	54.5
Total Split (s)	23.0	64.0	64.0	28.0	69.0	69.0	31.0	53.0	53.0	35.0	57.0
Total Split (%)	12.8%	35.6%	35.6%	15.6%	38.3%	38.3%	17.2%	29.4%	29.4%	19.4%	31.7%
Yellow Time (s)	4.0	4.5	4.5	4.5	4.5	4.5	4.0	4.5	4.5	4.0	4.5
All-Red Time (s)	4.0	3.0	3.0	4.5	3.0	3.0	4.0	3.0	3.0	4.5	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0	7.5	7.5	9.0	7.5	7.5	8.0	7.5	7.5	8.5	7.5
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)	15.0	56.5	56.5	19.0	61.5	61.5	24.0	45.5	45.5	26.5	48.5
Actuated g/C Ratio	0.08	0.31	0.31	0.11	0.34	0.34	0.13	0.25	0.25	0.15	0.27
v/c Ratio	1.05	0.78	0.99	1.11	0.68	0.96	1.37	0.81	1.27	1.10	0.91
Control Delay	142.7	60.2	88.8	112.4	17.2	41.4	232.9	68.8	185.6	136.4	73.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	142.7	60.2	88.8	112.4	17.2	41.4	232.9	68.8	185.6	136.4	73.4
LOS	F	E	F	F	B	D	F	E	F	F	E
Approach Delay		79.4			41.3			144.6			93.1
Approach LOS		E			D			F			F

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 166 (92%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.37	
Intersection Signal Delay: 90.2	Intersection LOS: F
Intersection Capacity Utilization 101.0%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 1: Military Trail & PGA Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	288	1193	509	384	1129	534	601	994	543	531	928	235
Future Volume (vph)	288	1193	509	384	1129	534	601	994	543	531	928	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	7.5	7.5	9.0	7.5	7.5	8.0	7.5	7.5	8.5	7.5	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3467	5136	1599	3467	5136	1599	3467	5136	1599	3467	4980	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3467	5136	1599	3467	5136	1599	3467	5136	1599	3467	4980	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	303	1256	536	404	1188	562	633	1046	572	559	977	247
RTOR Reduction (vph)	0	0	41	0	0	40	0	0	45	0	7	0
Lane Group Flow (vph)	303	1256	495	404	1188	523	633	1046	527	559	1217	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2			4			
Actuated Green, G (s)	15.0	56.5	56.5	19.0	61.5	61.5	24.0	45.5	45.5	26.5	48.5	
Effective Green, g (s)	15.0	56.5	56.5	19.0	61.5	61.5	24.0	45.5	45.5	26.5	48.5	
Actuated g/C Ratio	0.08	0.31	0.31	0.11	0.34	0.34	0.13	0.25	0.25	0.15	0.27	
Clearance Time (s)	8.0	7.5	7.5	9.0	7.5	7.5	8.0	7.5	7.5	8.5	7.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	288	1612	501	365	1754	546	462	1298	404	510	1341	
v/s Ratio Prot	0.09	0.24		0.12	0.23		c0.18	0.20		c0.16	0.24	
v/s Ratio Perm			c0.31			c0.33			c0.33			
v/c Ratio	1.05	0.78	0.99	1.11	0.68	0.96	1.37	0.81	1.30	1.10	0.91	
Uniform Delay, d1	82.5	56.1	61.4	80.5	50.8	58.0	78.0	63.1	67.2	76.8	63.6	
Progression Factor	1.00	1.00	1.00	0.56	0.31	0.36	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	67.4	3.8	37.3	69.9	1.3	21.5	179.9	3.8	154.2	68.6	9.1	
Delay (s)	149.9	59.9	98.7	115.1	17.1	42.2	257.9	66.9	221.4	145.4	72.6	
Level of Service	F	E	F	F	B	D	F	E	F	F	E	
Approach Delay (s)		82.8			42.0			159.9			95.4	
Approach LOS		F			D			F			F	

Intersection Summary			
HCM 2000 Control Delay	95.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	32.5
Intersection Capacity Utilization	101.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	288	1193	509	384	1129	534	601	994	543	531	928	235
Future Volume (veh/h)	288	1193	509	384	1129	534	601	994	543	531	928	235
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1881	1881	1881	1881	1881	1881	1881	1881	1881	1900
Adj Flow Rate, veh/h	303	1256	0	404	1188	0	633	1046	0	559	977	247
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	290	1612	502	402	1763	549	444	1182	368	556	1073	271
Arrive On Green	0.08	0.31	0.00	0.12	0.34	0.00	0.13	0.23	0.00	0.16	0.26	0.26
Sat Flow, veh/h	3476	5136	1599	3476	5136	1599	3476	5136	1599	3476	4091	1032
Grp Volume(v), veh/h	303	1256	0	404	1188	0	633	1046	0	559	817	407
Grp Sat Flow(s),veh/h/ln	1738	1712	1599	1738	1712	1599	1738	1712	1599	1738	1712	1699
Q Serve(g_s), s	15.0	40.0	0.0	20.8	35.6	0.0	23.0	35.4	0.0	28.8	41.6	41.8
Cycle Q Clear(g_c), s	15.0	40.0	0.0	20.8	35.6	0.0	23.0	35.4	0.0	28.8	41.6	41.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.61
Lane Grp Cap(c), veh/h	290	1612	502	402	1763	549	444	1182	368	556	898	446
V/C Ratio(X)	1.05	0.78	0.00	1.01	0.67	0.00	1.43	0.88	0.00	1.01	0.91	0.91
Avail Cap(c_a), veh/h	290	1612	502	402	1763	549	444	1298	404	556	942	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.55	0.55	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	82.5	56.1	0.0	79.6	50.5	0.0	78.5	67.0	0.0	75.6	64.3	64.4
Incr Delay (d2), s/veh	65.4	3.8	0.0	34.9	1.2	0.0	204.1	7.1	0.0	39.7	12.4	21.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.8	19.5	0.0	11.9	17.0	0.0	23.6	17.5	0.0	16.9	21.3	22.3
LnGrp Delay(d),s/veh	147.9	59.9	0.0	114.6	51.7	0.0	282.6	74.1	0.0	115.3	76.7	86.1
LnGrp LOS	F	E		F	D		F	E		F	E	F
Approach Vol, veh/h		1559			1592			1679			1783	
Approach Delay, s/veh		77.0			67.6			152.7			91.0	
Approach LOS		E			E			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	70.8	37.3	48.9	29.8	64.0	31.5	54.7
Change Period (Y+Rc), s	8.0	* 9	8.5	7.5	9.0	7.5	8.5	* 7.5
Max Green Setting (Gmax), s	15.0	* 62	26.5	45.5	19.0	56.5	23.0	* 50
Max Q Clear Time (g_c+I1), s	17.0	37.6	30.8	37.4	22.8	42.0	25.0	43.8
Green Ext Time (p_c), s	0.0	10.3	0.0	4.0	0.0	7.0	0.0	3.4

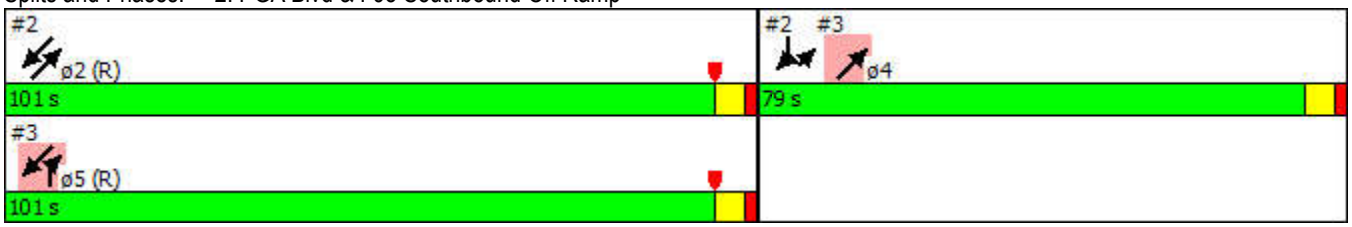
Intersection Summary	
HCM 2010 Ctrl Delay	97.7
HCM 2010 LOS	F

Notes

Lane Group	SBL	SBR	NET	SWT	ø5
Lane Configurations					
Traffic Volume (vph)	376	61	1420	2027	
Future Volume (vph)	376	61	1420	2027	
Turn Type	Prot	Prot	NA	NA	
Protected Phases	4	4	2	2	5
Permitted Phases					
Detector Phase	4	4	2	2	
Switch Phase					
Minimum Initial (s)	20.0	20.0	4.0	4.0	4.0
Minimum Split (s)	26.0	26.0	24.0	24.0	11.0
Total Split (s)	79.0	79.0	101.0	101.0	101.0
Total Split (%)	43.9%	43.9%	56.1%	56.1%	56%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	73.0	73.0	95.0	95.0	
Actuated g/C Ratio	0.41	0.41	0.53	0.53	
v/c Ratio	0.28	0.06	0.55	0.79	
Control Delay	36.7	32.8	8.4	4.7	
Queue Delay	0.3	0.0	46.8	0.0	
Total Delay	36.9	32.8	55.2	4.8	
LOS	D	C	E	A	
Approach Delay	36.4		55.2	4.8	
Approach LOS	D		E	A	

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 0 (0%), Referenced to phase 2:NESW and 5:, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 26.7	Intersection LOS: C
Intersection Capacity Utilization 85.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 2: PGA Blvd & I-95 Southbound Off Ramp



Movement	SBL	SBR	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (vph)	376	61	0	1420	2027	0
Future Volume (vph)	376	61	0	1420	2027	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		0.91	0.91	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3433	2776		5136	5136	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3433	2776		5136	5136	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	396	64	0	1495	2134	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	396	64	0	1495	2134	0
Heavy Vehicles (%)	2%	2%	0%	1%	1%	0%
Bus Blockages (#/hr)	0	2	0	0	0	0
Turn Type	Prot	Prot		NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases						
Actuated Green, G (s)	73.0	73.0		95.0	95.0	
Effective Green, g (s)	73.0	73.0		95.0	95.0	
Actuated g/C Ratio	0.41	0.41		0.53	0.53	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1392	1125		2710	2710	
v/s Ratio Prot	c0.12	0.02		0.29	c0.42	
v/s Ratio Perm						
v/c Ratio	0.28	0.06		0.55	0.79	
Uniform Delay, d1	36.0	32.6		28.3	34.3	
Progression Factor	1.00	1.00		0.29	0.10	
Incremental Delay, d2	0.1	0.0		0.2	1.4	
Delay (s)	36.1	32.6		8.4	4.7	
Level of Service	D	C		A	A	
Approach Delay (s)	35.6			8.4	4.7	
Approach LOS	D			A	A	

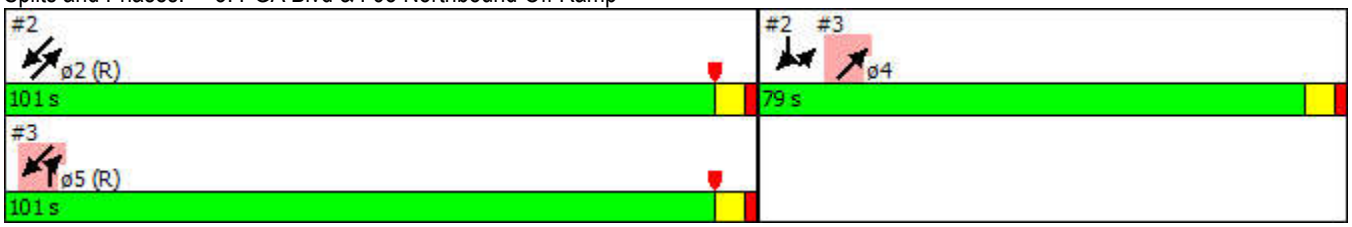
Intersection Summary			
HCM 2000 Control Delay	9.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	NBR	NET	SWT	ø2
Lane Configurations				
Traffic Volume (vph)	1755	1795	2027	
Future Volume (vph)	1755	1795	2027	
Turn Type	Prot	NA	NA	
Protected Phases	5	4	5	2
Permitted Phases				
Detector Phase	5	4	5	
Switch Phase				
Minimum Initial (s)	4.0	20.0	4.0	4.0
Minimum Split (s)	11.0	26.0	11.0	24.0
Total Split (s)	101.0	79.0	101.0	101.0
Total Split (%)	56.1%	43.9%	56.1%	56%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	C-Max	None	C-Max	C-Max
Act Effct Green (s)	95.0	73.0	95.0	
Actuated g/C Ratio	0.53	0.41	0.53	
v/c Ratio	0.91	0.92	0.80	
Control Delay	40.3	79.7	37.4	
Queue Delay	0.0	46.4	0.0	
Total Delay	40.3	126.1	37.4	
LOS	D	F	D	
Approach Delay		126.1	37.4	
Approach LOS		F	D	

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 0 (0%), Referenced to phase 2:NESW and 5:, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 66.9	Intersection LOS: E
Intersection Capacity Utilization 85.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: PGA Blvd & I-95 Northbound Off Ramp



Movement	NBL	NBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	0	1755	1795	0	0	2027
Future Volume (vph)	0	1755	1795	0	0	2027
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0			6.0
Lane Util. Factor		0.76	0.91			0.91
Frt		0.85	1.00			1.00
Flt Protected		1.00	1.00			1.00
Satd. Flow (prot)		3610	5085			5085
Flt Permitted		1.00	1.00			1.00
Satd. Flow (perm)		3610	5085			5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1847	1889	0	0	2134
RTOR Reduction (vph)	0	128	0	0	0	0
Lane Group Flow (vph)	0	1719	1889	0	0	2134
Heavy Vehicles (%)	0%	2%	2%	0%	0%	2%
Turn Type		Prot	NA			NA
Protected Phases		5	4			5
Permitted Phases						
Actuated Green, G (s)		95.0	73.0			95.0
Effective Green, g (s)		95.0	73.0			95.0
Actuated g/C Ratio		0.53	0.41			0.53
Clearance Time (s)		6.0	6.0			6.0
Vehicle Extension (s)		3.0	3.0			3.0
Lane Grp Cap (vph)		1905	2062			2683
v/s Ratio Prot		c0.48	c0.37			0.42
v/s Ratio Perm						
v/c Ratio		0.90	0.92			0.80
Uniform Delay, d1		38.3	50.6			34.6
Progression Factor		1.00	1.44			1.00
Incremental Delay, d2		7.4	6.2			2.5
Delay (s)		45.8	78.8			37.1
Level of Service		D	E			D
Approach Delay (s)	45.8		78.8			37.1
Approach LOS	D		E			D

Intersection Summary			
HCM 2000 Control Delay	53.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

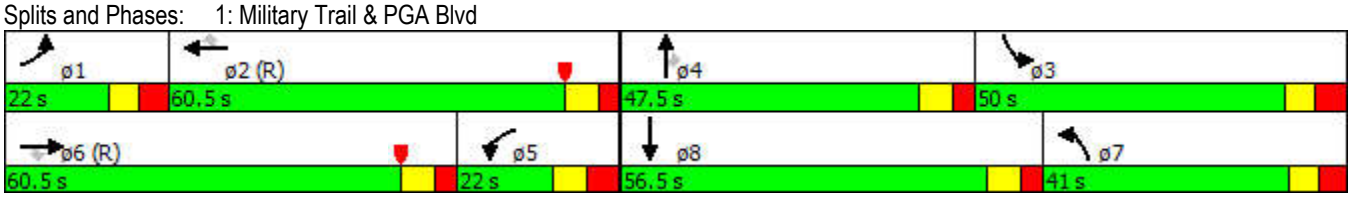
2040 Opening Year

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	277	1481	523	257	1363	592	582	749	448	804	845
Future Volume (vph)	277	1481	523	257	1363	592	582	749	448	804	845
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	1	6		5	2		7	4		3	8
Permitted Phases			6			2			4		
Detector Phase	1	6	6	5	2	2	7	4	4	3	8
Switch Phase											
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	20.0	4.0	10.0	10.0	4.0	10.0
Minimum Split (s)	13.0	47.0	47.0	14.0	46.5	46.5	13.0	47.5	47.5	13.5	54.5
Total Split (s)	22.0	60.5	60.5	22.0	60.5	60.5	41.0	47.5	47.5	50.0	56.5
Total Split (%)	12.2%	33.6%	33.6%	12.2%	33.6%	33.6%	22.8%	26.4%	26.4%	27.8%	31.4%
Yellow Time (s)	4.0	4.5	4.5	4.5	4.5	4.5	4.0	4.5	4.5	4.0	4.5
All-Red Time (s)	4.0	3.0	3.0	4.5	3.0	3.0	4.0	3.0	3.0	4.5	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0	7.5	7.5	9.0	7.5	7.5	8.0	7.5	7.5	8.5	7.5
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)	14.0	53.0	53.0	13.0	53.0	53.0	35.2	40.0	40.0	41.5	46.8
Actuated g/C Ratio	0.08	0.29	0.29	0.07	0.29	0.29	0.20	0.22	0.22	0.23	0.26
v/c Ratio	1.09	1.04	1.08	1.10	0.96	1.23	0.93	0.71	1.21	1.07	0.88
Control Delay	154.9	95.0	115.9	118.5	38.1	135.2	91.8	68.8	163.7	115.7	71.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	154.9	95.0	115.9	118.5	38.1	135.2	91.8	68.8	163.7	115.7	71.8
LOS	F	F	F	F	D	F	F	E	F	F	E
Approach Delay		107.1			73.4			100.2			90.6
Approach LOS		F			E			F			F

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 166 (92%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.23
Intersection Signal Delay: 92.6 — Intersection LOS: F
Intersection Capacity Utilization 100.6% — ICU Level of Service G
Analysis Period (min) 15

Splits and Phases: 1: Military Trail & PGA Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	277	1481	523	257	1363	592	582	749	448	804	845	226
Future Volume (vph)	277	1481	523	257	1363	592	582	749	448	804	845	226
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	7.5	7.5	9.0	7.5	7.5	8.0	7.5	7.5	8.5	7.5	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3367	4988	1553	3433	4924	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3367	4988	1553	3433	4924	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	292	1559	551	271	1435	623	613	788	472	846	889	238
RTOR Reduction (vph)	0	0	42	0	0	42	0	0	47	0	7	0
Lane Group Flow (vph)	292	1559	509	271	1435	581	613	788	425	846	1120	0
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	4%	4%	4%	2%	2%	2%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2			4			
Actuated Green, G (s)	14.0	53.0	53.0	13.0	53.0	53.0	35.2	40.0	40.0	41.5	46.8	
Effective Green, g (s)	14.0	53.0	53.0	13.0	53.0	53.0	35.2	40.0	40.0	41.5	46.8	
Actuated g/C Ratio	0.08	0.29	0.29	0.07	0.29	0.29	0.20	0.22	0.22	0.23	0.26	
Clearance Time (s)	8.0	7.5	7.5	9.0	7.5	7.5	8.0	7.5	7.5	8.5	7.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	267	1497	466	247	1497	466	658	1108	345	791	1280	
v/s Ratio Prot	0.09	0.31		0.08	0.28		0.18	0.16		c0.25	0.23	
v/s Ratio Perm			c0.32			c0.37			c0.27			
v/c Ratio	1.09	1.04	1.09	1.10	0.96	1.25	0.93	0.71	1.23	1.07	0.87	
Uniform Delay, d1	83.0	63.5	63.5	83.5	62.4	63.5	71.2	64.7	70.0	69.2	63.8	
Progression Factor	1.00	1.00	1.00	0.58	0.43	0.37	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	82.4	34.8	68.8	73.2	10.6	121.4	20.0	2.2	127.5	52.3	6.9	
Delay (s)	165.4	98.3	132.3	121.3	37.4	144.7	91.3	66.8	197.5	121.5	70.7	
Level of Service	F	F	F	F	D	F	F	E	F	F	E	
Approach Delay (s)		114.3			75.9			107.8			92.5	
Approach LOS		F			E			F			F	

Intersection Summary			
HCM 2000 Control Delay	97.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.23		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	32.5
Intersection Capacity Utilization	100.6%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	277	1481	523	257	1363	592	582	749	448	804	845	226
Future Volume (veh/h)	277	1481	523	257	1363	592	582	749	448	804	845	226
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1827	1827	1827	1863	1863	1900
Adj Flow Rate, veh/h	292	1559	0	271	1435	0	613	788	0	846	889	238
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	4	4	4	2	2	2
Cap, veh/h	268	1497	466	315	1554	484	619	919	286	858	1000	267
Arrive On Green	0.08	0.29	0.00	0.09	0.31	0.00	0.18	0.18	0.00	0.25	0.25	0.25
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3375	4988	1553	3442	3999	1066
Grp Volume(v), veh/h	292	1559	0	271	1435	0	613	788	0	846	753	374
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1688	1663	1553	1721	1695	1675
Q Serve(g_s), s	14.0	53.0	0.0	14.0	49.1	0.0	32.6	27.6	0.0	44.0	38.5	38.8
Cycle Q Clear(g_c), s	14.0	53.0	0.0	14.0	49.1	0.0	32.6	27.6	0.0	44.0	38.5	38.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.64
Lane Grp Cap(c), veh/h	268	1497	466	315	1554	484	619	919	286	858	848	419
V/C Ratio(X)	1.09	1.04	0.00	0.86	0.92	0.00	0.99	0.86	0.00	0.99	0.89	0.89
Avail Cap(c_a), veh/h	268	1497	466	315	1554	484	619	1108	345	858	923	456
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.50	0.50	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	83.0	63.5	0.0	80.6	60.5	0.0	73.3	71.1	0.0	67.3	65.1	65.2
Incr Delay (d2), s/veh	81.4	34.7	0.0	11.6	6.0	0.0	33.7	5.9	0.0	27.3	10.0	18.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.7	29.6	0.0	7.2	23.9	0.0	18.1	13.2	0.0	24.2	19.3	20.1
LnGrp Delay(d),s/veh	164.4	98.2	0.0	92.2	66.5	0.0	107.0	77.1	0.0	94.5	75.1	83.8
LnGrp LOS	F	F		F	E		F	E		F	E	F
Approach Vol, veh/h		1851			1706			1401			1973	
Approach Delay, s/veh		108.7			70.6			90.2			85.1	
Approach LOS		F			E			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	64.0	53.4	40.7	25.5	60.5	41.5	52.5
Change Period (Y+Rc), s	8.0	* 9	8.5	7.5	9.0	7.5	8.5	* 7.5
Max Green Setting (Gmax), s	14.0	* 53	41.5	40.0	13.0	53.0	33.0	* 49
Max Q Clear Time (g_c+I1), s	16.0	51.1	46.0	29.6	16.0	55.0	34.6	40.8
Green Ext Time (p_c), s	0.0	1.5	0.0	3.6	0.0	0.0	0.0	4.2

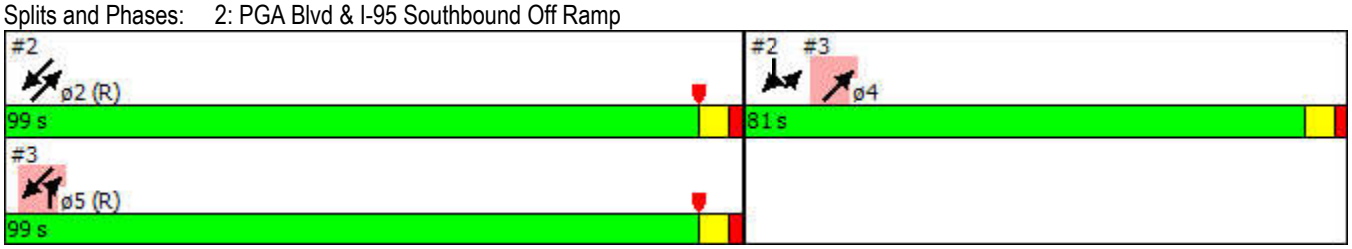
Intersection Summary	
HCM 2010 Ctrl Delay	88.8
HCM 2010 LOS	F

Notes

Lane Group	SBL	SBR	NET	SWT	ø5
Lane Configurations					
Traffic Volume (vph)	988	86	1893	2083	
Future Volume (vph)	988	86	1893	2083	
Turn Type	Prot	Prot	NA	NA	
Protected Phases	4	4	2	2	5
Permitted Phases					
Detector Phase	4	4	2	2	
Switch Phase					
Minimum Initial (s)	20.0	20.0	4.0	4.0	4.0
Minimum Split (s)	26.0	26.0	24.0	24.0	11.0
Total Split (s)	81.0	81.0	99.0	99.0	99.0
Total Split (%)	45.0%	45.0%	55.0%	55.0%	55%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	75.0	75.0	93.0	93.0	
Actuated g/C Ratio	0.42	0.42	0.52	0.52	
v/c Ratio	0.73	0.08	0.75	0.83	
Control Delay	47.6	32.0	10.3	5.1	
Queue Delay	43.2	0.0	50.4	0.0	
Total Delay	90.8	32.0	60.7	5.1	
LOS	F	C	E	A	
Approach Delay	86.1		60.7	5.1	
Approach LOS	F		E	A	

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 0 (0%), Referenced to phase 2:NESW and 5:, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.48	
Intersection Signal Delay: 43.2	Intersection LOS: D
Intersection Capacity Utilization 130.6%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 2: PGA Blvd & I-95 Southbound Off Ramp



Movement	SBL	SBR	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (vph)	988	86	0	1893	2083	0
Future Volume (vph)	988	86	0	1893	2083	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		0.91	0.91	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3433	2776		5136	5136	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3433	2776		5136	5136	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1040	91	0	1993	2193	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1040	91	0	1993	2193	0
Heavy Vehicles (%)	2%	2%	0%	1%	1%	0%
Bus Blockages (#/hr)	0	2	0	0	0	0
Turn Type	Prot	Prot		NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases						
Actuated Green, G (s)	75.0	75.0		93.0	93.0	
Effective Green, g (s)	75.0	75.0		93.0	93.0	
Actuated g/C Ratio	0.42	0.42		0.52	0.52	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1430	1156		2653	2653	
v/s Ratio Prot	c0.30	0.03		0.39	c0.43	
v/s Ratio Perm						
v/c Ratio	0.73	0.08		0.75	0.83	
Uniform Delay, d1	43.9	31.7		34.4	36.7	
Progression Factor	1.00	1.00		0.29	0.09	
Incremental Delay, d2	1.9	0.0		0.2	1.7	
Delay (s)	45.8	31.7		10.2	5.0	
Level of Service	D	C		B	A	
Approach Delay (s)	44.7			10.2	5.0	
Approach LOS	D			B	A	

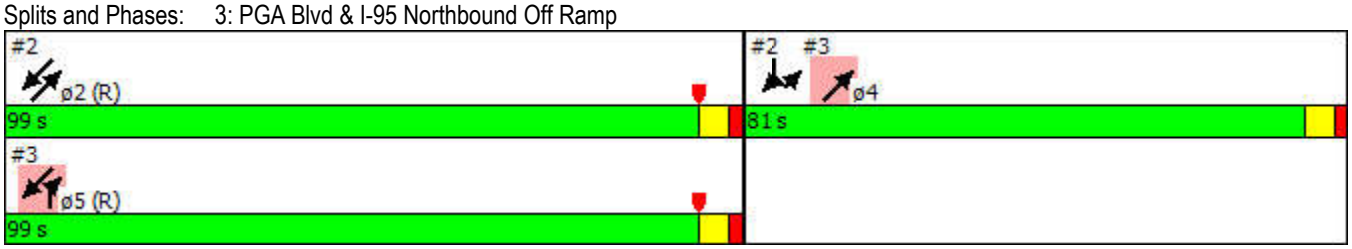
Intersection Summary			
HCM 2000 Control Delay	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	130.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	NBR	NET	SWT	ø2
Lane Configurations				
Traffic Volume (vph)	2783	2881	2083	
Future Volume (vph)	2783	2881	2083	
Turn Type	Prot	NA	NA	
Protected Phases	5	4	5	2
Permitted Phases				
Detector Phase	5	4	5	
Switch Phase				
Minimum Initial (s)	4.0	20.0	4.0	4.0
Minimum Split (s)	11.0	26.0	11.0	24.0
Total Split (s)	99.0	81.0	99.0	99.0
Total Split (%)	55.0%	45.0%	55.0%	55%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	C-Max	None	C-Max	C-Max
Act Effct Green (s)	93.0	75.0	93.0	
Actuated g/C Ratio	0.52	0.42	0.52	
v/c Ratio	1.48	1.43	0.83	
Control Delay	248.7	237.8	40.6	
Queue Delay	0.0	0.6	0.0	
Total Delay	248.7	238.4	40.6	
LOS	F	F	D	
Approach Delay		238.4	40.6	
Approach LOS		F	D	

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 0 (0%), Referenced to phase 2:NESW and 5:, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.48	
Intersection Signal Delay: 188.9	Intersection LOS: F
Intersection Capacity Utilization 130.6%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 3: PGA Blvd & I-95 Northbound Off Ramp



Movement	NBL	NBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	0	2783	2881	0	0	2083
Future Volume (vph)	0	2783	2881	0	0	2083
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0			6.0
Lane Util. Factor		0.76	0.91			0.91
Frt		0.85	1.00			1.00
Flt Protected		1.00	1.00			1.00
Satd. Flow (prot)		3610	5085			5085
Flt Permitted		1.00	1.00			1.00
Satd. Flow (perm)		3610	5085			5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	2929	3033	0	0	2193
RTOR Reduction (vph)	0	116	0	0	0	0
Lane Group Flow (vph)	0	2813	3033	0	0	2193
Heavy Vehicles (%)	0%	2%	2%	0%	0%	2%
Turn Type		Prot	NA			NA
Protected Phases		5	4			5
Permitted Phases						
Actuated Green, G (s)		93.0	75.0			93.0
Effective Green, g (s)		93.0	75.0			93.0
Actuated g/C Ratio		0.52	0.42			0.52
Clearance Time (s)		6.0	6.0			6.0
Vehicle Extension (s)		3.0	3.0			3.0
Lane Grp Cap (vph)		1865	2118			2627
v/s Ratio Prot		c0.78	c0.60			0.43
v/s Ratio Perm						
v/c Ratio		1.51	1.43			0.83
Uniform Delay, d1		43.5	52.5			37.0
Progression Factor		1.00	1.13			1.00
Incremental Delay, d2		231.5	196.2			3.3
Delay (s)		275.0	255.6			40.3
Level of Service		F	F			D
Approach Delay (s)	275.0		255.6			40.3
Approach LOS	F		F			D

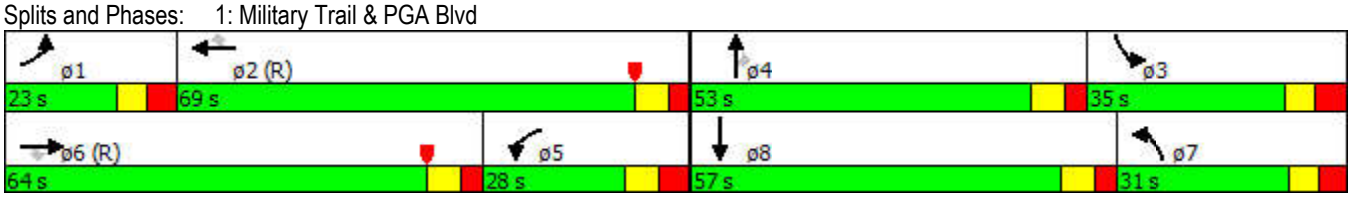
Intersection Summary			
HCM 2000 Control Delay	204.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.47		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	130.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	390	1465	512	474	1453	812	645	998	612	738	932
Future Volume (vph)	390	1465	512	474	1453	812	645	998	612	738	932
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	1	6		5	2		7	4		3	8
Permitted Phases			6			2			4		
Detector Phase	1	6	6	5	2	2	7	4	4	3	8
Switch Phase											
Minimum Initial (s)	4.0	20.0	20.0	4.0	20.0	20.0	4.0	10.0	10.0	4.0	10.0
Minimum Split (s)	13.0	47.0	47.0	14.0	46.5	46.5	13.0	47.5	47.5	13.5	54.5
Total Split (s)	23.0	64.0	64.0	28.0	69.0	69.0	31.0	53.0	53.0	35.0	57.0
Total Split (%)	12.8%	35.6%	35.6%	15.6%	38.3%	38.3%	17.2%	29.4%	29.4%	19.4%	31.7%
Yellow Time (s)	4.0	4.5	4.5	4.5	4.5	4.5	4.0	4.5	4.5	4.0	4.5
All-Red Time (s)	4.0	3.0	3.0	4.5	3.0	3.0	4.0	3.0	3.0	4.5	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	8.0	7.5	7.5	9.0	7.5	7.5	8.0	7.5	7.5	8.5	7.5
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)	15.0	56.5	56.5	19.0	61.5	61.5	23.3	45.5	45.5	26.5	49.2
Actuated g/C Ratio	0.08	0.31	0.31	0.11	0.34	0.34	0.13	0.25	0.25	0.15	0.27
v/c Ratio	1.43	0.96	0.99	1.37	0.87	1.46	1.51	0.81	1.43	1.52	0.94
Control Delay	264.3	74.3	90.1	205.9	20.3	231.1	290.0	69.0	248.9	292.0	76.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	264.3	74.3	90.1	205.9	20.3	231.1	290.0	69.0	248.9	292.0	76.6
LOS	F	E	F	F	C	F	F	E	F	F	E
Approach Delay		109.1			114.9			181.0			158.1
Approach LOS		F			F			F			F

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 166 (92%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.52
Intersection Signal Delay: 138.5 — Intersection LOS: F
Intersection Capacity Utilization 111.2% — ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 1: Military Trail & PGA Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	390	1465	512	474	1453	812	645	998	612	738	932	281
Future Volume (vph)	390	1465	512	474	1453	812	645	998	612	738	932	281
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.0	7.5	7.5	9.0	7.5	7.5	8.0	7.5	7.5	8.5	7.5	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3467	5136	1599	3467	5136	1599	3467	5136	1599	3467	4957	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3467	5136	1599	3467	5136	1599	3467	5136	1599	3467	4957	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	411	1542	539	499	1529	855	679	1051	644	777	981	296
RTOR Reduction (vph)	0	0	41	0	0	40	0	0	45	0	7	0
Lane Group Flow (vph)	411	1542	498	499	1529	816	679	1051	599	777	1270	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	1	6		5	2		7	4		3	8	
Permitted Phases			6			2			4			
Actuated Green, G (s)	15.0	56.5	56.5	19.0	61.5	61.5	23.3	45.5	45.5	26.5	49.2	
Effective Green, g (s)	15.0	56.5	56.5	19.0	61.5	61.5	23.3	45.5	45.5	26.5	49.2	
Actuated g/C Ratio	0.08	0.31	0.31	0.11	0.34	0.34	0.13	0.25	0.25	0.15	0.27	
Clearance Time (s)	8.0	7.5	7.5	9.0	7.5	7.5	8.0	7.5	7.5	8.5	7.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	288	1612	501	365	1754	546	448	1298	404	510	1354	
v/s Ratio Prot	c0.12	0.30		0.14	0.30		0.20	0.20		c0.22	0.26	
v/s Ratio Perm			0.31			c0.51			c0.37			
v/c Ratio	1.43	0.96	0.99	1.37	0.87	1.49	1.52	0.81	1.48	1.52	0.94	
Uniform Delay, d1	82.5	60.5	61.6	80.5	55.6	59.2	78.3	63.2	67.2	76.8	63.9	
Progression Factor	1.00	1.00	1.00	0.54	0.32	0.29	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	211.2	14.2	38.7	171.0	2.2	225.3	243.3	3.8	230.3	245.4	12.3	
Delay (s)	293.7	74.8	100.3	214.4	20.2	242.7	321.6	67.0	297.6	322.2	76.2	
Level of Service	F	E	F	F	C	F	F	E	F	F	E	
Approach Delay (s)		116.4			119.8			202.4			169.3	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	149.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.50		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	32.5
Intersection Capacity Utilization	111.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	390	1465	512	474	1453	812	645	998	612	738	932	281
Future Volume (veh/h)	390	1465	512	474	1453	812	645	998	612	738	932	281
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1881	1881	1881	1881	1881	1881	1881	1881	1881	1900
Adj Flow Rate, veh/h	411	1542	0	499	1529	0	679	1051	0	777	981	296
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	290	1612	502	942	2561	798	444	1186	369	575	1052	317
Arrive On Green	0.08	0.31	0.00	0.27	0.50	0.00	0.13	0.23	0.00	0.17	0.27	0.27
Sat Flow, veh/h	3476	5136	1599	3476	5136	1599	3476	5136	1599	3476	3917	1180
Grp Volume(v), veh/h	411	1542	0	499	1529	0	679	1051	0	777	857	420
Grp Sat Flow(s),veh/h/ln	1738	1712	1599	1738	1712	1599	1738	1712	1599	1738	1712	1673
Q Serve(g_s), s	15.0	53.0	0.0	22.0	38.3	0.0	23.0	35.6	0.0	29.8	44.0	44.1
Cycle Q Clear(g_c), s	15.0	53.0	0.0	22.0	38.3	0.0	23.0	35.6	0.0	29.8	44.0	44.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.71
Lane Grp Cap(c), veh/h	290	1612	502	942	2561	798	444	1186	369	575	920	450
V/C Ratio(X)	1.42	0.96	0.00	0.53	0.60	0.00	1.53	0.89	0.00	1.35	0.93	0.93
Avail Cap(c_a), veh/h	290	1612	502	942	2561	798	444	1298	404	575	942	460
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.14	0.14	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	82.5	60.5	0.0	55.9	32.2	0.0	78.5	66.9	0.0	75.1	64.2	64.2
Incr Delay (d2), s/veh	207.7	14.2	0.0	0.1	0.1	0.0	249.2	7.3	0.0	168.9	15.3	26.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.6	27.3	0.0	10.6	18.2	0.0	26.4	17.6	0.0	27.8	22.8	23.6
LnGrp Delay(d),s/veh	290.2	74.8	0.0	55.9	32.3	0.0	327.7	74.2	0.0	244.0	79.6	90.2
LnGrp LOS	F	E		E	C		F	E		F	E	F
Approach Vol, veh/h		1953			2028			1730			2054	
Approach Delay, s/veh		120.1			38.1			173.7			143.9	
Approach LOS		F			D			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.0	99.6	38.3	49.1	58.6	64.0	31.5	55.9
Change Period (Y+Rc), s	8.0	* 9	8.5	7.5	9.0	7.5	8.5	* 7.5
Max Green Setting (Gmax), s	15.0	* 62	26.5	45.5	19.0	56.5	23.0	* 50
Max Q Clear Time (g_c+I1), s	17.0	40.3	31.8	37.6	24.0	55.0	25.0	46.1
Green Ext Time (p_c), s	0.0	12.8	0.0	3.9	0.0	1.2	0.0	2.3

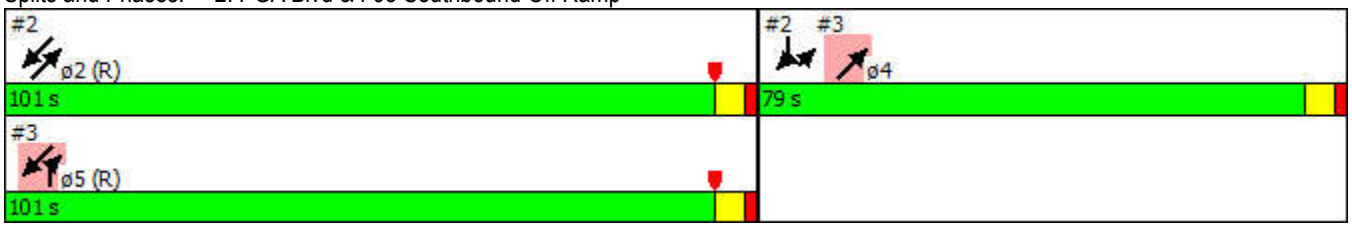
Intersection Summary	
HCM 2010 Ctrl Delay	116.9
HCM 2010 LOS	F

Notes

Lane Group	SBL	SBR	NET	SWT	ø5
Lane Configurations					
Traffic Volume (vph)	439	67	1963	2586	
Future Volume (vph)	439	67	1963	2586	
Turn Type	Prot	Prot	NA	NA	
Protected Phases	4	4	2	2	5
Permitted Phases					
Detector Phase	4	4	2	2	
Switch Phase					
Minimum Initial (s)	20.0	20.0	4.0	4.0	4.0
Minimum Split (s)	26.0	26.0	24.0	24.0	11.0
Total Split (s)	79.0	79.0	101.0	101.0	101.0
Total Split (%)	43.9%	43.9%	56.1%	56.1%	56%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	73.0	73.0	95.0	95.0	
Actuated g/C Ratio	0.41	0.41	0.53	0.53	
v/c Ratio	0.33	0.06	0.76	1.00	
Control Delay	37.6	32.9	9.5	13.5	
Queue Delay	0.4	0.0	50.3	1.8	
Total Delay	38.0	32.9	59.8	15.3	
LOS	D	C	E	B	
Approach Delay	37.3		59.8	15.3	
Approach LOS	D		E	B	

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 0 (0%), Referenced to phase 2:NESW and 5:, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.23	
Intersection Signal Delay: 34.8	Intersection LOS: C
Intersection Capacity Utilization 111.0%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 2: PGA Blvd & I-95 Southbound Off Ramp



Movement	SBL	SBR	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (vph)	439	67	0	1963	2586	0
Future Volume (vph)	439	67	0	1963	2586	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		0.91	0.91	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3433	2776		5136	5136	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3433	2776		5136	5136	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	462	71	0	2066	2722	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	462	71	0	2066	2722	0
Heavy Vehicles (%)	2%	2%	0%	1%	1%	0%
Bus Blockages (#/hr)	0	2	0	0	0	0
Turn Type	Prot	Prot		NA	NA	
Protected Phases	4	4		2	2	
Permitted Phases						
Actuated Green, G (s)	73.0	73.0		95.0	95.0	
Effective Green, g (s)	73.0	73.0		95.0	95.0	
Actuated g/C Ratio	0.41	0.41		0.53	0.53	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1392	1125		2710	2710	
v/s Ratio Prot	c0.13	0.03		0.40	c0.53	
v/s Ratio Perm						
v/c Ratio	0.33	0.06		0.76	1.00	
Uniform Delay, d1	36.7	32.6		33.6	42.5	
Progression Factor	1.00	1.00		0.28	0.13	
Incremental Delay, d2	0.1	0.0		0.2	6.3	
Delay (s)	36.9	32.7		9.4	11.8	
Level of Service	D	C		A	B	
Approach Delay (s)	36.3			9.4	11.8	
Approach LOS	D			A	B	

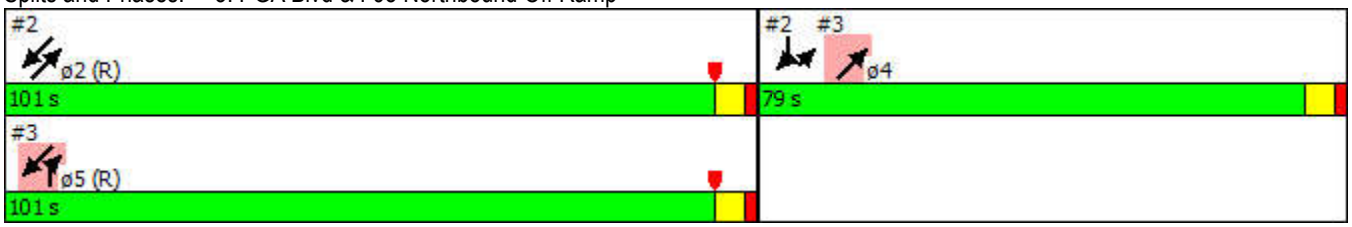
Intersection Summary			
HCM 2000 Control Delay	13.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	111.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	NBR	NET	SWT	ø2
Lane Configurations				
Traffic Volume (vph)	2342	2401	2586	
Future Volume (vph)	2342	2401	2586	
Turn Type	Prot	NA	NA	
Protected Phases	5	4	5	2
Permitted Phases				
Detector Phase	5	4	5	
Switch Phase				
Minimum Initial (s)	4.0	20.0	4.0	4.0
Minimum Split (s)	11.0	26.0	11.0	24.0
Total Split (s)	101.0	79.0	101.0	101.0
Total Split (%)	56.1%	43.9%	56.1%	56%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	C-Max	None	C-Max	C-Max
Act Effct Green (s)	95.0	73.0	95.0	
Actuated g/C Ratio	0.53	0.41	0.53	
v/c Ratio	1.20	1.23	1.01	
Control Delay	126.1	163.6	62.6	
Queue Delay	0.0	1.2	3.8	
Total Delay	126.1	164.7	66.4	
LOS	F	F	E	
Approach Delay		164.7	66.4	
Approach LOS		F	E	

Intersection Summary	
Cycle Length: 180	
Actuated Cycle Length: 180	
Offset: 0 (0%), Referenced to phase 2:NESW and 5:, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.23	
Intersection Signal Delay: 117.7	Intersection LOS: F
Intersection Capacity Utilization 111.0%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 3: PGA Blvd & I-95 Northbound Off Ramp



Movement	NBL	NBR	NET	NER	SWL	SWT
Lane Configurations						
Traffic Volume (vph)	0	2342	2401	0	0	2586
Future Volume (vph)	0	2342	2401	0	0	2586
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0			6.0
Lane Util. Factor		0.76	0.91			0.91
Frt		0.85	1.00			1.00
Flt Protected		1.00	1.00			1.00
Satd. Flow (prot)		3610	5085			5085
Flt Permitted		1.00	1.00			1.00
Satd. Flow (perm)		3610	5085			5085
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	2465	2527	0	0	2722
RTOR Reduction (vph)	0	157	0	0	0	0
Lane Group Flow (vph)	0	2308	2527	0	0	2722
Heavy Vehicles (%)	0%	2%	2%	0%	0%	2%
Turn Type		Prot	NA			NA
Protected Phases		5	4			5
Permitted Phases						
Actuated Green, G (s)		95.0	73.0			95.0
Effective Green, g (s)		95.0	73.0			95.0
Actuated g/C Ratio		0.53	0.41			0.53
Clearance Time (s)		6.0	6.0			6.0
Vehicle Extension (s)		3.0	3.0			3.0
Lane Grp Cap (vph)		1905	2062			2683
v/s Ratio Prot		c0.64	c0.50			0.54
v/s Ratio Perm						
v/c Ratio		1.21	1.23			1.01
Uniform Delay, d1		42.5	53.5			42.5
Progression Factor		1.00	1.40			1.00
Incremental Delay, d2		100.4	104.8			21.1
Delay (s)		142.9	179.6			63.6
Level of Service		F	F			E
Approach Delay (s)	142.9		179.6			63.6
Approach LOS	F		F			E

Intersection Summary			
HCM 2000 Control Delay	126.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	111.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Blue Heron Boulevard

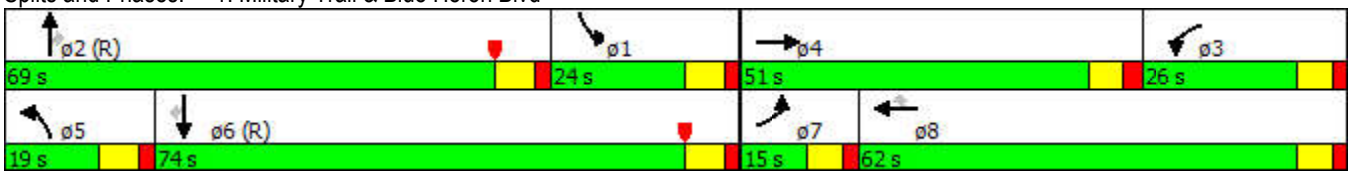
2020 Opening Year

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	110	683	445	780	382	109	812	566	443	661	109
Future Volume (vph)	110	683	445	780	382	109	812	566	443	661	109
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	4.0	10.0	4.0	10.0	10.0	4.0	20.0	20.0	4.0	20.0	20.0
Minimum Split (s)	12.0	51.0	12.0	52.0	52.0	12.0	52.0	52.0	12.0	48.0	48.0
Total Split (s)	15.0	51.0	26.0	62.0	62.0	19.0	69.0	69.0	24.0	74.0	74.0
Total Split (%)	8.8%	30.0%	15.3%	36.5%	36.5%	11.2%	40.6%	40.6%	14.1%	43.5%	43.5%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.5	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	7.0	6.5	6.5	6.5	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	8.4	33.3	30.2	55.6	55.6	10.6	62.0	62.0	17.0	68.4	68.4
Actuated g/C Ratio	0.05	0.20	0.18	0.33	0.33	0.06	0.36	0.36	0.10	0.40	0.40
v/c Ratio	0.70	0.80	0.79	0.51	0.74	0.55	0.47	0.99	1.37	0.34	0.17
Control Delay	101.5	71.0	61.5	33.1	36.8	87.1	42.5	80.8	237.0	36.0	16.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	101.5	71.0	61.5	33.1	36.8	87.1	42.5	80.8	237.0	36.0	16.7
LOS	F	E	E	C	D	F	D	F	F	D	B
Approach Delay		75.0		41.8			60.3			107.6	
Approach LOS		E		D			E			F	

Intersection Summary

Cycle Length: 170
Actuated Cycle Length: 170
Offset: 96 (56%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.37
Intersection Signal Delay: 68.1 — Intersection LOS: E
Intersection Capacity Utilization 79.4% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 1: Military Trail & Blue Heron Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	683	46	445	780	382	109	812	566	443	661	109
Future Volume (vph)	110	683	46	445	780	382	109	812	566	443	661	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	7.0		6.5	6.5	6.5	7.0	7.0	7.0	7.0	7.0	7.0
Lane Util. Factor	0.97	0.91		0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3335	4894		3335	4940	1538	3367	4988	1553	3400	5036	1568
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3335	4894		3335	4940	1538	3367	4988	1553	3400	5036	1568
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	116	719	48	468	821	402	115	855	596	466	696	115
RTOR Reduction (vph)	0	5	0	0	0	40	0	0	38	0	0	36
Lane Group Flow (vph)	116	762	0	468	821	362	115	855	558	466	696	79
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	4%	4%	4%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	8.4	33.3		30.2	55.6	55.6	10.6	62.0	62.0	17.0	68.4	68.4
Effective Green, g (s)	8.4	33.3		30.2	55.6	55.6	10.6	62.0	62.0	17.0	68.4	68.4
Actuated g/C Ratio	0.05	0.20		0.18	0.33	0.33	0.06	0.36	0.36	0.10	0.40	0.40
Clearance Time (s)	6.5	7.0		6.5	6.5	6.5	7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	164	958		592	1615	503	209	1819	566	340	2026	630
v/s Ratio Prot	0.03	c0.16		c0.14	0.17		0.03	0.17		c0.14	0.14	
v/s Ratio Perm						0.24			c0.36			0.05
v/c Ratio	0.71	0.80		0.79	0.51	0.72	0.55	0.47	0.99	1.37	0.34	0.13
Uniform Delay, d1	79.6	65.1		66.9	46.2	50.3	77.4	41.4	53.6	76.5	35.2	32.0
Progression Factor	1.00	1.00		0.78	0.69	0.68	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.0	4.6		5.8	0.2	4.0	3.1	0.9	34.5	184.5	0.5	0.4
Delay (s)	92.6	69.7		58.3	32.2	38.1	80.5	42.3	88.0	261.0	35.7	32.4
Level of Service	F	E		E	C	D	F	D	F	F	D	C
Approach Delay (s)		72.8			40.8			62.5			117.6	
Approach LOS		E			D			E			F	

Intersection Summary			
HCM 2000 Control Delay	70.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	27.5
Intersection Capacity Utilization	79.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	683	46	445	780	382	109	812	566	443	661	109
Future Volume (veh/h)	110	683	46	445	780	382	109	812	566	443	661	109
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1810	1827	1827	1827	1845	1845	1845
Adj Flow Rate, veh/h	116	719	48	468	821	402	115	855	596	466	696	115
Adj No. of Lanes	2	3	0	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	5	5	5	4	4	4	3	3	3
Cap, veh/h	154	872	58	383	1264	394	155	1819	566	595	2485	774
Arrive On Green	0.05	0.18	0.18	0.04	0.08	0.08	0.05	0.36	0.36	0.17	0.49	0.49
Sat Flow, veh/h	3343	4733	314	3343	4940	1538	3375	4988	1553	3408	5036	1568
Grp Volume(v), veh/h	116	499	268	468	821	402	115	855	596	466	696	115
Grp Sat Flow(s),veh/h/ln	1672	1647	1754	1672	1647	1538	1688	1663	1553	1704	1679	1568
Q Serve(g_s), s	5.8	24.8	25.0	19.5	27.4	28.7	5.7	22.3	62.0	22.2	13.8	6.8
Cycle Q Clear(g_c), s	5.8	24.8	25.0	19.5	27.4	28.7	5.7	22.3	62.0	22.2	13.8	6.8
Prop In Lane	1.00		0.18	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	154	607	323	383	1264	394	155	1819	566	595	2485	774
V/C Ratio(X)	0.75	0.82	0.83	1.22	0.65	1.02	0.74	0.47	1.05	0.78	0.28	0.15
Avail Cap(c_a), veh/h	167	852	454	383	1613	502	238	1819	566	595	2485	774
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.75	0.75	0.75	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	80.1	66.7	66.7	81.8	70.4	33.8	80.1	41.4	54.0	67.1	25.3	23.5
Incr Delay (d2), s/veh	16.3	4.6	8.6	115.9	0.5	38.1	6.9	0.9	52.3	6.8	0.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	11.7	12.9	15.2	12.6	16.4	2.8	10.4	34.8	11.0	6.4	3.0
LnGrp Delay(d),s/veh	96.5	71.2	75.4	197.7	70.9	71.9	87.0	42.3	106.3	73.8	25.6	23.9
LnGrp LOS	F	E	E	F	E	F	F	D	F	E	C	C
Approach Vol, veh/h		883			1691			1566			1277	
Approach Delay, s/veh		75.8			106.2			69.9			43.1	
Approach LOS		E			F			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	36.7	69.0	26.0	38.3	14.8	90.9	14.3	50.0
Change Period (Y+Rc), s	7.0	7.0	6.5	7.0	7.0	7.0	6.5	6.5
Max Green Setting (Gmax), s	17.0	62.0	19.5	44.0	12.0	67.0	8.5	55.5
Max Q Clear Time (g_c+I1), s	24.2	64.0	21.5	27.0	7.7	15.8	7.8	30.7
Green Ext Time (p_c), s	0.0	0.0	0.0	4.3	0.1	8.1	0.0	9.8

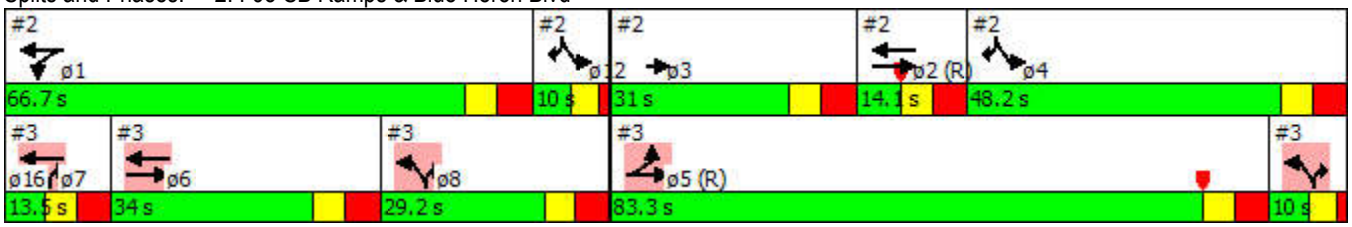
Intersection Summary	
HCM 2010 Ctrl Delay	75.9
HCM 2010 LOS	E

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR	ø2	ø3	ø4	ø5	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	1052	754	786	1153	703	505						
Future Volume (vph)	1052	754	786	1153	703	505						
Turn Type	NA	Free	Prot	NA	Prot	custom						
Protected Phases	3 2		1	1 2	4 12	4 3 12	2	3	4	5	6	7
Permitted Phases		Free				4						
Detector Phase	3 2		1	1 2	4 12	4 3 12						
Switch Phase												
Minimum Initial (s)			10.0				3.0	3.0	4.0	10.0	3.0	3.0
Minimum Split (s)			25.0				12.0	12.0	13.5	24.0	12.0	13.5
Total Split (s)			66.7				14.1	31.0	48.2	83.3	34.0	13.5
Total Split (%)			39.2%				8%	18%	28%	49%	20%	8%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			4.5				4.5	4.5	4.5	4.5	4.5	4.5
Lost Time Adjust (s)			0.0									
Total Lost Time (s)			8.5									
Lead/Lag			Lead				Lag	Lead		Lead	Lag	Lead
Lead-Lag Optimize?			Yes				Yes	Yes		Yes	Yes	Yes
Recall Mode			None				C-Max	None	None	C-Max	Max	None
Act Effct Green (s)	36.6	170.0	55.8	61.4	43.6	74.6						
Actuated g/C Ratio	0.22	1.00	0.33	0.36	0.26	0.44						
v/c Ratio	0.70	0.52	0.76	0.69	0.86	0.44						
Control Delay	43.0	3.3	28.2	17.9	65.9	23.0						
Queue Delay	0.0	0.0	2.6	0.7	0.0	0.0						
Total Delay	43.0	3.3	30.9	18.6	65.9	23.0						
LOS	D	A	C	B	E	C						
Approach Delay	26.4			23.6								
Approach LOS	C			C								

Intersection Summary

Cycle Length: 170
Actuated Cycle Length: 170
Offset: 42 (25%), Referenced to phase 2:EBWB and 5:, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.26
Intersection Signal Delay: 30.5 — Intersection LOS: C
Intersection Capacity Utilization 75.9% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 2: I-95 SB Ramps & Blue Heron Blvd



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	4.0	5.0	5.0
Minimum Split (s)	13.5	10.0	10.0
Total Split (s)	29.2	10.0	10.0
Total Split (%)	17%	6%	6%
Yellow Time (s)	4.0	3.5	3.5
All-Red Time (s)	4.5	1.5	1.5
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lag	Lag
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

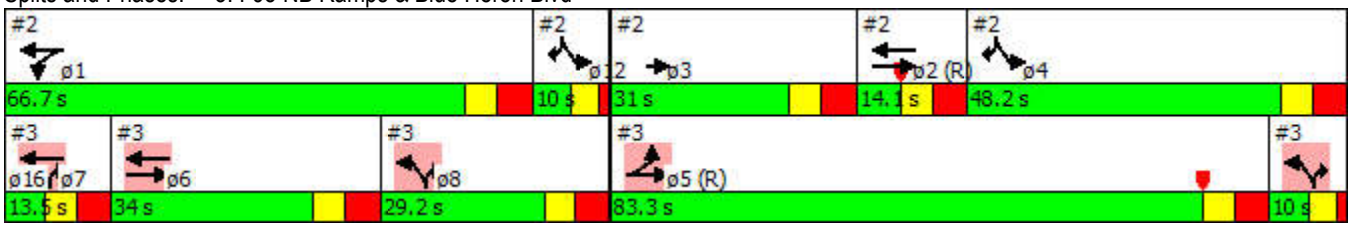
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1052	754	786	1153	0	0	0	0	703	0	505
Future Volume (vph)	0	1052	754	786	1153	0	0	0	0	703	0	505
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.5	4.0	8.5	8.5					8.5		8.5
Lane Util. Factor		0.81	1.00	0.97	0.91					0.97		0.88
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		7329	1538	3303	4893					3367		2733
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		7329	1538	3303	4893					3367		2733
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1107	794	827	1214	0	0	0	0	740	0	532
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1107	794	827	1214	0	0	0	0	740	0	532
Heavy Vehicles (%)	5%	5%	5%	6%	6%	6%	0%	0%	0%	4%	4%	4%
Turn Type		NA	Free	Prot	NA					Prot		custom
Protected Phases		3 2		1	1 2					4 12		4 3 12
Permitted Phases			Free									4
Actuated Green, G (s)		36.6	170.0	55.8	61.4					47.1		74.6
Effective Green, g (s)		36.6	170.0	55.8	61.4					47.1		69.6
Actuated g/C Ratio		0.22	1.00	0.33	0.36					0.28		0.41
Clearance Time (s)				8.5								
Vehicle Extension (s)				3.0								
Lane Grp Cap (vph)		1577	1538	1084	1767					932		1118
v/s Ratio Prot		c0.15		c0.25	0.25					c0.22		0.19
v/s Ratio Perm			c0.52									
v/c Ratio		0.70	0.52	0.76	0.69					0.79		0.48
Uniform Delay, d1		61.7	0.0	51.2	46.1					57.0		36.8
Progression Factor		0.68	1.00	0.53	0.45					1.00		1.00
Incremental Delay, d2		0.7	0.6	0.8	0.3					4.7		0.3
Delay (s)		42.4	0.6	27.8	21.1					61.7		37.1
Level of Service		D	A	C	C					E		D
Approach Delay (s)		24.9			23.8			0.0			51.4	
Approach LOS		C			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	30.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	51.0
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR	ø1	ø2	ø3	ø4	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	355	1399	1419	382	520	687						
Future Volume (vph)	355	1399	1419	382	520	687						
Turn Type	Prot	NA	NA	Free	Prot	custom						
Protected Phases	5	5 6	6 7		8 16	8 7 16	1	2	3	4	6	7
Permitted Phases				Free		8						
Detector Phase	5	5 6	6 7		8 16	8 7 16						
Switch Phase												
Minimum Initial (s)	10.0						10.0	3.0	3.0	4.0	3.0	3.0
Minimum Split (s)	24.0						25.0	12.0	12.0	13.5	12.0	13.5
Total Split (s)	83.3						66.7	14.1	31.0	48.2	34.0	13.5
Total Split (%)	49.0%						39%	8%	18%	28%	20%	8%
Yellow Time (s)	4.0						4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	4.5						4.5	4.5	4.5	4.5	4.5	4.5
Lost Time Adjust (s)	0.0											
Total Lost Time (s)	8.5											
Lead/Lag	Lead						Lead	Lag	Lead		Lag	Lead
Lead-Lag Optimize?	Yes						Yes	Yes	Yes		Yes	Yes
Recall Mode	C-Max						None	C-Max	None	None	Max	None
Act Effct Green (s)	74.8	100.3	39.0	170.0	22.2	35.7						
Actuated g/C Ratio	0.44	0.59	0.23	1.00	0.13	0.21						
v/c Ratio	0.25	0.51	0.91	0.27	1.25	1.26						
Control Delay	14.2	6.2	46.8	0.3	183.0	172.1						
Queue Delay	0.0	0.2	0.3	0.0	0.0	0.0						
Total Delay	14.2	6.4	47.0	0.3	183.0	172.1						
LOS	B	A	D	A	F	F						
Approach Delay		8.0	37.1									
Approach LOS		A	D									

Intersection Summary	
Cycle Length: 170	
Actuated Cycle Length: 170	
Offset: 42 (25%), Referenced to phase 2:EBWB and 5:, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.26	
Intersection Signal Delay: 61.8	Intersection LOS: E
Intersection Capacity Utilization 75.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: I-95 NB Ramps & Blue Heron Blvd



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	4.0	5.0	5.0
Minimum Split (s)	13.5	10.0	10.0
Total Split (s)	29.2	10.0	10.0
Total Split (%)	17%	6%	6%
Yellow Time (s)	4.0	3.5	3.5
All-Red Time (s)	4.5	1.5	1.5
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lag	Lag
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

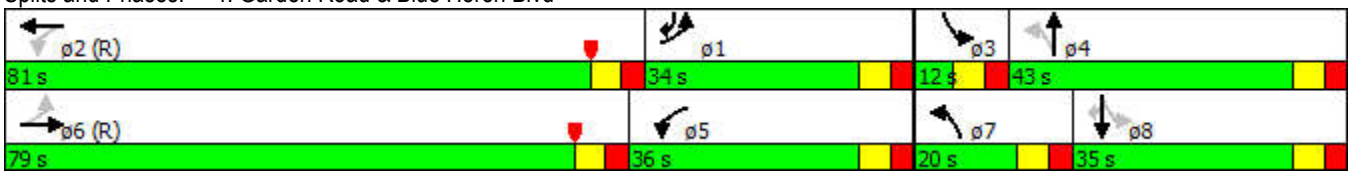
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	355	1399	0	0	1419	382	520	0	687	0	0	0
Future Volume (vph)	355	1399	0	0	1419	382	520	0	687	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.5	8.5			8.5	4.0	8.5		8.5			
Lane Util. Factor	0.97	0.91			0.81	1.00	0.97		0.88			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	3335	4940			7192	1509	3367		2733			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3335	4940			7192	1509	3367		2733			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	374	1473	0	0	1494	402	547	0	723	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	374	1473	0	0	1494	402	547	0	723	0	0	0
Heavy Vehicles (%)	5%	5%	5%	7%	7%	7%	4%	4%	4%	0%	0%	0%
Turn Type	Prot	NA			NA	Free	Prot		custom			
Protected Phases	5	5 6			6 7		8 16		8 7 16			
Permitted Phases						Free			8			
Actuated Green, G (s)	74.8	100.3			39.0	170.0	25.7		35.7			
Effective Green, g (s)	74.8	100.3			39.0	170.0	25.7		30.7			
Actuated g/C Ratio	0.44	0.59			0.23	1.00	0.15		0.18			
Clearance Time (s)	8.5											
Vehicle Extension (s)	3.0											
Lane Grp Cap (vph)	1467	2914			1649	1509	509		493			
v/s Ratio Prot	0.11	c0.30			c0.21		0.16		c0.26			
v/s Ratio Perm						0.27						
v/c Ratio	0.25	0.51			0.91	0.27	1.07		1.47			
Uniform Delay, d1	30.0	20.4			63.7	0.0	72.2		69.7			
Progression Factor	0.46	0.56			0.62	1.00	1.00		1.00			
Incremental Delay, d2	0.3	0.4			6.1	0.3	61.4		220.8			
Delay (s)	14.2	11.9			45.6	0.3	133.6		290.5			
Level of Service	B	B			D	A	F		F			
Approach Delay (s)		12.3			36.0			222.9			0.0	
Approach LOS		B			D			F			A	

Intersection Summary			
HCM 2000 Control Delay	74.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	51.0
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	222	1548	185	1481	128	89	76	75	110
Future Volume (vph)	222	1548	185	1481	128	89	76	75	110
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+ov
Protected Phases	1	6	5	2	7	4	3	8	1
Permitted Phases	6		2		4		8		8
Detector Phase	1	6	5	2	7	4	3	8	1
Switch Phase									
Minimum Initial (s)	4.0	20.0	4.0	20.0	4.0	6.0	4.0	6.0	4.0
Minimum Split (s)	12.0	32.0	12.0	32.0	12.0	35.0	12.0	35.0	12.0
Total Split (s)	34.0	79.0	36.0	81.0	20.0	43.0	12.0	35.0	34.0
Total Split (%)	20.0%	46.5%	21.2%	47.6%	11.8%	25.3%	7.1%	20.6%	20.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	None	None	None	None
Act Effct Green (s)	106.2	84.0	110.2	86.0	39.7	26.5	27.4	20.0	42.1
Actuated g/C Ratio	0.62	0.49	0.65	0.51	0.23	0.16	0.16	0.12	0.25
v/c Ratio	0.81	0.80	0.69	0.69	0.53	0.81	0.48	0.41	0.30
Control Delay	65.8	31.0	68.8	35.0	60.6	89.9	65.4	74.5	16.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.8	31.0	68.8	35.0	60.6	89.9	65.4	74.5	16.7
LOS	E	C	E	D	E	F	E	E	B
Approach Delay		34.8		38.5		77.9		47.5	
Approach LOS		C		D		E		D	

Intersection Summary	
Cycle Length: 170	
Actuated Cycle Length: 170	
Offset: 112 (66%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 40.2	Intersection LOS: D
Intersection Capacity Utilization 84.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 4: Garden Road & Blue Heron Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	222	1548	263	185	1481	128	128	89	97	76	75	110
Future Volume (vph)	222	1548	263	185	1481	128	128	89	97	76	75	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.99		1.00	0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1719	4832		1703	4835		1543	1497		1570	1652	1404
Flt Permitted	0.07	1.00		0.05	1.00		0.54	1.00		0.50	1.00	1.00
Satd. Flow (perm)	133	4832		84	4835		869	1497		833	1652	1404
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	234	1629	277	195	1559	135	135	94	102	80	79	116
RTOR Reduction (vph)	0	5	0	0	5	0	0	8	0	0	0	45
Lane Group Flow (vph)	234	1901	0	195	1689	0	135	188	0	80	79	71
Heavy Vehicles (%)	5%	5%	5%	6%	6%	6%	17%	17%	17%	15%	15%	15%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	1	6		5	2		7	4		3	8	1
Permitted Phases	6			2			4			8		8
Actuated Green, G (s)	106.1	84.0		110.1	86.0		40.3	26.5		27.5	20.1	42.2
Effective Green, g (s)	106.1	84.0		110.1	86.0		40.3	26.5		27.5	20.1	42.2
Actuated g/C Ratio	0.62	0.49		0.65	0.51		0.24	0.16		0.16	0.12	0.25
Clearance Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	289	2387		283	2445		260	233		166	195	348
v/s Ratio Prot	c0.11	0.39		0.10	0.35		c0.04	c0.13		0.02	0.05	0.03
v/s Ratio Perm	c0.40			0.35			0.08			0.06		0.02
v/c Ratio	0.81	0.80		0.69	0.69		0.52	0.80		0.48	0.41	0.20
Uniform Delay, d1	48.8	35.9		50.7	31.9		54.4	69.3		63.1	69.4	50.6
Progression Factor	0.94	0.78		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	10.2	1.8		6.8	1.6		1.8	18.0		2.2	1.4	0.3
Delay (s)	56.2	29.7		57.5	33.5		56.1	87.2		65.3	70.8	50.9
Level of Service	E	C		E	C		E	F		E	E	D
Approach Delay (s)		32.6			36.0			74.5			60.8	
Approach LOS		C			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	38.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	222	1548	263	185	1481	128	128	89	97	76	75	110
Future Volume (veh/h)	222	1548	263	185	1481	128	128	89	97	76	75	110
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1792	1792	1900	1624	1624	1900	1652	1652	1652
Adj Flow Rate, veh/h	234	1629	277	195	1559	135	135	94	102	80	79	116
Adj No. of Lanes	1	3	0	1	3	0	1	1	0	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	6	6	6	17	17	17	15	15	15
Cap, veh/h	460	1802	305	450	1997	173	220	107	116	110	169	454
Arrive On Green	0.07	0.14	0.14	0.23	0.44	0.44	0.08	0.15	0.15	0.03	0.10	0.10
Sat Flow, veh/h	1723	4256	720	1707	4588	397	1547	713	774	1573	1652	1404
Grp Volume(v), veh/h	234	1259	647	195	1108	586	135	0	196	80	79	116
Grp Sat Flow(s),veh/h/ln	1723	1647	1682	1707	1631	1722	1547	0	1487	1573	1652	1404
Q Serve(g_s), s	14.2	64.0	64.4	10.9	49.4	49.5	13.0	0.0	21.9	5.0	7.7	1.8
Cycle Q Clear(g_c), s	14.2	64.0	64.4	10.9	49.4	49.5	13.0	0.0	21.9	5.0	7.7	1.8
Prop In Lane	1.00		0.43	1.00		0.23	1.00		0.52	1.00		1.00
Lane Grp Cap(c), veh/h	460	1395	713	450	1420	750	220	0	223	110	169	454
V/C Ratio(X)	0.51	0.90	0.91	0.43	0.78	0.78	0.61	0.00	0.88	0.73	0.47	0.26
Avail Cap(c_a), veh/h	460	1395	713	450	1420	750	220	0	315	110	272	542
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.57	0.57	0.57	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.8	69.7	69.9	52.6	41.1	41.1	61.4	0.0	70.8	73.0	71.9	22.3
Incr Delay (d2), s/veh	0.5	6.0	11.3	0.7	4.3	7.9	5.0	0.0	18.2	21.1	2.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.6	30.4	32.3	7.7	23.0	25.1	0.8	0.0	10.2	2.2	3.6	2.8
LnGrp Delay(d),s/veh	64.3	75.7	81.1	53.2	45.4	49.0	66.4	0.0	89.0	94.1	73.9	22.6
LnGrp LOS	E	E	F	D	D	D	E		F	F	E	C
Approach Vol, veh/h		2140			1889			331			275	
Approach Delay, s/veh		76.1			47.3			79.8			58.1	
Approach LOS		E			D			E			E	

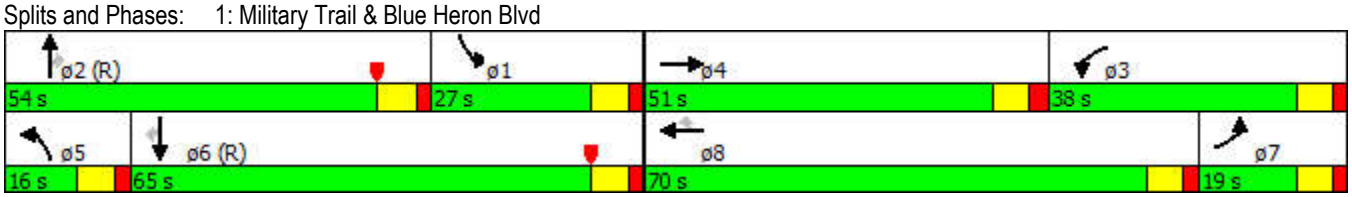
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	44.6	81.0	12.0	32.4	46.6	79.0	20.0	24.4
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Max Green Setting (Gmax), s	27.0	74.0	5.0	36.0	29.0	72.0	13.0	28.0
Max Q Clear Time (g_c+I1), s	16.2	51.5	7.0	23.9	12.9	66.4	15.0	9.7
Green Ext Time (p_c), s	1.0	12.4	0.0	1.5	1.1	4.6	0.0	1.8

Intersection Summary	
HCM 2010 Ctrl Delay	63.6
HCM 2010 LOS	E

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	136	660	501	837	378	60	788	430	337	914	129
Future Volume (vph)	136	660	501	837	378	60	788	430	337	914	129
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	4.0	10.0	4.0	10.0	10.0	4.0	20.0	20.0	4.0	20.0	20.0
Minimum Split (s)	12.0	51.0	12.0	52.0	52.0	12.0	52.0	52.0	12.0	48.0	48.0
Total Split (s)	19.0	51.0	38.0	70.0	70.0	16.0	54.0	54.0	27.0	65.0	65.0
Total Split (%)	11.2%	30.0%	22.4%	41.2%	41.2%	9.4%	31.8%	31.8%	15.9%	38.2%	38.2%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.5	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	7.0	6.5	6.5	6.5	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lag	Lead	Lag	Lead	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	15.5	32.0	31.5	48.5	48.5	8.1	59.0	59.0	20.0	70.9	70.9
Actuated g/C Ratio	0.09	0.19	0.19	0.29	0.29	0.05	0.35	0.35	0.12	0.42	0.42
v/c Ratio	0.47	0.79	0.84	0.61	0.81	0.38	0.47	0.77	0.88	0.45	0.20
Control Delay	79.4	71.5	60.5	27.6	31.4	85.1	45.7	53.4	96.4	37.9	20.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.4	71.5	60.5	27.6	31.4	85.1	45.7	53.4	96.4	37.9	20.2
LOS	E	E	E	C	C	F	D	D	F	D	C
Approach Delay		72.8		38.0			50.2			50.5	
Approach LOS		E		D			D			D	

Intersection Summary	
Cycle Length: 170	
Actuated Cycle Length: 170	
Offset: 96 (56%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 49.9	Intersection LOS: D
Intersection Capacity Utilization 77.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: Military Trail & Blue Heron Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	136	660	38	501	837	378	60	788	430	337	914	129
Future Volume (vph)	136	660	38	501	837	378	60	788	430	337	914	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	7.0		6.5	6.5	6.5	7.0	7.0	7.0	7.0	7.0	7.0
Lane Util. Factor	0.97	0.91		0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	4947		3400	5036	1568	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3367	4947		3400	5036	1568	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	143	695	40	527	881	398	63	829	453	355	962	136
RTOR Reduction (vph)	0	4	0	0	0	43	0	0	39	0	0	35
Lane Group Flow (vph)	143	731	0	527	881	355	63	829	414	355	962	101
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	2%	2%	2%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	15.5	32.0		31.5	48.5	48.5	8.1	59.0	59.0	20.0	70.9	70.9
Effective Green, g (s)	15.5	32.0		31.5	48.5	48.5	8.1	59.0	59.0	20.0	70.9	70.9
Actuated g/C Ratio	0.09	0.19		0.19	0.29	0.29	0.05	0.35	0.35	0.12	0.42	0.42
Clearance Time (s)	6.5	7.0		6.5	6.5	6.5	7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	306	931		630	1436	447	163	1764	549	403	2120	660
v/s Ratio Prot	0.04	0.15		c0.16	0.17		0.02	0.16		c0.10	0.19	
v/s Ratio Perm						c0.23			c0.26			0.06
v/c Ratio	0.47	0.79		0.84	0.61	0.79	0.39	0.47	0.75	0.88	0.45	0.15
Uniform Delay, d1	73.3	65.7		66.8	52.6	56.1	78.5	43.3	49.1	73.8	35.6	30.9
Progression Factor	1.00	1.00		0.75	0.50	0.43	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.1	4.4		8.0	0.7	8.0	1.5	0.9	9.3	19.6	0.7	0.5
Delay (s)	74.5	70.1		58.1	27.1	31.9	80.1	44.2	58.3	93.4	36.3	31.3
Level of Service	E	E		E	C	C	F	D	E	F	D	C
Approach Delay (s)		70.8			37.2			50.6			49.8	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	49.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	27.5
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	136	660	38	501	837	378	60	788	430	337	914	129
Future Volume (veh/h)	136	660	38	501	837	378	60	788	430	337	914	129
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1845	1845	1845	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	143	695	40	527	881	398	63	829	453	355	962	136
Adj No. of Lanes	2	3	0	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	3	3	3	2	2	2	2	2	2
Cap, veh/h	198	850	49	624	1528	476	98	1406	438	697	2291	713
Arrive On Green	0.06	0.18	0.18	0.06	0.10	0.10	0.03	0.28	0.28	0.20	0.45	0.45
Sat Flow, veh/h	3375	4827	277	3408	5036	1568	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	143	478	257	527	881	398	63	829	453	355	962	136
Grp Sat Flow(s),veh/h/ln	1688	1663	1778	1704	1679	1568	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	7.1	23.5	23.7	26.0	28.4	42.4	3.1	24.0	47.0	15.6	21.8	6.6
Cycle Q Clear(g_c), s	7.1	23.5	23.7	26.0	28.4	42.4	3.1	24.0	47.0	15.6	21.8	6.6
Prop In Lane	1.00		0.16	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	198	586	313	624	1528	476	98	1406	438	697	2291	713
V/C Ratio(X)	0.72	0.82	0.82	0.84	0.58	0.84	0.64	0.59	1.03	0.51	0.42	0.19
Avail Cap(c_a), veh/h	248	861	460	632	1881	586	182	1406	438	697	2291	713
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.78	0.78	0.78	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	78.6	67.4	67.5	77.5	66.1	72.3	81.7	53.2	61.5	60.3	31.7	15.7
Incr Delay (d2), s/veh	7.4	3.9	7.5	8.1	0.3	6.9	6.8	1.8	52.3	0.6	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	11.1	12.3	13.0	13.3	19.4	1.6	11.4	26.9	7.5	10.4	3.0
LnGrp Delay(d),s/veh	86.1	71.3	74.9	85.6	66.3	79.3	88.5	55.0	113.8	60.9	32.2	16.3
LnGrp LOS	F	E	E	F	E	E	F	D	F	E	C	B
Approach Vol, veh/h		878			1806			1345			1453	
Approach Delay, s/veh		74.8			74.8			76.4			37.7	
Approach LOS		E			E			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	41.4	54.0	37.6	36.9	11.9	83.6	16.5	58.1
Change Period (Y+Rc), s	7.0	7.0	6.5	7.0	7.0	7.0	6.5	6.5
Max Green Setting (Gmax), s	20.0	47.0	31.5	44.0	9.0	58.0	12.5	63.5
Max Q Clear Time (g_c+I1), s	17.6	49.0	28.0	25.7	5.1	23.8	9.1	44.4
Green Ext Time (p_c), s	0.4	0.0	0.9	4.3	0.0	10.0	0.9	7.2

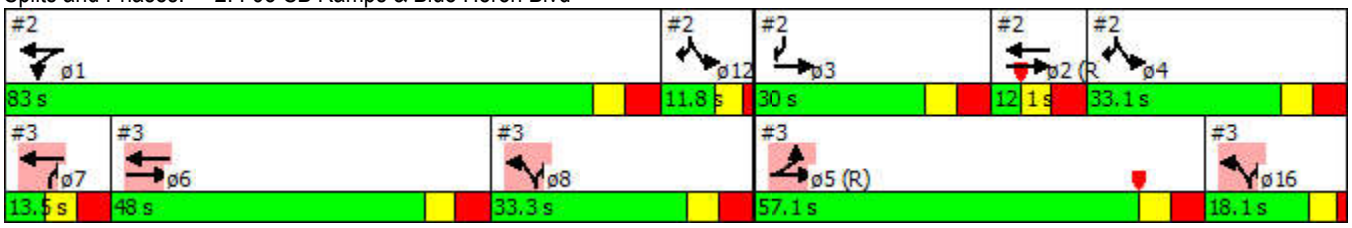
Intersection Summary	
HCM 2010 Ctrl Delay	65.4
HCM 2010 LOS	E

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR	ø2	ø3	ø4	ø5	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	936	563	1250	1402	323	255						
Future Volume (vph)	936	563	1250	1402	323	255						
Turn Type	NA	Free	Prot	NA	Prot	custom						
Protected Phases	3 2		1	1 2	4 12	4 3 12	2	3	4	5	6	7
Permitted Phases		Free				4						
Detector Phase	3 2		1	1 2	4 12	4 3 12						
Switch Phase												
Minimum Initial (s)			10.0				3.0	3.0	4.0	10.0	3.0	3.0
Minimum Split (s)			25.0				12.0	12.0	13.5	24.0	12.0	13.5
Total Split (s)			83.0				12.1	30.0	33.1	57.1	48.0	13.5
Total Split (%)			48.8%				7%	18%	19%	34%	28%	8%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			4.5				4.5	4.5	4.5	4.5	4.5	4.5
Lost Time Adjust (s)			0.0									
Total Lost Time (s)			8.5									
Lead/Lag			Lead				Lag	Lead		Lead	Lag	Lead
Lead-Lag Optimize?			Yes				Yes	Yes		Yes	Yes	Yes
Recall Mode			None				C-Max	None	None	C-Max	Max	None
Act Effct Green (s)	33.6	170.0	74.5	78.1	27.9	57.9						
Actuated g/C Ratio	0.20	1.00	0.44	0.46	0.16	0.34						
v/c Ratio	0.67	0.38	0.88	0.63	0.68	0.32						
Control Delay	37.4	1.5	20.5	10.1	65.8	30.2						
Queue Delay	0.0	0.0	14.6	0.7	0.0	0.0						
Total Delay	37.4	1.5	35.1	10.7	65.8	30.2						
LOS	D	A	D	B	E	C						
Approach Delay	23.9			22.2								
Approach LOS	C			C								

Intersection Summary

Cycle Length: 170
Actuated Cycle Length: 170
Offset: 38 (22%), Referenced to phase 2:EBWB and 5:, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 26.2 — Intersection LOS: C
Intersection Capacity Utilization 77.0% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 2: I-95 SB Ramps & Blue Heron Blvd



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	4.0	5.0	5.0
Minimum Split (s)	13.5	10.0	10.0
Total Split (s)	33.3	11.8	18.1
Total Split (%)	20%	7%	11%
Yellow Time (s)	4.0	3.5	3.5
All-Red Time (s)	4.5	1.5	1.5
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lag	Lag
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

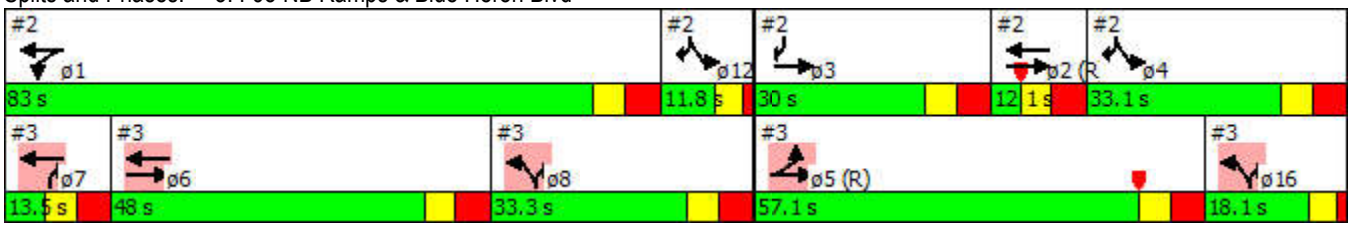
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	936	563	1250	1402	0	0	0	0	323	0	255
Future Volume (vph)	0	936	563	1250	1402	0	0	0	0	323	0	255
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.5	4.0	8.5	8.5					8.5		8.5
Lane Util. Factor		0.81	1.00	0.97	0.91					0.97		0.88
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		7399	1553	3433	5085					3045		2472
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		7399	1553	3433	5085					3045		2472
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	985	593	1316	1476	0	0	0	0	340	0	268
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	985	593	1316	1476	0	0	0	0	340	0	268
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	0%	0%	0%	15%	15%	15%
Turn Type		NA	Free	Prot	NA					Prot		custom
Protected Phases		3 2		1	1 2					4 12		4 3 12
Permitted Phases			Free									4
Actuated Green, G (s)		33.6	170.0	74.5	78.1					31.4		57.9
Effective Green, g (s)		33.6	170.0	74.5	78.1					31.4		52.9
Actuated g/C Ratio		0.20	1.00	0.44	0.46					0.18		0.31
Clearance Time (s)				8.5								
Vehicle Extension (s)				3.0								
Lane Grp Cap (vph)		1462	1553	1504	2336					562		769
v/s Ratio Prot		c0.13		c0.38	0.29					c0.11		0.11
v/s Ratio Perm			c0.38									
v/c Ratio		0.67	0.38	0.88	0.63					0.60		0.35
Uniform Delay, d1		63.1	0.0	43.5	35.0					63.6		45.2
Progression Factor		0.56	1.00	0.40	0.30					1.00		1.00
Incremental Delay, d2		0.9	0.5	2.3	0.2					1.8		0.3
Delay (s)		36.3	0.5	19.6	10.6					65.5		45.5
Level of Service		D	A	B	B					E		D
Approach Delay (s)		22.9			14.9			0.0			56.7	
Approach LOS		C			B			A			E	

Intersection Summary			
HCM 2000 Control Delay	22.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	51.0
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR	ø1	ø2	ø3	ø4	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	397	862	2028	795	624	620						
Future Volume (vph)	397	862	2028	795	624	620						
Turn Type	Prot	NA	NA	Free	Prot	custom						
Protected Phases	5	5 6	6 7		8 16	8 7 16	1	2	3	4	6	7
Permitted Phases				Free		8						
Detector Phase	5	5 6	6 7		8 16	8 7 16						
Switch Phase												
Minimum Initial (s)	10.0						10.0	3.0	3.0	4.0	3.0	3.0
Minimum Split (s)	24.0						25.0	12.0	12.0	13.5	12.0	13.5
Total Split (s)	57.1						83.0	12.1	30.0	33.1	48.0	13.5
Total Split (%)	33.6%						49%	7%	18%	19%	28%	8%
Yellow Time (s)	4.0						4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	4.5						4.5	4.5	4.5	4.5	4.5	4.5
Lost Time Adjust (s)	0.0											
Total Lost Time (s)	8.5											
Lead/Lag	Lead						Lead	Lag	Lead		Lag	Lead
Lead-Lag Optimize?	Yes						Yes	Yes	Yes		Yes	Yes
Recall Mode	C-Max						None	C-Max	None	None	Max	None
Act Effct Green (s)	48.6	88.1	53.0	170.0	34.4	47.9						
Actuated g/C Ratio	0.29	0.52	0.31	1.00	0.20	0.28						
v/c Ratio	0.45	0.36	0.92	0.53	0.96	0.85						
Control Delay	25.1	7.5	42.4	1.2	72.8	41.4						
Queue Delay	0.0	0.0	2.1	0.0	0.0	0.0						
Total Delay	25.1	7.5	44.5	1.2	72.8	41.4						
LOS	C	A	D	A	E	D						
Approach Delay		13.0	32.3									
Approach LOS		B	C									

Intersection Summary	
Cycle Length: 170	
Actuated Cycle Length: 170	
Offset: 38 (22%), Referenced to phase 2:EBWB and 5:, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 33.6	Intersection LOS: C
Intersection Capacity Utilization 77.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: I-95 NB Ramps & Blue Heron Blvd



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	4.0	5.0	5.0
Minimum Split (s)	13.5	10.0	10.0
Total Split (s)	33.3	11.8	18.1
Total Split (%)	20%	7%	11%
Yellow Time (s)	4.0	3.5	3.5
All-Red Time (s)	4.5	1.5	1.5
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lag	Lag
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

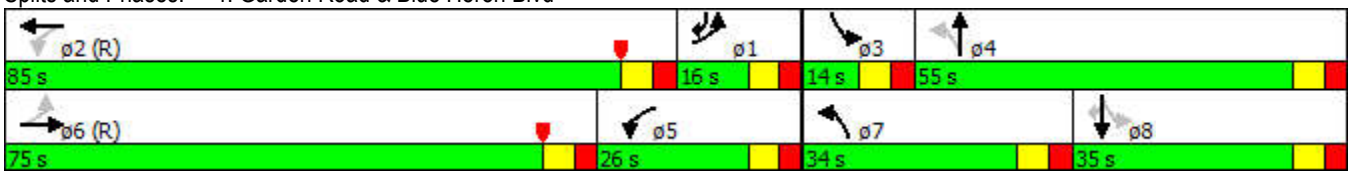
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	397	862	0	0	2028	795	624	0	620	0	0	0
Future Volume (vph)	397	862	0	0	2028	795	624	0	620	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.5	8.5			8.5	4.0	8.5		8.5			
Lane Util. Factor	0.97	0.91			0.81	1.00	0.97		0.88			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	3242	4803			7471	1568	3367		2733			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3242	4803			7471	1568	3367		2733			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	418	907	0	0	2135	837	657	0	653	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	418	907	0	0	2135	837	657	0	653	0	0	0
Heavy Vehicles (%)	8%	8%	8%	3%	3%	3%	4%	4%	4%	0%	0%	0%
Turn Type	Prot	NA			NA	Free	Prot		custom			
Protected Phases	5	5 6			6 7		8 16		8 7 16			
Permitted Phases						Free			8			
Actuated Green, G (s)	48.6	88.1			53.0	170.0	37.9		47.9			
Effective Green, g (s)	48.6	88.1			53.0	170.0	37.9		42.9			
Actuated g/C Ratio	0.29	0.52			0.31	1.00	0.22		0.25			
Clearance Time (s)	8.5											
Vehicle Extension (s)	3.0											
Lane Grp Cap (vph)	926	2489			2329	1568	750		689			
v/s Ratio Prot	0.13	0.19			c0.29		0.20		c0.24			
v/s Ratio Perm						c0.53						
v/c Ratio	0.45	0.36			0.92	0.53	0.88		0.95			
Uniform Delay, d1	49.8	24.3			56.4	0.0	63.8		62.4			
Progression Factor	0.48	0.59			0.67	1.00	1.00		1.00			
Incremental Delay, d2	1.2	0.3			3.8	0.8	11.2		22.1			
Delay (s)	25.0	14.6			41.7	0.8	75.0		84.5			
Level of Service	C	B			D	A	E		F			
Approach Delay (s)		17.9			30.1			79.7			0.0	
Approach LOS		B			C			E			A	

Intersection Summary			
HCM 2000 Control Delay	38.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	51.0
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	100	1344	104	2145	207	70	107	70	288
Future Volume (vph)	100	1344	104	2145	207	70	107	70	288
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+ov
Protected Phases	1	6	5	2	7	4	3	8	1
Permitted Phases	6		2		4		8		8
Detector Phase	1	6	5	2	7	4	3	8	1
Switch Phase									
Minimum Initial (s)	4.0	20.0	4.0	20.0	4.0	6.0	4.0	6.0	4.0
Minimum Split (s)	12.0	32.0	12.0	32.0	12.0	35.0	12.0	35.0	12.0
Total Split (s)	16.0	75.0	26.0	85.0	34.0	55.0	14.0	35.0	16.0
Total Split (%)	9.4%	44.1%	15.3%	50.0%	20.0%	32.4%	8.2%	20.6%	9.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	None	None	None	None
Act Effct Green (s)	91.5	82.5	108.5	92.5	47.5	33.5	24.8	17.8	26.8
Actuated g/C Ratio	0.54	0.49	0.64	0.54	0.28	0.20	0.15	0.10	0.16
v/c Ratio	0.79	0.65	0.38	0.86	0.60	0.84	0.66	0.39	1.03
Control Delay	75.2	28.2	38.4	37.9	56.7	85.0	72.2	76.2	106.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.2	28.2	38.4	37.9	56.7	85.0	72.2	76.2	106.7
LOS	E	C	D	D	E	F	E	E	F
Approach Delay		31.2		37.9		72.5		94.1	
Approach LOS		C		D		E		F	

Intersection Summary	
Cycle Length: 170	
Actuated Cycle Length: 170	
Offset: 88 (52%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 44.5	Intersection LOS: D
Intersection Capacity Utilization 93.4%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 4: Garden Road & Blue Heron Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	1344	130	104	2145	80	207	70	190	107	70	288
Future Volume (vph)	100	1344	130	104	2145	80	207	70	190	107	70	288
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.99		1.00	0.99		1.00	0.89		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1719	4875		1752	5009		1719	1611		1719	1810	1538
Flt Permitted	0.05	1.00		0.10	1.00		0.51	1.00		0.53	1.00	1.00
Satd. Flow (perm)	88	4875		177	5009		922	1611		955	1810	1538
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	105	1415	137	109	2258	84	218	74	200	113	74	303
RTOR Reduction (vph)	0	5	0	0	2	0	0	8	0	0	0	51
Lane Group Flow (vph)	105	1547	0	109	2340	0	218	266	0	113	74	252
Heavy Vehicles (%)	5%	5%	5%	3%	3%	3%	5%	5%	5%	5%	5%	5%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	1	6		5	2		7	4		3	8	1
Permitted Phases	6			2			4			8		8
Actuated Green, G (s)	91.5	82.5		108.5	92.5		47.5	33.5		24.9	17.9	26.9
Effective Green, g (s)	91.5	82.5		108.5	92.5		47.5	33.5		24.9	17.9	26.9
Actuated g/C Ratio	0.54	0.49		0.64	0.54		0.28	0.20		0.15	0.11	0.16
Clearance Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	133	2365		288	2725		363	317		171	190	243
v/s Ratio Prot	0.04	0.32		0.04	c0.47		c0.08	c0.17		0.03	0.04	c0.05
v/s Ratio Perm	0.38			0.20			0.09			0.07		0.11
v/c Ratio	0.79	0.65		0.38	0.86		0.60	0.84		0.66	0.39	1.04
Uniform Delay, d1	69.0	33.0		42.3	33.2		50.7	65.7		67.2	71.0	71.5
Progression Factor	0.78	0.80		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	22.8	1.2		0.8	3.8		2.8	17.4		9.2	1.3	68.3
Delay (s)	76.3	27.5		43.1	37.0		53.5	83.0		76.4	72.3	139.8
Level of Service	E	C		D	D		D	F		E	E	F
Approach Delay (s)		30.6			37.2			70.0			115.0	
Approach LOS		C			D			E			F	

Intersection Summary			
HCM 2000 Control Delay	45.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	93.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	100	1344	130	104	2145	80	207	70	190	107	70	288
Future Volume (veh/h)	100	1344	130	104	2145	80	207	70	190	107	70	288
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1845	1845	1900	1810	1810	1900	1810	1810	1810
Adj Flow Rate, veh/h	105	1415	137	109	2258	84	218	74	200	113	74	303
Adj No. of Lanes	1	3	0	1	3	0	1	1	0	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	3	3	3	5	5	5	5	5	5
Cap, veh/h	284	1832	177	422	2287	85	327	84	228	144	205	391
Arrive On Green	0.05	0.13	0.13	0.20	0.46	0.46	0.12	0.19	0.19	0.04	0.11	0.11
Sat Flow, veh/h	1723	4581	443	1757	4985	185	1723	433	1170	1723	1810	1538
Grp Volume(v), veh/h	105	1017	535	109	1518	824	218	0	274	113	74	303
Grp Sat Flow(s),veh/h/ln	1723	1647	1731	1757	1679	1812	1723	0	1603	1723	1810	1538
Q Serve(g_s), s	5.8	50.7	50.8	1.6	75.9	76.8	18.5	0.0	28.2	7.0	6.4	6.8
Cycle Q Clear(g_c), s	5.8	50.7	50.8	1.6	75.9	76.8	18.5	0.0	28.2	7.0	6.4	6.8
Prop In Lane	1.00		0.26	1.00		0.10	1.00		0.73	1.00		1.00
Lane Grp Cap(c), veh/h	284	1317	693	422	1540	831	327	0	312	144	205	391
V/C Ratio(X)	0.37	0.77	0.77	0.26	0.99	0.99	0.67	0.00	0.88	0.78	0.36	0.78
Avail Cap(c_a), veh/h	284	1317	693	422	1540	831	390	0	453	144	298	469
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.80	0.80	0.80	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.3	66.3	66.3	52.6	45.4	45.7	55.3	0.0	66.5	70.0	69.7	29.3
Incr Delay (d2), s/veh	0.6	3.6	6.6	0.3	19.7	29.2	3.3	0.0	12.8	24.0	1.1	6.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.8	23.8	25.6	4.2	39.4	45.0	9.1	0.0	13.6	5.6	3.3	9.5
LnGrp Delay(d),s/veh	71.9	69.9	72.9	52.9	65.1	74.9	58.7	0.0	79.2	94.0	70.7	35.9
LnGrp LOS	E	E	E	D	E	E	E		E	F	E	D
Approach Vol, veh/h		1657			2451			492			490	
Approach Delay, s/veh		71.0			67.9			70.1			54.6	
Approach LOS		E			E			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.9	85.0	14.0	40.1	40.9	75.0	27.8	26.3
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Max Green Setting (Gmax), s	9.0	78.0	7.0	48.0	19.0	68.0	27.0	28.0
Max Q Clear Time (g_c+I1), s	7.8	78.8	9.0	30.2	3.6	52.8	20.5	8.8
Green Ext Time (p_c), s	0.1	0.0	0.0	2.9	0.5	8.9	0.3	3.0

