Final

Systems Interchange Modification Report

Florida Department of Transportation

Florida's Turnpike Enterprise

Project Development and Environment (PD&E) Study

Florida's Turnpike Widening (Milepost 238.5 – 242)

and Interchange Modifications at

Kissimmee Park Road and U.S. 192 South

Osceola County, Florida

Financial Project ID: 441224-1

July 2020

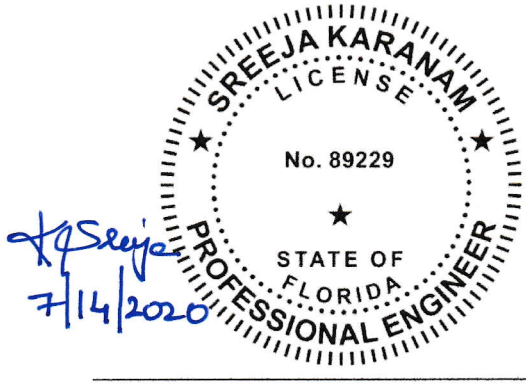
Florida's Turnpike Widening (MP 238.5 – 242) and Interchange Modifications at Kissimmee Park Road and U.S. 192 South

Systems Interchange Modification Report (SIMR)

PE Certification

FPID: 441224-1

July 2020



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SYSTEMS IMPLEMENTATION OFFICE

QUALITY CONTROL CERTIFICATION FOR INTERCHANGE ACCESS REQUEST SUBMITTAL

Submittal Date: 7/14/2020

FM Number: 441224-1

Project Title: Florida's Turnpike Interchange Modifications at Kissimmee Park Road and U.S. 192 South

District: Turnpike

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Status of Document (Only complete documents will be submitted for review; however, depending on the complexity of the project, interim reviews may be submitted as agreed upon in the MLOU)

Quality Control (QC) Statement

This document has been prepared following FDOT Procedure Topic No. 525-030-160 (New or Modified Interchanges) and complies with the FHWA two policy requirements. Appropriate District level quality control reviews have been conducted and all comments and issues have been resolved to their satisfaction. A record of all comments and responses provided during QC review is available in the project file or Electronic Review Comments (ERC) system.

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Carol Scott, CPM

Systems Interchange Modification Report (SIMR)

Florida's Turnpike Interchanges at Kissimmee Park Road and U.S. 192 South

FPID: 441224-1

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.

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The Florida's Turnpike Enterprise (FTE) is conducting a Project Development & Environment (PD&E) study (FPID: 441224-1) to evaluate widening of the Florida's Turnpike (S.R. 91) mainline from Milepost (MP) 238.5 to MP 242 in Osceola County. The PD&E study also includes interchange modifications at Kissimmee Park Road (C.R. 525) at MP 240 and Kissimmee – St. Cloud South (U.S. 192) at MP 242.

The Kissimmee Park Road interchange with the Florida's Turnpike provides access to and from the north only under existing conditions. The current PD&E study (FPID: 441224-1) is evaluating concepts for the ultimate configuration of the interchange, including access to and from the south. Capacity improvements at the adjacent Old Canoe Creek intersection are also being considered. The U.S. 192 South interchange serves the northbound off-ramp only. The on-going Florida's Turnpike mainline design and widening project from MP 242 to MP 249 (FPID: 436194-1) will add ramps to and from the north. The current PD&E study (FPID: 441224-1) is evaluating the addition of a southbound on-ramp. This Systems Interchange Modification Report (SIMR) documents traffic operations analysis and safety evaluations for the proposed reconfiguration/modification of the Kissimmee Park Road and U.S. 192 South interchanges along the Florida's Turnpike.

Reconfiguration of the Kissimmee Park Road interchange and capacity improvements are being proposed to address existing and future traffic congestion and related safety issues. Traffic at the Florida's Turnpike southbound off-ramp terminal intersection currently experiences long delays and queues during the evening commute. Queues extend along the full length of the ramp and onto the freeway mainline. This is mainly due to the heavy southbound off-ramp left-turn traffic demand which exceeds the capacity of the existing single left turn lane. Also, eastbound right-turn queues at the adjacent and closely spaced Old Canoe Creek Road intersection extend upstream to the interchange ramp terminals, compounding the backups along the southbound off-ramp and mainline. This intersection experiences severe traffic congestion during the morning and evening commute. As traffic demand increases in the future, traffic operations are expected to deteriorate within the interchange and along the freeway mainline.

There is also a need to complete the Kissimmee Park Road partial interchange by adding access ramps to and from the south, and the U.S. 192 South interchange by adding a southbound on-ramp. Travel demand on the Florida's Turnpike through much of Orange and Osceola County has increased significantly. The Florida's Turnpike system has continued to grow as a "commuter" facility serving trips between urban centers it passes through. Addition of ramps to and from the south will provide more efficient access points to better serve trips originating or ending in St. Cloud, east of the Florida's Turnpike. For instance, trips heading south currently must travel along U.S. 192 to access the Florida's Turnpike at the Kissimmee -St. Cloud North interchange at MP 244.

Crash data for the most recent five years from the state's CARS database showed that the number of crashes doubled from 2012 to 2016 within the study area. All the crashes resulted in injury and property damage only. The Florida's Turnpike mainline crashes were mostly off road but crashes along the ramps were mainly rear end. Majority of the crashes at the intersections were of rear end and angle type. Queue backups on the freeway mainline contribute to crashes. The intersection of Kissimmee Park Road and Old Canoe Creek Road is a high crash location.

The PD&E study evaluated various Build alternatives for the Kissimmee Park Road interchange. The selected Preferred Build interchange configuration increased the spacing between the ramp terminal intersections and Old Canoe Creek Road, enhanced network connectivity, had less residential and environmental impacts and offered a lower cost compared to the other alternatives. In addition, this alternative was highly supported by the public. The Build alternative relocated the Kissimmee Park Road interchange by approximately half of a mile north, to an extension of Nolte Road. The proposed configuration featured a DDI, serving all movements. The existing ramps at the Kissimmee Park Road interchange would be removed; however, the overpass would be maintained for local access. Additional ramps to and from the north would be added to provide direct access between the Florida's Turnpike and Old Canoe Creek Road, at approximately half of a mile south of Kissimmee Park Road. This alternative also included a proposed southbound on-ramp at U.S. 192 South, to complete the interchange and provide access to all movements. The Build alternative also assumed widening of the Florida's Turnpike mainline to eight lanes from MP 238.5 to MP 240.

Future lane requirement analysis for the freeway mainline and ramps showed that additional capacity will be required for both No Build and Build alternatives. The mainline will require three lanes per direction south of Kissimmee Park Road or Nolte Road in year 2039 and 2032, for the No Build and Build conditions, respectively. No additional capacity will be required through the 2045 design year south of Kissimmee Park Road. Three lanes will be required between Kissimmee Park Road or Nolte Road and U.S. 192 South by the 2025 opening year, for both No Build and Build conditions. The traffic demand in this segment will be very close to the four-lane volume target by the 2045 design year. Each of the ramps to and from the north at the Kissimmee Park Road or Nolte Road interchange will require two lanes by the opening year. All other ramps will require a single lane each through the 2045 design year.

It is anticipated that the Kissimmee Park Road and Florida's Turnpike southbound off-ramp and the intersections along Old Canoe Creek Road within the AOI will be over capacity, from opening to design year under the No Build conditions. Key deficiencies of the No Build include lack of capacity at the southbound off-ramp to Kissimmee Park Road, close proximity of the Old Canoe Creek Road intersection and lack of capacity along Old Canoe Creek Road. Transportation Systems Management and Operations (TSM&O) strategies such as signal retiming have been implemented to mitigate the existing issues but were not successful. This SIMR evaluated a TSM&O alternative that included restriping of the Kissimmee Park Road southbound off-ramp to add dual left turn lanes and two receiving lanes. This TSM&O alternative is expected to provide a small reduction in delay, at this intersection only, and will not address existing or future capacity needs. The additional capacity provided in the Build alternative is expected to restore operations to acceptable levels along the freeway mainline and ramps. It is estimated that the Build alternative will reduce network travel time and delay by approximately 50 to 90 percent compared to No Build, during 2045 peak periods within the study area. However, additional capacity will be required along Old Canoe Creek Road, the analysis showed a need for six lanes by the 2025 opening year south of Kissimmee Park Road and by

year 2036 to the north, under No Build conditions. Enhanced pedestrian and bicycle treatments are included such as sidewalks, crosswalks, lighting and signalization of right turns to improve safety.

User benefit for a 20-year life span of the proposed interchange modifications and improvements was estimated using network travel time and safety. Fuel consumption and emissions were not included. Based on 2018 dollars and a discount rate of five percent, the estimated user benefit was $1,209 Million and $8.6 Million based on travel time and safety, respectively, from year 2025 to 2045. The safety benefit would have been higher if the safety analysis tools could consider queuing impacts in estimating potential crashes. The design follows FDOT standards to provide features that mitigate potential crashes such as long acceleration and deceleration lanes, adequate sight distances, gentle cross-slopes, super elevation, wide curve radii, wide shoulders, signing, among others. The analysis showed that the proposed modifications meet the requirements for the Federal Highway Administration's (FHWA) two policy points. First, the operational and safety analysis conducted for this SIMR confirmed that the proposed improvements under the Build alternative do not have an adverse impact on the operations and safety of the Florida's Turnpike or local street network, and improves traffic operations through the design year. Second, the proposed accesses connect to public roads only and will provide for all traffic movements.

The Florida's Turnpike Enterprise (FTE) is conducting a Project Development & Environment (PD&E) study (FPID: 441224-1) to evaluate widening of the Florida's Turnpike (S.R. 91) mainline from Milepost (MP) 238.5 to MP 242 in Osceola County. The PD&E study also includes interchange modifications at Kissimmee Park Road (C.R. 525) at MP 240 and Kissimmee – St. Cloud South (U.S. 192) at MP 242. The project location is shown on **Figure 1.1**.

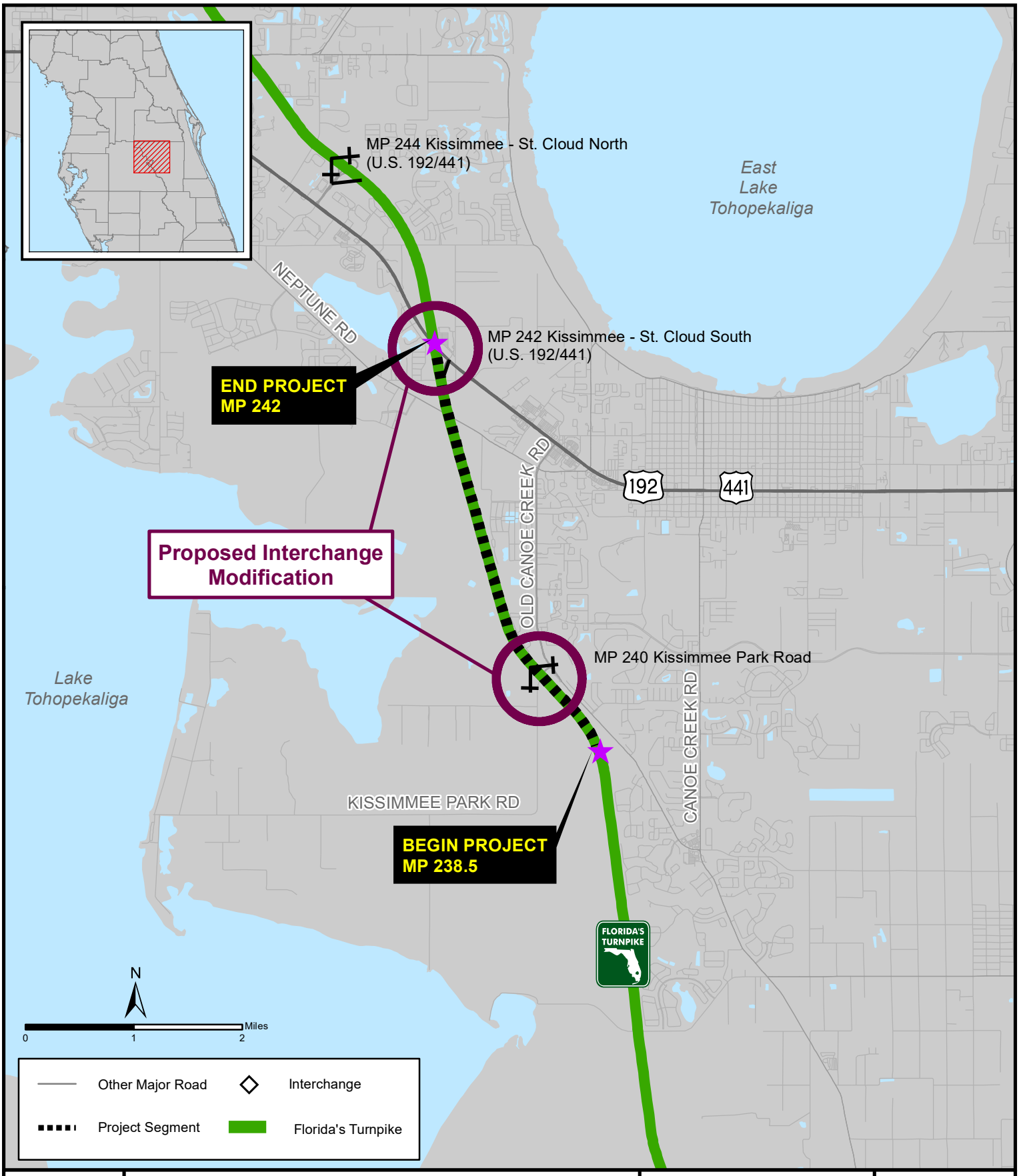
The Kissimmee Park Road interchange with the Florida's Turnpike provides access to and from the north only under existing conditions. The current PD&E study (FPID: 441224-1) is evaluating concepts for the ultimate configuration of the interchange, including access to and from the south. Capacity improvements at the adjacent Old Canoe Creek intersection are also being considered. The U.S. 192 South interchange serves the northbound off-ramp only. The on-going Florida's Turnpike mainline design and widening project from MP 242 to MP 249 (FPID: 436194-1) will add ramps to and from the north. The current PD&E study (FPID: 441224-1) is evaluating the addition of a southbound on-ramp.

This Systems Interchange Modification Report (SIMR) documents traffic operations analysis and safety evaluations for the proposed reconfiguration/modification of the Kissimmee Park Road and U.S. 192 South interchanges along the Florida's Turnpike. The SIMR has been developed in accordance with Florida Department of Transportation (FDOT) *Policy Topic No. 000-525-015-h, Approval of New or Modified Access to Limited Access Highways on the State Highway System (SHS)*; the FDOT *Interchange Access Request User's Guide (IARUG)*; FDOT *Procedure No. 525-030-160-l, New or Modified Interchanges*; and FDOT *Procedure No. 525-030-120-j, Project Traffic Forecasting*.

The Methodology Letter of Understanding (MLOU) for the SIMR was approved by FTE, the Requestor, FDOT District Five and FDOT Central Systems Implementation Office in October 2019. A copy of the executed MLOU is provided in **Appendix A**. Per the MLOU, the analysis years for the SIMR are 2018 (existing), 2025 (opening) and 2045 (design).

1.1 PURPOSE AND NEED

Reconfiguration of the Kissimmee Park Road interchange and capacity improvements are being proposed to address existing and future traffic congestion and related safety issues. Traffic at the Florida's Turnpike southbound off-ramp terminal intersection currently experiences long delays and queues during the evening commute. Queues extend along the full length of the ramp and onto the freeway mainline. This is mainly due to the heavy southbound off-ramp left-turn traffic demand which exceeds the capacity of the existing single left turn lane. Also, eastbound right-turn queues at the adjacent and closely spaced Old Canoe Creek Road intersection extend upstream to the interchange ramp terminals, compounding the backups along the southbound off-ramp and mainline. As traffic demand increases in the future, traffic operations are expected to deteriorate within the interchange and along the freeway mainline.



FLORIDA'S TURNPIKE	**Florida's Turnpike PD&E Study from MP 238.5 to 242** **Systems Interchange Modification Report (SIMR)**	**Project Location**	**Figure 1.1**

There is also a need to complete the Kissimmee Park Road partial interchange by adding access ramps to and from the south, and the U.S. 192 South interchange by adding a southbound on-ramp. Travel demand on the Florida's Turnpike through much of Orange and Osceola County has increased significantly. The Florida's Turnpike system has continued to grow as a "commuter" facility serving trips between urban centers it passes through. The Florida's Turnpike has become an important component of local transportation systems. As demand for local access grows, continued increase in traffic volumes at existing interchanges will result in future congestion. If the Florida's Turnpike is to efficiently fulfill this evolving role in the urban transportation system, it will require new or modified access points with major crossing roads and streets. It is within this context that addition of access ramps to and from the south is been proposed at the Kissimmee Park Road interchange, and a southbound on-ramp at the U.S. 192 South interchange. Addition of ramps to and from the south will provide more efficient access points to better serve trips originating or ending in St. Cloud, east of the Florida's Turnpike. For instance, trips heading south currently must travel along U.S. 192 to access the Florida's Turnpike at the Kissimmee -St. Cloud North interchange at MP 244.

1.2 PROJECT LOCATION AND STUDY LIMITS

Kissimmee Park Road intersects with the Florida's Turnpike at MP 240 in Osceola County, Florida, forming a partial interchange, with tolled ramps to and from north. The U.S. 192 South interchange is located at MP 242 along the Florida's Turnpike and currently serves the northbound off-ramp only. The two interchanges are within the Northern Turnpike system, which extends 67 miles from north of the Three Lakes Toll Plaza in Osceola County, through Orlando in Orange County, to I-75 at Wildwood in Sumter County. The Florida's Turnpike has two 12-foot lanes in each direction, with an 8-foot inside and a 10-foot outside paved shoulder, within the study limits. The posted speed is 70 mph. The closest interchange along the Florida's Turnpike is the Kissimmee-St. Cloud North, located at MP 244, about two miles to the north of the U.S. 192 South interchange.

Kissimmee Park Road is a two-lane east-west undivided minor arterial with a posted speed of 35 mph within the study limits. U.S. 192 is an east-west divided major arterial and is currently being widened to six lanes with a posted speed of 45 mph within the study limits. Old Canoe Creek Road is a north-south minor arterial with a posted speed of 45 mph within the study area. It's an undivided roadway with four lanes north of Kissimmee Park Road and two lanes to the south. Nolte Road is an east-west minor arterial that forms a T-intersection with Old Canoe Creek Road. The posted speed is 35 mph within the study area.

The Kissimmee Park Road and U.S. 192 interchanges are within the Area of Influence (AOI) of each other. Along the Florida's Turnpike, traffic impacts resulting from the proposed interchange modifications are expected on the freeway mainline and at the adjacent Kissimmee-St. Cloud North southbound on-ramp, located about two miles to the north. The closest interchange to the south is about 47 miles away, at Yeehaw Junction. This interchange is too far from the proposed modifications, tests showed that traffic impacts are not expected. The anticipated AOI for the SIMR is depicted on **Figure 1.2**.

FLORIDA'S TURNPIKE	**Florida's Turnpike PD&E Study from MP 238.5 to 242** **Systems Interchange Modification Report (SIMR)**	**Area of Influence**	**Figure 1.2**

The AOI includes the following in the 2018 existing conditions:

- Interchanges and ramps along Florida's Turnpike
  - Kissimmee-St. Cloud North Southbound On-ramp at MP 244
  - Kissimmee-St. Cloud South (U.S. 192) interchange at MP 242
  - Kissimmee Park Road interchange at MP 240
- Intersections along Kissimmee Park Road
  - Florida's Turnpike Southbound Off-ramp
  - Florida's Turnpike Northbound On-ramp
  - Old Canoe Creek Road
- Intersections along old Canoe Creek Road
  - Nolte Road

This section highlights the traffic operational analysis methodology and traffic factors used in development of the analysis contained in this document.

2.1 TRAFFIC OPERATIONAL ANALYSIS METHODOLOGY

Detailed operational analyses were performed for 2018 (existing), 2025 (opening) and 2045 (design) year conditions.

Signalized intersections were evaluated using Synchro Version 10, based on the Highway Capacity Manual (HCM) Sixth Edition Level of Service (LOS) and the delay targets presented in **Table 2.1**. Unlike the HCM, Synchro has additional procedures for estimating control delay, such as estimation of right turn on red and queue delay associated with starvation and spillback. Thus, Synchro is expected to yield more accurate results than HCM because of these additional refinements.

Table 2.1
Signalized Intersection HCM Sixth Edition Level of Service Criteria

Control Delay (s/veh)	LOS by Volume-to-Capacity Ratio*	
	≤1.0	>1.0
≤10	A	F
>10-20	B	F
>20-35	C	F
>35-55	D	F
>55-80	E	F
>80	F	F

*For approach-based and intersection wide assessments, LOS is defined solely by control delay. Control delay and volume-to-capacity ratio are used to characterize LOS for a lane group.

Future year capacity analysis for freeway mainline utilized the capacity targets published in the 2013 FDOT Quality and Level of Service (LOS) Handbook. Capacity analysis for ramp roadways was based on targets from the Highway Capacity Manual (HCM). The FDOT and HCM capacity targets were adjusted for local conditions such as speed, truck proportion, Peak Hour Factor (PHF), and driver population where applicable.

The VISSIM microsimulation software was used to further analyze existing and future traffic operations at a more detailed level for the entire study area. Freeway segments (basic, merge/diverge and weave), ramps, and intersections within the AOI were evaluated. VISSIM is a microscopic traffic flow simulation model based on car following, lane change, and queuing logic. VISSIM models each individual vehicle within the network in order to determine the performance measures for freeways, ramps, and intersections.

The VISSIM model was developed consistent with the latest Federal Highway Administration (FHWA) and FDOT guidelines: *FHWA Traffic Analysis Toolbox Volume III: Guidelines for Applying Traffic*

Microsimulation Modeling Software, July 2004; and FDOT Traffic Analysis Handbook: A Reference for Planning and Operations, March 2014. Model development and parameter adjustments were performed using the latest techniques and best engineering practices.

The VISSIM model calibration and analysis for freeway segments was based on the FDOT capacity targets adjusted for local conditions. Arterial links were calibrated based on flow rates from the HCM and inherently reduced to an actual flow in the network model depending on vehicle interactions, signal control, intersection geometry, truck proportion, proximity of adjacent intersections, etc. The existing conditions VISSIM model development and calibration documentation is provided in **Appendix D**.

In VISSIM microsimulation, Measures of Effectiveness (MOEs) selected for analysis of freeway segments included percentage of demand served, speed, and density in passenger cars per mile per lane (pcpmpl). Research indicates that the HCM methodology for calculating density is different from microsimulation methods. Therefore, density estimated by microsimulation tools like VISSIM cannot be directly related to HCM LOS criteria. However, density from VISSIM files (vehicles per mile) was converted into pcpmpl by dividing the VISSIM density by the number of lanes and multiplying by a heavy vehicle factor, following the HCM methodology. The HCM Sixth Edition LOS and density targets for freeway segments are listed in **Table 2.2** for information only.

Table 2.2
Freeway Segments HCM Sixth Edition LOS Criteria

LOS	Basic (HCM Exhibit 12-15)	Merge and Diverge (HCM Exhibit 14-3)	Weaving (HCM Exhibit 13-6)
A	≤ 11	≤ 10	0-10
B	> 11-18	> 10-20	> 10-20
C	> 18-26	> 20-28	> 20-28
D	> 26-35	> 28-35	> 28-35
E	> 35-45	> 35	> 35
F	Demand exceeds capacity or density > 45	Demand Exceeds Capacity	Demand Exceeds Capacity

Ramp roadways in VISSIM were evaluated based on percentage of demand served and average travel speed. Intersections were evaluated in VISSIM based on percentage of demand served, average intersection delay, and queue lengths. Due to the incongruences between HCM and microsimulation methodologies, delay estimated by microsimulation tools like VISSIM cannot be directly related to the HCM LOS criteria in **Table 2.1**.

2.2 TRAFFIC FACTORS

The traffic factors for this study are presented in **Table 2.3**. The Design Hour Factor (K) is the proportion of the Annual Average Daily Traffic (AADT) that occurs during the design hour. The Directional Distribution Factor (D) is the proportion of traffic traveling in the peak direction during the design hour. The K and D factors represent the traffic demand a roadway is typically designed to accommodate.

Table 2.3
Future Traffic Factors

Segment	Traffic Factors				MOCF
	K	D	T_{24}	DHT	
Florida's Turnpike Mainline	10.5%*	53.7%	16.7%	9.0%	0.98
Florida's Turnpike Ramps					
Kissimmee Park Road/Nolte Road Northbound on and Southbound off-ramps	11.5%	66.2%	8.2%	5.0%	
Kissimmee Park Road/Nolte Road Southbound on and Northbound off-ramps	11.7%	62.1%	8.2%	5.0%	
U.S. 192 South Northbound on and Southbound off-ramps	9.8%	69.9%	8.2%	5.0%	
U.S. 192 South Southbound on and Northbound off-ramps	10.2%	57.0%	8.2%	5.0%	
Arterials					
Kissimmee Park Road	9.0%*	58.8%	8.2%	5.0%	
Old Canoe Creek Road, South of Kissimmee Park Road		64.4%	5.4%	3.0%	
Old Canoe Creek Road, North of Kissimmee Park Road		57.0%	5.4%	3.0%	
U.S. 192		57.3%	8.8%	5.0%	
Nolte Road, East of Old Canoe Creek Road		57.0%	3.1%	2.0%	
Nolte Road, Old Canoe Creek Road to Florida's Turnpike		61.3%	3.1%	2.0%	
Nolte Road, West of Florida's Turnpike		59.2%	3.1%	2.0%	

Source:
*Turnpike's Standard K factor is based on FTE's annual factor development. Arterials Standard K is from Florida Transportation Information (FTI) and FDOT Project Traffic Forecasting Handbook.
K for ramps, D and T estimated from FTE's *Traffic Planning and Engineering Report*, toll and count data - following the FDOT Project Traffic Forecasting Handbook.

For future conditions analysis, this study used the standard K factor for the Florida's Turnpike mainline and arterials. Consistent with other FDOT districts, FTE has developed standard K factors for use in planning and design applications. The K factors for the Florida's Turnpike ramps as well as the D factors for the mainline and ramps were obtained from the FTE's *Traffic Planning and Engineering Report*. The D factors for the arterials were calculated using count data. The K and D factors were

adjusted where applicable based on future projections to account for anticipated changes in land use and traffic patterns.

The Design Hour Truck (DHT) factor is the proportion of trucks within the peak hour and is assumed to be half of the daily truck (T_{24}) proportion rounded up to the nearest whole number for this study. Daily truck (T_{24}) factors for the Florida's Turnpike mainline and tolled ramps were estimated from FTE's monthly class data from Fiscal Year *2017 Enterprise One Reports* (Toll Traffic by Vehicle Class by Month). The data were averaged to estimate daily trucks (3 axles and more) and adjusted to account for buses and 2-axle single unit trucks. Truck percentages for the non-tolled ramps were estimated from applicable adjacent truck toll data. Truck percentages for arterials were estimated using count data. A PHF of 0.95 was assumed for future conditions analysis. The PHF is the ratio of total peak hour volume and the peak rate of flow within the hour. It accounts for the variability of traffic flow within the hour.

Existing conditions such as population, land use, roadway facilities, existing traffic data collection, and crash data are described in this section.

3.1 REGIONAL POPULATION, EMPLOYMENT AND LAND USE

The Florida's Turnpike PD&E study from MP 238.5 to 242 is located within Osceola County and includes the cities of Kissimmee and St. Cloud. Osceola County is the 19th largest county (by population) in the state of Florida. According to the University of Florida's Bureau of Economic and Business Research (BEBR), the county population grew by 14.8 percent between 2010 and 2015, the second largest percentage increase over that period in the state. The population growth rate in Osceola County was higher than that of the state, which grew by nine percent over the same period. **Table 3.1** summarizes the 2010 and 2015 population and growth.

Table 3.1
Historical Population and Growth

Area	US Census	BEBR Estimate	Change	% Change
	2010	2015	2010 – 2015	2010 - 2015
Osceola County	268,685	308,327	39,642	14.8
Florida	18,801,330	19,815,183	1,013,853	5.4

Source: 2010 Census and Bureau of Economic and Business Research (BEBR)

Employment in Osceola County increased by 26.1 percent from 2010 to 2015, as shown in **Table 3.2**. Employment in the county, like the population, grew at a faster rate than the state (15.9 percent) in the same time frame. Osceola County's employment growth is due, in part, to its proximity to Orange County, which is the economic hub of eastern central Florida. The area features some of the highest total employment and employment growth in the state. In 2015, the Orlando-Kissimmee-Sanford Metropolitan Area contained approximately 1.5 million employees.

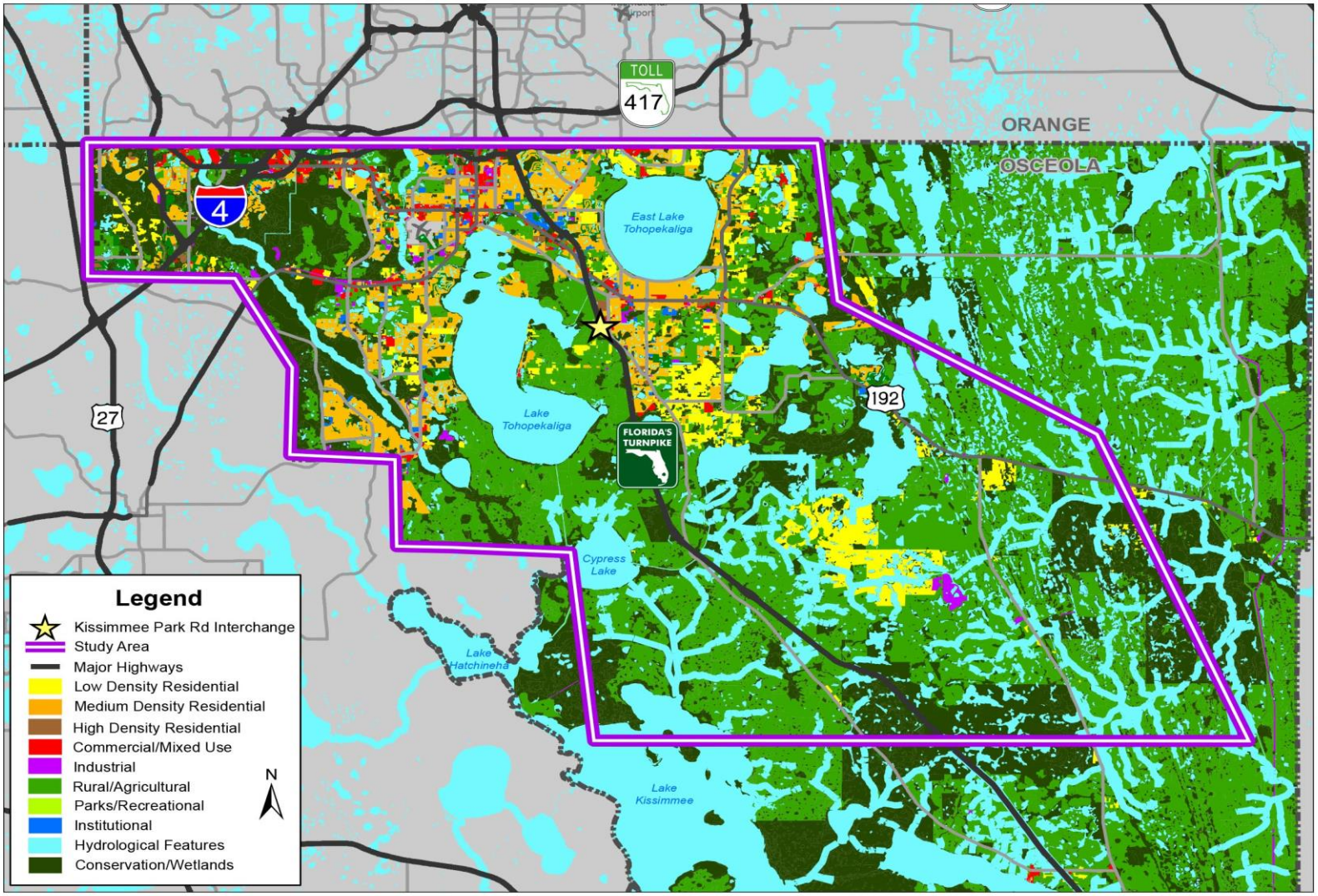
Table 3.2
Historical Employment and Growth

Area	Estimate		Change	% Change
	2010	2015	2010 - 2015	2010 – 2015
Osceola County	101,338	127,787	26,449	26.1
Florida	9,805,154	11,366,665	1,561,511	15.9

Source: U.S Bureau of Economic Analysis (BEA) and U.S. Bureau of Labor Statistics (BLS)

The existing land use within the study area, shown on **Figure 3.1**, is primarily a mixture of low to medium density residential and rural/agricultural. The area in close proximity to the Kissimmee Park Road interchange is comprised of medium density residential and rural, low density residential land uses.

Figure 3.1
Existing Land Use



The area along the Florida's Turnpike southeast of the Kissimmee Park Road interchange features higher density and more urbanized development than much of the county. The City of St. Cloud is located south of East Lake Tohopekaliga, which features a significant amount of residential land use. The area west of the Florida's Turnpike features predominately lower density rural land uses with scattered low-density residential area located along Lake Tohopekaliga.

The study area contains 13 Development of Regional Impact (DRI) projects. The developments are all in various stages of construction. The study area also contains several Planned Unit Developments (PUDs) or Planned Developments (PDs). Many of the PUDs and PDs are older, established developments that have reached full build out. Some PDs in the area are older DRIs that were converted to PDs after a change to state laws allowing such conversions. Error! Reference source not found. shows the locations of the developments within the study area.

Airport Industrial Park, located at the northeast corner of South Orange Avenue and East Wetherbee Road, was approved in 1982. The development is approved for 20.8 million square feet of industrial space, 700,000 square feet of office space, and 400,000 square feet of commercial/retail space. Though the development currently features significant levels of existing development, the DRI has not reached full build out and has capacity for future growth.

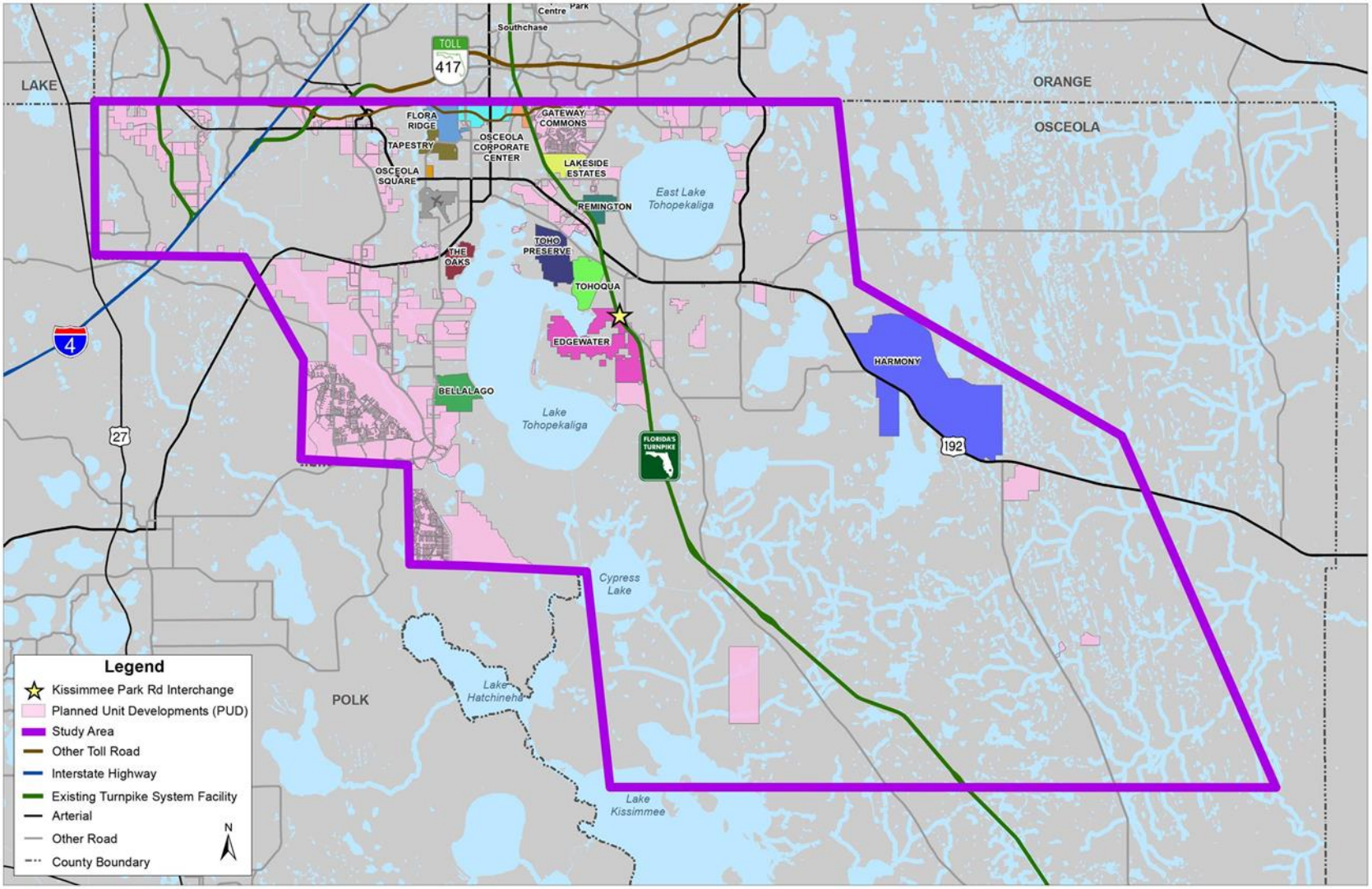
Bellalago, located at southwest corner of Lake Tohopekaliga, was first approved in 2002. The development was approved for 1,744 single family dwelling units, 501 multi-family units and 244,000 square feet of retail/office space. The development is nearing build out.

Edgewater, is located east of Lake Tohopekaliga and was first approved in 2006. The development was approved for 7,000 dwelling units, 1,000,000 square feet of retail space and 1.9 million square feet of office space. The development has been amended since it was first approved and has not yet begun construction.

Flora Ridge, is located at the Orange/Osceola county line just south of Hunters Creek. The development was originally approved in 2000 and allows for 2,229 single family dwelling units, 1,590 multi-family dwelling units, 1.4 million square feet of retail space, 700,000 square feet of office space, 400,000 square feet of industrial space and 600 hotel rooms. The development is active with remaining entitlements.

Gateway Commons, is located within the City of Kissimmee, near the Orange/Osceola county line. The development was originally approved for 695,000 square feet of retail space, 265,000 of business park space and 700 hotel rooms. The development is nearly built out.

Figure 3.2
Study Area Developments



Harmony, is located southeast of the City of St. Cloud along U.S. 192/441. The development, originally known as Birchwood, was first approved in 1992 and allow for 7,200 dwelling units, 350,000 square feet of retail space, 500,000 square feet of office space and 1 million square feet of industrial space. The development is active with remaining development entitlements.

Kindred (Toho Preserve), is located east of Lake Tohopekaliga and was approved in 2006 and later rescinded as a DRI in 2016. The development is approved for 3,615 dwelling units 350,000 square feet of retail space, 100,000 square feet of office space and 100,000 square feet of institutional space.

Lakeside Estates is located with the City of Kissimmee, south of the Buena Ventura Lake area in Osceola County. The development was approved for 2,258 dwelling units and 300,00 square feet of retail space. The development is currently at build out.

Osceola Corporate Center, is located in northern Osceola County, just south of the Hunter's Creek Area in Orange County. The development was first approved in 1989 and allows for 2,350 multi-family dwelling units, 1.85 million square feet of office space, 80,000 square feet of office/warehouse space, 1.78 million square feet of retail space and 500 rooms. The development is active with remaining development entitlements.

Osceola Square Mall, is located in the City of Kissimmee, just north of the Kissimmee Gateway Airport. The development was first approved in 1985 for 360,000 square feet of retail space and 600 multi-family dwelling units. The development is built out.

Remington, is located in Osceola County, west of East Lake Tohopekaliga. The development was first approved in 1990 and through amendments, allows for 1,544 single family dwelling units, 430 multi family dwelling units, 20,000 square feet of retail and an 18-hole golf course. The development is built out.

Tapestry, is located in the City of Kissimmee, north of the Kissimmee Gateway Airport. The development was first approved in 2005 for 3,030 dwelling units and 90,000 square feet of retail space. Though the DRI was rescinded in 2012, the development is still active with ongoing construction.

The Oaks, is located in the City of Kissimmee, northwest of Lake Tohopekaliga. The development was approved in 1987 and allows for 903 dwelling units. The development is built out.

