

Memo

Date: Friday, September 16, 2022

Project: I-4 (SR 400) Master Plan

From W of SR 570 (Polk Parkway) to West of US 27 Interchange (Phase 2)

Financial Project Identification (FPID) Nos.: 442512-1; 442512-2

Subject: Final Traffic Analysis Memorandum of Agreement for Phase 2 (MOA)

1. Purpose of the Memorandum of Agreement (MOA)

Florida Department of Transportation (FDOT) District One has initiated a Planning and Feasibility study for Interstate 4 (SR 400) in Polk County. The study limits extend from west of SR 570 (Polk Parkway) to west of the US 27 interchange. The study spans 27.6 miles in length and traverses the major urban area of Lakeland in Polk County. I-4 supports vital commerce and tourism of the state as it connects employment and population centers, including Tampa, Lakeland, Orlando, and Daytona Beach, within Florida. It is one of few east-west limited access facilities in the central portion of the state along with Florida's Turnpike. I-4 is also a designated state hurricane evacuation route and part of Florida's Strategic Intermodal System (SIS) highway network.

Phase 1 of this project consisted of data collection, traffic analyses, project management/meetings and public involvement, and was a planning level of effort, focused on the mainline. Phase 1 defines the area of traffic influence, determines what year interchanges are expected to fail, and identifies where improvements are needed. Phase 1 was intended to identify the potential Build Alternatives to be evaluated in more detail in Phase 2.

This Memorandum of Agreement (MOA) is being prepared based on discussions that occurred between FDOT District One and the I-4 Master Plan team for Phase 2. During this coordination effort, it was established that the primary purpose of Phase 2 is to develop interchange improvements, identify long and short-term capacity needs along the I-4 mainline and managed lanes, and address capacity deficiencies of segments identified as operating below the Level of Service (LOS) target (LOS D) adopted for this facility as part of the Strategic Intermodal System (SIS) designation.

This MOA was developed in accordance with guidance from the Project Development and Environment (PD&E) Manual, Traffic Analysis Handbook, and Project Traffic Forecasting Handbook. Phase 1 approved MOA is included as attachment.

2. Project Description

This section of I-4 consists of a six-lane divided typical section with a maximum posted speed limit of 70 miles per hour. The functional classification of I-4 within the project limits is Urban Principal Arterial – Interstate. Existing right of way along the corridor ranges from approximately 300 feet to 450 feet in width. While the proposed improvements are anticipated to be constructed primarily within the existing right of way, some additional right of way may be required.

Note that Phase 2 traffic analysis is for general planning purposes and will not determine the

engineering and construction acceptability for the managed lanes and interchange capacity improvements. The ultimate capacity improvement of this project involves the potential construction of managed lanes in each direction of I-4 and interchange improvements which will be analyzed later phase(s) of I-4 Master plan.

3. Purpose and Need Statement

The purpose of the I-4 Master Plan is to address deficiencies in operational capacity of I-4 in Polk County, also known as Florida's State Road (SR) 400, from west of SR 570 (Polk Parkway) to west of US 27 interchange in Polk County in order to accommodate future travel demand projected as a result of population and employment growth along the corridor. I-4 also serves significant freight distribution centers in Polk County. Capacity deficiencies are present under the existing condition and are expected to increase in the future. The goal of the project Phase 2 study is to evaluate the potential addition of managed lanes, additional general-use lanes, and develop interchange improvements.

Other goals of the project are to:

- 1) Preserve the operational integrity and regional functionality of I-4 (and, therefore, the regional transportation network) by complementing similar corridor improvements to the east and west, and
- 2) Enhance emergency evacuation and response times.

The need for this project is based on the following criteria:

Capacity/Transportation Demand: The project is anticipated to improve traffic operations on I-4 by increasing capacity and better dispersing traffic (i.e., separating managed lanes traffic from general-use traffic). The traffic dispersal and reduced congestion can decrease vehicle conflicts and, therefore, enhance travel conditions of the corridor. Under the current condition, the section of I-4 approaching US 27 from the west backs up significantly (about 5 miles) at evening peak hours. I-4 within the project limits currently operates at Level of Service (LOS) C to F, with annual average daily traffic volumes ranging from 90,000 vehicles to 140,000 vehicles per day (source: FDOT Florida Traffic Online 2021). Traffic volumes on the corridor are projected to increase to between 151,800 and 203,400 vehicles per day by 2045 (source: I-4 Master Plan Phase 1 Traffic Projection). If the proposed project improvements do not occur, the operating conditions along the corridor will continue to deteriorate as the traffic increases.

Safety: I-4 serves as part of the emergency evacuation route network designated by the Florida Division of Emergency Management. Also designated as an evacuation facility of Polk County, I-4 is vital in facilitating traffic during emergency evacuation periods as it connects to other major arterials and highways of the state evacuation route network [such as SR 570 (Polk Parkway) and US 27].

The project is anticipated to:

- Improve emergency evacuation capabilities by enhancing connectivity and accessibility to other major arterials designated on the state evacuation route network;
- Increase traffic volumes that can be evacuated during an emergency event, and
- Allow for enhanced emergency access and incident response time due to the ability to maintain operational speeds within the managed lanes.

System Linkage: As part of Florida's SIS highway network, I-4 plays a significant role in facilitating commuter, visitor, and freight traffic within the state. The proposed project improvements are part of a

larger, regional set of projects on the interstate system to the west [in Hillsborough, Pinellas, Manatee, Sarasota, Charlotte, Lee, and Collier Counties] where managed lanes, additional general use lanes and auxiliary lanes are being considered to increase the operational capacity of not only I-4 but I-75 and I-275 as well. The intent is for all these project improvements to work together to improve the overall reliability and performance of the interstate system in moving high volumes of goods and people at efficient speeds. It is important to note that managed lanes also create an opportunity for the provision of efficient and reliable transit service. As such, these improvements are critical to enhancing regional mobility. They are also key in preserving the operational integrity and regional functionality of the I-4 corridor as a whole.

4. Project Limits

This project is located along I-4 from west of SR 570 (Polk Parkway) to west of US 27 interchange. The study area is shown in **Figure 1**. The study spans 27.6 miles in length and traverses the city of Lakeland in Polk County.

