

FDOT SOURCE BOOK METHODOLOGIES

A TECHNICAL REPORT - 2025

produced by

Florida Department of Transportation Forecasting and Trends Office

**Systems Forecasting
& Trends Office**





THE FDOT SOURCE BOOK METHODOLOGIES

A Technical Report

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Executive Summary

The FDOT Source Book (Source Book) is an easy-to-use compendium of mobility, asset condition, safety, federal and MPO performance data to measure Florida's transportation system performance. The objective of this document is to detail the methodologies developed for the measures and describe the factors presented in the Source Book.

Performance measures provide the consumer with information to draw an understanding of the current and historical state of the system and, in turn, to adapt policies, plans, and programs to help accomplish performance goals. Performance measures are critical for evaluating the system conditions and linking performance to investment decisions and outcomes. The Source Book reports on a robust set of multimodal performance measures to capture the trends for safety, asset condition, and mobility.

Calculation of mobility measures in the Source Book is based on a combination of measured (archived field-measured travel speed data) and modeled results. Most of the data are obtained from existing sources such as the Department's Roadway Characteristics Inventory (RCI), Traffic Characteristics Inventory (TCI), Weigh-in-Motion (WIM), and the archived field-measured travel probe speed data provided by HERE Technologies (HERE) through the Regional Integrated Transportation Information System (RITIS). These data sources provide information on the roadway geometry (such as the number of lanes, posted speed limit, and functional classification), traffic demand (traffic volume and vehicle classification) and field-measured roadway travel speed information.

The full list of multimodal mobility performance measures is shown in **Table ES.1**. Most of these are calculated using the methodologies discussed in this document. **Table ES.2** presents a summary of the calculation routines, methodology, sources and reporting periods for all the measures. **Sections 2.0-4.0** define key inputs and data processing procedures. **Sections 5.0-12.0** document the methodology for computing mobility performance measures. **Sections 13.0 - 15.0** discuss the infrastructure, safety and federal performance measures in sequence.

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Table ES.1 Multimodal Performance Measures

Mobility

Auto

- Vehicle Miles Traveled
- Person Miles Traveled
- Average Travel Speed
- Vehicle Hours of Delay
- Person Hours of Delay
- Planning Time Index
- % Miles by Congestion Level
- Average Speed vs. Posted Speed Limit
- Vehicles per Lane Mile
- Level of Travel Time Reliability

Truck

- Combination Truck Miles Traveled
- Combination Truck Average Speed
- Combination Truck Hours of Delay
- Combination Truck Cost of Delay
- Combination Truck Planning Time Index

Transit

- Transit Passenger Trips
- Transit Revenue Miles
- Passenger Trips per Revenue Mile
- Transit Revenue Miles Between Failures
- Transit Weekday Span of Service

Bicycle

- % Bicycle Facility Coverage
- Non Motorized Counts

Pedestrian

- % Pedestrian Facility Coverage
- Non Motorized Counts

Aviation

- Aviation Passenger Boardings
- Aviation Departure Reliability
- Aviation Tonnage
- Aviation Operations

Rail

- Rail Passengers

Seaport

- Seaport Passenger Movements
- Seaport Tonnage
- Twenty Foot Equivalent Units

Spaceport

- Space Launches and Sites
- Space Payloads

Infrastructure

- Pavement Condition
- Bridge Condition
- Maintenance Condition

Safety

- Number and Rate of Fatalities
- Number and Rate of Serious Injuries
- Motorcyclist Fatalities and Serious Injuries
- Pedestrian Fatalities and Serious Injuries
- Bicyclist Fatalities and Serious Injuries
- Safety Belt Use

Federal Measures

- Safety
- Bridge
- Pavement
- System Performance

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Table ES.2 Summary of Multimodal Performance Measures

MEASURE	DESCRIPTION	CALCULATION	REPORTING PERIOD	SOURCES
MOBILITY MEASURES: AUTO				
Vehicle Miles Traveled	Vehicle miles traveled (VMT) is the mileage traveled by all vehicles on a road system over a period of time such as daily or yearly. It is determined using vehicle traffic volume and segment length.	$\sum_{i=1}^{\# \text{ Segments}} (\text{Segment Length}_i \times \text{Vehicular Traffic Volume}_i)$	■ Peak Hour ■ Daily	■ FDOT – <i>Traffic Characteristics Inventory</i> ■ FDOT – <i>Roadway Characteristics Inventory</i>
Person Miles Traveled	Person Miles Traveled (PMT) is defined as the average miles traveled by a person. It's determined by multiplying VMT by the average vehicle occupancy.	$\sum_{i=1}^{\# \text{ Segments}} (\text{Segment Length}_i \times \text{Vehicular Traffic Volume}_i \times \text{Average Vehicle Occupancy})$	■ Peak Hour ■ Daily	■ FDOT – <i>Traffic Characteristics Inventory</i> ■ FDOT – <i>Roadway Characteristics Inventory</i> ■ FDOT Crash Analysis Reporting System
Average Travel Speed	Average travel speed is the average of all hourly segment travel speeds captured by probe data or modeled through speed-volume functions, weighted by the segment's VMT.	$\frac{\sum_{i=1}^{\# \text{ Segments}} (\text{VMT}_i \times \text{Average Travel Speed}_i)}{\sum_{i=1}^{\# \text{ Segments}} \text{VMT}_i}$ where <i>Average Travel Speed_i</i> $= (\text{HCSpeed}_i \times \% \text{ of travel @ HCSpeed}_i) + (\text{MCSpeed}_i \times \% \text{ of travel @ MCSpeed}_i) + (\text{UCSpeed}_i \times \% \text{ of travel @ UCSpeed}_i)$	■ Peak Hour ■ Peak Period	■ FDOT – <i>Traffic Characteristics Inventory</i> ■ FDOT – <i>Roadway Characteristics Inventory</i> ■ HERE Technologies – <i>Travel Time Data</i>
Vehicle Hours of Delay	Vehicle hours of delay is estimated hourly by determining the difference between actual travel time and the delay threshold travel time along a facility. Delay threshold travel time is the travel time for a motorist during uncongested conditions.	$\sum_{i=1}^{\# \text{ Segments}} ((\text{Travel Time}_i - \text{Threshold Travel Time}_i) \times \text{Vehicular Traffic Volume}_i)$	■ Peak Hour ■ Daily ■ Yearly	■ FDOT – <i>Traffic Characteristics Inventory</i> ■ FDOT – <i>Roadway Characteristics Inventory</i> ■ HERE Technologies – <i>Travel Time Data</i>

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MEASURE	DESCRIPTION	CALCULATION	REPORTING PERIOD	SOURCES
Person Hours of Delay	Person hours of delay is estimated by multiplying the average vehicle occupancy by the vehicle hours of delay.	$\sum_{i=1}^{\# \text{ Segments}} ((\text{Travel Time}_i - \text{Threshold Travel Time}_i) \times \text{Vehicular Traffic Volume}_i)$	■ Peak Hour ■ Daily ■ Yearly	■ FDOT – <i>Traffic Characteristics Inventory</i> ■ FDOT Crash Analysis Reporting System ■ HERE Technologies – <i>Travel Time Data</i>
Planning Time Index	Planning time index is the ratio of the 95 th percentile travel time to the travel time at reference speed defined as the 85 th percentile speed during weekday off-peak hours (9:00 am to 4:00 pm and 7:00 to 10:00 pm). This measure represents the total travel time that a traveler should budget to ensure on-time arrival 95 percent of the time.	$\frac{\text{Travel Time}_{95\text{th percentile}}}{\text{Travel Time}_{\text{reference speed}}}$	■ Peak Hour ■ Peak Period ■ Daily	■ FDOT – <i>Traffic Characteristics Inventory</i> ■ FDOT – <i>Roadway Characteristics Inventory</i> ■ HERE Technologies – <i>Travel Time Data</i>
% Miles by Congestion Level	This measure reports the percent miles of roadway categorized as heavily congested, mildly congested, or uncongested. Each congestion category is based on average travel speeds meeting the corresponding congestion threshold. This measure estimates the percent miles by the three levels of congestion for the reporting periods of peak hour and peak period.	$\frac{\sum_{i=1}^{\# \text{ Segments}} \text{Segment Length whose travel speeds meet congestion threshold}}{\text{Total Segment Length}} \times 100$	■ Peak Hour ■ Peak Period	■ FDOT – <i>Traffic Characteristics Inventory</i> ■ FDOT – <i>Roadway Characteristics Inventory</i> ■ HERE Technologies – <i>Travel Time Data</i>

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MEASURE	DESCRIPTION	CALCULATION	REPORTING PERIOD	SOURCES
Average Speed vs. Posted Speed	This measure is expressed as the ratio of average peak hour speed against the posted speed limit. The output represents the percent of the posted speed limit achieved during the peak hour (5:00 to 6:00 pm on a weekday).	$\frac{\sum_{i=1}^{\# \text{Segments}} \left(VMT_i \times \frac{\text{Peak Hour Speed}_i}{\text{Posted Speed Limit}_i} \right)}{\text{Total VMT}}$	Peak Hour	- FDOT – <i>Traffic Characteristics Inventory</i> - FDOT – <i>Roadway Characteristics Inventory</i> - HERE Technologies – <i>Travel Time Data</i>
Vehicles Per Lane Mile	The vehicles per lane mile is calculated as the summation of each roadway segment's peak hour volume divided by the number of lanes weighted by the aggregate lane miles of each segment.	$\frac{\sum_{i=1}^{\# \text{Segments}} \left(\frac{\text{Volume}_i}{\text{Number of Lanes}_i} \times \text{Lane Miles}_i \right)}{\text{Total Lane Miles}}$	Peak Hour	- FDOT – <i>Traffic Characteristics Inventory</i> - FDOT – <i>Roadway Characteristics Inventory</i>
Level of Travel Time Reliability	This measure is computed as the ratio between the 80 th percentile travel time to the 50 th percentile travel time for each of the following time periods – AM peak, Mid-day, PM peak, and Weekends.	$\frac{\text{Travel Time}_{80\text{th percentile}}}{\text{Travel Time}_{50\text{th percentile}}}$	- AM Peak (6 am to 10 am on Mon-Fri) - Mid-day (10 am to 4 pm on Mon-Fri) - PM Peak (4 pm to 8 pm on Mon-Fri) - Weekends (6 am to 8 pm on Sat, Sun)	HERE Technologies – <i>Travel Time Data</i>
MOBILITY MEASURES: TRUCK				
Combination Truck Miles Traveled	Combination Truck Miles Traveled (CTMT) is computed by multiplying VMT by the truck factor and combination truck factor.	$\sum_{i=1}^{\# \text{Segments}} (VMT_i \times \text{Truck Factor}_i \times \text{Combination Truck Factor}_i)$	Daily	- FDOT – <i>Traffic Characteristics Inventory</i> - FDOT – <i>Roadway Characteristics Inventory</i>

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MEASURE	DESCRIPTION	CALCULATION	REPORTING PERIOD	SOURCES
Combination Truck Average Travel Speed	Combination truck average travel speed is the average of all hourly segment travel speeds captured by probe data or modeled through speed-volume functions. The combination truck average speed is estimated assuming that the free flow speed for automobile is set as the posted speed limit plus 5 mph, and the free flow speed for combination trucks is the posted speed limit.	$\frac{\sum_{i=1}^{\# \text{ Segments}} (CTMT_i \times \text{Combination Truck Average Travel Speed}_i)}{TOTAL \text{ CTMT}}$	Peak Hour	- FDOT – <i>Traffic Characteristics Inventory</i> - FDOT – <i>Roadway Characteristics Inventory</i> - HERE Technologies – <i>Travel Time Data</i>
Combination Truck Hours of Delay	Combination Truck Hours of Delay is estimated on an hourly basis by determining the difference between delay threshold travel time and actual travel time along a facility.	$\sum_{i=1}^{\# \text{ Segments}} (\text{Combination Truck Volume}_i \times (\text{Combination Truck Travel Time}_i - \text{Threshold Travel Time}_i))$	Daily	- FDOT – <i>Traffic Characteristics Inventory</i> - FDOT – <i>Roadway Characteristics Inventory</i> - HERE Technologies – <i>Travel Time Data</i>
Combination Truck Cost of Delay	Cost of delay comes from calculating the average marginal cost of labor per hour and multiplying that by the number of hours of delay for combination trucks.	$\sum_{i=1}^{\# \text{ Segments}} (\text{Combination Truck Hours of Delay}_i \times \text{Average Marginal Cost of Labor Per Hour})$	Yearly	- FDOT – <i>Traffic Characteristics Inventory</i> - FDOT – <i>Roadway Characteristics Inventory</i> - HERE Technologies – <i>Travel Time Data</i> - American Transportation Research Institute (ATRI) – <i>An Analysis of the Operational Costs of Trucking</i>

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MEASURE	DESCRIPTION	CALCULATION	REPORTING PERIOD	SOURCES
Combination Truck Planning Time Index	Combination Truck Planning Time Index is the same as Planning Time Index (PTI), defined as a ratio of the 95th percent peak period/hour travel time to the free flow travel time. This measure represents the additional time that a shipper should budget to ensure on-time arrival 95% of the time.	$\frac{\text{Travel Time}_{95th\ percentile}}{\text{Travel Time}_{reference\ speed}}$	■ Peak Hour ■ Peak Period ■ Daily	■ FDOT – Traffic Characteristics Inventory ■ HERE Technologies – Travel Time Data
MOBILITY MEASURES: TRANSIT				
Transit Passenger Trips	Annual number of passengers boarding transit vehicles. A trip is counted each time a passenger boards a transit vehicle. Thus, each time a passenger transfers between buses to reach a destination, it is counted as a passenger trip.	<i>Number of Passengers Boarding Transit Vehicles</i>	■ Yearly	■ FDOT – Florida Transit Information and Performance Handbook
Transit Revenue Miles	The number of annual miles a transit vehicle travels while in active service (available to pick up revenue passengers).	<i>Miles of Vehicle Operation with Revenue Service</i>	■ Yearly	■ FDOT – Florida Transit Information and Performance Handbook
Transit Passenger Trips Per Revenue Mile	The ratio of annual transit passenger trips to total annual transit revenue miles of service; a key indicator of service effectiveness that is influenced by the levels of demand and the supply of service provided.	$\frac{\text{Annual Transit Passenger Trips}}{\text{Annual Transit Passenger Miles}}$	■ Yearly	■ FDOT – Florida Transit Information and Performance Handbook

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MEASURE	DESCRIPTION	CALCULATION	REPORTING PERIOD	SOURCES
Transit Revenue Miles Between Failures	The number of total annual revenue miles divided by the number of revenue vehicle system failures, an indicator of the average frequency of delays because of a problem with the equipment. A failure is classified as the breakdown of either a major or minor element of the revenue vehicle's mechanical system.	$\frac{\text{Total Annual Revenue Miles}}{\text{Number of Revenue Vehicle System Failures}}$	Yearly	FDOT – Florida Transit Information and Performance Handbook
Transit Weekday Span of Service	The number of hours that transit service is provided on a representative weekday in the operation of the transit agency. This indicator is determined by computing the number of hours between the time service begins and the time service ends for an average weekday.	$\frac{\text{Transit Service Hours during weekdays}}{\text{Number of Transit Modes}}$	Yearly	FDOT – Florida Transit Information and Performance Handbook
MOBILITY MEASURES: PEDESTRIAN/BICYCLE				
% Pedestrian Facility Coverage	The pedestrian facilities include urban non-limited access State Highway System (SHS) with a sidewalk or a shared-use path on either side of a roadway.	$\frac{\text{Pedestrian Facility Miles in Urban Area}}{\text{Non – Limited Access Centerline Miles in Urban Area}} \times 100$	Yearly	FDOT – Roadway Characteristics Inventory
% Bicycle Facility Coverage	Bicycle facilities include non-limited SHS roadway with a paved shoulder ≥ 4' and < 7' or a shared-use path on either side.	$\frac{\text{Bicycle Facility Miles}}{\text{Non – Limited Access Centerline Miles}} \times 100$	Yearly	FDOT – Roadway Characteristics Inventory
Non-Motorized Traffic Counts	- Collected pedestrian and bicycle volume counts from permanent and short-term counters around Florida	$\frac{\text{Number of Bicyclists Crossing a Counter}}{\text{Number of Pedestrians Crossing a Counter}}$	Monthly	FDOT – Statewide Non-Motorized Traffic Monitoring Program

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MEASURE	DESCRIPTION	CALCULATION	REPORTING PERIOD	SOURCES
MOBILITY MEASURES: AVIATION				
Aviation Passenger Boardings	The total number of revenue-generating passengers who board an aircraft at a Florida primary commercial service airport. If a passenger transfers between planes to reach a destination within Florida, the passenger is counted as making two passenger boardings.	<i>Total Enplanements on An Aircraft</i>	■ Yearly	■ U.S. Federal Aviation Administration, Passenger Boarding (Enplanement) and All-Cargo Data for U.S. Airports
Aviation Departure Reliability	A departure is deemed reliable if the flight departs within 15 minutes of the scheduled time shown in the carrier's Computerized Reservations Systems (CRS). In the aviation industry, this is considered an on-time departure. Departure reliability is based on departure from the gate and can be influenced by various factors such as heavy traffic volume, weather, and mechanical reasons beyond the control of the airport or the air carrier. Aviation departure reliability is reported for all commercial service airports.	$\frac{\text{Number of Departures within 15 Minutes of Schedule}}{\text{Number of Departures}} \times 100$	■ Yearly	■ U.S. Department of Transportation, Bureau of Transportation Statistics, Reporting Carrier On-Time Departure
Aviation Tonnage	Aviation tonnage is the weight of all reported air cargo and mail handled at Florida airports, including commercial service, general aviation, and non-military freight movements at military airports.	<i>Total Weight of Mail and Air Cargo Handled at Florida Airports</i>	■ Yearly	■ U.S. Bureau of Transportation Statistics - T100 Market (all Carriers)

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MEASURE	DESCRIPTION	CALCULATION	REPORTING PERIOD	SOURCES
Aviation Operations	Aviation operations is the total annual number of aircraft movements occurring at Florida airports.	<i>Total Annual Aircraft Operations at Florida Airport</i>	■ Yearly	■ FDOT Aviation Office ■ U.S. Federal Aviation Administration, Air Traffic Activity Data System (ATADS)
MOBILITY MEASURES: RAIL				
Rail Passengers	Rail passengers refer to the annual number of revenue-paying rail passengers. For the purpose of this performance measure, rail passengers include those riding on Amtrak as well as inter-regional transit services, such as SunRail and Tri-Rail.	<i>Total Rail Passengers on Amtrak, SunRail and Tri – Rail</i>	■ Yearly	■ Amtrak – Amtrak Fact Sheet ■ SunRail, Tri-Rail – FDOT Public Transit Office
MOBILITY MEASURES: SEAPORT				
Seaport Passenger Movements	Seaport passenger movements refer to passengers embarking and disembarking a cruise ship at a Florida seaport. For example, when a cruise passenger departs on a cruise ship from PortMiami, they are counted. When the same cruise passenger arrives back at PortMiami, they are counted again.	<i>Total Cruise Passengers Embarking and Disembarking a Cruise Ship at Florida Seaports</i>	■ Yearly	■ FDOT Seaport Office
Seaport Tonnage	International and domestic waterborne tons of cargo handled at Florida's public seaports.	<i>Total Cargo Tonnage Handled at Florida's Public Seaports</i>	■ Yearly	■ FDOT Seaport Office

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MEASURE	DESCRIPTION	CALCULATION	REPORTING PERIOD	SOURCES
Seaport Twenty-Foot Equivalent Units	Twenty-foot equivalent unit (TEU) represents the cargo capacity of a standard intermodal container, twenty feet long and eight feet wide. It is the standardized unit of the capacity of a container ship, or a container terminal.	<i>Total Twenty – Foot Equivalent Units</i>	■ Yearly	■ FDOT Seaport Office
MOBILITY MEASURES: SPACEPORT				
Space Launches	Space launches account for all the successful mission launches from Cape Canaveral Spaceport, aside from any test flights.	<i>Total Successful Orbital Launches</i>	■ Yearly	■ Space Florida
Active Launch Sites in Florida	Launch sites include active launch sites at Florida's civilian and military spaceports.	<i>Total Active Launch Sites</i>	■ Yearly	■ Space Florida
Space Payloads	The space payloads describe the amount of military, civil, and commercial cargo launched into space. Payloads may include cargo, a flight crew, scientific experiments, munitions, or other equipment.	<i>Total Civil, Commercial and DoD payloads</i>	■ Yearly	■ Space Florida
Payload Weight in Orbit	Payload weight represents weight being sent to orbit through Florida's spaceports.	<i>Total Pounds in Orbit</i>	■ Yearly	■ Space Florida

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MEASURE	DESCRIPTION	CALCULATION	REPORTING PERIOD	SOURCES
INFRASTRUCTURE PERFORMANCE MEASURES				
Pavement Condition	The state of pavement in terms of ride quality, crack extent and severity, and average depth of wheel-path ruts through FDOT's annual pavement condition survey.	$\frac{\text{SHS Miles with Pavement Meeting FDOT Standards}}{\text{Total Pavement Miles on the SHS}} \times 100$	■ Yearly	■ FDOT State Materials Office
Bridge Condition	The state of a bridge is based on a 0 to 9 scale with 0 indicating a failed condition and 9 indicating an excellent condition. Target Bridge Condition is percent of bridges on the SHS meeting FDOT standards (90%) with a National Bridge Inventory (NBI) rating of 6 or higher.	$\frac{\text{Number of FDOT-Maintained Bridges on the SHS with NBI} \geq 6}{\text{Number of FDOT-Maintained Bridges on the SHS}} \times 100$	■ Yearly	■ FDOT Office of Maintenance
Maintenance Condition	Maintenance condition is determined by evaluating each of the following five highway components: roadway, roadside, traffic services, drainage, and vegetation/aesthetics.	The evaluation process consists of three main steps: • Step 1 – Element Scoring; • Step 2 – Facility Type Scoring; and • Step 3 – All Facility Types Scoring. The All Facility Types Score is compared with the Department's maintenance rating standard of 80. The ratio of the achieved score to 80 is expressed as a percentage, representing the final maintenance condition.	■ Yearly	■ FDOT Office of Maintenance