Tohoqua, is located in Osceola County east of Lake Tohopekaliga. The development was first approved in 2007 and allows for 3,220 dwelling units, 150,000 square feet of retail/office space, 30,000 square feet of institutional space, and 300 hotel rooms. The development had its DRI status rescinded in 2016 and is now designated at a Planned Development.

3.2 ROADWAY FACILITIES

The following is a description of the roadways within the project study limits:

Florida's Turnpike

The Florida's Turnpike provides multi-regional connectivity from Miami-Dade County in South Florida to Interstate 75 (I-75) north of Wildwood in Sumter County. The proposed interchange modifications at MP 240 and 242 are within the Northern Turnpike system which extends 67 miles from north of the Three Lakes Toll Plaza in Osceola County, through Orlando in Orange County, to I-75 at Wildwood in Sumter County. Within the vicinity of the proposed interchange modifications, the Turnpike has two 12-foot lanes in each direction, with 8-foot inside and 10-foot outside paved shoulders. The posted speed on the Florida's Turnpike is 70 mph within the study area.

Kissimmee Park Road

Kissimmee Park Road is an east-west arterial that begins close to Lake Tohopekaliga and ends at Old Canoe Creek Road in Osceola County, crossing the Florida's Turnpike. Within the study area, Kissimmee Park Road is a two-lane undivided arterial that forms a partial interchange with the Florida's Turnpike serving trips to/from north only. The posted speed is 35 mph within the study area. **Figure 3.3** is an aerial depiction of the Kissimmee Park Road and Florida's Turnpike interchange.

U.S. 192

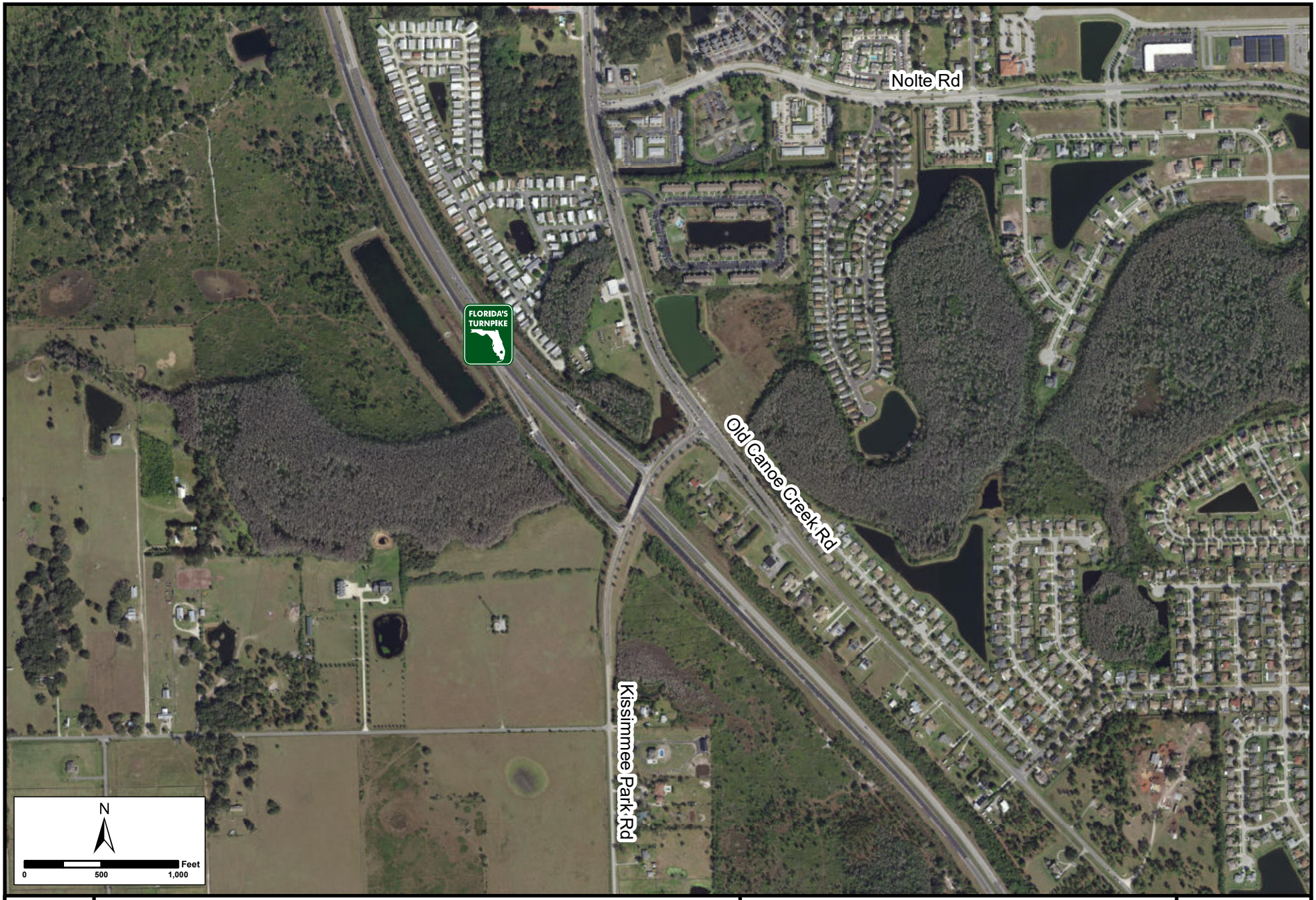
U.S. 192 is an east-west arterial that begins at U.S. 27 in Lake County and ends at S.R. A1A in Brevard County, crossing several major roadways including I-4, U.S. 17/92/441, Florida's Turnpike, and I-95. Within the study area, U.S. 192 is a divided urban principal arterial classified as an Access Management Class Three facility (controlled access) and the posted speed is 45 mph. U.S. 192 was widened in 2019 to six lanes from Aeronautical Drive to Budinger Avenue (FPID: 239682-1) within the study area. U.S. 192 connects twice with the Florida's Turnpike; at MP 244 (U.S. 192 North) with a three-ramp trumpet interchange and at MP 242 (U.S. 192 South) with a single-ramp interchange. **Figure 3.4** is an aerial depiction of the U.S. 192 South and Florida's Turnpike interchange which is within the study area.

Old Canoe Creek Road

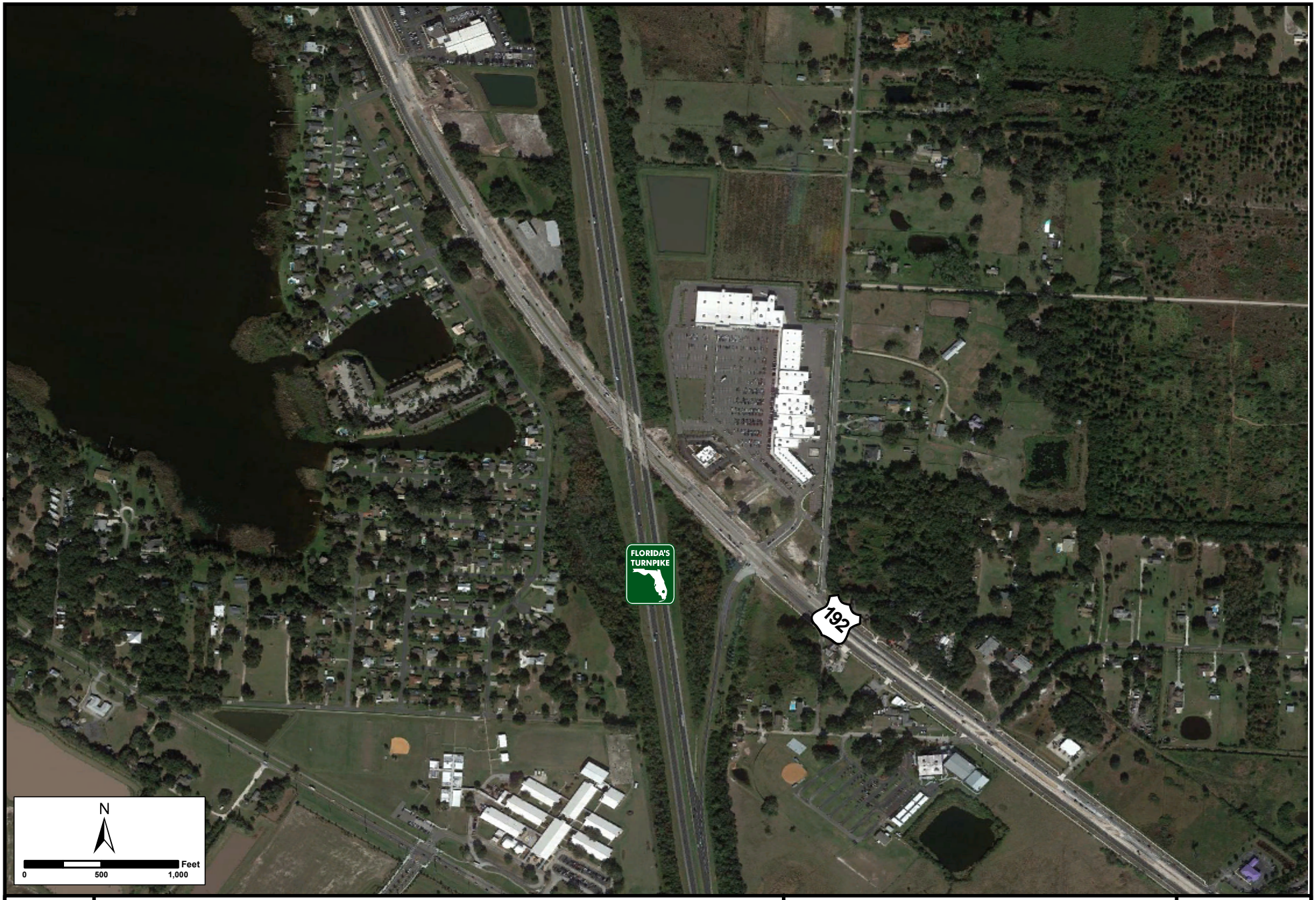
Old Canoe Creek Road is a north-south minor arterial with a posted speed of 45 mph within the study area. It's an undivided roadway with four lanes north of Kissimmee Park Road and two lanes to the south. The intersection of Kissimmee Park Road and Old Canoe Creek Road is shown on **Figure 3.3**.

Nolte Road

Nolte Road is a four-lane, divided, east-west rural collector which currently does not have a direct access from the Florida's Turnpike. It starts at Old Canoe Creek Road and ends at Hickory Tree Road, providing access to mostly residential areas. It forms a T-intersection with Old Canoe Creek Road and has a posted speed limit of 35 mph. The intersection of Nolte Road and Old Canoe Creek Road is shown on **Figure 3.3**.



FLORIDA'S TURNPIKE	**Florida's Turnpike PD&E Study** **From MP 238.5 to 242** **Systems Interchange Modification Report(SIMR)**	**Florida's Turnpike and Kissimmee Park Road** **Interchange Aerial Photograph**	**Figure 3.3**



FLORIDA'S TURNPIKE	**Florida's Turnpike PD&E Study** **From MP 238.5 to 242** **Systems Interchange Modification Report(SIMR)**	**Florida's Turnpike and U.S. 192 South Interchange Aerial Photograph**	**Figure 3.4**

3.3 EXISTING CRASH DATA

Crash data for state roads within the project AOI were processed using the most recent five-year data from the FDOT's Crash Analysis Reporting System (CARS), from 2012 through 2016. Crash data for non-state roads were obtained from the Signal Four Analytics tool, an FDOT-funded database developed in coordination with the state's CARS. Signal Four data was processed for the same time period as the CARS data. Detailed crash reports (long forms) were reviewed to verify the accuracy of the information obtained from the databases.

A total of 261 crashes were reported within the AOI during the five-year study period from 2012 to 2016, as presented in **Table 3.3**. There was an increase in the number of crashes from 2012 to 2013 but a decrease in 2014. The number of crashes increased from 2014 to 2016. The highest increase in number of crashes was between 2014 and 2015. Overall, the number of crashes doubled from 2012 to 2016, an indication that safety has been degrading in the area. All the crashes resulted in injury and property damage only. No fatalities were reported during the five-year analysis period.

Table 3.3
Number of Crashes and Crash Severity by Year

Crash Severity	2012	2013	2014	2015	2016	Total	Proportion
Fatality	0	0	0	0	0	***0***	0.0%
Injury	19	24	19	28	34	***124***	47.5%
Property Damage Only	18	21	21	38	39	***137***	52.5%
Total	***37***	***45***	***40***	***66***	***73***	***261***	100.0%

Table 3.4 summarizes the crashes based on location. Sixty six percent of the crashes occurred on the Florida's Turnpike mainline, seven percent along the ramps, and 27 percent at intersections. The freeway mainline experiences queue backups from the Kissimmee Park Road interchange.

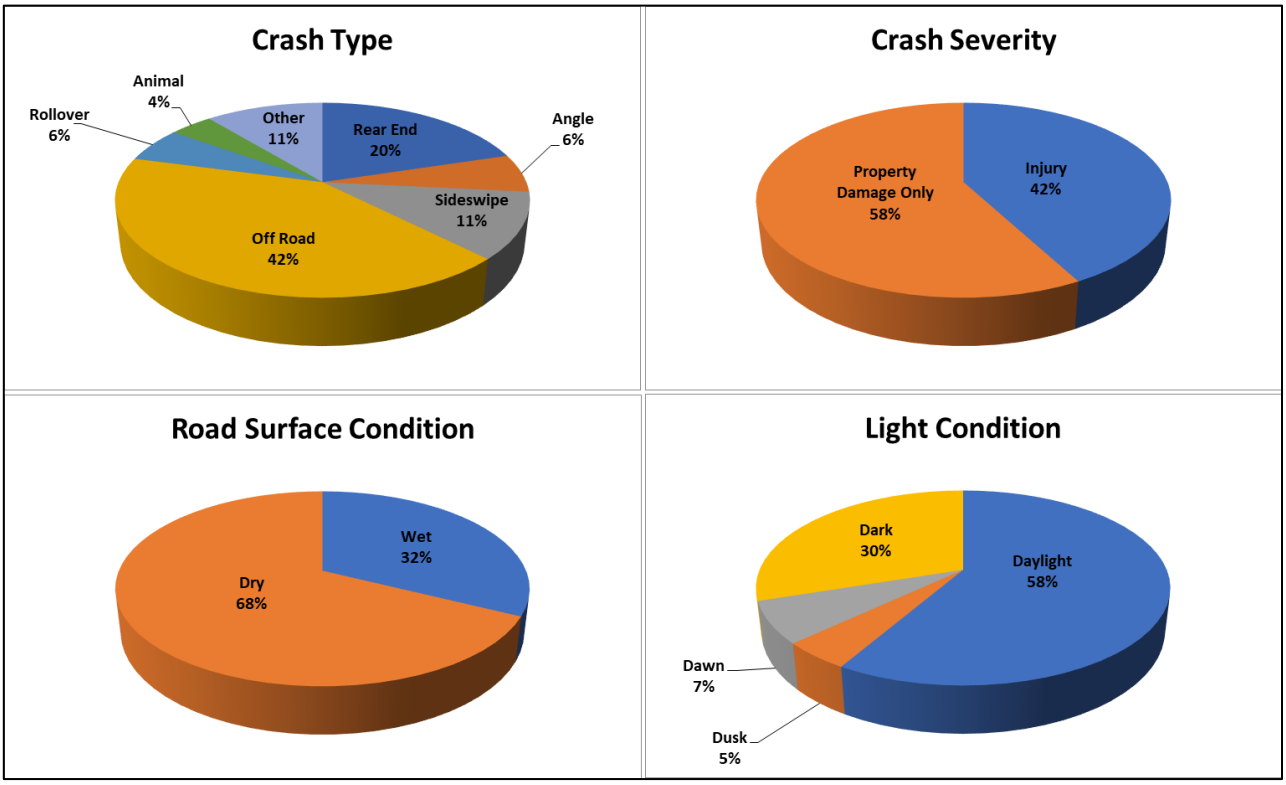
Table 3.4
Number of Crashes on Road Segments

Roadway Segment	2012	2013	2014	2015	2016	*Total*	Proportion
Freeway Mainline	27	32	28	46	40	***173***	66.3%
Ramps	2	6	2	2	6	***18***	6.9%
Intersections	8	7	10	18	27	***70***	26.8%
Total	***37***	***45***	***40***	***66***	***73***	***261***	100.0%

Crash data summaries are provided on **Figure 3.5** through **Figure 3.12** for each location. Crash analysis at the intersections included a 250-foot influence area. Detailed crash data tables and reports are provided in **Appendix B.**

The Florida's Turnpike mainline within the analysis AOI had a total of 173 crashes from 2012 to 2016. The mainline crashes were mostly off road and a few were rear end, as illustrated on **Figure 3.5**. Most of the crashes resulted in property damage only and occurred on dry pavement conditions during the day. Crash occurrence was more frequent on Fridays and Sundays, between 1:00-5:00 PM. Based on the detailed review of the crash reports, many of the crashes resulted from careless driving.

Figure 3.5
Florida's Turnpike Mainline from MP 237 to MP 244.5 Crash Data Summary



At the Kissimmee Park Road interchange ramps, 11 crashes were reported during the five-year analysis period. Most of the crashes were rear end, resulted in injury, and occurred under wet road surface conditions during the day, as shown on **Figure 3.6**. Crash occurrence was somewhat evenly distributed throughout the week, but a few more crashes were reported on Tuesdays, Fridays and Sundays.

Four crashes were reported at the U.S. 192 South interchange northbound off-ramp: three rear end and one angle. Crash severity was split evenly between injury and property damage only, as shown on **Figure 3.7**. Three out of the four crashes occurred on dry pavement, during the day. Crash occurrence was fairly evenly spread through all the days of the week.

At U.S. 192 North interchange southbound on-ramp, three crashes were reported in the five-year analysis period. As shown on **Figure 3.8,** all the three crashes were rear end and occurred during the day. Two crashes resulted in property damage only and occurred on a dry road surface.

Figure 3.6
Kissimmee Park Road Ramps Crash Data Summary

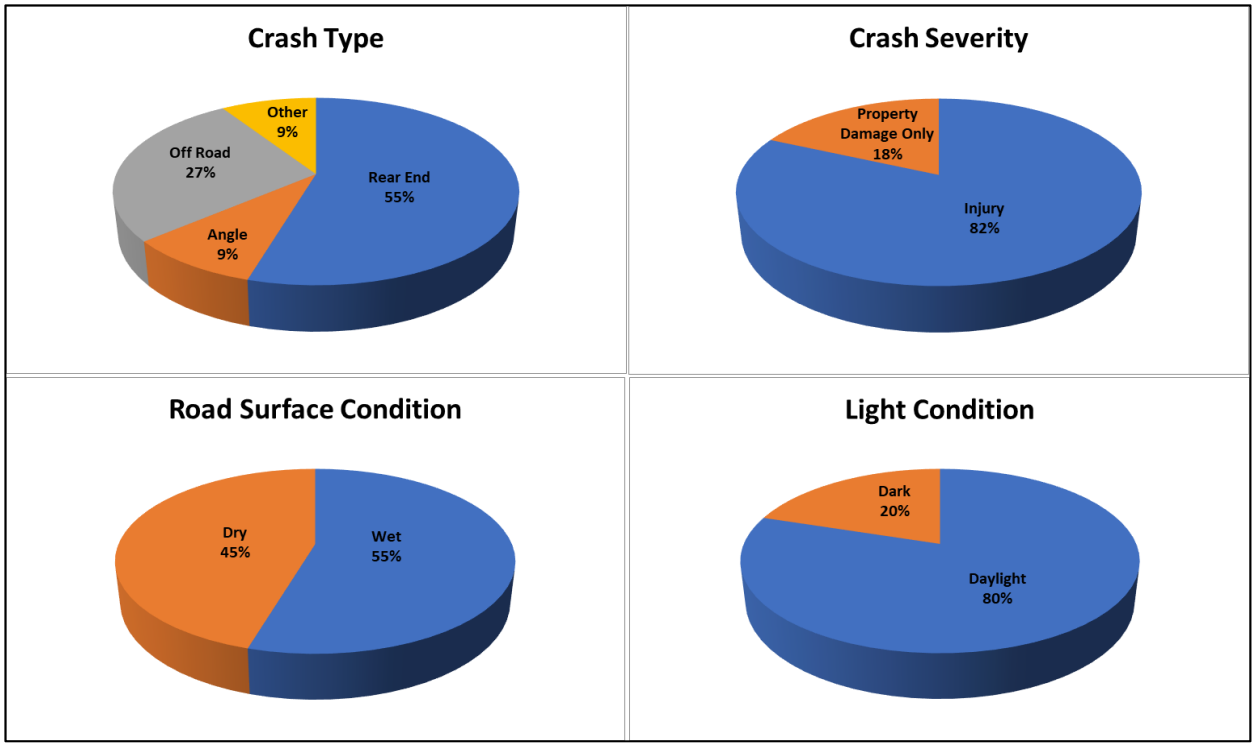


Figure 3.7
U.S. 192 South Northbound Off-ramp Crash Data Summary

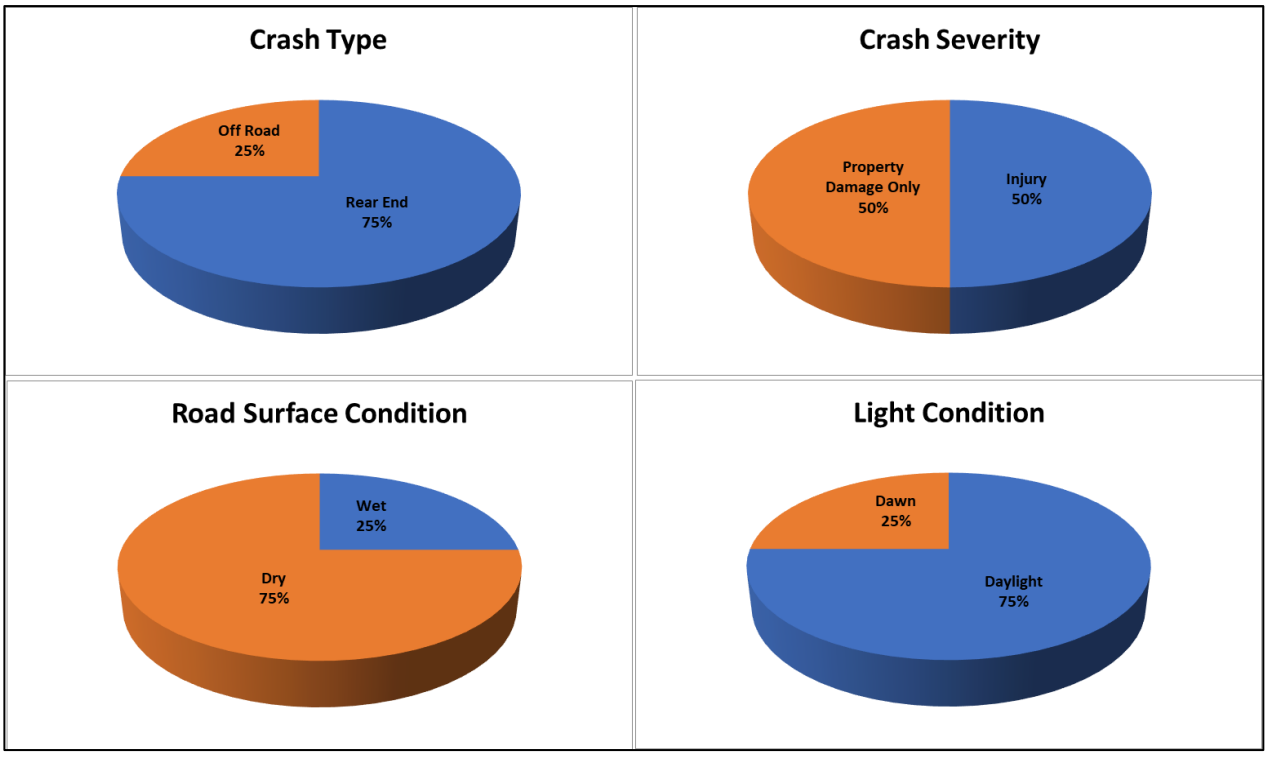
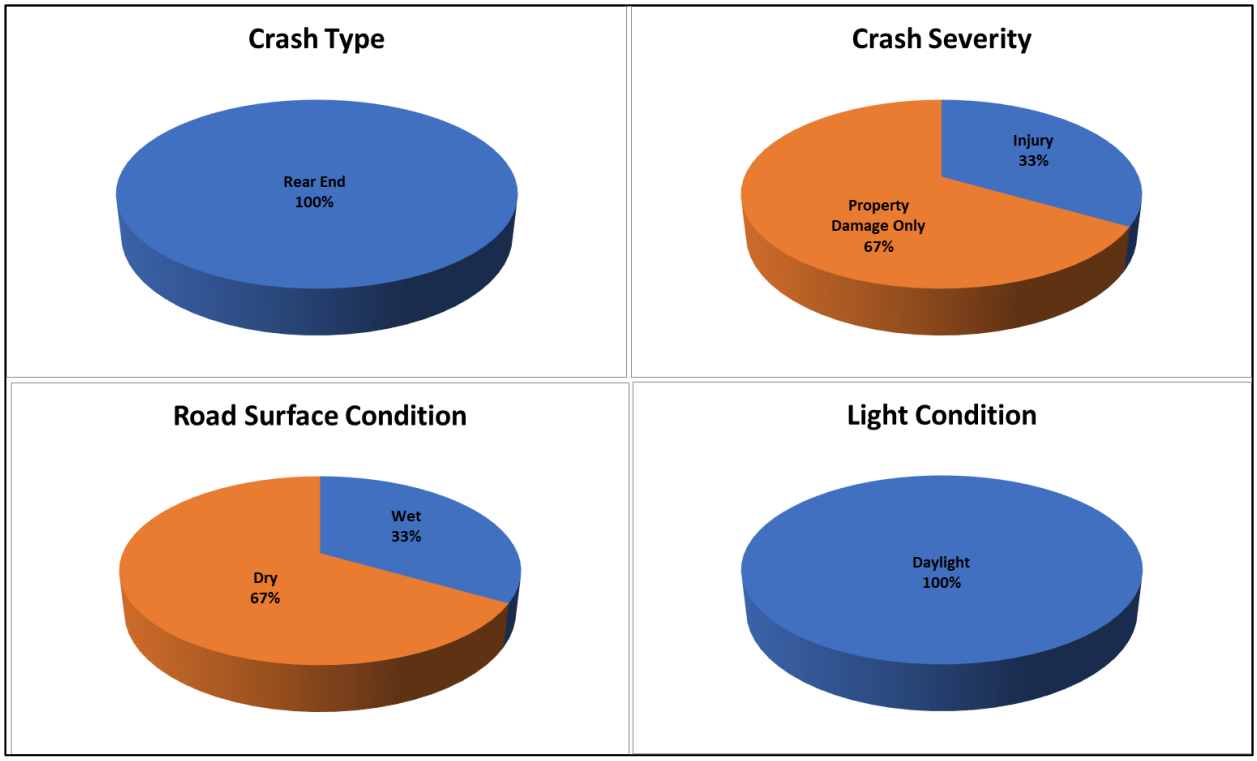


Figure 3.8
U.S. 192 North Southbound On-ramp Crash Data Summary



At the Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp intersection, four crashes were reported from 2012 to 2016. Crash severity was split evenly between injury and property damage only, as shown on **Figure 3.9**. There was also an even split between crashes on dry or wet pavement conditions, but three out of the four crashes occurred during the day.

A total of 46 crashes were reported from 2012 to 2016, at Kissimmee Park Road and Old Canoe Creek intersection. Most of the crashes were rear end, resulted in injury, and occurred under dry road surface conditions during the day, as shown on **Figure 3.10.** Most of the crashes occurred on Tuesdays and Wednesdays, during the morning, midday, and evening peak hours.

At Old Canoe Creek Road and Nolte Road intersection, a total of 15 crashes were reported during the five-year study period. Most of the crashes were rear end, resulted in injury, and occurred under dry road surface conditions during the day, as shown on **Figure 3.11.**

Four crashes were reported at the U.S. 192 South interchange northbound off-ramp: three rear end and one angle. Crash severity was split evenly between injury and property damage only, as shown on **Figure 3.12**. There was also an even split between crashes on dry or wet pavement conditions, but three out of the four crashes occurred during the day. One crash occurred on a Wednesday, two on a Thursday and one on a Friday.

Figure 3.9
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp Intersection Crash Data Summary

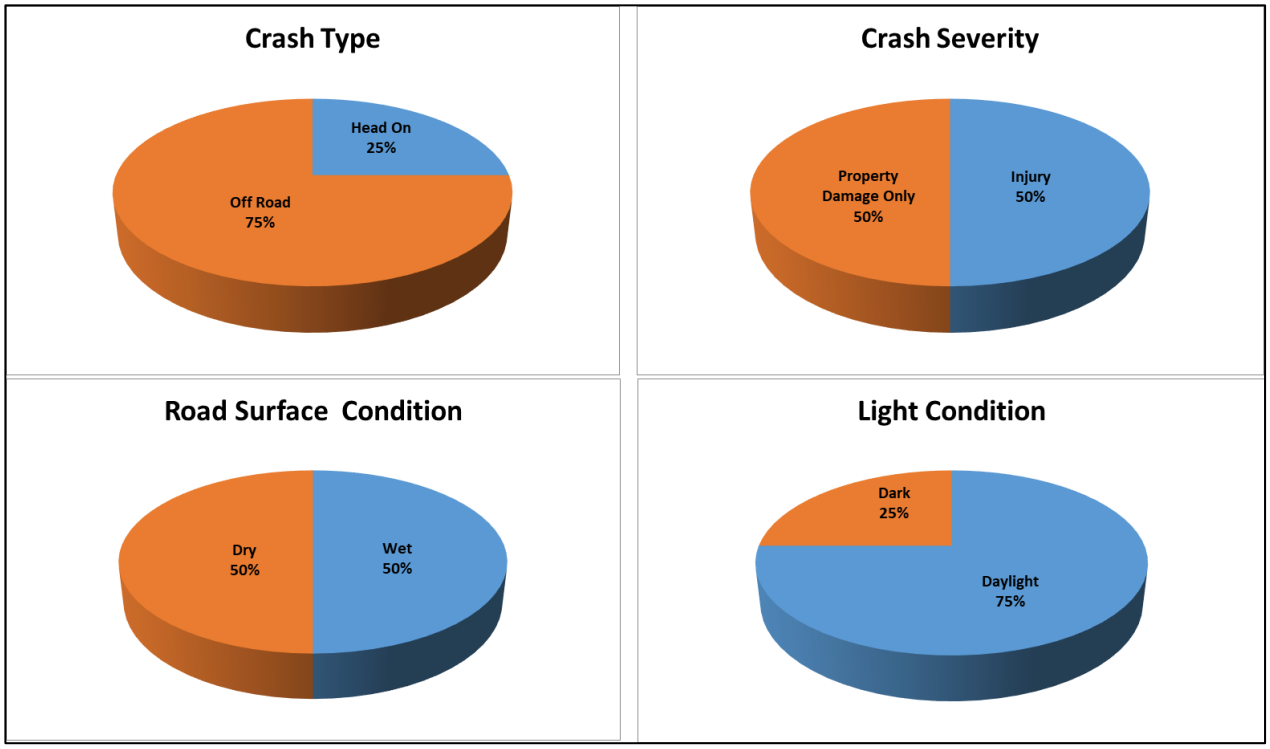


Figure 3.10
Kissimmee Park Road and Old Canoe Creek Road Intersection Crash Data Summary

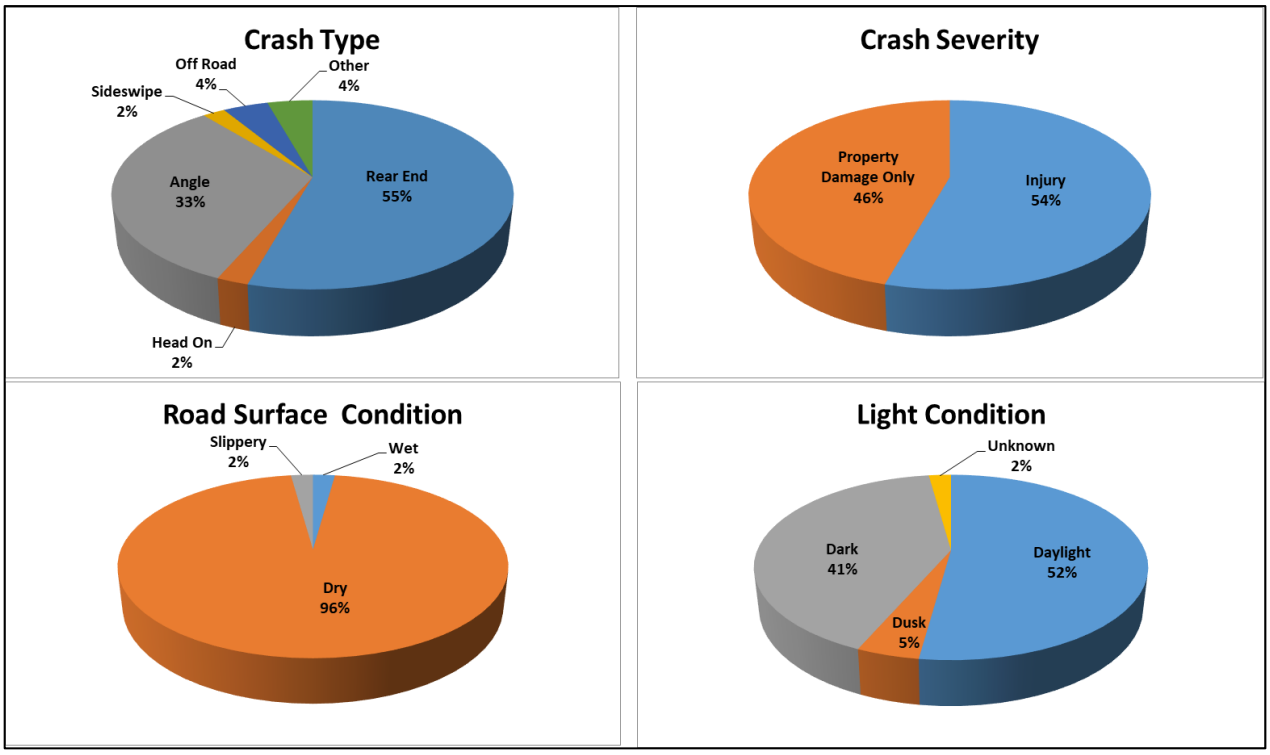


Figure 3.11
Old Canoe Creek Road and Nolte Road Intersection Crash Data Summary

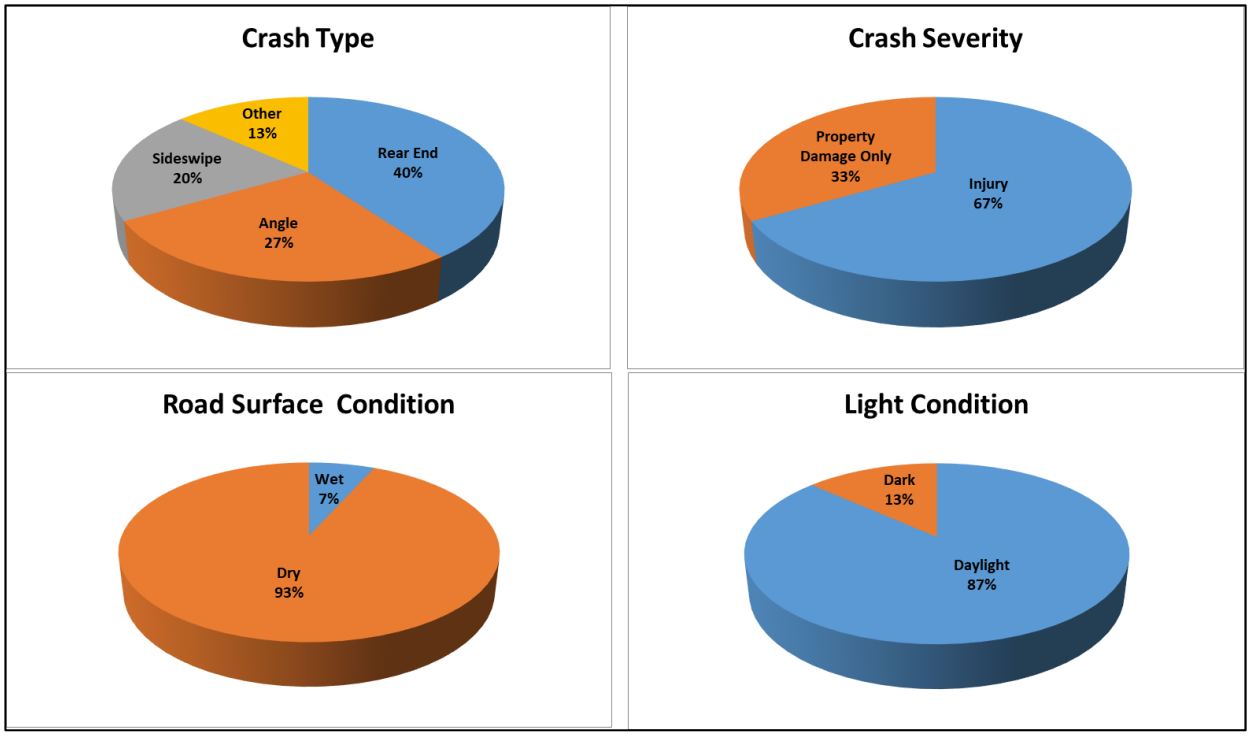
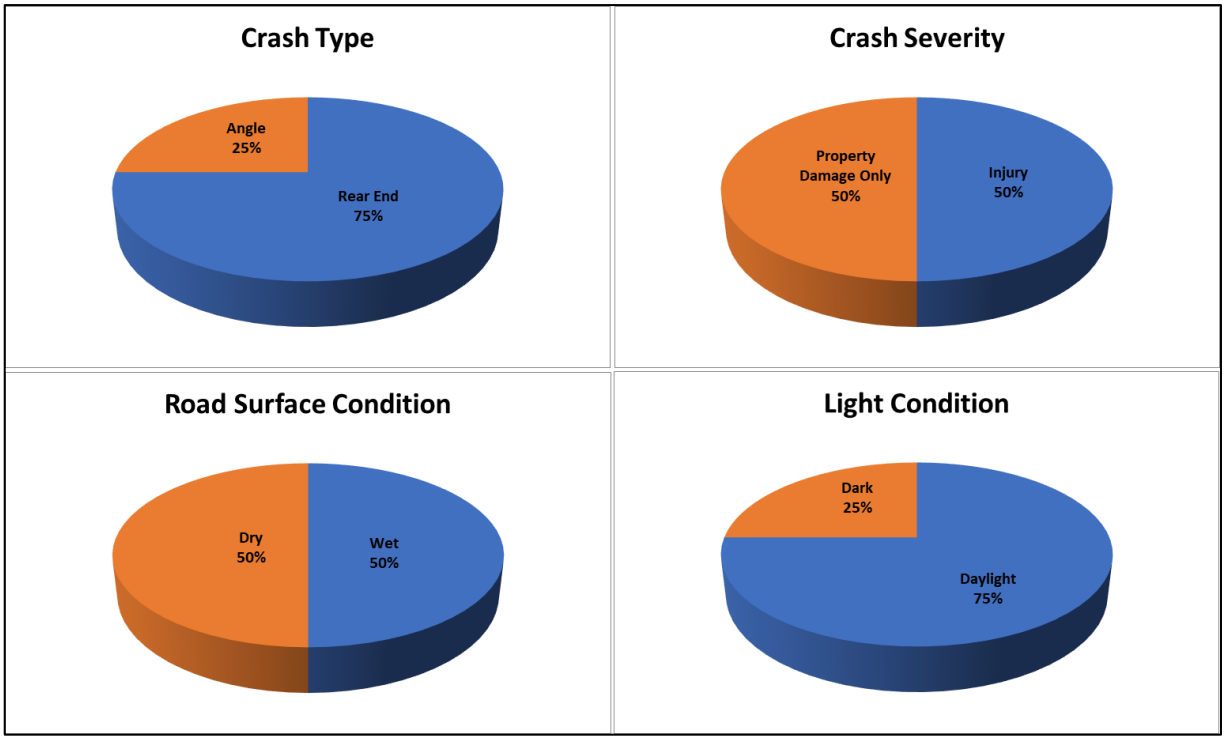


Figure 3.12
U.S. 192 and Florida's Turnpike Northbound Off-Ramp Intersection Crash Data Summary



Only one crash was reported during the five-year period at Kissimmee Park Road and Florida's Turnpike Northbound On-ramp intersection. The crash was off road, resulted in property damage only, and occurred under dry road surface condition during the day.