The study area includes seven (7) existing service interchanges on I-4 and two (2) system interchanges at I-4 and Polk Parkway. The on-and off-ramps and merge/diverge areas for the existing interchanges are encompassed along I-4 and Polk Parkway. The interchanges are listed below:

- I-4 and SR 570 (Polk Parkway- west) System-to-System Interchange
- I-4 and US 92/SR 546 (West Memorial Boulevard)
- I-4 and SR 539 (Kathleen Road)
- I-4 and US 98/SR 35/SR 700
- I-4 and CR 582 [North Socrum Loop Road]/SR 33 (Lakeland Hills Boulevard)]
- I-4 and SR 33 (Lakeland Hills Boulevard/Commonwealth Avenue)
- I-4 and SR 570 (Polk Parkway-east) System-to-System Interchange
- I-4 and SR 559
- I-4 and SR 557

Figure 1 Project Location and Study Area (Sheet 1 of 3)

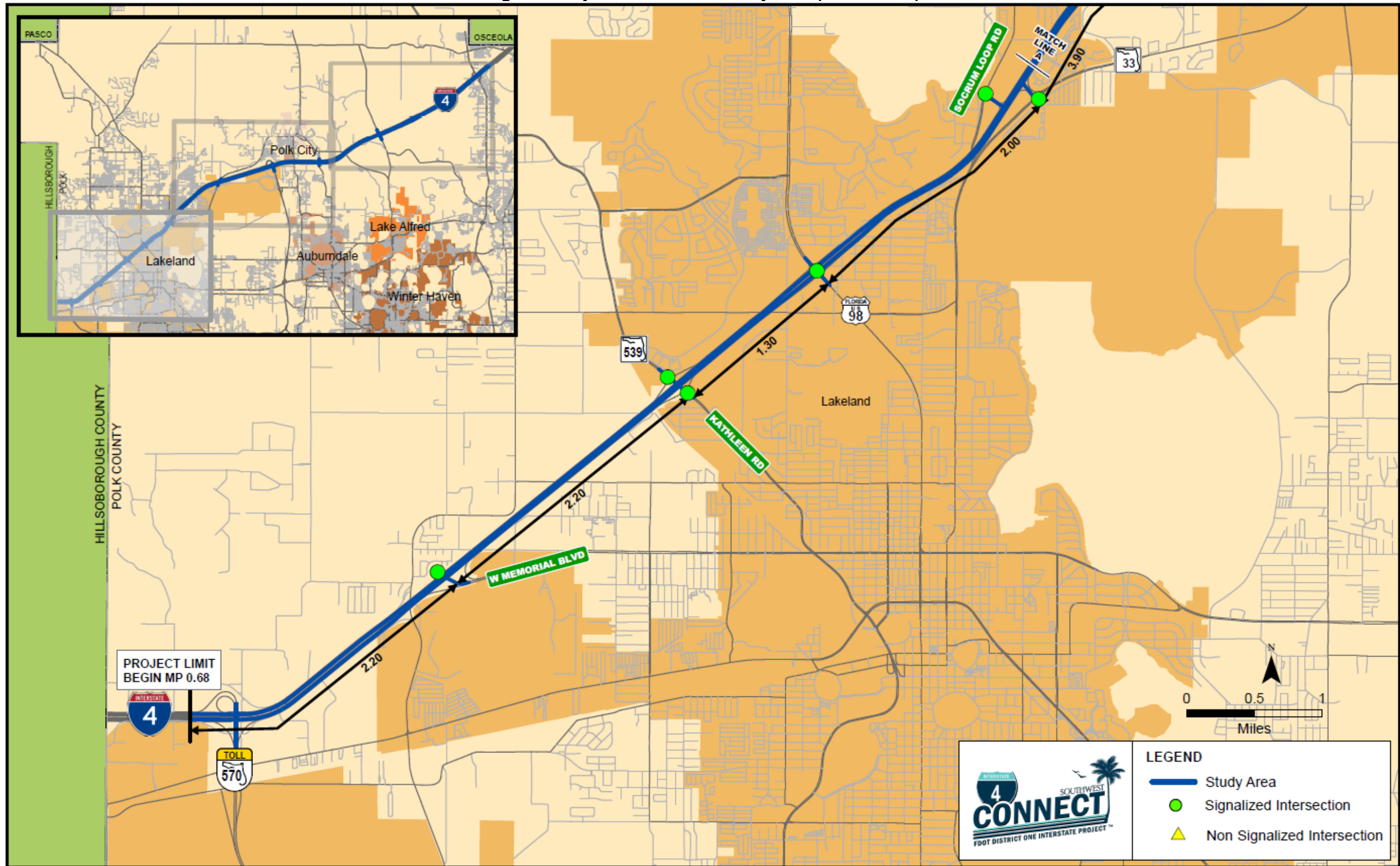


Figure 1 Project Location and Study Area (Sheet 2 of 3)

