District Five
Truck Parking Study

Technical Report #5:
Demand Estimation

February 2018

Contents

Tables

Figures

Truck Parking Demand Estimation

State of the Practice

This portion of the District Five Truck Parking Study (Study) estimates future truck parking demand through forecast methodologies. The nine-county District Five Study area includes: Orange, Osceola, Seminole, Lake, Sumter, Marion, Flagler, Brevard, and Volusia. A total of five estimation approaches were reviewed; four unique methodologies for estimating truck parking demand, along with one recent study by the Florida Department of Transportation's (FDOT) District Four, were reviewed and evaluated. The following methodologies were assessed based on their approach, availability of data, and advantages and disadvantages. The methodologies that were reviewed are described below.

The first methodology considered was based on the "***NCHRP Synthesis 298: Truck Trip Generation Data, A Synthesis of Highway Practice***" (2001) by the Transportation Research Board (TRB). The synthesis mainly focused on the current practices for truck trip generation data. It identified the needs and uses of this data and the critical issues associated with meeting these needs. The report did not directly address truck parking demand estimates and did not provide a clear and replicable methodology for calculating these estimates. Truck parking demand was referenced only as a by-product of truck trip generation. Not enough information was provided with regard to data requirements, or the subsequent steps to estimate truck parking demand.

The second methodology that was considered was based on the "***Estimating the Supply and Demand for Commercial Heavy Truck Parking on Interstate Highways: A Case Study of Interstate 81 in Virginia***" study by Dr. Nicholas J. Garber, Hua Wang and Dares Charoenphol. The methodology used in this study to calculate truck parking demand estimate relied on the accuracy and quality of the data collected. The methodology defined the demand for parking as the sum of parking accumulation and the illegal parking at any given time, and the supply as the number of parking spaces available. Data collection for this methodology consisted of five steps: identifying rest areas and truck stops, inventory of rest areas and truck stops, survey of truck drivers and truck stop owners/managers, collection of traffic information, and collection of truck parking accumulation and duration data. While the study tries to take a comprehensive approach towards estimating demand, the data collection method focuses primarily on illegal parking. The study was unable to conduct regular counts and opted to assume that six vehicles would be parked illegally at any interchange that did not have a truck stop or was a freeway-to-freeway interchange, based on field observations. If this methodology were to be used, the accuracy of illegal parking counts would be very important; however, collecting accurate counts for such parking would require a substantial amount of time and cost, making it very difficult to attain.

The third methodology considered was based on "***Mn/DOT: The Minnesota Interstate Truck Parking Study***" by Wilbur Smith Associates and the Center for Transportation Research and Education at Iowa State University. Minnesota Department of Transportation (Mn/DOT) used a model based on one recommended by AASHTO. The model estimated the demand based on overall traffic flow and on the percent of heavy commercial traffic. The model also estimated the short-term resting need due to driver fatigue, but it did not consider additional demand due to commercial motor vehicles hours of service or staging. In 1996, Apogee Inc. developed a guidebook for a more complicated space estimation model; the model took into account factors such as availability of food, amenities, lighting, location and proximity to delivery and pick up location. This model was based on the recommendation of the 1981 Mn/DOT model for estimating truck parking spaces. The study also pointed out that data for these methods was collected through surveys, field observations and aerial photographs. The study did not provide a clear step-by-step process for calculating the demand, and it focused on current demand rather than forecasting demand.

The fourth methodology considered was based on "***FHWA: Model Development for National Assessment of Commercial Vehicle Parking***" report by the Federal Highway Administration (FHWA). The model formulated for this study based parking demand on a segment of the highway or corridor rather than an individual parking facility. The model predicted parking demand for the segment based on total truck-hours of travel and the time and duration of stops. The model required four main attributes: length of highway segment (km), annual average daily traffic (AADT) (vehicles per day), percent of daily traffic consisting of commercial trucks, and speed limit of highway or average truck speed (kph). All four attributes are easily accessible. The model then relied on 12 parameters: seasonal peaking factor, short-term parking duration per hour traveled (min/hour), maximum hours driven per week, average hours spent loading/unloading per week, average hours spent at home per week, average hours spent parking for rest at shipper/receiver per week, proportion of demand for rest area spaces, proportion of demand for truck stop spaces, proportion of total trucks that are short-haul, proportion of total trucks that are long-haul, peak-parking factor for short-haul trucks, and peak-parking factor for long-haul trucks. The parameters for this model are based on a national survey of 2,000 commercial truck drivers that was conducted in 2002. The report encouraged the selection of parameter values that represent conditions within the local area of interest. The report outlined a detailed step-by-step process to calculate the demand through a 12-step equation.

A recent study conducted by FDOT District Four, titled "***Truck Parking Supply and Demand***," was also reviewed. The study focused on identifying truck parking needs in District Four. The methodology that was utilized in the study to estimate the truck parking demand was based on FHWA's report "***Study of Adequacy of Commercial Truck Parking Facilities - Technical Report***." The report offers a simplified version of the same methodology in "***FHWA: Model Development for National Assessment of Commercial Vehicle Parking***" without taking into consideration all the parameters considered in the latter study. The study also utilized calibrated factors based on another study from Pennsylvania titled: "***Truck Parking in Pennsylvania***." The values used from the Pennsylvania study were used as conservative estimates for the Florida region.

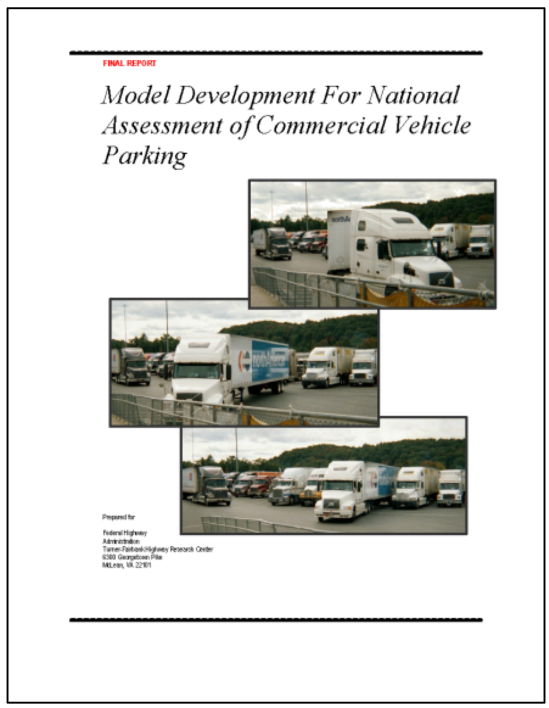
Conclusion

The FHWA method that was highlighted in the report "***FHWA: Model Development for National Assessment of Commercial Vehicle Parking***" was selected for this Study. This method is comprehensive as it takes into account multiple factors that affect the truck parking demand, unlike the other methods mentioned above. This method uses national commercial vehicle operator survey research and is replicable across the District Five study area. Data availability is an important factor for method selection. The segment length, annual average daily traffic, truck percentage and speed limit of the corridors that were used to calculate demand are provided as part of FDOT's Florida Traffic Information (FTI) database. The method is also clear in approach and provides a step-by-step process to calculate truck parking demand along freight corridors. Multiple planning scenarios can be developed with this method by exploring historic and future truck demand attributes (AADT, Truck Percent, and Haul Type).