Actual crash rates were computed and compared with average crash rates for similar facilities within Osceola County to assess the safety condition within the study area. Critical crash rates and safety ratios were also estimated. Crash rates for the Florida's Turnpike freeway and ramps were estimated as crashes per Million Vehicle Miles Travelled (MVMT) and for the intersections as crashes per Million Entering Vehicles (MEV). The critical crash rate is based on the average crash rate for a similar facility adjusted by vehicle exposure and a probability constant. The safety ratio represents the actual crash rate divided by the critical crash rate. If a segment has an actual crash rate higher than the critical crash rate (i.e., safety ratio > 1.0), it may have a safety deficiency. The crash rates are listed in **Table 3.5**.

Table 3.5
Intersection Crash Rates and Safety Ratios for 2012 through 2016

Description	Total Crashes	Actual Crash Rate	Average Crash Rate*	Critical Crash Rate	Safety Ratio
Freeway Mainline Or Ramps					
Florida's Turnpike Mainline	173	0.49	0.56	0.78	0.63
Kissimmee Park Road Ramps	11	0.54	0.56	1.55	0.35
U.S. 192 South Northbound Off-ramp	4	2.96	0.56	5.76	0.51
U.S. 192 North Southbound On-ramp	3	0.78	0.56	5.72	0.24
Intersections					
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	4	0.13	0.08	0.43	0.30
Kissimmee Park Road and Florida's Turnpike Northbound On-ramp	1	0.03	0.08	0.40	0.07
Kissimmee Park Road and Old Canoe Creek Road	46	0.74	0.20	0.53	1.40
Old Canoe Creek Road and Nolte Road	15	0.24	0.20	0.53	0.46
U.S. 192 and Florida's Turnpike Northbound Off-Ramp	4	0.07	0.35	0.80	0.09

* FDOT CARS Osceola County, 5-year Average Crash Rate
Turnpike Mainline: Toll Road Urban
Turnpike Ramps: Ramp Urban
Crash rate not available, used rate for mainline
Kissimmee Park Road & Turnpike Ramps: Suburban 2-3Ln 2Wy Divd Pavd
Kissimmee Park Road & Old Canoe Creek Road: Suburban 4-5Ln 2Wy Divd Rasd
U.S. 192 & S.R. 91 Ramp: Urban 6+Ln 2Wy Divd Rasd

Crash Rate:
Highway/Ramps: Crashes per Million Vehicle Miles Travelled (MVMT)
Intersections: Crashes per Million Entering Vehicles (MEV)

The analysis shows that the Florida's Turnpike mainline within the study limits currently has a safety ratio of 0.63. Even though the safety ration is under 1.0, there is a significant amount of crashes on the mainline, some of which can be attributed to queue backups from the Kissimmee Park Road

southbound off-ramp. There is only one location with a safety ratio greater than 1.0, the intersection of Kissimmee Park Road and Old Canoe Creek Road, indicating that this is a high crash location. This intersection experiences severe traffic congestion during the morning and evening commute.

3.4 CRASH ANALYSIS SUMMARY

The most recent five-year crash data from the state's CARS database is from 2012 through 2016. A total of 261 crashes were reported within the AOI during the five-year study period. The number of crashes doubled from 2012 to 2016. All the crashes resulted in injury and property damage only. No fatalities were reported during the five-year analysis period. Sixty six percent of the crashes occurred on the Florida's Turnpike mainline, seven percent along the ramps, and 27 percent at intersections, during the five-year study period.

The Florida's Turnpike mainline crashes were mostly off road but crashes along the ramps were mainly rear end. Majority of the crashes at the intersections were of rear end and angle type. The analysis shows that the Florida's Turnpike mainline within the study limits currently has a safety ratio of 0.63. Even though the safety ratio is under 1.0, there is a significant amount of crashes on the mainline, some of which can be attributed to queue backups from the Kissimmee Park Road southbound off-ramp. The intersection of Kissimmee Park Road and Old Canoe Creek Road has a safety ratio greater than 1.0, indicating that this is a high crash location. This intersection experiences severe traffic congestion during the morning and evening commute.

Existing traffic data and traffic operational analyses are provided in this section.

4.1 EXISTING TRAFFIC DATA AND LANE GEOMETRY

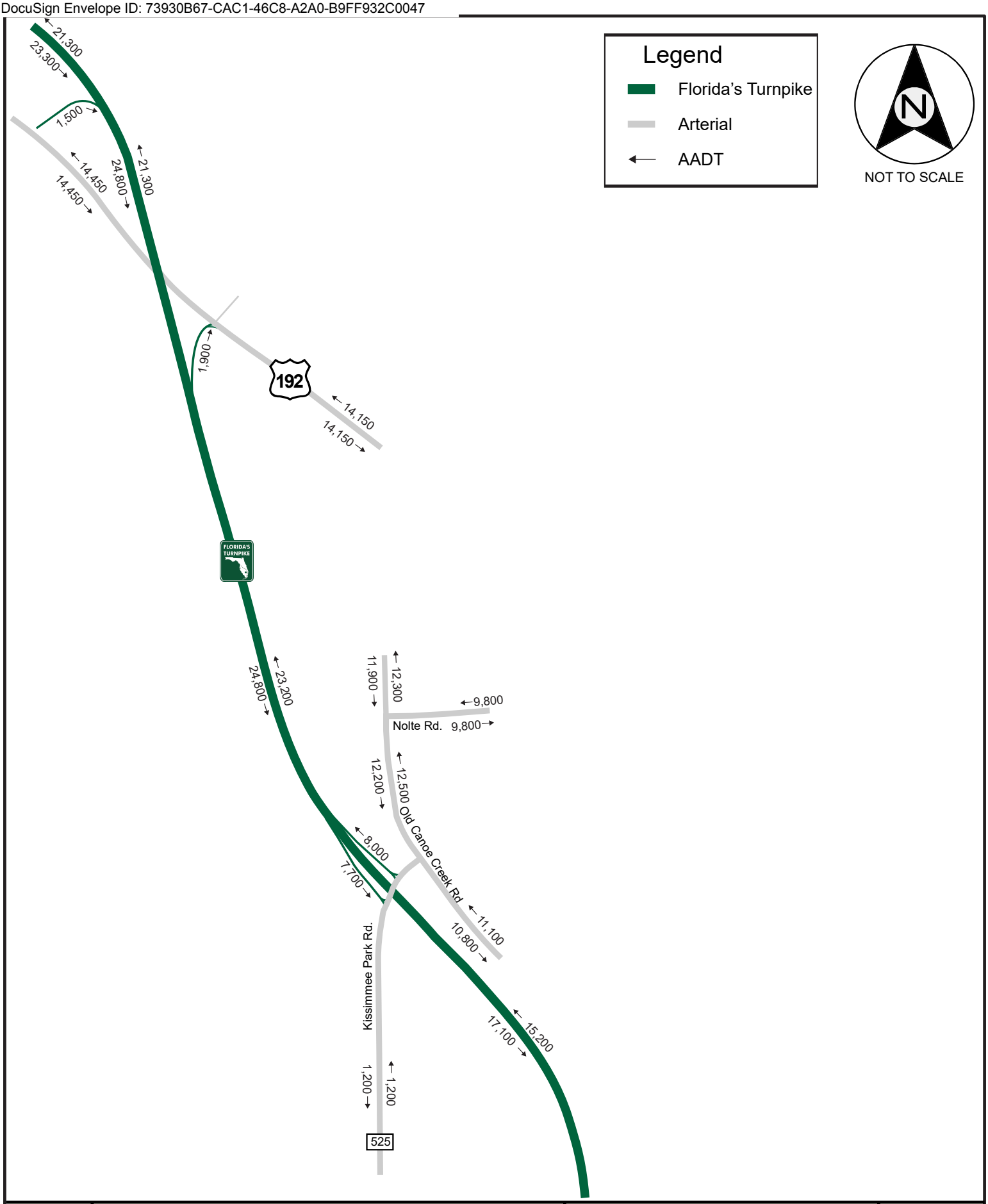
Traffic volumes for the Florida's Turnpike mainline for 2018 were obtained from the Three Lakes Toll Plaza and supplemented with data from the Florida Traffic Online web application for Telemetered Traffic Monitoring Site (TTMS) 97-0429, located on the Florida's Turnpike, south of Neptune Road (C.R. 525). Toll data for the Kissimmee Park Road ramps was used. Traffic data for the U.S. 192 northbound off-ramp was obtained from a previous study. Daily tube and intersection movement counts were collected at the locations listed in **Table 4.1**.

Table 4.1
Field Data Collection Locations

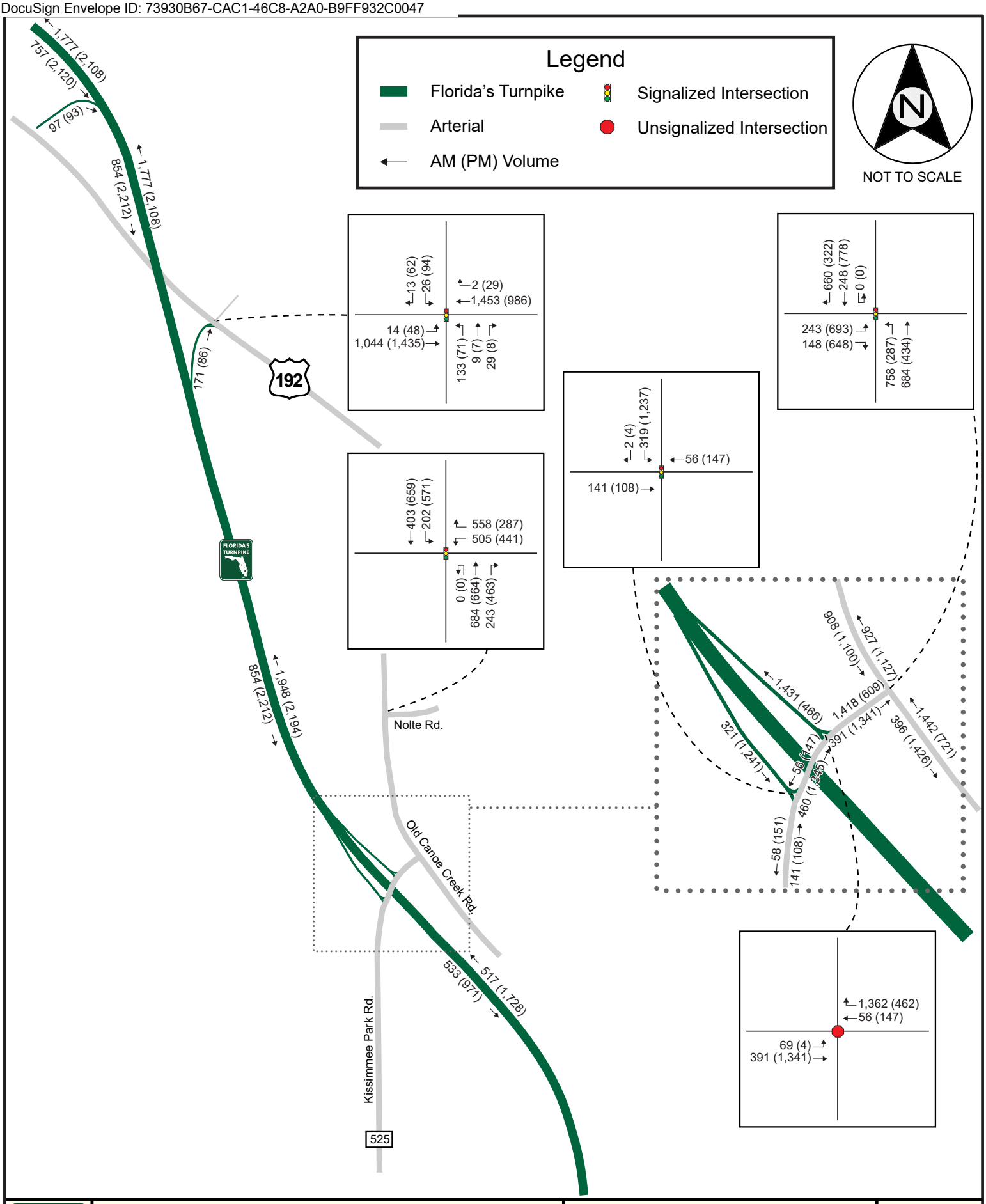
Location	Date	Time
Daily Tube Counts		
Kissimmee Park Road, South of Florida's Turnpike	9/12/2018	24 Hours
Old Canoe Creek Road, North of Florida's Turnpike	9/12/2018	
Intersection Turning Movement Counts		
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp Kissimmee Park Road and Florida's Turnpike Northbound On-ramp Kissimmee Park Road and Old Canoe Creek Road	5/8/2018	7:00 - 9:00 AM (2 Hours) 4:30 - 6:30 PM (2 Hours)
Old Canoe Creek Road and Nolte Road U.S. 192 and Florida's Turnpike Northbound Off-ramp	9/12/2018	6:00 - 9:00 AM (3 Hours) 4:00 - 7:00 PM (3 Hours)

The data collection was conducted in accordance with the procedures from the latest edition of the FDOT's *Manual on Uniform Traffic Studies* (MUTS), FDOT Manual Number 750-020-007. The AM and PM peak hour volumes were calculated using data for the four highest consecutive 15-minute periods in the morning and evening at each count location. The peak hours generally occurred between 7:15 AM to 8:15 AM and 4:45 PM to 5:45 PM but varied slightly based on the location. Seasonal and axle adjustment factors were applied where necessary. Intersection turning movement counts were adjusted using daily tube counts where applicable. The data were then aggregated and balanced to ensure continuity of flow and consistency. The final 2018 AADT and AM and PM peak hour volumes are graphically depicted in **Figure 4.1** and **4.2**, respectively.

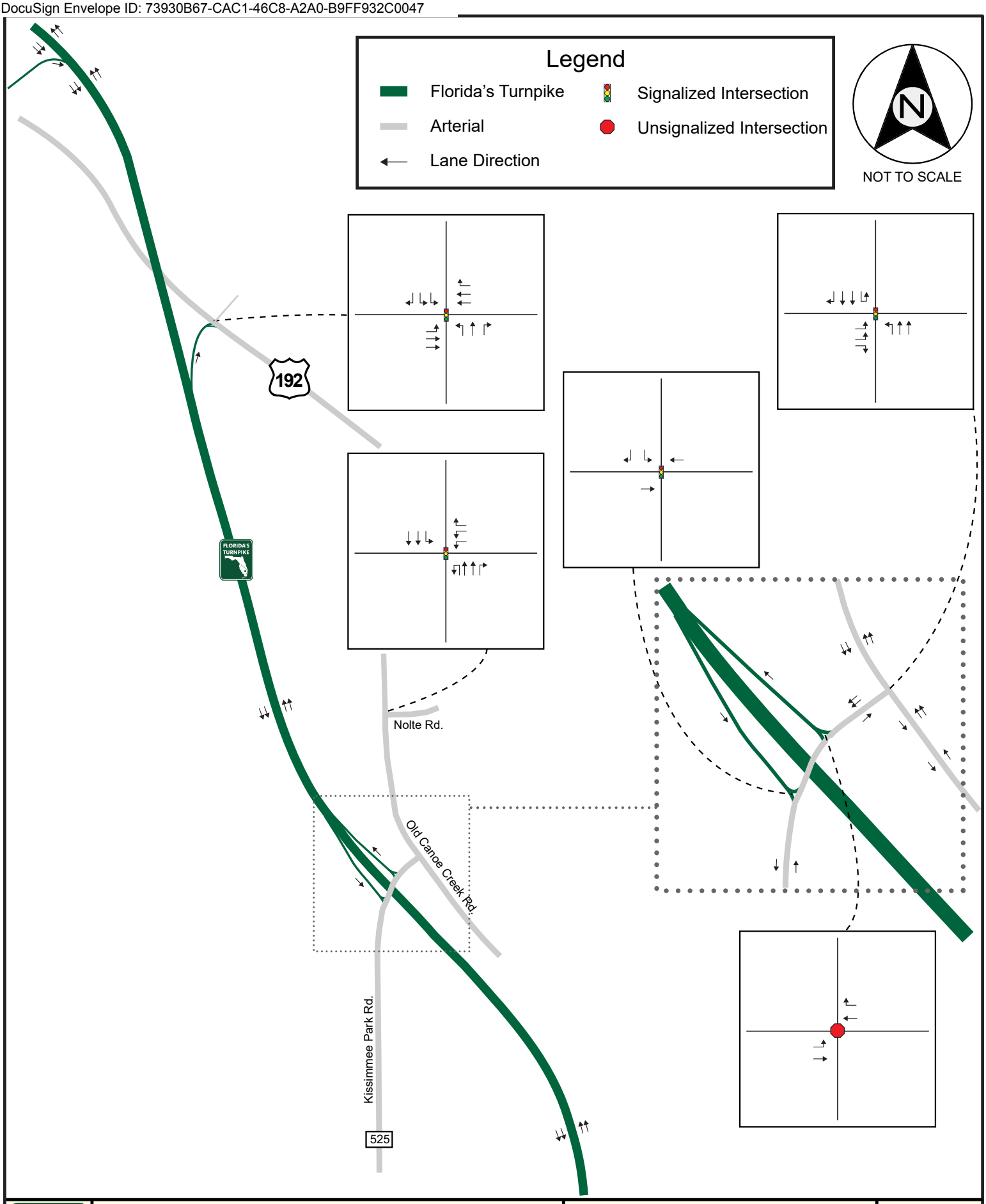
Signal timing data were provided by Osceola County. Field observations and high-resolution aerial maps were used to verify the geometry. The existing lane geometry is depicted on **Figure 4.3**.



FLORIDA'S TURNPIKE	Florida's Turnpike PD&E Study From MP 238.5 to 242 Systems Interchange Modification Report (SIMR)	2018 Annual Average Daily Traffic (AADT)	Figure 4.1



FLORIDA'S TURNPIKE	Florida's Turnpike PD&E Study From MP 238.5 to 242 Systems Interchange Modification Report (SIMR)	2018 (Existing) AM and PM Peak Hour Traffic Volumes	Figure 4.2



FLORIDA'S TURNPIKE	Florida's Turnpike PD&E Study From MP 238.5 to 242 Systems Interchange Modification Report (SIMR)	2018 (Existing) Lane Geometry	Figure 4.3

4.2 EXISTING OPERATIONAL PERFORMANCE

This section provides a summary of traffic performance results for 2018 existing conditions. The existing conditions VISSIM model development and calibration documentation is provided in **Appendix D**. The VISSIM model was developed and calibrated for the entire AOI as previously depicted on **Figure 1.2**. The model was calibrated for 2018 AM and PM peak period conditions: four hours of simulation with 30-minute seeding time. Calibration of the model was based on traffic volumes, travel time, speed, and observed queues at selected critical locations to accurately represent field conditions. The calibration documentation includes: model development inputs, existing peak hour traffic, hourly distributions used in generating volumes for each of the four analysis hours, and calibration output for both 2018 AM and PM. Analysis was based on the average of 10 random seed runs to account for the stochasticity of the microsimulation model.

4.2.1 Freeway Segment Analysis

Figures 4.4 and **4.5** highlight the MOEs for the 2018 AM and PM VISSIM calibrated models for the peak hour only. The output for each of the four hours during the AM and PM peak periods is presented in the calibration documentation in **Appendix D**. As shown in **Figures 4.4** and **4.5**, the Florida's Turnpike freeway segments operated at or close to the posted speed of 70 mph in 2018 peak hours, except for the southbound diverge section at the Kissimmee Park Road Off-ramp which is reported with a speed of 45 mph during the PM peak hour. This is consistent with field observations. The tables also show that most of the existing demand was served during the peak hours. The unmet demand in the northbound direction in the AM was due to upstream metering of the heavy northbound on-ramp traffic from Kissimmee Park Road. The unmet demand in the southbound direction in the PM was due to queue backups from the Kissimmee Park Road ramp terminal and adjacent intersection. Minor variations are also expected due to stochasticity of the model. All demand was served by the end of the four-hour simulation period.

4.2.2 Ramp Roadway Analysis

The VISSIM ramp roadway output shown in **Tables 4.2** and **4.3** was processed for the section immediately downstream of an off-ramp or upstream of an on-ramp gore. The results show that most of the existing demand was served during the peak hours, except for locations with existing congestion and capacity issues like the northbound on-ramp in the AM and southbound off-ramp in the PM at the Kissimmee Park Road interchange.

Figure 4.4
2018 AM Existing Peak Hour VISSIM Freeway Segments Performance

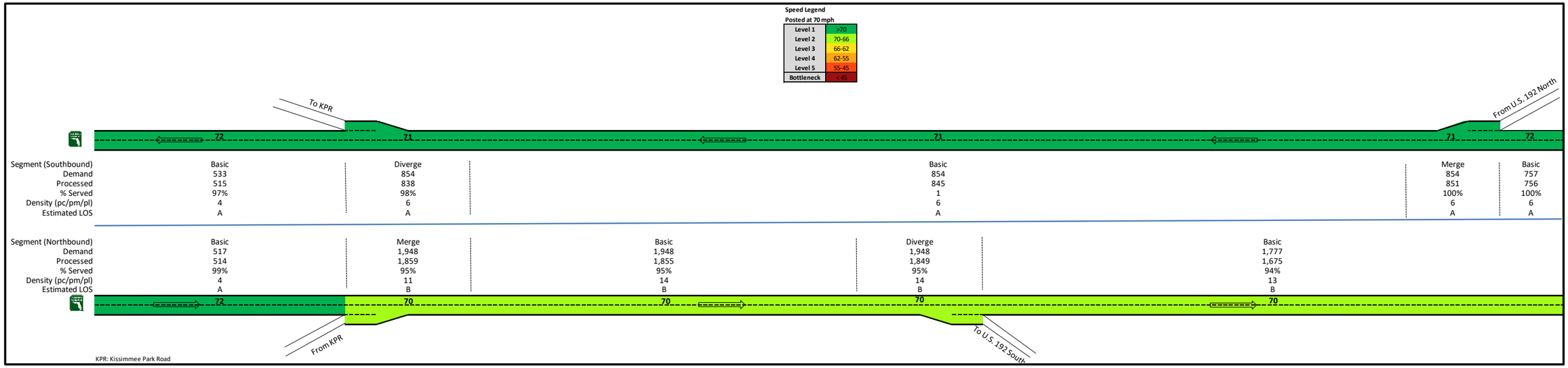


Figure 4.5
2018 PM Existing Peak Hour VISSIM Freeway Segments Performance

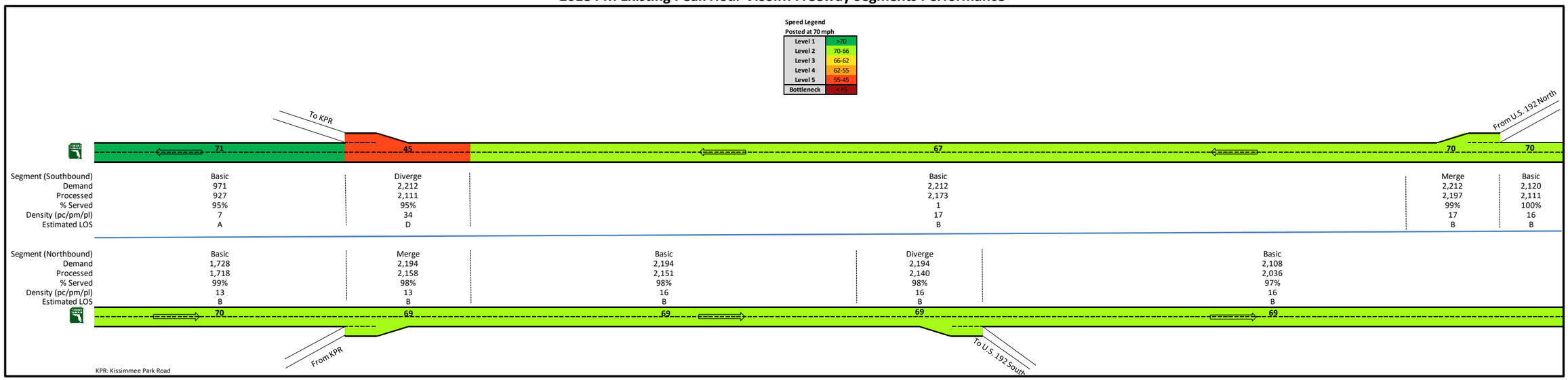


Table 4.2
2018 AM Existing Peak Hour VISSIM Freeway Ramp Roadway Performance

Florida's Turnpike Interchange	Ramp	Lanes	Demand	Processed	% Served	Speed
Kissimmee Park Road	Southbound Off-ramp	1	321	321	100%	64
	Northbound On-ramp	1	1,431	1,349	94%	49
U.S. 192 South	Northbound Off-ramp	1	171	159	93%	69
U.S. 192 North	Southbound On-ramp	1	97	95	98%	72

Ramp roadway output is for the section immediately downstream of an off-ramp or upstream of an on-ramp gore
Highlighted: unmet demand >5%

Table 4.3
2018 PM Existing Peak Hour VISSIM Freeway Ramp Roadway Performance

Florida's Turnpike Interchange	Ramp	Lanes	Demand	Processed	% Served	Speed
Kissimmee Park Road	Southbound Off-ramp	1	1,241	1,149	93%	23
	Northbound On-ramp	1	466	450	96%	51
U.S. 192 South	Northbound Off-ramp	1	86	85	99%	70
U.S. 192 North	Southbound On-ramp	1	93	91	98%	72

Ramp roadway output is for the section immediately downstream of an off-ramp or upstream of an on-ramp gore
Highlighted: unmet demand >5%

4.2.3 Intersection Analysis

Signalized intersections LOS was analyzed using Synchro Version 10. The Synchro analysis output summary is presented in **Tables 4.4** and **4.5** for 2018 AM and PM peak hours, respectively. The results show that most of the intersections operated at acceptable LOS C or better in 2018 AM and PM, except the Kissimmee Park Road and the Florida's Turnpike Southbound off-ramp terminal which operated at an unacceptable LOS F in the PM peak hour conditions. This is primarily due to the heavy southbound left turn traffic at the off-ramp. A few movements at the U.S. 192 Northbound Off-ramp terminal also operated at an unacceptable LOS F. Widening of U.S. 192 to six lanes was completed in 2019 and it is expected that operations have improved.

The signalized intersections were further analyzed in VISSIM microsimulation to assess operations at a detailed level. VISSIM analysis included unsignalized intersections. The 2018 intersection output from VISSIM is presented in **Tables 4.6** and **4.7.** The results show long delays in the AM at the Old Canoe Creek and Kissimmee Park Road intersection, and in the PM at the Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp and Old Canoe Creek and Nolte Road intersections. Consistent with the queue output, there are long queues along Old Canoe Creek Road in the northbound direction in the AM. Also, as reflected in the output, the southbound off-ramp to Kissimmee Park Road experiences long backups in the PM peak hour conditions, originating from the ramp terminal and the downstream intersection at Old Canoe Creek.

Table 4.4
2018 AM Existing Peak Hour Synchro Intersection LOS/Delay

Intersection	Eastbound			Westbound			Northbound			Southbound			Overall
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	B/14.6	-	-	B/13.2	-	-	-	-	B/14.6	-	A/6.0	B/14.4
Old Canoe Creek Road and Kissimmee Park Road	C/28.5	-	A/8.1	-	-	-	D/51.9	A/6.2	-	-	C/20.5	A/7.4	C/22.5
U.S. 192 and Florida's Turnpike Northbound off-ramp	E/75.1	B/11.7	-	-	C/23.4	A/0.0	F/82.3	E/56.6	A/0.7	E/72.4	-	A/0.6	C/22.3
Old Canoe Creek Road and Nolte Road	-	-	-	E/71.1	-	B/18.6	-	B/15.5	A/2.9	A/9.3	A/6.6	-	C/24.0

- Not Applicable Delay: Seconds per vehicle

Table 4.5
2018 PM Existing Peak Hour Synchro Intersection LOS/Delay

Intersection	Eastbound			Westbound			Northbound			Southbound			Overall
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	E/75.4	-	-	**F/87.2**	-	-	-	-	**F/98.4**	-	A/2.8	**F/95.3**
Old Canoe Creek Road and Kissimmee Park Road	C/28.1	-	B/18.7	-	-	-	C/26.8	A/9.8	-	-	D/37.1	A/5.9	C/23.5
U.S. 192 and Florida's Turnpike Northbound off-ramp	**F/94.3**	B/13.0	-	-	B/19.2	A/0.1	**F/96.0**	E/72.0	A/0.2	**F/86.4**	-	A/1.8	C/21.0
Old Canoe Creek Road and Nolte Road	-	-	-	D/53.2	-	A/9.6	-	D/40.7	A/7.4	C/28.4	A/6.6	-	C/25.1

- Not Applicable Delay: Seconds per vehicle

Synchro is limited in analyzing the Kissimmee Park Road and Florida's Turnpike Northbound On-ramp unsignalized intersection. This intersection was analyzed in VISSIM and the results are presented in the summary tables that follow.

Table 4.6
2018 AM Existing Peak Hour VISSIM Intersection Performance

Intersection	Northbound			Southbound			Eastbound			Westbound			Overall
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Input Volumes (Demand)													
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	-	-	319	-	2	-	141	-	-	56	-	518
Kissimmee Park Road and Florida's Turnpike Northbound On-ramp*	-	-	-	-	-	-	69	391	-	-	56	1,362	1,878
Old Canoe Creek Road and Kissimmee Park Road	758	684	-	-	248	660	243	-	148	-	-	-	2,741
U.S. 192 and Florida's Turnpike Northbound Off-ramp	133	9	29	26	-	13	14	1,044	-	-	1,453	2	2,724
Old Canoe Creek Road and Nolte Road	-	684	243	202	403	-	-	-	-	505	-	558	2,595
Percentage Served													
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	-	-	100%	-	100%	-	99%	-	-	96%	-	99%
Kissimmee Park Road and Florida's Turnpike Northbound On-ramp*	-	-	-	-	-	-	100%	99%	-	-	96%	94%	95%
Old Canoe Creek Road and Kissimmee Park Road	91%	91%	-	-	100%	98%	98%	-	100%	-	-	-	95%
U.S. 192 and Florida's Turnpike Northbound Off-ramp	92%	100%	92%	95%	-	100%	98%	99%	-	-	100%	100%	99%
Old Canoe Creek Road and Nolte Road	-	92%	94%	98%	100%	-	-	-	-	100%	-	99%	97%
Average Delay (Seconds) for the worst 30-minute Period and Estimated LOS													
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	-	-	11/B	-	6/A	-	15/B	-	-	14/B	-	12/B
Kissimmee Park Road and Florida's Turnpike Northbound On-ramp*	-	-	-	-	-	-	2/A	1/A	-	-	0/A	2/A	1/A
Old Canoe Creek Road and Kissimmee Park Road	155/F	53/D	-	-	24/C	78/E	27/C	-	2/A	-	-	-	78/E
U.S. 192 and Florida's Turnpike Northbound Off-ramp	69/E	84/F	10/A	75/E	-	0/A	78/E	10/A	-	-	15/B	4/A	16/B
Old Canoe Creek Road and Nolte Road	-	20/B	2/A	14/B	10/B	-	-	-	-	29/C	-	27/C	20/B
Average and (Maximum) Queue in Feet for the worst 30-minute Period													
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	-	-	19 (217)	-	4 (189)	-	9 (112)	-	-	10 (115)	-	
Kissimmee Park Road and Florida's Turnpike Northbound On-ramp*	-	-	-	-	-	-	0 (9)	-	-	-	0 (9)	0 (9)	
Old Canoe Creek Road and Kissimmee Park Road	8874 (11660)	8874 (11660)	-	-	453 (1121)	488 (1162)	30 (161)	-	1 (53)	-	-	-	-
U.S. 192 and Florida's Turnpike Northbound Off-ramp	57 (235)	57 (235)	2 (67)	10 (61)	-	10 (61)	34 (340)	34 (340)	-	-	78 (601)	78 (601)	
Old Canoe Creek Road and Nolte Road	-	40 (250)	40 (250)	22 (194)	22 (194)	-	-	-	-	130 (536)	-	130 (536)	

*Unsignalized - Not applicable

Table 4.7
2018 PM Existing Peak Hour VISSIM Intersection Performance

Intersection	Northbound			Southbound			Eastbound			Westbound			Overall
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Input Volumes (Demand)													
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	-	-	1,237	-	4	-	108	-	-	147	-	1,496
Kissimmee Park Road and Florida's Turnpike Northbound On-ramp*	-	-	-	-	-	-	4	1,341	-	-	147	462	1,954
Old Canoe Creek Road and Kissimmee Park Road	287	434	-	-	778	322	693	-	648	-	-	-	3,162
U.S. 192 and Florida's Turnpike Northbound Off-ramp	71	7	8	94	-	62	48	1,435	-	-	986	29	2,740
Old Canoe Creek Road and Nolte Road	-	664	463	571	659	-	-	-	-	441	-	287	3,085
Percentage Served													
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	-	-	92%	-	93%	-	95%	-	-	95%	-	92%
Kissimmee Park Road and Florida's Turnpike Northbound On-ramp*	-	-	-	-	-	-	95%	92%	-	-	97%	97%	94%
Old Canoe Creek Road and Kissimmee Park Road	97%	99%	-	-	98%	97%	91%	-	92%	-	-	-	95%
U.S. 192 and Florida's Turnpike Northbound Off-ramp	98%	99%	91%	95%	-	100%	97%	99%	-	-	99%	100%	99%
Old Canoe Creek Road and Nolte Road	-	94%	94%	92%	98%	-	-	-	-	99%	-	98%	96%
Average Delay (Seconds) for the worst 30-minute Period and Estimated LOS													
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	-	-	129/F	-	119/F	-	72/E	-	-	71/E	-	120/F
Kissimmee Park Road and Florida's Turnpike Northbound On-ramp*	-	-	-	-	-	-	5/A	7/A	-	-	1/A	1/A	5/A
Old Canoe Creek Road and Kissimmee Park Road	27/C	12/B	-	-	62/E	10/A	35/D	-	16/B	-	-	-	32/C
U.S. 192 and Florida's Turnpike Northbound Off-ramp	84/F	76/E	13/B	80/E	-	1/A	83/F	11/B	-	-	17/B	13/B	19/B
Old Canoe Creek Road and Nolte Road	-	22/C	5/A	212/F	16/B	-	-	-	-	28/C	-	12/B	55/E
Average and (Maximum) Queue in Feet for the worst 30-minute Period													
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	-	-	3336 (5323)	-	3301 (5323)	-	49 (219)	-	-	103 (315)	-	
Kissimmee Park Road and Florida's Turnpike Northbound On-ramp*	-	-	-	-	-	-	27 (373)	23 (341)	-	-	0 (9)	0 (9)	
Old Canoe Creek Road and Kissimmee Park Road	36 (194)	36 (194)	-	-	307 (628)	90 (607)	171 (527)	-	118 (591)	-	-	-	-
U.S. 192 and Florida's Turnpike Northbound Off-ramp	38 (182)	38 (182)	1 (28)	32 (126)	-	32 (126)	74 (547)	74 (547)	-	-	63 (469)	63 (469)	
Old Canoe Creek Road and Nolte Road	-	46 (270)	46 (270)	894 (1593)	894 (1593)	-	-	-	-	56 (229)	-	56 (229)	

*Unsignalized - Not applicable

This section provides information on the development of future traffic daily forecasts, design hour volumes, and freeway future lane requirements. A summary of the travel demand modeling process is provided herein. The full Travel Demand Model Development Report is provided in **Appendix E**.

5.1 TRAVEL DEMAND MODEL DEVELOPMENT

5.1.1 Travel Demand Model

The Central Florida Regional Planning Model (CFRPM) developed by FDOT District 5, CFRPM 6.1, was used as the basis for this project. The CFRPM 6.1 was developed in two versions, a Daily model and a Time-of-Day (ToD) model, the latter of which included the most recent available Socioeconomic (SE) data from MetroPlan Orlando . The CFRPM 6.1 has a 2010 base year; it includes cost feasible scenarios for years 2015 through 2045 in 5-year increments. The ToD version of the model was adopted for this study.

5.1.2 Base Year Validation

The CFRPM 6.1 ToD is a Peak Season Weekday Average Daily Traffic (PSWADT) model. The 2015 cost feasible scenario was updated with 2015 daily and ToD period counts, land use for the study area, and toll data. The model was then validated based on year 2015 conditions. During validation, the Root Mean Square Error (RMSE) statistic was reviewed for daily and by ToD periods to verify the accuracy of the model validation.

Table 5.1 summarizes the results of the RMSE statistic for the regional model for Daily, AM, Midday (MD), PM, and Night (NT). The RMSE results for the regional model as shown in the table for some daily and ToD periods and count ranges do not provide an acceptable range.

However, the focus was on the project study area validation and the project corridor itself. Therefore, an additional model validation for the subarea for the Northern Turnpike linear corridor was performed by extracting the subarea from the regional model with the corresponding trip tables. Subsequently, the subarea trip tables were adjusted through Origin Destination Matrix Estimation (ODME) to improve the subarea adjustment.

An assessment was done regarding the quality of the subarea trip tables by period before and after applying the ODME process. This was performed through a comparison of the Root Mean Square Error (RMSE) of assigned model traffic volumes to traffic counts by volume group by ToD period. The Volume to Count (V/C) ratio was also assessed. **Table 5.2** and **Table 5.3** display key statistics before and after applying the ODME process. As compared with the pre-ODME results, the post-ODME results show a significant improvement. The post-ODME results show that, for just one volume group (“1 to 5,000” in daily) the RMSE is out of the acceptable range. However, most of the links in those volume groups for each time period are performing within range. Also, the overall results surpass the acceptable range, which suggests that the model is reliable to replicate real

world conditions. With the subarea validation using the ODME process, the RMSE statistics for the subarea provide a very low RMSE. Therefore, the model can be used with confidence for forecasting future traffic in the subarea.

Table 5.1
Regional Time-of-Day Model Validation

Volume Group	RMSE (%)	Acceptable RMSE (%)	Volume/Count	Number of Counts
Daily				
1-5,000	94.75	45 - 55	1.16	5,471
5,000-10,000	49.07	35 - 45	1.03	2,783
10,000-20,000	29.30	27 - 35	1.02	2,566
20,000-30,000	22.37	24 - 27	0.97	742
30,000-40,000	20.84	22 – 24	0.97	156
40,000-50,000	15.01	20 – 22	1.01	53
50,000-60,000	18.71	18 - 20	1.00	19
60,000-70,000	20.74	17 - 18	1.05	21
70,000-80,000	14.39	16 – 17	0.95	12
80,000-90,000	10.54	15 – 16	0.96	23
90,000-100,000	11.45	14 – 15	0.90	5
100,000-500,000	18.96	< 14	0.85	4
1-500,000	41.64	32 - 39	1.02	11,855
AM Period				
1-5,000	55.66	45 - 55	1.03	10,530
5,000-10,000	37.18	35 - 45	0.86	199
10,000-20,000	23.91	27 - 35	0.90	53
20,000-30,000	-	24 - 27	0.62	1
1-30,000	56.79	32 - 39	1.01	10,783
MD Period				
1-5,000	74.39	45 - 55	1.13	8,283
5,000-10,000	30.22	35 - 45	0.98	2,095
10,000-20,000	28.37	27 - 35	1.00	341
20,000-30,000	26.02	24 - 27	1.11	42
30,000-40,000	8.88	22 – 24	1.03	23
40,000-50,000	17.34	20 – 22	0.87	3
1-50,000	50.85	32 - 39	1.05	10,787
PM Period				
1-5,000	49.64	45 - 55	1.00	10,127
5,000-10,000	31.07	35 - 45	0.90	572
10,000-20,000	24.80	27 - 35	0.97	84
20,000-30,000	6.35	24 - 27	0.96	2
1-30,000	48.29	32 - 39	0.98	10,785

Table 5.1 (continued)
Regional Time-of-Day Model Validation

Volume Group	RMSE (%)	Acceptable RMSE (%)	Volume/Count	Number of Counts
NT Period				
1-5,000	57.02	45 - 55	1.02	9,918
5,000-10,000	27.67	35 - 45	0.87	734
10,000-20,000	28.80	27 - 35	0.82	93
20,000-30,000	31.56	24 - 27	0.77	37
30,000-40,000	28.57	22 – 24	0.75	4
1-40,000	54.87	32 - 39	0.96	10,786

Table 5.2
Before ODME Subarea Time-of-Day Model Validation

Volume Group	RMSE (%)	Acceptable RMSE (%)	Volume/Count	Number of Counts
Daily				
1-5,000	103.87	45 - 55	1.34	169
5,000-10,000	37.30	35 - 45	0.87	60
10,000-20,000	26.14	30 - 35	1.06	103
20,000-30,000	17.71	27 – 30	0.95	45
30,000-40,000	13.50	24 - 27	0.90	8
1-500,000	32.70	32 - 39	1.02	385
AM Period				
1-5,000	54.04	27 - 100	1.11	375
5,000-10,000	21.31	24 - 27	0.88	10
1-50,000	50.63	32 - 39	1.09	385
MD Period				
1-5,000	64.49	27 - 100	1.14	269
5,000-1,000	23.85	24 - 27	1.02	98
10,000-20,000	16.65	18 - 24	0.98	18
1-50,000	37.06	32 - 39	1.05	385
PM Period				
1-5,000	51.57	27 - 100	1.08	364
5,000-10,000	19.03	24 - 27	0.94	21
1-50,000	46.03	32 - 39	1.06	385
NT Period				
1-5,000	48.67	27 - 100	0.91	320
5,000-10,000	29.00	24 - 27	0.79	62
10,000-20,000	31.71	18 - 24	0.75	3
1-50,000	43.04	32 - 39	0.85	385

Table 5.3
After ODME Subarea Time-of-Day Model Validation

Volume Group	RMSE (%)	Acceptable RMSE (%)	Volume/Count	Number of Counts
Daily				
1-5,000	69.97	45 - 55	1.10	169
5,000-10,000	22.65	35 - 45	0.98	60
10,000-20,000	10.23	27 - 35	1.02	103
20,000-30,000	6.39	24 – 27	0.98	45
30,000-40,000	4.97	22 - 24	0.97	8
1-500,000	15.89	32 - 39	1.01	385
AM Period				
1-5,000	24.27	27 - 100	1.01	375
5,000-10,000	10.37	24 - 27	0.94	10
1-50,000	22.89	32 - 39	1.00	385
MD Period				
1-5,000	39.96	27 - 100	1.06	269
5,000-10,000	9.14	24 - 27	1.00	98
10,000-20,000	5.79	18 - 24	0.97	18
1-50,000	18.73	32 - 39	1.02	385
PM Period				
1-5,000	19.71	27 - 100	1.00	364
5,000-10,000	5.56	24 - 27	0.99	21
1-50,000	17.27	32 - 39	1.00	385
NT Period				
1-5,000	26.50	27 - 100	1.02	320
5,000-10,000	7.01	24 - 27	0.99	62
10,000-20,000	6.60	18 - 24	0.96	3
1-50,000	17.65	32 - 39	1.00	385

5.1.3 Future Year Transportation Network

The future No Build regional network was updated to include the following planned and programmed improvements within the study area:

- Florida's Turnpike mainline widening (FPID: 436194-1) from four to eight lanes. This project extends from south of U.S. 192 South at MP 242 to Osceola Parkway interchange at MP 248. New ramps to and from the north at the Florida's Turnpike and U.S. 192 South interchange at MP 242 will also be added. Currently, this interchange serves the northbound off-ramp only. The project is expected to be completed by year 2025.
- Florida's Turnpike mainline widening (FPID: 411406-1) from four to eight lanes. The limits for this project are Osceola Parkway interchange at MP 248.93 to Orlando South interchange at

MP 254. The project will include widening ramps to and from the north at Orlando South to two lanes. It is expected to be completed by year 2020.