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MEASURE	DESCRIPTION	CALCULATION	REPORTING PERIOD	SOURCES
SAFETY PERFORMANCE MEASURES				
Number of Fatalities	The total number of fatalities on Florida's roadways as a direct result of a traffic crash within thirty days of the crash occurrence.	<i>Number of People Killed Due to Traffic Crashes</i>	■ Yearly	- Florida Department of Highway Safety and Motor Vehicles – Traffic Crash Facts Annual Report for 2018-2021 data - FDOT State Safety Office – Signal Four (S4) Analytics database as of November 15, 2023 for 2022 data; S4 database as of March 1 of the following year starting 2023
Number of Serious Injuries	The number of disabling/incapacitating injuries from traffic crashes that prevent the injured individuals from engaging in normal activities and which usually require transport to a medical facility and hospitalization.	<i>Number of People Seriously Injured Due to Traffic Crashes</i>	■ Yearly	- Florida Department of Highway Safety and Motor Vehicles – Traffic Crash Facts Annual Report for 2018-2021 data - FDOT State Safety Office – Signal Four Analytics database as of November 14, 2023 for 2022 data; S4 database as of March 1 of the following year starting 2023

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MEASURE	DESCRIPTION	CALCULATION	REPORTING PERIOD	SOURCES
Rate of Fatalities	The total number of fatalities on Florida's roadways per 100 million VMT.	$\frac{\text{Annual Fatalities}}{\text{Annual VMT}} \times 100 \text{ million}$	Yearly	- Florida Department of Highway Safety and Motor Vehicles – Traffic Crash Facts Annual Report for 2018-2021 data - FDOT State Safety Office – <i>Signal Four Analytics</i> database as of November 14, 2023 for 2022 data; S4 database as of March 1 of the following year starting 2023
Rate of Serious Injuries	The total number of serious injuries (non-fatal) on Florida's roadways per 100 million VMT.	$\frac{\text{Annual Total Serious Injuries}}{\text{Annual VMT}} \times 100 \text{ million}$	Yearly	- Florida Department of Highway Safety and Motor Vehicles – Traffic Crash Facts Annual Report for 2018-2021 data - FDOT State Safety Office – Signal Four Analytics database as of November 14, 2023 for 2022 data; S4 database as of March 1 of the following year starting 2023

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MEASURE	DESCRIPTION	CALCULATION	REPORTING PERIOD	SOURCES
Motorcyclist Fatalities and Serious Injuries	These safety measures capture the number of fatalities and incapacitating injuries of both motorcyclists and their passengers.	<i>Number of Motorcyclist and Passenger Fatalities</i> <i>Number of Motorcyclist and Passenger Serious Injuries</i>	Yearly	- Florida Department of Highway Safety and Motor Vehicles – Traffic Crash Facts Annual Report for 2018-2021 data - FDOT State Safety Office – Signal Four Analytics database as of November 14, 2023 for 2022 data; S4 database as of March 1 of the following year starting 2023
Pedestrian Fatalities and Serious Injuries	This measure is the total number of pedestrian fatalities and serious injuries (incapacitating) that are reported on Florida's public roads.	<i>Number of Pedestrians Killed from Traffic Crashes</i> <i>Number of Pedestrians Serious Injured (Incapacitated) from Traffic Crash</i>	Yearly	- Florida Department of Highway Safety and Motor Vehicles – Traffic Crash Facts Annual Report for 2018-2021 data - FDOT State Safety Office – Signal Four Analytics database as of November 14, 2023 for 2022 data; S4 database as of March 1 of the following year starting 2023

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MEASURE	DESCRIPTION	CALCULATION	REPORTING PERIOD	SOURCES
Bicycle Fatalities and Serious Injuries	The total number of bicyclist and passenger fatalities and serious injuries (incapacitating) on all of Florida's roadways.	$\frac{\text{Number of Bicyclists and Passengers Killed from from Traffic Crashes} + \text{Number of Bicyclists and Passengers Seriously Injured (Incapacitated) from Traffic Crashes}}{\text{Total Observations}} \times 100$	Yearly	- Florida Department of Highway Safety and Motor Vehicles – Traffic Crash Facts Annual Report for 2018-2021 data - FDOT State Safety Office – Signal Four Analytics database as of November 14, 2023 for 2022 data; S4 database as of March 1 of the following year starting 2023
Safety Belt Usage	A field survey of a one-hour observation at each of the 165 selected sites across 15 counties.	$\frac{\text{Number of Observed Safety-Belt-Using Drivers and Passengers}}{\text{Total Observations}} \times 100$	Yearly	- Florida Department of Highway Safety and Motor Vehicles – Traffic Crash Facts Annual Report for 2018-2021 data - FDOT State Safety Office – Signal Four Analytics database as of November 14, 2023 for 2022 data; S4 database as of March 1 of the following year starting 2023

1.0 Use of Probe Data in the Source Book

The FDOT Source Book (Source Book) uses field-measured travel speed data, provided by HERE Technologies through the Regional Integrated Transportation Information System (RITIS) at the University of Maryland's Center for Advanced Transportation Technology Laboratory (CATT Lab), for all its speed-based measures. The field-measured travel speed data covers most of the State Highway System (SHS), Strategic Intermodal System (SIS), and National Highway System (NHS) roadways. Where the speed data does not cover the SHS or NHS, the reported mobility measures for the Source Book are calculated based on speeds estimated from speed-volume functions. The modeled and field-measured travel speeds are described below:

Modeled Mobility Measures Calculations: Mobility measures are first calculated without using field-measured travel speed data. Speeds for each roadway segment are estimated using the traffic volume data and speed-volume functions discussed in **Section 4.6.2**.

Field Mobility Measures Calculations: Mobility measures are calculated using field-measured travel speed data and traffic volume data. Since some measures are not dependent on travel speeds, the method for applying modeled and field-measured travel speeds is only applicable to the following measures:

- Average Travel Speed: Auto and Combination Truck
- Average Speed vs. Posted Speed Limit: Auto
- Vehicle Hours of Delay: Auto and Combination Truck
- Person Hours of Delay: Auto
- Planning Time Index: Auto and Combination Truck
- % Miles by Congestion Level: Auto

2.0 Source Book Segmentation

Roadway segmentation is developed to create appropriate segment lengths for analysis purposes. On an annual basis, Source Book segmentation is revisited to ensure accuracy. Source Book segments are updated when roads are removed from or added to the State Highway System and National Highway System. Segmentation also changes to accommodate new attributes, if needed. Details for the segment consolidation are discussed below. The Source Book uses a uniform approach to segmenting arterial, highway, and freeway facilities for all speed-related measures.

For all years of data, roadways are segmented and consolidated from the RCI Top 30 table.¹ The segment consolidation is only completed on adjacent segments with the same roadway characteristics listed below:

- Roadway ID
- Number of Lanes
- Annual Average Daily Traffic (AADT)
- Posted Speed Limit
- County
- Context Classification
- State Highway System (SHS)
- National Highway System (NHS)
- Strategic Intermodal System (SIS)

In 2023, data on specific managed lanes (such as I-95, I-75, and SR 826) became available. These express lanes were examined and included in the Source Book, starting with the 2024 edition after assessing input availability. The travel speed data is only available for a limited number of managed lanes. Due to the data limitation, the Source Book only reports volume related measures for managed lanes. Similarly, frontage/service roads are included in the overall volume-related performance reporting to provide a comprehensive representation of corridor activity, but they are excluded from speed-related performance measures due to differences in operational characteristics and data consistency.

¹ For more information, see section 8.3.5 of RCI Handbook at https://ftp.fdot.gov/public/file/i9i09RG8GkK4hWk_IQSCiA/FDOT_RCI_Handbook_Chapter_8.pdf

3.0 Intermediate Calculation Routines

The intermediate calculation routines used by multiple measures in the Source Book are discussed below.

3.1 Context Classification (Class)

FDOT has adopted a roadway classification system comprised of nine context classifications for all state roadways to ensure that all roadway projects are context-sensitive and consider the needs of all users, as outlined in the FDOT [Context Classification Guide](#). The context classification denotes the criteria for roadway design elements for streets that promote safety, mobility, economic development, and quality of life. All state facilities will be evaluated and assigned a preliminary current context classification. Preliminary context classifications are captured within RCI Feature 126 and Initially assigned by each FDOT district to each roadway segment. For final context classification to be used at the project level, contact the [District Complete Streets Coordinator](#). This feature (Feature 126) is adopted in the Source Book. **Table 3.1** defines each context class along with the assigned number.

Table 3.1 Context Classification

CLASSIFICATION	DEFINITION
C1-Natural	Lands preserved in a natural or wilderness condition, including lands unsuitable for settlement due to natural conditions.
C2-Rural	Sparsely settled lands, may include agricultural land, grassland, woodland, and wetlands.
C2T-Rural Town	Small concentrations of developed areas immediately surrounded by rural and natural areas; includes many historic towns.
C3R-Suburban Residential	Mostly residential uses within large blocks and a disconnected/sparse roadway network.
C3C-Suburban Commercial	Mostly non-residential uses with large building footprints and large parking lots. Buildings are within large blocks and a disconnected/sparse roadway network.
C4-Urban General	Mix of uses set within small blocks with a well-connected roadway network. The roadway network usually connects to residential neighborhoods immediately along the corridor and/or behind the uses fronting the roadway.
C5-Urban Center	Mix of uses set within small blocks with a well-connected roadway network. Typically concentrated around a few blocks and identified as part of the civic or economic center of a community, town, or city.
C6-Urban Core	Areas with the highest densities and building heights, and within FDOT classified Large Urbanized Areas (population > 1,000,000). Many are regional centers and destinations. Buildings have mixed uses, are built up to the roadways, and are within a well-connected roadway network.
LA-Limited Access	Roadways with grade separation and limited access such as Interstates and Expressways.

3.2 Urban Area and MPO/TPO Boundaries

Every ten years, following every U.S. Decennial Census, there are two primary changes that affect the Source Book: the urban area boundaries and the Metropolitan Planning Organization (MPO)/Transportation Planning Organization (TPO) boundaries. With respect to the first one, FDOT leads the process to coordinate a review of its defined Urban Area Boundaries and the Federal Functional Classification of Florida's roadways. When the U.S. Census Bureau and Federal Highway Administration (FHWA) released the 2020 Urban Area Boundaries in early 2023, FDOT coordinated with local partners and the FHWA to review and adjust the U.S. Census Urban Area Boundaries for transportation planning purposes, often called "FDOT FHWA Smoothed Urban Boundaries". For more information, please visit [Urban Area Boundary and Functional Classification Update Process](#). Urban classifications are captured within RCI Feature 124 (URBSIZE and URAREA), which were used in the creation of the Source Book.

The MPO/TPO Boundaries were adjusted based on the population changes reflected in the 2020 U.S. Census. The changes were officially implemented in August 2024 through the adopted Apportionment Plans for each MPO/TPO that were approved by Florida's Governor. MPO/TPO boundaries are captured within RCI Feature 124 (MPOAREA), which were used in the development of the Source Book. The Source Book excludes the Alabama section of the Florida-Alabama TPO.

Five MPOs changed their boundaries after the Census Bureau updated the urban area boundaries. The changes include the following:

- Gainesville & Alachua County Transportation Planning Organization (GACTPO) now encompasses all of Alachua County.
- Indian River County MPO includes all of Indian River County.
- Volusia-Flagler TPO now comprises of the entire counties of Volusia & Flagler.
- Florida-Alabama TPO has expanded slightly.
- Okaloosa-Walton TPO has extended its boundary.

3.3 D Factors

The directional factor, or D factor, is the percentage of the hourly volume in the predominant direction. For the mobility measures calculations, directional Annual Average Daily Traffic (AADTs), when available, are used to estimate traffic volume in both the peak (with highest directional AADT) and off-peak directions. When the directional AADTs are not available, D factors are applied to the AADT to assign directional volumes.

For those roadway segments without directional AADTs in the calculations, peak and off-peak directional volumes are estimated with the assigned D factors based on lane equality, time of day and context classification. Specifically, D factors are assigned based on the criteria summarized in **Table 3.2**.

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Measures that use a D factor are identified below:

- Average Travel Speed
- % Miles by Congestion Level
- Vehicle Hours of Delay
- Person Hours of Delay

Table 3.2 D Factors

LANE EQUALITY	CONTEXT CLASS ²	TIME PERIOD	D FACTOR
One-Way	All	All	100%
Equal number of lanes in both travel directions	C1	5 – 6 p.m.	64%
		All others	57%
	C2	5 – 6 p.m.	63%
		All others	56%
	C2T	5 – 6 p.m.	64%
		All others	57%
	C3C	5 – 6 p.m.	63%
		All others	56%
	C3R	5 – 6 p.m.	63%
		All others	56%
	C4	5 – 6 p.m.	63%
		All others	56%
	C5	5 – 6 p.m.	63%
		All others	56%
	C6	5 – 6 p.m.	62%
		All others	55%
	LA	All	55%
Unequal number of lanes in both travel directions	All	All	Max (55% ³ , D factor from TCI)

3.4 Hourly Factors

The FDOT Transportation Data and Analytics Office (TDA) compiles Florida continuous traffic data every year. To achieve the hourly factors (i.e., the ratio of hourly volumes to daily volumes) for each context class, 2019

² For more information on context classification, please visit: [Context Classification Guide 2022 lo-res.pdf \(nflr2.com\)](#)

³ If D factor is not available in the RCI database, then D factor = 55% is used

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and 2021 traffic data were obtained from FDOT telemetered and portable traffic monitoring sites. Hourly factors are applied to daily volume to obtain hourly volume for each segment. Thus, the results for the Source Book are affected by the hourly factor used.

In addition, a set of weekend hourly factors is used to better represent traffic volumes on Saturdays and Sundays (see Section 4.5 below). [Appendix A](#) contains the weekday and weekend hourly factors for all context classifications.

Performance measures that use an hourly factor are identified below:

- Average Travel Speed
- % Miles by Congestion Level
- Person Hours of Delay
- Person Miles Traveled
- Planning Time Index
- Vehicle Hours of Delay
- Vehicle Miles Traveled
- Vehicles per Lane Mile

3.5 Day of Week Variance

Traffic data gathered from FDOT count sites provides volumes for weekdays, Saturdays, and Sundays. Typically, roadways have higher volumes on weekdays, lower volumes on Saturdays, and even lower volumes on Sundays. There are occasional deviations from this pattern, but the volume data consistently demonstrates this traffic pattern. To incorporate day of week variance, factors are developed for weekdays, Saturdays, and Sundays, allowing for a more precise representation of overall traffic conditions. **Table 3.3** summarizes the day of week variance for volumes used in the Source Book.

Table 3.3 Day of Week Variance Factors

WEEKDAY	SATURDAY	SUNDAY
106%	92%	78%

Note: The application of day of week variance factors does not change the annual average daily traffic (i.e., the weighted-average of factors is equal to 100%).

For peak hour and peak period performance measures, only the weekday traffic volumes and results are used. For measures reported on a daily basis, a seven-day average was calculated by weighting the weekday (5x), Saturday (1x), and Sunday (1x) results. Measures that are reported daily and weighted by vehicle miles traveled (VMT) (e.g., average travel speed) give additional importance to weekday results and less importance to weekend results, as there are not only more weekdays than weekend days but also traffic volumes (and thus, VMT) are higher on weekdays. [Appendix B](#) presents a flowchart of the day of week variance computation routine used in the Source Book calculations.

Measures that use day of week variance are identified below:

- Average Travel Speed
- Person Hours of Delay
- Person Miles Traveled
- Planning Time Index
- Vehicle Hours of Delay
- Vehicle Miles Traveled
- Vehicles Per Lane Mile

3.6 Vehicle Occupancies

Vehicle Occupancy Factors (VOFs), also referred to as average vehicle occupancies or vehicle occupancy rates, are estimates of the average number of occupants in a single vehicle. In the Source Book, the vehicle occupancies are taken from the 2022 [FDOT Vehicle Occupancy Factor and Transit Occupancy Factor Calculation Technical Report](#) that adopted the FHWA methodology ([Appendix C](#)). Using crash records that are readily available to FDOT, the approach extracted vehicle occupants' information from the Crash Analysis Reporting System (CARS) and inferred the average vehicle occupancy for the entire population by accounting for estimation bias and the representation of occupant types in crash data.

Measures that use vehicle occupancies are identified below:

- Person Hours of Delay
- Person Miles Traveled

3.7 Travel Speeds

Field-measured HERE data are used to estimate speeds for the Source Book measures. Model calculations are used to estimate speeds for segments that have no HERE coverage.

3.7.1 Field Mobility Measures' Calculations: Field-Measured Speeds

Speed-volume functions were used historically to compute measures. Travel speeds are obtained from field-measured data provided by HERE rather than the speed-volume functions. For each Source Book roadway segment, field-measured travel speeds are obtained in 15-minute increments from the archive of the real-time HERE speeds between January 1 and December 31 of the corresponding year. HERE removed outliers and provided imputation where there were not enough observations.

The following processes are conducted to conflate HERE speeds to the RCI segmentation:

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- A data repository and analytical tool, developed by the Regional Integrated Transportation Information System (RITIS) at the University of Maryland, receives FDOT-purchased real-time data feeds through an XML file.
- These “uncapped speeds”, from the archived real-time dataset, are averaged to create 15-minute travel speeds per the Traffic Message Channel (TMC) and downloaded as a text file.
- TMC segments are conflated to the Source Book segmentation along FDOT’s Linear Referencing System using conflation process built upon the one developed by FDOT’s State Safety Office.
- Source Book segments’ speeds are calculated.

The resulting dataset contains directional speeds in 15-minute increments for the Source Book segmentation. This dataset is used to compute Planning Time Index while the rest of the speed-based measures use an aggregated dataset that summarizes speeds by hour, direction, day type, and congestion threshold. For segments where field-measured speeds are not available, speeds calculated from the speed-volume functions are used.

The **day type** criteria classify days into four types: regular weekdays, Saturdays, Sundays, and holidays. These holidays are excluded from speed calculations:

- New Year’s Day
- Martin Luther King, Jr. Day
- Memorial Day
- Independence Day
- Labor Day
- Veterans Day
- Thanksgiving Day
- Day after Thanksgiving Day
- Christmas Day

The **congestion threshold** criteria identify speed ranges applicable for Heavily Congested (HC), Mildly Congested (MC), and Uncongested (UC) travel conditions based on the segment’s area and roadway type, as shown in the table below.

Table 3.4 Speed Ranges for Congestion Threshold

Free Flow Speed (FFS) is defined as the 85th percentile of speeds during overnight hours (10:00 p.m. to 5:00 a.m.) on all days.

AREA TYPE	ROADWAY TYPE	HEAVILY CONGESTED	MILDLY CONGESTED	UNCONGESTED
Urbanized Areas	Arterial PSL $\leq$ 35 mph	$\leq$ 13 mph	> 13 and ≤ 22 mph	> 22 mph
	Arterial PSL $\geq$ 40 mph	$\leq$ 18 mph	> 18 and ≤ 31 mph	> 31 mph
	Two-Lane Highway	$\leq 66.7\%$ of FFS	$> 66.7\%$ and $\leq 83.3\%$ of FFS	$> 83.3\%$ of FFS
	Multilane Highway	$\leq 66.7\%$ of FFS	$> 66.7\%$ and $\leq 83.3\%$ of FFS	$> 83.3\%$ of FFS
	Freeway (PSL $\leq$ 50 mph)	$\leq 66.7\%$ of FFS	$> 66.7\%$ and $\leq 83.3\%$ of FFS	$> 83.3\%$ of FFS

AREA TYPE	ROADWAY TYPE	HEAVILY CONGESTED	MILDLY CONGESTED	UNCONGESTED
Urbanized area	Freeway (PSL 55 mph)	≤ 45 mph	> 45 and ≤ 50 mph	> 50 mph
	Freeway (PSL 60 mph)	≤ 45 mph	> 45 and ≤ 55 mph	> 55 mph
	Freeway (PSL 65 mph)	≤ 45 mph	> 45 and ≤ 60 mph	> 60 mph
	Freeway (PSL 70 mph)	≤ 45 mph	> 45 and ≤ 65 mph	> 65 mph
Non-Urbanized Areas	Arterial PSL ≤ 35 mph	≤ 17 mph	> 17 and ≤ 22 mph	> 22 mph
	Arterial PSL ≥ 40 mph	≤ 23 mph	> 23 and ≤ 31 mph	> 31 mph
	Two-Lane Highway	$\leq 66.7\%$ of FFS	$> 66.7\%$ and $\leq 83.3\%$ of FFS	$> 83.3\%$ of FFS
	Multilane Highway	$\leq 66.7\%$ of FFS	$> 66.7\%$ and $\leq 83.3\%$ of FFS	$> 83.3\%$ of FFS
	Freeway (PSL ≤ 55 mph)	$\leq 66.7\%$ of FFS	$> 66.7\%$ and $\leq 83.3\%$ of FFS	$> 83.3\%$ of FFS
	Freeway (PSL 60 mph)	≤ 50 mph	> 50 and ≤ 55 mph	> 55 mph
	Freeway (PSL 65 mph)	≤ 50 mph	> 50 and ≤ 60 mph	> 60 mph
	Freeway (PSL 70 mph)	≤ 50 mph	> 50 and ≤ 65 mph	> 65 mph
	Freeway (PSL 75 mph)	≤ 50 mph	> 50 and ≤ 70 mph	> 70 mph

Note: PSL = Posted Speed Limit

3.7.2 Modeled Mobility Measures Calculations: Speed-Volume Functions

As mentioned previously, speed-volume functions are only used in calculating the modeled mobility measures. The speed-volume functions are applied as follows:

- **Freeway travel speeds** are calculated using the Modified Davidson curve for both under-saturated and over-saturated conditions (see [Appendix D](#)). A comparison of the performance of different speed-flow functions in the Orlando Urban Area Transportation Study (OUATS) travel demand model suggests that the modified Davidson equation has the highest average coefficient of determination (R^2) out of the study functions. The minimum speed is set at 10 mph.
- **Arterial travel speeds** are calculated using different methodologies for under-saturated and over-saturated conditions (see [Appendix E](#)).
 - For under-saturated conditions (demand less than capacity), operating speeds are calculated based on the latest set of Generalized Service Volume Tables ([Appendix F](#)).
 - For over-saturated conditions (demand greater than capacity), a Bureau of Public Roads (BPR) curve (with Greater Treasure Coast Regional Planning Model parameters) is used to determine average travel speed given vehicle volume and segment capacity. The BPR curve is calibrated such that the $V/C = 1.0$ speed matches the Generalized Service Volume Tables LOS E speed. The $V/C = 2.0$ speed is set at a minimum of 7 mph.