Demand Estimation Approach

The corridor model selected for this study bases the parking demand for highway segments on total truck-hours of travel and the time and duration of stops, rather than the parking characteristics of a parking facility. The model also considers the ratio of short-haul to long-haul trucks and the inclination to use public or private parking spaces for different purposes.

The key parameter in the model is the number of hours of parking required by drivers given the number of hours they travel (FHWA-RD-01-159). Therefore, the Federal Hours of Service (HOS) regulations have an indirect, but significant, effect on the model as they set the maximum number of hours truck drivers are allowed to drive; each HOS regulation has its own specific restrictions. The primary data input for the model and their sources are summarized in **Table 5-1**. The model produces a peak-hour estimate of parking spaces demanded for a highway segment (FHWA-RD-01-159).


FINAL REPORT

Model Development For National Assessment of Commercial Vehicle Parking

Prepared for

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Because short-haul drivers (i.e., those not making overnight trips) make relatively short stops, parking demand is based on minutes of parking time per hour on the road. For long-haul trips, when an overnight rest stop is required on the road, hours of parking demand are calculated using a ratio of parking time to driving time (FHWA-RD-01-159).

Table 5-1 | Primary Data Input Requirements

Model Variable	Description	Data Source
L	Length of highway segment (Miles)	For existing condition FTI database was used; For future conditions the CFRPM 6.1 outputs were used.
AADT	Annual average daily traffic (vehicles per day)	For existing condition FTI database was used; For future conditions the CFRPM 6.1 outputs were used.
P_t	Percent of daily traffic consisting of commercial trucks	For existing condition FTI database was used; For future conditions the CFRPM 6.1 outputs were used.
S	Speed limit of highway or average truck speed (MPH)	For existing condition FTI database was used; For future conditions the CFRPM 6.1 outputs were used.

Source: FHWA-RD-01-159

Table 5-2 provides the default parameters of the model adjusted to reflect changes in HOS regulations along with calibrating the parameters using values from the "***Truck Parking in Pennsylvania***" study. This adjustment was done to modify the parameters of the model to better suit the Florida region.

A seasonal peaking factor of 15 percent was used to represent all vehicles under peak periods. Short-term parking was assumed to be five minutes for each hour traveled. The assumption is based on professional judgment and the information obtained from drivers (FHWA-RD-01-159).

Table 5-2 | Demand Model Parameters

Model Variable	Description	Default Value
F_S	Seasonal peaking factor	1.15
D_{ST}	Short-term parking duration per hour traveled (min/hour)	5
$T_{DRIVING}$	Maximum hours driven per week	55
$T_{LOADING/UNLOADING}$	Average hours spent loading/unloading per week	15
T_{HOME}	Average hours spent at home per week	42
$T_{SHIPPER/RECIEVER}$	Average hours spent parking for rest at shipper/receiver per week	19
P_{RA}	Proportion of demand for rest area spaces	0.23
P_{TS}	Proportion of demand for truck stop spaces	0.77
P_{SH}	Proportion of total trucks that are short-haul	0.36 or 0.07*
P_{LH}	Proportion of total trucks that are long-haul	0.64 or 0.93*
PPF_{SH}	Peak-parking factor for short-haul trucks	0.058
PPF_{LH}	Peak-parking factor for long-haul trucks	0.063

*Values depend on proximity of analysis segment to a metropolitan area:0.36/0.64 for segments within 320 kilometers (200 miles) of a city of 200,000 people or more, 0.07/0.93 otherwise.
Source: FHWA-RD-01-159

The maximum hours driven per week is set to 55 hours according to Hours of Service regulations set by the Federal Motor Carrier Safety Administration (FMCSA). The 11-Hour Driving Limit rule states that a driver may drive a maximum of 11 hours after 10 consecutive hours off duty. The 14-Hour Limit states that the driver may not drive beyond the 14th consecutive hour after coming on duty following 10 consecutive hours off duty, and that the off-duty time does not extend the 14-hour period. The 60/70-Hour Limit rule states that the driver may not drive after 60/70 hours on duty in 7/8 consecutive days. A driver may restart a 7/8 consecutive day period after taking 34 or more consecutive hours off duty.

The maximum hours driven in an 8-day period would be: $70 * \frac{11}{14} = 55\ hr$

Several parameters were based on a national survey of commercial truck drivers that was administered to over 2,000 drivers across the United States. The responses from the survey were used to calibrate the values relying on the needs, preferences and travel patterns of the drivers. Driver survey results were used to determine values for the following parameters; average hours spent loading/unloading per week, average hours spent at home per week, average hours spent parking for rest at shipper/receiver per week, and the portion of demand for public rest area and private truck stop spaces (FHWA-RD-01-159).

The average hours spent loading/unloading the truck (whether the driver actually loads/unloads or waits for it to be done; “driver detention”) was determined from a question that asked drivers how many hours, on average, per week do they spend loading or unloading their trucks. The average response to this question was approximately 15 hours per week (FHWA-RD-01-159).

The average hours spent at home per week was determined from a question in the driver survey that asked drivers how many days, on average do they sleep at home each month. The average response to this question was 6.7 days per month, which translates into approximately 42 hours in eight days (FHWA-RD-01-159).

The average response to the “loading/unloading location” question was 2.6 times per week (FHWA-RD-01-159). Based on the District Four study, the median duration for long-term parking from the “***Truck Parking in Pennsylvania***” study was 7.25 hours (FDOT D4). Using this information, 2.6 times per week translates into approximately 19 hours per week of rest at shippers/receiver.

From this, the amount of time a driver will demand parking along the highway in a week can be determined by taking the total number of hours in an eight-day period (192) and subtracting the time that drivers spend on-duty driving (55 hours), on-duty not driving (15 hours), off-duty (42 hours), and parking other places than along the road (19 hours). Therefore, the total hours of parking demanded per long-haul truck per week, used for this model, is 61 hours.

While **Table 5-3a**, **Table 5-3b**, and **Table 5-4** show the data from the FHWA survey and illustrates how the data could be used to derive the values for the proportion of demand for rest area and truck stop spaces; it is important to note given evolving truck driver needs and locational preferences, study findings pertaining to parking space demand is reported in total values. This reporting approach focuses on total potential demand and associated needs.

The values were derived as follows:

1) The number of driver responses for each preference category (i.e., rest area, truck stop, no preference) was weighted according to the average amount of time spent parking for each activity (thereby converting number of drivers into number of truck-hours of parking according to preference);
2) The truck-hours of parking were then summed for each preference category;
3) The truck-hours of parking in the “no preference” category were then divided evenly between the rest area and truck stop preference categories; and
4) The total truck-hours of parking for rest areas and truck stops were then divided into the overall total truck-hours of parking. This process resulted in values for the proportion of parking demand for rest area and truck stop spaces of 0.23 and 0.77, respectively (FHWA-RD-01-159).

