



Truck and Freight Alternative Site Analysis Project Development and Environment (PD&E) Study

I-4 Corridor in Osceola, Orange, Seminole, and Volusia County, Florida

DRAFT AIR QUALITY TECHNICAL MEMORANDUM

FDOT Office

District Five

Date of Publication

January 2024

Financial Management No. 447724-1-22-01

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by the Florida Department of Transportation (FDOT) pursuant to 23 U.S.C. §327 and a Memorandum of Understanding dated May 26, 2022, and executed by the Federal Highway Administration (FHWA) and FDOT.

Air Quality Technical Memorandum

PROJECT DESCRIPTION

The Florida Department of Transportation (FDOT) is conducting the Truck and Freight Alternative Site Analysis Project Development and Environment (PD&E) Study to evaluate potential truck and freight parking sites along or near the I-4 corridor in Osceola, Orange, Seminole, and Volusia counties that are viable for private and public operator use for rest stops. In 2018, FDOT conducted a statewide truck parking study to assess existing truck parking and future demand. The study found the I-4 corridor is the most critical corridor for truck parking needs in the state, specifically between the Osceola/Polk County Line and I-95. Based on the 2018 study, the existing average demand for the I-4 corridor within FDOT District 5 was 481 designated truck parking spaces (combined public and private) for rest stops. However, there are currently 36 truck-only parking spaces (combined public and private) for rest stops along the I-4 corridor within the study area.

The purpose of the PD&E Study is to identify, evaluate, and recommend viable concept sites for truck and freight parking. Based on study evaluations, viable sites were identified within the four counties. One potential site was identified each within Osceola, Orange, and Seminole Counties, and two potential sites within Volusia County. The PD&E Study will include social, economic, cultural, physical environment, and engineering evaluations to identify effects of the proposed improvements. Each potential site will be evaluated for operational and safety needs for existing and future transportation demand. A preliminary concept design will be performed for each recommended viable preliminary concept site.

Recommended Site Descriptions:

Osceola County Site 1 – CR 532 and Poinciana Parkway Extension

Osceola County Site 1 (**Figure 1**) is located approximately 3.87 miles east of the I-4 interchange along the south side of CR 532. The recommended site is immediately east of the planned Poinciana Parkway Extension, which is in the Design phase as of November 2023, and located south of the planned CR 532 widening project. The Design phase for the CR 532 widening was completed in June 2023 and is programmed for construction in Fiscal Year (FY) 2025 to 2026. The site is planned to be developed around a proposed pond for the Poinciana Parkway Extension. This site would be bordered by the Poinciana Parkway Extension, CR 532, and US 17/92, providing access to I-4 as well as other high freight corridors including the Poinciana Parkway Extension, CR 532, and US 17/92. The Osceola County Site 1 will supply 234 truck parking spaces and restroom facilities. Eight-foot sidewalks around the truck parking site are proposed to allow pedestrians to safely walk from their individual truck parking spot to the restroom facilities and to provide connection from the site to the sidewalks along CR 532, to be installed during the widening project.

The recommended site is anticipated to require approximately 40.1 acres of Right of Way (ROW), impacting a total of 18 parcels. No relocations are anticipated for the recommended site. Access to the site will be located along CR 532 approximately 0.66 miles west of the intersection with US 17/92. A new signalized entrance on CR 532 is proposed for the site access, which will require a new median opening once the CR 532 widening is constructed. There is a gas easement located on the western side of the site. This easement will be maintained.

The recommended Osceola County Site 1 will include two wet detention stormwater ponds, with a combined pond area of 11.38 acres. The CR 532 widening project adjacent to the site includes construction of a new wet detention stormwater pond on the recommended site. Since this pond will need to be removed to accommodate the recommended site, compensation has been provided for the lost pond volume.