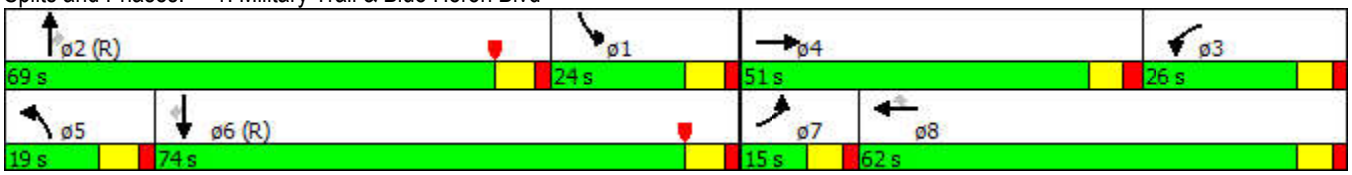
Intersection Summary	
HCM 2010 Ctrl Delay	67.8
HCM 2010 LOS	E

2040 Opening Year

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	115	915	695	1031	506	139	870	890	607	668	129
Future Volume (vph)	115	915	695	1031	506	139	870	890	607	668	129
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	4.0	10.0	4.0	10.0	10.0	4.0	20.0	20.0	4.0	20.0	20.0
Minimum Split (s)	12.0	51.0	12.0	52.0	52.0	12.0	52.0	52.0	12.0	48.0	48.0
Total Split (s)	15.0	51.0	26.0	62.0	62.0	19.0	69.0	69.0	24.0	74.0	74.0
Total Split (%)	8.8%	30.0%	15.3%	36.5%	36.5%	11.2%	40.6%	40.6%	14.1%	43.5%	43.5%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.5	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	7.0	6.5	6.5	6.5	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	8.5	41.7	21.8	55.5	55.5	11.3	62.0	62.0	17.0	67.7	67.7
Actuated g/C Ratio	0.05	0.25	0.13	0.33	0.33	0.07	0.36	0.36	0.10	0.40	0.40
v/c Ratio	0.73	0.86	1.71	0.67	0.98	0.65	0.50	1.55	1.88	0.35	0.21
Control Delay	103.5	68.9	363.2	38.1	65.6	91.5	43.2	290.2	443.3	36.5	19.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	103.5	68.9	363.2	38.1	65.6	91.5	43.2	290.2	443.3	36.5	19.4
LOS	F	E	F	D	E	F	D	F	F	D	B
Approach Delay		72.5		145.6			162.5			210.8	
Approach LOS		E		F			F			F	

Intersection Summary	
Cycle Length: 170	
Actuated Cycle Length: 170	
Offset: 96 (56%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.88	
Intersection Signal Delay: 152.1	Intersection LOS: F
Intersection Capacity Utilization 109.1%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 1: Military Trail & Blue Heron Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	115	915	68	695	1031	506	139	870	890	607	668	129
Future Volume (vph)	115	915	68	695	1031	506	139	870	890	607	668	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	7.0		6.5	6.5	6.5	7.0	7.0	7.0	7.0	7.0	7.0
Lane Util. Factor	0.97	0.91		0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3335	4888		3335	4940	1538	3367	4988	1553	3400	5036	1568
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3335	4888		3335	4940	1538	3367	4988	1553	3400	5036	1568
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	121	963	72	732	1085	533	146	916	937	639	703	136
RTOR Reduction (vph)	0	5	0	0	0	40	0	0	38	0	0	36
Lane Group Flow (vph)	121	1030	0	732	1085	493	146	916	899	639	703	100
Heavy Vehicles (%)	5%	5%	5%	5%	5%	5%	4%	4%	4%	3%	3%	3%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	8.5	41.7		21.8	55.5	55.5	11.3	62.0	62.0	17.0	67.7	67.7
Effective Green, g (s)	8.5	41.7		21.8	55.5	55.5	11.3	62.0	62.0	17.0	67.7	67.7
Actuated g/C Ratio	0.05	0.25		0.13	0.33	0.33	0.07	0.36	0.36	0.10	0.40	0.40
Clearance Time (s)	6.5	7.0		6.5	6.5	6.5	7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	166	1198		427	1612	502	223	1819	566	340	2005	624
v/s Ratio Prot	0.04	c0.21		c0.22	0.22		0.04	0.18		c0.19	0.14	
v/s Ratio Perm						c0.32			c0.58			0.06
v/c Ratio	0.73	0.86		1.71	0.67	0.98	0.65	0.50	1.59	1.88	0.35	0.16
Uniform Delay, d1	79.6	61.3		74.1	49.4	56.7	77.4	42.0	54.0	76.5	35.8	32.9
Progression Factor	1.00	1.00		0.83	0.74	0.74	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.8	6.3		328.0	0.8	28.1	6.7	1.0	273.0	406.7	0.5	0.5
Delay (s)	94.4	67.7		389.9	37.1	70.3	84.2	43.0	327.0	483.2	36.3	33.4
Level of Service	F	E		F	D	E	F	D	F	F	D	C
Approach Delay (s)		70.5			154.5			179.1			229.2	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	163.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.47		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	27.5
Intersection Capacity Utilization	109.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	915	68	695	1031	506	139	870	890	607	668	129
Future Volume (veh/h)	115	915	68	695	1031	506	139	870	890	607	668	129
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1810	1810	1810	1827	1827	1827	1845	1845	1845
Adj Flow Rate, veh/h	121	963	72	732	1085	533	146	916	937	639	703	136
Adj No. of Lanes	2	3	0	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	5	5	5	4	4	4	3	3	3
Cap, veh/h	159	1096	82	383	1501	467	186	1819	566	427	2190	682
Arrive On Green	0.05	0.23	0.23	0.04	0.10	0.10	0.06	0.36	0.36	0.13	0.43	0.43
Sat Flow, veh/h	3343	4691	350	3343	4940	1538	3375	4988	1553	3408	5036	1568
Grp Volume(v), veh/h	121	675	360	732	1085	533	146	916	937	639	703	136
Grp Sat Flow(s),veh/h/ln	1672	1647	1748	1672	1647	1538	1688	1663	1553	1704	1679	1568
Q Serve(g_s), s	6.1	33.6	33.7	19.5	36.2	36.5	7.3	24.3	62.0	21.3	15.6	9.1
Cycle Q Clear(g_c), s	6.1	33.6	33.7	19.5	36.2	36.5	7.3	24.3	62.0	21.3	15.6	9.1
Prop In Lane	1.00		0.20	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	159	769	408	383	1501	467	186	1819	566	427	2190	682
V/C Ratio(X)	0.76	0.88	0.88	1.91	0.72	1.14	0.79	0.50	1.65	1.50	0.32	0.20
Avail Cap(c_a), veh/h	167	852	452	383	1613	502	238	1819	566	427	2190	682
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.56	0.56	0.56	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	80.0	62.8	62.9	81.8	69.5	38.1	79.3	42.0	54.0	74.4	31.5	29.7
Incr Delay (d2), s/veh	17.7	9.7	16.8	414.4	0.8	77.7	12.4	1.0	302.3	235.5	0.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	16.3	18.2	31.1	16.7	25.6	3.7	11.4	74.1	24.0	7.3	4.1
LnGrp Delay(d),s/veh	97.8	72.5	79.7	496.2	70.4	115.8	91.7	43.0	356.3	309.9	31.9	30.4
LnGrp LOS	F	E	E	F	E	F	F	D	F	F	C	C
Approach Vol, veh/h		1156			2350			1999			1478	
Approach Delay, s/veh		77.4			213.3			193.4			152.0	
Approach LOS		E			F			F			F	

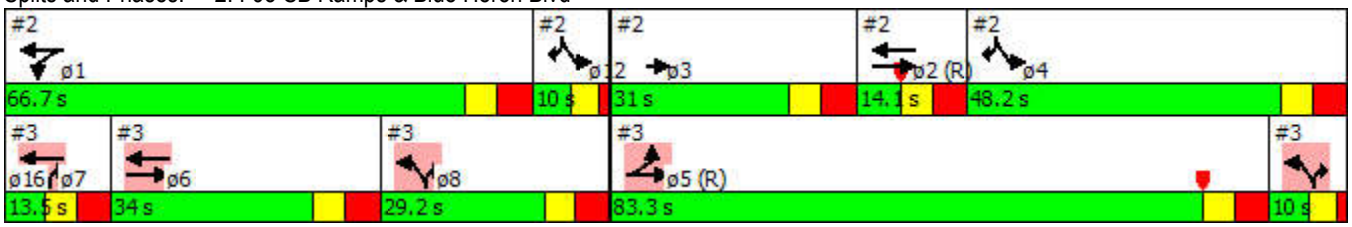
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	28.3	69.0	26.0	46.7	16.4	80.9	14.6	58.1
Change Period (Y+Rc), s	7.0	7.0	6.5	7.0	7.0	7.0	6.5	6.5
Max Green Setting (Gmax), s	17.0	62.0	19.5	44.0	12.0	67.0	8.5	55.5
Max Q Clear Time (g_c+I1), s	23.3	64.0	21.5	35.7	9.3	17.6	8.1	38.5
Green Ext Time (p_c), s	0.0	0.0	0.0	4.0	0.1	9.5	0.0	11.3

Intersection Summary	
HCM 2010 Ctrl Delay	172.1
HCM 2010 LOS	F

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR	ø2	ø3	ø4	ø5	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	1582	757	790	1380	929	771						
Future Volume (vph)	1582	757	790	1380	929	771						
Turn Type	NA	Free	Prot	NA	Prot	custom						
Protected Phases	3 2		1	1 2	4 12	4 3 12	2	3	4	5	6	7
Permitted Phases		Free				4						
Detector Phase	3 2		1	1 2	4 12	4 3 12						
Switch Phase												
Minimum Initial (s)			10.0				3.0	3.0	4.0	10.0	3.0	3.0
Minimum Split (s)			25.0				12.0	12.0	13.5	24.0	12.0	13.5
Total Split (s)			66.7				14.1	31.0	48.2	83.3	34.0	13.5
Total Split (%)			39.2%				8%	18%	28%	49%	20%	8%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			4.5				4.5	4.5	4.5	4.5	4.5	4.5
Lost Time Adjust (s)			0.0									
Total Lost Time (s)			8.5									
Lead/Lag			Lead				Lag	Lead		Lead	Lag	Lead
Lead-Lag Optimize?			Yes				Yes	Yes		Yes	Yes	Yes
Recall Mode			None				C-Max	None	None	C-Max	Max	None
Act Effct Green (s)	36.6	170.0	57.4	63.0	42.0	73.0						
Actuated g/C Ratio	0.22	1.00	0.34	0.37	0.25	0.43						
v/c Ratio	1.06	0.52	0.75	0.80	1.18	0.69						
Control Delay	70.9	1.2	24.3	17.0	143.0	30.3						
Queue Delay	0.0	0.0	3.3	2.9	0.0	0.0						
Total Delay	70.9	1.2	27.6	19.9	143.0	30.3						
LOS	E	A	C	B	F	C						
Approach Delay	48.3			22.7								
Approach LOS	D			C								

Intersection Summary	
Cycle Length: 170	
Actuated Cycle Length: 170	
Offset: 42 (25%), Referenced to phase 2:EBWB and 5:, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.27	
Intersection Signal Delay: 51.3	Intersection LOS: D
Intersection Capacity Utilization 88.6%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 2: I-95 SB Ramps & Blue Heron Blvd



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	4.0	5.0	5.0
Minimum Split (s)	13.5	10.0	10.0
Total Split (s)	29.2	10.0	10.0
Total Split (%)	17%	6%	6%
Yellow Time (s)	4.0	3.5	3.5
All-Red Time (s)	4.5	1.5	1.5
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lag	Lag
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1582	757	790	1380	0	0	0	0	929	0	771
Future Volume (vph)	0	1582	757	790	1380	0	0	0	0	929	0	771
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.5	4.0	8.5	8.5					8.5		8.5
Lane Util. Factor		0.81	1.00	0.97	0.91					0.97		0.88
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		7329	1538	3303	4893					3367		2733
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		7329	1538	3303	4893					3367		2733
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1665	797	832	1453	0	0	0	0	978	0	812
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1665	797	832	1453	0	0	0	0	978	0	812
Heavy Vehicles (%)	5%	5%	5%	6%	6%	6%	0%	0%	0%	4%	4%	4%
Turn Type		NA	Free	Prot	NA					Prot		custom
Protected Phases		3 2		1	1 2					4 12		4 3 12
Permitted Phases			Free									4
Actuated Green, G (s)		36.6	170.0	57.4	63.0					45.5		73.0
Effective Green, g (s)		36.6	170.0	57.4	63.0					45.5		68.0
Actuated g/C Ratio		0.22	1.00	0.34	0.37					0.27		0.40
Clearance Time (s)				8.5								
Vehicle Extension (s)				3.0								
Lane Grp Cap (vph)		1577	1538	1115	1813					901		1093
v/s Ratio Prot		c0.23		0.25	c0.30					c0.29		0.30
v/s Ratio Perm			c0.52									
v/c Ratio		1.06	0.52	0.75	0.80					1.09		0.74
Uniform Delay, d1		66.7	0.0	49.9	47.9					62.2		43.5
Progression Factor		0.68	1.00	0.48	0.40					1.00		1.00
Incremental Delay, d2		26.9	0.1	0.3	0.2					55.9		2.8
Delay (s)		72.5	0.1	24.0	19.3					118.2		46.3
Level of Service		E	A	C	B					F		D
Approach Delay (s)		49.1			21.0			0.0			85.6	
Approach LOS		D			C			A			F	

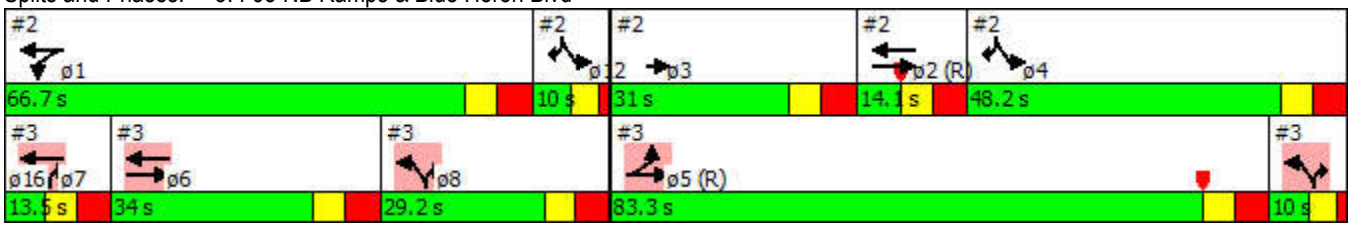
Intersection Summary			
HCM 2000 Control Delay	49.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	51.0
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR	ø1	ø2	ø3	ø4	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	600	1911	1646	557	524	690						
Future Volume (vph)	600	1911	1646	557	524	690						
Turn Type	Prot	NA	NA	Free	Prot	custom						
Protected Phases	5	5 6	6 7		8 16	8 7 16	1	2	3	4	6	7
Permitted Phases				Free		8						
Detector Phase	5	5 6	6 7		8 16	8 7 16						
Switch Phase												
Minimum Initial (s)	10.0						10.0	3.0	3.0	4.0	3.0	3.0
Minimum Split (s)	24.0						25.0	12.0	12.0	13.5	12.0	13.5
Total Split (s)	83.3						66.7	14.1	31.0	48.2	34.0	13.5
Total Split (%)	49.0%						39%	8%	18%	28%	20%	8%
Yellow Time (s)	4.0						4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	4.5						4.5	4.5	4.5	4.5	4.5	4.5
Lost Time Adjust (s)	0.0											
Total Lost Time (s)	8.5											
Lead/Lag	Lead						Lead	Lag	Lead		Lag	Lead
Lead-Lag Optimize?	Yes						Yes	Yes	Yes		Yes	Yes
Recall Mode	C-Max						None	C-Max	None	None	Max	None
Act Effct Green (s)	74.8	100.3	39.0	170.0	22.2	35.7						
Actuated g/C Ratio	0.44	0.59	0.23	1.00	0.13	0.21						
v/c Ratio	0.43	0.69	1.05	0.39	1.26	1.27						
Control Delay	15.4	7.6	68.1	0.4	187.1	174.2						
Queue Delay	0.8	0.8	3.0	0.0	0.0	0.0						
Total Delay	16.2	8.4	71.1	0.4	187.1	174.2						
LOS	B	A	E	A	F	F						
Approach Delay		10.3	53.3									
Approach LOS		B	D									

Intersection Summary

Cycle Length: 170
Actuated Cycle Length: 170
Offset: 42 (25%), Referenced to phase 2:EBWB and 5:, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.27
Intersection Signal Delay: 61.0 — Intersection LOS: E
Intersection Capacity Utilization 88.6% — ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 3: I-95 NB Ramps & Blue Heron Blvd



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	4.0	5.0	5.0
Minimum Split (s)	13.5	10.0	10.0
Total Split (s)	29.2	10.0	10.0
Total Split (%)	17%	6%	6%
Yellow Time (s)	4.0	3.5	3.5
All-Red Time (s)	4.5	1.5	1.5
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lag	Lag
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

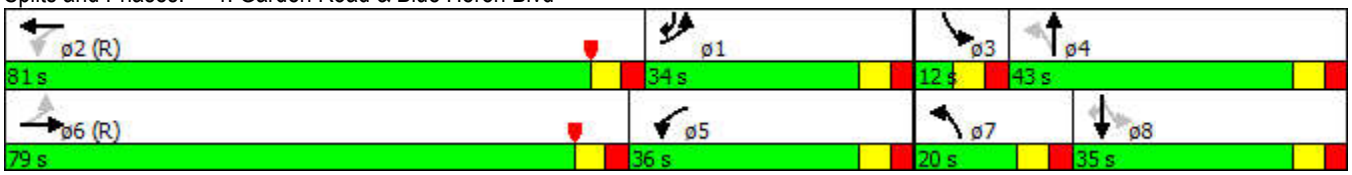
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	600	1911	0	0	1646	557	524	0	690	0	0	0
Future Volume (vph)	600	1911	0	0	1646	557	524	0	690	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.5	8.5			8.5	4.0	8.5		8.5			
Lane Util. Factor	0.97	0.91			0.81	1.00	0.97		0.88			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	3335	4940			7192	1509	3367		2733			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3335	4940			7192	1509	3367		2733			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	632	2012	0	0	1733	586	552	0	726	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	632	2012	0	0	1733	586	552	0	726	0	0	0
Heavy Vehicles (%)	5%	5%	5%	7%	7%	7%	4%	4%	4%	0%	0%	0%
Turn Type	Prot	NA			NA	Free	Prot		custom			
Protected Phases	5	5 6			6 7		8 16		8 7 16			
Permitted Phases						Free			8			
Actuated Green, G (s)	74.8	100.3			39.0	170.0	25.7		35.7			
Effective Green, g (s)	74.8	100.3			39.0	170.0	25.7		30.7			
Actuated g/C Ratio	0.44	0.59			0.23	1.00	0.15		0.18			
Clearance Time (s)	8.5											
Vehicle Extension (s)	3.0											
Lane Grp Cap (vph)	1467	2914			1649	1509	509		493			
v/s Ratio Prot	0.19	c0.41			c0.24		0.16		c0.27			
v/s Ratio Perm						0.39						
v/c Ratio	0.43	0.69			1.05	0.39	1.08		1.47			
Uniform Delay, d1	32.9	24.1			65.5	0.0	72.2		69.7			
Progression Factor	0.46	0.60			0.57	1.00	1.00		1.00			
Incremental Delay, d2	0.1	0.1			31.4	0.4	64.7		223.5			
Delay (s)	15.3	14.7			68.6	0.4	136.8		293.2			
Level of Service	B	B			E	A	F		F			
Approach Delay (s)		14.8			51.4			225.6			0.0	
Approach LOS		B			D			F			A	

Intersection Summary			
HCM 2000 Control Delay	71.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	51.0
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	259	1680	419	1695	273	164	80	105	113
Future Volume (vph)	259	1680	419	1695	273	164	80	105	113
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+ov
Protected Phases	1	6	5	2	7	4	3	8	1
Permitted Phases	6		2		4		8		8
Detector Phase	1	6	5	2	7	4	3	8	1
Switch Phase									
Minimum Initial (s)	4.0	20.0	4.0	20.0	4.0	6.0	4.0	6.0	4.0
Minimum Split (s)	12.0	32.0	12.0	32.0	12.0	35.0	12.0	35.0	12.0
Total Split (s)	34.0	79.0	36.0	81.0	20.0	43.0	12.0	35.0	34.0
Total Split (%)	20.0%	46.5%	21.2%	47.6%	11.8%	25.3%	7.1%	20.6%	20.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	None	None	None	None
Act Effct Green (s)	99.0	72.0	103.0	74.0	48.0	36.0	33.0	28.0	55.0
Actuated g/C Ratio	0.58	0.42	0.61	0.44	0.28	0.21	0.19	0.16	0.32
v/c Ratio	0.87	1.26	1.33	0.91	1.00	1.13	0.90	0.41	0.24
Control Delay	73.4	149.3	214.0	52.2	110.2	145.0	123.0	68.8	14.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	73.4	149.3	214.0	52.2	110.2	145.0	123.0	68.8	14.6
LOS	E	F	F	D	F	F	F	E	B
Approach Delay		141.9		82.4		129.7		62.7	
Approach LOS		F		F		F		E	

Intersection Summary	
Cycle Length: 170	
Actuated Cycle Length: 170	
Offset: 112 (66%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.33	
Intersection Signal Delay: 113.6	Intersection LOS: F
Intersection Capacity Utilization 119.1%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 4: Garden Road & Blue Heron Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	259	1680	711	419	1695	131	273	164	182	80	105	113
Future Volume (vph)	259	1680	711	419	1695	131	273	164	182	80	105	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.96		1.00	0.99		1.00	0.92		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1719	4720		1703	4841		1543	1496		1570	1652	1404
Flt Permitted	0.06	1.00		0.05	1.00		0.50	1.00		0.17	1.00	1.00
Satd. Flow (perm)	101	4720		97	4841		816	1496		286	1652	1404
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	273	1768	748	441	1784	138	287	173	192	84	111	119
RTOR Reduction (vph)	0	6	0	0	5	0	0	8	0	0	0	41
Lane Group Flow (vph)	273	2510	0	441	1917	0	287	357	0	84	111	78
Heavy Vehicles (%)	5%	5%	5%	6%	6%	6%	17%	17%	17%	15%	15%	15%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	1	6		5	2		7	4		3	8	1
Permitted Phases	6			2			4			8		8
Actuated Green, G (s)	99.0	72.0		103.0	74.0		48.0	36.0		33.0	28.0	55.0
Effective Green, g (s)	99.0	72.0		103.0	74.0		48.0	36.0		33.0	28.0	55.0
Actuated g/C Ratio	0.58	0.42		0.61	0.44		0.28	0.21		0.19	0.16	0.32
Clearance Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	315	1999		332	2107		285	316		93	272	454
v/s Ratio Prot	0.14	0.53		c0.23	0.40		c0.08	c0.24		0.03	0.07	0.03
v/s Ratio Perm	0.37			c0.58			0.21			0.15		0.03
v/c Ratio	0.87	1.26		1.33	0.91		1.01	1.13		0.90	0.41	0.17
Uniform Delay, d1	60.4	49.0		67.0	44.9		60.3	67.0		65.8	63.6	41.2
Progression Factor	0.95	0.71		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	12.7	117.4		167.1	7.3		55.1	90.5		62.4	1.0	0.2
Delay (s)	70.4	152.3		234.1	52.2		115.4	157.5		128.2	64.6	41.4
Level of Service	E	F		F	D		F	F		F	E	D
Approach Delay (s)		144.3			86.1			139.0			72.8	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	117.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.31		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	119.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	259	1680	711	419	1695	131	273	164	182	80	105	113
Future Volume (veh/h)	259	1680	711	419	1695	131	273	164	182	80	105	113
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1792	1792	1900	1624	1624	1900	1652	1652	1652
Adj Flow Rate, veh/h	273	1768	748	441	1784	138	287	173	192	84	111	119
Adj No. of Lanes	1	3	0	1	3	0	1	1	0	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	6	6	6	17	17	17	15	15	15
Cap, veh/h	331	1476	583	334	2017	156	265	149	166	89	272	454
Arrive On Green	0.05	0.14	0.14	0.17	0.44	0.44	0.08	0.21	0.21	0.03	0.16	0.16
Sat Flow, veh/h	1723	3484	1376	1707	4634	358	1547	704	782	1573	1652	1404
Grp Volume(v), veh/h	273	1664	852	441	1255	667	287	0	365	84	111	119
Grp Sat Flow(s),veh/h/ln	1723	1647	1567	1707	1631	1729	1547	0	1486	1573	1652	1404
Q Serve(g_s), s	20.9	72.0	72.0	29.0	60.0	60.3	13.0	0.0	36.0	5.0	10.2	1.9
Cycle Q Clear(g_c), s	20.9	72.0	72.0	29.0	60.0	60.3	13.0	0.0	36.0	5.0	10.2	1.9
Prop In Lane	1.00		0.88	1.00		0.21	1.00		0.53	1.00		1.00
Lane Grp Cap(c), veh/h	331	1395	664	334	1420	753	265	0	315	89	272	454
V/C Ratio(X)	0.82	1.19	1.28	1.32	0.88	0.89	1.08	0.00	1.16	0.95	0.41	0.26
Avail Cap(c_a), veh/h	331	1395	664	334	1420	753	265	0	315	89	272	454
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.42	0.42	0.42	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	75.1	73.1	73.1	68.7	44.0	44.1	65.2	0.0	67.0	68.2	63.6	22.4
Incr Delay (d2), s/veh	7.1	90.2	132.6	164.5	8.3	14.5	79.1	0.0	101.4	78.2	1.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.4	50.3	55.7	30.9	28.6	31.8	5.8	0.0	23.6	3.7	4.8	2.9
LnGrp Delay(d),s/veh	82.2	163.3	205.7	233.1	52.3	58.7	144.3	0.0	168.4	146.4	64.6	22.7
LnGrp LOS	F	F	F	F	D	E	F		F	F	E	C
Approach Vol, veh/h		2789			2363			652			314	
Approach Delay, s/veh		168.3			87.9			157.8			70.6	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	34.0	81.0	12.0	43.0	36.0	79.0	20.0	35.0
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Max Green Setting (Gmax), s	27.0	74.0	5.0	36.0	29.0	72.0	13.0	28.0
Max Q Clear Time (g_c+I1), s	22.9	62.3	7.0	38.0	31.0	74.0	15.0	12.2
Green Ext Time (p_c), s	1.0	8.7	0.0	0.0	0.0	0.0	0.0	2.9

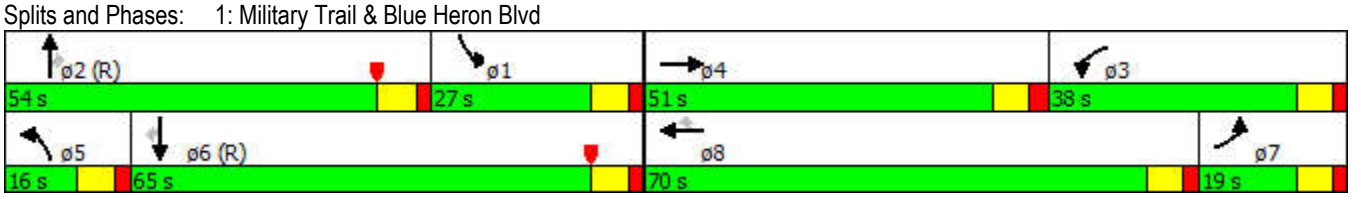
Intersection Summary	
HCM 2010 Ctrl Delay	131.1
HCM 2010 LOS	F

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	139	862	773	1097	469	89	810	678	491	946	156
Future Volume (vph)	139	862	773	1097	469	89	810	678	491	946	156
Turn Type	Prot	NA	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4	3	8		5	2		1	6	
Permitted Phases					8			2			6
Detector Phase	7	4	3	8	8	5	2	2	1	6	6
Switch Phase											
Minimum Initial (s)	4.0	10.0	4.0	10.0	10.0	4.0	20.0	20.0	4.0	20.0	20.0
Minimum Split (s)	12.0	51.0	12.0	52.0	52.0	12.0	52.0	52.0	12.0	48.0	48.0
Total Split (s)	19.0	51.0	38.0	70.0	70.0	16.0	54.0	54.0	27.0	65.0	65.0
Total Split (%)	11.2%	30.0%	22.4%	41.2%	41.2%	9.4%	31.8%	31.8%	15.9%	38.2%	38.2%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.5	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.5	7.0	6.5	6.5	6.5	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lag	Lead	Lag	Lead	Lead	Lead	Lead	Lead	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	18.2	40.2	35.3	57.8	57.8	8.6	47.0	47.0	20.0	58.4	58.4
Actuated g/C Ratio	0.11	0.24	0.21	0.34	0.34	0.05	0.28	0.28	0.12	0.34	0.34
v/c Ratio	0.41	0.83	1.15	0.67	0.86	0.54	0.61	1.48	1.28	0.57	0.28
Control Delay	76.8	67.8	127.8	27.7	35.5	90.4	55.7	266.5	200.8	47.2	26.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.8	67.8	127.8	27.7	35.5	90.4	55.7	266.5	200.8	47.2	26.8
LOS	E	E	F	C	D	F	E	F	F	D	C
Approach Delay		69.0		62.4			148.3			92.6	
Approach LOS		E		E			F			F	

Intersection Summary

Cycle Length: 170
Actuated Cycle Length: 170
Offset: 96 (56%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.48
Intersection Signal Delay: 91.4 — Intersection LOS: F
Intersection Capacity Utilization 93.7% — ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 1: Military Trail & Blue Heron Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	139	862	61	773	1097	469	89	810	678	491	946	156
Future Volume (vph)	139	862	61	773	1097	469	89	810	678	491	946	156
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	7.0		6.5	6.5	6.5	7.0	7.0	7.0	7.0	7.0	7.0
Lane Util. Factor	0.97	0.91		0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	4938		3400	5036	1568	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3367	4938		3400	5036	1568	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	146	907	64	814	1155	494	94	853	714	517	996	164
RTOR Reduction (vph)	0	5	0	0	0	40	0	0	43	0	0	39
Lane Group Flow (vph)	146	966	0	814	1155	454	94	853	671	517	996	125
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	2%	2%	2%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases						8			2			6
Actuated Green, G (s)	18.2	40.2		35.3	57.8	57.8	8.6	47.0	47.0	20.0	58.4	58.4
Effective Green, g (s)	18.2	40.2		35.3	57.8	57.8	8.6	47.0	47.0	20.0	58.4	58.4
Actuated g/C Ratio	0.11	0.24		0.21	0.34	0.34	0.05	0.28	0.28	0.12	0.34	0.34
Clearance Time (s)	6.5	7.0		6.5	6.5	6.5	7.0	7.0	7.0	7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	360	1167		706	1712	533	173	1405	437	403	1746	543
v/s Ratio Prot	0.04	0.20		c0.24	0.23		0.03	0.17		c0.15	0.20	
v/s Ratio Perm						c0.29			c0.42			0.08
v/c Ratio	0.41	0.83		1.15	0.67	0.85	0.54	0.61	1.53	1.28	0.57	0.23
Uniform Delay, d1	70.9	61.6		67.3	48.0	52.1	78.8	53.5	61.5	75.0	45.6	39.8
Progression Factor	1.00	1.00		0.80	0.55	0.52	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	5.0		80.5	0.8	9.2	3.5	2.0	251.8	145.1	1.4	1.0
Delay (s)	71.6	66.6		134.6	27.2	36.5	82.2	55.4	313.3	220.1	46.9	40.8
Level of Service	E	E		F	C	D	F	E	F	F	D	D
Approach Delay (s)		67.2			64.6			167.8			99.7	
Approach LOS		E			E			F			F	

Intersection Summary			
HCM 2000 Control Delay	98.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	27.5
Intersection Capacity Utilization	93.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	139	862	61	773	1097	469	89	810	678	491	946	156
Future Volume (veh/h)	139	862	61	773	1097	469	89	810	678	491	946	156
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1827	1827	1900	1845	1845	1845	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	146	907	64	814	1155	494	94	853	714	517	996	164
Adj No. of Lanes	2	3	0	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	4	4	3	3	3	2	2	2	2	2	2
Cap, veh/h	187	1055	74	636	1791	558	133	1406	438	528	1990	620
Arrive On Green	0.06	0.22	0.22	0.06	0.12	0.12	0.04	0.28	0.28	0.15	0.39	0.39
Sat Flow, veh/h	3375	4758	335	3408	5036	1568	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	146	633	338	814	1155	494	94	853	714	517	996	164
Grp Sat Flow(s),veh/h/ln	1688	1663	1768	1704	1679	1568	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	7.3	31.1	31.3	31.7	37.2	52.8	4.6	24.8	47.0	25.4	25.2	9.3
Cycle Q Clear(g_c), s	7.3	31.1	31.3	31.7	37.2	52.8	4.6	24.8	47.0	25.4	25.2	9.3
Prop In Lane	1.00		0.19	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	187	737	392	636	1791	558	133	1406	438	528	1990	620
V/C Ratio(X)	0.78	0.86	0.86	1.28	0.64	0.89	0.71	0.61	1.63	0.98	0.50	0.26
Avail Cap(c_a), veh/h	248	861	458	636	1881	586	182	1406	438	528	1990	620
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.59	0.59	0.59	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	79.3	63.6	63.7	79.8	64.8	71.6	80.8	53.5	61.5	71.7	39.1	21.3
Incr Delay (d2), s/veh	10.8	7.8	13.9	133.2	0.4	9.4	7.5	2.0	294.2	33.5	0.9	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	15.1	16.8	26.8	17.4	24.4	2.3	11.9	56.3	14.6	12.0	4.3
LnGrp Delay(d),s/veh	90.1	71.4	77.5	213.0	65.2	81.0	88.3	55.4	355.7	105.2	40.1	22.3
LnGrp LOS	F	E	E	F	E	F	F	E	F	F	D	C
Approach Vol, veh/h		1117			2463			1661			1677	
Approach Delay, s/veh		75.7			117.2			186.4			58.4	
Approach LOS		E			F			F			E	

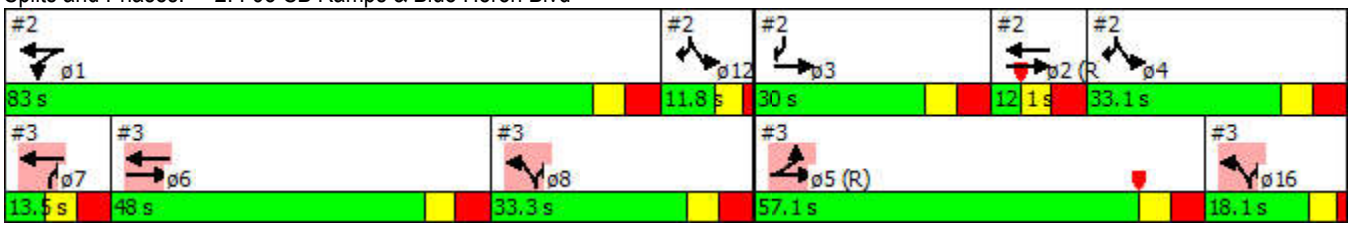
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	33.1	54.0	38.2	44.7	13.6	73.5	15.9	67.0
Change Period (Y+Rc), s	7.0	7.0	6.5	7.0	7.0	7.0	6.5	6.5
Max Green Setting (Gmax), s	20.0	47.0	31.5	44.0	9.0	58.0	12.5	63.5
Max Q Clear Time (g_c+I1), s	27.4	49.0	33.7	33.3	6.6	27.2	9.3	54.8
Green Ext Time (p_c), s	0.0	0.0	0.0	4.4	0.0	11.2	0.2	5.7

Intersection Summary	
HCM 2010 Ctrl Delay	112.9
HCM 2010 LOS	F

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR	ø2	ø3	ø4	ø5	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	1525	576	1264	1764	523	423						
Future Volume (vph)	1525	576	1264	1764	523	423						
Turn Type	NA	Free	Prot	NA	Prot	custom						
Protected Phases	3 2		1	1 2	4 12	4 3 12	2	3	4	5	6	7
Permitted Phases		Free				4						
Detector Phase	3 2		1	1 2	4 12	4 3 12						
Switch Phase												
Minimum Initial (s)			10.0				3.0	3.0	4.0	10.0	3.0	3.0
Minimum Split (s)			25.0				12.0	12.0	13.5	24.0	12.0	13.5
Total Split (s)			83.0				12.1	30.0	33.1	57.1	48.0	13.5
Total Split (%)			48.8%				7%	18%	19%	34%	28%	8%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			4.5				4.5	4.5	4.5	4.5	4.5	4.5
Lost Time Adjust (s)			0.0									
Total Lost Time (s)			8.5									
Lead/Lag			Lead				Lag	Lead		Lead	Lag	Lead
Lead-Lag Optimize?			Yes				Yes	Yes		Yes	Yes	Yes
Recall Mode			None				C-Max	None	None	C-Max	Max	None
Act Effct Green (s)	33.6	170.0	74.5	78.1	27.9	57.9						
Actuated g/C Ratio	0.20	1.00	0.44	0.46	0.16	0.34						
v/c Ratio	1.10	0.39	0.88	0.79	1.10	0.53						
Control Delay	82.8	0.1	15.8	9.6	129.6	34.2						
Queue Delay	1.0	0.0	29.8	4.5	0.0	0.0						
Total Delay	83.8	0.1	45.6	14.0	129.6	34.2						
LOS	F	A	D	B	F	C						
Approach Delay	60.8			27.2								
Approach LOS	E			C								

Intersection Summary	
Cycle Length: 170	
Actuated Cycle Length: 170	
Offset: 38 (22%), Referenced to phase 2:EBWB and 5:, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.10	
Intersection Signal Delay: 48.2	Intersection LOS: D
Intersection Capacity Utilization 89.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 2: I-95 SB Ramps & Blue Heron Blvd



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	4.0	5.0	5.0
Minimum Split (s)	13.5	10.0	10.0
Total Split (s)	33.3	11.8	18.1
Total Split (%)	20%	7%	11%
Yellow Time (s)	4.0	3.5	3.5
All-Red Time (s)	4.5	1.5	1.5
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lag	Lag
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

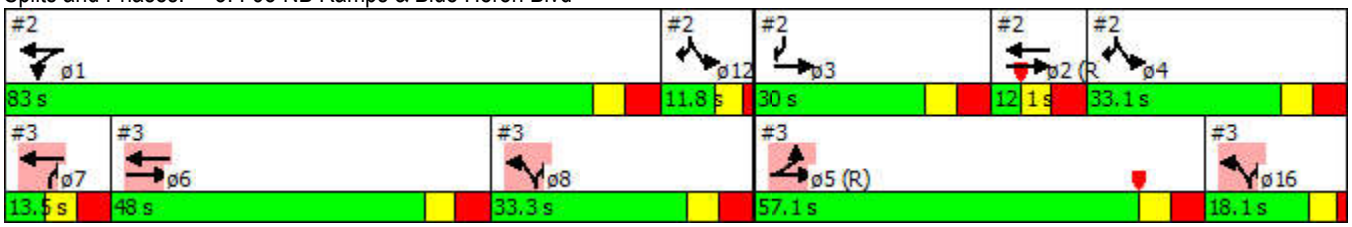
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1525	576	1264	1764	0	0	0	0	523	0	423
Future Volume (vph)	0	1525	576	1264	1764	0	0	0	0	523	0	423
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.5	4.0	8.5	8.5					8.5		8.5
Lane Util. Factor		0.81	1.00	0.97	0.91					0.97		0.88
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		7399	1553	3433	5085					3045		2472
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		7399	1553	3433	5085					3045		2472
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1605	606	1331	1857	0	0	0	0	551	0	445
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1605	606	1331	1857	0	0	0	0	551	0	445
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	0%	0%	0%	15%	15%	15%
Turn Type		NA	Free	Prot	NA					Prot		custom
Protected Phases		3 2		1	1 2					4 12		4 3 12
Permitted Phases			Free									4
Actuated Green, G (s)		33.6	170.0	74.5	78.1					31.4		57.9
Effective Green, g (s)		33.6	170.0	74.5	78.1					31.4		52.9
Actuated g/C Ratio		0.20	1.00	0.44	0.46					0.18		0.31
Clearance Time (s)				8.5								
Vehicle Extension (s)				3.0								
Lane Grp Cap (vph)		1462	1553	1504	2336					562		769
v/s Ratio Prot		c0.22		c0.39	0.37					c0.18		0.18
v/s Ratio Perm			0.39									
v/c Ratio		1.10	0.39	0.88	0.79					0.98		0.58
Uniform Delay, d1		68.2	0.0	43.8	39.1					69.0		49.2
Progression Factor		0.58	1.00	0.33	0.25					1.00		1.00
Incremental Delay, d2		45.2	0.1	0.7	0.2					32.8		1.1
Delay (s)		84.5	0.1	15.3	10.0					101.8		50.2
Level of Service		F	A	B	B					F		D
Approach Delay (s)		61.4			12.2			0.0			78.8	
Approach LOS		E			B			A			E	

Intersection Summary			
HCM 2000 Control Delay	39.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	51.0
Intersection Capacity Utilization	89.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR	ø1	ø2	ø3	ø4	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	684	1365	2392	1220	636	628						
Future Volume (vph)	684	1365	2392	1220	636	628						
Turn Type	Prot	NA	NA	Free	Prot	custom						
Protected Phases	5	5 6	6 7		8 16	8 7 16	1	2	3	4	6	7
Permitted Phases				Free		8						
Detector Phase	5	5 6	6 7		8 16	8 7 16						
Switch Phase												
Minimum Initial (s)	10.0						10.0	3.0	3.0	4.0	3.0	3.0
Minimum Split (s)	24.0						25.0	12.0	12.0	13.5	12.0	13.5
Total Split (s)	57.1						83.0	12.1	30.0	33.1	48.0	13.5
Total Split (%)	33.6%						49%	7%	18%	19%	28%	8%
Yellow Time (s)	4.0						4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	4.5						4.5	4.5	4.5	4.5	4.5	4.5
Lost Time Adjust (s)	0.0											
Total Lost Time (s)	8.5											
Lead/Lag	Lead						Lead	Lag	Lead		Lag	Lead
Lead-Lag Optimize?	Yes						Yes	Yes	Yes		Yes	Yes
Recall Mode	C-Max						None	C-Max	None	None	Max	None
Act Effct Green (s)	48.6	88.1	53.0	170.0	34.4	47.9						
Actuated g/C Ratio	0.29	0.52	0.31	1.00	0.20	0.28						
v/c Ratio	0.78	0.58	1.08	0.82	0.98	0.86						
Control Delay	26.1	10.3	70.4	12.2	76.9	42.4						
Queue Delay	2.3	0.1	8.1	0.0	0.0	0.0						
Total Delay	28.4	10.3	78.5	12.2	76.9	42.4						
LOS	C	B	E	B	E	D						
Approach Delay		16.4	56.1									
Approach LOS		B	E									

Intersection Summary	
Cycle Length: 170	
Actuated Cycle Length: 170	
Offset: 38 (22%), Referenced to phase 2:EBWB and 5:, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.10	
Intersection Signal Delay: 45.0	Intersection LOS: D
Intersection Capacity Utilization 89.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: I-95 NB Ramps & Blue Heron Blvd



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	4.0	5.0	5.0
Minimum Split (s)	13.5	10.0	10.0
Total Split (s)	33.3	11.8	18.1
Total Split (%)	20%	7%	11%
Yellow Time (s)	4.0	3.5	3.5
All-Red Time (s)	4.5	1.5	1.5
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lag	Lag
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

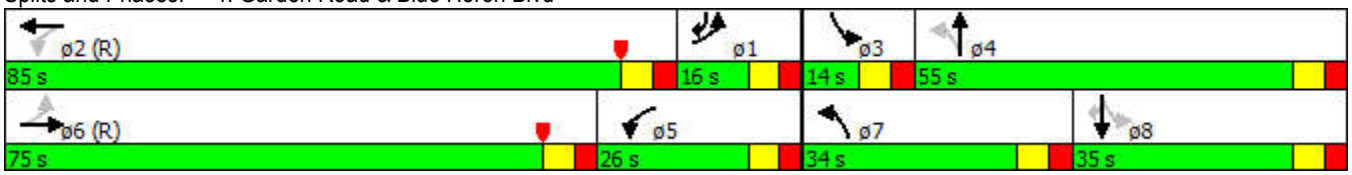
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	684	1365	0	0	2392	1220	636	0	628	0	0	0
Future Volume (vph)	684	1365	0	0	2392	1220	636	0	628	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	8.5	8.5			8.5	4.0	8.5		8.5			
Lane Util. Factor	0.97	0.91			0.81	1.00	0.97		0.88			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	3242	4803			7471	1568	3367		2733			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3242	4803			7471	1568	3367		2733			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	720	1437	0	0	2518	1284	669	0	661	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	720	1437	0	0	2518	1284	669	0	661	0	0	0
Heavy Vehicles (%)	8%	8%	8%	3%	3%	3%	4%	4%	4%	0%	0%	0%
Turn Type	Prot	NA			NA	Free	Prot		custom			
Protected Phases	5	5 6			6 7		8 16		8 7 16			
Permitted Phases						Free			8			
Actuated Green, G (s)	48.6	88.1			53.0	170.0	37.9		47.9			
Effective Green, g (s)	48.6	88.1			53.0	170.0	37.9		42.9			
Actuated g/C Ratio	0.29	0.52			0.31	1.00	0.22		0.25			
Clearance Time (s)	8.5											
Vehicle Extension (s)	3.0											
Lane Grp Cap (vph)	926	2489			2329	1568	750		689			
v/s Ratio Prot	0.22	0.30			c0.34		0.20		c0.24			
v/s Ratio Perm						c0.82						
v/c Ratio	0.78	0.58			1.08	0.82	0.89		0.96			
Uniform Delay, d1	55.7	28.2			58.5	0.0	64.1		62.7			
Progression Factor	0.45	0.72			0.57	1.00	1.00		1.00			
Incremental Delay, d2	0.6	0.1			37.4	0.5	12.9		24.3			
Delay (s)	25.9	20.3			71.0	0.5	77.0		87.0			
Level of Service	C	C			E	A	E		F			
Approach Delay (s)		22.2			47.2			82.0			0.0	
Approach LOS		C			D			F			A	

Intersection Summary			
HCM 2000 Control Delay	46.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.23		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	51.0
Intersection Capacity Utilization	89.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	138	1437	223	2621	504	123	110	90	291
Future Volume (vph)	138	1437	223	2621	504	123	110	90	291
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+ov
Protected Phases	1	6	5	2	7	4	3	8	1
Permitted Phases	6		2		4		8		8
Detector Phase	1	6	5	2	7	4	3	8	1
Switch Phase									
Minimum Initial (s)	4.0	20.0	4.0	20.0	4.0	6.0	4.0	6.0	4.0
Minimum Split (s)	12.0	32.0	12.0	32.0	12.0	35.0	12.0	35.0	12.0
Total Split (s)	16.0	75.0	26.0	85.0	34.0	55.0	14.0	35.0	16.0
Total Split (%)	9.4%	44.1%	15.3%	50.0%	20.0%	32.4%	8.2%	20.6%	9.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	C-Max	None	None	None	None	None
Act Effct Green (s)	78.9	69.9	95.9	79.9	60.1	46.1	33.1	26.1	35.1
Actuated g/C Ratio	0.46	0.41	0.56	0.47	0.35	0.27	0.19	0.15	0.21
v/c Ratio	1.09	0.99	0.98	1.21	1.16	0.96	0.77	0.34	0.84
Control Delay	137.8	48.8	118.7	137.2	137.5	91.1	77.2	67.2	61.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	137.8	48.8	118.7	137.2	137.5	91.1	77.2	67.2	61.0
LOS	F	D	F	F	F	F	E	E	E
Approach Delay		55.0		135.8		116.9		65.8	
Approach LOS		E		F		F		E	

Intersection Summary	
Cycle Length: 170	
Actuated Cycle Length: 170	
Offset: 88 (52%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.21	
Intersection Signal Delay: 102.2	Intersection LOS: F
Intersection Capacity Utilization 116.4%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 4: Garden Road & Blue Heron Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	138	1437	414	223	2621	83	504	123	282	110	90	291
Future Volume (vph)	138	1437	414	223	2621	83	504	123	282	110	90	291
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.97		1.00	1.00		1.00	0.90		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1719	4774		1752	5013		1719	1620		1719	1810	1538
Flt Permitted	0.06	1.00		0.05	1.00		0.53	1.00		0.29	1.00	1.00
Satd. Flow (perm)	104	4774		96	5013		954	1620		523	1810	1538
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	145	1513	436	235	2759	87	531	129	297	116	95	306
RTOR Reduction (vph)	0	6	0	0	2	0	0	7	0	0	0	48
Lane Group Flow (vph)	145	1943	0	235	2844	0	531	419	0	116	95	258
Heavy Vehicles (%)	5%	5%	5%	3%	3%	3%	5%	5%	5%	5%	5%	5%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	1	6		5	2		7	4		3	8	1
Permitted Phases	6			2			4			8		8
Actuated Green, G (s)	78.9	69.9		95.9	79.9		60.1	46.1		33.1	26.1	35.1
Effective Green, g (s)	78.9	69.9		95.9	79.9		60.1	46.1		33.1	26.1	35.1
Actuated g/C Ratio	0.46	0.41		0.56	0.47		0.35	0.27		0.19	0.15	0.21
Clearance Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	133	1962		239	2356		458	439		151	277	317
v/s Ratio Prot	0.06	0.41		c0.11	c0.57		c0.18	0.26		0.03	0.05	0.04
v/s Ratio Perm	0.45			0.44			c0.23			0.12		0.12
v/c Ratio	1.09	0.99		0.98	1.21		1.16	0.95		0.77	0.34	0.82
Uniform Delay, d1	77.2	49.7		65.6	45.0		52.1	60.9		63.0	64.3	64.4
Progression Factor	0.77	0.66		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	93.2	15.3		53.2	97.4		93.6	31.2		20.6	0.7	14.8
Delay (s)	152.3	48.3		118.7	142.5		145.8	92.1		83.6	65.0	79.1
Level of Service	F	D		F	F		F	F		F	E	E
Approach Delay (s)		55.5			140.7			121.9			77.5	
Approach LOS		E			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	106.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	116.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	138	1437	414	223	2621	83	504	123	282	110	90	291
Future Volume (veh/h)	138	1437	414	223	2621	83	504	123	282	110	90	291
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1845	1845	1900	1810	1810	1900	1810	1810	1810
Adj Flow Rate, veh/h	145	1513	436	235	2759	87	531	129	297	116	95	306
Adj No. of Lanes	1	3	0	1	3	0	1	1	0	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	3	3	3	5	5	5	5	5	5
Cap, veh/h	143	1528	436	249	2302	72	423	135	311	129	288	335
Arrive On Green	0.02	0.13	0.13	0.12	0.46	0.46	0.16	0.28	0.28	0.04	0.16	0.16
Sat Flow, veh/h	1723	3821	1090	1757	5017	157	1723	488	1123	1723	1810	1538
Grp Volume(v), veh/h	145	1302	647	235	1838	1008	531	0	426	116	95	306
Grp Sat Flow(s),veh/h/ln	1723	1647	1617	1757	1679	1817	1723	0	1611	1723	1810	1538
Q Serve(g_s), s	10.0	67.1	68.0	18.4	78.0	78.0	27.0	0.0	44.2	7.0	7.9	19.6
Cycle Q Clear(g_c), s	10.0	67.1	68.0	18.4	78.0	78.0	27.0	0.0	44.2	7.0	7.9	19.6
Prop In Lane	1.00		0.67	1.00		0.09	1.00		0.70	1.00		1.00
Lane Grp Cap(c), veh/h	143	1317	647	249	1540	834	423	0	446	129	288	335
V/C Ratio(X)	1.01	0.99	1.00	0.94	1.19	1.21	1.26	0.00	0.96	0.90	0.33	0.91
Avail Cap(c_a), veh/h	143	1317	647	249	1540	834	423	0	455	129	298	344
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.69	0.69	0.69	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	81.9	73.4	73.8	72.7	46.0	46.0	55.1	0.0	60.5	66.1	63.5	42.0
Incr Delay (d2), s/veh	65.3	18.1	29.5	42.0	93.6	105.4	133.0	0.0	30.8	50.4	0.7	27.6
Initial Q Delay(d3),s/veh	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.4	33.9	35.8	13.9	56.2	63.5	32.0	0.0	23.5	6.3	4.0	10.9
LnGrp Delay(d),s/veh	147.3	91.5	103.3	114.6	139.6	151.4	188.0	0.0	91.3	116.5	64.1	69.6
LnGrp LOS	F	F	F	F	F	F	F		F	F	E	E
Approach Vol, veh/h		2094			3081			957			517	
Approach Delay, s/veh		99.0			141.5			145.0			79.1	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	85.0	14.0	54.0	27.0	75.0	34.0	34.0
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Max Green Setting (Gmax), s	9.0	78.0	7.0	48.0	19.0	68.0	27.0	28.0
Max Q Clear Time (g_c+I1), s	12.0	80.0	9.0	46.2	20.4	70.0	29.0	21.6
Green Ext Time (p_c), s	0.0	0.0	0.0	0.8	0.0	0.0	0.0	2.4

Intersection Summary	
HCM 2010 Ctrl Delay	123.8
HCM 2010 LOS	F

APPENDIX P

(No-Build Alternative SIMTRAFFIC Queue Analysis Results)

Intersection: 1: Military Trail & Northlake Boulevard

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	396	495	989	988	992	375	290	311	287	315	346	183
Average Queue (ft)	193	479	916	933	956	318	166	187	151	176	178	66
95th Queue (ft)	358	582	1063	1023	1016	534	270	290	254	278	288	137
Link Distance (ft)			942	942	942				1617	1617	1617	1617
Upstream Blk Time (%)			35	28	78							
Queuing Penalty (veh)			0	0	0							
Storage Bay Dist (ft)	300	300				200	360	360				
Storage Blk Time (%)	5	8	87		98	0	0	0				
Queuing Penalty (veh)	29	49	621		302	3	0	2				

Intersection: 1: Military Trail & Northlake Boulevard

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	252	315	1108	1040	954	330	338	405	1473	1439	1411	300
Average Queue (ft)	236	306	669	636	557	294	326	398	1159	994	380	195
95th Queue (ft)	286	352	1091	1078	1049	405	370	434	1781	1733	1059	337
Link Distance (ft)			1096	1096	1096				1421	1421	1421	
Upstream Blk Time (%)			4	1	8				40	4	0	
Queuing Penalty (veh)			0	0	0				0	0	0	
Storage Bay Dist (ft)	190	190				180	270	270				175
Storage Blk Time (%)	36	58	39		31	54	52	80	2		19	20
Queuing Penalty (veh)	105	168	159		125	156	117	180	7		80	44

Intersection: 2: Keating Drive & Northlake Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	T	R	L	LT
Maximum Queue (ft)	249	1652	1671	1648	325	373	507	674	781	400	112	158
Average Queue (ft)	50	1593	1616	1619	109	204	222	270	316	49	15	64
95th Queue (ft)	190	1665	1664	1653	356	337	410	541	619	229	59	127
Link Distance (ft)		1617	1617	1617			619	619	619			283
Upstream Blk Time (%)		4	9	19				2	4			
Queuing Penalty (veh)		33	77	164				17	35			
Storage Bay Dist (ft)	150				175	475				350	150	
Storage Blk Time (%)		76		58			0		5		0	1
Queuing Penalty (veh)		24		50			0		7		0	0

Intersection: 2: Keating Drive & Northlake Boulevard

Movement	NB	SB	SB
Directions Served	R	LT	TR
Maximum Queue (ft)	291	365	292
Average Queue (ft)	167	266	73
95th Queue (ft)	285	396	196
Link Distance (ft)	283	339	339
Upstream Blk Time (%)	2	10	0
Queuing Penalty (veh)	0	0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: I95 SB On Ramp/I95 SB Off Ramp & Northlake Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	SB	SB
Directions Served	T	T	T	T	T	L	L	T	T	T	L	L
Maximum Queue (ft)	325	666	704	639	605	413	435	426	420	399	1346	1358
Average Queue (ft)	320	633	643	495	333	222	255	209	168	166	1056	1158
95th Queue (ft)	335	663	712	704	512	512	551	499	451	428	1719	1746
Link Distance (ft)		619	619	619	619	372	372	372	372	372	1317	1317
Upstream Blk Time (%)		19	14	1	0	30	31	22	14	6	15	39
Queuing Penalty (veh)		148	109	6	1	150	157	109	70	29	0	0
Storage Bay Dist (ft)	275											
Storage Blk Time (%)	76	51			0							46
Queuing Penalty (veh)	357	240			0							442

Intersection: 3: I95 SB On Ramp/I95 SB Off Ramp & Northlake Boulevard

Movement	SB	SB
Directions Served	R	R
Maximum Queue (ft)	550	450
Average Queue (ft)	413	150
95th Queue (ft)	780	465
Link Distance (ft)		
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	350	350
Storage Blk Time (%)	9	7
Queuing Penalty (veh)	48	40

Intersection: 4: I95 NB Off Ramp/I95 NB On Ramp & Northlake Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	T	T	T	T	T	T	R	L
Maximum Queue (ft)	433	435	419	408	398	403	406	402	386	399	387	1176
Average Queue (ft)	264	238	260	191	206	366	367	365	311	321	264	1121
95th Queue (ft)	453	512	475	422	428	389	391	388	430	436	472	1250
Link Distance (ft)	372	372	372	372	372	350	350	350	350	350	350	1126
Upstream Blk Time (%)	2	3	2	2	3	77	82	78	15	16	8	18
Queuing Penalty (veh)	16	23	16	15	21	352	373	357	68	72	37	0
Storage Bay Dist (ft)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 4: I95 NB Off Ramp/I95 NB On Ramp & Northlake Boulevard

Movement	NB	NB	NB
Directions Served	L	R	R
Maximum Queue (ft)	1184	800	650
Average Queue (ft)	1149	799	649
95th Queue (ft)	1169	803	652
Link Distance (ft)	1126		
Upstream Blk Time (%)	66		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)		500	500
Storage Blk Time (%)	69	89	85
Queuing Penalty (veh)	815	246	234

Intersection: 5: Northlake Boulevard & Roan Lane

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	WB	SB
Directions Served	UL	T	T	T	T	T	T	T	T	T	R	R
Maximum Queue (ft)	133	78	158	136	350	425	605	611	633	450	237	150
Average Queue (ft)	54	5	44	20	345	420	574	517	475	195	27	134
95th Queue (ft)	113	73	278	168	366	437	636	685	753	477	181	152
Link Distance (ft)		350	350	350			556	556	556			132
Upstream Blk Time (%)		1	6	2			37	12	7			81
Queuing Penalty (veh)		9	68	24			319	108	62			0
Storage Bay Dist (ft)	290				275	275				300	300	
Storage Blk Time (%)		1		0	39	73	69		9	6	0	
Queuing Penalty (veh)		0		0	175	323	610		44	27	0	

Intersection: 6: Sandtree Drive/Sunrise Drive & Northlake Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	R	L	L	T	T	TR	L	L
Maximum Queue (ft)	357	532	544	551	90	191	450	1135	1128	1134	274	350
Average Queue (ft)	114	300	311	319	33	50	275	1081	1077	1071	266	342
95th Queue (ft)	248	534	546	545	73	148	595	1175	1181	1192	286	366
Link Distance (ft)		556	556	556	556			1068	1068	1068		
Upstream Blk Time (%)		0	0	0				61	46	46		
Queuing Penalty (veh)		2	2	4				0	0	0		
Storage Bay Dist (ft)	350					175	175				200	200
Storage Blk Time (%)		7				2	3	73			98	48
Queuing Penalty (veh)		8				16	26	111			173	85

Intersection: 6: Sandtree Drive/Sunrise Drive & Northlake Boulevard

Movement	NB	NB	SB	SB
Directions Served	T	R	L	TR
Maximum Queue (ft)	562	177	441	405
Average Queue (ft)	528	50	373	187
95th Queue (ft)	637	148	488	360
Link Distance (ft)	525		390	390
Upstream Blk Time (%)	88		38	3
Queuing Penalty (veh)	0		0	0
Storage Bay Dist (ft)		150		
Storage Blk Time (%)		5		
Queuing Penalty (veh)		14		

Intersection: 15: Bend

Movement	SB
Directions Served	T
Maximum Queue (ft)	72
Average Queue (ft)	2
95th Queue (ft)	51
Link Distance (ft)	486
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 18: Bend

Movement	NB	NB
Directions Served	T	
Maximum Queue (ft)	488	450
Average Queue (ft)	107	32
95th Queue (ft)	427	244
Link Distance (ft)	459	459
Upstream Blk Time (%)	1	1
Queuing Penalty (veh)	6	6
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 9327

Intersection: 1: Military Trail & Northlake Boulevard

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	388	495	970	967	981	375	248	264	278	301	332	102
Average Queue (ft)	150	401	809	892	950	286	135	155	101	137	140	36
95th Queue (ft)	325	661	1148	1141	1052	537	215	232	218	250	270	75
Link Distance (ft)			942	942	942				1617	1617	1617	1617
Upstream Blk Time (%)			21	28	88							
Queuing Penalty (veh)			0	0	0							
Storage Bay Dist (ft)	300	300				200	360	360				
Storage Blk Time (%)	4	6	80		100	1						
Queuing Penalty (veh)	16	26	410		255	5						

Intersection: 1: Military Trail & Northlake Boulevard

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	252	315	1122	1113	1132	330	338	405	1457	1446	1476	300
Average Queue (ft)	147	195	462	552	990	312	327	404	1386	1324	1163	290
95th Queue (ft)	325	400	1256	1365	1436	391	371	408	1611	1747	1842	360
Link Distance (ft)			1096	1096	1096				1421	1421	1421	
Upstream Blk Time (%)			22	8	73				58	12	29	
Queuing Penalty (veh)			0	0	0				0	0	0	
Storage Bay Dist (ft)	190	190				180	270	270				175
Storage Blk Time (%)	24	37	7		9	88	52	86	6		19	62
Queuing Penalty (veh)	64	96	40		44	228	154	256	30		164	184

Intersection: 2: Keating Drive & Northlake Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	R	L	T	T	T	R	L	LT
Maximum Queue (ft)	249	1643	1670	1656	325	524	676	820	811	400	199	304
Average Queue (ft)	67	1608	1623	1627	192	473	540	754	684	101	97	170
95th Queue (ft)	215	1669	1655	1644	452	573	748	974	1007	330	229	309
Link Distance (ft)		1617	1617	1617			619	619	619			283
Upstream Blk Time (%)		12	13	48			20	76	54			6
Queuing Penalty (veh)		93	99	376			253	952	682			0
Storage Bay Dist (ft)	150				175	475				350	150	
Storage Blk Time (%)		83		66		29	26		9		4	29
Queuing Penalty (veh)		49		173		259	125		33		8	40

Intersection: 2: Keating Drive & Northlake Boulevard

Movement	NB	SB	SB
Directions Served	R	LT	TR
Maximum Queue (ft)	333	367	323
Average Queue (ft)	303	284	144
95th Queue (ft)	319	416	286
Link Distance (ft)	283	339	339
Upstream Blk Time (%)	95	26	0
Queuing Penalty (veh)	0	0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: I95 SB On Ramp/I95 SB Off Ramp & Northlake Boulevard

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	SB
Directions Served	T	T	T	T	T	R	L	L	T	T	T	L
Maximum Queue (ft)	325	666	688	641	574	62	376	407	426	424	400	1358
Average Queue (ft)	321	633	647	492	330	2	60	81	195	122	77	1287
95th Queue (ft)	334	656	680	712	498	44	255	328	455	392	289	1565
Link Distance (ft)		619	619	619	619		372	372	372	372	372	1317
Upstream Blk Time (%)		38	38	2	0		3	4	5	4	2	27
Queuing Penalty (veh)		282	276	15	0		24	28	34	29	12	0
Storage Bay Dist (ft)	275					550						
Storage Blk Time (%)	94	77			0							
Queuing Penalty (veh)	437	360			1							

Intersection: 3: I95 SB On Ramp/I95 SB Off Ramp & Northlake Boulevard

Movement	SB	SB	SB
Directions Served	L	R	R
Maximum Queue (ft)	1369	550	450
Average Queue (ft)	1318	534	415
95th Queue (ft)	1539	653	571
Link Distance (ft)	1317		
Upstream Blk Time (%)	74		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)		350	350
Storage Blk Time (%)	51	71	51
Queuing Penalty (veh)	551	290	208

Intersection: 4: I95 NB Off Ramp/I95 NB On Ramp & Northlake Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	L	T	T	T	T	T	T	T	T	R	L
Maximum Queue (ft)	438	445	434	349	275	355	380	401	391	425	413	1155
Average Queue (ft)	333	312	220	80	108	258	300	316	298	320	362	1131
95th Queue (ft)	487	540	463	242	252	387	412	422	412	444	417	1188
Link Distance (ft)	372	372	372	372	372	350	350	350	350	350	350	1126
Upstream Blk Time (%)	7	7	2	0	0	4	8	11	8	13	30	25
Queuing Penalty (veh)	44	45	15	1	0	30	56	78	59	91	215	0
Storage Bay Dist (ft)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 4: I95 NB Off Ramp/I95 NB On Ramp & Northlake Boulevard

Movement	NB	NB	NB
Directions Served	L	R	R
Maximum Queue (ft)	1177	800	623
Average Queue (ft)	1146	778	428
95th Queue (ft)	1161	970	822
Link Distance (ft)	1126		
Upstream Blk Time (%)	62		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)		500	500
Storage Blk Time (%)	82	39	37
Queuing Penalty (veh)	865	153	145

Intersection: 5: Northlake Boulevard & Roan Lane

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	WB	SB
Directions Served	UL	T	T	T	T	T	T	T	T	T	R	R
Maximum Queue (ft)	218	199	193	80	216	370	586	603	614	450	375	150
Average Queue (ft)	113	18	69	3	35	80	179	353	564	442	253	104
95th Queue (ft)	196	136	352	41	171	261	508	703	700	497	531	175
Link Distance (ft)		350	350	350			556	556	556			132
Upstream Blk Time (%)		1	9				1	3	23			6
Queuing Penalty (veh)		7	89				15	37	312			0
Storage Bay Dist (ft)	290				275	275				300	300	
Storage Blk Time (%)		1		0	0	2	4		37	75	2	
Queuing Penalty (veh)		1		0	1	15	50		308	517	15	

Intersection: 6: Sandtree Drive/Sunrise Drive & Northlake Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	R	L	L	T	T	TR	L	L
Maximum Queue (ft)	128	386	398	400	74	141	450	1093	1098	1102	275	350
Average Queue (ft)	46	193	217	227	18	43	165	1046	1084	1087	256	347
95th Queue (ft)	101	366	376	374	53	127	444	1204	1101	1094	328	354
Link Distance (ft)		556	556	556	556			1068	1068	1068		
Upstream Blk Time (%)								15	45	75		
Queuing Penalty (veh)								0	0	0		
Storage Bay Dist (ft)	350					175	175				200	200
Storage Blk Time (%)		0				0	1	31			59	95
Queuing Penalty (veh)		0				3	14	68			187	298

Intersection: 6: Sandtree Drive/Sunrise Drive & Northlake Boulevard

Movement	NB	NB	SB	SB
Directions Served	T	R	L	TR
Maximum Queue (ft)	552	189	374	339
Average Queue (ft)	541	79	202	185
95th Queue (ft)	553	188	335	306
Link Distance (ft)	525		390	390
Upstream Blk Time (%)	83		0	0
Queuing Penalty (veh)	0		0	0
Storage Bay Dist (ft)		150		
Storage Blk Time (%)		9		
Queuing Penalty (veh)		45		

Intersection: 15: Bend

Movement	SB	SB
Directions Served	T	T
Maximum Queue (ft)	218	155
Average Queue (ft)	7	5
95th Queue (ft)	92	79
Link Distance (ft)	486	486
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 18: Bend

Movement	NB	NB
Directions Served	T	
Maximum Queue (ft)	495	558
Average Queue (ft)	75	33
95th Queue (ft)	359	249
Link Distance (ft)	459	459
Upstream Blk Time (%)	1	0
Queuing Penalty (veh)	7	5
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 11448

APPENDIX Q

(Future Build Freeways & Ramps Operational Analysis Results)

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Northbound
Agency or Company	Goal Associates	Junction	Northlake Blvd. NB On-Ramp
Date Performed	7/15/2016	Jurisdiction	Palm Beach County
Analysis Time Period	AM Peak Period	Analysis Year	2040 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 4	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 2	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 500	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 3513	
	Ramp Volume, V_R: 1803	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 40.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	3513	0.95	Level	4	0	0.980	1.00	3772
Ramp	1803	0.95	Level	4	0	0.980	1.00	1936
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.209 using Equation 0 (Exhibit 13-6)

V_{12} = 788 pc/h

V_3 or V_{av34} 1492 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 1508 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	5708	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3444	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 22.0 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.323 (Exibit 13-11)

S_R= 57.6 mph (Exhibit 13-11)

S_0= 62.7 mph (Exhibit 13-11)

S = 59.5 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information		Site Information	
Analyst	Godfrey Lamptey, P.E., PTOE	Freeway/Dir of Travel	I-95 Northbound
Agency or Company	Goal Associates	Junction	Northlake Blvd. NB On-Ramp
Date Performed	7/15/2016	Jurisdiction	Palm Beach County
Analysis Time Period	PM Peak Period	Analysis Year	2040 Future Conditions

Project Description SR-9/I-95 at Northlake Boulevard Interchange PD&E Study

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 4	☐ Yes ☐ On
☑ No ☐ Off	Ramp Number of Lanes, N: 2	☑ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 500	L_{down} = ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 5572	
	Ramp Volume, V_R: 2361	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 40.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5572	0.95	Level	4	0	0.980	1.00	5983
Ramp	2361	0.95	Level	4	0	0.980	1.00	2535
UpStream								
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.209 using Equation 0 (Exhibit 13-6)

V_{12} = 1250 pc/h

V_3 or V_{av34} 2366 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☑ Yes ☐ No

If Yes, V_{12a} = 2393 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	8518	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	4928	Exhibit 13-8	4600:All	Yes

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 33.3 (pc/mi/ln)

LOS = D (Exhibit 13-2)

Speed Determination

M_S = 0.740 (Exibit 13-11)

S_R= 48.0 mph (Exhibit 13-11)

S_0= 60.3 mph (Exhibit 13-11)

S = 52.5 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * $V_{12}/2$ ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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APPENDIX R

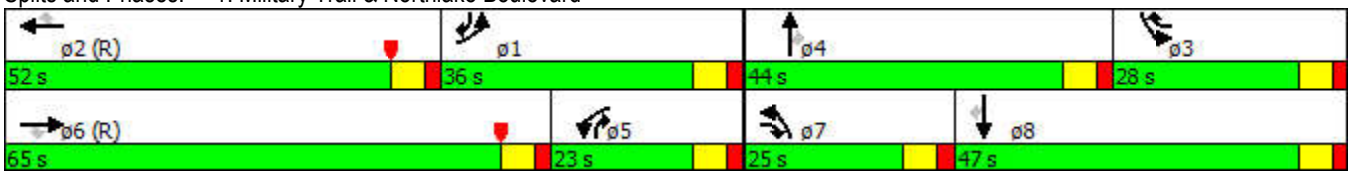
(Build Alternative 1 Signalized Intersections Operational Analysis Results)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	649	1414	278	277	787	293	244	771	295	367	626	274
Future Volume (vph)	649	1414	278	277	787	293	244	771	295	367	626	274
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	1	6	7	5	2	3	7	4	5	3	8	1
Permitted Phases			6			2			4			8
Detector Phase	1	6	7	5	2	3	7	4	5	3	8	1
Switch Phase												
Minimum Initial (s)	4.0	20.0	4.0	4.0	20.0	4.0	4.0	6.0	4.0	4.0	6.0	4.0
Minimum Split (s)	10.0	48.0	23.0	23.0	52.0	11.0	23.0	43.5	23.0	11.0	47.0	10.0
Total Split (s)	36.0	65.0	25.0	23.0	52.0	28.0	25.0	44.0	23.0	28.0	47.0	36.0
Total Split (%)	22.5%	40.6%	15.6%	14.4%	32.5%	17.5%	15.6%	27.5%	14.4%	17.5%	29.4%	22.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	None	None	None	None
Act Effct Green (s)	30.0	64.3	81.1	17.0	51.3	79.3	16.9	32.7	55.7	22.0	37.9	67.9
Actuated g/C Ratio	0.19	0.40	0.51	0.11	0.32	0.50	0.11	0.20	0.35	0.14	0.24	0.42
v/c Ratio	1.07	0.74	0.36	0.82	0.52	0.39	0.73	0.81	0.54	0.82	0.55	0.41
Control Delay	116.2	44.2	11.5	66.5	71.1	46.6	81.9	67.2	36.6	82.0	55.2	15.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	116.2	44.2	11.5	66.5	71.1	46.6	81.9	67.2	36.6	82.0	55.2	15.7
LOS	F	D	B	E	E	D	F	E	D	F	E	B
Approach Delay		60.3			64.9			63.0			54.4	
Approach LOS		E			E			E			D	

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 62 (39%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.07
Intersection Signal Delay: 60.7 — Intersection LOS: E
Intersection Capacity Utilization 80.6% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 1: Military Trail & Northlake Boulevard



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	649	1414	278	277	787	293	244	771	295	367	626	274
Future Volume (vph)	649	1414	278	277	787	293	244	771	295	367	626	274
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	5036	1568	3335	4940	1538	3335	4940	1538	3400	5036	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3400	5036	1568	3335	4940	1538	3335	4940	1538	3400	5036	1568
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	683	1488	293	292	828	308	257	812	311	386	659	288
RTOR Reduction (vph)	0	0	30	0	0	33	0	0	41	0	0	35
Lane Group Flow (vph)	683	1488	263	292	828	275	257	812	270	386	659	253
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	5%	5%	5%	3%	3%	3%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	1	6	7	5	2	3	7	4	5	3	8	1
Permitted Phases			6			2			4			8
Actuated Green, G (s)	30.0	64.2	81.1	17.0	51.2	73.3	16.9	32.7	49.7	22.1	37.9	67.9
Effective Green, g (s)	30.0	64.2	81.1	17.0	51.2	73.3	16.9	32.7	49.7	22.1	37.9	67.9
Actuated g/C Ratio	0.19	0.40	0.51	0.11	0.32	0.46	0.11	0.20	0.31	0.14	0.24	0.42
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	637	2020	794	354	1580	762	352	1009	535	469	1192	665
v/s Ratio Prot	c0.20	c0.30	0.04	0.09	0.17	0.05	0.08	c0.16	0.05	c0.11	0.13	0.07
v/s Ratio Perm			0.13			0.13			0.12			0.09
v/c Ratio	1.07	0.74	0.33	0.82	0.52	0.36	0.73	0.80	0.50	0.82	0.55	0.38
Uniform Delay, d1	65.0	40.7	23.4	70.0	44.4	28.2	69.3	60.6	45.1	67.0	53.6	31.6
Progression Factor	1.00	1.00	1.00	0.68	1.54	2.17	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	56.6	2.4	0.2	13.9	1.2	0.3	7.6	4.7	0.7	11.1	0.6	0.4
Delay (s)	121.6	43.2	23.6	61.4	69.6	61.4	76.9	65.4	45.8	78.2	54.2	32.0
Level of Service	F	D	C	E	E	E	E	E	D	E	D	C
Approach Delay (s)		62.6			66.1			63.1			56.3	
Approach LOS		E			E			E			E	

Intersection Summary			
HCM 2000 Control Delay	62.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	80.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	649	1414	278	277	787	293	244	771	295	367	626	274
Future Volume (veh/h)	649	1414	278	277	787	293	244	771	295	367	626	274
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1810	1810	1810	1810	1810	1810	1845	1845	1845
Adj Flow Rate, veh/h	683	1488	293	292	828	308	257	812	311	386	659	288
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	5	5	5	5	5	5	3	3	3
Cap, veh/h	788	1857	720	502	1420	646	303	983	537	451	1212	740
Arrive On Green	0.23	0.37	0.37	0.30	0.57	0.57	0.09	0.20	0.20	0.13	0.24	0.24
Sat Flow, veh/h	3408	5036	1568	3343	4940	1538	3343	4940	1538	3408	5036	1568
Grp Volume(v), veh/h	683	1488	293	292	828	308	257	812	311	386	659	288
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1672	1647	1538	1672	1647	1538	1704	1679	1568
Q Serve(g_s), s	30.8	42.4	10.2	11.9	17.1	0.0	12.1	25.2	2.4	17.7	18.3	4.6
Cycle Q Clear(g_c), s	30.8	42.4	10.2	11.9	17.1	0.0	12.1	25.2	2.4	17.7	18.3	4.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	788	1857	720	502	1420	646	303	983	537	451	1212	740
V/C Ratio(X)	0.87	0.80	0.41	0.58	0.58	0.48	0.85	0.83	0.58	0.86	0.54	0.39
Avail Cap(c_a), veh/h	788	1857	720	502	1420	646	397	1173	596	469	1290	764
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.1	45.2	11.1	51.7	27.9	18.2	71.7	61.4	42.5	67.9	53.1	12.0
Incr Delay (d2), s/veh	10.0	3.8	1.7	1.7	1.8	2.5	12.6	4.3	1.1	14.1	0.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	22.1	27.6	8.3	9.4	12.5	9.8	10.2	17.5	2.1	14.2	13.3	8.8
LnGrp Delay(d),s/veh	69.2	49.0	12.8	53.4	29.6	20.8	84.3	65.7	43.7	82.0	53.5	12.3
LnGrp LOS	E	D	B	D	C	C	F	E	D	F	D	B
Approach Vol, veh/h		2464			1428			1380			1333	
Approach Delay, s/veh		50.3			32.6			64.2			52.8	
Approach LOS		D			C			E			D	

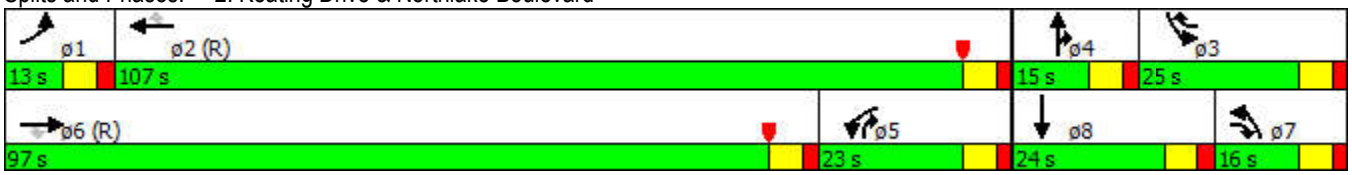
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	43.0	52.0	27.2	37.8	30.0	65.0	20.5	44.5
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	30.0	46.0	22.0	38.0	17.0	59.0	19.0	41.0
Max Q Clear Time (g_c+I1), s	32.8	19.1	19.7	27.2	13.9	44.4	14.1	20.3
Green Ext Time (p_c), s	0.0	7.0	1.4	4.6	1.3	9.1	0.4	6.7

Intersection Summary	
HCM 2010 Ctrl Delay	49.9
HCM 2010 LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	24	2093	81	109	1368	64	50	7	95	151	11
Future Volume (vph)	24	2093	81	109	1368	64	50	7	95	151	11
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pt+ov	Prot	NA
Protected Phases	1	6	7	5	2	3	7	4	4 5	3	8
Permitted Phases			6			2					
Detector Phase	1	6	7	5	2	3	7	4	4 5	3	8
Switch Phase											
Minimum Initial (s)	4.0	20.0	4.0	4.0	20.0	4.0	4.0	5.0		4.0	5.0
Minimum Split (s)	10.0	36.5	10.0	10.0	39.5	10.0	10.0	11.0		10.0	11.0
Total Split (s)	13.0	97.0	16.0	23.0	107.0	25.0	16.0	15.0		25.0	24.0
Total Split (%)	8.1%	60.6%	10.0%	14.4%	66.9%	15.6%	10.0%	9.4%		15.6%	15.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lead		Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	None		None	None
Act Effct Green (s)	7.5	99.4	118.7	17.0	113.7	129.6	13.4	6.2	29.2	13.4	8.6
Actuated g/C Ratio	0.05	0.62	0.74	0.11	0.71	0.81	0.08	0.04	0.18	0.08	0.05
v/c Ratio	0.30	0.55	0.07	0.32	0.32	0.05	0.36	0.10	0.18	0.55	0.42
Control Delay	99.1	6.5	0.2	76.1	8.1	3.0	77.8	76.7	24.8	77.2	70.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	99.1	6.5	0.2	76.1	8.1	3.0	77.8	76.7	24.8	77.2	70.1
LOS	F	A	A	E	A	A	E	E	C	E	E
Approach Delay		7.3			12.7			44.6			75.7
Approach LOS		A			B			D			E

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 117 (73%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.55	
Intersection Signal Delay: 13.9	Intersection LOS: B
Intersection Capacity Utilization 59.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 2: Keating Drive & Northlake Boulevard



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	2093	81	109	1368	64	50	7	95	151	11	28
Future Volume (vph)	24	2093	81	109	1368	64	50	7	95	151	11	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	0.86	1.00	0.97	0.86	1.00	1.00	1.00	0.88	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	6408	1583	3367	6285	1553	1752	1845	2760	3433	1665	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	6408	1583	3367	6285	1553	1752	1845	2760	3433	1665	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	25	2203	85	115	1440	67	53	7	100	159	12	29
RTOR Reduction (vph)	0	0	19	0	0	13	0	0	48	0	10	0
Lane Group Flow (vph)	25	2203	66	115	1440	54	53	7	52	159	31	0
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pt+ov	Prot	NA	
Protected Phases	1	6	7	5	2	3	7	4	4 5	3	8	
Permitted Phases			6			2						
Actuated Green, G (s)	5.0	95.8	109.2	19.3	110.1	124.8	13.4	6.2	31.5	14.7	7.5	
Effective Green, g (s)	5.0	95.8	109.2	19.3	110.1	124.8	13.4	6.2	31.5	14.7	7.5	
Actuated g/C Ratio	0.03	0.60	0.68	0.12	0.69	0.78	0.08	0.04	0.20	0.09	0.05	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	55	3836	1139	406	4324	1211	146	71	543	315	78	
v/s Ratio Prot	0.01	c0.34	0.00	0.03	c0.23	0.00	0.03	0.00	0.02	c0.05	c0.02	
v/s Ratio Perm			0.04			0.03						
v/c Ratio	0.45	0.57	0.06	0.28	0.33	0.04	0.36	0.10	0.10	0.50	0.40	
Uniform Delay, d1	76.2	19.6	8.4	64.1	10.1	4.0	69.3	74.2	52.6	69.2	74.1	
Progression Factor	1.26	0.34	0.05	1.11	0.82	4.25	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.3	0.5	0.0	0.4	0.2	0.0	1.5	0.6	0.1	1.3	3.4	
Delay (s)	99.9	7.1	0.4	71.5	8.5	17.0	70.8	74.8	52.7	70.5	77.5	
Level of Service	F	A	A	E	A	B	E	E	D	E	E	
Approach Delay (s)		7.9			13.3			59.6			71.9	
Approach LOS		A			B			E			E	

Intersection Summary			
HCM 2000 Control Delay	14.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	2093	81	109	1368	64	50	7	95	151	11	28
Future Volume (veh/h)	24	2093	81	109	1368	64	50	7	95	151	11	28
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1827	1827	1827	1845	1845	1845	1863	1863	1900
Adj Flow Rate, veh/h	25	2203	85	115	1440	67	53	7	100	159	12	29
Adj No. of Lanes	1	4	1	2	4	1	1	1	2	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	4	4	4	3	3	3	2	2	2
Cap, veh/h	32	3644	996	640	4653	1244	106	57	609	209	15	37
Arrive On Green	0.02	0.57	0.57	0.38	1.00	1.00	0.06	0.03	0.03	0.06	0.03	0.03
Sat Flow, veh/h	1774	6408	1583	3375	6285	1553	1757	1845	2760	3442	485	1171
Grp Volume(v), veh/h	25	2203	85	115	1440	67	53	7	100	159	0	41
Grp Sat Flow(s),veh/h/ln	1774	1602	1583	1688	1571	1553	1757	1845	1380	1721	0	1656
Q Serve(g_s), s	2.2	36.2	0.0	3.6	0.0	0.0	4.7	0.6	0.0	7.3	0.0	3.9
Cycle Q Clear(g_c), s	2.2	36.2	0.0	3.6	0.0	0.0	4.7	0.6	0.0	7.3	0.0	3.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.71
Lane Grp Cap(c), veh/h	32	3644	996	640	4653	1244	106	57	609	209	0	52
V/C Ratio(X)	0.79	0.60	0.09	0.18	0.31	0.05	0.50	0.12	0.16	0.76	0.00	0.78
Avail Cap(c_a), veh/h	78	3644	996	640	4653	1244	110	104	678	409	0	186
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.94	0.94	0.94	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	78.3	22.7	11.6	41.4	0.0	0.0	72.9	75.4	50.4	74.0	0.0	76.9
Incr Delay (d2), s/veh	34.1	0.8	0.2	0.1	0.2	0.1	3.6	0.9	0.1	5.6	0.0	22.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.5	22.7	2.7	3.1	0.1	0.0	4.3	0.6	3.2	6.5	0.0	3.8
LnGrp Delay(d),s/veh	112.4	23.4	11.8	41.5	0.2	0.1	76.5	76.4	50.6	79.6	0.0	99.0
LnGrp LOS	F	C	B	D	A	A	E	E	D	E		F
Approach Vol, veh/h		2313			1622			160			200	
Approach Delay, s/veh		24.0			3.1			60.3			83.6	
Approach LOS		C			A			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	124.5	15.7	11.0	36.3	97.0	15.6	11.1
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	7.0	101.0	19.0	9.0	17.0	91.0	10.0	18.0
Max Q Clear Time (g_c+I1), s	4.2	2.0	9.3	2.6	5.6	38.2	6.7	5.9
Green Ext Time (p_c), s	0.0	16.0	0.4	0.2	7.2	29.4	0.2	0.1

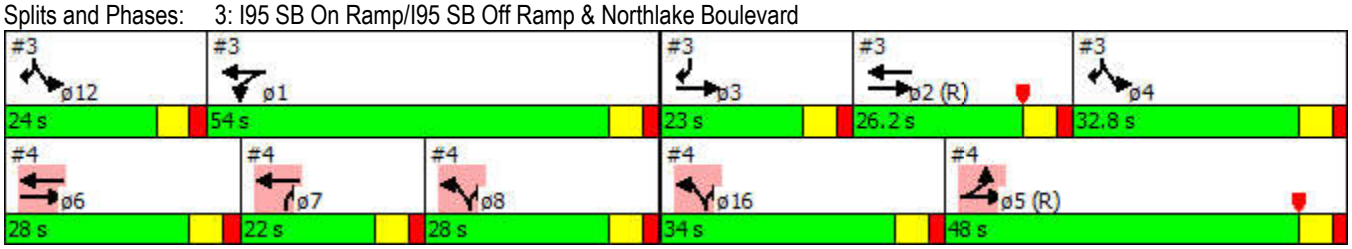
Intersection Summary	
HCM 2010 Ctrl Delay	20.2
HCM 2010 LOS	C

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR	ø2	ø3	ø4	ø5	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	1783	683	894	1207	690	442						
Future Volume (vph)	1783	683	894	1207	690	442						
Turn Type	NA	Free	Prot	NA	Prot	custom						
Protected Phases	2 3		1	1 2	4 12	3 4 12	2	3	4	5	6	7
Permitted Phases		Free										
Detector Phase	2 3		1	1 2	4 12	3 4 12						
Switch Phase												
Minimum Initial (s)			4.0				4.0	4.0	6.0	4.0	4.0	4.0
Minimum Split (s)			11.5				11.5	22.0	12.0	11.5	10.5	22.0
Total Split (s)			54.0				26.2	23.0	32.8	48.0	28.0	22.0
Total Split (%)			33.8%				16%	14%	21%	30%	18%	14%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			2.0				2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)			0.0									
Total Lost Time (s)			6.0									
Lead/Lag			Lag				Lag	Lead		Lag	Lead	Lag
Lead-Lag Optimize?			Yes				Yes	Yes		Yes	Yes	Yes
Recall Mode			Max				C-Max	None	None	C-Max	None	None
Act Effct Green (s)	43.2	160.0	57.4	77.6	41.4	58.4						
Actuated g/C Ratio	0.27	1.00	0.36	0.48	0.26	0.36						
v/c Ratio	0.68	0.45	0.78	0.39	0.53	0.27						
Control Delay	31.8	1.7	18.9	3.6	52.4	20.6						
Queue Delay	0.5	0.0	50.3	0.1	0.0	0.0						
Total Delay	32.3	1.7	69.2	3.7	52.4	20.6						
LOS	C	A	E	A	D	C						
Approach Delay	23.8			31.5								
Approach LOS	C			C								

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 108 (68%), Referenced to phase 2:EBWB and 5:, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 29.9 — Intersection LOS: C
Intersection Capacity Utilization 70.9% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 3: I95 SB On Ramp/I95 SB Off Ramp & Northlake Boulevard



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	5.0	5.0
Minimum Split (s)	12.0	11.0	11.0
Total Split (s)	28.0	24.0	34.0
Total Split (%)	18%	15%	21%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	Lead
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

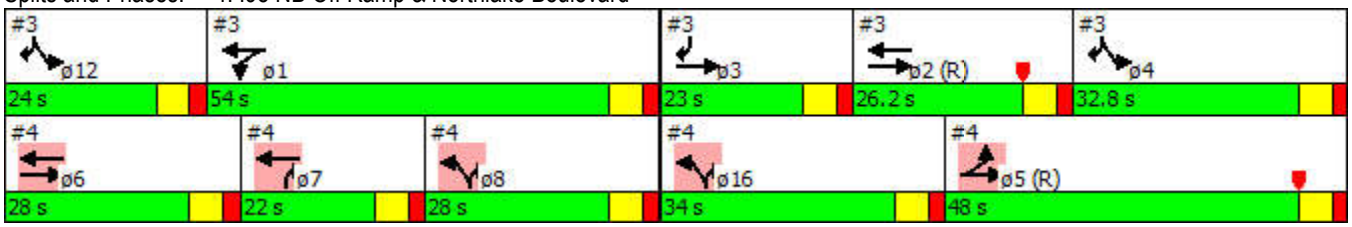
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1783	683	894	1207	0	0	0	0	690	0	442
Future Volume (vph)	0	1783	683	894	1207	0	0	0	0	690	0	442
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	6.0	6.0					6.0		6.0
Lane Util. Factor		*0.91	1.00	0.97	*0.91					*1.00		*1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		10171	1583	3367	6650					5309		4750
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		10171	1583	3367	6650					5309		4750
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1877	719	941	1271	0	0	0	0	726	0	465
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1877	719	941	1271	0	0	0	0	726	0	465
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	0%	0%	0%	2%	2%	2%
Turn Type		NA	Free	Prot	NA					Prot		custom
Protected Phases		2 3		1	1 2					4 12		3 4 12
Permitted Phases			Free									
Actuated Green, G (s)		43.2	160.0	57.4	77.6					41.4		58.4
Effective Green, g (s)		43.2	160.0	57.4	77.6					41.4		58.4
Actuated g/C Ratio		0.27	1.00	0.36	0.48					0.26		0.36
Clearance Time (s)				6.0								
Vehicle Extension (s)				3.0								
Lane Grp Cap (vph)		2746	1583	1207	3225					1373		1733
v/s Ratio Prot		c0.18		c0.28	0.19					c0.14		0.10
v/s Ratio Perm			c0.45									
v/c Ratio		0.68	0.45	0.78	0.39					0.53		0.27
Uniform Delay, d1		52.3	0.0	45.7	26.2					50.9		35.8
Progression Factor		0.58	1.00	0.33	0.23					1.00		1.00
Incremental Delay, d2		0.7	0.8	3.7	0.3					0.4		0.1
Delay (s)		31.2	0.8	18.7	6.4					51.3		35.9
Level of Service		C	A	B	A					D		D
Approach Delay (s)		22.8			11.6			0.0			45.3	
Approach LOS		C			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	23.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	36.0
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR	ø1	ø2	ø3	ø4	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	748	1726	1599	473	503	1089						
Future Volume (vph)	748	1726	1599	473	503	1089						
Turn Type	Prot	NA	NA	Free	Prot	custom						
Protected Phases	5	5 6	6 7		8 16	7 8 16	1	2	3	4	6	7
Permitted Phases				Free								
Detector Phase	5	5 6	6 7		8 16	7 8 16						
Switch Phase												
Minimum Initial (s)	4.0						4.0	4.0	4.0	6.0	4.0	4.0
Minimum Split (s)	11.5						11.5	11.5	22.0	12.0	10.5	22.0
Total Split (s)	48.0						54.0	26.2	23.0	32.8	28.0	22.0
Total Split (%)	30.0%						34%	16%	14%	21%	18%	14%
Yellow Time (s)	4.0						4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0						2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0											
Total Lost Time (s)	6.0											
Lead/Lag	Lag						Lag	Lag	Lead		Lead	Lag
Lead-Lag Optimize?	Yes						Yes	Yes	Yes		Yes	Yes
Recall Mode	C-Max						Max	C-Max	None	None	None	None
Act Effct Green (s)	57.4	85.4	44.0	160.0	40.6	62.6						
Actuated g/C Ratio	0.36	0.53	0.28	1.00	0.25	0.39						
v/c Ratio	0.72	0.56	0.68	0.36	0.44	0.69						
Control Delay	20.8	7.5	40.2	1.2	51.2	43.0						
Queue Delay	51.6	0.2	0.8	0.0	0.0	0.0						
Total Delay	72.5	7.8	41.0	1.2	51.2	43.0						
LOS	E	A	D	A	D	D						
Approach Delay		27.3	31.9									
Approach LOS		C	C									

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 108 (68%), Referenced to phase 2:EBWB and 5:, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 33.6	Intersection LOS: C
Intersection Capacity Utilization 70.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 4: I95 NB Off Ramp & Northlake Boulevard



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	5.0	5.0
Minimum Split (s)	12.0	11.0	11.0
Total Split (s)	28.0	24.0	34.0
Total Split (%)	18%	15%	21%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	Lead
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	748	1726	0	0	1599	473	503	0	1089	0	0	0
Future Volume (vph)	748	1726	0	0	1599	473	503	0	1089	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0	4.0	6.0		6.0			
Lane Util. Factor	0.97	*0.91			*0.91	1.00	*1.00		*1.00			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	3060	6043			8978	1398	4732		4233			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3060	6043			8978	1398	4732		4233			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	787	1817	0	0	1683	498	529	0	1146	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	787	1817	0	0	1683	498	529	0	1146	0	0	0
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	3%	3%	3%	0%	0%	0%
Turn Type	Prot	NA			NA	Free	Prot		custom			
Protected Phases	5	5 6			6 7		8 16		7 8 16			
Permitted Phases						Free						
Actuated Green, G (s)	57.4	85.4			44.0	160.0	40.6		62.6			
Effective Green, g (s)	57.4	85.4			44.0	160.0	40.6		62.6			
Actuated g/C Ratio	0.36	0.53			0.28	1.00	0.25		0.39			
Clearance Time (s)	6.0											
Vehicle Extension (s)	3.0											
Lane Grp Cap (vph)	1097	3225			2468	1398	1200		1656			
v/s Ratio Prot	c0.26	0.30			c0.19		0.11		c0.27			
v/s Ratio Perm						c0.36						
v/c Ratio	0.72	0.56			0.68	0.36	0.44		0.69			
Uniform Delay, d1	44.3	24.9			51.8	0.0	50.2		40.7			
Progression Factor	0.40	0.27			0.74	1.00	1.00		1.00			
Incremental Delay, d2	2.9	0.2			0.8	0.7	0.3		1.4			
Delay (s)	20.5	7.0			39.3	0.7	50.4		42.0			
Level of Service	C	A			D	A	D		D			
Approach Delay (s)		11.1			30.5			44.7			0.0	
Approach LOS		B			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	26.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	36.0
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	WBT	WBR	SBR
Lane Configurations				
Traffic Volume (vph)	2719	2020	56	52
Future Volume (vph)	2719	2020	56	52
Turn Type	NA	NA	Perm	Perm
Protected Phases	6	2		
Permitted Phases			2	6
Detector Phase	6	2	2	6
Switch Phase				
Minimum Initial (s)	4.0	4.0	4.0	4.0
Minimum Split (s)	24.0	23.5	23.5	24.0
Total Split (s)	160.0	133.0	133.0	160.0
Total Split (%)	100.0%	83.1%	83.1%	100.0%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	160.0	160.0	160.0	160.0
Actuated g/C Ratio	1.00	1.00	1.00	1.00
v/c Ratio	0.45	0.23	0.04	0.03
Control Delay	0.2	0.1	0.0	0.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	0.2	0.1	0.0	0.0
LOS	A	A	A	A
Approach Delay	0.2	0.1		
Approach LOS	A	A		

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 72 (45%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.45	
Intersection Signal Delay: 0.1	Intersection LOS: A
Intersection Capacity Utilization 44.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 5: Northlake Boulevard & Roan Lane