Table 5-3a | Deviation of the Proportion of Parking Demand for Public Rest Areas and Private Truck Stops, Number of Drivers Reporting Preference by Activity

Activity	Average Time for Activity (Hours)	Rest Area Preference (Number of Drivers)	No Preference (Number of Drivers)	Truck Stop Preference (Number of Drivers)
Restroom	0.25	208	334	222
Eat a Meal	1.00	8	63	668
Quick Nap	1.00	328	287	143
Extended Rest	5.00	47	108	593
Vending Machines	0.25	227	400	111
Phones	0.25	138	340	276
Travel Information	0.25	85	370	278

Table 5-3b | Deviation of the Proportion of Parking Demand for Public Rest Areas and Private Truck Stops, Truck-Hours of Parking by Activity

Activity	Rest Area Preference (Truck-Hours)	No Preference (Truck-Hours)	Truck Stop Preference (Truck-Hours)
Restroom	52	83.5	55.5
Eat a Meal	8	63	668
Quick Nap	328	287	143
Extended Rest	235	540	2965
Vending Machines	56.75	100	27.75
Phones	34.5	85	69
Travel Information	21.25	92.5	69.5
Total Truck-Hours	**735.50**	**1,251.00**	**3,997.75**

Source: FHWA-RD-01-159

Table 5-4 | Deviation of the Proportion of Parking Demand for Public Rest Areas and Private Truck Stops, Truck-Hours of Parking by Activity

Facility	Demand (Truck-Hours)	Proportion of Total Demand
Public Rest Areas	735.5+0.5*1251=1361	1361/5984.25=0.23
Private Truck Stops	3997.75+0.5*1251=4623.25	4623.25/5984.25=0.77
Total	**5,984.25**	**1.00**

Source: FHWA-RD-01-159

The "***FHWA: Model Development for National Assessment of Commercial Vehicle Parking***" defines short-haul as trips that could be completed without an overnight stay. Therefore, the maximum one-way distance for short-haul trips would typically be 200 to 250 miles, depending on speed, length of workday, and the number and length of stops. The default proportion of total trucks that are short-haul and the default proportion of total trucks that are long-haul values are based on national averages for long-haul to short-haul truck ratios. For short-haul the value used was 0.36 and for long-haul the value used was 0.64. These values were the default values in "***FHWA: Model Development for National Assessment of Commercial Vehicle Parking***," and are the default values for this study. The default values for the peak-parking factors for short-haul and long-haul trucks were based on the values extracted from "***Truck Parking in Pennsylvania***" study.

Utilizing the average short-haul parking duration of 22 minutes, and 2.11 percent for peak-hour short-haul parking demand utilization, the short-haul peak-parking factor is:

$$\frac{\mathbf{1\ veh}}{\left(\frac{\mathbf{22}}{\mathbf{60}}\right)\mathbf{hrs}} * \mathbf{0.0211} = \mathbf{0.058}$$

Using the median long-haul parking duration of 435 minutes, and 45.35 percent for peak-hour long-haul parking demand utilization, the long-haul peak-parking factor is:

$$\frac{\mathbf{1\ veh}}{\left(\frac{\mathbf{435}}{\mathbf{60}}\right)\mathbf{hrs}} * \mathbf{0.4535} = \mathbf{0.063}$$

Table 5-5 represents the terms calculated and their description. **Table 5-6** shows each equation along with an example solving the demand for the following values:

L = 130 Miles **AADT = 17,500** **P_t = 18%** **S = 65 MPH**

Table 5-5 | Terms Calculated in Step-By-Step Model Process

Equation Number	Term Calculated	Description of Term
1	V_t	Seasonal peak daily truck volume (trucks/day)
2	TT	Average truck travel time (hours/truck)
3	THT_{SH}	Daily short-haul truck-hours of travel (hours/day)
4	THT_{LH}	Daily long-haul truck-hours of travel (hours/day)
5	THP_{SH}	Daily short-haul truck-hours of parking demand (hours/day)
6	THP_{LH}	Daily long-haul truck-hours of parking demand (hours/day)
7	PHP_{SH}	Peak-hour short-haul parking demand (trucks or spaces/hour)
8	PHP_{LH}	Peak-hour long-haul parking demand (trucks or spaces/hour)
9	$PHP_{SH,RA}$	Peak-hour short-haul parking demand at rest areas (trucks or spaces/hour)
10	$PHP_{SH,TS}$	Peak-hour short-haul parking demand at truck stops (trucks or spaces/hour)
11	$PHP_{LH,RA}$	Peak-hour long-haul parking demand at rest areas (trucks or spaces/hour)
12	$PHP_{LH,TS}$	Peak-hour long-haul parking demand at truck stops (trucks or spaces/hour)

Table 5-6 | Equations and Example

Equation Number	Equation	Example
1	$V_t = AADT * P_t * F_s$	$= (17{,}500)(0.18)(1.15) = 3.623tpd$
2	$TT = \frac{L}{S}$	$= \frac{130}{65} = 2hrs$
3	$THT_{SH} = P_{SH} * V_t * TT$	$= (0.36)(3{,}623)(2) = 2{,}609veh - hrs$
4	$THT_{LH} = P_{LH} * V_t * TT$	$= (0.64)(3{,}623)(2) = 4{,}637veh - hrs$
5	$THP_{SH} = \frac{D_{ST} * THT_{SH}}{60} = \frac{5 * THT_{SH}}{60} = \frac{THT_{SH}}{12}$	$= \frac{2{,}609}{12} = 217veh - hrs$
6	$THP_{LH} = \frac{(Parking\ time)/week)}{(Drivingtime/week)} * THT_{LH} + \frac{D_{ST} * THT_{SH}}{60}$ $THP_{LH} = \frac{(61\ hours)}{(55\ hours)} * THT_{LH} + \frac{5 * THT_{SH}}{60}$ $THP_{LH} = 1.109 * THT_{LH} + \frac{THT_{SH}}{12}$	$= 1.109 * (4{,}637) + \frac{4{,}637}{12}$ $= 5{,}529veh - hrs$
7	$PHP_{SH} = PPF_{SH} * THP_{SH} = 0.058 * THP_{SH}$	$= (0.058)(217) = 13veh$
8	$PHP_{LH} = PPF_{LH} * THP_{LH} = 0.063 * THP_{LH}$	$= (0.063)(5{,}529) = 348veh$
9	$PHP_{SH,RA} = P_{RA} * PHP_{SH} = 0.23 * PHP_{SH}$	$= (0.23)(13) = 3veh$
10	$PHP_{SH,TS} = P_{TS} * PHP_{SH} = 0.77 * PHP_{SH}$	$= (0.77)(13) = 10veh$
11	$PHP_{LH,RA} = P_{RA} * PHP_{LH} = 0.23 * PHP_{LH}$	$= (0.23)(348) = 80veh$
12	$PHP_{LH,TS} = P_{TS} * PHP_{LH} = 0.77 * PHP_{LH}$	$= (0.77)(348) = 268veh$

For this example, the total peak-hour parking demand for public rest areas is 3+80 = 83 trucks, and the total peak-hour parking demand for private truck stops is 10+268 = 278 trucks. **Figure 5-1** shows an example of the truck parking estimation spreadsheet derived in *Microsoft Excel*.

