

Truck Parking Supply and Demand

FDOT District 4

final report

prepared for

Florida Department of Transportation

prepared by

Cambridge Systematics, Inc.

with

AECOM

report

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2101 West Commercial Boulevard, Suite 3200
Fort Lauderdale, FL 33309

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Table of Contents

- 1.0 Introduction 1-1**
- 2.0 Truck Parking Supply 2-1**
- 3.0 Truck Parking Demand 3-1**
 - 3.1 Methodology 3-1
 - 3.2 Results 3-1
- 4.0 Summary of Industry Input 4-1**
 - 4.1 Stakeholder Interviews 4-1
 - 4.2 Truck Driver Surveys 4-2
- 5.0 Conclusions and Recommendations 5-1**
 - 5.1 Conclusions 5-1
 - 5.2 Recommendations 5-1
- Appendix A. Truck Parking Locations A-1**
- Appendix B. Review of Existing Truck Parking Studies B-1**
- Appendix C. Demand Methodology Description C-1**
- Appendix D. Use of Demand Calculation Spreadsheet D-1**
- Appendix E. In-Person Truck Driver Survey (English) E-1**
- Appendix F. In-Person Truck Driver Survey (Spanish) F-1**
- Appendix G. Truck Driver Survey Results G-1**

List of Tables

Table 1.1	Hours of Service Rules	1-2
Table 2.1	Available Truck Parking Facilities by County	2-1
Table 3.1	Results of Analysis	3-2
Table 3.2	Range of Results for Truck Parking Demand by County	3-3
Table A.1	District 4 Truck Parking Facilities	A-3
Table B.1	Summary of Truck Parking Studies Reviewed	B-1
Table B.2	Summary of Truck Parking Demand Methodologies	B-3
Table C.1	Truck Parking Variables and Assumptions	C-2
Table C.2	SIS Roadways in District 4.....	C-4
Table C.3	Truck AADT of Roadway Segments	C-5
Table C.4	Posted Speed Limits and Segment Length.....	C-6
Table C.5	Short Haul/Long Haul Truck Ratio Assumptions	C-8
Table C.6	Peak Hour Parking Utilization Assumptions.....	C-8
Table G.1	Driver Age	G-1
Table G.2	Miles Driven per Year by Years Driving.....	G-1
Table G.3	Average Time to Find Parking	G-2
Table G.4	Reasons for Hour or More	G-3
Table G.5	Reasons for Parking.....	G-3
Table G.6	Ability to Park at Shipper/Receiver Location	G-4
Table G.7	Improvements for Truck Parking.....	G-4
Table G.8	Importance of Amenities	G-5
Table G.9	Use of Technology for Truck Trips.....	G-5

List of Figures

Figure 2.1 Locations of Truck Parking Facilities within District 4 2-2

Figure 2.2 Google Earth Aerial of Travel America Vero Beach..... 2-3

Figure A.1 Truck Parking Facilities in District 4 A-2

Figure A.2 Google Earth Aerial of Travel America Vero Beach..... A-6

Figure A.3 Area Location of Travel America Vero Beach A-7

Figure A.4 Google Earth Aerial of Gator Texaco Truck Stop A-8

Figure A.5 Area Location of Gator Texaco Truck Stop..... A-9

Figure A.6 Google Earth Aerial of Citgo Quik Mart A-10

Figure A.7 Area Location of Citgo Quik Mart..... A-11

Figure A.8 Google Earth Aerial of St. Lucie County Rest Areas A-12

Figure A.9 Area Location of St. Lucie County Rest Areas A-13

Figure A.10 Google Earth Aerial of Flying J 622 A-14

Figure A.11 Area Location of Flying J 622..... A-15

Figure A.12 Google Earth Aerial of Love’s Travel Stop 467 A-16

Figure A.13 Area Location of Love’s Travel Stop 467 A-17

Figure A.14 Google Earth Aerial of Love’s Travel Stop 415 A-18

Figure A.15 Area Location of Love’s Travel Stop 415..... A-19

Figure A.16 Google Earth Aerial of Falcon Truck Stop A-20

Figure A.17 Area Location of Falcon Truck Stop..... A-21

Figure A.18 Google Earth Aerial of Pilot Travel Center 90 A-22

Figure A.19 Area Location of Pilot Travel Center 90..... A-23

Figure A.20 Google Earth Aerial of Florida’s Turnpike Plaza – Mile Post 144..... A-24

Figure A.21 Area Location of Florida’s Turnpike Plaza – Mile Post 144 A-25

Figure A.22 Google Earth Aerial of Martin County Southbound Truck Comfort Station A-26

Figure A.23 Area Location of Martin County Southbound Truck Comfort Station..... A-27

Figure A.24 Google Earth Aerial of Martin County I-95 Rest Areas A-28

Figure A.25 Area Location of Martin County I-95 Rest Areas A-29

Figure A.26 Google Earth Aerial of Martin County Northbound Truck Comfort Station..... A-30

Figure A.27 Area Location of Martin County Northbound Truck Comfort Station A-31

Figure A.28 Google Earth Aerial of Riviera Truck Stop..... A-32

Figure A.29 Area Location of Riviera Truck Stop A-33

Figure A.30 Google Earth Aerial of Florida’s Turnpike Plaza – Mile Post 94..... A-34

Figure A.31 Area Location of Florida’s Turnpike Plaza – Mile Post 94 A-35

Figure A.32 Google Earth Aerial of 4 Points Market A-36

Figure A.33 Area Location of 4 Points Market..... A-37

Figure A.34	Google Earth Aerial of Marathon Gas Station	A-38
Figure A.35	Area Location of Marathon Gas Station	A-39
Figure A.36	Google Earth Aerial of Southern Belle Truck Stop	A-40
Figure A.37	Area Location of Southern Belle Truck Stop	A-41
Figure A.38	Google Earth Aerial of Pompano Truck Stop	A-42
Figure A.39	Area Location of Pompano Truck Stop.....	A-43
Figure A.40	Google Earth Aerial of Hardy Bros Truck Stop.....	A-44
Figure A.41	Area Location of Hardy Bros Truck Stop	A-45
Figure A.42	Google Earth Aerial of Florida's Turnpike Plaza – Mile Post 65.....	A-46
Figure A.43	Area Location of Florida's Turnpike Plaza – Mile Post 65	A-47
Figure A.44	Google Earth Aerial of 595 Truck Stop.....	A-48
Figure A.45	Area Location of 595 Truck Stop	A-49
Figure A.46	Google Earth Aerial of Broward County	A-50
Figure A.47	Area Location of Broward County Rest Area	A-51
Figure A.48	Google Earth Aerial of Miccosukee Service Plaza	A-52
Figure A.49	Area Location of Miccosukee Service Plaza	A-53
Figure A.50	Google Earth Aerial of Seminole Truck Stop	A-54
Figure A.51	Area Location of Seminole Truck Stop.....	A-55
Figure A.52	Google Earth Aerial of Sunoco Gas Station.....	A-56
Figure A.53	Area Location of Sunoco Gas Station	A-57
Figure G.1	Yearly Mileage for Experienced Drivers (11 years or more).....	G-2

1.0 Introduction

South Florida is home to an active and growing freight and logistics community. With major seaport, rail, highway, and warehouse investments in place or underway, the region is positioned for continued growth in domestic and international trade. This trade will serve a growing marketplace consisting of local businesses and an expanding hinterland to the north. With major gateway and corridor expansions in place, investments in the secondary logistics system is coming to the forefront of the priorities. Many developers are exploring investments in intermodal logistics centers (ILCs), warehouses, and distribution centers. Efforts to grow the local manufacturing base to help balance truck flows are also ongoing. One additional critical element is the capacity of long haul truck parking facilities. South Florida is home to the states' largest international gateways and population base but has limited truck parking available. This, along with truck driver shortages, is not unique to South Florida. In fact, a national study¹ completed by the American Transportation Research Institute (ATRI) highlighted issues that drivers face as it relates to truck parking shortages. This includes a loss in productivity as drivers must spend additional on-duty hours searching for parking or stop short of their allowable hours when they do find parking, which can reduce their overall wages. ATRI estimates this earnings loss at \$4,600 per driver, or over 10 percent of an average driver's wage.

As the Florida Department of Transportation (FDOT) District 4's freight program continues to advance and expand, truck parking needs must be identified and addressed to ensure the trucking industry has the necessary infrastructure to serve Florida's global hubs and domestic markets while complying with federal regulations such as driver hours of service and electronic log books.

In order for the District, which encompasses Broward, Palm Beach, Martin, St. Lucie, and Indian River Counties, to support ongoing expansion in the truck parking infrastructure in South Florida, it must have a comprehensive understanding of the existing facilities, the unmet need/demand, how the industry functions and shares information, and the regulations and policies in place impacting truck parking facilities. This information can then be used to help identify the need for additional truck parking, specific opportunities and priorities, and immediate next steps and actions necessary to advance the program. This analysis represents the first phase of District 4's efforts to examine truck parking focusing on calculating the unmet parking demand. This includes an inventory of available trucking parking supply, the calculation of demand, and recommendations on next steps. This work compliments efforts by the Federal Highway Administration (FHWA), ATRI, FDOT District 6, and the Miami-Dade Transportation Planning Organization (TPO).

The 595 Truck Stop at the interchange of I-595 and Florida's Turnpike illustrates the market demand and private sector interest in truck parking in South Florida. Over the last several years, the 595 Truck Stop has opened, expanded, and continues to look for expansion opportunities. It operates at or near capacity 24/7. Rest areas along Florida's Turnpike have similarly undergone redesigns of their facilities to be more accommodating for truck parking. Other private facilities exist in the District, primarily in St. Lucie County and in counties adjacent to I-95, but truck drivers still struggle to find adequate parking.

An understanding of the critical need for truck parking facilities is important so that truck drivers are able to meet regulations put in place by the Federal Motor Carrier Safety Administration (FMCSA). Updated regulations were published in December 2011 with full compliance put into effect in July 2013. The rules for hours of service for property carrying drivers are shown in Table 1.1. These rules may create a conflict for drivers who cannot find parking within the appropriate hours of service. Their options are to disobey federal

¹ *Managing Critical Truck Parking Case Study – Real World Insights from Truck Parking Diaries*. December 2016.

laws and drive longer to find legal parking or to obey federal laws and illegally park in alternative locations such as interstate ramps and vacant properties.

Table 1.1 Hours of Service Rules

Limit	Description
11-Hour Driving Limit	May drive a maximum of 11 hours after 10 consecutive hours off duty
14-Hour Limit	May not drive beyond the 14 th consecutive hour after coming on duty, following 10 consecutive hours off duty. Off-duty time does not extend the 14-hour period.
Rest Breaks	May drive only if 8 hours or less have passed since end of driver's last off-duty or sleeper berth period of at least 30 minutes. Does not apply to drivers using either the short-haul exception in 391.1(e). [49 CFR 397.5 mandatory "in attendance" time may be included in break if no other duties performed]
60/70-Hour Limit	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.
Sleeper Berth Provision	Drivers using the sleeper berth provision must take at least 8 consecutive hours in the sleeper berth, plus a separate 2 consecutive hours either in the sleeper berth, off duty, or any combination of the two.

Source: Federal Motor Carrier Safety Administration.

While these rules have been mandatory since 2013, some drivers are able to manipulate their hours to feign compliance with paper logging. Some may use it to drive more hours than legally allowed in order to generate more revenue, but other drivers may simply "fudge" their hours due to a lack of availability of parking. The ability to manipulate hours will soon be impossible due to the enactment of the electronic logging device (ELD) rule. The deadlines for this rule are as follows:

- Carriers and drivers who are using paper logs or logging software must transition to ELDs no later than December 18, 2017.
- Carriers and drivers who use automatic onboard recording devices (AOBRDs) prior to the compliance date must transition to ELDs no later than December 16, 2019.

The implementation of this rule is anticipated to exasperate existing truck parking shortages as all drivers will be forced into compliance with the hours of service regulations since they will no longer be able to modify paper logs.

2.0 Truck Parking Supply

The initial step in the process of determining truck parking issues in District 4 focused on the creation of an inventory of available truck parking capacity. An understanding of the quantity of parking available, the locations, and the types of amenities offered has an impact on the willingness and ability of a driver to use these facilities. In addition, the type of driver also has an impact on the type of facility utilized.

For instance, a driver utilizing the I-95 corridor to move into and out of South Florida would be less likely to use a truck stop on I-75 in the western part of Broward County. In addition, a long haul driver (a driver who typically drives several hundred miles per day likely across state lines and is only home a few nights a week) stopping overnight in South Florida would be unlikely to utilize a facility which does not provide some type of food service, showers, and fuel. A local, short-haul driver (a driver who operates within a smaller region and is typically home each night) operating within South Florida is more interested in secure parking where their truck can be safely left each night.

The inventory developed as part of this effort has been limited to truck stops designed to serve the long haul over the road truck market. The inventory provides a summary of available parking spaces that is compared to the estimated demand presented in Section 3. While this inventory does focus on facilities which can serve the long haul truck market, that does not preclude other drivers from using such facilities. Oftentimes, drivers of other vehicles such as buses and box trucks, as well as local truck drivers will use such facilities, which further reduces the availability of truck parking for long haul drivers.

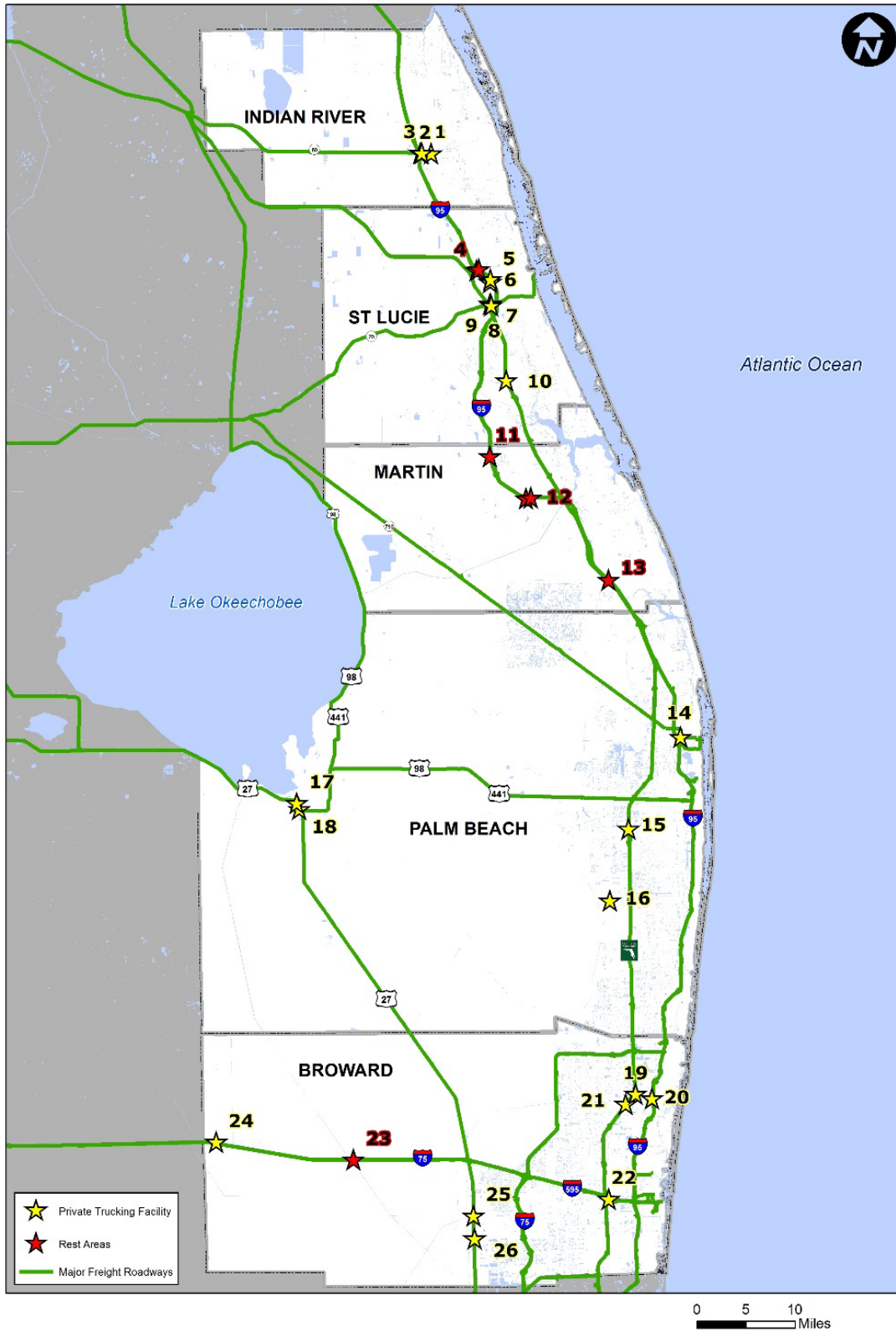
The inventory of truck parking facilities that cater to long haul drivers extends over all five counties that make up District 4, with a heavy concentration in St. Lucie and Broward Counties. Currently, there are over 1,600 parking spaces within 26 facilities, whose locations are displayed in Figure 2.1. Even though all of these facilities are frequented by long haul drivers, they are also utilized by local truck drivers. Detailed descriptions for each of the facilities are provided in Appendix A. Table 2.1 below summarizes the facilities by county, facility type, and number of available spaces. The majority of the facilities are privately-owned and offer 1,199 parking spaces. The publicly owned facilities offer 420 parking spaces. In addition, most facilities are located along major roadways such as Florida's Turnpike and I-95 such that drivers do not need to go far off route in order to reach them.

Table 2.1 Available Truck Parking Facilities by County

County	Facilities			Parking Spaces		
	Public	Private	Total	Public	Private	Total
Indian River	-	3	3	-	181+	181+
St. Lucie	2	5	7	116	501+	617+
Martin	3	-	3	172	-	172
Palm Beach	1	4	5	30	57+	87+
Broward	2	6	8	102	460+	552+
Total	8	18	26	420	1,199+	1,619

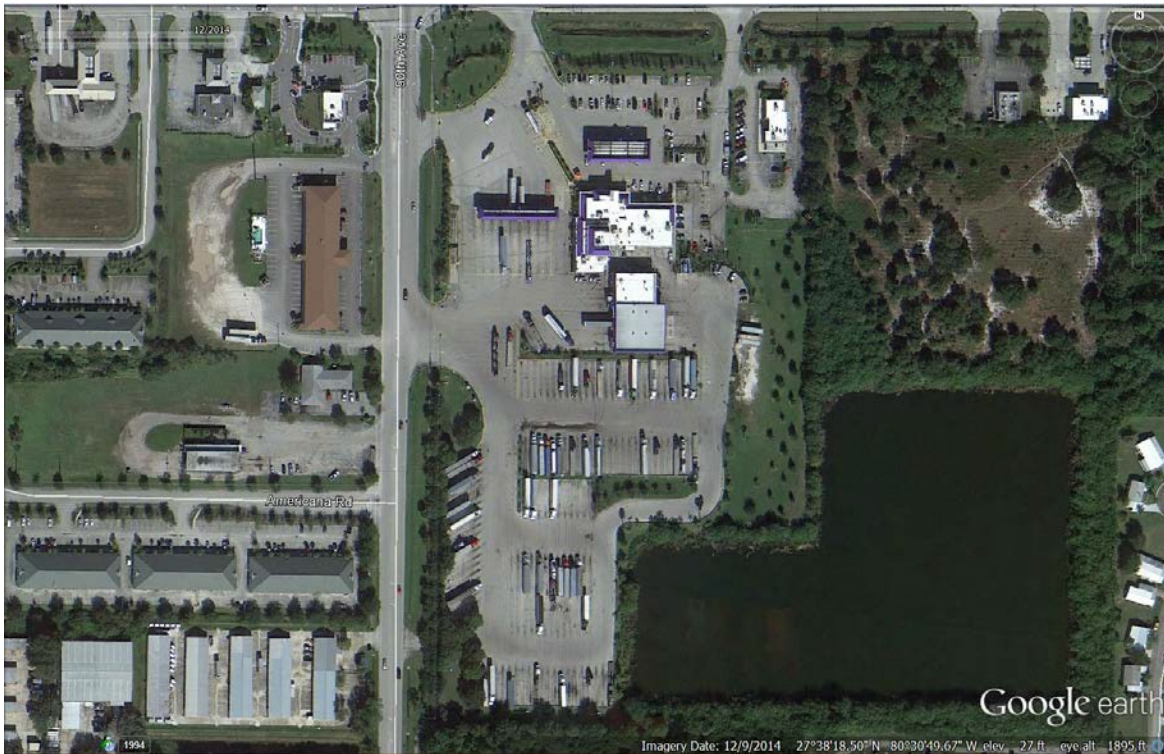
Source: AECOM.

Figure 2.1 Locations of Truck Parking Facilities within District 4



As mentioned, further details are provided in Appendix H for each individual facility. The appendix provides a Google Earth image of each facility, such as that shown in Figure 2.2, as well as information on the types of amenities available, number of spaces, and location. The below is an example of the information provided for a Travel America location in Vero Beach. Note not all facilities included here provide the same services. Some are full service truck stops which can provide fuel, showers, food, maintenance facilities, security, and other amenities. Others are simply a place that a truck can park. Some facilities are free while others may charge a fee. These amenities can make one truck stop more desirable than another to stop at.

Figure 2.2 Google Earth Aerial of Travel America Vero Beach



Source: Google Earth.

Website: www.ta-petro.com/location/fl/ta-vero-beach/

Ownership: Private

Initiation Year: Older than 1994

Parking spaces: 162

Location: 8909 20th Street (SR-60), east of I-95. Exit 147 NB or SB I-95. Vero Beach, FL 32966, Indian River County.

Amenities:

- Fuel Types: DEF island fueling, unleaded gasoline.
- Security: N/A
- Restaurants: Country Pride restaurant, Popeye's, Subway.

- Restrooms & Showers: Handicapped-equipped showers
- Scales: Available
- Truck Washing: N/A
- Electrical Hook-Up: N/A
- Business Services: Reserve-it parking, handicapped parking, fitness, interstate speedzone wifi, laundry room, check cashing services, Western Union, transflo express scanning, permit services, ATM, driver's lounge.
- Repair Facilities: Expert truck alignments.

3.0 Truck Parking Demand

3.1 Methodology

The demand for truck parking, as it relates to supply, is a difficult measure to quantify as it must determine how many trucks would park at a facility if a driver knew that space would be available. For facilities that operate below capacity, this is a more simple effort. However, based on anecdotal information from truck drivers and other industry members in South Florida, further details of which are provided in Section 4, drivers often stop short of their intended destination due to uncertainty about the availability of truck parking at facilities which operate at or above capacity.

Multiple national, statewide, regional, and even county entities have attempted to determine the demand for truck parking. This has resulted in multiple methodologies used to calculate this demand. Appendix B provides a high level overview of the studies and the demand methodologies utilized, where applicable. Based on this review, it was determined that the 2002 *Study of Adequacy of Commercial Truck Parking Facilities* completed by the Federal Highway Administration (FHWA) contained the best methodology to use for this FDOT District 4 effort. This methodology has been applied in multiple states such as Pennsylvania and Virginia and been updated within these applications as appropriate based on new data sources, changing regulations, and the like.

This methodology includes parking needs for both short term parking (i.e. rest breaks) as well as long term parking (long-haul overnight) but does not include the demand from local truckers who may use some of the same facilities to store their vehicle each night. This relies on a number of variables including those derived from Federal Hours of Service regulations, truck volumes, average stop times, average truck speeds, and the like. The methodology determines how much time a truck is spending on a particular roadway segment, based on length and speed, which is multiplied across the total number of trucks traversing that segment on an average day. This yields the total driving time on a segment. This driving time is then put into perspective based on how long an individual driver *may* drive based on HOS to determine how long they *must* be parked. The total parking demand is then summarized to represent the peak demand, recognizing not all truckers will park at the same time. A more detailed explanation, with a walk-through calculation is available in Appendix C. In addition, Appendix D provides a user's guide for modifying the spreadsheet tool developed as part of this effort in the event of updated or alternative data sources.

3.2 Results

The methodology was applied to the Strategic Intermodal System (SIS) roadways within District 4. In order to test the sensitivity of the methodology, the values for three factors were varied to reflect low, medium, and high scenarios. The factors include: truck volume, split of short haul and long haul truck movements, and peak hour of parking utilization. Thirty-six scenarios were generated using these factors and applied to each roadway segment to calculate overall truck parking demand for the District as illustrated in Table 3.1. A wide range of truck parking demand estimates are presented, ranging from as low as 85 spots across the District, to a high of 13,465. The scenarios on the far ends of the spectrum represent less likely combinations of low and/or high values for each factor. The 85 total spots at a minimum represents a combination of the lowest reported truck volumes per segment, the lowest percentage of long haul trucks, and the lowest peak hour usage. The 13,465 truck parking spot estimate represents the maximum for each of these factors. To correct for the less likely extremes, the top five highest values and the bottom five lowest values were removed from consideration. The remaining demand estimates are summarized in Table 3.2.

Table 3.1 Results of Analysis

Truck Volume	Truck Ratio	Peak Hour	Total Demand
Minimum	Low	Low	85
Minimum	Low	Medium	365
Minimum	Low	High	662
Minimum	Medium	Low	686
Minimum	Medium	Medium	1,726
Minimum	Medium	High	2,463
Minimum	High	Low	1,618
Minimum	High	Medium	3,841
Minimum	High	High	5,261
Median	Low	Low	144
Median	Low	Medium	617
Median	Low	High	1,120
Median	Medium	Low	1,129
Median	Medium	Medium	2,850
Median	Medium	High	4,074
Median	High	Low	2,738
Median	High	Medium	6,498
Median	High	High	8,901
Mean	Low	Low	148
Mean	Low	Medium	633
Mean	Low	High	1,149
Mean	Medium	Low	1,158
Mean	Medium	Medium	2,923
Mean	Medium	High	4,178
Mean	High	Low	2,809
Mean	High	Medium	6,668
Mean	High	High	9,134
Maximum	Low	Low	218
Maximum	Low	Medium	933
Maximum	Low	High	1,694
Maximum	Medium	Low	1,691
Maximum	Medium	Medium	4,273
Maximum	Medium	High	6,113
Maximum	High	Low	4,142
Maximum	High	Medium	9,830
Maximum	High	High	13,465

Table 3.2 Range of Results for Truck Parking Demand by County

County	Minimum	Median	Mean	Maximum	Available Parking	Need
Indian River	33	149	155	411	181	0 to 230
St Lucie	65	275	298	711	617	0 to 94
Martin	57	245	253	679	172	0 to 507
Palm Beach	195	623	820	2,248	90	105 to 2,158
Broward	226	820	1,049	2,846	562	0 to 2,284
Total ²	617	2,095	2,576	6,498	1,619	0 to 4,879

The purpose of providing a range of scenarios here is to illustrate how these numbers may be impacted by changing factors, particularly if better data is available in the future. In this case, the minimum and maximum are probably not the most likely scenarios however they can be used to demonstrate the most conservative and the most extreme cases. In fact, for Palm Beach, even in the minimum scenario, truck parking is not adequate. Rather, drivers would need to use excess capacity provided in other counties, which may limit their ability to use their full hours of service. On the other end, the maximum scenario suggests that four times as much parking is needed in District 4. A safer assumption is to look at the median and mean scenarios with a more modest range of 2,095 to 2,576. Based on the inventoried supply, the estimated demand exceeds the available supply by 1,619 available spots throughout the region, suggesting that another 500 to 1,000 truck parking spaces are needed.

An important consideration is also where truck parking is needed within the District. Both Indian River and St. Lucie have an excess supply based on the estimated demand. However, many of these excess spots are filled with drivers who would ideally park in Martin, Palm Beach, or Broward counties but cannot due to limited parking supplies. When drivers have to stop short in this manner, this can reduce their overall driving hours which may have a direct impact on their overall income. In addition, some of these excess spots in Indian River and St. Lucie, as well as spots provided in Broward county, are consumed by vehicles serving Miami-Dade County. The estimated demand presented in this report does not include the demand generated by trucks operating in Miami-Dade County. The Miami-Dade MPO has well documented its unmet truck parking demand. While the methodologies differ, the methodology used for this analysis was applied to illustrate the additional demand that would be generated in Miami-Dade County. Including the I-95 segment in Miami-Dade between the Broward County line and I-395 and applying this same methodology, demand for 120 spots is calculated. Inclusion of additional Miami-Dade County roadways, such as Florida's Turnpike, SR 826 and SR 836 would only further increase this demand. This distinction is important as Miami-Dade County has similar truck parking issues as District 4: significant demand and inadequate supply.

² The total does not represent a sum of the counties; the county numbers represent the specific minimum, median, mean, and maximum scenarios for the individual counties; the total represents a sum of identical scenarios for each county.

4.0 Summary of Industry Input

To supplement the demand calculations, outreach efforts were undertaken in order to get input directly from the industry. This is important in order to ensure that the comparison of the supply and demand reflects what drivers are actually experiencing. This industry input is a two-fold approach including interviews with truck parking facilities themselves as well as surveys of truck drivers while they are utilizing the facilities.

Three separate surveys were administered to commercial truck drivers and truck parking facility operators between August and November 2016. The primary purpose of the surveys was to collect information on key characteristics and features of truck parking facilities within District 4, and to help determine current and future needs of long-haul commercial truck drivers, i.e., drivers moving in and out of the region on 300+ mile trips. Short-haul drivers, however, were not excluded from the surveys. Survey data were collected via questionnaires (both English and Spanish versions) and were managed in-person, over-the-phone, or online. The questionnaires were designed to be completed by participants within five to 10 minutes. Of the three surveys, the in-person survey garnered the greatest number of responses. The methodology and administration of the three surveys are described below.

4.1 Stakeholder Interviews

4.1.1 *In-Person Survey of Truck Drivers*

A survey of truckers was conducted on August 29 and 30, 2016 between 10:00 am and 2:00 pm at the 595 Truck Stop in the Town of Davie in Broward County. There were 20 questions posed on a paper-and-pen questionnaire that truckers were asked to complete at a table set up in front of the facility's diner. Trained surveyors were on hand at the table to introduce the survey, provide guidance, and answer any questions. The respondents independently completed the questionnaire. The majority of the questions were a combination of multiple choice and close-ended, and included truck driver demographics, type of movement (long-haul vs. short-haul), average time to find a parking facility, existing truck parking facilities needing improvement, ranking of amenities, and frequency of use of parking facilities in District 4. A total of 34 truck drivers participated in the survey, 30 of whom were long-haul drivers. Both English and Spanish versions of the survey questionnaire are contained in Appendices E and F, respectively.

4.1.2 *Online (Web-Based) Survey of Truck Drivers*

A mix of key industry, planning, enforcement, and regulatory stakeholders were identified to help distribute an online questionnaire to truck drivers within the South Florida trucking community. Stakeholders included the Florida Trucking Association, the Federal Highway Administration, Port Everglades, Port Everglades Association, Port Miami, Port of Palm Beach, Florida East Coast (FEC) Railway, Florida Customs Brokers and Forwards Association, South Florida truck stop operators, and trucking companies. Introductory emails that described the purpose and intent of the survey, along with online links to English and Spanish questionnaires, were sent to the stakeholders. There were 26 questions posed on the questionnaire that could be completed online by the truck driver. A "submit" button was at the bottom of the last page of the questionnaire. Similar to the in-person survey, the majority of the online questions were a combination of multiple choice and close-ended. Questions included demographics, type of movement, South Florida drop-off/pick-up locations, average time to find a parking facility, reasons for stops, facility characteristics, and frequency of use. A total of six truck drivers participated in the online survey, two of whom were long-haul drivers.

In addition, one of the industry stakeholders, located in Miami, printed out copies of the online questionnaire and tried to get their truck driver clients to answer the questions. Even though the drivers were not interested in writing their answers on the questionnaires, some provided verbal responses, and some provided comments not addressed in the questionnaire, per se. Those who did provide verbal responses said there is not much parking available in Broward County and virtually none in Miami-Dade County (Miami-Dade County is outside District 4 boundaries). When asked about truck stops north of Martin County, the truck drivers said they are very congested and need more capacity. Some drivers said that if there were a large truck stop/parking area in Miami-Dade County, most would take their break there before heading north. There is usually parking available in the Turnpike service plazas but a lot of truck drivers do not use these facilities due to tolls and the higher prices for gas and diesel.

4.1.3 Over-the-Phone/Email Survey of Truck Parking Facility Operators

With the exception of the 595 Truck Stop, the operators (19 in total) of the various truck parking facilities within District 4 were contacted via telephone in September and October 2016 and were asked to participate in the survey. After a brief introduction and a description of the purpose and intent of the survey, the trained surveyor asked the facility operator to either answer the questions over the phone or complete an emailed questionnaire that would in turn be emailed back to the surveyor. There were 23 questions posed on a paper-and-pen questionnaire that focused on the physical and operating characteristics of their respective parking facilities, utilization rates, and plans for expansion.

Of the 19 operators who were contacted, eight said they were not interested in participating; six requested that the questionnaire be either emailed or faxed to them; and the remaining five were left with voice mail messages. Follow-up emails were then sent to those last remaining five with introductory messages and the attached questionnaire. Following ensuing phone calls and emails with the 11 applicable operators that spanned over the next two weeks, one questionnaire, albeit incomplete, was returned.

4.2 Truck Driver Surveys

An analysis of the surveys collected was conducted in order to determine trends in the user group. Since the majority of the questions of the online survey were identical or similar, answers of the six participants of the online survey were counted in with the aggregated data of the in-person survey. A good deal of the data collected from the respondents were within the range of expectations, i.e., demographics of the drivers and the reasons for needing a truck stop. Some of the data provide insights into unmet needs and amenities that are the most important. Highlights of the results are listed below.

- Majority of the drivers have driven 11 years or more; 42 percent drive between 100,000 and 125,000 miles per year.
- Majority are independent drivers, i.e., not part of a team.
- Most often it takes a driver more than an hour to find parking with the top reason for taking an hour or more is that the preferred facility was full.
- Most drivers need to use a truck parking location to meet their hours of service requirements, either for a full stop or a short break.

- Restrooms, fuel, showers, security and restaurants were ranked as top amenities by 80 percent or more of the drivers.
- Commercial truck stops are the most frequently used facilities for rest periods.
- 77 percent said there is significant unmet truck parking need; 91 percent see truck parking conditions worsening over the next five years.
- The top recommendation for improving truck parking issues in District 4 is to provide more commercial truck stop and travel plaza parking spaces.

A more detailed description and analysis of the responses collected from drivers is available in Appendix G and the full data collected from this effort is available as a separate Excel document.