- **Two-lane highway travel speeds** are calculated assuming a linear relationship between speed and flow according to the Highway Capacity Manual 6th Edition (HCM). Chapter 15: Two-Lane Highways of the HCM provides guidance on estimating average speeds on two-lane highways. The minimum speed is set at 10 mph (see [Appendix G](#)).

The following description summarizes the speed estimation technique.

Step 1: Obtain Hourly Directional Vehicle Volume

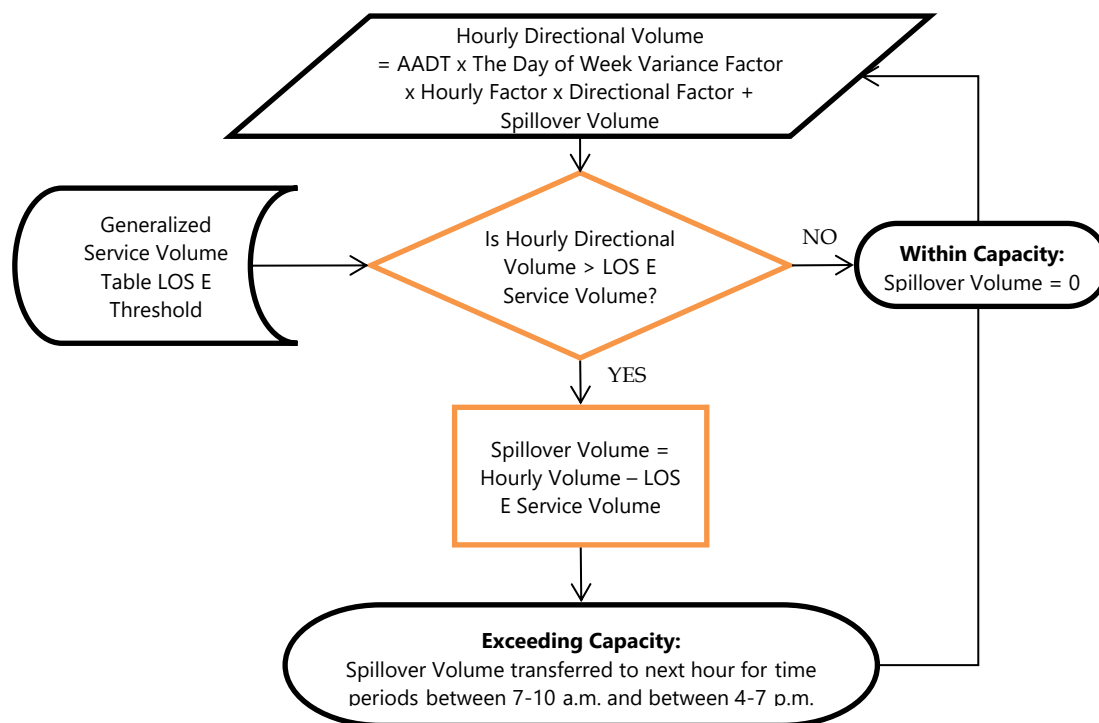
Daily volume is obtained from TDA's AADT dataset. For purposes of estimating speed, AADT is first converted to hourly directional volumes, based on the day of week variance factor, updated hourly factor and directional factor presented in the appendices.

Step 2: Adjust for Spillover

Hourly vehicle volumes calculated from Step 1 are adjusted to consider queuing that occurs under saturated flow conditions. For each hour between 7:00 a.m. and 10:00 a.m. and between 4:00 p.m. and 7:00 p.m. where saturated conditions exist, it is assumed that the unserved part of the queue will spill back to the next hour. This unserved demand is added to the volume of the next hour and this total volume is used to calculate speed. The process is repeated until demand (including that from previous hour(s)) is less than the capacity.

Figure 3.1 presents the algorithm in a flowchart graphical format.

Figure 3.1 Queue Spillover Algorithm



Step 3: Determine Whether Undersaturated or Oversaturated Conditions Prevail

The adjusted hourly volumes computed in Step 2 are compared with capacities obtained from the Generalized Service Volume Tables ([Appendix H](#)). If the volume is greater than the capacity, the oversaturated condition is assumed.

Step 4: Select Appropriate Travel Speed Estimation Technique

A speed estimation technique is then chosen based on the facility type and whether the facility is operating within capacity or over capacity. **Figure 3.2**, **Figure 3.3** and **Figure 3.4** provide a summary of the estimation techniques that are used in the Source Book for the modeled mobility measures calculations.

Figure 3.2 Estimation of Average Travel Speed on Freeways

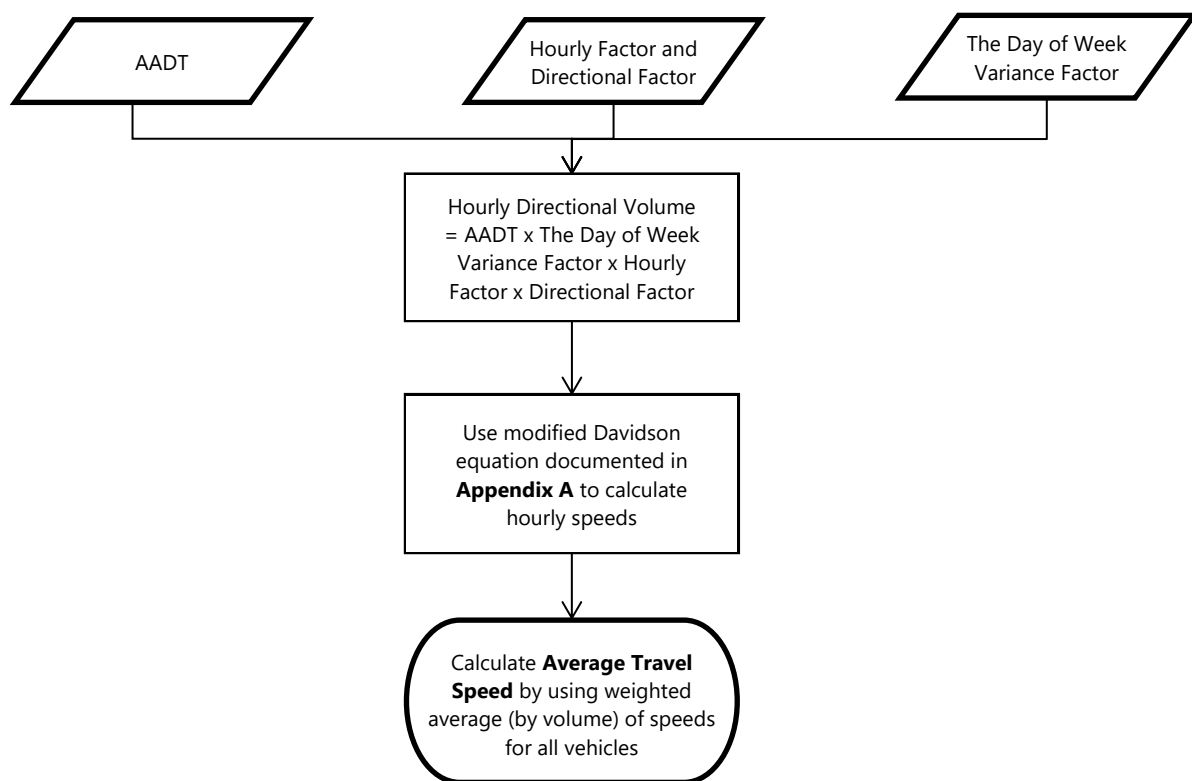


Figure 3.3 Estimation of Average Travel Speed on Arterials

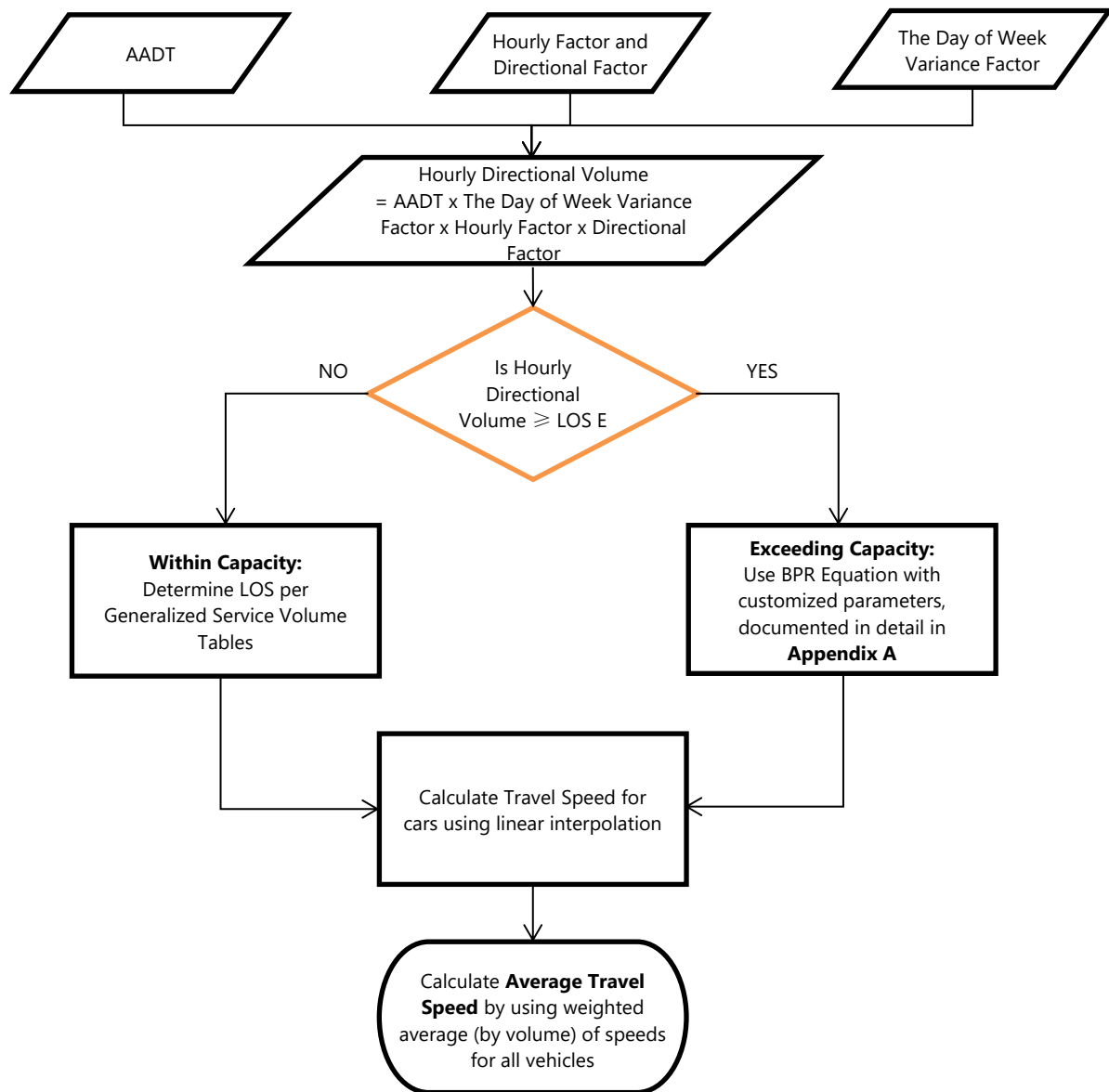
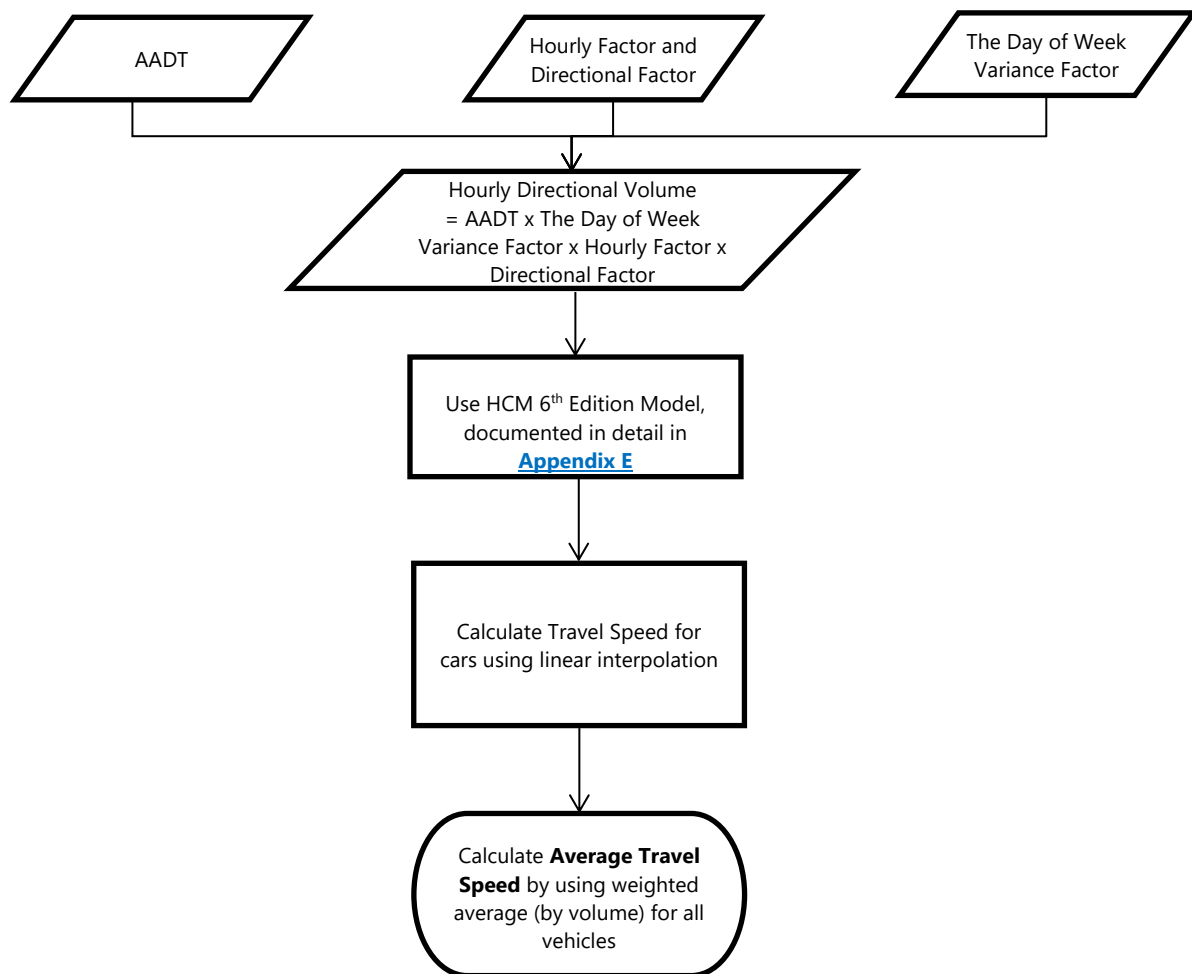


Figure 3.4 Estimation of Average Travel Speed on Two-Lane Highways



3.8 Peak Hour vs Peak Period

Peak Hour is defined as 5:00 p.m. to 6:00 p.m. on a weekday for all context classes. This hour is chosen to allow consistent comparisons among transportation modes. It may not be the hour of greatest travel for any given roadway, mode, or area.

Peak Period is defined as 4:00 p.m. to 6:00 p.m. on a weekday for all context classes.

The peak hour was selected to best align with the typical peak hour used in planning, design, and construction. The peak period represents the additional time where traffic volumes remain exceedingly high.

4.0 Mobility Measures: Auto

The calculation methodology for each individual auto mobility measure is discussed in this section.

4.1 Vehicle Miles Traveled

The following steps describe the process used to obtain Vehicle Miles Traveled (VMT) on a single segment:

Step 1: Obtain Daily and Peak Hour Vehicle Volume

Daily vehicle volume is represented by the Annual Average Daily Traffic (AADT), while the peak hour volume is the product of the AADT volume and the hourly factor for the time period 5:00 p.m. to 6:00 p.m.

Step 2: Obtain Vehicle Miles Traveled (VMT)

VMT is determined using vehicle traffic volume and segment length. The number of vehicle-miles traveled is based on data obtained from FDOT's traffic monitoring sites and Roadway Characteristics Inventory (RCI) Features 111 and 147. VMT is equal to the product of the daily or hourly volume and the roadway's length in miles as shown in **Equation 1**:

Equation 1

$$VMT = \sum (Segment\ Length \times Vehicular\ Traffic\ Volume)$$

Data Sources

- FDOT Transportation Data and Analytics Office, *Traffic Characteristics Inventory*
- FDOT Transportation Data and Analytics Office, *Roadway Characteristics Inventory*

4.2 Person Miles Traveled

Person Miles Traveled (PMT) is computed by multiplying VMT by the average vehicle occupancy. Average vehicle occupancies in the Source Book were developed for each individual county in 2022 in the [FDOT Vehicle Occupancy Factor and Transit Occupancy Factor Calculation Technical Report](#) (see **Table 4.1**) with data from the Crash Analysis Reporting System. PMT was computed using **Equation 2**:

Equation 2

$$PMT = \sum Segment\ Length \times Vehicular\ Traffic\ Volume \times Average\ Vehicle\ Occupancy$$

Data Sources

- FDOT Transportation Data and Analytics Office, *Traffic Characteristics Inventory*
- FDOT Transportation Data and Analytics Office, *Roadway Characteristics Inventory*
- FDOT Crash Analysis Reporting System

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Table 4.1 Average Vehicle Occupancies

COUNTY	OCCUPANCY	COUNTY	OCCUPANCY	COUNTY	OCCUPANCY
Alachua	1.74	Hardee	1.78	Okeechobee	1.89
Baker	1.91	Hendry	1.81	Orange	1.69
Bay	1.64	Hernando	1.73	Osceola	1.72
Bradford	1.76	Highlands	1.72	Palm Beach	1.55
Brevard	1.63	Hillsborough	1.69	Pasco	1.63
Broward	1.50	Holmes	1.76	Pinellas	1.54
Calhoun	1.54	Indian River	1.70	Polk	1.67
Charlotte	1.67	Jackson	1.77	Putnam	1.68
Citrus	1.68	Jefferson	1.70	Saint Johns	1.65
Clay	1.42	Lafayette	1.69	Saint Lucie	1.63
Collier	1.71	Lake	1.49	Santa Rosa	1.56
Columbia	1.81	Lee	1.65	Sarasota	1.74
DeSoto	1.85	Leon	1.62	Seminole	1.52
Dixie	1.79	Levy	1.78	Sumter	1.66
Duval	1.54	Liberty	1.69	Suwannee	1.80
Escambia	1.58	Madison	1.65	Taylor	1.67
Flagler	1.70	Manatee	1.66	Union	1.66
Franklin	1.51	Marion	1.76	Volusia	1.65
Gadsden	1.66	Martin	1.71	Wakulla	1.69
Gilchrist	1.74	Miami-Dade	1.52	Walton	1.76
Glades	1.73	Monroe	1.84	Washington	1.69
Gulf	1.57	Nassau	1.78	FLORIDA	1.68
Hamilton	1.73	Okaloosa	1.61		

Source: FDOT Vehicle Occupancy Factor and Transit Occupancy Factor Calculation Technical Report

4.3 Average Travel Speed

Field-measured data are used to capture the average speed for most segments for the Source Book. However, speed-volume functions are used to capture speeds where the probe data network has no coverage. Field-measured travel speeds are obtained from HERE, downloaded at the granular level. The granular level field-measured speeds are aggregated for each Source Book segment by hour, direction, day type, and congestion thresholds (i.e., heavily congested (HC), mildly congested (MC), and uncongested (UC) – see **Table 3.4**). The following equation is used to calculate the average travel speed:

$$\text{Average Travel Speed} = \frac{\sum_{i=1}^{\# \text{ Segments}} (VMT_i \times \text{Average Travel Speed}_i)}{\sum_{i=1}^{\# \text{ Segments}} VMT_i}$$

$$\text{Average Travel Speed}_i = (HCSpeed_i \times \% \text{ of travel @ } HCSpeed_i) + (MCSpeed_i \times \% \text{ of travel @ } MCSpeed_i) + (UCSpeed_i \times \% \text{ of travel @ } UCSpeed_i)$$

The HERE dataset does not span all the networks of the State Highway System (SHS), the Strategic Intermodal System (SIS), and the National Highway System (NHS), leaving some road segments without field-measured speeds. For segments where field-measured speeds are not available, speeds calculated from the speed-volume functions are used. The process for calculating speeds is described in [Appendix D](#) for freeways and multilane highways, [Appendix E](#) for arterials, and [Appendix G](#) for 2 lane highways.

Data Sources

- FDOT Transportation Data and Analytics Office, *Traffic Characteristics Inventory*
- FDOT Transportation Data and Analytics Office, *Roadway Characteristics Inventory*
- HERE Technologies, *Travel Time Data*

4.4 Hours of Delay

In the Source Book, Vehicle Hours of Delay and Person Hours of Delay are estimated on an hourly basis by determining the difference between delay threshold travel time and actual travel time along a facility. Delay threshold travel time/speed considers the additional travel time experienced by a motorist beyond what would be experienced under uncongested conditions. The delay threshold speeds for the Source Book are provided in **Table 4.2** below. Uncongested speed thresholds are dynamic; the uncongested speed value must be higher than the uncongested thresholds for the respective roadway type in **Table 4.2**.

Table 4.2 Summary of Delay Threshold Speeds

AREA TYPE	ROADWAY TYPE	UNCONGESTED
Urbanized Areas	Arterial PSL $\leq$ 35 mph	> 22 mph
	Arterial PSL $\geq$ 40 mph	> 31 mph
	Two-Lane Highway	> 83.3% of FFS
	Multilane Highway	> 83.3% of FFS
	Freeway (PSL $\leq$ 50 mph)	> 83.3% of FFS
	Freeway (PSL 55 mph)	> 50 mph
	Freeway (PSL 60 mph)	> 55 mph
	Freeway (PSL 65 mph)	> 60 mph
	Freeway (PSL 70 mph)	> 65 mph
Non-Urbanized Areas	Arterial PSL $\leq$ 35 mph	> 22 mph
	Arterial PSL $\geq$ 40 mph	> 31 mph
	Two-Lane Highway	> 83.3% of FFS
	Multilane Highway	> 83.3% of FFS
	Freeway (PSL $\leq$ 50 mph)	> 83.3% of FFS
	Freeway (PSL 60 mph)	> 55 mph
	Freeway (PSL 65 mph)	> 60 mph
	Freeway (PSL 70 mph)	> 65 mph
	Freeway (PSL 75 mph)	> 70 mph

Delay estimation considers unserved demand from the preceding hours for the time periods between 7:00 a.m. and 10:00 a.m. and between 4:00 p.m. and 7:00 p.m. During oversaturation, the undischarged queue—the difference between demand and capacity—from an oversaturated hour is added to the next hour. The process is repeated until demand (including that from previous hour(s)) is less than the capacity.