Figure 5-1 | Truck Parking Estimation Spreadsheet (Screenshot)

Model Variable	Description	2016 values
L	Length of highway segment (mi)	7.90
AADT_Average	Annual average daily traffic (vehicles per day)_Average	110053
P_t_Min	Percent of daily traffic consisting of commercial trucks (%)_Min	10.30%
P_t_Average	Percent of daily traffic consisting of commercial trucks (%)_Average	13.79%
P_t_Max	Percent of daily traffic consisting of commercial trucks (%)_Max	27.80%
S	Speed limit of highway or average truck speed (mph)	65

Min-Min-Min	2016 Calculator			
	Seasonal peak daily truck volume:	V_t	13036	vpd
	Segment truck travel time per trip:	TT	0.12	hrs
	Truck-hours of SH and LH Travel:	THT_SH	1505	veh-hr
		THT_LH	79	veh-hr
	Truck-hrs of SH parking demand:	THP_SH	125	veh-hr
	Truck-hrs of LH parking demand:	THP_LH	94	veh-hr
	Peak-hour parking demand for SH:	PHP_SH	0	veh-hr
	Peak-hour parking demand for LH:	PHP_LH	3	veh-hr
	SH and LH peak-hour parking demand by facility type:	PHP_(SH,RA)	0	Spaces
		PHP_(SH,TS)	0	Spaces
		PHP_(LH,RA)	1	Spaces
		PHP_(LH,TS)	2	Spaces
	Total Peak-hour parking demand for public rest area		1	Spaces
	Total Peak-hour parking demand for private truck stops		2	Spaces

Sensitivity Testing and Probabilistic Parameters

In order to eliminate outliers in the results, the methodology was subjected to a sensitivity test. Two parameters and one input were varied to represent minimum, mean and maximum scenarios. This step provides for probabilistic model outputs which account for uncertainty and fluctuation in parking demand; and recognizing that not all truck spaces are needed at the same time. The varied input was the truck percentage that allowed for the variation in the amount of trucks on the roadways being studied. These truck percentages were obtained from the FTI database for existing data and the Central Florida Regional Planning Model (CFRPM) 6.1 outputs for future data. The two other factors that were varied were the proportion of total trucks that are short-haul/long-haul percentages and the peak-parking factors.

For the long-haul and short-haul percentages, it was assumed to be five percent for long-haul and 95 percent for short-haul for the minimum scenario and vice-versa for the maximum scenario. As for the peak-parking factors, the values were calibrated using the median duration for long-haul parking and the mean for the short-haul parking utilized in both the FDOT "***Truck Parking Supply and Demand***" that was developed for District Four, and the "***Truck Parking in Pennsylvania***" study. This is assuming peak-parking demand at 0 percent and 20 percent for short-haul and long-haul, respectively, for the minimum scenario and five percent to 60 percent, respectively, for the maximum scenario. Using these values, the peak-parking factors yielded were zero for short-haul and 0.028 for long-haul in the minimum scenario and 0.136 and 0.083, respectively, for the maximum scenario. As for all the mean scenarios, the default values that were noted in **Table 5-2** were used. **Table 5-7** summarizes the values used for each scenario.

Table 5-7 | Values Used for Each Scenario

Variable	Min	Mean	Max
P_{SH}	95%	36%	5%
P_{LH}	5%	64%	95%
PPF_{SH}	0	0.058	0.136
PPF_{LH}	0.028	0.063	0.083

To provide probabilistic outputs and represent the variation in parking demands, the sensitivity analysis used 27 scenarios, a combination of the factors listed in **Table 5-8**, for each roadway segment to report a range (minimum, mean, and maximum) of truck parking space needs. The results were then arranged from lowest to highest, and five of the highest and lowest values were discarded. This process also removes any extremes on both ends that were created by the factorial nature of the analysis. **Table 5-8** shows the composition of each scenario.

Table 5-8 | Scenario Composition

Result Number	Truck volume	Short Haul to Long Haul	Peak Parking Factor
1	Min	Min	Min
2	Min	Min	Mean
3	Min	Min	Max
4	Min	Mean	Min
5	Min	Mean	Mean
6	Min	Mean	Max
7	Min	Max	Min
8	Min	Max	Mean
9	Min	Max	Max
10	Mean	Min	Min
11	Mean	Min	Mean
12	Mean	Min	Max
13	Mean	Mean	Min
14	Mean	Mean	Mean
15	Mean	Mean	Max
16	Mean	Max	Min
17	Mean	Max	Mean
18	Mean	Max	Max
19	Max	Min	Min
20	Max	Min	Mean

Result Number	Truck volume	Short Haul to Long Haul	Peak Parking Factor
21	Max	Min	Max
22	Max	Mean	Min
23	Max	Mean	Mean
24	Max	Mean	Max
25	Max	Max	Min
26	Max	Max	Mean
27	Max	Max	Max

FDOT's "***Truck Parking Supply and Demand***," conducted by District Four, also included a similar sensitivity analysis process. In the District Four study, 45 scenarios for each segment were calculated by varying the truck volume, truck ratio and peak-hour demand. Following preliminary calculations, the five highest and lowest results were discarded.

Corridors Identified for Truck Parking Demand Estimation

Trucks serve as the primary freight mode in Central Florida and this is true for most major metropolitan areas as generally trucks are the most flexible and responsive of all the freight modes. The highway network and supportive infrastructure are important elements of Central Florida's freight transportation system; providing access and connectivity for both long- and short-haul shipments.

Major freight corridors within District Five were identified and utilized in the analysis for this Study. For the demand estimation approach, two state and federally designated roadway networks were identified for the demand estimation calculation based on their interregional connectivity and freight carrying significance. The networks identified are Florida's Strategic Intermodal System (SIS) Corridors and connectors and segments of the National Highway Freight Network (NHFN) within District Five. Based on FDOT estimates, the current ***designated SIS system carries 55 percent*** of total traffic and ***more than 70 percent of all truck traffic*** on the State Highway System. To ensure full regional network coverage, additional roadway segments were included to provide comprehensive east-west and north-south connectivity.

These major corridors and their total segment length are summarized in **Table 5-9**. In order to conduct demand estimation, a few key inputs needed to be obtained. The roadway corridors were divided and organized by county in order to obtain refined results which illustrate supply and demand geographically.

For existing conditions, 2016 information from the FTI database was obtained while CFRPM 6.1 outputs (AADT and Truck Percentage) were used for 2025 and 2040 future year forecasting and analysis. A GIS analysis was conducted to extract and calculate the following demand estimation formula inputs for each study corridor segment:

- Length (miles);
- Posted Speed Limits (mph);
- Annual Average Daily Traffic; and
- Truck Percentage.