5.0 Conclusions and Recommendations

5.1 Conclusions

Key findings and conclusions reflect the results of the literature search, analyses, and industry input.

- **Changes to federal motor carrier regulations will increase demand for truck parking.** Changes to hours of service regulations combined with requirements for electronic log books will decrease the hours a driver can operate, ensuring all rest periods are observed. Drivers will need access to a greater number of parking facilities in order to be compliant.
- **Anticipated growth in international trade will drive truck parking demand.** Investments by Florida's seaports, airports, and the international trade community to compete as a global logistics hub, combined with ongoing population growth will provide a growing demand for trucking services, and thus the need for additional truck parking.
- **Existing truck parking supply in the District exceeds 1,600 spaces.** The majority of these spaces are provided by private truck stop operators. St. Lucie and Broward counties are home to over 70 percent of the spaces. Private truck stops offer a variety of amenities.
- **Estimated truck parking demand ranges from 2,000 to 2,600 spaces.** Based upon a methodology developed by FHWA, tested and used by other states, and updated with Florida specific data where available, truck parking demand was calculated. The greatest demand exists in Broward County, followed by Palm Beach County.
- **Unmet truck parking demand in the District is estimated to be 500 to 1,000 spaces.** This estimate reflects only the demand generated by the long haul, over the road trucking community. Unmet demand varies by county based on existing supply. There also is unmet parking demand in Miami-Dade County that competes for the District's parking supply. In addition, the analysis did not incorporate seasonal peaks (e.g., holidays, "snow birds"). These factors suggest the estimated unmet demand is a conservative number for some periods of time during the year.
- **Truck drivers reported a lack of truck parking in South Florida.** Input from the trucking industry supports the finding of unmet demand. Surveys with truck drivers reported significant time requirements to locate available parking largely due to first choice being full. Drivers also identified the need for additional spaces at both private and public facilities as a priority.

5.2 Recommendations

This first phase of this truck parking study was designed to provide FDOT District 4 with an estimate of unmet truck parking demand and develop recommended next steps. The following provides a list of recommended next steps for consideration.

- **Identify possible land available for truck stop development by county.** Available land use and freight activity center data (from FDOT's database) could be used to identify possible sites within each county that could be proposed as future truck stops. This would include access and proximity to major truck corridors, key origin/destination patterns, and community support.

- **Identify state owned lands available for truck stop development.** FDOT owns land throughout the District. A screening of available lands could be completed to determine any possible sites that the state could propose to be considered for additional truck parking.
- **Identify needed improvements at existing FDOT truck parking facilities.** FDOT maintains truck parking facilities within its mainline rest areas along I-95, I-75, and Florida's Turnpike. These facilities provide limited amenities and capacity. Possible improvements/additional services could be identified and considered. In addition, increased maintenance requirements due to truck traffic should be considered and incorporated.
- **Identify access improvement needs at existing private truck parking facilities.** The majority of private truck stops identified as part of this effort are located in close proximity to major highway corridors. FDOT could review accessibility to each facility and identify possible improvements as appropriate. An example of this has already been initiated by FDOT at the 595 Truck Stop.
- **Identify non-capacity opportunities to increase utilization at existing facilities.** While many facilities operate at capacity, some locations are underutilized. Programs such as FDOT's TPAS can help to inform drivers of facilities with availability. Similar reservation systems have been developed and tested throughout the U.S. The ability of FDOT to expand TPAS to include private facilities would provide new opportunities to maximize public/private partnerships.
- **Define best role for FDOT in partnering with private developers and truck stop operators.** FDOT as an agency has played different roles by district and at the state level regarding truck parking. FDOT D4 could further define its appropriate role for its 5-county region. As part of this process, a range of business models should be explored to evaluate the best opportunities for the state and its private sector partners.
- **Estimate impact of seasonal peaks on truck parking demand.** Florida experiences a significant increase in visitors (e.g., tourists and "snow birds") at key times during the year. This increase, combined with the impact of holidays, creates significant demand for goods and therefore trucks. Future work should analyze the impact of this peaking on truck parking demand.

FDOT has begun efforts to address the truck parking shortage statewide through the deployment of the Truck Parking Availability System (TPAS). This system uses a combination of pavement sense and closed-circuit televisions in order to determine if a truck is currently occupying a parking spot. Highway signs then inform trucks how many spaces are available two to five miles in advance. The initial roll out of this system will include seven rest areas along I-4 and I-95. A second phase, funded with a FASTLANE grant, will include all rest areas and weigh stations with truck parking, anticipated to be completed in 2018.

Appendix A. Truck Parking Locations

A.1 Existing Truck Parking Facilities

The inventory of truck parking facilities that cater to long haul drivers extends over all five counties that make up District 4, with a heavy concentration in St. Lucie and Broward Counties. Currently, there are over 1,500 parking spaces within 22 facilities, whose locations are displayed in Figure A.1. Even though all of these facilities are frequented by long haul drivers, they are also utilized by local truck drivers. Detailed descriptions are provided in Section A.2. Table A.1 below summarizes the facilities.

Figure A.1 Truck Parking Facilities in District 4

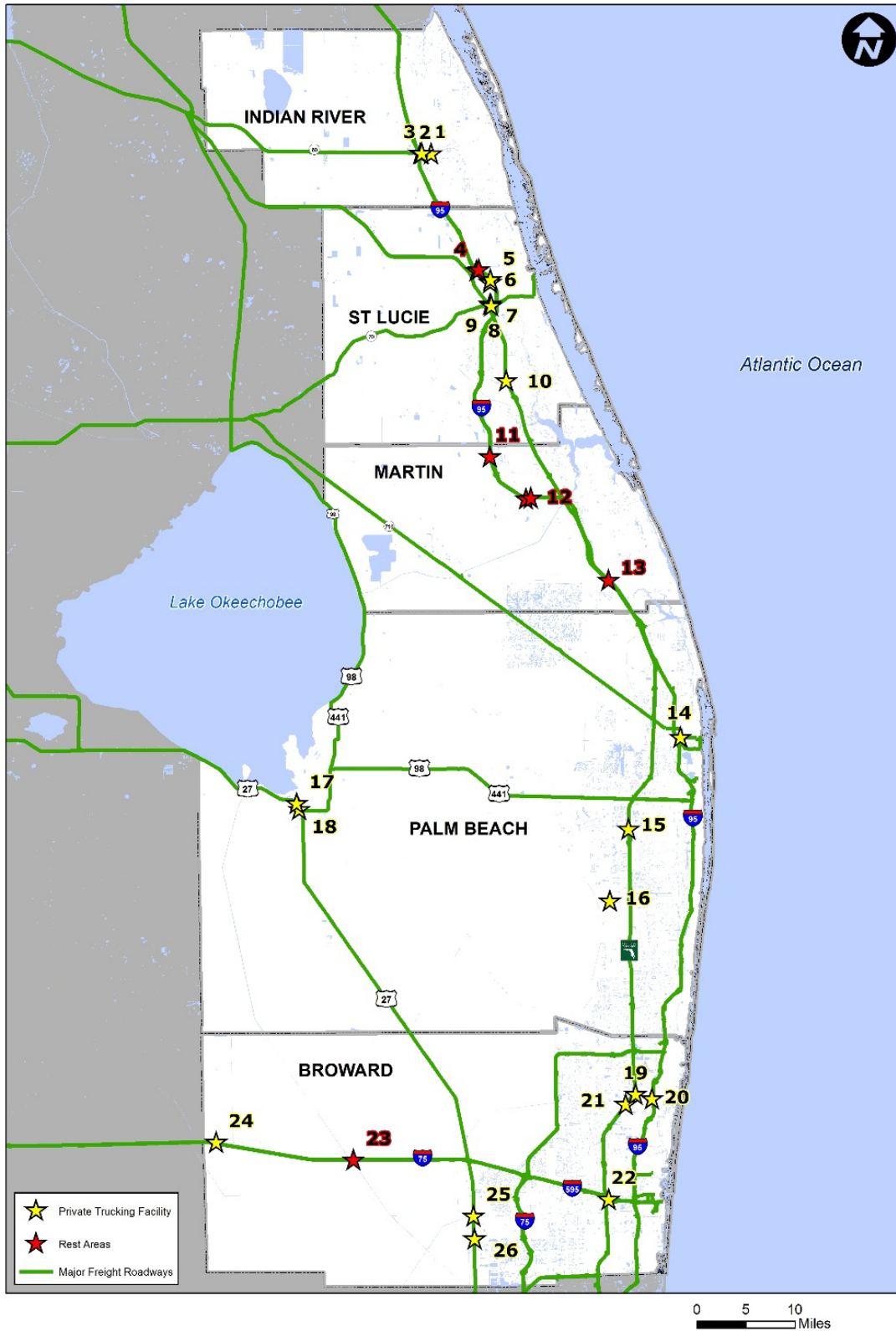


Table A.1 District 4 Truck Parking Facilities

Map ID	Name	Location	City/County	Ownership	# Spaces
1	Travel America Vero Beach	8909 20th Street (SR-60), east of I-95. Exit 147 NB or SB I-95	Vero Beach, FL 32966 Indian River County	Private	162
2	Gator Texaco Truck Stop	8201 20th Street (SR-60) east of I-95. Exit 147 NB or SB I-95	Vero Beach, FL 32966 Indian River County	Private	17+
3	Citgo Quik Mart	9097 20 th St	Vero Beach, FL 32966 Indian River County	Private	2+
4	St. Lucie County Rest Area	2 miles north of SR-68 on I-95, between Mile Post Exits 131 and 138. Separate NB and SB facilities	Fort Pierce, FL 34947 St. Lucie County	Public	84
5	Flying J	100 N. Kings Hwy (SR-713), west of I-95, north of SR-68. Exit 131-B NB or SB I-95	Fort Pierce, FL 34945 St. Lucie County	Private	156
6	Love's Travel Stop	200 S. King Highway (SR-713), west of I-95, south of SR-68. Exit 131-B NB or SB I-95	Fort Pierce, FL 34945 St. Lucie County	Private	120+
7	Love's Travel Stop	7150 W. Okeechobee Road, west of I-95, east of SR-713. Exit 129 NB or SB I-95	Fort Pierce, FL 34945 St. Lucie County	Private	100+
8	Falcon Truck Stop	7045 W. Okeechobee Rd, west of I-95, east of Florida's Turnpike Plaza Mile Post 152. Exit 129 NB or SB I-95	Fort Pierce, FL 34945 St. Lucie County	Private	25+
9	Pilot Travel Center	7300 W. Okeechobee Road, west of I-95, east of Florida's Turnpike Plaza Mile Post 152. Exit 129 NB or SB I-95	Fort Pierce, FL 34945 St. Lucie County	Private	100
10	Florida's Turnpike Plaza - Mile Post 144	2 miles south of SW Port St. Lucie Blvd, between Mile Post Exits 142 and 152	Port St. Lucie, FL 34986 St. Lucie County	Public	32
11	Martin County Weigh-in-Motion (WIM) Comfort Station (Southbound)	I-95, 1 mile south of SW Becker Road, between Mile Post Exits 110 and 114.	Palm City, FL 34990 Martin County	Public	34
12	Martin County Rest Area	3 miles west of Florida's Turnpike on I-95, between Mile Post Exits 102 and 110. Separate NB and SB facilities	Palm City, FL 34990 Martin County	Public	120
13	Martin County Weigh-in-Motion (WIM) Comfort Station (Northbound)	I-95, 5.5 miles north from W. Indiantown Road (SR 706), between Mile Post Exits 87 and 96.	Hobe Sound, FL 33455 Martin County	Public	18
14	Riviera Truck Stop	810 N. Congress Ave, east of I-95, between SR-708 and SR-710. Mile Post Exits 74 and 76 I-95	West Palm Beach, FL 33404 Palm Beach County	Private	10
15	Florida's Turnpike Plaza - Mile Post 94	1 mile north of SR-802 on Florida's Turnpike	West Palm Beach, FL 33467 Palm Beach County	Public	30

Map ID	Name	Location	City/County	Ownership	# Spaces
16	4 Points Market	9975 US 441	West Palm Beach, FL 33467 Palm Beach County	Private	2+
17	Marathon Gas Station	890 U.S. 27, 1 mile north of SR-80	South Bay, FL 33493 Palm Beach County	Private	30+
18	Southern Belle Truck Stop	255 U.S. 27, less than 1 mile north of SR-80	South Bay, FL 33493 Palm Beach County	Private	15+
19	Pompano Truck Stop	1101 NW 31st Ave, less than 1 mile south of Florida's Turnpike Mile Post Exit 67 (Atlantic Blvd. Exit)	Pompano Beach, FL 33069 Broward County	Private	30
20	Hardy Bros. Truck Stop	1126 Hammondville Rd	Pompano Beach, FL 33069 Broward County	Private	5+
21	Florida's Turnpike Plaza - Mile Post 65	Half mile south of W. Atlantic Boulevard (CR-814)	Pompano Beach, FL 33069 Broward County	Public	42
22	595 Truck Stop	2705 Burris Road, south of I-595, between Florida's Turnpike and SR-441. Mile Post Exits 54 of the Florida's Turnpike and 9B of I-595	Davie, FL 33314 Broward County	Private	330+
23	Broward County Rest Area	11 miles west of toll plaza on I-75 (Alligator Alley). Access from EB and WB	Fort Lauderdale, FL 33327 Broward County	Public	60
24	Miccosukee Service Plaza	47801 W. SR-84, north of I-75. Exit 49 WB or EB access from I-75	Fort Lauderdale, FL 33332 Broward County	Private	10+
25	Seminole Truck Stop	4690 U.S. 27, at the northeast intersection of SR-818 and U.S. 27	Weston, FL 33332 Broward County	Private	80+
26	Sunoco Gas Station	21250 Sheridan Street	Fort Lauderdale, FL 33333 Broward County	Private	5+

Source: AECOM.

The majority of the facilities are privately-owned and offer 1,199+ parking spaces. The publicly owned facilities offer 420 parking spaces. The breakdown of parking spaces by county is as follows:

- Indian River – 181+ spaces within three truck stops
- St. Lucie - 617+ spaces within seven truck stops
- Martin - 172 spaces within three truck stops
- Palm Beach - 90+ spaces within five truck stops
- Broward - 562+ spaces within eight truck stops

A.2 Profiles of Existing Truck Parking Facilities

The sizes of the truck parking facilities and amenities vary. The smallest facilities, such as 4 Points Market in West Palm Beach, only have capacity for a handful of trucks. The largest, 595 Truck Stop in Davie (Broward County), has 330+ parking spaces. Amenities include, but are not limited to, restaurants, showers, restrooms, and fueling.

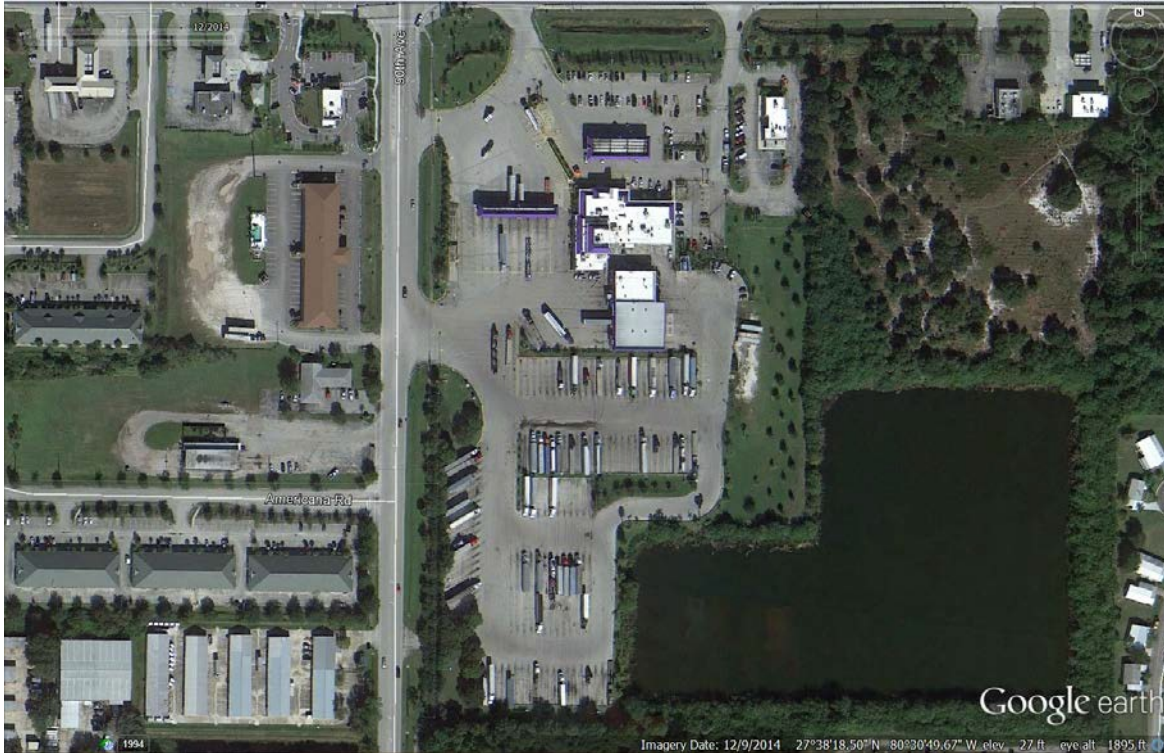
There are three truck parking facilities available at Florida's Turnpike Plazas within District 4 - one each in St. Lucie (Port St. Lucie/Fort Pierce), Palm Beach (West Palm Beach), and Broward (Pompano) Counties. The number of truck parking spaces at these Turnpike Plaza facilities ranges between 30 and 42. Even though this inventory per facility is relatively small, the Turnpike Plazas are open 24 hours per day and offer a variety of other services to both the trucker and the general public. Areas for truck parking at the Turnpike Plazas are segregated from personal vehicle parking. Amenities include fast food dining options, restrooms (including family-style), fueling, gift shops, ATMs, public telephones, 24-hour news broadcasts, travel information, picnic areas, and dog walks. Wireless Internet (WiFi) is also available at these three District 4 Turnpike Plazas. In addition to regular gasoline grades and diesel, the District 4 Turnpike Plaza stations offer E85 ethanol for flex-fuel approved vehicles.

There are also two Weigh-in-Motion (WIM) stations located in Martin County on I-95. Both are located north and south of the Martin County Rest Area, respectively, and are approximately 20 miles from each other. Trucks that are over the weight limit are inspected for safety measures at the facility. Restrooms are also available at the WIM stations.

A.2.1 Indian River County

Travel America Vero Beach

Figure A.2 Google Earth Aerial of Travel America Vero Beach



Source: Google Earth.

Website: www.ta-petro.com/location/fl/ta-vero-beach/

Ownership: Private

Initiation Year: Older than 1994

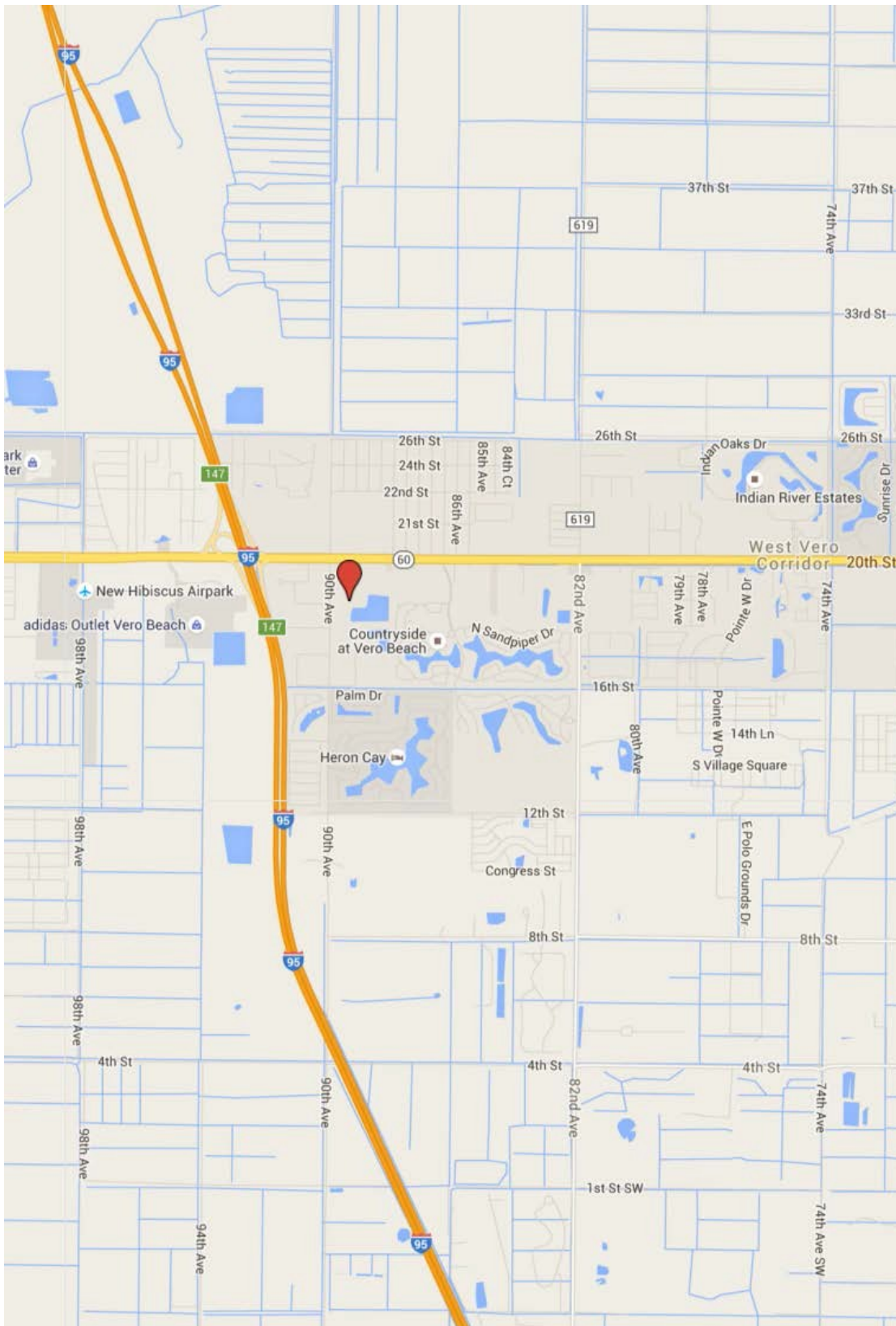
Parking spaces: 162

Location: 8909 20th Street (SR-60), east of I-95. Exit 147 NB or SB I-95. Vero Beach, FL 32966, Indian River County.

Amenities:

- Fuel Types: DEF island fueling, unleaded gasoline.
- Security: N/A
- Restaurants: Country Pride restaurant, Popeye's, Subway.
- Restrooms & Showers: Handicapped-equipped showers
- Scales: Available
- Truck Washing: N/A
- Electrical Hook-Up: N/A
- Business Services: Reserve-it parking, handicapped parking, fitness, interstate speedzone wifi, laundry room, check cashing services, western union, transflo express scanning, permit services, ATM, driver's lounge.
- Repair Facilities: Expert truck alignments.

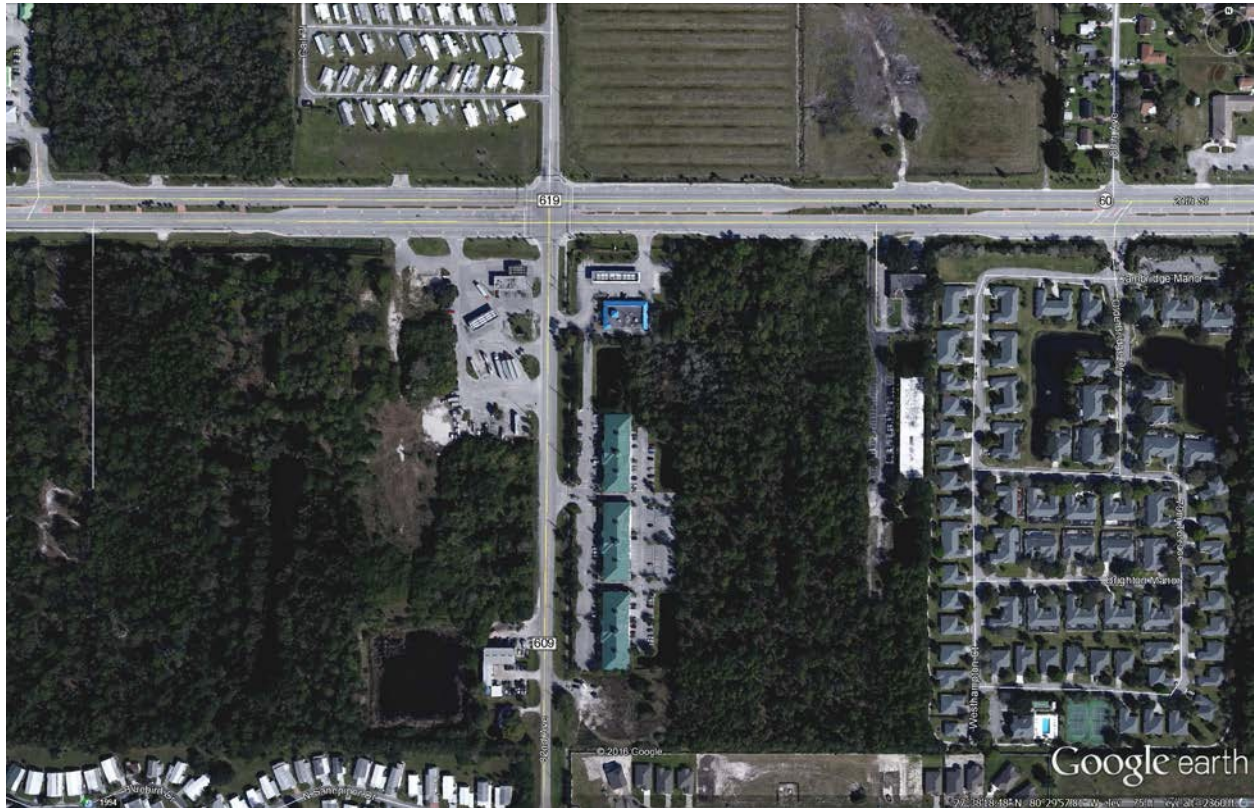
Figure A.3 Area Location of Travel America Vero Beach



Source: Google Maps.

Gator Texaco Truck Stop

Figure A.4 Google Earth Aerial of Gator Texaco Truck Stop



Source: Google Earth.

Website: www.texaco.com

Ownership: Private

Initiation Year: Older than 1994

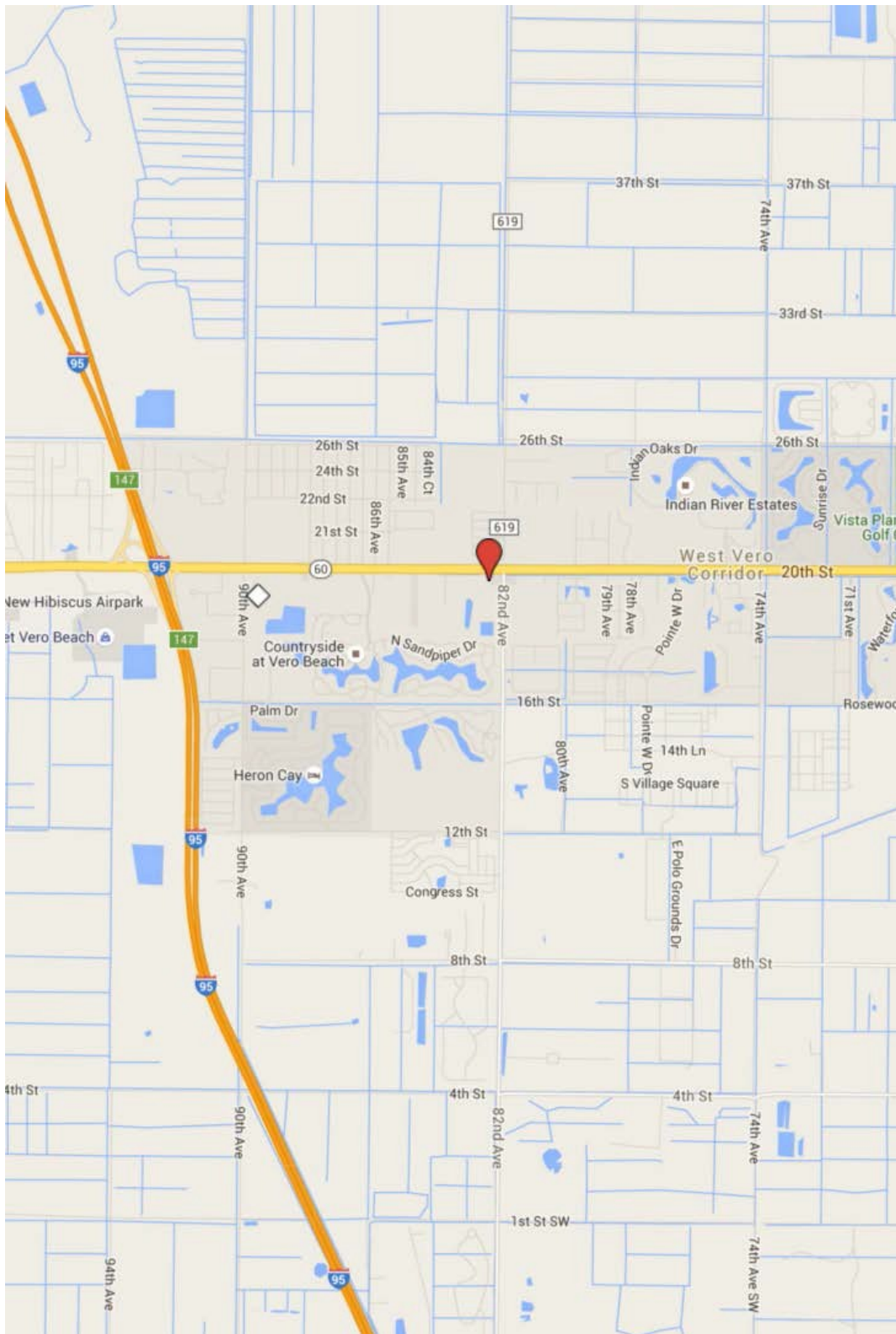
Parking spaces: 17+

Location: 8201 20th Street (SR-60) east of I-95. Exit 147 NB or SB I-95. Vero Beach, FL 32966, Indian River County.

Amenities:

- Fuel Types: Diesel
- Security: N/A
- Restaurants: N/A
- Restrooms & Showers: N/A
- Scales: N/A
- Truck Washing: N/A
- Electrical Hook-Up: N/A
- Business Services: N/A
- Repair Facilities: N/A

Figure A.5 Area Location of Gator Texaco Truck Stop



Source: Google Maps.