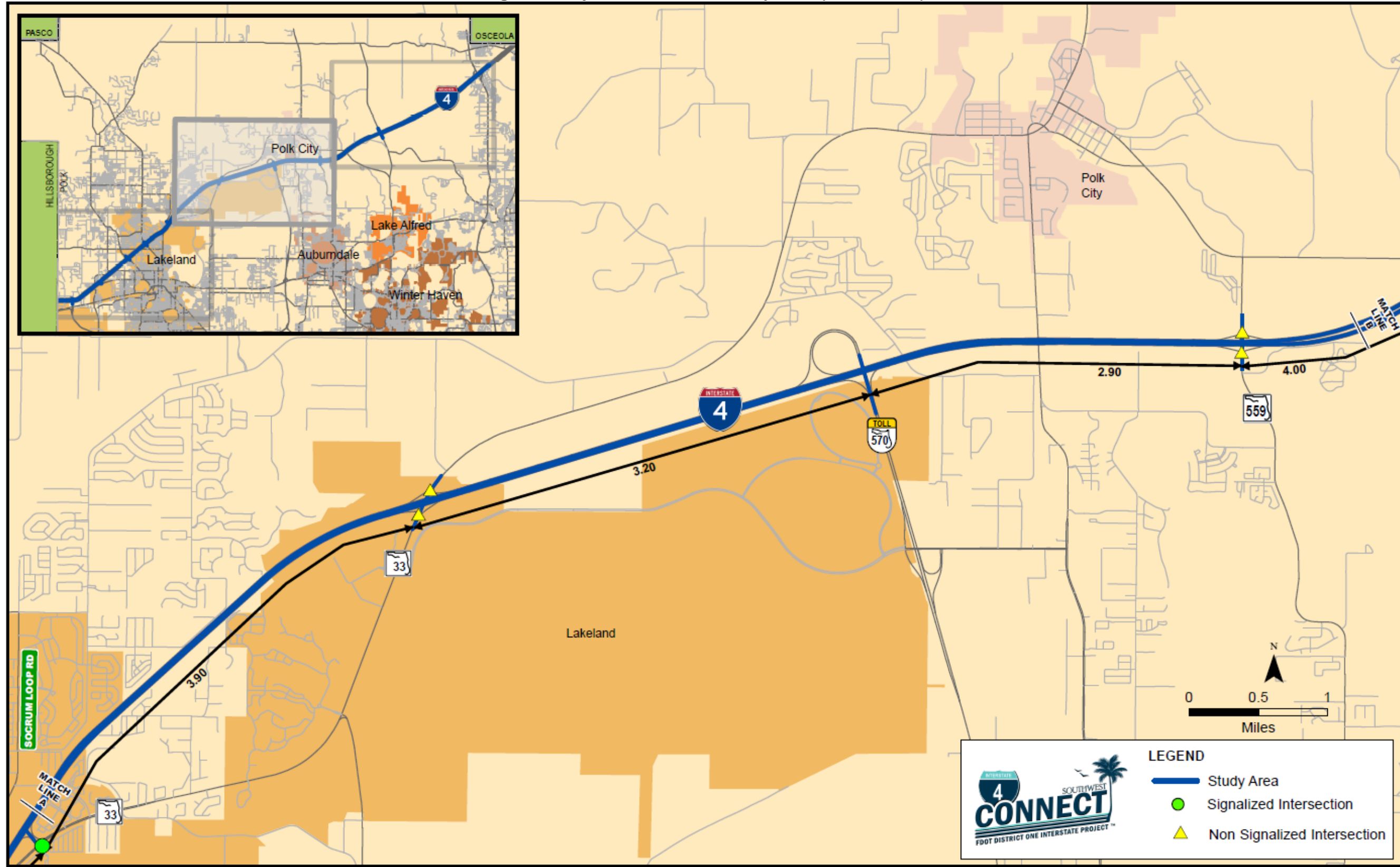


Figure 1 Project Location and Study Area (Sheet 3 of 3)



5. Project Schedule

The completion of Phase 2 analysis is tentatively scheduled by the end of 2023.

Funding for the I-4 Master Plan is in the currently adopted Five-Year Work Program as listed below:

- 442512-1 and 442512-2: I-4 (SR 400) west of SR 570 (Polk Parkway) to west of US 27 interchange, PD&E Study, on-going
- Florida's SIS Long Range Cost Feasible Plan FY 2029 – 2045 has identified funds for Design and Right of Way

6. Analysis Scenarios

Analysis will be conducted for the following scenarios to perform a preliminary evaluation of traffic conditions:

- Existing (2022)
- No-Build (2045)
- Build (2045)*

*A year of failure analysis shall be performed for Build Alternative(s), in case a failing LOS is obtained in Design Year.

7. Alternatives

The following alternatives will be considered during the preliminary analysis Phase 2 of the project using the Design Year traffic forecasts for I-4 and interchanges within the project limits.

- The Existing scenario represents the existing condition.
- No-Build Alternative: The No-Build (no action) Alternative will include currently planned and programmed improvements or projects with construction phases identified in cost feasible plans.
- Build Alternative(s): The Build Alternatives (up to **two Alternatives**) will be identified, developed, assessed and screened in order to satisfy the purpose and need for this project in accordance with Part 2, Chapter 3 of the PD&E Manual.

Options under consideration for further development and evaluation:

- Addition of General Purpose (GP) lanes
- Addition of Managed lanes

The traffic study will be performed to meet capacity improvement plan for the corridor to improve reliability and flow of traffic along the corridor. These improvements may include:

- Adding additional general-purpose lanes and/or auxiliary lanes
- Adding Managed lanes
- Adding a collector distributor roadway system, and
- Transportation Systems Management and Operations (TSM&O) strategies

8. Data Collection

Transportation System Data

Sources of information to be collected shall include, but not be limited to:

- Straight Line Diagrams (SLDs);
- Roadway Characteristic Inventory (RCI) Data;
- Florida Geographic Data Library (FGDL) Geographic Information System (GIS) Data;
- Existing Traffic Signal Plans;
- FDOT Design Standards;
- FDOT Florida Traffic Online (FTO), and
- INRIX Analytics: Speed

Existing and Historical Traffic Data

Data collection for the study shall consist of information from the FDOT, local government officials and other sources as available. It shall be comprised of existing information and field collected data. Sources of information to be collected shall include, but not be limited to:

- Latest Five-Year Crash History;
- Existing Traffic Signal Timing;
- Existing AADT counts along mainline and ramps from the FDOT FTO;
- Traffic count data and
- District One Regional Planning Model (D1RPM v 2.0) 2015 Base Year and 2045 Cost Feasible Model

Traffic Counts: Based on an assessment of future traffic conditions and year of failure analysis from Phase 1, recent Turning Movement Counts (TMC) are recommended to be obtained at the following intersections (**See Figure 2**):

1. US 98 at Lakeland Square Mall (4 hours TMC)
2. US 98 at Lakeland Park Center Drive (4 hours TMC)
3. US 98 Ramp Terminals (4 hours TMC)
4. US 98 at Pyramid Parkway (4 hours TMC)
5. US 98 at Griffin Road (4 hours TMC)
6. N Socrum Loop Road at Lakeland Park Blvd (4 hour TMC)
7. N Socrum Loop Road at Old Combee Road (4 hour TMC)
8. Lakeland Hills Blvd. at Melody Lane (4 hour TMC)
9. N Socrum Loop/Lakeland Hills Blvd Ramp Terminals (4 hours TMC)
10. SR 33 Ramp Terminals (4 hour TMC)
11. SR 559 Ramp Terminals (4 hour TMC and including 24- hours volume counts)
12. SR 557 Ramp Terminals (4 hour TMC)