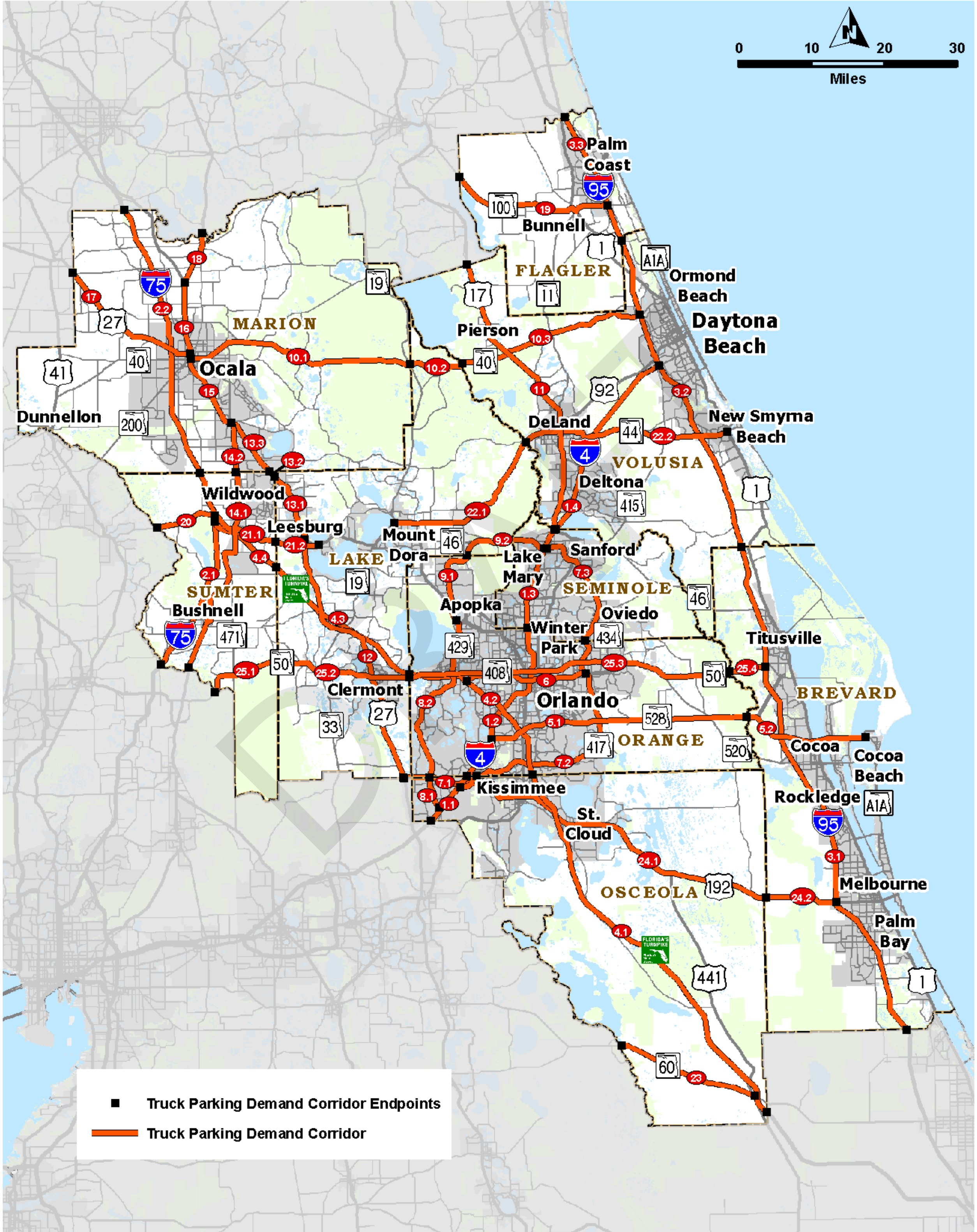
Figure 5-2 shows the corridors utilized for the Truck Parking Demand Estimation, their end points, and their segment IDs that correspond with **Table 5-9**. **Table 5-10** shows the segment limits and counties in which the corridors reside. **Table 5-11** reports the segment length and average posted speed limit. **Table 5-12** through **Table 5-14** show the average AADT counts and the minimum, mean, and maximum truck percentages used to vary the truck volumes in the model for each of the following years: 2016, 2025, and 2040.

Table 5-9 | Study Corridors for Truck Parking Demand Estimation

Segment ID	Corridor	Number of Miles
1	I-4	74
2	I-75	67
3	I-95	137
4	Florida's Turnpike (SR 91)	118
5	SR 528	53
6	SR 408	17
7	SR 417	54
8	SR 429	30
9	SR 429 (Exist. + Future)	24
10	SR 40	66
11	US 17	42
12	US 27	59
13	US 27/441	20
14	US 301	37
15	US 27/441/301	11
16	US 441/301	10
17	US 27	59
18	US 301	7
19	SR 100	23
20	SR 44	77
21	SR 44	77
22	SR 44	77
23	SR 60	20
24	US 192	66
25	SR 50	79
Total		**1,304**

Source: FDOT, 2017

Figure 5-2 | Study Corridors for Truck Parking Demand Estimation



Source: FDOT, 2017

Table 5-10 | Corridor Limits and County Location

Segment ID	Corridor	Limits	County
1.1	I-4	Osceola/Polk Co Line to Osceola/Orange Co Line	Osceola
1.2	I-4	Orange/Osceola Co Line to Orange/Seminole Co Line	Orange
1.3	I-4	Seminole/Orange Co Line to Seminole/Volusia Co Line	Seminole
1.4	I-4	Volusia/Seminole Co Line to I-95	Volusia
2.1	I-75	Sumter/Hernando Co Line to Sumter/Marion Co Line	Sumter
2.2	I-75	Marion/Sumter Co Line to Marion/Alachua Co Line	Marion
3.1	I-95	Brevard/Indian River Co Line to Brevard/Volusia Co Line	Brevard
3.2	I-95	Volusia/Brevard Co Line to Volusia/Flagler Co Line	Volusia
3.3	I-95	Flagler/Volusia Co Line to Flagler/St. Johns Co Line	Flagler
4.1	Florida's Turnpike	Osceola/Indian River Co Line to Osceola/Orange Co Line	Osceola
4.2	Florida's Turnpike	Orange/Osceola Co Line to Orange/Lake Co Line	Orange
4.3	Florida's Turnpike	Lake/Orange Co Line to Lake/Sumter Co Line	Lake
4.4	Florida's Turnpike	Sumter/Lake Co Line to I-75	Sumter
5.1	SR 528	I-4 to Orange/Brevard Co Line	Orange
5.2	SR 528	Brevard/Orange Co Line to SR A1A	Brevard
6	SR 408	FTE/SR 91 to SR 417	Orange
7.1	SR 417	I-4 to Osceola/Orange Co Line	Osceola
7.2	SR 417	Orange/Osceola Co Line to Orange/Seminole Co Line	Orange
7.3	SR 417	Seminole/Orange Co Line to I-4	Seminole
8.1	SR 429	I-4 to Osceola/Orange Co Line	Osceola
8.2	SR 429	Orange/Osceola Co Line to SR 414	Orange
9.1	SR 429 (Ext. + Future)	SR 414 to I-4 Orange/Seminole Co Line	Orange
9.2	SR 429 (Ext. + Future)	Seminole/Orange CO Line to I-4	Seminole
10.1	SR 40	US 301 to Marion/Lake Co Line	Marion
10.2	SR 40	Lake/Marion CO Line to Lake/Volusia Co Line	Lake
10.3	SR 40	Volusia/Lake Co Line to I-95	Volusia
11	US 17	I-4 (Sanford) to Flagler /Putnam Co Line	Flagler
12	US 27	Polk/Lake Co Line to US 441 (Leesburg)	Lake
13.1	US 27/441	US 441 (Leesburg) to Lake/Sumter Co Line	Lake
13.2	US 27/441	Sumter/Lake Co Line to Sumter/Marion Co Line	Sumter
13.3	US 27/441	Marion/Sumter Co Line to US 301 (Belleview)	Marion
14.1	US 301	Sumter/Hernando Co Line to Sumter/Marion Co Line	Sumter
14.2	US 301	Marion/Sumter Co Line to US 441/27 (Belleview)	Marion
15	US 27/441/301	US 441/27 (Belleview) to US 27 (Ocala)	Marion
16	US 441/301	US 27 (Ocala) to US 441/301 Interchange (Reddick)	Marion
17	US 27	US 301/441 (Ocala) to Marion/Levy Co Line	Marion