Citgo Quik Mart

Figure A.6 Google Earth Aerial of Citgo Quik Mart



Source: Google Earth

Website:

Ownership: Private

Initiation Year:

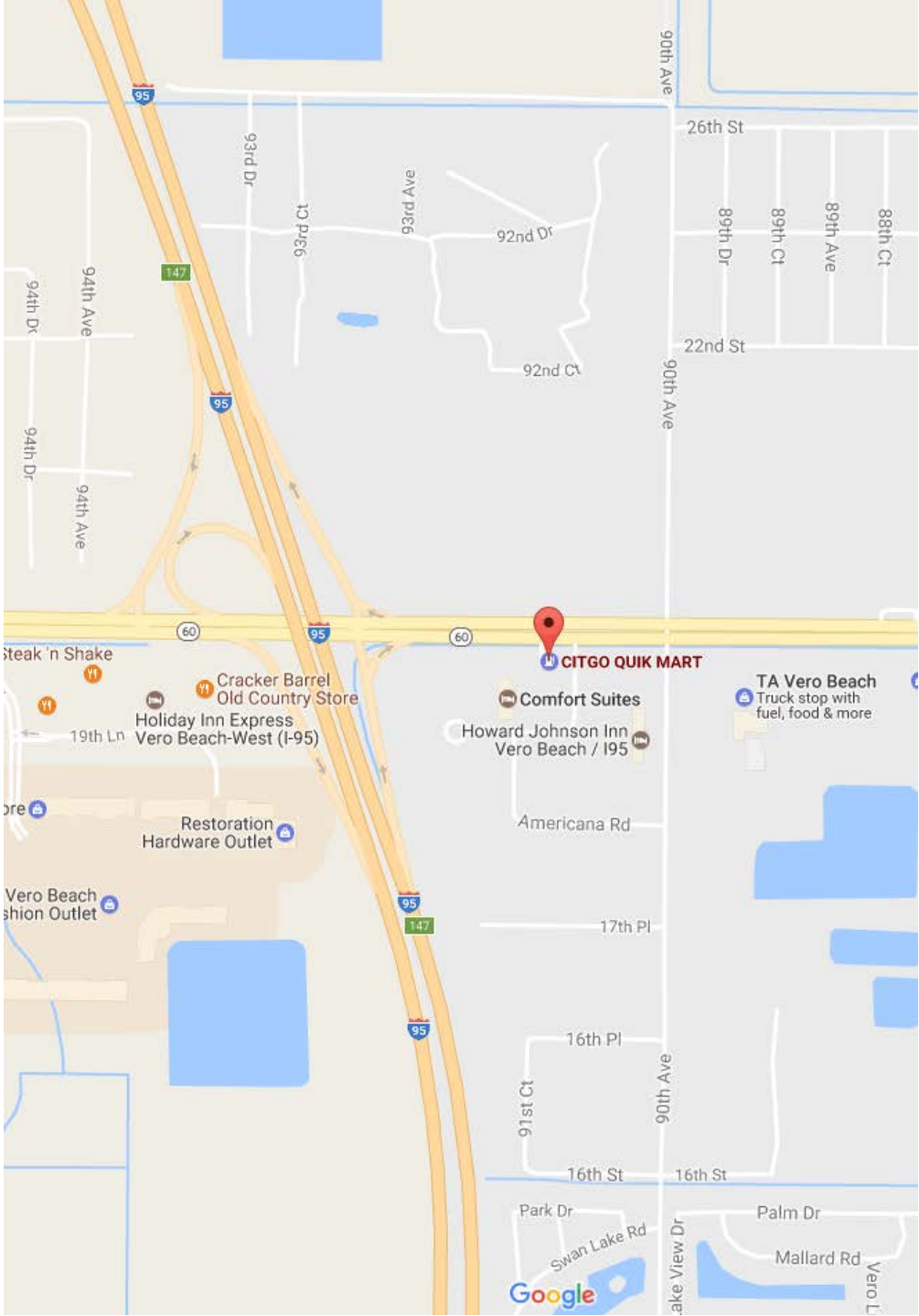
Parking spaces: 2+

Location: 9097 20th St, Vero Beach, FL 32966, Indian River County

Amenities:

- Fuel Types: Diesel, Regular, Midgrade, Premium
- Security: N/A
- Restaurants: Valero Food Mart
- Restrooms & Showers: N/A
- Scales: N/A
- Truck Washing: N/A
- Electrical Hook-Up: N/A
- Business Services: N/A
- Repair Facilities: N/A

Figure A.7 Area Location of Citgo Quik Mart

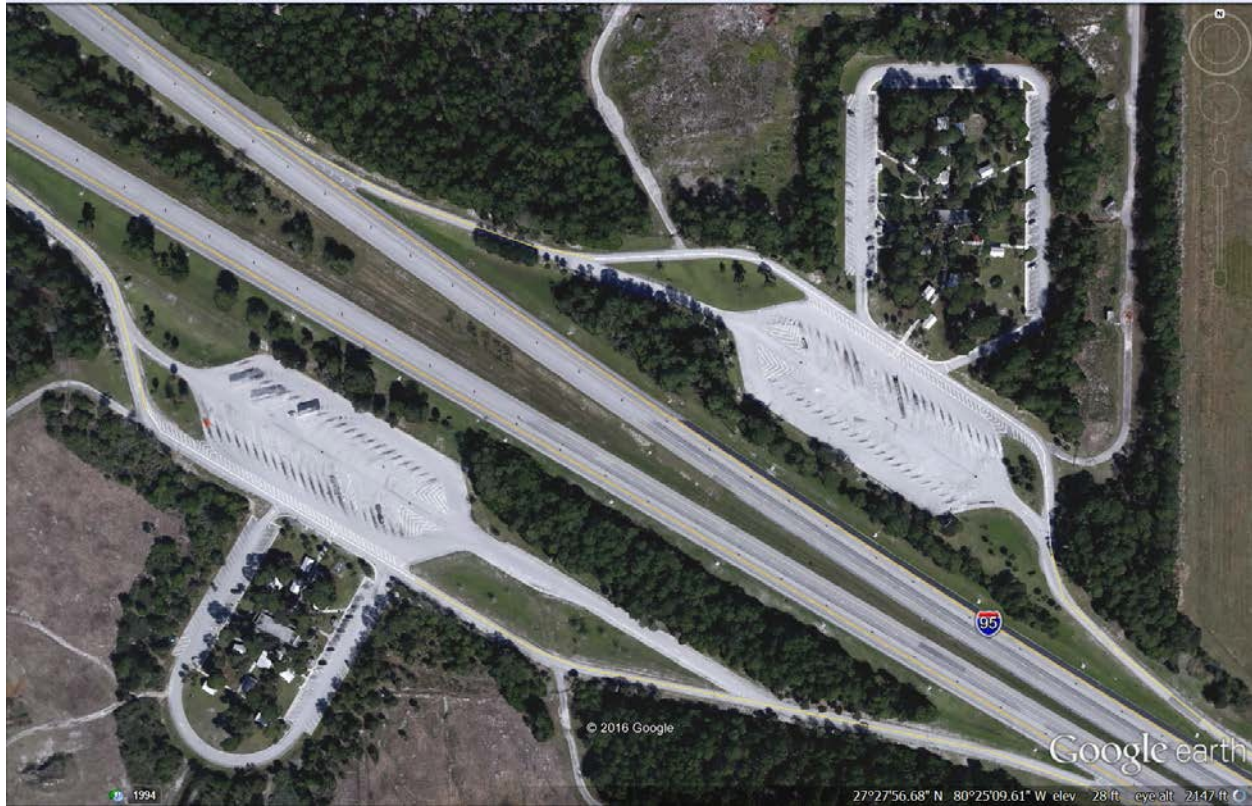


Source: Google Maps.

A.2.2 St. Lucie County

St. Lucie County Rest Areas (Northbound and Southbound)

Figure A.8 Google Earth Aerial of St. Lucie County Rest Areas



Source: Google Earth.

Website: http://www.fdot.gov/maintenance/Rest_Area_App/rest_areas.asp

Ownership: Public

Initiation Year: Older than 1995

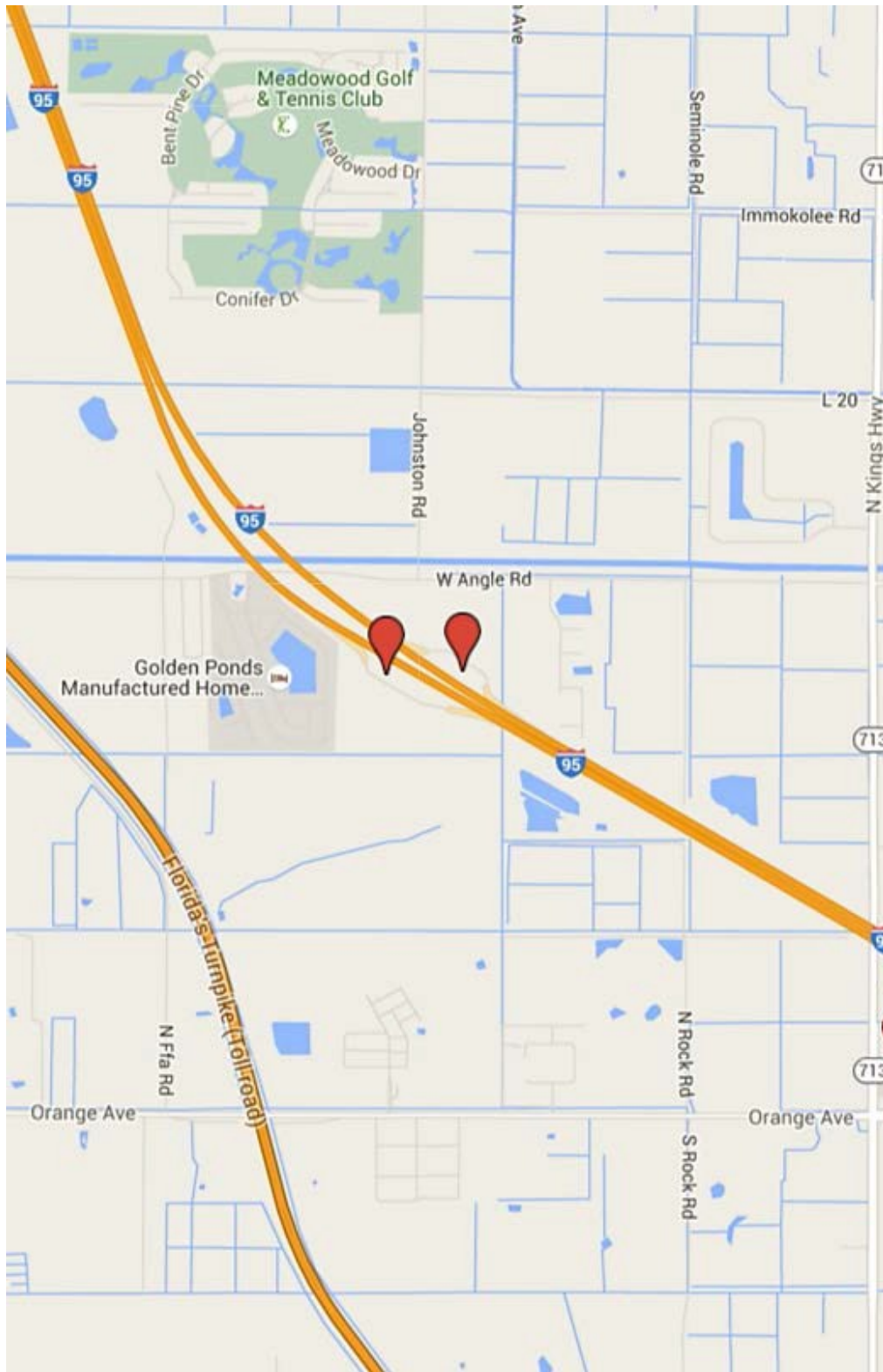
Parking spaces: 84 (42 Northbound and 42 Southbound)

Location: 2 miles north of SR-68 on I-95, between Mile Post Exits 131 and 138. Fort Pierce, FL 34947, St. Lucie County.

Amenities:

- Fuel Types: N/A
- Security: Nighttime security
- Restaurants: N/A
- Restrooms & Showers: No family restrooms
- Scales: N/A
- Truck Washing: N/A
- Electrical Hook-Up: N/A
- Business Services: N/A
- Repair Facilities: N/A

Figure A.9 Area Location of St. Lucie County Rest Areas



Source: Google Maps.

Flying J 622

Figure A.10 Google Earth Aerial of Flying J 622



Source: Google Earth.

Website: www.pilotflyingj.com (Store Number 622)

Ownership: Private

Initiation Year: Older than 1999

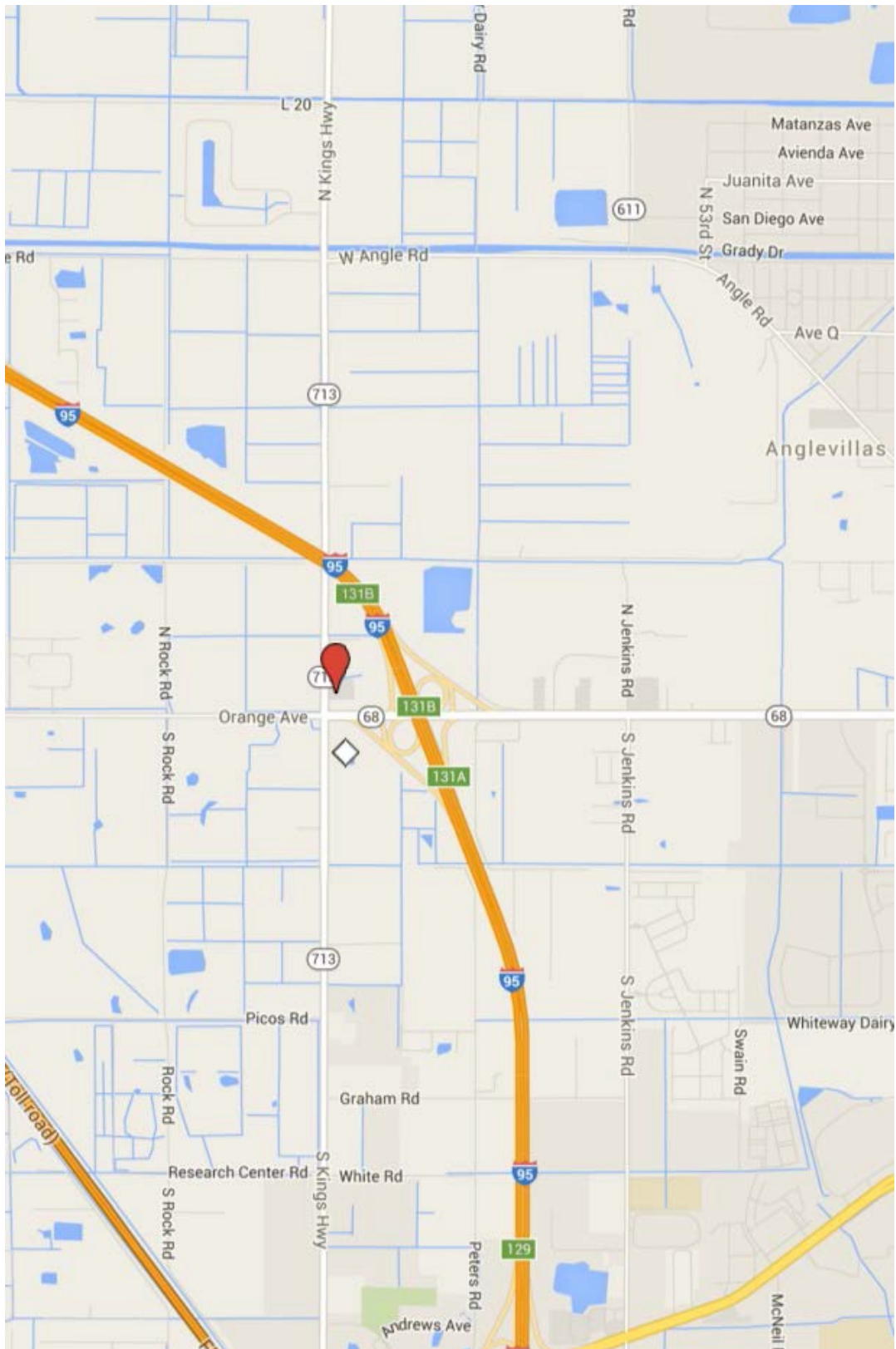
Parking spaces: 156

Location: 100 N. Kings Hwy (SR-713), west of I-95, north of SR-68. Exit 131B NB or SB I-95. Fort Pierce, FL 34945, St. Lucie County.

Amenities:

- Fuel Types: 12 bulk DEF Lanes, bulk propane, 12 diesel lanes, propane
- Security: N/A
- Restaurants: Hot deli, soup/breakfast bar, pizza
- Restrooms & Showers: 15 showers
- Scales: CAT Scale
- Truck Washing: N/A
- Electrical Hook-Up: N/A
- Business Services: ATM, barber shop, check cashing, drivers lounge, FedEx box, money orders, public laundry, RV plus card program, UPS, western union, wireless internet, reserved parking spaces.
- Repair Facilities: N/A

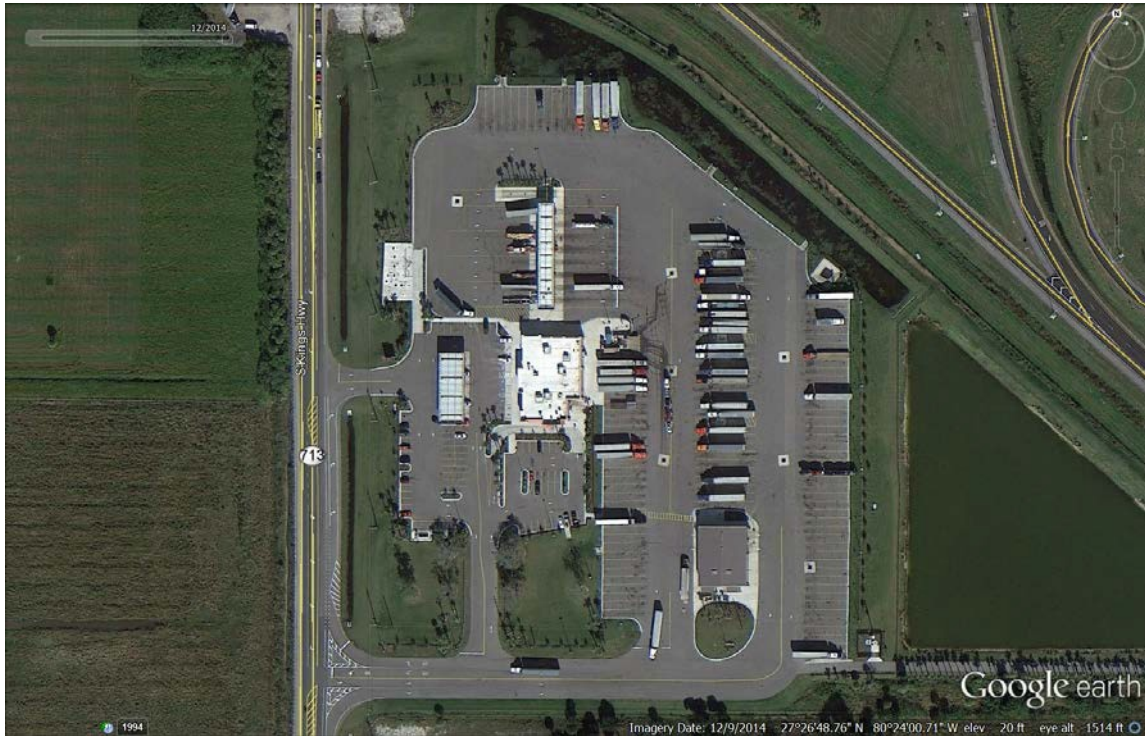
Figure A.11 Area Location of Flying J 622



Source: Google Maps.

Love's Travel Stop 467

Figure A.12 Google Earth Aerial of Love's Travel Stop 467



Source: Google Earth.

Website: www.myloves467.com

Ownership: Private

Initiation Year: Older than 2014

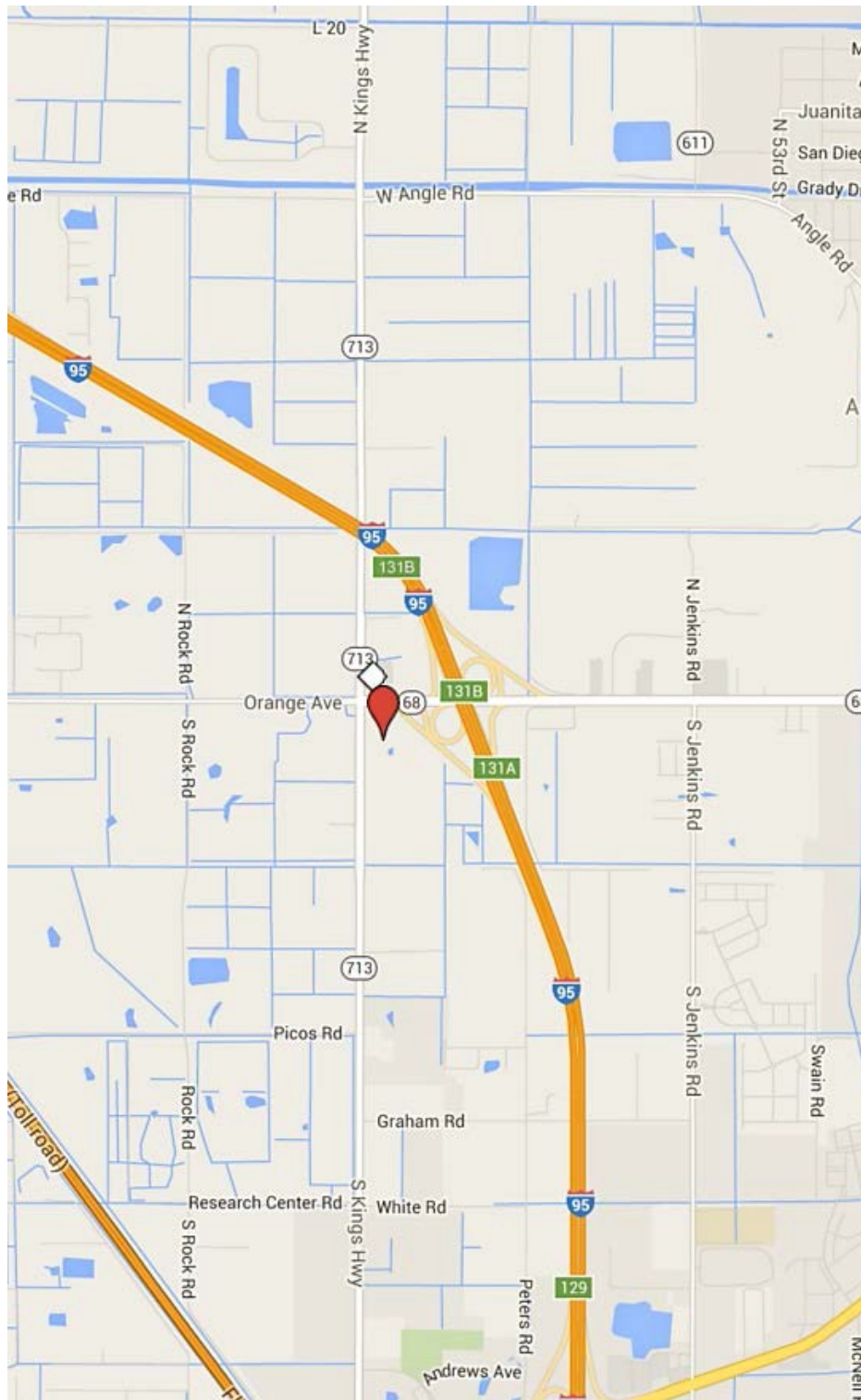
Parking spaces: 120+

Location: 200 S. King Highway (SR-713), west of I-95, south of SR-68. Exit 131B NB or SB I-95. Fort Pierce, FL 34945, St. Lucie County.

Amenities:

- Fuel Types: Diesel #2, bulk DEF, unleaded, unleaded plus, unleaded premium, bulk propane, propane autogas.
- Security: lighted parking,
- Restaurants: N/A
- Restrooms & Showers: private showers
- Scales: CAT Scales
- Truck Washing: N/A
- Electrical Hook-Up: N/A
- Business Services: 24 hour service, ATM, check cashing, copy and fax service, driver rewards program, national tire account, overnight parking, Pegasus Transflo, permit fax, RF enabled, Trippak express, wireless internet
- Repair Facilities: 24-hour road service, truck tire care, Tirepass, light mechanical repairs

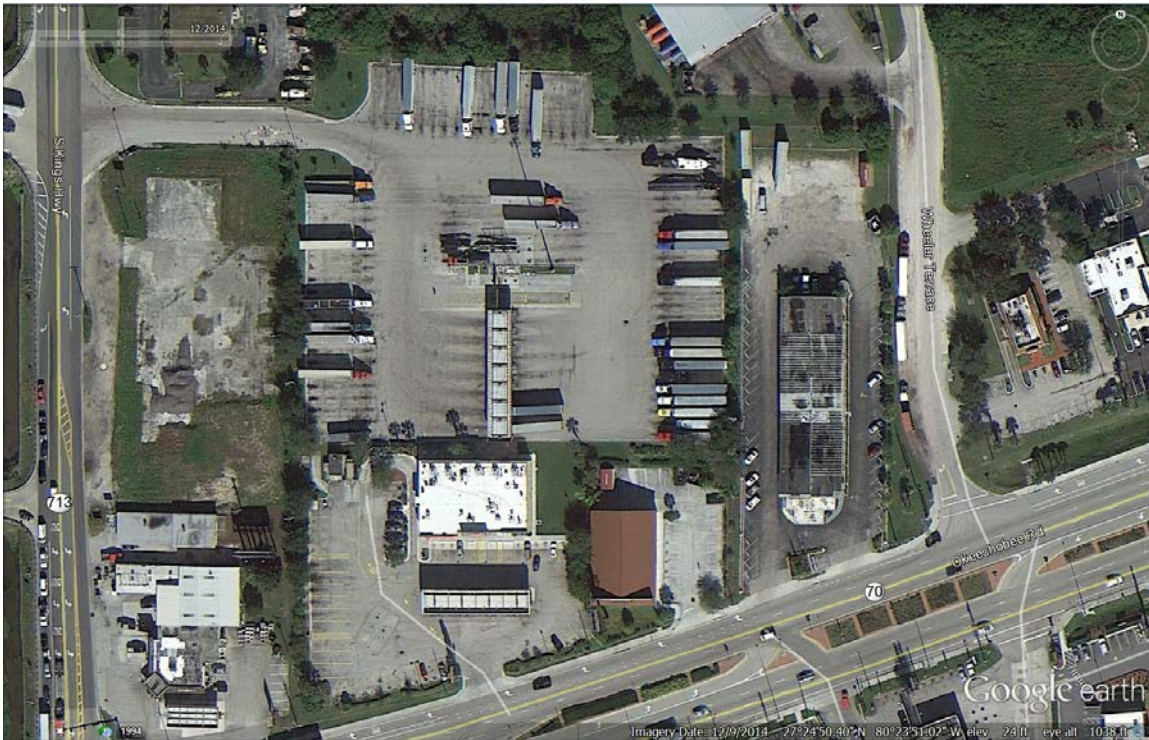
Figure A.13 Area Location of Love's Travel Stop 467



Source: Google Maps.

Love's Travel Stop 415

Figure A.14 Google Earth Aerial of Love's Travel Stop 415



Source: Google Earth.

Website: www.myloves415.com

Ownership: Private

Initiation Year: Older than 1999

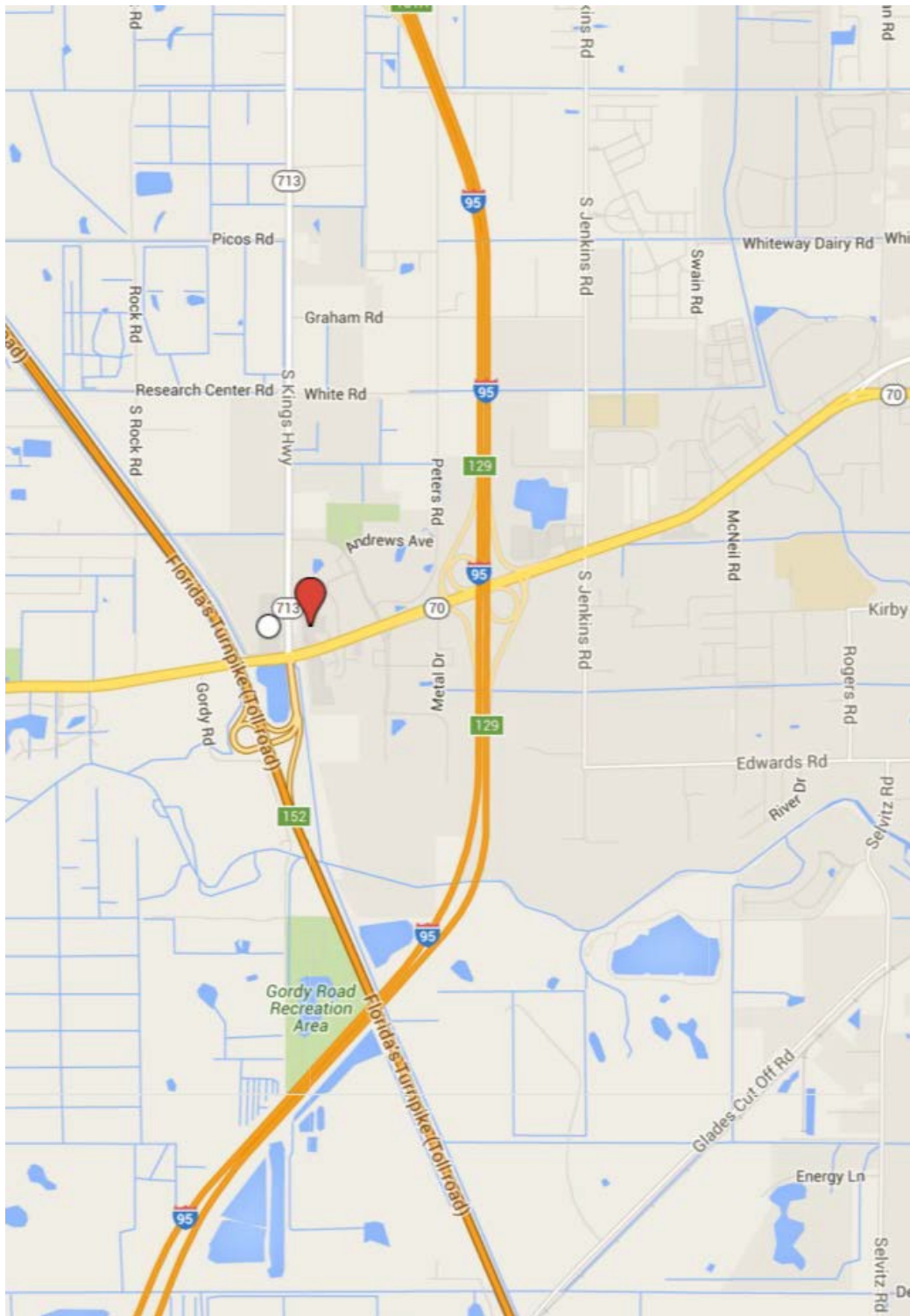
Parking spaces: 100+

Location: 7150 W. Okeechobee Road, west of I-95, east of SR-713. Exit 129 NB or SB I-95. Fort Pierce, FL 34945, St. Lucie County.

Amenities:

- Fuel Types: Diesel #2, bulk DEF, unleaded, unleaded plus, unleaded premium, biodiesel.
- Security: lighted parking.
- Restaurants: N/A
- Restrooms & Showers: private showers
- Scales: CAT scales
- Truck Washing: N/A
- Electrical Hook-Up: N/A
- Business Services: 24-hour Service, ATM, check cashing, copy and fax service, driver rewards program, laundry, overnight parking, Pegasus Transflo, permit fax, RF enabled, TripPak Express, Wireless Internet.
- Repair Facilities: N/A

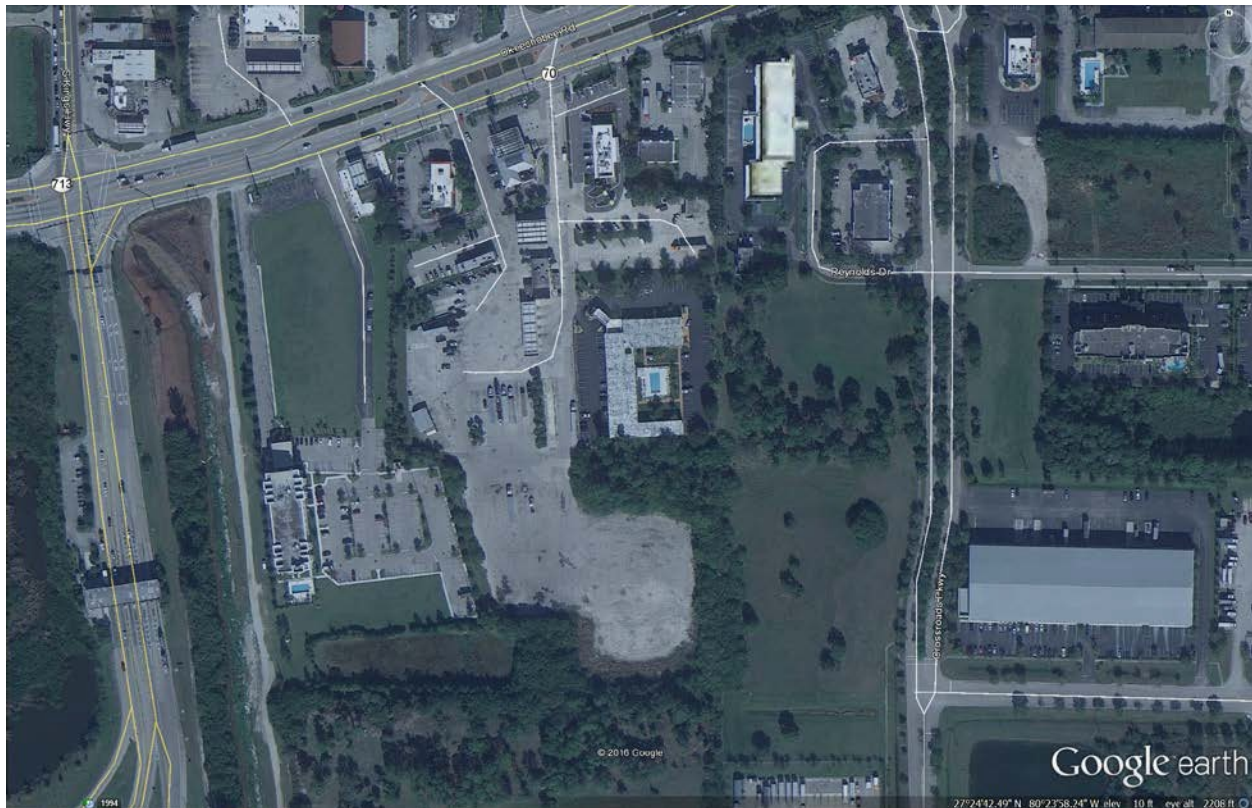
Figure A.15 Area Location of Love's Travel Stop 415



Source: Google Maps.

Falcon Truck Stop

Figure A.16 Google Earth Aerial of Falcon Truck Stop



Source: Google Earth.

Website:

Ownership: Private

Initiation Year: Older than 1994

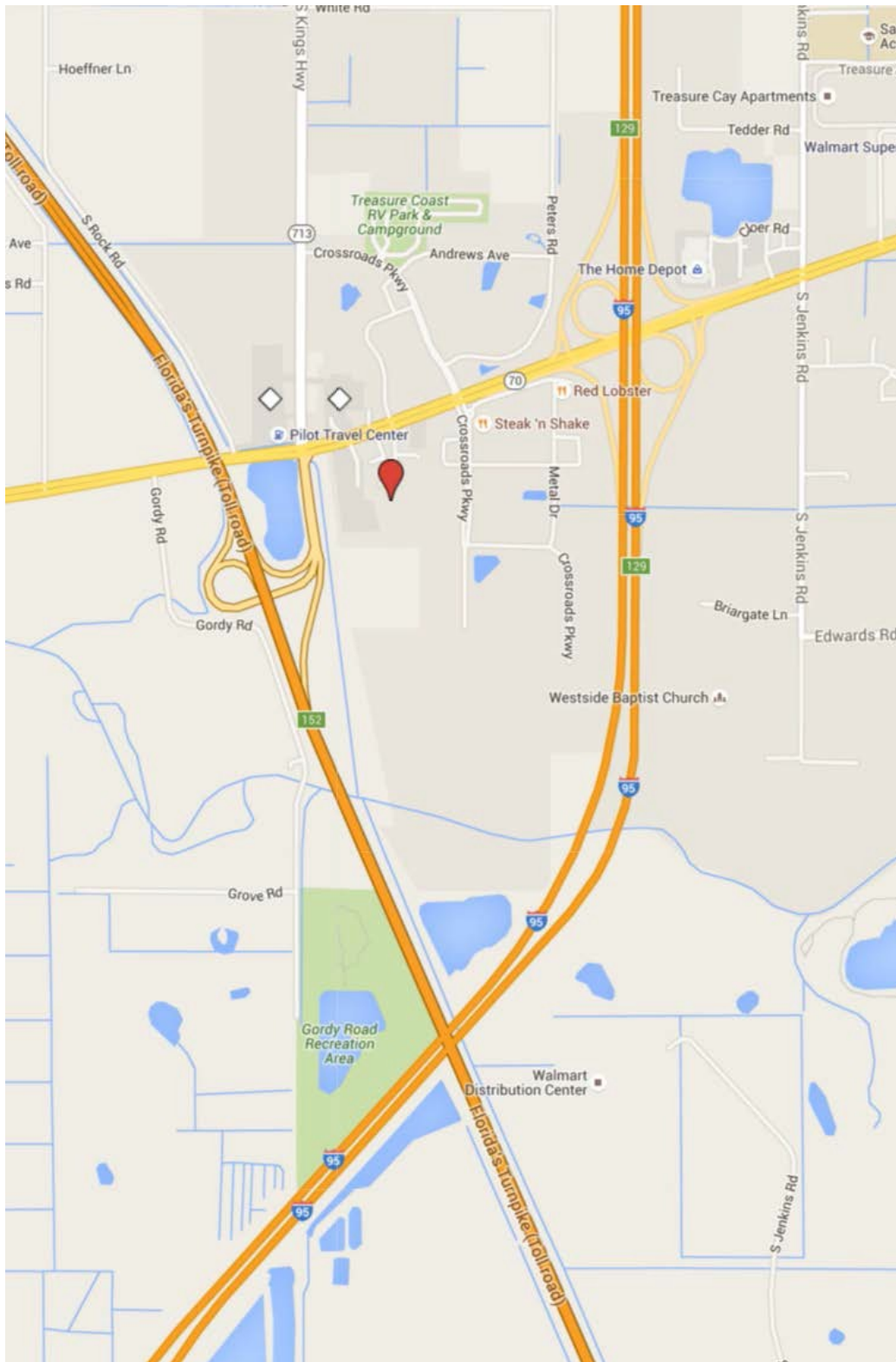
Parking spaces: 25+

Location: 7045 Okeechobee Rd, west of I-95, east of Florida's Turnpike Plaza Mile Post 152. Exit 129 NB or SB I-95. Fort Pierce, FL 34945, St. Lucie County.