The following description summarizes the technique to calculate the Vehicle Hours of Delay. The Person Hours of Delay is calculated by multiplying the average vehicle occupancy rate by the Vehicle Hours of Delay.

Step 1: Obtain Hourly Directional Vehicle Volumes

AADT is first converted to hourly directional volumes, based on the day of week variance factor, hourly factor and directional factor (if directional AADT is not available). Hourly directional volumes used for delay calculation are adjusted for queue spill-back under over-saturation conditions for the time periods between 7 a.m. and 10:00 a.m. and between 4:00 p.m. and 7:00 p.m.

Step 2: Obtain Delay Threshold Travel Time

A segment's delay threshold travel time is calculated by dividing the segment length by the uncongested threshold speeds (presented above). The uncongested threshold speeds are dynamic and vary by area and roadway types, as defined in **Table 4.2**.

Step 3: Compute Hourly Directional Total Vehicle Delay

Average vehicle delay (in time units per vehicle) is computed as the difference between the actual travel time and the delay threshold travel time. It should be noted that when the actual travel time is less than the delay threshold travel time, there is no delay on the roadway segment. Total vehicle hours of delay (in vehicle-time units) are the sum of all segment products of additional travel time an average vehicle experienced beyond uncongested conditions and the vehicle volume. The actual travel time is computed based on the average travel speed calculations described in the following section. On a single segment and for a single hour, the delay calculation is presented in the following equations:

Equation 4

$$\text{Vehicle Hours of Delay} = \sum_{i=1}^{\# \text{ Segments}} (\text{Travel Time}_i - \text{Threshold Travel Time}_i) \times \text{Vehicular Traffic Volume}_i$$

Equation 5

$$\begin{aligned} \text{Person Hours of Delay} \\ &= \sum (\text{Travel Time} - \text{Threshold Travel Time}) \times \text{Vehicle Traffic Volume} \\ &\quad \times \text{Average Vehicle Occupancy} \end{aligned}$$

Note: Average vehicle occupancies are discussed in **Section 5.2**.

Step 4: Obtain Daily Total Delay and Hours of Delay per Mile

The daily total hours of delay are the sum of hourly totals. The daily vehicle hours of delay are calculated as shown below:

Equation 6

$$\text{Daily Vehicle Hours of Delay} = \sum_{t=1}^{24} \text{Total Hourly Vehicle Delay}_t$$

where, t=a single hour, 24=24 hours

Data Sources

- FDOT Transportation Data and Analytics Office, *Traffic Characteristics Inventory*
- FDOT Transportation Data and Analytics Office, *Roadway Characteristics Inventory*
- HERE Technologies, *Travel Time Data*
- FDOT Crash Analysis Reporting System

4.5 Planning Time Index

Unlike the other speed-based measures, the computation of Planning Time Index (PTI) is based upon the granular speed dataset comprised of 15-minute epochs for each Source Book segment.

The Planning Time Index (PTI) is the ratio of the 95th percentile travel time to the travel time at reference speed. The reference speed is defined as the 85th percentile unmodified speed during weekday off-peak hours (9:00 a.m. to 4:00 p.m. and 7:00 p.m. to 10:00 p.m.) excluding holidays. This applies to all vehicles. The following equation is used to calculate the PTI:

Equation 7

$$\text{Planning Time Index} = \frac{\text{Travel Time}_{95\text{th percentile}}}{\text{Travel Time}_{\text{reference speed}}}$$

Data Sources

- FDOT Transportation Data and Analytics Office, *Traffic Characteristics Inventory*
- FDOT Transportation Data and Analytics Office, *Roadway Characteristics Inventory*
- HERE Technologies, *Travel Time Data*

4.6 % Miles by Congestion Level

The % of Miles by Congestion Level for all vehicles is determined by summing the miles of roadway in the congestion category and then dividing it by the total system miles. **Equation 8** computes the percent of miles heavily congested, mildly congested, and uncongested using speed thresholds for congestion provided in **Table 4.4**.

Equation 8

$$\begin{aligned} \text{\% Miles Heavily Congested} \\ &= \frac{\sum \text{Segment length whose travel speeds meet heavily congested threshold}}{\sum \text{Segment length}} \times 100 \end{aligned}$$

$$\begin{aligned} \text{\% Miles Mildly Congested} \\ &= \frac{\sum \text{Segment length whose travel speeds meet mildly congested threshold}}{\sum \text{Segment length}} \times 100 \end{aligned}$$

$$\text{\% Miles Uncongested} = \frac{\sum \text{Segment length whose travel speeds meet uncongested threshold}}{\sum \text{Segment length}} \times 100$$

Data Sources

- FDOT Transportation Data and Analytics Office, *Traffic Characteristics Inventory*
- FDOT Transportation Data and Analytics Office, *Roadway Characteristics Inventory*
- HERE Technologies, *Travel Time Data*

4.7 Average Peak Hour Speed vs. Posted Speed Limit

This measure is calculated by comparing the average peak hour speed against the posted speed limit. The output represents the overall percentage of the speed limit achieved in the peak hour. Average travel speed is the average of all peak hour segment travel speeds captured by probe data or modeled through speed-volume functions.

Equation 9

$$\text{Average Speed vs. Posted Speed Limit} = \frac{\sum VMT \times \left(\frac{\text{Peak Hour Speed}}{\text{Posted Speed Limit}} \right)}{\sum VMT}$$

Data Sources

- FDOT Transportation Data and Analytics Office, *Traffic Characteristics Inventory*
- FDOT Transportation Data and Analytics Office, *Roadway Characteristics Inventory*
- HERE Technologies, *Travel Time Data*

4.8 Vehicles per Lane Mile

The most commonly used mobility performance measure to describe utilization is vehicles per lane mile, which represents the average density on a roadway. It is calculated as the roadway segment's peak hour volume divided by the number of lanes weighted by the aggregate lane miles of each segment. Vehicles per lane mile is reported only for peak hour.

Step 1: Obtain Peak Hour Vehicle Volume and Number of Lanes

Peak hour volume is the product of the AADT, the day of week variance factor and the highest hourly factor. Total number of lanes (in both directions) is obtained by summing the number of lanes on the right and left sides of the roadway segment, which are obtained directly from the RCI database.

Step 2: Obtain Vehicles per Lane and Vehicle per Lane Mile

Vehicles per lane mile is calculated as:

Equation 10

$$\text{Vehicles per Lane} = \frac{\text{Volume}}{\text{Number of Lanes}}$$

Equation 11

$$\text{Vehicles per Lane Mile} = \frac{\sum_{i=1}^{\# \text{Segments}} \left(\frac{\text{Volume}_i}{\text{Number of Lanes}_i} \times \text{Lane Miles}_i \right)}{\sum_{i=1}^{\# \text{Segments}} \text{Lane Miles}_i}$$

Data Sources

- FDOT Transportation Data and Analytics Office, *Traffic Characteristics Inventory*
- FDOT Transportation Data and Analytics Office, *Roadway Characteristics Inventory*

4.9 Level of Travel Time Reliability

This measure is computed as the ratio between the 80th percentile travel time to the 50th percentile travel time. This measure is calculated for the following time periods: AM Peak (6:00 a.m. – 10:00 a.m. on Monday – Friday), Mid-day (10:00 a.m. – 4:00 p.m. on Monday – Friday), PM Peak (4:00 p.m. – 8:00 p.m. on Monday – Friday), and Weekends (6:00 a.m. – 8:00 p.m. on Saturday and Sunday). Additionally, for area-wide aggregation of this measure, a Person Miles Traveled (PMT)-weighted average technique is used.

Equation 12

$$\text{Level of Travel Time Reliability} = \frac{\text{Travel Time}_{80\text{th percentile}}}{\text{Travel Time}_{50\text{th percentile}}}$$

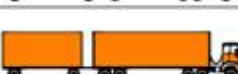
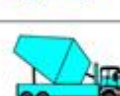
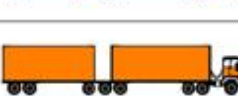
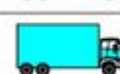
Data Sources

- FDOT Transportation Data and Analytics Office, *Traffic Characteristics Inventory*
- FDOT Transportation Data and Analytics Office, *Roadway Characteristics Inventory*
- HERE Technologies, *Travel Time Data*

5.0 Mobility Measure: Combination Truck

A combination truck is defined as a truck tractor pulling any number of trailers (including a “bobtail” truck tractor not pulling any trailers) or a straight truck pulling at least one trailer. These are vehicles classified as Classes 8-13 by FHWA⁴. The calculation methodology for combination truck mobility measures is discussed in this section.

Figure 5.1 FHWA 13 Vehicle Category Classification

Class 1 Motorcycles		Class 7 Four or more axle, single unit	
Class 2 Passenger cars			
			
		Class 8 Four or less axle, single trailer	
			
Class 3 Four tire, single unit		Class 9 5-Axle tractor semitrailer	
			
			
Class 4 Buses		Class 10 Six or more axle, single trailer	
			
		Class 11 Five or less axle, multi trailer	
Class 5 Two axle, six tire, single unit		Class 12 Six axle, multi-trailer	
			
		Class 13 Seven or more axle, multi-trailer	
Class 6 Three axle, single unit			
			
			

Source: Federal Highway Administration

⁴ For more information about FHWA 13 vehicle category classification, please visit: https://www.fhwa.dot.gov/policyinformation/tmguid/tmg_2013/vehicle-types.cfm

5.1 Combination Truck Miles Traveled

Combination Truck Miles Traveled (CTMT) is the total number of miles driven by combination trucks on a roadway within a region. It is computed by multiplying [VMT](#) by the truck factor and combination truck factor ([Appendix H](#)). The truck factor is captured within RCI Feature 331. The combination truck factor is provided annually on a county-by-county basis from TDA and represents the proportion of heavy vehicles that are combination trucks.

Equation 13

$$\text{Combination Truck Miles Traveled} = \sum (\text{VMT} \times \text{Truck Factor} \times \text{Combination Truck Factor})$$

Data Sources

- FDOT Transportation Data and Analytics Office, *Traffic Characteristics Inventory*
- FDOT Transportation Data and Analytics Office, *Roadway Characteristics Inventory*

5.2 Combination Truck Average Travel Speed

The combination truck travel speed is estimated using samples of field-measured speed. The methodologies are different for arterials, and freeways and highways.

- For arterials, if the HERE speed for all vehicles is at least 5 mph over the posted speed limit (PSL), then the combination truck travel speed is assumed to be the same as the PSL, which means combination truck travel speed is capped at the PSL. If the field-measured speed for all vehicles is 7 mph below the PSL or lower, then the combination truck travel speed is assumed to be the same as the field-measured speed. Linear interpolation is used to estimate the combination truck travel speed for field-measured speed between 7 mph below the PSL and the speed limit plus 5 mph.
- For freeways or highways, if the field-measured speed for all vehicles is at the speed limit plus 5 mph, then the combination truck travel speed is assumed to be at the speed limit. Linear interpolation is used to estimate the combination truck travel speed when the field-measured speed is between 45 mph and the speed limit plus 5 mph. If the field-measured speed is at or below 45 mph, the combination truck is assumed to travel at that same speed.

CTMT weights the resulting adjusted speed for each roadway segment and the average travel speed for combination trucks is determined using the following equation:

Equation 14

$$\text{Combination Truck Average Travel Speed} = \frac{\sum \text{CTMT} \times \text{Combination Truck Average Travel Speed}}{\sum \text{CTMT}}$$

Data Sources

- FDOT Transportation Data and Analytics Office, *Traffic Characteristics Inventory*
- FDOT Transportation Data and Analytics Office, *Roadway Characteristics Inventory*
- HERE Technologies, *Travel Time Data*

5.3 Combination Truck Hours of Delay

In the Source Book, Combination Truck Hours of Delay is estimated on an hourly basis by determining the difference between the actual threshold travel time and the threshold travel time along a facility. The calculation for obtaining combination truck hours of delay is similar to the ones for obtaining all vehicles' delay. The difference is that Combination Truck Hours of Delay uses the combination truck average travel speed. The methodology of this measure can be referenced in [Chapter 5.4 Hours of Delay](#). In the 3rd step of the methodology, the equation used to calculate the combination truck delay for a single segment and a single hour is presented as follows:

Equation 15

$$\begin{aligned} & \text{Combination Truck Hours of Delay} \\ &= \sum \text{Combination Truck Volume} \times (\text{Combination Truck Travel Time} \\ & \quad - \text{Threshold Travel Time}) \end{aligned}$$

Note: unlike the vehicle hours delay, which are reported for peak-hour, daily and annual levels, this measure is reported only at the daily level.

Data Sources

- FDOT Transportation Data and Analytics Office, *Traffic Characteristics Inventory*
- FDOT Transportation Data and Analytics Office, *Roadway Characteristics Inventory*
- HERE Technologies, *Travel Time Data*

5.4 Combination Truck Cost of Delay

This measure quantifies the cost of delay experienced by the freight industry by (1) calculating the average marginal cost of labor per hour and (2) multiplying that by the number of hours of delay for combination trucks. The average marginal cost of labor per hour is obtained as the sum of marginal driver wages and driver benefits from the American Transportation Research Institute (ATRI) annual report titled *An Analysis of the Operational Cost of Trucking*. The number of hours of delay for combination trucks is taken from the process used for the Source Book to calculate the said measure (see [Chapter 5.4 Hours of Delay](#)).

Equation 16

$$\begin{aligned} & \text{Combination Truck Cost of Delay} \\ &= \sum \text{Combination Truck Hours of Delay} \times \text{Average Marginal Cost of Labor Per Hour} \end{aligned}$$

Data Sources

- FDOT Transportation Data and Analytics Office, *Traffic Characteristics Inventory*
- FDOT Transportation Data and Analytics Office, *Roadway Characteristics Inventory*
- HERE Technologies, *Travel Time Data*
- American Transportation Research Institute, *An Analysis of the Operational Costs of Trucking*

5.5 Combination Truck Planning Time Index

The computation of Planning Time Index (PTI) is based upon the granular speed dataset comprised of 15-minute epochs for each Source Book segment. While this dataset is unmodified for all-traffic PTI, it is modified for combination truck PTI, as described below.

If the field-measured speed is at or above the posted speed limit plus 5 mph, then the combination truck travel speed was assumed to be 5 mph below field-measured speed. If the field-measured speed is at or below 60 mph, then the combination truck travel speed is assumed to be the same as the field-measured speed. Linear interpolation is used to estimate the combination truck travel speed for field-measured speed between 60 mph and the posted speed limit plus 5 mph. For example, if the posted speed limit is 70 mph and the field-measured speed is 75 mph, then the combination truck speed is 70 mph (75 mph - 5 mph). If it is the same posted speed limit and the field-measured speed is 55 mph, then the combination truck speed is 55 mph (since it is below 60 mph).

The Planning Time Index (PTI) is the ratio of the 95th percentile travel time to the travel time at reference speed. The reference speed is defined as the 85th percentile unmodified speed during weekday off-peak hours (9:00 a.m. to 4:00 p.m. and 7:00 p.m. to 10:00 p.m.). The following equation is used to calculate the PTI:

Equation 17

$$\text{Combination Truck Planning Time Index} = \frac{\text{Travel Time}_{95\text{th percentile}}}{\text{Travel Time}_{\text{reference speed}}}$$

Data Sources

- FDOT Transportation Data and Analytics Office, *Traffic Characteristics Inventory*
- FDOT Transportation Data and Analytics Office, *Roadway Characteristics Inventory*

6.0 Mobility Measures: Transit

Transit is defined as public transportation provided by an agency to the public, typically operated by local governments. It includes motor buses and rail-based services, and excludes school and charter buses. The calculation methodology for each transit mobility measure is discussed in this section. For reporting purposes, the federal fiscal year (FFY) is used.

6.1 Transit Passenger Trips

Transit passenger trips are the annual number of passengers boarding transit vehicles. A trip is counted each time a passenger boards a transit vehicle. Thus, each time when a passenger transfers between buses to reach a destination, it is counted as a passenger trip.

Equation 18

$$\text{Transit passenger Trips} = \sum \text{Passengers Boarding Transit Vehicles}$$

Data Sources

- FDOT Public Transit Office, [Florida Transit Information and Performance Handbook](#)

6.2 Transit Revenue Miles

Transit revenue miles is the number of annual miles a transit vehicle travels while in active service (available to pick up revenue passengers). This number is smaller than vehicle miles because of the exclusion of deadhead miles such as vehicle miles from the garage to the start of service, vehicle miles from the end of service to the garage, driver training, and other miscellaneous miles that are not considered to be in direct revenue service.

Equation 19

$$\text{Transit Revenue Miles} = \sum \text{Revenue Miles of Vehicle Operation while in Active Service}$$

Data Sources

- FDOT Public Transit Office, [Florida Transit Information and Performance Handbook](#)

6.3 Passenger Trips per Revenue Mile

Transit passenger trips per revenue mile is the ratio of annual passenger trips to total annual transit revenue miles of service, a key indicator of service effectiveness that is influenced by the levels of demand and the supply of service provided.

Equation 20

$$\text{Transit Passenger Trips per Revenue Mile} = \frac{\sum \text{Annual Transit Passenger Trips}}{\sum \text{Annual Transit Revenue Miles}}$$

Data Sources

- FDOT Public Transit Office, Florida Transit Information and Performance Handbook

6.4 Transit Revenue Miles between Failures

Transit revenue miles between failures measures the average frequency of delays because of a problem with the equipment. It is calculated by dividing total annual revenue miles by the number of revenue vehicle system failures. Revenue vehicle system failures are the total number of failures that occur during revenue service, deadheading, and layovers. A revenue vehicle failure is classified as the breakdown of either a major or minor element of the revenue vehicle's mechanical system.

Equation 21

$$\text{Transit Revenue Miles between Failures} = \frac{\text{Total Annual Revenue Miles}}{\text{Number of Revenue Vehicle System Failures}}$$

Data Sources

- FDOT Public Transit Office, [Florida Transit Information and Performance Handbook](#)

6.5 Transit Weekday Span of Service

Transit weekday span of service is the number of hours that transit service is provided on a representative weekday in the operation of the transit agency. This indicator is determined by computing the number of hours between the time service begins and the time service ends for an average weekday. For transit agencies with more than one mode, the system total span of service takes into account the hours of operation for all modes and reports the span of hours that any transit service is provided on a typical weekday.

Equation 22

$$\text{Transit Weekday Span of Service} = \frac{\text{Transit Service Hours of all Modes}}{\text{Number of Transit Modes}}$$

Data Sources

- FDOT Public Transit Office, [Florida Transit Information and Performance Handbook](#)

7.0 Mobility Measures: Pedestrian/Bicycle

This section discusses the calculation methodology for performance measures related to non-motorized modes, including pedestrian and bicycle. Measures cover the quantity of the sidewalk, shared use paths, and bicycle infrastructure available and the usage of that infrastructure. These measures are assessed on an annual basis for the calendar year.

7.1 % Pedestrian Facility Coverage

This measure reports the percentage of centerline miles of non-limited access SHS facilities in urban areas (5,000+ population) with a sidewalk 5 feet wide or greater or a shared-use path on either side of roadways. The pedestrian facilities include urban non-limited access SHS roadways and a limited number of non-SHS roadways deemed of interest to FDOT with a sidewalk or a shared path on either side. In the formula below, urban non-limited access centerline miles include a few non-SHS roadway miles with pedestrian facilities.

Equation 23

$$\% \text{ Pedestrian Facility Coverage} = \frac{\sum \text{Pedestrian Facility Miles in Urban Areas}}{\sum \text{Non - Limited Access Centerline Miles in Urban Area}} \times 100$$

Data Sources

- FDOT Transportation Data and Analytics Office, *Roadway Characteristics Inventory*

7.2 % Bicycle Facility Coverage

This measure reports the percentage of centerline miles of non-limited access SHS facilities with designated bike lanes, paved shoulders, or shared pathways available to bicyclists. The bicycle facilities include non-limited access SHS roadways and a limited number of non-SHS roadways deemed of interest to FDOT, with a paved shoulder $\geq 4'$ and $< 7'$ or a shared path on either side. In the formula below, non-limited access centerline miles include some non-SHS roadway miles with bicycle facilities.

Equation 24

$$\% \text{ Bicycle Facility Coverage} = \frac{\sum \text{Bike Facility Miles}}{\sum \text{Non - Limited Access Centerline Miles}} \times 100$$

Data Sources

- FDOT Transportation Data and Analytics Office, *Roadway Characteristics Inventory*

7.3 Non-Motorized Traffic Counts

The FDOT Source Book Methodologies

Bicyclists and pedestrians are counted at FDOT's non-motorized continuous counters statewide operated by TDA's Non-Motorized Traffic Monitoring Program (NMTMP)⁵. Continuous count data collection follows national guidelines, so the data collected can be submitted to FHWA. In addition to continuous counters, short-term counts are supplied at spot locations throughout Florida. Short-term counts are two-week counts broken down by day and hour.

Equation 25

$$Bicycles = \sum Bicyclists \text{ Crossing a Counter}$$

Equation 26

$$Pedestrians = \sum Pedestrians \text{ Crossing a Counter}$$

Data Sources

- FDOT Transportation Data and Analytics Office, [Non-Motorized Traffic Monitoring Program](https://www.fdot.gov/statistics/trafficinfo/florida-non-motorized-traffic-monitoring)

⁵ For more information on NMTMP, please visit: <https://www.fdot.gov/statistics/trafficinfo/florida-non-motorized-traffic-monitoring>

8.0 Mobility Measures: Aviation

Aviation refers to air transportation, which includes the movement of passengers and cargo by air. This can encompass commercial and general aviation, as well as air cargo operations. For reporting purposes, the calendar year (CY) is used. The methodologies described in this section are for measures that account for airborne freight and passenger operations in Florida.

8.1 Aviation Passenger Boardings

Aviation passenger boardings are the total number of enplanements on an aircraft at a Florida primary commercial service airport. If a passenger makes a transfer between flights to reach a destination within Florida, the passenger is counted as making two passenger boardings.