Segment ID	Corridor	Limits	County
18	US 301	US 441/301 Interchange (Reddick) to Marion/Alachua Co Line	Marion
19	SR 100	Flagler/Putnam Co Line to I-95	Flagler
20	SR 44	Citrus/Sumter Co Line to I-75	Sumter
21.1	SR 44	I-75 to Sumter/Lake Co Line	Sumter
21.2	SR 44	Lake/Sumter Co Line to US 441 (Leesburg)	Lake
22.1	SR 44	US 19 (Eustis) to Lake/Volusia Co Line	Lake
22.2	SR 44	Volusia/Lake Co Line to US 1 (New Smyrna Beach)	Volusia
23	SR 60	Osceola/Polk Co Line FTE/SR 91	Osceola
24.1	US 192	US 27 (4 Corners) to Osceola/Brevard Co Line	Osceola
24.2	US 192	Brevard/Osceola Co Line to I-95	Brevard
25.1	SR 50	Sumter/Hernando Co Line to Sumter/Lake Co Line	Sumter
25.2	SR 50	Lake/Sumter Co Line to Lake/Orange Co Line	Lake
25.3	SR 50	Orange/Lake Co Line to Orange/Brevard Co Line	Orange
25.4	SR 50	Brevard/Orange Co Line to I-95	Brevard

Source: FDOT, 2017

Table 5-11 | Length and Average Posted Speed Limit for Study Segments

Segment ID	County	Length (mi)	Average Posted Speed Limit (mph)
1.1	Osceola	7.9	65
1.2	Orange	24.7	57.5
1.3	Seminole	14.3	60
1.4	Volusia	27.5	67.5
2.1	Sumter	29.0	70
2.2	Marion	38.2	70
3.1	Brevard	72.7	70
3.2	Volusia	45.8	67.5
3.3	Flagler	18.7	70
4.1	Osceola	58.7	70
4.2	Orange	24.9	70
4.3	Lake	23.8	70
4.4	Sumter	10.7	70
5.1	Orange	35.8	67.5
5.2	Brevard	17.7	62.5
6	Orange	17.0	60
7.1	Osceola	3.0	60
7.2	Orange	33.7	67.5
7.3	Seminole	17.4	62.5

Segment ID	County	Length (mi)	Average Posted Speed Limit (mph)
8.1	Osceola	4.5	70
8.2	Orange	25.3	70
9.1	Orange	11.3	70
9.2	Seminole	12.3	70
10.1	Marion	32.2	50
10.2	Lake	7.8	50
10.3	Volusia	26.3	55
11	Flagler	41.5	42.5
12	Lake	38.1	50
13.1	Lake	10.0	40
13.2	Sumter	1.0	45
13.3	Marion	8.6	50
14.1	Sumter	30.3	47.5
14.2	Marion	6.9	50
15	Marion	11.0	45
16	Marion	9.8	55
17	Marion	21.4	55
18	Marion	7.4	57.5
19	Flagler	22.8	47.5
20	Sumter	8.4	60
21.1	Sumter	9.6	50
21.2	Lake	6.1	55
22.1	Lake	24.0	50
22.2	Volusia	29.1	45
23	Osceola	19.8	52.5
24.1	Osceola	56.3	52.5
24.2	Brevard	9.8	65
25.1	Sumter	10.6	57.5
25.2	Lake	18.7	45
25.3	Orange	45.0	47.5
25.4	Brevard	5.1	55

Source: FTI Database, 2016

Table 5-12 | Average AADT and Truck Percentage for Study Segments (2016)

Segment ID	Corridor	AADT	P_t (Min)	P_t (Mean)	P_t (Max)
1.1	I-4	110,053	10.3	13.8	27.8
1.2	I-4	157,579	3.7	6.4	10.3
1.3	I-4	134,751	3.8	7.8	11.7
1.4	I-4	73,756	7.8	12.0	12.8
2.1	I-75	54,797	19.8	21.4	23.3
2.2	I-75	68,309	17.0	19.7	23.3
3.1	I-95	55,074	5.6	14.9	19.8
3.2	I-95	48,850	6.3	9.6	19.4
3.3	I-95	56,795	5.4	8.5	15.4
4.1	Florida's Turnpike (SR 91)	36,078	14.7	14.7	14.7
4.2	Florida's Turnpike (SR 91)	92,387	16.6	16.6	16.6
4.3	Florida's Turnpike (SR 91)	47,588	16.1	16.4	16.6
4.4	Florida's Turnpike (SR 91)	42,988	16.6	16.6	16.6
5.1	SR 528	60,845	4.7	11.0	14.7
5.2	SR 528	36,315	5.6	10.9	14.7
6	SR 408	88,335	3.7	4.3	14.7
7.1	SR 417	28,071	14.7	14.7	14.7
7.2	SR 417	72,010	5.7	6.3	14.7
7.3	SR 417	50,373	14.7	14.7	16.6
8.1	SR 429	18,231	14.7	14.7	14.7
8.2	SR 429	35,886	3.8	8.5	14.7
9.1	SR 429 (Exist. + Future)	37,500	-	5.7	-
9.2	SR 429 (Exist. + Future)	-	-	-	-
10.1	SR 40	11,182	3.7	5.9	9.4
10.2	SR 40	5,146	12.8	14.1	18.6
10.3	SR 40	8,374	5.1	11.3	13.4
11	US 17	16,557	3.2	7.2	12.3
12	US 27	28,138	5.3	9.7	14.7
13.1	US 27/441	32,353	4.6	9.6	11.3
13.2	US 27/441	38,500	3.6	3.6	3.6
13.3	US 27/441	25,148	6.2	9.0	11.8
14.1	US 301	10,565	8.5	12.6	21.1
14.2	US 301	16,286	7.9	8.5	10.9
15	US 27/441/301	28,683	7.0	8.0	12.1
16	US 441/301	23,953	10.3	12.1	14.3
17	US 27	12,190	8.0	14.4	16.0

Segment ID	Corridor	AADT	P_t (Min)	P_t (Mean)	P_t (Max)
18	US 301	14,402	25.9	28.3	30.8
19	SR 100	8,146	4.6	11.0	12.8
20	SR 44	9,361	12.3	12.8	13.1
21.1	SR 44	16,968	13.1	13.3	14.5
21.2	SR 44	20,482	11.7	11.7	12.6
22.1	SR 44	10,366	4.1	8.8	10.2
22.2	SR 44	18,309	4.0	8.4	13.2
23	SR 60	7,233	37.4	37.4	38.1
24.1	US 192	30,032	2.4	9.1	16.2
24.2	US 192	8,800	16.2	16.2	16.2
25.1	SR 50	6,690	21.1	23.3	26.4
25.2	SR 50	30,114	4.6	11.6	25.5
25.3	SR 50	36,268	2.5	4.3	5.7
25.4	SR 50	10,800	-	4.7	-

Source: FTI Database, 2016

Table 5-13 | Average AADT and Truck Percentage for Study Segments (2025)