- U.S. 192 widening from four to six lanes from Aeronautical Drive to Budinger Avenue (FPID: 239682-1). The widening was completed in 2019.
- S.R. 60 widening from west of U.S. 441 to east of the Florida's Turnpike (FPID: 441036-1).
- Osceola Parkway widening from four to six lanes from John Young Parkway to U.S. 441 and from Buenaventura Boulevard to Boggy Creek Road.
- U.S. 17 widening from four to six lanes from Ham Brown Road to Portage Street.

The first two improvements are within the FTE's system and will be funded by FTE. The rest are being designed and constructed by others.

The Build network included full interchanges at both Kissimmee Park Road and U.S. 192. The Florida's Turnpike mainline was assumed to be widened to eight lanes north of Kissimmee Park Road and six lanes to the south.

5.1.4 Future Socioeconomic Data and Land Use

Future year model SE data in the study area were updated and integrated into the CFRPM. Population and employment projections were compared to future year county projections in order to ensure reasonability. **Table 5.4** shows the future year populations in the model, along with the annual growth percentage from the 2015 model base year to 2045 outer year.

Table 5.4
Population Projections

Area	CFRPM Model Population			Change	% Annual Change
	2015	2025	2045	2015 - 2045	2015 - 2045
Study Area	94,171	116,492	170,504	76,333	2.0
Osceola County	308,327	452,354	649,794	341,467	2.5
Florida	19,815,183	22,799,508	27,217,568	7,402,385	1.1

Table 5.5 displays the study area and county employment projections used in the model. The future year employment projections were compared with the model year totals from Woods and Poole Economics.

Table 5.5
Employment Projections

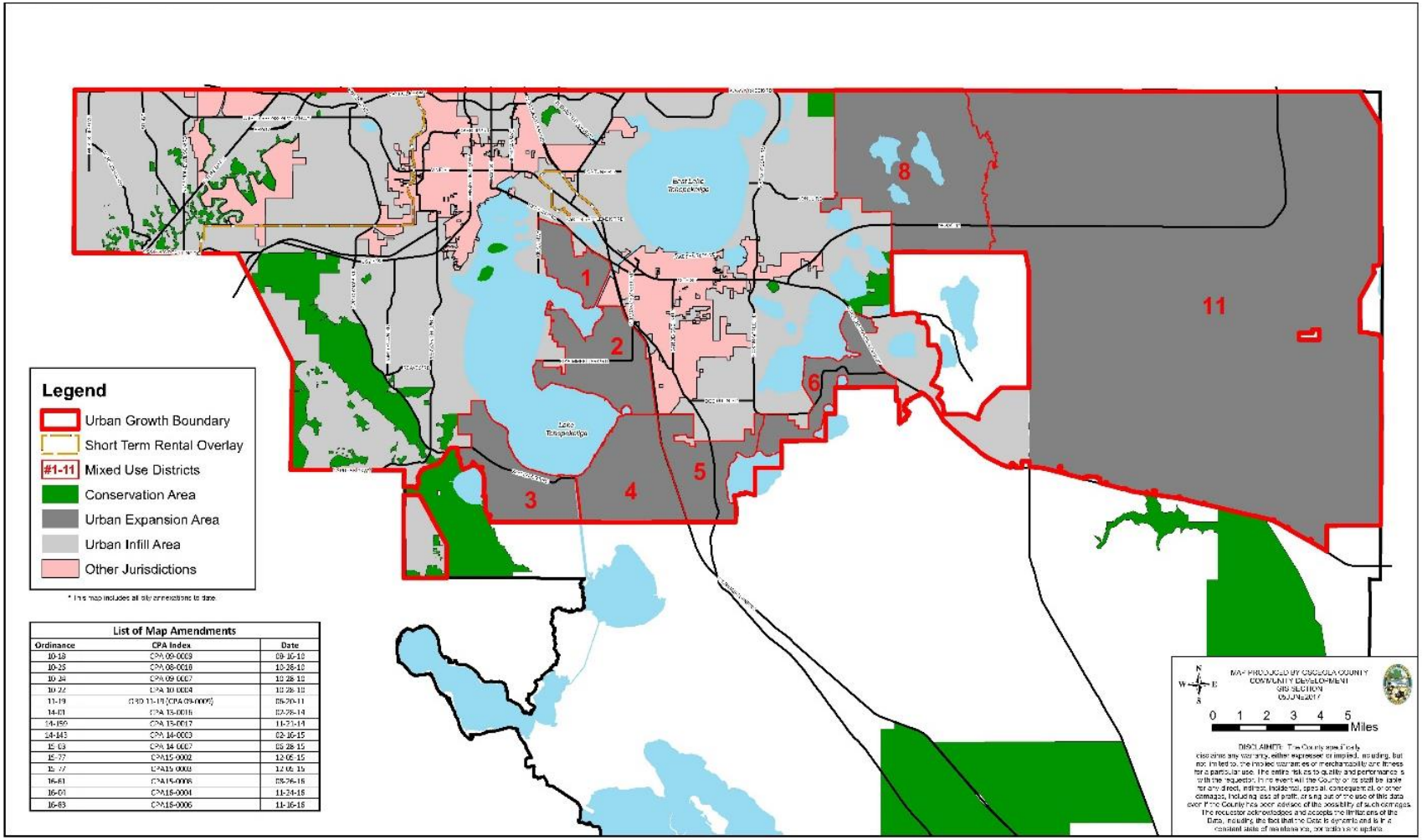
Area	CFRPM Employment			Change	% Annual Change
	2015	2025	2045	2015 - 2045	2015 - 2045
Study Area	22,403	26,274	46,839	24,436	2.5
Osceola County	126,406	162,628	258,177	131,771	2.4
Florida	9,216,000	13,326,000	17,830,000	8,614,000	2.2

Osceola County's proximity to Orange County will continue to contribute to the county's future population and employment growth. To better manage this growth the county has enacted an Urban Growth Boundary and has also targeted specific areas for urban infill and expansion as shown below on **Figure 5.1**.

5.1.5 Future Year Model Trip Matrix Adjustment

The subarea Origin-Destination (O-D) matrices for the future years 2025 and 2045 were extracted from the regional model, corresponding to the opening and design years for the PD&E study. Then, correction factors, which were developed based on the subarea trip tables before and after the ODME process, were applied to create the future year trip tables. These trip tables were then used to run the subarea model for the No Build and Build scenarios, which were then summarized in traffic profiles.

Figure 5.1
Osceola County Urban Infill/Expansion and Overlay Areas



List of Map Amendments

Ordinance	CPA Index	Date
10-18	CPA 09-0009	09-16-10
10-25	CPA 08-0018	10-26-10
10-29	CPA 09-0007	10-28-10
10-22	CPA 10-0004	10-26-10
11-19	CPA 11-19 [CPA 09-0005]	05-20-11
14-01	CPA 13-0016	02-26-14
14-159	CPA 13-0017	11-21-14
14-143	CPA 14-0003	02-16-15
15-03	CPA 14-0007	03-28-15
15-27	CPA15-0002	12-05-15
15-27	CPA15-0003	12-05-15
16-61	CPA15-0006	05-26-16
16-01	CPA16-0001	11-24-16
16-03	CPA16-0006	11-16-16

5.2 TRAFFIC FORECASTS

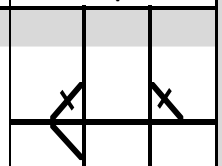
Traffic projections were developed using the updated CFRPM ToD model for years 2025 and 2045. The PSWADT from the model was converted to AADT by applying a Model Output Calibration Factor (MOCF) of 0.98. The model period volumes (AM, MD, PM, NT) were adjusted accordingly based on AADT. Model AM and PM peak hour volumes were developed by applying a factor of 0.42 and 0.35, respectively, to the period volumes. The factors were estimated using traffic counts. The model AADT, AM, and PM peak hour volumes were then adjusted following the National Cooperative Highway Research Program (NCHRP) 765 (an update to NCHRP 255 report) methodology. Additional adjustments were made based on growth rates and traffic factors (K and D) to ensure reasonableness and accuracy. The volumes were eventually adjusted for continuity of flow to develop final profiles for future AADT and Directional Design Hour Volumes (DDHV).

The final mainline and ramps AADTs and the corresponding DDHVs for years 2025, 2035, and 2045 are provided in **Tables 5.6** and **5.7** for the No Build and Build conditions, respectively. The year 2035 volumes were developed through interpolation. The bold values represent the mainline volumes and the non-bold values represent ramp volumes.

Future year turn movement volumes for ramp-terminal intersections were developed using the projected ramp DDHVs. Turn proportions were estimated using peak period data from the CFRPM model and adjusted using existing conditions volumes where applicable. Cross-street through movements and adjacent intersections traffic were developed using growth rates estimated from historical data and verified with the CFRPM model. A linear growth rate of 4.6 percent was applied from 2018 to 2025 and 3.6 percent from 2025 to 2045. The 2025 and 2045 design hour volumes are presented in **Figure 5.2** through **Figure 5.5** for No Build and Build conditions.

Table 5.6

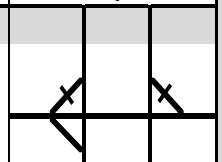
Future No Build Traffic Forecasts

Location	Florida's Turnpike	2025 AADT	2025 AM - DDHV SB	2025 AM - DDHV NB	2025 PM - DDHV SB	2025 PM - DDHV NB	2035 AADT	2035 AM - DDHV SB	2035 AM - DDHV NB	2035 PM - DDHV SB	2035 PM - DDHV NB	2045 AADT	2045 AM - DDHV SB	2045 AM - DDHV NB	2045 PM - DDHV SB	2045 PM - DDHV NB
		85,600	**3,870**	**5,370**	**5,370**	**3,870**	**106,900**	**4,630**	**6,470**	**6,470**	**4,630**	**128,100**	**5,390**	**7,560**	**7,560**	**5,390**
244 - Kissimmee-St. Cloud North (U.S. 192 & U.S. 441)		8,300 3,300	240 250	540	540 340	240	14,500 4,500	430 340	950	950 470	430	20,700 5,700	610 420	1,360	1,360 590	610
		80,600	**3,880**	**4,830**	**5,170**	**3,630**	**96,900**	**4,540**	**5,520**	**5,990**	**4,200**	**113,100**	**5,200**	**6,200**	**6,790**	**4,780**
242 - Kissimmee-St. Cloud South (U.S. 192 & U.S. 441)		16,200 3,300	480	1,060 340	1,060	480 250	20,100 4,500	590	1,320 470	1,320	590 340	23,900 5,700	700	1,570 590	1,570	700 420
		67,700	**3,400**	**4,110**	**4,110**	**3,400**	**81,300**	**3,950**	**4,670**	**4,670**	**3,950**	**94,900**	**4,500**	**5,220**	**5,220**	**4,500**
240 - Kissimmee Park Road		22,200	790	2,100	2,100	790	32,000	1,220	2,640	2,640	1,220	41,700	1,640	3,180	3,180	1,640
236 - Three Lakes Mainline Toll Plaza		**45,500**	**2,610**	**2,010**	**2,010**	**2,610**	**49,300**	**2,730**	**2,030**	**2,030**	**2,730**	**53,200**	**2,860**	**2,040**	**2,040**	**2,860**

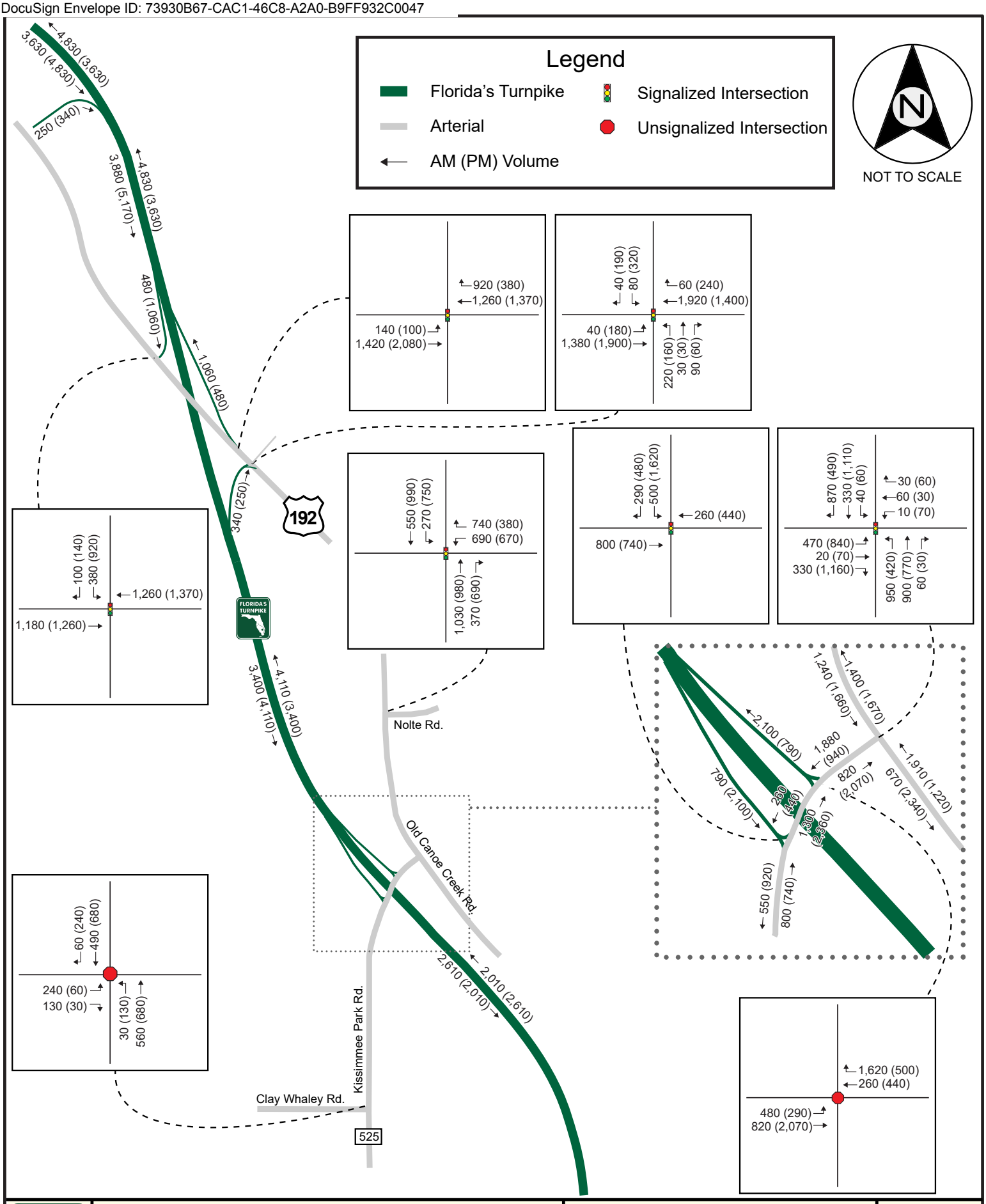
Note: Values in RED indicate PEAK direction and values in BLUE indicate OFF-PEAK direction

Table 5.7

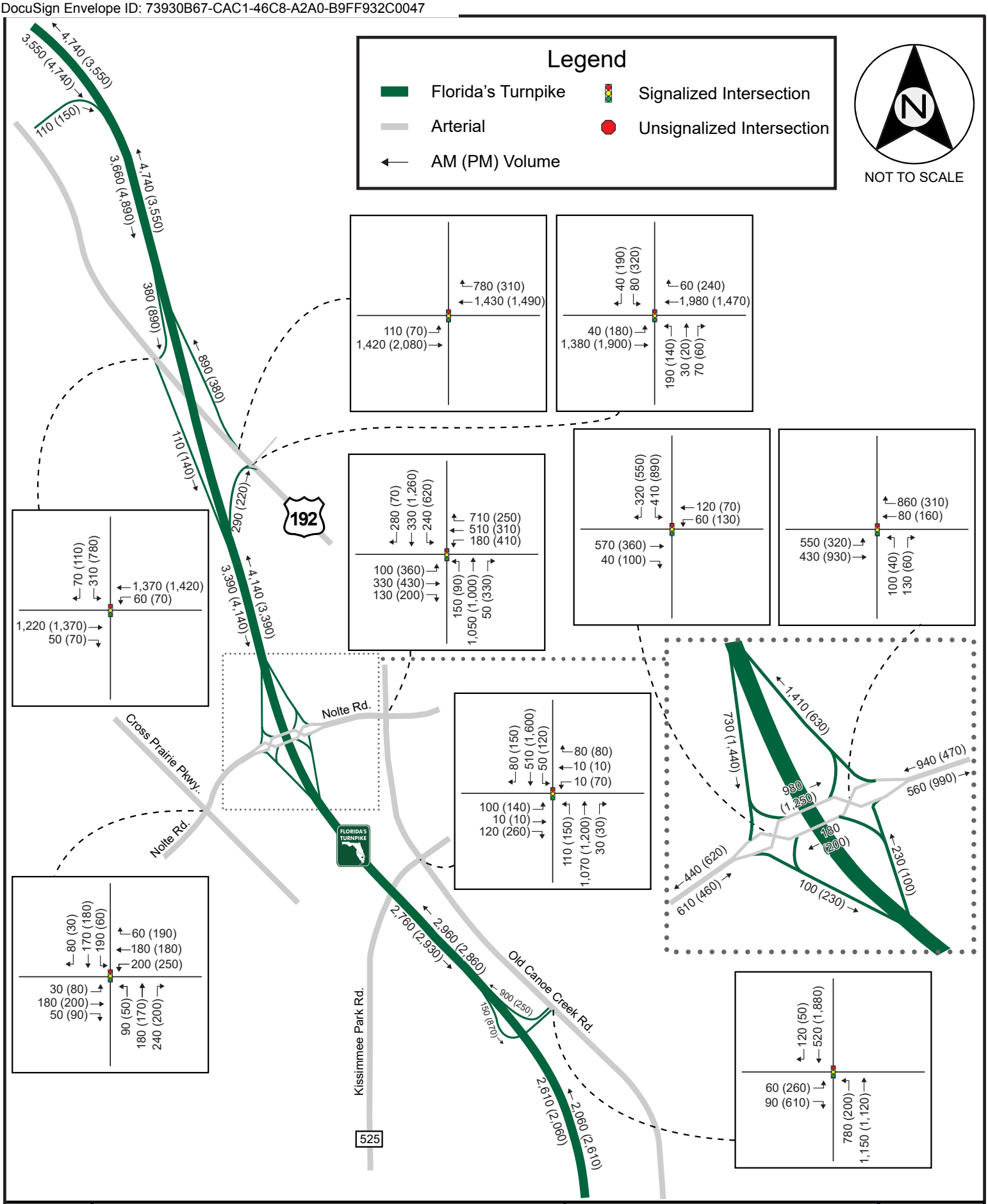
Future Build Traffic Forecasts

Location	Florida's Turnpike	2025 AADT	2025 AM - DDHV SB	2025 AM - DDHV NB	2025 PM - DDHV SB	2025 PM - DDHV NB	2035 AADT	2035 AM - DDHV SB	2035 AM - DDHV NB	2035 PM - DDHV SB	2035 PM - DDHV NB	2045 AADT	2045 AM - DDHV SB	2045 AM - DDHV NB	2045 PM - DDHV SB	2045 PM - DDHV NB
		84,600	3,790	5,280	5,280	3,790	105,900	4,560	6,380	6,370	4,560	127,000	5,320	7,470	7,470	5,320
244 - Kissimmee-St. Cloud North (U.S. 192 & U.S. 441)		8,200 1,500	240 110	540	540 150	240	14,300 2,300	430 200	950	950 250	430	20,400 3,100	610 280	1,360	1,360 340	610
		77,900	3,660	4,740	4,890	3,550	93,900	4,330	5,430	5,670	4,130	109,700	4,990	6,110	6,450	4,710
242 - Kissimmee-St. Cloud South (U.S. 192 & U.S. 441)		13,700 3,900	380 110	890 290	890 140	380 220	17,400 5,300	500 130	1,170 430	1,170 190	500 330	21,000 6,700	620 150	1,440 570	1,440 230	620 430
		68,100	3,390	4,140	4,140	3,390	81,800	3,960	4,690	4,690	3,960	95,400	4,520	5,240	5,240	4,520
240 - Kissimmee Park Road or 241 - New Nolte Road		24,800 3,200	880 100	2,310 230	2,310 230	880 100	35,500 4,600	1,340 230	2,910 330	2,910 330	1,340 230	46,100 6,000	1,790 360	3,510 430	3,510 430	1,790 360
236 - Three Lakes Mainline Toll Plaza		46,500	2,610	2,060	2,060	2,610	50,900	2,850	2,110	2,110	2,850	55,300	3,090	2,160	2,160	3,090

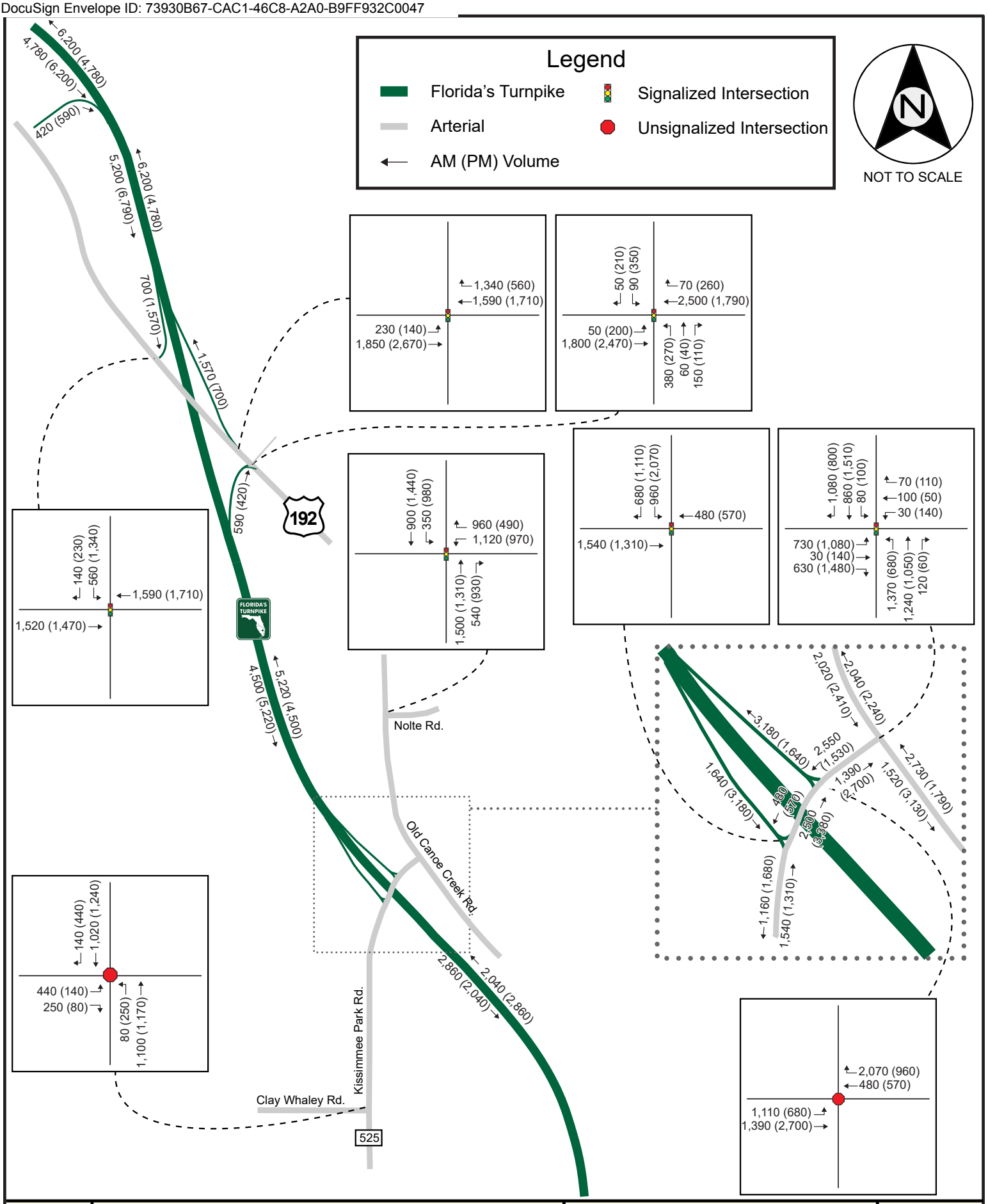
Note: Values in RED indicate PEAK direction and values in BLUE indicate OFF-PEAK direction



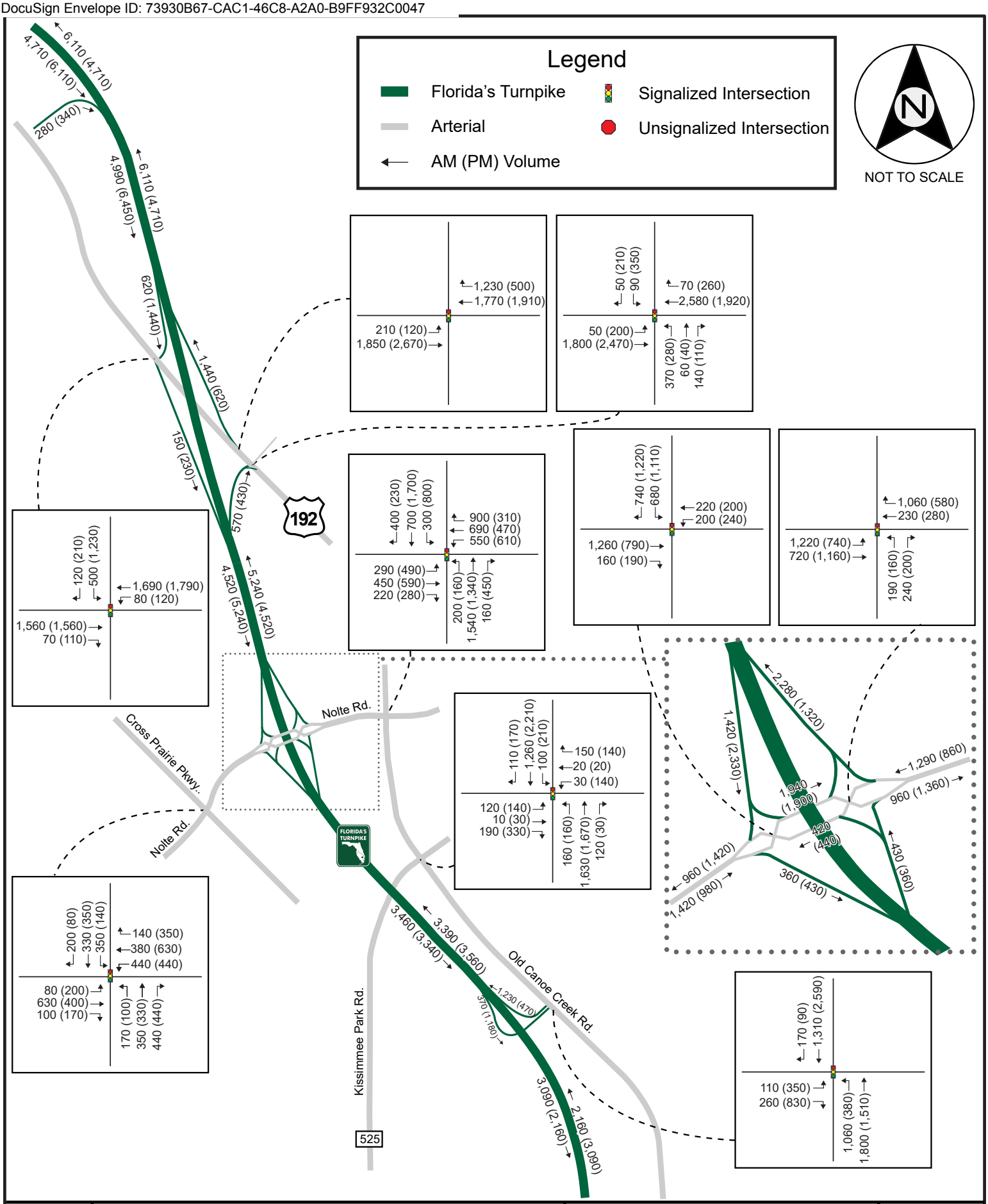
FLORIDA'S TURNPIKE	Florida's Turnpike PD&E Study From MP 238.5 to 242 Systems Interchange Modification Report (SIMR)	2025 Design Hour Volumes for No Build	Figure 5.2



FLORIDA'S TURNPIKE	Florida's Turnpike PD&E Study From MP 238.5 to 242 Systems Interchange Modification Report (SIMR)	2025 Design Hour Volumes for Build	Figure 5.3



FLORIDA'S TURNPIKE	Florida's Turnpike PD&E Study From MP 238.5 to 242 Systems Interchange Modification Report (SIMR)	2045 Design Hour Volumes for No Build	Figure 5.4



FLORIDA'S TURNPIKE	Florida's Turnpike PD&E Study From MP 238.5 to 242 Systems Interchange Modification Report (SIMR)	2045 Design Hour Volumes for Build	Figure 5.5

5.3 FUTURE LANE REQUIREMENTS

Future lane requirements were evaluated to provide an estimated timeline for the onset of capacity deficiencies along the mainline and ramp roadways. Freeway mainline LOS targets were based on the FDOT's Quality and LOS Handbook. Capacity analysis for ramp roadways was based on targets from the HCM. The FDOT and HCM targets were adjusted for local conditions such as speed, truck proportion, PHF, and driver population. **Table 5.8** and **5.9** show the detailed color-coded lane requirements corresponding to LOS D constraints for the mainline and LOS E (capacity) for the ramp roadways for the No Build and Build conditions, respectively.

Under No Build conditions, the Florida's Turnpike mainline will require four lanes of travel in each direction north of the U.S. 192 North interchange by year 2025 and five lanes per direction by year 2040, as shown in **Table 5.8**. The Florida's Turnpike mainline between U.S. 192 North and U.S. 192 South will require three lanes per direction by 2025 and four lanes by 2027. From U.S. 192 South to Kissimmee Park Road, the Florida's Turnpike mainline will requires three lanes in each direction by 2025. The traffic demand in this segment will be very close to the four-lane volume target by the 2045 design year. South of Kissimmee Park Road, three lanes of travel will be required by year 2038 through the 2045 design year. The mainline currently has two lanes in each direction within the study area. **Table 5.8** also shows that all the ramps require one lane through design year 2045 except for the ramps to and from the north at Kissimmee Park Road which will need two lanes each by year 2025.

Lane requirements for Build conditions (**Table 5.9**) are similar to No Build but with minor variations due to traffic diversion and attraction. With the widened freeway and new access ramps, the mainline traffic north of Kissimmee Park Road is expected to reduce whereas, traffic to the south is expected to increase slightly due to diversion of trips, mainly in the outer years. As a result, the onset for the four-lane need north and south of the U.S. 192 North interchange is delayed slightly to 2041 and 2030, compared to the No Build need in 2040 and 2027, respectively. Though with slightly lower traffic, the segment between U.S. 192 South and Kissimmee Park Road will still require three lanes per direction by 2025 under Build conditions. The traffic demand in this segment will be much closer to the four-lane volume target by the 2045 design year, compared to the No Build. The mainline south of Kissimmee Park Road will require three lanes in each direction by year 2032, a few years sooner than the No Build need in 2038. The ramps to and from the north at the Kissimmee Park Road interchange will require two lanes each by year 2025. All other ramps will require a single lane each through the 2045 design year.

Table 5.8
Lane Requirements by Year for No Build

Mainline Maximum Service Volume (LOS C/D) and Ramp Capacity (LOS E)
DDHV - Worst Case AM or PM Peak Hour

Location	Florida's Turnpike	Model	Interpolated Volumes																			Model
		2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
		5,370	5,480	5,590	5,700	5,810	5,920	6,030	6,140	6,250	6,360	6,470	6,580	6,690	6,800	6,910	7,020	7,120	7,230	7,340	7,450	7,560
244 - Kissimmee-St. Cloud North (U.S. 192 & U.S. 441)	SB	540	580	620	660	700	750	790	830	870	910	950	990	1,030	1,070	1,110	1,160	1,200	1,240	1,280	1,320	1,360
	NB	540	580	620	660	700	750	790	830	870	910	950	990	1,030	1,070	1,110	1,160	1,200	1,240	1,280	1,320	1,360
		340	350	370	380	390	410	420	430	440	460	470	480	490	510	520	530	540	550	570	580	590
		5,170	5,250	5,330	5,420	5,500	5,580	5,660	5,740	5,830	5,910	5,990	6,070	6,150	6,230	6,310	6,390	6,470	6,550	6,630	6,710	6,790
242 - Kissimmee-St. Cloud South (U.S. 192 & U.S. 441)		1,060	1,090	1,110	1,140	1,160	1,190	1,220	1,240	1,270	1,290	1,320	1,350	1,370	1,400	1,420	1,450	1,470	1,500	1,520	1,550	1,570
		340	350	370	380	390	410	420	430	440	460	470	480	490	510	520	530	540	550	570	580	590
		4,110	4,170	4,220	4,280	4,330	4,390	4,450	4,500	4,560	4,610	4,670	4,730	4,780	4,840	4,890	4,950	5,000	5,060	5,110	5,170	5,220
240 - Kissimmee Park Road		2,100	2,150	2,210	2,260	2,320	2,370	2,420	2,480	2,530	2,590	2,640	2,690	2,750	2,800	2,860	2,910	2,960	3,020	3,070	3,130	3,180
236 - Three Lakes Mainline Toll Plaza		2,610	2,620	2,630	2,650	2,660	2,670	2,680	2,690	2,710	2,720	2,730	2,740	2,760	2,770	2,780	2,800	2,810	2,820	2,830	2,850	2,860

Inputs	
Truck %	9.0%
Free Flow Speed (mph)	75
Peak Hour Factor (PHF)	0.95
Urban (LOS D) - North of Kissimmee Park Road	
Rural (LOS C) - South of Kissimmee Park Road	

Freeway LOS Targets		
Lanes	LOS D	LOS C
2	3,500	2,760
3	5,250	4,140
4	7,000	5,520
5	8,750	6,900
6	10,500	8,280
Area	Urban	Rural

T = 9%

Ramp Capacity by Number of Lanes	
1	1,820
2	3,640
3	5,460

Speed - 40 to 50 MPH

T = 9%

Ramp Capacity by Number of Lanes	
1	1,770
2	3,540

Speed 25 MPH

Table 5.9
Lane Requirements by Year for Build (Total Demand)

Mainline Maximum Service Volume (LOS C/D) and Ramp Capacity (LOS E)
DDHV - Worst Case AM or PM Peak Hour

Location	Florida's Turnpike	Model 2025	Interpolated Volumes 2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	Model 2045
		5,280	5,390	5,500	5,610	5,720	5,830	5,940	6,050	6,160	6,270	6,380	6,490	6,600	6,710	6,820	6,930	7,030	7,140	7,250	7,360	7,470
	SB	540	580	620	660	700	750	790	830	870	910	950	990	1,030	1,070	1,110	1,160	1,200	1,240	1,280	1,320	1,360
244 - Kissimmee-St. Cloud North	NB	540	580	620	660	700	750	790	830	870	910	950	990	1,030	1,070	1,110	1,160	1,200	1,240	1,280	1,320	1,360
(U.S. 192 & U.S. 441)		150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300	300	310	320	330	340
		4,890	4,970	5,050	5,120	5,200	5,280	5,360	5,440	5,510	5,590	5,670	5,750	5,830	5,900	5,980	6,060	6,140	6,220	6,290	6,370	6,450
242 - Kissimmee-St. Cloud South		890	920	950	970	1,000	1,030	1,060	1,090	1,110	1,140	1,170	1,200	1,220	1,250	1,280	1,310	1,330	1,360	1,390	1,410	1,440
(U.S. 192 & U.S. 441)		290	300	320	330	350	360	370	390	400	420	430	440	460	470	490	500	510	530	540	560	570
		4,140	4,200	4,250	4,310	4,360	4,420	4,470	4,530	4,580	4,640	4,690	4,750	4,800	4,860	4,910	4,970	5,020	5,080	5,130	5,190	5,240
240 - Kissimmee Park Road or		2,310	2,370	2,430	2,490	2,550	2,610	2,670	2,730	2,790	2,850	2,910	2,970	3,030	3,090	3,150	3,210	3,270	3,330	3,390	3,450	3,510
241 - New Nolte Road		230	240	250	260	270	280	290	300	310	320	330	340	350	360	370	380	390	400	410	420	430
236 - Three Lakes Mainline Toll Plaza		2,610	2,630	2,660	2,680	2,710	2,730	2,750	2,780	2,800	2,830	2,850	2,870	2,900	2,920	2,950	2,970	2,990	3,020	3,040	3,070	3,090

Inputs	
Truck %	9.0%
Free Flow Speed (mph)	75
Peak Hour Factor (PHF)	0.95
Urban (LOS D) - North of Kissimmee Park Road	
Rural (LOS C) - South of Kissimmee Park Road	

Freeway LOS Targets		
Lanes	LOS D	LOS C
2	3,500	2,760
3	5,250	4,140
4	7,000	5,520
5	8,750	6,900
6	10,500	8,280
Area	Urban	Rural

T = 9%

Ramp Capacity by Number of Lanes	
1	1,820
2	3,640
3	5,460

Speed - 40 to 50 MPH

T = 9%

Ramp Capacity by Number of Lanes	
1	1,770
2	3,540

Speed 25 MPH

The alternatives evaluated for the proposed interchange modifications are described in this section, as well as future traffic operational analysis and safety assessment.

6.1 ANALYSIS ALTERNATIVES

The PD&E study evaluated multiple alternatives for the Kissimmee Park Road interchange to screen viable concepts and five were short listed. A Preliminary Engineering Report (PER) was prepared for the PD&E study. Build alternatives development and selection of the preferred alternative are discussed in detail in the PER. The five Build alternatives are summarized as follows:

Alternative 1

This alternative involved shifting the southbound off-ramp to the west to improve intersection spacing. Northbound off and on-ramps were added south of Kissimmee Park Road, and a direct connect on-ramp from southbound Old Canoe Creek Road to northbound Florida's Turnpike was added, to remove these movements from the Kissimmee Park Road and Old Canoe Creek Road intersection.

Alternative 2

A displaced left movement for the eastbound Kissimmee Park Road to northbound Florida's Turnpike movement was considered in this alternative. A loop ramp in the southwest quadrant, with a direct connection to southbound Old Canoe Creek Road, replaced the existing tight diamond ramp.