Amenities:

- Fuel Types: N/A
- Security: N/A
- Restaurants: N/A
- Restrooms & Showers: N/A
- Scales: N/A
- Truck Washing: N/A
- Electrical Hook-Up: N/A
- Business Services: N/A
- Repair Facilities: N/A

Figure A.17 Area Location of Falcon Truck Stop



Source: Google Maps.

Pilot Travel Center 90

Figure A.18 Google Earth Aerial of Pilot Travel Center 90



Source: Google Earth.

Website: www.pilotflyingj.com (Store Number 90)

Ownership: Private

Initiation Year: Older than 2004

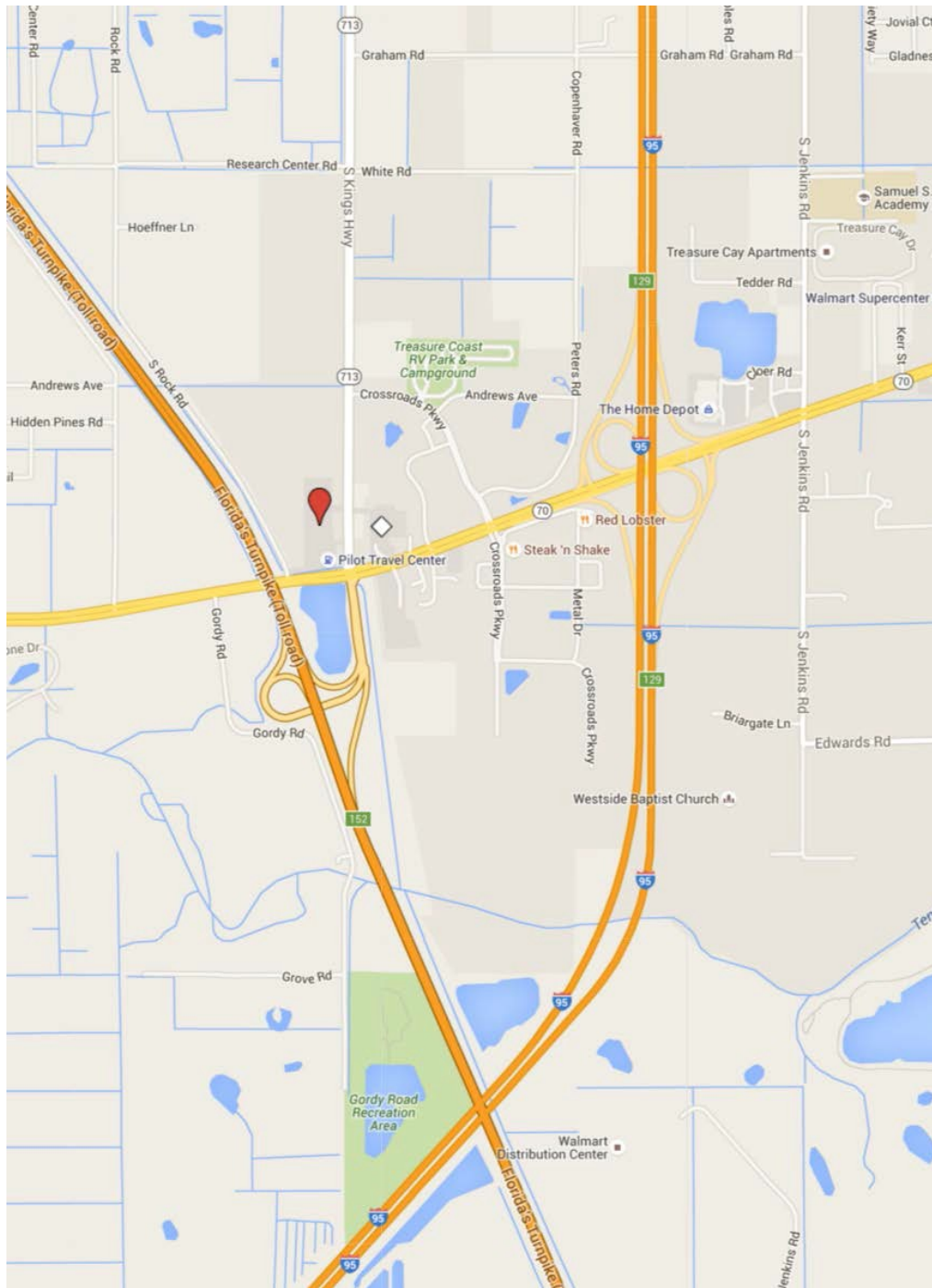
Parking spaces: 100

Location: 7300 W. Okeechobee Road, west of I-95, east of Florida's Turnpike Mile Post 152. Exit 129 NB or SB I-95. Fort Pierce, FL 34945, St. Lucie County.

Amenities:

- Fuel Types: 11 bulk DEF lanes, bulk propane, 12 diesel lanes, propane.
- Security: N/A
- Restaurants: Cinnabon, McDonalds.
- Restrooms & Showers: 8 showers
- Scales: CAT Scale
- Truck Washing: N/A
- Electrical Hook-Up: N/A
- Business Services: check cashing, FedEx Box, money orders, P.O. Box, public laundry, UPS, 2 ATMs, Western Union, wireless internet, reserved parking spaces, Transflo Express, RV Plus Card Program.
- Repair Facilities: N/A

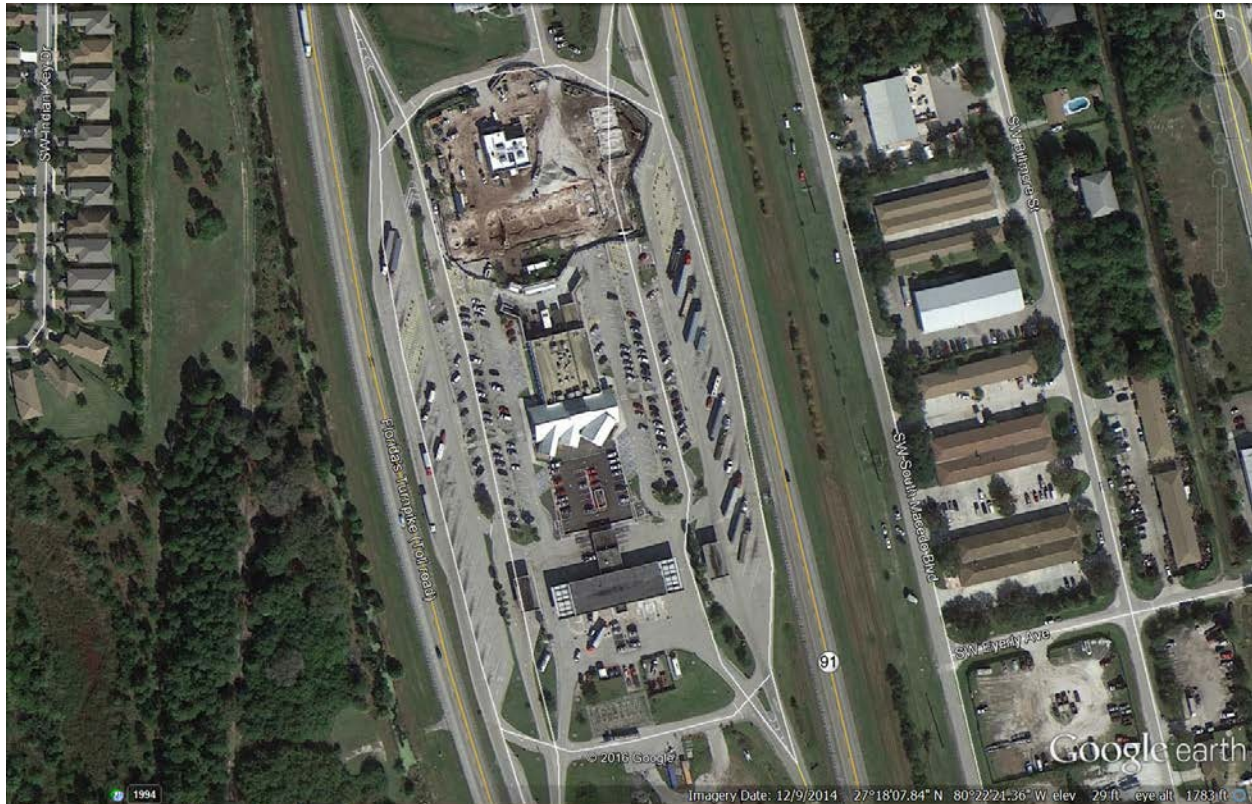
Figure A.19 Area Location of Pilot Travel Center 90



Source: Google Maps.

Florida's Turnpike Plaza – Mile Post 144

Figure A.20 Google Earth Aerial of Florida's Turnpike Plaza – Mile Post 144



Source: Google Earth.

Website: www.floridasturnpike.com/tools_serviceplazas.cfm

Ownership: Public

Initiation Year: Older than 1995

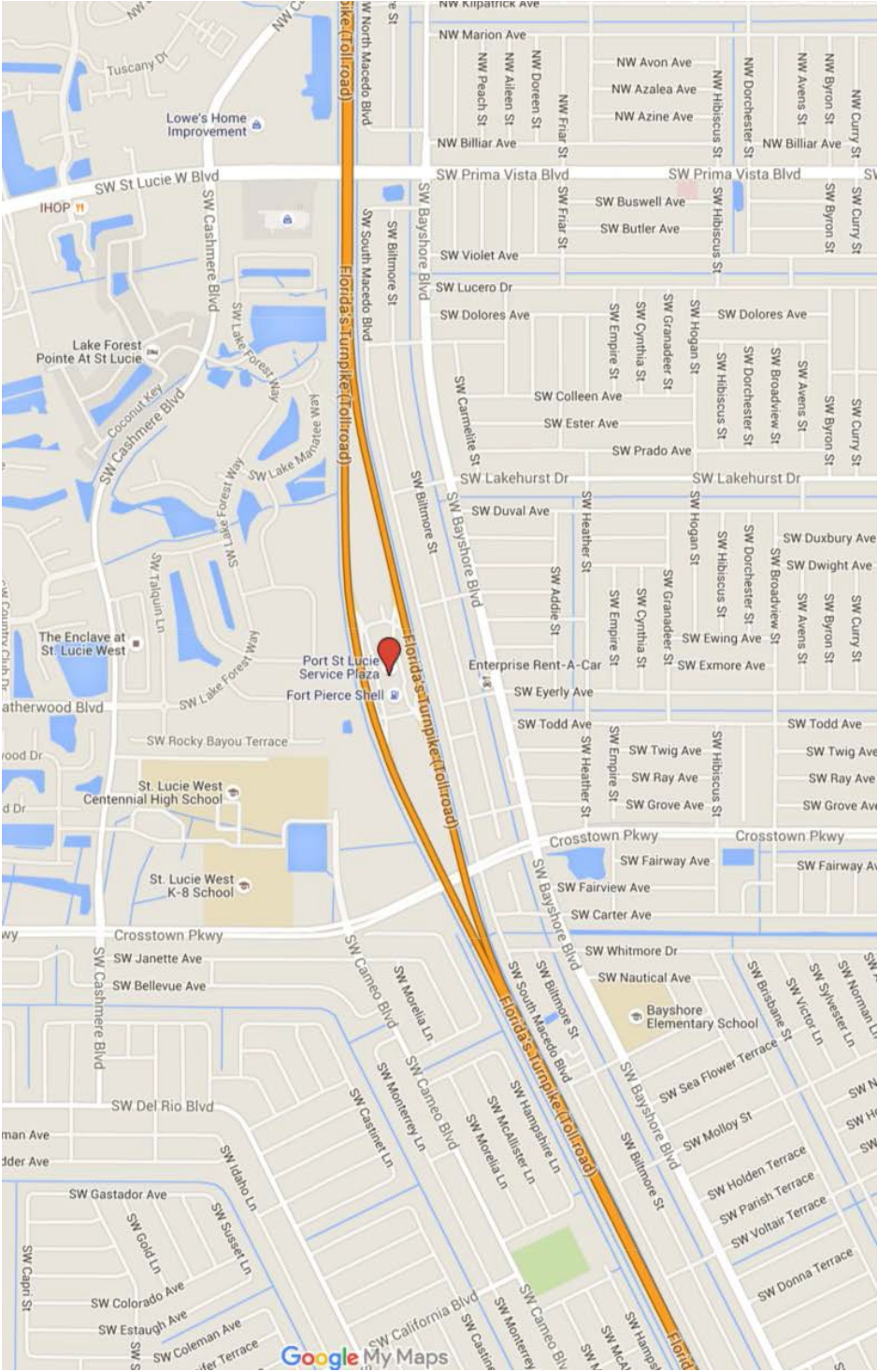
Parking spaces: 32

Location: 2 miles south of SW Port St Lucie Boulevard between Mile Post Exits 142 and 152. Port St. Lucie, FL 34986, St. Lucie County

Amenities:

Turnpike Plazas are open 24 hours per day and offer a variety of other services to both the trucker and the general public. Areas for truck parking at the Turnpike Plazas are segregated from personal vehicle parking. Amenities include fast food dining options, restrooms (including family-style), fueling, gift shops, ATMs, public telephones, 24-hour news broadcasts, travel information, picnic areas, and dog walks. Wireless Internet (WiFi) is also available at these three District 4 Turnpike Plazas. In addition to regular gasoline grades and diesel, the District 4 Turnpike Plaza stations offer E85 ethanol for flex-fuel approved vehicles.

Figure A.21 Area Location of Florida’s Turnpike Plaza – Mile Post 144

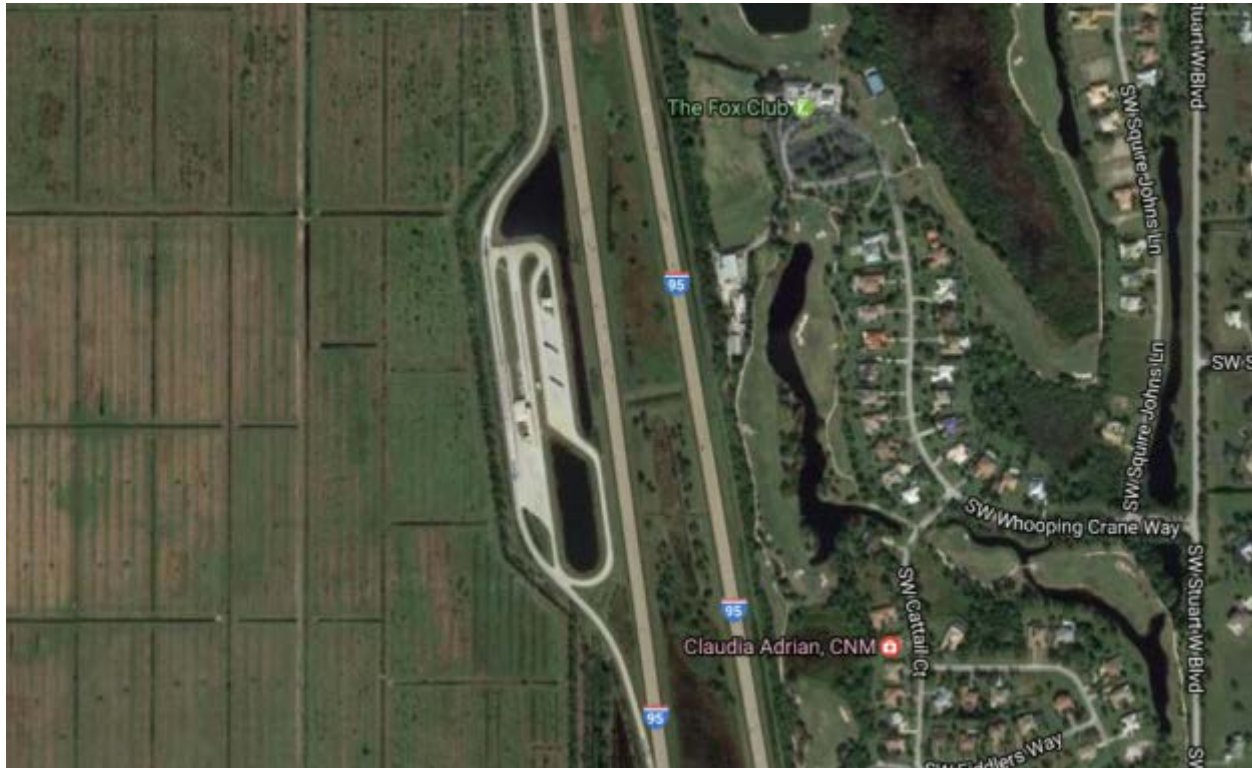


Source: Google Maps.

A.2.3 Martin County

Martin County Truck Comfort Station (WIM) (Southbound)

Figure A.22 Google Earth Aerial of Martin County Southbound Truck Comfort Station



Source: Google Earth.

Website: http://www.fdot.gov/maintenance/Rest_Area_App/rest_areas.asp

Ownership: Public

Initiation Year: Older than 2011.

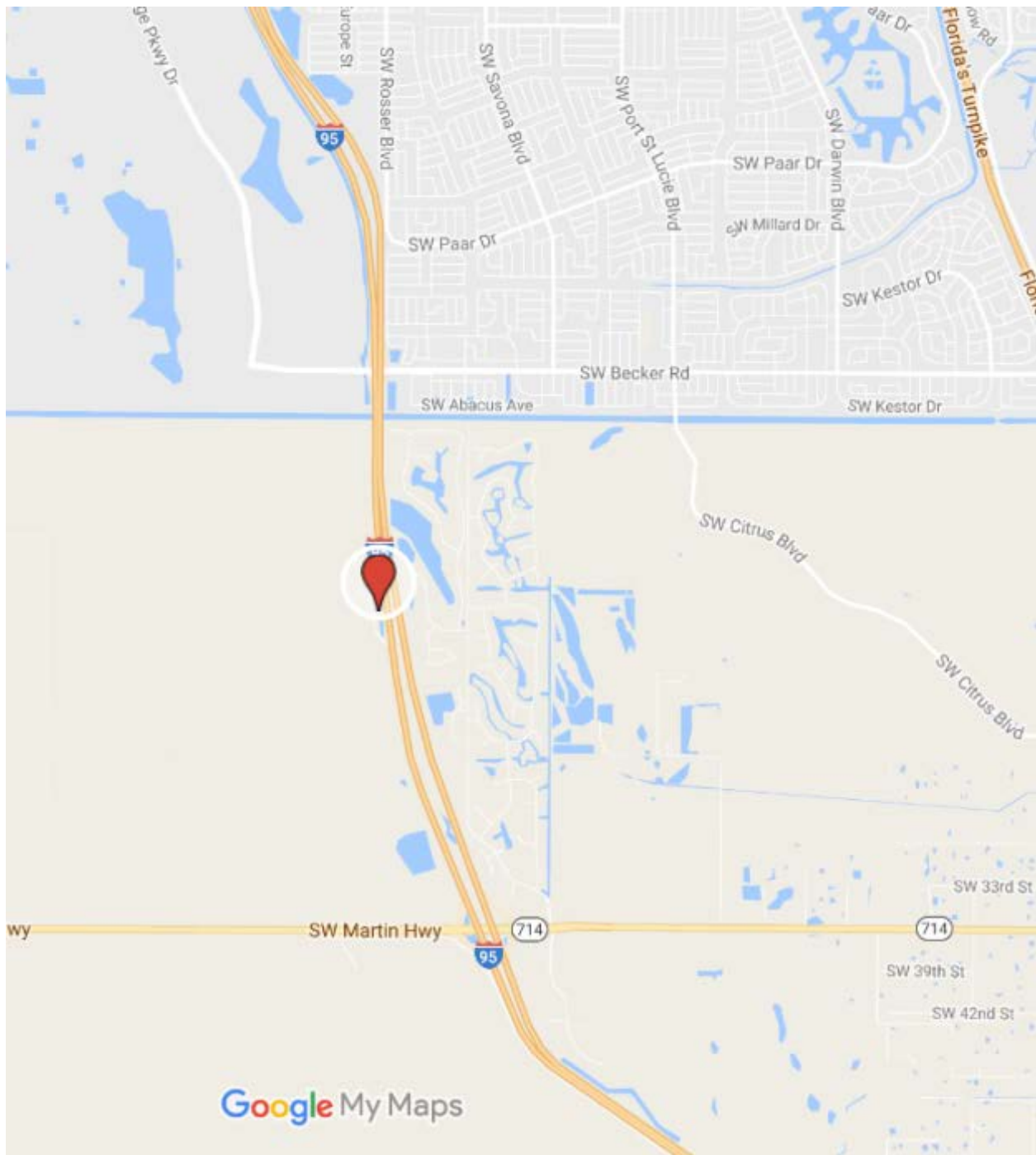
Parking spaces: 34

Location: 1 mile south of SW Becker Rd, between Mile Post Exits 110 and 114. Palm City, Martin County.

Amenities:

- Fuel Types: N/A
- Security: No nighttime security
- Restaurants: N/A
- Restrooms & Showers: No family restrooms
- Scales: Weigh-in-Motion (WIM)
- Truck Washing: N/A
- Electrical Hook-Up: N/A
- Business Services: N/A
- Repair Facilities: N/A

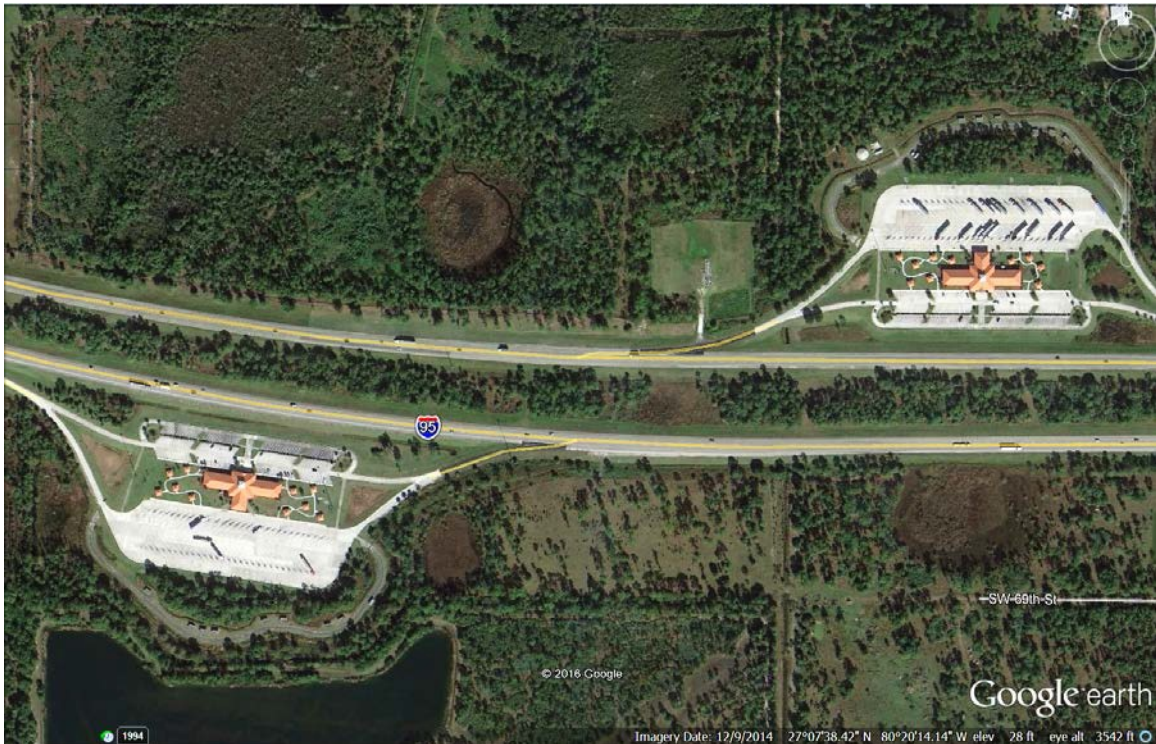
Figure A.23 Area Location of Martin County Southbound Truck Comfort Station



Source: Google Maps.

Martin County I-95 Rest Areas (Northbound and Southbound)

Figure A.24 Google Earth Aerial of Martin County I-95 Rest Areas



Source: Google Earth.

Website: http://www.fdot.gov/maintenance/Rest_Area_App/rest_areas.asp

Ownership: Public

Initiation Year: Older than 1995

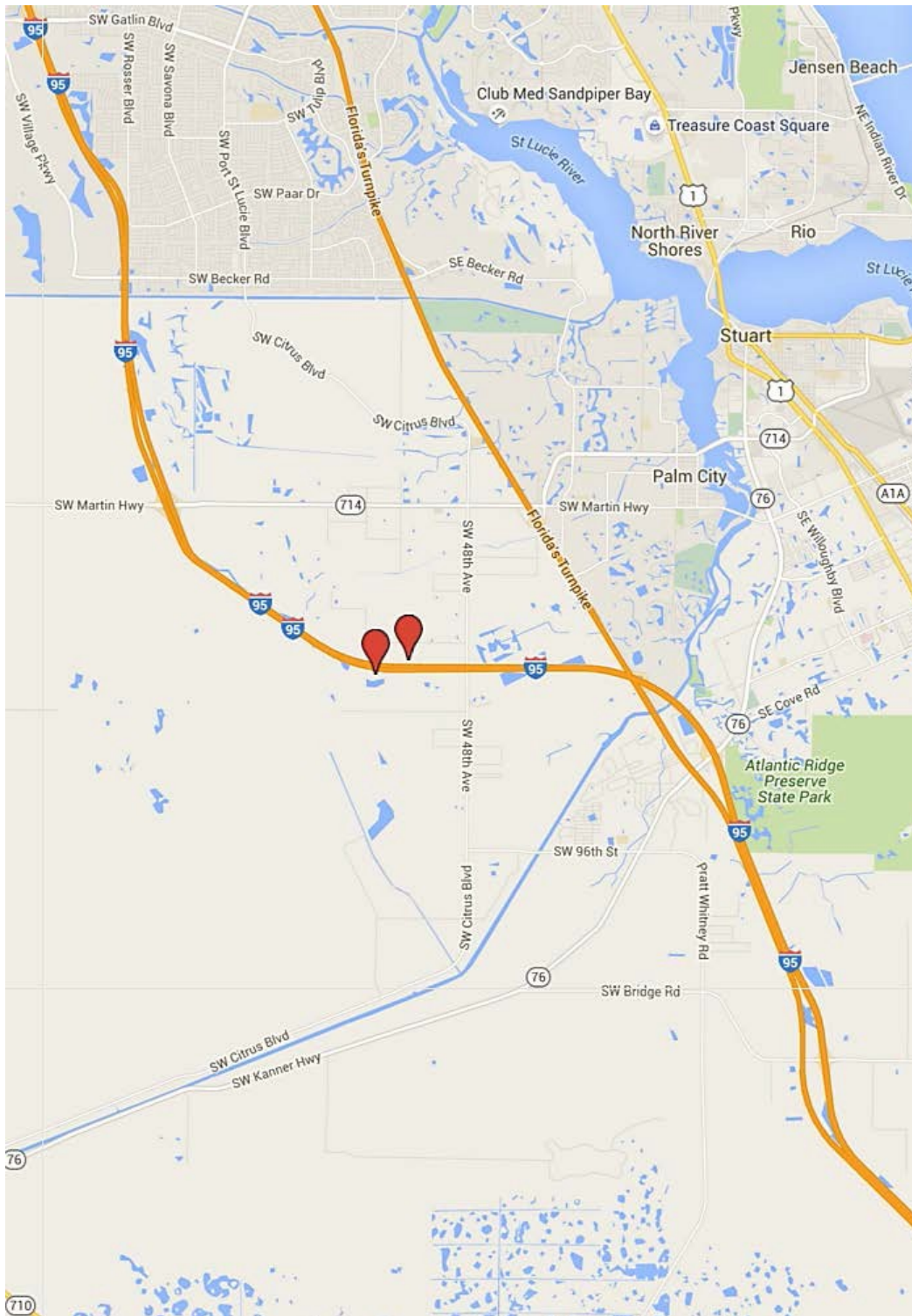
Parking spaces: 120 (60 Northbound and 60 Southbound)

Location: 3 miles west of Florida's Turnpike on I-95, between Mile Post Exits 102 and 110. Palm City, FL 34990, Martin County.

Amenities:

- Fuel Types: N/A
- Security: Nighttime security
- Restaurants: N/A
- Restrooms & Showers: No family restrooms
- Scales: N/A
- Truck Washing: N/A
- Electrical Hook-Up: N/A
- Business Services: N/A
- Repair Facilities: N/A

Figure A.25 Area Location of Martin County I-95 Rest Areas



Source: Google Maps.

Martin County Truck Comfort Station (WIM) (Northbound)

Figure A.26 Google Earth Aerial of Martin County Northbound Truck Comfort Station



Source: Google Earth.

Website: http://www.fdot.gov/maintenance/Rest_Area_App/rest_areas.asp

Ownership: Public

Initiation Year: Older than 2009.

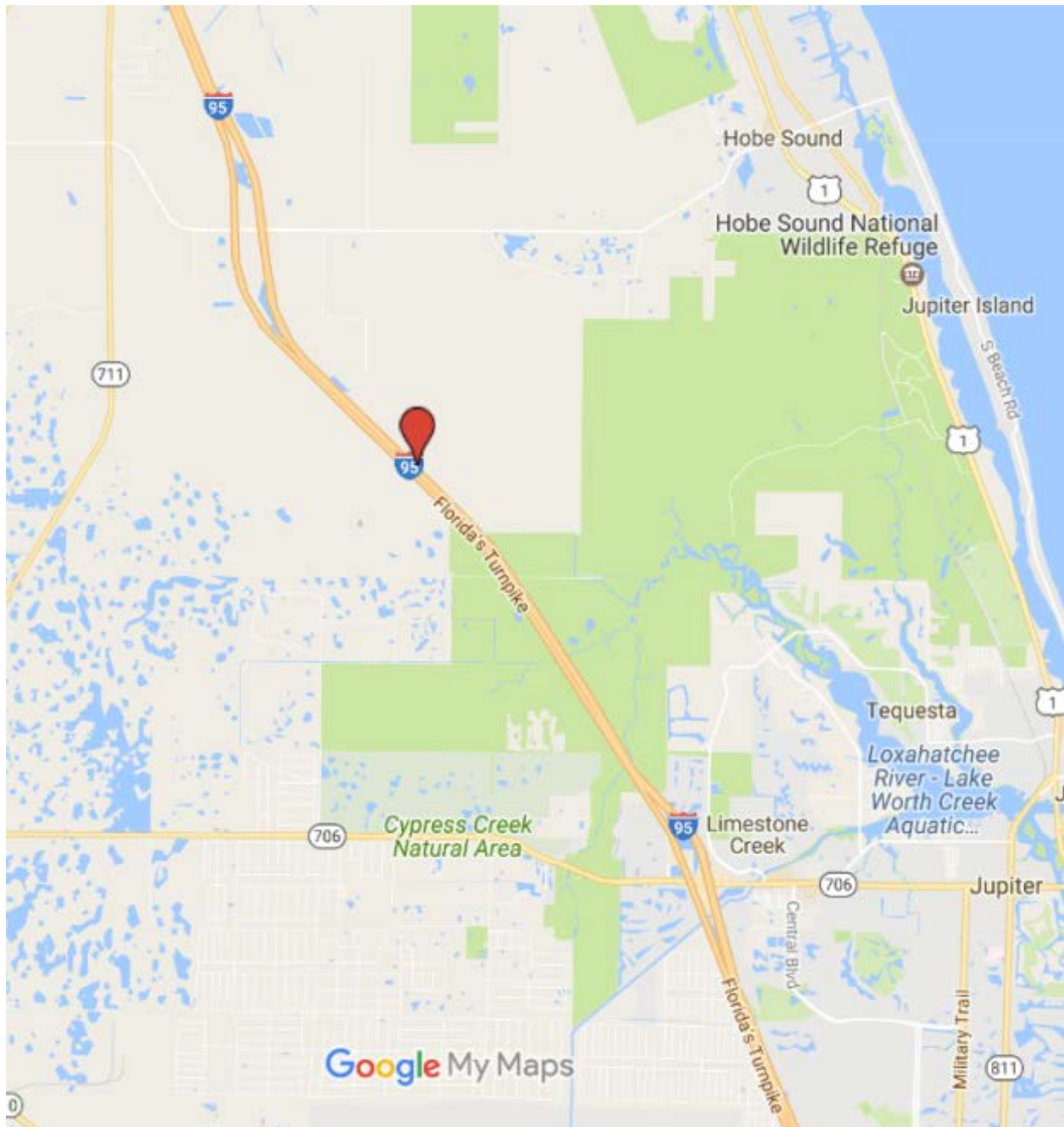
Parking spaces: 18

Location: 5.5 miles north of W. Indiantown Rd (SR 706), between Mile Post Exists 7 and 96. Hobe Sound, Martin County.

Amenities:

- Fuel Types: N/A
- Security: No nighttime security
- Restaurants: N/A
- Restrooms & Showers: No family restrooms
- Scales: Weigh-in-Motion (WIM)
- Truck Washing: N/A
- Electrical Hook-Up: N/A
- Business Services: N/A
- Repair Facilities: N/A

Figure A.27 Area Location of Martin County Northbound Truck Comfort Station



Source: Google Maps.

A.2.4 Palm Beach County

Riviera Truck Stop

Figure A.28 Google Earth Aerial of Riviera Truck Stop



Source: Google Earth.