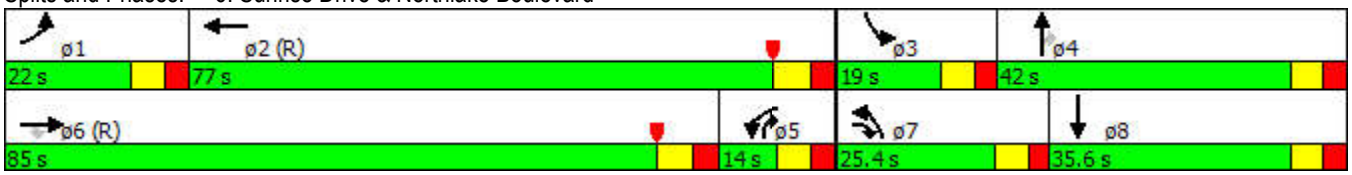
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2719	0	0	2020	56	0	0	0	0	0	52
Future Volume (vph)	0	2719	0	0	2020	56	0	0	0	0	0	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0	6.0						6.0
Lane Util. Factor		0.86			0.71	1.00						1.00
Frt		1.00			1.00	0.85						0.86
Flt Protected		1.00			1.00	1.00						1.00
Satd. Flow (prot)		6408			9168	1615						1644
Flt Permitted		1.00			1.00	1.00						1.00
Satd. Flow (perm)		6408			9168	1615						1644
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	2862	0	0	2126	59	0	0	0	0	0	55
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	2862	0	0	2126	59	0	0	0	0	0	55
Heavy Vehicles (%)	2%	2%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%
Turn Type		NA			NA	Perm						Perm
Protected Phases		6			2							
Permitted Phases						2						6
Actuated Green, G (s)		160.0			160.0	160.0						160.0
Effective Green, g (s)		160.0			160.0	160.0						160.0
Actuated g/C Ratio		1.00			1.00	1.00						1.00
Clearance Time (s)		6.0			6.0	6.0						6.0
Vehicle Extension (s)		3.0			3.0	3.0						3.0
Lane Grp Cap (vph)		6408			9168	1615						1644
v/s Ratio Prot		c0.45			0.23							
v/s Ratio Perm						0.04						0.03
v/c Ratio		0.45			0.23	0.04						0.03
Uniform Delay, d1		0.0			0.0	0.0						0.0
Progression Factor		1.00			1.00	1.00						1.00
Incremental Delay, d2		0.2			0.1	0.0						0.0
Delay (s)		0.2			0.1	0.0						0.0
Level of Service		A			A	A						A
Approach Delay (s)		0.2			0.1			0.0			0.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	0.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	44.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	142	2265	177	131	1640	237	10	133	168	20
Future Volume (vph)	142	2265	177	131	1640	237	10	133	168	20
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	1	6	7	5	2	7	4	5	3	8
Permitted Phases			6					4		
Detector Phase	1	6	7	5	2	7	4	5	3	8
Switch Phase										
Minimum Initial (s)	4.0	20.0	4.0	4.0	20.0	4.0	6.0	4.0	4.0	6.0
Minimum Split (s)	12.5	38.5	12.5	12.5	32.5	12.5	42.0	12.5	12.5	13.0
Total Split (s)	22.0	85.0	25.4	14.0	77.0	25.4	42.0	14.0	19.0	35.6
Total Split (%)	13.8%	53.1%	15.9%	8.8%	48.1%	15.9%	26.3%	8.8%	11.9%	22.3%
Yellow Time (s)	4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	2.5	3.0	3.0	2.5	3.0	3.0	2.5	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.5	6.5	7.0	7.5	6.5	7.0	7.0	6.5	7.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	None	None
Act Effct Green (s)	14.9	94.8	112.3	7.0	86.9	16.5	13.3	16.7	24.8	13.7
Actuated g/C Ratio	0.09	0.59	0.70	0.04	0.54	0.10	0.08	0.10	0.16	0.09
v/c Ratio	0.91	0.79	0.16	0.94	0.52	0.71	0.08	0.67	0.34	0.64
Control Delay	128.1	30.4	2.3	133.6	24.7	80.9	62.7	47.2	64.8	81.6
Queue Delay	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	128.1	30.6	2.3	133.6	24.7	80.9	62.7	47.2	64.8	81.6
LOS	F	C	A	F	C	F	E	D	E	F
Approach Delay		34.0			32.5		68.6			70.7
Approach LOS		C			C		E			E

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 24 (15%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 38.0	Intersection LOS: D
Intersection Capacity Utilization 78.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 6: Sunrise Drive & Northlake Boulevard



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	142	2265	177	131	1640	50	237	10	133	168	20	70
Future Volume (vph)	142	2265	177	131	1640	50	237	10	133	168	20	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.5	6.5	7.0	7.5		6.5	7.0	7.0	6.5	7.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.86		0.97	0.95	0.95	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1583	3367	6257		3400	1752	1490	3400	1629	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1583	3367	6257		3400	1752	1490	3400	1629	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	149	2384	186	138	1726	53	249	11	140	177	21	74
RTOR Reduction (vph)	0	0	20	0	2	0	0	0	54	0	9	0
Lane Group Flow (vph)	149	2384	166	138	1777	0	249	11	86	177	86	0
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	1	6	7	5	2		7	4	5	3	8	
Permitted Phases			6						4			
Actuated Green, G (s)	14.9	90.5	107.0	7.0	82.6		16.5	9.7	16.7	24.8	18.0	
Effective Green, g (s)	14.9	90.5	107.0	7.0	82.6		16.5	9.7	16.7	24.8	18.0	
Actuated g/C Ratio	0.09	0.57	0.67	0.04	0.52		0.10	0.06	0.10	0.16	0.11	
Clearance Time (s)	7.0	7.5	6.5	7.0	7.5		6.5	7.0	7.0	6.5	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	164	2876	1058	147	3230		350	106	155	527	183	
v/s Ratio Prot	0.08	c0.47	0.02	c0.04	0.28		c0.07	0.01	0.02	0.05	c0.05	
v/s Ratio Perm			0.09						0.03			
v/c Ratio	0.91	0.83	0.16	0.94	0.55		0.71	0.10	0.56	0.34	0.47	
Uniform Delay, d1	71.9	28.4	9.8	76.3	26.1		69.4	71.0	68.1	60.3	66.5	
Progression Factor	1.17	1.08	0.68	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	41.5	2.7	0.1	55.4	0.7		6.7	0.4	4.3	0.4	1.9	
Delay (s)	126.0	33.4	6.7	131.7	26.8		76.1	71.5	72.4	60.6	68.4	
Level of Service	F	C	A	F	C		E	E	E	E	E	
Approach Delay (s)		36.6			34.4			74.7			63.4	
Approach LOS		D			C			E			E	

Intersection Summary			
HCM 2000 Control Delay	40.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	142	2265	177	131	1640	50	237	10	133	168	20	70
Future Volume (veh/h)	142	2265	177	131	1640	50	237	10	133	168	20	70
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1827	1827	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	149	2384	186	138	1726	53	249	0	147	177	21	74
Adj No. of Lanes	1	3	1	2	4	0	2	0	2	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	4	4	4	3	3	3	3	3	3
Cap, veh/h	166	2463	901	596	3601	111	298	0	856	220	27	96
Arrive On Green	0.19	0.97	0.97	0.18	0.57	0.57	0.08	0.00	0.10	0.06	0.08	0.08
Sat Flow, veh/h	1774	5085	1583	3375	6312	194	3514	0	3136	3408	358	1263
Grp Volume(v), veh/h	149	2384	186	138	1289	490	249	0	147	177	0	95
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1688	1571	1793	1757	0	1568	1704	0	1622
Q Serve(g_s), s	13.1	37.6	0.2	5.6	25.9	25.9	11.2	0.0	0.8	8.2	0.0	9.2
Cycle Q Clear(g_c), s	13.1	37.6	0.2	5.6	25.9	25.9	11.2	0.0	0.8	8.2	0.0	9.2
Prop In Lane	1.00		1.00	1.00		0.11	1.00		1.00	1.00		0.78
Lane Grp Cap(c), veh/h	166	2463	901	596	2689	1023	298	0	856	220	0	123
V/C Ratio(X)	0.90	0.97	0.21	0.23	0.48	0.48	0.84	0.00	0.17	0.81	0.00	0.77
Avail Cap(c_a), veh/h	166	2463	901	596	2689	1023	415	0	1240	266	0	290
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.90	0.90	0.90	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	64.2	1.9	0.3	56.5	20.3	20.3	72.1	0.0	24.6	73.9	0.0	72.5
Incr Delay (d2), s/veh	38.4	11.1	0.5	0.2	0.6	1.6	10.1	0.0	0.1	13.9	0.0	9.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	12.6	19.3	0.4	4.8	16.9	19.2	9.8	0.0	3.3	7.7	0.0	7.9
LnGrp Delay(d),s/veh	102.6	13.0	0.8	56.7	20.9	21.9	82.2	0.0	24.7	87.8	0.0	82.2
LnGrp LOS	F	B	A	E	C	C	F		C	F		F
Approach Vol, veh/h		2719			1917			396			272	
Approach Delay, s/veh		17.1			23.8			60.8			85.8	
Approach LOS		B			C			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.0	98.8	16.8	22.4	35.8	85.0	20.1	19.2
Change Period (Y+Rc), s	7.0	7.5	6.5	7.0	7.5	* 7.5	6.5	7.0
Max Green Setting (Gmax), s	15.0	69.5	12.5	35.0	7.0	* 78	18.9	28.6
Max Q Clear Time (g_c+I1), s	15.1	27.9	10.2	2.8	7.6	39.6	13.2	11.2
Green Ext Time (p_c), s	0.0	17.6	0.1	1.1	0.0	27.3	0.4	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	26.3
HCM 2010 LOS	C

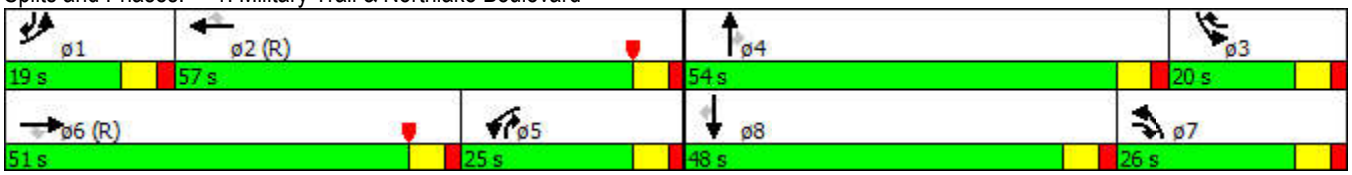
Notes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	431	1065	210	342	1416	350	414	713	391	430	842	677
Future Volume (vph)	431	1065	210	342	1416	350	414	713	391	430	842	677
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	1	6	7	5	2	3	7	4	5	3	8	1
Permitted Phases			6			2			4			8
Detector Phase	1	6	7	5	2	3	7	4	5	3	8	1
Switch Phase												
Minimum Initial (s)	4.0	20.0	4.0	4.0	20.0	4.0	4.0	6.0	4.0	4.0	6.0	4.0
Minimum Split (s)	10.0	48.0	23.0	23.0	52.0	11.0	23.0	43.5	23.0	11.0	47.0	10.0
Total Split (s)	19.0	51.0	26.0	25.0	57.0	20.0	26.0	54.0	25.0	20.0	48.0	19.0
Total Split (%)	12.7%	34.0%	17.3%	16.7%	38.0%	13.3%	17.3%	36.0%	16.7%	13.3%	32.0%	12.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	None	None	None	None
Act Effct Green (s)	13.4	45.4	79.6	19.0	51.0	83.5	28.2	29.1	54.1	32.5	33.4	46.8
Actuated g/C Ratio	0.09	0.30	0.53	0.13	0.34	0.56	0.19	0.19	0.36	0.22	0.22	0.31
v/c Ratio	1.48	0.73	0.25	0.83	0.86	0.41	0.67	0.76	0.68	0.61	0.78	1.34
Control Delay	278.6	50.1	15.2	63.4	37.1	6.8	63.1	62.4	40.0	57.9	60.0	190.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	278.6	50.1	15.2	63.4	37.1	6.8	63.1	62.4	40.0	57.9	60.0	190.7
LOS	F	D	B	E	D	A	E	E	D	E	E	F
Approach Delay		103.6			36.3			56.8			105.0	
Approach LOS		F			D			E			F	

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 60 (40%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.48
Intersection Signal Delay: 74.7 — Intersection LOS: E
Intersection Capacity Utilization 96.1% — ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 1: Military Trail & Northlake Boulevard



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	431	1065	210	342	1416	350	414	713	391	430	842	677
Future Volume (vph)	431	1065	210	342	1416	350	414	713	391	430	842	677
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	454	1121	221	360	1491	368	436	751	412	453	886	713
RTOR Reduction (vph)	0	0	31	0	0	27	0	0	41	0	0	41
Lane Group Flow (vph)	454	1121	190	360	1491	341	436	751	371	453	886	672
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	1	6	7	5	2	3	7	4	5	3	8	1
Permitted Phases			6			2			4			8
Actuated Green, G (s)	13.4	45.4	73.6	19.0	51.0	83.5	28.2	29.1	48.1	32.5	33.4	46.8
Effective Green, g (s)	13.4	45.4	73.6	19.0	51.0	83.5	28.2	29.1	48.1	32.5	33.4	46.8
Actuated g/C Ratio	0.09	0.30	0.49	0.13	0.34	0.56	0.19	0.19	0.32	0.22	0.22	0.31
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	306	1539	840	434	1728	881	645	986	570	743	1132	493
v/s Ratio Prot	c0.13	0.22	0.04	0.10	c0.29	0.08	c0.13	0.15	0.08	c0.13	0.17	c0.12
v/s Ratio Perm			0.08			0.13			0.15			0.30
v/c Ratio	1.48	0.73	0.23	0.83	0.86	0.39	0.68	0.76	0.65	0.61	0.78	1.36
Uniform Delay, d1	68.3	46.8	21.9	63.9	46.2	18.8	56.7	57.2	43.7	53.0	54.9	51.6
Progression Factor	1.00	1.00	1.00	0.77	0.69	0.65	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	234.4	3.1	0.1	10.2	4.9	0.2	2.8	3.5	2.7	1.4	3.6	175.9
Delay (s)	302.7	49.8	22.0	59.6	36.9	12.4	59.5	60.7	46.4	54.5	58.5	227.5
Level of Service	F	D	C	E	D	B	E	E	D	D	E	F
Approach Delay (s)		110.3			36.5			56.7			116.3	
Approach LOS		F			D			E			F	

Intersection Summary			
HCM 2000 Control Delay	79.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	96.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	431	1065	210	342	1416	350	414	713	391	430	842	677
Future Volume (veh/h)	431	1065	210	342	1416	350	414	713	391	430	842	677
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	454	1121	221	360	1491	368	436	751	412	453	886	713
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	298	1526	686	494	1815	881	459	1003	539	686	1338	554
Arrive On Green	0.09	0.30	0.30	0.29	0.71	0.71	0.13	0.20	0.20	0.20	0.26	0.26
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	454	1121	221	360	1491	368	436	751	412	453	886	713
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	13.0	29.7	0.0	14.1	30.4	3.7	18.9	20.9	13.3	18.2	23.3	33.0
Cycle Q Clear(g_c), s	13.0	29.7	0.0	14.1	30.4	3.7	18.9	20.9	13.3	18.2	23.3	33.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	298	1526	686	494	1815	881	459	1003	539	686	1338	554
V/C Ratio(X)	1.52	0.73	0.32	0.73	0.82	0.42	0.95	0.75	0.76	0.66	0.66	1.29
Avail Cap(c_a), veh/h	298	1526	686	494	1815	881	459	1627	734	686	1424	581
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.5	47.1	28.0	50.8	18.2	2.7	64.5	56.7	44.1	55.4	49.3	22.8
Incr Delay (d2), s/veh	251.4	3.2	1.2	5.4	4.3	1.5	29.7	1.1	3.3	2.3	1.1	142.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	29.9	20.6	10.4	11.4	20.8	3.8	16.3	15.1	10.3	13.8	16.5	65.3
LnGrp Delay(d),s/veh	319.9	50.3	29.2	56.2	22.5	4.2	94.2	57.9	47.3	57.7	50.4	165.2
LnGrp LOS	F	D	C	E	C	A	F	E	D	E	D	F
Approach Vol, veh/h		1796			2219			1599			2052	
Approach Delay, s/veh		115.9			24.9			65.1			91.9	
Approach LOS		F			C			E			F	

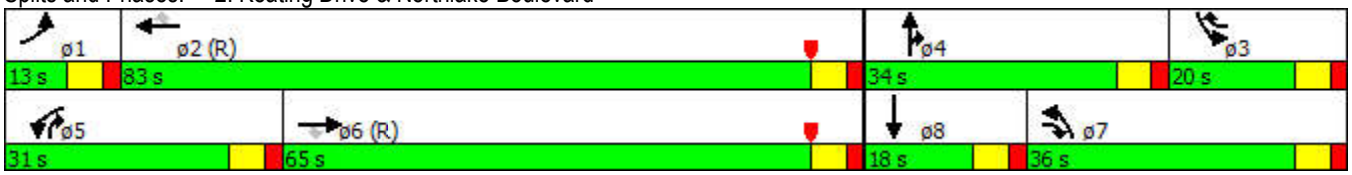
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	59.5	35.9	35.6	27.5	51.0	26.0	45.5
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	13.0	51.0	14.0	48.0	19.0	45.0	20.0	42.0
Max Q Clear Time (g_c+I1), s	15.0	32.4	20.2	22.9	16.1	31.7	20.9	35.0
Green Ext Time (p_c), s	0.0	12.2	0.0	6.7	2.5	6.5	0.0	4.5

Intersection Summary	
HCM 2010 Ctrl Delay	72.5
HCM 2010 LOS	E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	54	1704	244	295	1945	226	258	43	307	161	47
Future Volume (vph)	54	1704	244	295	1945	226	258	43	307	161	47
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pt+ov	Prot	NA
Protected Phases	1	6	7	5	2	3	7	4	4 5	3	8
Permitted Phases			6			2					
Detector Phase	1	6	7	5	2	3	7	4	4 5	3	8
Switch Phase											
Minimum Initial (s)	4.0	20.0	4.0	4.0	20.0	4.0	4.0	5.0		4.0	5.0
Minimum Split (s)	10.0	36.5	10.0	10.0	39.5	10.0	10.0	11.0		10.0	11.0
Total Split (s)	13.0	65.0	36.0	31.0	83.0	20.0	36.0	34.0		20.0	18.0
Total Split (%)	8.7%	43.3%	24.0%	20.7%	55.3%	13.3%	24.0%	22.7%		13.3%	12.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lead		Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	None		None	None
Act Effct Green (s)	7.6	69.2	95.9	19.2	83.2	107.9	26.7	14.2	33.3	23.5	10.9
Actuated g/C Ratio	0.05	0.46	0.64	0.13	0.55	0.72	0.18	0.09	0.22	0.16	0.07
v/c Ratio	0.63	0.61	0.25	0.71	0.58	0.21	0.86	0.26	0.48	0.31	0.71
Control Delay	102.5	16.9	1.6	93.1	11.4	1.1	84.8	65.8	25.4	57.2	88.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	102.5	16.9	1.6	93.1	11.4	1.1	84.8	65.8	25.4	57.2	88.1
LOS	F	B	A	F	B	A	F	E	C	E	F
Approach Delay		17.4			20.2			53.5			68.4
Approach LOS		B			C			D			E

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 78 (52%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 25.2	Intersection LOS: C
Intersection Capacity Utilization 69.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 2: Keating Drive & Northlake Boulevard



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	1704	244	295	1945	226	258	43	307	161	47	45
Future Volume (vph)	54	1704	244	295	1945	226	258	43	307	161	47	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	0.86	1.00	0.97	0.86	1.00	1.00	1.00	0.88	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	6408	1583	3433	6408	1583	1770	1863	2787	3433	1726	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	6408	1583	3433	6408	1583	1770	1863	2787	3433	1726	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	57	1794	257	311	2047	238	272	45	323	169	49	47
RTOR Reduction (vph)	0	0	22	0	0	18	0	0	47	0	9	0
Lane Group Flow (vph)	57	1794	235	311	2047	220	272	45	276	169	87	0
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pt+ov	Prot	NA	
Protected Phases	1	6	7	5	2	3	7	4	4 5	3	8	
Permitted Phases			6			2						
Actuated Green, G (s)	6.3	69.1	95.9	19.2	82.0	105.5	26.8	14.2	33.4	23.5	10.9	
Effective Green, g (s)	6.3	69.1	95.9	19.2	82.0	105.5	26.8	14.2	33.4	23.5	10.9	
Actuated g/C Ratio	0.04	0.46	0.64	0.13	0.55	0.70	0.18	0.09	0.22	0.16	0.07	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	74	2951	1012	439	3503	1113	316	176	620	537	125	
v/s Ratio Prot	0.03	c0.28	0.04	c0.09	0.32	0.03	c0.15	0.02	0.10	0.05	c0.05	
v/s Ratio Perm			0.11			0.11						
v/c Ratio	0.77	0.61	0.23	0.71	0.58	0.20	0.86	0.26	0.45	0.31	0.69	
Uniform Delay, d1	71.1	30.3	11.5	62.7	22.6	7.7	59.8	63.0	50.3	56.1	67.9	
Progression Factor	1.15	0.51	0.24	1.36	0.46	0.24	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	30.4	0.7	0.1	4.5	0.6	0.1	20.6	0.8	0.5	0.3	15.4	
Delay (s)	112.4	16.3	2.9	90.0	11.1	1.9	80.4	63.8	50.8	56.4	83.3	
Level of Service	F	B	A	F	B	A	F	E	D	E	F	
Approach Delay (s)		17.2			19.7			64.3			66.2	
Approach LOS		B			B			E			E	

Intersection Summary			
HCM 2000 Control Delay	26.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	69.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	1704	244	295	1945	226	258	43	307	161	47	45
Future Volume (veh/h)	54	1704	244	295	1945	226	258	43	307	161	47	45
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	57	1794	257	311	2047	238	272	45	323	169	49	47
Adj No. of Lanes	1	4	1	2	4	1	1	1	2	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	72	3202	1056	362	3616	1118	297	173	553	488	59	57
Arrive On Green	0.08	1.00	1.00	0.21	1.00	1.00	0.17	0.09	0.09	0.14	0.07	0.07
Sat Flow, veh/h	1774	6408	1583	3442	6408	1583	1774	1863	2787	3442	875	839
Grp Volume(v), veh/h	57	1794	257	311	2047	238	272	45	323	169	0	96
Grp Sat Flow(s),veh/h/ln	1774	1602	1583	1721	1602	1583	1774	1863	1393	1721	0	1715
Q Serve(g_s), s	4.7	0.1	0.0	13.1	0.0	0.0	22.6	3.4	10.6	6.6	0.0	8.3
Cycle Q Clear(g_c), s	4.7	0.1	0.0	13.1	0.0	0.0	22.6	3.4	10.6	6.6	0.0	8.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.49
Lane Grp Cap(c), veh/h	72	3202	1056	362	3616	1118	297	173	553	488	0	116
V/C Ratio(X)	0.79	0.56	0.24	0.86	0.57	0.21	0.92	0.26	0.58	0.35	0.00	0.83
Avail Cap(c_a), veh/h	83	3202	1056	574	3616	1118	355	348	814	488	0	137
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.84	0.84	0.84	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	68.3	0.0	0.0	58.1	0.0	0.0	61.4	63.2	27.5	58.1	0.0	69.0
Incr Delay (d2), s/veh	34.9	0.7	0.5	6.4	0.5	0.4	25.3	0.8	1.0	0.4	0.0	28.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.4	0.3	0.3	10.4	0.2	0.2	19.1	3.2	7.5	5.8	0.0	8.5
LnGrp Delay(d),s/veh	103.2	0.7	0.6	64.6	0.5	0.4	86.7	64.0	28.5	58.5	0.0	97.6
LnGrp LOS	F	A	A	E	A	A	F	E	C	E		F
Approach Vol, veh/h		2108			2596			640			265	
Approach Delay, s/veh		3.5			8.2			55.7			72.7	
Approach LOS		A			A			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.1	90.6	27.3	20.0	21.8	81.0	31.1	16.2
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	7.0	77.0	14.0	28.0	25.0	59.0	30.0	12.0
Max Q Clear Time (g_c+I1), s	6.7	2.0	8.6	12.6	15.1	2.1	24.6	10.3
Green Ext Time (p_c), s	0.0	67.5	0.7	1.3	0.7	52.5	0.5	0.1

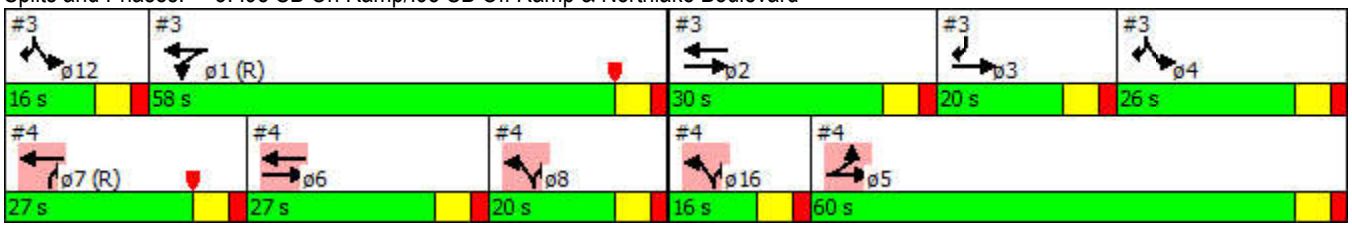
Intersection Summary	
HCM 2010 Ctrl Delay	14.9
HCM 2010 LOS	B

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR	ø2	ø3	ø4	ø5	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	1605	711	944	2074	549	562						
Future Volume (vph)	1605	711	944	2074	549	562						
Turn Type	NA	Free	Prot	NA	Prot	custom						
Protected Phases	2 3		1	1 2	4 12	3 4 12	2	3	4	5	6	7
Permitted Phases		Free										
Detector Phase	2 3		1	1 2	4 12	3 4 12						
Switch Phase												
Minimum Initial (s)			4.0				4.0	4.0	6.0	4.0	4.0	4.0
Minimum Split (s)			11.5				11.5	20.0	12.0	11.5	10.5	22.0
Total Split (s)			58.0				30.0	20.0	26.0	60.0	27.0	27.0
Total Split (%)			38.7%				20%	13%	17%	40%	18%	18%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			2.0				2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)			0.0									
Total Lost Time (s)			6.0									
Lead/Lag			Lag				Lead	Lag		Lag	Lag	Lead
Lead-Lag Optimize?			Yes				Yes	Yes		Yes	Yes	Yes
Recall Mode			C-Max				Max	None	None	Max	None	C-Max
Act Effct Green (s)	44.0	150.0	53.9	83.9	34.1	54.1						
Actuated g/C Ratio	0.29	1.00	0.36	0.56	0.23	0.36						
v/c Ratio	0.57	0.47	0.81	0.58	0.48	0.35						
Control Delay	31.0	2.9	12.5	2.9	51.6	35.6						
Queue Delay	0.0	0.0	39.2	0.7	0.0	0.0						
Total Delay	31.1	2.9	51.7	3.6	51.6	35.6						
LOS	C	A	D	A	D	D						
Approach Delay	22.4			18.7								
Approach LOS	C			B								

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 1:WBTL and 7:, Start of Yellow, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 24.3 — Intersection LOS: C
Intersection Capacity Utilization 72.3% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 3: I95 SB On Ramp/I95 SB Off Ramp & Northlake Boulevard



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	5.0	5.0
Minimum Split (s)	12.0	11.0	11.0
Total Split (s)	20.0	16.0	16.0
Total Split (%)	13%	11%	11%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	Lead
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1605	711	944	2074	0	0	0	0	549	0	562
Future Volume (vph)	0	1605	711	944	2074	0	0	0	0	549	0	562
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	6.0	6.0					6.0		6.0
Lane Util. Factor		*0.91	1.00	0.97	*0.91					*1.00		*1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		10171	1583	3433	6780					5309		4750
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		10171	1583	3433	6780					5309		4750
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1689	748	994	2183	0	0	0	0	578	0	592
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1689	748	994	2183	0	0	0	0	578	0	592
Turn Type		NA	Free	Prot	NA					Prot		custom
Protected Phases		2 3		1	1 2					4 12		3 4 12
Permitted Phases			Free									
Actuated Green, G (s)		44.0	150.0	53.9	83.9					34.1		54.1
Effective Green, g (s)		44.0	150.0	53.9	83.9					34.1		54.1
Actuated g/C Ratio		0.29	1.00	0.36	0.56					0.23		0.36
Clearance Time (s)				6.0								
Vehicle Extension (s)				3.0								
Lane Grp Cap (vph)		2983	1583	1233	3792					1206		1713
v/s Ratio Prot		c0.17		c0.29	c0.32					0.11		0.12
v/s Ratio Perm			c0.47									
v/c Ratio		0.57	0.47	0.81	0.58					0.48		0.35
Uniform Delay, d1		44.9	0.0	43.3	21.5					50.3		35.0
Progression Factor		0.67	1.00	0.22	0.12					1.00		1.00
Incremental Delay, d2		0.3	0.9	3.0	0.4					0.3		0.2
Delay (s)		30.5	0.9	12.4	2.9					50.6		35.2
Level of Service		C	A	B	A					D		D
Approach Delay (s)		21.4			5.8			0.0			42.8	
Approach LOS		C			A			A			D	

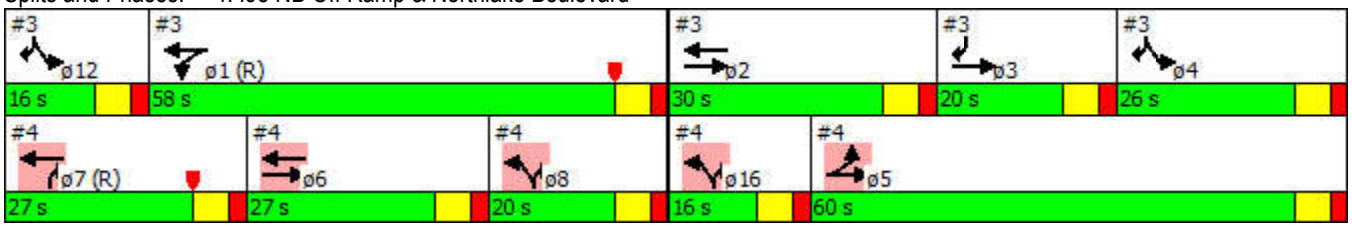
Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	36.0
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR	ø1	ø2	ø3	ø4	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	559	1595	2330	777	688	1043						
Future Volume (vph)	559	1595	2330	777	688	1043						
Turn Type	Prot	NA	NA	Free	Prot	custom						
Protected Phases	5	5 6	6 7		8 16	7 8 16	1	2	3	4	6	7
Permitted Phases				Free								
Detector Phase	5	5 6	6 7		8 16	7 8 16						
Switch Phase												
Minimum Initial (s)	4.0						4.0	4.0	4.0	6.0	4.0	4.0
Minimum Split (s)	11.5						11.5	11.5	20.0	12.0	10.5	22.0
Total Split (s)	60.0						58.0	30.0	20.0	26.0	27.0	27.0
Total Split (%)	40.0%						39%	20%	13%	17%	18%	18%
Yellow Time (s)	4.0						4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0						2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0											
Total Lost Time (s)	6.0											
Lead/Lag	Lag						Lag	Lead	Lag		Lag	Lead
Lead-Lag Optimize?	Yes						Yes	Yes	Yes		Yes	Yes
Recall Mode	Max						C-Max	Max	None	None	None	C-Max
Act Effct Green (s)	54.0	75.0	48.0	150.0	30.0	51.0						
Actuated g/C Ratio	0.36	0.50	0.32	1.00	0.20	0.34						
v/c Ratio	0.53	0.55	0.84	0.57	0.76	0.76						
Control Delay	12.3	9.2	35.8	4.8	62.5	30.7						
Queue Delay	2.9	0.1	10.3	0.0	0.0	0.0						
Total Delay	15.3	9.3	46.1	4.8	62.5	30.7						
LOS	B	A	D	A	E	C						
Approach Delay		10.8	35.8									
Approach LOS		B	D									

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 1:WBTL and 7:, Start of Yellow, Master Intersection	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 30.0	Intersection LOS: C
Intersection Capacity Utilization 72.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 4: I95 NB Off Ramp & Northlake Boulevard



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	5.0	5.0
Minimum Split (s)	12.0	11.0	11.0
Total Split (s)	20.0	16.0	16.0
Total Split (%)	13%	11%	11%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	Lead
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	559	1595	0	0	2330	777	688	0	1043	0	0	0
Future Volume (vph)	559	1595	0	0	2330	777	688	0	1043	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0	4.0	6.0		6.0			
Lane Util. Factor	0.97	*0.91			*0.91	1.00	*1.00		*1.00			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	3090	6102			9154	1425	4778		4275			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3090	6102			9154	1425	4778		4275			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	588	1679	0	0	2453	818	724	0	1098	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	588	1679	0	0	2453	818	724	0	1098	0	0	0
Turn Type	Prot	NA			NA	Free	Prot		custom			
Protected Phases	5	5 6			6 7		8 16		7 8 16			
Permitted Phases						Free						
Actuated Green, G (s)	54.0	75.0			48.0	150.0	30.0		51.0			
Effective Green, g (s)	54.0	75.0			48.0	150.0	30.0		51.0			
Actuated g/C Ratio	0.36	0.50			0.32	1.00	0.20		0.34			
Clearance Time (s)	6.0											
Vehicle Extension (s)	3.0											
Lane Grp Cap (vph)	1112	3051			2929	1425	955		1453			
v/s Ratio Prot	0.19	0.28			c0.27		c0.15		0.26			
v/s Ratio Perm						c0.57						
v/c Ratio	0.53	0.55			0.84	0.57	0.76		0.76			
Uniform Delay, d1	37.9	25.9			47.4	0.0	56.6		44.0			
Progression Factor	0.28	0.65			0.69	1.00	1.00		1.00			
Incremental Delay, d2	1.5	0.2			2.1	1.6	3.5		2.3			
Delay (s)	12.3	17.0			34.9	1.6	60.1		46.3			
Level of Service	B	B			C	A	E		D			
Approach Delay (s)		15.7			26.6			51.7			0.0	
Approach LOS		B			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	29.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	36.0
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	WBT	WBR	SBR
Lane Configurations				
Traffic Volume (vph)	2554	3005	116	102
Future Volume (vph)	2554	3005	116	102
Turn Type	NA	NA	Perm	Perm
Protected Phases	6	2		
Permitted Phases			2	6
Detector Phase	6	2	2	6
Switch Phase				
Minimum Initial (s)	4.0	4.0	4.0	4.0
Minimum Split (s)	24.0	23.5	23.5	24.0
Total Split (s)	150.0	115.0	115.0	150.0
Total Split (%)	100.0%	76.7%	76.7%	100.0%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	150.0	150.0	150.0	150.0
Actuated g/C Ratio	1.00	1.00	1.00	1.00
v/c Ratio	0.42	0.34	0.08	0.07
Control Delay	0.2	0.0	0.0	0.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	0.2	0.1	0.0	0.1
LOS	A	A	A	A
Approach Delay	0.2	0.1		
Approach LOS	A	A		

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 26 (17%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.42	
Intersection Signal Delay: 0.1	Intersection LOS: A
Intersection Capacity Utilization 42.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 5: Northlake Boulevard & Roan Lane

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑↑			↰	↱						↱
Traffic Volume (vph)	0	2554	0	0	3005	116	0	0	0	0	0	102
Future Volume (vph)	0	2554	0	0	3005	116	0	0	0	0	0	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0	6.0						6.0
Lane Util. Factor		0.86			0.71	1.00						1.00
Frt		1.00			1.00	0.85						0.86
Flt Protected		1.00			1.00	1.00						1.00
Satd. Flow (prot)		6408			9258	1583						1611
Flt Permitted		1.00			1.00	1.00						1.00
Satd. Flow (perm)		6408			9258	1583						1611
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	2688	0	0	3163	122	0	0	0	0	0	107
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	2688	0	0	3163	122	0	0	0	0	0	107
Turn Type		NA			NA	Perm						Perm
Protected Phases		6			2							
Permitted Phases						2						6
Actuated Green, G (s)		150.0			150.0	150.0						150.0
Effective Green, g (s)		150.0			150.0	150.0						150.0
Actuated g/C Ratio		1.00			1.00	1.00						1.00
Clearance Time (s)		6.0			6.0	6.0						6.0
Vehicle Extension (s)		3.0			3.0	3.0						3.0
Lane Grp Cap (vph)		6408			9258	1583						1611
v/s Ratio Prot		c0.42			0.34							
v/s Ratio Perm						0.08						0.07
v/c Ratio		0.42			0.34	0.08						0.07
Uniform Delay, d1		0.0			0.0	0.0						0.0
Progression Factor		1.00			1.00	1.00						1.00
Incremental Delay, d2		0.2			0.0	0.0						0.1
Delay (s)		0.2			0.0	0.0						0.1
Level of Service		A			A	A						A
Approach Delay (s)		0.2			0.0			0.0			0.1	
Approach LOS		A			A			A			A	

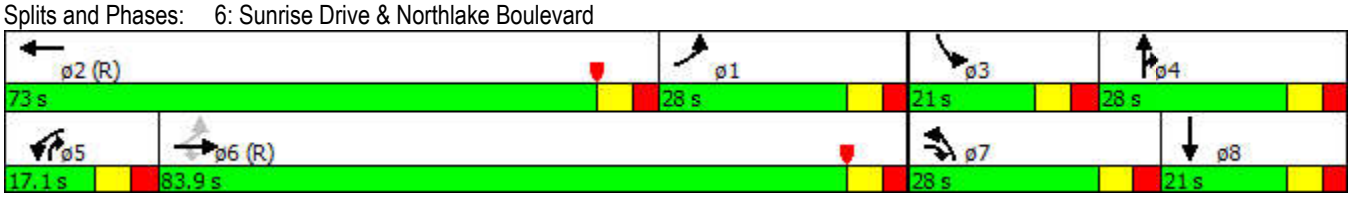
Intersection Summary			
HCM 2000 Control Delay	0.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	6.0
Intersection Capacity Utilization	42.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	190	2157	181	189	2427	446	18	226	116	17
Future Volume (vph)	190	2157	181	189	2427	446	18	226	116	17
Turn Type	pm+pt	NA	pm+ov	Prot	NA	Prot	NA	pt+ov	Prot	NA
Protected Phases	1	6	7	5	2	7	4	4 5	3	8
Permitted Phases	6		6							
Detector Phase	1	6	7	5	2	7	4	4 5	3	8
Switch Phase										
Minimum Initial (s)	4.0	20.0	4.0	4.0	20.0	4.0	6.0		4.0	6.0
Minimum Split (s)	12.5	38.5	12.5	12.5	32.5	12.5	28.0		12.5	21.0
Total Split (s)	28.0	83.9	28.0	17.1	73.0	28.0	28.0		21.0	21.0
Total Split (%)	18.7%	55.9%	18.7%	11.4%	48.7%	18.7%	18.7%		14.0%	14.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0		7.0	7.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag		Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None		None	None
Act Effct Green (s)	77.9	77.9	105.9	10.9	67.9	21.0	22.4	40.4	10.7	12.1
Actuated g/C Ratio	0.52	0.52	0.71	0.07	0.45	0.14	0.15	0.27	0.07	0.08
v/c Ratio	0.67	0.86	0.17	0.80	0.90	0.98	0.40	0.28	0.50	0.70
Control Delay	54.3	26.0	5.4	90.6	43.4	99.2	17.5	24.6	73.8	85.6
Queue Delay	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.3	26.6	5.4	90.6	43.4	99.2	17.5	24.6	73.8	85.6
LOS	D	C	A	F	D	F	B	C	E	F
Approach Delay		27.1			46.8		71.5			79.1
Approach LOS		C			D		E			E

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBTL, Start of Yellow	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 42.5	Intersection LOS: D
Intersection Capacity Utilization 84.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 6: Sunrise Drive & Northlake Boulevard



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	2157	181	189	2427	48	446	18	226	116	17	77
Future Volume (vph)	190	2157	181	189	2427	48	446	18	226	116	17	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0	7.0	7.0	7.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.86		0.97	0.95	0.95	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.87	0.85	1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1583	3433	6389		3433	1543	1504	3433	1634	
Flt Permitted	0.07	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	131	5085	1583	3433	6389		3433	1543	1504	3433	1634	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	200	2271	191	199	2555	51	469	19	238	122	18	81
RTOR Reduction (vph)	0	0	20	0	2	0	0	95	44	0	9	0
Lane Group Flow (vph)	200	2271	171	199	2604	0	469	36	82	122	90	0
Turn Type	pm+pt	NA	pm+ov	Prot	NA		Prot	NA	pt+ov	Prot	NA	
Protected Phases	1	6	7	5	2		7	4	4 5	3	8	
Permitted Phases	6		6									
Actuated Green, G (s)	78.0	78.0	99.0	10.9	67.9		21.0	22.4	40.3	10.7	12.1	
Effective Green, g (s)	78.0	78.0	99.0	10.9	67.9		21.0	22.4	40.3	10.7	12.1	
Actuated g/C Ratio	0.52	0.52	0.66	0.07	0.45		0.14	0.15	0.27	0.07	0.08	
Clearance Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	297	2644	1118	249	2892		480	230	404	244	131	
v/s Ratio Prot	0.09	c0.45	0.02	0.06	c0.41		c0.14	0.02	0.05	0.04	c0.05	
v/s Ratio Perm	0.26		0.09									
v/c Ratio	0.67	0.86	0.15	0.80	0.90		0.98	0.16	0.20	0.50	0.69	
Uniform Delay, d1	49.6	31.2	9.6	68.5	37.9		64.3	55.6	42.4	67.1	67.1	
Progression Factor	0.82	0.70	0.99	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	5.5	3.6	0.1	16.2	5.1		34.8	0.3	0.2	1.6	13.9	
Delay (s)	46.3	25.5	9.6	84.7	43.0		99.1	55.9	42.7	68.7	81.0	
Level of Service	D	C	A	F	D		F	E	D	E	F	
Approach Delay (s)		26.0			46.0			81.5			74.2	
Approach LOS		C			D			F			E	

Intersection Summary			
HCM 2000 Control Delay	42.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	84.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	2157	181	189	2427	48	446	18	226	116	17	77
Future Volume (veh/h)	190	2157	181	189	2427	48	446	18	226	116	17	77
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	200	2271	191	199	2555	51	469	0	251	122	18	81
Adj No. of Lanes	1	3	1	2	4	0	2	0	2	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	338	2705	1064	232	2867	57	497	0	736	169	22	99
Arrive On Green	0.11	0.36	0.36	0.07	0.44	0.44	0.14	0.00	0.17	0.05	0.07	0.07
Sat Flow, veh/h	1774	5085	1583	3442	6516	130	3548	0	3167	3442	296	1332
Grp Volume(v), veh/h	200	2271	191	199	1884	722	469	0	251	122	0	99
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1721	1602	1840	1774	0	1583	1721	0	1628
Q Serve(g_s), s	11.3	61.5	8.9	8.6	54.2	54.3	19.6	0.0	9.9	5.2	0.0	9.0
Cycle Q Clear(g_c), s	11.3	61.5	8.9	8.6	54.2	54.3	19.6	0.0	9.9	5.2	0.0	9.0
Prop In Lane	1.00		1.00	1.00		0.07	1.00		1.00	1.00		0.82
Lane Grp Cap(c), veh/h	338	2705	1064	232	2115	810	497	0	736	169	0	121
V/C Ratio(X)	0.59	0.84	0.18	0.86	0.89	0.89	0.94	0.00	0.34	0.72	0.00	0.82
Avail Cap(c_a), veh/h	338	2705	1064	232	2115	810	497	0	736	321	0	152
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.91	0.91	0.91	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	59.6	42.4	13.1	69.2	38.7	38.7	63.9	0.0	48.0	70.3	0.0	68.5
Incr Delay (d2), s/veh	2.5	3.0	0.3	26.1	6.2	14.2	27.0	0.0	0.3	5.7	0.0	23.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	12.5	38.2	7.1	8.6	33.3	39.8	17.1	0.0	7.8	4.7	0.0	8.5
LnGrp Delay(d),s/veh	62.1	45.5	13.4	95.3	44.9	52.9	90.9	0.0	48.3	76.0	0.0	92.3
LnGrp LOS	E	D	B	F	D	D	F		D	E		F
Approach Vol, veh/h		2662			2805			720			221	
Approach Delay, s/veh		44.4			50.5			76.0			83.3	
Approach LOS		D			D			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	30.9	73.0	14.4	31.8	17.1	86.8	28.0	18.1
Change Period (Y+Rc), s	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Max Green Setting (Gmax), s	21.0	66.0	14.0	21.0	10.1	76.9	21.0	14.0
Max Q Clear Time (g_c+I1), s	13.3	56.3	7.2	11.9	10.6	63.5	21.6	11.0
Green Ext Time (p_c), s	7.0	8.6	0.2	1.0	0.0	11.5	0.0	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	52.0
HCM 2010 LOS	D

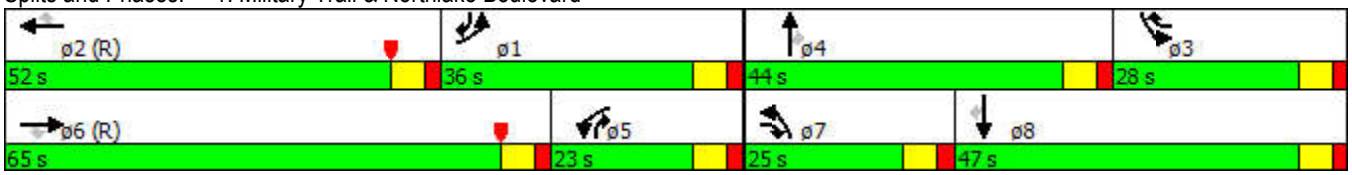
Notes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	678	1705	294	304	1223	346	390	826	381	433	642	403
Future Volume (vph)	678	1705	294	304	1223	346	390	826	381	433	642	403
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	1	6	7	5	2	3	7	4	5	3	8	1
Permitted Phases			6			2			4			8
Detector Phase	1	6	7	5	2	3	7	4	5	3	8	1
Switch Phase												
Minimum Initial (s)	4.0	20.0	4.0	4.0	20.0	4.0	4.0	6.0	4.0	4.0	6.0	4.0
Minimum Split (s)	10.0	48.0	23.0	23.0	52.0	11.0	23.0	43.5	23.0	11.0	47.0	10.0
Total Split (s)	36.0	65.0	25.0	23.0	52.0	28.0	25.0	44.0	23.0	28.0	47.0	36.0
Total Split (%)	22.5%	40.6%	15.6%	14.4%	32.5%	17.5%	15.6%	27.5%	14.4%	17.5%	29.4%	22.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	None	None	None	None
Act Effct Green (s)	30.0	60.4	79.4	17.0	47.4	77.6	19.0	34.4	57.4	24.2	39.6	69.6
Actuated g/C Ratio	0.19	0.38	0.50	0.11	0.30	0.48	0.12	0.22	0.36	0.15	0.25	0.44
v/c Ratio	1.12	0.94	0.38	0.90	0.88	0.47	1.04	0.82	0.68	0.89	0.54	0.59
Control Delay	130.8	59.3	12.4	80.8	90.8	53.7	121.7	66.7	42.7	85.4	54.0	19.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	130.8	59.3	12.4	80.8	90.8	53.7	121.7	66.7	42.7	85.4	54.0	19.6
LOS	F	E	B	F	F	D	F	E	D	F	D	B
Approach Delay		72.3			82.3			74.5			53.8	
Approach LOS		E			F			E			D	

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 62 (39%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.12
Intersection Signal Delay: 71.6 — Intersection LOS: E
Intersection Capacity Utilization 91.3% — ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 1: Military Trail & Northlake Boulevard



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	678	1705	294	304	1223	346	390	826	381	433	642	403
Future Volume (vph)	678	1705	294	304	1223	346	390	826	381	433	642	403
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	5036	1568	3335	4940	1538	3335	4940	1538	3400	5036	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3400	5036	1568	3335	4940	1538	3335	4940	1538	3400	5036	1568
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	714	1795	309	320	1287	364	411	869	401	456	676	424
RTOR Reduction (vph)	0	0	30	0	0	33	0	0	41	0	0	34
Lane Group Flow (vph)	714	1795	279	320	1287	331	411	869	360	456	676	390
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	5%	5%	5%	3%	3%	3%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	1	6	7	5	2	3	7	4	5	3	8	1
Permitted Phases			6			2			4			8
Actuated Green, G (s)	30.0	60.4	79.4	17.0	47.4	71.6	19.0	34.4	51.4	24.2	39.6	69.6
Effective Green, g (s)	30.0	60.4	79.4	17.0	47.4	71.6	19.0	34.4	51.4	24.2	39.6	69.6
Actuated g/C Ratio	0.19	0.38	0.50	0.11	0.30	0.45	0.12	0.21	0.32	0.15	0.25	0.43
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	637	1901	778	354	1463	745	396	1062	551	514	1246	682
v/s Ratio Prot	c0.21	c0.36	0.04	0.10	0.26	0.07	c0.12	c0.18	0.07	c0.13	0.13	0.11
v/s Ratio Perm			0.14			0.15			0.16			0.14
v/c Ratio	1.12	0.94	0.36	0.90	0.88	0.44	1.04	0.82	0.65	0.89	0.54	0.57
Uniform Delay, d1	65.0	48.2	24.7	70.7	53.6	30.5	70.5	59.8	46.7	66.6	52.3	34.0
Progression Factor	1.00	1.00	1.00	0.76	1.56	2.22	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	73.7	11.1	0.3	23.4	7.1	0.4	55.4	5.0	2.8	16.7	0.5	1.2
Delay (s)	138.7	59.3	25.0	77.4	90.7	67.9	125.9	64.8	49.4	83.3	52.8	35.2
Level of Service	F	E	C	E	F	E	F	E	D	F	D	D
Approach Delay (s)		75.7			84.3			76.1			56.9	
Approach LOS		E			F			E			E	

Intersection Summary			
HCM 2000 Control Delay	74.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	91.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	678	1705	294	304	1223	346	390	826	381	433	642	403
Future Volume (veh/h)	678	1705	294	304	1223	346	390	826	381	433	642	403
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1810	1810	1810	1810	1810	1810	1845	1845	1845
Adj Flow Rate, veh/h	714	1795	309	320	1287	364	411	869	401	456	676	424
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	5	5	5	5	5	5	3	3	3
Cap, veh/h	734	1857	764	448	1420	654	397	1036	529	469	1150	696
Arrive On Green	0.22	0.37	0.37	0.13	0.29	0.29	0.12	0.21	0.21	0.14	0.23	0.23
Sat Flow, veh/h	3408	5036	1568	3343	4940	1538	3343	4940	1538	3408	5036	1568
Grp Volume(v), veh/h	714	1795	309	320	1287	364	411	869	401	456	676	424
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1672	1647	1538	1672	1647	1538	1704	1679	1568
Q Serve(g_s), s	33.3	55.9	10.4	14.7	40.2	6.5	19.0	27.0	15.6	21.3	19.1	9.3
Cycle Q Clear(g_c), s	33.3	55.9	10.4	14.7	40.2	6.5	19.0	27.0	15.6	21.3	19.1	9.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	734	1857	764	448	1420	654	397	1036	529	469	1150	696
V/C Ratio(X)	0.97	0.97	0.40	0.71	0.91	0.56	1.04	0.84	0.76	0.97	0.59	0.61
Avail Cap(c_a), veh/h	734	1857	764	448	1420	654	397	1173	572	469	1290	739
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.3	49.5	10.0	66.3	54.9	34.7	70.5	60.6	46.6	68.7	55.0	14.3
Incr Delay (d2), s/veh	26.5	14.4	1.6	5.3	9.9	3.4	54.6	5.0	5.4	34.5	0.6	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	25.4	37.1	8.5	11.5	26.8	6.0	21.2	18.7	11.8	18.1	13.9	13.3
LnGrp Delay(d),s/veh	88.8	63.9	11.6	71.6	64.8	38.1	125.1	65.7	52.0	103.2	55.6	15.6
LnGrp LOS	F	E	B	E	E	D	F	E	D	F	E	B
Approach Vol, veh/h		2818			1971			1681			1556	
Approach Delay, s/veh		64.5			61.0			76.9			58.6	
Approach LOS		E			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	40.5	52.0	28.0	39.5	27.5	65.0	25.0	42.5
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	30.0	46.0	22.0	38.0	17.0	59.0	19.0	41.0
Max Q Clear Time (g_c+I1), s	35.3	42.2	23.3	29.0	16.7	57.9	21.0	21.1
Green Ext Time (p_c), s	0.0	2.9	0.0	4.6	0.2	1.0	0.0	7.6

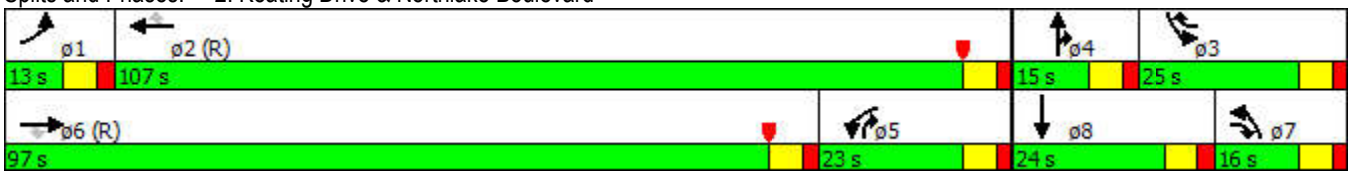
Intersection Summary	
HCM 2010 Ctrl Delay	65.1
HCM 2010 LOS	E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	29	2562	83	196	1917	135	52	9	207	219	13
Future Volume (vph)	29	2562	83	196	1917	135	52	9	207	219	13
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pt+ov	Prot	NA
Protected Phases	1	6	7	5	2	3	7	4	4 5	3	8
Permitted Phases			6			2					
Detector Phase	1	6	7	5	2	3	7	4	4 5	3	8
Switch Phase											
Minimum Initial (s)	4.0	20.0	4.0	4.0	20.0	4.0	4.0	5.0		4.0	5.0
Minimum Split (s)	10.0	36.5	10.0	10.0	39.5	10.0	10.0	11.0		10.0	11.0
Total Split (s)	13.0	97.0	16.0	23.0	107.0	25.0	16.0	15.0		25.0	24.0
Total Split (%)	8.1%	60.6%	10.0%	14.4%	66.9%	15.6%	10.0%	9.4%		15.6%	15.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lead		Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	None		None	None
Act Effct Green (s)	7.4	96.6	118.2	17.0	108.4	125.7	15.7	6.4	29.4	16.0	9.1
Actuated g/C Ratio	0.05	0.60	0.74	0.11	0.68	0.79	0.10	0.04	0.18	0.10	0.06
v/c Ratio	0.38	0.70	0.07	0.58	0.47	0.12	0.32	0.12	0.39	0.67	0.46
Control Delay	97.5	8.8	0.2	75.3	10.0	2.2	74.0	77.2	43.3	79.1	72.0
Queue Delay	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	97.5	8.8	0.2	75.3	10.1	2.2	74.0	77.2	43.3	79.1	72.0
LOS	F	A	A	E	B	A	E	E	D	E	E
Approach Delay		9.5			15.3			50.4			77.9
Approach LOS		A			B			D			E

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 117 (73%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 17.2 — Intersection LOS: B
Intersection Capacity Utilization 70.6% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 2: Keating Drive & Northlake Boulevard



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	2562	83	196	1917	135	52	9	207	219	13	31
Future Volume (vph)	29	2562	83	196	1917	135	52	9	207	219	13	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	0.86	1.00	0.97	0.86	1.00	1.00	1.00	0.88	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	6408	1583	3367	6285	1553	1752	1845	2760	3433	1667	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	6408	1583	3367	6285	1553	1752	1845	2760	3433	1667	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	31	2697	87	206	2018	142	55	9	218	231	14	33
RTOR Reduction (vph)	0	0	19	0	0	14	0	0	49	0	10	0
Lane Group Flow (vph)	31	2697	68	206	2018	128	55	9	169	231	38	0
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pt+ov	Prot	NA	
Protected Phases	1	6	7	5	2	3	7	4	4 5	3	8	
Permitted Phases			6			2						
Actuated Green, G (s)	6.3	94.2	109.9	18.1	106.0	123.3	15.7	6.4	30.5	17.3	8.0	
Effective Green, g (s)	6.3	94.2	109.9	18.1	106.0	123.3	15.7	6.4	30.5	17.3	8.0	
Actuated g/C Ratio	0.04	0.59	0.69	0.11	0.66	0.77	0.10	0.04	0.19	0.11	0.05	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	69	3772	1146	380	4163	1196	171	73	526	371	83	
v/s Ratio Prot	0.02	c0.42	0.01	0.06	c0.32	0.01	0.03	0.00	0.06	c0.07	c0.02	
v/s Ratio Perm			0.04			0.07						
v/c Ratio	0.45	0.72	0.06	0.54	0.48	0.11	0.32	0.12	0.32	0.62	0.45	
Uniform Delay, d1	75.2	23.4	8.2	67.0	13.4	4.6	67.2	74.1	55.8	68.2	73.9	
Progression Factor	1.22	0.37	0.03	1.02	0.74	1.38	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.4	0.6	0.0	1.4	0.4	0.0	1.1	0.8	0.4	3.2	3.9	
Delay (s)	94.3	9.2	0.3	69.5	10.3	6.4	68.3	74.9	56.2	71.5	77.7	
Level of Service	F	A	A	E	B	A	E	E	E	E	E	
Approach Delay (s)		9.9			15.2			59.1			72.5	
Approach LOS		A			B			E			E	

Intersection Summary			
HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	2562	83	196	1917	135	52	9	207	219	13	31
Future Volume (veh/h)	29	2562	83	196	1917	135	52	9	207	219	13	31
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1827	1827	1827	1845	1845	1845	1863	1863	1900
Adj Flow Rate, veh/h	31	2697	87	206	2018	142	55	9	218	231	14	33
Adj No. of Lanes	1	4	1	2	4	1	1	1	2	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	4	4	4	3	3	3	2	2	2
Cap, veh/h	40	3644	1021	570	4495	1237	134	58	552	279	18	42
Arrive On Green	0.02	0.57	0.57	0.34	1.00	1.00	0.08	0.03	0.03	0.08	0.04	0.04
Sat Flow, veh/h	1774	6408	1583	3375	6285	1553	1757	1845	2760	3442	494	1164
Grp Volume(v), veh/h	31	2697	87	206	2018	142	55	9	218	231	0	47
Grp Sat Flow(s),veh/h/ln	1774	1602	1583	1688	1571	1553	1757	1845	1380	1721	0	1657
Q Serve(g_s), s	2.8	50.1	0.0	7.4	0.0	0.0	4.8	0.8	0.0	10.6	0.0	4.5
Cycle Q Clear(g_c), s	2.8	50.1	0.0	7.4	0.0	0.0	4.8	0.8	0.0	10.6	0.0	4.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.70
Lane Grp Cap(c), veh/h	40	3644	1021	570	4495	1237	134	58	552	279	0	60
V/C Ratio(X)	0.78	0.74	0.09	0.36	0.45	0.11	0.41	0.16	0.39	0.83	0.00	0.78
Avail Cap(c_a), veh/h	78	3644	1021	570	4495	1237	134	104	621	409	0	186
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.84	0.84	0.84	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	77.8	25.7	10.7	46.5	0.0	0.0	70.5	75.4	55.6	72.4	0.0	76.5
Incr Delay (d2), s/veh	27.3	1.4	0.2	0.3	0.3	0.2	2.0	1.2	0.5	8.8	0.0	19.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.0	30.2	2.7	6.2	0.2	0.1	4.3	0.7	7.6	9.2	0.0	4.3
LnGrp Delay(d),s/veh	105.2	27.1	10.8	46.8	0.3	0.2	72.5	76.7	56.0	81.2	0.0	96.0
LnGrp LOS	F	C	B	D	A	A	E	E	E	F		F
Approach Vol, veh/h		2815			2366			282			278	
Approach Delay, s/veh		27.4			4.3			59.9			83.7	
Approach LOS		C			A			E			F	

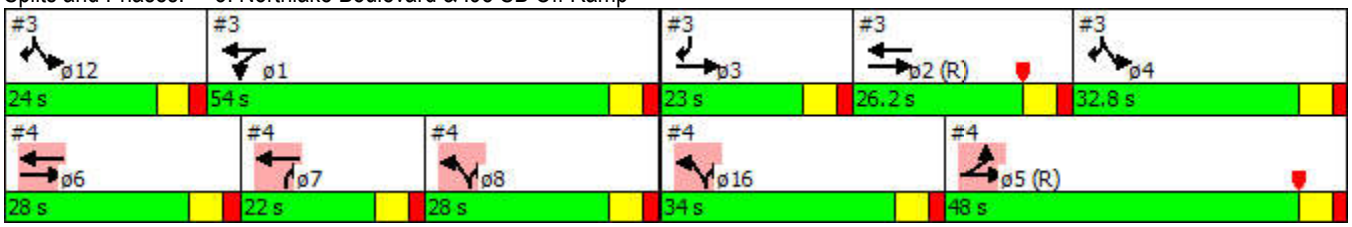
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	120.4	19.0	11.0	33.0	97.0	18.2	11.8
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	7.0	101.0	19.0	9.0	17.0	91.0	10.0	18.0
Max Q Clear Time (g_c+I1), s	4.8	2.0	12.6	2.8	9.4	52.1	6.8	6.5
Green Ext Time (p_c), s	0.0	35.0	0.4	0.4	4.4	31.1	0.3	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	22.2
HCM 2010 LOS	C

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR	ø2	ø3	ø4	ø5	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	2227	691	910	1479	1042	922						
Future Volume (vph)	2227	691	910	1479	1042	922						
Turn Type	NA	Free	Prot	NA	Prot	custom						
Protected Phases	2 3		1	1 2	4 12	3 4 12	2	3	4	5	6	7
Permitted Phases		Free										
Detector Phase	2 3		1	1 2	4 12	3 4 12						
Switch Phase												
Minimum Initial (s)			4.0				4.0	4.0	6.0	4.0	4.0	4.0
Minimum Split (s)			11.5				11.5	22.0	12.0	11.5	10.5	22.0
Total Split (s)			54.0				26.2	23.0	32.8	48.0	28.0	22.0
Total Split (%)			33.8%				16%	14%	21%	30%	18%	14%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			2.0				2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)			0.0									
Total Lost Time (s)			6.0									
Lead/Lag			Lag				Lag	Lead		Lag	Lead	Lag
Lead-Lag Optimize?			Yes				Yes	Yes		Yes	Yes	Yes
Recall Mode			Max				C-Max	None	None	C-Max	None	None
Act Effct Green (s)	43.2	160.0	50.6	70.8	48.2	65.2						
Actuated g/C Ratio	0.27	1.00	0.32	0.44	0.30	0.41						
v/c Ratio	0.85	0.46	0.90	0.53	0.69	0.50						
Control Delay	34.8	0.9	28.3	8.2	51.5	20.8						
Queue Delay	19.9	0.0	48.4	0.1	0.0	0.0						
Total Delay	54.7	0.9	76.8	8.4	51.6	20.8						
LOS	D	A	E	A	D	C						
Approach Delay	42.0			34.4								
Approach LOS	D			C								

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 108 (68%), Referenced to phase 2:EBWB and 5:, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 38.2	Intersection LOS: D
Intersection Capacity Utilization 82.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: Northlake Boulevard & I95 SB Off Ramp



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	5.0	5.0
Minimum Split (s)	12.0	11.0	11.0
Total Split (s)	28.0	24.0	34.0
Total Split (%)	18%	15%	21%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	Lead
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

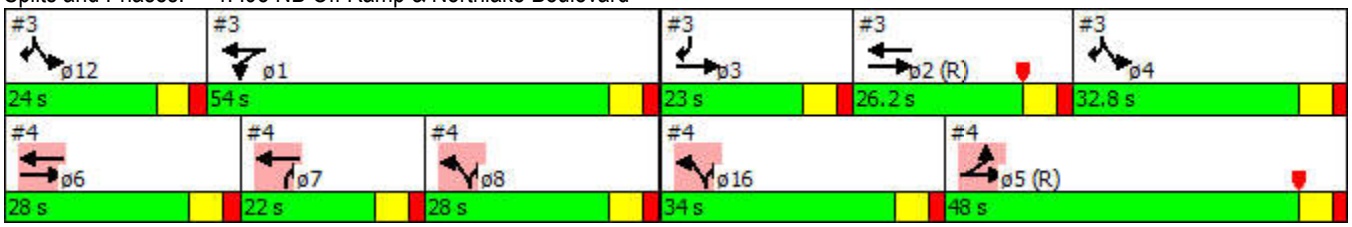
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2227	691	910	1479	0	0	0	0	1042	0	922
Future Volume (vph)	0	2227	691	910	1479	0	0	0	0	1042	0	922
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	6.0	6.0					6.0		6.0
Lane Util. Factor		*0.91	1.00	0.97	*0.91					*1.00		*1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		10171	1583	3367	6650					5309		4750
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		10171	1583	3367	6650					5309		4750
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	2344	727	958	1557	0	0	0	0	1097	0	971
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	2344	727	958	1557	0	0	0	0	1097	0	971
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	0%	0%	0%	2%	2%	2%
Turn Type		NA	Free	Prot	NA					Prot		custom
Protected Phases		2 3		1	1 2					4 12		3 4 12
Permitted Phases			Free									
Actuated Green, G (s)		43.2	160.0	50.6	70.8					48.2		65.2
Effective Green, g (s)		43.2	160.0	50.6	70.8					48.2		65.2
Actuated g/C Ratio		0.27	1.00	0.32	0.44					0.30		0.41
Clearance Time (s)				6.0								
Vehicle Extension (s)				3.0								
Lane Grp Cap (vph)		2746	1583	1064	2942					1599		1935
v/s Ratio Prot		c0.23		c0.28	0.23					c0.21		0.20
v/s Ratio Perm			0.46									
v/c Ratio		0.85	0.46	0.90	0.53					0.69		0.50
Uniform Delay, d1		55.4	0.0	52.3	32.5					49.2		35.3
Progression Factor		0.58	1.00	0.37	0.42					1.00		1.00
Incremental Delay, d2		2.2	0.7	7.6	0.5					1.2		0.3
Delay (s)		34.2	0.7	27.0	14.1					50.5		35.6
Level of Service		C	A	C	B					D		D
Approach Delay (s)		26.3			19.0			0.0			43.5	
Approach LOS		C			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	28.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	36.0
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR	ø1	ø2	ø3	ø4	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	1060	2209	1862	742	527	1117						
Future Volume (vph)	1060	2209	1862	742	527	1117						
Turn Type	Prot	NA	NA	Free	Prot	custom						
Protected Phases	5	5 6	6 7		8 16	7 8 16	1	2	3	4	6	7
Permitted Phases				Free								
Detector Phase	5	5 6	6 7		8 16	7 8 16						
Switch Phase												
Minimum Initial (s)	4.0						4.0	4.0	4.0	6.0	4.0	4.0
Minimum Split (s)	11.5						11.5	11.5	22.0	12.0	10.5	22.0
Total Split (s)	48.0						54.0	26.2	23.0	32.8	28.0	22.0
Total Split (%)	30.0%						34%	16%	14%	21%	18%	14%
Yellow Time (s)	4.0						4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0						2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0											
Total Lost Time (s)	6.0											
Lead/Lag	Lag						Lag	Lag	Lead		Lead	Lag
Lead-Lag Optimize?	Yes						Yes	Yes	Yes		Yes	Yes
Recall Mode	C-Max						Max	C-Max	None	None	None	None
Act Effct Green (s)	56.6	84.6	44.0	160.0	41.4	63.4						
Actuated g/C Ratio	0.35	0.53	0.28	1.00	0.26	0.40						
v/c Ratio	1.03	0.73	0.79	0.56	0.45	0.70						
Control Delay	51.6	7.4	40.2	6.5	50.8	42.8						
Queue Delay	28.9	0.4	3.2	0.0	0.0	0.0						
Total Delay	80.4	7.7	43.4	6.5	50.8	42.8						
LOS	F	A	D	A	D	D						
Approach Delay		31.3	32.9									
Approach LOS		C	C									

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 108 (68%), Referenced to phase 2:EBWB and 5:, Start of Yellow	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 34.9	Intersection LOS: C
Intersection Capacity Utilization 82.3%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 4: I95 NB Off Ramp & Northlake Boulevard



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	5.0	5.0
Minimum Split (s)	12.0	11.0	11.0
Total Split (s)	28.0	24.0	34.0
Total Split (%)	18%	15%	21%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	Lead
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1060	2209	0	0	1862	742	527	0	1117	0	0	0
Future Volume (vph)	1060	2209	0	0	1862	742	527	0	1117	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0	4.0	6.0		6.0			
Lane Util. Factor	0.97	*0.91			*0.91	1.00	*1.00		*1.00			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	3060	6043			8978	1398	4732		4233			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3060	6043			8978	1398	4732		4233			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1116	2325	0	0	1960	781	555	0	1176	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	1116	2325	0	0	1960	781	555	0	1176	0	0	0
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	3%	3%	3%	0%	0%	0%
Turn Type	Prot	NA			NA	Free	Prot		custom			
Protected Phases	5	5 6			6 7		8 16		7 8 16			
Permitted Phases						Free						
Actuated Green, G (s)	56.6	84.6			44.0	160.0	41.4		63.4			
Effective Green, g (s)	56.6	84.6			44.0	160.0	41.4		63.4			
Actuated g/C Ratio	0.35	0.53			0.28	1.00	0.26		0.40			
Clearance Time (s)	6.0											
Vehicle Extension (s)	3.0											
Lane Grp Cap (vph)	1082	3195			2468	1398	1224		1677			
v/s Ratio Prot	c0.36	c0.38			c0.22		0.12		c0.28			
v/s Ratio Perm						c0.56						
v/c Ratio	1.03	0.73			0.79	0.56	0.45		0.70			
Uniform Delay, d1	51.7	28.9			53.8	0.0	49.8		40.4			
Progression Factor	0.42	0.22			0.70	1.00	1.00		1.00			
Incremental Delay, d2	27.8	0.5			1.8	1.6	0.3		1.4			
Delay (s)	49.4	6.9			39.3	1.6	50.1		41.8			
Level of Service	D	A			D	A	D		D			
Approach Delay (s)		20.6			28.5			44.5			0.0	
Approach LOS		C			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	28.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	36.0
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	SBR
Lane Configurations					
Traffic Volume (vph)	55	3153	2538	65	66
Future Volume (vph)	55	3153	2538	65	66
Turn Type	Prot	NA	NA	Perm	Perm
Protected Phases	1	6	2		
Permitted Phases				2	6
Detector Phase	1	6	2	2	6
Switch Phase					
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	12.0	24.0	23.5	23.5	24.0
Total Split (s)	27.0	160.0	133.0	133.0	160.0
Total Split (%)	16.9%	100.0%	83.1%	83.1%	100.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	10.6	160.0	141.1	141.1	160.0
Actuated g/C Ratio	0.07	1.00	0.88	0.88	1.00
v/c Ratio	0.50	0.52	0.33	0.05	0.04
Control Delay	99.5	0.2	0.5	0.0	0.0
Queue Delay	0.0	0.1	0.0	0.0	0.0
Total Delay	99.5	0.3	0.5	0.0	0.0
LOS	F	A	A	A	A
Approach Delay		2.0	0.5		
Approach LOS		A	A		

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 72 (45%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.52	
Intersection Signal Delay: 1.3	Intersection LOS: A
Intersection Capacity Utilization 50.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 5: Northlake Boulevard & Roan Lane

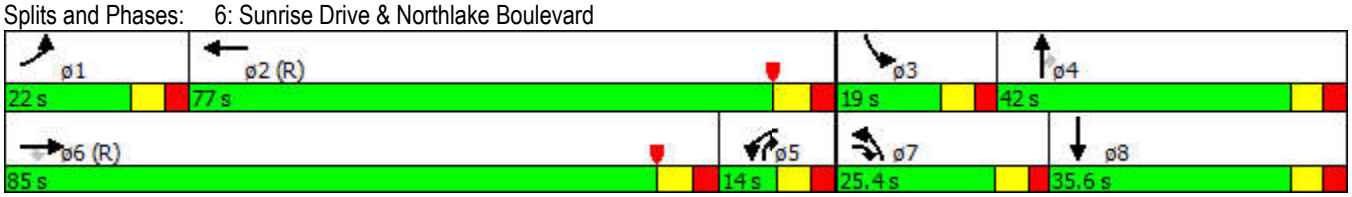
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	3153	0	0	2538	65	0	0	0	0	0	66
Future Volume (vph)	55	3153	0	0	2538	65	0	0	0	0	0	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0	6.0						6.0
Lane Util. Factor	1.00	0.86			0.71	1.00						1.00
Frt	1.00	1.00			1.00	0.85						0.86
Flt Protected	0.95	1.00			1.00	1.00						1.00
Satd. Flow (prot)	1770	6408			9168	1615						1644
Flt Permitted	0.95	1.00			1.00	1.00						1.00
Satd. Flow (perm)	1770	6408			9168	1615						1644
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	58	3319	0	0	2672	68	0	0	0	0	0	69
RTOR Reduction (vph)	0	0	0	0	0	8	0	0	0	0	0	0
Lane Group Flow (vph)	58	3319	0	0	2672	60	0	0	0	0	0	69
Heavy Vehicles (%)	2%	2%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Prot	NA			NA	Perm						Perm
Protected Phases	1	6			2							
Permitted Phases						2						6
Actuated Green, G (s)	9.3	160.0			138.7	138.7						160.0
Effective Green, g (s)	9.3	160.0			138.7	138.7						160.0
Actuated g/C Ratio	0.06	1.00			0.87	0.87						1.00
Clearance Time (s)	6.0	6.0			6.0	6.0						6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0						3.0
Lane Grp Cap (vph)	102	6408			7947	1400						1644
v/s Ratio Prot	0.03	c0.52			0.29							
v/s Ratio Perm						0.04						0.04
v/c Ratio	0.57	0.52			0.34	0.04						0.04
Uniform Delay, d1	73.4	0.0			2.0	1.5						0.0
Progression Factor	1.25	1.00			0.20	0.00						1.00
Incremental Delay, d2	5.2	0.2			0.1	0.0						0.0
Delay (s)	96.7	0.2			0.5	0.0						0.0
Level of Service	F	A			A	A						A
Approach Delay (s)		1.9			0.5			0.0			0.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	1.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	110	2782	216	145	2121	241	14	153	316	24
Future Volume (vph)	110	2782	216	145	2121	241	14	153	316	24
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	1	6	7	5	2	7	4	5	3	8
Permitted Phases			6					4		
Detector Phase	1	6	7	5	2	7	4	5	3	8
Switch Phase										
Minimum Initial (s)	4.0	20.0	4.0	4.0	20.0	4.0	6.0	4.0	4.0	6.0
Minimum Split (s)	12.5	38.5	12.5	12.5	32.5	12.5	42.0	12.5	12.5	13.0
Total Split (s)	22.0	85.0	25.4	14.0	77.0	25.4	42.0	14.0	19.0	35.6
Total Split (%)	13.8%	53.1%	15.9%	8.8%	48.1%	15.9%	26.3%	8.8%	11.9%	22.3%
Yellow Time (s)	4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	2.5	3.0	3.0	2.5	3.0	3.0	2.5	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.5	6.5	7.0	7.5	6.5	7.0	7.0	6.5	7.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	None	None
Act Effct Green (s)	13.8	90.5	108.1	7.0	83.7	16.6	15.4	18.7	27.0	17.9
Actuated g/C Ratio	0.09	0.57	0.68	0.04	0.52	0.10	0.10	0.12	0.17	0.11
v/c Ratio	0.76	1.02	0.21	1.04	0.73	0.72	0.08	0.43	0.58	0.72
Control Delay	110.4	51.1	2.5	156.1	32.2	81.2	59.7	34.8	64.2	83.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	110.4	51.1	2.5	156.1	32.2	81.2	59.7	34.8	64.2	83.8
LOS	F	D	A	F	C	F	E	C	E	F
Approach Delay		49.8			39.7		63.1			69.9
Approach LOS		D			D		E			E

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 24 (15%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 48.3	Intersection LOS: D
Intersection Capacity Utilization 95.9%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 6: Sunrise Drive & Northlake Boulevard



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	2782	216	145	2121	130	241	14	153	316	24	106
Future Volume (vph)	110	2782	216	145	2121	130	241	14	153	316	24	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.5	6.5	7.0	7.5		6.5	7.0	7.0	6.5	7.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.86		0.97	1.00	0.88	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1583	3367	6230		3400	1845	2760	3400	1618	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1583	3367	6230		3400	1845	2760	3400	1618	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	116	2928	227	153	2233	137	254	15	161	333	25	112
RTOR Reduction (vph)	0	0	21	0	5	0	0	0	53	0	9	0
Lane Group Flow (vph)	116	2928	206	153	2365	0	254	15	108	333	128	0
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	1	6	7	5	2		7	4	5	3	8	
Permitted Phases			6						4			
Actuated Green, G (s)	13.8	86.3	102.9	7.0	79.5		16.6	11.7	18.7	27.0	22.1	
Effective Green, g (s)	13.8	86.3	102.9	7.0	79.5		16.6	11.7	18.7	27.0	22.1	
Actuated g/C Ratio	0.09	0.54	0.64	0.04	0.50		0.10	0.07	0.12	0.17	0.14	
Clearance Time (s)	7.0	7.5	6.5	7.0	7.5		6.5	7.0	7.0	6.5	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	152	2742	1018	147	3095		352	134	322	573	223	
v/s Ratio Prot	0.07	c0.58	0.02	c0.05	0.38		0.07	0.01	0.01	c0.10	c0.08	
v/s Ratio Perm			0.11						0.02			
v/c Ratio	0.76	1.07	0.20	1.04	0.76		0.72	0.11	0.34	0.58	0.58	
Uniform Delay, d1	71.5	36.9	11.7	76.5	32.6		69.5	69.3	64.9	61.3	64.6	
Progression Factor	1.18	0.88	0.51	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	17.7	37.8	0.1	85.5	1.9		7.1	0.4	0.6	1.5	3.6	
Delay (s)	102.2	70.2	6.1	162.0	34.5		76.6	69.7	65.6	62.8	68.1	
Level of Service	F	E	A	F	C		E	E	E	E	E	
Approach Delay (s)		66.9			42.2			72.2			64.3	
Approach LOS		E			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	57.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	95.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	2782	216	145	2121	130	241	14	153	316	24	106
Future Volume (veh/h)	110	2782	216	145	2121	130	241	14	153	316	24	106
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1827	1827	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	116	2928	227	153	2233	137	254	15	161	333	25	112
Adj No. of Lanes	1	3	1	2	4	0	2	1	2	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	4	4	4	3	3	3	3	3	3
Cap, veh/h	135	2463	907	492	3399	208	301	209	716	266	30	136
Arrive On Green	0.15	0.97	0.97	0.15	0.56	0.56	0.09	0.11	0.11	0.08	0.10	0.10
Sat Flow, veh/h	1774	5085	1583	3375	6101	374	3408	1845	2760	3408	294	1318
Grp Volume(v), veh/h	116	2928	227	153	1725	645	254	15	161	333	0	137
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1688	1571	1761	1704	1845	1380	1704	0	1612
Q Serve(g_s), s	10.2	77.5	0.3	6.5	40.9	41.0	11.7	1.2	1.2	12.5	0.0	13.3
Cycle Q Clear(g_c), s	10.2	77.5	0.3	6.5	40.9	41.0	11.7	1.2	1.2	12.5	0.0	13.3
Prop In Lane	1.00		1.00	1.00		0.21	1.00		1.00	1.00		0.82
Lane Grp Cap(c), veh/h	135	2463	907	492	2626	981	301	209	716	266	0	167
V/C Ratio(X)	0.86	1.19	0.25	0.31	0.66	0.66	0.84	0.07	0.22	1.25	0.00	0.82
Avail Cap(c_a), veh/h	166	2463	907	492	2626	981	403	404	1006	266	0	288
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.84	0.84	0.84	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	67.0	2.5	0.3	61.1	24.7	24.8	71.8	63.4	25.2	73.8	0.0	70.3
Incr Delay (d2), s/veh	25.5	88.6	0.6	0.4	1.3	3.4	11.7	0.1	0.2	140.0	0.0	9.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	9.6	75.8	0.5	5.5	25.0	28.3	10.1	1.1	3.6	19.9	0.0	10.5
LnGrp Delay(d),s/veh	92.5	91.1	0.8	61.5	26.0	28.2	83.5	63.5	25.3	213.7	0.0	79.9
LnGrp LOS	F	F	A	E	C	C	F	E	C	F		E
Approach Vol, veh/h		3271			2523			430			470	
Approach Delay, s/veh		84.9			28.7			61.0			174.7	
Approach LOS		F			C			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.2	96.6	19.0	25.2	30.8	85.0	20.6	23.5
Change Period (Y+Rc), s	7.0	7.5	6.5	7.0	7.5	* 7.5	6.5	7.0
Max Green Setting (Gmax), s	15.0	69.5	12.5	35.0	7.0	* 78	18.9	28.6
Max Q Clear Time (g_c+I1), s	12.2	43.0	14.5	3.2	8.5	79.5	13.7	15.3
Green Ext Time (p_c), s	0.1	19.4	0.0	1.6	0.0	0.0	0.4	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	68.5
HCM 2010 LOS	E

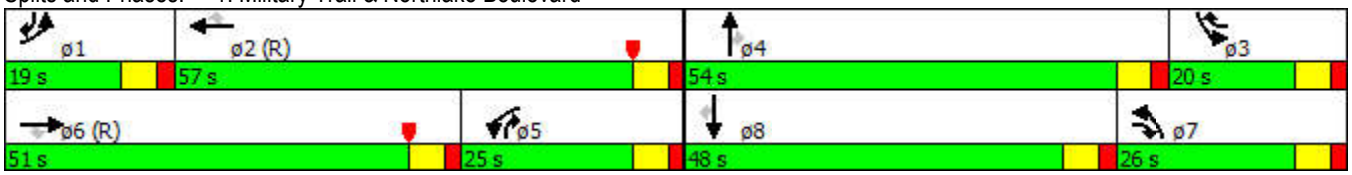
Notes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	486	1241	242	390	1870	419	550	743	476	495	845	819
Future Volume (vph)	486	1241	242	390	1870	419	550	743	476	495	845	819
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	1	6	7	5	2	3	7	4	5	3	8	1
Permitted Phases			6			2			4			8
Detector Phase	1	6	7	5	2	3	7	4	5	3	8	1
Switch Phase												
Minimum Initial (s)	4.0	20.0	4.0	4.0	20.0	4.0	4.0	6.0	4.0	4.0	6.0	4.0
Minimum Split (s)	10.0	48.0	23.0	23.0	52.0	11.0	23.0	43.5	23.0	11.0	47.0	10.0
Total Split (s)	19.0	51.0	26.0	25.0	57.0	20.0	26.0	54.0	25.0	20.0	48.0	19.0
Total Split (%)	12.7%	34.0%	17.3%	16.7%	38.0%	13.3%	17.3%	36.0%	16.7%	13.3%	32.0%	12.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	None	None	None	None
Act Effct Green (s)	13.0	45.0	79.6	19.0	51.0	82.8	28.6	30.2	55.2	31.8	33.4	46.4
Actuated g/C Ratio	0.09	0.30	0.53	0.13	0.34	0.55	0.19	0.20	0.37	0.21	0.22	0.31
v/c Ratio	1.72	0.86	0.29	0.95	1.14	0.49	0.89	0.77	0.81	0.72	0.78	1.62
Control Delay	377.3	56.1	16.5	66.8	95.4	6.8	74.9	61.6	48.1	61.6	60.0	314.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	377.3	56.1	16.5	66.8	95.4	6.8	74.9	61.6	48.1	61.6	60.0	314.4
LOS	F	E	B	E	F	A	E	E	D	E	E	F
Approach Delay		130.6			77.4			62.1			156.9	
Approach LOS		F			E			E			F	

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 60 (40%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.72
Intersection Signal Delay: 106.5 — Intersection LOS: F
Intersection Capacity Utilization 117.5% — ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 1: Military Trail & Northlake Boulevard



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	486	1241	242	390	1870	419	550	743	476	495	845	819
Future Volume (vph)	486	1241	242	390	1870	419	550	743	476	495	845	819
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	512	1306	255	411	1968	441	579	782	501	521	889	862
RTOR Reduction (vph)	0	0	31	0	0	27	0	0	40	0	0	41
Lane Group Flow (vph)	512	1306	224	411	1968	414	579	782	461	521	889	821
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	1	6	7	5	2	3	7	4	5	3	8	1
Permitted Phases			6			2			4			8
Actuated Green, G (s)	13.0	45.0	73.6	19.0	51.0	82.8	28.6	30.2	49.2	31.8	33.4	46.4
Effective Green, g (s)	13.0	45.0	73.6	19.0	51.0	82.8	28.6	30.2	49.2	31.8	33.4	46.4
Actuated g/C Ratio	0.09	0.30	0.49	0.13	0.34	0.55	0.19	0.20	0.33	0.21	0.22	0.31
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	297	1525	840	434	1728	873	654	1023	582	727	1132	489
v/s Ratio Prot	c0.15	0.26	0.05	0.12	c0.39	0.10	c0.17	0.15	0.10	c0.15	0.17	c0.15
v/s Ratio Perm			0.09			0.16			0.19			0.37
v/c Ratio	1.72	0.86	0.27	0.95	1.14	0.47	0.89	0.76	0.79	0.72	0.79	1.68
Uniform Delay, d1	68.5	49.5	22.4	65.0	49.5	20.4	59.1	56.5	45.7	54.9	54.9	51.8
Progression Factor	1.00	1.00	1.00	0.67	0.57	0.57	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	339.6	6.4	0.2	21.3	67.3	0.2	13.6	3.5	7.3	3.4	3.7	314.0
Delay (s)	408.1	55.9	22.6	64.5	95.3	11.8	72.7	60.0	53.0	58.3	58.6	365.8
Level of Service	F	E	C	E	F	B	E	E	D	E	E	F
Approach Delay (s)		138.8			77.8			62.1			175.1	
Approach LOS		F			E			E			F	

Intersection Summary			
HCM 2000 Control Delay	113.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.29		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	117.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	486	1241	242	390	1870	419	550	743	476	495	845	819
Future Volume (veh/h)	486	1241	242	390	1870	419	550	743	476	495	845	819
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	512	1306	255	411	1968	441	579	782	501	521	889	862
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	298	1526	686	483	1798	847	459	1109	567	625	1355	559
Arrive On Green	0.09	0.30	0.30	0.28	0.71	0.71	0.13	0.22	0.22	0.18	0.27	0.27
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	512	1306	255	411	1968	441	579	782	501	521	889	862
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	13.0	36.3	0.0	16.9	53.0	5.4	20.0	21.3	23.5	21.9	23.3	33.4
Cycle Q Clear(g_c), s	13.0	36.3	0.0	16.9	53.0	5.4	20.0	21.3	23.5	21.9	23.3	33.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	298	1526	686	483	1798	847	459	1109	567	625	1355	559
V/C Ratio(X)	1.72	0.86	0.37	0.85	1.09	0.52	1.26	0.71	0.88	0.83	0.66	1.54
Avail Cap(c_a), veh/h	298	1526	686	483	1798	847	459	1627	729	625	1424	581
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.5	49.4	28.7	52.5	22.0	3.3	65.0	54.2	45.2	59.2	48.9	22.8
Incr Delay (d2), s/veh	336.3	6.4	1.5	13.7	52.1	2.3	134.4	0.8	10.2	9.4	1.0	252.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	36.2	24.8	11.9	13.8	58.7	5.3	32.5	15.3	17.5	16.7	16.5	96.7
LnGrp Delay(d),s/veh	404.8	55.8	30.2	66.1	74.0	5.6	199.4	55.0	55.4	68.6	49.9	275.4
LnGrp LOS	F	E	C	E	F	A	F	E	E	E	D	F
Approach Vol, veh/h		2073			2820			1862			2272	
Approach Delay, s/veh		138.9			62.2			100.0			139.8	
Approach LOS		F			E			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	59.0	33.3	38.7	27.0	51.0	26.0	46.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	13.0	51.0	14.0	48.0	19.0	45.0	20.0	42.0
Max Q Clear Time (g_c+I1), s	15.0	55.0	23.9	25.5	18.9	38.3	22.0	35.4
Green Ext Time (p_c), s	0.0	0.0	0.0	7.2	0.1	4.5	0.0	4.6

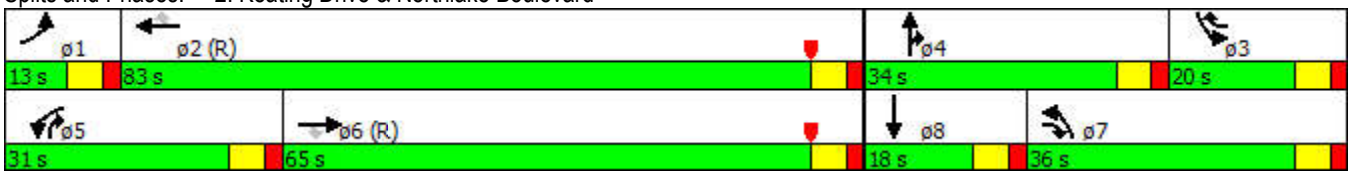
Intersection Summary	
HCM 2010 Ctrl Delay	107.1
HCM 2010 LOS	F

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	56	2053	247	452	2533	370	265	48	545	188	50
Future Volume (vph)	56	2053	247	452	2533	370	265	48	545	188	50
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pt+ov	Prot	NA
Protected Phases	1	6	7	5	2	3	7	4	4 5	3	8
Permitted Phases			6			2					
Detector Phase	1	6	7	5	2	3	7	4	4 5	3	8
Switch Phase											
Minimum Initial (s)	4.0	20.0	4.0	4.0	20.0	4.0	4.0	5.0		4.0	5.0
Minimum Split (s)	10.0	36.5	10.0	10.0	39.5	10.0	10.0	11.0		10.0	11.0
Total Split (s)	13.0	65.0	36.0	31.0	83.0	20.0	36.0	34.0		20.0	18.0
Total Split (%)	8.7%	43.3%	24.0%	20.7%	55.3%	13.3%	24.0%	22.7%		13.3%	12.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lead		Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	None		None	None
Act Effct Green (s)	7.6	63.2	90.4	24.4	79.9	94.7	27.2	23.7	48.0	14.8	11.2
Actuated g/C Ratio	0.05	0.42	0.60	0.16	0.53	0.63	0.18	0.16	0.32	0.10	0.07
v/c Ratio	0.66	0.80	0.27	0.85	0.78	0.38	0.87	0.17	0.62	0.59	0.75
Control Delay	98.3	24.0	2.8	88.5	18.2	3.2	85.2	54.9	26.2	72.0	92.1
Queue Delay	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	98.3	24.0	2.8	88.5	18.5	3.2	85.2	54.9	26.2	72.0	92.1
LOS	F	C	A	F	B	A	F	D	C	E	F
Approach Delay		23.5			26.2			46.0			78.9
Approach LOS		C			C			D			E

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 78 (52%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 30.0 — Intersection LOS: C
Intersection Capacity Utilization 79.0% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 2: Keating Drive & Northlake Boulevard



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	2053	247	452	2533	370	265	48	545	188	50	48
Future Volume (vph)	56	2053	247	452	2533	370	265	48	545	188	50	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	0.86	1.00	0.97	0.86	1.00	1.00	1.00	0.88	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	6408	1583	3433	6408	1583	1770	1863	2787	3433	1726	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	6408	1583	3433	6408	1583	1770	1863	2787	3433	1726	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	59	2161	260	476	2666	389	279	51	574	198	53	51
RTOR Reduction (vph)	0	0	24	0	0	22	0	0	41	0	9	0
Lane Group Flow (vph)	59	2161	236	476	2666	367	279	51	533	198	95	0
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pt+ov	Prot	NA	
Protected Phases	1	6	7	5	2	3	7	4	4 5	3	8	
Permitted Phases			6			2						
Actuated Green, G (s)	7.6	63.1	90.4	24.4	79.9	94.7	27.3	23.7	48.1	14.8	11.2	
Effective Green, g (s)	7.6	63.1	90.4	24.4	79.9	94.7	27.3	23.7	48.1	14.8	11.2	
Actuated g/C Ratio	0.05	0.42	0.60	0.16	0.53	0.63	0.18	0.16	0.32	0.10	0.07	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	89	2695	954	558	3413	999	322	294	893	338	128	
v/s Ratio Prot	0.03	0.34	0.05	c0.14	c0.42	0.04	c0.16	0.03	c0.19	0.06	0.05	
v/s Ratio Perm			0.10			0.20						
v/c Ratio	0.66	0.80	0.25	0.85	0.78	0.37	0.87	0.17	0.60	0.59	0.74	
Uniform Delay, d1	69.9	38.0	13.9	61.1	28.1	13.3	59.6	54.7	42.8	64.7	68.0	
Progression Factor	1.11	0.57	0.42	1.27	0.59	0.36	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	11.0	1.7	0.1	8.9	1.3	0.2	20.9	0.3	1.1	2.6	20.3	
Delay (s)	88.7	23.4	5.9	86.4	17.8	4.9	80.5	55.0	43.9	67.3	88.3	
Level of Service	F	C	A	F	B	A	F	D	D	E	F	
Approach Delay (s)		23.2			25.6			55.8			74.5	
Approach LOS		C			C			E			E	

Intersection Summary			
HCM 2000 Control Delay	30.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	2053	247	452	2533	370	265	48	545	188	50	48
Future Volume (veh/h)	56	2053	247	452	2533	370	265	48	545	188	50	48
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	59	2161	260	476	2666	389	279	51	574	198	53	51
Adj No. of Lanes	1	4	1	2	4	1	1	1	2	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	75	2842	975	523	3545	1026	305	279	841	326	63	61
Arrive On Green	0.06	0.59	0.59	0.20	0.74	0.74	0.17	0.15	0.15	0.09	0.07	0.07
Sat Flow, veh/h	1774	6408	1583	3442	6408	1583	1774	1863	2787	3442	874	841
Grp Volume(v), veh/h	59	2161	260	476	2666	389	279	51	574	198	0	104
Grp Sat Flow(s),veh/h/ln	1774	1602	1583	1721	1602	1583	1774	1863	1393	1721	0	1714
Q Serve(g_s), s	4.9	37.6	4.5	20.3	36.9	2.7	23.2	3.6	18.8	8.3	0.0	9.0
Cycle Q Clear(g_c), s	4.9	37.6	4.5	20.3	36.9	2.7	23.2	3.6	18.8	8.3	0.0	9.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.49
Lane Grp Cap(c), veh/h	75	2842	975	523	3545	1026	305	279	841	326	0	124
V/C Ratio(X)	0.79	0.76	0.27	0.91	0.75	0.38	0.91	0.18	0.68	0.61	0.00	0.84
Avail Cap(c_a), veh/h	83	2842	975	574	3545	1026	355	348	944	326	0	137
HCM Platoon Ratio	1.33	1.33	1.33	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.66	0.66	0.66	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	70.1	24.8	3.1	58.8	13.7	2.2	61.0	55.7	23.8	65.2	0.0	68.7
Incr Delay (d2), s/veh	35.7	2.0	0.7	12.8	1.0	0.7	25.3	0.3	1.8	3.2	0.0	32.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.7	23.7	3.8	14.9	21.6	4.2	19.6	3.4	11.9	7.4	0.0	9.2
LnGrp Delay(d),s/veh	105.8	26.8	3.8	71.7	14.7	2.9	86.3	56.0	25.5	68.5	0.0	100.7
LnGrp LOS	F	C	A	E	B	A	F	E	C	E		F
Approach Vol, veh/h		2480			3531			904			302	
Approach Delay, s/veh		26.3			21.1			46.0			79.6	
Approach LOS		C			C			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	89.0	20.2	28.5	28.8	72.5	31.8	16.9
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	7.0	77.0	14.0	28.0	25.0	59.0	30.0	12.0
Max Q Clear Time (g_c+I1), s	6.9	38.9	10.3	20.8	22.3	39.6	25.2	11.0
Green Ext Time (p_c), s	0.0	37.7	0.6	1.7	0.5	19.3	0.6	0.0

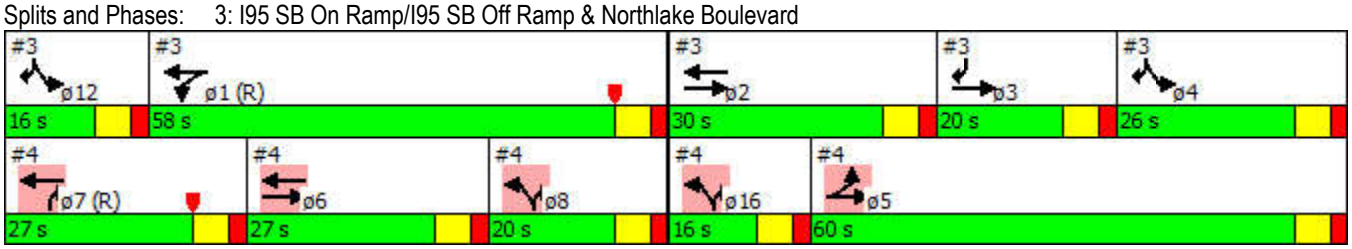
Intersection Summary	
HCM 2010 Ctrl Delay	28.5
HCM 2010 LOS	C

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR	ø2	ø3	ø4	ø5	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	2212	768	1013	2542	771	1036						
Future Volume (vph)	2212	768	1013	2542	771	1036						
Turn Type	NA	Free	Prot	NA	Prot	custom						
Protected Phases	2 3		1	1 2	4 12	3 4 12	2	3	4	5	6	7
Permitted Phases		Free										
Detector Phase	2 3		1	1 2	4 12	3 4 12						
Switch Phase												
Minimum Initial (s)			4.0				4.0	4.0	6.0	4.0	4.0	4.0
Minimum Split (s)			11.5				11.5	22.0	12.0	11.5	10.5	22.0
Total Split (s)			58.0				30.0	20.0	26.0	60.0	27.0	27.0
Total Split (%)			38.7%				20%	13%	17%	40%	18%	18%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			2.0				2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)			0.0									
Total Lost Time (s)			6.0									
Lead/Lag			Lag				Lead	Lag		Lag	Lag	Lead
Lead-Lag Optimize?			Yes				Yes	Yes		Yes	Yes	Yes
Recall Mode			C-Max				Max	None	None	Max	None	C-Max
Act Effct Green (s)	44.0	150.0	52.0	82.0	36.0	56.0						
Actuated g/C Ratio	0.29	1.00	0.35	0.55	0.24	0.37						
v/c Ratio	0.78	0.51	0.90	0.72	0.64	0.62						
Control Delay	36.3	2.3	11.2	5.5	53.8	40.1						
Queue Delay	2.5	0.0	47.4	16.1	0.0	0.0						
Total Delay	38.8	2.3	58.6	21.6	53.8	40.1						
LOS	D	A	E	C	D	D						
Approach Delay	29.4			32.1								
Approach LOS	C			C								

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 1:WBTL and 7:, Start of Yellow, Master Intersection
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.04
Intersection Signal Delay: 34.1 — Intersection LOS: C
Intersection Capacity Utilization 95.9% — ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 3: I95 SB On Ramp/I95 SB Off Ramp & Northlake Boulevard