Alternative 3a

Similar to Alternative 2 but with a larger loop ramp for the southbound off-ramp. The southbound to westbound Kissimmee Park Road movements and the southbound Florida's Turnpike on-ramp from Kissimmee Park Road were located at a new signalized intersection with Clay Whaley Road.

Alternative 3b

Same configuration as Alternative 3a, except the Florida's Turnpike southbound to westbound Kissimmee Park Road movement was on a separate ramp.

Alternative 4

Alternative 4 moved the interchange with the Florida's Turnpike north of Kissimmee Park Road to an extension of Nolte Road. The interchange had a diverging diamond configuration. The existing ramps at Kissimmee Park Road were removed but, the Kissimmee Park Road bridge was maintained for local access.

Alternative 4 was selected as the Preferred Build interchange configuration because it increased the spacing between the ramp terminal intersections and Old Canoe Creek Road, increased network connectivity, had less residential and environmental impacts and offered a lower cost compared to the other alternatives. In addition, Alternative 4 was highly preferred by most of the attendees at a Public Information Meeting held on August 6th, 2019.

This SIMR documents traffic analysis for the entire PD&E study within the AOI from south of Kissimmee Park Road to north of U.S. 192 South for the following alternatives: No Build, Transportation Systems Management & Operations (TSM&O) and the Preferred Build (Build). The results are provided for the 2025 opening, 2035 interim and 2045 design years. The analysis alternatives are described as follows:

No Build Alternative

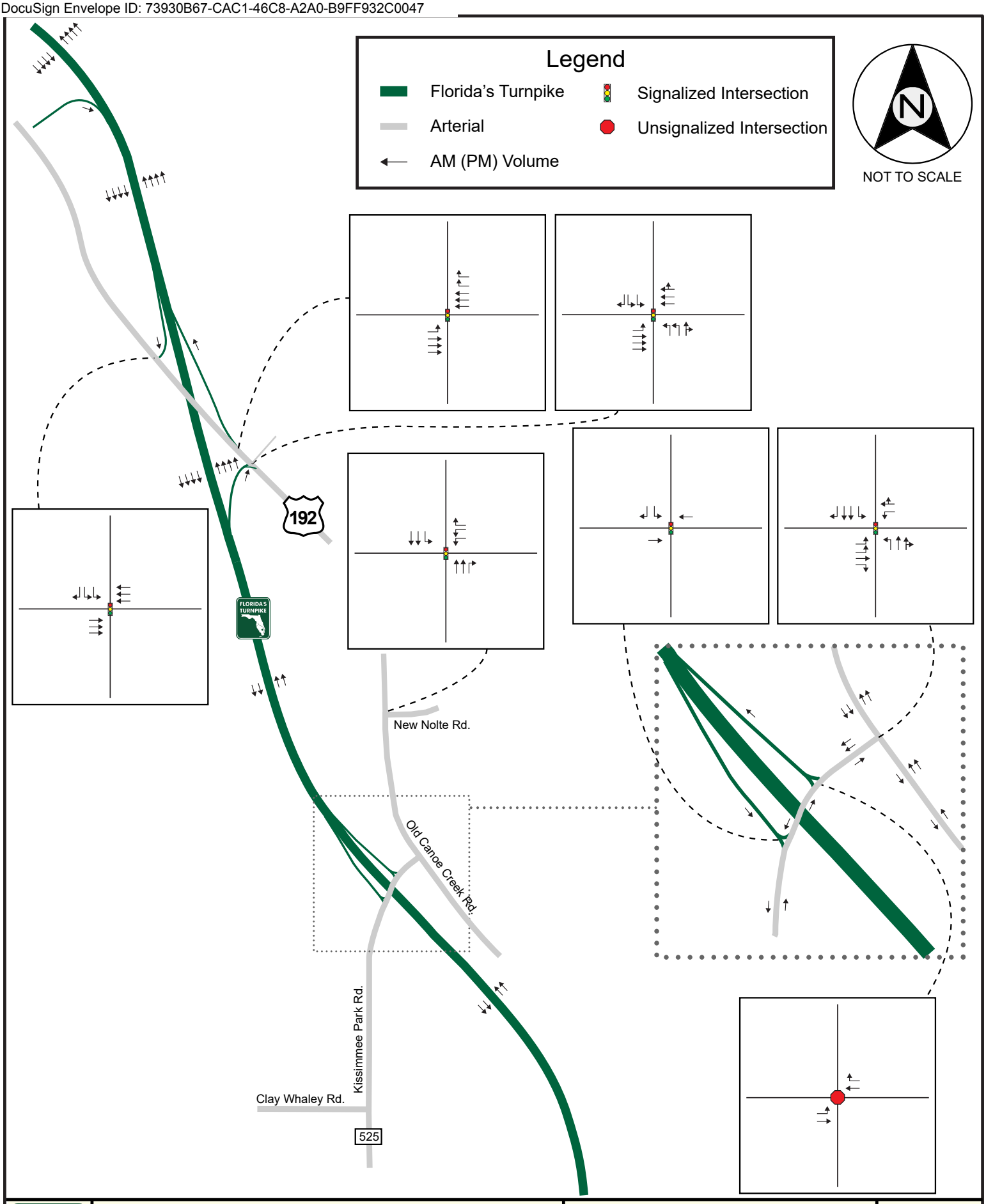
The No Build included new ramps to and from the north at the U.S. 192 South interchange and widening of the Florida's Turnpike to eight lanes north of the interchange (FPID: 436194-1). This project also includes turn lane improvements at the northbound off-ramp terminal intersection at U.S. 192. Widening of U.S. 192 to six lanes was also taken into consideration. The existing lane geometry was maintained at other locations such as the freeway mainline south of the U.S. 192 South interchange, Kissimmee Park Road interchange and Old Canoe Creek Road. The No Build lane geometry is depicted on **Figure 6.1**.

TSM&O Alternative

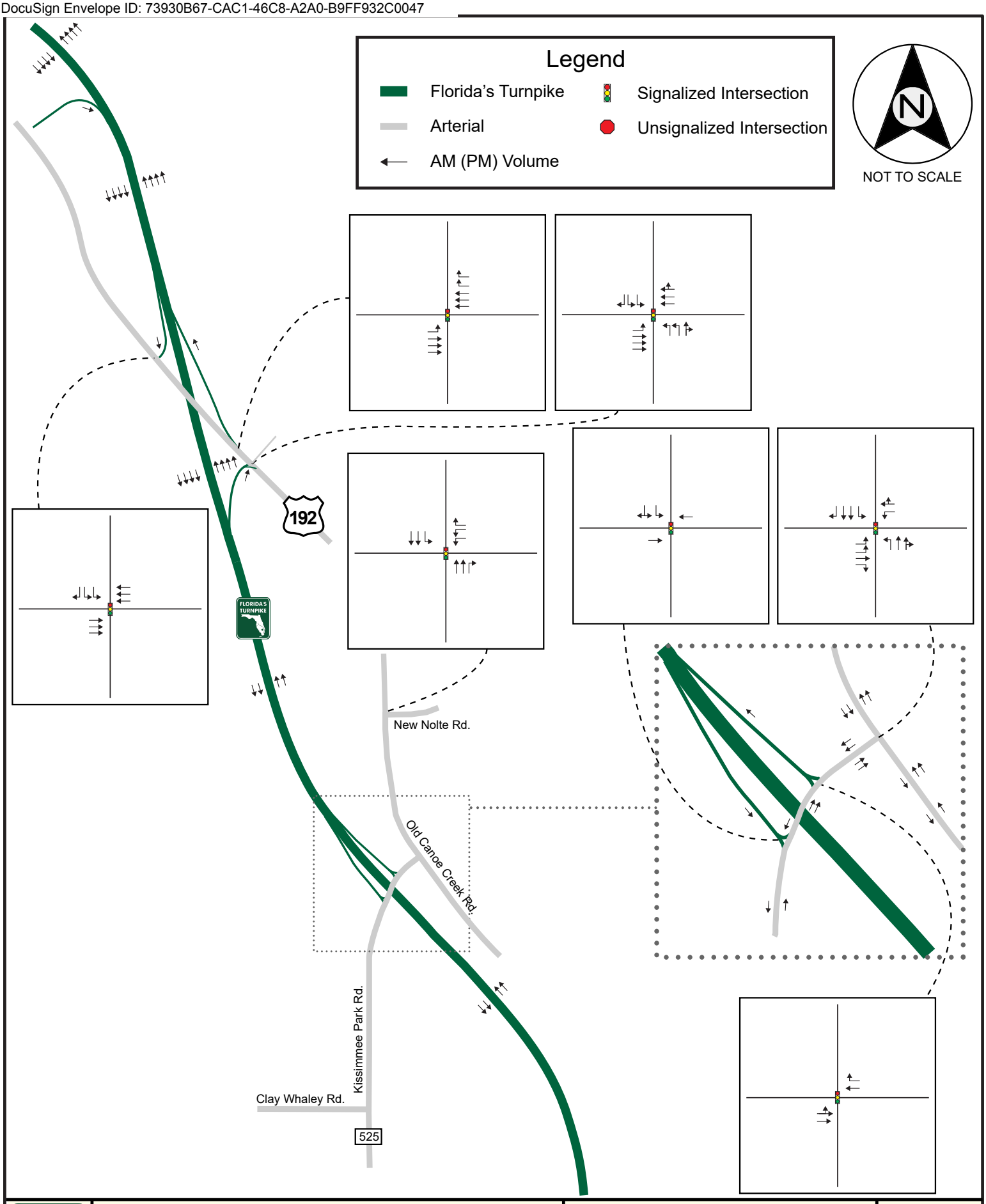
The TSM&O alternative was similar to the No Build configuration for the most part and was applied to the Kissimmee Park Road interchange only. Dual left turn lanes were considered at the Florida's Turnpike southbound off-ramp to Kissimmee Park Road and two receiving lanes were added on the Kissimmee Park Road bridge. This required restriping of the off-ramp and the bridge. The lane geometry for the TSM&O alternative is shown on **Figure 6.2**. A conceptual layout is provided in **Appendix F**.

Build Alternative

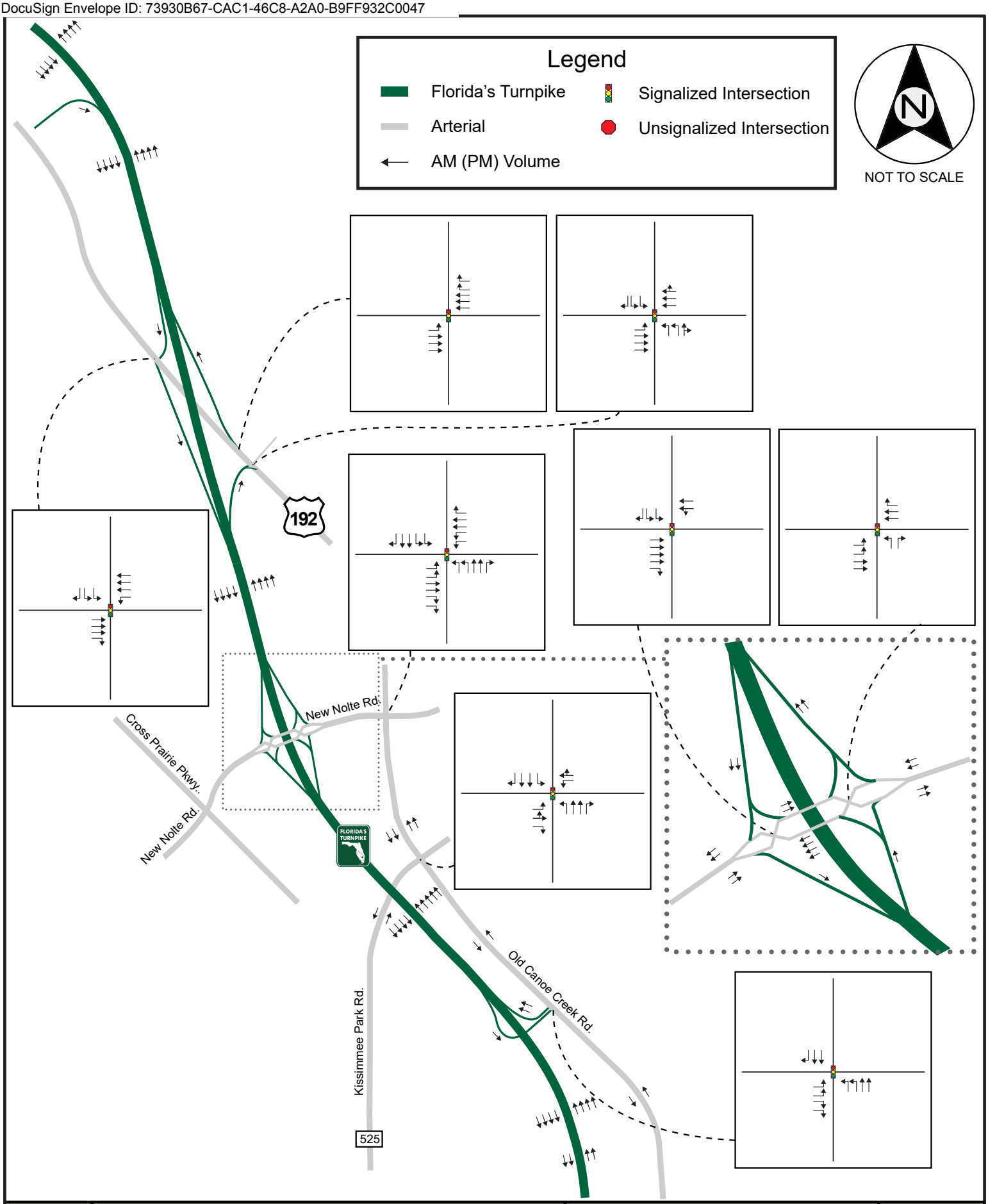
The Build alternative relocated the Kissimmee Park Road interchange by approximately half of a mile north, to an extension of Nolte Road. The proposed configuration featured a Diverging Diamond Interchange (DDI), serving all movements. The existing ramps at the Kissimmee Park Road interchange were removed; however, the overpass was maintained for local access. Additional ramps to and from the north were added to provide direct access between the Florida's Turnpike and Old Canoe Creek Road, at approximately half of a mile south of Kissimmee Park Road. This alternative also included a proposed southbound on-ramp at U.S. 192 South, to complete the interchange and provide access to all movements. The Build alternative also assumed widening of the Florida's Turnpike mainline to eight lanes from south of Kissimmee Park Road at MP 238.5 to the southern terminus of the ongoing widening design project (FPID: 436194-1) at approximately MP 240. The lane geometry for the Build alternative is depicted on **Figure 6.3**. A conceptual layout is provided in **Appendix F**.



FLORIDA'S TURNPIKE	Florida's Turnpike PD&E Study From MP 238.5 to 242 Systems Interchange Modification Report (SIMR)	Future No Build Lane Geometry	Figure 6.1



FLORIDA'S TURNPIKE	Florida's Turnpike PD&E Study From MP 238.5 to 242 Systems Interchange Modification Report (SIMR)	Future TSM&O Lane Geometry	Figure 6.2



FLORIDA'S TURNPIKE	Florida's Turnpike PD&E Study From MP 238.5 to 242 Systems Interchange Modification Report (SIMR)	Future Build Lane Geometry	Figure 6.3

6.2 FUTURE OPERATIONAL PERFORMANCE

This section provides a summary of traffic performance results for future conditions. Detailed output reports and analysis files are provided in **Appendix G**.

6.2.1 Freeway Segment Analysis

Freeway segment analysis was performed using VISSIM microsimulation for the No Build and Build alternatives. The analysis results are summarized in **Figures 6.4** through **6.15** for the 2025 opening, 2035 interim and 2045 design year peak hours. Detailed VISSIM output tables are provided in **Appendix G** showing the estimated performance for each of the four analysis hours. VISSIM driving parameters used to calibrate the existing conditions model were carried over to the future year analysis. The driving parameters changed for the purposes of calibrating the VISSIM model for existing conditions are documented in the report provided in **Appendix D**. Emergency stop and lane change distances for connectors were adjusted at a few locations where geometry changed in the future conditions to make the traffic simulation more realistic.

All southbound freeway segments in 2025 AM No Build (**Figure 6.4**) are expected to operate at or close to the posted speed of 70 mph. The exception is the diverge and basic sections upstream of the Kissimmee Park Road off-ramp which is reported with a slightly lower speed due to vehicle interactions at the exit. Similar results are reported in the northbound direction where most of the segments would operate at the posted speed except the merge section downstream of the Kissimmee Park Road on-ramp which would have a lower speed, due to inability of vehicles to quickly find gaps to merge. **Figure 6.4** also shows that approximately 11 percent of the demand would not be served in 2025 AM No Build in the northbound direction along the freeway. This is due to upstream metering of the heavy northbound demand along Old Canoe Creek Road. The heavy congestion and long queues on Old Canoe Creek in the existing conditions in the northbound direction approaching Kissimmee Park Road are expected to exacerbate in the future.

In 2025 PM No Build (**Figure 6.5**), traffic operations along the Florida's Turnpike in the southbound direction are expected to degrade significantly upstream of the Kissimmee Park Road off-ramp; travel speeds will be below 10 mph and almost half of the projected demand will not be served. As indicated previously, queue backups on the off-ramp to Kissimmee Park Road extend to the mainline in existing conditions and are expected to be longer in the future under No Build conditions. The queues are caused by lack of capacity at the off-ramp, along Kissimmee Park Road and at the adjacent intersection at Old Canoe Creek Road which is within close proximity. By year 2025, congestion effects are expected in the PM along Old Canoe Creek Road in the northbound direction and at the intersections and hence, traffic will be metered. This is the reason for the 10 percent unmet demand in the northbound direction of the freeway in **Figure 6.5**. The analysis showed that six through lanes will be required along Old Canoe Creek Road south of Kissimmee Park Road by the 2025 opening year and by year 2036 to the north.

The results in **Figures 6.6** and **6.7** show that traffic operations will be restored to free flow conditions with the Build alternative in 2025 AM and PM conditions. The proposed DDI at Nolte Road with widened ramps, longer spacing between the interchange at Old Canoe Creek Road, supplementary direct connect ramps and turn lane improvements at the intersections are expected to completely

alleviate congestion along the freeway mainline and ramps. Operations will also be significantly improved along Old Canoe Creek Road however, the analysis showed that additional through lanes are required. The Build analysis assumed existing lanes on Old Canoe Creek (four lanes north of Kissimmee Park Road and two lanes to the south) and hence, upstream metering will still be experienced in 2025 AM. As a result, approximately seven percent of the projected freeway northbound demand will not be served, as shown in **Figure 6.6**.

As shown in **Figures 6.8** and **6.9**, the Florida's Turnpike southbound mainline upstream of the Kissimmee Park Road off-ramp is expected to be impacted in both AM and PM conditions, under No Build conditions. Increase in traffic demand without adding capacity would degrade traffic operations. Metering of traffic along Old Canoe Creek would also increase, leading to a higher percentage of unmet demand along the freeway, as shown in **Figures 6.8** and **6.9**. With the Build concept, the results in **Figures 6.10** and **6.11** show that free flow operations are expected along the freeway. The only impacts shown are unmet demand in the northbound direction, due to lack of capacity along Old Canoe Creek Road.

By the 2045 design year, traffic congestion will be very severe under No Build conditions. As shown in **Figures 6.12** and **6.13**, the Florida's Turnpike will experience very low travel speeds and high unmet demand in the southbound direction in both 2045 AM and PM. The processed volume in the long-term will actually be lower compared to near-term due to high levels of congestion, as density increases throughput reduces. The Build results in **Figures 6.14** and **6.15** show free flow operations along the freeway due to added capacity. Metering impacts along Old Canoe Creek Road will still be experienced and hence, the processed volume along the freeway will be lower than demand, as the results show.

Figure 6.4
2025 AM No Build Peak Hour VISSIM Freeway Segments Performance

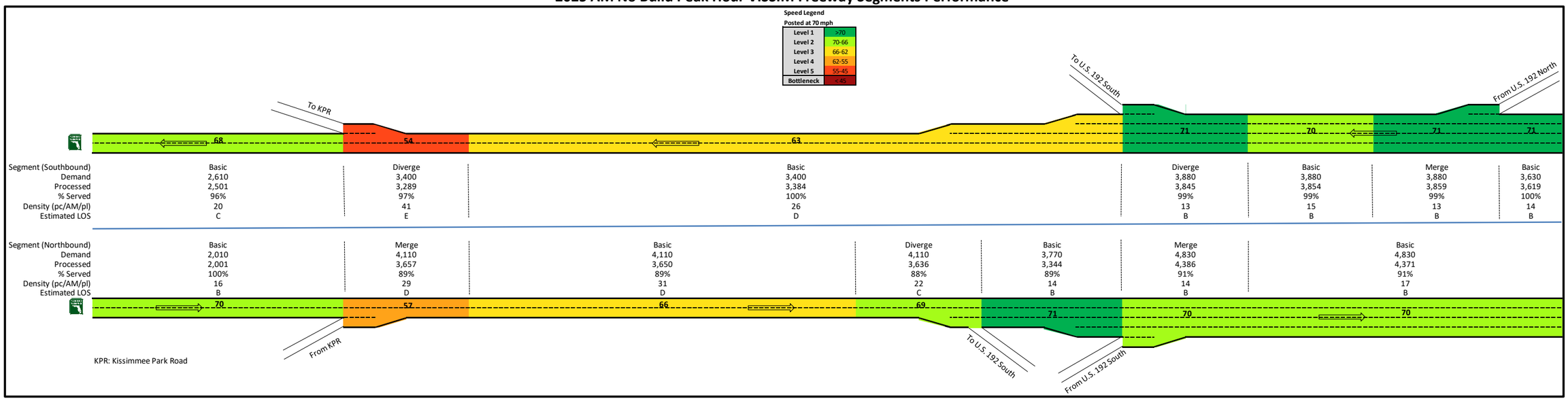


Figure 6.5
2025 PM No Build Peak Hour VISSIM Freeway Segments Performance

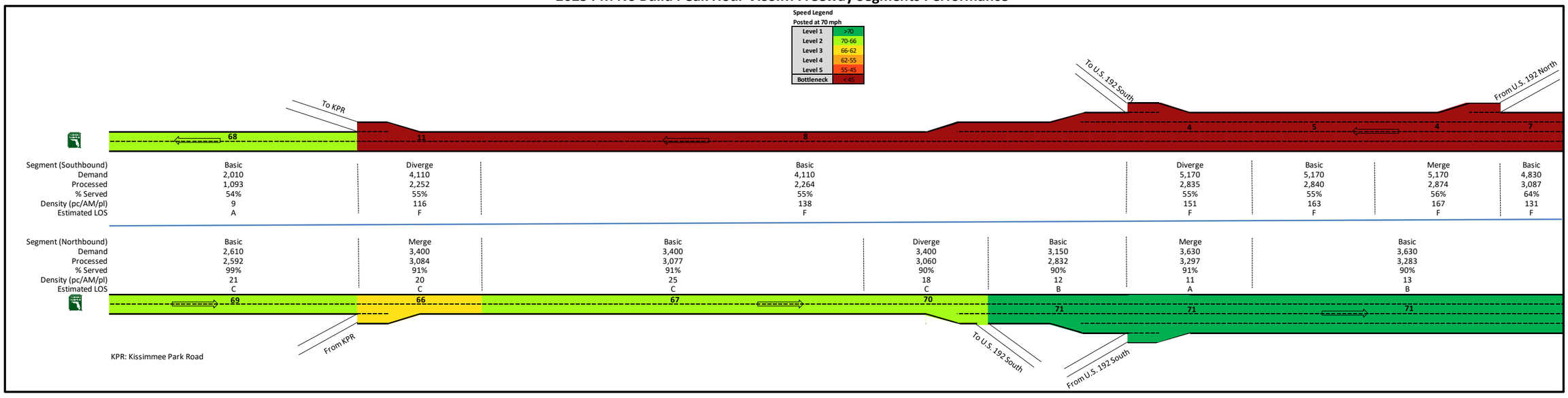


Figure 6.6

2025 AM Build Peak Hour VISSIM Freeway Segments Performance

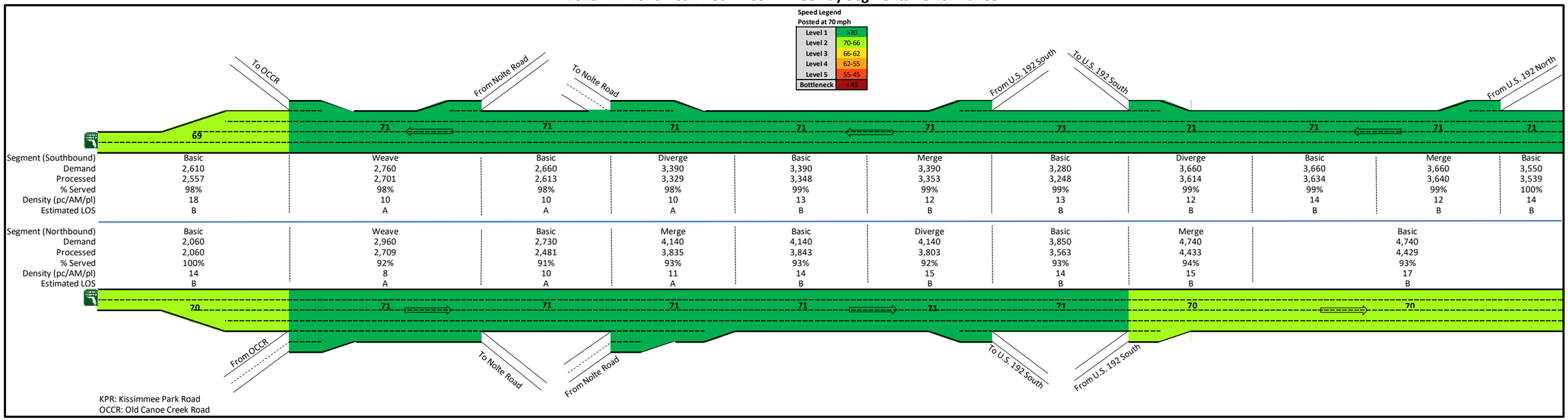


Figure 6.7

2025 PM Build Peak Hour VISSIM Freeway Segments Performance

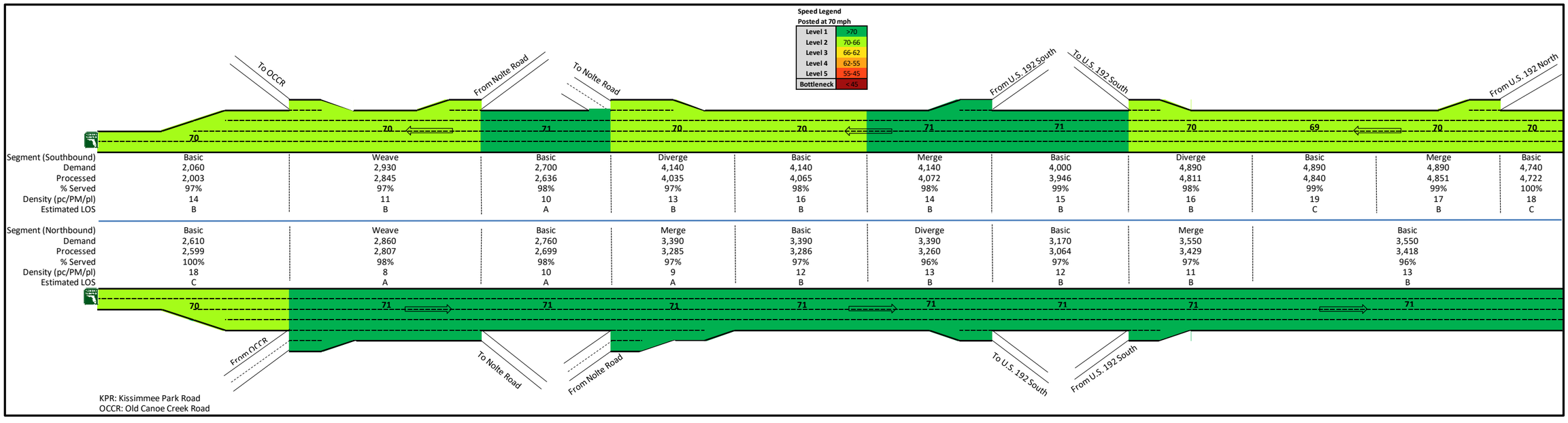


Figure 6.8
2035 AM No Build Peak Hour VISSIM Freeway Segments Performance

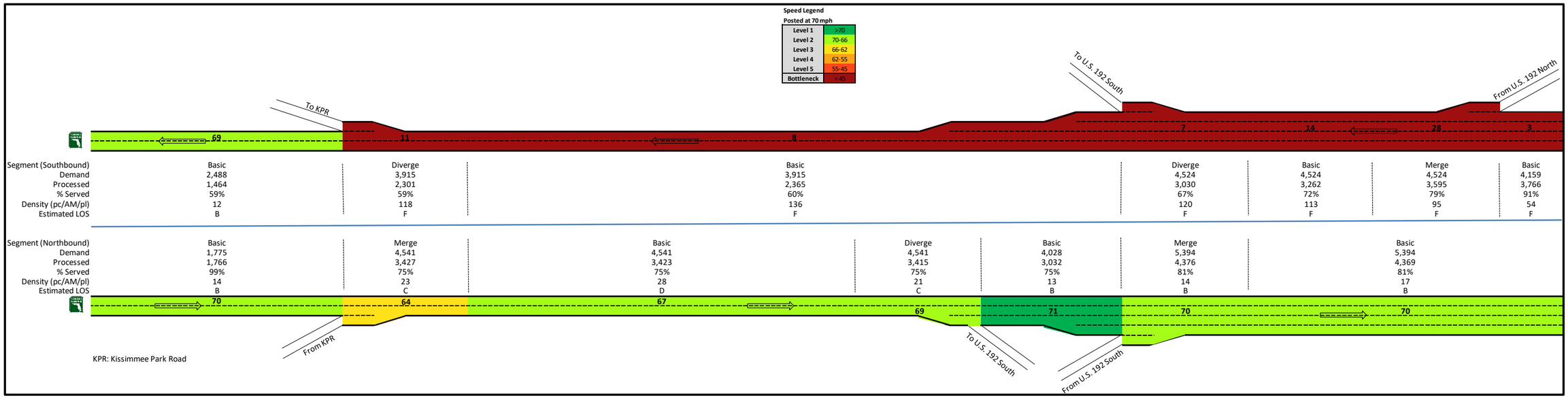


Figure 6.9
2035 PM No Build Peak Hour VISSIM Freeway Segments Performance

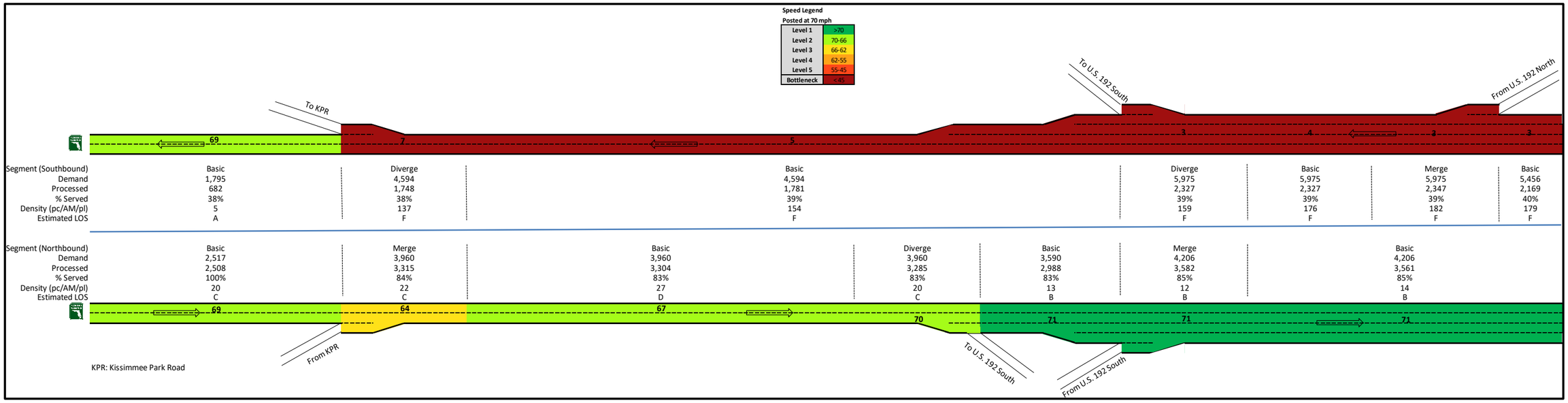


Figure 6.10
2035 AM Build Peak Hour VISSIM Freeway Segments Performance

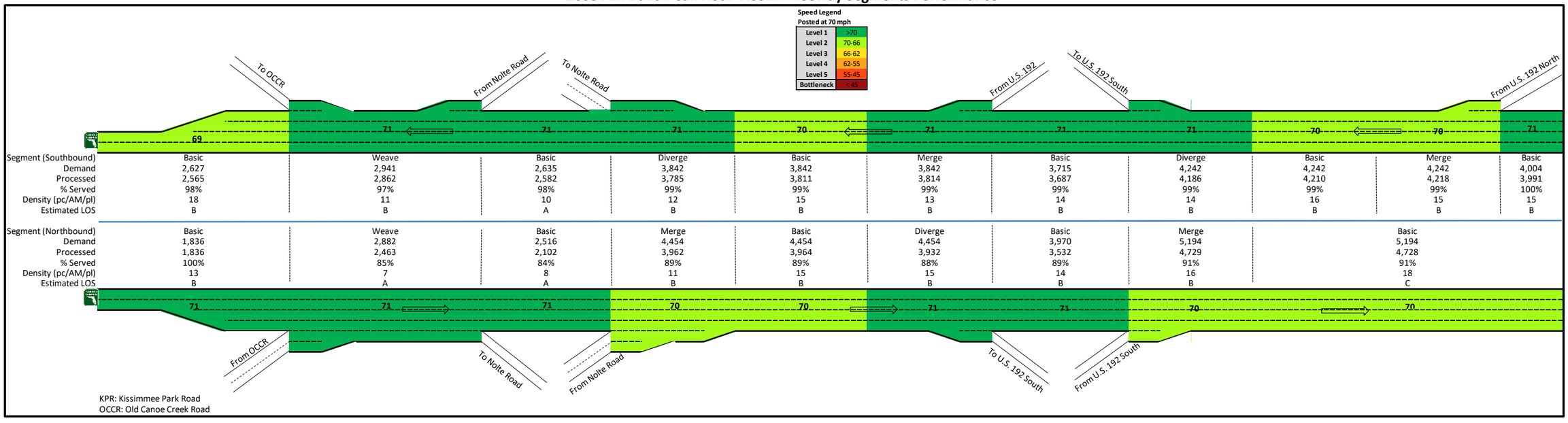


Figure 6.11
2035 PM Build Peak Hour VISSIM Freeway Segments Performance

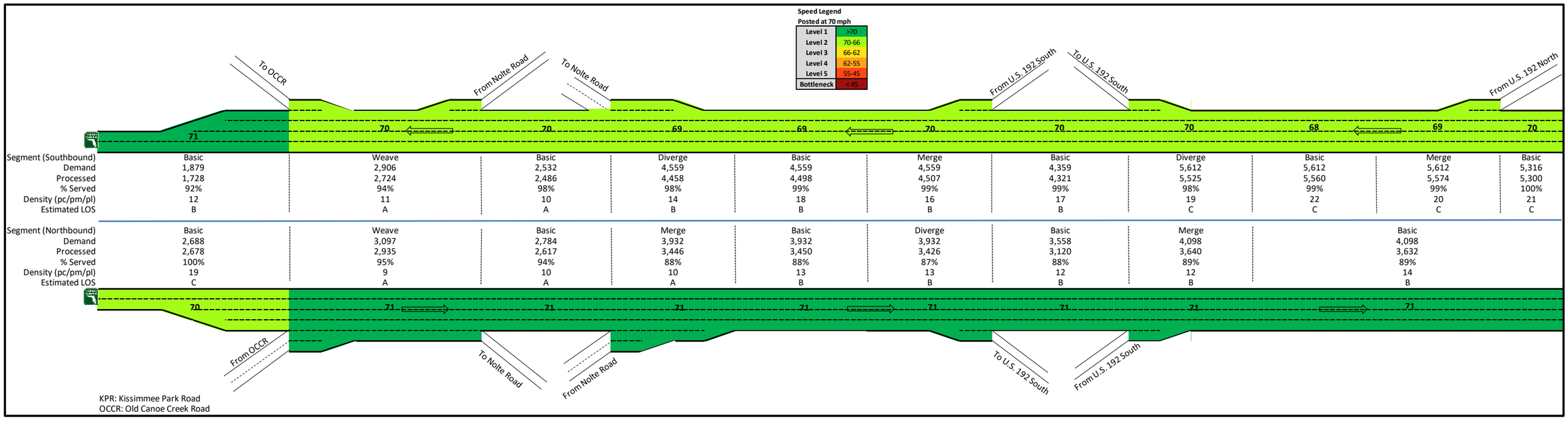


Figure 6.12
2045 AM No Build Peak Hour VISSIM Freeway Segments Performance

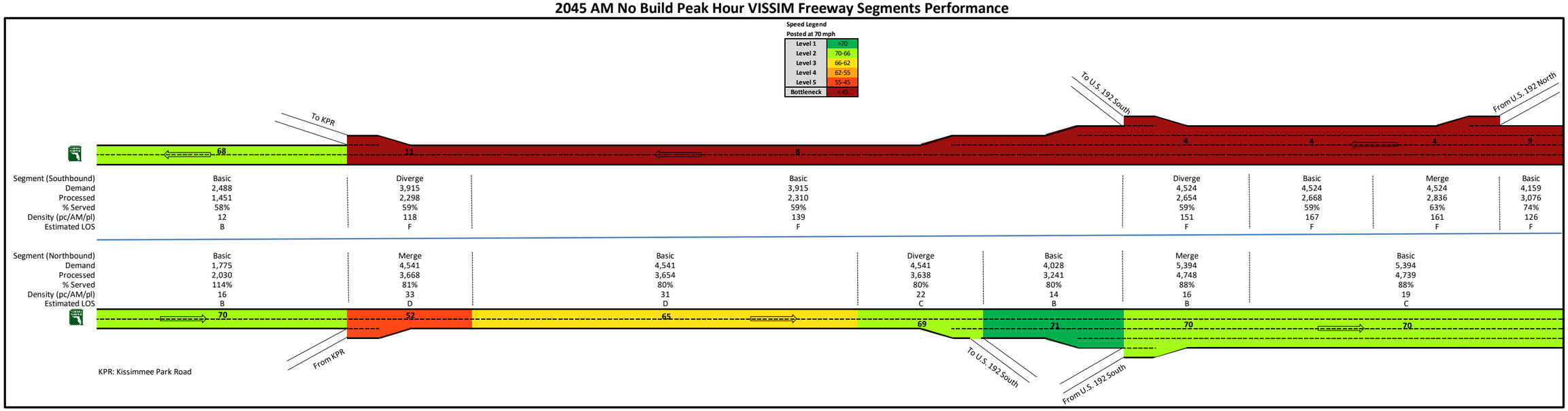


Figure 6.13
2045 PM No Build Peak Hour VISSIM Freeway Segments Performance

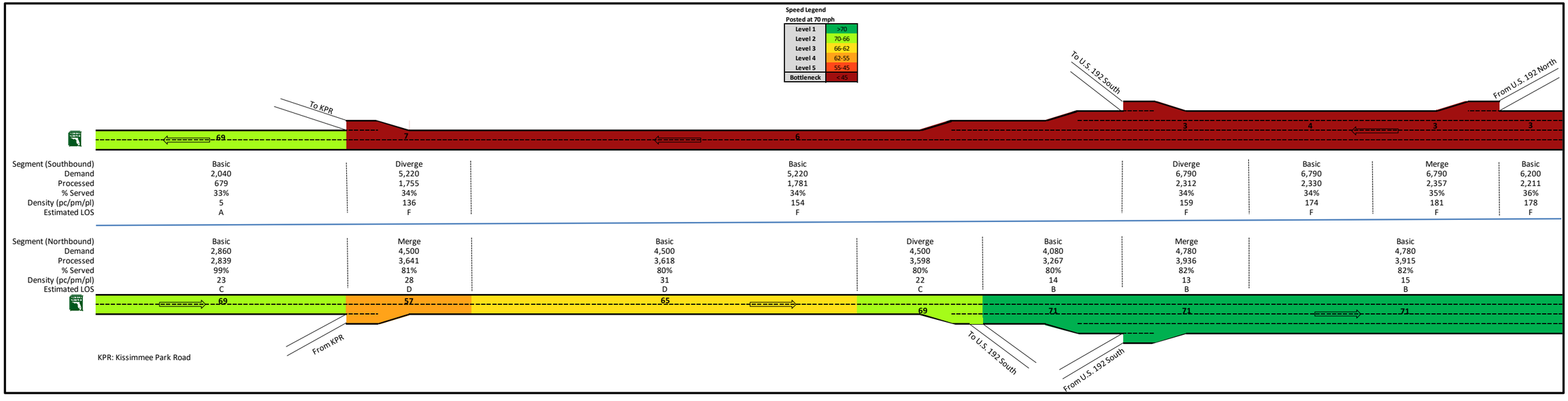


Figure 6.14
2045 AM Build Peak Hour VISSIM Freeway Segments Performance

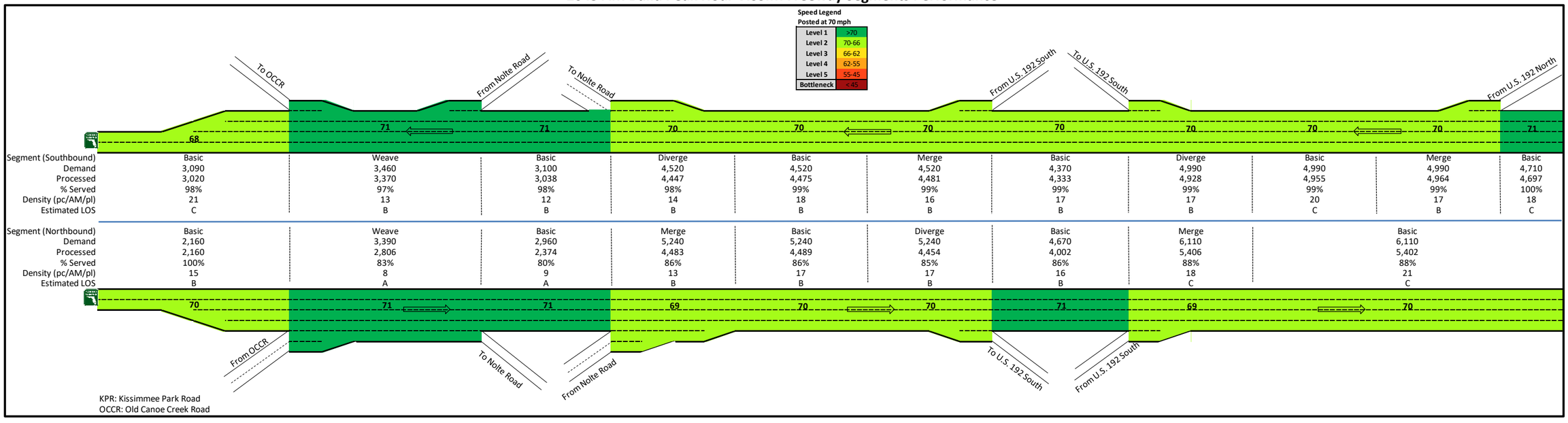
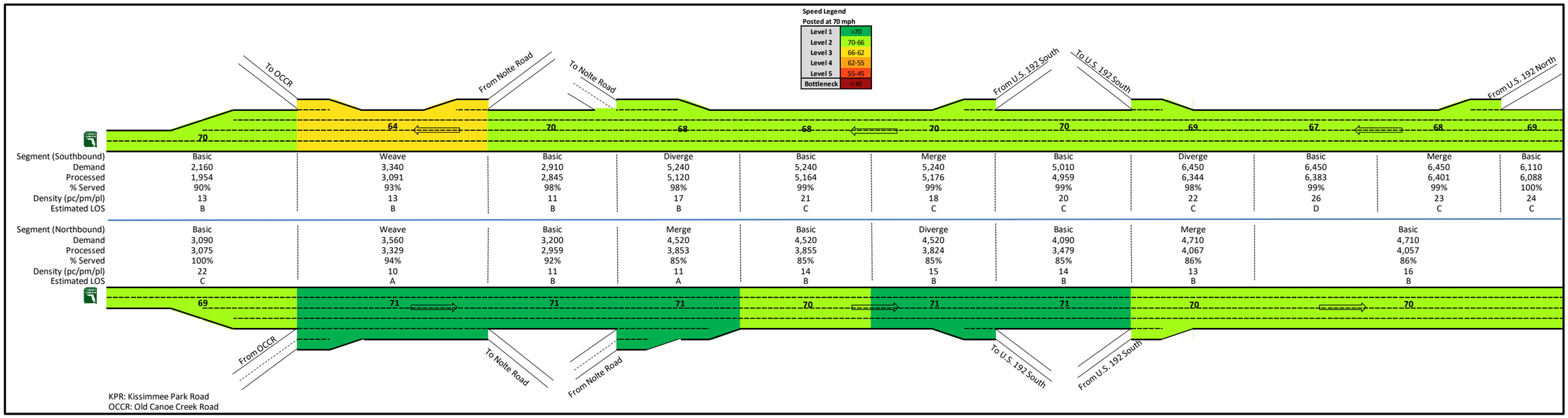


Figure 6.15
2045 PM Build Peak Hour VISSIM Freeway Segments Performance



6.2.2 Ramp Roadway Analysis

Ramp roadway analysis was performed using VISSIM microsimulation. **Tables 6.1** through **6.12** summarize the results for the No Build and Build alternatives for the 2025 opening, 2035 interim and 2045 design year peak hours. Similar to the freeway segment results, the ramp roadway output for No Build conditions (**Tables 6.1, 6.2, 6.5, 6.6, 6.9, 6.10**) shows that the percentage of unmet demand would increase with time, as traffic demand increases. Travel speeds are also expected to reduce in the future. The unacceptable operations in the future No Build are due to lack of capacity within the study area. The analysis showed that additional lanes are required on the interchange ramps and Old Canoe Creek Road, as well as turn lane improvements at the intersections. Results for the Build conditions (**Tables 6.3, 6.4, 6.7, 6.8, 6.11, 6.12**) show an improvement in ramp roadway performance with the Build compared to No Build. The proposed improvements are expected to restore operations along the freeway mainline and ramps to free flow conditions. However, additional capacity improvements will be required along Old Canoe Creek Road to further relieve congestion. Detailed VISSIM output tables are provided in **Appendix G** showing the estimated performance for each of the four analysis hours.