Website: www.mymarathonstation.com

Ownership: Private

Initiation Year: Older than 2002

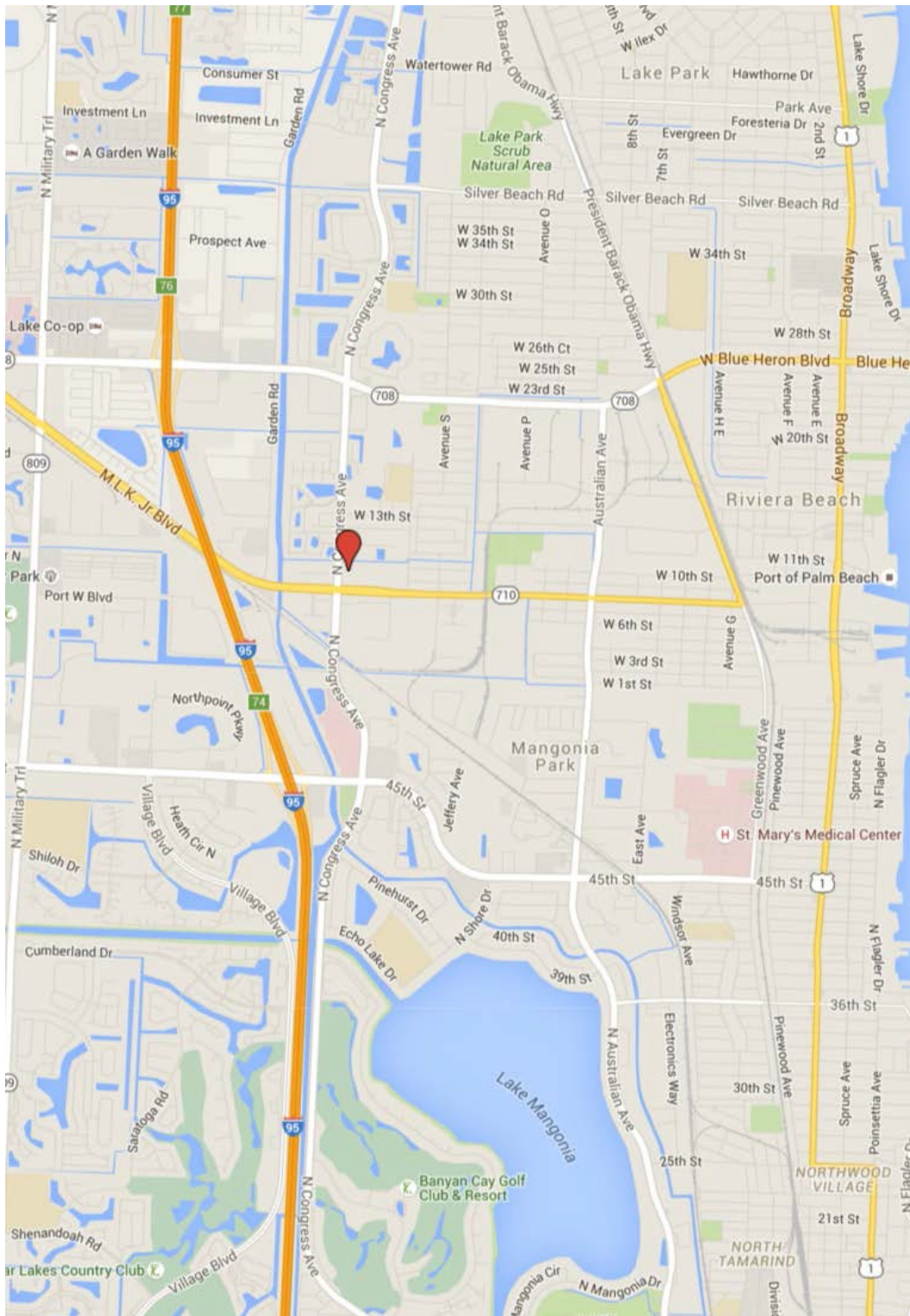
Parking spaces: 10

Location: 810 N. Congress Ave, east of I-95, between SR-708 and SR-710 and Mile Post Exits 74 and 76. West Palm Beach, FL 33404, Palm Beach County.

Amenities:

- Fuel Types: Regular gas grades, diesel. Marathon Gas Station.
- Security: N/A
- Restaurants: N/A
- Restrooms & Showers: N/A
- Scales: N/A
- Truck Washing: N/A
- Electrical Hook-Up: N/A
- Business Services: N/A
- Repair Facilities: N/A

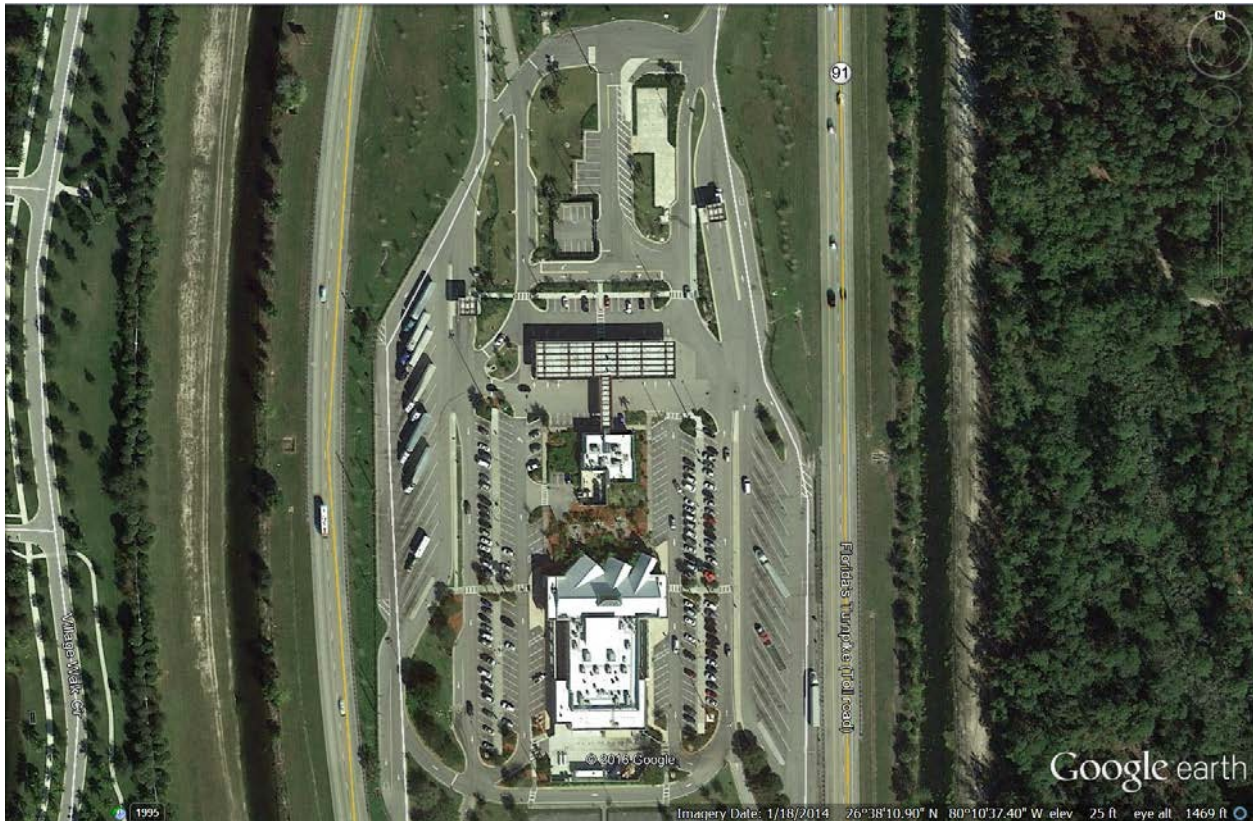
Figure A.29 Area Location of Riviera Truck Stop



Source: Google Maps.

Florida's Turnpike Plaza – Mile Post 94

Figure A.30 Google Earth Aerial of Florida's Turnpike Plaza – Mile Post 94



Source: Google Earth.

Website: www.floridasturnpike.com/tools_serviceplazas.cfm

Ownership: Public

Initiation Year: Older than 1995

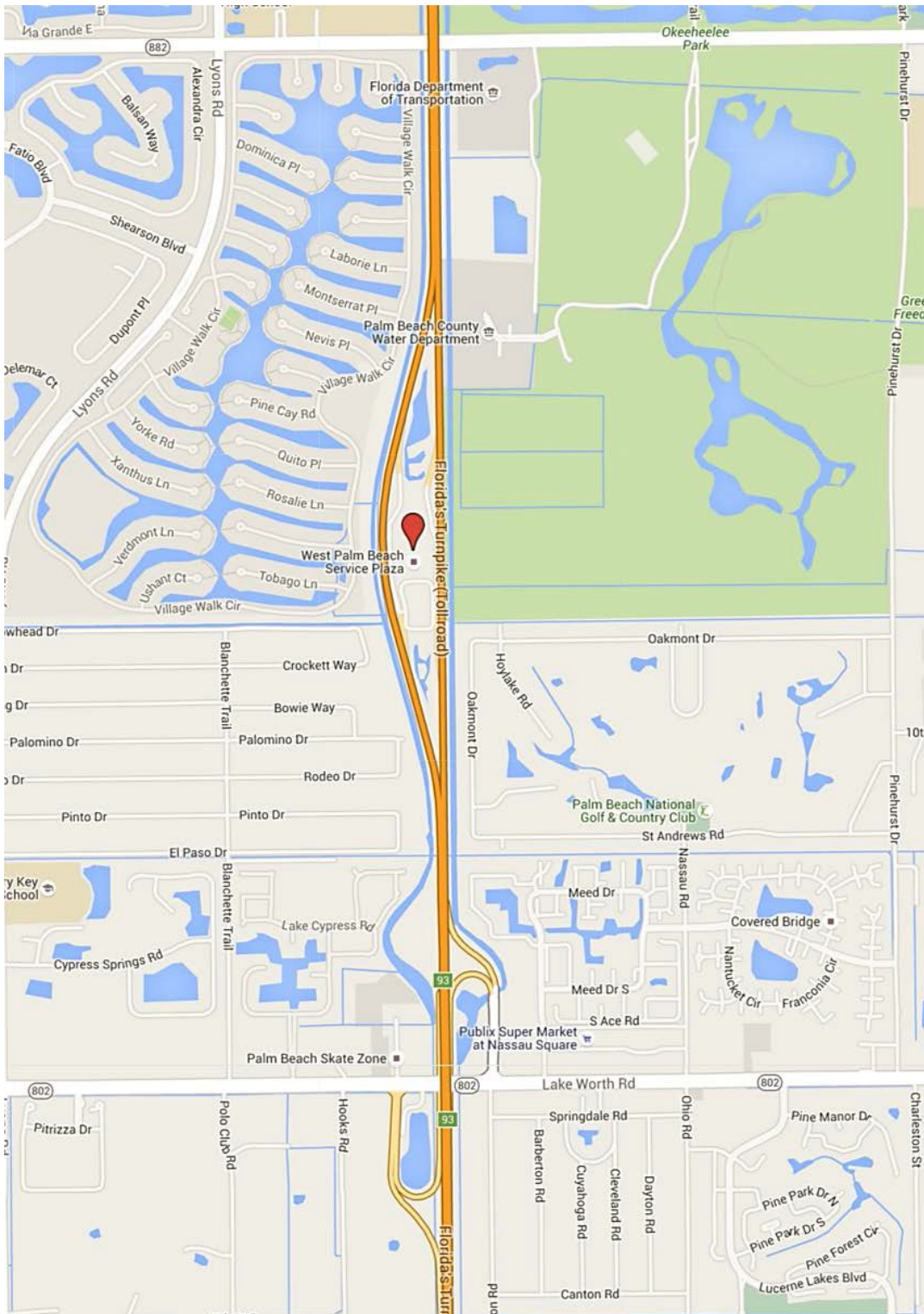
Parking spaces: 30

Location: 1 mile north of SR-802 on Florida's Turnpike. West Palm Beach, FL 33467, Palm Beach County.

Amenities:

Turnpike Plazas are open 24 hours per day and offer a variety of other services to both the trucker and the general public. Areas for truck parking at the Turnpike Plazas are segregated from personal vehicle parking. Amenities include fast food dining options, restrooms (including family-style), fueling, gift shops, ATMs, public telephones, 24-hour news broadcasts, travel information, picnic areas, and dog walks. Wireless Internet (WiFi) is also available at these three District 4 Turnpike Plazas. In addition to regular gasoline grades and diesel, the District 4 Turnpike Plaza stations offer E85 ethanol for flex-fuel approved vehicles.

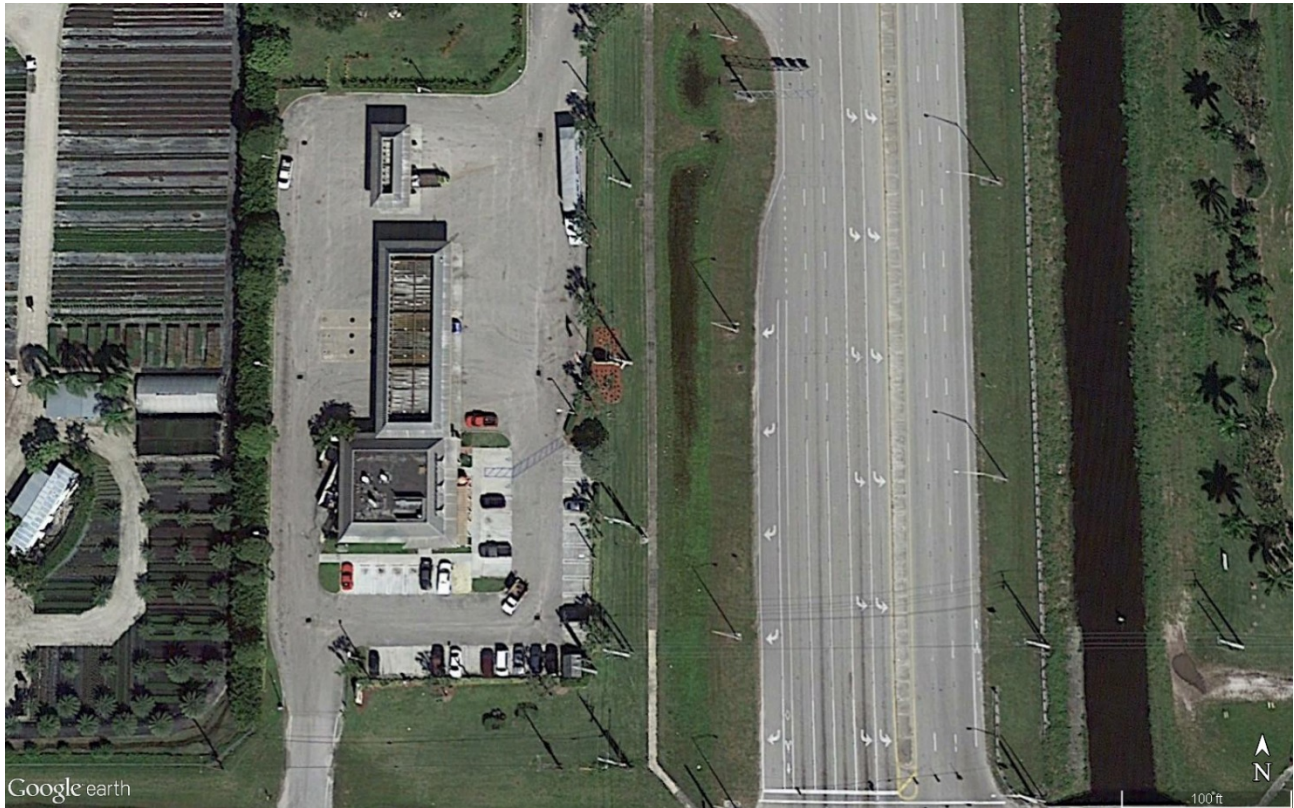
Figure A.31 Area Location of Florida's Turnpike Plaza – Mile Post 94



Source: Google Maps.

4 Points Market

Figure A.32 Google Earth Aerial of 4 Points Market



Source: Google Earth.

Website:

Ownership: Private

Initiation Year:

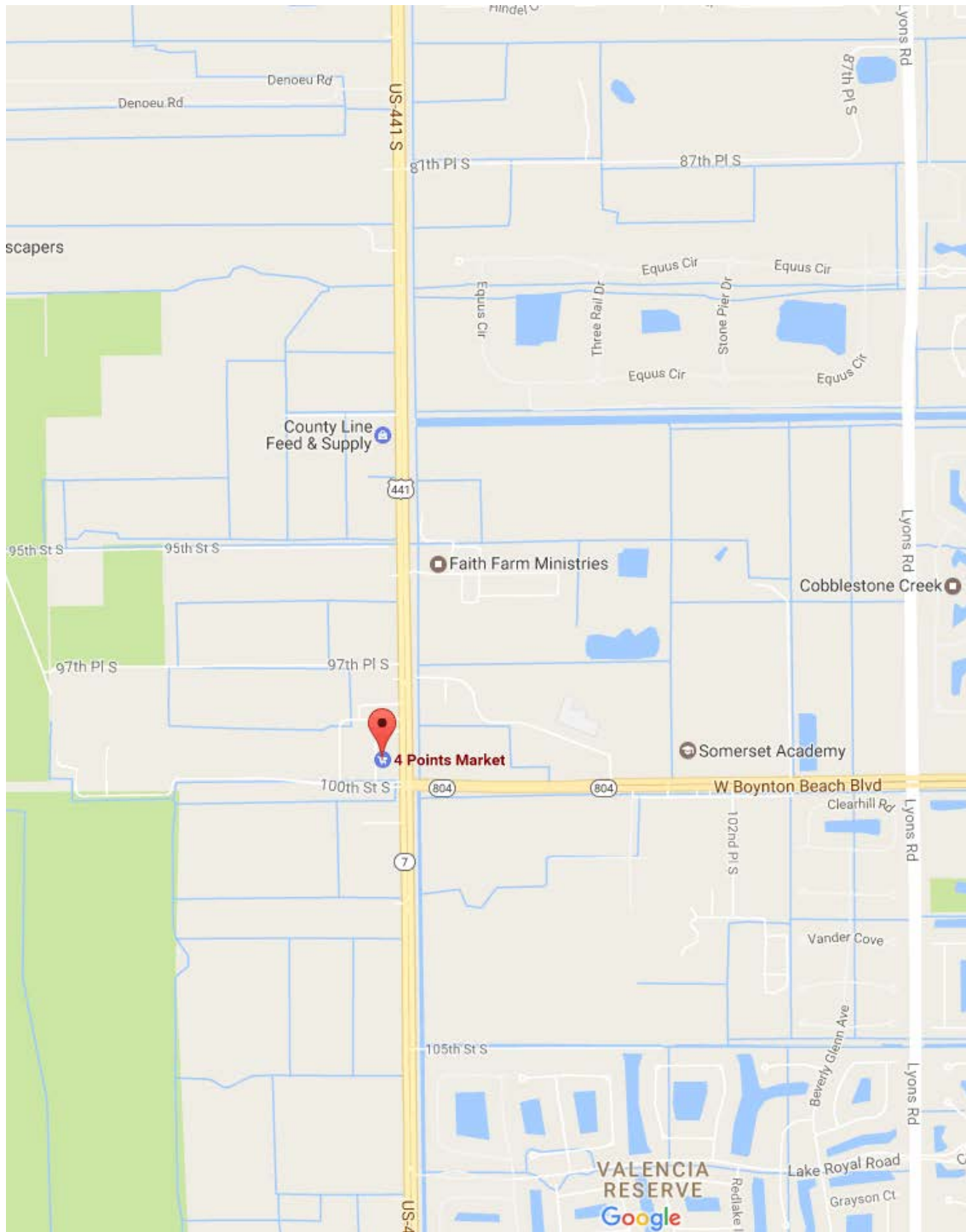
Parking spaces: 5+

Location: 9975 US-441, Boynton Beach, FL 33472, Palm Beach County.

Amenities:

- Fuel Types: Regular gas grades, diesel.
- Security: N/A
- Restaurants: N/A
- Restrooms & Showers: N/A
- Scales: N/A
- Truck Washing: N/A
- Electrical Hook-Up: N/A
- Business Services: N/A
- Repair Facilities: N/A

Figure A.33 Area Location of 4 Points Market



Source: Google Maps.

Marathon Gas Station

Figure A.34 Google Earth Aerial of Marathon Gas Station



Source: Google Earth.

Website: www.mymarathonstation.com

Ownership: Private

Initiation Year: Older than 2006

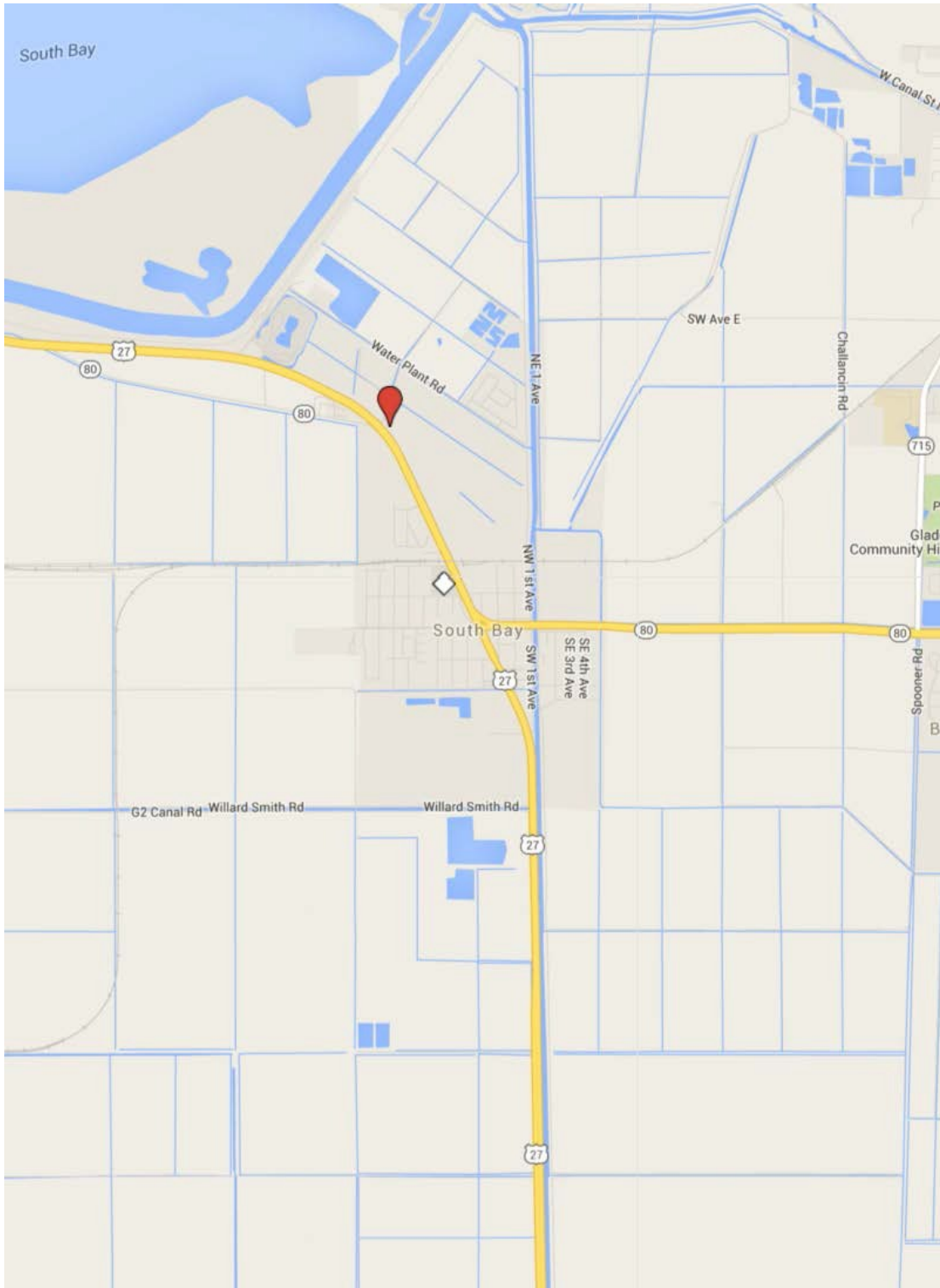
Parking spaces: 30+

Location: 890 U.S. 27, 1 mile north of SR-80. South Bay, FL 33493, Palm Beach County.

Amenities:

- Fuel Types: N/A
- Security: N/A
- Restaurants: N/A
- Restrooms & Showers: Restrooms
- Scales: N/A
- Truck Washing: N/A
- Electrical Hook-Up: N/A
- Business Services: Grocery store (South Bay Jiffymart), ATM.
- Repair Facilities: N/A

Figure A.35 Area Location of Marathon Gas Station



Source: Google Maps.

Southern Belle Truck Stop

Figure A.36 Google Earth Aerial of Southern Belle Truck Stop



Source: Google Earth.

Website:

Ownership: Private

Initiation Year: Older than 1996

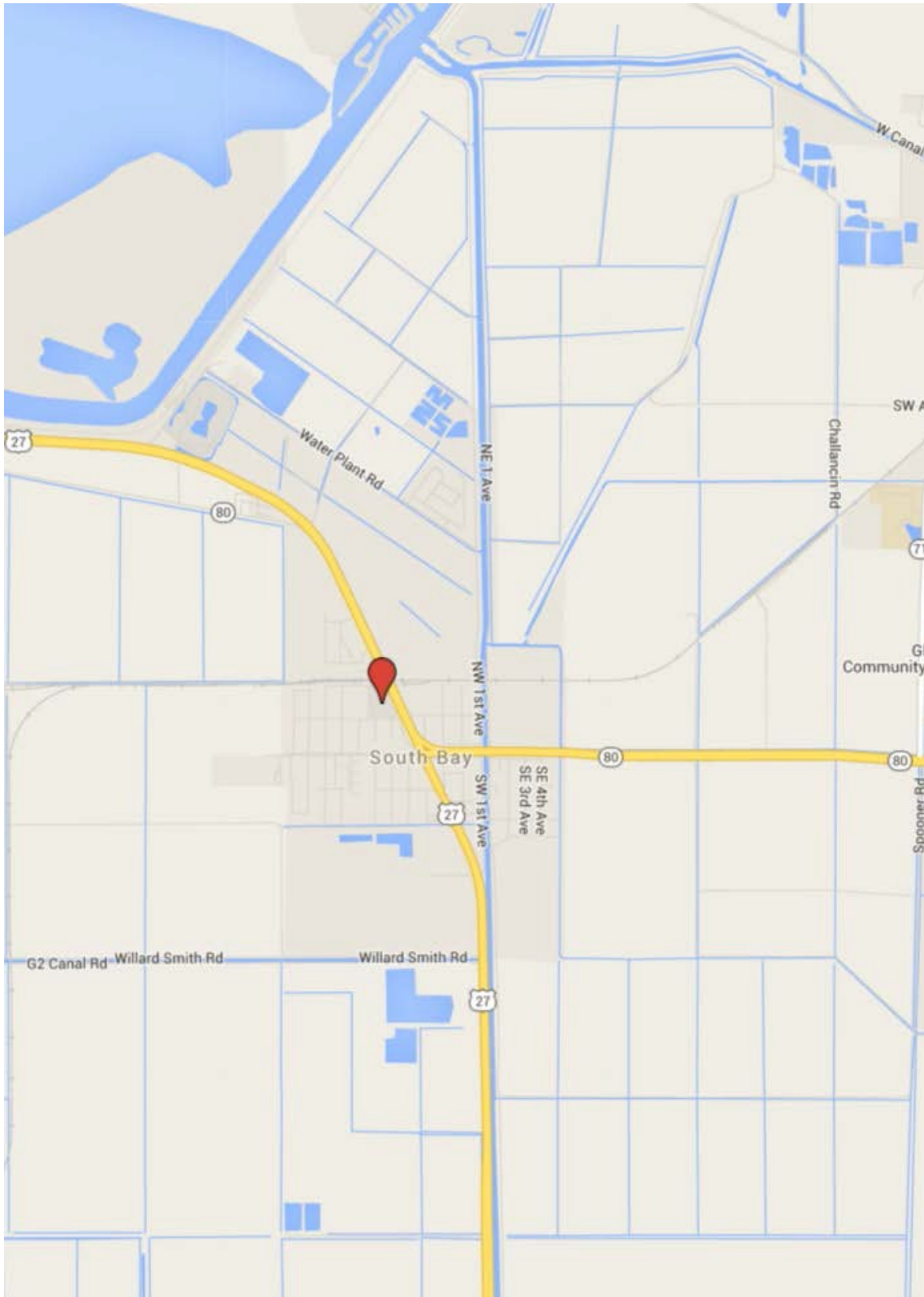
Parking spaces: 15+

Location: 255 U.S. 27, less than 1 mile north of SR-80. South Bay, FL 33493, Palm Beach County.

Amenities:

- Fuel Types: Regular gas, premium gas, propane, midgrade gas, diesel
- Security: N/A
- Restaurants: Restaurant
- Restrooms & Showers: Restrooms
- Scales: Certified scales.
- Truck Washing: N/A
- Electrical Hook-Up: N/A
- Business Services: ATM/bank machine, convenience store.
- Repair Facilities: N/A

Figure A.37 Area Location of Southern Belle Truck Stop



Source: Google Maps.

A.2.5 Broward County

Pompano Truck Stop

Figure A.38 Google Earth Aerial of Pompano Truck Stop



Source: Google Earth.

Website: www.mymarathonstation.com

Ownership: Private

Initiation Year: Older than 1995

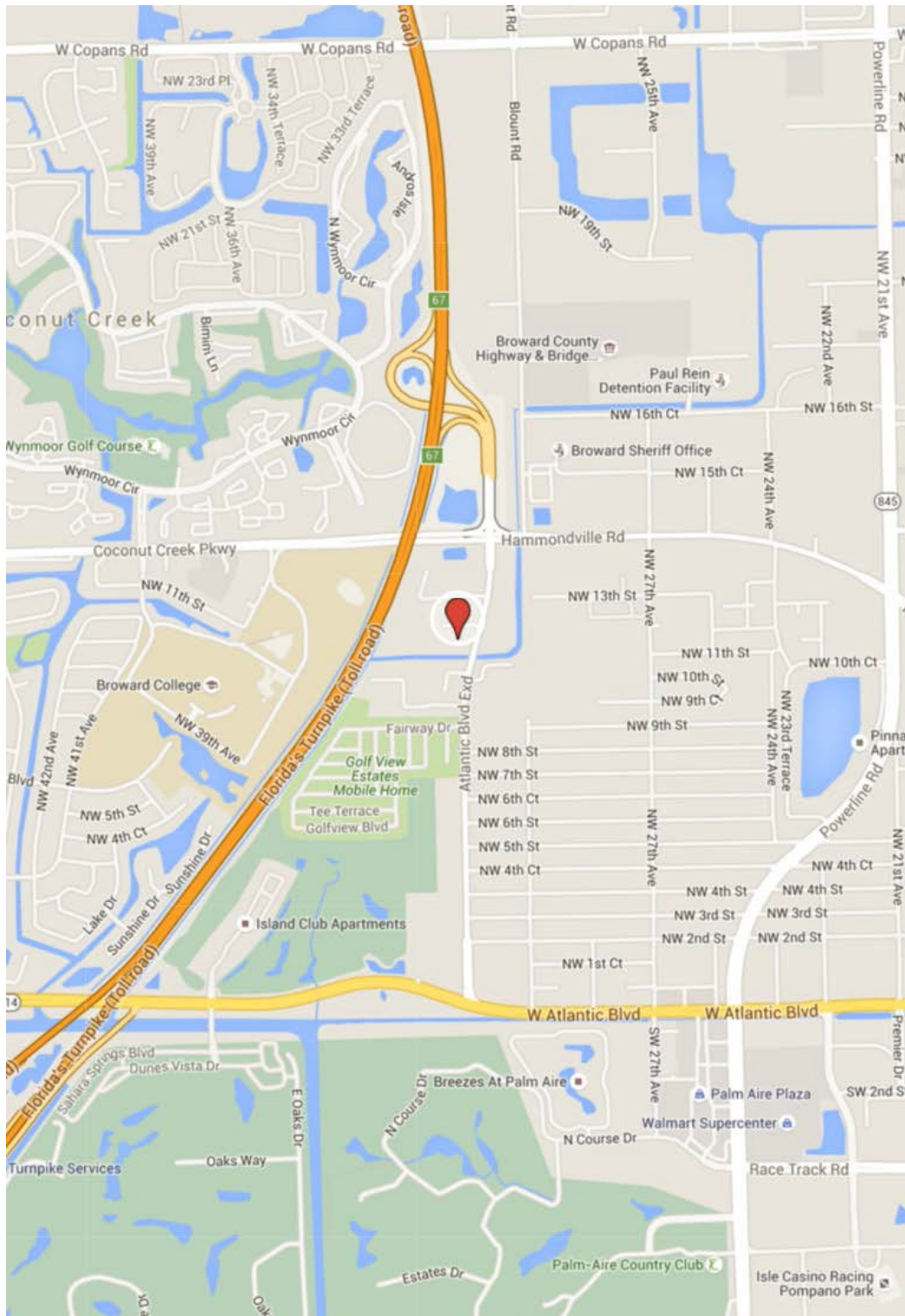
Parking spaces: 30

Location: 1101 NW 31st Ave, less than 1 mile south of Florida's Turnpike Mile Post Exit 67 (Atlantic Blvd. Exit). Pompano Beach, FL 33069, Broward County.