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	5.0	5.0
Minimum Split (s)	12.0	11.0	11.0
Total Split (s)	20.0	16.0	16.0
Total Split (%)	13%	11%	11%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	Lead
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	2212	768	1013	2542	0	0	0	0	771	0	1036
Future Volume (vph)	0	2212	768	1013	2542	0	0	0	0	771	0	1036
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	4.0	6.0	6.0					6.0		6.0
Lane Util. Factor		*0.91	1.00	0.97	*0.91					*1.00		*1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		10171	1583	3433	6780					5309		4750
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		10171	1583	3433	6780					5309		4750
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	2328	808	1066	2676	0	0	0	0	812	0	1091
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	2328	808	1066	2676	0	0	0	0	812	0	1091
Turn Type		NA	Free	Prot	NA					Prot		custom
Protected Phases		2 3		1	1 2					4 12		3 4 12
Permitted Phases			Free									
Actuated Green, G (s)		44.0	150.0	52.0	82.0					36.0		56.0
Effective Green, g (s)		44.0	150.0	52.0	82.0					36.0		56.0
Actuated g/C Ratio		0.29	1.00	0.35	0.55					0.24		0.37
Clearance Time (s)				6.0								
Vehicle Extension (s)				3.0								
Lane Grp Cap (vph)		2983	1583	1190	3706					1274		1773
v/s Ratio Prot		c0.23		c0.31	c0.39					0.15		c0.23
v/s Ratio Perm			c0.51									
v/c Ratio		0.78	0.51	0.90	0.72					0.64		0.62
Uniform Delay, d1		48.6	0.0	46.4	25.5					51.1		38.2
Progression Factor		0.72	1.00	0.20	0.20					1.00		1.00
Incremental Delay, d2		1.0	0.8	1.1	0.4					1.1		0.7
Delay (s)		35.8	0.8	10.5	5.4					52.2		39.0
Level of Service		D	A	B	A					D		D
Approach Delay (s)		26.8			6.9			0.0			44.6	
Approach LOS		C			A			A			D	

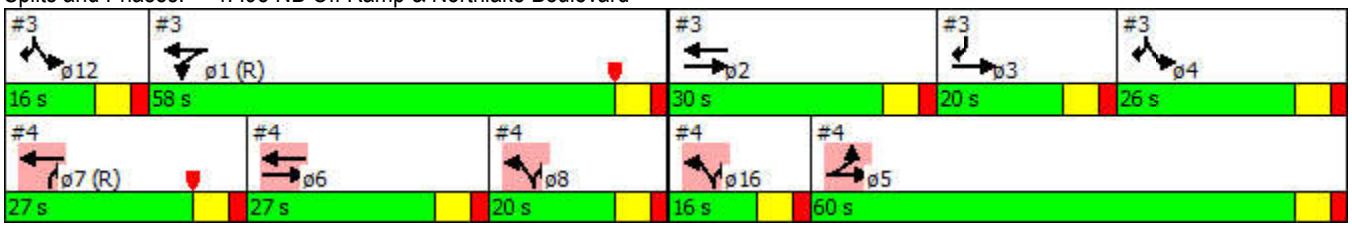
Intersection Summary			
HCM 2000 Control Delay	22.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	36.0
Intersection Capacity Utilization	95.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR	ø1	ø2	ø3	ø4	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	1103	1880	2806	1259	749	1069						
Future Volume (vph)	1103	1880	2806	1259	749	1069						
Turn Type	Prot	NA	NA	Free	Prot	custom						
Protected Phases	5	5 6	6 7		8 16	7 8 16	1	2	3	4	6	7
Permitted Phases				Free								
Detector Phase	5	5 6	6 7		8 16	7 8 16						
Switch Phase												
Minimum Initial (s)	4.0						4.0	4.0	4.0	6.0	4.0	4.0
Minimum Split (s)	11.5						11.5	11.5	22.0	12.0	10.5	22.0
Total Split (s)	60.0						58.0	30.0	20.0	26.0	27.0	27.0
Total Split (%)	40.0%						39%	20%	13%	17%	18%	18%
Yellow Time (s)	4.0						4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0						2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0											
Total Lost Time (s)	6.0											
Lead/Lag	Lag						Lag	Lead	Lag		Lag	Lead
Lead-Lag Optimize?	Yes						Yes	Yes	Yes		Yes	Yes
Recall Mode	Max						C-Max	Max	None	None	None	C-Max
Act Effct Green (s)	54.0	75.0	48.0	150.0	30.0	51.0						
Actuated g/C Ratio	0.36	0.50	0.32	1.00	0.20	0.34						
v/c Ratio	1.04	0.65	1.01	0.93	0.83	0.77						
Control Delay	54.0	9.7	44.7	28.5	65.8	31.7						
Queue Delay	24.2	0.2	35.9	0.0	0.0	0.0						
Total Delay	78.2	9.9	80.6	28.5	65.8	31.7						
LOS	E	A	F	C	E	C						
Approach Delay		35.2	64.5									
Approach LOS		D	E									

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 1:WBTL and 7:, Start of Yellow, Master Intersection	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 50.8	Intersection LOS: D
Intersection Capacity Utilization 95.9%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 4: I95 NB Off Ramp & Northlake Boulevard



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	5.0	5.0
Minimum Split (s)	12.0	11.0	11.0
Total Split (s)	20.0	16.0	16.0
Total Split (%)	13%	11%	11%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	Lead
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1103	1880	0	0	2806	1259	749	0	1069	0	0	0
Future Volume (vph)	1103	1880	0	0	2806	1259	749	0	1069	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0	4.0	6.0		6.0			
Lane Util. Factor	0.97	*0.91			*0.91	1.00	*1.00		*1.00			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	3090	6102			9154	1425	4778		4275			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	3090	6102			9154	1425	4778		4275			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1161	1979	0	0	2954	1325	788	0	1125	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	1161	1979	0	0	2954	1325	788	0	1125	0	0	0
Turn Type	Prot	NA			NA	Free	Prot		custom			
Protected Phases	5	5 6			6 7		8 16		7 8 16			
Permitted Phases						Free						
Actuated Green, G (s)	54.0	75.0			48.0	150.0	30.0		51.0			
Effective Green, g (s)	54.0	75.0			48.0	150.0	30.0		51.0			
Actuated g/C Ratio	0.36	0.50			0.32	1.00	0.20		0.34			
Clearance Time (s)	6.0											
Vehicle Extension (s)	3.0											
Lane Grp Cap (vph)	1112	3051			2929	1425	955		1453			
v/s Ratio Prot	c0.38	0.32			c0.32		0.16		0.26			
v/s Ratio Perm						c0.93						
v/c Ratio	1.04	0.65			1.01	0.93	0.83		0.77			
Uniform Delay, d1	48.0	27.7			51.0	0.0	57.5		44.3			
Progression Factor	0.39	0.63			0.53	1.00	1.00		1.00			
Incremental Delay, d2	33.5	0.3			17.0	10.1	5.9		2.6			
Delay (s)	52.0	17.9			44.1	10.1	63.4		47.0			
Level of Service	D	B			D	B	E		D			
Approach Delay (s)		30.5			33.6			53.7			0.0	
Approach LOS		C			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	36.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	36.0
Intersection Capacity Utilization	95.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBT	WBR	SBR
Lane Configurations					
Traffic Volume (vph)	150	2728	3945	140	120
Future Volume (vph)	150	2728	3945	140	120
Turn Type	Prot	NA	NA	Perm	Perm
Protected Phases	1	6	2		
Permitted Phases				2	6
Detector Phase	1	6	2	2	6
Switch Phase					
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	12.0	24.0	23.5	23.5	24.0
Total Split (s)	35.0	150.0	115.0	115.0	150.0
Total Split (%)	23.3%	100.0%	76.7%	76.7%	100.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag		Lead	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	29.0	150.0	109.0	109.0	150.0
Actuated g/C Ratio	0.19	1.00	0.73	0.73	1.00
v/c Ratio	0.46	0.45	0.62	0.13	0.08
Control Delay	63.5	0.2	0.9	0.8	0.1
Queue Delay	0.0	0.1	0.1	0.0	0.0
Total Delay	63.5	0.2	1.0	0.8	0.1
LOS	E	A	A	A	A
Approach Delay		3.5	1.0		
Approach LOS		A	A		

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 26 (17%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay: 2.0	Intersection LOS: A
Intersection Capacity Utilization 51.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 5: Northlake Boulevard & Roan Lane

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	2728	0	0	3945	140	0	0	0	0	0	120
Future Volume (vph)	150	2728	0	0	3945	140	0	0	0	0	0	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0	6.0						6.0
Lane Util. Factor	1.00	0.86			0.71	1.00						1.00
Frt	1.00	1.00			1.00	0.85						0.86
Flt Protected	0.95	1.00			1.00	1.00						1.00
Satd. Flow (prot)	1770	6408			9258	1583						1611
Flt Permitted	0.95	1.00			1.00	1.00						1.00
Satd. Flow (perm)	1770	6408			9258	1583						1611
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	158	2872	0	0	4153	147	0	0	0	0	0	126
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	158	2872	0	0	4153	147	0	0	0	0	0	126
Turn Type	Prot	NA			NA	Perm						Perm
Protected Phases	1	6			2							
Permitted Phases						2						6
Actuated Green, G (s)	29.0	150.0			109.0	109.0						150.0
Effective Green, g (s)	29.0	150.0			109.0	109.0						150.0
Actuated g/C Ratio	0.19	1.00			0.73	0.73						1.00
Clearance Time (s)	6.0	6.0			6.0	6.0						6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0						3.0
Lane Grp Cap (vph)	342	6408			6727	1150						1611
v/s Ratio Prot	0.09	c0.45			c0.45							
v/s Ratio Perm						0.09						0.08
v/c Ratio	0.46	0.45			0.62	0.13						0.08
Uniform Delay, d1	53.6	0.0			10.2	6.2						0.0
Progression Factor	1.11	1.00			0.09	0.13						1.00
Incremental Delay, d2	0.7	0.2			0.0	0.0						0.1
Delay (s)	60.3	0.2			0.9	0.8						0.1
Level of Service	E	A			A	A						A
Approach Delay (s)		3.3			0.9			0.0			0.1	
Approach LOS		A			A			A			A	

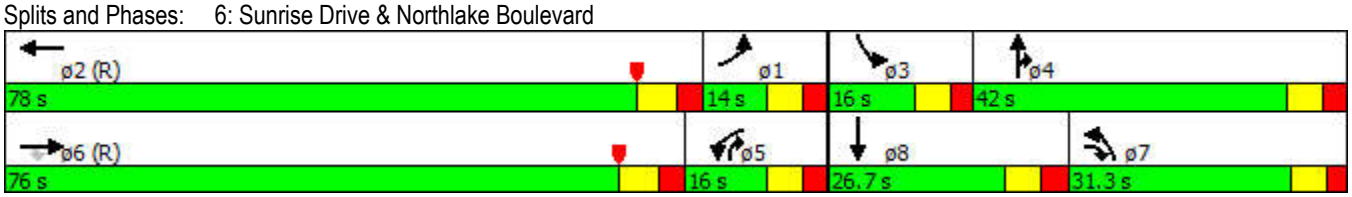
Intersection Summary			
HCM 2000 Control Delay	1.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	78	2442	188	208	3227	449	20	279	219	21
Future Volume (vph)	78	2442	188	208	3227	449	20	279	219	21
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	pt+ov	Prot	NA
Protected Phases	1	6	7	5	2	7	4	4 5	3	8
Permitted Phases			6							
Detector Phase	1	6	7	5	2	7	4	4 5	3	8
Switch Phase										
Minimum Initial (s)	4.0	20.0	4.0	4.0	20.0	4.0	6.0		4.0	6.0
Minimum Split (s)	12.5	38.5	12.5	12.5	32.5	12.5	42.0		12.5	13.0
Total Split (s)	14.0	76.0	31.3	16.0	78.0	31.3	42.0		16.0	26.7
Total Split (%)	9.3%	50.7%	20.9%	10.7%	52.0%	20.9%	28.0%		10.7%	17.8%
Yellow Time (s)	4.0	4.5	4.0	4.0	4.5	4.0	4.0		4.0	4.0
All-Red Time (s)	3.0	3.0	2.5	3.0	3.0	2.5	3.0		2.5	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	7.0	7.5	6.5	7.0	7.5	6.5	7.0		6.5	7.0
Lead/Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag		Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None		None	None
Act Effct Green (s)	7.0	71.3	102.6	9.0	73.3	23.7	32.2	41.2	9.5	17.9
Actuated g/C Ratio	0.05	0.48	0.68	0.06	0.49	0.16	0.21	0.27	0.06	0.12
v/c Ratio	1.00	1.06	0.18	1.07	1.13	0.87	0.05	0.36	1.06	0.83
Control Delay	156.9	67.1	4.0	146.3	100.9	78.9	45.4	24.8	143.4	91.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	156.9	67.1	4.0	146.3	100.9	78.9	45.4	24.8	143.4	91.4
LOS	F	E	A	F	F	E	D	C	F	F
Approach Delay		65.3			103.5		57.8			121.5
Approach LOS		E			F		E			F

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 14 (9%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.13	
Intersection Signal Delay: 85.8	Intersection LOS: F
Intersection Capacity Utilization 99.1%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 6: Sunrise Drive & Northlake Boulevard



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	78	2442	188	208	3227	133	449	20	279	219	21	139
Future Volume (vph)	78	2442	188	208	3227	133	449	20	279	219	21	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.5	6.5	7.0	7.5		6.5	7.0	7.0	6.5	7.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.86		0.97	1.00	0.88	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1583	3433	6370		3433	1863	2787	3433	1620	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1583	3433	6370		3433	1863	2787	3433	1620	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	82	2571	198	219	3397	140	473	21	294	231	22	146
RTOR Reduction (vph)	0	0	22	0	4	0	0	0	44	0	9	0
Lane Group Flow (vph)	82	2571	176	219	3533	0	473	21	250	231	159	0
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	pt+ov	Prot	NA	
Protected Phases	1	6	7	5	2		7	4	4 5	3	8	
Permitted Phases			6									
Actuated Green, G (s)	7.0	71.3	95.1	9.0	73.3		23.8	32.2	41.2	9.5	17.9	
Effective Green, g (s)	7.0	71.3	95.1	9.0	73.3		23.8	32.2	41.2	9.5	17.9	
Actuated g/C Ratio	0.05	0.48	0.63	0.06	0.49		0.16	0.21	0.27	0.06	0.12	
Clearance Time (s)	7.0	7.5	6.5	7.0	7.5		6.5	7.0		6.5	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	82	2417	1072	205	3112		544	399	765	217	193	
v/s Ratio Prot	0.05	0.51	0.03	c0.06	c0.55		c0.14	0.01	0.09	0.07	c0.10	
v/s Ratio Perm			0.09									
v/c Ratio	1.00	1.06	0.16	1.07	1.14		0.87	0.05	0.33	1.06	0.82	
Uniform Delay, d1	71.5	39.4	11.2	70.5	38.4		61.6	46.8	43.4	70.2	64.5	
Progression Factor	0.88	0.76	0.60	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	94.8	37.4	0.1	82.1	65.5		13.8	0.1	0.3	79.2	24.0	
Delay (s)	157.7	67.1	6.8	152.6	103.8		75.4	46.8	43.6	149.5	88.5	
Level of Service	F	E	A	F	F		E	D	D	F	F	
Approach Delay (s)		65.5			106.7			62.8			123.8	
Approach LOS		E			F			E			F	

Intersection Summary			
HCM 2000 Control Delay	88.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	99.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	2442	188	208	3227	133	449	20	279	219	21	139
Future Volume (veh/h)	78	2442	188	208	3227	133	449	20	279	219	21	139
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	82	2571	198	219	3397	140	473	21	294	231	22	146
Adj No. of Lanes	1	3	1	2	4	0	2	1	2	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	122	2322	967	283	2991	122	531	393	817	218	25	164
Arrive On Green	0.14	0.91	0.91	0.08	0.47	0.47	0.15	0.21	0.21	0.06	0.12	0.12
Sat Flow, veh/h	1774	5085	1583	3442	6364	259	3442	1863	2787	3442	211	1404
Grp Volume(v), veh/h	82	2571	198	219	2555	982	473	21	294	231	0	168
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1721	1602	1817	1721	1863	1393	1721	0	1615
Q Serve(g_s), s	6.6	68.5	0.0	9.4	70.5	70.5	20.2	1.3	1.9	9.5	0.0	15.4
Cycle Q Clear(g_c), s	6.6	68.5	0.0	9.4	70.5	70.5	20.2	1.3	1.9	9.5	0.0	15.4
Prop In Lane	1.00		1.00	1.00		0.14	1.00		1.00	1.00		0.87
Lane Grp Cap(c), veh/h	122	2322	967	283	2259	854	531	393	817	218	0	189
V/C Ratio(X)	0.67	1.11	0.20	0.77	1.13	1.15	0.89	0.05	0.36	1.06	0.00	0.89
Avail Cap(c_a), veh/h	122	2322	967	283	2259	854	569	435	879	218	0	212
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.89	0.89	0.89	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	63.1	6.5	1.8	67.5	39.7	39.8	62.2	47.2	22.5	70.3	0.0	65.3
Incr Delay (d2), s/veh	12.1	54.5	0.4	12.6	65.2	81.0	15.6	0.1	0.3	77.6	0.0	31.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.6	70.6	1.1	8.6	80.6	98.2	16.1	1.3	6.2	12.3	0.0	13.3
LnGrp Delay(d),s/veh	75.2	61.0	2.3	80.1	105.0	120.7	77.8	47.3	22.7	147.9	0.0	96.7
LnGrp LOS	E	F	A	F	F	F	E	D	C	F		F
Approach Vol, veh/h		2851			3756			788			399	
Approach Delay, s/veh		57.4			107.6			56.4			126.3	
Approach LOS		E			F			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.3	78.0	16.0	38.7	19.3	76.0	30.1	24.6
Change Period (Y+Rc), s	7.0	7.5	6.5	7.0	7.0	7.5	7.0	* 7
Max Green Setting (Gmax), s	7.0	70.5	9.5	35.0	9.0	68.5	24.8	* 20
Max Q Clear Time (g_c+I1), s	8.6	72.5	11.5	3.9	11.4	70.5	22.2	17.4
Green Ext Time (p_c), s	0.0	0.0	0.0	3.2	0.0	0.0	0.9	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	85.0
HCM 2010 LOS	F

Notes

APPENDIX S

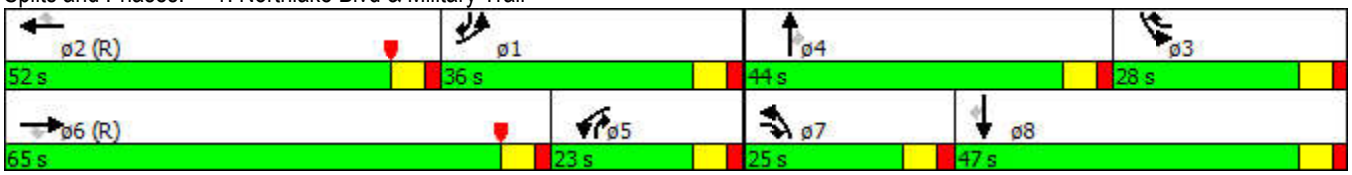
(Build Alternative 2 Signalized Intersections Operational Analysis Results)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	649	1414	278	277	787	293	244	771	295	367	626	274
Future Volume (vph)	649	1414	278	277	787	293	244	771	295	367	626	274
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	1	6	7	5	2	3	7	4	5	3	8	1
Permitted Phases			6			2			4			8
Detector Phase	1	6	7	5	2	3	7	4	5	3	8	1
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	51.0	22.0	22.0	47.0	10.0	22.0	47.0	22.0	10.0	47.0	10.0
Total Split (s)	36.0	65.0	25.0	23.0	52.0	28.0	25.0	44.0	23.0	28.0	47.0	36.0
Total Split (%)	22.5%	40.6%	15.6%	14.4%	32.5%	17.5%	15.6%	27.5%	14.4%	17.5%	29.4%	22.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	None	None	None	None
Act Effct Green (s)	30.0	64.3	81.1	17.0	51.3	79.3	16.9	32.7	55.7	22.0	37.9	67.9
Actuated g/C Ratio	0.19	0.40	0.51	0.11	0.32	0.50	0.11	0.20	0.35	0.14	0.24	0.42
v/c Ratio	1.07	0.74	0.36	0.82	0.52	0.39	0.73	0.81	0.54	0.82	0.55	0.41
Control Delay	116.2	44.2	11.5	79.8	19.2	7.7	81.9	67.2	36.6	82.0	55.2	15.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	116.2	44.2	11.5	79.8	19.2	7.7	81.9	67.2	36.6	82.0	55.2	15.7
LOS	F	D	B	E	B	A	F	E	D	F	E	B
Approach Delay		60.3			29.1			63.0			54.4	
Approach LOS		E			C			E			D	

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.07
Intersection Signal Delay: 52.9 — Intersection LOS: D
Intersection Capacity Utilization 80.6% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 1: Northlake Blvd & Military Trail



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	649	1414	278	277	787	293	244	771	295	367	626	274
Future Volume (vph)	649	1414	278	277	787	293	244	771	295	367	626	274
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	5036	1568	3335	4940	1538	3335	4940	1538	3400	5036	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3400	5036	1568	3335	4940	1538	3335	4940	1538	3400	5036	1568
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	683	1488	293	292	828	308	257	812	311	386	659	288
RTOR Reduction (vph)	0	0	30	0	0	33	0	0	41	0	0	35
Lane Group Flow (vph)	683	1488	263	292	828	275	257	812	270	386	659	253
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	5%	5%	5%	3%	3%	3%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	1	6	7	5	2	3	7	4	5	3	8	1
Permitted Phases			6			2			4			8
Actuated Green, G (s)	30.0	64.2	81.1	17.0	51.2	73.3	16.9	32.7	49.7	22.1	37.9	67.9
Effective Green, g (s)	30.0	64.2	81.1	17.0	51.2	73.3	16.9	32.7	49.7	22.1	37.9	67.9
Actuated g/C Ratio	0.19	0.40	0.51	0.11	0.32	0.46	0.11	0.20	0.31	0.14	0.24	0.42
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	637	2020	794	354	1580	762	352	1009	535	469	1192	665
v/s Ratio Prot	c0.20	c0.30	0.04	0.09	0.17	0.05	0.08	c0.16	0.05	c0.11	0.13	0.07
v/s Ratio Perm			0.13			0.13			0.12			0.09
v/c Ratio	1.07	0.74	0.33	0.82	0.52	0.36	0.73	0.80	0.50	0.82	0.55	0.38
Uniform Delay, d1	65.0	40.7	23.4	70.0	44.4	28.2	69.3	60.6	45.1	67.0	53.6	31.6
Progression Factor	1.00	1.00	1.00	0.88	0.40	0.31	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	56.6	2.4	0.2	13.8	1.2	0.3	7.6	4.7	0.7	11.1	0.6	0.4
Delay (s)	121.6	43.2	23.6	75.1	18.8	8.9	76.9	65.4	45.8	78.2	54.2	32.0
Level of Service	F	D	C	E	B	A	E	E	D	E	D	C
Approach Delay (s)		62.6			28.2			63.1			56.3	
Approach LOS		E			C			E			E	

Intersection Summary			
HCM 2000 Control Delay	54.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	80.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	649	1414	278	277	787	293	244	771	295	367	626	274
Future Volume (veh/h)	649	1414	278	277	787	293	244	771	295	367	626	274
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1810	1810	1810	1810	1810	1810	1845	1845	1845
Adj Flow Rate, veh/h	683	1488	293	292	828	308	257	812	311	386	659	288
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	5	5	5	5	5	5	3	3	3
Cap, veh/h	788	1857	720	502	1420	646	303	983	537	451	1212	740
Arrive On Green	0.23	0.37	0.37	0.15	0.29	0.29	0.09	0.20	0.20	0.13	0.24	0.24
Sat Flow, veh/h	3408	5036	1568	3343	4940	1538	3343	4940	1538	3408	5036	1568
Grp Volume(v), veh/h	683	1488	293	292	828	308	257	812	311	386	659	288
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1672	1647	1538	1672	1647	1538	1704	1679	1568
Q Serve(g_s), s	30.8	42.4	10.2	13.0	23.0	2.1	12.1	25.2	2.4	17.7	18.3	4.6
Cycle Q Clear(g_c), s	30.8	42.4	10.2	13.0	23.0	2.1	12.1	25.2	2.4	17.7	18.3	4.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	788	1857	720	502	1420	646	303	983	537	451	1212	740
V/C Ratio(X)	0.87	0.80	0.41	0.58	0.58	0.48	0.85	0.83	0.58	0.86	0.54	0.39
Avail Cap(c_a), veh/h	788	1857	720	502	1420	646	397	1173	596	469	1290	764
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.1	45.2	11.1	63.3	48.8	33.7	71.7	61.4	42.5	67.9	53.1	12.0
Incr Delay (d2), s/veh	10.0	3.8	1.7	1.7	1.8	2.5	12.6	4.3	1.1	14.1	0.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	22.1	27.6	8.4	10.2	16.0	2.2	10.2	17.5	2.1	14.2	13.3	8.8
LnGrp Delay(d),s/veh	69.2	49.0	12.8	65.0	50.5	36.2	84.3	65.7	43.7	82.0	53.5	12.3
LnGrp LOS	E	D	B	E	D	D	F	E	D	F	D	B
Approach Vol, veh/h		2464			1428			1380			1333	
Approach Delay, s/veh		50.3			50.4			64.2			52.8	
Approach LOS		D			D			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	43.0	52.0	27.2	37.8	30.0	65.0	20.5	44.5
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	30.0	46.0	22.0	38.0	17.0	59.0	19.0	41.0
Max Q Clear Time (g_c+I1), s	32.8	25.0	19.7	27.2	15.0	44.4	14.1	20.3
Green Ext Time (p_c), s	0.0	6.5	1.4	4.6	0.9	9.1	0.4	6.7

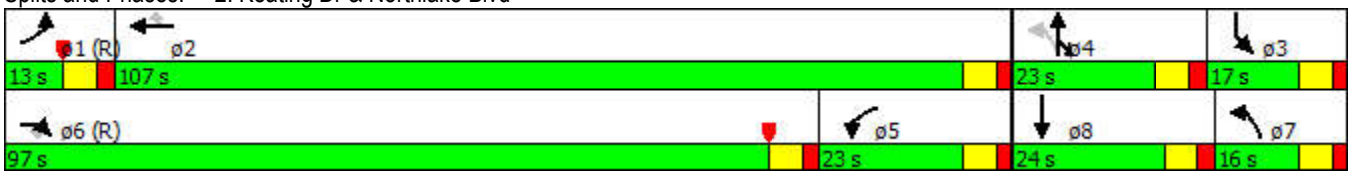
Intersection Summary	
HCM 2010 Ctrl Delay	53.7
HCM 2010 LOS	D

Notes

Lane Group	EBL	EBR	EBR2	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	24	2093	81	109	1368	64	50	7	95	151	11
Future Volume (vph)	24	2093	81	109	1368	64	50	7	95	151	11
Turn Type	Prot	Prot	Perm	Prot	NA	Perm	pm+pt	NA	Prot	Prot	NA
Protected Phases	1	6		5	2		7	4	4	3	8
Permitted Phases	1		6			2	4				
Detector Phase	1	6	6	5	2	2	7	4	4	3	8
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	36.0	36.0	10.0	36.0	36.0	11.0	22.0	22.0	11.0	22.0
Total Split (s)	13.0	97.0	97.0	23.0	107.0	107.0	16.0	23.0	23.0	17.0	24.0
Total Split (%)	8.1%	60.6%	60.6%	14.4%	66.9%	66.9%	10.0%	14.4%	14.4%	10.6%	15.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes						Yes	Yes	Yes	Yes	Yes
Recall Mode	C-Max	C-Max	C-Max	None	None	None	None	None	None	Max	Max
Act Effct Green (s)	7.0	91.0	91.0	10.8	94.8	94.8	17.1	8.0	8.0	26.1	27.4
Actuated g/C Ratio	0.04	0.57	0.57	0.07	0.59	0.59	0.11	0.05	0.05	0.16	0.17
v/c Ratio	0.32	0.61	0.09	0.50	0.39	0.07	0.32	0.08	0.51	0.28	0.14
Control Delay	90.7	17.1	6.7	87.5	22.2	7.5	54.7	72.4	41.4	61.6	49.4
Queue Delay	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	90.7	17.1	6.7	87.5	22.4	7.5	54.7	72.4	41.4	61.6	49.4
LOS	F	B	A	F	C	A	D	E	D	E	D
Approach Delay					26.4			47.2			59.1
Approach LOS					C			D			E

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 89 (56%), Referenced to phase 1:EBL and 6:EBR, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 23.9	Intersection LOS: C
Intersection Capacity Utilization Err%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 2: Keating Dr & Northlake Blvd



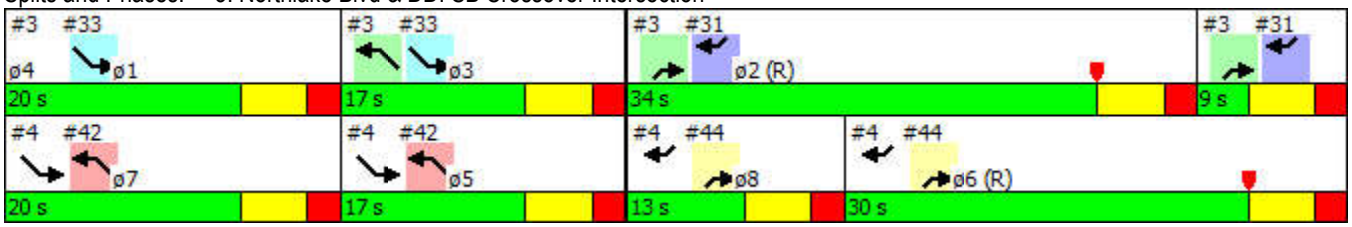
Movement	EBL	EBR	EBR2	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	2093	81	109	1368	64	50	7	95	151	11	28
Future Volume (vph)	24	2093	81	109	1368	64	50	7	95	151	11	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	*0.86	1.00	0.97	0.86	1.00	1.00	1.00	0.88	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	6346	1583	3367	6285	1553	1752	1845	2760	3433	1665	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.73	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	6346	1583	3367	6285	1553	1347	1845	2760	3433	1665	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	25	2203	85	115	1440	67	53	7	100	159	12	29
RTOR Reduction (vph)	0	0	26	0	0	24	0	0	57	0	8	0
Lane Group Flow (vph)	25	2203	59	115	1440	43	53	7	43	159	33	0
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Prot	Prot	Perm	Prot	NA	Perm	pm+pt	NA	Prot	Prot	NA	
Protected Phases	1	6		5	2		7	4	4	3	8	
Permitted Phases	1		6			2	4					
Actuated Green, G (s)	5.8	89.8	89.8	10.8	94.8	94.8	16.0	8.0	8.0	27.4	27.4	
Effective Green, g (s)	5.8	89.8	89.8	10.8	94.8	94.8	16.0	8.0	8.0	27.4	27.4	
Actuated g/C Ratio	0.04	0.56	0.56	0.07	0.59	0.59	0.10	0.05	0.05	0.17	0.17	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	64	3561	888	227	3723	920	154	92	138	587	285	
v/s Ratio Prot	0.01	c0.35		c0.03	0.23		0.02	0.00	0.02	c0.05	0.02	
v/s Ratio Perm			0.04			0.03	c0.02					
v/c Ratio	0.39	0.62	0.07	0.51	0.39	0.05	0.34	0.08	0.31	0.27	0.11	
Uniform Delay, d1	75.4	23.6	16.0	72.0	17.2	13.7	67.5	72.5	73.3	57.6	56.0	
Progression Factor	1.11	0.72	1.16	1.11	1.28	2.13	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	12.5	0.6	0.1	1.8	0.1	0.0	1.3	0.4	1.3	1.1	0.8	
Delay (s)	95.8	17.7	18.6	82.1	22.1	29.2	68.8	72.8	74.6	58.8	56.9	
Level of Service	F	B	B	F	C	C	E	E	E	E	E	
Approach Delay (s)					26.7			72.6			58.4	
Approach LOS					C			E			E	

Intersection Summary			
HCM 2000 Control Delay	25.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	NWL	NER	ø1	ø2	ø3	ø4	ø5	ø6	ø7	ø8
Lane Configurations										
Traffic Volume (vph)	1479	2227								
Future Volume (vph)	1479	2227								
Turn Type	Prot	custom								
Protected Phases	1 3	2 4	1	2	3	4	5	6	7	8
Permitted Phases										
Detector Phase	1 3	2 4								
Switch Phase										
Minimum Initial (s)			4.0	4.0	2.0	2.0	4.0	2.0	4.0	2.0
Minimum Split (s)			20.0	20.0	9.0	9.0	20.0	9.0	20.0	9.0
Total Split (s)			20.0	34.0	17.0	9.0	17.0	30.0	20.0	13.0
Total Split (%)			25%	43%	21%	11%	21%	38%	25%	16%
Yellow Time (s)			4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lead	Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?			Yes	Yes			Yes		Yes	
Recall Mode			Min	C-Min	Min	Min	Min	C-Min	Min	Min
Act Effct Green (s)	31.0	37.0								
Actuated g/C Ratio	0.39	0.46								
v/c Ratio	0.60	0.75								
Control Delay	18.8	26.4								
Queue Delay	0.0	0.0								
Total Delay	18.8	26.4								
LOS	B	C								
Approach Delay	18.8									
Approach LOS	B									

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NER and 6:, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 23.3	Intersection LOS: C
Intersection Capacity Utilization 44.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: Northlake Blvd & DDI SB Crossover Intersection



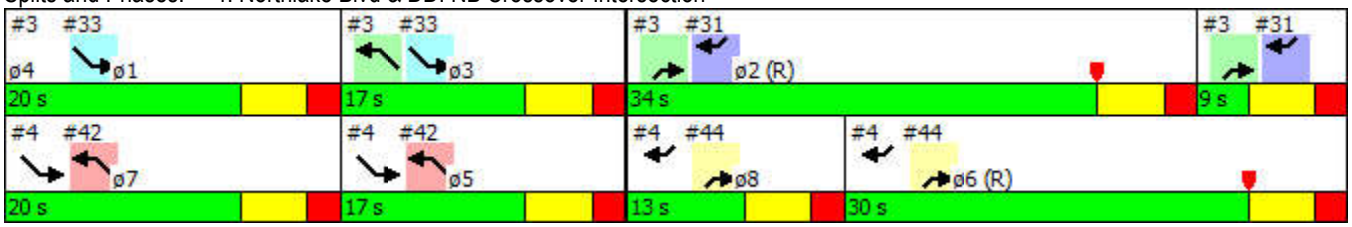
Movement	EBT	EBR	WBL	WBT	NWL	NWR	NEL	NER
Lane Configurations								
Traffic Volume (vph)	0	0	0	0	1479	0	0	2227
Future Volume (vph)	0	0	0	0	1479	0	0	2227
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.0			6.0
Lane Util. Factor					0.91			*0.91
Frt					1.00			1.00
Flt Protected					1.00			1.00
Satd. Flow (prot)					6650			6780
Flt Permitted					1.00			1.00
Satd. Flow (perm)					6650			6780
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	0	1557	0	0	2344
RTOR Reduction (vph)	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1557	0	0	2344
Heavy Vehicles (%)	2%	2%	2%	2%	4%	4%	2%	2%
Turn Type					Prot			custom
Protected Phases					1 3			2 4
Permitted Phases								
Actuated Green, G (s)					31.0			37.0
Effective Green, g (s)					31.0			37.0
Actuated g/C Ratio					0.39			0.46
Clearance Time (s)								
Vehicle Extension (s)								
Lane Grp Cap (vph)					2576			3135
v/s Ratio Prot					c0.23			c0.35
v/s Ratio Perm								
v/c Ratio					0.60			0.75
Uniform Delay, d1					19.6			17.7
Progression Factor					0.90			1.40
Incremental Delay, d2					0.4			0.9
Delay (s)					18.0			25.6
Level of Service					B			C
Approach Delay (s)	0.0			0.0	18.0		25.6	
Approach LOS	A			A	B		C	

Intersection Summary			
HCM 2000 Control Delay	22.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	44.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	SEL	SWR	ø1	ø2	ø3	ø4	ø5	ø6	ø7	ø8
Lane Configurations										
Traffic Volume (vph)	2209	1862								
Future Volume (vph)	2209	1862								
Turn Type	Prot	custom								
Protected Phases	5 7	6 8	1	2	3	4	5	6	7	8
Permitted Phases										
Detector Phase	5 7	6 8								
Switch Phase										
Minimum Initial (s)			4.0	4.0	2.0	2.0	4.0	2.0	4.0	2.0
Minimum Split (s)			20.0	20.0	9.0	9.0	20.0	9.0	20.0	9.0
Total Split (s)			20.0	34.0	17.0	9.0	17.0	30.0	20.0	13.0
Total Split (%)			25%	43%	21%	11%	21%	38%	25%	16%
Yellow Time (s)			4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lead	Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?			Yes	Yes			Yes		Yes	
Recall Mode			Min	C-Min	Min	Min	Min	C-Min	Min	Min
Act Effct Green (s)	31.0	37.0								
Actuated g/C Ratio	0.39	0.46								
v/c Ratio	0.89	0.64								
Control Delay	25.9	22.3								
Queue Delay	0.0	0.0								
Total Delay	25.9	22.3								
LOS	C	C								
Approach Delay	25.9									
Approach LOS	C									

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NER and 6:, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 24.3	Intersection LOS: C
Intersection Capacity Utilization 37.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 4: Northlake Blvd & DDI NB Crossover Intersection



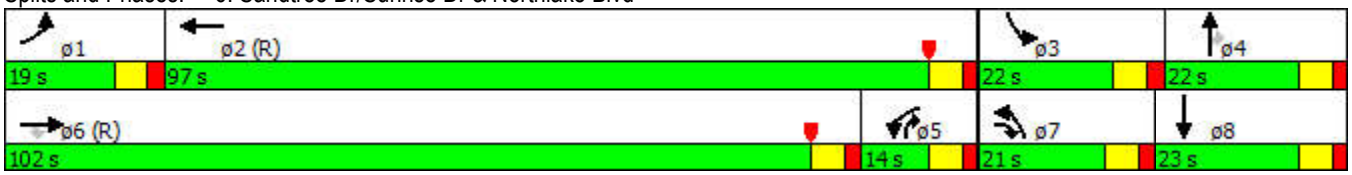
Movement	EBL	EBT	WBT	WBR	SEL	SER	SWL	SWR
Lane Configurations								
Traffic Volume (vph)	0	0	0	0	2209	0	0	1862
Future Volume (vph)	0	0	0	0	2209	0	0	1862
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.0			6.0
Lane Util. Factor					0.91			*0.91
Frt					1.00			1.00
Flt Protected					1.00			1.00
Satd. Flow (prot)					6715			6650
Flt Permitted					1.00			1.00
Satd. Flow (perm)					6715			6650
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	0	2325	0	0	1960
RTOR Reduction (vph)	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	2325	0	0	1960
Heavy Vehicles (%)	2%	2%	2%	2%	3%	3%	4%	4%
Turn Type					Prot			custom
Protected Phases					5 7			6 8
Permitted Phases								
Actuated Green, G (s)					31.0			37.0
Effective Green, g (s)					31.0			37.0
Actuated g/C Ratio					0.39			0.46
Clearance Time (s)								
Vehicle Extension (s)								
Lane Grp Cap (vph)					2602			3075
v/s Ratio Prot					c0.35			c0.29
v/s Ratio Perm								
v/c Ratio					0.89			0.64
Uniform Delay, d1					23.0			16.4
Progression Factor					0.90			1.30
Incremental Delay, d2					4.4			0.4
Delay (s)					25.0			21.7
Level of Service					C			C
Approach Delay (s)		0.0	0.0		25.0		21.7	
Approach LOS		A	A		C		C	

Intersection Summary			
HCM 2000 Control Delay	23.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	37.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	99	2265	177	131	1640	237	10	133	168	20
Future Volume (vph)	99	2265	177	131	1640	237	10	133	168	20
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	1	6	7	5	2	7	4	5	3	8
Permitted Phases			6					4		
Detector Phase	1	6	7	5	2	7	4	5	3	8
Switch Phase										
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	22.0	10.0	10.0	22.0	10.0	22.0	10.0	10.0	22.0
Total Split (s)	19.0	102.0	21.0	14.0	97.0	21.0	22.0	14.0	22.0	23.0
Total Split (%)	11.9%	63.8%	13.1%	8.8%	60.6%	13.1%	13.8%	8.8%	13.8%	14.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Max	C-Max	Max	Max	C-Max	Max	None	Max	None	None
Act Effct Green (s)	16.8	99.8	114.8	8.0	91.0	15.0	9.9	14.4	25.5	13.2
Actuated g/C Ratio	0.10	0.62	0.72	0.05	0.57	0.09	0.06	0.09	0.16	0.08
v/c Ratio	0.29	0.75	0.16	0.82	0.50	0.78	0.10	0.46	0.33	0.66
Control Delay	64.6	19.6	5.1	108.9	21.2	88.2	69.3	35.1	63.6	84.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.6	19.6	5.1	108.9	21.2	88.2	69.3	35.1	63.6	84.7
LOS	E	B	A	F	C	F	E	D	E	F
Approach Delay		20.3			27.5		69.1			71.0
Approach LOS		C			C		E			E

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 29.3	Intersection LOS: C
Intersection Capacity Utilization 75.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 6: Sandtree Dr/Sunrise Dr & Northlake Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	99	2265	177	131	1640	50	237	10	133	168	20	70
Future Volume (vph)	99	2265	177	131	1640	50	237	10	133	168	20	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.86		0.97	1.00	0.88	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	5085	1583	3367	6257		3400	1845	2760	3400	1629	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	5085	1583	3367	6257		3400	1845	2760	3400	1629	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	104	2384	186	138	1726	53	249	11	140	177	21	74
RTOR Reduction (vph)	0	0	18	0	5	0	0	0	55	0	9	0
Lane Group Flow (vph)	104	2384	168	138	1774	0	249	11	85	177	86	0
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	1	6	7	5	2		7	4	5	3	8	
Permitted Phases			6						4			
Actuated Green, G (s)	16.8	96.1	111.1	8.0	87.3		15.0	6.4	14.4	25.5	16.9	
Effective Green, g (s)	16.8	96.1	111.1	8.0	87.3		15.0	6.4	14.4	25.5	16.9	
Actuated g/C Ratio	0.11	0.60	0.69	0.05	0.55		0.09	0.04	0.09	0.16	0.11	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	360	3054	1099	168	3413		318	73	248	541	172	
v/s Ratio Prot	0.03	c0.47	0.01	c0.04	0.28		c0.07	0.01	0.02	0.05	c0.05	
v/s Ratio Perm			0.09						0.01			
v/c Ratio	0.29	0.78	0.15	0.82	0.52		0.78	0.15	0.34	0.33	0.50	
Uniform Delay, d1	66.1	24.0	8.4	75.3	23.1		70.9	74.2	68.4	59.6	67.6	
Progression Factor	0.93	0.82	1.84	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.9	1.9	0.3	34.5	0.6		17.3	1.0	0.8	0.4	2.3	
Delay (s)	63.1	21.6	15.7	109.8	23.6		88.3	75.1	69.2	60.0	69.8	
Level of Service	E	C	B	F	C		F	E	E	E	E	
Approach Delay (s)		22.8			29.8			81.2			63.4	
Approach LOS		C			C			F			E	

Intersection Summary			
HCM 2000 Control Delay	31.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	2265	177	131	1640	50	237	10	133	168	20	70
Future Volume (veh/h)	99	2265	177	131	1640	50	237	10	133	168	20	70
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1827	1827	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	104	2384	186	138	1726	53	249	11	140	177	21	74
Adj No. of Lanes	2	3	1	2	4	0	2	1	2	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	4	4	4	3	3	3	3	3	3
Cap, veh/h	280	3051	1098	284	3805	117	320	186	510	222	26	91
Arrive On Green	0.08	0.60	0.60	0.08	0.60	0.60	0.09	0.10	0.10	0.07	0.07	0.07
Sat Flow, veh/h	3442	5085	1583	3375	6312	194	3408	1845	2760	3408	358	1263
Grp Volume(v), veh/h	104	2384	186	138	1289	490	249	11	140	177	0	95
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1688	1571	1793	1704	1845	1380	1704	0	1622
Q Serve(g_s), s	4.6	56.5	2.3	6.2	23.9	23.9	11.4	0.9	0.9	8.2	0.0	9.2
Cycle Q Clear(g_c), s	4.6	56.5	2.3	6.2	23.9	23.9	11.4	0.9	0.9	8.2	0.0	9.2
Prop In Lane	1.00		1.00	1.00		0.11	1.00		1.00	1.00		0.78
Lane Grp Cap(c), veh/h	280	3051	1098	284	2841	1081	320	186	510	222	0	117
V/C Ratio(X)	0.37	0.78	0.17	0.49	0.45	0.45	0.78	0.06	0.27	0.80	0.00	0.81
Avail Cap(c_a), veh/h	280	3051	1098	284	2841	1081	320	186	510	341	0	172
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.00	0.97
Uniform Delay (d), s/veh	69.6	24.1	2.4	70.0	17.4	17.4	70.9	65.1	35.1	73.7	0.0	73.1
Incr Delay (d2), s/veh	3.8	2.1	0.3	5.9	0.5	1.4	17.0	0.1	0.3	7.0	0.0	15.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.2	35.3	2.1	5.7	15.8	18.0	10.2	0.8	3.7	7.3	0.0	8.1
LnGrp Delay(d),s/veh	73.4	26.2	2.8	75.8	17.9	18.7	87.9	65.2	35.4	80.7	0.0	89.1
LnGrp LOS	E	C	A	E	B	B	F	E	D	F		F
Approach Vol, veh/h		2674			1917			400			272	
Approach Delay, s/veh		26.4			22.3			68.9			83.6	
Approach LOS		C			C			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	102.4	16.4	22.1	19.4	102.0	21.0	17.6
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	13.0	91.0	16.0	16.0	8.0	96.0	15.0	17.0
Max Q Clear Time (g_c+I1), s	6.6	25.9	10.2	2.9	8.2	58.5	13.4	11.2
Green Ext Time (p_c), s	0.1	21.0	0.3	0.9	0.0	27.7	0.1	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	31.1
HCM 2010 LOS	C

Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	13	55	253	424
Future Volume (vph)	13	55	253	424
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		2		
Detector Phase	4	2	2	6
Switch Phase				
Minimum Initial (s)	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0	22.0	22.0
Total Split (s)	30.0	100.0	100.0	100.0
Total Split (%)	23.1%	76.9%	76.9%	76.9%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Max	C-Max	C-Max
Act Effct Green (s)	7.0	114.5	114.5	114.5
Actuated g/C Ratio	0.05	0.88	0.88	0.88
v/c Ratio	0.33	0.07	0.16	0.29
Control Delay	38.7	1.8	1.8	2.2
Queue Delay	0.0	0.0	0.8	0.0
Total Delay	38.7	1.8	2.6	2.2
LOS	D	A	A	A
Approach Delay	38.7		2.4	2.2
Approach LOS	D		A	A

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 125 (96%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.33	
Intersection Signal Delay: 3.9	Intersection LOS: A
Intersection Capacity Utilization 45.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 8: Sunrise Dr & Alley Road

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	13	22	55	253	424	22
Future Volume (vph)	13	22	55	253	424	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0	6.0	6.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.92		1.00	1.00	0.99	
Flt Protected	0.98		0.95	1.00	1.00	
Satd. Flow (prot)	1658		1752	1845	1832	
Flt Permitted	0.98		0.49	1.00	1.00	
Satd. Flow (perm)	1658		909	1845	1832	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	14	23	58	266	446	23
RTOR Reduction (vph)	22	0	0	0	1	0
Lane Group Flow (vph)	15	0	58	266	468	0
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	5.9		112.1	112.1	112.1	
Effective Green, g (s)	5.9		112.1	112.1	112.1	
Actuated g/C Ratio	0.05		0.86	0.86	0.86	
Clearance Time (s)	6.0		6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	75		783	1590	1579	
v/s Ratio Prot	c0.01			0.14	c0.26	
v/s Ratio Perm			0.06			
v/c Ratio	0.20		0.07	0.17	0.30	
Uniform Delay, d1	59.8		1.3	1.4	1.7	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	1.3		0.2	0.2	0.5	
Delay (s)	61.1		1.5	1.7	2.1	
Level of Service	E		A	A	A	
Approach Delay (s)	61.1			1.6	2.1	
Approach LOS	E			A	A	

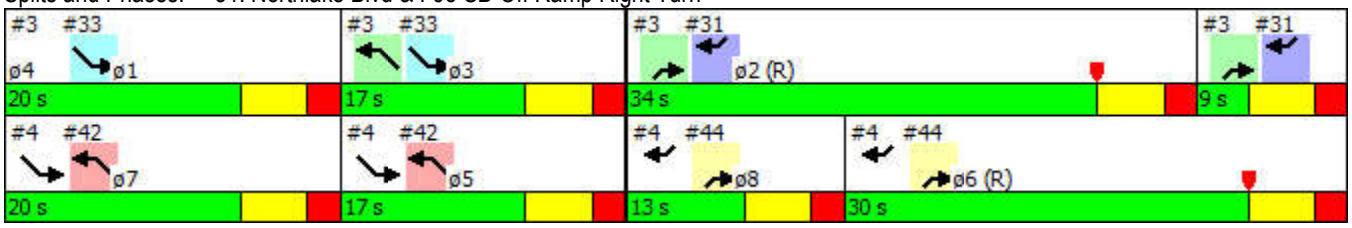
Intersection Summary			
HCM 2000 Control Delay	4.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	45.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	WBT	SWR	ø1	ø2	ø3	ø4	ø5	ø6	ø7	ø8
Lane Configurations										
Traffic Volume (vph)	1207	442								
Future Volume (vph)	1207	442								
Turn Type	NA	custom								
Protected Phases	Free!	2 4!	1	2	3	4	5	6	7	8
Permitted Phases										
Detector Phase		2 4								
Switch Phase										
Minimum Initial (s)			4.0	4.0	2.0	2.0	4.0	2.0	4.0	2.0
Minimum Split (s)			20.0	20.0	9.0	9.0	20.0	9.0	20.0	9.0
Total Split (s)			20.0	34.0	17.0	9.0	17.0	30.0	20.0	13.0
Total Split (%)			25%	43%	21%	11%	21%	38%	25%	16%
Yellow Time (s)			4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lead	Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?			Yes	Yes			Yes		Yes	
Recall Mode			Min	C-Min	Min	Min	Min	C-Min	Min	Min
Act Effct Green (s)	80.0	37.0								
Actuated g/C Ratio	1.00	0.46								
v/c Ratio	0.20	0.24								
Control Delay	0.1	1.6								
Queue Delay	0.0	0.0								
Total Delay	0.1	1.6								
LOS	A	A								
Approach Delay	0.1									
Approach LOS	A									

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NER and 6:, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 0.5	Intersection LOS: A
Intersection Capacity Utilization 36.1%	ICU Level of Service A
Analysis Period (min) 15	

! Phase conflict between lane groups.

Splits and Phases: 31: Northlake Blvd & I-95 SB-Off Ramp Right Turn



Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	0	0	1207	0	0	442
Future Volume (vph)	0	0	1207	0	0	442
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	8	12	12	12	12
Total Lost time (s)			4.0			6.0
Lane Util. Factor			0.86			0.76
Frt			1.00			0.85
Flt Protected			1.00			1.00
Satd. Flow (prot)			6285			3610
Flt Permitted			1.00			1.00
Satd. Flow (perm)			6285			3610
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	1271	0	0	465
RTOR Reduction (vph)	0	0	0	0	0	250
Lane Group Flow (vph)	0	0	1271	0	0	215
Heavy Vehicles (%)	2%	2%	4%	4%	2%	2%
Turn Type			NA			custom
Protected Phases			Free!			2 4!
Permitted Phases						
Actuated Green, G (s)			80.0			37.0
Effective Green, g (s)			80.0			37.0
Actuated g/C Ratio			1.00			0.46
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)			6285			1669
v/s Ratio Prot			0.20			0.06
v/s Ratio Perm						
v/c Ratio			0.20			0.13
Uniform Delay, d1			0.0			12.3
Progression Factor			1.00			1.00
Incremental Delay, d2			0.1			0.0
Delay (s)			0.1			12.3
Level of Service			A			B
Approach Delay (s)		0.0	0.1		12.3	
Approach LOS		A	A		B	

Intersection Summary			
HCM 2000 Control Delay	3.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	36.1%	ICU Level of Service	A
Analysis Period (min)	15		

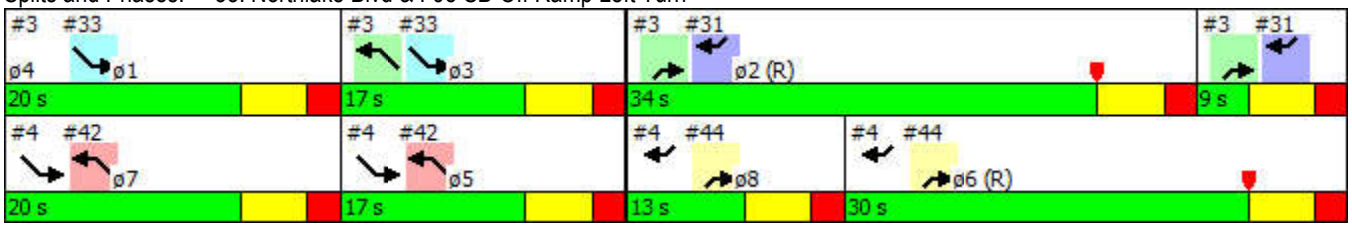
! Phase conflict between lane groups.
c Critical Lane Group

Lane Group	EBT	SEL	ø1	ø2	ø3	ø4	ø5	ø6	ø7	ø8
Lane Configurations										
Traffic Volume (vph)	1783	690								
Future Volume (vph)	1783	690								
Turn Type	NA	Prot								
Protected Phases	Free!	1 3!	1	2	3	4	5	6	7	8
Permitted Phases										
Detector Phase		1 3								
Switch Phase										
Minimum Initial (s)			4.0	4.0	2.0	2.0	4.0	2.0	4.0	2.0
Minimum Split (s)			20.0	20.0	9.0	9.0	20.0	9.0	20.0	9.0
Total Split (s)			20.0	34.0	17.0	9.0	17.0	30.0	20.0	13.0
Total Split (%)			25%	43%	21%	11%	21%	38%	25%	16%
Yellow Time (s)			4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lead	Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?			Yes	Yes			Yes		Yes	
Recall Mode			Min	C-Min	Min	Min	Min	C-Min	Min	Min
Act Effct Green (s)	80.0	31.0								
Actuated g/C Ratio	1.00	0.39								
v/c Ratio	0.29	0.38								
Control Delay	0.1	18.3								
Queue Delay	0.0	0.0								
Total Delay	0.1	18.3								
LOS	A	B								
Approach Delay	0.1	18.3								
Approach LOS	A	B								

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NER and 6:, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 5.1	Intersection LOS: A
Intersection Capacity Utilization 47.3%	ICU Level of Service A
Analysis Period (min) 15	

! Phase conflict between lane groups.

Splits and Phases: 33: Northlake Blvd & I-95 SB-Off Ramp Left Turn



Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Traffic Volume (vph)	0	1783	0	0	690	0
Future Volume (vph)	0	1783	0	0	690	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			6.0	
Lane Util. Factor		0.86			0.94	
Frt		1.00			1.00	
Flt Protected		1.00			0.95	
Satd. Flow (prot)		6408			4990	
Flt Permitted		1.00			0.95	
Satd. Flow (perm)		6408			4990	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1877	0	0	726	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	1877	0	0	726	0
Turn Type		NA			Prot	
Protected Phases		Free!			1 3!	
Permitted Phases						
Actuated Green, G (s)		80.0			31.0	
Effective Green, g (s)		80.0			31.0	
Actuated g/C Ratio		1.00			0.39	
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)		6408			1933	
v/s Ratio Prot		0.29			c0.15	
v/s Ratio Perm						
v/c Ratio		0.29			0.38	
Uniform Delay, d1		0.0			17.6	
Progression Factor		1.00			1.00	
Incremental Delay, d2		0.1			0.1	
Delay (s)		0.1			17.7	
Level of Service		A			B	
Approach Delay (s)		0.1	0.0		17.7	
Approach LOS		A	A		B	

Intersection Summary			
HCM 2000 Control Delay	5.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	47.3%	ICU Level of Service	A
Analysis Period (min)	15		

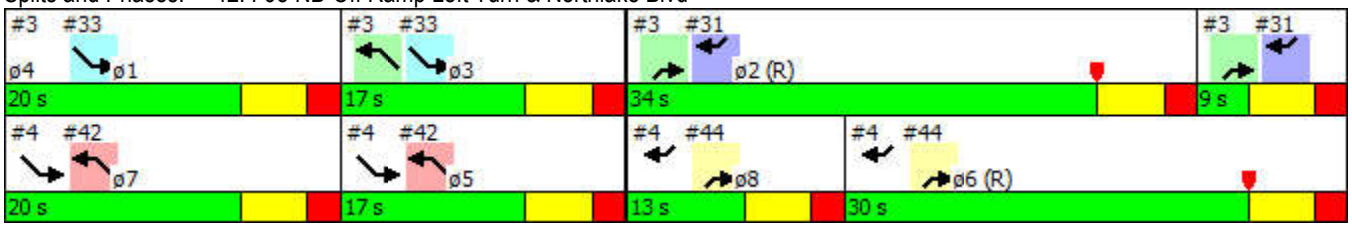
! Phase conflict between lane groups.
c Critical Lane Group

Lane Group	WBT	NWL	ø1	ø2	ø3	ø4	ø5	ø6	ø7	ø8
Lane Configurations										
Traffic Volume (vph)	1599	503								
Future Volume (vph)	1599	503								
Turn Type	NA	Prot								
Protected Phases	Free!	7 5!	1	2	3	4	5	6	7	8
Permitted Phases										
Detector Phase		7 5								
Switch Phase										
Minimum Initial (s)			4.0	4.0	2.0	2.0	4.0	2.0	4.0	2.0
Minimum Split (s)			20.0	20.0	9.0	9.0	20.0	9.0	20.0	9.0
Total Split (s)			20.0	34.0	17.0	9.0	17.0	30.0	20.0	13.0
Total Split (%)			25%	43%	21%	11%	21%	38%	25%	16%
Yellow Time (s)			4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lead	Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?			Yes	Yes			Yes		Yes	
Recall Mode			Min	C-Min	Min	Min	Min	C-Min	Min	Min
Act Effct Green (s)	80.0	31.0								
Actuated g/C Ratio	1.00	0.39								
v/c Ratio	0.27	0.28								
Control Delay	0.1	17.3								
Queue Delay	0.0	0.0								
Total Delay	0.1	17.3								
LOS	A	B								
Approach Delay	0.1	17.3								
Approach LOS	A	B								

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NER and 6:, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 4.2	Intersection LOS: A
Intersection Capacity Utilization 41.1%	ICU Level of Service A
Analysis Period (min) 15	

! Phase conflict between lane groups.

Splits and Phases: 42: I-95 NB-Off Ramp Left Turn & Northlake Blvd



Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Volume (vph)	0	0	0	1599	503	0
Future Volume (vph)	0	0	0	1599	503	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	6.0	
Lane Util. Factor				0.86	0.94	
Frt				1.00	1.00	
Flt Protected				1.00	0.95	
Satd. Flow (prot)				6285	4942	
Flt Permitted				1.00	0.95	
Satd. Flow (perm)				6285	4942	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	1683	529	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	1683	529	0
Heavy Vehicles (%)	2%	2%	4%	4%	3%	3%
Turn Type				NA	Prot	
Protected Phases				Free!	7 5!	
Permitted Phases						
Actuated Green, G (s)				80.0	31.0	
Effective Green, g (s)				80.0	31.0	
Actuated g/C Ratio				1.00	0.39	
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)				6285	1915	
v/s Ratio Prot				0.27	0.11	
v/s Ratio Perm						
v/c Ratio				0.27	0.28	
Uniform Delay, d1				0.0	16.8	
Progression Factor				1.00	1.00	
Incremental Delay, d2				0.1	0.1	
Delay (s)				0.1	16.9	
Level of Service				A	B	
Approach Delay (s)	0.0			0.1	16.9	
Approach LOS	A			A	B	

Intersection Summary			
HCM 2000 Control Delay	4.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	41.1%	ICU Level of Service	A
Analysis Period (min)	15		

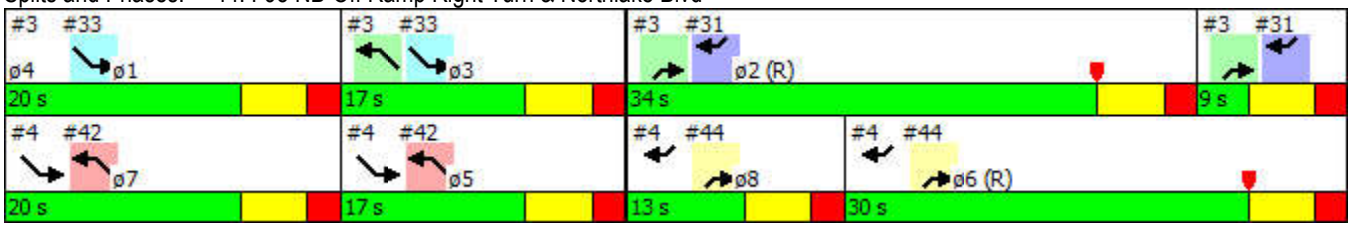
! Phase conflict between lane groups.
c Critical Lane Group

Lane Group	EBT	NER	ø1	ø2	ø3	ø4	ø5	ø6	ø7	ø8
Lane Configurations										
Traffic Volume (vph)	1726	1089								
Future Volume (vph)	1726	1089								
Turn Type	NA	custom								
Protected Phases	Free!	6 8!	1	2	3	4	5	6	7	8
Permitted Phases										
Detector Phase		6 8								
Switch Phase										
Minimum Initial (s)			4.0	4.0	2.0	2.0	4.0	2.0	4.0	2.0
Minimum Split (s)			20.0	20.0	9.0	9.0	20.0	9.0	20.0	9.0
Total Split (s)			20.0	34.0	17.0	9.0	17.0	30.0	20.0	13.0
Total Split (%)			25%	43%	21%	11%	21%	38%	25%	16%
Yellow Time (s)			4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lead	Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?			Yes	Yes			Yes		Yes	
Recall Mode			Min	C-Min	Min	Min	Min	C-Min	Min	Min
Act Effct Green (s)	80.0	37.0								
Actuated g/C Ratio	1.00	0.46								
v/c Ratio	0.29	0.65								
Control Delay	0.2	15.0								
Queue Delay	0.0	0.0								
Total Delay	0.2	15.0								
LOS	A	B								
Approach Delay	0.2									
Approach LOS	A									

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NER and 6:, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 5.9	Intersection LOS: A
Intersection Capacity Utilization 58.7%	ICU Level of Service B
Analysis Period (min) 15	

! Phase conflict between lane groups.

Splits and Phases: 44: I-95 NB-Off Ramp Right Turn & Northlake Blvd



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	1726	0	0	0	0	1089
Future Volume (vph)	1726	0	0	0	0	1089
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0					6.0
Lane Util. Factor	0.86					0.76
Frt	1.00					0.85
Flt Protected	1.00					1.00
Satd. Flow (prot)	6346					3575
Flt Permitted	1.00					1.00
Satd. Flow (perm)	6346					3575
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1817	0	0	0	0	1146
RTOR Reduction (vph)	0	0	0	0	0	120
Lane Group Flow (vph)	1817	0	0	0	0	1026
Heavy Vehicles (%)	3%	3%	2%	2%	3%	3%
Turn Type	NA					custom
Protected Phases	Free!					6 8!
Permitted Phases						
Actuated Green, G (s)	80.0					37.0
Effective Green, g (s)	80.0					37.0
Actuated g/C Ratio	1.00					0.46
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)	6346					1653
v/s Ratio Prot	0.29					c0.29
v/s Ratio Perm						
v/c Ratio	0.29					0.62
Uniform Delay, d1	0.0					16.2
Progression Factor	1.00					1.00
Incremental Delay, d2	0.0					0.7
Delay (s)	0.0					16.9
Level of Service	A					B
Approach Delay (s)	0.0			0.0	16.9	
Approach LOS	A			A	B	

Intersection Summary			
HCM 2000 Control Delay	6.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		

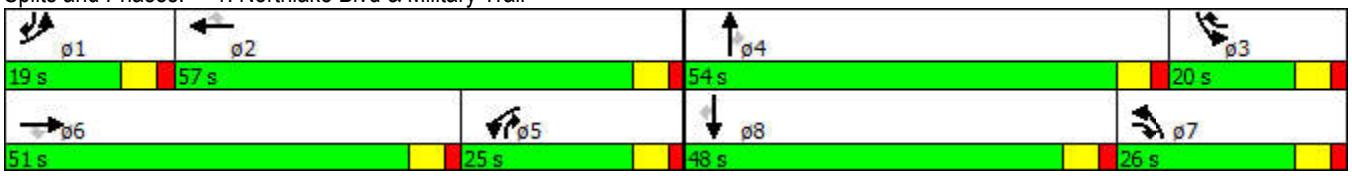
! Phase conflict between lane groups.
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	431	1065	210	342	1416	350	414	713	391	430	842	677
Future Volume (vph)	431	1065	210	342	1416	350	414	713	391	430	842	677
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	1	6	7	5	2	3	7	4	5	3	8	1
Permitted Phases			6			2			4			8
Detector Phase	1	6	7	5	2	3	7	4	5	3	8	1
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	51.0	10.0	10.0	47.0	10.0	10.0	47.0	10.0	10.0	47.0	10.0
Total Split (s)	19.0	51.0	26.0	25.0	57.0	20.0	26.0	54.0	25.0	20.0	48.0	19.0
Total Split (%)	12.7%	34.0%	17.3%	16.7%	38.0%	13.3%	17.3%	36.0%	16.7%	13.3%	32.0%	12.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None	None	None
Act Effct Green (s)	13.0	45.1	71.0	19.0	51.1	74.9	19.9	27.2	52.3	23.8	31.2	44.2
Actuated g/C Ratio	0.09	0.32	0.51	0.14	0.37	0.54	0.14	0.20	0.38	0.17	0.22	0.32
v/c Ratio	1.41	0.68	0.26	0.77	0.80	0.42	0.89	0.75	0.65	0.77	0.78	1.31
Control Delay	248.5	43.9	15.4	70.3	44.0	10.3	79.5	58.0	35.8	65.3	55.9	179.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	248.5	43.9	15.4	70.3	44.0	10.3	79.5	58.0	35.8	65.3	55.9	179.5
LOS	F	D	B	E	D	B	E	E	D	E	E	F
Approach Delay		92.1			42.7			58.2			100.9	
Approach LOS		F			D			E			F	

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 139.2
Natural Cycle: 150
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.41
Intersection Signal Delay: 73.1 — Intersection LOS: E
Intersection Capacity Utilization 96.1% — ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 1: Northlake Blvd & Military Trail



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	431	1065	210	342	1416	350	414	713	391	430	842	677
Future Volume (vph)	431	1065	210	342	1416	350	414	713	391	430	842	677
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	454	1121	221	360	1491	368	436	751	412	453	886	713
RTOR Reduction (vph)	0	0	32	0	0	28	0	0	40	0	0	41
Lane Group Flow (vph)	454	1121	189	360	1491	340	436	751	372	453	886	672
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	1	6	7	5	2	3	7	4	5	3	8	1
Permitted Phases			6			2			4			8
Actuated Green, G (s)	13.0	45.1	65.0	19.0	51.1	75.0	19.9	27.2	46.2	23.9	31.2	44.2
Effective Green, g (s)	13.0	45.1	65.0	19.0	51.1	75.0	19.9	27.2	46.2	23.9	31.2	44.2
Actuated g/C Ratio	0.09	0.32	0.47	0.14	0.37	0.54	0.14	0.20	0.33	0.17	0.22	0.32
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	320	1647	807	468	1866	852	490	993	593	589	1139	502
v/s Ratio Prot	c0.13	0.22	0.03	0.10	c0.29	0.07	c0.13	0.15	0.09	c0.13	0.17	c0.12
v/s Ratio Perm			0.09			0.15			0.15			0.30
v/c Ratio	1.42	0.68	0.23	0.77	0.80	0.40	0.89	0.76	0.63	0.77	0.78	1.34
Uniform Delay, d1	63.1	40.8	22.2	58.0	39.5	18.9	58.6	52.9	39.2	55.0	50.7	47.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	205.9	2.3	0.2	7.5	3.7	0.3	17.7	3.3	2.1	6.0	3.4	165.5
Delay (s)	269.0	43.1	22.4	65.4	43.1	19.2	76.2	56.2	41.3	61.0	54.2	213.0
Level of Service	F	D	C	E	D	B	E	E	D	E	D	F
Approach Delay (s)		97.6			42.8			57.8			110.9	
Approach LOS		F			D			E			F	

Intersection Summary			
HCM 2000 Control Delay	77.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	139.2	Sum of lost time (s)	24.0
Intersection Capacity Utilization	96.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	431	1065	210	342	1416	350	414	713	391	430	842	677
Future Volume (veh/h)	431	1065	210	342	1416	350	414	713	391	430	842	677
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	454	1121	221	360	1491	368	436	751	412	453	886	713
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	304	1553	699	444	1760	872	467	1008	518	704	1357	562
Arrive On Green	0.09	0.31	0.31	0.26	0.69	0.69	0.14	0.20	0.20	0.20	0.27	0.27
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	454	1121	221	360	1491	368	436	751	412	453	886	713
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	13.0	28.9	0.0	14.5	32.1	3.9	18.5	20.5	15.9	17.8	22.8	32.7
Cycle Q Clear(g_c), s	13.0	28.9	0.0	14.5	32.1	3.9	18.5	20.5	15.9	17.8	22.8	32.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	304	1553	699	444	1760	872	467	1008	518	704	1357	562
V/C Ratio(X)	1.49	0.72	0.32	0.81	0.85	0.42	0.93	0.75	0.80	0.64	0.65	1.27
Avail Cap(c_a), veh/h	304	1553	699	444	1760	872	467	1657	720	704	1450	591
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.2	45.6	26.7	53.0	19.8	2.9	63.0	55.6	45.1	53.7	47.9	22.1
Incr Delay (d2), s/veh	239.3	2.9	1.2	10.9	5.3	1.5	25.9	1.1	4.2	2.0	1.0	134.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	29.3	20.2	10.1	12.0	22.0	4.0	15.8	14.8	20.0	13.4	16.2	67.5
LnGrp Delay(d),s/veh	306.5	48.5	27.9	63.8	25.0	4.4	88.9	56.7	49.3	55.7	48.9	156.3
LnGrp LOS	F	D	C	E	C	A	F	E	D	E	D	F
Approach Vol, veh/h		1796			2219			1599			2052	
Approach Delay, s/veh		111.2			27.9			63.6			87.7	
Approach LOS		F			C			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	57.0	36.1	35.2	25.0	51.0	26.0	45.3
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	13.0	51.0	14.0	48.0	19.0	45.0	20.0	42.0
Max Q Clear Time (g_c+I1), s	15.0	34.1	19.8	22.5	16.5	30.9	20.5	34.7
Green Ext Time (p_c), s	0.0	11.4	0.0	6.7	2.2	6.8	0.0	4.6

Intersection Summary	
HCM 2010 Ctrl Delay	70.9
HCM 2010 LOS	E

Lane Group	EBL	EBR	EBR2	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	54	1704	244	295	1945	226	258	43	307	161	47
Future Volume (vph)	54	1704	244	295	1945	226	258	43	307	161	47
Turn Type	Prot	Prot	pm+ov	Prot	NA	custom	pm+pt	NA	custom	Prot	NA
Protected Phases	1	6	7	5	2	3	7	4	4 5	3	8
Permitted Phases	1		6			2	4				
Detector Phase	1	6	7	5	2	3	7	4	4 5	3	8
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	10.0	36.0	22.0	10.0	36.0	22.0	22.0	22.0		22.0	22.0
Total Split (s)	19.0	67.0	28.0	33.0	81.0	22.0	28.0	28.0		22.0	22.0
Total Split (%)	12.7%	44.7%	18.7%	22.0%	54.0%	14.7%	18.7%	18.7%		14.7%	14.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lead		Lag	Lead
Lead-Lag Optimize?	Yes		Yes	Yes		Yes	Yes	Yes		Yes	Yes
Recall Mode	C-Max	C-Max	None	None	None	Max	None	None		Max	Max
Act Effct Green (s)	13.0	68.8	90.8	19.2	75.0	98.7	36.3	14.3	33.5	23.7	16.0
Actuated g/C Ratio	0.09	0.46	0.61	0.13	0.50	0.66	0.24	0.10	0.22	0.16	0.11
v/c Ratio	0.37	0.62	0.26	0.71	0.64	0.22	0.74	0.25	0.48	0.31	0.50
Control Delay	72.1	32.2	6.2	79.1	36.2	6.0	64.2	65.3	25.5	58.6	66.1
Queue Delay	0.0	0.0	0.0	0.0	0.5	0.2	0.0	0.0	0.0	0.0	0.0
Total Delay	72.1	32.2	6.2	79.1	36.6	6.2	64.2	65.3	25.5	58.6	66.1
LOS	E	C	A	E	D	A	E	E	C	E	E
Approach Delay					38.9			44.7			61.3
Approach LOS					D			D			E

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 1:EBL and 6:EBR, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 37.4	Intersection LOS: D
Intersection Capacity Utilization Err%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 2: Keating Dr & Northlake Blvd

Movement	EBL	EBR	EBR2	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	1704	244	295	1945	226	258	43	307	161	47	45
Future Volume (vph)	54	1704	244	295	1945	226	258	43	307	161	47	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	*0.91	1.00	0.97	0.86	1.00	1.00	1.00	0.88	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	6346	1583	3433	6408	1583	1770	1863	2787	3433	1726	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.62	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	6346	1583	3433	6408	1583	1154	1863	2787	3433	1726	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	57	1794	257	311	2047	238	272	45	323	169	49	47
RTOR Reduction (vph)	0	0	24	0	0	21	0	0	47	0	9	0
Lane Group Flow (vph)	57	1794	233	311	2047	217	272	45	276	169	87	0
Turn Type	Prot	Prot	pm+ov	Prot	NA	custom	pm+pt	NA	custom	Prot	NA	
Protected Phases	1	6	7	5	2	3	7	4	4 5	3	8	
Permitted Phases	1		6			2	4					
Actuated Green, G (s)	13.0	68.8	90.8	19.2	75.0	98.7	36.3	14.3	33.5	23.7	16.0	
Effective Green, g (s)	13.0	68.8	90.8	19.2	75.0	98.7	36.3	14.3	33.5	23.7	16.0	
Actuated g/C Ratio	0.09	0.46	0.61	0.13	0.50	0.66	0.24	0.10	0.22	0.16	0.11	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	153	2910	958	439	3204	1041	369	177	622	542	184	
v/s Ratio Prot	0.03	0.28	0.04	c0.09	c0.32	0.03	c0.11	0.02	0.10	0.05	0.05	
v/s Ratio Perm			0.11			0.10	c0.07					
v/c Ratio	0.37	0.62	0.24	0.71	0.64	0.21	0.74	0.25	0.44	0.31	0.47	
Uniform Delay, d1	64.7	30.6	13.7	62.7	27.6	10.2	52.0	62.9	50.2	55.9	63.0	
Progression Factor	1.00	1.00	1.00	1.13	1.27	1.38	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.8	1.0	0.1	4.9	0.4	0.1	7.5	0.8	0.5	1.5	8.5	
Delay (s)	71.5	31.6	13.8	75.7	35.4	14.2	59.4	63.7	50.7	57.4	71.5	
Level of Service	E	C	B	E	D	B	E	E	D	E	E	
Approach Delay (s)					38.3			55.3			62.5	
Approach LOS					D			E			E	

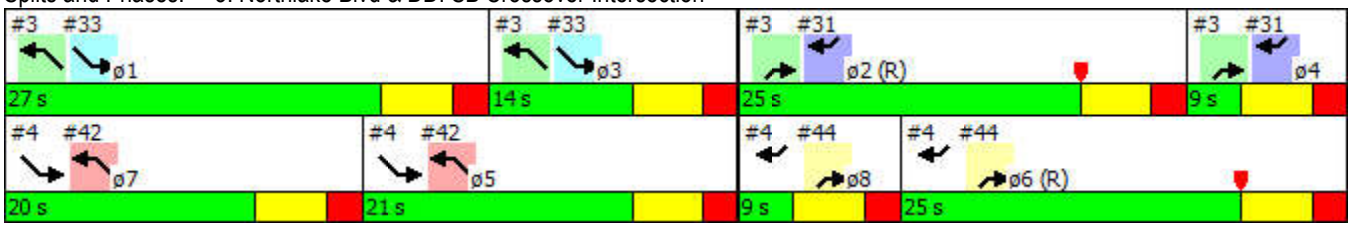
Intersection Summary			
HCM 2000 Control Delay	38.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	NWL	NER	ø1	ø2	ø3	ø4	ø5	ø6	ø7	ø8
Lane Configurations										
Traffic Volume (vph)	2542	2212								
Future Volume (vph)	2542	2212								
Turn Type	Prot	custom								
Protected Phases	1 3	2 4	1	2	3	4	5	6	7	8
Permitted Phases										
Detector Phase	1 3	2 4								
Switch Phase										
Minimum Initial (s)			4.0	4.0	2.0	2.0	4.0	2.0	4.0	2.0
Minimum Split (s)			20.0	20.0	9.0	9.0	20.0	9.0	20.0	9.0
Total Split (s)			27.0	25.0	14.0	9.0	21.0	25.0	20.0	9.0
Total Split (%)			36%	33%	19%	12%	28%	33%	27%	12%
Yellow Time (s)			4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lead	Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?			Yes	Yes			Yes		Yes	
Recall Mode			Min	C-Min	Min	Min	Min	C-Min	Min	Min
Act Effct Green (s)	35.0	28.0								
Actuated g/C Ratio	0.47	0.37								
v/c Ratio	0.85	0.92								
Control Delay	19.9	28.4								
Queue Delay	0.0	0.0								
Total Delay	19.9	28.4								
LOS	B	C								
Approach Delay	19.9									
Approach LOS	B									

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 49 (65%), Referenced to phase 2:NER and 6:, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 23.8	Intersection LOS: C
Intersection Capacity Utilization 43.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: Northlake Blvd & DDI SB Crossover Intersection



Movement	EBT	EBR	WBL	WBT	NWL	NWR	NEL	NER
Lane Configurations								
Traffic Volume (vph)	0	0	0	0	2542	0	0	2212
Future Volume (vph)	0	0	0	0	2542	0	0	2212
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.0			6.0
Lane Util. Factor					0.91			*0.91
Frt					1.00			1.00
Flt Protected					1.00			1.00
Satd. Flow (prot)					6780			6780
Flt Permitted					1.00			1.00
Satd. Flow (perm)					6780			6780
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	0	2676	0	0	2328
RTOR Reduction (vph)	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	2676	0	0	2328
Turn Type					Prot			custom
Protected Phases					1 3			2 4
Permitted Phases								
Actuated Green, G (s)					35.0			28.0
Effective Green, g (s)					35.0			28.0
Actuated g/C Ratio					0.47			0.37
Clearance Time (s)								
Vehicle Extension (s)								
Lane Grp Cap (vph)					3164			2531
v/s Ratio Prot					c0.39			c0.34
v/s Ratio Perm								
v/c Ratio					0.85			0.92
Uniform Delay, d1					17.6			22.4
Progression Factor					0.96			0.96
Incremental Delay, d2					2.2			5.7
Delay (s)					19.0			27.2
Level of Service					B			C
Approach Delay (s)	0.0			0.0	19.0		27.2	
Approach LOS	A			A	B		C	

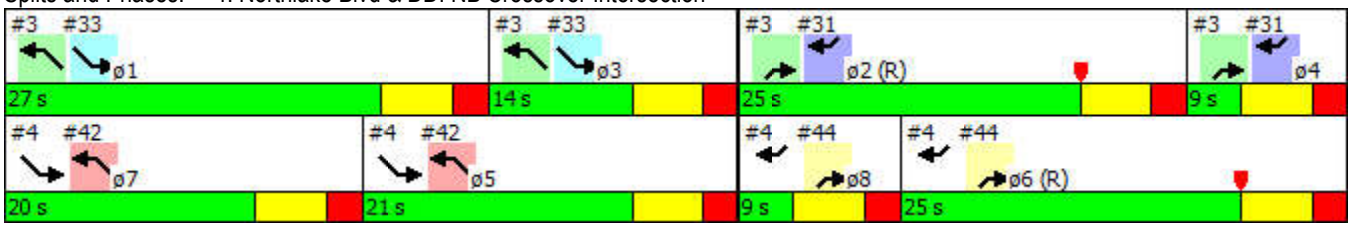
Intersection Summary			
HCM 2000 Control Delay	22.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	SEL	SWR	ø1	ø2	ø3	ø4	ø5	ø6	ø7	ø8
Lane Configurations										
Traffic Volume (vph)	2806	1880								
Future Volume (vph)	2806	1880								
Turn Type	Prot	custom								
Protected Phases	5 7	6 8	1	2	3	4	5	6	7	8
Permitted Phases										
Detector Phase	5 7	6 8								
Switch Phase										
Minimum Initial (s)			4.0	4.0	2.0	2.0	4.0	2.0	4.0	2.0
Minimum Split (s)			20.0	20.0	9.0	9.0	20.0	9.0	20.0	9.0
Total Split (s)			27.0	25.0	14.0	9.0	21.0	25.0	20.0	9.0
Total Split (%)			36%	33%	19%	12%	28%	33%	27%	12%
Yellow Time (s)			4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lead	Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?			Yes	Yes			Yes		Yes	
Recall Mode			Min	C-Min	Min	Min	Min	C-Min	Min	Min
Act Effct Green (s)	35.0	28.0								
Actuated g/C Ratio	0.47	0.37								
v/c Ratio	0.93	0.78								
Control Delay	24.4	27.1								
Queue Delay	0.0	0.0								
Total Delay	24.4	27.1								
LOS	C	C								
Approach Delay	24.4									
Approach LOS	C									

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 49 (65%), Referenced to phase 2:NER and 6:, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 25.5	Intersection LOS: C
Intersection Capacity Utilization 45.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 4: Northlake Blvd & DDI NB Crossover Intersection



Movement	EBL	EBT	WBT	WBR	SEL	SER	SWL	SWR
Lane Configurations								
Traffic Volume (vph)	0	0	0	0	2806	0	0	1880
Future Volume (vph)	0	0	0	0	2806	0	0	1880
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.0			6.0
Lane Util. Factor					0.91			*0.91
Frt					1.00			1.00
Flt Protected					1.00			1.00
Satd. Flow (prot)					6780			6780
Flt Permitted					1.00			1.00
Satd. Flow (perm)					6780			6780
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	0	2954	0	0	1979
RTOR Reduction (vph)	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	2954	0	0	1979
Turn Type					Prot			custom
Protected Phases					5 7			6 8
Permitted Phases								
Actuated Green, G (s)					35.0			28.0
Effective Green, g (s)					35.0			28.0
Actuated g/C Ratio					0.47			0.37
Clearance Time (s)								
Vehicle Extension (s)								
Lane Grp Cap (vph)					3164			2531
v/s Ratio Prot					c0.44			c0.29
v/s Ratio Perm								
v/c Ratio					0.93			0.78
Uniform Delay, d1					18.9			20.8
Progression Factor					0.94			1.20
Incremental Delay, d2					5.9			1.4
Delay (s)					23.7			26.3
Level of Service					C			C
Approach Delay (s)		0.0	0.0		23.7		26.3	
Approach LOS		A	A		C		C	

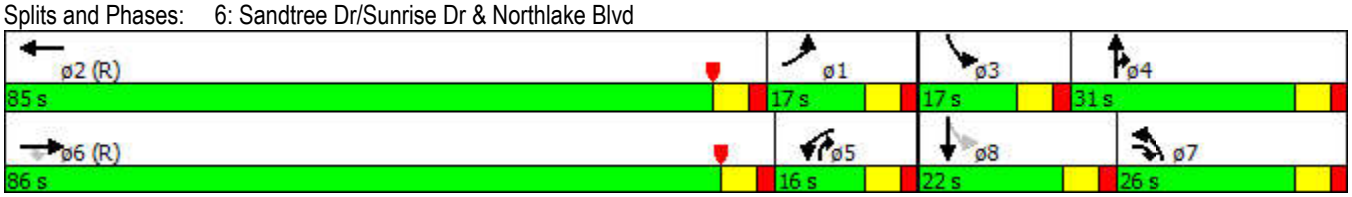
Intersection Summary			
HCM 2000 Control Delay	24.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	45.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	62	2157	181	189	2427	446	18	226	116	17
Future Volume (vph)	62	2157	181	189	2427	446	18	226	116	17
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	pt+ov	pm+pt	NA
Protected Phases	1	6	7	5	2	7	4	4 5	3	8
Permitted Phases			6						8	
Detector Phase	1	6	7	5	2	7	4	4 5	3	8
Switch Phase										
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	10.0	22.0	10.0	10.0	22.0	10.0	22.0		10.0	22.0
Total Split (s)	17.0	86.0	26.0	16.0	85.0	26.0	31.0		17.0	22.0
Total Split (%)	11.3%	57.3%	17.3%	10.7%	56.7%	17.3%	20.7%		11.3%	14.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0
Lead/Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag		Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	Max	C-Max	Max	Max	C-Max	Max	None		None	None
Act Effct Green (s)	11.0	80.0	109.1	10.0	79.0	23.1	26.1	36.1	12.9	12.9
Actuated g/C Ratio	0.07	0.53	0.73	0.07	0.53	0.15	0.17	0.24	0.09	0.09
v/c Ratio	0.26	0.84	0.16	0.87	0.77	0.89	0.06	0.33	0.39	0.66
Control Delay	78.6	31.3	4.1	102.6	30.2	81.1	53.2	25.5	65.9	77.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	78.6	31.3	4.1	102.6	30.2	81.1	53.2	25.5	65.9	77.9
LOS	E	C	A	F	C	F	D	C	E	E
Approach Delay		30.5			35.4		62.1			71.3
Approach LOS		C			D		E			E

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 141 (94%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 37.8	Intersection LOS: D
Intersection Capacity Utilization 81.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 6: Sandtree Dr/Sunrise Dr & Northlake Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	2157	181	189	2427	48	446	18	226	116	17	77
Future Volume (vph)	62	2157	181	189	2427	48	446	18	226	116	17	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.86		0.97	1.00	0.88	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	5085	1583	3433	6389		3433	1863	2787	3433	1634	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	1.00	1.00	
Satd. Flow (perm)	3433	5085	1583	3433	6389		3433	1863	2787	3614	1634	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	65	2271	191	199	2555	51	469	19	238	122	18	81
RTOR Reduction (vph)	0	0	19	0	5	0	0	0	46	0	9	0
Lane Group Flow (vph)	65	2271	172	199	2601	0	469	19	192	122	90	0
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	pt+ov	pm+pt	NA	
Protected Phases	1	6	7	5	2		7	4	4 5	3	8	
Permitted Phases			6							8		
Actuated Green, G (s)	11.0	80.0	103.1	10.0	79.0		23.1	26.1	36.1	12.9	12.9	
Effective Green, g (s)	11.0	80.0	103.1	10.0	79.0		23.1	26.1	36.1	12.9	12.9	
Actuated g/C Ratio	0.07	0.53	0.69	0.07	0.53		0.15	0.17	0.24	0.09	0.09	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	251	2712	1151	228	3364		528	324	670	310	140	
v/s Ratio Prot	0.02	c0.45	0.02	c0.06	0.41		c0.14	0.01	c0.07	0.03	c0.05	
v/s Ratio Perm			0.09							0.01		
v/c Ratio	0.26	0.84	0.15	0.87	0.77		0.89	0.06	0.29	0.39	0.64	
Uniform Delay, d1	65.7	29.5	8.2	69.4	28.3		62.2	51.7	46.5	65.0	66.3	
Progression Factor	1.16	0.95	0.84	1.00	1.00		1.00	1.00	1.00	0.97	0.97	
Incremental Delay, d2	2.3	3.0	0.3	34.0	1.8		19.5	0.1	0.2	0.8	9.5	
Delay (s)	78.2	31.0	7.1	103.4	30.1		81.7	51.8	46.7	64.0	73.8	
Level of Service	E	C	A	F	C		F	D	D	E	E	
Approach Delay (s)		30.4			35.3			69.4			68.4	
Approach LOS		C			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	38.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	2157	181	189	2427	48	446	18	226	116	17	77
Future Volume (veh/h)	62	2157	181	189	2427	48	446	18	226	116	17	77
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	65	2271	191	199	2555	51	469	19	238	122	18	81
Adj No. of Lanes	2	3	1	2	4	0	2	1	2	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	364	2712	1056	341	3432	68	459	296	719	263	22	99
Arrive On Green	0.11	0.53	0.53	0.10	0.53	0.53	0.13	0.16	0.16	0.05	0.07	0.07
Sat Flow, veh/h	3442	5085	1583	3442	6516	130	3442	1863	2787	3442	296	1332
Grp Volume(v), veh/h	65	2271	191	199	1884	722	469	19	238	122	0	99
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1602	1840	1721	1863	1393	1721	0	1628
Q Serve(g_s), s	2.6	56.5	0.0	8.3	45.8	45.9	20.0	1.3	1.2	5.2	0.0	9.0
Cycle Q Clear(g_c), s	2.6	56.5	0.0	8.3	45.8	45.9	20.0	1.3	1.2	5.2	0.0	9.0
Prop In Lane	1.00		1.00	1.00		0.07	1.00		1.00	1.00		0.82
Lane Grp Cap(c), veh/h	364	2712	1056	341	2531	969	459	296	719	263	0	121
V/C Ratio(X)	0.18	0.84	0.18	0.58	0.74	0.75	1.02	0.06	0.33	0.46	0.00	0.82
Avail Cap(c_a), veh/h	364	2712	1056	341	2531	969	459	310	740	348	0	174
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.00	0.98
Uniform Delay (d), s/veh	61.1	29.5	9.5	64.6	27.6	27.7	65.0	53.6	27.6	70.3	0.0	68.4
Incr Delay (d2), s/veh	1.1	3.3	0.4	7.1	2.0	5.2	47.7	0.1	0.3	1.2	0.0	17.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.3	35.6	5.5	7.7	28.2	32.8	22.6	1.2	5.6	4.6	0.0	8.1
LnGrp Delay(d),s/veh	62.2	32.8	9.9	71.8	29.7	32.9	112.7	53.7	27.9	71.5	0.0	86.1
LnGrp LOS	E	C	A	E	C	C	F	D	C	E		F
Approach Vol, veh/h		2527			2805			726			221	
Approach Delay, s/veh		31.8			33.5			83.4			78.0	
Approach LOS		C			C			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.9	85.0	13.3	29.9	20.9	86.0	26.0	17.1
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	11.0	79.0	11.0	25.0	10.0	80.0	20.0	16.0
Max Q Clear Time (g_c+I1), s	4.6	47.9	7.2	3.3	10.3	58.5	22.0	11.0
Green Ext Time (p_c), s	0.5	23.7	0.1	2.7	0.0	17.2	0.0	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	40.1
HCM 2010 LOS	D

Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	10	175	206	354
Future Volume (vph)	10	175	206	354
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		2		
Detector Phase	4	2	2	6
Switch Phase				
Minimum Initial (s)	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0	22.0	22.0
Total Split (s)	33.0	117.0	117.0	117.0
Total Split (%)	22.0%	78.0%	78.0%	78.0%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Max	C-Max	C-Max
Act Effct Green (s)	7.0	134.5	134.5	134.5
Actuated g/C Ratio	0.05	0.90	0.90	0.90
v/c Ratio	0.36	0.21	0.13	0.24
Control Delay	41.5	2.0	1.3	1.8
Queue Delay	0.0	0.9	0.6	0.0
Total Delay	41.5	2.9	2.0	1.8
LOS	D	A	A	A
Approach Delay	41.5		2.4	1.8
Approach LOS	D		A	A

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 115 (77%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.36	
Intersection Signal Delay: 3.9	Intersection LOS: A
Intersection Capacity Utilization 48.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 8: Sunrise Dr & Alley Road

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	10	25	175	206	354	25
Future Volume (vph)	10	25	175	206	354	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0	6.0	6.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.91		1.00	1.00	0.99	
Flt Protected	0.99		0.95	1.00	1.00	
Satd. Flow (prot)	1661		1770	1863	1846	
Flt Permitted	0.99		0.53	1.00	1.00	
Satd. Flow (perm)	1661		982	1863	1846	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	11	26	184	217	373	26
RTOR Reduction (vph)	25	0	0	0	1	0
Lane Group Flow (vph)	12	0	184	217	398	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	5.9		132.1	132.1	132.1	
Effective Green, g (s)	5.9		132.1	132.1	132.1	
Actuated g/C Ratio	0.04		0.88	0.88	0.88	
Clearance Time (s)	6.0		6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	65		864	1640	1625	
v/s Ratio Prot	c0.01			0.12	c0.22	
v/s Ratio Perm			0.19			
v/c Ratio	0.18		0.21	0.13	0.25	
Uniform Delay, d1	69.7		1.3	1.2	1.4	
Progression Factor	1.00		0.98	0.88	1.00	
Incremental Delay, d2	1.4		0.6	0.2	0.4	
Delay (s)	71.1		1.9	1.2	1.7	
Level of Service	E		A	A	A	
Approach Delay (s)	71.1			1.5	1.7	
Approach LOS	E			A	A	

Intersection Summary			
HCM 2000 Control Delay	4.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		

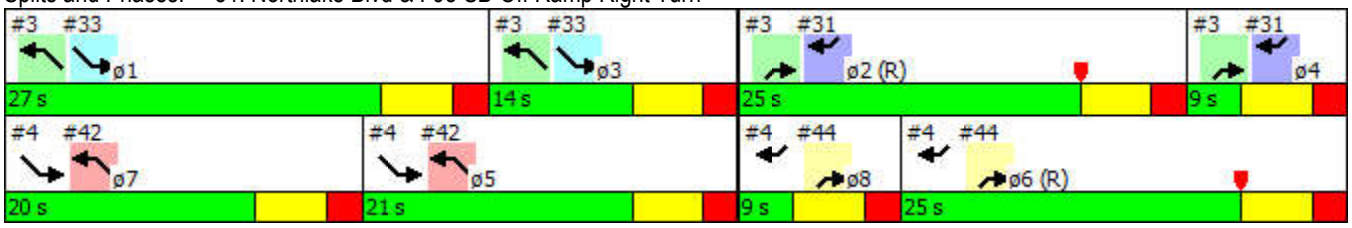
c Critical Lane Group

Lane Group	WBT	SWR	ø1	ø2	ø3	ø4	ø5	ø6	ø7	ø8
Lane Configurations										
Traffic Volume (vph)	2074	562								
Future Volume (vph)	2074	562								
Turn Type	NA	custom								
Protected Phases	Free!	2 4!	1	2	3	4	5	6	7	8
Permitted Phases										
Detector Phase		2 4								
Switch Phase										
Minimum Initial (s)			4.0	4.0	2.0	2.0	4.0	2.0	4.0	2.0
Minimum Split (s)			20.0	20.0	9.0	9.0	20.0	9.0	20.0	9.0
Total Split (s)			27.0	25.0	14.0	9.0	21.0	25.0	20.0	9.0
Total Split (%)			36%	33%	19%	12%	28%	33%	27%	12%
Yellow Time (s)			4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lead	Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?			Yes	Yes			Yes		Yes	
Recall Mode			Min	C-Min	Min	Min	Min	C-Min	Min	Min
Act Effct Green (s)	75.0	28.0								
Actuated g/C Ratio	1.00	0.37								
v/c Ratio	0.34	0.41								
Control Delay	0.1	14.2								
Queue Delay	0.0	0.0								
Total Delay	0.1	14.2								
LOS	A	B								
Approach Delay	0.1									
Approach LOS	A									

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 49 (65%), Referenced to phase 2:NER and 6:, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 3.1	Intersection LOS: A
Intersection Capacity Utilization 51.5%	ICU Level of Service A
Analysis Period (min) 15	

! Phase conflict between lane groups.

Splits and Phases: 31: Northlake Blvd & I-95 SB-Off Ramp Right Turn



Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	0	0	2074	0	0	562
Future Volume (vph)	0	0	2074	0	0	562
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	8	12	12	12	12
Total Lost time (s)			4.0			6.0
Lane Util. Factor			0.86			0.76
Frt			1.00			0.85
Flt Protected			1.00			1.00
Satd. Flow (prot)			6408			3610
Flt Permitted			1.00			1.00
Satd. Flow (perm)			6408			3610
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	2183	0	0	592
RTOR Reduction (vph)	0	0	0	0	0	84
Lane Group Flow (vph)	0	0	2183	0	0	508
Turn Type			NA			custom
Protected Phases			Free!			2 4!
Permitted Phases						
Actuated Green, G (s)			75.0			28.0
Effective Green, g (s)			75.0			28.0
Actuated g/C Ratio			1.00			0.37
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)			6408			1347
v/s Ratio Prot			0.34			c0.14
v/s Ratio Perm						
v/c Ratio			0.34			0.38
Uniform Delay, d1			0.0			17.1
Progression Factor			1.00			1.00
Incremental Delay, d2			0.1			0.2
Delay (s)			0.1			17.3
Level of Service			A			B
Approach Delay (s)		0.0	0.1		17.3	
Approach LOS		A	A		B	

Intersection Summary			
HCM 2000 Control Delay	3.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		

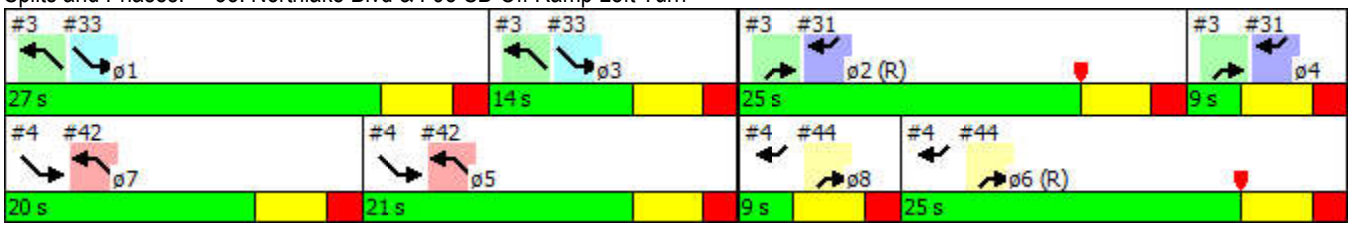
! Phase conflict between lane groups.
c Critical Lane Group

Lane Group	EBT	SEL	ø1	ø2	ø3	ø4	ø5	ø6	ø7	ø8
Lane Configurations										
Traffic Volume (vph)	1605	549								
Future Volume (vph)	1605	549								
Turn Type	NA	Prot								
Protected Phases	Free!	1 3!	1	2	3	4	5	6	7	8
Permitted Phases										
Detector Phase		1 3								
Switch Phase										
Minimum Initial (s)			4.0	4.0	2.0	2.0	4.0	2.0	4.0	2.0
Minimum Split (s)			20.0	20.0	9.0	9.0	20.0	9.0	20.0	9.0
Total Split (s)			27.0	25.0	14.0	9.0	21.0	25.0	20.0	9.0
Total Split (%)			36%	33%	19%	12%	28%	33%	27%	12%
Yellow Time (s)			4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lead	Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?			Yes	Yes			Yes		Yes	
Recall Mode			Min	C-Min	Min	Min	Min	C-Min	Min	Min
Act Effct Green (s)	75.0	35.0								
Actuated g/C Ratio	1.00	0.47								
v/c Ratio	0.26	0.25								
Control Delay	0.0	12.4								
Queue Delay	0.0	0.0								
Total Delay	0.0	12.4								
LOS	A	B								
Approach Delay	0.0	12.4								
Approach LOS	A	B								

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 49 (65%), Referenced to phase 2:NER and 6:, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 3.2	Intersection LOS: A
Intersection Capacity Utilization 42.0%	ICU Level of Service A
Analysis Period (min) 15	

! Phase conflict between lane groups.