Table 6.1
2025 AM No Build Peak Hour VISSIM Freeway Ramp Roadway Performance

Florida's Turnpike Interchange	Ramp	Lanes	Demand	Processed	% Served	Speed
Kissimmee Park Road	Southbound Off-ramp	1	790	760	96%	20
	Northbound On-ramp	1	2,100	1,661	79%	46
U.S. 192 South	Southbound Off-ramp	1	480	469	98%	67
	Northbound Off-ramp	1	340	298	88%	70
	Northbound On-ramp	1	1,060	1,051	99%	57
U.S. 192 North	Southbound On-ramp	1	250	249	100%	60

Ramp roadway output is for the section immediately downstream of an off-ramp or upstream of an on-ramp gore
Highlighted: unmet demand >5%

Table 6.2
2025 PM No Build Peak Hour VISSIM Freeway Ramp Roadway Performance

Florida's Turnpike Interchange	Ramp	Lanes	Demand	Processed	% Served	Speed
Kissimmee Park Road	Southbound Off-ramp	1	2,100	1,166	56%	11
	Northbound On-ramp	1	790	510	65%	50
U.S. 192 South	Southbound Off-ramp	1	1,060	572	54%	59
	Northbound Off-ramp	1	250	225	90%	70
	Northbound On-ramp	1	480	470	98%	63
U.S. 192 North	Southbound On-ramp	1	340	268	79%	8

Ramp roadway output is for the section immediately downstream of an off-ramp or upstream of an on-ramp gore
Highlighted: unmet demand >5%

Table 6.3
2025 AM Build Peak Hour VISSIM Freeway Ramp Roadway Performance

Florida's Turnpike Interchange	Ramp	Lanes	Demand	Processed	% Served	Speed
Old Canoe Creek Road	Southbound Off-ramp	1	150	151	101%	70
	Northbound On-ramp	2	900	663	74%	56
Nolte Road	Southbound Off-ramp	2	730	720	99%	71
	Southbound On-ramp	1	100	95	95%	60
	Northbound Off-ramp	1	230	226	98%	67
	Northbound On-ramp	2	1,410	1,360	96%	56
U.S. 192 South	Southbound Off-ramp	1	380	375	99%	67
	Southbound On-ramp	1	110	112	102%	60
	Northbound Off-ramp	1	290	267	92%	69
	Northbound On-ramp	1	890	893	100%	56
U.S. 192 North	Southbound On-ramp	1	110	109	99%	61

Ramp roadway output is for the section immediately downstream of an off-ramp or upstream of an on-ramp gore
Highlighted: unmet demand >5%

Table 6.4
2025 PM Build Peak Hour VISSIM Freeway Ramp Roadway Performance

Florida's Turnpike Interchange	Ramp	Lanes	Demand	Processed	% Served	Speed
Old Canoe Creek Road	Southbound Off-ramp	1	870	839	96%	63
	Northbound On-ramp	2	250	226	90%	57
Nolte Road	Southbound Off-ramp	2	1,440	1,404	98%	70
	Southbound On-ramp	1	230	222	97%	59
	Northbound Off-ramp	1	100	102	102%	68
	Northbound On-ramp	2	630	600	95%	57
U.S. 192 South	Southbound Off-ramp	1	890	873	98%	65
	Southbound On-ramp	1	140	138	99%	60
	Northbound Off-ramp	1	220	207	94%	70
	Northbound On-ramp	1	380	383	101%	60
U.S. 192 North	Southbound On-ramp	1	150	148	98%	60

Ramp roadway output is for the section immediately downstream of an off-ramp or upstream of an on-ramp gore
Highlighted: unmet demand >5%

Table 6.5
2035 AM No Build Peak Hour VISSIM Freeway Ramp Roadway Performance

Florida's Turnpike Interchange	Ramp	Lanes	Demand	Processed	% Served	Speed
Kissimmee Park Road	Southbound Off-ramp	1	1,427	844	59%	6
	Northbound On-ramp	1	2,767	1,666	60%	45
U.S. 192 South	Southbound Off-ramp	1	609	400	66%	63
	Northbound Off-ramp	1	513	384	75%	69
	Northbound On-ramp	1	1,366	1,350	99%	54
U.S. 192 North	Southbound On-ramp	1	365	347	95%	37

Ramp roadway output is for the section immediately downstream of an off-ramp or upstream of an on-ramp gore
Highlighted: unmet demand >5%

Table 6.6
2035 PM No Build Peak Hour VISSIM Freeway Ramp Roadway Performance

Florida's Turnpike Interchange	Ramp	Lanes	Demand	Processed	% Served	Speed
Kissimmee Park Road	Southbound Off-ramp	1	2,798	1,064	38%	9
	Northbound On-ramp	1	1,443	820	57%	49
U.S. 192 South	Southbound Off-ramp	1	1,382	543	39%	58
	Northbound Off-ramp	1	370	302	82%	69
	Northbound On-ramp	1	616	602	98%	63
U.S. 192 North	Southbound On-ramp	1	519	152	29%	1

Ramp roadway output is for the section immediately downstream of an off-ramp or upstream of an on-ramp gore
Highlighted: unmet demand >5%

Table 6.7
2035 AM Build Peak Hour VISSIM Freeway Ramp Roadway Performance

Florida's Turnpike Interchange	Ramp	Lanes	Demand	Processed	% Served	Speed
Old Canoe Creek Road	Southbound Off-ramp	1	315	303	96%	69
	Northbound On-ramp	2	1,046	640	61%	56
Nolte Road	Southbound Off-ramp	2	1,209	1,206	100%	71
	Southbound On-ramp	1	306	284	93%	59
	Northbound Off-ramp	1	366	360	98%	66
	Northbound On-ramp	2	1,938	1,867	96%	55
U.S. 192 South	Southbound Off-ramp	1	527	509	97%	67
	Southbound On-ramp	1	128	133	104%	60
	Northbound Off-ramp	1	485	429	88%	68
	Northbound On-ramp	1	1,224	1,221	100%	53
U.S. 192 North	Southbound On-ramp	1	238	237	99%	60

Ramp roadway output is for the section immediately downstream of an off-ramp or upstream of an on-ramp gore
Highlighted: unmet demand >5%

Table 6.8
2035 PM Build Peak Hour VISSIM Freeway Ramp Roadway Performance

Florida's Turnpike Interchange	Ramp	Lanes	Demand	Processed	% Served	Speed
Old Canoe Creek Road	Southbound Off-ramp	1	1,027	990	96%	61
	Northbound On-ramp	2	409	276	68%	57
Nolte Road	Southbound Off-ramp	2	2,027	1,983	98%	69
	Southbound On-ramp	1	374	247	66%	59
	Northbound Off-ramp	1	313	311	99%	67
	Northbound On-ramp	2	1,148	843	73%	56
U.S. 192 South	Southbound Off-ramp	1	1,253	1,212	97%	59
	Southbound On-ramp	1	200	196	98%	59
	Northbound Off-ramp	1	374	322	86%	69
	Northbound On-ramp	1	539	537	100%	58
U.S. 192 North	Southbound On-ramp	1	296	293	99%	60

Ramp roadway output is for the section immediately downstream of an off-ramp or upstream of an on-ramp gore
Highlighted: unmet demand >5%

Table 6.9
2045 AM No Build Peak Hour VISSIM Freeway Ramp Roadway Performance

Florida's Turnpike Interchange	Ramp	Lanes	Demand	Processed	% Served	Speed
Kissimmee Park Road	Southbound Off-ramp	1	1,640	842	51%	6
	Northbound On-ramp	1	3,180	1,635	51%	43
U.S. 192 South	Southbound Off-ramp	1	700	347	50%	62
	Northbound Off-ramp	1	590	407	69%	69
	Northbound On-ramp	1	1,570	1,518	97%	52
U.S. 192 North	Southbound On-ramp	1	420	300	71%	5

Ramp roadway output is for the section immediately downstream of an off-ramp or upstream of an on-ramp gore
Highlighted: unmet demand >5%

Table 6.10
2045 PM No Build Peak Hour VISSIM Freeway Ramp Roadway Performance

Florida's Turnpike Interchange	Ramp	Lanes	Demand	Processed	% Served	Speed
Kissimmee Park Road	Southbound Off-ramp	1	3,180	1,075	34%	9
	Northbound On-ramp	1	1,640	824	50%	49
U.S. 192 South	Southbound Off-ramp	1	1,570	517	33%	57
	Northbound Off-ramp	1	420	336	80%	69
	Northbound On-ramp	1	700	678	97%	63
U.S. 192 North	Southbound On-ramp	1	590	158	27%	1

Ramp roadway output is for the section immediately downstream of an off-ramp or upstream of an on-ramp gore
Highlighted: unmet demand >5%

Table 6.11
2045 AM Build Peak Hour VISSIM Freeway Ramp Roadway Performance

Florida's Turnpike Interchange	Ramp	Lanes	Demand	Processed	% Served	Speed
Old Canoe Creek Road	Southbound Off-ramp	1	370	356	96%	69
	Northbound On-ramp	2	1,230	659	54%	56
Nolte Road	Southbound Off-ramp	2	1,420	1,416	100%	70
	Southbound On-ramp	1	360	333	93%	59
	Northbound Off-ramp	1	430	429	100%	65
	Northbound On-ramp	2	2,280	2,122	93%	54
U.S. 192 South	Southbound Off-ramp	1	620	606	98%	66
	Southbound On-ramp	1	150	154	103%	60
	Northbound Off-ramp	1	570	477	84%	67
	Northbound On-ramp	1	1,440	1,427	99%	51
U.S. 192 North	Southbound On-ramp	1	280	278	99%	60

Ramp roadway output is for the section immediately downstream of an off-ramp or upstream of an on-ramp gore
Highlighted: unmet demand >5%

Table 6.12
2045 PM Build Peak Hour VISSIM Freeway Ramp Roadway Performance

Florida's Turnpike Interchange	Ramp	Lanes	Demand	Processed	% Served	Speed
Old Canoe Creek Road	Southbound Off-ramp	1	1,180	1,094	93%	42
	Northbound On-ramp	2	470	274	58%	57
Nolte Road	Southbound Off-ramp	2	2,330	2,289	98%	68
	Southbound On-ramp	1	430	265	62%	59
	Northbound Off-ramp	1	360	359	100%	62
	Northbound On-ramp	2	1,320	909	69%	56
U.S. 192 South	Southbound Off-ramp	1	1,440	1,393	97%	53
	Southbound On-ramp	1	230	227	99%	59
	Northbound Off-ramp	1	430	359	84%	69
	Northbound On-ramp	1	620	607	98%	58
U.S. 192 North	Southbound On-ramp	1	340	337	99%	60

Ramp roadway output is for the section immediately downstream of an off-ramp or upstream of an on-ramp gore
Highlighted: unmet demand >5%

6.2.3 Signal Warrant Analysis

Signal warrant analysis was conducted at the proposed Nolte Road and Florida's Turnpike interchange ramp terminal intersections, and at the Old Canoe Creek Road and Florida's Turnpike supplementary ramps intersection. The Manual of Uniform Traffic Control Devices (MUTCD), 2009 Edition, and the FDOT MUTS handbook were followed in conducting the signal warrant analysis. Warrants 1 through 9 of the MUTCD were evaluated at the proposed intersections where applicable, for the 2025 opening year.

The proposed intersection of Nolte Road and Florida's Turnpike southbound ramps met Warrant 1 (Eight-Hour Vehicular Volume), Warrant 2 (Four-Hour Vehicular Volume), and Warrant 3 (Peak Hour). The proposed intersections at Nolte Road and Florida's Turnpike northbound ramps, as well as Old Canoe Creek Road and Florida's Turnpike ramps met Warrant 3 only. A detailed report of the Signal Warrant Analysis is provided in **Appendix G**. Signalization of the proposed intersections was assumed in the 2025, 2035 and 2045 intersection analysis.

6.2.4 Intersection Analysis

Intersection analysis for the No Build and Build alternatives was performed using Synchro and VISSIM microsimulation. Intersection analysis for the TSM&O alternative was performed using Synchro only. The volumes for the No Build were utilized for the TSM&O analysis since minor lane geometry changes were considered. The Synchro results for the No Build, TSM&O and Build alternatives are summarized in **Tables 6.13** through **6.30** for the 2025 opening, 2035 interim and 2045 design years.

It is anticipated that the Kissimmee Park Road and Florida's Turnpike southbound off-ramp and the intersections along Old Canoe Creek Road within the AOI will be over capacity, from opening to design year under the No Build conditions. These intersections are reported with an unacceptable LOS F in either or both the AM and PM peak hours in 2025 No Build (**Tables 6.13** and **6.14**). Key deficiencies of the No Build include lack of capacity at the southbound off-ramp to Kissimmee Park Road, close proximity of the Old Canoe Creek Road intersection, and lack of capacity along Old Canoe Creek Road. The TSM&O alternative makes minor restriping modifications at the Kissimmee Park Road southbound off-ramp to add dual left turn lanes and two receiving lanes and as such, it is expected to provide a small reduction in delay, at this intersection only. As shown in **Tables 6.15** and **6.16**, the TSM&O reduces delay, but an unacceptable LOS F is reported in 2025 PM. The additional capacity provided in the Build alternative restores operations to acceptable levels, all intersections are anticipated to operate at LOS D or better, as shown in **Tables 6.17** and **6.18**. A few movements are reported with an unacceptable LOS F for the Build in 2025 due to lack of capacity along Old Canoe Creek Road. The analysis showed that additional through lanes will be required along Old Canoe Creek Road by the 2025 opening year. All intersections at the U.S. 192 interchange are expected to operate at an acceptable LOS D or better from the 2025 opening to the 2045 design year.

In 2035 No Build (**Tables 6.19** and **6.20**), the Kissimmee Park Road and Florida's Turnpike southbound off-ramp and Old Canoe Creek Road intersections are expected to operate with at unacceptable LOS

F in both AM and PM. The TSM&O alternative (**Tables 6.21** and **6.22**) reduces delay at the Kissimmee Park Road southbound off-ramp intersection only but the LOS remains F, similar to No Build. The Build alternative significantly improves operations at the intersections in 2035. As shown in **Tables 6.23** and **6.24**, all intersections are expected to operate at an acceptable LOS D or better except the Old Canoe Creek Road and Nolte Road intersection. As previously noted, additional through lanes will be required along Old Canoe Creek in the future.

Delays in the 2045 design year are expected to be very long at the Kissimmee Park Road and Florida's Turnpike southbound off-ramp and at the Old Canoe Creek Road intersections under No Build conditions, as the results in **Tables 6.25** and **6.26** show. There is a minor reduction in delay with the TSM&O (**Tables 6.27** and **6.28**) at the Kissimmee Park Road southbound off-ramp intersection but the LOS remains F, similar to No Build. It is anticipated that all intersections will operate at acceptable LOS D or better with the Build in year 2045 (**Tables 6.29** and **6.30**), except the Old Canoe Creek Road intersections at the Florida's Turnpike ramps, Kissimmee Park Road and Nolte Road. The analysis showed that Old Canoe Creek Road will require six through lanes by the 2045 design year.

Table 6.13
2025 AM No Build Peak Hour Synchro Intersection Level of Service/Delay

Intersection	Eastbound			Westbound			Northbound			Southbound			Overall
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	D/49.2	-	-	C/21.8	-	-	-	-	E/56.6	-	A/8.8	D/41.0
Old Canoe Creek Road and Kissimmee Park Road	**F/151.5**	E/58.6	B/10.9	D/50.9	**F/128.4**	**F/128.4**	**F/116.4**	B/15.6	B/15.6	B/17.7	D/36.7	**F/123.2**	**F/82.0**
U.S. 192 and Florida's Turnpike Northbound Off-ramp	C/25.7	A/8.7	-	-	C/24.4	C/24.4	E/76.1	A/8.5	A/8.5	E/76.1	-	A/1.6	C/22.1
U.S. 192 and Florida's Turnpike Northbound On-ramp	**F/85.1**	A/0.1	-	-	A/6.2	A/0.4	-	-	-	-	-	-	A/5.4
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	B/12.4	-	-	A/1.9	-	-	-	-	D/51.8	-	C/27.0	B/13.5
Old Canoe Creek Road and Nolte Road	-	-	-	D/38.3	-	E/55.3	-	D/53.7	B/17.8	**F/84.9**	B/19.1	-	D/44.6

- Not Applicable Delay: Seconds per vehicle

Table 6.14
2025 PM No Build Peak Hour Synchro Intersection Level of Service/Delay

Intersection	Eastbound			Westbound			Northbound			Southbound			Overall
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	**F/298.4**	-	-	D/51.8	-	-	-	-	**F/359.8**	-	B/13.0	**F/253.9**
Old Canoe Creek Road and Kissimmee Park Road	D/43.1	C/25.0	**F/237.9**	D/35.5	D/42.3	D/42.3	**F/270.3**	D/48.5	D/48.5	C/33.6	**F/229.4**	D/42.7	**F/146.8**
U.S. 192 and Florida's Turnpike Northbound Off-ramp	E/61.3	B/10.4	-	-	D/36.8	D/36.8	**F/83.7**	A/7.1	A/7.1	**F/80.7**	-	A/4.5	C/29.4
U.S. 192 and Florida's Turnpike Northbound On-ramp	**F/83.2**	A/0.2	-	-	B/10.2	A/0.1	-	-	-	-	-	-	A/5.8
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	C/23.4	-	-	A/1.3	-	-	-	-	E/58.6	-	D/36.3	C/24.5
Old Canoe Creek Road and Nolte Road	-	-	-	**F/113.8**	-	B/12.8	-	E/75.5	D/43.8	**F/108.0**	A/8.8	-	E/61.7

- Not Applicable Delay: Seconds per vehicle

Table 6.15
2025 AM TSM&O Peak Hour Synchro Intersection Level of Service/Delay

Intersection	Eastbound			Westbound			Northbound			Southbound			Overall
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	D/37.2	-	-	B/16.8	-	-	-	-	C/33.4	-	C/33.4	C/32.7
Kissimmee Park Road and Florida's Turnpike Northbound On-ramp	E/69.2	E/69.2	-	-	D/53.8	E/55.6	-	-	-	-	-	-	E/61.0
Old Canoe Creek Road and Kissimmee Park Road	**F/151.5**	E/58.6	B/10.9	D/50.9	**F/128.4**	**F/128.4**	**F/116.4**	B/15.6	B/15.6	B/17.7	D/36.7	**F/123.2**	**F/82.0**
U.S. 192 and Florida's Turnpike Northbound Off-ramp	C/25.7	A/8.9	-	-	C/24.8	C/24.8	E/76.1	A/8.5	A/8.5	E/76.1	-	A/1.5	C/22.5
U.S. 192 and Florida's Turnpike Northbound On-ramp	**F/85.1**	A/0.1	-	-	A/6.0	A/0.4	-	-	-	-	-	-	A/5.4
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	B/12.4	-	-	A/2.0	-	-	-	-	D/51.8	-	C/27.0	B/13.5
Old Canoe Creek Road and Nolte Road	-	-	-	D/38.3	-	E/55.3	-	D/53.7	B/17.8	**F/84.9**	B/19.1	-	D/44.6

- Not Applicable Delay: Seconds per vehicle

Table 6.16
2025 PM TSM&O Peak Hour Synchro Intersection Level of Service/Delay

Intersection	Eastbound			Westbound			Northbound			Southbound			Overall
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	**F/298.4**	-	-	**F/117.1**	-	-	-	-	**F/85.2**	-	**F/85.2**	**F/137.6**
Kissimmee Park Road and Florida's Turnpike Northbound On-ramp	E/77.7	E/77.7	-	-	**F/115.3**	A/0.4	-	-	-	-	-	-	E/71.0
Old Canoe Creek Road and Kissimmee Park Road	**F/113.0**	D/47.2	**F/252.0**	D/35.5	D/42.5	D/42.5	**F/270.8**	D/48.5	D/48.5	C/33.6	**F/229.4**	**F/92.7**	**F/166.6**
U.S. 192 and Florida's Turnpike Northbound Off-ramp	E/61.3	B/10.4	-	-	D/36.8	D/36.8	**F/83.7**	A/7.1	A/7.1	**F/80.7**	-	A/4.5	C/29.4
U.S. 192 and Florida's Turnpike Northbound On-ramp	**F/83.2**	A/0.2	-	-	B/10.2	A/0.1	-	-	-	-	-	-	A/5.8
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	C/23.4	-	-	A/1.1	-	-	-	-	E/58.6	-	D/36.3	C/24.4
Old Canoe Creek Road and Nolte Road	-	-	-	**F/113.8**	-	B/12.8	-	E/75.5	D/43.8	**F/108.0**	A/8.8	-	E/61.7

- Not Applicable Delay: Seconds per vehicle

Table 6.17
2025 AM Build Peak Hour Synchro Intersection Level of Service/Delay

Intersection	Eastbound			Westbound			Northbound			Southbound			Overall
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Old Canoe Creek Road and Florida's Turnpike Ramps	E/72.1	-	A/4.3	-	-	-	D/55.0	A/3.0	-	-	B/14.7	A/3.9	C/21.8
Old Canoe Creek Road and Kissimmee Park Road	E/79.8	E/75.4	A/9.1	E/66.9	C/27.4	C/27.4	A/9.0	B/18.9	A/0.1	A/7.1	B/13.7	A/0.1	B/19.0
Old Canoe Creek Road and Nolte Road	E/79.6	D/36.4	A/3.0	E/77.3	D/41.4	E/59.9	**F/94.1**	D/51.2	A/3.2	**F/97.2**	D/35.9	B/16.7	D/50.7
Nolte Road and Florida's Turnpike Northbound Ramps	A/5.5	A/2.1	-	-	E/58.1	A/8.2	A/0.1	-	A/0.5	-	-	-	A/7.3
Nolte Road and Florida's Turnpike Southbound Ramps	-	E/56.6	A/0.0	A/6.9	A/6.9	-	-	-	-	A/0.9	-	A/0.3	C/22.3
U.S. 192 and Florida's Turnpike Northbound Off-ramp	C/27.3	A/8.1	-	-	C/22.1	C/22.1	**F/87.3**	A/8.4	A/8.4	**F/88.3**	-	A/2.0	C/21.2
U.S. 192 and Florida's Turnpike Northbound On-ramp	**F/92.7**	A/0.1	-	-	A/4.5	A/0.3	-	-	-	-	-	-	A/4.6
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	B/15.9	A/0.1	A/2.6	A/1.2	-	-	-	-	E/65.8	-	B/10.8	B/13.8

- Not Applicable Delay: Seconds per vehicle

Table 6.18
2025 PM Build Peak Hour Synchro Intersection Level of Service/Delay

Intersection	Eastbound			Westbound			Northbound			Southbound			Overall
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Old Canoe Creek Road and Florida's Turnpike Ramps	E/62.7	-	E/61.0	-	-	-	**F/85.6**	A/7.4	-	-	B/11.8	A/0.1	C/24.5
Old Canoe Creek Road and Kissimmee Park Road	E/71.8	E/67.9	D/42.6	**F/94.6**	C/27.6	C/27.6	E/56.6	C/25.8	A/0.9	B/13.1	C/26.1	A/0.1	C/29.7
Old Canoe Creek Road and Nolte Road	E/79.4	**F/81.3**	B/15.4	**F/94.2**	E/67.0	C/23.9	E/75.6	D/44.9	A/9.8	**F/83.2**	C/34.3	A/2.0	D/52.9
Nolte Road and Florida's Turnpike Northbound Ramps	A/2.8	A/3.5	-	-	C/28.4	A/2.8	A/0.0	-	A/0.5	-	-	-	A/5.3
Nolte Road and Florida's Turnpike Southbound Ramps	-	E/65.3	A/0.1	A/5.8	A/5.8	-	-	-	-	A/1.5	-	A/0.7	B/12.6
U.S. 192 and Florida's Turnpike Northbound Off-ramp	E/61.7	B/12.9	-	-	D/36.1	D/36.1	**F/93.7**	A/4.5	A/4.5	**F/88.3**	-	A/6.4	C/31.0
U.S. 192 and Florida's Turnpike Northbound On-ramp	E/73.8	A/0.2	-	-	A/5.5	A/0.1	-	-	-	-	-	-	A/3.5
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	C/28.5	A/0.2	B/11.8	A/2.3	-	-	-	-	E/67.3	-	B/17.1	C/25.5

- Not Applicable Delay: Seconds per vehicle

Table 6.19
2035 AM No Build Peak Hour Synchro Intersection Level of Service/Delay

Intersection	Eastbound			Westbound			Northbound			Southbound			Overall
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	**F/260.3**	-	-	C/26.4	-	-	-	-	**F/246.7**	-	C/29.5	**F/183.1**
Old Canoe Creek Road and Kissimmee Park Road	**F/339.1**	E/61.5	B/14.1	D/52.5	**F/235.2**	**F/235.2**	**F/403.0**	C/20.9	C/20.9	C/23.5	D/53.0	**F/269.2**	**F/192.2**
U.S. 192 and Florida's Turnpike Northbound Off-ramp	C/31.9	A/9.9	-	-	C/29.1	C/29.1	**F/81.3**	C/22.0	C/22.0	**F/81.4**	-	A/2.0	C/26.6
U.S. 192 and Florida's Turnpike Northbound On-ramp	**F/81.3**	A/0.2	-	-	B/12.5	A/0.8	-	-	-	-	-	-	A/8.0
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	B/19.2	-	-	A/3.0	-	-	-	-	D/43.0	-	C/28.5	B/16.3
Old Canoe Creek Road and Nolte Road	-	-	-	D/48.9	-	**F/119.2**	-	**F/82.4**	C/23.4	**F/152.6**	C/20.4	-	E/70.2

- Not Applicable Delay: Seconds per vehicle

Table 6.20
2035 PM No Build Peak Hour Synchro Intersection Level of Service/Delay

Intersection	Eastbound			Westbound			Northbound			Southbound			Overall
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	**F/363.5**	-	-	D/37.7	-	-	-	-	**F/641.5**	-	**F/108.8**	**F/384.6**
Old Canoe Creek Road and Kissimmee Park Road	**F/297.0**	C/22.5	**F/364.6**	D/35.5	C/34.3	C/34.3	**F/390.5**	D/48.4	D/48.4	D/35.8	**F/276.1**	**F/94.7**	**F/234.6**
U.S. 192 and Florida's Turnpike Northbound Off-ramp	**F/83.7**	B/12.1	-	-	D/38.6	D/38.6	**F/88.0**	B/18.2	B/18.2	**F/84.0**	-	B/15.6	C/32.5
U.S. 192 and Florida's Turnpike Northbound On-ramp	E/73.4	A/0.3	-	-	C/21.5	A/0.2	-	-	-	-	-	-	A/9.4
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	C/34.1	-	-	A/3.9	-	-	-	-	D/50.2	-	C/31.2	C/27.6
Old Canoe Creek Road and Nolte Road	-	-	-	**F/152.8**	-	C/21.4	-	**F/139.4**	**F/101.2**	**F/203.6**	B/12.2	-	**F/106.6**

- Not Applicable Delay: Seconds per vehicle

Table 6.21
2035 AM TSM&O Peak Hour Synchro Intersection Level of Service/Delay

Intersection	Eastbound			Westbound			Northbound			Southbound			Overall
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	**F/260.3**	-	-	D/38.9	-	-	-	-	**F/103.9**	-	**F/103.9**	**F/161.2**
Kissimmee Park Road and Florida's Turnpike Northbound On-ramp	**F/82.7**	**F/82.7**	-	-	**F/134.7**	**F/108.9**	-	-	-	-	-	-	**F/98.4**
Old Canoe Creek Road and Kissimmee Park Road	**F/339.1**	E/61.5	B/14.1	D/52.5	**F/235.2**	**F/235.2**	**F/403.0**	C/20.9	C/20.9	C/23.5	D/53.0	**F/269.2**	**F/192.2**
U.S. 192 and Florida's Turnpike Northbound Off-ramp	C/31.9	A/9.9	-	-	C/29.1	C/29.1	**F/81.3**	C/22.0	C/22.0	**F/81.4**	-	A/2.0	C/26.6
U.S. 192 and Florida's Turnpike Northbound On-ramp	**F/81.3**	A/0.2	-	-	B/12.5	A/0.8	-	-	-	-	-	-	A/8.0
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	B/19.2	-	-	A/3.0	-	-	-	-	D/43.0	-	C/28.5	B/16.3
Old Canoe Creek Road and Nolte Road	-	-	-	D/48.9	-	**F/119.2**	-	**F/82.4**	C/23.4	**F/152.6**	C/20.4	-	E/70.2

- Not Applicable Delay: Seconds per vehicle

Table 6.22
2035 PM TSM&O Peak Hour Synchro Intersection Level of Service/Delay

Intersection	Eastbound			Westbound			Northbound			Southbound			Overall
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	**F/363.5**	-	-	**F/129.2**	-	-	-	-	**F/345.1**	-	**F/345.1**	**F/325.5**
Kissimmee Park Road and Florida's Turnpike Northbound On-ramp	**F/171.3**	**F/171.3**	-	-	**F/189**	A/5.2	-	-	-	-	-	-	**F/140.9**
Old Canoe Creek Road and Kissimmee Park Road	**F/303.3**	D/51.2	**F/374.0**	D/35.5	C/34.3	C/34.3	**F/391.1**	D/48.4	D/48.4	D/35.8	**F/276.1**	**F/97.3**	**F/238.4**
U.S. 192 and Florida's Turnpike Northbound Off-ramp	**F/83.7**	B/12.1	-	-	D/38.6	D/38.6	**F/88**	B/18.2	B/18.2	**F/84.0**	-	B/15.6	C/32.5
U.S. 192 and Florida's Turnpike Northbound On-ramp	E/73.4	A/0.3	-	-	C/21.5	A/0.2	-	-	-	-	-	-	A/9.4
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	C/34.1	-	-	A/3.9	-	-	-	-	D/50.2	-	C/31.2	C/27.6
Old Canoe Creek Road and Nolte Road	-	-	-	**F/152.8**	-	C/21.4	-	**F/139.4**	**F/101.2**	**F/203.6**	B/12.2	-	**F/106.6**

- Not Applicable Delay: Seconds per vehicle

Table 6.23
2035 AM Build Peak Hour Synchro Intersection Level of Service/Delay

Intersection	Eastbound			Westbound			Northbound			Southbound			Overall
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Old Canoe Creek Road and Florida's Turnpike Ramps	**F/80.4**	-	C/20.2	-	-	-	E/56.1	A/3.7	-	-	B/15.5	A/3.9	C/21.5
Old Canoe Creek Road and Kissimmee Park Road	E/79.9	E/74.9	A/9.4	E/68.9	C/26.9	C/26.9	B/12.1	C/24.1	A/2.5	B/10.2	B/10.2	A/0.1	B/19.0
Old Canoe Creek Road and Nolte Road	**F/125.1**	E/61.3	B/17.6	E/73.5	D/49.0	**F/117.0**	E/64.7	**F/92.2**	B/12.0	**F/125.1**	D/37.6	B/16.7	E/74.1
Nolte Road and Florida's Turnpike Northbound Ramps	A/9.4	A/3.2	-	-	E/70.3	A/9.1	A/0.2	-	A/0.8	-	-	-	B/10.9
Nolte Road and Florida's Turnpike Southbound Ramps	-	D/44.2	A/0.1	A/7.9	A/7.9	-	-	-	-	B/10.6	-	A/0.9	B/20.5
U.S. 192 and Florida's Turnpike Northbound Off-ramp	D/44.9	B/10.1	-	-	C/26.3	C/26.3	**F/90.0**	C/26.5	C/26.5	**F/100.4**	-	A/2.6	C/26.5
U.S. 192 and Florida's Turnpike Northbound On-ramp	**F/85.7**	A/0.2	-	-	A/9.6	A/0.6	-	-	-	-	-	-	A/7.1
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	C/26.6	A/0.1	A/9.2	A/3.4	-	-	-	-	D/53.1	-	B/15.6	B/19.0

- Not Applicable Delay: Seconds per vehicle

Table 6.24
2035 PM Build Peak Hour Synchro Intersection Level of Service/Delay

Intersection	Eastbound			Westbound			Northbound			Southbound			Overall
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Old Canoe Creek Road and Florida's Turnpike Ramps	E/71.9	-	**F/94.5**	-	-	-	**F/129.2**	A/7.1	-	-	D/40.5	A/1.2	D/46.7
Old Canoe Creek Road and Kissimmee Park Road	E/77.8	E/77.4	E/56.4	**F/132.0**	C/25.6	C/25.6	**F/107.8**	C/33.7	A/0.0	E/55.3	C/22.5	A/0.1	D/36.0
Old Canoe Creek Road and Nolte Road	**F/82.4**	**F/131.9**	D/45.4	**F/131.0**	E/78.0	C/26.3	E/78.3	**F/96.3**	C/34.8	**F/129.4**	D/47.0	A/6.4	**F/80.4**
Nolte Road and Florida's Turnpike Northbound Ramps	A/3.1	A/5.2	-	-	D/39.3	A/4.4	A/0.1	-	A/4.7	-	-	-	A/7.3
Nolte Road and Florida's Turnpike Southbound Ramps	-	C/27.1	A/0.1	A/0.1	A/0.1	-	-	-	-	C/26.4	-	A/3.0	B/14.5
U.S. 192 and Florida's Turnpike Northbound Off-ramp	E/78.9	C/21.1	-	-	D/39.9	D/39.9	**F/96.4**	B/17.0	B/17.0	**F/95.9**	-	B/18.2	D/38.0
U.S. 192 and Florida's Turnpike Northbound On-ramp	E/61.3	A/0.2	-	-	B/12.0	A/0.1	-	-	-	-	-	-	A/6.0
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	D/43.3	A/2.1	E/62.0	A/5.1	-	-	-	-	E/58.2	-	C/21.7	C/32.0

- Not Applicable Delay: Seconds per vehicle

Table 6.25
2045 AM No Build Peak Hour Synchro Intersection Level of Service/Delay

Intersection	Eastbound			Westbound			Northbound			Southbound			Overall
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	**F/357.2**	-	-	C/28.2	-	-	-	-	**F/338.6**	-	D/42.4	**F/250.7**
Old Canoe Creek Road and Kissimmee Park Road	**F/441.0**	E/63.2	C/34.6	D/53.1	**F/307.0**	**F/307.0**	**F/569.4**	C/23.5	C/23.5	C/27.4	E/58.3	**F/377.1**	**F/263.6**
U.S. 192 and Florida's Turnpike Northbound Off-ramp	D/37.3	B/10.5	-	-	D/37.5	D/37.5	**F/92.1**	C/29.5	C/29.5	**F/89.4**	-	A/2.4	C/32.3
U.S. 192 and Florida's Turnpike Northbound On-ramp	E/79.8	A/0.2	-	-	B/14.9	A/1.7	-	-	-	-	-	-	A/8.9
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	C/21.9	-	-	A/4.7	-	-	-	-	D/42.8	-	C/33.6	B/18.2
Old Canoe Creek Road and Nolte Road	-	-	-	E/60.9	-	**F/193.7**	-	**F/139.6**	C/30.0	**F/218.3**	C/21.6	-	**F/107.2**