Amenities:

- Fuel Types: Regular gas grades, diesel. Marathon Gas Station.
- Security: N/A
- Restaurants: N/A
- Restrooms & Showers: N/A
- Scales: N/A
- Truck Washing: N/A
- Electrical Hook-Up: N/A
- Business Services: N/A
- Repair Facilities: N/A

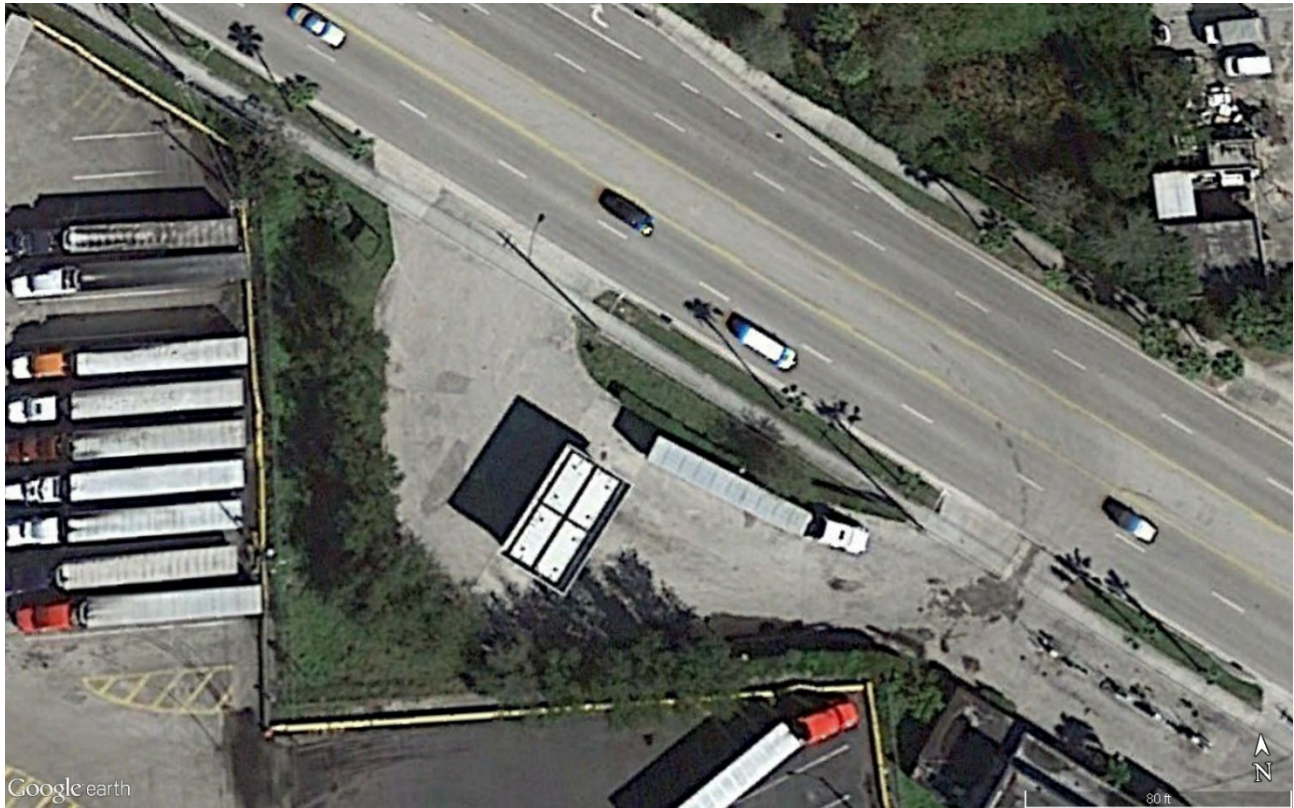
Figure A.39 Area Location of Pompano Truck Stop



Source: Google Maps.

Hardy Bros Truck Stop

Figure A.40 Google Earth Aerial of Hardy Bros Truck Stop



Source: Google Earth.

Website: <http://www.truckstopreport.com/>

Ownership: Private

Initiation Year: Older than 1995

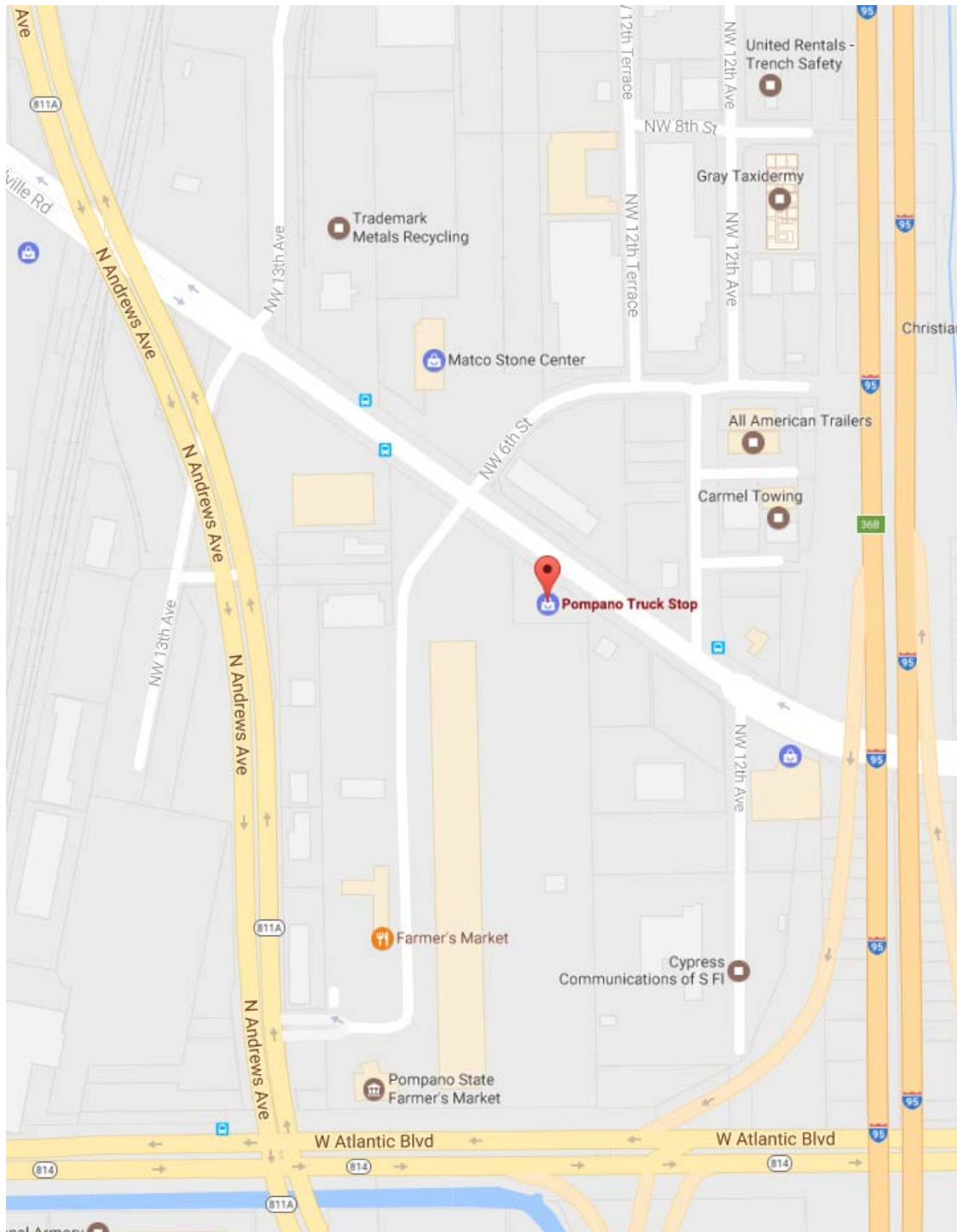
Parking spaces: Fuel stop only, no parking.

Location: 1126 Hammondville Rd, Pompano Beach, FL 33069, Broward County.

Amenities:

- Fuel Types: Diesel.
- Security: N/A
- Restaurants: N/A
- Restrooms & Showers: N/A
- Scales: N/A
- Truck Washing: N/A
- Electrical Hook-Up: N/A
- Business Services: N/A
- Repair Facilities: N/A

Figure A.41 Area Location of Hardy Bros Truck Stop



Source: Google Maps.

Florida's Turnpike Plaza – Mile Post 65

Figure A.42 Google Earth Aerial of Florida's Turnpike Plaza – Mile Post 65



Source: Google Earth.

Website: www.floridasturnpike.com/tools_serviceplazas.cfm

Ownership: Public

Initiation Year: Older than 1995

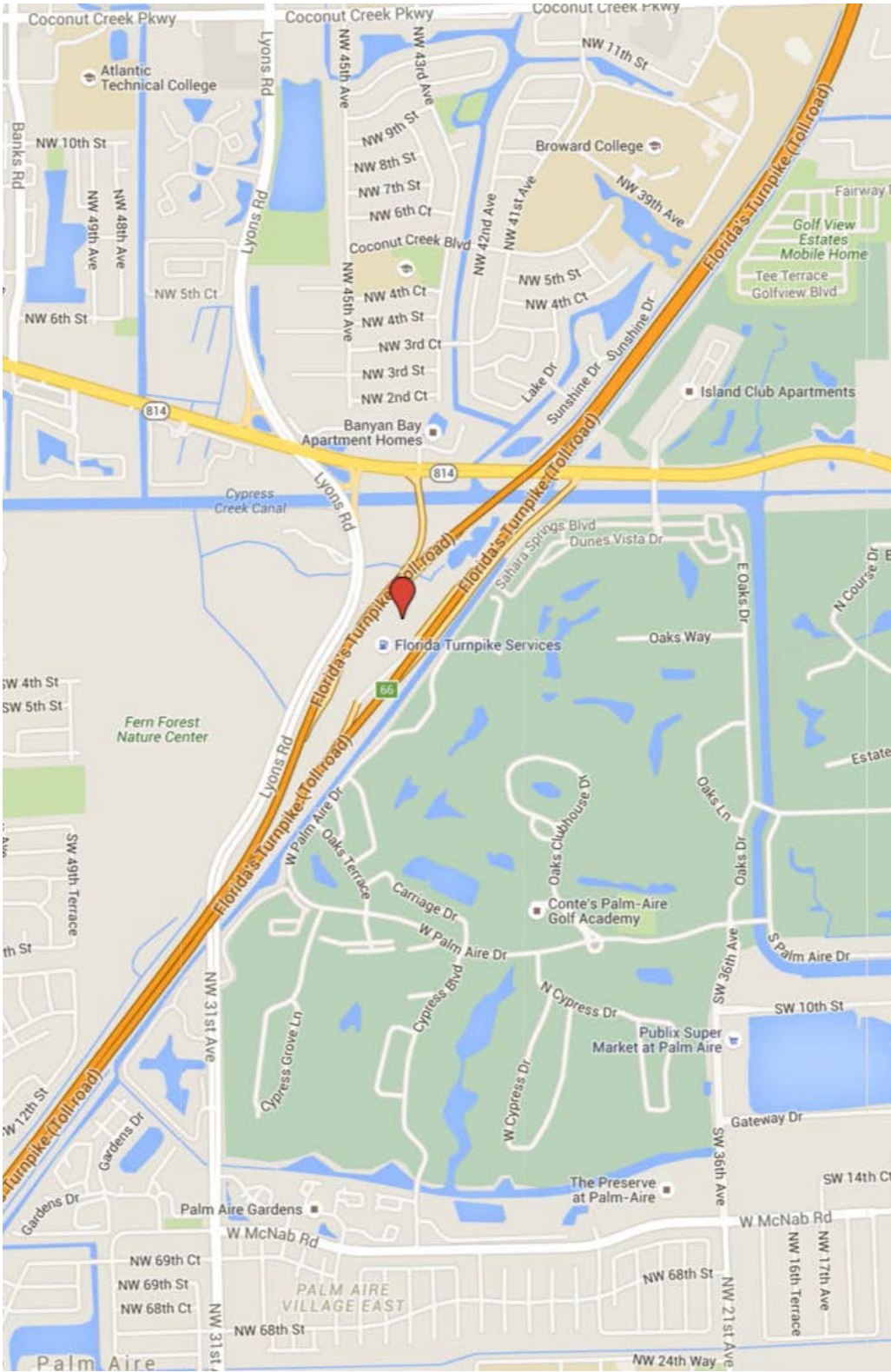
Parking spaces: 42

Location: Half mile south of W. Atlantic Boulevard (CR-814). Pompano Beach, FL 33069, Broward County.

Amenities:

Turnpike Plazas are open 24 hours per day and offer a variety of other services to both the trucker and the general public. Areas for truck parking at the Turnpike Plazas are segregated from personal vehicle parking. Amenities include fast food dining options, restrooms (including family-style), fueling, gift shops, ATMs, public telephones, 24-hour news broadcasts, travel information, picnic areas, and dog walks. Wireless Internet (WiFi) is also available at these three District 4 Turnpike Plazas. In addition to regular gasoline grades and diesel, the District 4 Turnpike Plaza stations offer E85 ethanol for flex-fuel approved vehicles.

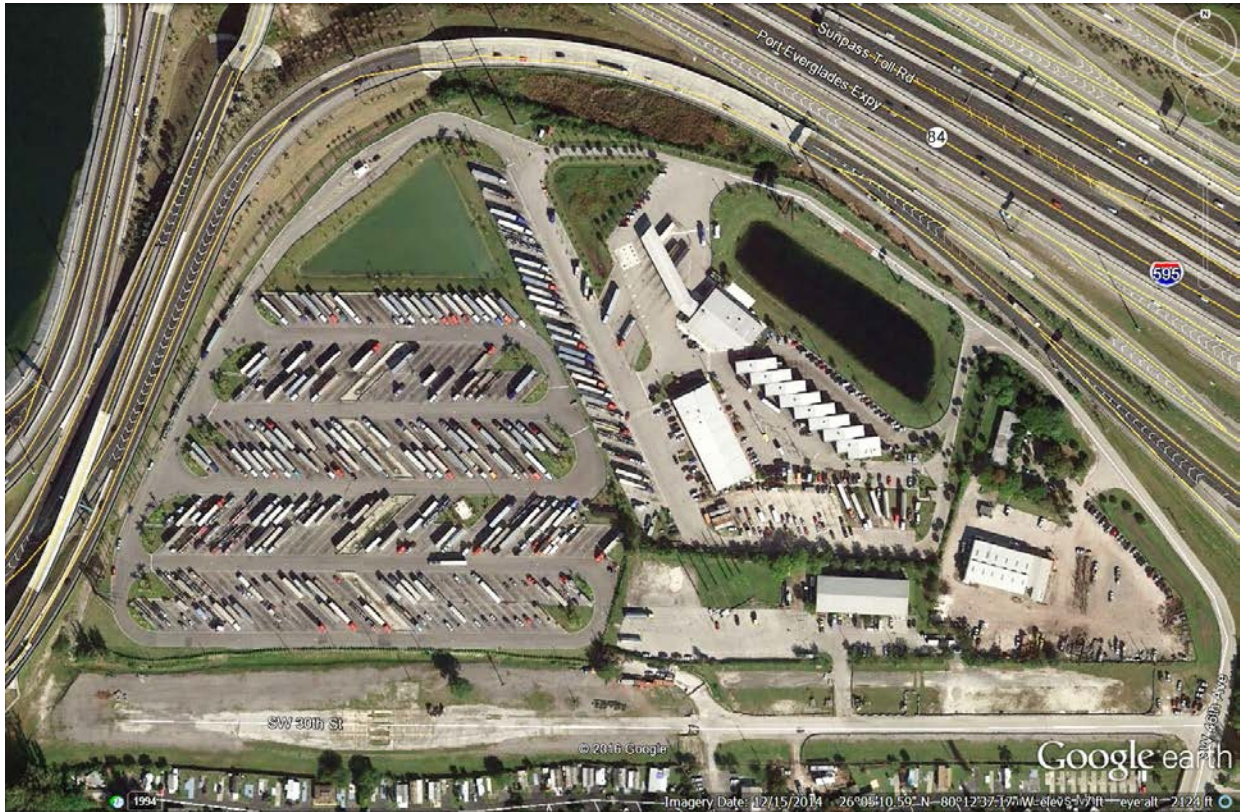
Figure A.43 Area Location of Florida’s Turnpike Plaza – Mile Post 65



Source: Google Maps.

595 Truck Stop

Figure A.44 Google Earth Aerial of 595 Truck Stop



Source: Google Earth.

Website: www.595truckstop.com

Ownership: Private

Initiation Year: 2005

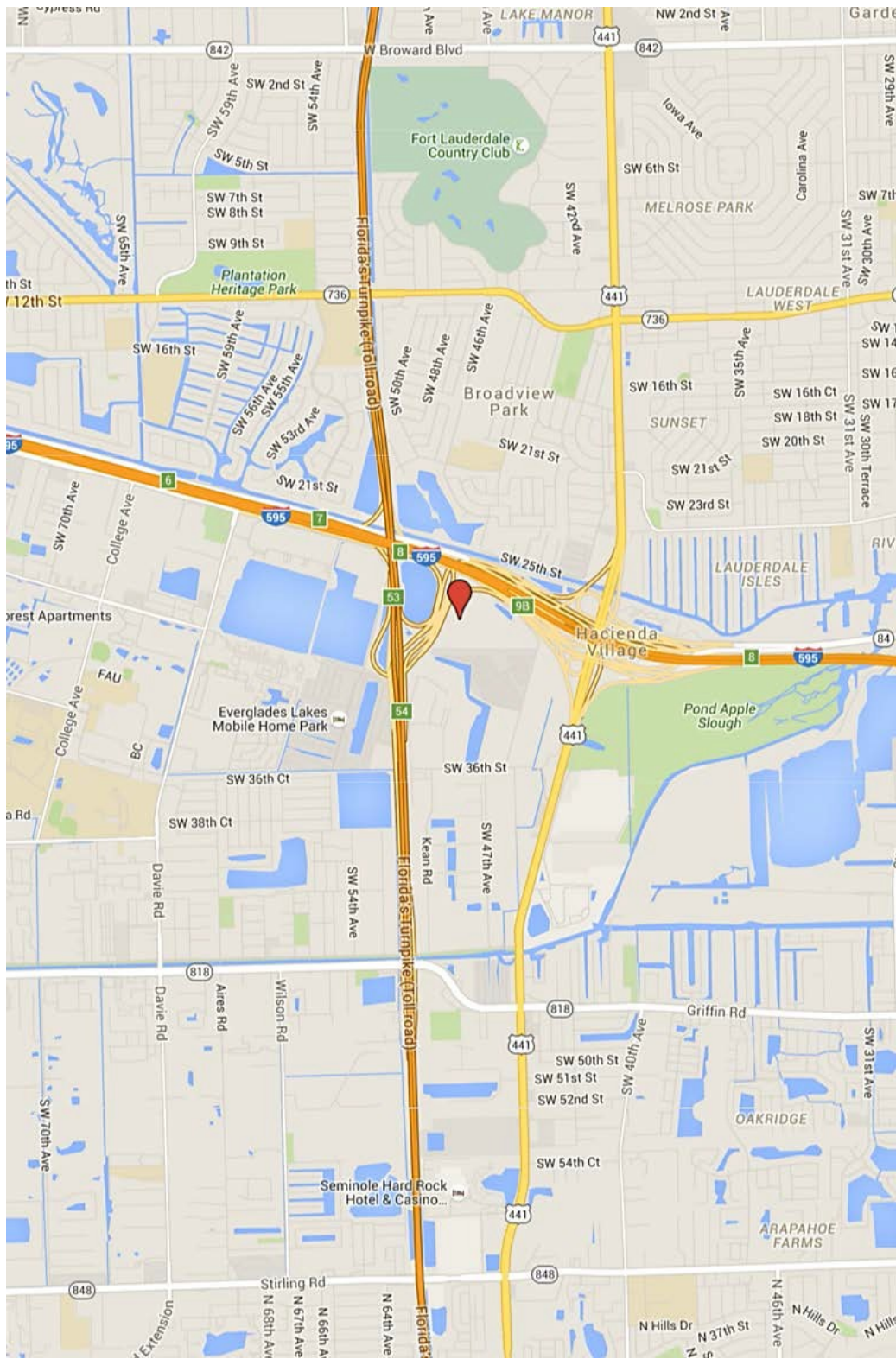
Parking spaces: 330+

Location: 2705 Burris Road, south of I-595, between Florida's Turnpike and SR-441. Mile Post Exits 54 of the Florida's Turnpike and 9B of I-595, Davie, FL 33314, Broward County.

Amenities:

- Fuel Types: Regular gas, diesel, DEF, off-road diesel.
- Security: On-site 24/7 security, lighted parking area.
- Restaurants: 24-hour breakfast, lunch and dinner on-the-go.
- Restrooms & Showers: Available.
- Scales: Certified weigh scale.
- Truck Washing: Automated drive-thru truck wash.
- Electrical Hook-Up: N/A
- Business Services: ATMs, all major credit & fuel cards, check cashing, free WiFi, drop boxes: UPS/ FedEx/TripPak document scanning, copy/fax service.
- Repair Facilities: Light and heavy duty truck and trailer repair

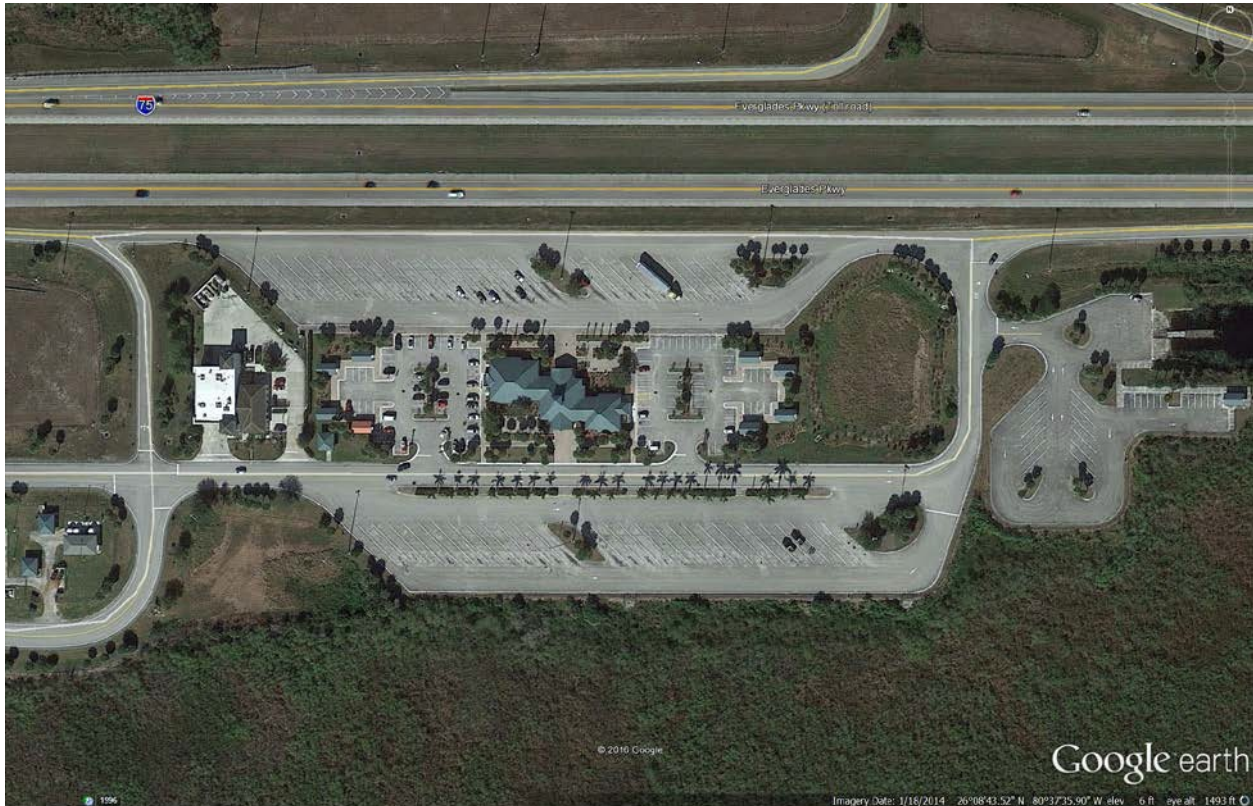
Figure A.45 Area Location of 595 Truck Stop



Source: Google Maps.

Broward County Rest Area

Figure A.46 Google Earth Aerial of Broward County



Source: Google Earth.

Website: http://www.fdot.gov/maintenance/Rest_Area_App/rest_areas.asp

Ownership: Public

Initiation Year: Older than 2000

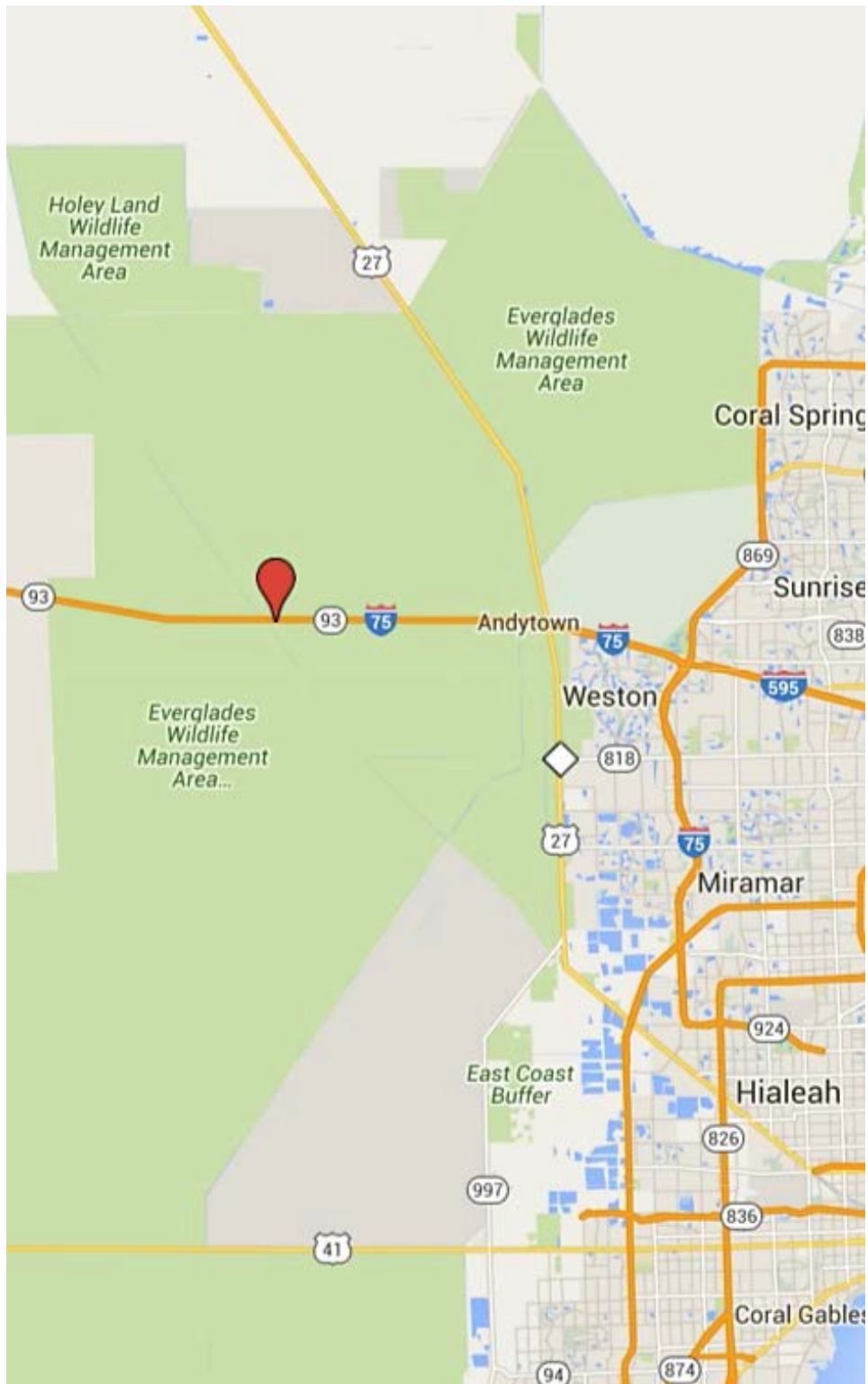
Parking spaces: 60

Location: 11 miles west of toll plaza on I-75 (Alligator Alley). Access from EB and WB. Fort Lauderdale, FL 33327, Broward County.

Amenities:

- Fuel Types: N/A
- Security: N/A
- Restaurants: N/A
- Restrooms & Showers: N/A
- Scales: N/A
- Truck Washing: N/A
- Electrical Hook-Up: N/A
- Business Services: N/A
- Repair Facilities: N/A

Figure A.47 Area Location of Broward County Rest Area



Source: Google Maps.

Miccosukee Service Plaza

Figure A.48 Google Earth Aerial of Miccosukee Service Plaza



Source: Google Earth.

Website:

Ownership: Private

Initiation Year: Older than 1995

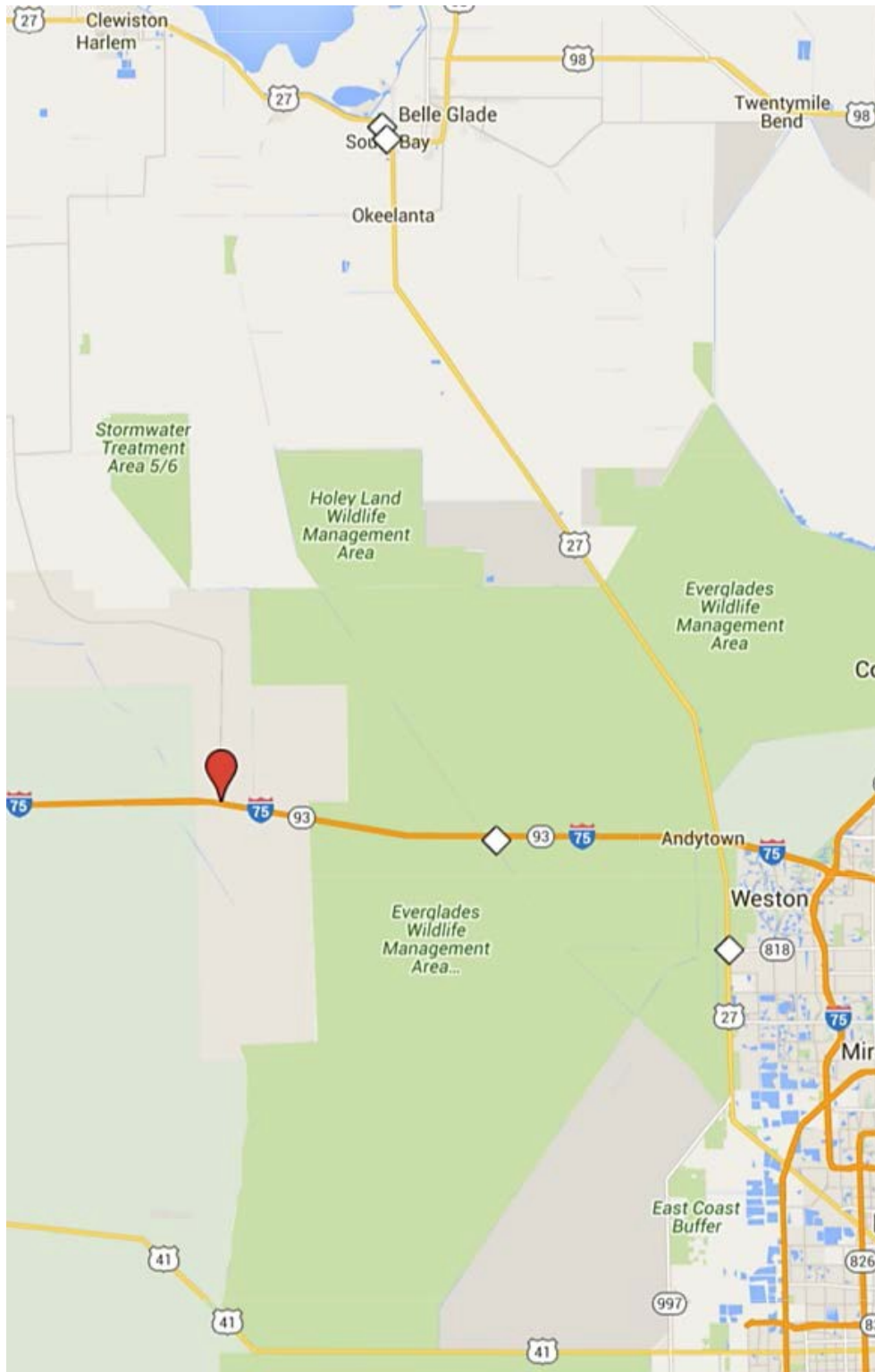
Parking spaces: 10+

Location: 47801 W. SR-84, north of I-75. Exit 49 WB or EB access from I-75. Fort Lauderdale, FL 33332 Broward County.

Amenities:

- Fuel Types: N/A
- Security: N/A
- Restaurants: N/A
- Restrooms & Showers: N/A
- Scales: N/A
- Truck Washing: N/A
- Electrical Hook-Up: N/A
- Business Services: N/A
- Repair Facilities: N/A

Figure A.49 Area Location of Miccosukee Service Plaza



Source: Google Maps.

Seminole Truck Stop

Figure A.50 Google Earth Aerial of Seminole Truck Stop



Source: Google Earth.