Splits and Phases: 33: Northlake Blvd & I-95 SB-Off Ramp Left Turn



Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Traffic Volume (vph)	0	1605	0	0	549	0
Future Volume (vph)	0	1605	0	0	549	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			6.0	
Lane Util. Factor		0.86			0.94	
Frt		1.00			1.00	
Flt Protected		1.00			0.95	
Satd. Flow (prot)		6408			4990	
Flt Permitted		1.00			0.95	
Satd. Flow (perm)		6408			4990	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1689	0	0	578	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	1689	0	0	578	0
Turn Type		NA			Prot	
Protected Phases		Free!			1 3!	
Permitted Phases						
Actuated Green, G (s)		75.0			35.0	
Effective Green, g (s)		75.0			35.0	
Actuated g/C Ratio		1.00			0.47	
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)		6408			2328	
v/s Ratio Prot		0.26			0.12	
v/s Ratio Perm						
v/c Ratio		0.26			0.25	
Uniform Delay, d1		0.0			12.1	
Progression Factor		1.00			1.00	
Incremental Delay, d2		0.0			0.1	
Delay (s)		0.0			12.1	
Level of Service		A			B	
Approach Delay (s)		0.0	0.0		12.1	
Approach LOS		A	A		B	

Intersection Summary			
HCM 2000 Control Delay	3.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	42.0%	ICU Level of Service	A
Analysis Period (min)	15		

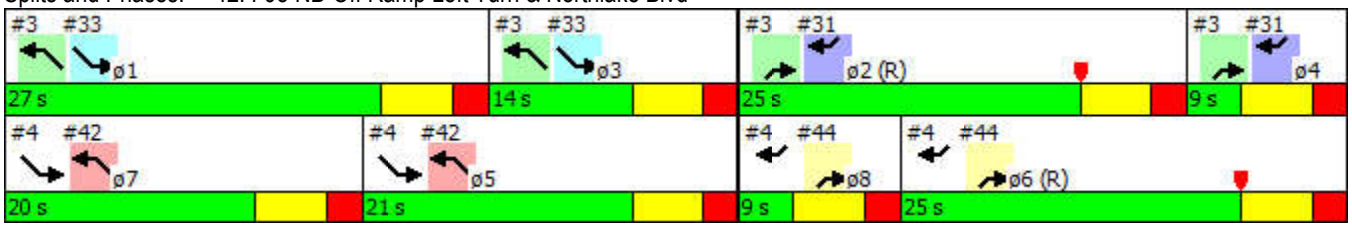
! Phase conflict between lane groups.
c Critical Lane Group

Lane Group	WBT	NWL	ø1	ø2	ø3	ø4	ø5	ø6	ø7	ø8
Lane Configurations										
Traffic Volume (vph)	2330	688								
Future Volume (vph)	2330	688								
Turn Type	NA	Prot								
Protected Phases	Free!	7 5!	1	2	3	4	5	6	7	8
Permitted Phases										
Detector Phase		7 5								
Switch Phase										
Minimum Initial (s)			4.0	4.0	2.0	2.0	4.0	2.0	4.0	2.0
Minimum Split (s)			20.0	20.0	9.0	9.0	20.0	9.0	20.0	9.0
Total Split (s)			27.0	25.0	14.0	9.0	21.0	25.0	20.0	9.0
Total Split (%)			36%	33%	19%	12%	28%	33%	27%	12%
Yellow Time (s)			4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lead	Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?			Yes	Yes			Yes		Yes	
Recall Mode			Min	C-Min	Min	Min	Min	C-Min	Min	Min
Act Effct Green (s)	75.0	35.0								
Actuated g/C Ratio	1.00	0.47								
v/c Ratio	0.38	0.31								
Control Delay	1.3	12.9								
Queue Delay	0.0	0.0								
Total Delay	1.3	12.9								
LOS	A	B								
Approach Delay	1.3	12.9								
Approach LOS	A	B								

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 49 (65%), Referenced to phase 2:NER and 6:, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 4.0	Intersection LOS: A
Intersection Capacity Utilization 55.2%	ICU Level of Service B
Analysis Period (min) 15	

! Phase conflict between lane groups.

Splits and Phases: 42: I-95 NB-Off Ramp Left Turn & Northlake Blvd



Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Volume (vph)	0	0	0	2330	688	0
Future Volume (vph)	0	0	0	2330	688	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	6.0	
Lane Util. Factor				0.86	0.94	
Frt				1.00	1.00	
Flt Protected				1.00	0.95	
Satd. Flow (prot)				6408	4990	
Flt Permitted				1.00	0.95	
Satd. Flow (perm)				6408	4990	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	2453	724	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	2453	724	0
Turn Type				NA	Prot	
Protected Phases				Free!	7 5!	
Permitted Phases						
Actuated Green, G (s)				75.0	35.0	
Effective Green, g (s)				75.0	35.0	
Actuated g/C Ratio				1.00	0.47	
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)				6408	2328	
v/s Ratio Prot				0.38	0.15	
v/s Ratio Perm						
v/c Ratio				0.38	0.31	
Uniform Delay, d1				0.0	12.5	
Progression Factor				1.00	1.00	
Incremental Delay, d2				0.1	0.1	
Delay (s)				0.1	12.6	
Level of Service				A	B	
Approach Delay (s)	0.0			0.1	12.6	
Approach LOS	A			A	B	

Intersection Summary			
HCM 2000 Control Delay	3.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		

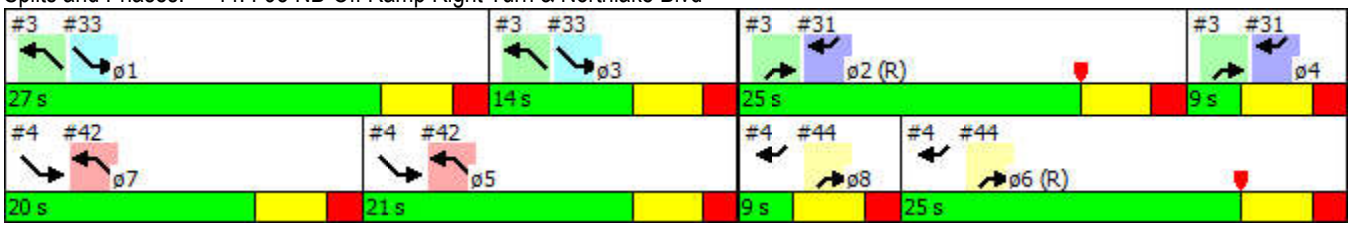
! Phase conflict between lane groups.
c Critical Lane Group

Lane Group	EBT	NER	ø1	ø2	ø3	ø4	ø5	ø6	ø7	ø8
Lane Configurations										
Traffic Volume (vph)	1595	1043								
Future Volume (vph)	1595	1043								
Turn Type	NA	custom								
Protected Phases	Free!	6 8!	1	2	3	4	5	6	7	8
Permitted Phases										
Detector Phase		6 8								
Switch Phase										
Minimum Initial (s)			4.0	4.0	2.0	2.0	4.0	2.0	4.0	2.0
Minimum Split (s)			20.0	20.0	9.0	9.0	20.0	9.0	20.0	9.0
Total Split (s)			27.0	25.0	14.0	9.0	21.0	25.0	20.0	9.0
Total Split (%)			36%	33%	19%	12%	28%	33%	27%	12%
Yellow Time (s)			4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lead	Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?			Yes	Yes			Yes		Yes	
Recall Mode			Min	C-Min	Min	Min	Min	C-Min	Min	Min
Act Effct Green (s)	75.0	28.0								
Actuated g/C Ratio	1.00	0.37								
v/c Ratio	0.26	0.72								
Control Delay	0.0	18.2								
Queue Delay	0.0	0.0								
Total Delay	0.0	18.2								
LOS	A	B								
Approach Delay	0.0									
Approach LOS	A									

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 49 (65%), Referenced to phase 2:NER and 6:, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 7.2	Intersection LOS: A
Intersection Capacity Utilization 55.8%	ICU Level of Service B
Analysis Period (min) 15	

! Phase conflict between lane groups.

Splits and Phases: 44: I-95 NB-Off Ramp Right Turn & Northlake Blvd



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	1595	0	0	0	0	1043
Future Volume (vph)	1595	0	0	0	0	1043
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0					6.0
Lane Util. Factor	0.86					0.76
Frt	1.00					0.85
Flt Protected	1.00					1.00
Satd. Flow (prot)	6408					3610
Flt Permitted	1.00					1.00
Satd. Flow (perm)	6408					3610
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1679	0	0	0	0	1098
RTOR Reduction (vph)	0	0	0	0	0	169
Lane Group Flow (vph)	1679	0	0	0	0	929
Turn Type	NA					custom
Protected Phases	Free!					6 8!
Permitted Phases						
Actuated Green, G (s)	75.0					28.0
Effective Green, g (s)	75.0					28.0
Actuated g/C Ratio	1.00					0.37
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)	6408					1347
v/s Ratio Prot	0.26					c0.26
v/s Ratio Perm						
v/c Ratio	0.26					0.69
Uniform Delay, d1	0.0					19.8
Progression Factor	1.00					1.00
Incremental Delay, d2	0.0					1.5
Delay (s)	0.0					21.3
Level of Service	A					C
Approach Delay (s)	0.0			0.0	21.3	
Approach LOS	A			A	C	

Intersection Summary			
HCM 2000 Control Delay	8.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	55.8%	ICU Level of Service	B
Analysis Period (min)	15		

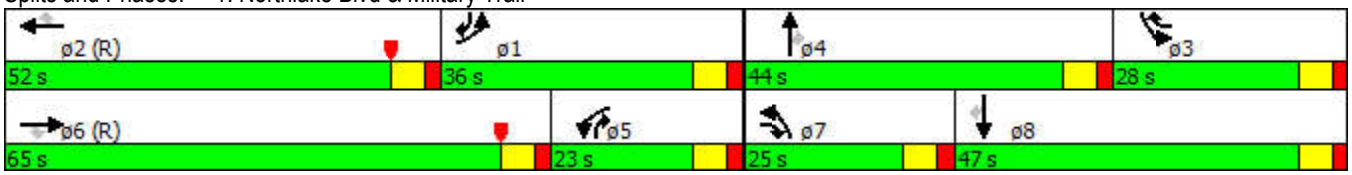
! Phase conflict between lane groups.
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	678	1705	294	304	1223	346	390	826	381	433	642	403
Future Volume (vph)	678	1705	294	304	1223	346	390	826	381	433	642	403
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	1	6	7	5	2	3	7	4	5	3	8	1
Permitted Phases			6			2			4			8
Detector Phase	1	6	7	5	2	3	7	4	5	3	8	1
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	51.0	22.0	22.0	47.0	10.0	22.0	47.0	22.0	10.0	47.0	10.0
Total Split (s)	36.0	65.0	25.0	23.0	52.0	28.0	25.0	44.0	23.0	28.0	47.0	36.0
Total Split (%)	22.5%	40.6%	15.6%	14.4%	32.5%	17.5%	15.6%	27.5%	14.4%	17.5%	29.4%	22.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	None	None	None	None
Act Effct Green (s)	30.0	60.4	79.4	17.0	47.4	77.6	19.0	34.4	57.4	24.2	39.6	69.6
Actuated g/C Ratio	0.19	0.38	0.50	0.11	0.30	0.48	0.12	0.22	0.36	0.15	0.25	0.44
v/c Ratio	1.12	0.94	0.38	0.90	0.88	0.47	1.04	0.82	0.68	0.89	0.54	0.59
Control Delay	130.8	59.3	12.4	85.1	38.7	15.8	121.7	66.7	42.7	85.4	54.0	19.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	130.8	59.3	12.4	85.1	38.7	15.8	121.7	66.7	42.7	85.4	54.0	19.6
LOS	F	E	B	F	D	B	F	E	D	F	D	B
Approach Delay		72.3			42.0			74.5			53.8	
Approach LOS		E			D			E			D	

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 155
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.12
Intersection Signal Delay: 61.7 — Intersection LOS: E
Intersection Capacity Utilization 91.3% — ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 1: Northlake Blvd & Military Trail



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	678	1705	294	304	1223	346	390	826	381	433	642	403
Future Volume (vph)	678	1705	294	304	1223	346	390	826	381	433	642	403
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	5036	1568	3335	4940	1538	3335	4940	1538	3400	5036	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3400	5036	1568	3335	4940	1538	3335	4940	1538	3400	5036	1568
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	714	1795	309	320	1287	364	411	869	401	456	676	424
RTOR Reduction (vph)	0	0	30	0	0	33	0	0	41	0	0	34
Lane Group Flow (vph)	714	1795	279	320	1287	331	411	869	360	456	676	390
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	5%	5%	5%	3%	3%	3%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	1	6	7	5	2	3	7	4	5	3	8	1
Permitted Phases			6			2			4			8
Actuated Green, G (s)	30.0	60.4	79.4	17.0	47.4	71.6	19.0	34.4	51.4	24.2	39.6	69.6
Effective Green, g (s)	30.0	60.4	79.4	17.0	47.4	71.6	19.0	34.4	51.4	24.2	39.6	69.6
Actuated g/C Ratio	0.19	0.38	0.50	0.11	0.30	0.45	0.12	0.21	0.32	0.15	0.25	0.43
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	637	1901	778	354	1463	745	396	1062	551	514	1246	682
v/s Ratio Prot	c0.21	c0.36	0.04	0.10	0.26	0.07	c0.12	c0.18	0.07	c0.13	0.13	0.11
v/s Ratio Perm			0.14			0.15			0.16			0.14
v/c Ratio	1.12	0.94	0.36	0.90	0.88	0.44	1.04	0.82	0.65	0.89	0.54	0.57
Uniform Delay, d1	65.0	48.2	24.7	70.7	53.6	30.5	70.5	59.8	46.7	66.6	52.3	34.0
Progression Factor	1.00	1.00	1.00	0.83	0.58	0.60	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	73.7	11.1	0.3	23.1	7.0	0.4	55.4	5.0	2.8	16.7	0.5	1.2
Delay (s)	138.7	59.3	25.0	82.0	38.1	18.7	125.9	64.8	49.4	83.3	52.8	35.2
Level of Service	F	E	C	F	D	B	F	E	D	F	D	D
Approach Delay (s)		75.7			41.7			76.1			56.9	
Approach LOS		E			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	63.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	91.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	678	1705	294	304	1223	346	390	826	381	433	642	403
Future Volume (veh/h)	678	1705	294	304	1223	346	390	826	381	433	642	403
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1810	1810	1810	1810	1810	1810	1845	1845	1845
Adj Flow Rate, veh/h	714	1795	309	320	1287	364	411	869	401	456	676	424
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	5	5	5	5	5	5	3	3	3
Cap, veh/h	734	1857	764	448	1420	654	397	1036	529	469	1150	696
Arrive On Green	0.22	0.37	0.37	0.13	0.29	0.29	0.12	0.21	0.21	0.14	0.23	0.23
Sat Flow, veh/h	3408	5036	1568	3343	4940	1538	3343	4940	1538	3408	5036	1568
Grp Volume(v), veh/h	714	1795	309	320	1287	364	411	869	401	456	676	424
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1672	1647	1538	1672	1647	1538	1704	1679	1568
Q Serve(g_s), s	33.3	55.9	10.4	14.7	40.2	6.5	19.0	27.0	15.6	21.3	19.1	9.3
Cycle Q Clear(g_c), s	33.3	55.9	10.4	14.7	40.2	6.5	19.0	27.0	15.6	21.3	19.1	9.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	734	1857	764	448	1420	654	397	1036	529	469	1150	696
V/C Ratio(X)	0.97	0.97	0.40	0.71	0.91	0.56	1.04	0.84	0.76	0.97	0.59	0.61
Avail Cap(c_a), veh/h	734	1857	764	448	1420	654	397	1173	572	469	1290	739
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.3	49.5	10.0	66.3	54.9	34.7	70.5	60.6	46.6	68.7	55.0	14.3
Incr Delay (d2), s/veh	26.5	14.4	1.6	5.3	9.9	3.4	54.6	5.0	5.4	34.5	0.6	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	25.4	37.1	8.5	11.5	26.8	6.0	21.2	18.7	11.8	18.1	13.9	13.3
LnGrp Delay(d),s/veh	88.8	63.9	11.6	71.6	64.8	38.1	125.1	65.7	52.0	103.2	55.6	15.6
LnGrp LOS	F	E	B	E	E	D	F	E	D	F	E	B
Approach Vol, veh/h		2818			1971			1681			1556	
Approach Delay, s/veh		64.5			61.0			76.9			58.6	
Approach LOS		E			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	40.5	52.0	28.0	39.5	27.5	65.0	25.0	42.5
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	30.0	46.0	22.0	38.0	17.0	59.0	19.0	41.0
Max Q Clear Time (g_c+I1), s	35.3	42.2	23.3	29.0	16.7	57.9	21.0	21.1
Green Ext Time (p_c), s	0.0	2.9	0.0	4.6	0.2	1.0	0.0	7.6

Intersection Summary	
HCM 2010 Ctrl Delay	65.1
HCM 2010 LOS	E

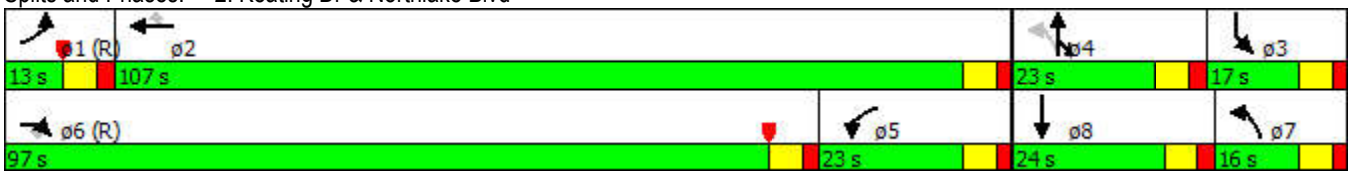
Notes

Lane Group	EBL	EBR	EBR2	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	29	2562	83	196	1917	135	52	9	207	219	13
Future Volume (vph)	29	2562	83	196	1917	135	52	9	207	219	13
Turn Type	Prot	Prot	Perm	Prot	NA	Perm	pm+pt	NA	Prot	Prot	NA
Protected Phases	1	6		5	2		7	4	4	3	8
Permitted Phases	1		6			2	4				
Detector Phase	1	6	6	5	2	2	7	4	4	3	8
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	36.0	36.0	10.0	36.0	36.0	11.0	22.0	22.0	11.0	22.0
Total Split (s)	13.0	97.0	97.0	23.0	107.0	107.0	16.0	23.0	23.0	17.0	24.0
Total Split (%)	8.1%	60.6%	60.6%	14.4%	66.9%	66.9%	10.0%	14.4%	14.4%	10.6%	15.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes						Yes	Yes	Yes	Yes	Yes
Recall Mode	C-Max	C-Max	C-Max	None	None	None	None	None	None	Max	Max
Act Effct Green (s)	7.0	91.0	91.0	14.6	98.6	98.6	23.2	14.1	14.1	16.3	23.6
Actuated g/C Ratio	0.04	0.57	0.57	0.09	0.62	0.62	0.14	0.09	0.09	0.10	0.15
v/c Ratio	0.40	0.75	0.09	0.67	0.52	0.14	0.25	0.06	0.73	0.66	0.19
Control Delay	86.1	23.7	9.5	82.4	19.4	9.0	54.8	65.8	65.9	78.4	53.8
Queue Delay	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.1	23.7	9.5	82.4	19.7	9.0	54.8	65.8	65.9	78.4	53.8
LOS	F	C	A	F	B	A	D	E	E	E	D
Approach Delay					24.5			63.7			74.2
Approach LOS					C			E			E

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 89 (56%), Referenced to phase 1:EBL and 6:EBR, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 28.6 Intersection LOS: C
Intersection Capacity Utilization Err% ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 2: Keating Dr & Northlake Blvd



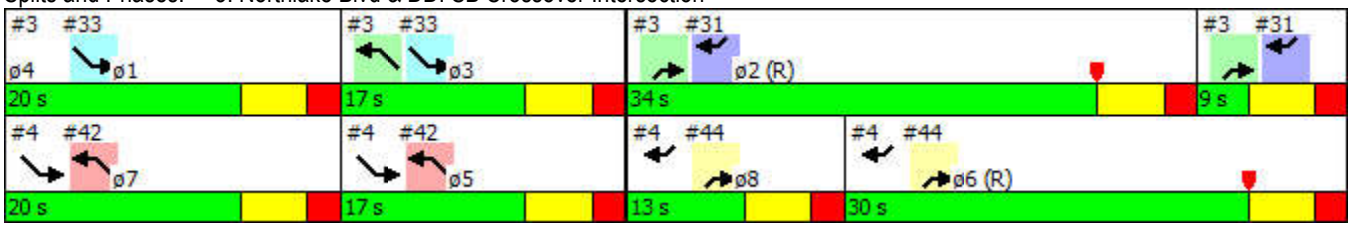
Movement	EBL	EBR	EBR2	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	2562	83	196	1917	135	52	9	207	219	13	31
Future Volume (vph)	29	2562	83	196	1917	135	52	9	207	219	13	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	*0.86	1.00	0.97	0.86	1.00	1.00	1.00	0.88	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	6346	1583	3367	6285	1553	1752	1845	2760	3433	1667	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.73	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	6346	1583	3367	6285	1553	1340	1845	2760	3433	1667	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	31	2697	87	206	2018	142	55	9	218	231	14	33
RTOR Reduction (vph)	0	0	26	0	0	23	0	0	55	0	9	0
Lane Group Flow (vph)	31	2697	61	206	2018	119	55	9	163	231	38	0
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Prot	Prot	Perm	Prot	NA	Perm	pm+pt	NA	Prot	Prot	NA	
Protected Phases	1	6		5	2		7	4	4	3	8	
Permitted Phases	1		6			2	4					
Actuated Green, G (s)	5.8	89.8	89.8	14.6	98.6	98.6	22.1	14.1	14.1	17.5	23.6	
Effective Green, g (s)	5.8	89.8	89.8	14.6	98.6	98.6	22.1	14.1	14.1	17.5	23.6	
Actuated g/C Ratio	0.04	0.56	0.56	0.09	0.62	0.62	0.14	0.09	0.09	0.11	0.15	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	64	3561	888	307	3873	957	205	162	243	375	245	
v/s Ratio Prot	0.02	c0.42		c0.06	0.32		0.01	0.00	c0.06	c0.07	0.02	
v/s Ratio Perm			0.04			0.08	0.02					
v/c Ratio	0.48	0.76	0.07	0.67	0.52	0.12	0.27	0.06	0.67	0.62	0.16	
Uniform Delay, d1	75.6	26.8	16.0	70.4	17.4	12.8	62.0	66.8	70.7	68.0	59.5	
Progression Factor	1.04	0.88	1.59	1.03	1.10	1.24	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	12.8	0.8	0.1	5.4	0.1	0.1	0.7	0.1	7.1	7.4	1.4	
Delay (s)	91.6	24.4	25.6	77.6	19.1	15.8	62.7	67.0	77.8	75.4	60.9	
Level of Service	F	C	C	E	B	B	E	E	E	E	E	
Approach Delay (s)					24.0			74.5			73.0	
Approach LOS					C			E			E	

Intersection Summary			
HCM 2000 Control Delay	29.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	NWL	NER	ø1	ø2	ø3	ø4	ø5	ø6	ø7	ø8
Lane Configurations										
Traffic Volume (vph)	1479	2227								
Future Volume (vph)	1479	2227								
Turn Type	Prot	custom								
Protected Phases	1 3	2 4	1	2	3	4	5	6	7	8
Permitted Phases										
Detector Phase	1 3	2 4								
Switch Phase										
Minimum Initial (s)			4.0	4.0	2.0	2.0	4.0	2.0	4.0	2.0
Minimum Split (s)			20.0	20.0	9.0	9.0	20.0	9.0	20.0	9.0
Total Split (s)			20.0	34.0	17.0	9.0	17.0	30.0	20.0	13.0
Total Split (%)			25%	43%	21%	11%	21%	38%	25%	16%
Yellow Time (s)			4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lead	Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?			Yes	Yes			Yes		Yes	
Recall Mode			Min	C-Min	Min	Min	Min	C-Min	Min	Min
Act Effct Green (s)	31.0	37.0								
Actuated g/C Ratio	0.39	0.46								
v/c Ratio	0.60	0.75								
Control Delay	19.5	29.3								
Queue Delay	0.0	0.0								
Total Delay	19.5	29.3								
LOS	B	C								
Approach Delay	19.5									
Approach LOS	B									

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NER and 6:, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 25.4	Intersection LOS: C
Intersection Capacity Utilization 44.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: Northlake Blvd & DDI SB Crossover Intersection



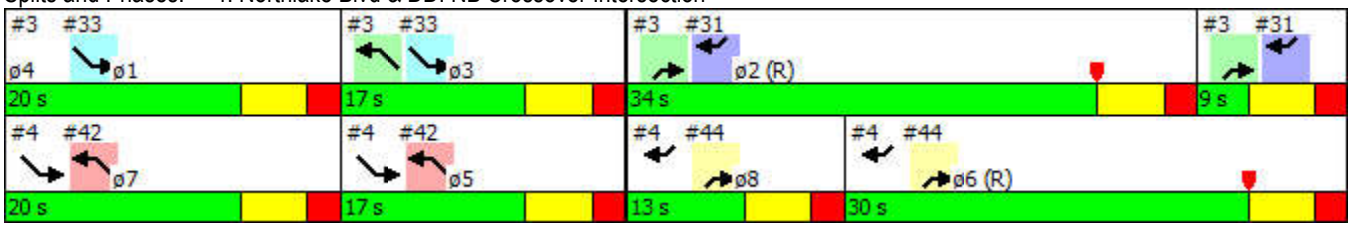
Movement	EBT	EBR	WBL	WBT	NWL	NWR	NEL	NER
Lane Configurations								
Traffic Volume (vph)	0	0	0	0	1479	0	0	2227
Future Volume (vph)	0	0	0	0	1479	0	0	2227
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.0			6.0
Lane Util. Factor					0.91			*0.91
Frt					1.00			1.00
Flt Protected					1.00			1.00
Satd. Flow (prot)					6650			6780
Flt Permitted					1.00			1.00
Satd. Flow (perm)					6650			6780
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	0	1557	0	0	2344
RTOR Reduction (vph)	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1557	0	0	2344
Heavy Vehicles (%)	2%	2%	2%	2%	4%	4%	2%	2%
Turn Type					Prot			custom
Protected Phases					1 3			2 4
Permitted Phases								
Actuated Green, G (s)					31.0			37.0
Effective Green, g (s)					31.0			37.0
Actuated g/C Ratio					0.39			0.46
Clearance Time (s)								
Vehicle Extension (s)								
Lane Grp Cap (vph)					2576			3135
v/s Ratio Prot					c0.23			c0.35
v/s Ratio Perm								
v/c Ratio					0.60			0.75
Uniform Delay, d1					19.6			17.7
Progression Factor					0.94			1.59
Incremental Delay, d2					0.4			0.7
Delay (s)					18.8			28.7
Level of Service					B			C
Approach Delay (s)	0.0			0.0	18.8		28.7	
Approach LOS	A			A	B		C	

Intersection Summary			
HCM 2000 Control Delay	24.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	44.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	SEL	SWR	ø1	ø2	ø3	ø4	ø5	ø6	ø7	ø8
Lane Configurations										
Traffic Volume (vph)	2209	1862								
Future Volume (vph)	2209	1862								
Turn Type	Prot	custom								
Protected Phases	5 7	6 8	1	2	3	4	5	6	7	8
Permitted Phases										
Detector Phase	5 7	6 8								
Switch Phase										
Minimum Initial (s)			4.0	4.0	2.0	2.0	4.0	2.0	4.0	2.0
Minimum Split (s)			20.0	20.0	9.0	9.0	20.0	9.0	20.0	9.0
Total Split (s)			20.0	34.0	17.0	9.0	17.0	30.0	20.0	13.0
Total Split (%)			25%	43%	21%	11%	21%	38%	25%	16%
Yellow Time (s)			4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lead	Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?			Yes	Yes			Yes		Yes	
Recall Mode			Min	C-Min	Min	Min	Min	C-Min	Min	Min
Act Effct Green (s)	31.0	37.0								
Actuated g/C Ratio	0.39	0.46								
v/c Ratio	0.89	0.64								
Control Delay	29.3	21.8								
Queue Delay	0.0	0.0								
Total Delay	29.3	21.8								
LOS	C	C								
Approach Delay	29.3									
Approach LOS	C									

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NER and 6:, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 25.9	Intersection LOS: C
Intersection Capacity Utilization 37.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 4: Northlake Blvd & DDI NB Crossover Intersection



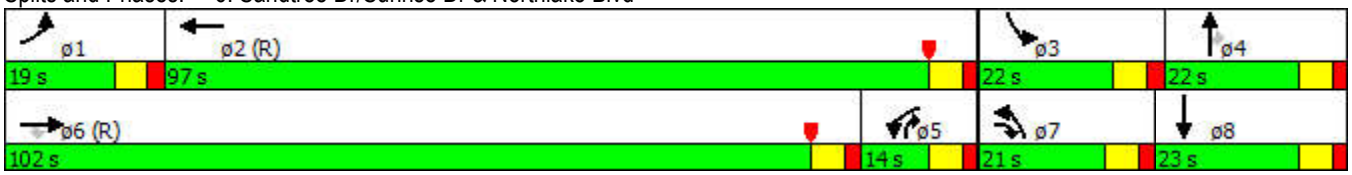
Movement	EBL	EBT	WBT	WBR	SEL	SER	SWL	SWR
Lane Configurations								
Traffic Volume (vph)	0	0	0	0	2209	0	0	1862
Future Volume (vph)	0	0	0	0	2209	0	0	1862
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.0			6.0
Lane Util. Factor					0.91			*0.91
Frt					1.00			1.00
Flt Protected					1.00			1.00
Satd. Flow (prot)					6715			6650
Flt Permitted					1.00			1.00
Satd. Flow (perm)					6715			6650
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	0	2325	0	0	1960
RTOR Reduction (vph)	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	2325	0	0	1960
Heavy Vehicles (%)	2%	2%	2%	2%	3%	3%	4%	4%
Turn Type					Prot			custom
Protected Phases					5 7			6 8
Permitted Phases								
Actuated Green, G (s)					31.0			37.0
Effective Green, g (s)					31.0			37.0
Actuated g/C Ratio					0.39			0.46
Clearance Time (s)								
Vehicle Extension (s)								
Lane Grp Cap (vph)					2602			3075
v/s Ratio Prot					c0.35			c0.29
v/s Ratio Perm								
v/c Ratio					0.89			0.64
Uniform Delay, d1					23.0			16.4
Progression Factor					1.06			1.27
Incremental Delay, d2					4.1			0.3
Delay (s)					28.4			21.2
Level of Service					C			C
Approach Delay (s)		0.0	0.0		28.4		21.2	
Approach LOS		A	A		C		C	

Intersection Summary			
HCM 2000 Control Delay	25.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	37.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	165	2782	216	145	2121	241	14	153	316	24
Future Volume (vph)	165	2782	216	145	2121	241	14	153	316	24
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	1	6	7	5	2	7	4	5	3	8
Permitted Phases			6					4		
Detector Phase	1	6	7	5	2	7	4	5	3	8
Switch Phase										
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	22.0	10.0	10.0	22.0	10.0	22.0	10.0	10.0	22.0
Total Split (s)	19.0	102.0	21.0	14.0	97.0	21.0	22.0	14.0	22.0	23.0
Total Split (%)	11.9%	63.8%	13.1%	8.8%	60.6%	13.1%	13.8%	8.8%	13.8%	14.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	Max	C-Max	Max	Max	C-Max	Max	None	Max	None	None
Act Effct Green (s)	14.3	97.3	112.3	8.0	91.0	15.0	10.0	14.4	27.9	15.7
Actuated g/C Ratio	0.09	0.61	0.70	0.05	0.57	0.09	0.06	0.09	0.17	0.10
v/c Ratio	0.57	0.95	0.20	0.91	0.67	0.80	0.13	0.53	0.56	0.82
Control Delay	70.6	30.2	5.7	123.1	25.1	89.5	70.2	40.4	64.9	99.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.6	30.2	5.7	123.1	25.1	89.5	70.2	40.4	64.9	99.7
LOS	E	C	A	F	C	F	E	D	E	F
Approach Delay		30.6			31.0		70.5			75.0
Approach LOS		C			C		E			E

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 0 (0%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 36.4	Intersection LOS: D
Intersection Capacity Utilization 92.6%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 6: Sandtree Dr/Sunrise Dr & Northlake Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	165	2782	216	145	2121	130	241	14	153	316	24	106
Future Volume (vph)	165	2782	216	145	2121	130	241	14	153	316	24	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.86		0.97	1.00	0.88	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	5085	1583	3367	6230		3400	1845	2760	3400	1618	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	3433	5085	1583	3367	6230		3400	1845	2760	3400	1618	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	174	2928	227	153	2233	137	254	15	161	333	25	112
RTOR Reduction (vph)	0	0	19	0	5	0	0	0	55	0	9	0
Lane Group Flow (vph)	174	2928	208	153	2365	0	254	15	106	333	128	0
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	1	6	7	5	2		7	4	5	3	8	
Permitted Phases			6						4			
Actuated Green, G (s)	14.3	93.7	108.7	8.0	87.4		15.0	6.4	14.4	27.9	19.3	
Effective Green, g (s)	14.3	93.7	108.7	8.0	87.4		15.0	6.4	14.4	27.9	19.3	
Actuated g/C Ratio	0.09	0.59	0.68	0.05	0.55		0.09	0.04	0.09	0.17	0.12	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	306	2977	1075	168	3403		318	73	248	592	195	
v/s Ratio Prot	0.05	c0.58	0.02	0.05	c0.38		c0.07	0.01	0.02	0.10	c0.08	
v/s Ratio Perm			0.11						0.02			
v/c Ratio	0.57	0.98	0.19	0.91	0.70		0.80	0.21	0.43	0.56	0.66	
Uniform Delay, d1	69.9	32.4	9.5	75.6	26.6		71.0	74.3	68.9	60.5	67.2	
Progression Factor	0.90	0.78	1.68	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.7	12.2	0.4	49.2	1.2		18.6	1.4	1.2	1.2	7.8	
Delay (s)	69.8	37.5	16.2	124.8	27.7		89.7	75.7	70.1	61.7	75.0	
Level of Service	E	D	B	F	C		F	E	E	E	E	
Approach Delay (s)		37.7			33.6			81.8			65.6	
Approach LOS		D			C			F			E	

Intersection Summary			
HCM 2000 Control Delay	40.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	92.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	165	2782	216	145	2121	130	241	14	153	316	24	106
Future Volume (veh/h)	165	2782	216	145	2121	130	241	14	153	316	24	106
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1827	1827	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	174	2928	227	153	2233	137	254	15	161	333	25	112
Adj No. of Lanes	2	3	1	2	4	0	2	1	2	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	4	4	4	3	3	3	3	3	3
Cap, veh/h	280	3051	1098	197	3521	216	320	169	414	341	29	129
Arrive On Green	0.08	0.60	0.60	0.06	0.58	0.58	0.09	0.09	0.09	0.10	0.10	0.10
Sat Flow, veh/h	3442	5085	1583	3375	6101	374	3408	1845	2760	3408	294	1318
Grp Volume(v), veh/h	174	2928	227	153	1725	645	254	15	161	333	0	137
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1688	1571	1761	1704	1845	1380	1704	0	1612
Q Serve(g_s), s	7.8	86.9	3.6	7.2	39.0	39.1	11.7	1.2	1.4	15.6	0.0	13.4
Cycle Q Clear(g_c), s	7.8	86.9	3.6	7.2	39.0	39.1	11.7	1.2	1.4	15.6	0.0	13.4
Prop In Lane	1.00		1.00	1.00		0.21	1.00		1.00	1.00		0.82
Lane Grp Cap(c), veh/h	280	3051	1098	197	2721	1016	320	169	414	341	0	158
V/C Ratio(X)	0.62	0.96	0.21	0.78	0.63	0.63	0.79	0.09	0.39	0.98	0.00	0.87
Avail Cap(c_a), veh/h	280	3051	1098	197	2721	1016	320	184	437	341	0	171
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.00	0.97
Uniform Delay (d), s/veh	71.1	30.2	2.6	74.3	22.6	22.6	71.0	66.6	36.1	71.8	0.0	71.2
Incr Delay (d2), s/veh	10.0	9.3	0.4	25.2	1.1	3.0	18.2	0.2	0.6	41.6	0.0	32.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.4	53.8	3.0	7.2	24.0	27.2	10.4	1.1	4.4	14.2	0.0	11.8
LnGrp Delay(d),s/veh	81.1	39.5	3.0	99.5	23.7	25.6	89.2	66.8	36.7	113.5	0.0	103.6
LnGrp LOS	F	D	A	F	C	C	F	E	D	F		F
Approach Vol, veh/h		3329			2523			430			470	
Approach Delay, s/veh		39.1			28.8			68.8			110.6	
Approach LOS		D			C			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	98.4	22.0	20.6	15.4	102.0	21.0	21.6
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	13.0	91.0	16.0	16.0	8.0	96.0	15.0	17.0
Max Q Clear Time (g_c+I1), s	9.8	41.1	17.6	3.4	9.2	88.9	13.7	15.4
Green Ext Time (p_c), s	0.1	30.6	0.0	1.1	0.0	6.9	0.1	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	42.1
HCM 2010 LOS	D

Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	13	55	253	424
Future Volume (vph)	13	55	253	424
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		2		
Detector Phase	4	2	2	6
Switch Phase				
Minimum Initial (s)	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0	22.0	22.0
Total Split (s)	30.0	100.0	100.0	100.0
Total Split (%)	23.1%	76.9%	76.9%	76.9%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Max	C-Max	C-Max
Act Effct Green (s)	7.0	114.5	114.5	114.5
Actuated g/C Ratio	0.05	0.88	0.88	0.88
v/c Ratio	0.33	0.07	0.16	0.29
Control Delay	38.7	1.8	1.8	2.2
Queue Delay	0.0	0.0	0.8	0.0
Total Delay	38.7	1.8	2.6	2.2
LOS	D	A	A	A
Approach Delay	38.7		2.4	2.2
Approach LOS	D		A	A

Intersection Summary	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 125 (96%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.33	
Intersection Signal Delay: 3.9	Intersection LOS: A
Intersection Capacity Utilization 45.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 8: Sunrise Dr & Alley Road

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	13	22	55	253	424	22
Future Volume (vph)	13	22	55	253	424	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0	6.0	6.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.92		1.00	1.00	0.99	
Flt Protected	0.98		0.95	1.00	1.00	
Satd. Flow (prot)	1658		1752	1845	1832	
Flt Permitted	0.98		0.49	1.00	1.00	
Satd. Flow (perm)	1658		909	1845	1832	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	14	23	58	266	446	23
RTOR Reduction (vph)	22	0	0	0	1	0
Lane Group Flow (vph)	15	0	58	266	468	0
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	5.9		112.1	112.1	112.1	
Effective Green, g (s)	5.9		112.1	112.1	112.1	
Actuated g/C Ratio	0.05		0.86	0.86	0.86	
Clearance Time (s)	6.0		6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	75		783	1590	1579	
v/s Ratio Prot	c0.01			0.14	c0.26	
v/s Ratio Perm			0.06			
v/c Ratio	0.20		0.07	0.17	0.30	
Uniform Delay, d1	59.8		1.3	1.4	1.7	
Progression Factor	1.00		1.00	1.00	1.00	
Incremental Delay, d2	1.3		0.2	0.2	0.5	
Delay (s)	61.1		1.5	1.7	2.1	
Level of Service	E		A	A	A	
Approach Delay (s)	61.1			1.6	2.1	
Approach LOS	E			A	A	

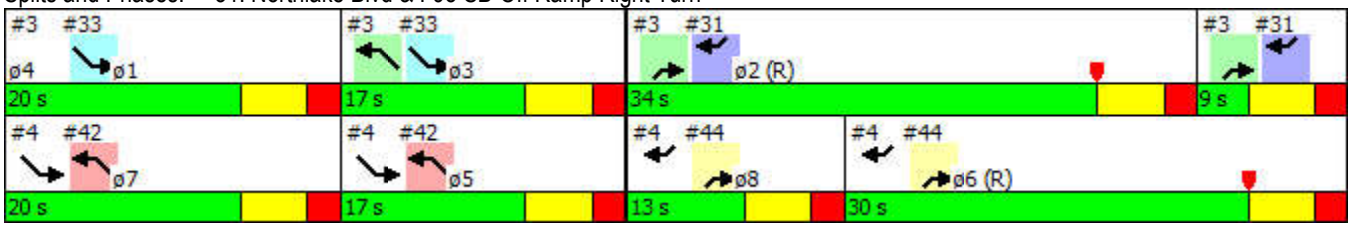
Intersection Summary			
HCM 2000 Control Delay	4.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	45.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	WBT	SWR	ø1	ø2	ø3	ø4	ø5	ø6	ø7	ø8
Lane Configurations										
Traffic Volume (vph)	1479	922								
Future Volume (vph)	1479	922								
Turn Type	NA	custom								
Protected Phases	Free!	2 4!	1	2	3	4	5	6	7	8
Permitted Phases										
Detector Phase		2 4								
Switch Phase										
Minimum Initial (s)			4.0	4.0	2.0	2.0	4.0	2.0	4.0	2.0
Minimum Split (s)			20.0	20.0	9.0	9.0	20.0	9.0	20.0	9.0
Total Split (s)			20.0	34.0	17.0	9.0	17.0	30.0	20.0	13.0
Total Split (%)			25%	43%	21%	11%	21%	38%	25%	16%
Yellow Time (s)			4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lead	Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?			Yes	Yes			Yes		Yes	
Recall Mode			Min	C-Min	Min	Min	Min	C-Min	Min	Min
Act Effct Green (s)	80.0	37.0								
Actuated g/C Ratio	1.00	0.46								
v/c Ratio	0.25	0.53								
Control Delay	0.5	11.0								
Queue Delay	0.0	0.0								
Total Delay	0.5	11.0								
LOS	A	B								
Approach Delay	0.5									
Approach LOS	A									

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NER and 6:, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 4.5	Intersection LOS: A
Intersection Capacity Utilization 51.3%	ICU Level of Service A
Analysis Period (min) 15	

! Phase conflict between lane groups.

Splits and Phases: 31: Northlake Blvd & I-95 SB-Off Ramp Right Turn



Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	0	0	1479	0	0	922
Future Volume (vph)	0	0	1479	0	0	922
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	8	12	12	12	12
Total Lost time (s)			4.0			6.0
Lane Util. Factor			0.86			0.76
Frt			1.00			0.85
Flt Protected			1.00			1.00
Satd. Flow (prot)			6285			3610
Flt Permitted			1.00			1.00
Satd. Flow (perm)			6285			3610
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	1557	0	0	971
RTOR Reduction (vph)	0	0	0	0	0	172
Lane Group Flow (vph)	0	0	1557	0	0	799
Heavy Vehicles (%)	2%	2%	4%	4%	2%	2%
Turn Type			NA			custom
Protected Phases			Free!			2 4!
Permitted Phases						
Actuated Green, G (s)			80.0			37.0
Effective Green, g (s)			80.0			37.0
Actuated g/C Ratio			1.00			0.46
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)			6285			1669
v/s Ratio Prot			0.25			c0.22
v/s Ratio Perm						
v/c Ratio			0.25			0.48
Uniform Delay, d1			0.0			14.8
Progression Factor			1.00			1.00
Incremental Delay, d2			0.1			0.2
Delay (s)			0.1			15.1
Level of Service			A			B
Approach Delay (s)		0.0	0.1		15.1	
Approach LOS		A	A		B	

Intersection Summary			
HCM 2000 Control Delay	5.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	51.3%	ICU Level of Service	A
Analysis Period (min)	15		

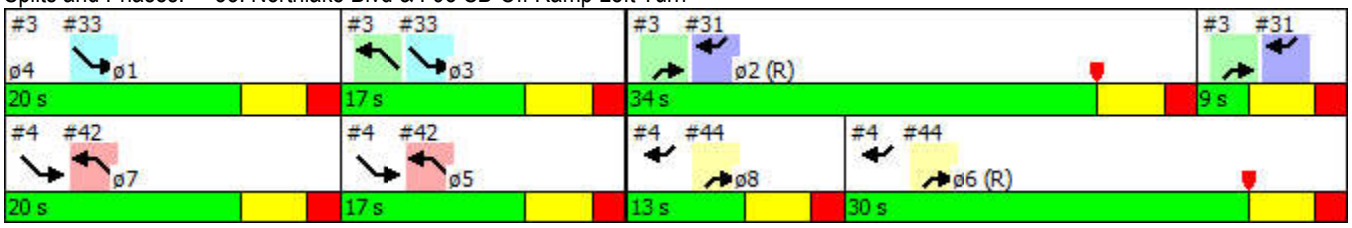
! Phase conflict between lane groups.
c Critical Lane Group

Lane Group	EBT	SEL	ø1	ø2	ø3	ø4	ø5	ø6	ø7	ø8
Lane Configurations										
Traffic Volume (vph)	2227	1042								
Future Volume (vph)	2227	1042								
Turn Type	NA	Prot								
Protected Phases	Free!	1 3!	1	2	3	4	5	6	7	8
Permitted Phases										
Detector Phase		1 3								
Switch Phase										
Minimum Initial (s)			4.0	4.0	2.0	2.0	4.0	2.0	4.0	2.0
Minimum Split (s)			20.0	20.0	9.0	9.0	20.0	9.0	20.0	9.0
Total Split (s)			20.0	34.0	17.0	9.0	17.0	30.0	20.0	13.0
Total Split (%)			25%	43%	21%	11%	21%	38%	25%	16%
Yellow Time (s)			4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lead	Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?			Yes	Yes			Yes		Yes	
Recall Mode			Min	C-Min	Min	Min	Min	C-Min	Min	Min
Act Effct Green (s)	80.0	31.0								
Actuated g/C Ratio	1.00	0.39								
v/c Ratio	0.37	0.57								
Control Delay	0.9	20.7								
Queue Delay	0.0	0.0								
Total Delay	0.9	20.7								
LOS	A	C								
Approach Delay	0.9	20.7								
Approach LOS	A	C								

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NER and 6:, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 7.2	Intersection LOS: A
Intersection Capacity Utilization 60.4%	ICU Level of Service B
Analysis Period (min) 15	

! Phase conflict between lane groups.

Splits and Phases: 33: Northlake Blvd & I-95 SB-Off Ramp Left Turn



Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Traffic Volume (vph)	0	2227	0	0	1042	0
Future Volume (vph)	0	2227	0	0	1042	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			6.0	
Lane Util. Factor		0.86			0.94	
Frt		1.00			1.00	
Flt Protected		1.00			0.95	
Satd. Flow (prot)		6408			4990	
Flt Permitted		1.00			0.95	
Satd. Flow (perm)		6408			4990	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	2344	0	0	1097	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	2344	0	0	1097	0
Turn Type		NA			Prot	
Protected Phases		Free!			1 3!	
Permitted Phases						
Actuated Green, G (s)		80.0			31.0	
Effective Green, g (s)		80.0			31.0	
Actuated g/C Ratio		1.00			0.39	
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)		6408			1933	
v/s Ratio Prot		0.37			c0.22	
v/s Ratio Perm						
v/c Ratio		0.37			0.57	
Uniform Delay, d1		0.0			19.2	
Progression Factor		1.00			1.00	
Incremental Delay, d2		0.1			0.4	
Delay (s)		0.1			19.6	
Level of Service		A			B	
Approach Delay (s)		0.1	0.0		19.6	
Approach LOS		A	A		B	

Intersection Summary			
HCM 2000 Control Delay	6.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		

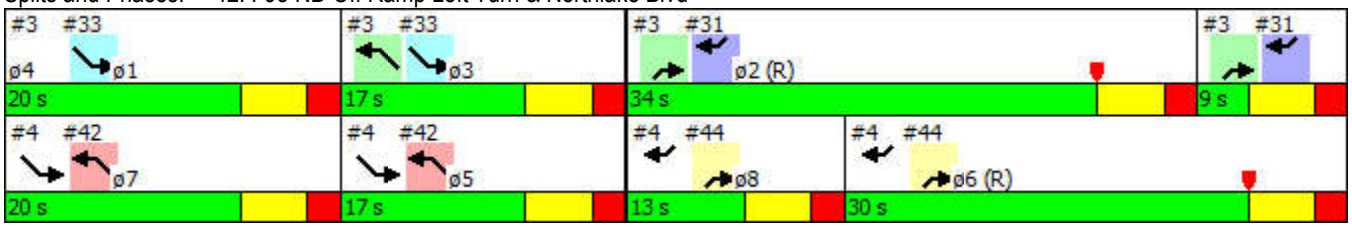
! Phase conflict between lane groups.
c Critical Lane Group

Lane Group	WBT	NWL	ø1	ø2	ø3	ø4	ø5	ø6	ø7	ø8
Lane Configurations										
Traffic Volume (vph)	1862	527								
Future Volume (vph)	1862	527								
Turn Type	NA	Prot								
Protected Phases	Free!	7 5!	1	2	3	4	5	6	7	8
Permitted Phases										
Detector Phase		7 5								
Switch Phase										
Minimum Initial (s)			4.0	4.0	2.0	2.0	4.0	2.0	4.0	2.0
Minimum Split (s)			20.0	20.0	9.0	9.0	20.0	9.0	20.0	9.0
Total Split (s)			20.0	34.0	17.0	9.0	17.0	30.0	20.0	13.0
Total Split (%)			25%	43%	21%	11%	21%	38%	25%	16%
Yellow Time (s)			4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lead	Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?			Yes	Yes			Yes		Yes	
Recall Mode			Min	C-Min	Min	Min	Min	C-Min	Min	Min
Act Effct Green (s)	80.0	31.0								
Actuated g/C Ratio	1.00	0.39								
v/c Ratio	0.31	0.29								
Control Delay	0.8	17.4								
Queue Delay	0.0	0.0								
Total Delay	0.8	17.4								
LOS	A	B								
Approach Delay	0.8	17.4								
Approach LOS	A	B								

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NER and 6:, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 4.5	Intersection LOS: A
Intersection Capacity Utilization 45.3%	ICU Level of Service A
Analysis Period (min) 15	

! Phase conflict between lane groups.

Splits and Phases: 42: I-95 NB-Off Ramp Left Turn & Northlake Blvd



Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Volume (vph)	0	0	0	1862	527	0
Future Volume (vph)	0	0	0	1862	527	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	6.0	
Lane Util. Factor				0.86	0.94	
Frt				1.00	1.00	
Flt Protected				1.00	0.95	
Satd. Flow (prot)				6285	4942	
Flt Permitted				1.00	0.95	
Satd. Flow (perm)				6285	4942	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	1960	555	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	1960	555	0
Heavy Vehicles (%)	2%	2%	4%	4%	3%	3%
Turn Type				NA	Prot	
Protected Phases				Free!	7 5!	
Permitted Phases						
Actuated Green, G (s)				80.0	31.0	
Effective Green, g (s)				80.0	31.0	
Actuated g/C Ratio				1.00	0.39	
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)				6285	1915	
v/s Ratio Prot				0.31	0.11	
v/s Ratio Perm						
v/c Ratio				0.31	0.29	
Uniform Delay, d1				0.0	16.9	
Progression Factor				1.00	1.00	
Incremental Delay, d2				0.1	0.1	
Delay (s)				0.1	17.0	
Level of Service				A	B	
Approach Delay (s)	0.0			0.1	17.0	
Approach LOS	A			A	B	

Intersection Summary			
HCM 2000 Control Delay	3.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	45.3%	ICU Level of Service	A
Analysis Period (min)	15		

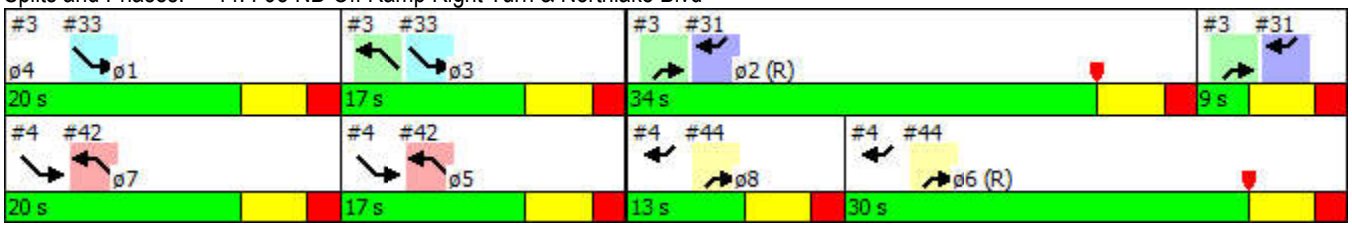
! Phase conflict between lane groups.
c Critical Lane Group

Lane Group	EBT	NER	ø1	ø2	ø3	ø4	ø5	ø6	ø7	ø8
Lane Configurations										
Traffic Volume (vph)	2209	1117								
Future Volume (vph)	2209	1117								
Turn Type	NA	custom								
Protected Phases	Free!	6 8!	1	2	3	4	5	6	7	8
Permitted Phases										
Detector Phase		6 8								
Switch Phase										
Minimum Initial (s)			4.0	4.0	2.0	2.0	4.0	2.0	4.0	2.0
Minimum Split (s)			20.0	20.0	9.0	9.0	20.0	9.0	20.0	9.0
Total Split (s)			20.0	34.0	17.0	9.0	17.0	30.0	20.0	13.0
Total Split (%)			25%	43%	21%	11%	21%	38%	25%	16%
Yellow Time (s)			4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lead	Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?			Yes	Yes			Yes		Yes	
Recall Mode			Min	C-Min	Min	Min	Min	C-Min	Min	Min
Act Effct Green (s)	80.0	37.0								
Actuated g/C Ratio	1.00	0.46								
v/c Ratio	0.37	0.69								
Control Delay	1.0	17.7								
Queue Delay	0.0	0.0								
Total Delay	1.0	17.7								
LOS	A	B								
Approach Delay	1.0									
Approach LOS	A									

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NER and 6:, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 6.6	Intersection LOS: A
Intersection Capacity Utilization 66.4%	ICU Level of Service C
Analysis Period (min) 15	

! Phase conflict between lane groups.

Splits and Phases: 44: I-95 NB-Off Ramp Right Turn & Northlake Blvd



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	2209	0	0	0	0	1117
Future Volume (vph)	2209	0	0	0	0	1117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0					6.0
Lane Util. Factor	0.86					0.76
Frt	1.00					0.85
Flt Protected	1.00					1.00
Satd. Flow (prot)	6346					3575
Flt Permitted	1.00					1.00
Satd. Flow (perm)	6346					3575
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2325	0	0	0	0	1176
RTOR Reduction (vph)	0	0	0	0	0	59
Lane Group Flow (vph)	2325	0	0	0	0	1117
Heavy Vehicles (%)	3%	3%	2%	2%	3%	3%
Turn Type	NA					custom
Protected Phases	Free!					6 8!
Permitted Phases						
Actuated Green, G (s)	80.0					37.0
Effective Green, g (s)	80.0					37.0
Actuated g/C Ratio	1.00					0.46
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)	6346					1653
v/s Ratio Prot	0.37					c0.31
v/s Ratio Perm						
v/c Ratio	0.37					0.68
Uniform Delay, d1	0.0					16.8
Progression Factor	1.00					1.00
Incremental Delay, d2	0.1					1.1
Delay (s)	0.1					17.9
Level of Service	A					B
Approach Delay (s)	0.1			0.0	17.9	
Approach LOS	A			A	B	

Intersection Summary			
HCM 2000 Control Delay	6.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		

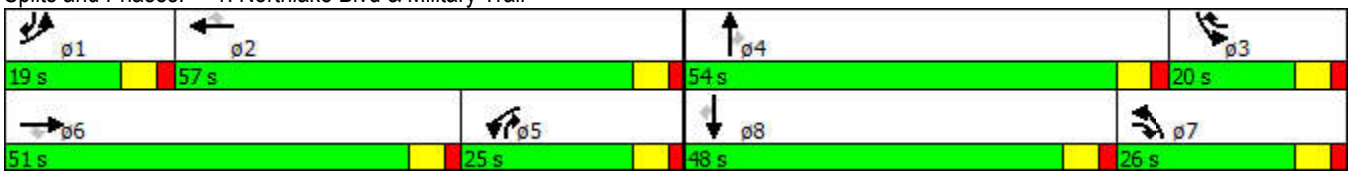
! Phase conflict between lane groups.
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	486	1241	242	390	1870	419	550	743	476	495	845	819
Future Volume (vph)	486	1241	242	390	1870	419	550	743	476	495	845	819
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	1	6	7	5	2	3	7	4	5	3	8	1
Permitted Phases			6			2			4			8
Detector Phase	1	6	7	5	2	3	7	4	5	3	8	1
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	51.0	10.0	10.0	47.0	10.0	10.0	47.0	10.0	10.0	47.0	10.0
Total Split (s)	19.0	51.0	26.0	25.0	57.0	20.0	26.0	54.0	25.0	20.0	48.0	19.0
Total Split (%)	12.7%	34.0%	17.3%	16.7%	38.0%	13.3%	17.3%	36.0%	16.7%	13.3%	32.0%	12.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	None	None	Max	None	None	None	None	None	None	None
Act Effct Green (s)	13.0	45.1	71.1	19.0	51.1	74.1	20.0	28.3	53.3	23.0	31.2	44.3
Actuated g/C Ratio	0.09	0.32	0.51	0.14	0.37	0.53	0.14	0.20	0.38	0.16	0.22	0.32
v/c Ratio	1.60	0.79	0.31	0.88	1.06	0.51	1.17	0.76	0.78	0.92	0.78	1.59
Control Delay	322.5	47.8	16.7	79.6	80.1	12.2	149.0	57.5	42.7	80.0	56.0	297.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	322.5	47.8	16.7	79.6	80.1	12.2	149.0	57.5	42.7	80.0	56.0	297.3
LOS	F	D	B	E	F	B	F	E	D	E	E	F
Approach Delay		111.8			69.4			81.9			153.0	
Approach LOS		F			E			F			F	

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 139.4
Natural Cycle: 180
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.60
Intersection Signal Delay: 102.8 — Intersection LOS: F
Intersection Capacity Utilization 117.5% — ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 1: Northlake Blvd & Military Trail



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	486	1241	242	390	1870	419	550	743	476	495	845	819
Future Volume (vph)	486	1241	242	390	1870	419	550	743	476	495	845	819
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	512	1306	255	411	1968	441	579	782	501	521	889	862
RTOR Reduction (vph)	0	0	32	0	0	28	0	0	40	0	0	41
Lane Group Flow (vph)	512	1306	223	411	1968	413	579	782	461	521	889	821
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	1	6	7	5	2	3	7	4	5	3	8	1
Permitted Phases			6			2			4			8
Actuated Green, G (s)	13.0	45.1	65.1	19.0	51.1	74.1	20.0	28.2	47.2	23.0	31.2	44.2
Effective Green, g (s)	13.0	45.1	65.1	19.0	51.1	74.1	20.0	28.2	47.2	23.0	31.2	44.2
Actuated g/C Ratio	0.09	0.32	0.47	0.14	0.37	0.53	0.14	0.20	0.34	0.17	0.22	0.32
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	320	1646	807	468	1865	842	492	1029	604	566	1138	502
v/s Ratio Prot	0.15	0.26	0.04	0.12	c0.39	0.08	c0.17	0.15	0.10	c0.15	0.17	c0.15
v/s Ratio Perm			0.10			0.18			0.19			0.37
v/c Ratio	1.60	0.79	0.28	0.88	1.06	0.49	1.18	0.76	0.76	0.92	0.78	1.64
Uniform Delay, d1	63.2	42.9	22.7	59.0	44.1	20.6	59.7	52.4	41.1	57.2	50.8	47.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	284.2	4.0	0.2	16.8	37.2	0.5	99.1	3.3	5.7	20.4	3.6	294.9
Delay (s)	347.4	46.9	22.9	75.8	81.3	21.1	158.8	55.6	46.8	77.7	54.4	342.5
Level of Service	F	D	C	E	F	C	F	E	D	E	D	F
Approach Delay (s)		118.2			71.1			85.3			169.0	
Approach LOS		F			E			F			F	

Intersection Summary			
HCM 2000 Control Delay	109.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.30		
Actuated Cycle Length (s)	139.3	Sum of lost time (s)	24.0
Intersection Capacity Utilization	117.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	486	1241	242	390	1870	419	550	743	476	495	845	819
Future Volume (veh/h)	486	1241	242	390	1870	419	550	743	476	495	845	819
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	512	1306	255	411	1968	441	579	782	501	521	889	862
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	303	1548	696	442	1754	824	465	1168	567	603	1371	566
Arrive On Green	0.09	0.30	0.30	0.26	0.69	0.69	0.14	0.23	0.23	0.18	0.27	0.27
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	512	1306	255	411	1968	441	579	782	501	521	889	862
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	13.0	35.5	0.0	17.2	51.0	5.7	20.0	20.7	24.9	21.8	22.9	33.2
Cycle Q Clear(g_c), s	13.0	35.5	0.0	17.2	51.0	5.7	20.0	20.7	24.9	21.8	22.9	33.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	303	1548	696	442	1754	824	465	1168	567	603	1371	566
V/C Ratio(X)	1.69	0.84	0.37	0.93	1.12	0.54	1.24	0.67	0.88	0.86	0.65	1.52
Avail Cap(c_a), veh/h	303	1548	696	442	1754	824	465	1651	717	603	1444	589
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.4	48.1	27.7	54.3	22.9	3.7	63.9	51.8	44.6	59.3	47.8	22.2
Incr Delay (d2), s/veh	325.4	5.8	1.5	26.1	63.1	2.5	126.8	0.7	10.6	12.4	1.0	244.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	35.7	24.4	11.6	14.8	60.0	5.7	31.7	14.9	24.2	16.9	16.2	99.4
LnGrp Delay(d),s/veh	392.8	54.0	29.2	80.4	86.1	6.2	190.7	52.5	55.1	71.7	48.8	266.4
LnGrp LOS	F	D	C	F	F	A	F	D	E	E	D	F
Approach Vol, veh/h		2073			2820			1862			2272	
Approach Delay, s/veh		134.6			72.8			96.2			136.6	
Approach LOS		F			E			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	57.0	31.9	40.0	25.0	51.0	26.0	45.9
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	13.0	51.0	14.0	48.0	19.0	45.0	20.0	42.0
Max Q Clear Time (g_c+I1), s	15.0	53.0	23.8	26.9	19.2	37.5	22.0	35.2
Green Ext Time (p_c), s	0.0	0.0	0.0	7.0	0.0	4.9	0.0	4.7

Intersection Summary	
HCM 2010 Ctrl Delay	107.9
HCM 2010 LOS	F

Lane Group	EBL	EBR	EBR2	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	56	2053	247	452	2533	370	265	48	545	188	50
Future Volume (vph)	56	2053	247	452	2533	370	265	48	545	188	50
Turn Type	Prot	Prot	pm+ov	Prot	NA	custom	pm+pt	NA	custom	Prot	NA
Protected Phases	1	6	7	5	2	3	7	4	4 5	3	8
Permitted Phases	1		6			2	4				
Detector Phase	1	6	7	5	2	3	7	4	4 5	3	8
Switch Phase											
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	10.0	36.0	22.0	10.0	36.0	22.0	22.0	22.0		22.0	22.0
Total Split (s)	19.0	67.0	28.0	33.0	81.0	22.0	28.0	28.0		22.0	22.0
Total Split (%)	12.7%	44.7%	18.7%	22.0%	54.0%	14.7%	18.7%	18.7%		14.7%	14.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lead		Lag	Lead
Lead-Lag Optimize?	Yes		Yes	Yes		Yes	Yes	Yes		Yes	Yes
Recall Mode	C-Max	C-Max	None	None	None	Max	None	None		Max	Max
Act Effct Green (s)	13.0	62.7	84.7	25.3	75.0	91.9	43.1	21.1	46.3	16.9	16.0
Actuated g/C Ratio	0.09	0.42	0.56	0.17	0.50	0.61	0.29	0.14	0.31	0.11	0.11
v/c Ratio	0.39	0.81	0.28	0.82	0.83	0.39	0.66	0.20	0.64	0.51	0.54
Control Delay	72.6	41.9	7.5	73.5	41.2	9.0	57.6	58.5	27.3	68.1	68.5
Queue Delay	0.0	0.0	0.0	1.0	1.8	0.4	0.0	0.0	0.0	0.0	0.0
Total Delay	72.6	41.9	7.5	74.5	43.1	9.4	57.6	58.5	27.3	68.1	68.5
LOS	E	D	A	E	D	A	E	E	C	E	E
Approach Delay					43.6			38.4			68.3
Approach LOS					D			D			E

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 1:EBL and 6:EBR, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 42.4 Intersection LOS: D
Intersection Capacity Utilization Err% ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 2: Keating Dr & Northlake Blvd

Movement	EBL	EBR	EBR2	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	2053	247	452	2533	370	265	48	545	188	50	48
Future Volume (vph)	56	2053	247	452	2533	370	265	48	545	188	50	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	*0.91	1.00	0.97	0.86	1.00	1.00	1.00	0.88	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	6346	1583	3433	6408	1583	1770	1863	2787	3433	1726	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.62	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	6346	1583	3433	6408	1583	1150	1863	2787	3433	1726	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	59	2161	260	476	2666	389	279	51	574	198	53	51
RTOR Reduction (vph)	0	0	26	0	0	23	0	0	41	0	9	0
Lane Group Flow (vph)	59	2161	234	476	2666	366	279	51	533	198	95	0
Turn Type	Prot	Prot	pm+ov	Prot	NA	custom	pm+pt	NA	custom	Prot	NA	
Protected Phases	1	6	7	5	2	3	7	4	4 5	3	8	
Permitted Phases	1		6			2	4					
Actuated Green, G (s)	13.0	62.7	84.7	25.3	75.0	91.9	43.1	21.1	46.4	16.9	16.0	
Effective Green, g (s)	13.0	62.7	84.7	25.3	75.0	91.9	43.1	21.1	46.4	16.9	16.0	
Actuated g/C Ratio	0.09	0.42	0.56	0.17	0.50	0.61	0.29	0.14	0.31	0.11	0.11	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	153	2652	893	579	3204	969	421	262	862	386	184	
v/s Ratio Prot	0.03	0.34	0.04	c0.14	c0.42	0.04	c0.10	0.03	0.19	0.06	0.06	
v/s Ratio Perm			0.11			0.19	c0.09					
v/c Ratio	0.39	0.81	0.26	0.82	0.83	0.38	0.66	0.19	0.62	0.51	0.52	
Uniform Delay, d1	64.7	38.5	16.7	60.2	32.1	14.6	47.7	56.9	44.2	62.7	63.3	
Progression Factor	1.00	1.00	1.00	1.04	1.20	1.25	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	7.2	2.9	0.2	8.0	1.7	0.2	3.9	0.4	1.3	4.8	10.0	
Delay (s)	71.9	41.4	16.8	70.4	40.3	18.5	51.6	57.3	45.6	67.5	73.3	
Level of Service	E	D	B	E	D	B	D	E	D	E	E	
Approach Delay (s)					42.0			48.1			69.5	
Approach LOS					D			D			E	

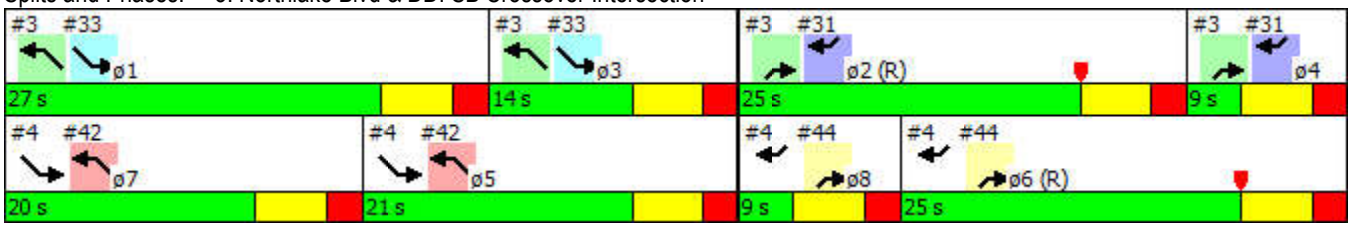
Intersection Summary			
HCM 2000 Control Delay	43.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	NWL	NER	ø1	ø2	ø3	ø4	ø5	ø6	ø7	ø8
Lane Configurations										
Traffic Volume (vph)	2542	2212								
Future Volume (vph)	2542	2212								
Turn Type	Prot	custom								
Protected Phases	1 3	2 4	1	2	3	4	5	6	7	8
Permitted Phases										
Detector Phase	1 3	2 4								
Switch Phase										
Minimum Initial (s)			4.0	4.0	2.0	2.0	4.0	2.0	4.0	2.0
Minimum Split (s)			20.0	20.0	9.0	9.0	20.0	9.0	20.0	9.0
Total Split (s)			27.0	25.0	14.0	9.0	21.0	25.0	20.0	9.0
Total Split (%)			36%	33%	19%	12%	28%	33%	27%	12%
Yellow Time (s)			4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lead	Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?			Yes	Yes			Yes		Yes	
Recall Mode			Min	C-Min	Min	Min	Min	C-Min	Min	Min
Act Effct Green (s)	35.0	28.0								
Actuated g/C Ratio	0.47	0.37								
v/c Ratio	0.85	0.92								
Control Delay	19.1	25.1								
Queue Delay	0.0	0.0								
Total Delay	19.1	25.1								
LOS	B	C								
Approach Delay	19.1									
Approach LOS	B									

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 49 (65%), Referenced to phase 2:NER and 6:, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 21.9	Intersection LOS: C
Intersection Capacity Utilization 43.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: Northlake Blvd & DDI SB Crossover Intersection



Movement	EBT	EBR	WBL	WBT	NWL	NWR	NEL	NER
Lane Configurations								
Traffic Volume (vph)	0	0	0	0	2542	0	0	2212
Future Volume (vph)	0	0	0	0	2542	0	0	2212
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.0			6.0
Lane Util. Factor					0.91			*0.91
Frt					1.00			1.00
Flt Protected					1.00			1.00
Satd. Flow (prot)					6780			6780
Flt Permitted					1.00			1.00
Satd. Flow (perm)					6780			6780
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	0	2676	0	0	2328
RTOR Reduction (vph)	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	2676	0	0	2328
Turn Type					Prot			custom
Protected Phases					1 3			2 4
Permitted Phases								
Actuated Green, G (s)					35.0			28.0
Effective Green, g (s)					35.0			28.0
Actuated g/C Ratio					0.47			0.37
Clearance Time (s)								
Vehicle Extension (s)								
Lane Grp Cap (vph)					3164			2531
v/s Ratio Prot					c0.39			c0.34
v/s Ratio Perm								
v/c Ratio					0.85			0.92
Uniform Delay, d1					17.6			22.4
Progression Factor					0.92			0.88
Incremental Delay, d2					2.1			4.3
Delay (s)					18.3			24.1
Level of Service					B			C
Approach Delay (s)	0.0			0.0	18.3		24.1	
Approach LOS	A			A	B		C	

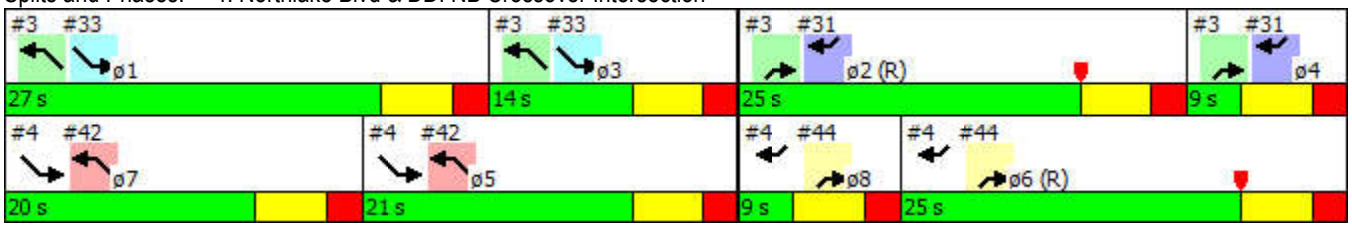
Intersection Summary			
HCM 2000 Control Delay	21.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	SEL	SWR	ø1	ø2	ø3	ø4	ø5	ø6	ø7	ø8
Lane Configurations										
Traffic Volume (vph)	2806	1880								
Future Volume (vph)	2806	1880								
Turn Type	Prot	custom								
Protected Phases	5 7	6 8	1	2	3	4	5	6	7	8
Permitted Phases										
Detector Phase	5 7	6 8								
Switch Phase										
Minimum Initial (s)			4.0	4.0	2.0	2.0	4.0	2.0	4.0	2.0
Minimum Split (s)			20.0	20.0	9.0	9.0	20.0	9.0	20.0	9.0
Total Split (s)			27.0	25.0	14.0	9.0	21.0	25.0	20.0	9.0
Total Split (%)			36%	33%	19%	12%	28%	33%	27%	12%
Yellow Time (s)			4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lead	Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?			Yes	Yes			Yes		Yes	
Recall Mode			Min	C-Min	Min	Min	Min	C-Min	Min	Min
Act Effct Green (s)	35.0	28.0								
Actuated g/C Ratio	0.47	0.37								
v/c Ratio	0.93	0.78								
Control Delay	26.3	26.2								
Queue Delay	0.0	0.0								
Total Delay	26.3	26.2								
LOS	C	C								
Approach Delay	26.3									
Approach LOS	C									

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 49 (65%), Referenced to phase 2:NER and 6:, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 26.2	Intersection LOS: C
Intersection Capacity Utilization 45.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 4: Northlake Blvd & DDI NB Crossover Intersection



Movement	EBL	EBT	WBT	WBR	SEL	SER	SWL	SWR
Lane Configurations								
Traffic Volume (vph)	0	0	0	0	2806	0	0	1880
Future Volume (vph)	0	0	0	0	2806	0	0	1880
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.0			6.0
Lane Util. Factor					0.91			*0.91
Frt					1.00			1.00
Flt Protected					1.00			1.00
Satd. Flow (prot)					6780			6780
Flt Permitted					1.00			1.00
Satd. Flow (perm)					6780			6780
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	0	2954	0	0	1979
RTOR Reduction (vph)	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	2954	0	0	1979
Turn Type					Prot			custom
Protected Phases					5 7			6 8
Permitted Phases								
Actuated Green, G (s)					35.0			28.0
Effective Green, g (s)					35.0			28.0
Actuated g/C Ratio					0.47			0.37
Clearance Time (s)								
Vehicle Extension (s)								
Lane Grp Cap (vph)					3164			2531
v/s Ratio Prot					c0.44			c0.29
v/s Ratio Perm								
v/c Ratio					0.93			0.78
Uniform Delay, d1					18.9			20.8
Progression Factor					1.03			1.21
Incremental Delay, d2					5.8			0.5
Delay (s)					25.3			25.8
Level of Service					C			C
Approach Delay (s)		0.0	0.0		25.3		25.8	
Approach LOS		A	A		C		C	

Intersection Summary			
HCM 2000 Control Delay	25.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	45.0%	ICU Level of Service	A
Analysis Period (min)	15		

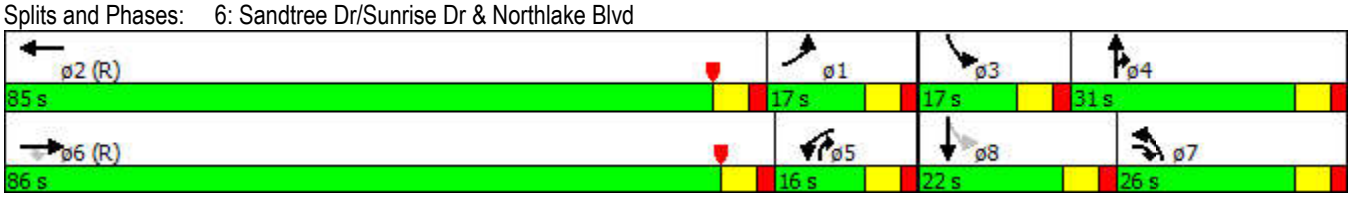
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	228	2442	188	208	3227	449	20	279	219	21
Future Volume (vph)	228	2442	188	208	3227	449	20	279	219	21
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	pt+ov	pm+pt	NA
Protected Phases	1	6	7	5	2	7	4	4 5	3	8
Permitted Phases			6						8	
Detector Phase	1	6	7	5	2	7	4	4 5	3	8
Switch Phase										
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	10.0	22.0	10.0	10.0	22.0	10.0	22.0		10.0	22.0
Total Split (s)	17.0	86.0	26.0	16.0	85.0	26.0	31.0		17.0	22.0
Total Split (%)	11.3%	57.3%	17.3%	10.7%	56.7%	17.3%	20.7%		11.3%	14.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0
Lead/Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag		Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	Max	C-Max	Max	Max	C-Max	Max	None		None	None
Act Effct Green (s)	11.0	80.0	106.0	10.0	79.0	20.0	25.0	35.0	16.0	16.0
Actuated g/C Ratio	0.07	0.53	0.71	0.07	0.53	0.13	0.17	0.23	0.11	0.11
v/c Ratio	0.96	0.95	0.17	0.96	1.05	1.04	0.07	0.42	0.66	0.93
Control Delay	121.6	39.5	4.5	118.7	66.5	113.2	53.5	29.3	72.2	109.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	121.6	39.5	4.5	118.7	66.5	113.2	53.5	29.3	72.2	109.8
LOS	F	D	A	F	E	F	D	C	E	F
Approach Delay		43.8			69.5		80.3			88.0
Approach LOS		D			E		F			F

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 141 (94%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 170
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.05
Intersection Signal Delay: 61.8 — Intersection LOS: E
Intersection Capacity Utilization 98.0% — ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 6: Sandtree Dr/Sunrise Dr & Northlake Blvd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	228	2442	188	208	3227	133	449	20	279	219	21	139
Future Volume (vph)	228	2442	188	208	3227	133	449	20	279	219	21	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	0.97	0.91	1.00	0.97	0.86		0.97	1.00	0.88	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	3433	5085	1583	3433	6370		3433	1863	2787	3433	1620	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.80	1.00	
Satd. Flow (perm)	3433	5085	1583	3433	6370		3433	1863	2787	2891	1620	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	240	2571	198	219	3397	140	473	21	294	231	22	146
RTOR Reduction (vph)	0	0	20	0	5	0	0	0	46	0	9	0
Lane Group Flow (vph)	240	2571	178	219	3532	0	473	21	248	231	159	0
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	pt+ov	pm+pt	NA	
Protected Phases	1	6	7	5	2		7	4	4 5	3	8	
Permitted Phases			6							8		
Actuated Green, G (s)	11.0	80.0	100.0	10.0	79.0		20.0	25.0	35.0	16.0	16.0	
Effective Green, g (s)	11.0	80.0	100.0	10.0	79.0		20.0	25.0	35.0	16.0	16.0	
Actuated g/C Ratio	0.07	0.53	0.67	0.07	0.53		0.13	0.17	0.23	0.11	0.11	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	251	2712	1118	228	3354		457	310	650	348	172	
v/s Ratio Prot	c0.07	0.51	0.02	0.06	c0.55		c0.14	0.01	c0.09	0.05	c0.10	
v/s Ratio Perm			0.09							0.02		
v/c Ratio	0.96	0.95	0.16	0.96	1.05		1.04	0.07	0.38	0.66	0.92	
Uniform Delay, d1	69.3	33.0	9.3	69.8	35.5		65.0	52.7	48.4	64.2	66.4	
Progression Factor	1.15	0.94	0.83	1.00	1.00		1.00	1.00	1.00	0.97	0.97	
Incremental Delay, d2	44.0	8.1	0.3	50.2	31.9		51.4	0.1	0.4	4.6	46.5	
Delay (s)	123.9	39.3	8.0	120.0	67.4		116.4	52.8	48.8	67.0	111.2	
Level of Service	F	D	A	F	E		F	D	D	E	F	
Approach Delay (s)		44.0			70.5			89.5			85.6	
Approach LOS		D			E			F			F	

Intersection Summary			
HCM 2000 Control Delay	63.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	98.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	228	2442	188	208	3227	133	449	20	279	219	21	139
Future Volume (veh/h)	228	2442	188	208	3227	133	449	20	279	219	21	139
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	240	2571	198	219	3397	140	473	21	294	231	22	146
Adj No. of Lanes	2	3	1	2	4	0	2	1	2	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	252	2712	1056	229	3352	136	459	310	650	348	23	150
Arrive On Green	0.07	0.53	0.53	0.07	0.53	0.53	0.13	0.17	0.17	0.07	0.11	0.11
Sat Flow, veh/h	3442	5085	1583	3442	6364	259	3442	1863	2787	3442	211	1404
Grp Volume(v), veh/h	240	2571	198	219	2555	982	473	21	294	231	0	168
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1602	1817	1721	1863	1393	1721	0	1615
Q Serve(g_s), s	10.4	71.6	0.0	9.5	79.0	79.0	20.0	1.4	2.1	9.9	0.0	15.6
Cycle Q Clear(g_c), s	10.4	71.6	0.0	9.5	79.0	79.0	20.0	1.4	2.1	9.9	0.0	15.6
Prop In Lane	1.00		1.00	1.00		0.14	1.00		1.00	1.00		0.87
Lane Grp Cap(c), veh/h	252	2712	1056	229	2531	957	459	310	650	348	0	172
V/C Ratio(X)	0.95	0.95	0.19	0.95	1.01	1.03	1.03	0.07	0.45	0.66	0.00	0.98
Avail Cap(c_a), veh/h	252	2712	1056	229	2531	957	459	310	650	348	0	172
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.00	0.98
Uniform Delay (d), s/veh	69.2	33.0	9.5	69.8	35.5	35.5	65.0	52.7	28.8	68.1	0.0	66.8
Incr Delay (d2), s/veh	45.3	8.8	0.4	48.7	20.2	36.0	50.1	0.1	0.5	4.6	0.0	60.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	10.8	45.3	5.9	10.1	71.0	88.0	22.8	1.3	1.6	8.5	0.0	14.9
LnGrp Delay(d),s/veh	114.5	41.8	9.9	118.5	55.7	71.5	115.1	52.8	29.3	72.6	0.0	127.2
LnGrp LOS	F	D	A	F	F	F	F	D	C	E		F
Approach Vol, veh/h		3009			3756			788			399	
Approach Delay, s/veh		45.5			63.5			81.4			95.6	
Approach LOS		D			E			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	85.0	17.0	31.0	16.0	86.0	26.0	22.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	11.0	79.0	11.0	25.0	10.0	80.0	20.0	16.0
Max Q Clear Time (g_c+I1), s	12.4	81.0	11.9	4.1	11.5	73.6	22.0	17.6
Green Ext Time (p_c), s	0.0	0.0	0.0	2.9	0.0	6.1	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	60.1
HCM 2010 LOS	E

Lane Group	EBL	NBL	NBT	SBT
Lane Configurations				
Traffic Volume (vph)	10	175	206	354
Future Volume (vph)	10	175	206	354
Turn Type	Prot	Perm	NA	NA
Protected Phases	4		2	6
Permitted Phases		2		
Detector Phase	4	2	2	6
Switch Phase				
Minimum Initial (s)	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0	22.0	22.0
Total Split (s)	33.0	117.0	117.0	117.0
Total Split (%)	22.0%	78.0%	78.0%	78.0%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Max	C-Max	C-Max
Act Effct Green (s)	7.0	134.5	134.5	134.5
Actuated g/C Ratio	0.05	0.90	0.90	0.90
v/c Ratio	0.36	0.21	0.13	0.24
Control Delay	41.5	3.7	1.3	1.8
Queue Delay	0.0	1.6	0.8	0.0
Total Delay	41.5	5.3	2.1	1.8
LOS	D	A	A	A
Approach Delay	41.5		3.6	1.8
Approach LOS	D		A	A

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 115 (77%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.36	
Intersection Signal Delay: 4.4	Intersection LOS: A
Intersection Capacity Utilization 48.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 8: Sunrise Dr & Alley Road

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	10	25	175	206	354	25
Future Volume (vph)	10	25	175	206	354	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0	6.0	6.0	
Lane Util. Factor	1.00		1.00	1.00	1.00	
Frt	0.91		1.00	1.00	0.99	
Flt Protected	0.99		0.95	1.00	1.00	
Satd. Flow (prot)	1661		1770	1863	1846	
Flt Permitted	0.99		0.53	1.00	1.00	
Satd. Flow (perm)	1661		982	1863	1846	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	11	26	184	217	373	26
RTOR Reduction (vph)	25	0	0	0	1	0
Lane Group Flow (vph)	12	0	184	217	398	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	5.9		132.1	132.1	132.1	
Effective Green, g (s)	5.9		132.1	132.1	132.1	
Actuated g/C Ratio	0.04		0.88	0.88	0.88	
Clearance Time (s)	6.0		6.0	6.0	6.0	
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Lane Grp Cap (vph)	65		864	1640	1625	
v/s Ratio Prot	c0.01			0.12	c0.22	
v/s Ratio Perm			0.19			
v/c Ratio	0.18		0.21	0.13	0.25	
Uniform Delay, d1	69.7		1.3	1.2	1.4	
Progression Factor	1.00		2.29	0.96	1.00	
Incremental Delay, d2	1.4		0.2	0.1	0.4	
Delay (s)	71.1		3.2	1.2	1.7	
Level of Service	E		A	A	A	
Approach Delay (s)	71.1			2.1	1.7	
Approach LOS	E			A	A	

Intersection Summary			
HCM 2000 Control Delay	5.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		

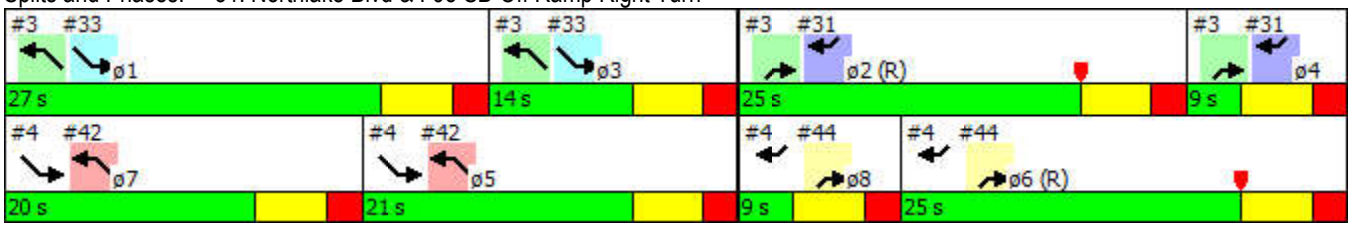
c Critical Lane Group

Lane Group	WBT	SWR	ø1	ø2	ø3	ø4	ø5	ø6	ø7	ø8
Lane Configurations										
Traffic Volume (vph)	2542	1036								
Future Volume (vph)	2542	1036								
Turn Type	NA	custom								
Protected Phases	Free!	2 4!	1	2	3	4	5	6	7	8
Permitted Phases										
Detector Phase		2 4								
Switch Phase										
Minimum Initial (s)			4.0	4.0	2.0	2.0	4.0	2.0	4.0	2.0
Minimum Split (s)			20.0	20.0	9.0	9.0	20.0	9.0	20.0	9.0
Total Split (s)			27.0	25.0	14.0	9.0	21.0	25.0	20.0	9.0
Total Split (%)			36%	33%	19%	12%	28%	33%	27%	12%
Yellow Time (s)			4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lead	Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?			Yes	Yes			Yes		Yes	
Recall Mode			Min	C-Min	Min	Min	Min	C-Min	Min	Min
Act Effct Green (s)	75.0	28.0								
Actuated g/C Ratio	1.00	0.37								
v/c Ratio	0.42	0.79								
Control Delay	0.9	24.4								
Queue Delay	0.1	0.6								
Total Delay	1.0	25.0								
LOS	A	C								
Approach Delay	1.0									
Approach LOS	A									

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 49 (65%), Referenced to phase 2:NER and 6:, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 7.9	Intersection LOS: A
Intersection Capacity Utilization 69.3%	ICU Level of Service C
Analysis Period (min) 15	

! Phase conflict between lane groups.

Splits and Phases: 31: Northlake Blvd & I-95 SB-Off Ramp Right Turn



Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Volume (vph)	0	0	2542	0	0	1036
Future Volume (vph)	0	0	2542	0	0	1036
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	12	8	12	12	12	12
Total Lost time (s)			4.0			6.0
Lane Util. Factor			0.86			0.76
Frt			1.00			0.85
Flt Protected			1.00			1.00
Satd. Flow (prot)			6408			3610
Flt Permitted			1.00			1.00
Satd. Flow (perm)			6408			3610
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	2676	0	0	1091
RTOR Reduction (vph)	0	0	0	0	0	42
Lane Group Flow (vph)	0	0	2676	0	0	1049
Turn Type			NA			custom
Protected Phases			Free!			2 4!
Permitted Phases						
Actuated Green, G (s)			75.0			28.0
Effective Green, g (s)			75.0			28.0
Actuated g/C Ratio			1.00			0.37
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)			6408			1347
v/s Ratio Prot			0.42			c0.29
v/s Ratio Perm						
v/c Ratio			0.42			0.78
Uniform Delay, d1			0.0			20.8
Progression Factor			1.00			1.00
Incremental Delay, d2			0.1			2.9
Delay (s)			0.1			23.7
Level of Service			A			C
Approach Delay (s)		0.0	0.1		23.7	
Approach LOS		A	A		C	

Intersection Summary			
HCM 2000 Control Delay	6.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		

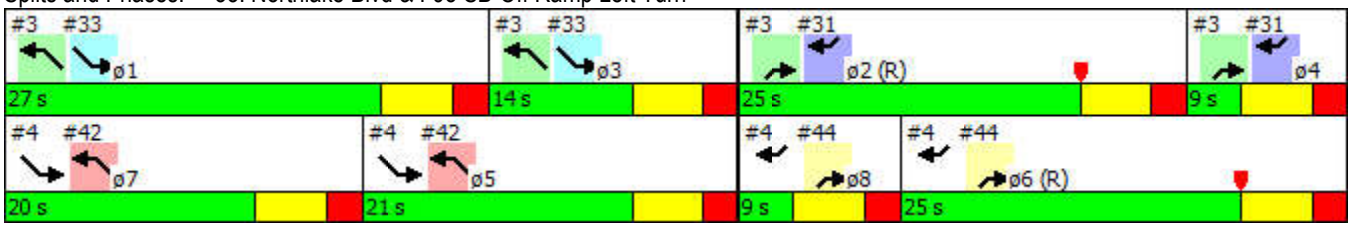
! Phase conflict between lane groups.
c Critical Lane Group

Lane Group	EBT	SEL	ø1	ø2	ø3	ø4	ø5	ø6	ø7	ø8
Lane Configurations										
Traffic Volume (vph)	2212	771								
Future Volume (vph)	2212	771								
Turn Type	NA	Prot								
Protected Phases	Free!	1 3!	1	2	3	4	5	6	7	8
Permitted Phases										
Detector Phase		1 3								
Switch Phase										
Minimum Initial (s)			4.0	4.0	2.0	2.0	4.0	2.0	4.0	2.0
Minimum Split (s)			20.0	20.0	9.0	9.0	20.0	9.0	20.0	9.0
Total Split (s)			27.0	25.0	14.0	9.0	21.0	25.0	20.0	9.0
Total Split (%)			36%	33%	19%	12%	28%	33%	27%	12%
Yellow Time (s)			4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lead	Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?			Yes	Yes			Yes		Yes	
Recall Mode			Min	C-Min	Min	Min	Min	C-Min	Min	Min
Act Effct Green (s)	75.0	35.0								
Actuated g/C Ratio	1.00	0.47								
v/c Ratio	0.36	0.35								
Control Delay	1.0	13.3								
Queue Delay	0.0	0.0								
Total Delay	1.0	13.3								
LOS	A	B								
Approach Delay	1.0	13.3								
Approach LOS	A	B								

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 49 (65%), Referenced to phase 2:NER and 6:, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 4.1	Intersection LOS: A
Intersection Capacity Utilization 55.1%	ICU Level of Service B
Analysis Period (min) 15	

! Phase conflict between lane groups.

Splits and Phases: 33: Northlake Blvd & I-95 SB-Off Ramp Left Turn



Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Traffic Volume (vph)	0	2212	0	0	771	0
Future Volume (vph)	0	2212	0	0	771	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			6.0	
Lane Util. Factor		0.86			0.94	
Frt		1.00			1.00	
Flt Protected		1.00			0.95	
Satd. Flow (prot)		6408			4990	
Flt Permitted		1.00			0.95	
Satd. Flow (perm)		6408			4990	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	2328	0	0	812	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	2328	0	0	812	0
Turn Type		NA			Prot	
Protected Phases		Free!			1 3!	
Permitted Phases						
Actuated Green, G (s)		75.0			35.0	
Effective Green, g (s)		75.0			35.0	
Actuated g/C Ratio		1.00			0.47	
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)		6408			2328	
v/s Ratio Prot		0.36			0.16	
v/s Ratio Perm						
v/c Ratio		0.36			0.35	
Uniform Delay, d1		0.0			12.7	
Progression Factor		1.00			1.00	
Incremental Delay, d2		0.1			0.1	
Delay (s)		0.1			12.8	
Level of Service		A			B	
Approach Delay (s)		0.1	0.0		12.8	
Approach LOS		A	A		B	

Intersection Summary			
HCM 2000 Control Delay	3.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		

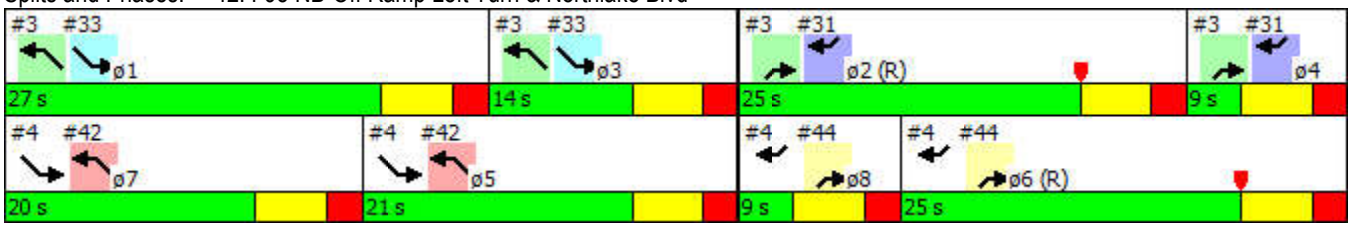
! Phase conflict between lane groups.
c Critical Lane Group

Lane Group	WBT	NWL	ø1	ø2	ø3	ø4	ø5	ø6	ø7	ø8
Lane Configurations										
Traffic Volume (vph)	2806	749								
Future Volume (vph)	2806	749								
Turn Type	NA	Prot								
Protected Phases	Free!	7 5!	1	2	3	4	5	6	7	8
Permitted Phases										
Detector Phase		7 5								
Switch Phase										
Minimum Initial (s)			4.0	4.0	2.0	2.0	4.0	2.0	4.0	2.0
Minimum Split (s)			20.0	20.0	9.0	9.0	20.0	9.0	20.0	9.0
Total Split (s)			27.0	25.0	14.0	9.0	21.0	25.0	20.0	9.0
Total Split (%)			36%	33%	19%	12%	28%	33%	27%	12%
Yellow Time (s)			4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lead	Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?			Yes	Yes			Yes		Yes	
Recall Mode			Min	C-Min	Min	Min	Min	C-Min	Min	Min
Act Effct Green (s)	75.0	35.0								
Actuated g/C Ratio	1.00	0.47								
v/c Ratio	0.46	0.34								
Control Delay	2.1	13.2								
Queue Delay	0.0	0.0								
Total Delay	2.1	13.2								
LOS	A	B								
Approach Delay	2.1	13.2								
Approach LOS	A	B								

Intersection Summary	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 49 (65%), Referenced to phase 2:NER and 6:, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 4.4	Intersection LOS: A
Intersection Capacity Utilization 63.2%	ICU Level of Service B
Analysis Period (min) 15	

! Phase conflict between lane groups.