Equation 27

$$\text{Aviation Passenger Boardings} = \sum \text{Number of Enplanements on An Aircraft}$$

Data Sources

- U.S. Federal Aviation Administration, [Passenger Boarding \(Enplanement\) and All-Cargo Data for U.S. Airports](#)

8.2 Aviation Departure Reliability

Departure reliability is based on a flight's take-off time from the gate of a Florida primary commercial service airport. A departure is deemed reliable if the flight departs within 15 minutes of the scheduled time shown in the carrier's Computerized Reservations Systems. In the aviation industry, this is commonly known as an on-time departure. Departure reliability can be influenced by various factors such as heavy traffic volume, weather, and mechanical reasons beyond the control of an airport or an airline.

Equation 28

$$\text{Aviation Departure Reliability} = \frac{\sum \text{Departures} < 15 \text{ Minutes of Schedule}}{\sum \text{Departures}} \times 100$$

Data Sources

- U.S. Bureau of Transportation Statistics, [Reporting Carrier On-Time Performance](#)

8.3 Aviation Tonnage

Aviation tonnage comes from the Bureau of Transportation Statistics (BTS) T-100 Market report. This is the weight of all air cargo and mail handled (both originated and terminated) at Florida airports, including commercial service, general aviation, and military aviation facilities handling non-military freight movements.

Equation 29

$$\text{Aviation Tonnage} = \sum \text{Weight of Mail and Air Cargo Handled at Florida Airports}$$

Data Sources

- U.S. Bureau of Transportation Statistics, [T100 Market \(All Carriers\)](#)

8.4 Aviation Operations

Aviation Operations represent the total number of aircraft movements occurring at Florida airports during a calendar year. An operation is defined as a single aircraft movement, including takeoffs, landings, and touch-and-go activities.

The Source Book reports total annual operations for all Florida airports included in the FDOT Aviation Office dataset (128 airports). Most airports report operations directly to the Aviation Office. For airports where direct reporting is unavailable (e.g., Miami International and Orlando International), the Aviation Office applies U.S. Federal Aviation Administration (FAA) - derived proxy estimates based on the FAA Air Traffic Activity Data System (ATADS) to ensure complete statewide coverage.

Equation 30

$$\text{Aviation Operations} = \text{Total Annual Aircraft Operations at Florida Airports}$$

Data Sources

- FDOT Aviation Office
- U.S. Federal Aviation Administration, [Air Traffic Activity Data System \(ATADS\)](#)

9.0 Mobility Measures: Rail

Florida's rail transportation system links the state to regional, national, and global markets through connections with seaports and airports and remains a vital and expanding component of the transportation system. Passenger rail plays an increasingly important role in meeting the mobility needs of a growing population by moving large numbers of people while reducing roadway congestion and emissions, enhancing safety, supporting economic development, improving access to airports, and facilitating tourism and access to employment. The methodologies described in this section are for passenger rail systems in Florida, including Amtrak, SunRail and Tri-Rail.

- Amtrak operates three train routes in the state of Florida: Amtrak's Auto Train, Silver Meteor, and Floridian routes. Amtrak's Auto Train is an 855-mile scheduled daily train between Lorton, Virginia (near Washington, D.C.), and Sanford, Florida (near Orlando). It has no stops and is the only Auto Train in the country that allows transportation of personal vehicles. The Silver Meteor route is one of Amtrak's longest routes at 1,389 miles that travels between New York City and Miami in approximately 28 hours, stopping at many popular vacation destinations and cities, including Philadelphia, Baltimore, DC, Savannah, and Orlando. Amtrak's Floridian route travels daily between Chicago and Miami with multiple stops in Florida, and spans 2,076 miles. The route is intended to be temporary, as the East River Tunnel is undergoing rehabilitation.
- SunRail is a rail service moving people throughout the East Central Florida region by providing work and leisure travel opportunities and connecting communities. The system currently operates over 61 miles with 17 stations through Volusia, Seminole, Orange and Osceola counties.
- Tri-Rail is a commuter rail line linking Miami, Fort Lauderdale and West Palm Beach in Southeast Florida. The 80-mile-long system has 19 stations in all three South Florida counties, and connects directly to Amtrak at numerous stations, and to Metrorail at the Tri-Rail and Metrorail Transfer station and at Miami Intermodal Center.

9.1 Rail Passengers

This measure provides the annual number of revenue-paying rail passengers on Florida's interregional rail system. For the purpose of this performance measure, rail passengers include those riding on Amtrak, SunRail, and Tri-Rail.

Equation 31

$$\text{Rail Passengers} = \sum \text{Rail Passengers on Amtrak, SunRail and Tri - Rail}$$

Data Sources

- Amtrak, [Amtrak Fact Sheet](#)
- SunRail, Tri-Rail, FDOT Public Transit Office, Florida Transit Information and Performance Handbook

10.0 Mobility Measures: Seaport

10.1 Seaport Passenger Movements

Seaport passenger movements refer to passengers embarking and disembarking at a Florida seaport. For example, when a cruise passenger departs on a cruise ship from PortMiami, they are counted. When the same cruise passenger arrives back at PortMiami, they are counted again. The measure is reported in fiscal year, which runs October 1st through September 30th.

Equation 32

Seaport Passenger Movements

$$= \sum \text{Cruise Passengers Embarking and Disembarking a Cruise Ship at Florida Seaports}$$

Data Sources

- FDOT Seaport Office

10.2 Seaport Tonnage

Seaport tonnage is the international and domestic waterborne tons of cargo handled at Florida's public deep-water seaports.

Equation 33

$$\text{Seaport Tonnage} = \sum \text{Cargo Tonnage Handled at Florida's Public Seaports}$$

Data Sources

- FDOT Seaport Office

10.3 Seaport Twenty-Foot Equivalent Units

Twenty-Foot Equivalent Unit (TEU) represents the cargo capacity of a standard intermodal container, twenty feet long, eight feet tall, and eight feet wide. It is the standardized unit of the capacity of a container ship.

Equation 34

$$\text{Seaport TEUs} = \sum \text{Twenty-Foot Equivalent Units}$$

Data Sources

- FDOT Seaport Office

11.0 Mobility Measures: Spaceport

Calculation methodologies for each space measure are discussed in this section. The methodologies presented here are for measures accounting for military and civilian space operations in Florida. Most launches are of unmanned vessels and similarly most payloads launched into space from Florida are unmanned.

11.1 Space Launches and Sites

Space launches account for all the successful mission launches from Cape Canaveral Spaceport, aside from any test flights:

Equation 35

$$\text{Space Launches} = \sum \text{Successful Orbital Launches}$$

Space launch sites are all active launch sites at Florida's civilian and military spaceports.

$$\text{Number of Sites} = \sum \text{Active Launch Sites}$$

Data Sources

- Space Florida

11.2 Space Payloads

The number of payloads describes the amount of military, civil, and commercial cargo launched into space. Payloads may include cargo, flight crews, scientific experiments, munitions, or other equipment. The aggregate payload mass represents the total weight in pounds sent to orbit through Florida's spaceports.

Equation 36

$$\text{Number of Payloads} = \sum \text{Civil, Commercial, and DoD payloads}$$

$$\text{Payload Weight} = \sum \text{Pounds in Orbit}$$

Data Sources

- FDOT Spaceport Office

12.0 Infrastructure

The [Florid Statute \(F.S.\) 334.046\(4\)](#), specifies FDOT’s mission as providing “a safe statewide transportation system that promotes the efficient movement of people and goods, supports the state’s economic competitiveness, prioritizes Florida’s environment and natural resources, and preserves the quality of life and connectedness of the state’s communities.” and mandates FDOT to protect “the state’s transportation infrastructure investment” by establishing preservation measures with targets. The methodologies presented here detail how these measures are calculated to report the performance of infrastructure preservation of roads and bridges on the SHS that carries over half of all traffic within Florida.

12.1 Pavement Condition

Florida Statute [334.046\(c4\), F.S.](#) requires FDOT to achieve acceptable pavement standards on at least 80% of the SHS. The FDOT State Materials Office’s Pavement Condition Unit conducts annual surveys of the entire SHS in support of the Department’s Pavement Management Program. This survey evaluates pavement conditions in terms of ride quality, crack extent and severity, and average depth of wheel-path ruts.

- “Ride quality” is what the motorist experiences (i.e., smoothness of the ride).
- Crack extent and severity or “cracking” refers to the deterioration of the pavement through the formation of cracks or loss of aggregate or surface texture caused by repeated heavy use, which leads to loss of smoothness and, ultimately, deterioration of the road base by water seepage if not corrected.
- Wheel-path ruts or “rutting” are pavement depressions caused mainly by heavy use. These depressions or ruts can collect water, creating potential safety hazards.

Data are annually collected from January 1 to December 31 and reported for the state fiscal year in which December 31 falls. For details, please visit the FDOT [Flexible Pavement Condition Survey Handbook](#) or the [Rigid Pavement Condition Survey Handbook](#).

Note: For [federal performance](#) reporting purposes, pavement conditions are calculated using a different method.

Equation 37

$$\text{Pavement Condition} = \frac{\sum \text{Miles Meeting Pavement Thresholds}}{\sum \text{Pavement Miles}} \times 100$$

Data Sources

- FDOT State Materials Office, *Pavement Condition Survey Program*

12.2 Bridge Condition

FDOT's core bridge measure is the percentage of bridges on the SHS meeting FDOT standards. The target is to have at least 90% of bridges maintained by the Department achieve a National Bridge Inventory (NBI) rating of 6 or higher to meet the mandate of [334.046\(c4\), F.S.](#).

The NBI is a FHWA requirement for evaluating bridge conditions, based on a 0 to 9 scale, with 0 indicating a failed condition and 9 indicating an excellent condition. An NBI rating of 6 or 7 means a bridge is in good condition.

The Department takes a proactive approach to bridge maintenance, so that bridges will not deteriorate to a level that will require greater repair costs. This helps FDOT-maintained bridges meet or exceed their life expectancy, resulting in a lower frequency of replacements. Data is annually collected from July 1 to June 30. More information is available in the [Bridge Load Rating Manual](#).

Equation 38

$$\text{Bridge Condition} = \frac{\sum \text{FDOT} - \text{Maintained Bridges with NBI} \geq 6}{\sum \text{FDOT} - \text{Maintained Bridges}} \times 100$$

Note: Bridge conditions are calculated using a different method for [federal performance](#) reporting purposes.

Data Sources

- FDOT Office of Maintenance, AASHTOWare™ Bridge Management software (BrM) Version 5.3

12.3 Maintenance Condition

Florida Statute [334.046\(c4\), F.S.](#) obligates FDOT to ensure that 100% of the acceptable maintenance standard on the State Highway System (SHS) is achieved. The Department's maintenance rating standard is a score of 80 and was derived over time from the use of output measures and engineering input to evaluate the performance of the transportation system.

To determine the maintenance rating, field conditions are evaluated by rating each highway element to develop an overall maintenance condition score. Conditions are compared to FDOT standards, and a composite state score is derived. The maintenance condition rating system evaluates five highway elements, consisting of multiple characteristics:

- Roadway – potholes, pavement joints, paved shoulders, and pavement distress
- Roadside – unpaved shoulders, slopes, sidewalks, and fences
- Traffic services – signs, lighting, guardrails, striping, handrail, and pavement markers
- Drainage – storm drains, ditches, roadway sweeping, inlets, and pavement edge drain outlets
- Vegetation/aesthetics – landscaping, litter removal, turf condition, and tree trimming

The FDOT Source Book Methodologies

Data is annually collected from July 1 to June 30. More information is available in the [Maintenance Rating Program](#). The evaluation process consists of three main steps:

Step 1: Element Scoring

Each highway characteristics is evaluated at multiple sample points along the roadway. The number of satisfactory conditions is divided by the total number of evaluated items to determine the Level of Maintenance by Element (expressed as a percentage).

Step 2: Facility Type Scoring

Each element score is multiplied by a predefined Element Factor, which represents the relative importance of that element for the specific facility type (e.g., rural limited access, urban arterial, etc.). The weighted element scores are summed and rounded to yield the Level of Maintenance score for that facility type.

Step 3: All Facility Type Scoring

Each Facility Type score is then multiplied by its respective mileage to obtain “score-miles”. The total score-miles across all facility types are divided by the total evaluated mileage to determine the overall maintenance condition score (i.e., the All Facility Types score).

The All Facility Types Score is compared with the Department’s maintenance rating standard of 80. The ratio of the achieved score to 80 is expressed as a percentage, representing the final maintenance condition. A minimum score of 80 of all state-maintained roads is expected to achieve the statewide target of 100%.

Equation 39

$$\text{Maintenance Condition} = \frac{\text{All Facility Types Score}}{80} \times 100$$

Data Sources

- FDOT Office of Maintenance, *Maintenance Rating Program*

13.0 Safety Measures

Improving the safety of Florida's traveling public is a core mission for FDOT. The statewide initiative, Target Zero, aims to reduce the number of transportation-related serious injuries and deaths across Florida to ZERO. Understanding the safety performance of the state's transportation system enables wise transportation investment and saves lives. The calculation methodology for each safety measure is discussed in this section.

Note: For [federal performance](#) reporting purposes, the five safety measures are calculated using a five-year rolling average while the state safety measures report single year totals.

13.1 Number of Fatalities

This measure is the total number of fatalities on Florida's roadways that are a direct result of a traffic crash within thirty days of the crash occurrence.

Equation 40

$$\text{Number of Fatalities} = \sum \text{People Killed Due to Traffic Crashes}$$

Data Sources

- Starting 2023: *Signal Four Analytics (S4) database as of March 1 of the following year*
- For 2022: *Signal Four Analytics (S4) database as of November 15, 2023*
- Prior years: Florida Department of Highway Safety and Motor Vehicles, [Traffic Crash Facts Annual Report](#)

13.2 Number of Serious Injuries

The number of disabling/incapacitating injuries from traffic crashes that prevent the injured individuals from engaging in normal activities and usually requiring transport to a medical facility and hospitalization within thirty days of the crash occurrence.

Equation 41

$$\text{Number of Serious Injuries} = \sum \text{People Seriously Injured Due to Traffic Crashes}$$

Data Sources

- Starting 2023: *Signal Four Analytics (S4) database as of March 1 of the following year*
- For 2022: *Signal Four Analytics (S4) database as of November 15, 2023*
- Prior years: Florida Department of Highway Safety and Motor Vehicles, [Traffic Crash Facts Annual Report](#)

13.3 Rate of Fatalities

This measure is the total number of fatalities on Florida's roadways per 100 million VMT.

Equation 42

$$\text{Rate of Fatalities} = \frac{\sum \text{Fatalities}}{\text{Annual VMT}} \times 100 \text{ million}$$

Data Sources

- Starting 2023: *Signal Four Analytics (S4) database as of March 1 of the following year*
- For 2022: *Signal Four Analytics (S4) database as of November 15, 2023*
- Prior years: Florida Department of Highway Safety and Motor Vehicles, [Traffic Crash Facts Annual Report](#)
- Traffic volumes as published by the FDOT Transportation Data and Analytics Office

13.4 Rate of Serious Injuries

This measure is the total number of serious injuries on Florida's roadways per 100 million VMT.

Equation 43

$$\text{Rate of Serious Injuries} = \frac{\sum \text{Serious Injuries}}{\text{Annual VMT}} \times 100 \text{ million}$$

Data Sources

- Starting 2023: *Signal Four Analytics (S4) database as of March 1 of the following year*
- For 2022: *Signal Four Analytics (S4) database as of November 15, 2023*
- Prior years: Florida Department of Highway Safety and Motor Vehicles, [Traffic Crash Facts Annual Report](#)
- Traffic volumes as published by the FDOT Transportation Data and Analytics Office

13.5 Motorcycle Fatalities and Serious Injuries

These safety measures capture the number of incapacitating injuries and fatalities of both motorcyclists and their passengers within thirty days of the crash occurrence.

Equation 44

$$\begin{aligned} \text{Motorcycle Fatalities} &= \sum \text{Motorcyclist and Passenger Fatalities} \\ \text{Motorcycle Serious Injuries} &= \sum \text{Motorcyclist and Passenger Serious Injuries} \end{aligned}$$

Data Sources

- Starting 2023: *Signal Four Analytics (S4) database as of March 1 of the following year*
- For 2022: *Signal Four Analytics (S4) database as of November 15, 2023*
- Prior years: Florida Department of Highway Safety and Motor Vehicles, [Traffic Crash Facts Annual Report](#)

13.6 Pedestrian Fatalities and Serious Injuries

These safety measures represent the total number of pedestrian serious (incapacitating) injuries and fatalities that are reported on Florida's public roads within thirty days of a crash.

Equation 45

$$\begin{aligned} \text{Pedestrian Fatalities} &= \sum \text{Pedestrians Killed from Traffic Crashes} \\ \text{Pedestrian Serious Injuries} &= \sum \text{Pedestrians Seriously Injured (Incapacitated) from Traffic Crashes} \end{aligned}$$

Data Sources

- Starting 2023: *Signal Four Analytics (S4) database as of March 1 of the following year*
- For 2022: *Signal Four Analytics (S4) database as of November 15, 2023*
- Prior years: Florida Department of Highway Safety and Motor Vehicles, [Traffic Crash Facts Annual Report](#)

13.7 Bicycle Fatalities and Serious Injuries

These safety measures capture the total number of bicycle serious (incapacitating) injuries and fatalities on all of Florida's roadways within thirty days of the crash occurrence.

Equation 46

$$\begin{aligned} \text{Bicycle Fatalities} &= \sum \text{Bicyclists and Passengers Killed from Traffic Crashes} \\ \text{Bicycle Serious Injuries} &= \sum \text{Bicyclists and Passengers Seriously Injured (Incapacitated) from Traffic Crashes} \end{aligned}$$

Data Sources

- Starting 2023: *Signal Four Analytics (S4) database as of March 1 of the following year*
- For 2022: *Signal Four Analytics (S4) database as of November 15, 2023*
- Prior years: Florida Department of Highway Safety and Motor Vehicles, [Traffic Crash Facts Annual Report](#)

13.8 Safety Belt Use

FDOT conducts Florida's annual statewide safety belt use survey. The statewide survey follows National Highway Traffic Safety Administration (NHTSA) procedures in determining the outboard, front-seat occupant belt use rate. Every five years, NHTSA requires that statewide surveys include newly sampled survey sites based on the most recent traffic fatality counts. These sites were selected randomly to represent all the traffic on various roadway types around the State of Florida. This measure is the percentage of driver and front seat passengers observed to be using a safety belt. Observations were recorded at 165 sites across 15 counties and occurred at random one-hour periods on all days of the week during daylight hours between 7:00 AM and 6:00 PM.

Equation 47

$$\text{Percent Safety Belt Use} = \frac{\sum \text{Observed Safety} - \text{Belt} - \text{Using Drivers and Passengers}}{\text{Total Observations}} \times 100$$

Data Sources

- FDOT State Safety Office, [Florida Safety Belt Use Reports](#)

14.0 Federal Performance Measures

Federal transportation law requires state departments of transportation (DOTs), metropolitan planning organizations (MPOs), and public transportation providers to conduct performance-based planning by tracking performance and establishing data-driven performance targets to assess progress toward achieving goals. This Transportation Performance management (TPM) approach aims to link investment decisions to key outcomes related to seven national goals established by Congress in the areas of safety, infrastructure condition, congestion reduction, system reliability, freight movement and economic vitality, environmental sustainability, and reduced project delivery delays.

This section provides an overview of the performance measures for Safety (PM1); Bridge and Pavement Condition (PM2); and System Performance (PM3).

14.1 Target and Reporting Timeline

The target-setting timeline and performance reporting are different for safety (PM1) compared to pavement/bridge condition (PM2) and system performance (PM3). For PM1, state DOTs must set safety targets and report safety performance annually in their Highway Safety Improvement Program (HSIP) report, due on August 31st. The reported targets are for the following calendar year. In turn, MPOs must establish their targets within 180 days after the state reports theirs, so this creates an effective date of February 27th.

For PM2 and PM3, the targets and reporting follow a four-year performance period (2018-2021, 2022-2025, 2026-2029). On October 1st of the first year of this performance periods, State DOTs must report their baseline performance, as well as 2- and 4-year targets. MPOs do so 180 days afterwards (March 30th). In all PM1, PM2, and PM3 targets, MPOs have the option to either support the statewide target through their planned projects or set a quantifiable target for their MPO area. State DOTs can adjust their targets at mid-cycle (every 2 years). In that event, MPOs that choose to support the state target must inform the state if they will continue to do so or set a new MPO target. In the 4th year of the reporting cycle, state DOTs must reevaluate and submit new targets for the next 4-year cycle for PM2 and PM3 even if the targets don't change.

14.2 MPO Boundary Changes

In August 2024, the following five (5) MPOs updated their boundaries. The official MPO/TPO boundaries are based on the August 2024 adopted Apportionment Plans for each MPO/TPO that was approved by Florida's Governor.

- Alachua & Gainesville TPO was adjusted to encompass all of Alachua County and its name has been changed from Gainesville MTPO.
- Florida-Alabama TPO was adjusted slightly to follow the 2020 census blocks.
- Okaloosa-Walton TPO was adjusted slightly to follow the 2020 Census blocks.

The FDOT Source Book Methodologies

- Indian River County MPO was adjusted to encompass all of Indian River County.
- Volusia-Flagler TPO was adjusted to encompass all of Volusia & Flagler counties and its name has been changed from River2Sea TPO.
- Palm Beach TPA is now Palm Beach MPO.

Performance measures and targets for Safety (PM1) are based on the current MPO boundaries as described above. Performance measures and targets for Bridge and Pavement Condition (PM2) and System Performance (PM3) for all the years are based on the MPO boundaries prior to 2024.

14.3 PM1 – Safety

The first performance measures rule (PM1) on safety establishes the following five performance measures that support the data-driven performance framework outlined in the Highway Safety Improvement Program (HSIP) Final Rule. These measures are to be reported every year as a 5-year rolling average.

- Number of Fatalities: The total number of persons suffering fatal injuries in a motor vehicle crash during a calendar year.
- Rate of Fatalities: The ratio of total number of fatalities to the number of vehicle miles traveled (VMT, in 100 million VMT) in a calendar year.
- Number of Serious Injuries: The total number of persons suffering at least one serious injury in a motor vehicle crash during a calendar year.
- Rate of Serious Injuries: The ratio of total number of serious injuries to the number of VMT (in 100 million VMT) in a calendar year.
- Number of Non-motorized Fatalities and Non-motorized Serious Injuries: The combined total number of non-motorized fatalities and non-motorized serious injuries involving a motor vehicle during a calendar year.