Orange County Site 1 – Sand Lake Road at John Young Parkway

Orange County Site 1 (**Figure 2**) is located along Sand Lake Road approximately 2.90 miles east of I-4. The site is proposed on the northeast corner of Sand Lake Road and John Young Parkway immediately west, and adjacent to, the limited access Florida's Turnpike facility. As part of a separate project, Florida's Turnpike is adding a new interchange with Sand Lake Road, which will increase access to this truck parking site. The Orange County Site 1 will supply 93 truck parking spaces and a restroom facility. An eight-foot sidewalk surrounding the truck parking site will be included to allow pedestrians to safely walk from their individual truck parking spot to the restroom facility and to provide connection from the site to the sidewalk along Sand Lake Road, to be installed during the Florida's Turnpike interchange project.

The preferred site area is approximately 16.3 acres and is anticipated to require approximately 14.6 acres of ROW, impacting a total of two parcels. No relocations are anticipated for the recommended site. Access to the site will be provided with two unsignalized driveways (right-in/right-out) on John Young Parkway and on Sand Lake Road. The new driveway on Sand Lake Road is located approximately 480 feet west of the proposed Turnpike off-ramp to Sand Lake Road. The second driveway connects to the John Young Parkway northbound off-ramp (frontage road) and is located approximately 440 feet north of the John Young Parkway and Sand Lake Road intersection. No access or median modifications are proposed on either Sand Lake Road or John Young Parkway to accommodate the recommended truck parking site.

The recommended Orange County Site 1 will include two wet detention stormwater ponds, with a combined pond area of 5.01 acres. An existing wet detention pond in the southwest corner of the site currently serves as the stormwater management system for portions of John Young Parkway and Sand Lake Road. The existing pond will be removed with the construction of the recommended site; therefore, treatment and attenuation volumes must be replaced in kind, and the proposed stormwater ponds will serve as a joint-use stormwater management facility between the recommended site and John Young Parkway and Sand Lake Road. The site is adjacent to the new proposed off-ramp from Florida's Turnpike to Sand Lake Road, in the Design phase as of November 2023, which includes construction of stormwater treatment ponds which overlap the recommended Orange County Site 1. The 5.62-acre pond proposed for the Turnpike project was configured as part of the recommended alternative for Orange County Site 1 to optimize the number of truck parking spaces. As construction of the Turnpike pond is anticipated to begin in Spring 2024, the future pond modification will be verified in the Design phase for Orange County Site 1.

Seminole County Site 1B – I-4 at US 17/92

Seminole County Site 1B (**Figure 3**) is located adjacent to eastbound I-4 and southeast of the I-4 / US 17/92 interchange in unincorporated Seminole County, immediately outside the Sanford city limits. In the existing condition, the site can access I-4 via US 17/92 (0.45 miles) and via SR 46 (1.85 miles). Additionally, there are planned I-4 BtU improvements at the I-4 / US 17/92 interchange, which will modify access to I-4 through a reconfigured ramp adjacent to the site. Following the I-4 BtU construction, the distance to I-4 via US 17/92 will be shortened to 0.25 miles. The recommended site will supply 156 truck parking spaces

and a restroom facility. Eight-foot sidewalks around the truck parking site are proposed to allow pedestrians to safely walk from their individual truck parking spot to the restroom facility. Additionally, an eight-foot sidewalk is proposed along School Street to provide a connection from the entrance to Seminole County Site 1B to the existing sidewalk that runs along the west side of US 17/92.

The recommended site is anticipated to require 18.5 acres of ROW, impacting a total of eight parcels and requiring up to three relocations. A large, raised berm at the northeast corner of the site is proposed to decrease the visibility of the site to nearby properties. Access to the site will be provided with a signalized entrance on School Street. A median island on School Street just west of the site entrance is proposed to prevent trucks leaving the site from heading westbound on School Street and ultimately, traveling on the narrower Elder Road. The median modification will still allow passenger vehicles to travel on School Street from US 17/92 to Elder Road.

The recommended Seminole County Site 1B will include two wet detention stormwater ponds and one dry detention pond, with a combined area of 4.17 acres. As of November 2023, Seminole County Site 1B is under Design as part of the Truck Parking Central Florida Corridor – Seminole County Site (FPID 446445-1).