Splits and Phases: 42: I-95 NB-Off Ramp Left Turn & Northlake Blvd



Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Traffic Volume (vph)	0	0	0	2806	749	0
Future Volume (vph)	0	0	0	2806	749	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	6.0	
Lane Util. Factor				0.86	0.94	
Frt				1.00	1.00	
Flt Protected				1.00	0.95	
Satd. Flow (prot)				6408	4990	
Flt Permitted				1.00	0.95	
Satd. Flow (perm)				6408	4990	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	2954	788	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	2954	788	0
Turn Type				NA	Prot	
Protected Phases				Free!	7 5!	
Permitted Phases						
Actuated Green, G (s)				75.0	35.0	
Effective Green, g (s)				75.0	35.0	
Actuated g/C Ratio				1.00	0.47	
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)				6408	2328	
v/s Ratio Prot				0.46	0.16	
v/s Ratio Perm						
v/c Ratio				0.46	0.34	
Uniform Delay, d1				0.0	12.7	
Progression Factor				1.00	1.00	
Incremental Delay, d2				0.2	0.1	
Delay (s)				0.2	12.8	
Level of Service				A	B	
Approach Delay (s)	0.0			0.2	12.8	
Approach LOS	A			A	B	

Intersection Summary			
HCM 2000 Control Delay	2.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

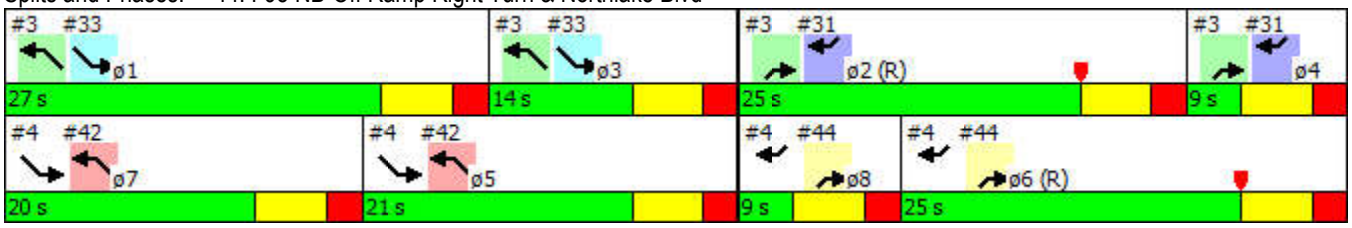
Lane Group	EBT	NER	ø1	ø2	ø3	ø4	ø5	ø6	ø7	ø8
Lane Configurations										
Traffic Volume (vph)	1880	998								
Future Volume (vph)	1880	998								
Turn Type	NA	custom								
Protected Phases	Free!	6 8!	1	2	3	4	5	6	7	8
Permitted Phases										
Detector Phase		6 8								
Switch Phase										
Minimum Initial (s)			4.0	4.0	2.0	2.0	4.0	2.0	4.0	2.0
Minimum Split (s)			20.0	20.0	9.0	9.0	20.0	9.0	20.0	9.0
Total Split (s)			27.0	25.0	14.0	9.0	21.0	25.0	20.0	9.0
Total Split (%)			36%	33%	19%	12%	28%	33%	27%	12%
Yellow Time (s)			4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)										
Total Lost Time (s)										
Lead/Lag			Lead	Lead	Lag	Lag	Lag	Lag	Lead	Lead
Lead-Lag Optimize?			Yes	Yes			Yes		Yes	
Recall Mode			Min	C-Min	Min	Min	Min	C-Min	Min	Min
Act Effct Green (s)	75.0	28.0								
Actuated g/C Ratio	1.00	0.37								
v/c Ratio	0.31	0.72								
Control Delay	0.0	19.9								
Queue Delay	0.0	0.0								
Total Delay	0.0	19.9								
LOS	A	B								
Approach Delay	0.0									
Approach LOS	A									

Intersection Summary

Cycle Length: 75
Actuated Cycle Length: 75
Offset: 49 (65%), Referenced to phase 2:NER and 6:, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 6.9 — Intersection LOS: A
Intersection Capacity Utilization 58.9% — ICU Level of Service B
Analysis Period (min) 15

! Phase conflict between lane groups.

Splits and Phases: 44: I-95 NB-Off Ramp Right Turn & Northlake Blvd



Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Traffic Volume (vph)	1880	0	0	0	0	998
Future Volume (vph)	1880	0	0	0	0	998
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0					6.0
Lane Util. Factor	0.86					0.76
Frt	1.00					0.85
Flt Protected	1.00					1.00
Satd. Flow (prot)	6408					3610
Flt Permitted	1.00					1.00
Satd. Flow (perm)	6408					3610
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1979	0	0	0	0	1051
RTOR Reduction (vph)	0	0	0	0	0	112
Lane Group Flow (vph)	1979	0	0	0	0	939
Turn Type	NA					custom
Protected Phases	Free!					6 8!
Permitted Phases						
Actuated Green, G (s)	75.0					28.0
Effective Green, g (s)	75.0					28.0
Actuated g/C Ratio	1.00					0.37
Clearance Time (s)						
Vehicle Extension (s)						
Lane Grp Cap (vph)	6408					1347
v/s Ratio Prot	0.31					c0.26
v/s Ratio Perm						
v/c Ratio	0.31					0.70
Uniform Delay, d1	0.0					19.9
Progression Factor	1.00					1.00
Incremental Delay, d2	0.0					1.6
Delay (s)	0.0					21.5
Level of Service	A					C
Approach Delay (s)	0.0			0.0	21.5	
Approach LOS	A			A	C	

Intersection Summary			
HCM 2000 Control Delay	7.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		

! Phase conflict between lane groups.
c Critical Lane Group

APPENDIX T

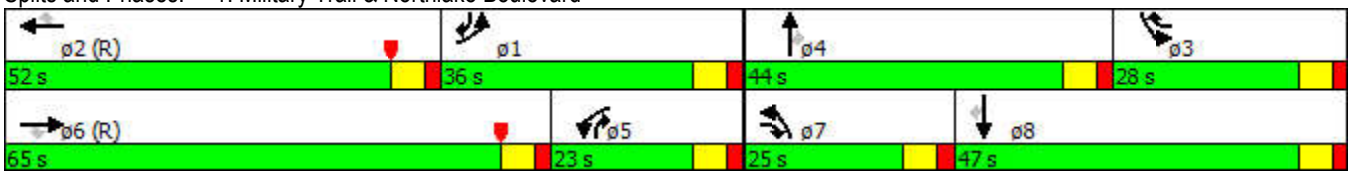
(Build Alternative 3E Signalized Intersections Operational Analysis Results)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	649	1414	278	277	787	293	244	771	295	367	626	274
Future Volume (vph)	649	1414	278	277	787	293	244	771	295	367	626	274
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	1	6	7	5	2	3	7	4	5	3	8	1
Permitted Phases			6			2			4			8
Detector Phase	1	6	7	5	2	3	7	4	5	3	8	1
Switch Phase												
Minimum Initial (s)	4.0	20.0	4.0	4.0	20.0	4.0	4.0	6.0	4.0	4.0	6.0	4.0
Minimum Split (s)	10.0	48.0	23.0	23.0	52.0	11.0	23.0	43.5	23.0	11.0	47.0	10.0
Total Split (s)	36.0	65.0	25.0	23.0	52.0	28.0	25.0	44.0	23.0	28.0	47.0	36.0
Total Split (%)	22.5%	40.6%	15.6%	14.4%	32.5%	17.5%	15.6%	27.5%	14.4%	17.5%	29.4%	22.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	None	None	None	None
Act Effct Green (s)	30.0	64.3	81.1	17.0	51.3	79.3	16.9	32.7	55.7	22.0	37.9	67.9
Actuated g/C Ratio	0.19	0.40	0.51	0.11	0.32	0.50	0.11	0.20	0.35	0.14	0.24	0.42
v/c Ratio	1.07	0.74	0.36	0.82	0.52	0.39	0.73	0.81	0.54	0.82	0.55	0.41
Control Delay	116.2	44.2	11.5	65.4	71.3	45.8	81.9	67.2	36.6	82.0	55.2	15.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	116.2	44.2	11.5	65.4	71.3	45.8	81.9	67.2	36.6	82.0	55.2	15.7
LOS	F	D	B	E	E	D	F	E	D	F	E	B
Approach Delay		60.3			64.6			63.0			54.4	
Approach LOS		E			E			E			D	

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 50 (31%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 155
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.07
Intersection Signal Delay: 60.6 — Intersection LOS: E
Intersection Capacity Utilization 80.6% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 1: Military Trail & Northlake Boulevard



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	649	1414	278	277	787	293	244	771	295	367	626	274
Future Volume (vph)	649	1414	278	277	787	293	244	771	295	367	626	274
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	5036	1568	3335	4940	1538	3335	4940	1538	3400	5036	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3400	5036	1568	3335	4940	1538	3335	4940	1538	3400	5036	1568
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	683	1488	293	292	828	308	257	812	311	386	659	288
RTOR Reduction (vph)	0	0	30	0	0	33	0	0	41	0	0	35
Lane Group Flow (vph)	683	1488	263	292	828	275	257	812	270	386	659	253
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	5%	5%	5%	3%	3%	3%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	1	6	7	5	2	3	7	4	5	3	8	1
Permitted Phases			6			2			4			8
Actuated Green, G (s)	30.0	64.2	81.1	17.0	51.2	73.3	16.9	32.7	49.7	22.1	37.9	67.9
Effective Green, g (s)	30.0	64.2	81.1	17.0	51.2	73.3	16.9	32.7	49.7	22.1	37.9	67.9
Actuated g/C Ratio	0.19	0.40	0.51	0.11	0.32	0.46	0.11	0.20	0.31	0.14	0.24	0.42
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	637	2020	794	354	1580	762	352	1009	535	469	1192	665
v/s Ratio Prot	c0.20	c0.30	0.04	0.09	0.17	0.05	0.08	c0.16	0.05	c0.11	0.13	0.07
v/s Ratio Perm			0.13			0.13			0.12			0.09
v/c Ratio	1.07	0.74	0.33	0.82	0.52	0.36	0.73	0.80	0.50	0.82	0.55	0.38
Uniform Delay, d1	65.0	40.7	23.4	70.0	44.4	28.2	69.3	60.6	45.1	67.0	53.6	31.6
Progression Factor	1.00	1.00	1.00	0.66	1.54	2.14	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	56.6	2.4	0.2	13.9	1.2	0.3	7.6	4.7	0.7	11.1	0.6	0.4
Delay (s)	121.6	43.2	23.6	60.2	69.8	60.4	76.9	65.4	45.8	78.2	54.2	32.0
Level of Service	F	D	C	E	E	E	E	E	D	E	D	C
Approach Delay (s)		62.6			65.8			63.1			56.3	
Approach LOS		E			E			E			E	

Intersection Summary			
HCM 2000 Control Delay	62.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	80.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	649	1414	278	277	787	293	244	771	295	367	626	274
Future Volume (veh/h)	649	1414	278	277	787	293	244	771	295	367	626	274
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1810	1810	1810	1810	1810	1810	1845	1845	1845
Adj Flow Rate, veh/h	683	1488	293	292	828	308	257	812	311	386	659	288
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	5	5	5	5	5	5	3	3	3
Cap, veh/h	788	1857	720	502	1420	646	303	983	537	451	1212	740
Arrive On Green	0.23	0.37	0.37	0.15	0.29	0.29	0.09	0.20	0.20	0.13	0.24	0.24
Sat Flow, veh/h	3408	5036	1568	3343	4940	1538	3343	4940	1538	3408	5036	1568
Grp Volume(v), veh/h	683	1488	293	292	828	308	257	812	311	386	659	288
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1672	1647	1538	1672	1647	1538	1704	1679	1568
Q Serve(g_s), s	30.8	42.4	10.2	13.0	23.0	2.1	12.1	25.2	2.4	17.7	18.3	4.6
Cycle Q Clear(g_c), s	30.8	42.4	10.2	13.0	23.0	2.1	12.1	25.2	2.4	17.7	18.3	4.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	788	1857	720	502	1420	646	303	983	537	451	1212	740
V/C Ratio(X)	0.87	0.80	0.41	0.58	0.58	0.48	0.85	0.83	0.58	0.86	0.54	0.39
Avail Cap(c_a), veh/h	788	1857	720	502	1420	646	397	1173	596	469	1290	764
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.1	45.2	11.1	63.3	48.8	33.7	71.7	61.4	42.5	67.9	53.1	12.0
Incr Delay (d2), s/veh	10.0	3.8	1.7	1.7	1.8	2.5	12.6	4.3	1.1	14.1	0.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	22.1	27.6	8.3	10.2	16.0	2.2	10.2	17.5	2.1	14.2	13.3	8.8
LnGrp Delay(d),s/veh	69.2	49.0	12.8	65.0	50.5	36.2	84.3	65.7	43.7	82.0	53.5	12.3
LnGrp LOS	E	D	B	E	D	D	F	E	D	F	D	B
Approach Vol, veh/h		2464			1428			1380			1333	
Approach Delay, s/veh		50.3			50.4			64.2			52.8	
Approach LOS		D			D			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	43.0	52.0	27.2	37.8	30.0	65.0	20.5	44.5
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	30.0	46.0	22.0	38.0	17.0	59.0	19.0	41.0
Max Q Clear Time (g_c+I1), s	32.8	25.0	19.7	27.2	15.0	44.4	14.1	20.3
Green Ext Time (p_c), s	0.0	6.5	1.4	4.6	0.9	9.1	0.4	6.7

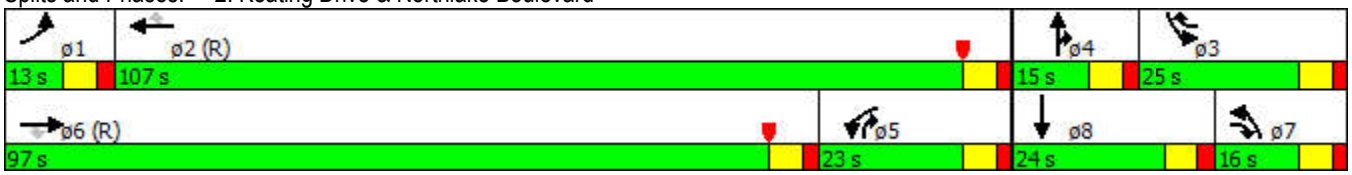
Intersection Summary	
HCM 2010 Ctrl Delay	53.7
HCM 2010 LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	24	1420	81	109	1368	64	50	7	95	151	11
Future Volume (vph)	24	1420	81	109	1368	64	50	7	95	151	11
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pt+ov	Prot	NA
Protected Phases	1	6	7	5	2	3	7	4	4 5	3	8
Permitted Phases			6			2					
Detector Phase	1	6	7	5	2	3	7	4	4 5	3	8
Switch Phase											
Minimum Initial (s)	4.0	20.0	4.0	4.0	20.0	4.0	4.0	5.0		4.0	5.0
Minimum Split (s)	10.0	36.5	10.0	10.0	39.5	10.0	10.0	11.0		10.0	11.0
Total Split (s)	13.0	97.0	16.0	23.0	107.0	25.0	16.0	15.0		25.0	24.0
Total Split (%)	8.1%	60.6%	10.0%	14.4%	66.9%	15.6%	10.0%	9.4%		15.6%	15.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lead		Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	None		None	None
Act Effct Green (s)	7.5	99.4	118.7	17.0	113.7	129.6	13.4	6.2	29.2	13.4	8.6
Actuated g/C Ratio	0.05	0.62	0.74	0.11	0.71	0.81	0.08	0.04	0.18	0.08	0.05
v/c Ratio	0.30	0.38	0.07	0.32	0.32	0.05	0.36	0.10	0.18	0.55	0.42
Control Delay	98.5	5.6	0.2	81.3	11.8	1.2	77.8	76.7	24.8	77.2	70.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	98.5	5.6	0.2	81.3	11.8	1.2	77.8	76.7	24.8	77.2	70.1
LOS	F	A	A	F	B	A	E	E	C	E	E
Approach Delay		6.8			16.3			44.6			75.7
Approach LOS		A			B			D			E

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 109 (68%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 16.6 — Intersection LOS: B
Intersection Capacity Utilization 49.9% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2: Keating Drive & Northlake Boulevard



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	1420	81	109	1368	64	50	7	95	151	11	28
Future Volume (vph)	24	1420	81	109	1368	64	50	7	95	151	11	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	0.86	1.00	0.97	0.86	1.00	1.00	1.00	0.88	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	6408	1583	3367	6285	1553	1752	1845	2760	3433	1665	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	6408	1583	3367	6285	1553	1752	1845	2760	3433	1665	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	25	1495	85	115	1440	67	53	7	100	159	12	29
RTOR Reduction (vph)	0	0	19	0	0	13	0	0	48	0	10	0
Lane Group Flow (vph)	25	1495	66	115	1440	54	53	7	52	159	31	0
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pt+ov	Prot	NA	
Protected Phases	1	6	7	5	2	3	7	4	4 5	3	8	
Permitted Phases			6			2						
Actuated Green, G (s)	5.0	95.8	109.2	19.3	110.1	124.8	13.4	6.2	31.5	14.7	7.5	
Effective Green, g (s)	5.0	95.8	109.2	19.3	110.1	124.8	13.4	6.2	31.5	14.7	7.5	
Actuated g/C Ratio	0.03	0.60	0.68	0.12	0.69	0.78	0.08	0.04	0.20	0.09	0.05	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	55	3836	1139	406	4324	1211	146	71	543	315	78	
v/s Ratio Prot	0.01	c0.23	0.00	0.03	c0.23	0.00	0.03	0.00	0.02	c0.05	c0.02	
v/s Ratio Perm			0.04			0.03						
v/c Ratio	0.45	0.39	0.06	0.28	0.33	0.04	0.36	0.10	0.10	0.50	0.40	
Uniform Delay, d1	76.2	16.8	8.4	64.1	10.1	4.0	69.3	74.2	52.6	69.2	74.1	
Progression Factor	1.25	0.35	0.03	1.19	1.20	1.66	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.3	0.2	0.0	0.4	0.2	0.0	1.5	0.6	0.1	1.3	3.4	
Delay (s)	99.2	6.2	0.3	76.5	12.3	6.7	70.8	74.8	52.7	70.5	77.5	
Level of Service	F	A	A	E	B	A	E	E	D	E	E	
Approach Delay (s)		7.3			16.6			59.6			71.9	
Approach LOS		A			B			E			E	

Intersection Summary			
HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	24	1420	81	109	1368	64	50	7	95	151	11	28
Future Volume (veh/h)	24	1420	81	109	1368	64	50	7	95	151	11	28
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1827	1827	1827	1845	1845	1845	1863	1863	1900
Adj Flow Rate, veh/h	25	1495	85	115	1440	67	53	7	100	159	12	29
Adj No. of Lanes	1	4	1	2	4	1	1	1	2	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	4	4	4	3	3	3	2	2	2
Cap, veh/h	32	3644	996	640	4653	1244	106	57	609	209	15	37
Arrive On Green	0.02	0.57	0.57	0.38	1.00	1.00	0.06	0.03	0.03	0.06	0.03	0.03
Sat Flow, veh/h	1774	6408	1583	3375	6285	1553	1757	1845	2760	3442	485	1171
Grp Volume(v), veh/h	25	1495	85	115	1440	67	53	7	100	159	0	41
Grp Sat Flow(s),veh/h/ln	1774	1602	1583	1688	1571	1553	1757	1845	1380	1721	0	1656
Q Serve(g_s), s	2.2	21.0	0.0	3.6	0.0	0.0	4.7	0.6	0.0	7.3	0.0	3.9
Cycle Q Clear(g_c), s	2.2	21.0	0.0	3.6	0.0	0.0	4.7	0.6	0.0	7.3	0.0	3.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.71
Lane Grp Cap(c), veh/h	32	3644	996	640	4653	1244	106	57	609	209	0	52
V/C Ratio(X)	0.79	0.41	0.09	0.18	0.31	0.05	0.50	0.12	0.16	0.76	0.00	0.78
Avail Cap(c_a), veh/h	78	3644	996	640	4653	1244	110	104	678	409	0	186
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.95	0.95	0.95	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	78.3	19.4	11.6	41.4	0.0	0.0	72.9	75.4	50.4	74.0	0.0	76.9
Incr Delay (d2), s/veh	34.1	0.3	0.2	0.1	0.2	0.1	3.6	0.9	0.1	5.6	0.0	22.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.5	14.3	2.7	3.1	0.1	0.0	4.3	0.6	3.2	6.5	0.0	3.8
LnGrp Delay(d),s/veh	112.4	19.7	11.8	41.5	0.2	0.1	76.5	76.4	50.6	79.6	0.0	99.0
LnGrp LOS	F	B	B	D	A	A	E	E	D	E		F
Approach Vol, veh/h		1605			1622			160			200	
Approach Delay, s/veh		20.8			3.1			60.3			83.6	
Approach LOS		C			A			E			F	

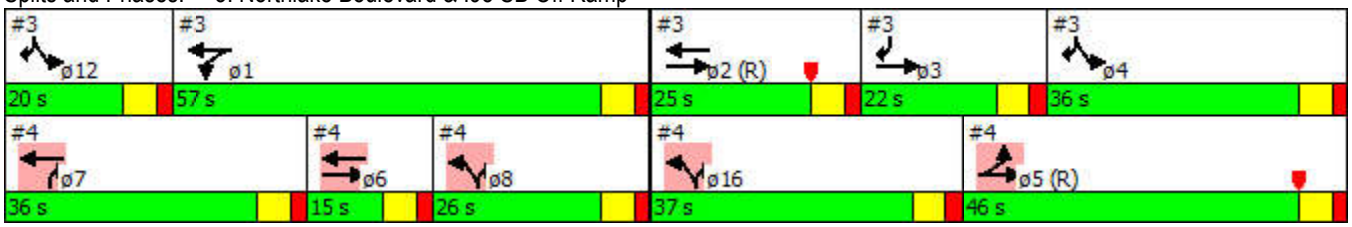
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	124.5	15.7	11.0	36.3	97.0	15.6	11.1
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	7.0	101.0	19.0	9.0	17.0	91.0	10.0	18.0
Max Q Clear Time (g_c+I1), s	4.2	2.0	9.3	2.6	5.6	23.0	6.7	5.9
Green Ext Time (p_c), s	0.0	16.0	0.4	0.2	7.2	15.8	0.2	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	18.0
HCM 2010 LOS	B

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR	ø2	ø3	ø4	ø5	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	1111	683	90	1207	690	442						
Future Volume (vph)	1111	683	90	1207	690	442						
Turn Type	NA	Free	Prot	NA	Prot	custom						
Protected Phases	2 3		1	1 2	4 12	3 4 12	2	3	4	5	6	7
Permitted Phases		Free										
Detector Phase	2 3		1	1 2	4 12	3 4 12						
Switch Phase												
Minimum Initial (s)			4.0				4.0	4.0	6.0	4.0	4.0	4.0
Minimum Split (s)			11.5				11.5	22.0	12.0	11.5	10.5	22.0
Total Split (s)			57.0				25.0	22.0	36.0	46.0	15.0	36.0
Total Split (%)			35.6%				16%	14%	23%	29%	9%	23%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			2.0				2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)			0.0									
Total Lost Time (s)			6.0									
Lead/Lag			Lag				Lead	Lag		Lag	Lag	Lead
Lead-Lag Optimize?			Yes				Yes	Yes		Yes	Yes	Yes
Recall Mode			Max				C-Max	None	None	C-Max	None	None
Act Effct Green (s)	41.0	160.0	56.4	81.4	44.6	66.6						
Actuated g/C Ratio	0.26	1.00	0.35	0.51	0.28	0.42						
v/c Ratio	0.54	0.45	0.16	0.38	0.49	0.24						
Control Delay	32.2	2.1	3.7	3.8	49.4	30.5						
Queue Delay	0.0	0.0	0.0	0.1	0.0	0.0						
Total Delay	32.2	2.1	3.7	3.9	49.4	30.5						
LOS	C	A	A	A	D	C						
Approach Delay	20.7			3.9								
Approach LOS	C			A								

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 66 (41%), Referenced to phase 2:EBWB and 5:, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 21.3	Intersection LOS: C
Intersection Capacity Utilization 66.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Northlake Boulevard & I95 SB Off Ramp



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	5.0	5.0
Minimum Split (s)	12.0	11.0	11.0
Total Split (s)	26.0	20.0	37.0
Total Split (%)	16%	13%	23%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	Lead
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1111	683	90	1207	0	0	0	0	690	0	442
Future Volume (vph)	0	1111	683	90	1207	0	0	0	0	690	0	442
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		6.0	4.0	6.0	6.0					6.0		6.0
Lane Util. Factor		*0.91	1.00	1.00	*0.91					*1.00		*1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		8475	1583	1736	6650					5309		4750
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		8475	1583	1736	6650					5309		4750
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1169	719	95	1271	0	0	0	0	726	0	465
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1169	719	95	1271	0	0	0	0	726	0	465
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	2%	2%	2%	2%	2%	2%
Turn Type		NA	Free	Prot	NA					Prot		custom
Protected Phases		2 3		1	1 2					4 12		3 4 12
Permitted Phases			Free									
Actuated Green, G (s)		41.0	160.0	56.4	81.4					44.6		66.6
Effective Green, g (s)		41.0	160.0	56.4	81.4					44.6		66.6
Actuated g/C Ratio		0.26	1.00	0.35	0.51					0.28		0.42
Clearance Time (s)				6.0								
Vehicle Extension (s)				3.0								
Lane Grp Cap (vph)		2171	1583	611	3383					1479		1977
v/s Ratio Prot		c0.14		0.05	0.19					c0.14		0.10
v/s Ratio Perm			c0.45									
v/c Ratio		0.54	0.45	0.16	0.38					0.49		0.24
Uniform Delay, d1		51.3	0.0	35.5	23.9					48.2		30.2
Progression Factor		0.61	1.00	0.09	0.14					1.00		1.00
Incremental Delay, d2		0.3	0.9	0.5	0.3					0.3		0.1
Delay (s)		31.5	0.9	3.7	3.7					48.5		30.3
Level of Service		C	A	A	A					D		C
Approach Delay (s)		19.9			3.7			0.0			41.4	
Approach LOS		B			A			A			D	

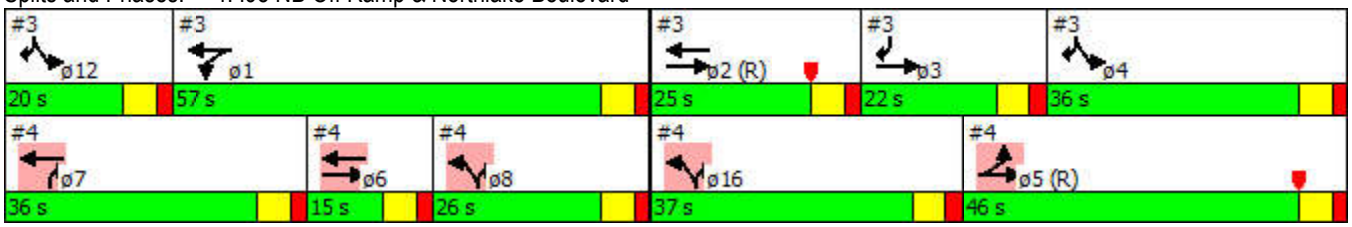
Intersection Summary			
HCM 2000 Control Delay	20.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	36.0
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR	ø1	ø2	ø3	ø4	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	75	1726	794	473	503	1089						
Future Volume (vph)	75	1726	794	473	503	1089						
Turn Type	Prot	NA	NA	Free	Prot	custom						
Protected Phases	5	5 6	6 7		8 16	7 8 16	1	2	3	4	6	7
Permitted Phases				Free								
Detector Phase	5	5 6	6 7		8 16	7 8 16						
Switch Phase												
Minimum Initial (s)	4.0						4.0	4.0	4.0	6.0	4.0	4.0
Minimum Split (s)	11.5						11.5	11.5	22.0	12.0	10.5	22.0
Total Split (s)	46.0						57.0	25.0	22.0	36.0	15.0	36.0
Total Split (%)	28.8%						36%	16%	14%	23%	9%	23%
Yellow Time (s)	4.0						4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0						2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0											
Total Lost Time (s)	6.0											
Lead/Lag	Lag						Lag	Lead	Lag		Lag	Lead
Lead-Lag Optimize?	Yes						Yes	Yes	Yes		Yes	Yes
Recall Mode	C-Max						Max	C-Max	None	None	None	None
Act Effct Green (s)	58.7	67.7	45.0	160.0	38.3	68.3						
Actuated g/C Ratio	0.37	0.42	0.28	1.00	0.24	0.43						
v/c Ratio	0.14	0.71	0.40	0.36	0.47	0.63						
Control Delay	5.8	11.4	33.8	1.1	53.4	25.2						
Queue Delay	0.0	0.2	0.0	0.0	0.0	0.0						
Total Delay	5.8	11.6	33.8	1.1	53.4	25.2						
LOS	A	B	C	A	D	C						
Approach Delay		11.3	21.6									
Approach LOS		B	C									

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 66 (41%), Referenced to phase 2:EBWB and 5:, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 21.9	Intersection LOS: C
Intersection Capacity Utilization 66.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 4: I95 NB Off Ramp & Northlake Boulevard



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	5.0	5.0
Minimum Split (s)	12.0	11.0	11.0
Total Split (s)	26.0	20.0	37.0
Total Split (%)	16%	13%	23%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	Lead
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	1726	0	0	794	473	503	0	1089	0	0	0
Future Volume (vph)	75	1726	0	0	794	473	503	0	1089	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	6.0	6.0			6.0	4.0	6.0		6.0			
Lane Util. Factor	1.00	*0.91			*0.91	1.00	*1.00		*1.00			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	1577	6043			7481	1398	4732		4233			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	1577	6043			7481	1398	4732		4233			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	79	1817	0	0	836	498	529	0	1146	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	79	1817	0	0	836	498	529	0	1146	0	0	0
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Prot	NA			NA	Free	Prot		custom			
Protected Phases	5	5 6			6 7		8 16		7 8 16			
Permitted Phases						Free						
Actuated Green, G (s)	58.7	67.7			45.0	160.0	38.3		68.3			
Effective Green, g (s)	58.7	67.7			45.0	160.0	38.3		68.3			
Actuated g/C Ratio	0.37	0.42			0.28	1.00	0.24		0.43			
Clearance Time (s)	6.0											
Vehicle Extension (s)	3.0											
Lane Grp Cap (vph)	578	2556			2104	1398	1132		1806			
v/s Ratio Prot	0.05	c0.30			0.11		0.11		c0.27			
v/s Ratio Perm						0.36						
v/c Ratio	0.14	0.71			0.40	0.36	0.47		0.63			
Uniform Delay, d1	33.8	38.1			46.5	0.0	52.1		36.0			
Progression Factor	0.16	0.34			0.71	1.00	1.00		1.00			
Incremental Delay, d2	0.4	0.8			0.1	0.7	0.3		0.8			
Delay (s)	5.7	13.8			33.3	0.7	52.4		36.9			
Level of Service	A	B			C	A	D		D			
Approach Delay (s)		13.5			21.1			41.8			0.0	
Approach LOS		B			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	25.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	36.0
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBT	WBR	SBR
Lane Configurations					
Traffic Volume (vph)	43	2676	1215	28	52
Future Volume (vph)	43	2676	1215	28	52
Turn Type	Prot	NA	NA	Perm	Perm
Protected Phases	1	6	2		
Permitted Phases				2	6
Detector Phase	1	6	2	2	6
Switch Phase					
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	12.0	24.0	23.5	23.5	24.0
Total Split (s)	27.0	160.0	133.0	133.0	160.0
Total Split (%)	16.9%	100.0%	83.1%	83.1%	100.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	9.5	160.0	142.1	142.1	160.0
Actuated g/C Ratio	0.06	1.00	0.89	0.89	1.00
v/c Ratio	0.43	0.44	0.19	0.02	0.03
Control Delay	94.6	0.2	0.5	0.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	94.6	0.2	0.5	0.0	0.0
LOS	F	A	A	A	A
Approach Delay		1.7	0.5		
Approach LOS		A	A		

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 68 (43%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.44	
Intersection Signal Delay: 1.3	Intersection LOS: A
Intersection Capacity Utilization 43.8%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 5: Northlake Boulevard & Roan Lane

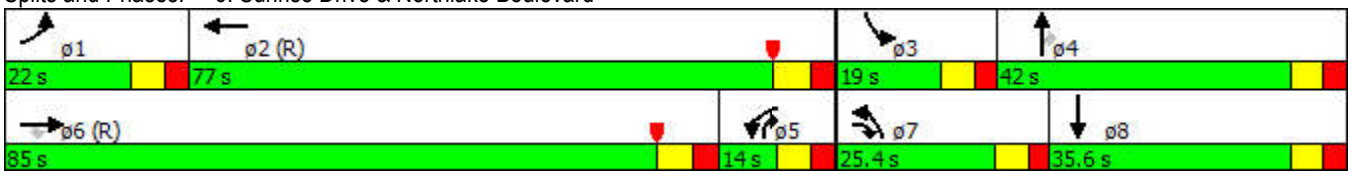
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	2676	0	0	1215	28	0	0	0	0	0	52
Future Volume (vph)	43	2676	0	0	1215	28	0	0	0	0	0	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	6.0	6.0			6.0	6.0						6.0
Lane Util. Factor	1.00	0.86			0.81	1.00						1.00
Frt	1.00	1.00			1.00	0.85						0.86
Flt Protected	0.95	1.00			1.00	1.00						1.00
Satd. Flow (prot)	1770	6408			7544	1583						1611
Flt Permitted	0.95	1.00			1.00	1.00						1.00
Satd. Flow (perm)	1770	6408			7544	1583						1611
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	45	2817	0	0	1279	29	0	0	0	0	0	55
RTOR Reduction (vph)	0	0	0	0	0	4	0	0	0	0	0	0
Lane Group Flow (vph)	45	2817	0	0	1279	25	0	0	0	0	0	55
Turn Type	Prot	NA			NA	Perm						Perm
Protected Phases	1	6			2							
Permitted Phases						2						6
Actuated Green, G (s)	8.3	160.0			139.7	139.7						160.0
Effective Green, g (s)	8.3	160.0			139.7	139.7						160.0
Actuated g/C Ratio	0.05	1.00			0.87	0.87						1.00
Clearance Time (s)	6.0	6.0			6.0	6.0						6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0						3.0
Lane Grp Cap (vph)	91	6408			6586	1382						1611
v/s Ratio Prot	0.03	c0.44			0.17							
v/s Ratio Perm						0.02						0.03
v/c Ratio	0.49	0.44			0.19	0.02						0.03
Uniform Delay, d1	73.8	0.0			1.6	1.3						0.0
Progression Factor	1.18	1.00			0.30	0.26						1.00
Incremental Delay, d2	3.3	0.2			0.1	0.0						0.0
Delay (s)	90.3	0.2			0.5	0.4						0.0
Level of Service	F	A			A	A						A
Approach Delay (s)		1.6			0.5			0.0			0.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	1.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	43.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	99	2265	177	131	1640	237	10	133	168	20
Future Volume (vph)	99	2265	177	131	1640	237	10	133	168	20
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	1	6	7	5	2	7	4	5	3	8
Permitted Phases			6					4		
Detector Phase	1	6	7	5	2	7	4	5	3	8
Switch Phase										
Minimum Initial (s)	4.0	20.0	4.0	4.0	20.0	4.0	6.0	4.0	4.0	6.0
Minimum Split (s)	12.5	38.5	12.5	12.5	32.5	12.5	42.0	12.5	12.5	13.0
Total Split (s)	22.0	85.0	25.4	14.0	77.0	25.4	42.0	14.0	19.0	35.6
Total Split (%)	13.8%	53.1%	15.9%	8.8%	48.1%	15.9%	26.3%	8.8%	11.9%	22.3%
Yellow Time (s)	4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	2.5	3.0	3.0	2.5	3.0	3.0	2.5	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.5	6.5	7.0	7.5	6.5	7.0	7.0	6.5	7.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	None	None
Act Effct Green (s)	13.3	94.8	112.3	7.0	88.5	16.5	13.3	16.7	24.8	13.7
Actuated g/C Ratio	0.08	0.59	0.70	0.04	0.55	0.10	0.08	0.10	0.16	0.09
v/c Ratio	0.71	0.79	0.16	0.94	0.51	0.71	0.07	0.41	0.34	0.64
Control Delay	97.4	19.7	1.3	133.6	23.9	80.9	62.6	32.2	64.8	81.6
Queue Delay	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	97.4	19.8	1.3	133.6	23.9	80.9	62.6	32.2	64.8	81.6
LOS	F	B	A	F	C	F	E	C	E	F
Approach Delay		21.5			31.8		63.4			70.7
Approach LOS		C			C		E			E

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 24 (15%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 31.0	Intersection LOS: C
Intersection Capacity Utilization 78.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 6: Sunrise Drive & Northlake Boulevard



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	99	2265	177	131	1640	50	237	10	133	168	20	70
Future Volume (vph)	99	2265	177	131	1640	50	237	10	133	168	20	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	7.0	7.5	6.5	7.0	7.5		6.5	7.0	7.0	6.5	7.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.86		0.97	1.00	0.88	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1583	3367	6257		3400	1845	2760	3400	1629	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1583	3367	6257		3400	1845	2760	3400	1629	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	104	2384	186	138	1726	53	249	11	140	177	21	74
RTOR Reduction (vph)	0	0	20	0	2	0	0	0	54	0	9	0
Lane Group Flow (vph)	104	2384	166	138	1777	0	249	11	86	177	86	0
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	1	6	7	5	2		7	4	5	3	8	
Permitted Phases			6						4			
Actuated Green, G (s)	13.3	90.5	107.0	7.0	84.2		16.5	9.7	16.7	24.8	18.0	
Effective Green, g (s)	13.3	90.5	107.0	7.0	84.2		16.5	9.7	16.7	24.8	18.0	
Actuated g/C Ratio	0.08	0.57	0.67	0.04	0.53		0.10	0.06	0.10	0.16	0.11	
Clearance Time (s)	7.0	7.5	6.5	7.0	7.5		6.5	7.0	7.0	6.5	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	147	2876	1058	147	3292		350	111	288	527	183	
v/s Ratio Prot	0.06	c0.47	0.02	c0.04	0.28		c0.07	0.01	0.01	0.05	c0.05	
v/s Ratio Perm			0.09						0.02			
v/c Ratio	0.71	0.83	0.16	0.94	0.54		0.71	0.10	0.30	0.34	0.47	
Uniform Delay, d1	71.5	28.4	9.8	76.3	25.1		69.4	71.0	66.2	60.3	66.5	
Progression Factor	1.04	0.67	0.33	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	13.3	2.7	0.1	55.4	0.6		6.7	0.4	0.6	0.4	1.9	
Delay (s)	87.3	21.7	3.3	131.7	25.7		76.1	71.4	66.8	60.6	68.4	
Level of Service	F	C	A	F	C		E	E	E	E	E	
Approach Delay (s)		23.0			33.3			72.7			63.4	
Approach LOS		C			C			E			E	

Intersection Summary			
HCM 2000 Control Delay	32.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	2265	177	131	1640	50	237	10	133	168	20	70
Future Volume (veh/h)	99	2265	177	131	1640	50	237	10	133	168	20	70
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1827	1827	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	104	2384	186	138	1726	53	249	11	140	177	21	74
Adj No. of Lanes	1	3	1	2	4	0	2	1	2	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	4	4	4	3	3	3	3	3	3
Cap, veh/h	123	2463	904	589	3740	115	296	182	754	220	27	96
Arrive On Green	0.14	0.97	0.97	0.17	0.59	0.59	0.09	0.10	0.10	0.06	0.08	0.08
Sat Flow, veh/h	1774	5085	1583	3375	6312	194	3408	1845	2760	3408	358	1263
Grp Volume(v), veh/h	104	2384	186	138	1289	490	249	11	140	177	0	95
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1688	1571	1793	1704	1845	1380	1704	0	1622
Q Serve(g_s), s	9.2	37.6	0.2	5.6	24.5	24.5	11.5	0.9	0.9	8.2	0.0	9.2
Cycle Q Clear(g_c), s	9.2	37.6	0.2	5.6	24.5	24.5	11.5	0.9	0.9	8.2	0.0	9.2
Prop In Lane	1.00		1.00	1.00		0.11	1.00		1.00	1.00		0.78
Lane Grp Cap(c), veh/h	123	2463	904	589	2793	1062	296	182	754	220	0	124
V/C Ratio(X)	0.84	0.97	0.21	0.23	0.46	0.46	0.84	0.06	0.19	0.81	0.00	0.77
Avail Cap(c_a), veh/h	166	2463	904	589	2793	1062	403	404	1085	266	0	290
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	68.0	1.9	0.3	56.9	18.3	18.3	72.0	65.4	24.7	73.9	0.0	72.5
Incr Delay (d2), s/veh	24.3	12.0	0.5	0.2	0.6	1.4	11.2	0.1	0.1	13.9	0.0	9.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	9.0	19.9	0.4	4.8	16.1	18.4	9.9	0.8	3.1	7.7	0.0	7.9
LnGrp Delay(d),s/veh	92.3	13.9	0.8	57.1	18.8	19.7	83.1	65.5	24.8	87.8	0.0	82.1
LnGrp LOS	F	B	A	E	B	B	F	E	C	F		F
Approach Vol, veh/h		2674			1917			400			272	
Approach Delay, s/veh		16.0			21.8			62.2			85.8	
Approach LOS		B			C			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.1	102.3	16.8	22.8	35.4	85.0	20.4	19.2
Change Period (Y+Rc), s	7.0	7.5	6.5	7.0	7.5	* 7.5	6.5	7.0
Max Green Setting (Gmax), s	15.0	69.5	12.5	35.0	7.0	* 78	18.9	28.6
Max Q Clear Time (g_c+I1), s	11.2	26.5	10.2	2.9	7.6	39.6	13.5	11.2
Green Ext Time (p_c), s	0.1	17.8	0.1	1.2	0.0	27.3	0.4	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	25.3
HCM 2010 LOS	C

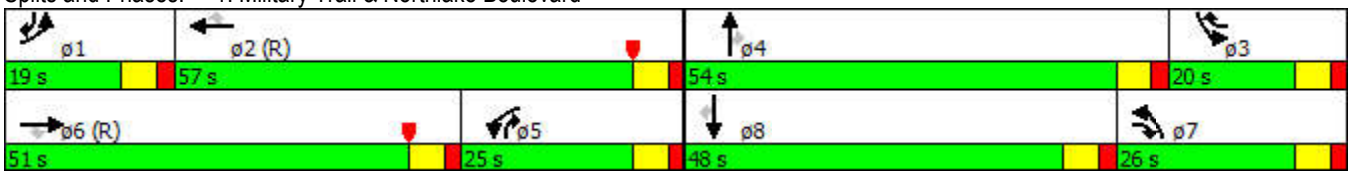
Notes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	431	1065	210	342	1416	350	414	713	391	430	842	677
Future Volume (vph)	431	1065	210	342	1416	350	414	713	391	430	842	677
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	1	6	7	5	2	3	7	4	5	3	8	1
Permitted Phases			6			2			4			8
Detector Phase	1	6	7	5	2	3	7	4	5	3	8	1
Switch Phase												
Minimum Initial (s)	4.0	20.0	4.0	4.0	20.0	4.0	4.0	6.0	4.0	4.0	6.0	4.0
Minimum Split (s)	10.0	48.0	23.0	23.0	52.0	11.0	23.0	43.5	23.0	11.0	47.0	10.0
Total Split (s)	19.0	51.0	26.0	25.0	57.0	20.0	26.0	54.0	25.0	20.0	48.0	19.0
Total Split (%)	12.7%	34.0%	17.3%	16.7%	38.0%	13.3%	17.3%	36.0%	16.7%	13.3%	32.0%	12.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	None	None	None	None
Act Effct Green (s)	13.4	45.4	79.6	19.0	51.0	83.5	28.2	29.1	54.1	32.5	33.4	46.8
Actuated g/C Ratio	0.09	0.30	0.53	0.13	0.34	0.56	0.19	0.19	0.36	0.22	0.22	0.31
v/c Ratio	1.48	0.73	0.25	0.83	0.86	0.41	0.67	0.76	0.68	0.61	0.78	1.34
Control Delay	278.6	50.1	15.2	56.0	29.9	7.6	63.1	62.4	40.0	57.9	60.0	190.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	278.6	50.1	15.2	56.0	29.9	7.6	63.1	62.4	40.0	57.9	60.0	190.7
LOS	F	D	B	E	C	A	E	E	D	E	E	F
Approach Delay		103.6			30.4			56.8			105.0	
Approach LOS		F			C			E			F	

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 66 (44%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.48
Intersection Signal Delay: 73.0 — Intersection LOS: E
Intersection Capacity Utilization 96.1% — ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 1: Military Trail & Northlake Boulevard



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	431	1065	210	342	1416	350	414	713	391	430	842	677
Future Volume (vph)	431	1065	210	342	1416	350	414	713	391	430	842	677
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	454	1121	221	360	1491	368	436	751	412	453	886	713
RTOR Reduction (vph)	0	0	31	0	0	27	0	0	41	0	0	41
Lane Group Flow (vph)	454	1121	190	360	1491	341	436	751	371	453	886	672
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	1	6	7	5	2	3	7	4	5	3	8	1
Permitted Phases			6			2			4			8
Actuated Green, G (s)	13.4	45.4	73.6	19.0	51.0	83.5	28.2	29.1	48.1	32.5	33.4	46.8
Effective Green, g (s)	13.4	45.4	73.6	19.0	51.0	83.5	28.2	29.1	48.1	32.5	33.4	46.8
Actuated g/C Ratio	0.09	0.30	0.49	0.13	0.34	0.56	0.19	0.19	0.32	0.22	0.22	0.31
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	306	1539	840	434	1728	881	645	986	570	743	1132	493
v/s Ratio Prot	c0.13	0.22	0.04	0.10	c0.29	0.08	c0.13	0.15	0.08	c0.13	0.17	c0.12
v/s Ratio Perm			0.08			0.13			0.15			0.30
v/c Ratio	1.48	0.73	0.23	0.83	0.86	0.39	0.68	0.76	0.65	0.61	0.78	1.36
Uniform Delay, d1	68.3	46.8	21.9	63.9	46.2	18.8	56.7	57.2	43.7	53.0	54.9	51.6
Progression Factor	1.00	1.00	1.00	0.65	0.54	0.74	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	234.4	3.1	0.1	10.1	4.9	0.2	2.8	3.5	2.7	1.4	3.6	175.9
Delay (s)	302.7	49.8	22.0	51.9	29.7	14.2	59.5	60.7	46.4	54.5	58.5	227.5
Level of Service	F	D	C	D	C	B	E	E	D	D	E	F
Approach Delay (s)		110.3			30.7			56.7			116.3	
Approach LOS		F			C			E			F	

Intersection Summary			
HCM 2000 Control Delay	77.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	96.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	431	1065	210	342	1416	350	414	713	391	430	842	677
Future Volume (veh/h)	431	1065	210	342	1416	350	414	713	391	430	842	677
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	454	1121	221	360	1491	368	436	751	412	453	886	713
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	298	1526	686	494	1815	881	459	1003	539	686	1338	554
Arrive On Green	0.09	0.30	0.30	0.29	0.71	0.71	0.13	0.20	0.20	0.20	0.26	0.26
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	454	1121	221	360	1491	368	436	751	412	453	886	713
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	13.0	29.7	0.0	14.1	30.4	3.7	18.9	20.9	13.3	18.2	23.3	33.0
Cycle Q Clear(g_c), s	13.0	29.7	0.0	14.1	30.4	3.7	18.9	20.9	13.3	18.2	23.3	33.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	298	1526	686	494	1815	881	459	1003	539	686	1338	554
V/C Ratio(X)	1.52	0.73	0.32	0.73	0.82	0.42	0.95	0.75	0.76	0.66	0.66	1.29
Avail Cap(c_a), veh/h	298	1526	686	494	1815	881	459	1627	734	686	1424	581
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.5	47.1	28.0	50.8	18.2	2.7	64.5	56.7	44.1	55.4	49.3	22.8
Incr Delay (d2), s/veh	251.4	3.2	1.2	5.4	4.3	1.5	29.7	1.1	3.3	2.3	1.1	142.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	29.9	20.6	10.4	11.4	20.8	3.8	16.3	15.1	10.3	13.8	16.5	65.3
LnGrp Delay(d),s/veh	319.9	50.3	29.2	56.2	22.5	4.2	94.2	57.9	47.3	57.7	50.4	165.2
LnGrp LOS	F	D	C	E	C	A	F	E	D	E	D	F
Approach Vol, veh/h		1796			2219			1599			2052	
Approach Delay, s/veh		115.9			24.9			65.1			91.9	
Approach LOS		F			C			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	59.5	35.9	35.6	27.5	51.0	26.0	45.5
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	13.0	51.0	14.0	48.0	19.0	45.0	20.0	42.0
Max Q Clear Time (g_c+I1), s	15.0	32.4	20.2	22.9	16.1	31.7	20.9	35.0
Green Ext Time (p_c), s	0.0	12.2	0.0	6.7	2.5	6.5	0.0	4.5

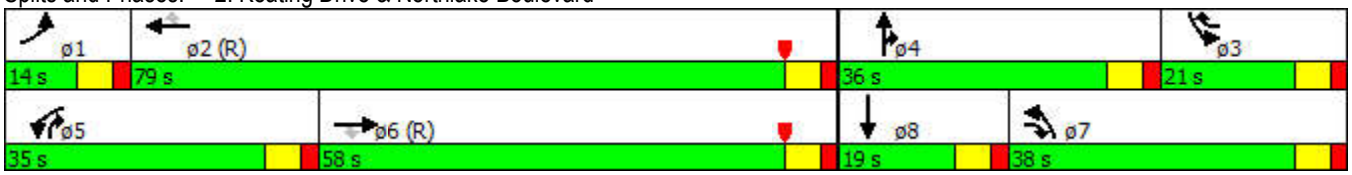
Intersection Summary	
HCM 2010 Ctrl Delay	72.5
HCM 2010 LOS	E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	54	1207	244	295	1945	226	258	43	307	161	47
Future Volume (vph)	54	1207	244	295	1945	226	258	43	307	161	47
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pt+ov	Prot	NA
Protected Phases	1	6	7	5	2	3	7	4	4 5	3	8
Permitted Phases			6			2					
Detector Phase	1	6	7	5	2	3	7	4	4 5	3	8
Switch Phase											
Minimum Initial (s)	4.0	20.0	4.0	4.0	20.0	4.0	4.0	5.0		4.0	5.0
Minimum Split (s)	10.0	36.5	10.0	10.0	39.5	10.0	10.0	11.0		10.0	11.0
Total Split (s)	14.0	58.0	38.0	35.0	79.0	21.0	38.0	36.0		21.0	19.0
Total Split (%)	9.3%	38.7%	25.3%	23.3%	52.7%	14.0%	25.3%	24.0%		14.0%	12.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lead		Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	None		None	None
Act Effct Green (s)	8.4	68.2	95.4	19.2	81.5	107.2	27.2	14.1	33.3	24.5	11.4
Actuated g/C Ratio	0.06	0.45	0.64	0.13	0.54	0.71	0.18	0.09	0.22	0.16	0.08
v/c Ratio	0.58	0.44	0.25	0.71	0.59	0.21	0.85	0.26	0.48	0.30	0.69
Control Delay	103.3	16.3	3.0	82.5	20.1	3.8	82.5	66.0	25.1	55.7	84.5
Queue Delay	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	103.3	16.3	3.0	82.5	20.2	3.8	82.5	66.0	25.1	55.7	84.5
LOS	F	B	A	F	C	A	F	E	C	E	F
Approach Delay		17.3			26.2			52.4			66.1
Approach LOS		B			C			D			E

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 92 (61%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 28.8 — Intersection LOS: C
Intersection Capacity Utilization 67.5% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 2: Keating Drive & Northlake Boulevard



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	1207	244	295	1945	226	258	43	307	161	47	45
Future Volume (vph)	54	1207	244	295	1945	226	258	43	307	161	47	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	0.86	1.00	0.97	0.86	1.00	1.00	1.00	0.88	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	6408	1583	3433	6408	1583	1770	1863	2787	3433	1726	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	6408	1583	3433	6408	1583	1770	1863	2787	3433	1726	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	57	1271	257	311	2047	238	272	45	323	169	49	47
RTOR Reduction (vph)	0	0	22	0	0	18	0	0	47	0	9	0
Lane Group Flow (vph)	57	1271	235	311	2047	220	272	45	276	169	87	0
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pt+ov	Prot	NA	
Protected Phases	1	6	7	5	2	3	7	4	4 5	3	8	
Permitted Phases			6			2						
Actuated Green, G (s)	7.1	68.2	95.4	19.2	80.3	104.8	27.2	14.1	33.3	24.5	11.4	
Effective Green, g (s)	7.1	68.2	95.4	19.2	80.3	104.8	27.2	14.1	33.3	24.5	11.4	
Actuated g/C Ratio	0.05	0.45	0.64	0.13	0.54	0.70	0.18	0.09	0.22	0.16	0.08	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	83	2913	1006	439	3430	1105	320	175	618	560	131	
v/s Ratio Prot	0.03	0.20	0.04	c0.09	c0.32	0.03	c0.15	0.02	0.10	0.05	c0.05	
v/s Ratio Perm			0.11			0.11						
v/c Ratio	0.69	0.44	0.23	0.71	0.60	0.20	0.85	0.26	0.45	0.30	0.66	
Uniform Delay, d1	70.4	27.8	11.7	62.7	23.8	7.9	59.4	63.1	50.4	55.2	67.4	
Progression Factor	1.25	0.54	0.51	1.20	0.79	1.07	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	16.5	0.4	0.1	4.4	0.6	0.1	18.6	0.8	0.5	0.3	11.9	
Delay (s)	104.6	15.5	6.0	79.6	19.4	8.5	78.0	63.9	50.9	55.5	79.3	
Level of Service	F	B	A	E	B	A	E	E	D	E	E	
Approach Delay (s)		17.2			25.6			63.3			64.1	
Approach LOS		B			C			E			E	

Intersection Summary			
HCM 2000 Control Delay	29.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	1207	244	295	1945	226	258	43	307	161	47	45
Future Volume (veh/h)	54	1207	244	295	1945	226	258	43	307	161	47	45
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	57	1271	257	311	2047	238	272	45	323	169	49	47
Adj No. of Lanes	1	4	1	2	4	1	1	1	2	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	73	3193	1055	365	3609	1117	298	174	555	490	59	57
Arrive On Green	0.04	0.50	0.50	0.21	1.00	1.00	0.17	0.09	0.09	0.14	0.07	0.07
Sat Flow, veh/h	1774	6408	1583	3442	6408	1583	1774	1863	2787	3442	875	839
Grp Volume(v), veh/h	57	1271	257	311	2047	238	272	45	323	169	0	96
Grp Sat Flow(s),veh/h/ln	1774	1602	1583	1721	1602	1583	1774	1863	1393	1721	0	1715
Q Serve(g_s), s	4.8	18.6	4.2	13.0	0.0	0.0	22.6	3.4	10.6	6.6	0.0	8.3
Cycle Q Clear(g_c), s	4.8	18.6	4.2	13.0	0.0	0.0	22.6	3.4	10.6	6.6	0.0	8.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.49
Lane Grp Cap(c), veh/h	73	3193	1055	365	3609	1117	298	174	555	490	0	116
V/C Ratio(X)	0.78	0.40	0.24	0.85	0.57	0.21	0.91	0.26	0.58	0.34	0.00	0.82
Avail Cap(c_a), veh/h	95	3193	1055	665	3609	1117	378	373	853	490	0	149
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.81	0.81	0.81	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	71.3	23.6	3.0	58.0	0.0	0.0	61.3	63.2	27.4	58.0	0.0	69.0
Incr Delay (d2), s/veh	26.5	0.4	0.5	4.6	0.5	0.4	22.6	0.8	1.0	0.4	0.0	24.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.2	13.0	3.6	10.1	0.2	0.2	18.9	3.2	7.5	5.8	0.0	8.3
LnGrp Delay(d),s/veh	97.7	23.9	3.5	62.6	0.5	0.4	83.9	64.0	28.4	58.4	0.0	93.6
LnGrp LOS	F	C	A	E	A	A	F	E	C	E		F
Approach Vol, veh/h		1585			2596			640			265	
Approach Delay, s/veh		23.3			7.9			54.5			71.2	
Approach LOS		C			A			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.2	90.5	27.4	20.0	21.9	80.7	31.2	16.2
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	8.0	73.0	15.0	30.0	29.0	52.0	32.0	13.0
Max Q Clear Time (g_c+I1), s	6.8	2.0	8.6	12.6	15.0	20.6	24.6	10.3
Green Ext Time (p_c), s	0.0	58.4	0.8	1.4	0.9	28.6	0.6	0.1

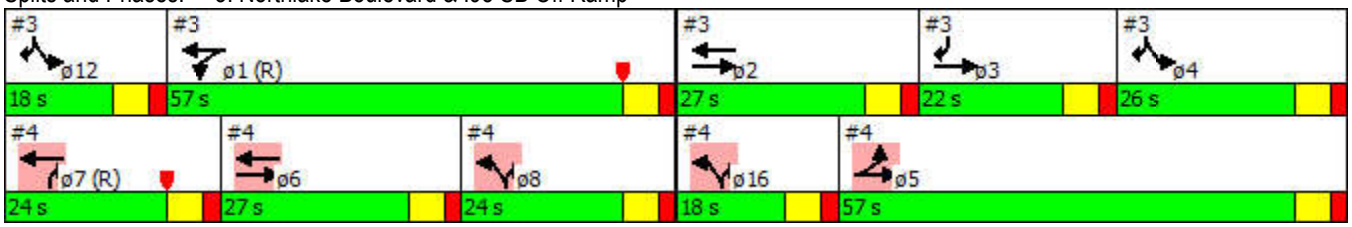
Intersection Summary	
HCM 2010 Ctrl Delay	21.9
HCM 2010 LOS	C

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR	ø2	ø3	ø4	ø5	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	1107	711	103	2074	549	562						
Future Volume (vph)	1107	711	103	2074	549	562						
Turn Type	NA	Free	Prot	NA	Prot	custom						
Protected Phases	2 3		1	1 2	4 12	3 4 12	2	3	4	5	6	7
Permitted Phases		Free										
Detector Phase	2 3		1	1 2	4 12	3 4 12						
Switch Phase												
Minimum Initial (s)			4.0				4.0	4.0	6.0	4.0	4.0	4.0
Minimum Split (s)			11.5				11.5	22.0	12.0	11.5	10.5	22.0
Total Split (s)			57.0				27.0	22.0	26.0	57.0	27.0	24.0
Total Split (%)			38.0%				18%	15%	17%	38%	18%	16%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			2.0				2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)			0.0									
Total Lost Time (s)			6.0									
Lead/Lag			Lag				Lead	Lag		Lag	Lag	Lead
Lead-Lag Optimize?			Yes				Yes	Yes		Yes	Yes	Yes
Recall Mode			C-Max				Max	None	None	Max	None	C-Max
Act Effct Green (s)	43.0	150.0	54.9	81.9	34.1	56.1						
Actuated g/C Ratio	0.29	1.00	0.37	0.55	0.23	0.37						
v/c Ratio	0.54	0.47	0.17	0.62	0.48	0.33						
Control Delay	32.6	4.0	1.8	6.2	51.6	34.1						
Queue Delay	0.0	0.0	0.0	0.5	0.0	0.0						
Total Delay	32.6	4.0	1.8	6.7	51.6	34.1						
LOS	C	A	A	A	D	C						
Approach Delay	21.4			6.5								
Approach LOS	C			A								

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 1:WBTL and 7:, Start of Yellow, Master Intersection
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 19.7 — Intersection LOS: B
Intersection Capacity Utilization 62.7% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 3: Northlake Boulevard & I95 SB Off Ramp



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	5.0	5.0
Minimum Split (s)	12.0	11.0	11.0
Total Split (s)	24.0	18.0	18.0
Total Split (%)	16%	12%	12%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	Lead
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

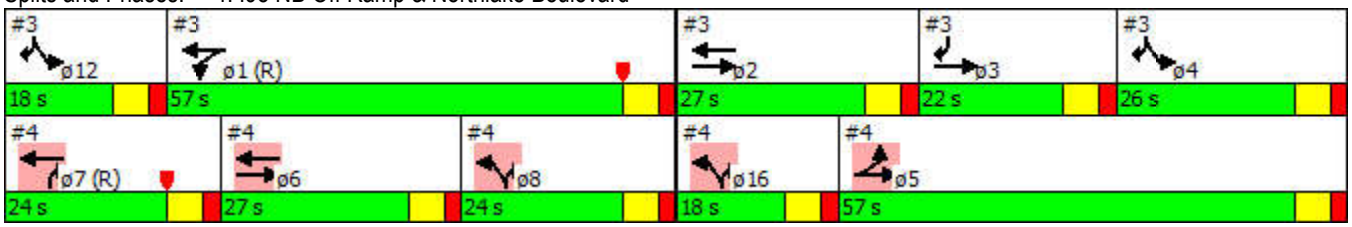
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1107	711	103	2074	0	0	0	0	549	0	562
Future Volume (vph)	0	1107	711	103	2074	0	0	0	0	549	0	562
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		6.0	4.0	6.0	6.0					6.0		6.0
Lane Util. Factor		0.81	1.00	1.00	0.86					*1.00		*1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		7544	1583	1770	6408					5309		4750
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		7544	1583	1770	6408					5309		4750
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1165	748	108	2183	0	0	0	0	578	0	592
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1165	748	108	2183	0	0	0	0	578	0	592
Turn Type		NA	Free	Prot	NA					Prot		custom
Protected Phases		2 3		1	1 2					4 12		3 4 12
Permitted Phases			Free									
Actuated Green, G (s)		43.0	150.0	54.9	81.9					34.1		56.1
Effective Green, g (s)		43.0	150.0	54.9	81.9					34.1		56.1
Actuated g/C Ratio		0.29	1.00	0.37	0.55					0.23		0.37
Clearance Time (s)				6.0								
Vehicle Extension (s)				3.0								
Lane Grp Cap (vph)		2162	1583	647	3498					1206		1776
v/s Ratio Prot		c0.15		0.06	c0.34					0.11		0.12
v/s Ratio Perm			c0.47									
v/c Ratio		0.54	0.47	0.17	0.62					0.48		0.33
Uniform Delay, d1		45.1	0.0	32.1	23.4					50.3		33.6
Progression Factor		0.70	1.00	0.04	0.24					1.00		1.00
Incremental Delay, d2		0.3	1.0	0.4	0.6					0.3		0.2
Delay (s)		31.9	1.0	1.7	6.2					50.6		33.7
Level of Service		C	A	A	A					D		C
Approach Delay (s)		19.8			5.9			0.0			42.0	
Approach LOS		B			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	18.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	36.0
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR	ø1	ø2	ø3	ø4	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	61	1595	1489	777	688	1043						
Future Volume (vph)	61	1595	1489	777	688	1043						
Turn Type	Prot	NA	NA	Free	Prot	custom						
Protected Phases	5	5 6	6 7		8 16	7 8 16	1	2	3	4	6	7
Permitted Phases				Free								
Detector Phase	5	5 6	6 7		8 16	7 8 16						
Switch Phase												
Minimum Initial (s)	4.0						4.0	4.0	4.0	6.0	4.0	4.0
Minimum Split (s)	11.5						11.5	11.5	22.0	12.0	10.5	22.0
Total Split (s)	57.0						57.0	27.0	22.0	26.0	27.0	24.0
Total Split (%)	38.0%						38%	18%	15%	17%	18%	16%
Yellow Time (s)	4.0						4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0						2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0											
Total Lost Time (s)	6.0											
Lead/Lag	Lag						Lag	Lead	Lag		Lag	Lead
Lead-Lag Optimize?	Yes						Yes	Yes	Yes		Yes	Yes
Recall Mode	Max						C-Max	Max	None	None	None	C-Max
Act Effct Green (s)	51.5	72.5	45.0	150.0	35.5	53.5						
Actuated g/C Ratio	0.34	0.48	0.30	1.00	0.24	0.36						
v/c Ratio	0.12	0.57	0.68	0.57	0.64	0.72						
Control Delay	3.9	10.2	28.0	4.5	54.5	29.7						
Queue Delay	0.0	0.1	0.4	0.0	0.0	0.0						
Total Delay	3.9	10.3	28.4	4.5	54.5	29.7						
LOS	A	B	C	A	D	C						
Approach Delay		10.1	20.2									
Approach LOS		B	C									

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 1:WBTL and 7:, Start of Yellow, Master Intersection	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 23.2	Intersection LOS: C
Intersection Capacity Utilization 62.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 4: I95 NB Off Ramp & Northlake Boulevard



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	5.0	5.0
Minimum Split (s)	12.0	11.0	11.0
Total Split (s)	24.0	18.0	18.0
Total Split (%)	16%	12%	12%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	Lead
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	1595	0	0	1489	777	688	0	1043	0	0	0
Future Volume (vph)	61	1595	0	0	1489	777	688	0	1043	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	6.0	6.0			6.0	4.0	6.0		6.0			
Lane Util. Factor	1.00	*0.91			*0.91	1.00	*1.00		*1.00			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	1593	6102			7628	1425	4778		4275			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	1593	6102			7628	1425	4778		4275			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	64	1679	0	0	1567	818	724	0	1098	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	64	1679	0	0	1567	818	724	0	1098	0	0	0
Turn Type	Prot	NA			NA	Free	Prot		custom			
Protected Phases	5	5 6			6 7		8 16		7 8 16			
Permitted Phases						Free						
Actuated Green, G (s)	51.5	72.5			45.0	150.0	35.5		53.5			
Effective Green, g (s)	51.5	72.5			45.0	150.0	35.5		53.5			
Actuated g/C Ratio	0.34	0.48			0.30	1.00	0.24		0.36			
Clearance Time (s)	6.0											
Vehicle Extension (s)	3.0											
Lane Grp Cap (vph)	546	2949			2288	1425	1130		1524			
v/s Ratio Prot	0.04	0.28			c0.21		0.15		c0.26			
v/s Ratio Perm						c0.57						
v/c Ratio	0.12	0.57			0.68	0.57	0.64		0.72			
Uniform Delay, d1	33.7	27.6			46.3	0.0	51.5		41.8			
Progression Factor	0.10	0.65			0.57	1.00	1.00		1.00			
Incremental Delay, d2	0.4	0.2			0.8	1.6	1.3		1.7			
Delay (s)	3.8	18.2			27.1	1.6	52.8		43.5			
Level of Service	A	B			C	A	D		D			
Approach Delay (s)		17.7			18.4			47.2			0.0	
Approach LOS		B			B			D			A	

Intersection Summary			
HCM 2000 Control Delay	27.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	36.0
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	SBR
Lane Configurations					
Traffic Volume (vph)	128	2426	2164	75	102
Future Volume (vph)	128	2426	2164	75	102
Turn Type	Prot	NA	NA	Perm	Perm
Protected Phases	1	6	2		
Permitted Phases				2	6
Detector Phase	1	6	2	2	6
Switch Phase					
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	12.0	24.0	23.5	23.5	24.0
Total Split (s)	34.0	150.0	116.0	116.0	150.0
Total Split (%)	22.7%	100.0%	77.3%	77.3%	100.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag		Lead	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	28.0	150.0	110.0	110.0	150.0
Actuated g/C Ratio	0.19	1.00	0.73	0.73	1.00
v/c Ratio	0.41	0.40	0.41	0.07	0.07
Control Delay	62.7	0.1	0.8	0.1	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	62.7	0.2	0.8	0.1	0.1
LOS	E	A	A	A	A
Approach Delay		3.3	0.8		
Approach LOS		A	A		

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 21 (14%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.41	
Intersection Signal Delay: 2.1	Intersection LOS: A
Intersection Capacity Utilization 42.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 5: Northlake Boulevard & Roan Lane

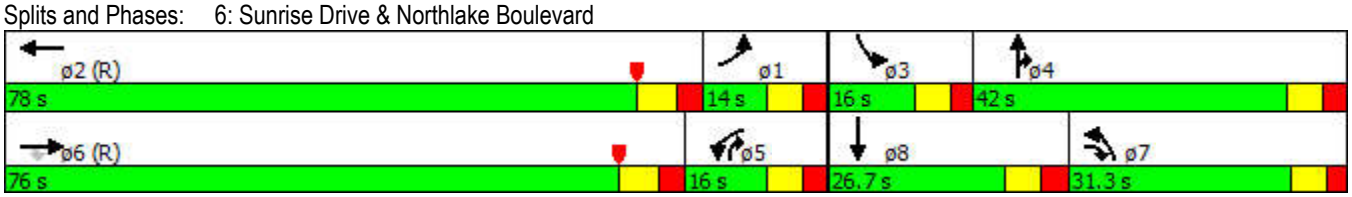
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	128	2426	0	0	2164	75	0	0	0	0	0	102
Future Volume (vph)	128	2426	0	0	2164	75	0	0	0	0	0	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	6.0	6.0			6.0	6.0						6.0
Lane Util. Factor	1.00	0.86			0.81	1.00						1.00
Frt	1.00	1.00			1.00	0.85						0.86
Flt Protected	0.95	1.00			1.00	1.00						1.00
Satd. Flow (prot)	1770	6408			7544	1583						1611
Flt Permitted	0.95	1.00			1.00	1.00						1.00
Satd. Flow (perm)	1770	6408			7544	1583						1611
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	135	2554	0	0	2278	79	0	0	0	0	0	107
RTOR Reduction (vph)	0	0	0	0	0	16	0	0	0	0	0	0
Lane Group Flow (vph)	135	2554	0	0	2278	63	0	0	0	0	0	107
Turn Type	Prot	NA			NA	Perm						Perm
Protected Phases	1	6			2							
Permitted Phases						2						6
Actuated Green, G (s)	28.0	150.0			110.0	110.0						150.0
Effective Green, g (s)	28.0	150.0			110.0	110.0						150.0
Actuated g/C Ratio	0.19	1.00			0.73	0.73						1.00
Clearance Time (s)	6.0	6.0			6.0	6.0						6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0						3.0
Lane Grp Cap (vph)	330	6408			5532	1160						1611
v/s Ratio Prot	0.08	c0.40			0.30							
v/s Ratio Perm						0.04						0.07
v/c Ratio	0.41	0.40			0.41	0.05						0.07
Uniform Delay, d1	53.7	0.0			7.6	5.6						0.0
Progression Factor	1.10	1.00			0.09	0.00						1.00
Incremental Delay, d2	0.6	0.1			0.1	0.1						0.1
Delay (s)	59.7	0.1			0.8	0.1						0.1
Level of Service	E	A			A	A						A
Approach Delay (s)		3.1			0.8			0.0			0.1	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	2.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	42.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	62	2157	181	189	2427	446	18	226	116	17
Future Volume (vph)	62	2157	181	189	2427	446	18	226	116	17
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	pt+ov	Prot	NA
Protected Phases	1	6	7	5	2	7	4	4 5	3	8
Permitted Phases			6							
Detector Phase	1	6	7	5	2	7	4	4 5	3	8
Switch Phase										
Minimum Initial (s)	4.0	20.0	4.0	4.0	20.0	4.0	6.0		4.0	6.0
Minimum Split (s)	12.5	38.5	12.5	12.5	32.5	12.5	42.0		12.5	13.0
Total Split (s)	14.0	76.0	31.3	16.0	78.0	31.3	42.0		16.0	26.7
Total Split (%)	9.3%	50.7%	20.9%	10.7%	52.0%	20.9%	28.0%		10.7%	17.8%
Yellow Time (s)	4.0	4.5	4.0	4.0	4.5	4.0	4.0		4.0	4.0
All-Red Time (s)	3.0	3.0	2.5	3.0	3.0	2.5	3.0		2.5	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	7.0	7.5	6.5	7.0	7.5	6.5	7.0		6.5	7.0
Lead/Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag		Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None		None	None
Act Effct Green (s)	7.0	74.7	107.0	9.0	76.7	24.7	29.1	38.1	9.1	13.5
Actuated g/C Ratio	0.05	0.50	0.71	0.06	0.51	0.16	0.19	0.25	0.06	0.09
v/c Ratio	0.79	0.90	0.17	0.97	0.80	0.83	0.05	0.32	0.58	0.63
Control Delay	112.1	30.3	3.1	124.6	33.4	73.6	46.5	23.0	80.2	76.3
Queue Delay	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	112.1	31.1	3.1	124.6	33.4	73.6	46.5	23.0	80.2	76.3
LOS	F	C	A	F	C	E	D	C	F	E
Approach Delay		31.1			39.9		56.3			78.4
Approach LOS		C			D		E			E

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 8 (5%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 39.6	Intersection LOS: D
Intersection Capacity Utilization 84.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 6: Sunrise Drive & Northlake Boulevard



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	2157	181	189	2427	48	446	18	226	116	17	77
Future Volume (vph)	62	2157	181	189	2427	48	446	18	226	116	17	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	7.0	7.5	6.5	7.0	7.5		6.5	7.0	7.0	6.5	7.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.86		0.97	1.00	0.88	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1583	3433	6389		3433	1863	2787	3433	1634	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1583	3433	6389		3433	1863	2787	3433	1634	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	65	2271	191	199	2555	51	469	19	238	122	18	81
RTOR Reduction (vph)	0	0	20	0	1	0	0	0	45	0	9	0
Lane Group Flow (vph)	65	2271	171	199	2605	0	469	19	193	122	90	0
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	pt+ov	Prot	NA	
Protected Phases	1	6	7	5	2		7	4	4 5	3	8	
Permitted Phases			6									
Actuated Green, G (s)	7.0	74.8	99.5	9.0	76.8		24.7	29.1	38.1	9.1	13.5	
Effective Green, g (s)	7.0	74.8	99.5	9.0	76.8		24.7	29.1	38.1	9.1	13.5	
Actuated g/C Ratio	0.05	0.50	0.66	0.06	0.51		0.16	0.19	0.25	0.06	0.09	
Clearance Time (s)	7.0	7.5	6.5	7.0	7.5		6.5	7.0		6.5	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	82	2535	1118	205	3271		565	361	707	208	147	
v/s Ratio Prot	0.04	c0.45	0.03	c0.06	0.41		c0.14	0.01	c0.07	0.04	c0.06	
v/s Ratio Perm			0.08									
v/c Ratio	0.79	0.90	0.15	0.97	0.80		0.83	0.05	0.27	0.59	0.61	
Uniform Delay, d1	70.8	34.1	9.5	70.4	30.2		60.6	49.2	44.9	68.6	65.7	
Progression Factor	0.87	0.70	0.55	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	37.3	5.1	0.1	54.2	2.1		10.0	0.1	0.2	4.2	7.3	
Delay (s)	98.6	29.1	5.2	124.6	32.3		70.6	49.3	45.1	72.8	73.1	
Level of Service	F	C	A	F	C		E	D	D	E	E	
Approach Delay (s)		29.1			38.8			61.7			72.9	
Approach LOS		C			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	38.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	84.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	2157	181	189	2427	48	446	18	226	116	17	77
Future Volume (veh/h)	62	2157	181	189	2427	48	446	18	226	116	17	77
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	65	2271	191	199	2555	51	469	19	238	122	18	81
Adj No. of Lanes	1	3	1	2	4	0	2	1	2	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	199	2322	965	432	3062	61	526	340	859	167	22	100
Arrive On Green	0.22	0.91	0.91	0.13	0.47	0.47	0.15	0.18	0.18	0.05	0.07	0.07
Sat Flow, veh/h	1774	5085	1583	3442	6516	130	3442	1863	2787	3442	296	1332
Grp Volume(v), veh/h	65	2271	191	199	1884	722	469	19	238	122	0	99
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1721	1602	1840	1721	1863	1393	1721	0	1628
Q Serve(g_s), s	4.6	54.3	0.0	8.0	51.3	51.4	20.0	1.3	1.3	5.2	0.0	9.0
Cycle Q Clear(g_c), s	4.6	54.3	0.0	8.0	51.3	51.4	20.0	1.3	1.3	5.2	0.0	9.0
Prop In Lane	1.00		1.00	1.00		0.07	1.00		1.00	1.00		0.82
Lane Grp Cap(c), veh/h	199	2322	965	432	2259	865	526	340	859	167	0	122
V/C Ratio(X)	0.33	0.98	0.20	0.46	0.83	0.84	0.89	0.06	0.28	0.73	0.00	0.81
Avail Cap(c_a), veh/h	199	2322	965	432	2259	865	569	435	1000	218	0	214
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.4	5.9	1.9	60.9	34.6	34.7	62.3	50.6	21.7	70.4	0.0	68.3
Incr Delay (d2), s/veh	0.9	14.2	0.5	0.8	3.8	9.4	15.5	0.1	0.2	8.5	0.0	12.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.1	33.1	1.1	7.0	31.4	37.1	16.0	1.2	4.9	4.9	0.0	7.9
LnGrp Delay(d),s/veh	54.4	20.0	2.3	61.6	38.5	44.0	77.8	50.7	21.9	78.9	0.0	80.4
LnGrp LOS	D	C	A	E	D	D	E	D	C	E		F
Approach Vol, veh/h		2527			2805			726			221	
Approach Delay, s/veh		19.6			41.5			58.8			79.6	
Approach LOS		B			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	23.8	78.0	13.8	34.4	25.8	76.0	29.9	18.2
Change Period (Y+Rc), s	7.0	7.5	6.5	7.0	7.0	7.5	7.0	* 7
Max Green Setting (Gmax), s	7.0	70.5	9.5	35.0	9.0	68.5	24.8	* 20
Max Q Clear Time (g_c+I1), s	6.6	53.4	7.2	3.3	10.0	56.3	22.0	11.0
Green Ext Time (p_c), s	0.0	14.3	0.1	2.9	0.0	10.4	0.9	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	36.0
HCM 2010 LOS	D

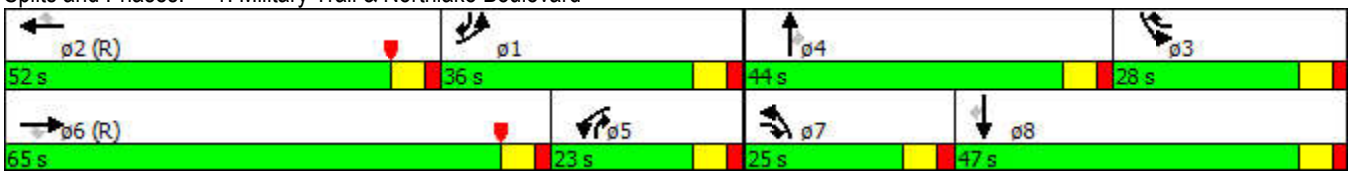
Notes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	678	1705	294	304	1223	346	390	826	381	433	642	403
Future Volume (vph)	678	1705	294	304	1223	346	390	826	381	433	642	403
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	1	6	7	5	2	3	7	4	5	3	8	1
Permitted Phases			6			2			4			8
Detector Phase	1	6	7	5	2	3	7	4	5	3	8	1
Switch Phase												
Minimum Initial (s)	4.0	20.0	4.0	4.0	20.0	4.0	4.0	6.0	4.0	4.0	6.0	4.0
Minimum Split (s)	10.0	48.0	23.0	23.0	52.0	11.0	23.0	43.5	23.0	11.0	47.0	10.0
Total Split (s)	36.0	65.0	25.0	23.0	52.0	28.0	25.0	44.0	23.0	28.0	47.0	36.0
Total Split (%)	22.5%	40.6%	15.6%	14.4%	32.5%	17.5%	15.6%	27.5%	14.4%	17.5%	29.4%	22.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	None	None	None	None
Act Effct Green (s)	30.0	60.4	79.4	17.0	47.4	77.6	19.0	34.4	57.4	24.2	39.6	69.6
Actuated g/C Ratio	0.19	0.38	0.50	0.11	0.30	0.48	0.12	0.22	0.36	0.15	0.25	0.44
v/c Ratio	1.12	0.94	0.38	0.90	0.88	0.47	1.04	0.82	0.68	0.89	0.54	0.59
Control Delay	130.8	59.3	12.4	87.5	88.0	49.0	121.7	66.7	42.7	85.4	54.0	19.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	130.8	59.3	12.4	87.5	88.0	49.0	121.7	66.7	42.7	85.4	54.0	19.6
LOS	F	E	B	F	F	D	F	E	D	F	D	B
Approach Delay		72.3			80.7			74.5			53.8	
Approach LOS		E			F			E			D	

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 50 (31%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 155
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.12
Intersection Signal Delay: 71.2 — Intersection LOS: E
Intersection Capacity Utilization 91.3% — ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 1: Military Trail & Northlake Boulevard



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	678	1705	294	304	1223	346	390	826	381	433	642	403
Future Volume (vph)	678	1705	294	304	1223	346	390	826	381	433	642	403
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	5036	1568	3335	4940	1538	3335	4940	1538	3400	5036	1568
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3400	5036	1568	3335	4940	1538	3335	4940	1538	3400	5036	1568
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	714	1795	309	320	1287	364	411	869	401	456	676	424
RTOR Reduction (vph)	0	0	30	0	0	33	0	0	41	0	0	34
Lane Group Flow (vph)	714	1795	279	320	1287	331	411	869	360	456	676	390
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	5%	5%	5%	3%	3%	3%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	1	6	7	5	2	3	7	4	5	3	8	1
Permitted Phases			6			2			4			8
Actuated Green, G (s)	30.0	60.4	79.4	17.0	47.4	71.6	19.0	34.4	51.4	24.2	39.6	69.6
Effective Green, g (s)	30.0	60.4	79.4	17.0	47.4	71.6	19.0	34.4	51.4	24.2	39.6	69.6
Actuated g/C Ratio	0.19	0.38	0.50	0.11	0.30	0.45	0.12	0.21	0.32	0.15	0.25	0.43
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	637	1901	778	354	1463	745	396	1062	551	514	1246	682
v/s Ratio Prot	c0.21	c0.36	0.04	0.10	0.26	0.07	c0.12	c0.18	0.07	c0.13	0.13	0.11
v/s Ratio Perm			0.14			0.15			0.16			0.14
v/c Ratio	1.12	0.94	0.36	0.90	0.88	0.44	1.04	0.82	0.65	0.89	0.54	0.57
Uniform Delay, d1	65.0	48.2	24.7	70.7	53.6	30.5	70.5	59.8	46.7	66.6	52.3	34.0
Progression Factor	1.00	1.00	1.00	0.86	1.51	2.01	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	73.7	11.1	0.3	23.4	7.1	0.4	55.4	5.0	2.8	16.7	0.5	1.2
Delay (s)	138.7	59.3	25.0	84.6	87.9	61.7	125.9	64.8	49.4	83.3	52.8	35.2
Level of Service	F	E	C	F	F	E	F	E	D	F	D	D
Approach Delay (s)		75.7			82.5			76.1			56.9	
Approach LOS		E			F			E			E	

Intersection Summary			
HCM 2000 Control Delay	73.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	91.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	678	1705	294	304	1223	346	390	826	381	433	642	403
Future Volume (veh/h)	678	1705	294	304	1223	346	390	826	381	433	642	403
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1845	1810	1810	1810	1810	1810	1810	1845	1845	1845
Adj Flow Rate, veh/h	714	1795	309	320	1287	364	411	869	401	456	676	424
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	5	5	5	5	5	5	3	3	3
Cap, veh/h	734	1857	764	448	1420	654	397	1036	529	469	1150	696
Arrive On Green	0.22	0.37	0.37	0.13	0.29	0.29	0.12	0.21	0.21	0.14	0.23	0.23
Sat Flow, veh/h	3408	5036	1568	3343	4940	1538	3343	4940	1538	3408	5036	1568
Grp Volume(v), veh/h	714	1795	309	320	1287	364	411	869	401	456	676	424
Grp Sat Flow(s),veh/h/ln	1704	1679	1568	1672	1647	1538	1672	1647	1538	1704	1679	1568
Q Serve(g_s), s	33.3	55.9	10.4	14.7	40.2	6.5	19.0	27.0	15.6	21.3	19.1	9.3
Cycle Q Clear(g_c), s	33.3	55.9	10.4	14.7	40.2	6.5	19.0	27.0	15.6	21.3	19.1	9.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	734	1857	764	448	1420	654	397	1036	529	469	1150	696
V/C Ratio(X)	0.97	0.97	0.40	0.71	0.91	0.56	1.04	0.84	0.76	0.97	0.59	0.61
Avail Cap(c_a), veh/h	734	1857	764	448	1420	654	397	1173	572	469	1290	739
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.3	49.5	10.0	66.3	54.9	34.7	70.5	60.6	46.6	68.7	55.0	14.3
Incr Delay (d2), s/veh	26.5	14.4	1.6	5.3	9.9	3.4	54.6	5.0	5.4	34.5	0.6	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	25.4	37.1	8.5	11.5	26.8	6.0	21.2	18.7	11.8	18.1	13.9	13.3
LnGrp Delay(d),s/veh	88.8	63.9	11.6	71.6	64.8	38.1	125.1	65.7	52.0	103.2	55.6	15.6
LnGrp LOS	F	E	B	E	E	D	F	E	D	F	E	B
Approach Vol, veh/h		2818			1971			1681			1556	
Approach Delay, s/veh		64.5			61.0			76.9			58.6	
Approach LOS		E			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	40.5	52.0	28.0	39.5	27.5	65.0	25.0	42.5
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	30.0	46.0	22.0	38.0	17.0	59.0	19.0	41.0
Max Q Clear Time (g_c+I1), s	35.3	42.2	23.3	29.0	16.7	57.9	21.0	21.1
Green Ext Time (p_c), s	0.0	2.9	0.0	4.6	0.2	1.0	0.0	7.6

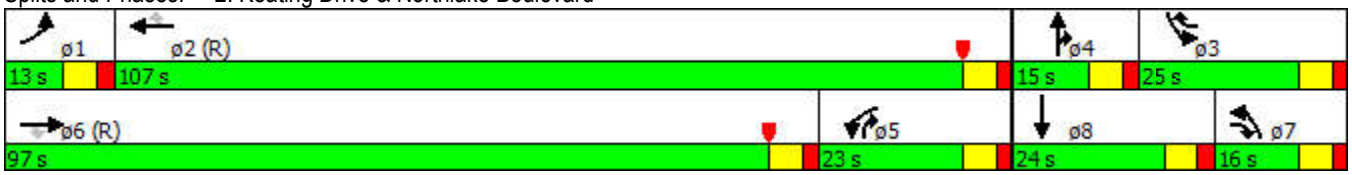
Intersection Summary	
HCM 2010 Ctrl Delay	65.1
HCM 2010 LOS	E

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	29	1608	83	196	1917	135	52	9	207	219	13
Future Volume (vph)	29	1608	83	196	1917	135	52	9	207	219	13
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pt+ov	Prot	NA
Protected Phases	1	6	7	5	2	3	7	4	4 5	3	8
Permitted Phases			6			2					
Detector Phase	1	6	7	5	2	3	7	4	4 5	3	8
Switch Phase											
Minimum Initial (s)	4.0	20.0	4.0	4.0	20.0	4.0	4.0	5.0		4.0	5.0
Minimum Split (s)	10.0	36.5	10.0	10.0	39.5	10.0	10.0	11.0		10.0	11.0
Total Split (s)	13.0	97.0	16.0	23.0	107.0	25.0	16.0	15.0		25.0	24.0
Total Split (%)	8.1%	60.6%	10.0%	14.4%	66.9%	15.6%	10.0%	9.4%		15.6%	15.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lead		Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	None		None	None
Act Effct Green (s)	7.4	96.6	118.2	17.0	108.4	125.7	15.7	6.4	29.4	16.0	9.1
Actuated g/C Ratio	0.05	0.60	0.74	0.11	0.68	0.79	0.10	0.04	0.18	0.10	0.06
v/c Ratio	0.38	0.44	0.07	0.58	0.47	0.12	0.32	0.12	0.39	0.67	0.46
Control Delay	97.7	7.2	0.2	78.8	14.2	2.8	74.0	77.2	43.3	79.1	72.0
Queue Delay	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	97.7	7.2	0.2	78.8	14.4	2.8	74.0	77.2	43.3	79.1	72.0
LOS	F	A	A	E	B	A	E	E	D	E	E
Approach Delay		8.4			19.3			50.4			77.9
Approach LOS		A			B			D			E

Intersection Summary

Cycle Length: 160
Actuated Cycle Length: 160
Offset: 109 (68%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.67
Intersection Signal Delay: 20.4 — Intersection LOS: C
Intersection Capacity Utilization 59.0% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 2: Keating Drive & Northlake Boulevard



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	1608	83	196	1917	135	52	9	207	219	13	31
Future Volume (vph)	29	1608	83	196	1917	135	52	9	207	219	13	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	0.86	1.00	0.97	0.86	1.00	1.00	1.00	0.88	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	6408	1583	3367	6285	1553	1752	1845	2760	3433	1667	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	6408	1583	3367	6285	1553	1752	1845	2760	3433	1667	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	31	1693	87	206	2018	142	55	9	218	231	14	33
RTOR Reduction (vph)	0	0	19	0	0	14	0	0	49	0	10	0
Lane Group Flow (vph)	31	1693	68	206	2018	128	55	9	169	231	38	0
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pt+ov	Prot	NA	
Protected Phases	1	6	7	5	2	3	7	4	4 5	3	8	
Permitted Phases			6			2						
Actuated Green, G (s)	6.3	94.2	109.9	18.1	106.0	123.3	15.7	6.4	30.5	17.3	8.0	
Effective Green, g (s)	6.3	94.2	109.9	18.1	106.0	123.3	15.7	6.4	30.5	17.3	8.0	
Actuated g/C Ratio	0.04	0.59	0.69	0.11	0.66	0.77	0.10	0.04	0.19	0.11	0.05	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	69	3772	1146	380	4163	1196	171	73	526	371	83	
v/s Ratio Prot	0.02	c0.26	0.01	0.06	c0.32	0.01	0.03	0.00	0.06	c0.07	c0.02	
v/s Ratio Perm			0.04			0.07						
v/c Ratio	0.45	0.45	0.06	0.54	0.48	0.11	0.32	0.12	0.32	0.62	0.45	
Uniform Delay, d1	75.2	18.4	8.2	67.0	13.4	4.6	67.2	74.1	55.8	68.2	73.9	
Progression Factor	1.22	0.40	0.04	1.06	1.06	1.83	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.5	0.2	0.0	1.4	0.4	0.0	1.1	0.8	0.4	3.2	3.9	
Delay (s)	94.3	7.6	0.3	72.8	14.6	8.5	68.3	74.9	56.2	71.5	77.7	
Level of Service	F	A	A	E	B	A	E	E	E	E	E	
Approach Delay (s)		8.7			19.3			59.1			72.5	
Approach LOS		A			B			E			E	

Intersection Summary			
HCM 2000 Control Delay	20.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	1608	83	196	1917	135	52	9	207	219	13	31
Future Volume (veh/h)	29	1608	83	196	1917	135	52	9	207	219	13	31
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1827	1827	1827	1845	1845	1845	1863	1863	1900
Adj Flow Rate, veh/h	31	1693	87	206	2018	142	55	9	218	231	14	33
Adj No. of Lanes	1	4	1	2	4	1	1	1	2	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	4	4	4	3	3	3	2	2	2
Cap, veh/h	40	3644	1021	570	4495	1237	134	58	552	279	18	42
Arrive On Green	0.02	0.57	0.57	0.34	1.00	1.00	0.08	0.03	0.03	0.08	0.04	0.04
Sat Flow, veh/h	1774	6408	1583	3375	6285	1553	1757	1845	2760	3442	494	1164
Grp Volume(v), veh/h	31	1693	87	206	2018	142	55	9	218	231	0	47
Grp Sat Flow(s),veh/h/ln	1774	1602	1583	1688	1571	1553	1757	1845	1380	1721	0	1657
Q Serve(g_s), s	2.8	24.8	0.0	7.4	0.0	0.0	4.8	0.8	0.0	10.6	0.0	4.5
Cycle Q Clear(g_c), s	2.8	24.8	0.0	7.4	0.0	0.0	4.8	0.8	0.0	10.6	0.0	4.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.70
Lane Grp Cap(c), veh/h	40	3644	1021	570	4495	1237	134	58	552	279	0	60
V/C Ratio(X)	0.78	0.46	0.09	0.36	0.45	0.11	0.41	0.16	0.39	0.83	0.00	0.78
Avail Cap(c_a), veh/h	78	3644	1021	570	4495	1237	134	104	621	409	0	186
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.87	0.87	0.87	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	77.8	20.2	10.7	46.5	0.0	0.0	70.5	75.4	55.6	72.4	0.0	76.5
Incr Delay (d2), s/veh	27.3	0.4	0.2	0.3	0.3	0.2	2.0	1.2	0.5	8.8	0.0	19.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.0	16.5	2.7	6.2	0.2	0.1	4.3	0.7	7.6	9.2	0.0	4.3
LnGrp Delay(d),s/veh	105.2	20.6	10.8	46.8	0.3	0.2	72.5	76.7	56.0	81.2	0.0	96.0
LnGrp LOS	F	C	B	D	A	A	E	E	E	F		F
Approach Vol, veh/h		1811			2366			282			278	
Approach Delay, s/veh		21.6			4.3			59.9			83.7	
Approach LOS		C			A			E			F	

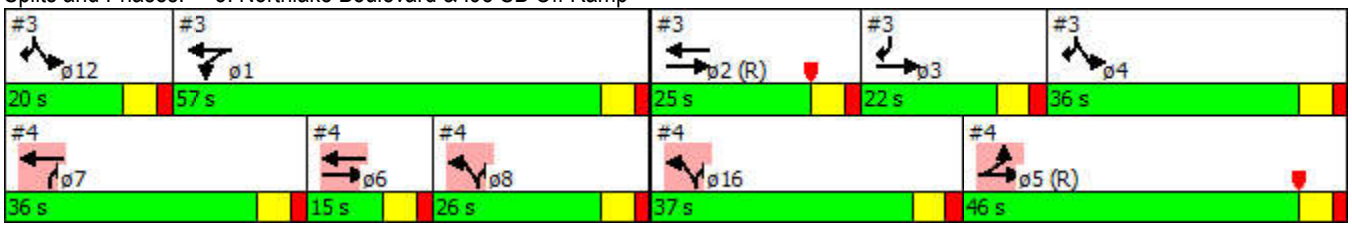
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.6	120.4	19.0	11.0	33.0	97.0	18.2	11.8
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	7.0	101.0	19.0	9.0	17.0	91.0	10.0	18.0
Max Q Clear Time (g_c+I1), s	4.8	2.0	12.6	2.8	9.4	26.8	6.8	6.5
Green Ext Time (p_c), s	0.0	35.0	0.4	0.4	4.4	19.6	0.3	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	18.9
HCM 2010 LOS	B

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR	ø2	ø3	ø4	ø5	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	1273	691	91	1479	1042	922						
Future Volume (vph)	1273	691	91	1479	1042	922						
Turn Type	NA	Free	Prot	NA	Prot	custom						
Protected Phases	2 3		1	1 2	4 12	3 4 12	2	3	4	5	6	7
Permitted Phases		Free										
Detector Phase	2 3		1	1 2	4 12	3 4 12						
Switch Phase												
Minimum Initial (s)			4.0				4.0	4.0	6.0	4.0	4.0	4.0
Minimum Split (s)			11.5				11.5	22.0	12.0	11.5	10.5	22.0
Total Split (s)			57.0				25.0	22.0	36.0	46.0	15.0	36.0
Total Split (%)			35.6%				16%	14%	23%	29%	9%	23%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			2.0				2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)			0.0									
Total Lost Time (s)			6.0									
Lead/Lag			Lag				Lead	Lag		Lag	Lag	Lead
Lead-Lag Optimize?			Yes				Yes	Yes		Yes	Yes	Yes
Recall Mode			Max				C-Max	None	None	C-Max	None	None
Act Effct Green (s)	41.0	160.0	51.9	76.9	49.1	71.1						
Actuated g/C Ratio	0.26	1.00	0.32	0.48	0.31	0.44						
v/c Ratio	0.62	0.46	0.17	0.49	0.67	0.46						
Control Delay	36.8	1.9	5.9	7.1	50.8	31.8						
Queue Delay	0.2	0.0	0.0	0.2	0.0	0.0						
Total Delay	37.0	1.9	5.9	7.3	50.8	31.8						
LOS	D	A	A	A	D	C						
Approach Delay	24.7			7.2								
Approach LOS	C			A								

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 66 (41%), Referenced to phase 2:EBWB and 5:, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 25.8	Intersection LOS: C
Intersection Capacity Utilization 74.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: Northlake Boulevard & I95 SB Off Ramp



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	5.0	5.0
Minimum Split (s)	12.0	11.0	11.0
Total Split (s)	26.0	20.0	37.0
Total Split (%)	16%	13%	23%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	Lead
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1273	691	91	1479	0	0	0	0	1042	0	922
Future Volume (vph)	0	1273	691	91	1479	0	0	0	0	1042	0	922
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		6.0	4.0	6.0	6.0					6.0		6.0
Lane Util. Factor		*0.91	1.00	1.00	*0.91					*1.00		*1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		8475	1583	1736	6650					5309		4750
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		8475	1583	1736	6650					5309		4750
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1340	727	96	1557	0	0	0	0	1097	0	971
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1340	727	96	1557	0	0	0	0	1097	0	971
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	2%	2%	2%	2%	2%	2%
Turn Type		NA	Free	Prot	NA					Prot		custom
Protected Phases		2 3		1	1 2					4 12		3 4 12
Permitted Phases			Free									
Actuated Green, G (s)		41.0	160.0	51.9	76.9					49.1		71.1
Effective Green, g (s)		41.0	160.0	51.9	76.9					49.1		71.1
Actuated g/C Ratio		0.26	1.00	0.32	0.48					0.31		0.44
Clearance Time (s)				6.0								
Vehicle Extension (s)				3.0								
Lane Grp Cap (vph)		2171	1583	563	3196					1629		2110
v/s Ratio Prot		c0.16		0.06	c0.23					c0.21		0.20
v/s Ratio Perm			c0.46									
v/c Ratio		0.62	0.46	0.17	0.49					0.67		0.46
Uniform Delay, d1		52.6	0.0	38.7	28.2					48.4		31.0
Progression Factor		0.68	1.00	0.13	0.23					1.00		1.00
Incremental Delay, d2		0.6	0.9	0.6	0.5					1.1		0.2
Delay (s)		36.1	0.9	5.8	7.0					49.6		31.3
Level of Service		D	A	A	A					D		C
Approach Delay (s)		23.7			7.0			0.0			41.0	
Approach LOS		C			A			A			D	

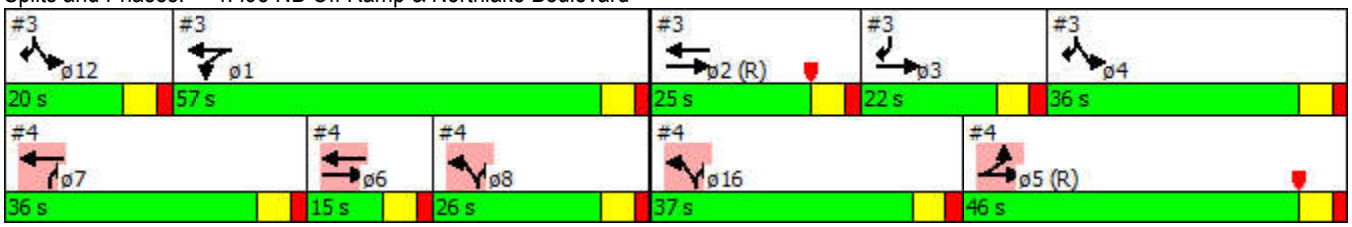
Intersection Summary			
HCM 2000 Control Delay	25.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	36.0
Intersection Capacity Utilization	74.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR	ø1	ø2	ø3	ø4	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	106	2209	1043	742	527	1117						
Future Volume (vph)	106	2209	1043	742	527	1117						
Turn Type	Prot	NA	NA	Free	Prot	custom						
Protected Phases	5	5 6	6 7		8 16	7 8 16	1	2	3	4	6	7
Permitted Phases				Free								
Detector Phase	5	5 6	6 7		8 16	7 8 16						
Switch Phase												
Minimum Initial (s)	4.0						4.0	4.0	4.0	6.0	4.0	4.0
Minimum Split (s)	11.5						11.5	11.5	22.0	12.0	10.5	22.0
Total Split (s)	46.0						57.0	25.0	22.0	36.0	15.0	36.0
Total Split (%)	28.8%						36%	16%	14%	23%	9%	23%
Yellow Time (s)	4.0						4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0						2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0											
Total Lost Time (s)	6.0											
Lead/Lag	Lag						Lag	Lead	Lag		Lag	Lead
Lead-Lag Optimize?	Yes						Yes	Yes	Yes		Yes	Yes
Recall Mode	C-Max						Max	C-Max	None	None	None	None
Act Effct Green (s)	58.2	67.2	45.0	160.0	38.8	68.8						
Actuated g/C Ratio	0.36	0.42	0.28	1.00	0.24	0.43						
v/c Ratio	0.20	0.92	0.52	0.56	0.48	0.65						
Control Delay	6.6	20.3	42.5	6.0	53.4	25.3						
Queue Delay	0.0	1.9	0.0	0.0	0.0	0.0						
Total Delay	6.6	22.2	42.5	6.0	53.4	25.3						
LOS	A	C	D	A	D	C						
Approach Delay		21.5	27.3									
Approach LOS		C	C									