Details of PM1 are available [here](#).

Data Sources

- Fatality and serious injury counts: Signal Four Analytics (S4) database as of March 1, 2025: any figures that include the 2024 data are preliminary at this time and may change with future updates
- Traffic volumes: FDOT Transportation Data and Analytics Office

14.4 PM2 – Pavement and Bridge

The second performance measures rule (PM2) on bridge and pavement conditions establishes six performance measures (two for bridges and four for pavement) that FDOT must use to manage bridge and pavement performance on the National Highway System (NHS).

Bridge performance measures include:

- Percentage of NHS bridges classified as in Good condition
- Percentage of NHS bridges classified as in Poor condition

Pavement performance measures include:

- Percentage of pavements of the Interstate System in Good condition
- Percentage of pavements of the Interstate System in Poor condition
- Percentage of pavements of the non-Interstate NHS in Good condition
- Percentage of pavements of the non-Interstate NHS in Poor condition

Details of PM2 are available [here](#).

Data Sources

- Pavement Data: FDOT State Materials Office
- LRS Network: FDOT Transportation Data and Analytics Office
- Bridge Data: FDOT Office of Maintenance

14.5 PM3 – System Performance

The third and final performance measures rule (PM3) on system performance is intended to carry out the NHPP, National Highway Freight Program (NHFP), and Congestion Mitigation and Air Quality Improvement Program (CMAQ) through six performance measures that address travel-time reliability, freight movement, peak-hour excessive delay, non-SOV travel, and on-road mobile source emissions reductions. Because Florida's air quality is in attainment, Florida isn't required to set targets for or report three measures related to the CMAQ program (peak-hour excessive delay, non-SOV travel, and on-road mobile source emissions reductions).

System performance measures include:

- Percent of person-miles traveled on the Interstate that are reliable
- Percent of person-miles traveled on the non-Interstate National Highway System (NHS) that are reliable
- Truck Travel Time Reliability (TTTR) Index

Details of PM3 are available [here](#).

The FDOT Source Book Methodologies

Data Sources

- Travel time: National Performance Management Research Data Set (NPMRDS)
- Annual Average Daily Traffic (AADT): FDOT Transportation Data and Analytics Office, *Highway Performance Monitoring System (HPMS)*
- Segment Length: NPMRDS
- Occupancy Factor: FHWA

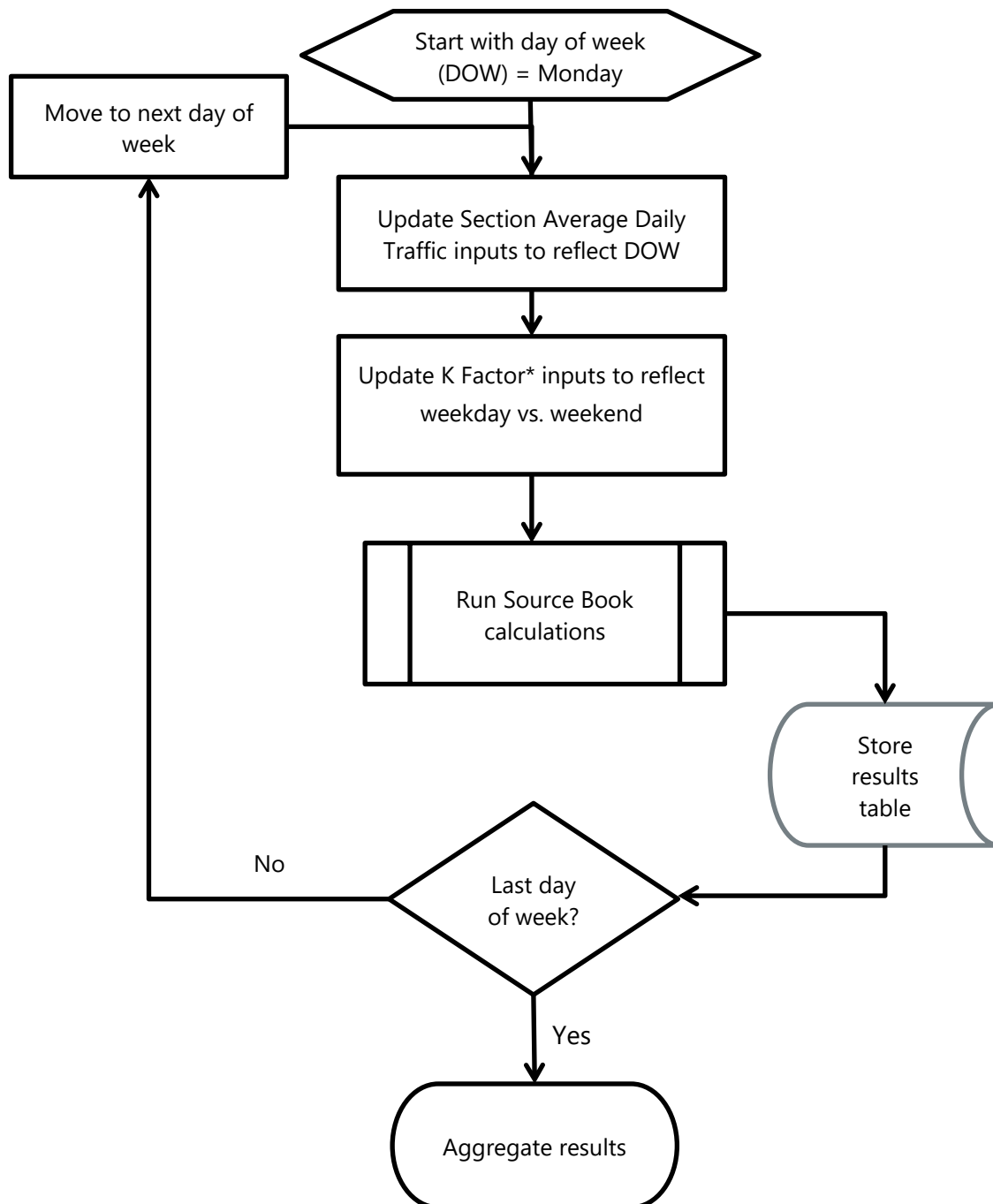
Appendix A Hourly Factors (K Factors)

TIME PERIOD	LIMITED ACCESS	
	WEEKDAY	WEEKEND
12 a.m. – 1 a.m.	0.84%	1.57%
1 a.m. – 2 a.m.	0.57%	1.04%
2 a.m. – 3 a.m.	0.48%	0.78%
3 a.m. – 4 a.m.	0.56%	0.68%
4 a.m. – 5 a.m.	0.97%	0.78%
5 a.m. – 6 a.m.	2.26%	1.24%
6 a.m. – 7 a.m.	4.77%	2.17%
7 a.m. – 8 a.m.	6.70%	3.09%
8 a.m. – 9 a.m.	6.42%	4.18%
9 a.m. – 10 a.m.	5.62%	5.35%
10 a.m. – 11 a.m.	5.51%	6.38%
11 a.m. – 12 p.m.	5.67%	7.00%
12 p.m. – 1 p.m.	5.87%	7.34%
1 p.m. – 2 p.m.	5.95%	7.31%
2 p.m. – 3 p.m.	6.32%	7.23%
3 p.m. – 4 p.m.	6.96%	7.12%
4 p.m. – 5 p.m.	7.44%	6.91%
5 p.m. – 6 p.m.	7.49%	6.60%
6 p.m. – 7 p.m.	5.88%	5.96%
7 p.m. – 8 p.m.	4.32%	5.05%
8 p.m. – 9 p.m.	3.35%	4.17%
9 p.m. – 10 p.m.	2.63%	3.38%
10 p.m. – 11 p.m.	2.00%	2.68%
11 p.m. – 12 a.m.	1.42%	1.97%

TIME PERIOD	C1		C2		C2T		C3C	
	WEEKDAY	WEEKEND	WEEKDAY	WEEKEND	WEEKDAY	WEEKEND	WEEKDAY	WEEKEND
12 a.m. – 1 a.m.	0.62%	1.24%	0.87%	1.56%	0.52%	1.56%	0.66%	1.44%
1 a.m. – 2 a.m.	0.43%	0.81%	0.60%	1.01%	0.36%	1.01%	0.43%	0.96%
2 a.m. – 3 a.m.	0.39%	0.65%	0.49%	0.76%	0.41%	0.76%	0.38%	0.76%
3 a.m. – 4 a.m.	0.45%	0.54%	0.57%	0.72%	0.60%	0.72%	0.45%	0.65%
4 a.m. – 5 a.m.	0.89%	0.65%	0.92%	0.76%	1.12%	0.76%	0.84%	0.67%
5 a.m. – 6 a.m.	2.24%	1.10%	2.10%	1.29%	2.79%	1.29%	2.07%	1.07%
6 a.m. – 7 a.m.	4.85%	2.02%	4.48%	2.11%	4.99%	2.11%	4.53%	1.91%
7 a.m. – 8 a.m.	6.56%	3.11%	6.54%	3.05%	6.92%	3.05%	6.44%	2.86%
8 a.m. – 9 a.m.	6.17%	4.35%	5.90%	4.11%	5.99%	4.11%	6.15%	4.05%
9 a.m. – 10 a.m.	5.63%	5.73%	5.45%	5.45%	5.96%	5.45%	5.53%	5.39%
10 a.m. – 11 a.m.	5.79%	6.79%	5.63%	6.54%	6.34%	6.54%	5.62%	6.52%
11 a.m. – 12 p.m.	6.23%	7.52%	6.03%	7.26%	6.39%	7.26%	5.97%	7.23%
12 p.m. – 1 p.m.	6.62%	7.95%	6.32%	7.67%	6.33%	7.67%	6.33%	7.74%
1 p.m. – 2 p.m.	6.65%	7.86%	6.39%	7.67%	6.26%	7.67%	6.33%	7.65%
2 p.m. – 3 p.m.	6.92%	7.58%	6.69%	7.58%	6.78%	7.58%	6.64%	7.46%
3 p.m. – 4 p.m.	7.37%	7.32%	7.17%	7.39%	7.16%	7.39%	7.28%	7.28%
4 p.m. – 5 p.m.	7.44%	6.92%	7.56%	7.09%	7.20%	7.09%	7.69%	7.03%
5 p.m. – 6 p.m.	7.12%	6.46%	7.51%	6.61%	7.42%	6.61%	7.66%	6.67%
6 p.m. – 7 p.m.	5.35%	5.77%	5.63%	5.76%	5.46%	5.76%	5.89%	6.01%
7 p.m. – 8 p.m.	3.92%	4.81%	4.14%	4.68%	4.06%	4.68%	4.31%	5.04%
8 p.m. – 9 p.m.	3.02%	3.85%	3.23%	3.79%	2.95%	3.79%	3.29%	4.07%
9 p.m. – 10 p.m.	2.36%	3.05%	2.51%	3.05%	1.86%	3.05%	2.51%	3.23%
10 p.m. – 11 p.m.	1.80%	2.31%	1.87%	2.34%	1.27%	2.34%	1.79%	2.51%
11 p.m. – 12 a.m.	1.20%	1.61%	1.40%	1.71%	0.85%	1.71%	1.21%	1.79%

TIME PERIOD	C3R		C4		C5		C6	
	WEEKDAY	WEEKEND	WEEKDAY	WEEKEND	WEEKDAY	WEEKEND	WEEKDAY	WEEKEND
12 a.m. – 1 a.m.	0.70%	1.44%	0.83%	1.90%	1.01%	1.90%	1.41%	1.90%
1 a.m. – 2 a.m.	0.47%	0.98%	0.50%	1.21%	0.58%	1.21%	0.86%	1.21%
2 a.m. – 3 a.m.	0.39%	0.74%	0.36%	0.85%	0.40%	0.85%	0.56%	0.85%
3 a.m. – 4 a.m.	0.48%	0.65%	0.34%	0.66%	0.38%	0.66%	0.43%	0.66%
4 a.m. – 5 a.m.	0.85%	0.72%	0.56%	0.68%	0.56%	0.68%	0.53%	0.68%
5 a.m. – 6 a.m.	1.89%	1.05%	1.42%	1.02%	1.49%	1.02%	1.20%	1.02%
6 a.m. – 7 a.m.	3.94%	1.80%	3.45%	1.84%	3.20%	1.84%	2.93%	1.84%
7 a.m. – 8 a.m.	6.23%	2.82%	5.95%	2.99%	5.25%	2.99%	5.90%	2.99%
8 a.m. – 9 a.m.	6.19%	4.16%	6.59%	4.23%	5.95%	4.23%	6.96%	4.23%
9 a.m. – 10 a.m.	5.66%	5.61%	5.86%	5.41%	5.69%	5.41%	5.87%	5.41%
10 a.m. – 11 a.m.	5.74%	6.77%	5.72%	6.34%	5.88%	6.34%	5.43%	6.34%
11 a.m. – 12 p.m.	6.12%	7.37%	6.15%	7.01%	6.08%	7.01%	5.73%	7.01%
12 p.m. – 1 p.m.	6.42%	7.87%	6.50%	7.33%	6.33%	7.33%	5.91%	7.33%
1 p.m. – 2 p.m.	6.45%	7.68%	6.46%	7.25%	6.32%	7.25%	5.87%	7.25%
2 p.m. – 3 p.m.	6.83%	7.46%	6.72%	7.16%	6.65%	7.16%	5.97%	7.16%
3 p.m. – 4 p.m.	7.32%	7.27%	7.21%	7.02%	7.06%	7.02%	6.54%	7.02%
4 p.m. – 5 p.m.	7.64%	7.02%	7.50%	6.70%	7.24%	6.70%	7.17%	6.70%
5 p.m. – 6 p.m.	7.61%	6.66%	7.46%	6.41%	7.17%	6.41%	7.61%	6.41%
6 p.m. – 7 p.m.	5.88%	5.94%	5.95%	5.94%	6.21%	5.94%	6.21%	5.94%
7 p.m. – 8 p.m.	4.38%	4.94%	4.49%	5.09%	5.04%	5.09%	4.74%	5.09%
8 p.m. – 9 p.m.	3.34%	3.96%	3.51%	4.27%	3.93%	4.27%	3.93%	4.27%
9 p.m. – 10 p.m.	2.47%	3.04%	2.76%	3.49%	3.14%	3.49%	3.35%	3.49%
10 p.m. – 11 p.m.	1.76%	2.34%	2.17%	2.90%	2.59%	2.90%	2.77%	2.90%
11 p.m. – 12 a.m.	1.22%	1.71%	1.55%	2.26%	1.86%	2.26%	2.11%	2.26%

Appendix B Day of Week Calculation



*Refer to [Appendix A](#) for the specific K-factors by time-of-day, context classification, and weekday/weekend day.

Appendix C County Vehicle Occupancy Factors

COUNTY NAME	VEHICLE OCCUPANCY FACTOR
Alachua	1.74
Baker	1.91
Bay	1.64
Bradford	1.76
Brevard	1.63
Broward	1.50
Calhoun	1.54
Charlotte	1.67
Citrus	1.68
Clay	1.42
Collier	1.71
Columbia	1.81
Desoto	1.85
Dixie	1.79
Duval	1.54
Escambia	1.58
Flagler	1.70
Franklin	1.51
Gadsden	1.66
Gilchrist	1.74
Glades	1.73
Gulf	1.57
Hamilton	1.73

COUNTY NAME	VEHICLE OCCUPANCY FACTOR
Hardee	1.78
Hendry	1.81
Hernando	1.73
Highlands	1.72
Hillsborough	1.69
Holmes	1.76
Indian River	1.70
Jackson	1.77
Jefferson	1.70
Lafayette	1.69
Lake	1.49
Lee	1.65
Leon	1.62
Levy	1.78
Liberty	1.69
Madison	1.65
Manatee	1.66
Marion	1.76
Martin	1.71
Miami-Dade	1.52
Monroe	1.84
Nassau	1.78
Okaloosa	1.61

COUNTY NAME	VEHICLE OCCUPANCY FACTOR
Okeechobee	1.89
Orange	1.69
Osceola	1.72
Palm Beach	1.55
Pasco	1.63
Pinellas	1.54
Polk	1.67
Putnam	1.68
Santa Rosa	1.65
Sarasota	1.63
Seminole	1.56
St. Johns	1.74
St. Lucie	1.52
Sumter	1.66
Suwannee	1.80
Taylor	1.67
Union	1.66
Volusia	1.65
Wakulla	1.69
Walton	1.76
Washington	1.69
Florida	1.68

Appendix D Freeway Speed Model

This Appendix discusses the modified Davidson Equation used in developing modeled speeds in the Source Book for freeway facilities.

Modified Davidson Equation

The travel time function proposed by Davidson (1966, 1978) for transport planning purposes has been subject to much discussion and efforts of calibration and improvement including some controversy over the meaning of its parameters. In a presentation on the *Development of Speed Models for Improving Travel Forecasting and Highway Performance Evaluation*, Moses et al. (December 5, 2012) presented a piecewise modified Davidson volume-delay function for use in a study of SR 9/I-95 data in Pompano Beach, Florida.

Table D.1 contains modified Davidson parameters applicable to freeways in Florida.

Equation 48

$$S = \begin{cases} \frac{S_0}{1 + \frac{J_D \left(\frac{V}{C}\right)}{1 - \frac{V}{C}}} & \text{for } \frac{V}{C} \leq \mu \\ \frac{S_0}{\left(1 + \frac{J_D \times \mu}{1 - \mu} + \frac{J_D \left(\frac{V}{C} - \mu\right)}{(1 - \mu)^2}\right)} & \text{for } \frac{V}{C} > \mu \end{cases}$$

Where:

S	= predicted travel speed (mph)
S ₀	= free flow speed (mph)
J _D	= a delay parameter,
V	= volume (veh/h)
C	= capacity (veh/h)
μ	= saturation threshold parameter

Table D.1 FDOT Parameter Values for Fitted Speed-Volume Functions

FUNCTION	PARAMETER	URBAN SPEED LIMIT (MPH)		
		SPEED LIMIT ≤ 60	60 < SPEED LIMIT ≤ 65	65 < SPEED LIMIT ≤ 70
Modified Davidson	J _D	0.0090	0.0092	0.0099
	μ	0.9500	0.9490	0.9510

Appendix E Arterial Speed Model

This Appendix discusses the methods used to calculate modeled speeds on arterial facilities at various degrees of saturation.

Speed calculation when $v/c < 1$

For $v/c < 1.0$, speed calculations will be based on speeds given in the 2012 Generalized Level of Service Volume Tables. See [Appendix F](#).

Speed calculation when $v/c \geq 1$

The Bureau of Public Roads (BPR – the predecessor of Federal Highway Administration before 1967) speed-flow curve is used to estimate speeds at various volume/capacity (v/c) ratios. The standard BPR curve generally drops too soon before capacity is reached, and then drops too slowly when demand exceeds capacity. For the Source Book, alpha and beta parameters developed in Florida from the Greater Treasure Coast Regional Planning Model (GTCRPM III) were used, and then interpolated to force predicted speeds equal to 15 mph when $v/c = 1$ and 7 mph when $v/c = 2$.

The BPR equation is shown below:

Equation 49

$$S = \frac{S_f}{1 + a \left(\frac{V}{C} \right)^b}$$

Where:

S	= predicted mean speed
S _f	= free flow speed
V	= volume
C	= capacity
b, a	= parameters

Table E.1 BPR Parameters

SOURCE	HIGH SPEED ARTERIAL (SPEED LIMIT ≥ 40 MPH)		LOW SPEED ARTERIAL (SPEED LIMIT ≤ 35 MPH)	
	ALPHA	BETA	ALPHA	BETA
Greater Treasure Coast Regional Planning Model (GTCRPM III)	0.71	2.1	0.83	5.5

Table E.2 Interpolated Speed

V/C	PREDICTED SPEED BY BPR	INTERPOLATED SPEED
1.0	26.32	15.00
1.1	24.10	13.83
1.2	22.05	12.75
1.3	20.16	11.76
1.4	18.45	10.86
1.5	16.89	10.04
1.6	15.49	9.30
1.7	14.22	8.63
1.8	13.08	8.03
1.9	12.05	7.49
2.0	11.13	7.00

Appendix F 2012 Generalized Service Volume Tables

Although the Generalized Service Volume tables were updated in 2023, the Source Book used the 2012 version, which was the current version available at the time of publication. Volumes can be found in Tables 7, 8, and 9 of the [2012 FDOT Quality/Level of Service Handbook](#). The 2012 Generalized Service Volume tables were also used for consistency in computation methodology with historical results.

Appendix G Two-Lane Highway Speed Model

Chapter 15: Two-Lane Highways of the Highway Capacity Manual 6th Edition (HCM) provides guidance on estimating average speeds on two-lane highways. This memorandum summarizes the HCM methodology and provides advice relevant to the Source Book project.

The HCM methodology considers several characteristics of a two-lane highway, including lane width, percentage of combination trucks, and no-passing zones, etc. However, the HCM's methodology is limited in its coverage of oversaturated conditions, with the HCM noting that it is rare to see two-lane highways operating at or near capacity (because most will have been expanded before demand reaches capacity), and thus there is a corresponding lack of data on oversaturated operations.

Classification of Two-Lane Highways

Because two-lane highways are versatile roadways that can serve a multitude of purposes, the HCM has subdivided this type of facility into three distinct classes: Class I, Class II, and Class III (**Figure G.1**). A brief discussion of the different classes is relevant to the Source Book project, as they have different methodologies for calculating performance measures.

Figure G.1 Two-Lane Highway Classification



Source: Derived from HCM: Chapter 15: Two-Lane Highways. Percent Time Spent Following (PTSF) is the average percent of total travel time that vehicles must travel in platoons behind slower vehicles due to inability to pass on a two-lane highway. It therefore represents the freedom to maneuver and convenience of travel.