Volusia County Site 1A – I-4 Eastbound Direct Access, 4.5 miles west of I-95

Volusia County Site 1A (**Figure 4**) is located along I-4 approximately 4.5 miles west of the I-95 interchange. The recommended site, located at a former Volusia County rest area, will supply 275 truck parking spaces and restroom facilities. Eight-foot sidewalks will be provided around the recommended site to allow pedestrians to safely walk from their individual truck parking spot to the restroom facilities.

The recommended site is anticipated to require 73.3 acres of ROW, impacting two parcels both publicly owned by the City of Port Orange. Wildlife fencing and wildlife sensitive lighting will be provided around the recommended site due to the proximity of the existing wildlife crossing. Ramps will be provided on I-4 Eastbound for direct access to and from Volusia County Site 1A. No local road access will be provided to the sites. The recommended Volusia County Site 1A will include one wet detention stormwater pond located along the southeast parcel line and is 7.15 acres.

Volusia County Site 1B – I-4 Westbound Direct Access, 4.5 miles west of I-95

Volusia County Site 1B (**Figure 4**) is located along I-4 approximately 4.5 miles west of the I-95 interchange. The recommended site will supply 253 truck parking spaces and a centralized restroom facility. Eight-foot sidewalks will be provided around the recommended site to allow pedestrians to safely walk from their individual truck parking spot to the restroom facilities.

The recommended site is anticipated to require 116.8 acres of ROW, impacting one parcel publicly owned by the City of Daytona Beach. Wildlife fencing and wildlife sensitive lighting will be provided around the recommended site due to the proximity of the existing wildlife crossing. Ramps will be provided on I-4 Westbound for direct access to and from Volusia County Site 1B. No local road access will be provided to the sites.

The recommended Volusia County Site 1B will include two wet detention stormwater ponds for a combined area of 10.17 acres. Pond 1 is located adjacent to, and east of, the truck parking site and is 3.45 acres. The second pond will involve modification of Pond I, which was originally constructed with the I-4 widening project (FPID: 408464-2). Pond I will be expanded from approximately 1.93 acres to 6.72 acres (4.79 acre increase). Volusia County Site 1B also will include a floodplain compensation area of 2.20 acres.

Air Quality

This project has been determined to generate minimal air quality impacts for Clean Air Act criteria pollutants and has not been linked with any special mobile source air toxic (MSAT) concerns. An air quality screening was completed for this project according to FDOT's Project Development and Environment Manual. The No-Build and proposed Build alternatives for all five recommended truck parking sites were subjected to a carbon monoxide (CO) screening model that makes various conservative worst-case assumptions related to site conditions, meteorology and traffic. Based on the results from the screening model, the highest project-related CO one-hour and eight-hour levels are predicted to be below the National Ambient Air Quality Standards (NAAQS) for CO for all sites. As such, the project "passes" the CO screening. The results of the screening model are provided at the end of this memorandum.

Moreover, Environmental Protection Agency (EPA) regulations for vehicle engines and fuels will cause overall MSAT emissions to decline significantly over the next several decades. Based on regulations now in effect, an analysis of national trends with EPA's MOVES2014 model forecasts a combined reduction of over 90 percent in the total annual emissions rate for the priority MSAT from 2010 to 2050 while vehicle-miles of travel are projected to increase by over 45 percent (Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents, Federal Highway Administration, October 12, 2016). This will both reduce the background level of MSAT as well as the possibility of even minor MSAT emissions from this project.