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 66 (41%), Referenced to phase 2:EBWB and 5:, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 27.0	Intersection LOS: C
Intersection Capacity Utilization 74.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 4: I95 NB Off Ramp & Northlake Boulevard



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	5.0	5.0
Minimum Split (s)	12.0	11.0	11.0
Total Split (s)	26.0	20.0	37.0
Total Split (%)	16%	13%	23%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	Lead
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	2209	0	0	1043	742	527	0	1117	0	0	0
Future Volume (vph)	106	2209	0	0	1043	742	527	0	1117	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	6.0	6.0			6.0	4.0	6.0		6.0			
Lane Util. Factor	1.00	*0.91			*0.91	1.00	*1.00		*1.00			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	1577	6043			7481	1398	4732		4233			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	1577	6043			7481	1398	4732		4233			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	112	2325	0	0	1098	781	555	0	1176	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	112	2325	0	0	1098	781	555	0	1176	0	0	0
Heavy Vehicles (%)	3%	3%	3%	4%	4%	4%	3%	3%	3%	2%	2%	2%
Turn Type	Prot	NA			NA	Free	Prot		custom			
Protected Phases	5	5 6			6 7		8 16		7 8 16			
Permitted Phases						Free						
Actuated Green, G (s)	58.2	67.2			45.0	160.0	38.8		68.8			
Effective Green, g (s)	58.2	67.2			45.0	160.0	38.8		68.8			
Actuated g/C Ratio	0.36	0.42			0.28	1.00	0.24		0.43			
Clearance Time (s)	6.0											
Vehicle Extension (s)	3.0											
Lane Grp Cap (vph)	573	2538			2104	1398	1147		1820			
v/s Ratio Prot	0.07	c0.38			0.15		0.12		c0.28			
v/s Ratio Perm						c0.56						
v/c Ratio	0.20	0.92			0.52	0.56	0.48		0.65			
Uniform Delay, d1	34.9	43.7			48.4	0.0	52.0		36.0			
Progression Factor	0.17	0.40			0.86	1.00	1.00		1.00			
Incremental Delay, d2	0.6	4.5			0.2	1.6	0.3		0.9			
Delay (s)	6.5	21.9			41.7	1.6	52.3		36.9			
Level of Service	A	C			D	A	D		D			
Approach Delay (s)		21.2			25.0			41.8			0.0	
Approach LOS		C			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	28.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	36.0
Intersection Capacity Utilization	74.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBT	WBR	SBR
Lane Configurations					
Traffic Volume (vph)	55	3153	1719	65	66
Future Volume (vph)	55	3153	1719	65	66
Turn Type	Prot	NA	NA	Perm	Perm
Protected Phases	1	6	2		
Permitted Phases				2	6
Detector Phase	1	6	2	2	6
Switch Phase					
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	12.0	24.0	23.5	23.5	24.0
Total Split (s)	27.0	160.0	133.0	133.0	160.0
Total Split (%)	16.9%	100.0%	83.1%	83.1%	100.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	10.6	160.0	141.1	141.1	160.0
Actuated g/C Ratio	0.07	1.00	0.88	0.88	1.00
v/c Ratio	0.50	0.52	0.27	0.05	0.04
Control Delay	94.2	0.2	0.6	0.1	0.0
Queue Delay	0.0	0.1	0.0	0.0	0.0
Total Delay	94.2	0.3	0.6	0.1	0.0
LOS	F	A	A	A	A
Approach Delay		1.9	0.6		
Approach LOS		A	A		

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 68 (43%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.52	
Intersection Signal Delay: 1.4	Intersection LOS: A
Intersection Capacity Utilization 50.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 5: Northlake Boulevard & Roan Lane

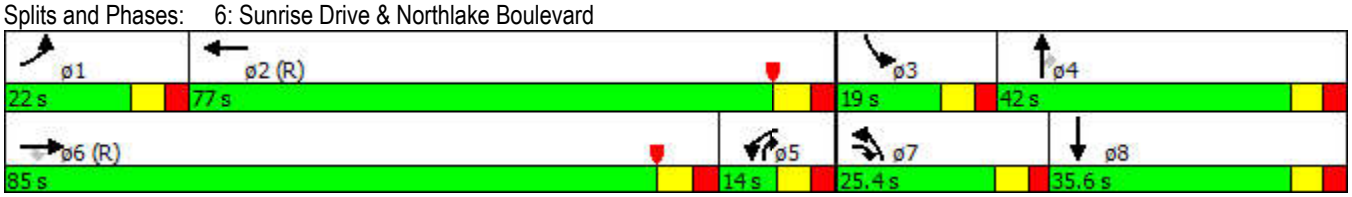
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	3153	0	0	1719	65	0	0	0	0	0	66
Future Volume (vph)	55	3153	0	0	1719	65	0	0	0	0	0	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	6.0	6.0			6.0	6.0						6.0
Lane Util. Factor	1.00	0.86			0.81	1.00						1.00
Frt	1.00	1.00			1.00	0.85						0.86
Flt Protected	0.95	1.00			1.00	1.00						1.00
Satd. Flow (prot)	1770	6408			7544	1583						1611
Flt Permitted	0.95	1.00			1.00	1.00						1.00
Satd. Flow (perm)	1770	6408			7544	1583						1611
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	58	3319	0	0	1809	68	0	0	0	0	0	69
RTOR Reduction (vph)	0	0	0	0	0	8	0	0	0	0	0	0
Lane Group Flow (vph)	58	3319	0	0	1809	60	0	0	0	0	0	69
Turn Type	Prot	NA			NA	Perm						Perm
Protected Phases	1	6			2							
Permitted Phases						2						6
Actuated Green, G (s)	9.3	160.0			138.7	138.7						160.0
Effective Green, g (s)	9.3	160.0			138.7	138.7						160.0
Actuated g/C Ratio	0.06	1.00			0.87	0.87						1.00
Clearance Time (s)	6.0	6.0			6.0	6.0						6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0						3.0
Lane Grp Cap (vph)	102	6408			6539	1372						1611
v/s Ratio Prot	0.03	c0.52			0.24							
v/s Ratio Perm						0.04						0.04
v/c Ratio	0.57	0.52			0.28	0.04						0.04
Uniform Delay, d1	73.4	0.0			1.9	1.5						0.0
Progression Factor	1.20	1.00			0.26	0.03						1.00
Incremental Delay, d2	4.3	0.2			0.1	0.0						0.0
Delay (s)	92.2	0.2			0.6	0.1						0.0
Level of Service	F	A			A	A						A
Approach Delay (s)		1.8			0.5			0.0			0.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	1.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	110	2782	216	145	2121	241	14	153	316	24
Future Volume (vph)	110	2782	216	145	2121	241	14	153	316	24
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	pm+ov	Prot	NA
Protected Phases	1	6	7	5	2	7	4	5	3	8
Permitted Phases			6					4		
Detector Phase	1	6	7	5	2	7	4	5	3	8
Switch Phase										
Minimum Initial (s)	4.0	20.0	4.0	4.0	20.0	4.0	6.0	4.0	4.0	6.0
Minimum Split (s)	12.5	38.5	12.5	12.5	32.5	12.5	42.0	12.5	12.5	13.0
Total Split (s)	22.0	85.0	25.4	14.0	77.0	25.4	42.0	14.0	19.0	35.6
Total Split (%)	13.8%	53.1%	15.9%	8.8%	48.1%	15.9%	26.3%	8.8%	11.9%	22.3%
Yellow Time (s)	4.0	4.5	4.0	4.0	4.5	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	2.5	3.0	3.0	2.5	3.0	3.0	2.5	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.5	6.5	7.0	7.5	6.5	7.0	7.0	6.5	7.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	None	None
Act Effct Green (s)	13.8	90.5	108.1	7.0	83.7	16.6	15.4	18.7	27.0	17.9
Actuated g/C Ratio	0.09	0.57	0.68	0.04	0.52	0.10	0.10	0.12	0.17	0.11
v/c Ratio	0.76	1.02	0.21	1.04	0.73	0.72	0.08	0.43	0.58	0.72
Control Delay	100.8	49.7	2.7	156.1	32.2	81.2	59.7	34.8	64.2	83.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	100.8	49.7	2.7	156.1	32.2	81.2	59.7	34.8	64.2	83.8
LOS	F	D	A	F	C	F	E	C	E	F
Approach Delay		48.3			39.7		63.1			69.9
Approach LOS		D			D		E			E

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 24 (15%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 180	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 47.5	Intersection LOS: D
Intersection Capacity Utilization 95.9%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 6: Sunrise Drive & Northlake Boulevard



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	2782	216	145	2121	130	241	14	153	316	24	106
Future Volume (vph)	110	2782	216	145	2121	130	241	14	153	316	24	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	7.0	7.5	6.5	7.0	7.5		6.5	7.0	7.0	6.5	7.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.86		0.97	1.00	0.88	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1583	3367	6230		3400	1845	2760	3400	1618	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1583	3367	6230		3400	1845	2760	3400	1618	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	116	2928	227	153	2233	137	254	15	161	333	25	112
RTOR Reduction (vph)	0	0	21	0	5	0	0	0	53	0	9	0
Lane Group Flow (vph)	116	2928	206	153	2365	0	254	15	108	333	128	0
Heavy Vehicles (%)	2%	2%	2%	4%	4%	4%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	1	6	7	5	2		7	4	5	3	8	
Permitted Phases			6						4			
Actuated Green, G (s)	13.8	86.3	102.9	7.0	79.5		16.6	11.7	18.7	27.0	22.1	
Effective Green, g (s)	13.8	86.3	102.9	7.0	79.5		16.6	11.7	18.7	27.0	22.1	
Actuated g/C Ratio	0.09	0.54	0.64	0.04	0.50		0.10	0.07	0.12	0.17	0.14	
Clearance Time (s)	7.0	7.5	6.5	7.0	7.5		6.5	7.0	7.0	6.5	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	152	2742	1018	147	3095		352	134	322	573	223	
v/s Ratio Prot	0.07	c0.58	0.02	c0.05	0.38		0.07	0.01	0.01	c0.10	c0.08	
v/s Ratio Perm			0.11						0.02			
v/c Ratio	0.76	1.07	0.20	1.04	0.76		0.72	0.11	0.34	0.58	0.58	
Uniform Delay, d1	71.5	36.9	11.7	76.5	32.6		69.5	69.3	64.9	61.3	64.6	
Progression Factor	1.04	0.84	0.56	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	17.7	37.8	0.1	85.5	1.9		7.1	0.4	0.6	1.5	3.6	
Delay (s)	92.4	68.5	6.7	162.0	34.5		76.6	69.7	65.6	62.8	68.1	
Level of Service	F	E	A	F	C		E	E	E	E	E	
Approach Delay (s)		65.1			42.2			72.2			64.3	
Approach LOS		E			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	56.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	160.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	95.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	2782	216	145	2121	130	241	14	153	316	24	106
Future Volume (veh/h)	110	2782	216	145	2121	130	241	14	153	316	24	106
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1827	1827	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	116	2928	227	153	2233	137	254	15	161	333	25	112
Adj No. of Lanes	1	3	1	2	4	0	2	1	2	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	4	4	4	3	3	3	3	3	3
Cap, veh/h	135	2463	907	492	3399	208	301	209	716	266	30	136
Arrive On Green	0.15	0.97	0.97	0.15	0.56	0.56	0.09	0.11	0.11	0.08	0.10	0.10
Sat Flow, veh/h	1774	5085	1583	3375	6101	374	3408	1845	2760	3408	294	1318
Grp Volume(v), veh/h	116	2928	227	153	1725	645	254	15	161	333	0	137
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1688	1571	1761	1704	1845	1380	1704	0	1612
Q Serve(g_s), s	10.2	77.5	0.3	6.5	40.9	41.0	11.7	1.2	1.2	12.5	0.0	13.3
Cycle Q Clear(g_c), s	10.2	77.5	0.3	6.5	40.9	41.0	11.7	1.2	1.2	12.5	0.0	13.3
Prop In Lane	1.00		1.00	1.00		0.21	1.00		1.00	1.00		0.82
Lane Grp Cap(c), veh/h	135	2463	907	492	2626	981	301	209	716	266	0	167
V/C Ratio(X)	0.86	1.19	0.25	0.31	0.66	0.66	0.84	0.07	0.22	1.25	0.00	0.82
Avail Cap(c_a), veh/h	166	2463	907	492	2626	981	403	404	1006	266	0	288
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	67.0	2.5	0.3	61.1	24.7	24.8	71.8	63.4	25.2	73.8	0.0	70.3
Incr Delay (d2), s/veh	29.1	89.3	0.7	0.4	1.3	3.4	11.7	0.1	0.2	140.0	0.0	9.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	10.1	76.1	0.5	5.5	25.0	28.3	10.1	1.1	3.6	19.9	0.0	10.5
LnGrp Delay(d),s/veh	96.0	91.8	0.9	61.5	26.0	28.2	83.5	63.5	25.3	213.7	0.0	79.9
LnGrp LOS	F	F	A	E	C	C	F	E	C	F		E
Approach Vol, veh/h		3271			2523			430			470	
Approach Delay, s/veh		85.6			28.7			61.0			174.7	
Approach LOS		F			C			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.2	96.6	19.0	25.2	30.8	85.0	20.6	23.5
Change Period (Y+Rc), s	7.0	7.5	6.5	7.0	7.5	* 7.5	6.5	7.0
Max Green Setting (Gmax), s	15.0	69.5	12.5	35.0	7.0	* 78	18.9	28.6
Max Q Clear Time (g_c+I1), s	12.2	43.0	14.5	3.2	8.5	79.5	13.7	15.3
Green Ext Time (p_c), s	0.1	19.4	0.0	1.6	0.0	0.0	0.4	1.2

Intersection Summary	
HCM 2010 Ctrl Delay	68.9
HCM 2010 LOS	E

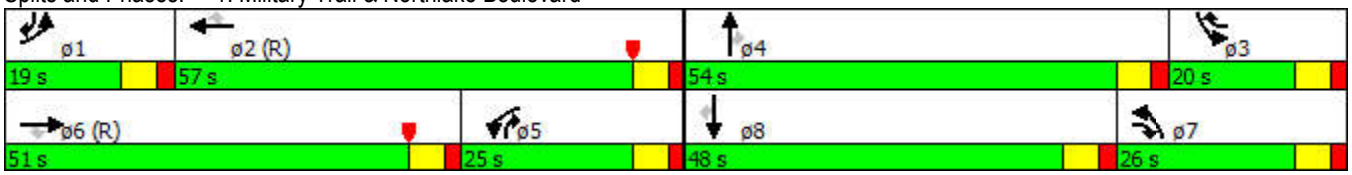
Notes

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	486	1241	242	390	1870	419	550	743	476	495	845	819
Future Volume (vph)	486	1241	242	390	1870	419	550	743	476	495	845	819
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	1	6	7	5	2	3	7	4	5	3	8	1
Permitted Phases			6			2			4			8
Detector Phase	1	6	7	5	2	3	7	4	5	3	8	1
Switch Phase												
Minimum Initial (s)	4.0	20.0	4.0	4.0	20.0	4.0	4.0	6.0	4.0	4.0	6.0	4.0
Minimum Split (s)	10.0	48.0	23.0	23.0	52.0	11.0	23.0	43.5	23.0	11.0	47.0	10.0
Total Split (s)	19.0	51.0	26.0	25.0	57.0	20.0	26.0	54.0	25.0	20.0	48.0	19.0
Total Split (%)	12.7%	34.0%	17.3%	16.7%	38.0%	13.3%	17.3%	36.0%	16.7%	13.3%	32.0%	12.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	None	None	None	None	None
Act Effct Green (s)	13.0	45.0	79.6	19.0	51.0	82.8	28.6	30.2	55.2	31.8	33.4	46.4
Actuated g/C Ratio	0.09	0.30	0.53	0.13	0.34	0.55	0.19	0.20	0.37	0.21	0.22	0.31
v/c Ratio	1.72	0.86	0.29	0.95	1.14	0.49	0.89	0.77	0.81	0.72	0.78	1.62
Control Delay	377.3	56.1	16.5	76.3	102.0	12.5	74.9	61.6	48.1	61.6	60.0	314.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	377.3	56.1	16.5	76.3	102.0	12.5	74.9	61.6	48.1	61.6	60.0	314.4
LOS	F	E	B	E	F	B	E	E	D	E	E	F
Approach Delay		130.6			84.2			62.1			156.9	
Approach LOS		F			F			E			F	

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 66 (44%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Natural Cycle: 175
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.72
Intersection Signal Delay: 108.6 — Intersection LOS: F
Intersection Capacity Utilization 117.5% — ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 1: Military Trail & Northlake Boulevard



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	486	1241	242	390	1870	419	550	743	476	495	845	819
Future Volume (vph)	486	1241	242	390	1870	419	550	743	476	495	845	819
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	3433	5085	1583	3433	5085	1583
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	512	1306	255	411	1968	441	579	782	501	521	889	862
RTOR Reduction (vph)	0	0	31	0	0	27	0	0	40	0	0	41
Lane Group Flow (vph)	512	1306	224	411	1968	414	579	782	461	521	889	821
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	1	6	7	5	2	3	7	4	5	3	8	1
Permitted Phases			6			2			4			8
Actuated Green, G (s)	13.0	45.0	73.6	19.0	51.0	82.8	28.6	30.2	49.2	31.8	33.4	46.4
Effective Green, g (s)	13.0	45.0	73.6	19.0	51.0	82.8	28.6	30.2	49.2	31.8	33.4	46.4
Actuated g/C Ratio	0.09	0.30	0.49	0.13	0.34	0.55	0.19	0.20	0.33	0.21	0.22	0.31
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	297	1525	840	434	1728	873	654	1023	582	727	1132	489
v/s Ratio Prot	c0.15	0.26	0.05	0.12	c0.39	0.10	c0.17	0.15	0.10	c0.15	0.17	c0.15
v/s Ratio Perm			0.09			0.16			0.19			0.37
v/c Ratio	1.72	0.86	0.27	0.95	1.14	0.47	0.89	0.76	0.79	0.72	0.79	1.68
Uniform Delay, d1	68.5	49.5	22.4	65.0	49.5	20.4	59.1	56.5	45.7	54.9	54.9	51.8
Progression Factor	1.00	1.00	1.00	0.82	0.74	1.14	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	339.6	6.4	0.2	21.6	67.4	0.3	13.6	3.5	7.3	3.4	3.7	314.0
Delay (s)	408.1	55.9	22.6	74.6	103.9	23.5	72.7	60.0	53.0	58.3	58.6	365.8
Level of Service	F	E	C	E	F	C	E	E	D	E	E	F
Approach Delay (s)		138.8			87.1			62.1			175.1	
Approach LOS		F			F			E			F	

Intersection Summary			
HCM 2000 Control Delay	115.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.29		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	117.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	486	1241	242	390	1870	419	550	743	476	495	845	819
Future Volume (veh/h)	486	1241	242	390	1870	419	550	743	476	495	845	819
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	512	1306	255	411	1968	441	579	782	501	521	889	862
Adj No. of Lanes	2	3	1	2	3	1	2	3	1	2	3	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	298	1526	686	483	1798	847	459	1109	567	625	1355	559
Arrive On Green	0.09	0.30	0.30	0.28	0.71	0.71	0.13	0.22	0.22	0.18	0.27	0.27
Sat Flow, veh/h	3442	5085	1583	3442	5085	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h	512	1306	255	411	1968	441	579	782	501	521	889	862
Grp Sat Flow(s),veh/h/ln	1721	1695	1583	1721	1695	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s	13.0	36.3	0.0	16.9	53.0	5.4	20.0	21.3	23.5	21.9	23.3	33.4
Cycle Q Clear(g_c), s	13.0	36.3	0.0	16.9	53.0	5.4	20.0	21.3	23.5	21.9	23.3	33.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	298	1526	686	483	1798	847	459	1109	567	625	1355	559
V/C Ratio(X)	1.72	0.86	0.37	0.85	1.09	0.52	1.26	0.71	0.88	0.83	0.66	1.54
Avail Cap(c_a), veh/h	298	1526	686	483	1798	847	459	1627	729	625	1424	581
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.5	49.4	28.7	52.5	22.0	3.3	65.0	54.2	45.2	59.2	48.9	22.8
Incr Delay (d2), s/veh	336.3	6.4	1.5	13.7	52.1	2.3	134.4	0.8	10.2	9.4	1.0	252.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	36.2	24.8	11.9	13.8	58.7	5.3	32.5	15.3	17.5	16.7	16.5	96.7
LnGrp Delay(d),s/veh	404.8	55.8	30.2	66.1	74.0	5.6	199.4	55.0	55.4	68.6	49.9	275.4
LnGrp LOS	F	E	C	E	F	A	F	E	E	E	D	F
Approach Vol, veh/h		2073			2820			1862			2272	
Approach Delay, s/veh		138.9			62.2			100.0			139.8	
Approach LOS		F			E			F			F	

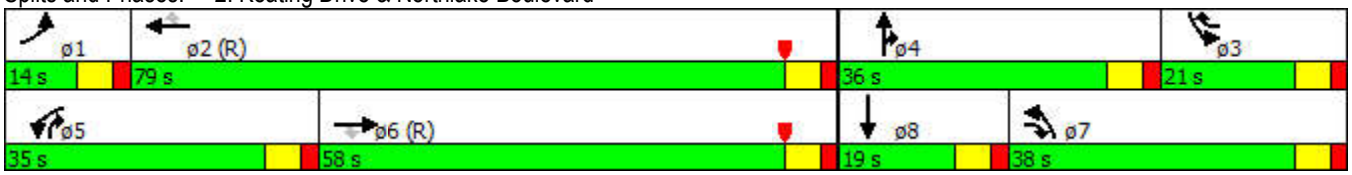
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.0	59.0	33.3	38.7	27.0	51.0	26.0	46.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	13.0	51.0	14.0	48.0	19.0	45.0	20.0	42.0
Max Q Clear Time (g_c+I1), s	15.0	55.0	23.9	25.5	18.9	38.3	22.0	35.4
Green Ext Time (p_c), s	0.0	0.0	0.0	7.2	0.1	4.5	0.0	4.6

Intersection Summary	
HCM 2010 Ctrl Delay	107.1
HCM 2010 LOS	F

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	56	1072	247	452	2533	370	265	48	545	188	50
Future Volume (vph)	56	1072	247	452	2533	370	265	48	545	188	50
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pt+ov	Prot	NA
Protected Phases	1	6	7	5	2	3	7	4	4 5	3	8
Permitted Phases			6			2					
Detector Phase	1	6	7	5	2	3	7	4	4 5	3	8
Switch Phase											
Minimum Initial (s)	4.0	20.0	4.0	4.0	20.0	4.0	4.0	5.0		4.0	5.0
Minimum Split (s)	10.0	36.5	10.0	10.0	39.5	10.0	10.0	11.0		10.0	11.0
Total Split (s)	14.0	58.0	38.0	35.0	79.0	21.0	38.0	36.0		21.0	19.0
Total Split (%)	9.3%	38.7%	25.3%	23.3%	52.7%	14.0%	25.3%	24.0%		14.0%	12.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lead		Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None	None		None	None
Act Effct Green (s)	8.4	60.1	88.1	26.2	80.4	97.7	28.0	23.6	49.8	16.2	11.7
Actuated g/C Ratio	0.06	0.40	0.59	0.17	0.54	0.65	0.19	0.16	0.33	0.11	0.08
v/c Ratio	0.60	0.44	0.27	0.79	0.78	0.37	0.85	0.17	0.60	0.54	0.72
Control Delay	99.9	19.5	3.9	77.4	27.1	6.1	81.3	55.0	24.3	68.5	87.8
Queue Delay	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	99.9	19.5	3.9	77.4	27.8	6.1	81.3	55.0	24.3	68.5	87.8
LOS	F	B	A	E	C	A	F	E	C	E	F
Approach Delay		20.0			32.1			43.6			75.2
Approach LOS		B			C			D			E

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 92 (61%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 33.0	Intersection LOS: C
Intersection Capacity Utilization 76.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: Keating Drive & Northlake Boulevard



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	1072	247	452	2533	370	265	48	545	188	50	48
Future Volume (vph)	56	1072	247	452	2533	370	265	48	545	188	50	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	0.86	1.00	0.97	0.86	1.00	1.00	1.00	0.88	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.93	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	6408	1583	3433	6408	1583	1770	1863	2787	3433	1726	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	6408	1583	3433	6408	1583	1770	1863	2787	3433	1726	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	59	1128	260	476	2666	389	279	51	574	198	53	51
RTOR Reduction (vph)	0	0	25	0	0	22	0	0	40	0	9	0
Lane Group Flow (vph)	59	1128	235	476	2666	367	279	51	534	198	95	0
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pt+ov	Prot	NA	
Protected Phases	1	6	7	5	2	3	7	4	4 5	3	8	
Permitted Phases			6			2						
Actuated Green, G (s)	7.1	60.0	88.1	26.2	79.1	95.3	28.1	23.6	49.8	16.2	11.7	
Effective Green, g (s)	7.1	60.0	88.1	26.2	79.1	95.3	28.1	23.6	49.8	16.2	11.7	
Actuated g/C Ratio	0.05	0.40	0.59	0.17	0.53	0.64	0.19	0.16	0.33	0.11	0.08	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	83	2563	929	599	3379	1005	331	293	925	370	134	
v/s Ratio Prot	0.03	0.18	0.05	c0.14	c0.42	0.04	c0.16	0.03	c0.19	0.06	0.05	
v/s Ratio Perm			0.10			0.19						
v/c Ratio	0.71	0.44	0.25	0.79	0.79	0.37	0.84	0.17	0.58	0.54	0.71	
Uniform Delay, d1	70.4	32.8	15.0	59.3	28.7	13.0	58.8	54.8	41.4	63.3	67.5	
Progression Factor	1.22	0.56	0.53	1.19	0.88	0.83	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	16.9	0.4	0.1	4.9	1.3	0.1	17.4	0.3	0.9	1.5	15.7	
Delay (s)	103.2	18.8	8.1	75.3	26.4	11.0	76.2	55.0	42.3	64.8	83.1	
Level of Service	F	B	A	E	C	B	E	E	D	E	F	
Approach Delay (s)		20.3			31.3			53.5			71.1	
Approach LOS		C			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	33.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	24.0
Intersection Capacity Utilization	76.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	56	1072	247	452	2533	370	265	48	545	188	50	48
Future Volume (veh/h)	56	1072	247	452	2533	370	265	48	545	188	50	48
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	59	1128	260	476	2666	389	279	51	574	198	53	51
Adj No. of Lanes	1	4	1	2	4	1	1	1	2	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	75	2822	973	526	3531	1024	309	281	847	329	64	61
Arrive On Green	0.04	0.44	0.44	0.31	1.00	1.00	0.17	0.15	0.15	0.10	0.07	0.07
Sat Flow, veh/h	1774	6408	1583	3442	6408	1583	1774	1863	2787	3442	874	841
Grp Volume(v), veh/h	59	1128	260	476	2666	389	279	51	574	198	0	104
Grp Sat Flow(s),veh/h/ln	1774	1602	1583	1721	1602	1583	1774	1863	1393	1721	0	1714
Q Serve(g_s), s	4.9	17.9	5.7	19.9	0.0	0.0	23.1	3.6	18.7	8.3	0.0	9.0
Cycle Q Clear(g_c), s	4.9	17.9	5.7	19.9	0.0	0.0	23.1	3.6	18.7	8.3	0.0	9.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.49
Lane Grp Cap(c), veh/h	75	2822	973	526	3531	1024	309	281	847	329	0	125
V/C Ratio(X)	0.78	0.40	0.27	0.90	0.76	0.38	0.90	0.18	0.68	0.60	0.00	0.83
Avail Cap(c_a), veh/h	95	2822	973	665	3531	1024	378	373	983	344	0	149
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.60	0.60	0.60	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	71.1	28.5	4.5	51.0	0.0	0.0	60.7	55.6	23.5	65.1	0.0	68.6
Incr Delay (d2), s/veh	27.8	0.4	0.7	8.9	0.9	0.6	21.6	0.3	1.5	2.7	0.0	27.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.4	12.6	4.7	14.1	0.4	0.3	19.1	3.4	11.8	7.3	0.0	9.0
LnGrp Delay(d),s/veh	99.0	28.9	5.2	59.9	0.9	0.6	82.3	55.9	25.1	67.8	0.0	96.6
LnGrp LOS	F	C	A	E	A	A	F	E	C	E		F
Approach Vol, veh/h		1447			3531			904			302	
Approach Delay, s/veh		27.5			8.9			44.5			77.7	
Approach LOS		C			A			D			E	

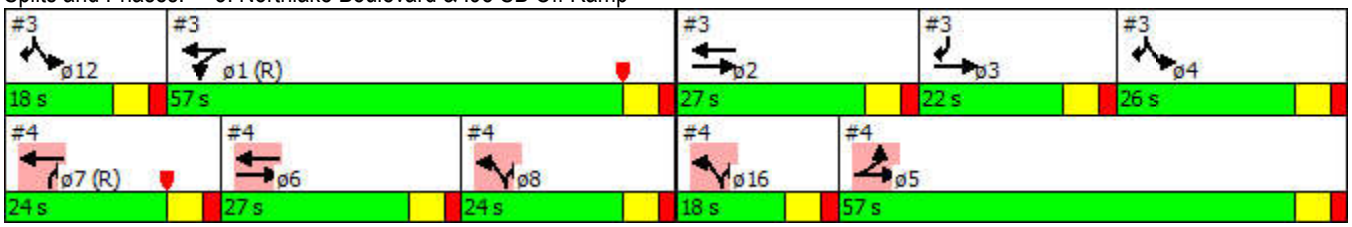
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	88.6	20.3	28.7	28.9	72.1	32.1	16.9
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	8.0	73.0	15.0	30.0	29.0	52.0	32.0	13.0
Max Q Clear Time (g_c+I1), s	6.9	2.0	10.3	20.7	21.9	19.9	25.1	11.0
Green Ext Time (p_c), s	0.0	65.6	0.7	2.0	1.0	30.9	1.0	0.1

Intersection Summary	
HCM 2010 Ctrl Delay	21.8
HCM 2010 LOS	C

Lane Group	EBT	EBR	WBL	WBT	SBL	SBR	ø2	ø3	ø4	ø5	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	1231	768	111	2542	771	1036						
Future Volume (vph)	1231	768	111	2542	771	1036						
Turn Type	NA	Free	Prot	NA	Prot	custom						
Protected Phases	2 3		1	1 2	4 12	3 4 12	2	3	4	5	6	7
Permitted Phases		Free										
Detector Phase	2 3		1	1 2	4 12	3 4 12						
Switch Phase												
Minimum Initial (s)			4.0				4.0	4.0	6.0	4.0	4.0	4.0
Minimum Split (s)			11.5				11.5	22.0	12.0	11.5	10.5	22.0
Total Split (s)			57.0				27.0	22.0	26.0	57.0	27.0	24.0
Total Split (%)			38.0%				18%	15%	17%	38%	18%	16%
Yellow Time (s)			4.0				4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)			2.0				2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)			0.0									
Total Lost Time (s)			6.0									
Lead/Lag			Lag				Lead	Lag		Lag	Lag	Lead
Lead-Lag Optimize?			Yes				Yes	Yes		Yes	Yes	Yes
Recall Mode			C-Max				Max	None	None	Max	None	C-Max
Act Effct Green (s)	43.0	150.0	51.2	78.2	37.8	59.8						
Actuated g/C Ratio	0.29	1.00	0.34	0.52	0.25	0.40						
v/c Ratio	0.60	0.51	0.19	0.80	0.61	0.58						
Control Delay	39.3	3.3	2.4	11.0	51.8	36.7						
Queue Delay	0.0	0.0	0.0	21.8	0.0	0.0						
Total Delay	39.3	3.3	2.4	32.7	51.8	36.7						
LOS	D	A	A	C	D	D						
Approach Delay	25.5			31.5								
Approach LOS	C			C								

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 1:WBTL and 7:, Start of Yellow, Master Intersection	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 32.9	Intersection LOS: C
Intersection Capacity Utilization 71.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Northlake Boulevard & I95 SB Off Ramp



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	5.0	5.0
Minimum Split (s)	12.0	11.0	11.0
Total Split (s)	24.0	18.0	18.0
Total Split (%)	16%	12%	12%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	Lead
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

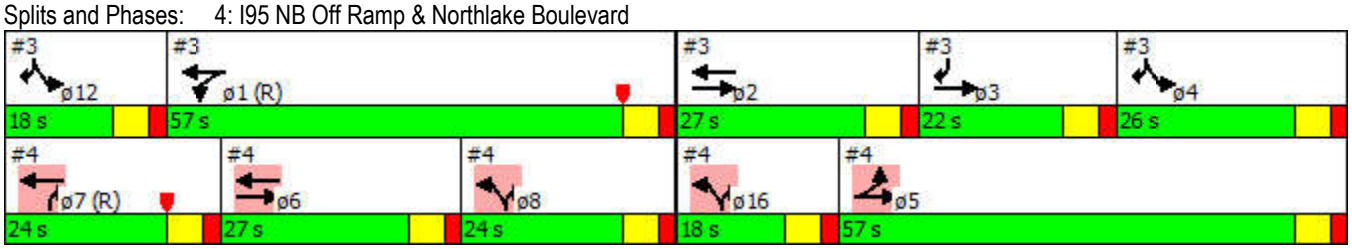
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1231	768	111	2542	0	0	0	0	771	0	1036
Future Volume (vph)	0	1231	768	111	2542	0	0	0	0	771	0	1036
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		6.0	4.0	6.0	6.0					6.0		6.0
Lane Util. Factor		0.81	1.00	1.00	0.86					*1.00		*1.00
Frt		1.00	0.85	1.00	1.00					1.00		0.85
Flt Protected		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (prot)		7544	1583	1770	6408					5309		4750
Flt Permitted		1.00	1.00	0.95	1.00					0.95		1.00
Satd. Flow (perm)		7544	1583	1770	6408					5309		4750
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1296	808	117	2676	0	0	0	0	812	0	1091
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1296	808	117	2676	0	0	0	0	812	0	1091
Turn Type		NA	Free	Prot	NA					Prot		custom
Protected Phases		2 3		1	1 2					4 12		3 4 12
Permitted Phases			Free									
Actuated Green, G (s)		43.0	150.0	51.2	78.2					37.8		59.8
Effective Green, g (s)		43.0	150.0	51.2	78.2					37.8		59.8
Actuated g/C Ratio		0.29	1.00	0.34	0.52					0.25		0.40
Clearance Time (s)				6.0								
Vehicle Extension (s)				3.0								
Lane Grp Cap (vph)		2162	1583	604	3340					1337		1893
v/s Ratio Prot		c0.17		0.07	c0.42					0.15		c0.23
v/s Ratio Perm			c0.51									
v/c Ratio		0.60	0.51	0.19	0.80					0.61		0.58
Uniform Delay, d1		46.1	0.0	34.8	29.5					49.5		35.2
Progression Factor		0.83	1.00	0.06	0.33					1.00		1.00
Incremental Delay, d2		0.5	1.1	0.3	1.2					0.8		0.5
Delay (s)		38.5	1.1	2.4	10.9					50.3		35.7
Level of Service		D	A	A	B					D		D
Approach Delay (s)		24.1			10.6			0.0			42.0	
Approach LOS		C			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	23.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	36.0
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	NBL	NBR	ø1	ø2	ø3	ø4	ø6	ø7
Lane Configurations												
Traffic Volume (vph)	122	1880	1904	1259	749	998						
Future Volume (vph)	122	1880	1904	1259	749	998						
Turn Type	Prot	NA	NA	Free	Prot	custom						
Protected Phases	5	5 6	6 7		8 16	7 8 16	1	2	3	4	6	7
Permitted Phases				Free								
Detector Phase	5	5 6	6 7		8 16	7 8 16						
Switch Phase												
Minimum Initial (s)	4.0						4.0	4.0	4.0	6.0	4.0	4.0
Minimum Split (s)	11.5						11.5	11.5	22.0	12.0	10.5	22.0
Total Split (s)	57.0						57.0	27.0	22.0	26.0	27.0	24.0
Total Split (%)	38.0%						38%	18%	15%	17%	18%	16%
Yellow Time (s)	4.0						4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0						2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0											
Total Lost Time (s)	6.0											
Lead/Lag	Lag						Lag	Lead	Lag		Lag	Lead
Lead-Lag Optimize?	Yes						Yes	Yes	Yes		Yes	Yes
Recall Mode	Max						C-Max	Max	None	None	None	C-Max
Act Effct Green (s)	51.4	72.4	45.0	150.0	35.6	53.6						
Actuated g/C Ratio	0.34	0.48	0.30	1.00	0.24	0.36						
v/c Ratio	0.23	0.67	0.88	0.93	0.70	0.69						
Control Delay	5.4	12.4	28.5	28.6	56.0	28.1						
Queue Delay	0.0	0.1	46.7	0.0	0.0	0.0						
Total Delay	5.4	12.5	75.2	28.6	56.0	28.1						
LOS	A	B	E	C	E	C						
Approach Delay		12.1	56.7									
Approach LOS		B	E									

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 1:WBTL and 7:, Start of Yellow, Master Intersection	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 39.5	Intersection LOS: D
Intersection Capacity Utilization 71.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 4: I95 NB Off Ramp & Northlake Boulevard



Lane Group	ø8	ø12	ø16
Lane Configurations			
Traffic Volume (vph)			
Future Volume (vph)			
Turn Type			
Protected Phases	8	12	16
Permitted Phases			
Detector Phase			
Switch Phase			
Minimum Initial (s)	6.0	5.0	5.0
Minimum Split (s)	12.0	11.0	11.0
Total Split (s)	24.0	18.0	18.0
Total Split (%)	16%	12%	12%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)			
Total Lost Time (s)			
Lead/Lag		Lead	Lead
Lead-Lag Optimize?		Yes	Yes
Recall Mode	None	None	None
Act Effct Green (s)			
Actuated g/C Ratio			
v/c Ratio			
Control Delay			
Queue Delay			
Total Delay			
LOS			
Approach Delay			
Approach LOS			

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	122	1880	0	0	1904	1259	749	0	998	0	0	0
Future Volume (vph)	122	1880	0	0	1904	1259	749	0	998	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	6.0	6.0			6.0	4.0	6.0		6.0			
Lane Util. Factor	1.00	*0.91			*0.91	1.00	*1.00		*1.00			
Frt	1.00	1.00			1.00	0.85	1.00		0.85			
Flt Protected	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (prot)	1593	6102			7628	1425	4778		4275			
Flt Permitted	0.95	1.00			1.00	1.00	0.95		1.00			
Satd. Flow (perm)	1593	6102			7628	1425	4778		4275			
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	128	1979	0	0	2004	1325	788	0	1051	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	128	1979	0	0	2004	1325	788	0	1051	0	0	0
Turn Type	Prot	NA			NA	Free	Prot		custom			
Protected Phases	5	5 6			6 7		8 16		7 8 16			
Permitted Phases						Free						
Actuated Green, G (s)	51.4	72.4			45.0	150.0	35.6		53.6			
Effective Green, g (s)	51.4	72.4			45.0	150.0	35.6		53.6			
Actuated g/C Ratio	0.34	0.48			0.30	1.00	0.24		0.36			
Clearance Time (s)	6.0											
Vehicle Extension (s)	3.0											
Lane Grp Cap (vph)	545	2945			2288	1425	1133		1527			
v/s Ratio Prot	0.08	0.32			0.26		0.16		0.25			
v/s Ratio Perm						c0.93						
v/c Ratio	0.23	0.67			0.88	0.93	0.70		0.69			
Uniform Delay, d1	35.2	29.7			49.8	0.0	52.2		41.1			
Progression Factor	0.13	0.72			0.48	1.00	1.00		1.00			
Incremental Delay, d2	0.8	0.5			3.5	10.5	1.9		1.3			
Delay (s)	5.4	22.0			27.6	10.5	54.1		42.4			
Level of Service	A	C			C	B	D		D			
Approach Delay (s)		20.9			20.8			47.4			0.0	
Approach LOS		C			C			D			A	

Intersection Summary			
HCM 2000 Control Delay	27.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	36.0
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	WBR	SBR
Lane Configurations					
Traffic Volume (vph)	150	2728	3043	140	120
Future Volume (vph)	150	2728	3043	140	120
Turn Type	Prot	NA	NA	Perm	Perm
Protected Phases	1	6	2		
Permitted Phases				2	6
Detector Phase	1	6	2	2	6
Switch Phase					
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	12.0	24.0	23.5	23.5	24.0
Total Split (s)	34.0	150.0	116.0	116.0	150.0
Total Split (%)	22.7%	100.0%	77.3%	77.3%	100.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag		Lead	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	28.0	150.0	110.0	110.0	150.0
Actuated g/C Ratio	0.19	1.00	0.73	0.73	1.00
v/c Ratio	0.48	0.45	0.58	0.12	0.08
Control Delay	60.8	0.2	0.9	0.0	0.1
Queue Delay	0.0	0.0	0.2	0.0	0.0
Total Delay	60.8	0.2	1.1	0.0	0.1
LOS	E	A	A	A	A
Approach Delay		3.4	1.0		
Approach LOS		A	A		

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 21 (14%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.58	
Intersection Signal Delay: 2.1	Intersection LOS: A
Intersection Capacity Utilization 53.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 5: Northlake Boulevard & Roan Lane

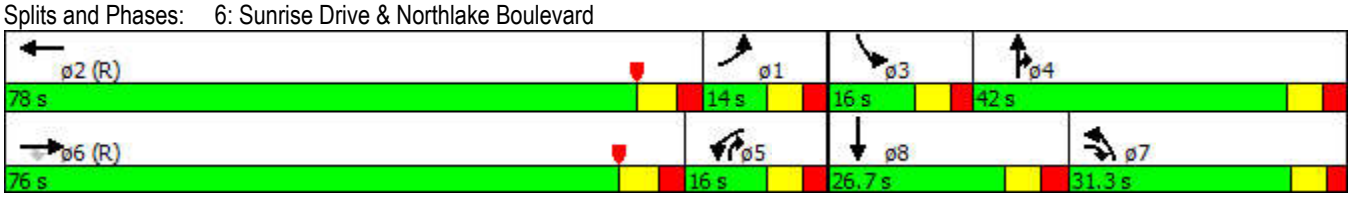
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	2728	0	0	3043	140	0	0	0	0	0	120
Future Volume (vph)	150	2728	0	0	3043	140	0	0	0	0	0	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	6.0	6.0			6.0	6.0						6.0
Lane Util. Factor	1.00	0.86			0.81	1.00						1.00
Frt	1.00	1.00			1.00	0.85						0.86
Flt Protected	0.95	1.00			1.00	1.00						1.00
Satd. Flow (prot)	1770	6408			7544	1583						1611
Flt Permitted	0.95	1.00			1.00	1.00						1.00
Satd. Flow (perm)	1770	6408			7544	1583						1611
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	158	2872	0	0	3203	147	0	0	0	0	0	126
RTOR Reduction (vph)	0	0	0	0	0	16	0	0	0	0	0	0
Lane Group Flow (vph)	158	2872	0	0	3203	131	0	0	0	0	0	126
Turn Type	Prot	NA			NA	Perm						Perm
Protected Phases	1	6			2							
Permitted Phases						2						6
Actuated Green, G (s)	28.0	150.0			110.0	110.0						150.0
Effective Green, g (s)	28.0	150.0			110.0	110.0						150.0
Actuated g/C Ratio	0.19	1.00			0.73	0.73						1.00
Clearance Time (s)	6.0	6.0			6.0	6.0						6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0						3.0
Lane Grp Cap (vph)	330	6408			5532	1160						1611
v/s Ratio Prot	0.09	c0.45			c0.42							
v/s Ratio Perm						0.08						0.08
v/c Ratio	0.48	0.45			0.58	0.11						0.08
Uniform Delay, d1	54.5	0.0			9.3	5.8						0.0
Progression Factor	1.04	1.00			0.09	0.01						1.00
Incremental Delay, d2	0.8	0.2			0.0	0.0						0.1
Delay (s)	57.4	0.2			0.9	0.1						0.1
Level of Service	E	A			A	A						A
Approach Delay (s)		3.1			0.9			0.0			0.1	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	1.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	78	2442	188	208	3227	449	20	279	219	21
Future Volume (vph)	78	2442	188	208	3227	449	20	279	219	21
Turn Type	Prot	NA	pm+ov	Prot	NA	Prot	NA	pt+ov	Prot	NA
Protected Phases	1	6	7	5	2	7	4	4 5	3	8
Permitted Phases			6							
Detector Phase	1	6	7	5	2	7	4	4 5	3	8
Switch Phase										
Minimum Initial (s)	4.0	20.0	4.0	4.0	20.0	4.0	6.0		4.0	6.0
Minimum Split (s)	12.5	38.5	12.5	12.5	32.5	12.5	42.0		12.5	13.0
Total Split (s)	14.0	76.0	31.3	16.0	78.0	31.3	42.0		16.0	26.7
Total Split (%)	9.3%	50.7%	20.9%	10.7%	52.0%	20.9%	28.0%		10.7%	17.8%
Yellow Time (s)	4.0	4.5	4.0	4.0	4.5	4.0	4.0		4.0	4.0
All-Red Time (s)	3.0	3.0	2.5	3.0	3.0	2.5	3.0		2.5	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	7.0	7.5	6.5	7.0	7.5	6.5	7.0		6.5	7.0
Lead/Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag		Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	None	None		None	None
Act Effct Green (s)	7.0	71.3	102.6	9.0	73.3	23.7	32.2	41.2	9.5	17.9
Actuated g/C Ratio	0.05	0.48	0.68	0.06	0.49	0.16	0.21	0.27	0.06	0.12
v/c Ratio	1.00	1.06	0.18	1.07	1.13	0.87	0.05	0.36	1.06	0.83
Control Delay	159.1	68.6	5.3	146.3	100.9	78.9	45.4	24.8	143.4	91.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	159.1	68.6	5.3	146.3	100.9	78.9	45.4	24.8	143.4	91.4
LOS	F	E	A	F	F	E	D	C	F	F
Approach Delay		66.8			103.5		57.8			121.5
Approach LOS		E			F		E			F

Intersection Summary	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 8 (5%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow	
Natural Cycle: 180	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.13	
Intersection Signal Delay: 86.4	Intersection LOS: F
Intersection Capacity Utilization 99.1%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 6: Sunrise Drive & Northlake Boulevard



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	78	2442	188	208	3227	133	449	20	279	219	21	139
Future Volume (vph)	78	2442	188	208	3227	133	449	20	279	219	21	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)	7.0	7.5	6.5	7.0	7.5		6.5	7.0	7.0	6.5	7.0	
Lane Util. Factor	1.00	0.91	1.00	0.97	0.86		0.97	1.00	0.88	0.97	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85	1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	5085	1583	3433	6370		3433	1863	2787	3433	1620	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1770	5085	1583	3433	6370		3433	1863	2787	3433	1620	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	82	2571	198	219	3397	140	473	21	294	231	22	146
RTOR Reduction (vph)	0	0	22	0	4	0	0	0	44	0	9	0
Lane Group Flow (vph)	82	2571	176	219	3533	0	473	21	250	231	159	0
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	pt+ov	Prot	NA	
Protected Phases	1	6	7	5	2		7	4	4 5	3	8	
Permitted Phases			6									
Actuated Green, G (s)	7.0	71.3	95.1	9.0	73.3		23.8	32.2	41.2	9.5	17.9	
Effective Green, g (s)	7.0	71.3	95.1	9.0	73.3		23.8	32.2	41.2	9.5	17.9	
Actuated g/C Ratio	0.05	0.48	0.63	0.06	0.49		0.16	0.21	0.27	0.06	0.12	
Clearance Time (s)	7.0	7.5	6.5	7.0	7.5		6.5	7.0		6.5	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	82	2417	1072	205	3112		544	399	765	217	193	
v/s Ratio Prot	0.05	0.51	0.03	c0.06	c0.55		c0.14	0.01	0.09	0.07	c0.10	
v/s Ratio Perm			0.09									
v/c Ratio	1.00	1.06	0.16	1.07	1.14		0.87	0.05	0.33	1.06	0.82	
Uniform Delay, d1	71.5	39.4	11.2	70.5	38.4		61.6	46.8	43.4	70.2	64.5	
Progression Factor	0.92	0.80	0.81	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	94.8	37.4	0.1	82.1	65.5		13.8	0.1	0.3	79.2	24.0	
Delay (s)	160.5	68.9	9.1	152.6	103.8		75.4	46.8	43.6	149.5	88.5	
Level of Service	F	E	A	F	F		E	D	D	F	F	
Approach Delay (s)		67.4			106.7			62.8			123.8	
Approach LOS		E			F			E			F	

Intersection Summary			
HCM 2000 Control Delay	88.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	28.0
Intersection Capacity Utilization	99.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	2442	188	208	3227	133	449	20	279	219	21	139
Future Volume (veh/h)	78	2442	188	208	3227	133	449	20	279	219	21	139
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	82	2571	198	219	3397	140	473	21	294	231	22	146
Adj No. of Lanes	1	3	1	2	4	0	2	1	2	2	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	122	2322	967	283	2991	122	531	393	817	218	25	164
Arrive On Green	0.14	0.91	0.91	0.08	0.47	0.47	0.15	0.21	0.21	0.06	0.12	0.12
Sat Flow, veh/h	1774	5085	1583	3442	6364	259	3442	1863	2787	3442	211	1404
Grp Volume(v), veh/h	82	2571	198	219	2555	982	473	21	294	231	0	168
Grp Sat Flow(s),veh/h/ln	1774	1695	1583	1721	1602	1817	1721	1863	1393	1721	0	1615
Q Serve(g_s), s	6.6	68.5	0.0	9.4	70.5	70.5	20.2	1.3	1.9	9.5	0.0	15.4
Cycle Q Clear(g_c), s	6.6	68.5	0.0	9.4	70.5	70.5	20.2	1.3	1.9	9.5	0.0	15.4
Prop In Lane	1.00		1.00	1.00		0.14	1.00		1.00	1.00		0.87
Lane Grp Cap(c), veh/h	122	2322	967	283	2259	854	531	393	817	218	0	189
V/C Ratio(X)	0.67	1.11	0.20	0.77	1.13	1.15	0.89	0.05	0.36	1.06	0.00	0.89
Avail Cap(c_a), veh/h	122	2322	967	283	2259	854	569	435	879	218	0	212
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	63.1	6.5	1.8	67.5	39.7	39.8	62.2	47.2	22.5	70.3	0.0	65.3
Incr Delay (d2), s/veh	13.4	55.2	0.5	12.6	65.2	81.0	15.6	0.1	0.3	77.6	0.0	31.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.6	70.9	1.2	8.6	80.6	98.2	16.1	1.3	6.2	12.3	0.0	13.3
LnGrp Delay(d),s/veh	76.5	61.7	2.3	80.1	105.0	120.7	77.8	47.3	22.7	147.9	0.0	96.7
LnGrp LOS	E	F	A	F	F	F	E	D	C	F		F
Approach Vol, veh/h		2851			3756			788			399	
Approach Delay, s/veh		58.0			107.6			56.4			126.3	
Approach LOS		E			F			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.3	78.0	16.0	38.7	19.3	76.0	30.1	24.6
Change Period (Y+Rc), s	7.0	7.5	6.5	7.0	7.0	7.5	7.0	* 7
Max Green Setting (Gmax), s	7.0	70.5	9.5	35.0	9.0	68.5	24.8	* 20
Max Q Clear Time (g_c+I1), s	8.6	72.5	11.5	3.9	11.4	70.5	22.2	17.4
Green Ext Time (p_c), s	0.0	0.0	0.0	3.2	0.0	0.0	0.9	0.2

Intersection Summary	
HCM 2010 Ctrl Delay	85.3
HCM 2010 LOS	F

Notes

APPENDIX U

(Build Alternatives SIMTRAFFIC Queue Analysis Results)

Alternative 1

Intersection: 1: Military Trail & Northlake Boulevard

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	349	400	590	582	588	320	307	362	547	599	621	522
Average Queue (ft)	167	388	554	550	557	246	164	183	395	449	464	234
95th Queue (ft)	376	471	602	592	591	455	261	289	524	573	590	443
Link Distance (ft)			542	542	542				869	869	869	869
Upstream Blk Time (%)			47	37	56							
Queuing Penalty (veh)			0	0	0							
Storage Bay Dist (ft)	300	300				270	450	450				
Storage Blk Time (%)	3	14	67		74	0			4			
Queuing Penalty (veh)	16	82	452		218	0			12			

Intersection: 1: Military Trail & Northlake Boulevard

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	240	290	914	884	823	230	340	390	803	670	382	225
Average Queue (ft)	233	287	724	638	495	216	289	337	444	351	197	154
95th Queue (ft)	257	301	1055	960	856	271	407	444	850	699	324	253
Link Distance (ft)			877	877	877				997	997	997	
Upstream Blk Time (%)			27	0	6				0			
Queuing Penalty (veh)			0	0	0				0			
Storage Bay Dist (ft)	190	190				180	290	290				175
Storage Blk Time (%)	47	75	26		18	52	14	37	2		6	7
Queuing Penalty (veh)	130	206	101		70	142	31	80	9		25	16

Intersection: 2: Keating Drive & Northlake Boulevard

Movement	EB	EB	EB	EB	EB	EB	B8	B8	B8	WB	WB	WB
Directions Served	L	T	T	T	T	R	T	T	T	L	L	T
Maximum Queue (ft)	320	822	817	793	783	320	889	904	910	176	191	215
Average Queue (ft)	154	769	767	752	734	190	759	769	774	86	113	95
95th Queue (ft)	405	831	838	828	828	438	1160	1174	1185	152	172	197
Link Distance (ft)		694	694	694	694		869	869	869			591
Upstream Blk Time (%)		86	80	57	34		6	6	11			
Queuing Penalty (veh)		542	507	361	212		47	52	93			
Storage Bay Dist (ft)	270					270				450	450	
Storage Blk Time (%)	0	89			73	0						
Queuing Penalty (veh)	0	26			60	0						

Intersection: 2: Keating Drive & Northlake Boulevard

Movement	WB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	T	T	T	R	L	T	R	R	L	L	TR
Maximum Queue (ft)	234	288	250	39	142	44	300	140	198	266	111
Average Queue (ft)	109	125	92	8	55	10	183	85	107	155	26
95th Queue (ft)	216	235	205	27	112	37	306	177	205	252	72
Link Distance (ft)	591	591	591			271	271			315	315
Upstream Blk Time (%)							3			0	
Queuing Penalty (veh)							0			0	
Storage Bay Dist (ft)				365	145			115	150		
Storage Blk Time (%)					0		25	1	3	13	
Queuing Penalty (veh)					0		26	1	3	14	

Intersection: 3: I95 SB On Ramp/I95 SB Off Ramp & Northlake Boulevard

Movement	EB	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB
Directions Served	T	T	T	T	T	T	R	L	L	T	T	T
Maximum Queue (ft)	460	510	639	645	643	641	530	402	399	428	429	378
Average Queue (ft)	439	506	606	604	606	602	427	297	333	341	275	141
95th Queue (ft)	479	519	630	629	632	642	764	453	447	490	501	288
Link Distance (ft)			591	591	591	591		345	345	345	345	345
Upstream Blk Time (%)			30	25	23	18		2	6	10	4	0
Queuing Penalty (veh)			223	183	170	135		9	23	40	17	2
Storage Bay Dist (ft)	410	410					480					
Storage Blk Time (%)	11	60	76			28	0					
Queuing Penalty (veh)	40	221	563			191	0					

Intersection: 3: I95 SB On Ramp/I95 SB Off Ramp & Northlake Boulevard

Movement	WB	SB	SB	SB	SB	SB	SB
Directions Served	T	L	L	L	R	R	R
Maximum Queue (ft)	309	532	588	578	590	512	282
Average Queue (ft)	131	368	423	364	361	285	84
95th Queue (ft)	218	506	561	523	544	467	197
Link Distance (ft)	345			1298	1298		
Upstream Blk Time (%)	0						
Queuing Penalty (veh)	0						
Storage Bay Dist (ft)		800	800			675	675
Storage Blk Time (%)					0		
Queuing Penalty (veh)					0		

Intersection: 4: I95 NB Off Ramp & Northlake Boulevard

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	T	T	T	T	T	T	T
Maximum Queue (ft)	404	416	428	422	395	388	379	399	398	400	402	401
Average Queue (ft)	335	352	359	338	297	209	337	361	361	353	351	342
95th Queue (ft)	453	447	458	490	456	430	368	395	392	389	404	412
Link Distance (ft)	345	345	345	345	345	345	331	331	331	331	331	331
Upstream Blk Time (%)	6	12	13	9	5	2	44	73	75	70	57	44
Queuing Penalty (veh)	34	64	72	47	27	11	165	271	279	261	210	164
Storage Bay Dist (ft)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 4: I95 NB Off Ramp & Northlake Boulevard

Movement	WB	NB	NB	NB	NB	NB	NB
Directions Served	R	L	L	L	R	R	R
Maximum Queue (ft)	398	246	476	596	617	536	384
Average Queue (ft)	307	108	267	362	429	360	136
95th Queue (ft)	500	204	433	530	578	503	298
Link Distance (ft)	331			1119	1119		
Upstream Blk Time (%)	29						
Queuing Penalty (veh)	110						
Storage Bay Dist (ft)		800	800			800	800
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 5: Northlake Boulevard & Roan Lane

Movement	EB	EB	EB	WB	WB	WB	WB	WB	WB	WB	WB	SB
Directions Served	T	T	T	T	T	T	T	T	T	T	R	R
Maximum Queue (ft)	16	35	59	224	250	605	608	619	619	400	373	138
Average Queue (ft)	1	2	4	178	238	532	484	457	424	287	22	105
95th Queue (ft)	8	28	32	274	298	744	736	766	770	537	169	162
Link Distance (ft)	331	331	331			559	559	559	559			119
Upstream Blk Time (%)						21	8	6	6			81
Queuing Penalty (veh)						131	47	40	36			0
Storage Bay Dist (ft)				200	200					350	350	
Storage Blk Time (%)				1	30	67			12	7	0	
Queuing Penalty (veh)				5	110	482			52	25	0	

Intersection: 6: Sunrise Drive & Northlake Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	T	T	T	R	L	L	T	T	T	TR	L
Maximum Queue (ft)	357	467	506	524	84	209	400	1078	1072	1090	325	248
Average Queue (ft)	197	281	326	358	32	72	240	785	763	739	303	130
95th Queue (ft)	348	435	488	513	69	181	487	1281	1283	1299	383	227
Link Distance (ft)		559	559	559	559			1019	1019	1019		
Upstream Blk Time (%)		0	0	0				28	27	32		
Queuing Penalty (veh)		0	1	3				0	0	0		
Storage Bay Dist (ft)	500					300	300				300	325
Storage Blk Time (%)	0	0					0	47		31	25	
Queuing Penalty (veh)	0	1					0	68		203	130	

Intersection: 6: Sunrise Drive & Northlake Boulevard

Movement	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	R	L	L	TR
Maximum Queue (ft)	306	241	194	174	427	389
Average Queue (ft)	173	111	37	166	375	126
95th Queue (ft)	265	194	134	196	462	311
Link Distance (ft)		519			377	377
Upstream Blk Time (%)					61	3
Queuing Penalty (veh)					0	0
Storage Bay Dist (ft)	325		350	150		
Storage Blk Time (%)	0			45	82	
Queuing Penalty (veh)	0			71	130	

Intersection: 15: Bend

Movement	SB	SB
Directions Served	T	T
Maximum Queue (ft)	59	128
Average Queue (ft)	2	4
95th Queue (ft)	41	65
Link Distance (ft)	474	474
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 18: Bend

Movement	NB	NB
Directions Served	T	
Maximum Queue (ft)	12	4
Average Queue (ft)	0	0
95th Queue (ft)	8	3
Link Distance (ft)	397	397
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 8601

Intersection: 1: Military Trail & Northlake Boulevard

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	350	400	594	560	501	320	290	549	880	875	879	854
Average Queue (ft)	346	399	564	391	208	67	174	299	545	590	609	336
95th Queue (ft)	358	401	579	678	440	180	274	572	950	971	984	907
Link Distance (ft)			542	542	542				838	838	838	838
Upstream Blk Time (%)			82	3	0				5	7	10	4
Queuing Penalty (veh)			0	0	0				37	47	74	29
Storage Bay Dist (ft)	300	300				270	450	450				
Storage Blk Time (%)	46	90	1		7			0	20			
Queuing Penalty (veh)	189	370	4		16			0	76			

Intersection: 1: Military Trail & Northlake Boulevard

Movement	B8	B8	B8	B8	NB	NB	NB	NB	NB	NB	SB	SB
Directions Served	T	T	T	T	L	L	T	T	T	R	L	L
Maximum Queue (ft)	358	372	379	288	240	290	794	692	450	230	292	362
Average Queue (ft)	45	60	78	44	218	276	426	321	244	187	143	190
95th Queue (ft)	230	277	340	222	279	323	726	571	395	277	273	312
Link Distance (ft)	726	726	726	726			877	877	877			
Upstream Blk Time (%)		0	0				1					
Queuing Penalty (veh)		0	0				0					
Storage Bay Dist (ft)					190	190				180	290	290
Storage Blk Time (%)					11	35	22		6	13	0	2
Queuing Penalty (veh)					27	86	119		29	32	0	4

Intersection: 1: Military Trail & Northlake Boulevard

Movement	SB	SB	SB	SB
Directions Served	T	T	T	R
Maximum Queue (ft)	610	1026	1052	225
Average Queue (ft)	240	799	1020	225
95th Queue (ft)	419	1318	1036	225
Link Distance (ft)	997	997	997	
Upstream Blk Time (%)	0	6	94	
Queuing Penalty (veh)	0	0	0	
Storage Bay Dist (ft)				175
Storage Blk Time (%)	2		3	82
Queuing Penalty (veh)	11		25	231

Intersection: 2: Keating Drive & Northlake Boulevard

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	T	T	T	T	R	L	L	T	T	T	T
Maximum Queue (ft)	126	332	332	328	353	262	325	340	352	359	434	324
Average Queue (ft)	47	206	185	181	180	49	187	209	220	240	268	225
95th Queue (ft)	103	312	287	285	295	147	289	311	315	327	366	312
Link Distance (ft)		726	726	726	726				591	591	591	591
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	270					270	450	450				
Storage Blk Time (%)		4			1							0
Queuing Penalty (veh)		2			4							0

Intersection: 2: Keating Drive & Northlake Boulevard

Movement	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	R	L	T	R	R	L	L	TR
Maximum Queue (ft)	103	194	290	317	165	184	226	207
Average Queue (ft)	42	173	175	229	138	76	124	89
95th Queue (ft)	85	225	361	336	206	170	199	185
Link Distance (ft)			272	272			323	323
Upstream Blk Time (%)			8	8				
Queuing Penalty (veh)			0	0				
Storage Bay Dist (ft)	365	145			115	150		
Storage Blk Time (%)		34	0	30	2	1	9	
Queuing Penalty (veh)		17	1	81	6	1	8	

Intersection: 3: I95 SB On Ramp/I95 SB Off Ramp & Northlake Boulevard

Movement	EB	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB
Directions Served	T	T	T	T	T	T	R	L	L	T	T	T
Maximum Queue (ft)	364	420	450	424	400	356	297	335	403	388	333	335
Average Queue (ft)	240	301	300	284	278	185	22	59	123	141	55	39
95th Queue (ft)	358	412	433	413	402	333	131	217	348	391	236	161
Link Distance (ft)			591	591	591	591		345	345	345	345	345
Upstream Blk Time (%)								0	0	1	0	0
Queuing Penalty (veh)								1	3	4	1	0
Storage Bay Dist (ft)	410	410					480					
Storage Blk Time (%)	0	0	1									
Queuing Penalty (veh)	0	1	7									

Intersection: 3: I95 SB On Ramp/I95 SB Off Ramp & Northlake Boulevard

Movement	WB	SB	SB	SB	SB	SB	SB
Directions Served	T	L	L	L	R	R	R
Maximum Queue (ft)	160	461	550	600	636	559	383
Average Queue (ft)	33	293	354	382	427	365	172
95th Queue (ft)	101	420	495	525	573	509	295
Link Distance (ft)	345			1298	1298		
Upstream Blk Time (%)	0						
Queuing Penalty (veh)	0						
Storage Bay Dist (ft)		800	800			675	675
Storage Blk Time (%)					0		
Queuing Penalty (veh)					1		

Intersection: 4: I95 NB Off Ramp & Northlake Boulevard

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	T	T	T	T	T	T	T
Maximum Queue (ft)	373	395	390	373	342	266	338	378	380	385	394	397
Average Queue (ft)	187	218	251	228	215	129	244	303	309	303	332	366
95th Queue (ft)	429	456	408	350	289	225	347	386	382	381	413	403
Link Distance (ft)	345	345	345	345	345	345	324	324	324	324	324	324
Upstream Blk Time (%)	1	2	2	1	0	0	0	4	6	5	12	30
Queuing Penalty (veh)	4	7	9	3	0	0	3	21	37	28	71	172
Storage Bay Dist (ft)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 4: I95 NB Off Ramp & Northlake Boulevard

Movement	WB	NB	NB	NB	NB	NB	NB
Directions Served	R	L	L	L	R	R	R
Maximum Queue (ft)	398	387	732	791	807	771	493
Average Queue (ft)	365	274	467	566	586	514	303
95th Queue (ft)	398	383	651	735	747	686	477
Link Distance (ft)	324			1119	1119		
Upstream Blk Time (%)	45						
Queuing Penalty (veh)	261						
Storage Bay Dist (ft)		800	800			800	800
Storage Blk Time (%)				0	0	0	
Queuing Penalty (veh)				2	1	0	

Intersection: 5: Northlake Boulevard & Roan Lane

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	WB	WB
Directions Served	T	T	T	T	T	T	T	T	T	T	T	R
Maximum Queue (ft)	51	129	143	20	82	298	540	550	571	584	400	375
Average Queue (ft)	4	19	29	1	5	56	199	263	321	386	334	134
95th Queue (ft)	42	80	102	10	48	206	517	575	596	618	459	430
Link Distance (ft)	324	324	324	324			565	565	565	565		
Upstream Blk Time (%)							0	0	1	3		
Queuing Penalty (veh)							1	4	12	32		
Storage Bay Dist (ft)					200	200					350	350
Storage Blk Time (%)					0	0	1			8	15	0
Queuing Penalty (veh)					0	0	8			58	84	2

Intersection: 5: Northlake Boulevard & Roan Lane

Movement	SB
Directions Served	R
Maximum Queue (ft)	156
Average Queue (ft)	128
95th Queue (ft)	155
Link Distance (ft)	119
Upstream Blk Time (%)	95
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: Sunrise Drive & Northlake Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	T	T	T	R	L	L	T	T	T	TR	L
Maximum Queue (ft)	529	569	602	598	335	137	400	1068	1062	1072	350	375
Average Queue (ft)	217	452	507	523	52	54	207	1039	1038	1040	349	321
95th Queue (ft)	392	602	640	636	190	119	467	1054	1051	1054	354	425
Link Distance (ft)		565	565	565	565			1019	1019	1019		
Upstream Blk Time (%)	0	0	2	4				38	41	51		
Queuing Penalty (veh)	0	1	13	25				0	0	0		
Storage Bay Dist (ft)	500					300	300				300	325
Storage Blk Time (%)		2						43		40	47	17
Queuing Penalty (veh)		6						90		371	376	52

Intersection: 6: Sunrise Drive & Northlake Boulevard

Movement	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	R	L	L	TR
Maximum Queue (ft)	425	548	262	199	329	325
Average Queue (ft)	363	349	102	147	206	149
95th Queue (ft)	477	640	233	244	304	284
Link Distance (ft)		519			377	377
Upstream Blk Time (%)		23			0	0
Queuing Penalty (veh)		0			0	0
Storage Bay Dist (ft)	325		350	150		
Storage Blk Time (%)	37	0		6	35	
Queuing Penalty (veh)	111	0		6	38	

Intersection: 15: Bend

Movement	SB	SB
Directions Served	T	T
Maximum Queue (ft)	79	76
Average Queue (ft)	3	3
95th Queue (ft)	55	54
Link Distance (ft)	474	474
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 18: Bend

Movement	NB	NB
Directions Served	T	
Maximum Queue (ft)	15	12
Average Queue (ft)	0	0
95th Queue (ft)	6	8
Link Distance (ft)	397	397
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 3457

Alternative 2

Intersection: 1: Northlake Blvd & Military Trail

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	350	400	1016	987	990	320	239	244	264	277	292	244
Average Queue (ft)	289	395	987	916	826	251	114	138	141	165	170	106
95th Queue (ft)	430	433	1000	1078	1097	441	201	218	234	252	257	210
Link Distance (ft)			967	967	967				1057	1057	1057	1057
Upstream Blk Time (%)			58	7	6							
Queuing Penalty (veh)			0	0	0							
Storage Bay Dist (ft)	300	300				270	450	450				
Storage Blk Time (%)	22	35	43		50	0						
Queuing Penalty (veh)	124	199	295		148	0						

Intersection: 1: Northlake Blvd & Military Trail

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	240	290	1028	958	612	230	340	390	863	816	503	225
Average Queue (ft)	227	284	652	561	381	218	297	337	510	434	202	159
95th Queue (ft)	272	313	1078	972	587	263	390	444	1094	973	420	252
Link Distance (ft)			1176	1176	1176				1124	1124	1124	
Upstream Blk Time (%)			4	0					12	0	0	
Queuing Penalty (veh)			0	0					0	0	0	
Storage Bay Dist (ft)	190	190				180	290	290				175
Storage Blk Time (%)	42	69	22		16	31	21	38	2		7	7
Queuing Penalty (veh)	115	190	87		62	86	45	81	7		27	15

Intersection: 2: Keating Dr & Northlake Blvd

Movement	EB	EB	EB	EB	EB	EB	B12	B12	B12	WB	WB	WB
Directions Served	L	R	R	R	R	>	T	T	T	L	L	T
Maximum Queue (ft)	320	615	573	528	526	320	1076	1104	1110	178	213	283
Average Queue (ft)	133	564	430	382	343	99	661	631	529	88	117	174
95th Queue (ft)	369	610	608	557	504	299	1216	1259	1214	164	198	274
Link Distance (ft)		492	492	492	492		1057	1057	1057			270
Upstream Blk Time (%)		77	8	2	1		1	1	1		0	0
Queuing Penalty (veh)		484	51	11	7		10	10	5		0	2
Storage Bay Dist (ft)	270					270				200	200	
Storage Blk Time (%)	1	81			20					0	1	4
Queuing Penalty (veh)	3	24			17					0	5	8

Intersection: 2: Keating Dr & Northlake Blvd

Movement	WB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	T	T	T	R	L	T	>	>	L	L	TR
Maximum Queue (ft)	329	402	365	250	146	82	373	165	200	311	102
Average Queue (ft)	216	261	234	59	53	10	209	84	140	206	25
95th Queue (ft)	322	382	345	186	114	46	359	185	239	327	67
Link Distance (ft)	270	270	270			378	378			304	304
Upstream Blk Time (%)	1	7	5				2			8	
Queuing Penalty (veh)	9	41	29				0			0	
Storage Bay Dist (ft)				200	145			115	150		
Storage Blk Time (%)			13		1		41	0	9	40	
Queuing Penalty (veh)			17		0		42	0	10	44	

Intersection: 3: Northlake Blvd & DDI SB Crossover Intersection

Movement	NW	NW	NW	NW	NE	NE	NE	NE
Directions Served	L	L	L	L	R	R	R	R
Maximum Queue (ft)	151	151	176	163	260	237	247	251
Average Queue (ft)	73	81	116	118	231	176	214	143
95th Queue (ft)	136	141	165	167	247	239	274	224
Link Distance (ft)	92	92	92	92	122	122	122	122
Upstream Blk Time (%)	4	6	17	19	55	20	35	10
Queuing Penalty (veh)	15	23	63	69	306	113	195	56
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 4: Northlake Blvd & DDI NB Crossover Intersection

Movement	SE	SE	SE	SE	SW	SW	SW	SW
Directions Served	L	L	L	L	R	R	R	R
Maximum Queue (ft)	191	183	176	154	275	224	187	206
Average Queue (ft)	154	151	146	121	237	108	70	72
95th Queue (ft)	180	164	160	171	256	217	143	155
Link Distance (ft)	85	85	85	85	132	132	132	132
Upstream Blk Time (%)	26	53	57	26	69	15	2	2
Queuing Penalty (veh)	146	293	315	142	322	70	7	8
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 5: Northlake Blvd & Roan Ln

Movement	WB	WB	WB	WB	WB	SB	NE	NE	NE
Directions Served	T	T	T	T	T	>	R	R	R
Maximum Queue (ft)	629	630	622	563	116	170	66	121	131
Average Queue (ft)	597	598	476	236	4	153	4	8	11
95th Queue (ft)	616	639	784	654	82	176	28	58	63
Link Distance (ft)	549	549	549	549	549	159	114	114	114
Upstream Blk Time (%)	69	47	11	0	0	100	0	0	0
Queuing Penalty (veh)	343	232	55	2	1	0	0	2	2
Storage Bay Dist (ft)									
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 6: Sandtree Dr/Sunrise Dr & Northlake Blvd

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	TR
Maximum Queue (ft)	70	405	547	556	558	90	98	400	713	692	690	350
Average Queue (ft)	12	112	349	392	413	31	21	309	666	659	653	324
95th Queue (ft)	48	252	558	580	604	70	67	573	688	682	702	451
Link Distance (ft)			549	549	549	549			641	641	641	
Upstream Blk Time (%)			0	0	0				80	45	38	
Queuing Penalty (veh)			1	2	2				0	0	0	
Storage Bay Dist (ft)	370	370					300	300				300
Storage Blk Time (%)		0	5						95		26	15
Queuing Penalty (veh)		0	8						137		175	78

Intersection: 6: Sandtree Dr/Sunrise Dr & Northlake Blvd

Movement	NB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	T	R	R	L	L	TR
Maximum Queue (ft)	371	414	481	351	210	199	258	241
Average Queue (ft)	267	319	226	136	57	155	201	121
95th Queue (ft)	442	495	629	303	173	237	282	223
Link Distance (ft)			491	491			242	242
Upstream Blk Time (%)			28	1			7	3
Queuing Penalty (veh)			0	0			16	7
Storage Bay Dist (ft)	325	325			350	150		
Storage Blk Time (%)	12	42	0	0		13	33	
Queuing Penalty (veh)	2	6	0	0		20	53	

Intersection: 8: Sunrise Dr & Alley Road

Movement	EB	NB	NB	SB
Directions Served	LR	L	T	TR
Maximum Queue (ft)	112	91	94	353
Average Queue (ft)	34	24	10	88
95th Queue (ft)	81	67	51	316
Link Distance (ft)	429	242	242	573
Upstream Blk Time (%)				2
Queuing Penalty (veh)				0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 31: Northlake Blvd & I-95 SB-Off Ramp Right Turn

Movement	WB	WB	WB	SW	SW	SW
Directions Served	T	T	T	R	R	R
Maximum Queue (ft)	10	32	25	269	208	186
Average Queue (ft)	0	2	2	136	118	101
95th Queue (ft)	6	15	13	229	185	164
Link Distance (ft)	133	133	133	382	382	382
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 32: I-95 SB-On Ramp & Northlake Blvd

Movement	EB	EB	EB	EB
Directions Served	T	T	T	T
Maximum Queue (ft)	350	73	61	54
Average Queue (ft)	268	3	11	2
95th Queue (ft)	373	35	40	21
Link Distance (ft)	266	266	266	266
Upstream Blk Time (%)	9			
Queuing Penalty (veh)	54			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 33: Northlake Blvd & I-95 SB-Off Ramp Left Turn

Movement	EB	EB	EB	EB	SE	SE	SE
Directions Served	T	T	T	T	L	L	L
Maximum Queue (ft)	104	132	186	104	532	509	493
Average Queue (ft)	8	36	58	11	494	483	310
95th Queue (ft)	54	108	141	57	512	542	420
Link Distance (ft)	97	97	97	97	282	282	282
Upstream Blk Time (%)	0	0	2	0	85	75	13
Queuing Penalty (veh)	1	2	9	2	294	259	43
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 34: I-95 SB-On Ramp & DDI SB Crossover Intersection/Northlake Blvd

Movement	WB	WB	WB	WB	WB
Directions Served	L	LT	T	T	T
Maximum Queue (ft)	26	78	77	115	119
Average Queue (ft)	1	6	4	11	18
95th Queue (ft)	18	44	45	69	76
Link Distance (ft)	202	202	202	202	202
Upstream Blk Time (%)		0	0	0	0
Queuing Penalty (veh)		0	0	1	2
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 35: I-95 SB-Off Ramp Right Turn & I-95 SB-Off Ramp Left Turn/I-95 SB-Off Ramp

Movement	SB	SB	SB	SB	SB
Directions Served	T	T	R	R	R
Maximum Queue (ft)	1154	1148	600	567	111
Average Queue (ft)	1010	1010	540	291	4
95th Queue (ft)	1355	1398	802	716	75
Link Distance (ft)	1098	1098			
Upstream Blk Time (%)	22	48			
Queuing Penalty (veh)	0	0			
Storage Bay Dist (ft)			500	500	500
Storage Blk Time (%)		64	7	0	
Queuing Penalty (veh)		591	34	1	

Intersection: 36: I-95 SB-On Ramp

Movement	SE
Directions Served	R
Maximum Queue (ft)	66
Average Queue (ft)	13
95th Queue (ft)	46
Link Distance (ft)	353
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 41: Northlake Blvd & I-95 NB-On Ramp

Movement	EB	EB	EB	EB
Directions Served	R	R	R	R
Maximum Queue (ft)	203	249	258	232
Average Queue (ft)	124	182	198	113
95th Queue (ft)	220	255	254	242
Link Distance (ft)	204	204	204	204
Upstream Blk Time (%)	0	2	5	2
Queuing Penalty (veh)	1	11	34	12
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 42: I-95 NB-Off Ramp Left Turn & Northlake Blvd

Movement	WB	WB	WB	NW	NW	NW
Directions Served	T	T	T	L	L	L
Maximum Queue (ft)	40	5	7	216	188	126
Average Queue (ft)	3	0	0	131	101	50
95th Queue (ft)	22	4	5	191	166	107
Link Distance (ft)	101	101	101	272	272	272
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 43: DDI NB Crossover Intersection & I-95 NB-On Ramp/Northlake Blvd

Movement	WB	WB	WB	WB	WB
Directions Served	L	L	L	L	T
Maximum Queue (ft)	215	213	134	30	10
Average Queue (ft)	186	135	9	1	0
95th Queue (ft)	222	234	62	18	7
Link Distance (ft)	135	135	135	135	135
Upstream Blk Time (%)	69	21	0	0	
Queuing Penalty (veh)	359	108	1	0	
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 44: I-95 NB-Off Ramp Right Turn & Northlake Blvd

Movement	EB	EB	EB	NE	NE	NE
Directions Served	T	T	T	R	R	R
Maximum Queue (ft)	161	255	35	582	564	479
Average Queue (ft)	10	17	1	538	487	315
95th Queue (ft)	72	108	24	602	609	506
Link Distance (ft)	154	154	154	356	356	356
Upstream Blk Time (%)	0	0	0	65	55	7
Queuing Penalty (veh)	0	1	0	217	182	22
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 45: I-95 NB-On Ramp

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 46: I-95 NB-Off Ramp/I-95 NB-Off Ramp Left Turn & I-95 NB-Off Ramp Right Turn

Movement	NB	NB	NB	NB	NB
Directions Served	T	T	R	R	R
Maximum Queue (ft)	410	560	450	432	297
Average Queue (ft)	111	209	259	223	106
95th Queue (ft)	642	817	573	541	373
Link Distance (ft)	1214	1214			
Upstream Blk Time (%)	1	4			
Queuing Penalty (veh)	0	0			
Storage Bay Dist (ft)			500	500	500
Storage Blk Time (%)		4	6	3	0
Queuing Penalty (veh)		37	15	7	0

Network Summary

Network wide Queuing Penalty: 7895

Intersection: 1: Northlake Blvd & Military Trail

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	350	400	1018	985	983	320	249	348	549	589	604	369
Average Queue (ft)	307	372	987	864	676	181	130	163	313	357	372	110
95th Queue (ft)	460	524	1004	1174	1190	410	225	301	533	592	612	262
Link Distance (ft)			967	967	967				1057	1057	1057	1057
Upstream Blk Time (%)			88	8	8							
Queuing Penalty (veh)			0	0	0							
Storage Bay Dist (ft)	300	300				270	450	450				
Storage Blk Time (%)	48	70	47		49	0		0	2			
Queuing Penalty (veh)	197	288	227		118	0		0	9			

Intersection: 1: Northlake Blvd & Military Trail

Movement	B12	B12	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	T	T	L	L	T	T	T	R	L	L	T	T
Maximum Queue (ft)	92	94	240	290	1118	1199	1215	230	340	390	1159	1150
Average Queue (ft)	3	3	205	258	519	747	781	219	269	324	684	920
95th Queue (ft)	65	66	301	354	1029	1410	1512	267	414	479	1397	1482
Link Distance (ft)	492	492			1176	1176	1176				1124	1124
Upstream Blk Time (%)					0	6	37				31	4
Queuing Penalty (veh)					0	0	0				0	0
Storage Bay Dist (ft)			190	190				180	290	290		
Storage Blk Time (%)			21	40	18		6	60	40	57	1	
Queuing Penalty (veh)			51	99	99		29	149	112	160	4	

Intersection: 1: Northlake Blvd & Military Trail

Movement	SB	SB
Directions Served	T	R
Maximum Queue (ft)	1178	225
Average Queue (ft)	1061	225
95th Queue (ft)	1399	227
Link Distance (ft)	1124	
Upstream Blk Time (%)	65	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		175
Storage Blk Time (%)	3	80
Queuing Penalty (veh)	23	223

Intersection: 2: Keating Dr & Northlake Blvd

Movement	EB	EB	EB	EB	EB	EB	B12	B12	B12	WB	WB	WB
Directions Served	L	R	R	R	R	>	T	T	T	L	L	T
Maximum Queue (ft)	320	597	580	506	460	312	1097	1105	1124	249	270	406
Average Queue (ft)	159	567	422	300	247	129	1025	1021	928	187	240	323
95th Queue (ft)	406	579	639	519	431	300	1222	1239	1402	278	315	423
Link Distance (ft)		492	492	492	492		1057	1057	1057			270
Upstream Blk Time (%)		97	17	0	1		37	20	11		2	13
Queuing Penalty (veh)		534	91	2	5		272	150	81		0	112
Storage Bay Dist (ft)	270					270				200	200	
Storage Blk Time (%)	0	92			9	1				6	15	27
Queuing Penalty (veh)	1	52			21	3				37	95	120

Intersection: 2: Keating Dr & Northlake Blvd

Movement	WB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	T	T	T	R	L	T	>	>	L	L	TR
Maximum Queue (ft)	418	414	408	250	194	407	435	165	200	335	281
Average Queue (ft)	327	391	371	165	161	304	398	132	162	275	100
95th Queue (ft)	416	430	425	328	223	537	419	225	237	396	234
Link Distance (ft)	270	270	270			378	378			304	304
Upstream Blk Time (%)	16	29	25			20	74			63	2
Queuing Penalty (veh)	144	258	220			0	0			0	0
Storage Bay Dist (ft)				200	145			115	150		
Storage Blk Time (%)			28	0	36	2	76	3	57	72	
Queuing Penalty (veh)			102	0	17	5	206	9	53	68	

Intersection: 3: Northlake Blvd & DDI SB Crossover Intersection

Movement	NW	NW	NW	NW	NE	NE	NE	NE
Directions Served	L	L	L	L	R	R	R	R
Maximum Queue (ft)	173	192	172	164	277	237	251	260
Average Queue (ft)	158	158	148	141	233	173	179	202
95th Queue (ft)	175	175	169	161	254	256	272	289
Link Distance (ft)	92	92	92	92	122	122	122	122
Upstream Blk Time (%)	48	35	26	25	82	39	23	33
Queuing Penalty (veh)	305	225	163	157	452	218	128	181
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 4: Northlake Blvd & DDI NB Crossover Intersection

Movement	SE	SE	SE	SE	SW	SW	SW	SW
Directions Served	L	L	L	L	R	R	R	R
Maximum Queue (ft)	162	157	155	137	239	253	253	239
Average Queue (ft)	131	134	130	94	214	236	176	126
95th Queue (ft)	181	172	167	143	270	262	265	214
Link Distance (ft)	85	85	85	85	132	132	132	132
Upstream Blk Time (%)	24	24	18	11	29	42	14	5
Queuing Penalty (veh)	114	112	83	54	200	292	100	35
Storage Bay Dist (ft)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 5: Northlake Blvd & Roan Ln

Movement	WB	WB	WB	WB	WB	SB	NE	NE	NE	NE
Directions Served	T	T	T	T	T	>	R	R	R	R
Maximum Queue (ft)	178	227	173	23	37	204	12	40	52	22
Average Queue (ft)	18	37	13	1	1	140	0	2	3	1
95th Queue (ft)	101	151	97	16	23	219	8	29	23	11
Link Distance (ft)	549	549	549	549	549	159	114	114	114	114
Upstream Blk Time (%)						42		0		
Queuing Penalty (veh)						0		0		
Storage Bay Dist (ft)										
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 6: Sandtree Dr/Sunrise Dr & Northlake Blvd

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	TR
Maximum Queue (ft)	282	337	494	504	510	66	192	295	639	658	703	350
Average Queue (ft)	112	138	326	344	357	23	82	141	370	558	664	349
95th Queue (ft)	242	286	462	481	491	54	193	241	588	735	679	355
Link Distance (ft)			549	549	549	549			642	642	642	
Upstream Blk Time (%)			0		0				0	5	49	
Queuing Penalty (veh)			0		0				0	0	0	
Storage Bay Dist (ft)	370	370					300	300				300
Storage Blk Time (%)	0	0	3						10		4	48
Queuing Penalty (veh)	0	0	8						21		38	384

Intersection: 6: Sandtree Dr/Sunrise Dr & Northlake Blvd

Movement	NB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	T	R	R	L	L	TR
Maximum Queue (ft)	374	425	513	360	290	199	253	244
Average Queue (ft)	305	370	234	183	121	129	163	147
95th Queue (ft)	430	479	622	308	266	218	246	243
Link Distance (ft)			491	491			242	242
Upstream Blk Time (%)			18	0			2	7
Queuing Penalty (veh)			0	0			4	14
Storage Bay Dist (ft)	325	325			350	150		
Storage Blk Time (%)	3	37		0	0	6	19	
Queuing Penalty (veh)	1	7		1	0	7	20	

Intersection: 8: Sunrise Dr & Alley Road

Movement	EB	NB	NB	SB
Directions Served	LR	L	T	TR
Maximum Queue (ft)	117	136	55	210
Average Queue (ft)	41	60	6	75
95th Queue (ft)	115	126	35	353
Link Distance (ft)	429	242	242	573
Upstream Blk Time (%)				7
Queuing Penalty (veh)				0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 31: Northlake Blvd & I-95 SB-Off Ramp Right Turn

Movement	WB	WB	WB	WB	SW	SW	SW
Directions Served	T	T	T	T	R	R	R
Maximum Queue (ft)	257	268	280	288	626	627	619
Average Queue (ft)	85	143	186	204	580	573	540
95th Queue (ft)	252	314	321	353	673	679	688
Link Distance (ft)	133	133	133	133	382	382	382
Upstream Blk Time (%)	3	5	9	11	87	84	74
Queuing Penalty (veh)	20	33	57	68	301	290	256
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 32: I-95 SB-On Ramp & Northlake Blvd

Movement	EB	EB	EB	EB
Directions Served	T	T	T	T
Maximum Queue (ft)	331	370	257	226
Average Queue (ft)	280	304	36	36
95th Queue (ft)	311	359	156	139
Link Distance (ft)	266	266	266	266
Upstream Blk Time (%)	29	31	0	0
Queuing Penalty (veh)	160	170	2	1
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 33: Northlake Blvd & I-95 SB-Off Ramp Left Turn

Movement	EB	EB	EB	SE	SE	SE
Directions Served	T	T	T	L	L	L
Maximum Queue (ft)	72	22	21	321	296	273
Average Queue (ft)	4	1	1	145	122	118
95th Queue (ft)	30	16	10	258	232	221
Link Distance (ft)	97	97	97	282	282	282
Upstream Blk Time (%)	0	0		1	0	0
Queuing Penalty (veh)	0	0		2	1	0
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 34: I-95 SB-On Ramp & DDI SB Crossover Intersection/Northlake Blvd

Movement	WB	WB	WB	WB	WB
Directions Served	L	LT	T	T	T
Maximum Queue (ft)	241	272	239	171	155
Average Queue (ft)	112	221	166	81	62
95th Queue (ft)	256	302	260	165	138
Link Distance (ft)	202	202	202	202	202
Upstream Blk Time (%)	1	10	1	0	0
Queuing Penalty (veh)	4	73	10	0	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 35: I-95 SB-Off Ramp Right Turn & I-95 SB-Off Ramp Left Turn/I-95 SB-Off Ramp

Movement	SB	SB	SB	SB	SB
Directions Served	T	T	R	R	R
Maximum Queue (ft)	1124	1148	550	533	486
Average Queue (ft)	631	754	474	437	260
95th Queue (ft)	1348	1396	665	657	505
Link Distance (ft)	1098	1098			
Upstream Blk Time (%)	4	24			
Queuing Penalty (veh)	0	0			
Storage Bay Dist (ft)			500	500	500
Storage Blk Time (%)		15	15	2	0
Queuing Penalty (veh)		158	59	8	0

Intersection: 36: I-95 SB-On Ramp

Movement	SB	SB	SE
Directions Served	T	T	R
Maximum Queue (ft)	34	112	318
Average Queue (ft)	3	24	93
95th Queue (ft)	27	76	223
Link Distance (ft)	251	251	353
Upstream Blk Time (%)			0
Queuing Penalty (veh)			1
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 41: Northlake Blvd & I-95 NB-On Ramp

Movement	EB	EB	EB	EB
Directions Served	R	R	R	R
Maximum Queue (ft)	105	136	126	62
Average Queue (ft)	22	29	39	6
95th Queue (ft)	72	92	101	35
Link Distance (ft)	204	204	204	204
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 42: I-95 NB-Off Ramp Left Turn & Northlake Blvd

Movement	WB	WB	WB	WB	NW	NW	NW
Directions Served	T	T	T	T	L	L	L
Maximum Queue (ft)	147	141	127	126	465	459	468
Average Queue (ft)	50	74	33	21	338	433	433
95th Queue (ft)	103	116	93	73	507	474	494
Link Distance (ft)	101	101	101	101	272	272	272
Upstream Blk Time (%)	0	2	0	0	52	90	73
Queuing Penalty (veh)	1	11	1	0	129	225	182
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 43: DDI NB Crossover Intersection & I-95 NB-On Ramp/Northlake Blvd

Movement	WB	WB	WB	WB	WB
Directions Served	L	L	L	L	T
Maximum Queue (ft)	213	213	163	100	42
Average Queue (ft)	90	126	60	7	1
95th Queue (ft)	206	229	160	53	30
Link Distance (ft)	135	135	135	135	135
Upstream Blk Time (%)	4	9	1	0	0
Queuing Penalty (veh)	35	74	10	0	1
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 44: I-95 NB-Off Ramp Right Turn & Northlake Blvd

Movement	EB	EB	EB	NE	NE	NE
Directions Served	T	T	T	R	R	R
Maximum Queue (ft)	44	34	10	541	561	426
Average Queue (ft)	2	2	1	349	362	153
95th Queue (ft)	20	17	6	611	625	407
Link Distance (ft)	154	154	154	356	356	356
Upstream Blk Time (%)				29	31	3
Queuing Penalty (veh)				96	104	11
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 45: I-95 NB-On Ramp

Movement	NB	NB	NW
Directions Served	T	T	R
Maximum Queue (ft)	59	100	435
Average Queue (ft)	3	47	133
95th Queue (ft)	27	93	326
Link Distance (ft)	305	305	411
Upstream Blk Time (%)			1
Queuing Penalty (veh)			9
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 46: I-95 NB-Off Ramp/I-95 NB-Off Ramp Left Turn & I-95 NB-Off Ramp Right Turn

Movement	NB	NB	NB	NB	NB
Directions Served	T	T	R	R	R
Maximum Queue (ft)	1257	1275	550	257	171
Average Queue (ft)	1108	1139	467	63	28
95th Queue (ft)	1609	1599	760	241	150
Link Distance (ft)	1214	1214			
Upstream Blk Time (%)	21	60			
Queuing Penalty (veh)	0	0			
Storage Bay Dist (ft)			500	500	500
Storage Blk Time (%)		51	0		
Queuing Penalty (veh)		513	0		

Network Summary

Network wide Queuing Penalty: 10849

Alternative 3E

Intersection: 1: Military Trail & Northlake Boulevard

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	343	396	772	792	829	320	256	283	518	563	576	446
Average Queue (ft)	216	260	458	721	790	219	130	151	381	423	444	217
95th Queue (ft)	338	378	807	885	807	433	230	252	494	541	559	379
Link Distance (ft)			769	769	769				890	890	890	890
Upstream Blk Time (%)			1	13	65							
Queuing Penalty (veh)			0	0	0							
Storage Bay Dist (ft)	300	300				270	450	450				
Storage Blk Time (%)	2	7	4		60				2			
Queuing Penalty (veh)	12	43	27		177				6			

Intersection: 1: Military Trail & Northlake Boulevard

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	240	290	520	486	525	230	340	390	541	481	524	225
Average Queue (ft)	234	288	470	403	423	226	326	389	497	322	334	206
95th Queue (ft)	258	295	552	522	577	250	392	391	517	508	562	273
Link Distance (ft)			464	464	464				474	474	474	
Upstream Blk Time (%)			50	4	22				74	0	7	
Queuing Penalty (veh)			0	0	0				0	0	0	
Storage Bay Dist (ft)	190	190				180	290	290				175
Storage Blk Time (%)	35	77	32		25	47	5	83	2		19	22
Queuing Penalty (veh)	96	212	125		94	129	10	178	7		77	47

Intersection: 2: Keating Drive & Northlake Boulevard

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	T	T	T	T	R	L	L	T	T	T	T
Maximum Queue (ft)	267	487	500	545	613	263	154	203	335	315	321	303
Average Queue (ft)	48	234	237	247	295	75	76	99	154	154	171	138
95th Queue (ft)	186	503	511	542	620	278	141	167	309	297	311	281
Link Distance (ft)		652	652	652	652				547	547	547	547
Upstream Blk Time (%)		0	0	0	3							
Queuing Penalty (veh)		2	1	0	13							
Storage Bay Dist (ft)	270					270	450	450				
Storage Blk Time (%)		16			23	0						
Queuing Penalty (veh)		5			19	0						

Intersection: 2: Keating Drive & Northlake Boulevard

Movement	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	R	L	T	R	R	L	L	TR
Maximum Queue (ft)	58	134	46	299	165	200	358	98
Average Queue (ft)	7	36	10	206	97	135	272	24
95th Queue (ft)	35	99	35	346	202	245	405	72
Link Distance (ft)			272	272			324	324
Upstream Blk Time (%)				41			48	
Queuing Penalty (veh)				0			0	
Storage Bay Dist (ft)	365	145			115	150		
Storage Blk Time (%)		0		55	13	31	68	
Queuing Penalty (veh)		0		56	13	34	75	

Intersection: 3: Northlake Boulevard & I95 SB Off Ramp

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	SB
Directions Served	T	T	T	T	T	R	L	T	T	T	T	L
Maximum Queue (ft)	325	580	583	590	599	530	77	191	215	201	206	564
Average Queue (ft)	317	533	530	527	498	250	21	71	66	84	103	382
95th Queue (ft)	367	642	638	647	672	685	59	157	152	165	188	548
Link Distance (ft)		547	547	547	547		371	371	371	371	371	
Upstream Blk Time (%)		40	37	37	15	0						
Queuing Penalty (veh)		203	190	188	78	0						
Storage Bay Dist (ft)	275					480						600
Storage Blk Time (%)	56	80			28	0						0
Queuing Penalty (veh)	143	203			195	0						0

Intersection: 3: Northlake Boulevard & I95 SB Off Ramp

Movement	SB	SB	SB	SB	SB
Directions Served	L	L	R	R	R
Maximum Queue (ft)	624	689	689	576	371
Average Queue (ft)	433	376	372	316	169
95th Queue (ft)	601	574	575	494	314
Link Distance (ft)		1416	1416		
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	600			500	500
Storage Blk Time (%)	1	1	2	0	
Queuing Penalty (veh)	2	4	11	1	

Intersection: 4: I95 NB Off Ramp & Northlake Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	T	T	T	T	T	T	L	L
Maximum Queue (ft)	442	435	428	445	441	173	246	188	196	180	223	286
Average Queue (ft)	344	395	399	405	390	63	124	95	95	96	108	160
95th Queue (ft)	554	441	419	429	467	135	212	161	163	164	208	257
Link Distance (ft)	371	371	371	371	371		342	342	342	342		
Upstream Blk Time (%)	13	21	19	25	17							
Queuing Penalty (veh)	60	95	87	116	78							
Storage Bay Dist (ft)						250					600	600
Storage Blk Time (%)							0					
Queuing Penalty (veh)							0					