Segment ID	Corridor	AADT	P_t (Min)	P_t (Mean)	P_t (Max)
1.1	I-4	112,728	10.6	13.5	16.2
1.2	I-4	161,302	9.6	12.6	22.2
1.3	I-4	115,493	8.2	15.1	18.8
1.4	I-4	92,643	4.7	10.7	13.4
2.1	I-75	60,098	17.6	23.4	26.8
2.2	I-75	80,943	17.1	17.9	18.7
3.1	I-95	74,394	6.4	10.6	12.6
3.2	I-95	67,247	6.3	9.2	10.7
3.3	I-95	77,176	9.3	10.0	11
4.1	Florida's Turnpike (SR 91)	42,748	11.7	13.3	16.6
4.2	Florida's Turnpike (SR 91)	108,208	13.8	15.2	17.4
4.3	Florida's Turnpike (SR 91)	64,175	14.6	15.7	16.4
4.4	Florida's Turnpike (SR 91)	58,392	12.4	15.8	19.1
5.1	SR 528	70,812	4.9	7.1	9.3
5.2	SR 528	38,745	4.8	7.3	8.7
6	SR 408	88,715	11.1	13.4	17.6
7.1	SR 417	34,781	10.9	11.7	12.4
7.2	SR 417	56,973	7.4	13.0	17.7

Segment ID	Corridor	AADT	P_t (Min)	P_t (Mean)	P_t (Max)
7.3	SR 417	47,344	13.7	14.9	18.7
8.1	SR 429	35,117	12.5	14.5	14.9
8.2	SR 429	47,520	10.1	12.6	16.7
9.1	SR 429 (Exist. + Future)	34,505	8.5	11.2	13.1
9.2	SR 429 (Exist. + Future)	36,261	10.8	13.4	14
10.1	SR 40	12,371	3.4	6.1	7.8
10.2	SR 40	16,300	5	5.8	5.8
10.3	SR 40	18,806	4.5	5.5	6.3
11	US 17	23,653	3.9	8.7	9.9
12	US 27	32,188	6.4	11.1	12.6
13.1	US 27/441	36,523	7.5	8.1	8.6
13.2	US 27/441	25,504	7.4	7.4	7.4
13.3	US 27/441	22,741	6.2	6.9	7.5
14.1	US 301	11,959	6.2	14.1	15
14.2	US 301	25,754	8.8	10.3	11.2
15	US 27/441/301	27,580	7.5	8.8	9.7
16	US 441/301	40,984	8.1	9.3	10
17	US 27	17,979	3.9	6.9	8.5
18	US 301	22,932	9.9	13.2	14.4
19	SR 100	12,089	3.9	6.1	6.9
20	SR 44	17,499	5.9	9.9	11.2
21.1	SR 44	33,097	9.1	10.2	11.1
21.2	SR 44	24,789	6.1	8.9	11
22.1	SR 44	14,187	6.4	8.8	9.5
22.2	SR 44	18,658	4.8	7.9	10.5
23	SR 60	22,512	9.8	10.8	11.3
24.1	US 192	40,821	3.2	10.2	11.9
24.2	US 192	25,165	3.5	4.6	4.8
25.1	SR 50	18,761	10.3	10.6	10.8
25.2	SR 50	36,887	7	16.7	17.7
25.3	SR 50	41,593	4.3	8.9	10.2
25.4	SR 50	19,636	7.4	7.5	7.6

Source: FTI Database, 2016

Table 5-14 | Average AADT and Truck Percentage for Study Segments (2040)

Segment ID	Corridor	AADT	P_t (Min)	P_t (Mean)	P_t (Max)
1.1	I-4	135,224	10.3	13.4	16.6
1.2	I-4	184,278	9.6	12.8	16.8
1.3	I-4	129,716	13.1	15.3	20.1
1.4	I-4	110,534	4.9	11.0	13.6
2.1	I-75	64,370	16.8	22.9	26.8
2.2	I-75	83,137	16.7	17.5	18.5
3.1	I-95	82,568	6.3	10.5	12.5
3.2	I-95	75,464	6.3	9.3	10.9
3.3	I-95	79,214	9.4	10.0	10.9
4.1	Florida's Turnpike (SR 91)	46,725	11.5	12.9	14.7
4.2	Florida's Turnpike (SR 91)	141,008	14.1	15.3	16.7
4.3	Florida's Turnpike (SR 91)	91,695	13.5	15.4	16.3
4.4	Florida's Turnpike (SR 91)	71,422	11.2	14.6	17.6
5.1	SR 528	96,953	5.1	7.2	9.1
5.2	SR 528	45,154	4.8	7.4	8.4
6	SR 408	114,960	11.2	13.8	17.5
7.1	SR 417	53,652	10.4	11.2	12.1
7.2	SR 417	96,151	9.2	13.1	17.6
7.3	SR 417	68,093	14.1	15.0	19.2
8.1	SR 429	57,784	12.5	14.9	15.3
8.2	SR 429	70,941	11.8	14.1	17.5
9.1	SR 429 (Exist. + Future)	45,546	11.5	13.3	14.4
9.2	SR 429 (Exist. + Future)	43,601	13.7	15.5	16.4
10.1	SR 40	17,753	2.4	7.2	8.3
10.2	SR 40	20,097	4.7	4.9	5
10.3	SR 40	22,865	4.5	5.7	6
11	US 17	25,076	3.9	8.2	10
12	US 27	39,033	6.4	10.6	12.2
13.1	US 27/441	42,689	7.4	8.3	8.7
13.2	US 27/441	28,651	7.6	7.7	7.7
13.3	US 27/441	26,450	6.2	7.3	7.8
14.1	US 301	15,745	6.2	14.1	16.2
14.2	US 301	33,295	8.6	11.2	11.9
15	US 27/441/301	31,891	7.5	9.2	9.7
16	US 441/301	45,032	8.3	9.7	10.1

Segment ID	Corridor	AADT	P_t (Min)	P_t (Mean)	P_t (Max)
17	US 27	18,683	3.9	7.9	8.8
18	US 301	24,147	9.8	13.1	14.3
19	SR 100	15,065	3.9	6.2	6.9
20	SR 44	20,795	5.9	8.8	10.1
21.1	SR 44	40,650	9.2	10.9	11.5
21.2	SR 44	26,907	6.1	9.2	11.3
22.1	SR 44	15,565	6.1	8.9	9.7
22.2	SR 44	21,592	4.7	7.8	10.2
23	SR 60	24,321	9.6	10.4	10.7
24.1	US 192	46,661	2.8	10.1	11.7
24.2	US 192	39,346	3.4	4.2	4.5
25.1	SR 50	18,782	9.7	10.4	10.7
25.2	SR 50	40,170	6.6	16.3	16.5
25.3	SR 50	45,991	4.2	9.3	10.7
25.4	SR 50	25,650	6.8	7.0	7.2

Source: FTI Database, 2016

Demand Estimation Findings

Truck parking demand estimation findings are summarized in **Table 5-15** through **Table 5-19**, moving from the segment level, to the corridor level, to the county level with totals for District Five. The arrangement of the tables allows for each segment to be viewed individually followed by how each segment contributes to each roadway corridor, and ultimately how they contribute to each county's parking space demand.

In summary, ***the full range of truck parking space demand for 2016 is 843 to 6,648 spaces***, while in 2025 the minimum increases from 1,133 to 4,118 spaces; and in 2040, 1,360 to 10,005 truck parking spaces are estimated. **Table 5-15** shows the Segment results for each year, providing a minimum, mean, and max demand levels.