Figure 1- Osceola County Site 1 Location Map

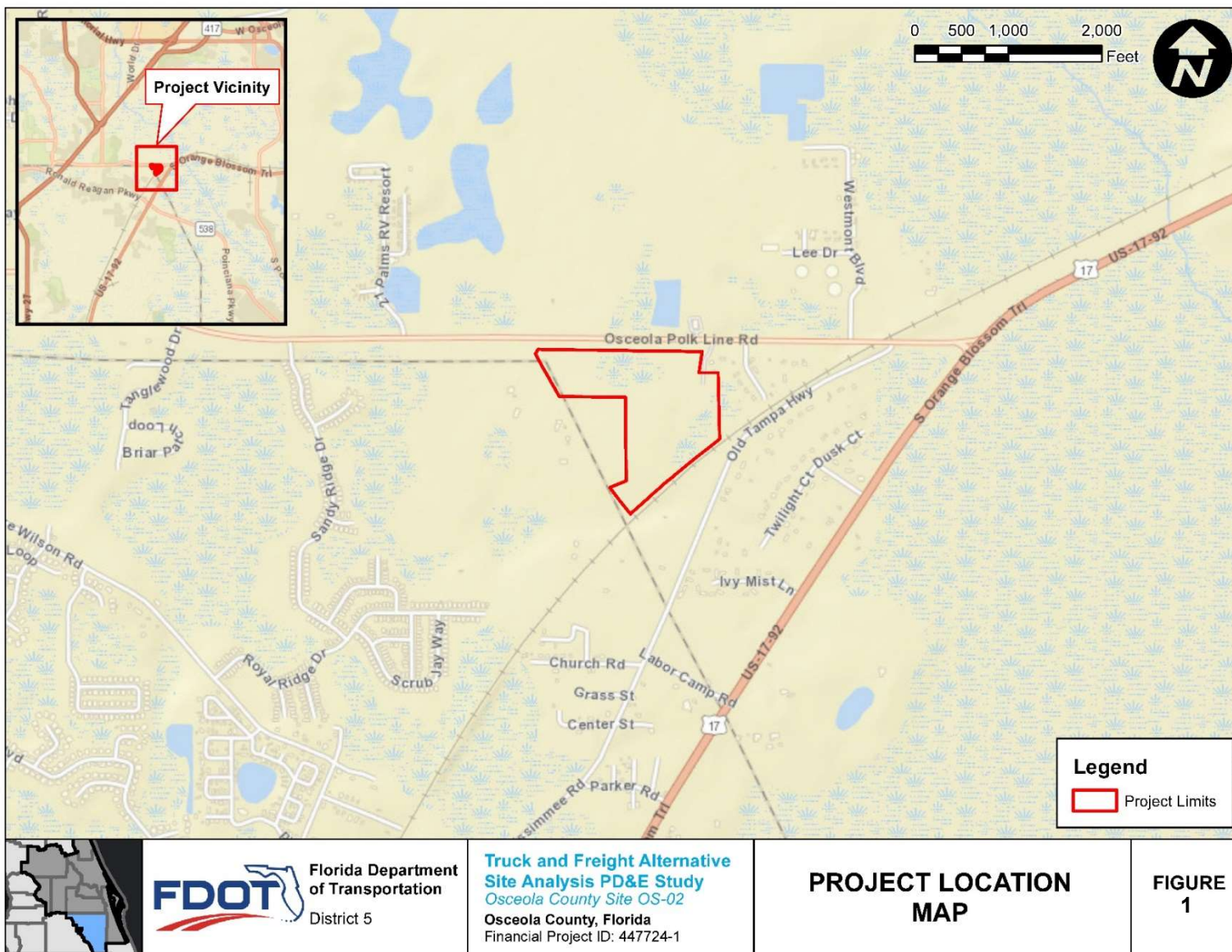