Figure 2 Traffic Count Locations (Sheet 1 of 3)

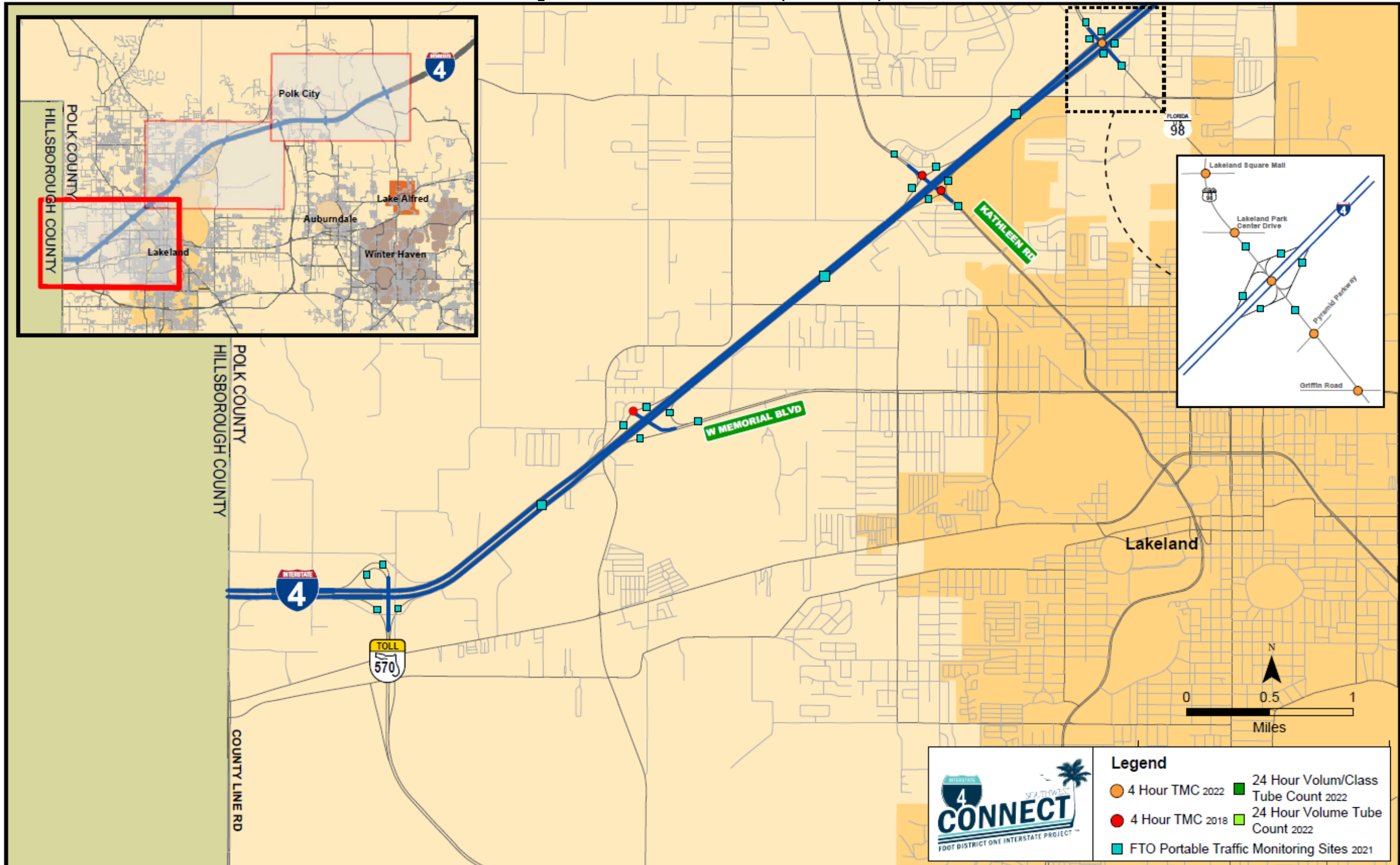


Figure 2 Traffic Count Locations (Sheet 2 of 3)