Table 5-15 | Segment Demand Parking Results

Segment ID	2016			2025			2040		
	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max
1.1	25	84	152	22	76	152	26	91	180
1.2	45	171	355	120	388	721	127	420	824
1.3	24	92	204	41	150	322	60	205	388
1.4	37	134	280	38	136	311	47	167	383
2.1	51	207	396	64	233	475	68	243	486
2.2	83	311	602	78	338	640	80	340	649
3.1	78	280	659	89	303	636	98	332	698
3.2	38	138	260	47	162	326	53	183	368
3.3	15	54	105	22	88	169	22	91	173
4.1	42	191	363	57	206	389	55	214	411
4.2	52	234	447	64	251	480	80	326	626
4.3	25	113	213	34	144	276	49	199	391
4.4	11	46	89	16	58	114	18	65	129
5.1	34	121	274	33	107	206	45	148	287
5.2	11	40	86	9	31	62	11	35	72
6	17	58	116	42	144	275	54	190	368
7.1	2	9	17	2	9	16	3	13	24
7.2	37	115	222	38	139	286	80	255	488
7.3	22	92	170	24	86	161	35	127	233
8.1	2	7	14	3	14	27	5	22	44
8.2	11	41	89	27	92	178	42	153	295
9.1	0	1	8	7	25	51	11	41	80

Segment ID	2016			2025			2040		
	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max
9.2	0	0	0	9	34	69	12	49	96
10.1	5	17	35	5	18	37	7	25	64
10.2	2	5	9	2	6	12	2	7	12
10.3	4	15	35	5	20	40	6	25	51
11	11	43	95	20	66	155	20	69	155
12	20	79	171	28	97	211	35	115	244
13.1	7	26	60	7	31	60	9	37	71
13.2	0	1	3	0	2	4	0	2	4
13.3	5	15	30	3	12	22	4	14	27
14.1	10	36	69	11	34	83	13	46	110
14.2	2	8	15	4	15	30	5	20	42
15	8	25	48	6	24	48	7	29	58
16	6	22	42	7	28	55	7	32	63
17	7	24	54	5	18	37	6	20	45
18	5	22	43	4	15	32	4	16	33
19	4	14	33	4	13	28	5	17	35
20	2	7	13	2	9	19	3	10	20
21.1	4	19	35	7	27	53	9	35	69
21.2	3	12	22	3	10	19	3	11	21
22.1	4	15	34	6	23	47	7	25	51
22.2	9	36	80	10	36	73	12	41	84
23	9	44	83	9	38	75	9	40	76
24.1	19	97	241	34	134	345	34	148	391
24.2	2	9	18	2	7	14	2	10	20
25.1	3	12	24	4	16	29	4	15	29
25.2	14	56	119	24	81	199	26	84	211
25.3	16	55	115	33	118	271	38	134	313
25.4	0	0	1	2	6	11	2	7	13
TOTAL	843	3,253	6,648	1,133	4,118	8,351	1,360	4,943	10,005

Table 5-16 shows the Corridor results for each year, providing a minimum, mean and max demand levels.

Table 5-16 | Corridor Demand Results

Segment ID	Corridor	2016			2025			2040		
		Min	Mean	Max	Min	Mean	Max	Min	Mean	Max
1	I-4	131	481	991	221	750	1,506	260	883	1,775
2	I-75	134	518	998	142	571	1,115	148	583	1,135
3	I-95	131	472	1,024	158	553	1,131	173	606	1,239
4	Florida's Turnpike	130	584	1,112	171	659	1,259	202	804	1,557
5	SR 528	45	161	360	42	138	268	56	183	359
6	SR 408	17	58	116	42	144	275	54	190	368
7	SR 417	61	216	409	64	234	463	118	395	745
8	SR 429	13	48	103	30	106	205	47	175	339
9	SR 429 (Ext. + Future)	0	1	8	16	59	120	23	90	176
10	SR 40	11	37	79	12	44	89	15	57	127
11	US 17	11	43	95	20	66	155	20	69	155
12	US 27	20	79	171	28	97	211	35	115	244
13	US 27/441	12	42	93	10	45	86	13	53	102
14	US 301	12	44	84	15	49	113	18	66	152
15	US 27/441/301	8	25	48	6	24	48	7	29	58
16	US 441/301	6	22	42	7	28	55	7	32	63
17	US 27	7	24	54	5	18	37	6	20	45
18	US 301	5	22	43	4	15	32	4	16	33
19	SR 100	4	14	33	4	13	28	5	17	35
20	SR 44	2	7	13	2	9	19	3	10	20
21	SR 44	7	31	57	10	37	72	12	46	90
22	SR 44	13	51	114	16	59	120	19	66	135
23	SR 60	9	44	83	9	38	75	9	40	76
24	US 192	21	106	259	36	141	359	36	158	411
25	SR 50	33	123	259	63	221	510	70	240	566
TOTAL		**843**	**3,253**	**6,648**	**1,133**	**4,118**	**8,351**	**1,360**	**4,943**	**10,005**

County-Level Summary

Based on the county-level segmentation of the estimation corridors described in **Table 5-11**, corridors-level findings were organized geographically to estimate county-level truck parking space demand. **Table 5-17** through **Table 5-19** shows the County results for each horizon year, providing a minimum, median, mean, and maximum demand levels. It is suggested and has been the practice of other studies utilizing this approach, given the factorial nature of the methodology, to focus not on the full range of forecasted demand (minimum to maximum) generated by the model but rather a scenario of demand within the range of median and mean values. The reporting approach provides a probabilistic range of truck parking space demand while acknowledging the limitations and uncertainties of the estimation methodology.

Table 5-17 | County Demand Results, Existing Conditions, 2016

County	Min	Median	Mean	Max
Brevard	91	293	329	764
Flagler	30	99	111	233
Lake	75	265	306	628
Marion	121	382	444	869
Orange	212	731	796	1,626
Osceola	99	360	432	870
Seminole	46	165	184	374
Sumter	81	278	328	629
Volusia	88	297	323	655
Total	**843**	**2,870**	**3,253**	**6,648**

Table 5-18 | County Demand Results, 2025 Forecast Scenario

County	Min	Median	Mean	Max
Brevard	102	321	347	723
Flagler	46	141	167	352
Lake	104	341	392	824
Marion	112	398	468	901
Orange	364	1,119	1,264	2,468
Osceola	127	399	477	1,004
Seminole	74	230	270	552
Sumter	104	334	379	777
Volusia	100	325	354	750
Total	**1,133**	**3,608**	**4,118**	**8,351**

Table 5-19 | County Demand Results, 2040 Forecast Scenario

County	Min	Median	Mean	Max
Brevard	113	357	384	803
Flagler	47	151	177	363
Lake	131	419	478	1,001
Marion	120	423	496	981
Orange	477	1,440	1,667	3,281
Osceola	132	439	528	1,126
Seminole	107	316	381	717
Sumter	115	371	416	847
Volusia	118	378	416	886
Total	**1,360**	**4,294**	**4,943**	**10,005**

It is important to note:

While the approach to calculating the parking demand is comprehensive, it still has limitations and assumed uncertainty, especially in calculating long-range (future) demand. The parking demand in this model is based on truck volume, speed limit, and segment length; and does not take into consideration other factors such as changes in regulatory policies (HOS rules, local ordinances, etc.) and technological advancements in transportation logistics such as autonomous and connected vehicles, or even other modes for transporting goods and services. It is acknowledged that these factors will affect future truck parking demand.

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