- Not Applicable Delay: Seconds per vehicle

Table 6.26
2045 PM No Build Peak Hour Synchro Intersection Level of Service/Delay

Intersection	Eastbound			Westbound			Northbound			Southbound			Overall
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	**F/465.6**	-	-	D/39.7	-	-	-	-	**F/784.8**	-	**F/186.2**	**F/486.9**
Old Canoe Creek Road and Kissimmee Park Road	**F/388.7**	C/22.8	**F/478.5**	D/37.8	D/38.7	D/38.7	**F/494.8**	E/55.3	E/55.3	E/57.6	**F/363.0**	**F/154.1**	**F/308.0**
U.S. 192 and Florida's Turnpike Northbound Off-ramp	**F/92.4**	B/16.8	-	-	D/46.6	D/46.6	**F/99.5**	C/25.7	C/25.7	**F/92.1**	-	C/23.8	D/39.2
U.S. 192 and Florida's Turnpike Northbound On-ramp	E/68.0	A/0.3	-	-	C/24.9	A/0.1	-	-	-	-	-	-	B/10.4
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	D/41.1	-	-	A/9.3	-	-	-	-	D/51.1	-	C/29.2	C/31.9
Old Canoe Creek Road and Nolte Road	-	-	-	**F/217.2**	-	C/31.6	-	**F/204.5**	**F/165.7**	**F/281.9**	B/13.6	-	**F/154.3**

- Not Applicable Delay: Seconds per vehicle

Table 6.27
2045 AM TSM&O Peak Hour Synchro Intersection Level of Service/Delay

Intersection	Eastbound			Westbound			Northbound			Southbound			Overall
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	**F/357.2**	-	-	E/58.1	-	-	-	-	**F/170.8**	-	**F/170.8**	**F/234.5**
Kissimmee Park Road and Florida's Turnpike Northbound On-ramp	**F/98.5**	**F/98.5**	-	-	**F/133.3**	**F/191.5**	-	-	-	-	-	-	**F/139.9**
Old Canoe Creek Road and Kissimmee Park Road	**F/441.0**	E/63.2	C/34.6	D/53.1	**F/307.0**	**F/307.0**	**F/569.4**	C/23.5	C/23.5	C/27.4	E/58.3	**F/377.1**	**F/263.6**
U.S. 192 and Florida's Turnpike Northbound Off-ramp	D/37.3	B/10.5	-	-	D/37.5	D/37.5	**F/92.1**	C/29.5	C/29.5	**F/89.4**	-	A/2.4	C/32.3
U.S. 192 and Florida's Turnpike Northbound On-ramp	E/79.8	A/0.2	-	-	B/14.9	A/1.7	-	-	-	-	-	-	A/8.9
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	C/21.9	-	-	A/4.7	-	-	-	-	D/42.8	-	C/33.6	B/18.2
Old Canoe Creek Road and Nolte Road	-	-	-	E/60.9	-	**F/193.7**	-	**F/139.6**	C/30.0	**F/218.3**	C/21.6	-	**F/107.2**

- Not Applicable Delay: Seconds per vehicle

Table 6.28
2045 PM TSM&O Peak Hour Synchro Intersection Level of Service/Delay

Intersection	Eastbound			Westbound			Northbound			Southbound			Overall
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	**F/465.6**	-	-	**F/130.2**	-	-	-	-	**F/446.8**	**-**	**F/446.8**	**F/416.0**
Kissimmee Park Road and Florida's Turnpike Northbound On-ramp	**F/248.0**	**F/248.0**	-	-	**F/265.6**	A/9.1	-	-	-	-	-	-	**F/203.3**
Old Canoe Creek Road and Kissimmee Park Road	**F/393.5**	D/51.6	**F/485.8**	D/37.8	D/38.8	D/38.8	**F/495.8**	E/55.3	E/55.3	E/57.6	**F/363.0**	**F/157.3**	**F/311.3**
U.S. 192 and Florida's Turnpike Northbound Off-ramp	**F/92.4**	B/16.8	-	-	D/46.6	D/46.6	**F/99.5**	C/25.7	C/25.7	**F/92.1**	-	C/23.8	D/39.2
U.S. 192 and Florida's Turnpike Northbound On-ramp	E/68.0	A/0.3	-	-	C/24.9	A/0.1	-	-	-	-	-	-	B/10.4
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	D/41.1	-	-	A/9.3	-	-	-	-	E/51.1	-	C/29.2	C/31.9
Old Canoe Creek Road and Nolte Road	-	-	-	**F/217.2**	-	C/31.6	-	**F/204.5**	**F/165.7**	**F/281.9**	B/13.6	-	**F/154.3**

- Not Applicable Delay: Seconds per vehicle

Table 6.29
2045 AM Build Peak Hour Synchro Intersection Level of Service/Delay

Intersection	Eastbound			Westbound			Northbound			Southbound			Overall
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Old Canoe Creek Road and Florida's Turnpike Ramps	**F/85.6**	-	C/22.9	-	-	-	E/60.4	A/4.6	-	-	C/25.1	A/6.1	C/25.8
Old Canoe Creek Road and Kissimmee Park Road	**F/91.4**	**F/81.7**	B/19.3	E/69.8	D/36.7	D/36.7	B/18.5	C/24.5	A/2.0	C/30.1	B/18.9	A/0.1	C/23.9
Old Canoe Creek Road and Nolte Road	**F/175.1**	E/63.2	C/20.8	**F/81.3**	D/52.3	**F/197.6**	E/71.2	**F/149.6**	A/9.3	**F/173.9**	D/40.2	B/19.8	**F/105.8**
Nolte Road and Florida's Turnpike Northbound Ramps	A/9.8	A/3.7	-	-	E/68.0	B/13.6	A/0.3	-	A/2.1	-	-	-	B/12.4
Nolte Road and Florida's Turnpike Southbound Ramps	-	C/28.3	A/0.1	A/0.1	A/0.1	-	-	-	-	B/18.3	-	A/1.2	B/15.0
U.S. 192 and Florida's Turnpike Northbound Off-ramp	D/53.5	B/11.9	-	-	D/35.6	D/35.6	**F/96.4**	C/34.9	C/34.9	**F/107.8**	-	A/3.2	C/32.8
U.S. 192 and Florida's Turnpike Northbound On-ramp	E/80.0	A/0.2	-	-	B/11.9	A/0.7	-	-	-	-	-	-	A/7.7
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	C/32.8	A/0.2	D/39.7	A/4.9	-	-	-	-	D/51.0	-	B/18.8	C/22.4

- Not Applicable Delay: Seconds per vehicle

Table 6.30
2045 PM Build Peak Hour Synchro Intersection Level of Service/Delay

Intersection	Eastbound			Westbound			Northbound			Southbound			Overall
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Old Canoe Creek Road and Florida's Turnpike Ramps	E/78.5	-	**F/148.6**	-	-	-	**F/177.3**	A/8.0	-	-	**F/110.8**	A/1.3	**F/90.0**
Old Canoe Creek Road and Kissimmee Park Road	**F/82.0**	**F/82.2**	**F/87.6**	**F/164.8**	D/36.8	D/36.8	**F/146.3**	D/41.8	A/0.0	E/67.1	E/73.0	A/0.0	**E/64.9**
Old Canoe Creek Road and Nolte Road	**F/101.7**	**F/182.7**	D/46.4	**F/188.5**	**F/100.2**	C/29.1	**F/91.2**	F/147.5	D/37.5	**F/190.8**	E/78.8	A/7.0	**F/115.6**
Nolte Road and Florida's Turnpike Northbound Ramps	A/2.8	A/7.6	-	-	D/36.9	A/6.1	A/0.3	-	A/8.9	-	-	-	A/8.5
Nolte Road and Florida's Turnpike Southbound Ramps	-	C/27.2	A/0.1	A/0.1	A/0.1	-	-	-	-	C/29.3	-	A/5.5	B/16.2
U.S. 192 and Florida's Turnpike Northbound Off-ramp	**F/89.4**	C/30.3	-	-	E/58.5	E/58.5	**F/106.5**	C/23.7	C/23.7	**F/107.6**	-	C/27.7	D/50.9
U.S. 192 and Florida's Turnpike Northbound On-ramp	D/51.9	A/0.3	-	-	B/16.4	A/0.1	-	-	-	-	-	-	A/7.4
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	D/54.3	A/3.7	**F/98.2**	A/7.7	-	-	-	-	E/61.5	-	C/22.4	D/38.0

- Not Applicable Delay: Seconds per vehicle

Tables 6.31 through **6.42** summarize the AM and PM peak hour VISSIM intersection performance for the 2025 opening, 2035 interim and 2045 design years. The output tables show the estimated performance for the No Build and Build alternatives based on the percentage of demand served, delay, and queue lengths. Detailed VISSIM output tables are provided in **Appendix G** showing the estimated performance for each of the four analysis hours.

The VISSIM microsimulation results for the intersections show that traffic operations will degrade by the 2025 opening year under No Build conditions (**Tables 6.31** and **6.32**), compared to existing conditions. The Kissimmee Park Road and Florida's Turnpike southbound off-ramp and the intersections along Old Canoe Creek Road within the AOI will not process all the projected demand and traffic will experience long delays and queues. However, traffic operations will improve with the Build due to added capacity. The results in **Tables 6.33** and **6.34** show higher percentages of processed volume and shorter delays and queues. As noted previously, the Build did not include the required capacity improvements along Old Canoe Creek Road and therefore, all projected demand could not be served in the model and the intersections would still experience long delays and queues with the Build, even though shorter than No Build.

For years 2035 and 2045, the results in **Tables 6.35** through **6.42** show an improvement in performance with the Build compared to No Build, in both AM and PM peak hours. The Build alternative processes more of the projected demand and delays and queues are shorter, compared to the No Build. Capacity improvements along Old Canoe Creek would improve operations.

Table 6.31
2025 AM No Build Peak Hour VISSIM Intersection Performance

Intersection	Northbound			Southbound			Eastbound			Westbound			Overall
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Input Volumes (Demand)													
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	-	-	500	-	290	-	800	-	-	260	-	1,850
Kissimmee Park Road and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	480	820	-	-	260	1,620	3,180
Old Canoe Creek Road and Kissimmee Park Road	950	900	60	40	330	870	470	20	330	10	60	30	4,070
U.S. 192 and Florida's Turnpike Northbound Off-ramp	220	30	90	80	-	40	40	1,380	-	-	1,920	60	3,860
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	140	1,420	-	-	1,260	920	3,740
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	380	-	100	-	1,180	-	-	1,260	-	2,920
Old Canoe Creek Road and Nolte Road	-	1,030	370	270	550	-	-	-	-	690	-	740	3,650
Percentage Served													
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	-	-	93%	-	96%	-	89%	-	-	74%	-	89%
Kissimmee Park Road and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	88%	91%	-	-	74%	76%	82%
Old Canoe Creek Road and Kissimmee Park Road	90%	89%	87%	72%	65%	60%	88%	94%	92%	91%	92%	100%	81%
U.S. 192 and Florida's Turnpike Northbound Off-ramp	86%	91%	91%	97%	-	99%	100%	98%	-	-	100%	98%	98%
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	97%	99%	-	-	97%	100%	98%
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	96%	-	100%	-	100%	-	-	97%	-	98%
Old Canoe Creek Road and Nolte Road	-	88%	88%	97%	93%	-	-	-	-	45%	-	50%	74%
Average Delay (Seconds) for the worst 30-minute Period and Estimated LOS													
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	-	-	150/F	-	114/F	-	256/F	-	-	20/C	-	170/F
Kissimmee Park Road and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	12/B	18/B	-	-	4/A	10/A	12/B
Old Canoe Creek Road and Kissimmee Park Road	44/D	22/C	21/C	174/F	284/F	518/F	78/E	66/E	11/B	74/E	220/F	210/F	129/F
U.S. 192 and Florida's Turnpike Northbound Off-ramp	65/E	71/E	8/A	72/E	-	15/B	39/D	7/A	-	-	19/B	23/C	18/B
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	70/E	1/A	-	-	5/A	2/A	3/A
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	63/E	-	2/A	-	7/A	-	-	1/A	-	11/B
Old Canoe Creek Road and Nolte Road	-	47/D	15/B	92/F	224/F	-	-	-	-	1808/F	-	1357/F	383/F
Average and (Maximum) Queue in Feet for the worst 30-minute period													
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	-	-	2534 (5111)	-	2533 (5111)	-	3258 (4682)	-	-	39 (247)	-	
Kissimmee Park Road and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	73 (384)	61 (351)	-	-	43 (349)	43 (349)	
Old Canoe Creek Road and Kissimmee Park Road	2439 (7936)	2439 (7936)	2375 (7854)	2161 (2285)	2161 (2285)	2202 (2326)	231 (537)	231 (537)	4 (178)	152 (300)	147 (294)	159 (307)	
U.S. 192 and Florida's Turnpike Northbound Off-ramp	53 (197)	53 (197)	2 (72)	26 (106)	-	26 (106)	20 (175)	20 (175)	-	-	195 (1064)	195 (1064)	-
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	66 (247)	66 (247)	-	-	14 (272)	14 (272)	
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	87 (297)	-	91 (325)	-	20 (228)	-	-	1 (36)	-	
Old Canoe Creek Road and Nolte Road	-	204 (780)	204 (780)	542 (884)	542 (884)	-	-	-	-	5138 (5215)	-	5138 (5215)	

- Not Applicable

Table 6.32
2025 PM No Build Peak Hour VISSIM Intersection Performance

Intersection	Northbound			Southbound			Eastbound			Westbound			Overall
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Input Volumes (Demand)													
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	-	-	1,620	-	480	-	740	-	-	440	-	3,280
Kissimmee Park Road and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	290	2,070	-	-	440	500	3,300
Old Canoe Creek Road and Kissimmee Park Road	420	770	30	-	1,110	490	840	70	1,160	70	30	60	5,050
U.S. 192 and Florida's Turnpike Northbound Off-ramp	160	30	60	-	-	190	180	1,900	-	-	1,400	240	4,160
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	100	2,080	-	-	1,370	380	3,930
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	920	-	140	-	1,260	-	-	1,370	-	3,690
Old Canoe Creek Road and Nolte Road	-	980	690	750	990	-	-	-	-	670	-	380	4,460
Percentage Served													
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	-	-	56%	-	54%	-	58%	-	-	69%	-	58%
Kissimmee Park Road and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	57%	56%	-	-	69%	69%	60%
Old Canoe Creek Road and Kissimmee Park Road	99%	98%	100%	-	40%	42%	56%	58%	56%	100%	100%	92%	63%
U.S. 192 and Florida's Turnpike Northbound Off-ramp	89%	93%	89%	-	-	94%	80%	79%	-	-	99%	99%	96%
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	99%	79%	-	-	98%	98%	88%
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	54%	-	51%	-	99%	-	-	98%	-	86%
Old Canoe Creek Road and Nolte Road	-	76%	76%	50%	49%	-	-	-	-	30%	-	29%	55%
Average Delay (Seconds) for the worst 30-minute Period and Estimated LOS													
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	-	-	155/F	-	144/F	-	624/F	-	-	39/D	-	237/F
Kissimmee Park Road and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	8/A	9/A	-	-	6/A	1/A	7/A
Old Canoe Creek Road and Kissimmee Park Road	84/F	55/E	51/D	1374/F	843/F	361/F	39/D	43/D	15/B	51/D	144/F	136/F	175/F
U.S. 192 and Florida's Turnpike Northbound Off-ramp	78/E	82/F	10/B	77/E	-	14/B	48/D	9/A	-	-	28/C	32/C	27/C
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	75/E	1/A	-	-	6/A	3/A	3/A
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	68/E	-	8/A	-	10/A	-	-	1/A	-	16/B
Old Canoe Creek Road and Nolte Road	-	21/C	7/A	701/F	936/F	-	-	-	-	2531/F	-	1988/F	568/F
Average and (Maximum) Queue in Feet for the worst 30-minute period													
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	-	-	34678 (34761)	-	34679 (34761)	-	6115 (6238)	-	-	130 (471)	-	-
Kissimmee Park Road and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	48 (381)	41 (348)	-	-	1 (46)	1 (46)	-
Old Canoe Creek Road and Kissimmee Park Road	337 (1540)	337 (1540)	267 (1457)	2173 (2295)	2173 (2295)	2215 (2336)	161 (542)	161 (542)	104 (598)	115 (300)	110 (294)	121 (306)	-
U.S. 192 and Florida's Turnpike Northbound Off-ramp	53 (178)	53 (178)	2 (73)	106 (321)	-	106 (321)	49 (258)	49 (258)	-	-	165 (767)	165 (767)	-
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	57 (237)	57 (237)	-	-	20 (374)	20 (374)	-
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	142 (643)	-	122 (610)	-	28 (294)	-	-	1 (34)	-	-
Old Canoe Creek Road and Nolte Road	-	99 (739)	99 (739)	3798 (3902)	3798 (3902)	-	-	-	-	5162 (5218)	-	5162 (5218)	-

- Not Applicable

Table 6.33
2025 AM Build Peak Hour VISSIM Intersection Performance

Intersection	Northbound			Southbound			Eastbound			Westbound			Overall
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Input Volumes (Demand)													
Old Canoe Creek Road and Florida's Turnpike Ramps	780	1,150	-	-	520	120	60	-	90	-	-	-	2,720
Old Canoe Creek Road and Kissimmee Park Road	110	1,070	30	50	510	80	100	10	120	10	10	80	2,180
Old Canoe Creek Road and Nolte Road	150	1,050	50	240	330	280	100	330	130	180	510	710	4,060
Nolte Road and Florida's Turnpike Northbound Ramps	100	-	130	-	-	-	550	430	-	-	80	860	2,150
Nolte Road and Florida's Turnpike Southbound Ramps	-	-	-	410	-	320	-	570	40	60	120	-	1,520
U.S. 192 and Florida's Turnpike Northbound Off-ramp	190	30	70	80	-	40	40	1,380	-	-	1,980	60	3,870
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	110	1,420	-	-	1,430	780	3,740
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	310	-	70	-	1,220	50	60	1,370	-	3,080
Percentage Served													
Old Canoe Creek Road and Florida's Turnpike Ramps	70%	69%	-	-	100%	97%	95%	-	100%	-	-	-	78%
Old Canoe Creek Road and Kissimmee Park Road	68%	71%	61%	100%	100%	100%	98%	91%	100%	96%	100%	98%	83%
Old Canoe Creek Road and Nolte Road	74%	73%	100%	100%	100%	97%	93%	98%	100%	100%	98%	98%	91%
Nolte Road and Florida's Turnpike Northbound Ramps	95%	-	100%	-	-	-	100%	98%	-	-	93%	94%	97%
Nolte Road and Florida's Turnpike Southbound Ramps	-	-	-	98%	-	99%	-	100%	100%	91%	94%	-	99%
U.S. 192 and Florida's Turnpike Northbound Off-ramp	92%	92%	90%	98%	-	98%	100%	98%	-	-	99%	100%	98%
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	100%	99%	-	-	98%	100%	99%
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	98%	-	97%	-	99%	100%	100%	98%	-	98%
Average Delay (Seconds) for the worst 30-minute Period and Estimated LOS													
Old Canoe Creek Road and Florida's Turnpike Ramps	84/F	25/C	-	-	10/A	6/A	73/E	-	6/A	-	-	-	36/D
Old Canoe Creek Road and Kissimmee Park Road	11/B	12/B	3/A	15/B	18/B	2/A	69/E	71/E	3/A	62/E	82/F	71/E	19/B
Old Canoe Creek Road and Nolte Road	67/E	28/C	11/B	68/E	23/C	7/A	69/E	60/E	8/A	73/E	58/E	44/D	41/D
Nolte Road and Florida's Turnpike Northbound Ramps	7/A	-	30/C	-	-	-	2/A	4/A	-	-	38/D	13/B	10/B
Nolte Road and Florida's Turnpike Southbound Ramps	-	-	-	9/A	-	8/A	-	28/C	1/A	2/A	10/B	-	15/B
U.S. 192 and Florida's Turnpike Northbound Off-ramp	78/E	81/F	9/A	84/F	-	16/B	42/D	6/A	-	-	16/B	18/B	17/B
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	81/F	0/A	-	-	3/A	FALSE	2/A
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	75/E	-	8/A	-	7/A	6/A	10/B	0/A	-	11/B

Table 6.33 (Continued)
2025 AM Build Peak Hour VISSIM Intersection Performance

Average and (Maximum) Queue in Feet for the worst 30-minute period													
Old Canoe Creek Road and Florida's Turnpike Ramps	119 (401)	119 (401)	-	-	21 (146)	21 (146)	25 (97)	-	25 (97)	-	-	-	-
Old Canoe Creek Road and Kissimmee Park Road	28 (251)	28 (251)	28 (251)	32 (209)	32 (209)	1 (82)	35 (132)	35 (132)	0 (61)	39 (166)	39 (166)	39 (166)	
Old Canoe Creek Road and Nolte Road	89 (366)	89 (366)	72 (359)	70 (202)	70 (202)	70 (202)	83 (252)	83 (252)	83 (252)	228 (671)	228 (671)	228 (671)	
Nolte Road and Florida's Turnpike Northbound Ramps	2 (85)	-	22 (166)	-	-	-	0 (8)	5 (121)	-	-	15 (143)	19 (369)	
Nolte Road and Florida's Turnpike Southbound Ramps	-	-	-	14 (161)	-	15 (189)	-	53 (253)	7 (146)	-	5 (92)	-	-
U.S. 192 and Florida's Turnpike Northbound Off-ramp	59 (188)	59 (188)	2 (65)	29 (106)	-	29 (106)	22 (198)	22 (198)	-	-	145 (948)	145 (948)	
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	62 (229)	62 (229)	-	-	9 (216)	8 (220)	
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	122 (321)	-	40 (313)	-	18 (216)	18 (216)	2 (50)	2 (50)	-	

- Not Applicable

Table 6.34
2025 PM Build Peak Hour VISSIM Intersection Performance

Intersection	Northbound			Southbound			Eastbound			Westbound			Overall
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Input Volumes (Demand)													
Old Canoe Creek Road and Florida's Turnpike Ramps	200	1,120	-	-	1,880	50	260	-	610	-	-	-	4,120
Old Canoe Creek Road and Kissimmee Park Road	150	1,200	30	120	1,600	150	140	10	260	70	10	80	3,820
Old Canoe Creek Road and Nolte Road	90	1,000	330	620	1,260	70	360	430	200	410	310	250	5,330
Nolte Road and Florida's Turnpike Northbound Ramps	40	-	60	-	-	-	320	930	-	-	160	310	1,820
Nolte Road and Florida's Turnpike Southbound Ramps	-	-	-	890	-	550	-	360	100	130	70	-	2,100
U.S. 192 and Florida's Turnpike Northbound Off-ramp	140	20	60	320	-	190	180	1,900	-	-	1,470	240	4,520
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	70	2,080	-	-	1,490	310	3,950
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	780	-	110	-	1,370	70	70	1,420	-	3,820
Percentage Served													
Old Canoe Creek Road and Florida's Turnpike Ramps	94%	97%	-	-	73%	76%	94%	-	92%	-	-	-	85%
Old Canoe Creek Road and Kissimmee Park Road	95%	96%	90%	80%	77%	81%	82%	82%	78%	100%	100%	99%	85%
Old Canoe Creek Road and Nolte Road	89%	90%	100%	87%	80%	75%	95%	96%	98%	88%	94%	98%	90%
Nolte Road and Florida's Turnpike Northbound Ramps	100%	-	100%	-	-	-	100%	96%	-	-	91%	91%	96%
Nolte Road and Florida's Turnpike Southbound Ramps	-	-	-	97%	-	98%	-	99%	100%	94%	93%	-	97%
U.S. 192 and Florida's Turnpike Northbound Off-ramp	92%	93%	94%	98%	-	98%	97%	98%	-	-	100%	96%	98%
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	99%	98%	-	-	98%	100%	99%
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	97%	-	95%	-	99%	100%	96%	98%	-	98%
Average Delay (Seconds) for the worst 30-minute Period and Estimated LOS													
Old Canoe Creek Road and Florida's Turnpike Ramps	95/F	27/C	-	-	358/F	318/F	170/F	-	145/F	-	-	-	190/F
Old Canoe Creek Road and Kissimmee Park Road	73/E	23/C	13/B	292/F	348/F	280/F	783/F	795/F	913/F	102/F	77/E	77/E	247/F
Old Canoe Creek Road and Nolte Road	86/F	23/C	30/C	317/F	608/F	411/F	77/E	67/E	73/E	728/F	121/F	12/B	228/F
Nolte Road and Florida's Turnpike Northbound Ramps	8/A	-	30/C	-	-	-	2/A	8/A	-	-	33/C	4/A	9/A
Nolte Road and Florida's Turnpike Southbound Ramps	-	-	-	11/B	-	27/C	-	31/C	1/A	3/A	11/B	-	18/B
U.S. 192 and Florida's Turnpike Northbound Off-ramp	80/F	78/E	15/B	83/F	-	18/B	53/D	8/A	-	-	30/C	35/C	26/C
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	72/E	0/A	-	-	6/A	FALSE	2/A
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	67/E	-	9/A	-	15/B	14/B	18/B	1/A	-	20/C

Table. 6.34 (Continued)

2025 PM Build Peak Hour VISSIM Intersection Performance

Average and (Maximum) Queue in Feet for the worst 30-minute period													
Old Canoe Creek Road and Florida's Turnpike Ramps	62 (263)	62 (263)	-	-	3860 (4040)	3860 (4040)	520 (1076)	-	520 (1076)	-	-	-	-
Old Canoe Creek Road and Kissimmee Park Road	145 (582)	145 (582)	145 (582)	2214 (2451)	2214 (2451)	2078 (2315)	3315 (4514)	3315 (4514)	3350 (4550)	57 (179)	57 (179)	57 (179)	-
Old Canoe Creek Road and Nolte Road	106 (436)	106 (436)	91 (429)	6493 (6829)	6493 (6829)	6493 (6829)	157 (403)	157 (403)	157 (403)	989 (1721)	989 (1721)	989 (1721)	
Nolte Road and Florida's Turnpike Northbound Ramps	1 (45)	-	11 (103)	-	-	-	2 (105)	26 (307)	-	-	18 (133)	1 (51)	
Nolte Road and Florida's Turnpike Southbound Ramps	-	-	-	49 (392)	-	122 (533)	-	40 (188)	2 (81)	0 (9)	3 (65)	-	
U.S. 192 and Florida's Turnpike Northbound Off-ramp	50 (161)	50 (161)	4 (85)	109 (348)	-	109 (348)	71 (340)	71 (340)	-	-	175 (778)	175 (778)	
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	35 (188)	35 (188)	-	-	22 (323)	23 (332)	
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	237 (724)	-	149 (716)	-	65 (394)	65 (394)	7 (75)	7 (75)	-	

- Not Applicable

Table 6.35
2035 AM No Build Peak Hour VISSIM Intersection Performance

Intersection	Northbound			Southbound			Eastbound			Westbound			Overall
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Input Volumes (Demand)													
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	-	-	835	-	592	-	1,340	-	-	418	-	3,184
Kissimmee Park Road and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	966	1,209	-	-	418	1,801	4,394
Old Canoe Creek Road and Kissimmee Park Road	1,192	1,079	104	70	748	940	635	26	548	26	87	61	5,516
U.S. 192 and Florida's Turnpike Northbound Off-ramp	331	52	131	78	-	44	44	1,566	-	-	2,175	61	4,481
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	200	1,610	-	-	1,383	1,166	4,359
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	487	-	122	-	1,322	-	-	1,383	-	3,315
Old Canoe Creek Road and Nolte Road	-	1,305	470	305	783	-	-	-	-	974	-	835	4,672
Percentage Served													
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	-	-	57%	-	61%	-	57%	-	-	62%	-	58%
Kissimmee Park Road and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	57%	57%	-	-	62%	62%	60%
Old Canoe Creek Road and Kissimmee Park Road	54%	53%	56%	76%	71%	71%	57%	66%	57%	81%	73%	67%	61%
U.S. 192 and Florida's Turnpike Northbound Off-ramp	74%	79%	75%	96%	-	97%	97%	89%	-	-	100%	97%	93%
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	98%	89%	-	-	93%	99%	94%
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	66%	-	68%	-	99%	-	-	94%	-	91%
Old Canoe Creek Road and Nolte Road	-	55%	55%	97%	94%	-	-	-	-	54%	-	56%	64%
Average Delay (Seconds) for the worst 30-minute Period and Estimated LOS													
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	-	-	278/F	-	240/F	-	271/F	-	-	20/C	-	231/F
Kissimmee Park Road and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	16/B	16/B	-	-	3/A	9/A	12/B
Old Canoe Creek Road and Kissimmee Park Road	165/F	75/E	77/E	246/F	271/F	276/F	84/F	71/E	16/B	460/F	611/F	600/F	179/F
U.S. 192 and Florida's Turnpike Northbound Off-ramp	63/E	64/E	8/A	181/F	-	23/C	57/E	7/A	-	-	40/D	40/D	33/C
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	72/E	1/A	-	-	5/A	3/A	4/A
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	60/E	-	4/A	-	9/A	-	-	1/A	-	12/B
Old Canoe Creek Road and Nolte Road	-	32/C	6/A	122/F	209/F	-	-	-	-	745/F	-	582/F	270/F
Average and (Maximum) Queue in Feet for the worst 30-minute period													
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	-	-	34684 (34759)	-	34684 (34760)	-	5958 (6234)	-	-	54 (314)	-	-
Kissimmee Park Road and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	75 (377)	62 (344)	-	-	29 (335)	29 (335)	
Old Canoe Creek Road and Kissimmee Park Road	10936 (11720)	10936	10854 (11637)	2031 (2280)	2031 (2280)	2072 (2321)	202 (539)	202 (539)	37 (471)	559 (608)	553 (603)	566 (615)	
U.S. 192 and Florida's Turnpike Northbound Off-ramp	63 (224)	63 (224)	3 (91)	61 (166)	-	61 (166)	23 (193)	23 (193)	-	-	719 (1705)	719 (1705)	-
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	96 (291)	96 (291)	-	-	18 (232)	18 (232)	
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	80 (321)	-	87 (345)	-	28 (281)	-	-	3 (47)	-	
Old Canoe Creek Road and Nolte Road	-	98 (499)	98 (499)	787 (1520)	787 (1520)	-	-	-	-	5079 (5208)	-	5079 (5208)	

- Not Applicable

Table 6.36
2035 PM No Build Peak Hour VISSIM Intersection Performance

Intersection	Northbound			Southbound			Eastbound			Westbound			Overall
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Input Volumes (Demand)													
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	-	-	1,822	-	977	-	1,153	-	-	502	-	4,453
Kissimmee Park Road and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	598	2,376	-	-	502	845	4,321
Old Canoe Creek Road and Kissimmee Park Road	598	924	53	88	1,329	704	950	123	1,302	123	44	97	6,336
U.S. 192 and Florida's Turnpike Northbound Off-ramp	238	35	97	308	-	185	176	2,174	-	-	1,575	229	5,016
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	123	2,350	-	-	1,505	493	4,470
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	1,179	-	202	-	1,294	-	-	1,505	-	4,180
Old Canoe Creek Road and Nolte Road	-	1,153	818	862	1,267	-	-	-	-	854	-	431	5,386
Percentage Served													
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	-	-	38%	-	38%	-	51%	-	-	60%	-	44%
Kissimmee Park Road and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	51%	41%	-	-	61%	61%	49%
Old Canoe Creek Road and Kissimmee Park Road	64%	62%	64%	53%	56%	56%	41%	44%	41%	95%	100%	97%	54%
U.S. 192 and Florida's Turnpike Northbound Off-ramp	80%	78%	84%	98%	-	94%	70%	69%	-	-	100%	100%	84%
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	98%	69%	-	-	97%	98%	83%
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	39%	-	39%	-	100%	-	-	97%	-	79%
Old Canoe Creek Road and Nolte Road	-	54%	54%	69%	68%	-	-	-	-	38%	-	38%	56%
Average Delay (Seconds) for the worst 30-minute Period and Estimated LOS													
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	-	-	200/F	-	184/F	-	390/F	-	-	36/D	-	229/F
Kissimmee Park Road and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	8/A	10/B	-	-	3/A	1/A	7/A
Old Canoe Creek Road and Kissimmee Park Road	389/F	180/F	182/F	658/F	376/F	122/F	51/D	54/D	30/C	41/D	65/E	67/E	194/F
U.S. 192 and Florida's Turnpike Northbound Off-ramp	81/F	83/F	11/B	111/F	-	33/C	51/D	11/B	-	-	31/C	36/D	32/C
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	80/E	1/A	-	-	4/A	5/A	3/A
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	77/E	-	11/B	-	9/A	-	-	2/A	-	17/B
Old Canoe Creek Road and Nolte Road	-	35/C	6/A	324/F	384/F	-	-	-	-	1705/F	-	1354/F	412/F
Average and (Maximum) Queue in Feet for the worst 30-minute period													
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	-	-	34698 (34761)	-	34699 (34762)	-	6040 (6241)	-	-	104 (416)	-	-
Kissimmee Park Road and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	42 (361)	34 (328)	-	-	0 (14)	0 (14)	
Old Canoe Creek Road and Kissimmee Park Road	11319 (11726)	11319 (11726)	11236 (11643)	2109 (2284)	2109 (2284)	2150 (2325)	180 (538)	180 (538)	137 (598)	94 (340)	89 (334)	99 (347)	
U.S. 192 and Florida's Turnpike Northbound Off-ramp	69 (232)	69 (232)	4 (98)	151 (407)	-	151 (407)	52 (353)	52 (353)	-	-	216 (891)	216 (891)	-
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	70 (243)	70 (243)	-	-	14 (256)	14 (256)	
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	131 (598)	-	131 (616)	-	29 (319)	-	-	7 (75)	-	
Old Canoe Creek Road and Nolte Road	-	86 (527)	86 (527)	3693 (3896)	3693 (3896)	-	-	-	-	5155 (5219)	-	5155 (5219)	

- Not Applicable

Table 6.37
2035 AM Build Peak Hour VISSIM Intersection Performance

Intersection	Northbound			Southbound			Eastbound			Westbound			Overall
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Input Volumes (Demand)													
Old Canoe Creek Road and Florida's Turnpike Ramps	901	1,530	-	-	1,114	145	94	-	221	-	-	-	4,004
Old Canoe Creek Road and Kissimmee Park Road	136	1,386	102	85	1,071	94	102	9	162	26	17	128	3,315
Old Canoe Creek Road and Nolte Road	170	1,309	136	255	595	340	247	383	187	468	587	765	5,440
Nolte Road and Florida's Turnpike Northbound Ramps	162	-	204	-	-	-	1,037	612	-	-	196	901	3,111
Nolte Road and Florida's Turnpike Southbound Ramps	-	-	-	578	-	629	-	1,071	136	170	187	-	2,771
U.S. 192 and Florida's Turnpike Northbound Off-ramp	315	51	119	77	-	43	43	1,530	-	-	2,193	60	4,429
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	179	1,573	-	-	1,505	1,046	4,301
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	425	-	102	-	1,326	60	68	1,437	-	3,417
Percentage Served													
Old Canoe Creek Road and Florida's Turnpike Ramps	56%	55%	-	-	100%	95%	97%	-	96%	-	-	-	72%
Old Canoe Creek Road and Kissimmee Park Road	57%	57%	57%	99%	100%	95%	100%	88%	99%	98%	100%	100%	79%
Old Canoe Creek Road and Nolte Road	61%	61%	87%	100%	99%	99%	98%	98%	100%	100%	98%	97%	88%
Nolte Road and Florida's Turnpike Northbound Ramps	99%	-	99%	-	-	-	100%	100%	-	-	93%	92%	97%
Nolte Road and Florida's Turnpike Southbound Ramps	-	-	-	100%	-	99%	-	100%	96%	92%	98%	-	99%
U.S. 192 and Florida's Turnpike Northbound Off-ramp	87%	90%	89%	96%	-	97%	94%	98%	-	-	100%	98%	97%
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	100%	98%	-	-	97%	100%	98%
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	95%	-	98%	-	99%	100%	100%	96%	-	98%
Average Delay (Seconds) for the worst 30-minute Period and Estimated LOS													
Old Canoe Creek Road and Florida's Turnpike Ramps	85/F	25/C	-	-	16/B	6/A	75/E	-	9/A	-	-	-	31/C
Old Canoe Creek Road and Kissimmee Park Road	18/B	12/B	3/A	14/B	19/B	4/A	68/E	73/E	10/A	98/F	129/F	120/F	24/C
Old Canoe Creek Road and Nolte Road	62/E	38/D	5/A	77/E	32/C	8/A	129/F	64/E	12/B	73/E	61/E	96/F	58/E
Nolte Road and Florida's Turnpike Northbound Ramps	9/A	-	27/C	-	-	-	5/A	12/B	-	-	39/D	10/B	12/B
Nolte Road and Florida's Turnpike Southbound Ramps	-	-	-	19/B	-	14/B	-	23/C	1/A	4/A	20/B	-	18/B
U.S. 192 and Florida's Turnpike Northbound Off-ramp	75/E	78/E	13/B	187/F	-	28/C	54/D	7/A	-	-	26/C	29/C	26/C
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	82/F	0/A	-	-	4/A	FALSE	2/A
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	72/E	-	9/A	-	10/A	9/A	14/B	2/A	-	14/B

Table 6.37 (Continued)
2035 AM Build Peak Hour VISSIM Intersection Performance

Average and (Maximum) Queue in Feet for the worst 30-minute period													
Old Canoe Creek Road and Florida's Turnpike Ramps	113 (365)	113 (365)	-	-	57 (377)	57 (377)	34 (120)	-	34 (120)	-	-	-	-
Old Canoe Creek Road and Kissimmee Park Road	32 (284)	32 (284)	32 (284)	76 (547)	76 (547)	33 (411)	36 (142)	36 (142)	6 (126)	121 (335)	121 (335)	121 (335)	
Old Canoe Creek Road and Nolte Road	117 (420)	117 (420)	104 (413)	103 (319)	103 (319)	103 (319)	168 (339)	168 (339)	168 (339)	450 (925)	450 (925)	450 (925)	
Nolte Road and Florida's Turnpike Northbound Ramps	6 (165)	-	32 (236)	-	-	-	2 (114)	28 (299)	-	-	30 (288)	15 (353)	-
Nolte Road and Florida's Turnpike Southbound Ramps	-	-	-	47 (337)	-	63 (427)	-	88 (441)	34 (334)	0 (41)	17 (157)	-	
U.S. 192 and Florida's Turnpike Northbound Off-ramp	83 (305)	83 (305)	7 (168)	57 (155)	-	57 (155)	29 (279)	29 (279)	-	-	413 (1654)	413 (1654)	
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	102 (303)	102 (303)	-	-	17 (253)	17 (261)	
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	145 (400)	-	71 (387)	-	33 (308)	33 (308)	8 (82)	8 (82)	-	

- Not Applicable

Table 6.38
2035 PM Build Peak Hour VISSIM Intersection Performance

Intersection	Northbound			Southbound			Eastbound			Westbound			Overall
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Input Volumes (Demand)													
Old Canoe Creek Road and Florida's Turnpike Ramps	331	1,314	-	-	2,253	78	305	-	722	-	-	-	5,003
Old Canoe Creek Road and Kissimmee Park Road	139	1,453	26	183	1,923	148	122	26	287	122	17	122	4,568
Old Canoe Creek Road and Nolte Road	139	1,166	392	696	1,479	200	426	513	244	531	409	270	6,464
Nolte Road and Florida's Turnpike Northbound Ramps	139	-	174	-	-	-	644	1,009	-	-	244	505	2,714
Nolte Road and Florida's Turnpike Southbound Ramps	-	-	-	966	-	1,061	-	687	165	209	174	-	3,263
U.S. 192 and Florida's Turnpike Northbound Off-ramp	244	35	96	305	-	183	174	2,149	-	-	1,670	226	5,081
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	104	2,323	-	-	1,662	435	4,524
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	1,070	-	183	-	1,357	96	104	1,557	-	4,367
Percentage Served													
Old Canoe Creek Road and Florida's Turnpike Ramps	71%	71%	-	-	55%	55%	96%	-	93%	-	-	-	69%
Old Canoe Creek Road and Kissimmee Park Road	75%	76%	82%	54%	52%	56%	65%	59%	63%	96%	100%	95%	64%
Old Canoe Creek Road and Nolte Road	75%	72%	89%	59%	57%	58%	97%	95%	98%	19%	20%	21%	63%
Nolte Road and Florida's Turnpike Northbound Ramps	98%	-	99%	-	-	-	100%	98%	-	-	41%	40%	83%
Nolte Road and Florida's Turnpike Southbound Ramps	-	-	-	98%	-	97%	-	100%	97%	42%	86%	-	94%
U.S. 192 and Florida's Turnpike Northbound Off-ramp	85%	90%	87%	98%	-	96%	97%	98%	-	-	100%	98%	97%
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	99%	98%	-	-	97%	100%	98%
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	96%	-	94%	-	99%	100%	97%	97%	-	97%
Average Delay (Seconds) for the worst 30-minute Period and Estimated LOS													
Old Canoe Creek Road and Florida's Turnpike Ramps	108/F	40/D	-	-	382/F	346/F	155/F	-	125/F	-	-	-	197/F
Old Canoe Creek Road and Kissimmee Park Road	81/F	24/C	14/B	328/F	405/F	331/F	1199/F	1186/F	1329/F	210/F	172/F	175/F	294/F
Old Canoe Creek Road and Nolte Road	54/D	60/E	15/B	304/F	584/F	361/F	76/E	98/F	79/E	4237/F	1972/F	1167/F	414/F
Nolte Road and Florida's Turnpike Northbound Ramps	9/A	-	29/C	-	-	-	4/A	8/A	-	-	41/D	2/A	9/A
Nolte Road and Florida's Turnpike Southbound Ramps	-	-	-	17/B	-	4/A	-	37/D	1/A	3/A	13/B	-	16/B
U.S. 192 and Florida's Turnpike Northbound Off-ramp	81/F	84/F	18/B	114/F	-	27/C	58/E	8/A	-	-	35/C	38/D	30/C
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	66/E	1/A	-	-	11/B	FALSE	3/A
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	61/E	-	17/B	-	29/C	24/C	37/D	3/A	-	26/C