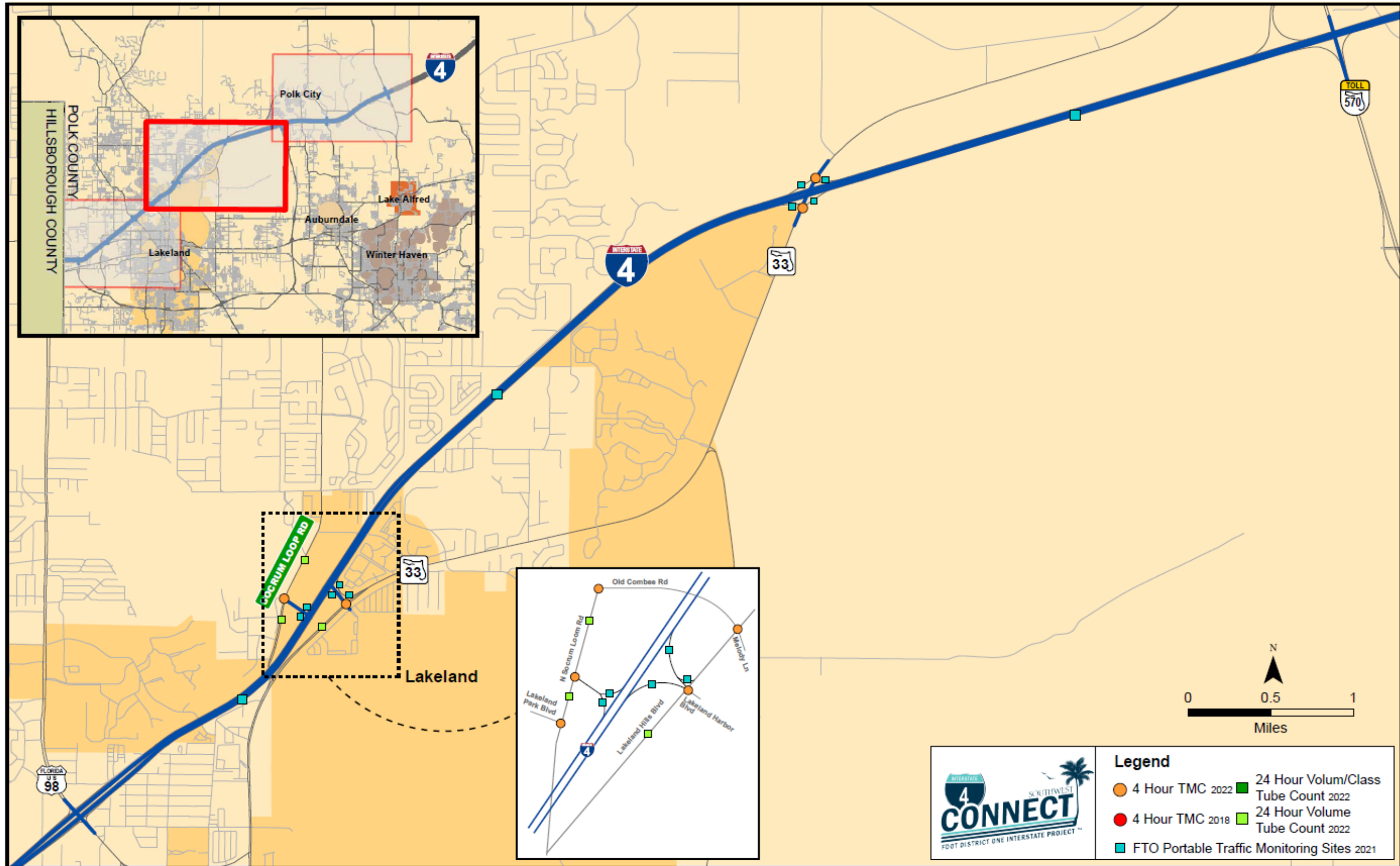
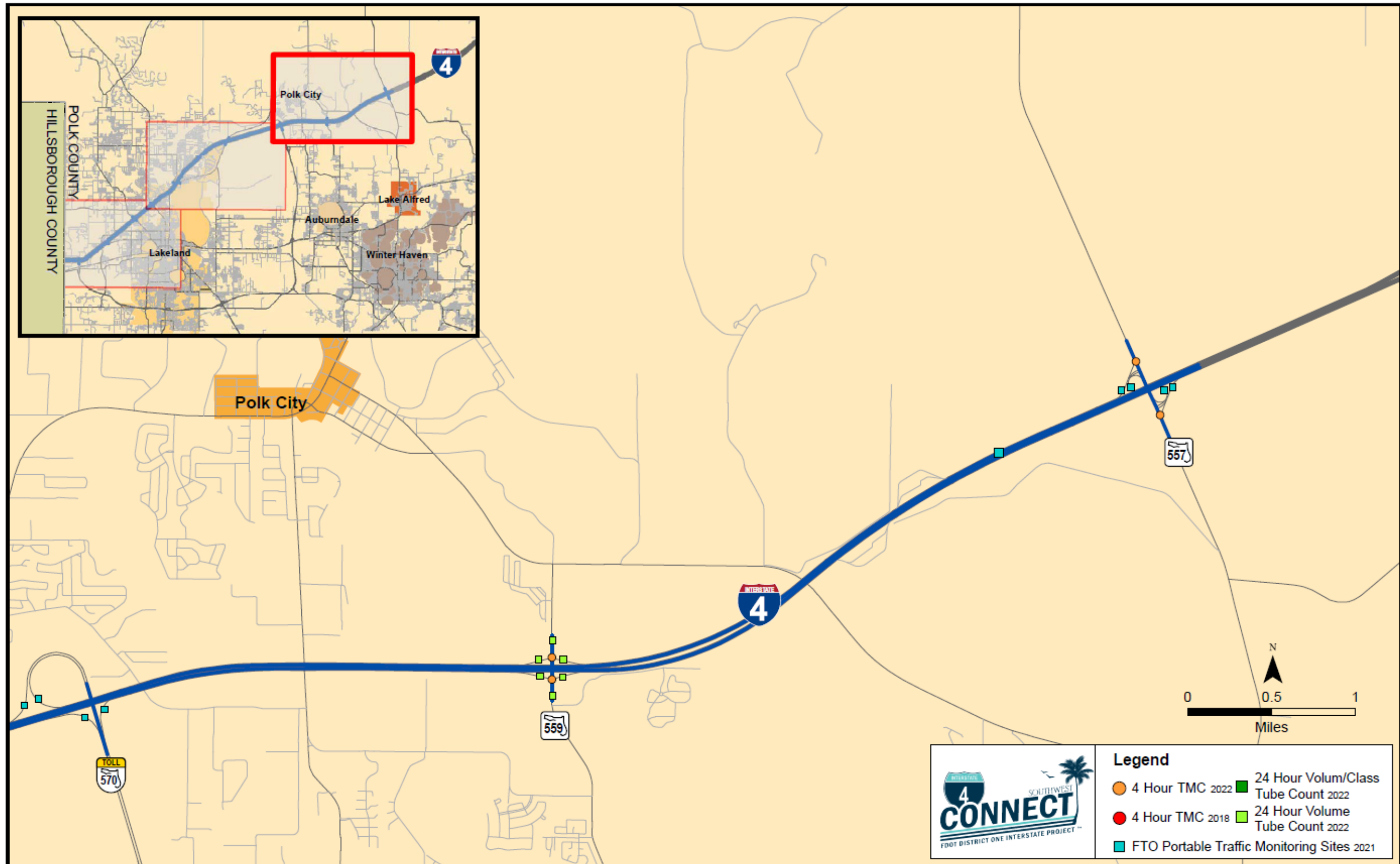


Figure 2 Traffic Count Locations (Sheet 3 of 3)



I-4 mainline count data will be obtained from FDOT's Florida Traffic Online database. The AM and PM peak period (7-9 AM and 4-6 PM) turning movement counts will be collected. A peak-hour volume summary will be calculated by approach for each study intersection.