Intersection: 4: I95 NB Off Ramp & Northlake Boulevard

Movement	NB	NB	NB	NB
Directions Served	L	R	R	R
Maximum Queue (ft)	333	413	381	234
Average Queue (ft)	193	245	216	91
95th Queue (ft)	290	361	329	218
Link Distance (ft)	1601	1601		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			500	500
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Northlake Boulevard & Roan Lane

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	SB
Directions Served	L	T	T	T	T	T	T	T	T	T	R	R
Maximum Queue (ft)	139	157	235	230	86	75	42	47	78	154	46	71
Average Queue (ft)	60	10	23	25	5	15	7	10	18	40	5	20
95th Queue (ft)	120	94	157	151	70	52	29	35	58	110	25	54
Link Distance (ft)		342	342	342	342		311	311	311	311		150
Upstream Blk Time (%)			0	0	0							
Queuing Penalty (veh)			0	0	0							
Storage Bay Dist (ft)	270					200					270	
Storage Blk Time (%)		0										
Queuing Penalty (veh)		0										

Intersection: 6: Sunrise Drive & Northlake Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	T	T	T	R	L	L	T	T	T	TR	L
Maximum Queue (ft)	194	257	274	284	85	138	185	1007	1038	1084	350	301
Average Queue (ft)	111	226	245	254	37	38	88	391	750	1044	349	170
95th Queue (ft)	197	283	287	273	76	116	158	892	1283	1060	353	275
Link Distance (ft)		194	194	194	194			1022	1022	1022		
Upstream Blk Time (%)	0	19	24	28				0	2	55		
Queuing Penalty (veh)	0	145	189	219				0	0	0		
Storage Bay Dist (ft)	250					400	400				300	325
Storage Blk Time (%)	0	19						0		3	46	0
Queuing Penalty (veh)	3	21						0		18	246	0

Intersection: 6: Sunrise Drive & Northlake Boulevard

Movement	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	R	L	L	TR
Maximum Queue (ft)	279	68	208	193	200	386	281
Average Queue (ft)	100	18	108	50	175	278	107
95th Queue (ft)	199	51	190	155	237	399	221
Link Distance (ft)		564	564			360	360
Upstream Blk Time (%)						13	1
Queuing Penalty (veh)						0	0
Storage Bay Dist (ft)	325			190	150		
Storage Blk Time (%)	0		1	0	20	56	
Queuing Penalty (veh)	0		1	0	31	88	

Intersection: 21: Northlake Boulevard

Movement	EB	EB	EB	EB
Directions Served	T	T	T	R
Maximum Queue (ft)	2	74	133	70
Average Queue (ft)	0	5	14	7
95th Queue (ft)	1	72	155	88
Link Distance (ft)	890	890	890	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				300
Storage Blk Time (%)			1	
Queuing Penalty (veh)			6	

Intersection: 23:

Movement	NB	NB	NE
Directions Served	T	T	L
Maximum Queue (ft)	71	20	295
Average Queue (ft)	11	1	47
95th Queue (ft)	44	10	176
Link Distance (ft)	510	510	512
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 51: Northlake Boulevard

Movement	EB	EB	EB	EB	WB
Directions Served	T	T	T	T	T
Maximum Queue (ft)	240	280	298	43	5
Average Queue (ft)	53	89	119	1	0
95th Queue (ft)	201	255	276	31	4
Link Distance (ft)	311	311	311	311	194
Upstream Blk Time (%)	1	1	1		
Queuing Penalty (veh)	5	7	10		
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 53:

Movement	SB	SE	SE
Directions Served	T	R	R
Maximum Queue (ft)	408	119	106
Average Queue (ft)	163	46	14
95th Queue (ft)	436	105	64
Link Distance (ft)	426	429	429
Upstream Blk Time (%)	6		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 4097

Intersection: 1: Military Trail & Northlake Boulevard

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	350	398	785	787	803	320	240	427	670	759	836	611
Average Queue (ft)	311	357	580	659	737	206	132	185	362	406	423	169
95th Queue (ft)	405	465	994	965	937	424	227	380	620	684	724	456
Link Distance (ft)			769	769	769				890	890	890	890
Upstream Blk Time (%)			29	12	52				0	0	1	0
Queuing Penalty (veh)			0	0	0				0	2	4	1
Storage Bay Dist (ft)	300	300				270	450	450				
Storage Blk Time (%)	30	58	0		64			0	6			
Queuing Penalty (veh)	122	240	1		154			0	23			

Intersection: 1: Military Trail & Northlake Boulevard

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (ft)	240	290	496	460	501	230	334	387	478	470	529	225
Average Queue (ft)	218	279	392	303	371	222	120	236	243	284	495	225
95th Queue (ft)	291	318	570	450	572	253	315	400	422	484	531	225
Link Distance (ft)			464	464	464				474	474	474	
Upstream Blk Time (%)			13	0	10				3	0	83	
Queuing Penalty (veh)			0	0	0				0	0	0	
Storage Bay Dist (ft)	190	190				180	290	290				175
Storage Blk Time (%)	9	40	20		7	38	0	11	2		3	81
Queuing Penalty (veh)	21	100	108		31	93	0	32	9		28	228

Intersection: 2: Keating Drive & Northlake Boulevard

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	T	T	T	T	R	L	L	T	T	T	T
Maximum Queue (ft)	102	149	141	161	285	131	258	279	407	463	494	471
Average Queue (ft)	45	78	74	73	165	41	132	155	215	237	266	229
95th Queue (ft)	90	133	121	133	260	109	228	248	348	370	405	376
Link Distance (ft)		652	652	652	652				547	547	547	547
Upstream Blk Time (%)											0	0
Queuing Penalty (veh)											0	0
Storage Bay Dist (ft)	270					270	450	450				
Storage Blk Time (%)					0				0			0
Queuing Penalty (veh)					1				0			1

Intersection: 2: Keating Drive & Northlake Boulevard

Movement	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	R	L	T	R	R	L	L	TR
Maximum Queue (ft)	361	194	298	304	165	197	276	210
Average Queue (ft)	35	175	179	187	132	78	153	87
95th Queue (ft)	148	225	361	310	199	189	242	172
Link Distance (ft)			272	272			324	324
Upstream Blk Time (%)			9	4			0	
Queuing Penalty (veh)			0	0			0	
Storage Bay Dist (ft)	365	145			115	150		
Storage Blk Time (%)	0	30	0	16	7	0	17	
Queuing Penalty (veh)	0	14	1	45	19	0	16	

Intersection: 3: Northlake Boulevard & I95 SB Off Ramp

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	SB
Directions Served	T	T	T	T	T	R	L	T	T	T	T	L
Maximum Queue (ft)	206	246	250	292	202	56	33	205	144	266	171	435
Average Queue (ft)	96	141	154	183	77	2	14	45	39	60	65	287
95th Queue (ft)	186	219	230	269	162	39	31	128	86	149	122	456
Link Distance (ft)		547	547	547	547		371	371	371	371	371	
Upstream Blk Time (%)								0		0		
Queuing Penalty (veh)								0		0		
Storage Bay Dist (ft)	275					480						600
Storage Blk Time (%)	0	0										1
Queuing Penalty (veh)	0	0										1

Intersection: 3: Northlake Boulevard & I95 SB Off Ramp

Movement	SB	SB	SB	SB	SB
Directions Served	L	L	R	R	R
Maximum Queue (ft)	489	678	727	558	368
Average Queue (ft)	328	308	396	343	192
95th Queue (ft)	502	612	636	517	317
Link Distance (ft)		1416	1416		
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	600			500	500
Storage Blk Time (%)	2	2	3	0	
Queuing Penalty (veh)	5	8	20	1	

Intersection: 4: I95 NB Off Ramp & Northlake Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	T	T	T	T	T	T	T	T	T	R	L
Maximum Queue (ft)	256	365	405	402	332	237	292	276	329	345	300	310
Average Queue (ft)	30	206	240	256	138	97	161	166	200	203	20	188
95th Queue (ft)	136	368	384	401	328	210	262	256	309	320	137	277
Link Distance (ft)	371	371	371	371	371		342	342	342	342	342	
Upstream Blk Time (%)	0	1	2	5	2		0	0	0	0	0	
Queuing Penalty (veh)	0	5	8	19	10		1	0	1	2	1	
Storage Bay Dist (ft)						250						600
Storage Blk Time (%)						0	1					
Queuing Penalty (veh)						0	4					

Intersection: 4: I95 NB Off Ramp & Northlake Boulevard

Movement	NB	NB	NB	NB	NB
Directions Served	L	L	R	R	R
Maximum Queue (ft)	377	447	479	444	343
Average Queue (ft)	243	282	296	269	160
95th Queue (ft)	345	390	439	404	302
Link Distance (ft)		1601	1601		
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	600			500	500
Storage Blk Time (%)			0	0	
Queuing Penalty (veh)			0	0	

Intersection: 5: Northlake Boulevard & Roan Lane

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	SB
Directions Served	L	T	T	T	T	T	T	T	T	T	R	R
Maximum Queue (ft)	314	360	362	362	304	98	67	50	71	173	49	156
Average Queue (ft)	166	190	210	220	54	13	14	9	18	61	10	57
95th Queue (ft)	296	427	440	441	234	54	46	33	55	138	37	117
Link Distance (ft)		342	342	342	342		311	311	311	311		150
Upstream Blk Time (%)		2	3	4	0							0
Queuing Penalty (veh)		15	20	30	3							0
Storage Bay Dist (ft)	270					200					270	
Storage Blk Time (%)	0	8				0						
Queuing Penalty (veh)	1	11				0						

Intersection: 6: Sunrise Drive & Northlake Boulevard

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	NB
Directions Served	L	T	T	T	R	L	L	T	T	T	TR	L
Maximum Queue (ft)	194	282	277	292	94	128	156	1029	1059	1077	350	375
Average Queue (ft)	86	257	256	258	34	27	75	576	927	1045	349	259
95th Queue (ft)	187	278	265	274	77	95	143	1043	1223	1061	352	425
Link Distance (ft)		194	194	194	194			1022	1022	1022		
Upstream Blk Time (%)	0	46	46	48				0	7	65		
Queuing Penalty (veh)	0	311	316	330				0	0	0		
Storage Bay Dist (ft)	250					400	400				300	325
Storage Blk Time (%)	0	46						0		6	54	1
Queuing Penalty (veh)	2	36						1		52	431	0

Intersection: 6: Sunrise Drive & Northlake Boulevard

Movement	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	R	L	L	TR
Maximum Queue (ft)	425	584	265	219	199	379	290
Average Queue (ft)	352	168	152	90	167	247	137
95th Queue (ft)	470	570	235	208	239	363	249
Link Distance (ft)		564	564			360	360
Upstream Blk Time (%)		4				5	0
Queuing Penalty (veh)		0				0	0
Storage Bay Dist (ft)	325			190	150		
Storage Blk Time (%)	24		3	0	24	58	
Queuing Penalty (veh)	5		4	0	26	63	

Intersection: 21: Northlake Boulevard

Movement	WB	WB	WB
Directions Served	T	T	T
Maximum Queue (ft)	112	140	307
Average Queue (ft)	4	5	12
95th Queue (ft)	79	82	138
Link Distance (ft)	652	652	652
Upstream Blk Time (%)			0
Queuing Penalty (veh)			0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 23:

Movement	NB	NB	NE
Directions Served	T	T	L
Maximum Queue (ft)	75	24	513
Average Queue (ft)	19	1	134
95th Queue (ft)	59	14	367
Link Distance (ft)	510	510	512
Upstream Blk Time (%)			1
Queuing Penalty (veh)			0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 51: Northlake Boulevard

Movement	EB	EB	EB	EB	WB	WB	WB
Directions Served	T	T	T	T	T	T	T
Maximum Queue (ft)	396	403	398	50	6	9	12
Average Queue (ft)	332	351	362	2	0	1	0
95th Queue (ft)	471	463	455	35	4	8	6
Link Distance (ft)	311	311	311	311	194	194	194
Upstream Blk Time (%)	23	28	32				
Queuing Penalty (veh)	156	190	217				
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 53:

Movement	SB	SE	SE
Directions Served	T	R	R
Maximum Queue (ft)	462	137	128
Average Queue (ft)	226	74	33
95th Queue (ft)	511	126	105
Link Distance (ft)	426	429	429
Upstream Blk Time (%)	8		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 3603

APPENDIX V

(PGA Boulevard SB On-Ramps Operational Analysis Results)

Alternative 1

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	L. Ferreira	Freeway/Dir of Travel	I-95 Southbound
Agency or Company	Stanley Consultants	Junction	PGA Blvd Fly - Over Ramp
Date Performed	9/6/2016	Jurisdiction	Palm Beach County
Analysis Time Period	AM Peak Period	Analysis Year	2040

Project Description I-95 at Northlake Boulevard PD&E - Alt 1

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 4	☑ Yes ☑ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☐ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 1500	L_{down} = 400 ft
V_u = veh/h	Deceleration Lane Length L_D:	V_D = 924 veh/h
	Freeway Volume, V_F: 5700	
	Ramp Volume, V_R: 1062	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 40.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5700	0.95	Composite	4	0	0.980	1.00	6120
Ramp	1062	0.95	Grade	3	0	0.985	1.00	1135
UpStream								
DownStream	924	0.95	Grade	3	0	0.985	1.00	987

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.076 using Equation 0 (Exhibit 13-6)

V_{12} = 465 pc/h

V_3 or V_{av34} 2827 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☑ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 2448 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	7255	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3583	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 23.5 (pc/mi/ln)

LOS = C (Exhibit 13-2)

Speed Determination

M_S = 0.341 (Exibit 13-11)

S_R= 57.1 mph (Exhibit 13-11)

S_0= 60.2 mph (Exhibit 13-11)

S = 58.6 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	L. Ferreira	Freeway/Dir of Travel	I-95 Southbound
Agency or Company	Stanley Consultants	Junction	PGA Blvd EB-SB On-Ramp
Date Performed	9/6/2016	Jurisdiction	Palm Beach County
Analysis Time Period	AM Peak Period	Analysis Year	2040

Project Description I-95 at Northlake Boulevard PD&E - Alt 1

Inputs

Upstream Adj Ramp

☑ Yes ☑ On

☐ No ☐ Off

L_{up} = 400 ft

V_u = 1062 veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	1500
Deceleration Lane Length L_D	
Freeway Volume, V_F	6762
Ramp Volume, V_R	924
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	6762	0.95	Composite	4	0	0.980	1.00	7260
Ramp	924	0.95	Grade	3	0	0.985	1.00	987
UpStream	1062	0.95	Grade	3	0	0.985	1.00	1135
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.094 using Equation 0 (Exhibit 13-6)

V_{12} = 500 pc/h

V_3 or V_{av34} 2400 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 2120 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	6287	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3107	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 19.9 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.303 (Exibit 13-11)

S_R= 58.0 mph (Exhibit 13-11)

S_0= 61.1 mph (Exhibit 13-11)

S = 59.5 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	L. Ferreira	Freeway/Dir of Travel	I-95 Southbound
Agency or Company	Stanley Consultants	Junction	PGA Blvd Fly - Over Ramp
Date Performed	9/6/2016	Jurisdiction	Palm Beach County
Analysis Time Period	PM Peak Period	Analysis Year	2040

Project Description I-95 at Northlake Boulevard PD&E - Alt 1

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☐ Yes ☐ On	Freeway Number of Lanes, N: 4	☑ Yes ☑ On
☑ No ☐ Off	Ramp Number of Lanes, N: 1	☐ No ☐ Off
L_{up} = ft	Acceleration Lane Length, L_A: 1500	L_{down} = 400 ft
V_u = veh/h	Deceleration Lane Length L_D	V_D = 998 veh/h
	Freeway Volume, V_F: 2447	
	Ramp Volume, V_R: 1671	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 40.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	2447	0.95	Composite	4	0	0.980	1.00	2627
Ramp	1671	0.95	Grade	3	0	0.985	1.00	1785
UpStream								
DownStream	998	0.95	Grade	3	0	0.985	1.00	1066

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.413 using Equation 0 (Exhibit 13-6)

V_{12} = 1084 pc/h

V_3 or V_{av34} 771 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 1084 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4412	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2869	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 17.6 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.270 (Exibit 13-11)

S_R= 58.8 mph (Exhibit 13-11)

S_0= 64.0 mph (Exhibit 13-11)

S = 60.5 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	L. Ferreira	Freeway/Dir of Travel	I-95 Southbound
Agency or Company	Stanley Consultants	Junction	PGA Blvd EB-SB On-Ramp
Date Performed	9/6/2016	Jurisdiction	Palm Beach County
Analysis Time Period	PM Peak Period	Analysis Year	2040

Project Description I-95 at Northlake Boulevard PD&E - Alt 1

Inputs

Upstream Adj Ramp

☑ Yes ☑ On

☐ No ☐ Off

L_{up} = 400 ft

V_u = 1671 veh/h

Freeway Number of Lanes, N	5
Ramp Number of Lanes, N	1
Acceleration Lane Length, L_A	1500
Deceleration Lane Length L_D	
Freeway Volume, V_F	4118
Ramp Volume, V_R	998
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	4118	0.95	Composite	4	0	0.980	1.00	4421
Ramp	998	0.95	Grade	3	0	0.985	1.00	1066
UpStream	1671	0.95	Grade	3	0	0.985	1.00	1785
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.085 using Equation 0 (Exhibit 13-6)

V_{12} = 292 pc/h

V_3 or V_{av34} 1578 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 1379 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	4515	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2445	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 14.7 (pc/mi/ln)

LOS = B (Exhibit 13-2)

Speed Determination

M_S = 0.261 (Exibit 13-11)

S_R= 59.0 mph (Exhibit 13-11)

S_0= 63.1 mph (Exhibit 13-11)

S = 60.8 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
V_{12}		Exhibit 13-8	

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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Alternative 2

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	L. Ferreira	Freeway/Dir of Travel	I-95 Southbound
Agency or Company	Stanley Consultants	Junction	PGA Blvd EB-SB On-Ramp
Date Performed	9/6/2016	Jurisdiction	Palm Beach County
Analysis Time Period	AM Peak Period	Analysis Year	2040

Project Description I-95 at Northlake Boulevard PD&E - Alt 2

Inputs

Upstream Adj Ramp		Downstream Adj Ramp
☑ Yes ☐ On	Freeway Number of Lanes, N: 4	☐ Yes ☐ On
☐ No ☑ Off	Ramp Number of Lanes, N: 2	☑ No ☐ Off
L_{up} = 3230 ft	Acceleration Lane Length, L_A: 1500	L_{down} = ft
V_u = 1062 veh/h	Deceleration Lane Length L_D:	V_D = veh/h
	Freeway Volume, V_F: 5700	
	Ramp Volume, V_R: 924	
	Freeway Free-Flow Speed, S_{FF}: 65.0	
	Ramp Free-Flow Speed, S_{FR}: 40.0	

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	5700	0.95	Composite	4	0	0.980	1.00	6120
Ramp	924	0.95	Grade	3	0	0.985	1.00	987
UpStream	1062	0.95	Grade	3	0	0.985	1.00	1135
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.209 using Equation 0 (Exhibit 13-6)

V_{12} = 1279 pc/h

V_3 or V_{av34} 2420 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 2448 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	7107	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	3435	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = 9.9 (pc/mi/ln)

LOS = A (Exhibit 13-2)

Speed Determination

M_S = 0.162 (Exibit 13-11)

S_R= 61.3 mph (Exhibit 13-11)

S_0= 60.2 mph (Exhibit 13-11)

S = 60.7 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*L. Ferreira*	Highway/Direction of Travel	*I-95 Southbound*
Agency or Company	*Stanley Consultants*	From/To	*PGA Blvd EB-SB On-Ramp CD Road*
Date Performed	*9/6/2016*	Jurisdiction	*Palm Beach County*
Analysis Time Period	*PM Peak Period*	Analysis Year	*2040*

Project Description *I-95 at Northlake Boulevard PD&E - Alt 2*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*2669*	veh/h	Peak-Hour Factor, PHF	*0.95*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs

Lane Width		ft
Rt-Side Lat. Clearance		ft
Number of Lanes, N	*2*	
Total Ramp Density, TRD		ramps/mi
FFS (measured)	*55.0*	mph
Base free-flow Speed, BFFS		mph

Calc Speed Adj and FFS

f_{LW}		mph
f_{LC}		mph
TRD Adjustment		mph
FFS	*55.0*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1433*	pc/h/ln
S	*55.0*	mph
D = v_p / S	*26.1*	pc/mi/ln
LOS	*D*	

Design (N)

Design (N)

Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h/ln
S		mph
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed
DDHV - Directional design hour volume

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst	L. Ferreira	Freeway/Dir of Travel	I-95 Southbound
Agency or Company	Stanley Consultants	Junction	PGA Blvd EB-SB On-Ramp
Date Performed	9/6/2016	Jurisdiction	Palm Beach County
Analysis Time Period	PM Peak Period	Analysis Year	2040

Project Description I-95 at Northlake Boulevard PD&E - Alt 2

Inputs

Upstream Adj Ramp

☑ Yes ☐ On

☐ No ☑ Off

L_{up} = 3230 ft

V_u = 1617 veh/h

Freeway Number of Lanes, N	4
Ramp Number of Lanes, N	2
Acceleration Lane Length, L_A	1500
Deceleration Lane Length L_D	
Freeway Volume, V_F	2447
Ramp Volume, V_R	998
Freeway Free-Flow Speed, S_{FF}	65.0
Ramp Free-Flow Speed, S_{FR}	35.0

Downstream Adj Ramp

☐ Yes ☐ On

☑ No ☐ Off

L_{down} = ft

V_D = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	%Truck	%Rv	f_{HV}	f_p	$v = V/PHF \times f_{HV} \times f_p$
Freeway	2447	0.95	Composite	4	0	0.980	1.00	2627
Ramp	998	0.95	Grade	3	0	0.985	1.00	1066
UpStream	1617	0.95	Grade	3	0	0.985	1.00	1728
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.209 using Equation 0 (Exhibit 13-6)

V_{12} = 549 pc/h

V_3 or V_{av34} 1039 pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☑ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☑ Yes ☐ No

If Yes, V_{12a} = 1050 pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_{FO}	3693	Exhibit 13-8		No

Flow Entering Merge Influence Area

	Actual	Max Desirable		Violation?
V_{R12}	2116	Exhibit 13-8	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = -6.7 (pc/mi/ln)

LOS = A (Exhibit 13-2)

Speed Determination

M_S = 0.038 (Exibit 13-11)

S_R= 64.1 mph (Exhibit 13-11)

S_0= 64.0 mph (Exhibit 13-11)

S = 64.1 mph (Exhibit 13-13)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = using Equation (Exhibit 13-7)

V_{12} = pc/h

V_3 or V_{av34} pc/h (Equation 13-14 or 13-17)

Is V_3 or V_{av34} > 2,700 pc/h? ☐ Yes ☐ No

Is V_3 or V_{av34} > 1.5 * V_{12}/2 ☐ Yes ☐ No

If Yes, V_{12a} = pc/h (Equation 13-16, 13-18, or 13-19)

Capacity Checks

	Actual	Capacity		LOS F?
V_F		Exhibit 13-8		
$V_{FO} = V_F - V_R$		Exhibit 13-8		
V_R		Exhibit 13-10		

Flow Entering Diverge Influence Area

	Actual	Max Desirable		Violation?
V_{12}		Exhibit 13-8		

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = (pc/mi/ln)

LOS = (Exhibit 13-2)

Speed Determination

D_s = (Exhibit 13-12)

S_R= mph (Exhibit 13-12)

S_0= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

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BASIC FREEWAY SEGMENTS WORKSHEET

General Information		Site Information	
Analyst	*L. Ferreira*	Highway/Direction of Travel	*I-95 Southbound*
Agency or Company	*Stanley Consultants*	From/To	*PGA Blvd EB-SB On-Ramp CD Road*
Date Performed	*9/6/2016*	Jurisdiction	*Palm Beach County*
Analysis Time Period	*AM Peak Period*	Analysis Year	*2040*

Project Description *I-95 at Northlake Boulevard PD&E - Alt 2*

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Data

Flow Inputs

Volume, V	*1986*	veh/h	Peak-Hour Factor, PHF	*0.95*
AADT		veh/day	%Trucks and Buses, P_T	*4*
Peak-Hr Prop. of AADT, K			%RVs, P_R	*0*
Peak-Hr Direction Prop, D			General Terrain:	*Level*
DDHV = AADT x K x D		veh/h	Grade % Length Up/Down %	*mi*

Calculate Flow Adjustments

f_p	*1.00*	E_R	*1.2*
E_T	*1.5*	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	*0.980*

Speed Inputs

Lane Width		ft
Rt-Side Lat. Clearance		ft
Number of Lanes, N	*2*	
Total Ramp Density, TRD		ramps/mi
FFS (measured)	*55.0*	mph
Base free-flow Speed, BFFS		mph

Calc Speed Adj and FFS

f_{LW}		mph
f_{LC}		mph
TRD Adjustment		mph
FFS	*55.0*	mph

LOS and Performance Measures

Operational (LOS)

v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	*1066*	pc/h/ln
S	*55.0*	mph
D = v_p / S	*19.4*	pc/mi/ln
LOS	*C*	

Design (N)

Design (N)

Design LOS		
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)		pc/h/ln
S		mph
D = v_p / S		pc/mi/ln
Required Number of Lanes, N		

Glossary

N - Number of lanes
V - Hourly volume
v_p - Flow rate
LOS - Level of service
S - Speed
D - Density
FFS - Free-flow speed
BFFS - Base free-flow speed
DDHV - Directional design hour volume

Factor Location

E_R - Exhibits 11-10, 11-12
E_T - Exhibits 11-10, 11-11, 11-13
f_p - Page 11-18
LOS, S, FFS, v_p - Exhibits 11-2, 11-3
f_{LW} - Exhibit 11-8
f_{LC} - Exhibit 11-9
TRD - Page 11-11

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APPENDIX W

(DIRC Meetings and IMR Review Comments)

FDOT District 4 Interchange Review Coordination Meeting
September 22, 2016 Meeting Summary

I. Call to order

Cesar Martinez called to order the FDOT District 4 Interchange Review Coordination (DIRC) meeting at 1:30 p.m. on September 22, 2016, in the Second Floor Conference Room of the FDOT District 4 Office.

II. Attendance

Please see attached the sign-in sheet for meeting attendees. Representatives from Central Office joined through teleconference.

III. I-95 at Northlake Boulevard IMR

Cesar introduced the project team, stating to the attendees that the project team is seeking feedback for what alternative should be pursued as the preferred alternative. Scott Thurman (FDOT) and Bill Evans (HDR) presented the project history, location, and three preliminary alternatives.

Northlake Boulevard is a County Road and will be widened to 8 lanes from Military Trail to Sandtree Drive. Northlake Boulevard is designated by Palm Beach County as a Constrained Roadway at Lower Level of Service (CRALLS). Northlake Boulevard is part of Palm Beach County's adaptive signal control network. All concepts on Northlake Boulevard include 11' lanes with 7' foot buffered bike lanes. The 2040 AADT is projected to be approximately 65,000 vehicles per day.

Alternative 1 holds the existing diamond form, incorporating additional turn lanes to the off-ramps for triple-left turns and triple-right turns at both the NB and SB ramp terminals. The operational analysis shows that the off-ramps will operate at LOS D, E and F, with queues exceeding available storage. The EB left-turn at Roan Lane remains signalized (WB only stops) in Alternative 1.

Alternative 2 is a Diverging Diamond Interchange (DDI). The design speed of the shown concept is 40 mph with cross-over angles of approximately 40°. The crossover angles are within FHWA guidelines. The existing posted speed limit is 45 mph. Both off-ramps are shown as having triple left-turn and triple right-turn configurations. This alternative requires mainline reconstruction of I-95 and is anticipated to have relatively high ROW acquisition and relocation impacts. The cost estimates for acquisition and relocation are currently being estimated.

Operationally, the off-ramps are able to accommodate the anticipated queues. The DDI concept introduces access issues with Roan Lane and Sunset Drive, and changes to the local street connections would likely be required.

Alternative 3 incorporates elevated on-ramps for both the EB-to-NB and WB-to SB movements. Similar to the other alternatives, both off-ramps are shown as having triple left-turn and triple right-turn configurations. This alternative also requires ROW acquisition and relocation, but is not as impactful as Alternative 2 (DDI). The operational analysis shows the off-ramp movements operate at LOS C and D and the queue storage needs are satisfied.

Mark Plass (FDOT) noted that Alternative 3 (Diamond + flyovers) will process traffic through the interchange intersections more efficiently and degrade conditions at Military Trail. Bill responded that the objective of the study and its identified alternatives is to reduce queueing on I-95 from exit ramps and efficiently move traffic away from the interchange. Also, this study is not proposing improvements at the intersection with Military Trail outside of programmed improvements. The only programmed improvement at Northlake Boulevard and Military Trail is an additional westbound right-turn lane. Godfrey Lamptey (Goal) noted that as a system, some intersections, and not necessarily the interchange, are the major bottlenecks on Northlake Blvd. For example, at Keating Drive, there is heavy demand for the NB and SB movements.

Cesar noted that Alternative 1 (Diamond) does not meet the LOS standard for the exit ramp movements, but the queues do not impact the I-95 mainline. Godfrey clarified that the SB and NB "storage deficiency" is based on available storage measured from the stop bar to the painted gore point.

After some discussion, it was verified by Bill that in Alternative 3 (Diamond + flyovers) the EB and WB left-turns onto I-95 will still need to be accommodated at the signal.

Lisa Dykstra (FDOT) expected that the proposed improvements would include neighboring intersections and would reduce queuing. Mark requested that the project team consider crashes or lane-blocking events between Military Trail and Sunrise Drive. It would be helpful to know the "realistic" capacity due to lane-blocking events. Mark would be happy to provide the information and work with HDR. Steve Braun (FDOT) suggested that Mark's team also help with the Access Management review.

Bill added that the objective of the study is not to determine improvements for all cross-street approaches of the intersections.

Bill has not shown the alternatives to the County yet, and is seeking feedback from the FDOT first. Therefore, the County is not yet aware of forecast conditions in the Alternatives on the County Rd and their intersections. With the CRALLS designation, Bill believes that the LOS would still meet the requirement, with the understanding that, as Lisa pointed out, the CRALLS designation is geared more towards development than an LOS standard. The Alternatives Public Meeting is scheduled for December 8, 2016.

Bill raised the potential of Alternative 1 (Diamond) as an interim solution with Alternative 3 (Diamond + flyovers) as the ultimate configuration.

Scott Peterson (FDOT) asked about a DDI with a lower design speed. Stanley does not plan to pursue the low-speed DDI, unless the County would like to. The ROW impacts for the lower-speed design would be expected to be lower than those for Alternative 2 (DDI).

John Olson (FDOT) stated that he was comfortable for all 3 alternatives to move forward to the public workshop. Steve added that the lower speed DDI should still be considered as well, given its reduced impacts and costs, along with its ability to move traffic away from the interstate.

Bill stated that the ROW acquisition and construction estimates will be complete in approximately 6 weeks, or early November. Also, the design of Alternative 1 (Diamond) will be amended so that the exit ramp gore points are located to accommodate projected storage.

As part of the PD&E Study, alternatives reconfiguring the PGA Boulevard (SR 786) SB on-ramp merge points with I-95 have been developed. Bill stated that goal is to take the existing SB on-ramp merge points and

combine them into a single merge point, or further separate the two SB on-ramp merge locations. Keith Krieger (Stanley) walked through the details of the existing conditions and the two alternatives. Alternative 1 maintains two separate entrance ramps. The WB-to-SB flyover continues as a dedicated lane to I-95 and the EB-to-SB ramp has a ¼ mi. merge and taper further downstream. Alternative 2 combines the two ramps and continues with a dedicated lane to I-95. A concrete barrier allows the two ramps to combine into a single 2-lane ramp separately from the mainline. The taper for the merge of the two ramp lanes to one is south of the Burns Rd bridge.

Both alternatives add a short auxiliary lane to SB I-95 merging before the mainline bridge over Burns Rd. Alternative 2 requires widening this bridge because of the extra width required for the barrier separation.

Bill added this ramp improvement will be documented in the Northlake Blvd. IMR, and the project team would like to move forward with an alternative from the DIRC meeting. The reconfiguration can get carried through the IMR process and then proceed to the design phase as a separate project. Steve stated that the express lanes may have an impact on this project; however, that may be many years away.

Bill added that the PGA Blvd ramp alternatives do not need to go to the Alternatives Public Workshop other than to show it is included as part of the project. Construction in Alternative 1 can occur all within the existing L/A lines. Bill anticipates submitting the IMR for traffic review next week. The DIRC generally agreed that Alternative 1 would be the preferred alternative.

Steve adjourned the topic.

IV. Status Report (FDOT District 4)

- I-95 at Indiantown Rd IOAR – Submitted to Central Office.
- I-95 at 45th Street – Future Traffic Development Memo comment returned. Waiting on first draft MLOU.
- I-95 at SR 80 IMR – MLOU approved by Central Office. Project Traffic Report comments returned. Expecting October DIRC presentation. Concepts will include fly-over ramps for I-95 express lane connections.
- I-95 at 6th Ave South IOAR – Draft IOAR comments returned. A separate meeting has been scheduled for October 3, 2016.
- I-95 at Gateway Boulevard & Boynton Beach Blvd SIMR – Alternatives Public Meeting held in July 2016. Waiting on first draft SIMR.
- I-95 at Cypress Creek Road & Commercial Blvd SIMR – MLOU approved by Central Office. Alternatives are being developed.
- I-95 at Sunrise Boulevard (Western Ramps) IOAR –Final report under District review for approval.
- I-95 at Broward Blvd. – MLOU being revised, data collection started without waiting for express lanes phase 2 tolling due to schedule impacts.
- I-95 at Hallandale Beach Boulevard IOAR – Submitted to Central Office.

The meeting was adjourned at 3:00 p.m.

FDOT

District Four Interchange Review Coordination Meeting

Sign-In Sheet

Date/Time: Thursday, September 22, 2016, 1:30 pm

Location: FDOT District Four, Second Floor Conference Room

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FDOT

District Four Interchange Review Coordination Meeting

Sign-In Sheet

Date/Time: Thursday, September 22, 2016, 1:30 pm

Location: FDOT District Four, Second Floor Conference Room

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FDOT

District Four Interchange Review Coordination Meeting

Sign-In Sheet

Date/Time: Thursday, September 22, 2016, 1:30 pm

Location: FDOT District Four, Second Floor Conference Room

Name (Last, First)	Agency/Company	Phone	E-mail Address	Initials
Youngs, Andrew	FDOT - CO			PHONE

FDOT District 4 Interchange Review Coordination Meeting
March 24, 2016 Meeting Summary

I. Call to order

Steve Braun called to order the FDOT District 4 Interchange Review Coordination (DIRC) meeting at 1:30 p.m. on March 24, 2016, in the Second Floor Conference Room of the FDOT District 4 Office.

II. Attendance

Please see the attached sign-in sheet for meeting attendees.

III. Status Report

- I-95 at PGA Blvd/Central Blvd IJR – approved by FHWA Division Office
- I-95 at Indiantown Rd. IOAR – draft IOAR to be submitted for review
- I-95 at Sunrise Blvd. IOAR – focused group meeting to be scheduled
- Upcoming PD&Es in 2016
  - I-95 at 45th St. IMR
  - I-95 at SW 10th St. IMR
  - I-95 at Broward Blvd. IMR
  - I-95 from S of Hallandale Beach Blvd. to N. of Hollywood Blvd. SIMR
  - I75 at Griffin Rd – advanced construction to FY '19

IV. I-95 at Boynton Beach Blvd & Gateway Blvd Interchange Modification Report (IMR)

Hank Deibel, Erik VanZanden, and Satya Kolluru of Arcadis jointly presented on the operational analysis results for the various alternatives evaluated. The interchanges are projected to have LOS F by the design year 2040 under the No-Build conditions; hence, the project team proposed to add improvements to address current and future congestion, and apply system-wide improvements, from Woolbright Rd and Hypoluxo Rd, keeping in mind potential future managed lanes along I-95. It should be noted that no improvements are proposed on I-95 mainline, but only at cross streets.

At Boynton Beach Blvd interchange, nine (9) alternatives were examined in Tier 1, including one developed by the PBC Interchange Master Plan Team, referred to as Concept Development Alternative (CDA). The Single Point Urban Interchange (SPUI) alternative indicates the least overall delay, but would remove the access to one intersection. The Diverging Diamond Interchange (DDI) alternative may not be effective due to the geometric constraints, e.g. high grade. Alternatives 1, 2, and 4 are to move to Tier 2 for further evaluation. Clarification on the operational comparison: DDI is expected to provide 59% delay reduction, and SPUI is expected to provide 61% delay reduction. All Build alternatives provide at least 50% of delay reduction.

At Gateway Blvd interchange, four (4) alternatives were examined in Tier 1, including a CDA and a streamlined CDA. All of the alternatives requires additional right-of-way (ROW). Alternative CDA and streamlined CDA provide the best operational benefits. DDI was evaluated and eliminated due to geometric constraints.

It was noted that a report had been submitted 2 weeks before the meeting and the project team would need feedback and agreements on which alternatives to move forward (UPDATE: comments on this report were sent by Cesar Martinez after the meeting requesting incorporating their responses in the SIMR document). The alternative public meeting has been scheduled for July 14th 2016 at which time consultant would like to present the preferred alternatives. Discussion on Seacrest intersection, which is projected to have undesired

operations, concluded with the decision to focus on the interchange operations instead of the corridor along the intersection. Steve Braun recommended the report to include discussion on the geometric constraints for the DDI.

V. I-95 at SR 80 IMR

Winston Harris and Paul Heeg of RS&H presented on operational analysis part of the IMR and noted that the conceptual plans had been uploaded for further review. This project is in Palm Beach County's LRTP. I-95 and SR 80/Southern Blvd both are evacuation routes. Southern Blvd to the west is fairly directional (60/40). Heavy movements from and to the west are expected at both intersections during the peak hours.

After evaluating a dozen or so alternatives, four (4) are being considered, each to address the heavy movements at the ramp terminal. Alternative 1 is the I-95 Interchange Master Plan design concept, and should be the last resort, as the quadruple left-turn lanes are not a favorable solution based on D4 reference. Alternatives 2 includes a northbound to westbound flyover. Alternatives 3 includes a northbound to westbound and an eastbound to northbound flyovers. Alternative 4 includes an eastbound to northbound flyover.

Jonathan Overton asked if all signs be accommodated, especially with the managed lanes in place. Winston will meet with Traffic Ops staff to further discuss this issue. Origin-destination (OD) info and travel demand model were utilized to develop project future traffic patterns (UPDATE: after the meeting Cesar Martinez provided additional OD counts and traffic demand model select link analysis to refine the traffic patterns supporting the northbound to westbound flyover).

No major ROW take is anticipated. John Olson inquired about the potential of the bridge replacement. The project team's goal is not to replace, but rather widen the bridge. It was noted that coordination has been ongoing with the SR 80 Action Plan project team for future demand projection consistency.

Steve asked about the direct connect to the express lane from SR 80 potentially serving the longer distance trips from and to both south and north ramps, and suggested that the team would evaluate the OD survey result. There is a suggestion of keeping 2 ramps at same level coming into and out of express lane. Winston noted that the LRE includes both flyovers and suggested that we should go with higher cost and scale back if needed.

VI. I-95 at Northlake Blvd IMR

Bill Evans of Stanley Consultant presented on the detailed operational analysis of Northlake Blvd interchange. In addition to the No-Build and TSM&O Alternatives, a modified CDA, DDI, and various elevated ramps alternatives are analyzed.

Alternative 1 includes triple lefts and triple rights at the exit ramp terminals. The ramp terminal intersections are expected to operate at LOS E/F. For this reason, Alternative 1 will not be carry forward to next phase.

Alternative 2, which is a DDI, would eliminate left-turn movement onto Roan Lane, located on the east side of the interchange. The overall operation at all intersections except for Military Trail is acceptable. It was noted that DDI are considered to operate at 40 mph and should be further evaluated for impact comparison.

Several of flyover ramp configurations are evaluated in Alternatives 3A through 3E. Some of them, will not be carried forward to next phase due to poor operational performance.

Coordination is ongoing on addressing the congestion along PGA Blvd and I-95. PGA Blvd EB and WB ramps to I-95 SB merge areas are being evaluated as a part of the Northlake Blvd PD&E study. As for project schedule, the IMR submittal is expected to be in Fall of 2016.

VII. I-95 at Cypress Creek Rd & Commercial Blvd IMR – Methodology Letter of Understanding (MLOU)

Josh Salazar of HDR presented on the methodology proposed for the IMR prepared for Cypress Creek Rd and Commercial Blvd. This IMR is unique because of the influence along the arterial network and major stakeholders (include Broward MPO)' interest in TOD and multimodal options and alternatives.

The data collection and Pre-PD&E AADT forecast were completed. Additional intersections along both corridors are added due to the proximity of the intersections to the ramps. VISSIM is proposed as analysis tool, with 3-hour AM and PM simulation analysis periods. 2010 and 2040 SERPM will be used. All traffic parameters are as recommended in the Project Traffic Forecasting Handbook.

No-Build alternative includes TSM&O improvements (signal optimization and ramp metering). Build Alternative 1 is from the Broward Interchange Concept Development Reports. Build Alternative 2 includes new intersection configurations at both ramp terminals and along the adjacent corridors. Jonathan warned that the currently proposed configuration of Alternative 2 at the west ramp terminal intersection on Cypress Creek Rd may introduce wrong-way-driving, as an on-ramp is located between two off-ramps. Care should be taken and other alternatives should be considered. It was also noted that some of the operational analysis results may not be intuitive (e.g. replacing right-turning movement by left-turning movement and resulting in lower delay and congestion) and should be revisited.

Richard Creed reminded the team to evaluate the potential southbound on-ramp through the parking lot. There was a mention of potential lane elimination on Cypress west of Andrews. Along Commercial Blvd, it was recommended that the team evaluate the potential for extending the existing on-ramp flyover to start east of Andrew Ave.

VIII. I-95 at 6th Ave. Interchange Operation Analysis Report – MLOU

Rafael De Arazoza of R.J. Behar presented on the methodology proposed for the IOAR. The alternatives being evaluated are: No-Build, TSM&O, Concept Development Alternative (CDA) and modified CDA. The team will look at the I-95 SB off-ramp congestion as observed in the field review. It was noted that the CDA does not include any improvements at the off-ramps.

The improvements proposed in the Concept Development Alternative requires some ROW taken impacting an assisted living facility on 6th Ave at South A St. The modified CDA includes eliminating the proposed EB right-turn lane to South A St and slightly shifting of the 6th Ave alignment.

All traffic parameters are as recommended in the Project Traffic Forecasting Handbook. The project is consistent with the Palm Beach MPO's LRTP and City of Lake Worth's recently adopted CIP. Final IOAR will be submitted in August 2016, and the approval is expected in late September 2016.

The meeting adjourned at 4:15 p.m.

District Four Interchange Review Coordination Meeting

Sign-In Sheet

Date/Time: Thursday, March 24, 2016, 1:30 pm
Location: FDOT District Four, Second Floor Conference Room

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FDOT

District Four Interchange Review Coordination Meeting

Sign-In Sheet

Date/Time: Thursday, March 24, 2016, 1:30 pm
Location: FDOT District Four, Second Floor Conference Room

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~~Prasoon Sinha~~	~~Arcadis~~		~~prasoon.sinha@arcadis-us.com~~	
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Paul Heeg RS&H paul.heeg ~ here —

FDOT

District Four Interchange Review Coordination Meeting

Sign-In Sheet

Date/Time: Thursday, March 24, 2016, 1:30 pm

Location: FDOT District Four, Second Floor Conference Room

Name	Agency/Company	Phone	E-mail Address	Initials
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FDOT District 4 Interchange Review Coordination Meeting
September 24, 2015 Meeting Summary

I. Call to order

Steve Braun called to order the FDOT District 4 Interchange Review Coordination (DIRC) meeting at 1:30 p.m. on September 24, 2015, in the Second Floor Conference Room of the FDOT District 4 Office.

II. Attendance

Please see attached the sign-in sheet for meeting attendees. Representatives from Central Office joined through teleconference.

III. I-95 at SR 80/Southern Boulevard Interchange Modification Report (IMR) – Methodology Letter of Understanding (MLOU)

Introduced by Steve, Anson Sonnet (FDOT) provided background on the agenda item and introduced RS&H to present the MLOU.

Cassie Piche (RS&H) provided a brief summary of the schedule. They expect to have Location and Design Concept Acceptance (LDCA) in late 2017 or early 2018. Winston Harris of RS&H then presented the project background and existing conditions.

The PD&E Study follows from the I-95 Interchange Master Plan (IMP), and established capacity and safety needs with potential short-term and long-term improvements.

The Interchange Access Request (IAR) has been recommended for exemption from the programmatic agreement. Winston expects the IAR to go through the programmatic process.

Winston presented the purpose and need and the area of influence. The project limits include the interchanges of I-95 with Forest Hill Blvd and Belvedere Blvd. At interchanges, the project includes the nearest signalized intersection in each direction. Southern Blvd is the exception as it also includes the interchange of Southern Blvd and Australian Ave.

The Design Year will be 2040 (per follow-up discussion) with No-Build, TSM&O, and 3 build alternatives analyzed. The concept design from the IMP has a new flyover from westbound Southern Blvd to southbound I-95 and a new flyover from eastbound Southern Blvd to northbound I-95. The concept design also includes a northbound-to-westbound quadruple left turn.

Traffic data and traffic projections have been provided to the study team by the FDOT. Most of the traffic data needed is ready and available. Winston does not anticipate additional SERPM runs for the build alternatives.

HCM 2010 will be used to analyze the freeway segments. Synchro 9 will be used for intersection and arterial analysis. CORSIM and VISSIM are available if microsimulation is needed based on the complexity of recommended alternatives.

Steve asked if the pre-work for the PD&E had been reviewed for correctness and completeness. Winston confirmed that it had.

Anson stated that they would like to get to LDCA in early 2017; however, the team is expecting some Environmental items.

Mark Plass (FDOT) asked for the level of benefit to increase from a triple- to a quadruple-left. Cassie replied that the quadruple northbound left turn is as per the concept design. She is confident they can eliminate the quadruple left turn.

Steve mentioned that it was his understanding that quadruple lefts would not be pursued as a viable option through the PD&E process unless it is of a particular design. Therefore, the quadruple left will likely need to be removed from the design concept. FDOT will follow up and provide further guidance to the PD&E consultants.

Steve asked if microsimulation was necessary. Winston replied that if there is an access point for the express lanes in the vicinity, it may be necessary. Steve would like the decision or assumption regarding the location of the express lane access to be made relatively soon in the study. Winston will follow-up and determine the necessary coordination or reasonable assumptions.

Anson will confirm if there are other short-term/interim projects in the study area. Winston will coordinate with the SR 80 Action Plan team regarding outcomes that may impact the PD&E study.

Steve adjourned the topic.

IV. I-95 at Northlake Boulevard IMR - MLOU

Introduced by Steve, Scott Thurman (FDOT) provided some background on the agenda item and introduced Bill Evans (Stanley), project manager of the consultant team.

A purpose of this project is to reduce queue spillback onto I-95. This interchange was part of the I-95 IMP for Broward County. Northlake Blvd is a county road and the study area includes the interchanges of I-95 with Blue Heron Blvd and PGA Blvd. The Efficient Transportation Decision Making (ETDM) was completed last year.

The concepts thus far include a Diverging Diamond Interchange (DDI) and flyover ramps. Microsimulation may be needed to analyze the DDI concept. The design phase is funded in 2021.

Steve will discuss internally within FDOT regarding whether the design year should be 2040 or 2045 for this project and the Southern Boulevard PD&E. It should be consistent between the two interchange studies.

Mark asked if there will be a methodology to give weight to the performance measures of different intersections and arterials, or if the same weight would be used. No methodology for weighting performance measures was provided.

Morteza Alian (FDOT) asked if the study team had been coordinating with the Central Blvd Interchange Justification Report (IJR) team. Bill responded that there would be no changes at the Northlake Blvd interchange from that study. Morteza added that the study team should consider the Build Condition at the PGA Blvd interchange based on the results of the Central Blvd IJR.

Steve adjourned the topic.

V. Status Report

- I-95 at Gateway Blvd & Boynton Beach Blvd IMR – MLOU being prepared
- I-95 at Hillsboro Blvd IOAR – Submitted to Central Office for approval

- I-95/I-595 SIMR Reevaluation – Submitted to FHWA Headquarters
- I-75 SIMR Reevaluation Segment A/B – Approved by FHWA
- I-75 at Miami Gardens Drive (MGD) Minimization Concept – Additional alternative being analyzed
- I-75 SIMR Reevaluation Segment E – Approved by FHWA
- I-95 at PGA Blvd/Central Blvd IJR – Report being revised based on District & Central Office's comments
- I-95 at Lantana Rd Signal Modification

The meeting was adjourned at 2:55 p.m.

Centennial FDOT 1915 ★ 2015

District Four Interchange Review Coordination Meeting

Sign-In Sheet

Date/Time: Thursday, September 24, 2015, 1:30 pm

Location: FDOT District Four, Second Floor Conference Room

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Centennial FDOT 1915 ★ 2015

District Four Interchange Review Coordination Meeting

Sign-In Sheet

Date/Time: Thursday, September 24, 2015, 1:30 pm

Location: FDOT District Four, Second Floor Conference Room

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Centennial FDOT 1915 ★ 2015

District Four Interchange Review Coordination Meeting

Sign-In Sheet

Date/Time: Thursday, September 24, 2015, 1:30 pm

Location: FDOT District Four, Second Floor Conference Room

Name	Agency/Company	Phone	E-mail Address	Initials

Document Review Comment and Response Form

Title of Document			Type of Document	
PD&E Study for SR9/I-95 at Northlake Blvd Interchange: Interchange Modification Report (IMR)			Interchange Modification Report (IMR)	
Version of Document	October 2016	Status Code updated by KAI on 2/21/2017.	**Name and Initials of Reviewer(s) & Agency Represented**	
Date Released for Review	October 18, 2016		Abby Morgan, P.E., Ph.D. and Zachary Clark, P.E. (KAI) on behalf of FDOT D4 PLEMO	KAI
Date of Request	October 18, 2016		Cesar Martinez, PE	PLEMO
Comments Submitted	**November 1, 2016**			

No.	Section	Page	Table	Exhibit	Reviewer Comment	Reviewer Initials	Status Code	Response	Responder Initials
1	signature page				The signature page is incorrect. Please include the appropiate approval authorities per IAR User's Guide. State IRC is David Young, and State Chief Engineer is Courtney Drummound, PE	CM	A	Signature page has been updated	GL
2	PE certification				Remove PE certification. IAR are planning documents and are not required to be signed and sealed.	CM	C	Florida Statutes requires requires document to be signed and sealed. see excep: FS 471.025 Seals.—All final drawings, specifications, plans, reports, or documents prepared or issued by the licensee and being filed for public record and all final documents provided to the owner or the owner's representative shall be signed by the licensee, dated, and sealed with said seal.	GL
3	Quality certification				Include quality certification. Template is available in FDOt Systems Planning website	CM	A	The Quality Certification has been included in the submittal	GL
4	1.2 Project Description	12			Please update the cost estimate on page 12 of the report.	KAI	A	The project cost estimate has been provided	GL
5	1.4.2 and 2.3	16 and 20			Please specify in the report which version of the SERPM model was used for the traffic forecasting (e.g., 7.062).	KAI	A	The SERPM Version is February 2015. The information has been added to the document	GL
6	1.4.3 Secondary Criteria: Safety	16-17			In response to FHWA Policy Point 3, the report states that five fatal crashes occurred in the study area between 2010-2014. However, on page 16, none of the fatal crashes are discussed. Please include a discussion of the location of the fatal crashes in Section 1.4.3 to clarify where these crashes occurred and whether any recommendations were made related to the study area.	KAI	A	Crash analysis include discussion of fatal crashes has been provided in the IMR.	GL
7		53		3-22, 23, 25, 26	Please update the legend for the figures to explain the performance measurement used to determine LOS (e.g., approach or overall intersection delay (s)).	KAI	A	The legend has been updated as suggested	GL
8		62	3-2		Please update the Table header to explain the "%" column in more detail.	KAI	A	The coulmn header has been revised to show % over existing or proposed storage	GL
9		93	6-1		Please clarify in Table 6-1 which Build alternative is represented.	KAI	A	The table has been updated to include all the 3 Build Alternatives, Note that Build Alternatives 1 and 2 will have the same volumes along Northlake Blvd., while Build Alternative 3 will have different volumes due to the dual flyovers	GL
10	Appendix G				Please include Appendix G (Crash data & collision diagram) in the report.	KAI	A	The crash data and collision diagrams have been included in the appendices	GL
11	Appendix I				Appendix I (LOS Results for Preliminary Alternatives Analysis) is missing from the report. The appendices go from H to J.	KAI	A	The results from the Tier 1 evaluation has been provided	GL
12	Appendices O and P				Several movements at the signalized intersection of Northlake Blvd and Military Trail are reported to have a v/c ratio well above 1.0. The westbound through movement has a v/c of 1.09 and 1.10 for Alternatives 2 and 3E in the PM peak. Please discuss in the report any potential queues from Military Trail, which may affect operations at adjacent intersections or the interchange at Northlake Blvd.	KAI	A	The report has been updated to include the results that although the Military Trail operates at LOS F, the maximum queues obtained from the SIMTRAFFIC simulation do not extend to the adjacent intersections and hence do not impact the operations of the I-95 ramp terminals.	GL
13	Future volume forecasts				The projected 2040 volumes from the PTFM for the I-95 NB Off-Ramp shows the right-turn movement growing from 986 vph in 2015 to only 999 vph in 2040. Please recommend future volumes with the 0.5% minimum growth rate and update the queue analysis with the revised volumes. Otherwise, the design based on the current queue analysis will be significantly underestimating the potential queue and design needs of the future volumes.	KAI	A	The volumes for the NB right turn lane has been updated as suggested using a minimum growth rate of 0.5%	GL

Status Code
A = Incorporated; B = Alternate Revision Proposed; C = Evaluated/Not Incorporated; D = Response to Question

Document Review Comment and Response Form

No.	Section	Page	Table	Exhibit	Reviewer Comment	Reviewer Initials	Status Code	Response	Responder Initials
14	Synchro				PHF and turck percentages were entered by movement. Please code PHF by intersection (overall value) per HCM requirements and truck percentages by approach	CM	A	The SYNCHRO files have been updated as suggested consistent with the HCM methodologies	GL
15	Synchro				Please verify RTOR was coded correctly and RTOR data/splits was used. The PGA NB off-ramp was coded as no RTOR when RTOR is allowed and data was provided.	CM	Unable to confirm. PDF does not reflect these changes.	For the existing conditions analysis, the actual Right Turn on Red (RTOR) volumes obtained from the data collection were used instead of the estimated values. For the future conditions analysis, the Right Turn on Red (RTOR) volumes were capped at 60 vph for exclusive right turn lanes and 10 vph for shared right turn lanes where permitted as per Palm Beach County requirements	GL
16	Synchro				DDI all analysis years - Please include outputs for all movements. NB and SB movements were not included in the outputs.	CM	Unable to confirm. PDF does not reflect these changes.	The output for all the movements have been provided	GL
17	HCS				How was the existing HOV lane considered? It seems like it was included as a fifth lane when it does not have the capacity of a full lane. This approach is not correct. The analysis should reflect 4 lanes and the demand reduced by the max vph in the HOV lane. Please correct all HCS mainline analysis files, results and figures.	CM	A	The HCS analysis has been updated to account for the HOV lane. the default capacity of an HOV lane i.e. 1,600 vehicles per hour, (See Appendix E) was subtracted from the existing freeway DDHV and the number of freeway lanes also reduced accordingly for the freeway and ramp merge/diverge analysis	GL
18	General				No mention, analysis, results and recommendations are presented for the PGA Blvd SB on-ramp. Please include all these items in the IMR.	CM	A	The PGA Blvd SB on-ramp improvements and analysis have been included in the report	GL
19	Appenix A				**New Comment:** There are two Appendix A's. Please review and update the report and Appendices as appropriate.	KAI	A	The second Appeendix A is actually for the MLOU which is included as Appendix A for the IMR. The Appendix A for the MLOU has been revised to Attachment A for clarity.	GL

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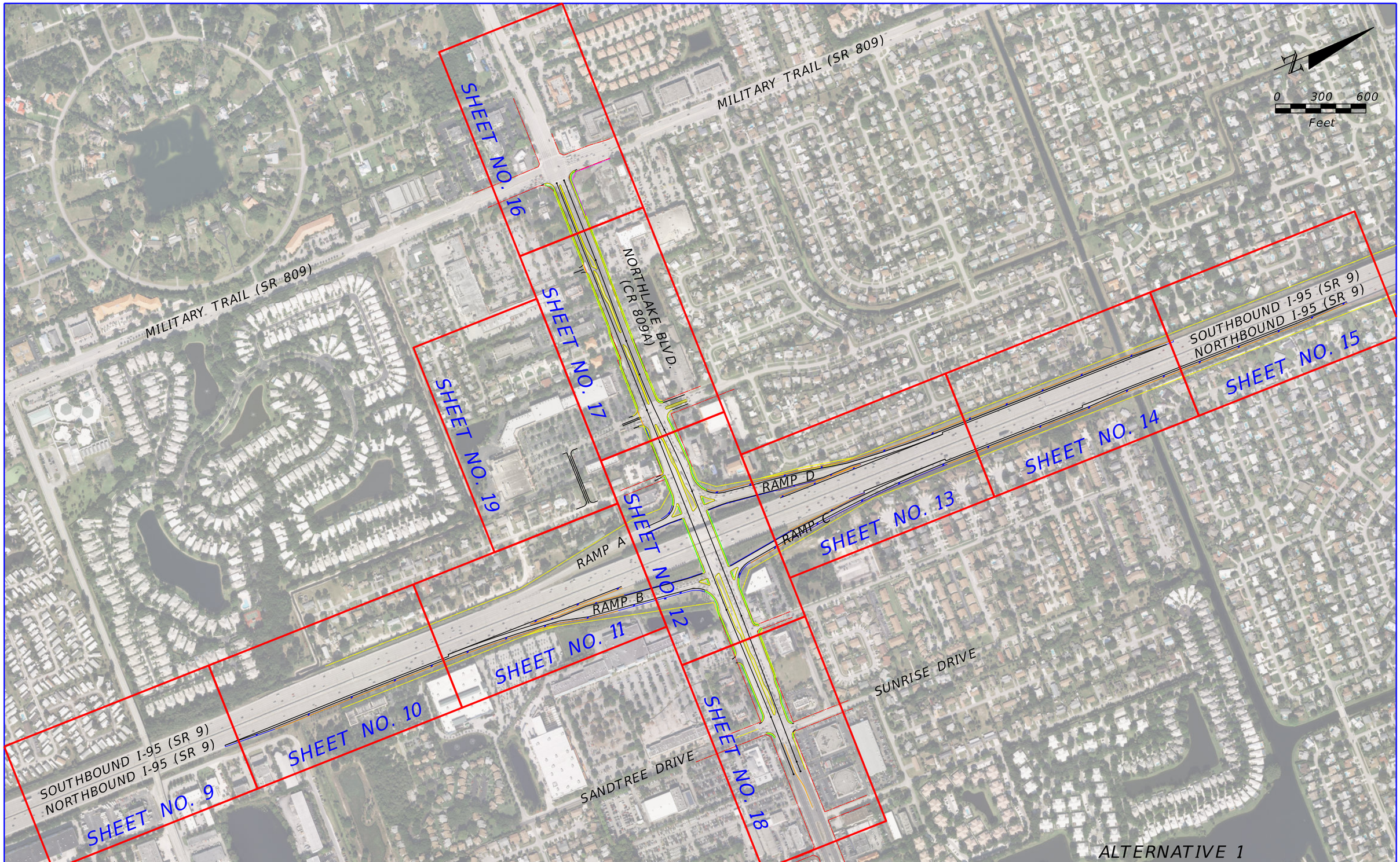
APPENDIX X

(Conceptual Signing Plan)



REVISIONS	
DATE	DESCRIPTION

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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	PALM BEACH	435803-1-22-02

CONCEPT PLAN LAYOUT

SHEET NO. 8

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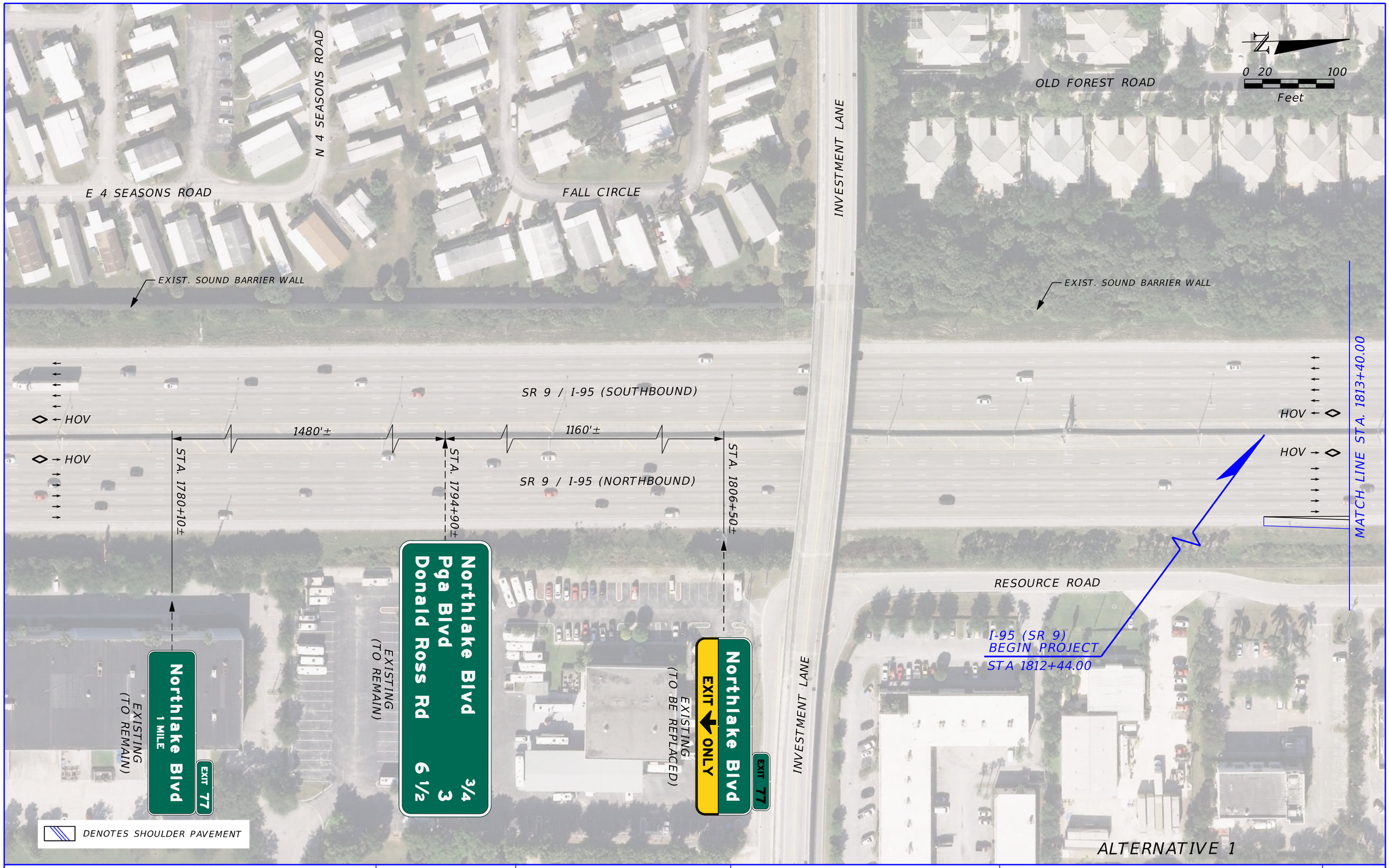

REVISIONS	
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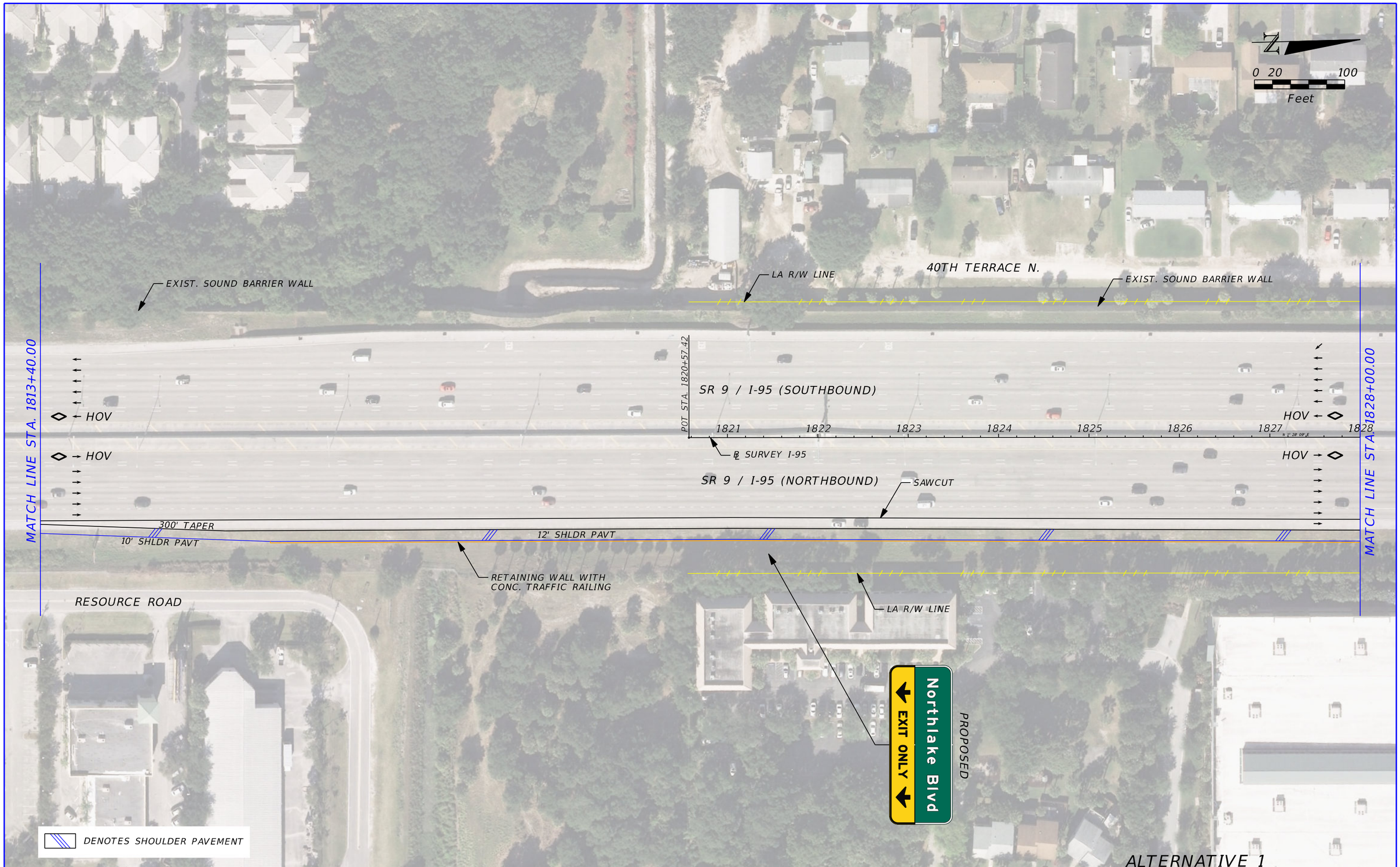
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	PALM BEACH	435803-1-22-02

CONCEPTUAL ROADWAY AND SIGNING PLAN

SHEET NO. 9

7537 3/30/2017 1:39:10 PM Q:\CADD\43580312202\roadway\PLANRD01.dgn



REVISIONS	
DATE	DESCRIPTION

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STATE OF FLORIDA
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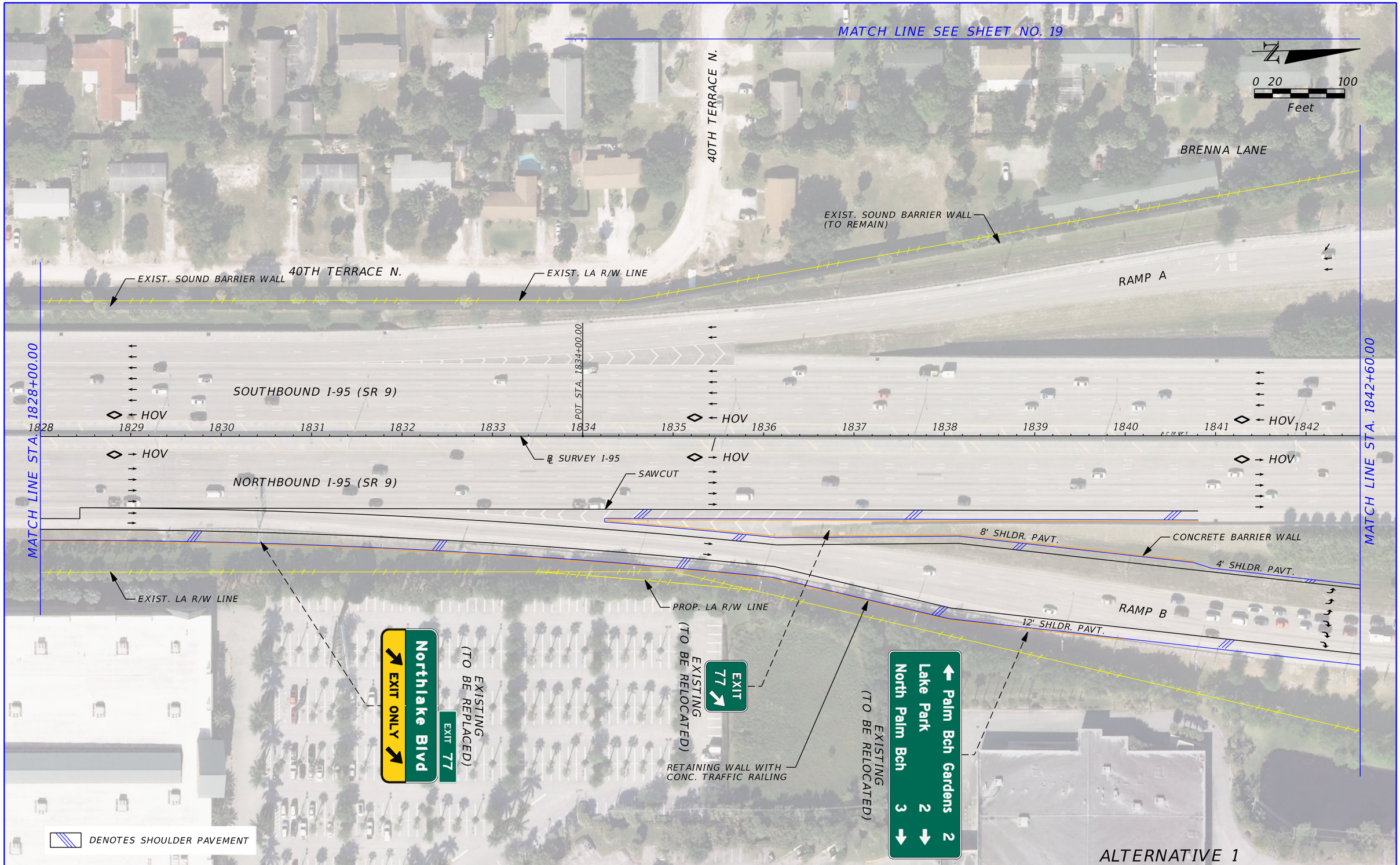
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	PALM BEACH	435803-1-22-02

CONCEPTUAL ROADWAY AND SIGNING PLAN

SHEET NO. 10

7537 3/30/2017 1:39:41 PM Q:\CADD\43580312202\roadway\PLANRD02.dgn



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STATE OF FLORIDA
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	PALM BEACH	435803-1-22-02

CONCEPTUAL ROADWAY AND SIGNING PLAN

SHEET NO. 11

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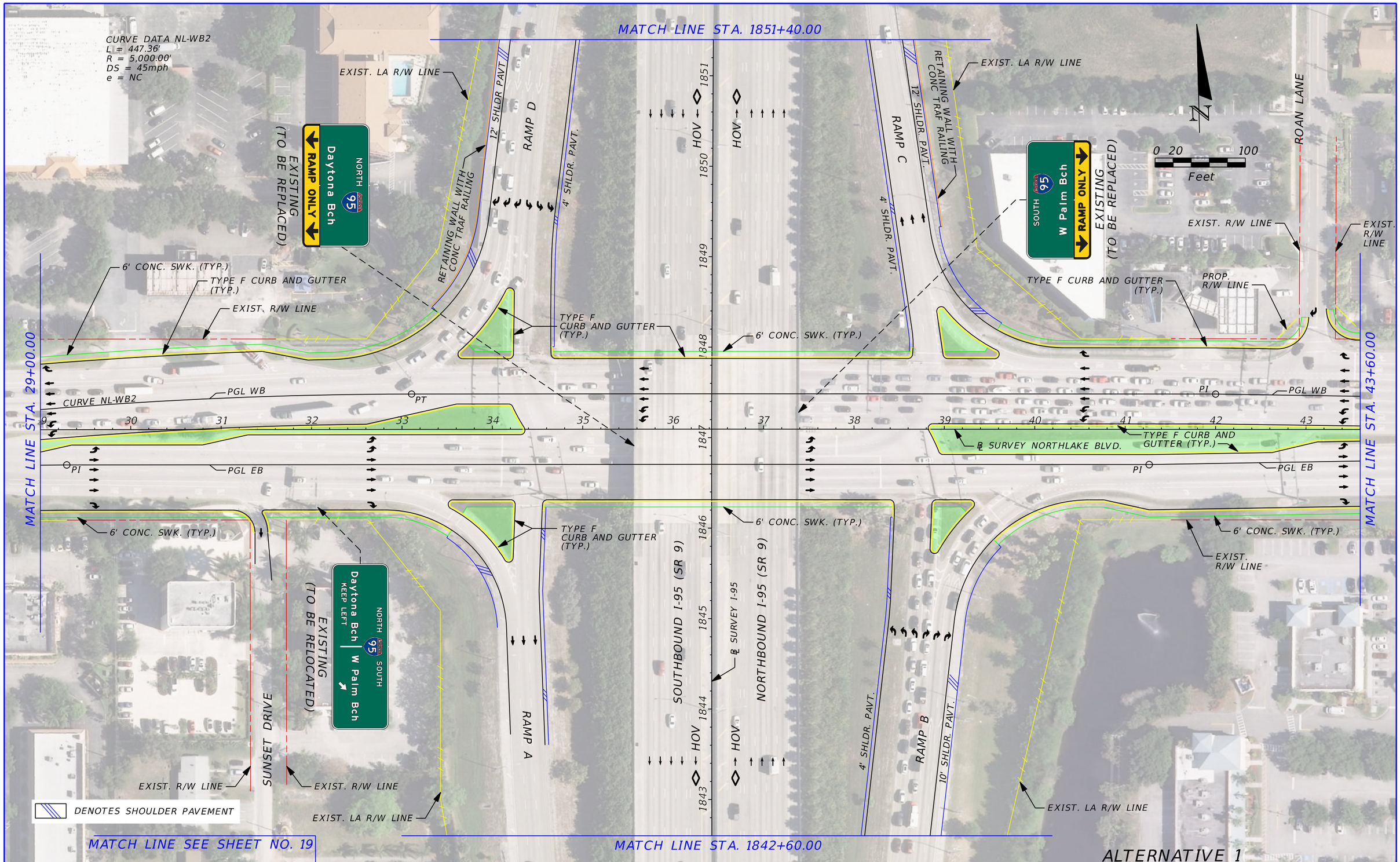

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CONCEPTUAL ROADWAY AND SIGNING PLAN

SHEET NO. 12

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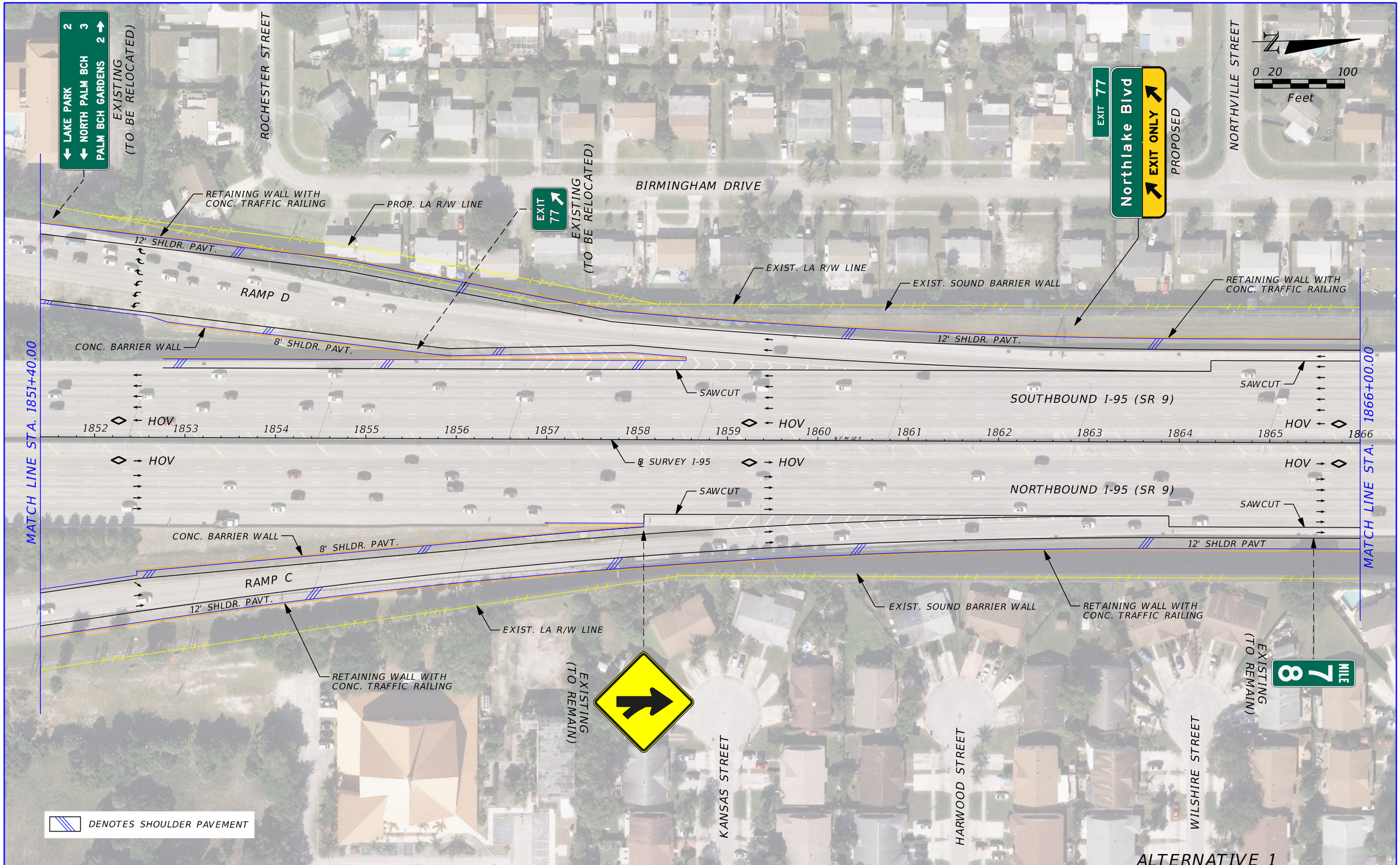

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CONCEPTUAL ROADWAY AND SIGNING PLAN

SHEET NO. 13

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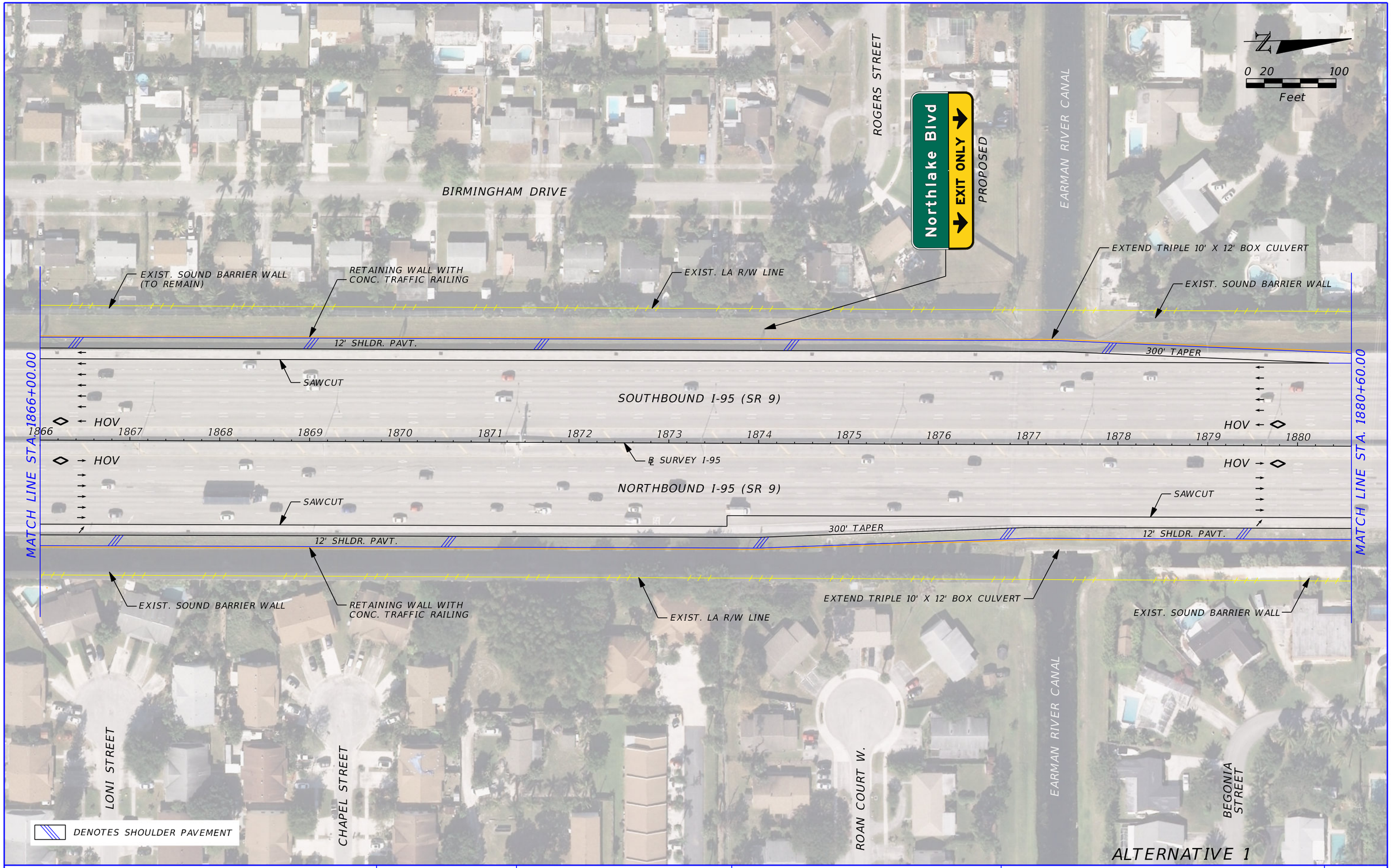

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CONCEPTUAL ROADWAY AND SIGNING PLAN

SHEET NO. 14

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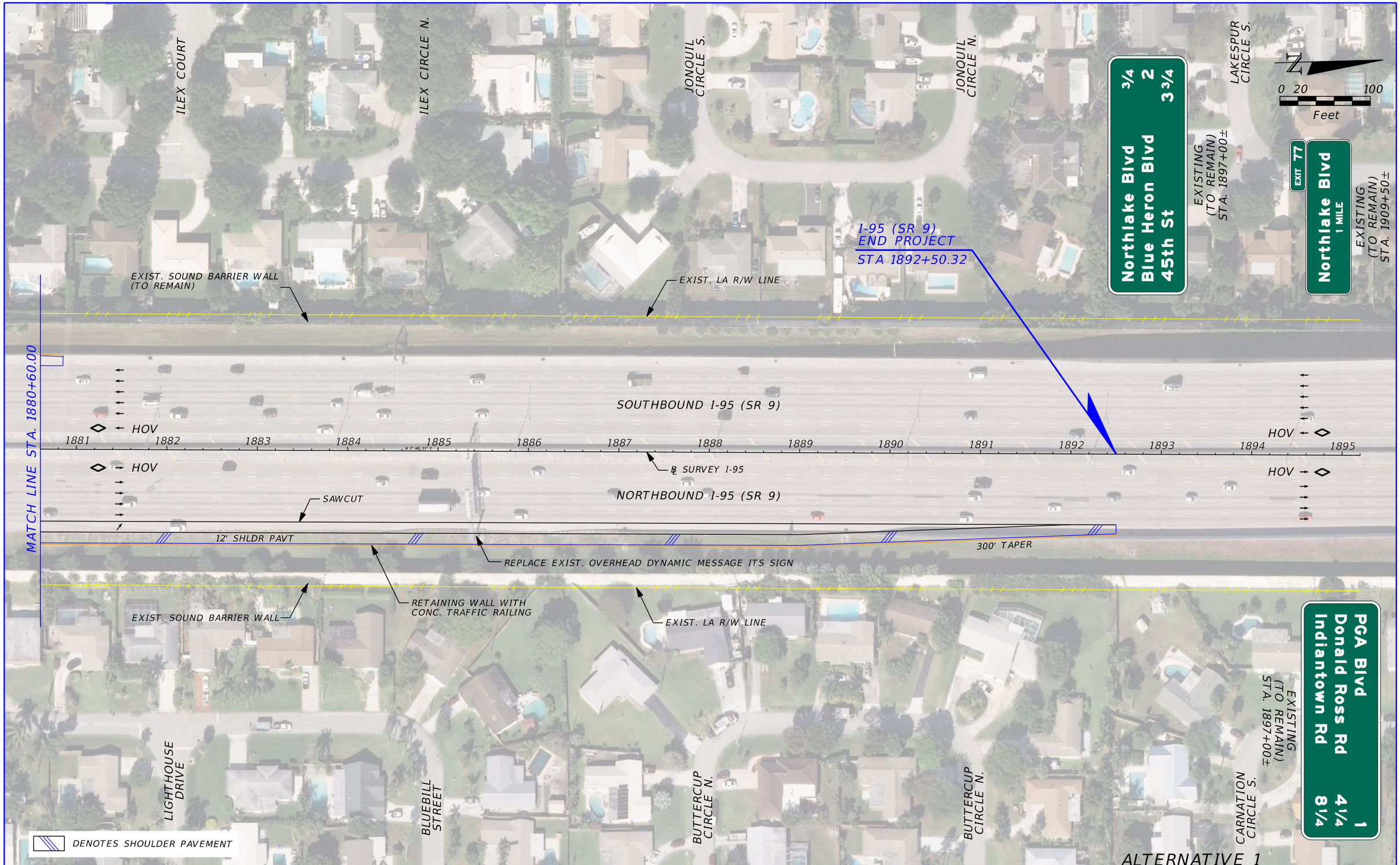

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CONCEPTUAL ROADWAY AND SIGNING PLAN

SHEET NO. 15

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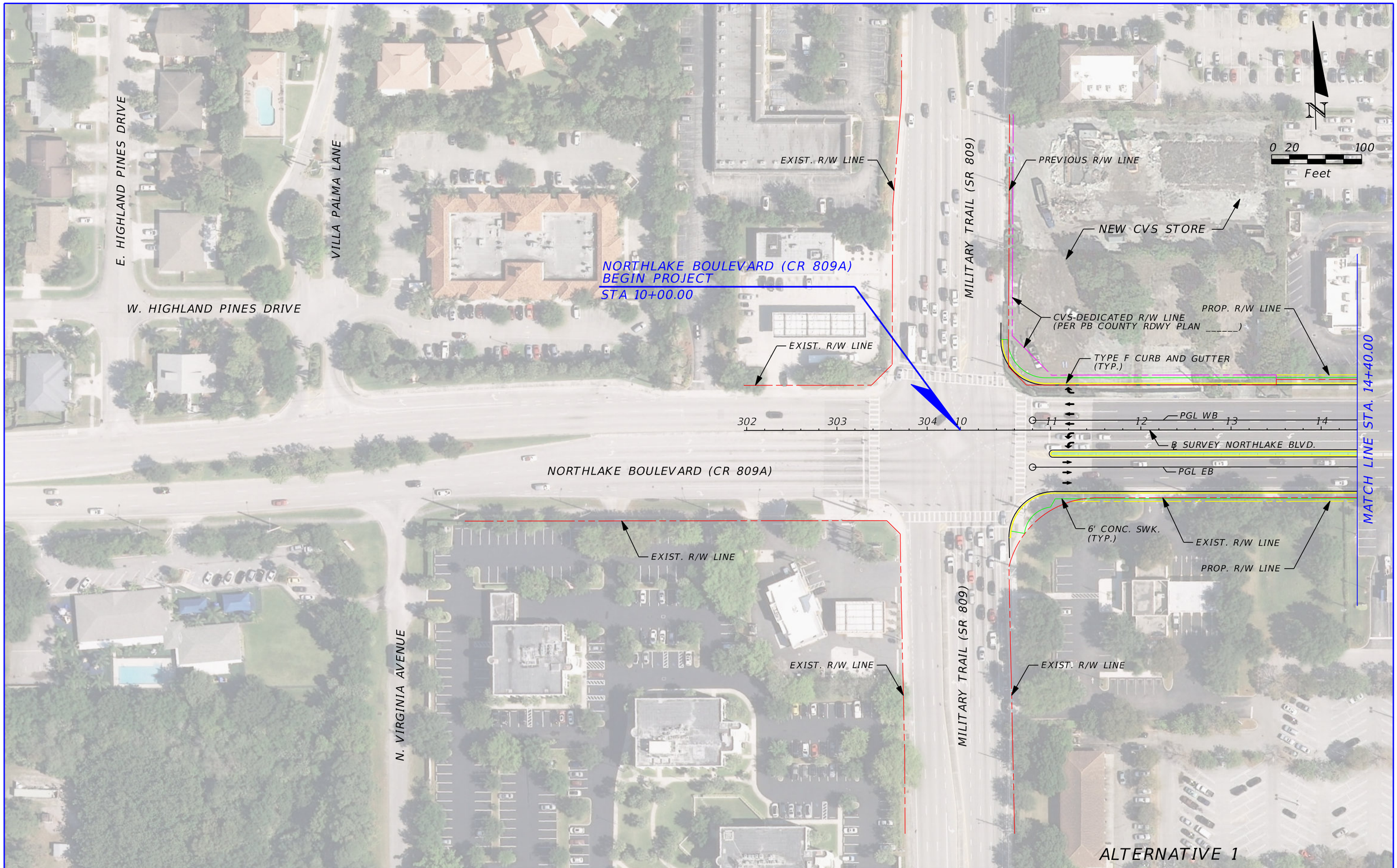

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SHEET NO.
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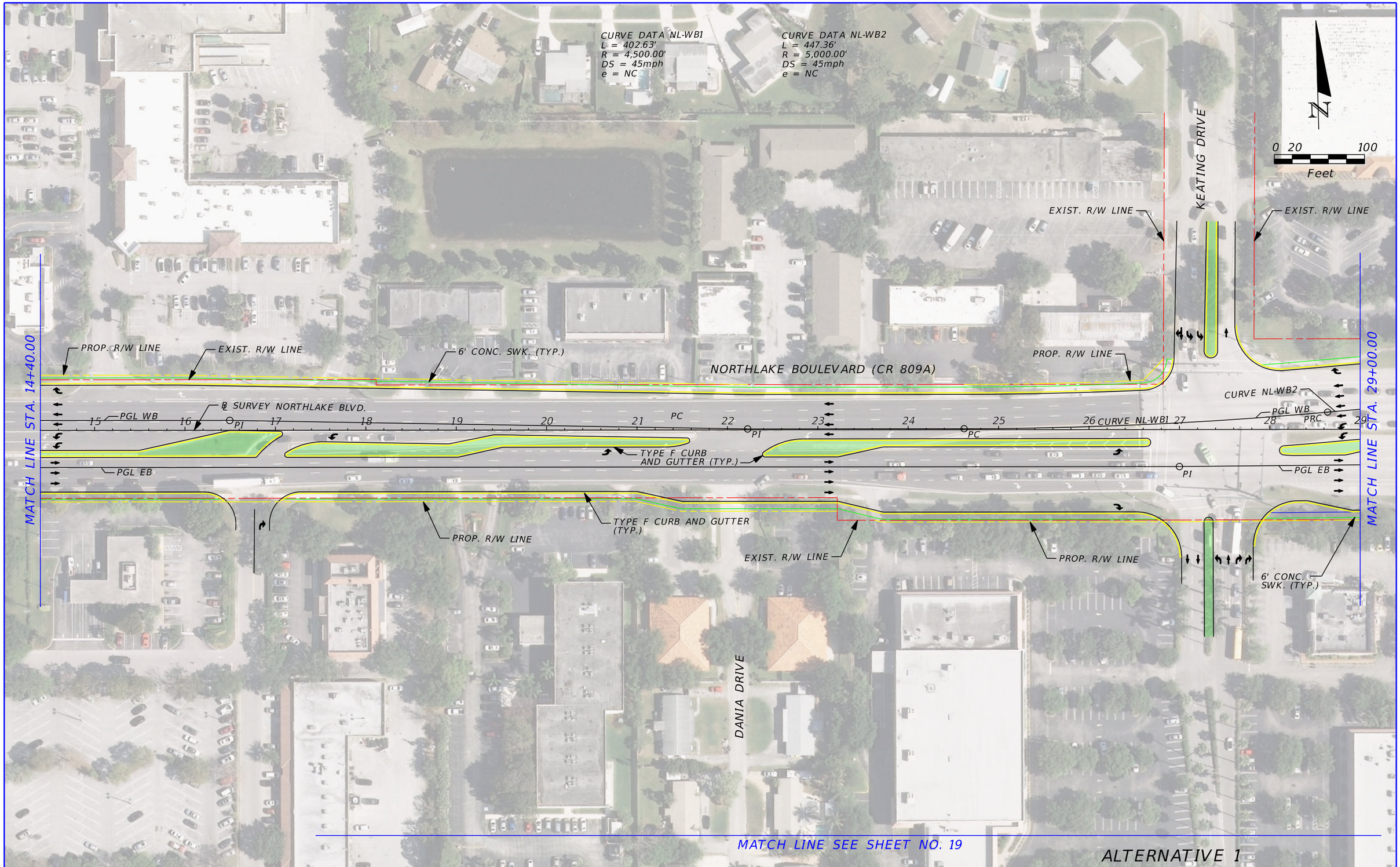

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SHEET NO.
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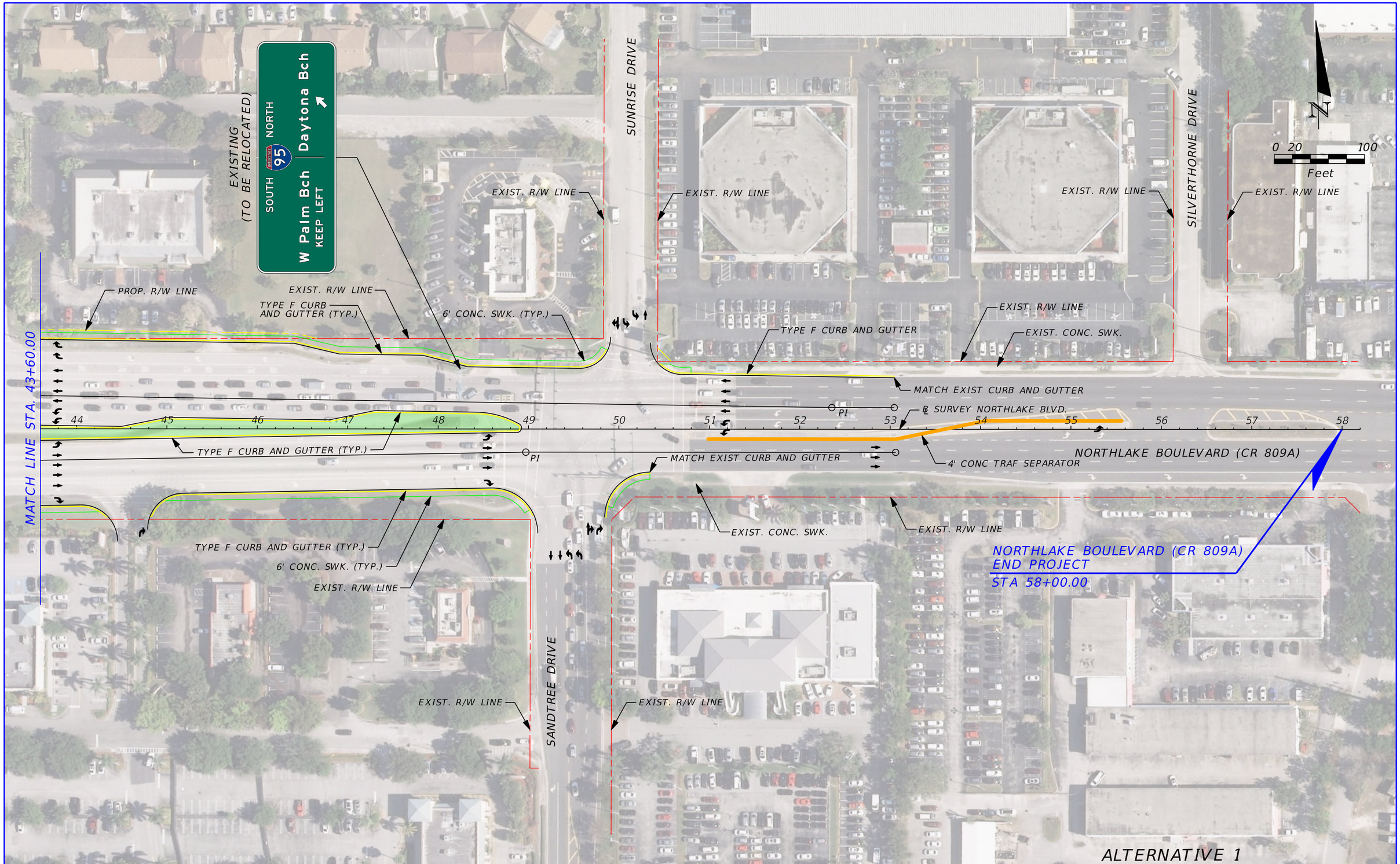

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CONCEPTUAL ROADWAY AND SIGNING PLAN

SHEET NO. 18

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