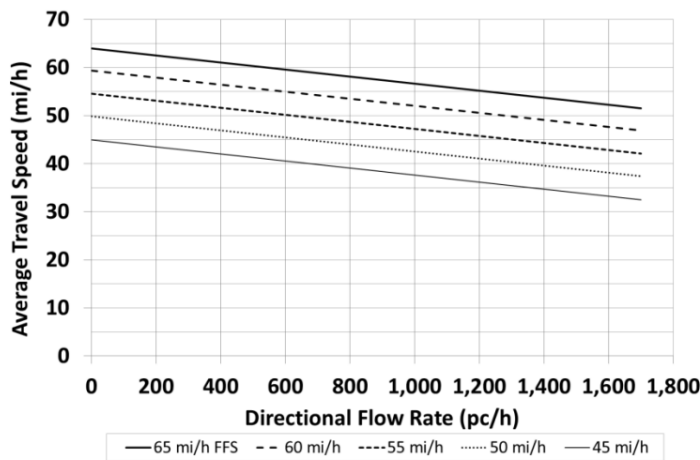
Basic Relationship

Figure G.2 presents the basic relationship between flow, average travel speed, and percent time spent following another vehicle or trailer for two-lane highways in “base conditions”. Base conditions are defined by the HCM as the absence of restrictive geometric, traffic, or environmental factors. Therefore, base conditions are not to be confused with typical or default conditions. They more closely resemble ideal conditions.

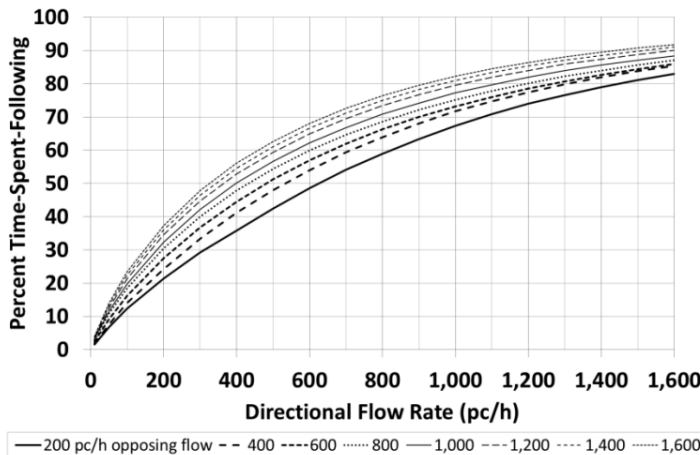
For the Source Book, the two-lane highway speed calculations are based on speed-flow relationships with base conditions (Exhibit 15-2 of HCM 6th Edition).

Figure G.2 Base (Ideal) Speed-Flow Relationship in Two-Lane Highways

Highway Capacity Manual: A Guide for Multimodal Mobility Analysis



(a) ATS Versus Directional Flow Rate



(b) PTSF Versus Directional Flow Rate

Exhibit 15-2
Speed-Flow and PTSF
Relationships for Directional
Segments with Base
Conditions

Source: HCM 6th Edition, Chapter 15

Appendix H County Combination Truck Factors

COUNTY NAME	VEHICLE OCCUPANCY FACTOR
Alachua	0.72
Baker	0.72
Bay	0.43
Bradford	0.53
Brevard	0.67
Broward	0.52
Calhoun	0.53
Charlotte	0.72
Citrus	N/A
Clay	0.35
Collier	0.69
Columbia	0.72
Desoto	0.50
Dixie	0.53
Duval	0.50
Escambia	0.65
Flagler	0.65
Franklin	0.53
Gadsden	0.71
Gilchrist	0.53
Glades	0.53
Gulf	0.53
Hamilton	0.72

COUNTY NAME	VEHICLE OCCUPANCY FACTOR
Hardee	0.51
Hendry	0.52
Hernando	0.72
Highlands	0.46
Hillsborough	0.50
Holmes	0.72
Indian River	0.72
Jackson	0.72
Jefferson	0.72
Lafayette	0.53
Lake	0.41
Lee	0.55
Leon	0.65
Levy	0.53
Liberty	0.53
Madison	0.72
Manatee	0.53
Marion	0.71
Martin	0.71
Miami-Dade	0.49
Monroe	0.47
Nassau	0.72
Okaloosa	0.72

COUNTY NAME	VEHICLE OCCUPANCY FACTOR
Okeechobee	0.52
Orange	0.49
Osceola	0.66
Palm Beach	0.49
Pasco	0.57
Pinellas	0.49
Polk	0.68
Putnam	0.50
Santa Rosa	0.67
Sarasota	0.63
Seminole	0.49
St. Johns	0.72
St. Lucie	0.67
Sumter	0.72
Suwannee	0.72
Taylor	0.52
Union	N/A
Volusia	0.67
Wakulla	0.53
Walton	0.72
Washington	0.72

* For County without Combination Truck factor, 0.68 will be used for Principal Arterial – Interstate, 0.55 will be used for Principal Arterial – Freeway & Expressways, 0.44 will be used for all other roadways.

Appendix I Source Book Data Dictionary

FIELD NAME	DESCRIPTION	ATTRIBUTES	DATA SOURCE	DESCRIPTIVE NAME
ROADWAYID	A unique 8-character identification number assigned to a roadway or section of a roadway either on or off the State Highway System for which information is maintained in the Department's Roadway Characteristics Inventory (RCI)	8-character ID, the first two characters are the county code, the next 3 are the section code, and final 3 characters are the subsection code	Florida Department of Transportation, Transportation Data & Analytics Office. Included in the RCI Top 30 data	Roadway ID
YR	Calendar year for which the calculated performance measure applies	The calendar year that applies to the calculated performance measure. Each Source Book publication reports each performance measure for five years counting back from the most current year of the publication. For example, the Source Book for 2023 measures contains all measures for five years from 2016-2023.	Florida Department of Transportation, Systems Forecasting and Trends Office	Source Book Performance Report Year
ID	Source Book Segment ID	The segments are generated by Florida Department of Transportation, Systems Forecasting and Trends Office, specifically for the Source Book calculations and reporting.	Florida Department of Transportation, Systems Forecasting and Trends Office Source Book segmentation	Source Book Segment ID
BEGIN_POST	Denotes the lowest milepoint for the record	Lowest milepoint for the record	Florida Department of Transportation, Transportation Data & Analytics Office. Included in the RCI Top 30 data	Begin Milepost
END_POST	Denotes the highest milepoint for the record	Highest milepoint for the record	Florida Department of Transportation, Transportation Data & Analytics Office. Included in the RCI Top 30 data	End Milepost

FIELD NAME	DESCRIPTION	ATTRIBUTES	DATA SOURCE	DESCRIPTIVE NAME
DISTRICT	FDOT District Number (Geographic District)	1 - District 1 2 - District 2 3 - District 3 4 - District 4 5 - District 5 6 - District 6 7 - District 7	Florida Department of Transportation, Transportation Data & Analytics Office. Included in the RCI Top 30 data	FDOT Geographic District Number
CNTYNAME	The county that contains the roadway	Alachua, Baker, Bay, Bradford, Brevard, Broward, Calhoun, Charlotte, Citrus, Clay, Collier, Columbia, Desoto, Dixie, Duval, Escambia, Flagler, Franklin, Gadsden, Gilchrist, Glades, Gulf, Hamilton, Hardee, Hendry, Hernando, Highlands, Hillsborough, Holmes, Indian, River, Jackson, Jefferson, Lafayette, Lake, Lee, Leon, Levy, Liberty, Madison, Manatee, Marion, Martin, Miami-Dade, Monroe, Nassau, Okaloosa, Okeechobee, Orange, Osceola, Palm Beach, Pasco, Pinellas, Polk, Putnam, Santa Rosa, Sarasota, Seminole, St. Johns, St. Lucie, Sumter, Suwannee, Taylor, Union, Volusia, Wakulla, Walton, Washington	Florida Department of Transportation, Transportation Data & Analytics Office. Included in the RCI Top 30 data	County Name
USROUTE	USROUTE refers to U.S. Route, which is the United States Numbered Highway System. A US route number is assigned to a specific roadway that receives federal aid.	The US Route Number	Florida Department of Transportation, Transportation Data & Analytics Office. Included in the RCI Top 30 data	US Route
STROUTE	STROUTE stands for state routes. A state route number is assigned to a specific roadway owned and maintained by the FDOT	State road route number from the STROADNO field of the RCI Top 30 feature service layer	Florida Department of Transportation, Transportation Data & Analytics Office. Included in the RCI Top 30 data	State Route
LOCAL_NAME	LOCAL_NAME stands for the local name of facility	Local name of road	Florida Department of Transportation, Transportation Data & Analytics Office. Included in the RCI Top 30 data	Local Name

FIELD NAME	DESCRIPTION	ATTRIBUTES	DATA SOURCE	DESCRIPTIVE NAME
NHS	NHS stands for National Highway System, roads designated by Congress as nationally important for inter-regional travel, including roads designated as connectors to NHS intermodal facilities. This element denotes whether the roadway is on the National Highway System or not. Roads on the SHS, but not on NHS are assigned a 0 by the SFT.	0 - Not a National Highway System 1 - Is a National Highway System	Florida Department of Transportation, Transportation Data & Analytics Office. Included in the RCI Top 30 data	National Highway System
SISFACTP	SISFACTP denotes Florida's Strategic Intermodal System (SIS) Facility Type level. It is roadway characteristics inventory (RCI) feature 149 (SISFCTPX).	0-off the SIS 11-Corridor 13-Corridor Future 14-Corridor Planned Drop 21-Connector 22-Connector Future 23-Connector Planned Drop 24-Military Access 25-Military Access Future 26-Military Access Planned Drop 27-SG Connector 28-SG Connector Future 29-SG Connector Planned Drop 31-Link 41-GIS Route 51-Managed/Express/Reversible	Florida Department of Transportation, Transportation Data & Analytics Office. Included in the RCI Top 30 data	Strategic Intermodal System (SIS) Facility Type
SPEED	SPEED provides information on the posted speed on HPMS sample sections. It is roadway characteristics inventory (RCI) feature 311.	NA	Florida Department of Transportation, Transportation Data & Analytics Office. Included in the RCI Top 30 data	Speed

FIELD NAME	DESCRIPTION	ATTRIBUTES	DATA SOURCE	DESCRIPTIVE NAME
URBTYPE	URBTYPE stands for urban area type. This data is included in the RCI Top 30 download but not referenced in the RCI Handbook. The criteria are discussed in FDOT's Urban Boundary and Functional Classification Handbook.	0 - Not urbanized UA -Urbanized area UC - Urban cluster	Florida Department of Transportation, Transportation Data & Analytics Office. Included in the RCI Top 30 data	Urban Area Type
FUNCLASS	FUNCLASS stands for Functional Classification, a description of how a road functions, using definitions and processes specified by the Federal Highway Administration (FHWA). A road may be classified as a principal arterial (including Interstates, Other Freeways and Expressways, or others), a minor arterial, a collector (major or minor), or a local road. The FDOT GIS Functional Classification Roadways shapefile provides spatial information on the assignment of roads into systems according to the character of the service they provide in relation to the total road network. This is used to identify the highway type for performance measures calculations. It is roadway characteristics inventory (RCI) feature 121 (FUNCLASS).	0 - No defined roads 1 - Principal Arterial-Interstate - RURAL 2 - Principal Arterial-Expressway - RURAL 4 - Principal Arterial-Other - RURAL 6 - Minor Arterial - RURAL 7 - Major Collector - RURAL 8 - Minor Collector - RURAL 9 - Local - RURAL 11 - Principal Arterial-Interstate - URBAN 12 - Principal Arterial-Freeway and Expressway - URBAN 14 - Principal Arterial-Other - URBAN 16 - Minor Arterial - URBAN 17 - Major Collector - URBAN 18 - Minor Collector (Fed Aid) - URBAN 19 - Local - URBAN	Florida Department of Transportation, Transportation Data & Analytics Office. Included in the RCI Top 30 data	Functional Classification
TOTLANES	TOTLANES stands for the total number of lanes. Count the number of through lanes excluding auxiliary lanes, parking lanes, or acceleration and deceleration lanes. For a divided roadway, there will be two values, one for the left roadway side and one for the right roadway side. For a composite roadway side, there will be one value. It is Roadway Characteristics Inventory (RCI) feature 212 (NOLANES).	NA	Florida Department of Transportation, Transportation Data & Analytics Office. Included in the RCI Top 30 data	Total Number of Lanes

FIELD NAME	DESCRIPTION	ATTRIBUTES	DATA SOURCE	DESCRIPTIVE NAME
URBNAME	URBNAME stands for urban area name. An urban area is defined as a geographical region comprising, as a minimum, the United States Bureau of Census boundary of an urban place with a population of 5,000 or more persons, expanded to include adjacent areas as provided for by FHWA regulations, Sub-section 334.003(27), F.S. It is derived from the feature (URBAREA) in RCI TOP 30 and RCI Feature 124. The attributes are the names of urban area, excluding the code.	0 - No defined area Arcadia-SE Arcadia Belle Glade Big Pine Key Chattahoochee Clewiston Crawfordville Crestview DeFuniak Springs Fellsmere Fernandina Beach Fort Meade Four Corners Frostproof Immokalee Indian Town Interlachen Jasper Jupiter Farms Key Largo Key West Keystone Heights Labelle-Port LaBelle Lake Butler Lake City Lake Placid Live Oak Macclenny Marathon Marianna Marion Oaks Nassau Village-Ratliff Okeechobee-Taylor Creek Orangetree Pahokee Palatka Panama City NE Perry Poinciana, Poinciana SW Quincy	Florida Department of Transportation, Transportation Data & Analytics Office. Included in the RCI Top 30 data	Urban Area Name

FIELD NAME	DESCRIPTION	ATTRIBUTES	DATA SOURCE	DESCRIPTIVE NAME
		Rainbow Lakes Estates Starke Sugarmill Woods Wauchula Woodville World Golf Village Yulee Deltona Fort Walton Beach-Navarre-Wright Gainesville Homosassa Springs-Beverly Hills-Citrus Springs Lady Lake-The Villages Leesburg-Eustis-Tavares North Port-Port Charlotte Ocala Panama City St. Augustine Sebastian-Vero Beach South-Florida Ridge Sebring-Avon Park Spring Hill Titusville Zephyrhills Bonita Springs Kissimmee Lakeland Palm Bay-Melbourne Palm Coast-Daytona Beach-Port Orange Pensacola, (FL-AL) Port Saint Lucie Tallahassee Winter Haven Cape Coral Jacksonville Miami Orlando Sarasota-Bradenton Tampa-St. Petersburg		

FIELD NAME	DESCRIPTION	ATTRIBUTES	DATA SOURCE	DESCRIPTIVE NAME
MPO_NAME	MPONAME stands for the Metropolitan Area where the segment is located in. MPOs are federally mandated transportation planning organizations (TPO) comprised of representatives from local governments and transportation authorities. It is derived from the feature (MPOAREA) in RCI TOP 30 and RCI Feature 124. The attributes are the names of MPO.	None (Outside of MPO Area Boundary and Within County of an MPO Area) Space Coast TPO Charlotte County-Punta Gorda MPO Broward MPO Okaloosa-Walton TPO Gainesville MTPO Hernando/Citrus MPO Hillsborough MPO Indian River County MPO North Florida TPO Polk TPO Lee County MPO Martin MPO Miami-Dade TPO Collier MPO Ocala/Marion County TPO MetroPlan Bay County TPO Pasco County MPO Florida-Alabama TPO Forward Pinellas Sarasota/Manatee MPO St. Lucie TPO Capital Region TPA River to Sea TPO Palm Beach TPA Lake-Sumter MPO Heartland Regional TPO N/A- Entire Counties outside of MPO Areas	Florida Department of Transportation, Transportation Data & Analytics Office. Included in the RCI Top 30 data	Metropolitan Planning Organization
CCTXTCLS	CCTXTCLS stands for context classification, which broadly identifies the various built environments existing in Florida. It denotes the criteria for roadway design elements for safer streets that promote safety, economic development, and quality of life.	C1-Natural C2-Rural C2T-Rural Town C3R-Surburban Residential C3C-Surburban Commercial C4-Urban General C5-Urban Center C6-Urban Core LA-Limited Access	Florida Department of Transportation, Transportation Data & Analytics Office. Included in the RCI Top 30 data	Context Classification

FIELD NAME	DESCRIPTION	ATTRIBUTES	DATA SOURCE	DESCRIPTIVE NAME
LOSAT	LOSAT stands for level of service area type. LOASAT is used to calculate Source Book performance measures which are reported by area type (i.e., VMT, Person Miles Traveled, Average Travel Speed, Vehicle Hours of Delay, Person Hours of Delay, Planning Time Index, % Travel by Congestion Type, % Miles by Congestion Type, % Time by Congestion Type, Duration of Congestion, Average Speed versus Speed Limit, Vehicles per Lane Mile). This information is provided by FDOT Systems Implementation Office.	R - rural area RD - rural developed area RU - rural undeveloped area TR - transitioning area UZ - urbanized area	Florida Department of Transportation, Systems Implementation Office	Level of Service Area Type
LOSFT	LOSFT stands for level of service facility type. LOSFT is used to calculate SB performance measures which are reported by facility type (i.e., VMT, Person Miles Traveled, Average Travel Speed, Vehicle Hours of Delay, Person Hours of Delay, Planning Time Index, % Travel by Congestion Type, % Miles by Congestion Type, % Time by Congestion Type, Duration of Congestion, Average Speed versus Speed Limit, Vehicles per Lane Mile). This information is provided by FDOT Systems Implementation Office.	A - arterial F - freeway H - highway 0 - no designated facility type	Florida Department of Transportation, Systems Implementation Office	Level of Service Facility Type
SHS	SHS is State Highway System, roads under the jurisdiction of the State of Florida, and maintained by Florida Department of Transportation or a regional transportation commission, including roads with Interstate, US, and State Road (SR) numbers. This element denotes whether the roadway is on State Highway System or not.	0 - Not a State Highway System 1 - Is a State Highway System	Florida Department of Transportation, Transportation Data & Analytics Office	State Highway System

FIELD NAME	DESCRIPTION	ATTRIBUTES	DATA SOURCE	DESCRIPTIVE NAME
SECTADT	SECTADT stands for section annual average daily traffic (AADT). According to the 2019 Project Traffic Forecasting Handbook, AADT is defined as the total volume of traffic passing a point or segment of a highway facility in both directions for one year divided by the number of days in the year.	The total volume of traffic on a segment of roadway for one year divided by the number of days in that year.	Florida Department of Transportation, Transportation Data & Analytics Office Annual Average Daily Traffic (AADT) feature service layer that displays the location of traffic breaks and affiliated annual average daily traffic volumes in the state of Florida as derived from event mapping selected traffic characteristics from the FDOT Traffic Characteristics Inventory's (TCI) Telemetered Traffic Monitoring Site (TTMS) data for the respective year.	Annual Average Daily Traffic
VMTPH	VMTPH represents vehicle miles traveled during peak hour. VMT refers to estimated amount of travel for all vehicles in a geographic region over a given period of time. It is calculated as the sum of the number of miles traveled by each vehicle.	This value is calculated by the Florida Department of Transportation, Systems Forecasting and Trends Office using FDOT - Traffic Characteristics Inventory and FDOT - Roadway Characteristics Inventory Feature 147 (Strategic Intermodal System). Last two digits in field name represents the year of the calculated measure.	Florida Department of Transportation, Systems Forecasting and Trends Office Source Book calculated measure	Vehicle Miles Traveled (Peak Hour)
PMTPH	PMTPH represents person miles traveled during peak hour. PMT refers to estimated miles each person travels in a vehicle. It is computed by multiplying vehicle miles traveled (VMT) by the average vehicle occupancy for the county in which the segment resides.	This value is calculated by Florida Department of Transportation, Systems Forecasting and Trends Office for the purpose of providing the measure per each Source Book segment. Last two digits in field name represents the year of the calculated measure.	Florida Department of Transportation, Systems Forecasting and Trends Office Source Book calculated measure	Person Miles Traveled (Peak Hour)

FIELD NAME	DESCRIPTION	ATTRIBUTES	DATA SOURCE	DESCRIPTIVE NAME
VEHPLMPH	VEHPLMPH stands for Vehicles Per Lane Mile during Peak Hour. Vehicles per lane mile represents the average density of vehicles on a roadway segment. It was calculated as the summation of each roadway segment's peak hour vehicle miles traveled divided by the number of lane miles of that segment. VEHPLMPH represents vehicles per lane mile during weekday (excludes holidays) peak hour.	This value is calculated by Florida Department of Transportation, Systems Forecasting and Trends Office using RCI Feature 212 (Through Lanes) and VMTPH20.	<u>Florida Department of Transportation, Systems Forecasting and Trends Office Source Book calculated measure</u>	Vehicles Per Lane Mile (Peak Hour)
ASPEEDPH	ASPEEDPH stands for Average Peak Hour speed. It represents average travel speed during weekday (excludes holidays) peak hour. Average travel speed is calculated for each roadway segment by dividing the length of the segment by the average travel time of all vehicles traversing the segment, including the time when a vehicle is stopped. The average travel speed for an area is the average of all hourly segment travel speeds captured by probe data or modeled through speed-volume functions, weighted by the segment's vehicle miles traveled (VMT).	This value is calculated by Florida Department of Transportation, Systems Forecasting and Trends Office using FDOT - Traffic Characteristics Inventory, Roadway Characteristics Inventory Feature 147 (Strategic Intermodal System), and HERE Technologies - Travel Time Data. Last two digits in field name represents the year of the calculated measure.	<u>Florida Department of Transportation, Systems Forecasting and Trends Office Source Book calculated measure</u>	Average Travel Speed (Peak Hour)
DELAYPH	DELAYPH represents vehicle hours of delay during weekday (excludes holidays) peak hour. Vehicle hours of delay was estimated hourly by determining the difference between actual travel time and the delay threshold travel time along a facility. Delay threshold travel time is the travel time for a motorist during uncongested conditions.	This value is calculated by Florida Department of Transportation, Systems Forecasting and Trends Office using FDOT - Traffic Characteristics Inventory, FDOT - Roadway Characteristics Inventory Feature 147 (Strategic Intermodal System), and HERE Technologies - Travel Time Data. Last two digits in field name represents the year of the calculated measure.	<u>Florida Department of Transportation, Systems Forecasting and Trends Office Source Book calculated measure</u>	Vehicle Hours of Delay (Peak Hour)