Based on the *FTO and I-4 Selected Interchanges Analysis Report (SIAR)*, the peak hours were determined to be 7:15 AM-8:15 AM for the AM peak hour and 4:45 PM – 5:45 PM for the PM peak hour for the I-4 mainline.

Crash Data:

The most recently approved and certified five (5) years of crash data (2015-2019) will be obtained from FDOT verified sources (CARS and/or SSOGis databases), and the latest available unverified crash data from 2020 forward will be obtained from Signal Four Analytics for supplemental review.

This project will consider all programmed and planned roadway improvements in the area. Planned and programmed projects will be consistent with the adopted Cost Feasible Plan and FDOT Work Program. The project team will coordinate with project stakeholders including FDOT, Polk County, and the Polk Transportation Planning Organization (TPO) within the project study area and will obtain concurrence with FDOT District One prior to incorporating them in the study. These capacity improvements will be consistent with those specified in the regional transportation plans including, but not limited to, the following:

- FDOT Five-Year Work Program
- FDOT SIS Plans
- FDOT State Transportation Improvement Program (STIP)
- Committed improvements from local and private sources
- Polk Transportation Planning Organization (TPO)

9. Travel Demand Forecasting

The Express Lane Time-of-Day (ELToD) Model v2.3 will be the primary forecasting tool used to estimate 2045 traffic on the I-4 Managed Lanes (ML) and General Use Lanes (GUL).

The ELToD Model is a forecasting tool developed by the Florida Turnpike Enterprise (FTE) to determine the percent share of traffic that chooses managed lanes during each hour of the day. It estimates the volume of traffic on both general use and managed lanes. In addition, it identifies the managed lanes dynamic toll by hour based on traffic conditions. The model works in conjunction with Florida's travel demand models which provide the basis for the total corridor traffic.

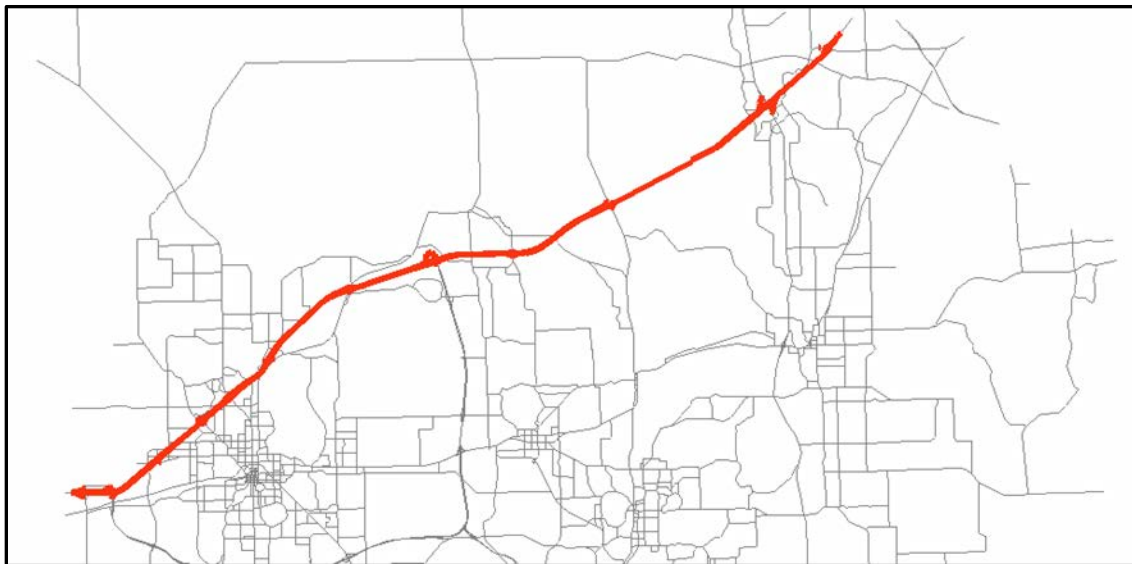
ELToD Setup

Phase 1 of the I-4 PD&E Study developed 2045 forecast AADTs for a Build alternative that included the addition of 4 tolled managed lanes to the existing 6 general use lanes on I-4 from the Polk Parkway (West) to SR 532. The 2045 I-4 No Build D1RPM developed by the IPM (based on the currently adopted 2045 D1RPM v2.0) was the primary travel demand forecasting tool used to model the Build alternative. The D1RPM v2.0 reports highway assignments in AADTs therefore the application of a Model Output Conversion Factor will not be used. The Phase 1 Managed Lane Build model will be the primary input into the ELToD Model used for the Phase 2 analysis.

While the overall forecast corridor demand will be the same as what was developed in Phase 1, the assignment of trips between the managed lanes and general use lanes will likely change due to the use of the ELToD model in Phase 2.

The I-4 corridor will be extracted from the D1RPM Build model for input into the ELToD Model. When creating a corridor network file from a demand model, it is recommended that the subarea network polygon be designed so that one external node is created for each entrance or exit ramp. The image below depicts the extent of the I-4 corridor that will be extracted.

Figure 3 I-4 Corridor Study Area for ELToD Model



The corresponding D1RPM daily trip tables will be extracted from the Phase 1 Build model for input into the ELToD Model. In order to convert the daily Origin/Destination trips into hourly trips, the ELToD Hourly Distribution File will be updated. This requires the calculation of the hourly traffic percentage in each direction for the I-4 study corridor. Hourly traffic counts will be the primary data source used to calculate the temporal distribution of traffic.

ELToD Execution

Once the development of input data and model setup has been completed, The ELToD Model will be run, and the results will be reviewed for reasonableness. Sensitivity test may be needed to tweak and confirm the appropriate model parameters such as toll rates, toll choice coefficients and trip diversion.