Website: www.mymarathonstation.com

Ownership: Private

Initiation Year: Older than 1994

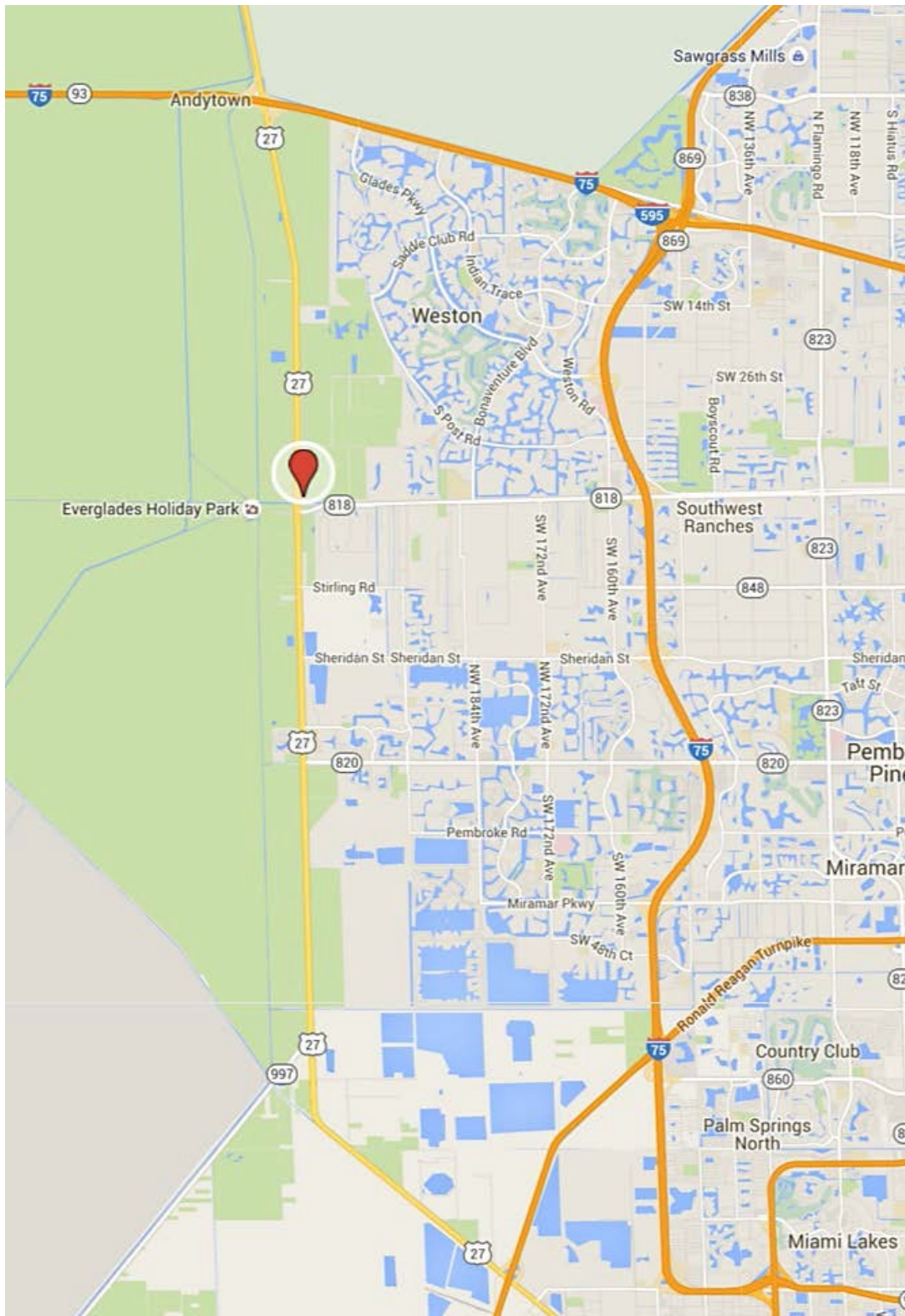
Parking spaces: 80+

Location: 4690 U.S. 27, at the northeast intersection of SR-818 and U.S. 27, Weston, FL 33332, Broward County

Amenities:

- Fuel Types: Regular gas grades, diesel, Marathon Gas Station.
- Security: N/A
- Restaurants: N/A
- Restrooms & Showers: N/A
- Scales: N/A
- Truck Washing: N/A
- Electrical Hook-Up: N/A
- Business Services: N/A
- Repair Facilities: N/A

Figure A.51 Area Location of Seminole Truck Stop



Source: Google Maps.

Sunoco Gas Station

Figure A.52 Google Earth Aerial of Sunoco Gas Station



Source: Google Earth.

Website: <https://www.sunoco.com/locations/fl/21250-sheridan-street-pembroke-pines-fl-33332/>

Ownership: Private

Initiation Year: Older than 1995

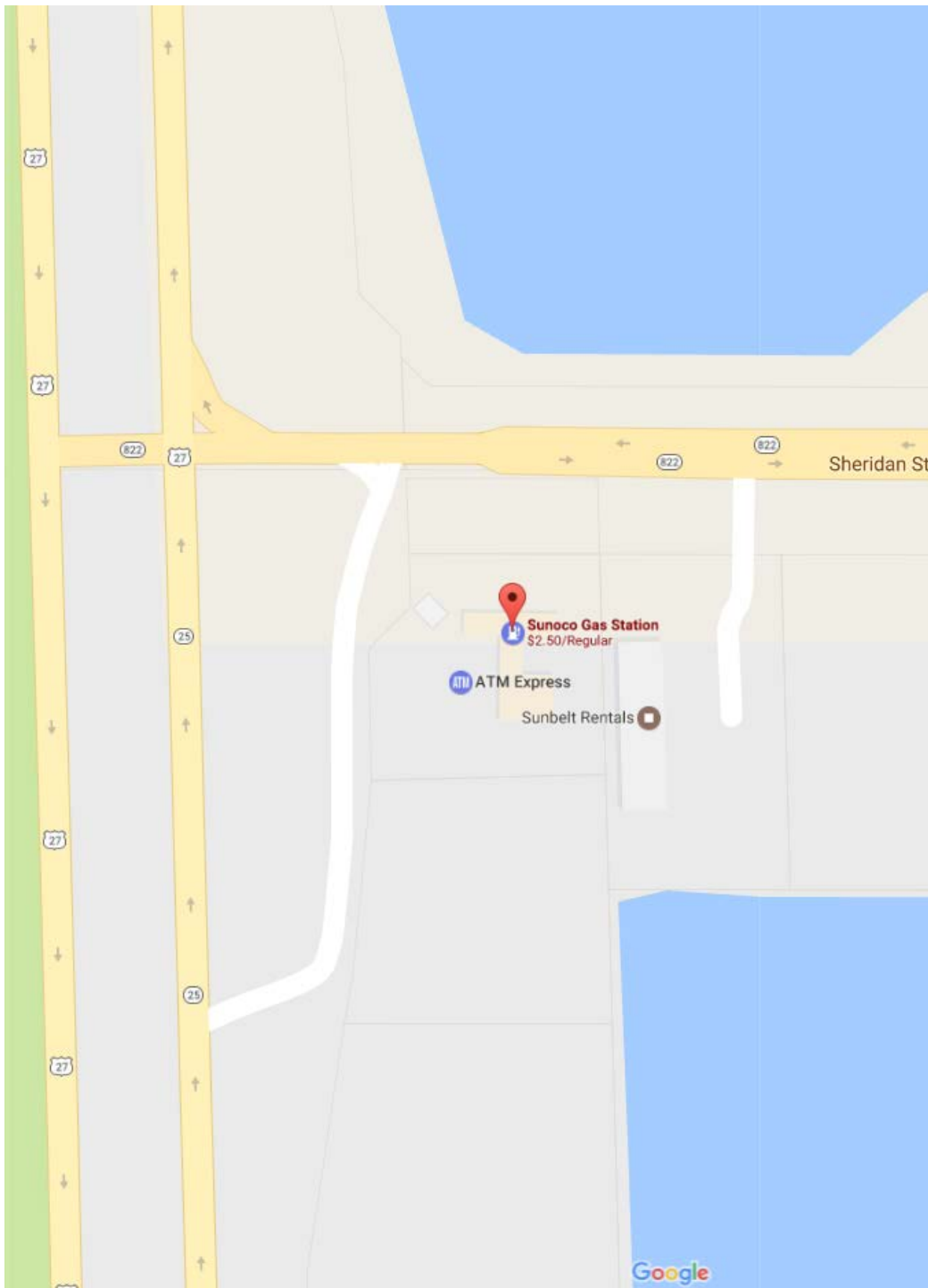
Parking spaces: 5+

Location: 21250 Sheridan Street, Fort Lauderdale, FL 33332, Broward County.

Amenities:

- Fuel Types: Diesel, Regular, Premium
- Security: N/A
- Restaurants: N/A
- Restrooms & Showers: N/A
- Scales: N/A
- Truck Washing: N/A
- Electrical Hook-Up: N/A
- Business Services: N/A
- Repair Facilities: N/A

Figure A.53 Area Location of Sunoco Gas Station



Source: Google Map.

Appendix B. Review of Existing Truck Parking Studies

As part of this effort, an extensive review was conducted of completed existing studies focusing on truck parking. This includes efforts at the national, state, regional, and county level. Table B.1 details a summary of the information contained within each report while Table B.2 examines the truck parking demand methodology used in each report, if applicable.

Table B.1 Summary of Truck Parking Studies Reviewed

Title	Study Level	Year	Summary
Managing Critical Truck Parking Case Study – Real World Insights from Truck Parking Diaries	National	2016	ATRI undertook this effort as part of their truck parking specific research directives. This specific task focuses on the findings of “Truck Parking Diaries” to illustrate the daily issues truck drivers face as it relates to parking.
Jason’s Law Truck Parking Survey Results and Comparative Analysis	National	2015	This survey was conducted in order to meet the requirements of MAP-21 to address commercial motor vehicle parking shortages at public and private facilities along the National Highway System (NHS). Specifically the focus of this study was to evaluate the capability of each State to provide adequate parking and rest facilities, assess the volume of commercial motor vehicle traffic in each State, and to develop a measure of the adequacy of facilities in each State.
Critical Issues in the Truck Parking Industry – 2014	National	2014	The American Trucking Association (ATA) utilizes the American Transportation Research Institute (ATRI) to conduct an annual survey of the trucking industry to identify top issues of concern. Truck parking was identified as a key issue, beginning in 2012 due to new hours of service (HOS) rules. This survey both identifies the key issues and proposing strategies to help mitigate them.
Dealing with Truck Parking Demands: A Synthesis of Highway Practice	National	2003	This report is a review of successful practices used by transportation agencies to evaluate and deal with truck parking demands. This includes summary information on the legislative authority governing the provision of commercial vehicle parking by state DOTs, an analysis of the extent of the demand problem, and an overview of potential solutions for this problem.
Model Development for National Assessment of Commercial Vehicle Parking	National	2002	This report was completed in accordance with Section 4027 of TEA-21. A parking demand model was developed in order to estimate the parking demand for a highway segment, rather than for a single parking facility. This includes factors such as traffic engineering, truck driver behaviors, and Federal hours-of-service regulations.
Study of Adequacy of Commercial Truck Parking Facilities – Technical Report	National	2002	This report documents the investigative findings of the adequacy of commercial truck parking facilities nationwide. This includes an overview of factors impacting commercial vehicle parking demand and the modeling approach used to determine this, commercial vehicle parking supply, and a comparison of these two components. Recommended actions were also proposed to help reduce identified shortages.
Highway Special Investigation Report: Truck Parking Areas	National	2000	In 1999, the National Transportation Safety Board (NTSB) began a Truck/Bus Safety Initiative. Public hearings were held to help obtain information from multiple sources to learn about safety issues related to these types of vehicles. The major issue addressed as part of this special investigative report is the lack of safe available commercial vehicle parking on or near interstates for truck drivers who want or need to use it.
Virginia Truck Parking Study	State	2015	Prepared for the Virginia Department of Transportation, this study provide VDOT with current information to address truck parking challenges statewide. The primary purpose was to identify the frequency of trucks

Title	Study Level	Year	Summary
			parking on ramps near interchanges, rest areas, and welcome centers and to determine where truck parking is needed.
Commercial Motor Vehicle Parking Trends at Rest Areas and Weigh Stations	State	2012	Prepared for FDOT, the two major objectives of this study were to determine trends for truck parking at public rest areas in Florida and to develop a suitable smart parking management system for commercial motor vehicles and conduct a pilot project.
Mn/DOT Truck Parking Study: Phase 2	State	2010	As a follow on study to the truck parking study completed by Mn/DOT in 2008, the objective was to find opportunities for expanding truck parking were needed within Minnesota. This involved investigating lower cost improvements, investigating development of urban truck parking in other U.S. metropolitan areas, investigating parking demand from major truck generators in the Twin Cities area, and coordination and communication with internal and external stakeholders.
The Minnesota Interstate Truck Parking Study	State	2008	This study was undertaken to help the Mn/DOT develop information to support future approaches to truck parking issues within the state. Issues include determining what the state's role should be, what provisions of long term truck parking will provide the greatest support to the economy, and what will provide the greatest impact on traffic safety. This also included an assessment of supply and demand along the three primary interstate corridors in Minnesota.
Truck Parking in Pennsylvania - Final Report	State	2007	This study provides an overview of the truck parking issues and trends in Pennsylvania, an identification of regions in the state where parking demand is the highest, and options for parking providers, drivers, and decision makers. Some of the significant findings were that there is a shortage of truck parking in Pennsylvania, this shortage compromises safety and contributes to other problems, and truck parking demand will continue to grow.
Estimation of the Demand for Commercial Truck Parking on Interstate Highways in Virginia	State	2004	Prepared for the Virginia Department of Transportation, this study is Phase I of a two part study. This initial effort focused on developing a methodology for determining the supply and demand for commercial truck parking using I-81 in Virginia as a case study. Other interstate highways are to be included as part of Phase II.
New York's Research and Program Approach to Address the Needs of the Motor Carrier Industry at Public Roadside Rest Areas	State	1999	Beginning in 1997, the New York State Department of Transportation (NYDOT) adopted a rest area policy requiring state rest facilities to meet the future needs of commercial motor vehicle users. NYDOT asked their regional offices to prepare rest area plans as part of this study to consider the needs of truck operators. This included recommendations for the conversion of closed rest areas to commercial vehicle parking, and/or construction of new rest areas on heavily used corridors.
Regional Truck Parking and Service Issues	Regional	2014	This study was a component of the Tampa Bay Regional Goods Movement Study. A major component of this study was the identification and overview of both public and private truck parking facilities in the region. Other aspects include an overview of existing truck parking research and opportunities to address truck parking needs.
Development of Truck Parking Facilities in Miami-Dade County Phase II	County	2012	Phase II of the Miami-Dade MPO truck parking study focused on implementation strategies which expands on prior efforts. This study examined identified locations to determine if they are viable truck parking locations. Criteria included acreage, location, challenges, surrounding land use, and zoning. Conceptual site plans for various site acreages were also developed.
Comprehensive Parking Study for Freight Transport in Miami Dade County	County	2010	This study was completed for the Miami-Dade MPO. As Part I of a two part study, this component focused on determining the existing supply of truck parking within Miami-Dade County and comparing it to the perceived

Title	Study Level	Year	Summary
			demand. This included a preliminary evaluation of sites eligible for additional truck parking based on existing legal requirements and available land.

Table B.2 Summary of Truck Parking Demand Methodologies

Title	Study Level	Year	Demand Calculation	Methodology (In Brief)
Managing Critical Truck Parking Case Study – Real World Insights from Truck Parking Diaries	National	2016	No	
Jason’s Law Truck Parking Survey Results and Comparative Analysis	National	2015	No	Parking supply is summarized and compared state by state through such indicators as "Spaces per 100k Daily Truck VMT" and "Space per 100 miles of NHS"
Critical Issues in the Truck Parking Industry – 2014	National	2014	No	
Dealing with Truck Parking Demands: A Synthesis of Highway Practice	National	2003	Yes	Demand estimation methodology is not included in this documentation. Readers are referred to the Montana Rest Area Plans and Model Development for National Assessment Commercial Vehicle Parking Availability (described below).
Model Development for National Assessment of Commercial Vehicle Parking	National	2002	Yes	The model developed for this methodology requires four data inputs as well as multiple model parameters. Overall, the model produced reasonable estimates of demand with an error of -2% for the 29 segments where parked truck counts were conducted.
Study of Adequacy of Commercial Truck Parking Facilities – Technical Report	National	2002	Yes	Two models were developed for this effort. The first is a simplified model which captures many of the key elements. The second model includes additional factors such as seasonal peaks, short haul/long haul ratio, time driving for long haul drivers, and more. The model was then calibrated based on field surveys of various corridors nationwide.
Highway Special Investigation Report: Truck Parking Areas	National	2000	No	
Virginia Truck Parking Study	State	2015	Yes	Utilized two sources to determine the truck parking demand: FHWA Study of Adequacy of Commercial Truck Parking Facilities - Technical Report and the Truck Parking in Pennsylvania - Final Report. This second study was used to refine the methodologies developed in the FHWA study based on changing federal regulations involving hours of service.
Commercial Motor Vehicle Parking Trends at Rest Areas and Weigh Stations	State	2012	No	While not determining truck parking demand, this study did develop models to determine occupancy of truck parking facilities by time of day.
Mn/DOT Truck Parking Study: Phase 2	State	2010	Yes	Major freight generators in the Twin Cities metropolitan area were analyzed to determine the truck parking demand derived from these businesses. Ultimately, the analysis looked to better understand any spatial relationships

Title	Study Level	Year	Demand Calculation	Methodology (In Brief)
				between locations generating truck traffic, roadway truck traffic flow, and truck parking needs.
The Minnesota Interstate Truck Parking Study	State	2008	No	The study did complete a comprehensive survey of existing truck parking locations to determine the supply and current demand at each location. However, this did not include an effort to quantify the unmet demand (i.e. trucks which would have stopped but did not since the facilities were currently over capacity).
Truck Parking in Pennsylvania - Final Report	State	2007	Yes	To determine the truck parking demands, the Pennsylvania Core Highway System was segmented into 27 corridors throughout the state. The methodology developed by FHWA was then modified based on updated factors and rulemakings to determine the demand on each corridor.
Estimation of the Demand for Commercial Truck Parking on Interstate Highways in Virginia	State	2004	Yes	Phase I of this study developed a methodology to determine the supply and demand for commercial truck parking using I-81 in Virginia as a case study. Phase II expanded to other interstate highways in Virginia to test the applicability of the model developed in Phase I and developed new models as necessary.
New York's Research and Program Approach to Address the Needs of the Motor Carrier Industry at Public Roadside Rest Areas	State	1999	No	
Regional Truck Parking and Service Issues	Regional	2014	No	
Development of Truck Parking Facilities in Miami-Dade County Phase II	County	2012	No	
Comprehensive Parking Study for Freight Transport in Miami Dade County	County	2010	Yes	Truck parking demand was determined for two distinct elements of the trucking industry: short-haul local trips and long-haul interstate trips. Demand estimates were based on truck registration data provided by the State and the Interstate Registration Program (IRP) registrations.

Appendix C. Demand Methodology Description

C.1 Review and Selection of Truck Parking Demand Methodology

In order to develop a methodology for estimating truck parking demand, a review was conducted of prior studies which attempted to also estimate this demand. This included efforts at the national, state, regional, and county levels focusing on various issues related to truck parking. While all studies reviewed were a useful and insightful look at truck parking issues, not all attempted to calculate the demand for truck parking. A full list of the studies reviewed is included in Appendix B along with a high level summary of each study and demand methodology used, if applicable.

Based on this review, the starting point for determining the best available methodology for calculating truck parking demand was deemed to be the 2002 *Study of Adequacy of Commercial Truck Parking Facilities* completed by the Federal Highway Administration (FHWA). The report documents the investigative findings of the adequacy of commercial truck parking facilities nationwide and has been used by other states in subsequent years. This includes an overview of factors impacting commercial vehicle parking demand and the modeling approach used to determine this, commercial vehicle parking supply, and a comparison of these two components. Recommended actions were also proposed to help reduce identified shortages.

This study developed two models for estimating truck parking demand: a simplified version of the model and a secondary one with additional factors. The simplified version is presented such that users can be familiar with the general nature and limitations of the model, as well as factors which are not included.

The following details the recommended methodology to be used in this demand calculation which has been utilized in other studies across the nation. As described in the study, the simplified model predicts the demand (D) for commercial truck parking spaces along a highway segment based on total truck-hours of travel per day (THT) on that segment and the average parking time per truck-hour of travel (P_{avg}).

$$D = THT * P_{avg}$$

Average truck-hours of travel per day for a segment is determined based on the percent of vehicles which are commercial trucks (P_t), annual average daily traffic (AADT), the length of the segment (L), and the speed limit or average truck speed (S) as calculated by the following formula:

$$THT = P_t * AADT * L/S$$

P_{avg} is a parameter that is estimated during the calibration step to best fit the calibration data.

Limitations of this calculation include variables such as the use of average truck hours of travel per day, not peak. Other important designations include the use of public parking spaces versus private as well as seasonal variations in traffic. The Pennsylvania State Transportation Advisory Committee incorporated this model into the 2007 study *Truck Parking in Pennsylvania*. As the hours of service requirements have changed over the years, many of the refinements made in this study to the model are directly related to those requirements. The following table includes the variables and assumptions made in this study:

Table C.1 Truck Parking Variables and Assumptions

Variable	Description	Derivation/Source
F _d	Driving hours permitted in a daily on-duty window	11 out of 14, or 0.786 (FMCSA Regulations)
OD ₈	Maximum on-duty hours permitted over 8 consecutive days	70 (FMCSA)
DR ₈	Maximum driving hours permitted over 8 consecutive days	55 (OD ₈ x F _D)
H _T	Total hours in 8-day period	192 (24 x 8)
H _H	Avg. hours at home (off duty and away from truck) for long-haul truckers in 8-day period	42 (2002 FHWA Study)
H _R	Average hours with truck (on-duty or off-duty) for long haul truckers in 8-day period	150 (H _T - H _H)
D%	Fraction of time on the road (on-duty and driving) for long-haul truckers in 8-day period	0.367 (DR ₈ / H _R)
P%	Fraction of time long-haul truckers must be off duty and/or parked in 8-day period under FMCSA regulations	0.633 (1 - D%)
P	Parking Ratio (hours parked for FMCSA regulations for every hour driving)	1.725 (P% / D%)

Source: *Truck Parking in Pennsylvania.*

The following describes the methodology applied in the *Truck Parking in Pennsylvania* Study with an example segment of the Eastbound PA Turnpike between the New Stanton and Bedford exits. The 2006 PA Statewide Travel Demand Model provided an average speed of 61 mph and 6,595 daily trucks on this segment which are divided into short and long haul using a 65%-35% split as this is a Turnpike segment.

$$\text{Short-Haul Trucks: } 6,595 \times 65\% = 4,285 \text{ Short-Haul Trucks}$$

$$\text{Long Haul Trucks: } 6,595 - 4,286 = 2,309 \text{ Long - Haul Trucks}$$

With this information, a theoretical daily and peak truck parking demand was calculated for each roadway segment. This includes the computation of truck-miles traveled (TMT) and the duration of time each truck spends on the segment (THT or truck-hours traveled). Note that the total truck volume is used to determine short-term parking demand as both engage in activities, such as food and fuel stops, which require short-term parking. The TMT for this 70 mile segment is calculated as follows:

$$\text{TMT: } 70 \text{ miles} \times 6,595 \text{ trucks} = 461,622 \text{ Truck-Miles Traveled}$$

This TMT can then be used to calculate the THT based on the average speed for the segment:

$$\text{THT} = 461,622 \text{ miles} / 61 \text{ mph} = 7,567.6 \text{ Truck-Hours Traveled}$$

Using a ratio of 5 minutes of truck parking per 55 minutes of truck operations per hour, an estimation of the short-term parking demand is calculated as follows:

Truck-Hours Parked: $7,567.6 \text{ hr} \times 5 \text{ min}/60 \text{ min} = 630.6 \text{ hours}$

The total amount of time spent on short-term parking for all trucks operating on this segment must be converted to daily truck stops using the average short-term parking duration. Based on data collection, this was determined to be 0.367 hours, or 22 minutes. Estimated short term truck stops is therefore:

Daily Truck Stops: $630.6 \text{ hr}/0.367 \text{ hr per stop} = 1,718.3 \text{ Daily Truck Stops}$

This value represents the total for an entire 24 hour period. Of concern is the availability of truck parking during peak periods. A 24-hour survey of sample facilities in the study area determined that 2.11 percent of trucks parked for less than three hours over the course of the day are parking during the hour of peak parking (3:00 to 4:00 am). Therefore, the short-term parking demand during the peak hour of parking is:

Peak Demand (Short-Term): $1,718.3 \text{ stops} \times 2.11\% = 36.26 \text{ Stops}$

The calculation for long-term parking demand is similar, but only long-haul trucks volumes are used for the computations. Therefore, the calculation of TMT and THT is as follows:

TMT = $70 \text{ miles} \times 2,309 \text{ trucks} = 161,602 \text{ Truck-Miles Traveled}$

THT = $161,602 \text{ miles}/61 \text{ mph} = 2,649.2 \text{ Truck-Hours Traveled}$

The parking ratio (as determined in Table C.1) is applied to the THT to determine the truck-hours parked.

Truck-Hours Parked: $2,649.2 \text{ hr} \times 1.725 = 4,569.9 \text{ Hours}$

For long-term parking, the median duration from data collection efforts was determined to be 435 minutes, or 7.25 hours. Applying this value to the number of truck hours parked yields the number of daily truck stops.

Daily Truck Stops: $4569.9 \text{ hr}/7.25 \text{ hr} = 630.3 \text{ Daily Truck Stops}$

As with the short-term parking, this long-term truck parking was determined for the daily demand. The 24-hour profile of parking activity at sample facilities in the study area determined that 45.35 percent of trucks parked for three or more hours during a typical day are parking during the hour of peak parking activity. Therefore, the peak long-term parking demand is as follows:

Peak Parking Demand (Long-Term): $630.3 \text{ stops} \times 45.35\% = 285.84 \text{ Stops}$.

The total peak parking demand is the sum of peak parking for both long term and short term parking, or 322.1 trucks. This methodology was then applied to each segment in Pennsylvania and compared to the parking capacity on that segment to determine the parking surplus or shortfall.

This same demand calculation methodology was utilized in the *Virginia Truck Parking Study* completed in July 2015 as a way to determine demand without doing extensive surveys at each truck parking location.

C.2 Truck Parking Demand Methodology

For application in District 4, this same methodology was utilized. Without 24 hour counts at each location, the factors determined in the Pennsylvania study can be used as conservative estimates here in Florida. To

implement this strategy, it was necessary to know the defined roadway segments, average daily truck traffic per segment, and average truck speed per segment which can be determined from either model outputs or current FDOT data collection efforts.

C.2.1 Selected Roadways

Routes that are part of the existing Strategic Intermodal System (SIS) or are part of the emerging SIS are included in the truck parking demand calculations. These roadways were selected as they represent the corridors which carry the majority of freight movement. In addition, this truck parking demand analysis specifically focuses on truck parking needs of long haul overnight drivers who are more likely to use a road such as I-95 over a local roadway. These roadways were divided along county lines in order to determine truck parking demand at the county level.

Table C.2 SIS Roadways in District 4

Roadway	From	To	County
SR 60	Osceola County	I-95	Indian River
Florida's Turnpike	Osceola County	St Lucie County	Indian River
I-95	Brevard County	St Lucie County	Indian River
SR 70	Okeechobee County	I-95	St Lucie
Florida's Turnpike	Indian River County	Martin County	St Lucie
I-95	Indian River County	Martin County	St Lucie
US 98	Okeechobee County	Palm Beach County	Martin
SR 710	Okeechobee County	Palm Beach County	Martin
Florida's Turnpike	St Lucie County	Palm Beach County	Martin
I-95	St Lucie County	Palm Beach County	Martin
US 27	Hendry County	Broward County	Palm Beach
US 98/SR 15	Martin County	US 27	Palm Beach
US 98	Belle Glade	I-95	Palm Beach
SR 710	Martin County	I-95	Palm Beach
Florida's Turnpike	Martin County	Broward County	Palm Beach
I-95	Martin County	Broward County	Palm Beach
SW 10 th St	I-95	Florida's Turnpike	Broward
Sawgrass Expressway	Florida's Turnpike	I-75	Broward
I-75	Collier County	Miami-Dade County	Broward
I-595	I-75	I-95	Broward
US 27	Palm Beach County	Miami-Dade County	Broward
Florida's Turnpike	Palm Beach County	Miami-Dade County	Broward
I-95	Palm Beach County	Miami-Dade County	Broward

Source: Florida Department of Transportation.

C.2.2 Truck Volumes

For this effort, truck traffic volumes from FDOT's Transportation Statistics Office were utilized for the SIS roadways. However, each roadway segment as defined in Table C.2 above is comprised of multiple segments within the Statistics Office database, each with its own individual traffic count. To account for these, a range of volumes were used for the analysis to help illustrate the sensitivity of this methodology as well as to provide a sense of a high and low truck parking demand. In total, four different volumes were used for each county's segment of a roadway: minimum, median, mean, and maximum as shown in Table C.3. Any segment with only one count location has the same value for each.

Table C.3 Truck AADT of Roadway Segments

Roadway	County	Minimum	Median	Mean	Maximum
SR 60	Indian River	984	1,535	1,705	2,297
Florida's Turnpike	Indian River	3,335	3,335	3,335	3,335
I-95	Indian River	4,896	5,916	5,576	5,916
SR 70	St Lucie	707	944	1,738	3,925
Florida's Turnpike	St Lucie	4,536	5,066	5,099	5,728
I-95	St Lucie	4,760	7,449	7,159	8,975
US 98	Martin	800	1,478	1,478	2,155
SR 710	Martin	1,711	1,983	1,958	2,180
Florida's Turnpike	Martin	4,914	5,040	5,040	5,166
I-95	Martin	5,548	7,262	7,190	8,694
US 27	Palm Beach	2,741	3,745	3,652	4,568
US 98/SR 15	Palm Beach	294	1,348	1,411	2,484
US 98	Palm Beach	1,366	3,228	3,297	4,856
SR 710	Palm Beach	434	1,314	1,464	2,534
Florida's Turnpike	Palm Beach	4,914	8,165	7,588	9,900
I-95	Palm Beach	5,548	13,027	13,078	18,786
SW 10 th St	Broward	2,883	3,876	3,888	4,905
Sawgrass Expressway	Broward	1,985	7,956	7,577	10,710
I-75	Broward	2,911	8,819	8,797	16,848
I-595	Broward	9,696	10,080	19,422	57,558
US 27	Broward	2,222	2,853	3,020	3,738
Florida's Turnpike	Broward	8,514	10,211	10,332	12,375
I-95	Broward	7,488	15,281	15,645	22,200

Source: FDOT Transportation Statistics Office, 2015.

C.2.3 Truck Speeds and Segment Lengths

Two further variables which have an impact on the truck demand are truck travel speeds and the length of the segment. These variables are important as they determine the amount of time that a trucker will spend on a particular roadway segment. These values for each roadway segment are detailed in Table C.4. Of these two factors, the assumed travel speed will have the greatest impact on the resulting truck parking demand calculation. Higher speed limits mean that a truck spends less time traversing a particular distance, and therefore is less likely to need a parking space. Lower speed limits will increase the travel time and therefore increase the likelihood of needing to park. For this effort, travel speeds of trucks were assumed to be 90 percent of the posted speed limit to account for both lower travel speeds for trucks and congestion. Note that the same speed is used for the entire segment in each county. The highest posted speed limit in each county is used to simplify the calculation as well as provide a more conservative estimate of the truck parking demand.

Table C.4 Posted Speed Limits and Segment Length

Roadway	County	Distance (miles)	Speed Limit
SR 60	Indian River	21	65
Florida's Turnpike	Indian River	35	70
I-95	Indian River	27	70
SR 70	St Lucie	12	65
Florida's Turnpike	St Lucie	23	70
I-95	St Lucie	20	70
US 98	Martin	25	65
SR 710	Martin	39	65
Florida's Turnpike	Martin	25	70
I-95	Martin	38	70
US 27	Palm Beach	22	65
US 98/SR 15	Palm Beach	45	65
US 98	Palm Beach	46	65
SR 710	Palm Beach	3	65
Florida's Turnpike	Palm Beach	22	70
I-95	Palm Beach	45	70
SW 10 th St	Broward	10	45
Sawgrass Expressway	Broward	28	60
I-75	Broward	26	70
I-595	Broward	25	65
US 27	Broward	21	60
Florida's Turnpike	Broward	35	65
I-95	Broward	27	65

Source: FDOT Transportation Statistics Office.

C.2.4 Other Variables

The last variables used for this methodology are not dependent on specific roadway segments. These four variables are: Short Haul/Long Haul Truck Ratio, Peak Hour Parking Utilization, Hours Parked for Every Hour of Driving, and Average Stop Time.

For these last variables, Hours Parked for Every Hour of Driving and Average Stop Time, set values were utilized. For the Hours Parked for Every Hour of Driving, this was assumed to be five minutes for short term parking needs (i.e. rest periods, consistent with survey results from Pennsylvania) and 1.73³ hours for long term parking based on the maximum allowable driving hours over an eight day period. For the Average Stop Time, data collection efforts from prior studies were utilized. For short term parking needs, the average stop time is assumed to be 22 minutes. For the long term parking needs, the average stop time is assumed to be 7.25 hours.

The remaining two variables, Short Haul/Long Haul Truck Ratio and Peak Hour Parking Utilization, were used with a range of values in order to determine the sensitivity of these variables. For the Short Haul/Long Haul Truck Ratio, a low, medium, and high scenario were developed as detailed in Table C.5. The low and high scenarios are to help illustrate the two extremes which occur for this ratio. Note that a higher short haul ratio will result in a lower demand for parking as the local overnight truck parking demand is not being determined as part of this effort, even though some drivers will use these facilities for that purpose. In addition, this factor becomes irrelevant when determining the short term parking needs as trucks of all types have rest periods throughout their daily workload (i.e. fueling stops).

The medium scenario varies based on the roadway segment. For the purposes of this portion of the analysis, FDOT roadway classification data was utilized. Telemetered Traffic Monitoring locations located on the roadway segments included here were used as they provide classification data consistently from year to year. If data was not available on a roadway segment, the next closest comparable segment was selected. For instance, there are no telemetered sites along I-95 in Indian River County. The I-95 value for St. Lucie County was used instead. In cases where there were multiple telemetered sites along the same roadway in the same county, an average was used. For instance, there are four telemetered locations along I-95 in Palm Beach County, the average of these four was used for I-95 in Palm Beach.

Traffic data, as provided by Florida Traffic Online, sorts vehicles into “Passenger”, “Single Unit Truck”, “Combination Trailer Trucks”, and “Multi Trailer Trucks”. The sum of “Single Unit Truck”, “Combination Trailer Trucks”, and “Multi Trailer Trucks” is what is reported as the “Truck” traffic. The Single Unit Truck volumes were included in this demand assessment only for purposes of short term parking calculations as oftentimes buses, vehicles with trailers, etc. will utilize truck parking spaces, thus lowering the overall capacity of a facility. The sum of “Combination Trailer Trucks” and “Multi Trailer Trucks” is what is being considered to be “Heavy Trucks” which would comprise more of the long haul over the road trucks which need overnight truck parking. However, there is an acknowledgement that some of these Heavy Trucks may be making local deliveries. Therefore, the variables of 0.36 short haul to 0.64 long haul developed as part of the *Study of*

³ The value of 1.73 hours was determined based on current federal guidance for a period of eight consecutive days. Drivers may only be on duty for a period of 70 hours over these eight days. For each individual day, drivers may only actually drive for 11 hours of a fourteen hour period, followed by 10 consecutive hours off duty. Therefore, a driver may only drive for 55 hours total over that eight day period. Accounting for time associated with being at home (off duty), the ratio of the time that a driver must be off duty/parked to the time that a driver is on the road/on duty results in the amount of time that a driver must be parked for each hour of driving, or 1.73. Note that this assumes that drivers max out their hours of service, which is often not the case when parking is hard to come by. Thus this should be considered a conservative value.

Adequacy of Commercial Truck Parking Facilities – Technical Report were utilized. For more rural areas, a split of 0.07/0.93 is suggested, however the value used here results in a more conservative estimate of parking demand. Thus 36 percent of this Heavy Truck volume is only considered for the Short Term parking demand and the remaining 64 percent is included for Long Term parking demand. The resulting scenario is that, on average, 60 percent of total truck traffic is considered short haul and 40 percent is considered long haul.