Figure 2- Orange County Site 1 Location Map

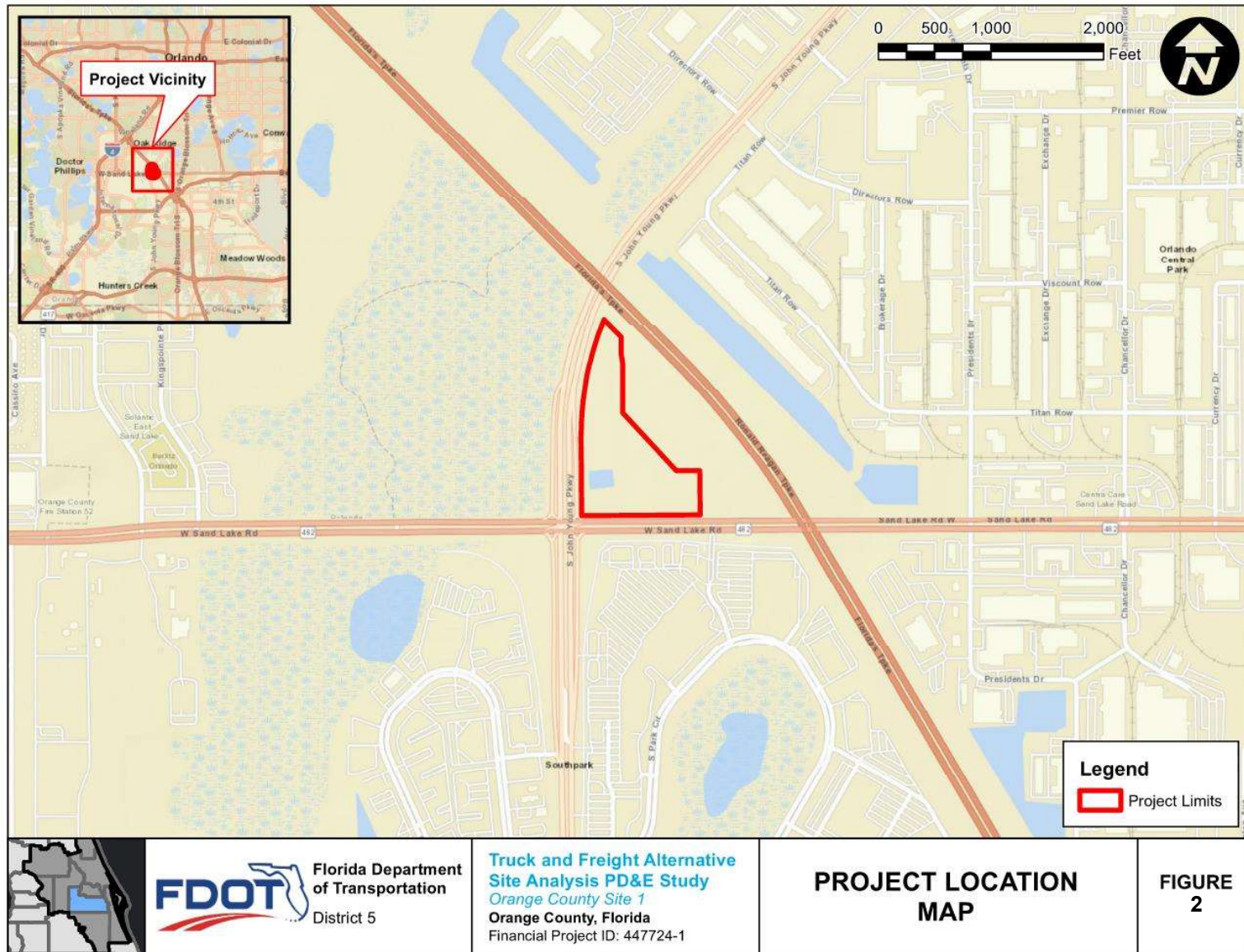


Figure 3- Seminole County Site 