Model outputs will be summarized and analyzed and will include the following:

Outputs

- Loaded networks
 - Daily
 - Period (AM, Mid-day, PM, Night)
 - Hourly
- Results Summary Analysis including GUL-ML diversion, hourly assignments, potential revenue estimation, hourly v/c ratios

Development of the Traffic Volumes (AADT and DDHV)

Existing Year 2022 Annual Average Daily Traffic (AADT) volumes will be developed by applying appropriate seasonal adjustment factors (SF) and axle correction factors (AF) (will be applied only to the volume counts) to the Average Daily Traffic (ADT) obtained from recent available traffic counts or new counts collected to supplement available counts. An average trend annual growth rate of 5% will be applied to previous year counts to develop a 2022 AADTs where applicable. The growth rate was developed based on historical counts along I-4.(approved under Phase 1 MOA) and will be checked for relevant. The Directional Design Hour Volumes (DDHVs) for existing year 2022 will be developed by applying the Standard K Factor of 9.0 percent and Directional Factor (D) to the AADT volumes. A historical D factor has been developed by averaging the estimated D factor from permanent count stations along I-4 over a ten-year period based on FDOT Florida Traffic Online data as documented under the Phase 1 Traffic Analysis MOA.

Design hour AM and PM will be developed in accordance with Chapter 6 of the Project Traffic Forecast Handbook. A smoothing process shall be employed to ensure that the resulting design hour traffic volumes comply with the design traffic factors K_{STD} , Truck (T), D, and that traffic flows balance between intersections/interchanges. **Table 1** illustrates the traffic factors will be utilized for existing and future years.

Table 1: Design Traffic Factors

Roadway	K_{STD}	D	T	Tf	MOCF
I-4 Mainline	9.0	52.0	14.0	7.0	0.95
I-4 Ramps	9.0	100.0	14.0	7.0	0.95
Arterials	9.0	*	*	*	0.95

Source: Model Output Conversion Factor (MOCF), * D and T factors will be obtained from Phase 1 Traffic Study. The Standard K is from FDOT Project Traffic Forecasting Handbook.

The Peak Hour Factor (PHF) represents the relationship of total peak hour volume to the peak 15-minute rate of flow within the hour. It accounts for the variability of traffic within the hour. The PHFs for existing conditions varied and will be applied accordingly. A PHF of 0.95 will be used for future conditions analyses.

Future year Design Hour Volumes (DHVs) will be developed by applying the design traffic factors stated in **Table 1** above to the future year AADT volumes for each scenario. EIToD output will be reviewed for the AADTs and peak hour volumes.

The DDHVs for the AM peak hour will be determined using the reciprocal movement (supporting documenting will be provided) of the PM peak hour volumes. Note that historical and population [Bureau of Economic and Business Research (BEBR)] growth rates in addition to model growth will be considered. Project growth rates and/or forecasted AADT volumes will be submitted to the Department for review prior to the development of future design hour volumes.

No-Build and Build Alternatives DDHVs will be developed for the design year. For Build Alternative, if there is need to determine the year of failure in case of a failing LOS for the design

year, interim year(s) DDHVs will be developed by interpolation between the existing year 2022 and design year 2045.

10. Traffic Operational Tools and Analysis

Highway Capacity Software (HCS version 7.9 or newer version) will be utilized to perform a preliminary traffic analysis with planning level inputs and to compare the mobility benefits of adding general-purpose lanes, and express lanes as a sketch planning tool. Note that Phase 2 traffic analysis is for general planning purposes and will not determine the engineering and construction acceptability for the managed lanes. Use of microsimulation to evaluate the managed lane configurations development will be discussed with the FDOT District One and the I-4 Master Plan team during later phase(s) of I-4 Master Plan in future. The HCS software was developed based on Highway Capacity Manual (HCM) Sixth Edition methodologies. Freeway facility analysis will be performed using the HCS software consistent with the HCM 6th Edition Freeway Facilities methodology. The HCM estimates level of service based on density – a function of flow rate (volumes) and travel speed – for uninterrupted flow facilities such as basic freeway/Collector-Distributor (C-D) roadway segments, merge and diverge segments, and freeway/C-D roadway weaving segments. Density is measured in passenger cars per mile per lane (pcpmpl). Capacity and speed adjustment factors are listed below:

- I-4 Free-Flow Speed (FFS) – 75 mph
- I-4 Ramps Free-Flow Speed (FFS) – Posted or Advisory Speed Limit plus 5 mph
- I-4 peak hour truck percentage – 7%
- Lane width – 12 feet
- Driver Population – Mostly Familiar
- Weather Type – Non-Severe Weather
- Incident Type – No Incident
- Demand Adjustment Factor – 1.000

Signalized intersections will be evaluated using Synchro software (version 11 or newer). Unlike HCM methodologies, Synchro software has additional procedures for estimating control delay, such as estimation of right turn on red and queue delay associated with starvation and spillback. Because of these additional refinements, Synchro delay estimation yields more accurate results than HCM in signalized intersection analysis. Unsignalized intersections will be evaluated using the HCS (version 7.9 or newer). SIDRA Intersection Version 9 software will be used for roundabout analysis.

Signal warrant analyses shall be performed at the SR 559 ramp terminals based on the Manual on Uniform Traffic Control Devices (MUTCD).

Transportation System Management and Operations (TSM&O) strategies for safety and congestion management, such as addition of turn lanes and storage lengths, signal timing optimization, and auxiliary lanes, will be included in the Build alternative. Future implementation of additional TSM&O strategies will be included as well.

Based on a review of interchange traffic conditions from Phase 1 Traffic Study, **US 98 and North Socrum Loop Road/Lakeland Hills Blvd** interchanges and crossroad intersections will be analyzed using Vissim (version 2022.0 or newer version) software. Note that HCS software will be used to evaluate I-4 mainline managed lane and general-purpose lane under Phase 2. Intersections listed below will be evaluated using Vissim software:

- 1) US 98 at Lakeland Square Mall
- 2) US 98 at Lakeland Park Center Drive
- 3) US 98 Ramp Terminals
- 4) US 98 at Pyramid Parkway
- 5) US 98 at Griffin Road
- 6) N Socrum Loop Road at Lakeland Park Blvd
- 7) N Socrum Loop Road at Old Combee Road
- 8) Lakeland Hills Blvd. at Melody Lane
- 9) N Socrum Loop/Lakeland Hills Blvd Ramp Terminals

Traffic analysis will be performed for existing (year 2022), No-Build (year 2045) and Build (2045) scenarios (both AM and PM peak periods). All the preliminary traffic analysis using HCS, Synchro and Sidra will be performed for all scenarios evaluated, including Existing, No- Build and Build scenarios

11. Calibration Methodology

Existing year VISSIM models will be developed, and the calibration criteria will be adopted from the *FDOT Traffic Analysis Handbook 2021*. Model calibration is achieved by iteratively changing model parameters to replicate the traffic patterns, congestion, bottlenecks, and driver behavior observed within the study area. In the calibration stage, the model measures of effectiveness (MOEs) will be summarized and compared to the 2022 collected data, and field observations.