Table C.5 Short Haul/Long Haul Truck Ratio Assumptions

Demand	Short Haul	Long Haul
Low	95%	5%
Medium	varies	
High	5%	95%

For the Peak Hour Parking Utilization, low, medium, and high scenarios were developed as seen in Table C.6. Once again, the medium scenario is derived from prior efforts which utilized this methodology. For this factor, a higher percentage for either type of movement will result in an increased demand for truck parking. This split between short term and long term parking is important as trucks must stop for different reasons and those reasons will impact the amount of time spent parking. Short term parking applies to both short haul and long haul movements, typically just for a quick rest break or bathroom stop. This type of parking is less likely to occur in the overnight peak period as many of the short haul drivers work during the day and will have parked their truck elsewhere. Long term parking here is considered the longer breaks that drivers must take to fall within federal guidance and get proper hours of sleep.

Table C.6 Peak Hour Parking Utilization Assumptions

Demand	Short Term	Long Term
Low	0%	20%
Medium	2.1%	45.4%
High	5%	60%

Appendix D. Use of Demand Calculation Spreadsheet

A spreadsheet tool was developed to calculate the demand for truck parking. As mentioned in Section 3.0 Truck Parking Demand, the methodology for this calculation was based off of Federal guidance which has been utilized by other states. This Appendix serves as a user guide for future updates of this tool pending the availability of new data which can include anything from legislative changes to Federal Hours of Service to updated traffic counts to facility usage times. This Appendix will describe what is contained within each sheet and what values a user should change to make modifications. All sheets are color coded with the following parameters:

- Red cells should not be modified as they are calculated from other values;
- Yellow cells should not be modified unless there is significant changes (i.e. data collection or changes in Federal regulations) or if the user wishes to test the impact of the variables on the demand; and
- Green cells can be modified if there is new data available. Typically this new data is annual traffic data provided by FDOT.

D.1 Federal Variables

The “Federal Variables” sheet contains information based off of Federal Hours of Service regulations as provided from the Federal Motor Carrier Safety Administration (FMCSA). The important value here is the Parking Ratio which is the ratio of hours parked for every hour of driving based on FMCSA regulations. At present, this value is 1.726. Should this value increase then the expected demand for truck parking will also increase. A decrease in this value would similarly decrease the expected demand. Variables on this sheet should not be changed unless Federal guidance is modified.

D.2 Other Variables

The “Other Variables” sheet contains information on three necessary data items: Trucking Type Ratio, Short Term Parking Stop Time, and Average Stop Time. Each of these is described below.

The Trucking Type Ratio represents a value utilized by a Pennsylvania study for the split of short haul and long haul as a percentage of the overall truck traffic. For this study, this value is used for the example calculation shown in each of the segment calculation sheets, but not for the final demand calculation for District 4. This value does not need to be updated at any point.

The Short Term Parking Stop Time represents how long a driver will stop for a short break for each hour of driving. Modifications may be made to this variable if better information is provided. Only cells B7 and B8 should be updated with B9 reflecting a total of 60 minutes.

For the Average Stop Time, data collection efforts from prior studies were utilized. For short term parking needs, the average stop time is assumed to be 22 minutes. For the long term parking needs, the average stop time is assumed to be 7.25 hours. These values should only be updated if better information is provided. Most likely, an extensive survey of truck drivers and their habits would be required to update this information.

D.3 Peak Hour Parking

The “Peak Hour Parking” sheet is set up in a way that anticipates future data collection efforts. At present, the only value represented here is that which was determined from data collection efforts in other states. Ideally, an understanding of the percent of trucks parked at each time period would be acquired. In that case the data should be filled in for cells C2 through D25 with the user also manually updating the Peak Hour of Parking in cells C29 and D29. Note that the Peak Hour of Parking is the combined total peak hour for both short term and long term parking, not differing hours for each.

D.4 Classification Counts

The “Classification Counts” sheet contains information from the Telemetered Traffic monitoring locations located along selected roadway segments. These locations were selected as they provide classification data consistently from year to year. This information feeds into the Medium Scenario of the split between short term parking and long term parking. Values should only be updated for each new year of data or if an additional monitoring location is added to any of the roadways included in this effort.

D.5 Master Data

The “Master Data” sheet contains much of the information that feeds into the final calculations. This is where a majority of updates would occur in order to recalculate anticipated demand. Four key tables are included in this spreadsheet: Roadway Information, Short Haul/Long Haul Ratios, Peak Hour Usage, and Split of Combination/Multi-Trailer trucks into Short and Long Haul.

Short Haul/Long Haul Ratios are presented as three scenarios: Low, Medium, and High. The Low and High are to help illustrate extreme cases while the Medium scenario represents a most likely case. For this the values for Low and High may be modified. The Medium value varies by roadway segment as is detailed in the Roadway table in this sheet in columns K and L. This Medium value is determined based on the classification counts in the “Classification Counts” sheet and the Split of Combination/Multi-Trailer trucks in the “Master Data” sheet. The Split value of 0.36 short haul to 0.64 long-haul is determined from the model parameters developed as part of the *Study of Adequacy of Commercial Truck Parking Facilities – Technical Report* developed by FHWA. For more rural areas, a split of 0.07/0.93 is suggested, however the value used here results in a more conservative estimate of parking demand. These should only be modified if there is better data available. For the telemetered locations used to calculate this medium value, if data was not available on a roadway segment, the next closest comparable segment was selected. For instance, there are no telemetered sites along I-95 in Indian River County. The I-95 value for St. Lucie County was used instead. In cases where there were multiple telemetered sites along the same roadway in the same county, an average was used. For instance, there are four telemetered locations along I-95 in Palm Beach County, the average of these four was used for I-95 in Palm Beach.

Peak Hour Usage presents three scenarios: Low, Medium, and High. The Low and High are to help illustrate extreme cases while the Medium scenario represents a most likely case. For this the values for Low and High may be modified. However, the Medium value should not be changed here but rather in the “Peak Hour Parking Sheet”.

Lastly, the Roadway Information contains all information needed for calculations for each segment. Segments should only be removed or added as deemed necessary. For this evaluation, SIS roadways were included. The information here includes the start of the segment, the end of the segment, the county which

the segment is in, the minimum, median, mean, and maximum Average Annual Daily Truck Traffic (AADTT) values, the distance of the roadway, the speed limit, and the aforementioned value for the Medium Scenario of the Short Haul/Long Haul Ratio. AADTT values were determined from the FDOT Roadway shapefiles. Speed limits were determined based on the posted speed limits for each segment, with a reduction of 10 percent based on federal guidance for observed truck speeds. All of these values may be updated if there is newer data available.

D.6 Roadway Calculations

The calculations for demand are built up by roadway segment for each county which are calculated in individual sheets. Sheets are colored differently for each county to help differentiate them. Modifications should not be done to these sheets as all values are fed in from other sheets. The calculations are performed as described in the Truck Parking Demand Methodology section.

D.7 Short Term

The “Short Term” sheet summarizes the final calculations for each roadway segment in each county for the short term parking demand. This is automatically fed in from each of the individual Roadway Calculation sheets. This sheet would only be modified if a roadway is added or removed from this analysis.

D.8 Long Term

The “Long Term” sheet is similar to the “Short Term” sheet but this one instead summarizes the final calculations for each roadway segment in each county for the long term parking demand. This is automatically fed in from each of the individual Roadway Calculation sheets. This sheet would only be modified if a roadway is added or removed from this analysis.

D.9 Total

The “Total” sheet summarizes the total demand (short and long term) for each roadway segment by county. This is automatically fed in from each of the individual Roadway Calculation sheets. This sheet would only be modified if a roadway is added or removed from this analysis.

D.10 Summary

The “Summary” sheet shows the Short Term, Long Term, and Total Parking Demand by County and by scenario. These columns can be adjusted to filter by the calculated parking demand but should generally not be modified. At the bottom of the Total Demand table (columns Z through AD and row 40 through 46) is a table summarizing the statistics related to the final calculations with the Minimum, Median, Mean, and Maximum values for each county as well as the overall total. These are calculated from the table above it and should not be modified. This table excludes the highest five values and the lowest five values from the analysis in order to remove outliers.

D.11 Available Parking

The “Available Parking” sheet displays the known truck parking locations in District 4 by facility and includes the number of spaces at each facility. A summary table is provided by county in order to understand the total

supply available as compared to the demand. These two tables should only be updated if an additional facility is identified. The summary table of total truck parking demand is also provided here and should not be modified as this information is from the “Summary” sheet. This allows for an immediate comparison with the supply and demand.

Appendix E. In-Person Truck Driver Survey (English)

South Florida is home to an active and growing freight and logistics community. As the Florida Department of Transportation's (FDOT) freight program continues to advance and expand, truck parking needs must be identified and addressed to ensure the trucking industry has the necessary infrastructure to serve our global hubs and domestic markets while complying with driver hours of service regulations and the quality of life of our communities. **FDOT District 4 is looking for your input to help better understand the need for truck parking in South Florida.**

1. What is your gender?

- Male Female

2. What is your age?

- 21 – 24 35 – 44 55 – 64
 25 – 34 45 – 54 65+

3. How many years have you been driving a commercial truck?

- 1 Year or less 2 – 4 years 5 – 10 years 11+ years

4. How many miles on average do you drive a commercial truck in a year for work?

- <100,000 miles 100,000 – 125,000 miles 126,000 – 150,000 miles 151,000 + miles

5. What type of movements do you make?

- Long Haul (greater than 300 miles, multiple states, over the road) Short Haul (less than 300 miles; local deliveries/dray movements)

6. Where are you based? (city, state) _____

7. Where do you primarily operate? (check all that apply)

- Florida Northeast Southwest
 Southeast Midwest South Central
 Mid Atlantic Northwest

8. Do you drive as part of a team?

- Yes No Sometimes

9. From the time you decide or are mandated to take a break, how long on average does it take to find parking in District 4 (Broward, Indian River, Martin, Palm Beach, and St. Lucie counties)?

- Less than 15 minutes Less than an hour
 Less than 30 minutes 1 hour +

10. When it takes you more than an hour to find parking, please identify reasons (check all that apply):

- Distance to facility Traffic congestion caused delay
 Preferred facility full Other: _____

11. What are the primary reasons you use/need truck parking facilities? (pick top three)

- | | |
|--|--|
| <input type="checkbox"/> Full stop: hours of service | <input type="checkbox"/> Breaking up doubles/triples |
| <input type="checkbox"/> Short break: hours of service | <input type="checkbox"/> LTL relays |
| <input type="checkbox"/> Driver fatigue | <input type="checkbox"/> Vehicle repair/service |
| <input type="checkbox"/> Staging for appointment time for pick up/drop off | |

12. Where do you typically find parking for mandatory rest periods or waiting to pick-up or drop-off a load?

	Regularly	Occasionally	Rarely	Never
Commercial truck stop	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rest area (no commercial services)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Shipper/receiver's location or nearby designated parking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Highway on/off ramp	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Abandoned lot/isolated area	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Shopping center parking lot	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Side of road/shoulder	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. In your opinion, is there significant unmet truck parking need in South Florida?

- Yes No

14. Do you expect truck parking conditions to worsen in the next five years?

- Yes No

15. From your experience, how often can you park at the shipper or receiver's property prior to pick-up? (choose one)

- | | |
|--|---|
| <input type="radio"/> Not a problem, I'm always welcomed | <input type="radio"/> Never |
| <input type="radio"/> Sometimes – It depends on the location | <input type="radio"/> Not applicable – This scenario does not apply to me |

16. How can truck parking locations in District 4 be improved? (please check the top three)

- | | | |
|--|---|--|
| <input type="radio"/> Build more commercial truck stop and travel plaza parking spaces | <input type="radio"/> Eliminate parking time limits | <input type="radio"/> Better lighting |
| <input type="radio"/> Build more public rest area parking spaces | <input type="radio"/> Improve parking configuration (e.g., more pull-through parking) | <input type="radio"/> Additional amenities at existing locations (i.e., showers, food) |
| <input type="radio"/> Build more staging areas/open space adjacent to shippers/receivers | <input type="radio"/> Separate truck, car, and recreational vehicle parking | <input type="radio"/> Others: _____ |
| <input type="radio"/> Stop enforcement officers from waking driver | <input type="radio"/> Increased security | |

17. How important are the following amenities? (1 being not important at all and 5 being extremely important)

Fuel	1	2	3	4	5
Electrification/Plug In	1	2	3	4	5
Truck Wash	1	2	3	4	5
Maintenance/Repair Facility	1	2	3	4	5
Restrooms	1	2	3	4	5
Restaurant	1	2	3	4	5
Convenience Store	1	2	3	4	5
Shower	1	2	3	4	5
Lighting	1	2	3	4	5
Security	1	2	3	4	5

18. Do you make use of available technology to help with (check all that apply):

- Navigation
- Trip planning
- Load management
- If so, what technologies or web sites do you use?
- Lodging, Service and Fueling facilities
- Parking availability

19. Please share with us any stories which illustrate truck parking issues in South Florida.

20. Please comment on the following existing truck parking facilities.

	Are you aware of this facility?		Do you use it?		Does it have adequate capacity?		Is it safe?		Does it have adequate amenities?	
	Y	N	Y	N	Y	N	Y	N	Y	N
TravelAmerica Vero Beach	Y	N	Y	N	Y	N	Y	N	Y	N
Gator Texaco Truck Stop (Vero Beach)	Y	N	Y	N	Y	N	Y	N	Y	N
St. Lucie County Rest Area (I-95, Fort Pierce)	Y	N	Y	N	Y	N	Y	N	Y	N
Flying J Fort Pierce	Y	N	Y	N	Y	N	Y	N	Y	N
Love's Travel Stop (King Highway, Fort Pierce)	Y	N	Y	N	Y	N	Y	N	Y	N
Love's Travel Stop (Okeechobee Road, Fort Pierce)	Y	N	Y	N	Y	N	Y	N	Y	N
ATM Falcon Truck Stop (Fort Pierce)	Y	N	Y	N	Y	N	Y	N	Y	N
Pilot Travel Center (Fort Pierce)	Y	N	Y	N	Y	N	Y	N	Y	N
Florida's Turnpike Plaza (Mile Post 144)	Y	N	Y	N	Y	N	Y	N	Y	N
Martin County Rest Area (I-95, Palm City)	Y	N	Y	N	Y	N	Y	N	Y	N
Riviera Truck Stop (West Palm Beach)	Y	N	Y	N	Y	N	Y	N	Y	N
Florida's Turnpike Plaza (Mile Post 94, West Palm Beach)	Y	N	Y	N	Y	N	Y	N	Y	N
Marathon Gas Station (South Bay)	Y	N	Y	N	Y	N	Y	N	Y	N
Southern Belle Truck Stop (South Bay)	Y	N	Y	N	Y	N	Y	N	Y	N
Pompano Truck Stop (Pompano Beach)	Y	N	Y	N	Y	N	Y	N	Y	N

	Are you aware of this facility?		Do you use it?		Does it have adequate capacity?		Is it safe?		Does it have adequate amenities?	
	Y	N	Y	N	Y	N	Y	N	Y	N
Florida's Turnpike Plaza (Mile Post 65, Pompano Beach)	Y	N	Y	N	Y	N	Y	N	Y	N
595 Truck Stop (Davie)	Y	N	Y	N	Y	N	Y	N	Y	N
Seminole Truck Stop (Weston)	Y	N	Y	N	Y	N	Y	N	Y	N
Broward County Rest Area (I-75, Fort Lauderdale)	Y	N	Y	N	Y	N	Y	N	Y	N
Miccosukee Service Plaza (Fort Lauderdale)	Y	N	Y	N	Y	N	Y	N	Y	N

If You are Aware of Additional Facilities, Please Identify:

Other Facility: _____ Other Facility: _____

Other Facility: _____ Other Facility: _____

FDOT will be incorporating the results of this survey into its Truck Parking Study to help inform key needs and next steps by the Department to help ensure we have adequate truck parking in South Florida. **If you want to receive information about our completed study or would like to discuss your input in more detail, please provide your name and contact information.**

OPTIONAL

Name: _____

Company: _____

Phone: _____

Email: _____

Appendix F. In-Person Truck Driver Survey (Spanish)

El Sur de la Florida es el hogar de una comunidad de transporte de carga y logística activa y creciente. Mientras el programa de transporte de carga del Departamento de Transporte de la Florida (FDOT son sus siglas en inglés) continúa avanzando y expandiéndose, las necesidades de estacionamiento para camiones deben ser identificadas y abordadas para asegurar que la industria camionera tenga la infraestructura necesaria para servir a nuestros centros globales y mercados domésticos cumpliendo al mismo tiempo con las regulaciones para las Horas de Servicio de los conductores de camiones y la calidad de vida de nuestras comunidades. **El Distrito 4 de FDOT está interesado en conocer su opinión para poder comprender mejor la necesidad del establecimiento de lugares de estacionamiento para camiones en el Sur de la Florida.**

1. Sexo (seleccione la opción que corresponda):

- Masculino Femenino

2. ¿Cuál es su edad?

- 21 – 24 35 – 44 55 – 64
 25 – 34 45 – 54 65+

3. ¿Cuántos años lleva conduciendo camiones?

- 1 Año o menos 2 – 4 años 5 – 10 años 11+ años

4. ¿En un año, cuántas millas en promedio usted conduce un camión por razones de trabajo?

- <100,000 millas 100,000 – 125,000 millas 126,000 – 150,000 millas 151,000 + millas

5. ¿Qué tipo de movimientos usted hace con el camión?

- Larga Distancia (más de 300 millas, múltiples estados, en la carretera) Corta Distancia (menos de 300 millas, distribución local)

6. ¿Dónde está basado? (ciudad, estado) _____

7. ¿Dónde usted opera su camión primordialmente? (marque todas las regiones donde usted opera)

- La Florida El Nordeste El Suroeste
 El Sudeste El Medio Oeste El Sur Central
 El Medio Atlántico El Noroeste

8. ¿Usted forma parte de un equipo mientras conduce camiones?

- Si No Algunas veces

9. ¿Desde el momento que usted decide o está obligado a tomar un descanso, qué tanto tiempo le toma encontrar estacionamiento en el Distrito 4 (incluyendo los condados Broward, Indian River, Martin, Palm Beach y St. Lucie)?

- Menos de 15 minutos Menos de una hora
 Menos de 30 minutos 1 hora +

10. ¿Cuándo usted tiene que estacionarse, si le toma más de una hora encontrar estacionamiento, por favor identifique las razones (seleccione todas las opciones que apliquen):

- La distancia al estacionamiento
 La congestión del tráfico causó retraso
 El estacionamiento de preferencia está lleno
 Otras: _____

11. ¿Cuáles son las razones principales por las que usted utiliza o necesita utilizar lugares de estacionamiento para camiones? (seleccione las 3 razones más importantes)

- Finalización de las horas de servicio
 Romper doble/triple remolque
 Breve descanso en horas de servicio
 Relevo/intercambio de remolques de carga menor que camión completo (LTL)
 Fatiga de conductor
 Reparación/mantenimiento del vehículo
 Punto de parada para esperar la hora de recogida/entrega

12. ¿Dónde usted suele encontrar estacionamiento cuando debe tomar un descanso obligatorio o debe esperar para recoger o entregar una carga?

	Regularmente	A veces	Raramente	Nunca
Parada de camiones	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Area de descanso (sin servicios para camiones)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ubicación del lugar donde se va a recoger/entregar la carga o estacionamiento designado cercano al lugar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rampa de entrada o de salida de la carretera	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Solar abandonado/Zona aislada	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Estacionamiento en un centro comercial	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A un lado/orilla de la carretera	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. ¿En su opinión, en el Sur de la Florida existe una necesidad significativa de estacionamientos para camiones?

- si
 no

14. ¿Cree que las condiciones de estacionamiento de camiones serán peores en los próximos 5 años?

- si
 no

15. ¿De acuerdo a su experiencia, con qué frecuencia puede estacionarse en la propiedad del generador o receptor de la carga antes de recoger o entregar la carga? (seleccione una)

- No es problema, siempre soy bienvenido
 Nunca
 Algunas veces. Depende del lugar
 No aplica. Este escenario no se aplica a mí

16. ¿Cómo se pueden mejorar los lugares para estacionamientos de camiones en el Distrito 4? (por favor seleccione las 3 más importantes)

- Construir más estacionamientos en las paradas de camiones y las áreas de descanso privadas
 Eliminar los límites de tiempo en los estacionamientos
 Incrementar la seguridad
 Construir más espacios para estacionarse en las áreas de descanso públicas.
 Mejorar la configuración de los estacionamientos (e.g., más estacionamientos en los que
 Mejor iluminación

- Construir más estacionamiento temporal/espacio abierto cerca de los generadores/receptores de la carga
- Impedir que las agentes policiales o de tránsito despierten al conductor
- se conduce directo al espacio de estacionamiento y no hay de maniobrar para salir)
- Separar los estacionamientos de camiones, carros, y vehículos recreacionales
- Agregar comodidades en los estacionamientos actuales (i.e., duchas, comida)
- Otros: _____

17. ¿Qué tan importante son las siguientes comodidades? (1 significa que no es nada importante, y 5 que es extremadamente importante):

Combustible	1	2	3	4	5
Electrificación/Enchufe para el Camión	1	2	3	4	5
Lavado de Camión	1	2	3	4	5
Facilidades para Mantenimiento/Reparaciones	1	2	3	4	5
Baños	1	2	3	4	5
Restaurante	1	2	3	4	5
Tienda de Conveniencia	1	2	3	4	5
Ducha	1	2	3	4	5
Iluminación	1	2	3	4	5
Seguridad	1	2	3	4	5

18. ¿Utiliza aplicaciones tecnológicas para ayudarse con alguna de los siguientes actividades? (seleccione todas las que apliquen)?

- Navegación
- Alojamiento, facilidades para mantenimiento/ reparaciones y servicios de combustible
- Planificación de viaje
- Disponibilidad de estacionamiento
- Administración de carga
- Si es así, ¿cuáles tecnologías o páginas de internet usted utiliza?

19. Por favor comparta con nosotros historias que demuestren problemas de estacionamiento de camiones en el Sur de la Florida.

20. Por favor comente sobre las siguientes facilidades para estacionamiento de camiones.

	¿Conoce esta facilidad?		¿La utiliza?		¿Tiene capacidad adecuada?		¿Es segura?		¿Tiene comodidades adecuadas?	
	si	no	si	no	si	no	si	no	si	no
Travel America Vero Beach	si	no	si	no	si	no	si	no	si	no
Gator Texaco Truck Stop (Vero Beach)	si	no	si	no	si	no	si	no	si	no
St. Lucie County Rest Area (I-95, Fort Pierce)	si	no	si	no	si	no	si	no	si	no
Flying J Fort Pierce	si	no	si	no	si	no	si	no	si	no
Love's Travel Stop (King Highway, Fort Pierce)	si	no	si	no	si	no	si	no	si	no
Love's Travel Stop (Okeechobee Road, Fort Pierce)	si	no	si	no	si	no	si	no	si	no
ATM Falcon Truck Stop (Fort Pierce)	si	no	si	no	si	no	si	no	si	no
Pilot Travel Center (Fort Pierce)	si	no	si	no	si	no	si	no	si	no

	¿Conoce esta facilidad?		¿La utiliza?		¿Tiene capacidad adecuada?		¿Es segura?		¿Tiene comodidades adecuadas?	
	si	no	si	no	si	no	si	no	si	no
Florida's Turnpike Plaza (Mile Post 144)	si	no	si	no	si	no	si	no	si	no
Martin County Rest Area (I-95, Palm City)	si	no	si	no	si	no	si	no	si	no
Riviera Truck Stop (West Palm Beach)	si	no	si	no	si	no	si	no	si	no
Florida's Turnpike Plaza (Mile Post 94, West Palm Beach)	si	no	si	no	si	no	si	no	si	no
Marathon Gas Station (South Bay)	si	no	si	no	si	no	si	no	si	no
Southern Belle Truck Stop (South Bay)	si	no	si	no	si	no	si	no	si	no
Pompano Truck Stop (Pompano Beach)	si	no	si	no	si	no	si	no	si	no
Florida's Turnpike Plaza (Mile Post 65, Pompano Beach)	si	no	si	no	si	no	si	no	si	no
595 Truck Stop (Davie)	si	no	si	no	si	no	si	no	si	no
Seminole Truck Stop (Weston)	si	no	si	no	si	no	si	no	si	no
Broward County Rest Area (I-75, Fort Lauderdale)	si	no	si	no	si	no	si	no	si	no
Miccosukee Service Plaza (Fort Lauderdale)	si	no	si	no	si	no	si	no	si	no

Si conoce otras facilidades para estacionamiento de camiones, por favor identifíquelas.

Otras facilidades: _____ Otras facilidades: _____

Otras facilidades: _____ Otras facilidades: _____

FDOT estará incorporando los resultados de esta encuesta en su Estudio de Estacionamiento de Camiones, y de esta manera poder fundamentar las necesidades más importantes y los próximos pasos que el Departamento debe dar para asegurar que tengamos estacionamientos adecuados para camiones en el Sur de la Florida. **Si desea recibir información acerca del estudio completado o desea discutir sus respuestas y opiniones en más detalle, por favor escriba su nombre e información de contacto.**

OPCIONAL

Nombre: _____

Compañía: _____

Teléfono: _____

Email: _____

Appendix G. Truck Driver Survey Results

G.1 Demographic and Driver Information

General demographic information was obtained from the participants, along with years driving, annual miles driven per year, home base, and operating regions. A total 40 participants responded to the gender question. Of those, only one was female. Table G.1 displays the age distribution of the participants. Most drivers fell within the age range of 35 to 64 with the largest segment being 45 to 54 representing 45 percent.

Table G.1 Driver Age

Age Range	Total	Percentage
21-24	0	0%
25-34	3	8%
35-44	7	18%
45-54	18	45%
55-64	8	20%
65+	4	10%
Total	40	100%

There were 32 long-haul truck drivers versus 6 short-haul drivers; two did not answer the question. All 40 participants answered the question about the number of years they have been driving a commercial truck. The majority (63 percent) have been driving 11 years or more. The participants were also asked how many miles, on average, they drive a commercial truck in a year for work. Of the 38 who answered this question, most drove between 100,000 and 125,000 miles per year.

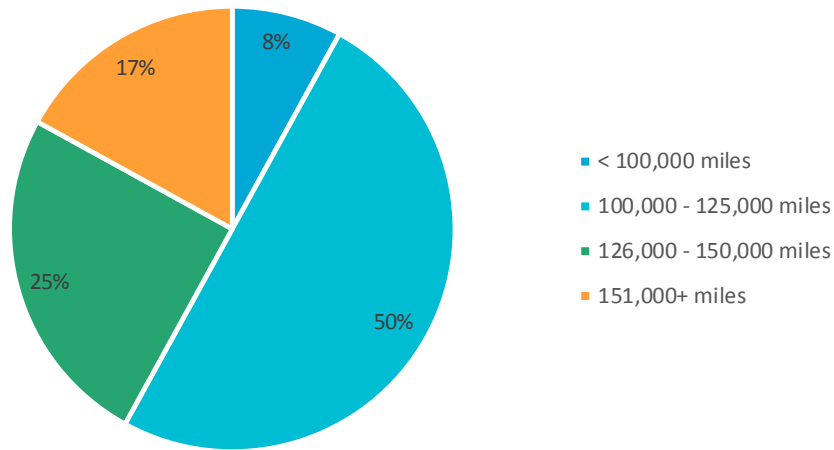
Table G.2 shows the annual miles driven by years driving. The data suggest that the miles increase as drivers years increase, but only to a point. In this instance the majority of experienced drivers drive 100,000 to 125,000 miles per year.

Table G.2 Miles Driven per Year by Years Driving

Years Driving	< 100k Miles	100k – 125k Miles	126k – 150k Miles	>150k Miles	Total Drivers
1 Year or Less	(1) 50%	0	0	(1) 50%	2
2-4 Years	(4) 67%	(1) 17%	(1) 17%	0	6
5-10 Years	(1) 17%	(3) 50%	(1) 17%	(1) 17%	6
11 Years or More	(2) 8%	(12) 50%	(6) 25%	(4) 17%	24
Total Drivers	8	16	8	6	38

Figure 4.1 illustrates the distribution of miles driven for the participants who have driven 11 years or more.

Figure G.1 Yearly Mileage for Experienced Drivers (11 years or more)



The majority of drivers surveyed, 88 percent, do not drive as part of a team which has a direct impact on their truck parking needs. Those that drive as teams need less long-term parking as the drivers can alternate who is driving while the other rests.

In regards to location, the majority of respondents (64 percent) indicated that they were based in Florida, with the next largest representation coming from Georgia with 10 percent of respondents. A driver’s home base does not, however, indicate where they may operate. The majority (66 percent) of drivers did indicate Florida as the primary region where they operate; with 42 percent also operating in the Southeast; 37 operating in the Midwest; and 32 percent operating in the Northeast.

G.2 Truck Stop Behavior

Four questions were asked of the participants that pertained to the length of time it takes to find parking, reasons for choosing locations for parking, purpose of truck stop, and types of facilities that are typically sought after for parking. Most drivers answered the question about length of time it takes to find parking with nearly half indicating that it takes them an hour or more to find parking on average. Table G.3 displays the distribution of average time it takes to find parking.

Table G.3 Average Time to Find Parking

Time	Responses	Percentage
< 15 Minutes	5	13%
< 30 Minutes	7	18%
< 1 Hour	9	23%
1 Hour or More	18	46%
Total	39	100%

When asked why it takes more than an hour to find parking, nearly half indicated that it was due to the preferred facility being full. Roughly 40 percent of drivers also included traffic congestion as a significant factor in the ability to find truck parking. Table G.4 displays the responses given by all drivers, with multiple reasons given by some.

Table G.4 Reasons for Hour or More

Reason	Total	Percentage
Preferred Facility Full	18	47%
Traffic Congestion	16	42%
Distance to Facility	13	34%
Other	6	16%

Drivers were asked to choose the top three reasons they use and/or need truck parking facilities. The top three choices among the 36 drivers who responded were full stop, short break, and driver fatigue. Nearly all drivers indicated that a full stop for hours of service was a reason they need truck parking facilities. Table G.5 shows the distribution of the responses chosen by the drivers with the percentage indicating the portion of drivers selecting that response.

Table G.5 Reasons for Parking

Reason	Total	Percentage
Full Stop – Hours of Service	28	78%
Short Break – Hours of Service	21	58%
Driver Fatigue	11	31%
Staging for Pick-Up/Drop Off	9	25%
Vehicle Repair/Service	9	25%
Breaking up Doubles/Triples	1	3%
LTL Relays	0	0%

Each driver was asked to indicate how frequently they used facilities that are typically used for mandatory rest periods. Facility choices are listed below.

- Commercial truck stop
- Rest area (no commercial services)
- Shipper/receiver location or nearby designated parking
- Highway on/off ramp
- Shopping center parking lot

- Side of road/shoulder

The facility that was used most regularly was the commercial truck stop with drivers also occasionally using rest areas without commercial services or the parking lot of a shopping center. The facilities that received the highest rank of never being used were the highway on/off ramp and the side of the road. In regards to the ability to park at a shipper/receiver location, the majority responded that they were always or sometimes welcome, which can ease the challenge of finding available truck parking. Table G.6 details these responses.

Table G.6 Ability to Park at Shipper/Receiver Location

Frequency	Total	Percentage
Sometimes	19	54%
Never	7	20%
Always welcomed	6	17%
Not applicable	3	9%
Total	35	100%

G.3 Where Improvements are Needed and Importance of Amenities

Questions were asked about needed improvements at the existing truck stop facilities and the drivers' uses of amenities. Over 77 percent of the respondents said there is significant unmet truck parking need in South Florida; and 91 percent expect truck parking conditions to worsen over the next five years.

Drivers were asked to select the top three ways that truck parking in District 4 can be improved. Table G.7 displays the number of times the improvements were picked by the 36 drivers who answered the question. Drivers overwhelmingly responded that more commercial truck stops and travel plaza parking spaces were needed. Nearly half of drivers also indicated that more public rest area parking spaces are necessary.

Table G.7 Improvements for Truck Parking

Improvement	Selections	Percentage
More commercial truck stop and travel plaza parking spaces	27	75%
More public rest area parking spaces	16	44%
Improve parking configuration (e.g. more pull through parking)	8	22%
Additional amenities at existing locations (i.e. showers, food)	8	22%
More staging areas/open space adjacent to shippers/receivers	7	19%
Stop enforcement officers from waking driver	6	17%
Increased Security	6	17%
Better lighting	5	14%
Separate truck, car, and recreational vehicle parking	5	14%
Eliminate parking time limits	5	14%
Others	1	3%

On a scale from one to five (one being not important at all and five being extremely important), drivers were asked to rank the importance of specific amenities. The responses from the 33 drivers completing this question are listed in Table G.8, below. These amenities received either a four or five in ranking. With the exception of electrification and truck wash, all of the amenities received high rankings with the most universal response being the need for restrooms. Other amenities with a high ranking included fuel, showers, security, lighting, and restaurants. The percentages in Table G.8 indicate the percent of responding drivers who ranked the amenity as either a four or a five.

Table G.8 Importance of Amenities

Amenity	Total 4 and 5 Rankings	Total 5 Rankings	Percentage of Participants
Restrooms	32	30	97%
Fuel	29	24	88%
Shower	29	22	88%
Security	27	23	82%
Restaurant	26	23	79%
Lighting	25	20	76%
Maintenance/Repair Facility	23	19	70%
Convenience Store	22	17	67%
Truck Wash	17	12	52%
Electrification/Plug In	10	8	30%

Table G.9 shows what type of technology the truck drivers are using to help with various aspects of their truck trips. Of the 33 drivers who responded, nearly all indicated that they use some sort of navigation technology, with more than half also using some sort of trip planning technology.

Table G.9 Use of Technology for Truck Trips

Technology Type	Total	Percentage
Navigation	27	87%
Trip planning	17	55%
Lodging, Service, and Fueling Facilities	14	45%
Parking Availability	13	42%
Load Management	10	32%

G.4 South Florida Activities and Comments about Specific Facilities

Participants were asked to comment on existing truck parking facilities in District 4 with close-ended answers pertaining to facility awareness, adequacy of capacity, safety, and adequacy of amenities. This question proved to be too long in relation to the overall survey and many drivers either skipped this question or selected the same answer for everything. While this information would be useful to identify specific

improvements or needs at truck parking locations, it was not practical for the administration of this survey. Future interactions should perhaps instead focus only on publically owned facilities which FDOT may have some ability to improve in order to garner a better response rate.