1B Location Map

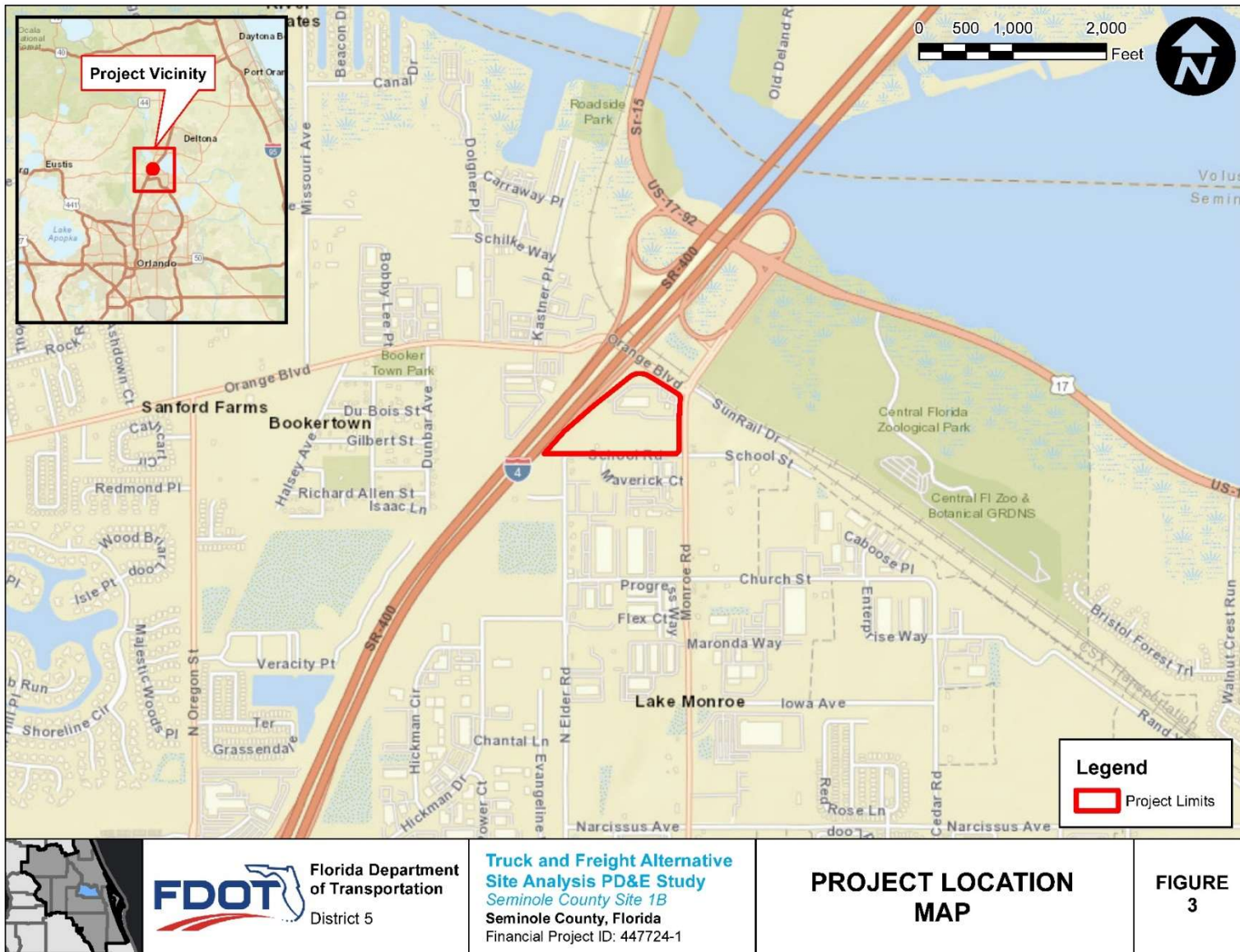
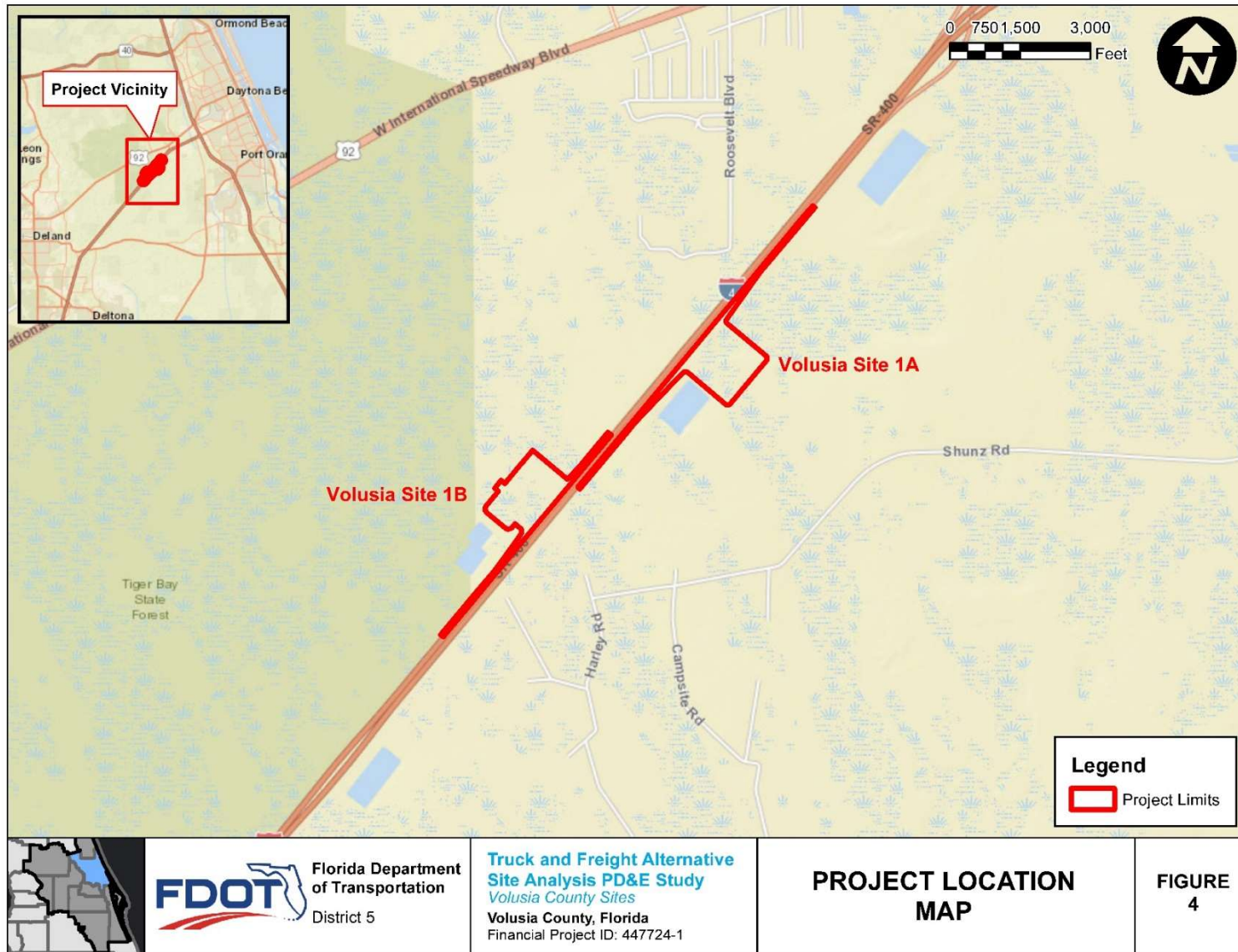