The calibration parameters will be adjusted iteratively, to ensure that the model reasonably reflects existing field conditions. The model outputs will be compared to the vehicle volumes processed through the system, vehicle speeds, bottlenecks, and observed queues. The model calibration targets shown in Table 7-7 of the *FDOT Traffic Analysis Handbook 2021* will be used. The “raw” AM and PM peak hour traffic volumes will be utilized that have been reviewed and/or adjusted for accuracy to perform the model calibration process.

Calibration of the base microsimulation model will be achieved by satisfying criteria of traffic volumes, travel times (simulated speeds), and field observations of traffic conditions. Calibration targets listed in Table 7-7 of the *Traffic Analysis Handbook* will be utilized for the calibration of traffic volumes and travel times. In terms of field observations, a comparison of modeled and field observed congestion and queues will be performed at critical locations to ensure proper operations. It should be noted that a quantitative comparison of model and real-world queues is not typically required. Due to the stochastic nature of VISSIM simulation models, multiple model runs will be required to check the reasonableness of the calibrated model and establish a certain confidence level for the model results. The computation of the minimum number of required runs

will be based on the guidelines provided in the *FDOT Traffic Analysis Handbook 2021*.

Input data increments (e.g., 15-min), warm-up duration 30 minutes and overall duration of models (four hours and the 2nd hour is the peak hour) will be applied for the calibration.

12. Selection of Measures of Effectiveness (MOE)

Site-specific MOEs to be derived from statics analysis of HCS and Synchro software are listed below:

- Signalized/unsignalized Intersections – Volume, control delay, LOS, maximum queue lengths.
- Freeway Segments – Volume, density, LOS; demand to capacity ratio, speed; and
- Ramp Merge/Diverge – Volume, density, LOS, demand to capacity ratio, speed.

MOEs to be derived from Vissim analysis are listed below:

- Intersections/ interchange performance: LOS, Volume, delay, and average maximum queue length for all movements.
- Travel times and network performance measures

13. Safety Analysis

Historical crash data will be analyzed, mapped, and summarized to identify any locations that may be experiencing higher than normal collision rates (actual rate/calculated rate) as determined by FDOT. Crash rates and other statistics to be included in study documents will be calculated by segment and by interchange. Crash data will be analyzed in accordance with Chapter 2 of the PD&E Manual. Safety needs will be identified based on the crash analysis of existing conditions. Special emphasis will be placed on investigating off-road crashes, hydroplaning crashes, and other potentially preventable crash types in order to identify safety projects that can be implemented in the near-term.

The collision data summary will be provided in tabular and graphical formats, which will include crash location density maps, bicycle/pedestrian crash maps and fatal crash maps. Interchange profiles will be prepared for each of the study interchanges to provide a graphical representation of the existing interchange configuration and geometry, existing operations, and crash locations. The interchange profiles will also include data from the RCI, specific interchange characteristics, crash data review summaries, and estimated crash costs. All crash data maps, tables, figures, and statistics developed will be included in study documents.

Evaluation of project alternatives using crash modification factors (CMFs) will be conducted, where applicable. Short-term and long-term safety improvement recommendations will be developed, where needed. A preliminary, high-level Highway Safety Manual (HSM)-based predictive crash analysis will be conducted and will be used in a benefit/cost analysis to compare the safety performance of the no-build and build scenarios, with a focus on the I-4 mainline segments. Detailed interchange concepts are not anticipated to be available for analysis during the Master Plan development phase. A full HSM-based predictive crash analysis is to be conducted in subsequent project phases/future PD&E Studies.

14. Consistency with Other Plans/Projects

The I-4 PD&E study will maintain consistency with the FDOT Work Program, I-4 interchange improvements at CSX Railroad (bridge replacement), SR 33 interchange modification, SR 557 and SR 559 interchange improvements, and addition of eastbound lane along I-4 from east of US 98 (SR 700) to east of SR 33. Any planned improvements unrelated to this PD&E with construction phases identified in cost feasible plans and due to be in place by the most recently adopted county LRTP horizon years for the travel demand model being used will be incorporated into the future No-Build and Build scenarios.

15. Environmental Considerations

A preliminary assessment of environmental elements will be performed in this Phase 2 in order to identify any potential environmental constraints.

16. Coordination

A review of future network changes and land use growth will be performed as part of the travel demand model's subarea validation, which is an effort being undertaken by the Interstate Program Manager (IPM) for this PD&E project. The Interstate Program Manager (IPM) has summarized and distributed network and land use changes during Phase 1 Traffic Study.

17. Anticipated Design Exceptions and Variations

If an exception/variation should arise for the Build scenario, it will be processed per FHWA and FDOT standards.

18. Conceptual Signing Plan

A conceptual plan will be developed for all viable Project Alternatives.

19. Access Management Plan

The improvement may affect access management within the study area. An access management plan will be developed for the Build scenario to complement the improvements to the interchanges in Phase 2.

20. FHWA Policy Points

The two FHWA Policy Criteria (also known as Policy on Access to the Interstate System) will be specifically addressed under Interchange Access Request Report in next phase of this I-4 Master Plan study.

21. Reports and Documentation

The following documents and reports will be produced:

- Public Involvement Summary Report
- Traffic Analysis Memorandum of Agreement

- Traffic Forecasting Analysis Memorandum
- Facility Enhancement Element
- Facility Operations & Preservation Element
- Existing Conditions Element
- Draft Master Plan Report
- Final Master Plan Report
- Project Priority Table