FIELD NAME	DESCRIPTION	ATTRIBUTES	DATA SOURCE	DESCRIPTIVE NAME
PDELAYPH	PDELAYPH refers to Person Hours of Delay during the Peak Hour and represents person hours of delay during weekday (excludes holidays) peak hour.	This value is calculated by Florida Department of Transportation, Systems Forecasting and Trends Office using FDOT - Traffic Characteristics Inventory, FDOT - Roadway Characteristics Inventory Feature 147 (Strategic Intermodal System), HERE Technologies - Travel Time Data, and U.S. Department of Transportation (USDOT – National Household Travel Survey, Florida Add-On, 2009). Last two digits in field name represents the year of the calculated measure.	Florida Department of Transportation, Systems Forecasting and Trends Office Source Book calculated measure	Person Hours of Delay (Peak Hour)
ASPEEDPP	ASPEEDPP represents average travel speed during weekdays (excludes holidays) peak period. Average travel speed is calculated for each roadway segment by dividing the length of the segment by the average travel time of all vehicles traversing the segment, including the time when a vehicle is stopped. The average travel speed for an area is the average of all hourly segment travel speeds captured by probe data or modeled through speed-volume functions, weighted by the segment's vehicle miles traveled (VMT).	This value is calculated by Florida Department of Transportation, Systems Forecasting and Trends Office using FDOT - Traffic Characteristics Inventory, FDOT - Roadway Characteristics Inventory Feature 147 (Strategic Intermodal System), and HERE Technologies - Travel Time Data for. Last two digits in field name represents the year of the calculated measure.	Florida Department of Transportation, Systems Forecasting and Trends Office Source Book calculated measure	Average Travel Speed (Peak Period)
VMTD	VMTD is Vehicle Miles Traveled Daily. It represents vehicle miles traveled during an average 24-hour day. VMT refers to the estimated amount of travel for all vehicles in a geographic region over a given period of time. It is calculated as the sum of the number of miles traveled by each vehicle.	This value is calculated by Florida Department of Transportation, Systems Forecasting and Trends Office using FDOT - Traffic Characteristics Inventory and FDOT - Roadway Characteristics Inventory Feature 147 (Strategic Intermodal System). Last two digits in field name represents the year of the calculated measure.	Florida Department of Transportation, Systems Forecasting and Trends Office Source Book calculated measure	Vehicle Miles Traveled (Daily)

FIELD NAME	DESCRIPTION	ATTRIBUTES	DATA SOURCE	DESCRIPTIVE NAME
PMTD	PMTD represents person miles traveled during an average 24-hour day. PMT refers to estimated miles each person travels in a vehicle. It is computed by multiplying vehicle miles traveled (VMT) by the average vehicle occupancy for the county in which the segment resides.	This value is calculated by Florida Department of Transportation, Systems Forecasting and Trends Office using FDOT - Traffic Characteristics Inventory, FDOT - Roadway Characteristics Inventory Feature 147 (Strategic Intermodal System) and U.S. Department of Transportation (USDOT – National Household Travel Survey, Florida Add-On, 2009). Last two digits in field name represents the year of the calculated measure.	<u>Florida Department of Transportation, Systems Forecasting and Trends Office Source Book calculated measure</u>	Person Miles Traveled (Daily)
DELAYD	DELAYD represents vehicle hours of delay during an average 24-hour weekday (excludes holidays). Vehicle hours of delay was estimated hourly by determining the difference between actual travel time and the delay threshold travel time along a facility. Delay threshold travel time is the travel time for a motorist during uncongested conditions.	This value is calculated by Florida Department of Transportation, Systems Forecasting and Trends Office using FDOT - Traffic Characteristics Inventory, FDOT - Roadway Characteristics Inventory Feature 147 (Strategic Intermodal System), and HERE Technologies - Travel Time Data. Last two digits in field name represents the year of the calculated measure.	<u>Florida Department of Transportation, Systems Forecasting and Trends Office Source Book calculated measure</u>	Vehicle Hours of Delay (Daily)
DELAYYLY	DELAYYLY refers to annual delay, which represents vehicle hours of delay experienced on that segment during a year (includes all the calendar days in a year, excluding State of Florida holidays and weekends). Vehicle hours of delay was estimated hourly by determining the difference between actual travel time and the delay threshold travel time along a facility. Delay threshold travel time is the travel time for a motorist during uncongested conditions.	This value is calculated by Florida Department of Transportation, Systems Forecasting and Trends Office using FDOT - Traffic Characteristics Inventory, FDOT - Roadway Characteristics Inventory Feature 147 (Strategic Intermodal System), and HERE Technologies - Travel Time Data. Last two digits in field name represents the year of the calculated measure.	<u>Florida Department of Transportation, Systems Forecasting and Trends Office Source Book calculated measure</u>	Vehicle Hours of Delay (Yearly)

FIELD NAME	DESCRIPTION	ATTRIBUTES	DATA SOURCE	DESCRIPTIVE NAME
PDELAYD	PDELAYD represents person hours of delay during an average 24-hour weekday (excludes holidays). Person hours of delay was estimated by multiplying the average vehicle occupancy for the county in which the segment resides by the daily vehicle hours of delay experienced on that segment (DELAYD). Average vehicle occupancies were developed by county using the 2009 National Household Travel Survey (NHTS) Florida add-on dataset.	This value is calculated by Florida Department of Transportation, Systems Forecasting and Trends Office using FDOT - Traffic Characteristics Inventory, FDOT - Roadway Characteristics Inventory Feature 147 (Strategic Intermodal System), HERE Technologies - Travel Time Data, and U.S. Department of Transportation (USDOT – National Household Travel Survey, Florida Add-On, 2009). Last two digits in field name represents the year of the calculated measure.	Florida Department of Transportation, Systems Forecasting and Trends Office Source Book calculated measure	Person Hours of Delay (Daily)
PDELAYY	PDELAYY represents person hours of delay during a year (includes all the calendar days in a year, excluding State of Florida holidays and weekends). Person hours of delay was estimated by multiplying the average vehicle occupancy for the county in which the segment resides by the yearly vehicle hours of delay (DELAyyy). Average vehicle occupancies were developed by county using the 2009 National Household Travel Survey (NHTS) Florida add-on dataset.	This value is calculated by Florida Department of Transportation, Systems Forecasting and Trends Office using FDOT - Traffic Characteristics Inventory, FDOT - Roadway Characteristics Inventory Feature 147 (Strategic Intermodal System), HERE Technologies - Travel Time Data, and U.S. Department of Transportation (USDOT – National Household Travel Survey, Florida Add-On, 2009). Last two digits in field name represents the year of the calculated measure.	Florida Department of Transportation, Systems Forecasting and Trends Office Source Book calculated measure	Person Hours of Delay (Yearly)
PMIHCPH	PMIHCPH represents percent miles heavily congested during weekday (excludes holidays) peak hour. PMIHCPH refers to the percent roadway miles categorized as heavily congested.	This value is calculated by Florida Department of Transportation, Systems Forecasting and Trends Office using FDOT - Traffic Characteristics Inventory, FDOT - Roadway Characteristics Inventory Feature 147 (Strategic Intermodal System) and Feature 311 (Speed Limits), and HERE Technologies - Travel Time Data. Last two digits in field name represents the year of the calculated measure.	Florida Department of Transportation, Systems Forecasting and Trends Office Source Book calculated measure	Percent Miles Heavily Congested (Peak Hour)
PMIMCPH	PMIMCPH represents percent miles mildly congested during weekday (excludes holidays) peak hour. PMIMCPH refers to the percent roadway miles categorized as mildly congested.	This value is calculated by Florida Department of Transportation, Systems Forecasting and Trends Office using FDOT - Traffic Characteristics Inventory, FDOT - Roadway Characteristics Inventory Feature 147 (Strategic Intermodal System) and Feature 311 (Speed Limits), and HERE Technologies - Travel Time Data. Last two digits in field name represents the year of the calculated measure.	Florida Department of Transportation, Systems Forecasting and Trends Office Source Book calculated measure	Percent Miles Mildly Congested (Peak Hour)

FIELD NAME	DESCRIPTION	ATTRIBUTES	DATA SOURCE	DESCRIPTIVE NAME
PMIUCPH	PMIUCPH represents percent miles uncongested during weekday (excludes holidays) peak hour. PMIUC refers to the percent roadway miles categorized uncongested.	This value is calculated by Florida Department of Transportation, Systems Forecasting and Trends Office using FDOT - Traffic Characteristics Inventory, FDOT - Roadway Characteristics Inventory Feature 147 (Strategic Intermodal System) and Feature 311 (Speed Limits), and HERE Technologies - Travel Time Data. Last two digits in field name represents the year of the calculated measure.	Florida Department of Transportation, Systems Forecasting and Trends Office Source Book calculated measure	Percent Miles Uncongested (Peak Hour)
PMIHCPP	PMIHCPP represents percent miles heavily congested during weekday (excludes holidays) peak period. PMIHC refers to the percent roadway miles categorized as heavily congested.	This value is calculated by Florida Department of Transportation, Systems Forecasting and Trends Office using FDOT - Traffic Characteristics Inventory, FDOT - Roadway Characteristics Inventory Feature 147 (Strategic Intermodal System) and Feature 311 (Speed Limits), and HERE Technologies - Travel Time Data. Last two digits in field name represents the year of the calculated measure.	Florida Department of Transportation, Systems Forecasting and Trends Office Source Book calculated measure	Percent Miles Heavily Congested (Peak Period)
PMIMCPP	PMIMCPP represents percent miles mildly congested during weekday (excludes holidays) peak period. PMIMC refers to the percent roadway miles categorized as mildly congested.	This value is calculated by Florida Department of Transportation, Systems Forecasting and Trends Office using FDOT - Traffic Characteristics Inventory, FDOT - Roadway Characteristics Inventory Feature 147 (Strategic Intermodal System) and Feature 311 (Speed Limits), and HERE Technologies - Travel Time Data. Last two digits in field name represents the year of the calculated measure.	Florida Department of Transportation, Systems Forecasting and Trends Office Source Book calculated measure	Percent Miles Mildly Congested (Peak Period)
PMIUCPP	PMIUCPP represents percent miles uncongested during weekday (excludes holidays) peak period. PMIUC refers to the percent roadway miles categorized as uncongested.	This value is calculated by Florida Department of Transportation, Systems Forecasting and Trends Office using FDOT - Traffic Characteristics Inventory, FDOT - Roadway Characteristics Inventory Feature 147 (Strategic Intermodal System) and Feature 311 (Speed Limits), and HERE Technologies - Travel Time Data. Last two digits in field name represents the year of the calculated measure.	Florida Department of Transportation, Systems Forecasting and Trends Office Source Book calculated measure	Percent Miles Uncongested (Peak Period)

FIELD NAME	DESCRIPTION	ATTRIBUTES	DATA SOURCE	DESCRIPTIVE NAME
SPDRATIO	SPDRATIO is expressed as the ratio of average weekday (excluding holidays) peak hour speed against the posted speed limit. The average peak hour speed for a roadway is the average of all hourly roadway segment travel speeds captured by HERE probe speed data or modeled through speed-volume functions, weighted by the segment's vehicle miles traveled (VMT).	This value is calculated by Florida Department of Transportation, Systems Forecasting and Trends Office using FDOT - Traffic Characteristics Inventory, FDOT - Roadway Characteristics Inventory Feature 311 (Speed Limits), and HERE Technologies - Travel Time Data. Last two digits in field name represents the year of the calculated measure.	<u>Florida Department of Transportation, Systems Forecasting and Trends Office Source Book calculated measure</u>	Average Speed versus Speed Limit (Peak Hour)
LOTTRAPH	Level of Travel Time Reliability during AM Peak Hour (LOTTRAPH) is defined as the ratio of the longer travel times (80th percentile) to a normal travel time (50th percentile) over segments of all applicable roads, between the hours of 6 a.m. and 8 p.m. on Monday to Friday.	This value is calculated by Florida Department of Transportation, Systems Forecasting and Trends Office using FDOT - Traffic Characteristics Inventory, FDOT - Roadway Characteristics Inventory Feature 147 (Strategic Intermodal System), and HERE Technologies - Travel Time Data. Last two digits in field name represents the year of the calculated measure.	<u>Florida Department of Transportation, Systems Forecasting and Trends Office Source Book calculated measure</u>	Level of Travel Time Reliability during AM Peak
LOTTRMDD	Level of Travel Time Reliability during Mid Day (LOTTRMDD) is defined as the ratio of the longer travel times (80th percentile) to a normal travel time (50th percentile) over segments of all applicable roads, between the hours of 10 a.m. and 4 p.m. on Monday to Friday.	This value is calculated by Florida Department of Transportation, Systems Forecasting and Trends Office using FDOT - Traffic Characteristics Inventory, FDOT - Roadway Characteristics Inventory Feature 147 (Strategic Intermodal System), and HERE Technologies - Travel Time Data. Last two digits in field name represents the year of the calculated measure.	<u>Florida Department of Transportation, Systems Forecasting and Trends Office Source Book calculated measure</u>	Level of Travel Time Reliability during Mid-day
LOTTRPPH	Level of Travel Time Reliability during PM Peak Hour (LOTTRPPH) is defined as the ratio of the longer travel times (80th percentile) to a normal travel time (50th percentile) over segments of all applicable roads, between the hours of 4 p.m. and 8 p.m. on Monday to Friday.	This value is calculated by Florida Department of Transportation, Systems Forecasting and Trends Office using FDOT - Traffic Characteristics Inventory, FDOT - Roadway Characteristics Inventory Feature 147 (Strategic Intermodal System), and HERE Technologies - Travel Time Data. Last two digits in field name represents the year of the calculated measure.	<u>Florida Department of Transportation, Systems Forecasting and Trends Office Source Book calculated measure</u>	Level of Travel Time Reliability during PM Peak

FIELD NAME	DESCRIPTION	ATTRIBUTES	DATA SOURCE	DESCRIPTIVE NAME
LOTTRWED	Level of Travel Time Reliability during Weekends (LOTTRWED) is defined as the ratio of the longer travel times (80th percentile) to a normal travel time (50th percentile) over segments of all applicable roads, between the hours of 6 a.m. and 8 p.m. on Saturday and Sunday.	This value is calculated by Florida Department of Transportation, Systems Forecasting and Trends Office using FDOT - Traffic Characteristics Inventory, FDOT - Roadway Characteristics Inventory Feature 147 (Strategic Intermodal System), and HERE Technologies - Travel Time Data. Last two digits in field name represents the year of the calculated measure.	Florida Department of Transportation, Systems Forecasting and Trends Office Source Book calculated measure	Level of Travel Time Reliability during Weekends
LOTTRM	The maximum Level of Travel Time Reliability of the four time periods (AM Peak, Mid-Day, PM Peak, and Weekends)	This value is calculated by Florida Department of Transportation, Forecasting and Trends Office using FDOT - Traffic Characteristics Inventory, FDOT - Roadway Characteristics Inventory Feature 147 (Strategic Intermodal System), and HERE Technologies - Travel Time Data. Last two digits in field name represents the year of the calculated measure.	Florida Department of Transportation, Systems Forecasting and Trends Office Source Book calculated measure	Level of Travel Time Reliability Maximum
TTIWDD	TTIWDD denotes the Planning Time Index (PTI) for a weekday (excludes holidays) daily condition. This measure represents the additional time that a traveler should budget to ensure on-time arrival 95 percent of the time.	This value is calculated by Florida Department of Transportation, Systems Forecasting and Trends Office using FDOT - Traffic Characteristics Inventory, FDOT - Roadway Characteristics Inventory Feature 147 (Strategic Intermodal System), and HERE Technologies - Travel Time Data. Last two digits in field name represents the year of the calculated measure.	Florida Department of Transportation, Systems Forecasting and Trends Office Source Book calculated measure	Planning Time Index Weekday (Daily)
TTIWDP	TTIWDP denotes the Planning Time Index (PTI) for a weekday (excludes holidays) peak period condition. This measure represents the additional time that a traveler should budget to ensure on-time arrival 95 percent of the time during a weekday peak period.	This value is calculated by Florida Department of Transportation, Systems Forecasting and Trends Office using FDOT - Traffic Characteristics Inventory, FDOT - Roadway Characteristics Inventory Feature 147 (Strategic Intermodal System), and HERE Technologies - Travel Time Data. Last two digits in field name represents the year of the calculated measure.	Florida Department of Transportation, Systems Forecasting and Trends Office Source Book calculated measure	Planning Time Index Weekday (Peak Period)

FIELD NAME	DESCRIPTION	ATTRIBUTES	DATA SOURCE	DESCRIPTIVE NAME
TTIWDPH	TTIWDPH denotes the Planning Time Index (PTI) for a weekday (excludes holidays) peak hour condition. This measure represents the additional time that a traveler should budget to ensure on-time arrival 95 percent of the time during a weekday peak hour.	This value is calculated by Florida Department of Transportation, Systems Forecasting and Trends Office using FDOT - Traffic Characteristics Inventory, FDOT - Roadway Characteristics Inventory Feature 147 (Strategic Intermodal System), and HERE Technologies - Travel Time Data. Last two digits in field name represents the year of the calculated measure.	Florida Department of Transportation, Systems Forecasting and Trends Office Source Book calculated measure	Planning Time Index Weekday (Peak Hour)
CTASDPH	CTASDPH stands for Combination Truck Average speed during weekday Peak Hour. It represents the average travel speed experienced by combination trucks during weekdays (excludes holidays) peak hour.	This value is calculated by the Florida Department of Transportation, Systems Forecasting and Trends Office using FDOT - Traffic Characteristics Inventory, FDOT - Roadway Characteristics Inventory Feature 147 (Strategic Intermodal System), and HERE Technologies. Last two digits in field name represents the year of the calculated measure.	Florida Department of Transportation, Systems Forecasting and Trends Office Source Book calculated measure	Combination Truck Average Speed (Peak Hour)
CTDELAYD	CTDELAYD represents combination truck (vehicles classified as Classes 8-13 by FHWA) hours of delay during an average 24-hour weekday (excludes holidays). This measures the additional travel time experienced by a combination truck beyond what would be experienced under uncongested conditions. The congestion thresholds are available here . Combination truck hours of delay was estimated hourly by determining the difference between actual travel time and the delay threshold travel time along a facility. Delay threshold travel time is the travel time for a truck during uncongested conditions.	This value is calculated by the Florida Department of Transportation, Systems Forecasting and Trends Office using FDOT - Traffic Characteristics Inventory, FDOT - Roadway Characteristics Inventory Feature 147 (Strategic Intermodal System), and HERE Technologies - Travel Time Data. Last two digits in field name represents the year of the calculated measure.	Florida Department of Transportation, Systems Forecasting and Trends Office Source Book calculated measure	Combination Truck Hours of Delay (Daily)

FIELD NAME	DESCRIPTION	ATTRIBUTES	DATA SOURCE	DESCRIPTIVE NAME
CTMTD	CTMTD presents combination truck miles travel daily. It represents combination truck (vehicles classified as Classes 8-13 by FHWA) miles traveled during an average 24-hour weekday (excludes holidays).	This value is calculated by the Florida Department of Transportation, Systems Forecasting and Trends Office using FDOT - Traffic Characteristics Inventory and FDOT - Roadway Characteristics Inventory Feature 147 (Strategic Intermodal System). Last two digits in field name represents the year of the calculated measure.	Florida Department of Transportation, Systems Forecasting and Trends Office Source Book calculated measure	Combination Truck Miles Traveled (Daily)
CTDECOST	CTDECOST represents the annual cost of delay for combination trucks (vehicles classified as Classes 8-13 by the FHWA), including holidays. This metric measures the monetary cost incurred due to additional travel time experienced by a combination truck beyond what would occur under uncongested conditions.	This value is calculated by Florida Department of Transportation, Forecasting and Trends Office using FDOT - Traffic Characteristics Inventory and FDOT - Roadway Characteristics Inventory Feature 147 (Strategic Intermodal System). Last two digits in field name represents the year of the calculated measure.	Florida Department of Transportation, Systems Forecasting and Trends Office Source Book calculated measure	Combination Truck Cost of Delay (Yearly)
TMTD	TMTD presents truck miles traveled daily. It represents truck (vehicles classified as Classes 4-13 by FHWA) miles traveled during an average 24-hour weekday (excludes holidays).	This value is calculated by the Florida Department of Transportation, Systems Forecasting and Trends Office using FDOT - Traffic Characteristics Inventory and FDOT - Roadway Characteristics Inventory Feature 147 (Strategic Intermodal System). Last two digits in field name represents the year of the calculated measure.	Florida Department of Transportation, Systems Forecasting and Trends Office Source Book calculated measure	Combination Truck Ton Miles Traveled (Daily)
TTITWDD	TTITWDD stands for Combination Truck Planning Time Index (PTI) for a weekday (excludes holidays) daily condition. This measure represents the additional time that a traveler should budget to ensure on-time arrival 95 percent of the time.	This value is calculated by Florida Department of Transportation, Systems Forecasting and Trends Office using FDOT - Traffic Characteristics Inventory, FDOT - Roadway Characteristics Inventory Feature 147 (Strategic Intermodal System), and HERE Technologies - Travel Time Data. Last two digits in field name represents the year of the calculated measure.	Florida Department of Transportation, Systems Forecasting and Trends Office Source Book calculated measure	Combination Truck Planning Time Index (Weekday Daily)

FIELD NAME	DESCRIPTION	ATTRIBUTES	DATA SOURCE	DESCRIPTIVE NAME
TTITWDPP	TTITWDPP stands for Combination Truck Planning Time Index (PTI) for a weekday (excludes holidays) peak period condition. This measure represents the additional time that a traveler should budget to ensure on-time arrival 95 percent of the time during a weekday peak period.	This value is calculated by Florida Department of Transportation, Systems Forecasting and Trends Office using FDOT - Traffic Characteristics Inventory, FDOT - Roadway Characteristics Inventory Feature 147 (Strategic Intermodal System), and HERE Technologies - Travel Time Data. Last two digits in field name represents the year of the calculated measure.	<u>Florida Department of Transportation, Systems Forecasting and Trends Office Source Book calculated measure</u>	Combination Truck Planning Time Index (Weekday Peak Period)
TTITWDPH	TTITWDPH stands for Combination Truck the Planning Time Index (PTI) for a weekday (excludes holidays) peak hour condition. This measure represents the additional time that a traveler should budget to ensure on-time arrival 95 percent of the time during a weekday peak hour.	This value is calculated by Florida Department of Transportation, Systems Forecasting and Trends Office using FDOT - Traffic Characteristics Inventory, FDOT - Roadway Characteristics Inventory Feature 147 (Strategic Intermodal System), and HERE Technologies - Travel Time Data. Last two digits in field name represents the year of the calculated measure.	<u>Florida Department of Transportation, Systems Forecasting and Trends Office Source Book calculated measure</u>	Combination Truck Planning Time Index (Weekday Peak Hour)