Figure 4- Volusia County Site 1A & 1B Location Map



CO Florida 2012 - Results
Wednesday, November 1, 2023

Project Description

Project Title Truck Parking PD& Study
Facility Name Orange County Site 1
User's Name Jeff Jones
Run Name Run 1
FDOT District 5
Year 2023
Intersection Type North Tee
Speed Arterial 15 mph
Approach Traffic Arterial 3540 vph

Environmental Data

Temperature 47.8 °F
Reid Vapor Pressure 13.3 psi
Land Use Suburban
Stability Class D
Surface Roughness 108 cm
1 Hr. Background Concentration 3.3 ppm
8 Hr. Background Concentration 2.0 ppm

Results
(ppm, including background CO)

Receptor	Max 1-Hr	Max 8-Hr
1	4.6	2.8
2	5.0	3.0
3	5.8	3.5
4	5.5	3.3
5	5.4	3.2
6	5.5	3.3
7	5.6	3.4
8	5.7	3.4
9	5.7	3.4
10	5.5	3.3
11	5.5	3.3
12	5.5	3.3
13	5.6	3.4
14	5.6	3.4
15	5.9	3.5
16	5.0	3.0
17	4.8	2.9

*****PROJECT PASSES*****
NO EXCEEDANCES OF NAAQ STANDARDS ARE PREDICTED

CO Florida 2012 - Results
 Wednesday, November 1, 2023

Project Description

Project Title Truck Parking PD& Study
 Facility Name Osceola County Site 1
 User's Name Jeff Jones
 Run Name Run 1
 FDOT District 5
 Year 2023
 Intersection Type East Tee
 Speed Arterial 15 mph
 Approach Traffic Arterial 1072 vph