Table 6.38 (Continued)
2035 PM Build Peak Hour VISSIM Intersection Performance

Average and (Maximum) Queue in Feet for the worst 30-minute period													
Old Canoe Creek Road and Florida's Turnpike Ramps	69 (265)	69 (265)	-	-	3869 (4042)	3869 (4042)	584 (1264)	-	584 (1264)	-	-	-	-
Old Canoe Creek Road and Kissimmee Park Road	124 (523)	124 (523)	124 (523)	2209 (2456)	2209 (2456)	2074 (2320)	6661 (6927)	6661 (6927)	6697 (6962)	254 (539)	254 (539)	254 (539)	-
Old Canoe Creek Road and Nolte Road	208 (682)	208 (682)	198 (675)	6626 (6833)	6626 (6833)	6626 (6833)	250 (559)	250 (559)	250 (559)	5132 (5180)	5132 (5180)	5132 (5180)	-
Nolte Road and Florida's Turnpike Northbound Ramps	5 (106)	-	33 (235)	-	-	-	5 (181)	34 (385)	-	-	18 (117)	0 (11)	-
Nolte Road and Florida's Turnpike Southbound Ramps	-	-	-	63 (457)	-	19 (418)	-	91 (332)	27 (224)	0 (15)	9 (120)	-	-
U.S. 192 and Florida's Turnpike Northbound Off-ramp	71 (242)	71 (242)	9 (156)	142 (364)	-	142 (364)	75 (422)	75 (422)	-	-	245 (905)	245 (905)	-
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	43 (223)	43 (223)	-	-	55 (564)	58 (573)	-
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	309 (1148)	-	246 (1146)	-	114 (537)	114 (537)	23 (138)	23 (138)	-	-

- Not Applicable

Table 6.39
2045 AM No Build Peak Hour VISSIM Intersection Performance

Intersection	Northbound			Southbound			Eastbound			Westbound			Overall
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Input Volumes (Demand)													
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	-	-	960	-	680	-	1,540	-	-	480	-	3,660
Kissimmee Park Road and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	1,110	1,390	-	-	480	2,070	5,050
Old Canoe Creek Road and Kissimmee Park Road	1,370	1,240	120	80	860	1,080	730	30	630	30	100	70	6,340
U.S. 192 and Florida's Turnpike Northbound Off-ramp	380	60	150	90	-	50	50	1,800	-	-	2,500	70	5,150
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	230	1,850	-	-	1,590	1,340	5,010
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	560	-	140	-	1,520	-	-	1,590	-	3,810
Old Canoe Creek Road and Nolte Road	-	1,500	540	350	900	-	-	-	-	1,120	-	960	5,370
Percentage Served													
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	-	-	51%	-	53%	-	48%	-	-	53%	-	50%
Kissimmee Park Road and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	48%	49%	-	-	53%	53%	51%
Old Canoe Creek Road and Kissimmee Park Road	47%	46%	49%	66%	61%	60%	48%	55%	49%	68%	61%	55%	52%
U.S. 192 and Florida's Turnpike Northbound Off-ramp	68%	75%	69%	94%	-	97%	91%	84%	-	-	99%	98%	90%
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	96%	85%	-	-	92%	98%	91%
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	49%	-	51%	-	100%	-	-	92%	-	87%
Old Canoe Creek Road and Nolte Road	-	47%	48%	92%	89%	-	-	-	-	38%	-	39%	54%
Average Delay (Seconds) for the worst 30-minute Period and Estimated LOS													
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	-	-	290/F	-	252/F	-	273/F	-	-	21/C	-	234/F
Kissimmee Park Road and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	18/B	14/B	-	-	4/A	13/B	13/B
Old Canoe Creek Road and Kissimmee Park Road	182/F	87/F	84/F	272/F	297/F	288/F	79/E	72/E	14/B	508/F	614/F	634/F	188/F
U.S. 192 and Florida's Turnpike Northbound Off-ramp	67/E	73/E	11/B	346/F	-	60/E	61/E	7/A	-	-	104/F	112/F	73/E
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	73/E	1/A	-	-	6/A	7/A	5/A
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	64/E	-	5/A	-	10/A	-	-	1/A	-	10/B
Old Canoe Creek Road and Nolte Road	-	35/D	7/A	255/F	359/F	-	-	-	-	1053/F	-	804/F	371/F
Average and (Maximum) Queue in Feet for the worst 30-minute period													
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	-	-	34682 (34758)	-	34682 (34759)	-	5952 (6236)	-	-	51 (303)	-	-
Kissimmee Park Road and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	76 (378)	63 (345)	-	-	44 (351)	44 (351)	
Old Canoe Creek Road and Kissimmee Park Road	10944 (11727)	10944	10862 (11645)	2060 (2293)	2060 (2293)	2101 (2334)	186 (532)	186 (532)	24 (441)	561 (606)	555 (600)	568 (613)	
U.S. 192 and Florida's Turnpike Northbound Off-ramp	70 (264)	70 (264)	4 (95)	124 (230)	-	124 (230)	29 (252)	29 (252)	-	-	1798 (2733)	1798 (2733)	-
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	109 (321)	109 (321)	-	-	26 (330)	26 (330)	
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	63 (330)	-	62 (355)	-	35 (331)	-	-	4 (57)	-	
Old Canoe Creek Road and Nolte Road	-	101 (524)	101 (524)	1874 (2669)	1874 (2669)	-	-	-	-	5104 (5215)	-	5104 (5215)	

- Not Applicable

Table 6.40
2045 PM No Build Peak Hour VISSIM Intersection Performance

Intersection	Northbound			Southbound			Eastbound			Westbound			Overall
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Input Volumes (Demand)													
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	-	-	2,070	-	1,110	-	1,310	-	-	570	-	5,060
Kissimmee Park Road and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	680	2,700	-	-	570	960	4,910
Old Canoe Creek Road and Kissimmee Park Road	680	1,050	60	100	1,510	800	1,080	140	1,480	140	50	110	7,200
U.S. 192 and Florida's Turnpike Northbound Off-ramp	270	40	110	350	-	210	200	2,470	-	-	1,790	260	5,700
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	140	2,670	-	-	1,710	560	5,080
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	1,340	-	230	-	1,470	-	-	1,710	-	4,750
Old Canoe Creek Road and Nolte Road	-	1,310	930	980	1,440	-	-	-	-	970	-	490	6,120
Percentage Served													
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	-	-	34%	-	34%	-	45%	-	-	52%	-	39%
Kissimmee Park Road and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	45%	36%	-	-	53%	54%	43%
Old Canoe Creek Road and Kissimmee Park Road	54%	53%	54%	48%	49%	50%	36%	38%	36%	97%	100%	99%	48%
U.S. 192 and Florida's Turnpike Northbound Off-ramp	78%	78%	81%	93%	-	91%	66%	66%	-	-	99%	100%	82%
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	96%	66%	-	-	96%	97%	80%
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	33%	-	32%	-	100%	-	-	96%	-	76%
Old Canoe Creek Road and Nolte Road	-	47%	47%	61%	61%	-	-	-	-	32%	-	31%	49%
Average Delay (Seconds) for the worst 30-minute Period and Estimated LOS													
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	-	-	205/F	-	189/F	-	403/F	-	-	33/C	-	230/F
Kissimmee Park Road and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	9/A	10/B	-	-	3/A	1/A	7/A
Old Canoe Creek Road and Kissimmee Park Road	406/F	190/F	178/F	659/F	373/F	122/F	52/D	52/D	30/C	42/D	64/E	66/E	197/F
U.S. 192 and Florida's Turnpike Northbound Off-ramp	89/F	93/F	16/B	230/F	-	90/F	59/E	11/B	-	-	38/D	46/D	47/D
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	80/E	1/A	-	-	4/A	4/A	3/A
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	75/E	-	13/B	-	10/A	-	-	2/A	-	16/B
Old Canoe Creek Road and Nolte Road	-	34/C	6/A	322/F	403/F	-	-	-	-	1656/F	-	1322/F	426/F
Average and (Maximum) Queue in Feet for the worst 30-minute period													
Kissimmee Park Road and Florida's Turnpike Southbound Off-ramp	-	-	-	34693 (34759)	-	34694 (34760)	-	6036 (6237)	-	-	102 (418)	-	-
Kissimmee Park Road and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	45 (374)	37 (341)	-	-	0 (34)	0 (34)	
Old Canoe Creek Road and Kissimmee Park Road	11319 (11723)	11319	11237 (11641)	2110 (2284)	2110 (2284)	2151 (2325)	185 (537)	185 (537)	134 (595)	101 (374)	96 (369)	106 (381)	
U.S. 192 and Florida's Turnpike Northbound Off-ramp	84 (260)	84 (260)	9 (131)	416 (843)	-	416 (843)	64 (388)	64 (388)	-	-	342 (1089)	342 (1089)	
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	78 (267)	78 (267)	-	-	15 (282)	15 (282)	
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	123 (652)	-	111 (654)	-	36 (377)	-	-	7 (68)	-	
Old Canoe Creek Road and Nolte Road	-	85 (488)	85 (488)	3688 (3903)	3688 (3903)	-	-	-	-	5150 (5216)	-	5150 (5216)	

- Not Applicable

Table 6.41
2045 AM Build Peak Hour VISSIM Intersection Performance

Intersection	Northbound			Southbound			Eastbound			Westbound			Overall
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Input Volumes (Demand)													
Old Canoe Creek Road and Florida's Turnpike Ramps	1,060	1,800	-	-	1,310	170	110	-	260	-	-	-	4,710
Old Canoe Creek Road and Kissimmee Park Road	160	1,630	120	100	1,260	110	120	10	190	30	20	150	3,900
Old Canoe Creek Road and Nolte Road	200	1,540	160	300	700	400	290	450	220	550	690	900	6,400
Nolte Road and Florida's Turnpike Northbound Ramps	190	-	240	-	-	-	1,220	720	-	-	230	1,060	3,660
Nolte Road and Florida's Turnpike Southbound Ramps	-	-	-	680	-	740	-	1,260	160	200	220	-	3,260
U.S. 192 and Florida's Turnpike Northbound Off-ramp	370	60	140	90	-	50	50	1,800	-	-	2,580	70	5,210
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	210	1,850	-	-	1,770	1,230	5,060
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	500	-	120	-	1,560	70	80	1,690	-	4,020
Percentage Served													
Old Canoe Creek Road and Florida's Turnpike Ramps	48%	47%	-	-	98%	92%	98%	-	95%	-	-	-	66%
Old Canoe Creek Road and Kissimmee Park Road	50%	49%	50%	95%	97%	96%	97%	98%	100%	98%	94%	90%	73%
Old Canoe Creek Road and Nolte Road	53%	53%	84%	100%	98%	99%	91%	98%	99%	94%	89%	86%	83%
Nolte Road and Florida's Turnpike Northbound Ramps	100%	-	98%	-	-	-	99%	100%	-	-	86%	87%	95%
Nolte Road and Florida's Turnpike Southbound Ramps	-	-	-	100%	-	99%	-	99%	100%	86%	98%	-	99%
U.S. 192 and Florida's Turnpike Northbound Off-ramp	83%	84%	84%	80%	-	91%	90%	98%	-	-	99%	99%	97%
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	100%	98%	-	-	96%	99%	98%
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	97%	-	99%	-	99%	100%	100%	96%	-	98%
Average Delay (Seconds) for the worst 30-minute Period and Estimated LOS													
Old Canoe Creek Road and Florida's Turnpike Ramps	87/F	25/C	-	-	20/C	7/A	77/E	-	12/B	-	-	-	33/C
Old Canoe Creek Road and Kissimmee Park Road	20/C	12/B	3/A	16/B	22/C	7/A	70/E	70/E	14/B	276/F	334/F	330/F	39/D
Old Canoe Creek Road and Nolte Road	57/E	41/D	7/A	123/F	35/C	9/A	284/F	88/F	19/B	159/F	215/F	324/F	134/F
Nolte Road and Florida's Turnpike Northbound Ramps	10/A	-	24/C	-	-	-	6/A	15/B	-	-	40/D	13/B	13/B
Nolte Road and Florida's Turnpike Southbound Ramps	-	-	-	24/C	-	17/B	-	24/C	1/A	4/A	24/C	-	20/B
U.S. 192 and Florida's Turnpike Northbound Off-ramp	83/F	88/F	25/C	626/F	-	133/F	64/E	8/A	-	-	56/E	57/E	48/D
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	82/F	1/A	-	-	5/A	FALSE	2/A
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	73/E	-	8/A	-	12/B	11/B	21/C	2/A	-	15/B

Table 6.41 (Continued)
2045 AM Build Peak Hour VISSIM Intersection Performance

Average and (Maximum) Queue in Feet for the worst 30-minute period													
Old Canoe Creek Road and Florida's Turnpike Ramps	116 (363)	116 (363)	-	-	86 (478)	86 (478)	41 (132)	-	41 (132)	-	-	-	-
Old Canoe Creek Road and Kissimmee Park Road	36 (279)	36 (279)	36 (279)	107 (769)	107 (769)	59 (633)	40 (158)	40 (158)	13 (178)	429 (577)	429 (577)	429 (577)	
Old Canoe Creek Road and Nolte Road	128 (441)	128 (441)	116 (434)	167 (383)	167 (383)	167 (383)	371 (602)	371 (602)	371 (602)	4087 (5094)	4087 (5094)	4087 (5094)	
Nolte Road and Florida's Turnpike Northbound Ramps	8 (148)	-	39 (261)	-	-	-	9 (236)	51 (415)	-	-	34 (310)	21 (358)	
Nolte Road and Florida's Turnpike Southbound Ramps	-	-	-	80 (460)	-	95 (569)	-	101 (508)	46 (400)	1 (52)	24 (168)	-	-
U.S. 192 and Florida's Turnpike Northbound Off-ramp	110 (397)	110 (397)	31 (332)	244 (401)	-	244 (401)	34 (321)	34 (321)	-	-	1136 (2180)	1136 (2180)	
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	117 (323)	117 (323)	-	-	25 (317)	26 (326)	
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	163 (452)	-	88 (417)	-	51 (402)	51 (402)	15 (118)	15 (118)	-	

- Not Applicable

Table 6.42
2045 PM Build Peak Hour VISSIM Intersection Performance

Intersection	Northbound			Southbound			Eastbound			Westbound			Overall
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Input Volumes (Demand)													
Old Canoe Creek Road and Florida's Turnpike Ramps	380	1,510	-	-	2,590	90	350	-	830	-	-	-	5,750
Old Canoe Creek Road and Kissimmee Park Road	160	1,670	30	210	2,210	170	140	30	330	140	20	140	5,250
Old Canoe Creek Road and Nolte Road	160	1,340	450	800	1,700	230	490	590	280	610	470	310	7,430
Nolte Road and Florida's Turnpike Northbound Ramps	160	-	200	-	-	-	740	1,160	-	-	280	580	3,120
Nolte Road and Florida's Turnpike Southbound Ramps	-	-	-	1,110	-	1,220	-	790	190	240	200	-	3,750
U.S. 192 and Florida's Turnpike Northbound Off-ramp	280	40	110	350	-	210	200	2,470	-	-	1,920	260	5,840
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	120	2,670	-	-	1,910	500	5,200
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	1,230	-	210	-	1,560	110	120	1,790	-	5,020
Percentage Served													
Old Canoe Creek Road and Florida's Turnpike Ramps	61%	62%	-	-	47%	45%	89%	-	88%	-	-	-	60%
Old Canoe Creek Road and Kissimmee Park Road	67%	67%	72%	45%	43%	46%	52%	47%	53%	89%	100%	89%	55%
Old Canoe Creek Road and Nolte Road	66%	63%	81%	48%	46%	45%	95%	90%	92%	16%	14%	14%	54%
Nolte Road and Florida's Turnpike Northbound Ramps	100%	-	96%	-	-	-	99%	96%	-	-	33%	31%	79%
Nolte Road and Florida's Turnpike Southbound Ramps	-	-	-	97%	-	98%	-	99%	98%	33%	86%	-	93%
U.S. 192 and Florida's Turnpike Northbound Off-ramp	81%	88%	84%	90%	-	91%	96%	97%	-	-	99%	98%	96%
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	100%	97%	-	-	96%	98%	97%
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	96%	-	94%	-	99%	99%	99%	96%	-	97%
Average Delay (Seconds) for the worst 30-minute Period and Estimated LOS													
Old Canoe Creek Road and Florida's Turnpike Ramps	107/F	40/D	-	-	408/F	373/F	381/F	-	326/F	-	-	-	262/F
Old Canoe Creek Road and Kissimmee Park Road	88/F	24/C	16/B	357/F	444/F	370/F	1185/F	1146/F	1332/F	293/F	274/F	267/F	314/F
Old Canoe Creek Road and Nolte Road	54/D	59/E	15/B	311/F	623/F	380/F	120/F	203/F	146/F	5307/F	2468/F	1215/F	430/F
Nolte Road and Florida's Turnpike Northbound Ramps	72/E	-	197/F	-	-	-	4/A	30/C	-	-	47/D	2/A	35/D
Nolte Road and Florida's Turnpike Southbound Ramps	-	-	-	45/D	-	12/B	-	39/D	1/A	3/A	15/B	-	27/C
U.S. 192 and Florida's Turnpike Northbound Off-ramp	81/F	85/F	25/C	361/F	-	181/F	67/E	12/B	-	-	48/D	58/E	56/E
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	55/E	1/A	-	-	12/B	FALSE	3/A
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	62/E	-	27/C	-	40/D	34/C	71/E	3/A	-	32/C

Table 6.42 (Continued)
2045 PM Build Peak Hour VISSIM Intersection Performance

Average and (Maximum) Queue in Feet for the worst 30-minute period													
Old Canoe Creek Road and Florida's Turnpike Ramps	70 (266)	70 (266)	-	-	3868 (4038)	3868 (4038)	3941 (5715)	-	3941 (5715)	-	-	-	-
Old Canoe Creek Road and Kissimmee Park Road	134 (590)	134 (590)	134 (590)	2241 (2458)	2241 (2458)	2106 (2322)	7026 (7116)	7026 (7116)	7061 (7151)	433 (577)	433 (577)	433 (577)	-
Old Canoe Creek Road and Nolte Road	208 (730)	208 (730)	199 (723)	6650 (6837)	6650 (6837)	6650 (6837)	895 (1480)	895 (1480)	895 (1480)	5132 (5176)	5132 (5176)	5132 (5176)	
Nolte Road and Florida's Turnpike Northbound Ramps	7 (132)	-	327 (702)	-	-	-	50 (313)	105 (517)	-	-	19 (131)	0 (16)	
Nolte Road and Florida's Turnpike Southbound Ramps	-	-	-	241 (718)	-	184 (718)	-	108 (375)	41 (268)	0 (19)	12 (138)	-	
U.S. 192 and Florida's Turnpike Northbound Off-ramp	81 (271)	81 (271)	24 (236)	589 (1017)	-	589 (1017)	127 (612)	127 (612)	-	-	440 (1167)	440 (1167)	
U.S. 192 and Florida's Turnpike Northbound On-ramp	-	-	-	-	-	-	41 (260)	41 (260)	-	-	68 (606)	71 (615)	
U.S. 192 and Florida's Turnpike Southbound Off-ramp	-	-	-	420 (1553)	-	361 (1494)	-	192 (695)	192 (695)	53 (200)	53 (200)	-	

- Not Applicable

6.2.5 Network Performance

A summary of the VISSIM network performance for the 2025 opening and 2045 design years is presented in **Figures 6.16** and **6.17** for the entire project for AM and PM conditions, respectively. The results indicate that the proposed Build alternative will improve system-wide traffic operations. It is estimated that the network travel time and delay will reduce by 64 and 90 percent, respectively, in the design year 2045 AM peak hour. A reduction in network travel time and delay of 50 and 67 percent is estimated for 2045 PM peak hour. This reduction is due to the increased capacity and redistribution of traffic within the AOI.

Figure 6.16
AM Peak Period Network Performance (4-Hour Total)

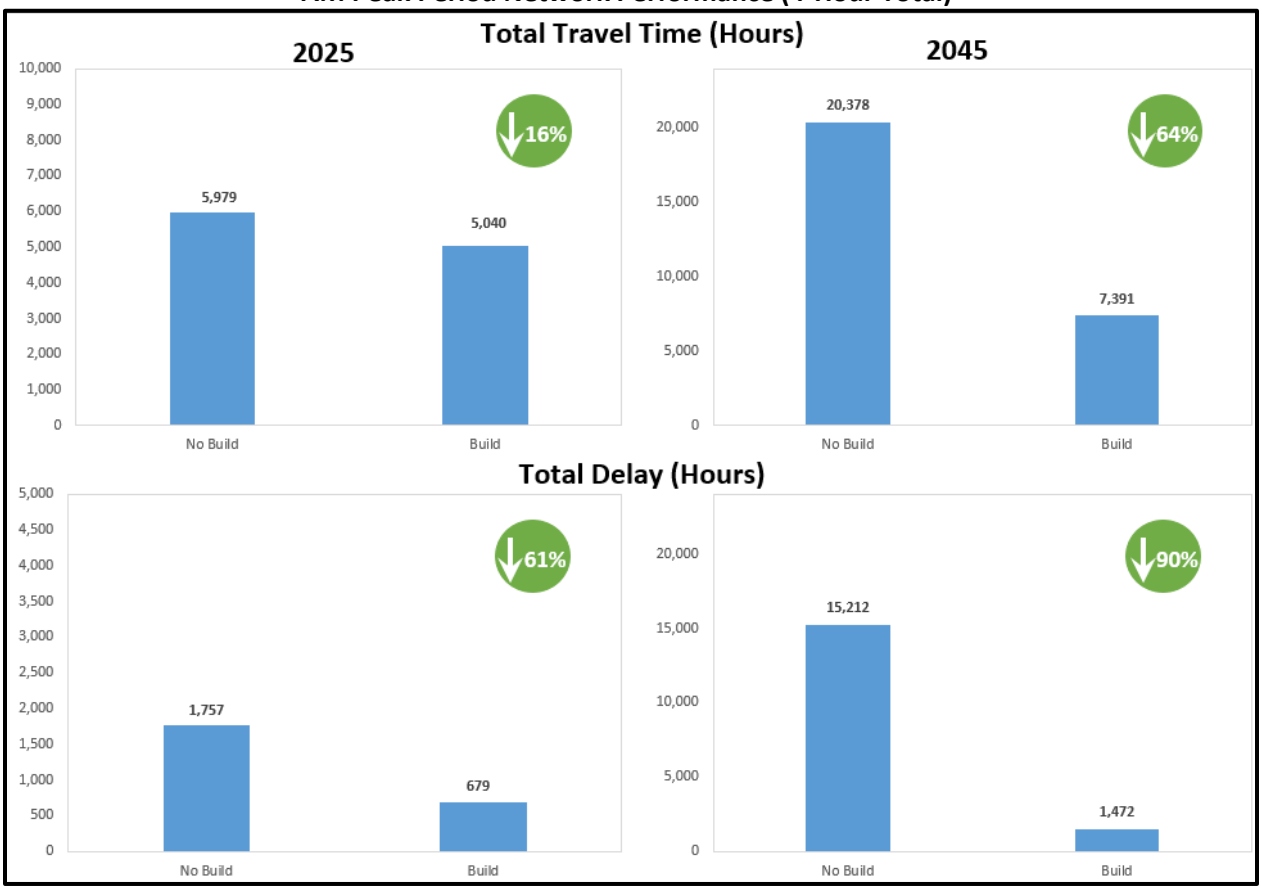
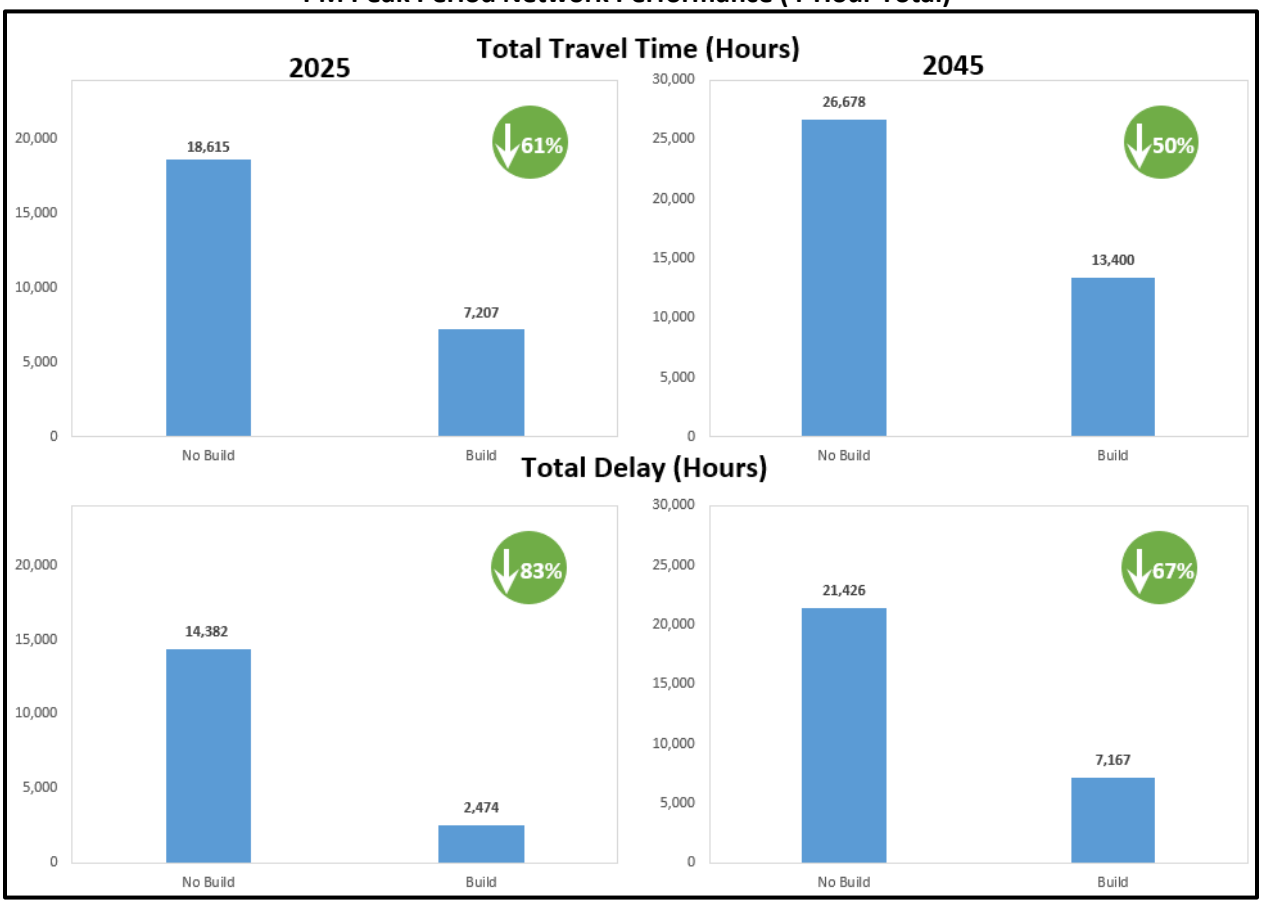


Figure 6.17
PM Peak Period Network Performance (4-Hour Total)



6.3 FUTURE SAFETY EVALUATION

A safety analysis was conducted to study the future impacts of the proposed interchange modifications and improvements within the project limits. The analysis focused on the Florida's Turnpike freeway mainline, ramp segments, arterials and study intersections within the AOI. The analysis was conducted using the predictive methods in Chapters 12 and 19 of the Highway Safety Manual (HSM), where available, and the Interchange Safety Analysis Tool (ISATe), which apply a combination of Safety Performance Functions (SPFs), crash modification factors (CMFs), and calibration factors to estimate frequency and cost of crashes for each segment and intersection.

The No Build and Build alternatives were evaluated and the predicted number of crashes and associated costs were compared for the 2025 to 2045 analysis period. The results of the safety analysis are summarized in **Table 6.43**. It is important to note that the safety analysis tools available to date are deterministic in nature and estimate future crashes mainly based on AADT and roadway characteristics. These tools do not account for vehicle interactions. The No Build is expected to have extensive congestion and queues which may potentially impact crashes. Predicted crashes for No Build would be higher than shown in **Table 6.43** if congestion and queuing impacts were considered.

Consequently, cost savings would be higher than reported. Nevertheless, a summary of the crash estimates based on the available tools is presented.

Even though the Build has additional merge/diverge segments and new access points along the freeway when compared to the No Build, the crash prediction is lower since the analysis considered eight lanes in the Build conditions. The number of crashes predicted on ramp segments is slightly higher, due to the increase in number of ramps along the freeway. However, the Build will relieve congestion at the Florida's Turnpike, ramps and the arterial intersections, which is expected to result in a 10 percent reduction in the overall number of potential crashes. Intersection improvements within the AOI are also expected to reduce crashes. Based on these results, the Build alternative is predicted to have a 20-year crash cost savings of approximately $8.6 Million compared to the No Build alternative, in 2018 present value. Detailed analysis tables are provided in **Appendix H**.

Table 6.43
Predicted Number of Crashes and Cost Savings from 2025 to 2045

Site	No Build		Build	
	$N_{predicted*}$	2018 Present Value	$N_{predicted*}$	2018 Present Value
Florida's Turnpike				
Freeway Segments	2191.3	$91,017,793	1914.5	$87,578,103
Ramp Segments	130.3	$5,413,278	210.5	$9,631,031
Intersections				
Kissimmee Park Road and Old Canoe Creek Road	509.3	$50,852,163	405.4	$40,734,757
Old Canoe Creek Road and Nolte Road	126.4	$13,914,470	114.5	$12,582,519
U.S. 192 Northbound Off-ramp terminal	139.1	$5,777,454	141.0	$6,451,089
U.S. 192 Northbound On-ramp terminal	148.1	$6,152,988	122.1	$5,585,358
U.S. 192 Southbound ramp terminal	107.1	$4,640,864	97.7	$4,468,287
Kissimmee Park Road and Southbound ramps	33.1	$3,255,039	-	-
Kissimmee Park Road and Northbound ramps	12.0	$1,176,571	-	-
Nolte Road and Southbound ramps	-	-	28.3	$2,706,221
Nolte Road and Northbound ramps	-	-	4.7	$465,021
Old Canoe Creek Road and Turnpike Ramps	-	-	30.7	$3,404,415
TOTAL	**3396.8**	**$182,200,620**	**3069.5**	**$173,606,800**
CRASH COST SAVINGS	**$8,593,821**			

*Predicted Crashes
Note: ISATe output adjusted using the calibration factors provided in the output summary in the appendix.
Note: No Build crashes and cost savings would be higher if congestion and queuing impacts were considered.

6.4 USER BENEFIT ANALYSIS

The network travel time (**Figures 6.1** and **6.2**) and safety (**Table 6.43**) results were used to estimate the user benefit for a 20-year life span of the proposed interchange modifications and improvements within the study area. Fuel consumption and emissions were not included in the estimated benefits. The value of time used in estimating the user benefit was obtained from the 2015 *Urban Mobility Report* published by the Texas Transportation Institute. This value accounts for auto occupancy and trucks. Based on 2018 dollars and a discount rate of five percent, the estimated user benefit was $1,209 Million and $8.6 Million based on travel time and safety, respectively, from year 2025 to 2045. The safety benefit would have been higher if the safety analysis tools could consider queuing impacts in estimating potential crashes. The table used to estimate the user benefit is presented in **Appendix H**.

The PD&E study (FPID: 441224-1) is expected to be completed in Summer 2020. Design of the proposed Nolte Road interchange and associated arterial/intersection improvements (FPID: 441224-2) is underway, construction is programmed in Fiscal Year (FY) 2024. Design, right of way and construction of the mainline to eight lanes and the supplementary ramps to and from Old Canoe Creek Road are not yet programmed.

There are no anticipated signing issues with the proposed interchange modifications along Florida's Turnpike. A conceptual signing plan is presented in **Appendix I**.

The Florida's Turnpike is a limited-access tolled facility. This section discusses the proposed Build alternative with regard to Federal Highway Administration's (FHWA) two policy points.

Point 1.

> *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 should, 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, should 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 should 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 should 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)).*

An operational and safety analysis was conducted to study the impacts of the proposed Build alternative on the Florida's Turnpike and local street network within the AOI. Several performance measures were used to compare the operations and safety of the current and future networks under the No Build and Build alternatives. Key measures included network-wide travel time and delay, freeway speed, intersection delays and queues, and safety benefits. The analysis showed that the proposed interchange modifications will not have an adverse impact on the operations and safety of the roadways within the study area.

The overall network-wide operations will be improved with the proposed interchange modifications. It is estimated that network travel time and delay will reduce by 63 and 89 percent, respectively, in the design year 2045 AM peak hour. A reduction in network travel time and delay of 50 and 67 percent is estimated for 2045 PM peak hour. This reduction is due to the increased capacity and redistribution of traffic within the AOI.

The intersection of Kissimmee Park Road and Florida's Turnpike Southbound Off-Ramp operates at unacceptable levels under existing conditions and is expected to experience longer delays and queues in the future under No Build conditions. Queues along Florida's Turnpike southbound off-ramp are expected to extend along the full length of the ramp and onto the mainline during evening commute, bringing travel along Florida's Turnpike to a stop-and-go condition. The additional capacity provided in the Build alternative is expected to restore operations to acceptable levels along the freeway mainline and ramps. Relieve in congestion along Florida's Turnpike and at the intersections is

expected to result in a 10 percent reduction in the number of potential crashes within the study area. It is important to note that the safety analysis tools available to date are deterministic in nature and estimate future crashes mainly based on AADT and roadway characteristics. These tools do not account for vehicle interactions. The No Build is expected to have extensive congestion and queues which may potentially impact crashes. Percentage reduction in crashes would be higher than reported if congestion and queuing impacts were considered.

Point 2.

> *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, such as 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)). In rare instances where all basic movements are not provided by the proposed design, the report should include a full-interchange option with a comparison of the operational and safety analyses to the partial-interchange option. The report should also include the mitigation proposed to compensate for the missing movements, including wayfinding signage, impacts on local intersections, mitigation of driver expectation leading to wrong-way movements on ramps, etc. The report should describe whether future provision of a full interchange is precluded by the proposed design.*

The Florida's Turnpike currently intersects with Kissimmee Park Road forming a partial interchange, serving movements to and from the north only. The proposal consists of relocating the Kissimmee Park Road interchange by approximately half of a mile north, to an extension of Nolte Road. The existing ramps at the Kissimmee Park Road interchange would be removed; however, the overpass would be maintained for local access. Additional ramps to and from the north would be added to provide direct access between the Florida's Turnpike and Old Canoe Creek Road, at approximately half of a mile south of Kissimmee Park Road. A southbound on-ramp at U.S. 192 South would also be added, to complete the interchange and provide access to all movements. The proposed access modifications connect to public roads only and will provide for all traffic movements.

The ongoing Florida's Turnpike widening PD&E Study (FPID: 441224-1) is also evaluating interchange modifications at the Kissimmee Park Road and U.S. 192 South interchanges. This SIMR documents existing conditions, traffic forecast, lane requirement evaluations, traffic operations analysis, and safety evaluations conducted for the mainline widening and the proposed interchange modifications.

The existing conditions traffic analysis showed that the Florida's Turnpike Southbound off-ramp terminal at Kissimmee Park Road currently experiences long delays and queues during the evening commute. Queues extend along the full length of the ramp and onto the freeway mainline, due to the heavy southbound off-ramp left-turn traffic demand which exceeds the capacity of a single left turn lane. The close proximity of the Old Canoe Creek Road intersection compounds the backups along the southbound off-ramp and mainline. This intersection experiences severe traffic congestion during the morning and evening commute.

Crash data for the most recent five years from the state's CARS database showed that the number of crashes doubled from 2012 to 2016 within the study area. All the crashes resulted in injury and property damage only. The Florida's Turnpike mainline crashes were mostly off road but crashes along the ramps were mainly rear end. Majority of the crashes at the intersections were of rear end and angle type. Queue backups on the freeway mainline contribute to crashes. The intersection of Kissimmee Park Road and Old Canoe Creek Road is a high crash location.

The PD&E study evaluated various Build alternatives for the Kissimmee Park Road interchange. The selected Preferred Build interchange configuration increased the spacing between the ramp terminal intersections and Old Canoe Creek Road, enhanced network connectivity, had less residential and environmental impacts and offered a lower cost compared to the other alternatives. In addition, this alternative was highly supported by the public. The Build alternative relocated the Kissimmee Park Road interchange by approximately half of a mile north, to an extension of Nolte Road. The proposed configuration featured a DDI, serving all movements. The existing ramps at the Kissimmee Park Road interchange would be removed; however, the overpass would be maintained for local access. Additional ramps to and from the north would be added to provide direct access between the Florida's Turnpike and Old Canoe Creek Road, at approximately half of a mile south of Kissimmee Park Road. This alternative also included a proposed southbound on-ramp at U.S. 192 South, to complete the interchange and provide access to all movements. The Build alternative also assumed widening of the Florida's Turnpike mainline to eight lanes from MP 238.5 to MP 240.

Future lane requirement analysis for the freeway mainline and ramps showed that additional capacity will be required for both No Build and Build alternatives. The mainline will require three lanes per direction south of Kissimmee Park Road or Nolte Road in year 2039 and 2032, for the No Build and Build conditions, respectively. No additional capacity will be required through the 2045 design year south of Kissimmee Park Road. Three lanes will be required between Kissimmee Park Road or Nolte Road and U.S. 192 South by the 2025 opening year, for both No Build and Build conditions. The traffic demand in this segment will be very close to the four-lane volume target by the 2045 design year. Each of the ramps to and from the north at the Kissimmee Park Road or Nolte Road interchange will

require two lanes by the opening year. All other ramps will require a single lane each through the 2045 design year.

It is anticipated that the Kissimmee Park Road and Florida's Turnpike southbound off-ramp and the intersections along Old Canoe Creek Road within the AOI will be over capacity, from opening to design year under the No Build conditions. Key deficiencies of the No Build include lack of capacity at the southbound off-ramp to Kissimmee Park Road, close proximity of the Old Canoe Creek Road intersection and lack of capacity along Old Canoe Creek Road. TSM&O strategies such as signal retiming have been implemented to mitigate the existing issues but were not successful. This SIMR evaluated a TSM&O alternative that included restriping of the Kissimmee Park Road southbound off-ramp to add dual left turn lanes and two receiving lanes. This TSM&O alternative is expected to provide a small reduction in delay, at this intersection only, and will not address existing or future capacity needs. The additional capacity provided in the Build alternative is expected to restore operations to acceptable levels along the freeway mainline and ramps. It is estimated that the Build alternative will reduce network travel time and delay by approximately 50 to 90 percent compared to No Build, during 2045 peak periods within the study area. However, additional capacity will be required along Old Canoe Creek Road, the analysis showed a need for six lanes by the 2025 opening year south of Kissimmee Park Road and by year 2036 to the north, under No Build conditions. Enhanced pedestrian and bicycle treatments are included such as sidewalks, crosswalks, lighting, and signalization of right turns to improve safety.

User benefit for a 20-year life span of the proposed interchange modifications and improvements was estimated using network travel time and safety. Fuel consumption and emissions were not included. Based on 2018 dollars and a discount rate of five percent, the estimated user benefit was $1,209 Million and $8.6 Million based on travel time and safety, respectively, from year 2025 to 2045. The safety benefit would have been higher if the safety analysis tools could consider queuing impacts in estimating potential crashes. The design follows FDOT standards to provide features that mitigate potential crashes such as long acceleration and deceleration lanes, adequate sight distances, gentle cross-slopes, super elevation, wide curve radii, wide shoulders, signing, among others.

APPENDICES

PROVIDED ELECTRONICALLY