Environmental Data

Temperature 47.8 °F
 Reid Vapor Pressure 13.3 psi
 Land Use Rural
 Stability Class E
 Surface Roughness 10 cm
 1 Hr. Background Concentration 1.7 ppm
 8 Hr. Background Concentration 1.0 ppm

Results
 (ppm, including background CO)

Receptor	Max 1-Hr	Max 8-Hr
-----	-----	-----
1	2.9	1.7
2	2.9	1.7
3	3.0	1.8
4	2.5	1.5
5	2.5	1.5
6	2.5	1.5
7	2.7	1.6
8	3.1	1.9
9	2.8	1.7
10	2.9	1.7
11	2.9	1.7
12	3.0	1.8
13	3.0	1.8
14	3.1	1.9
15	3.1	1.9
16	3.1	1.9
17	3.1	1.9

 *****PROJECT PASSES*****
 NO EXCEEDANCES OF NAAQ STANDARDS ARE PREDICTED

CO Florida 2012 - Results
 Wednesday, November 1, 2023

Project Description

Project Title Truck Parking PD& Study
 Facility Name Seminole County Site 1B
 User's Name Jeff Jones
 Run Name Run 1
 FDOT District 5
 Year 2023
 Intersection Type 4 X 4
 Speed Arterial 25 mph
 Approach Traffic Arterial 2020 vph

Environmental Data

Temperature 47.8 °F
 Reid Vapor Pressure 13.3 psi
 Land Use Suburban
 Stability Class D
 Surface Roughness 108 cm
 1 Hr. Background Concentration 3.3 ppm
 8 Hr. Background Concentration 2.0 ppm

Results

(ppm, including background CO)

Receptor	Max 1-Hr	Max 8-Hr
1	4.5	2.7
2	4.6	2.8
3	5.0	3.0
4	4.7	2.8
5	4.6	2.8
6	4.5	2.7
7	4.6	2.8
8	5.0	3.0
9	4.7	2.8
10	4.6	2.8
11	4.5	2.7
12	4.6	2.8
13	5.0	3.0
14	4.7	2.8
15	4.6	2.8
16	4.5	2.7
17	4.6	2.8
18	5.0	3.0
19	4.7	2.8
20	4.6	2.8

 *****PROJECT PASSES*****
 NO EXCEEDANCES OF NAAQ STANDARDS ARE PREDICTED

CO Florida 2012 - Results
 Wednesday, November 1, 2023

Project Description

Project Title	Truck Parking PD& Study		
Facility Name	Volusia County Site 1A & 1B		
User's Name	Jeff Jones		
Run Name	Run 1		
FDOT District	5		
Year	2023		
Intersection Type	N-S Freeway Toll Booth		
Speed	North Bound 65 mph	South Bound	65 mph
Approach Traffic	NB Stopping 3848 vph	SB Stopping	3860 vph
	NB ETC-only 79 vph	SB ETC-only	79 vph

Environmental Data

Temperature	47.8 °F
Reid Vapor Pressure	13.3 psi
Land Use	Rural
Stability Class	E
Surface Roughness	10 cm
1 Hr. Background Concentration	1.7 ppm
8 Hr. Background Concentration	1.0 ppm

Results

(ppm, including background CO)

Receptor	Max 1-Hr	Max 8-Hr
-----	-----	-----
1	4.5	2.7
2	7.1	4.3
3	8.7	5.2
4	8.9	5.3
5	9.9	5.9
6	10.1	6.1
7	8.4	5.0
8	5.3	3.2
9	6.3	3.8
10	4.6	2.8
11	4.5	2.7
12	7.1	4.3
13	8.7	5.2
14	8.9	5.3
15	9.9	5.9
16	10.1	6.1
17	8.4	5.0
18	5.3	3.2
19	7.1	4.3
20	4.6	2.8

 *****PROJECT PASSES*****
 NO EXCEEDANCES OF NAAQ STANDARDS ARE PREDICTED
