PRELIMINARY ENGINEERING REPORT

Florida Department of Transportation District 5 SR 535 PD&E Study From US 192 to North of World Center Drive (SR 536) Osceola and Orange Counties, Florida Financial Project ID Number: 437174-2-22-01 ETDM Number: 14325 October 2024

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 Federal Highway Administration and FDOT.

PROFESSIONAL ENGINEER CERTIFICATION

PRELIMINARY ENGINEERING REPORT

Project: SR 535 PD&E Study

ETDM Number: 14325

Financial Project ID: 437174-2-22-01

Federal Aid Project Number: N/A

This preliminary engineering report contains engineering information that fulfills the purpose and need for the SR 535 Project Development & Environment Study from US 192 to North of World Center Drive (SR 536) in Osceola and Orange Counties, Florida. I acknowledge that the procedures and references used to develop the results contained in this report are standard to the professional practice of transportation engineering as applied through professional judgment and experience.

I hereby certify that I am a registered professional engineer in the State of Florida practicing with Metric Engineering, Inc. and that I have prepared or approved the evaluation, findings, opinions, conclusions or technical advice for this project.

This item has been digitally signed and sealed by Carlos Rodriguez, P.E. on the date adjacent to the seal.

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Appendix A: Geotechnical Memorandum

- Appendix B: FEMA FIRM
- Appendix C: Alternatives Evaluation
- Appendix D: Efficient Transportation Decision Making (ETDM)
- Appendix E: Roadway Concept Roll Plot
- Appendix F: Typical Section Package
- Appendix G: Access Management
- Appendix H: Long Range Estimate (LRE)

1.0 PROJECT SUMMARY

In November 2017, the Florida Department of Transportation (FDOT) District Five (D-5) completed a Corridor Planning Study (CPS) to evaluate State Road 535 (SR 535) from US 192 in Osceola County to I-4 in Orange County. The purpose of the CPS was to identify specific problem areas along the corridor and evaluate multimodal alternatives that will be carried forward into future phases of project development in order to optimize the operations of the existing facility. Improvements identified as a result of the CPS included widening from four to six lanes, TSM&O and multimodal improvements, and intersection improvements (including innovative intersection designs).

This Preliminary Engineering Report (PER) documents the project's purpose and need, the alternatives developed, the process of selecting the preferred alternative, and presents the preliminary design analysis for the preferred alternative.

1.1 **Project Description**

The Florida Department of Transportation, District 5 (FDOT) is conducting a Project Development and Environment (PD&E) Study to evaluate the widening of SR 535 from four to six lanes from US 192 in Osceola County to just north of World Center Drive (SR 536) in Orange County, approximately 2.35 miles as shown in **Figure 1-1**. SR 535 is known as Vineland Road in Osceola County and Kissimmee-Vineland Road in Orange County.

Within the study limits, State Road (SR) 535 is a four-lane divided minor arterial facility that runs generally in a north south direction with an existing posted speed that varies from 45 to 50 miles per hour (mph) (**Figure 1-1**). Bicycle and pedestrian facilities are provided intermittently throughout the study limits. There are three bridges over SR 535 within the study limits. Two of the existing bridges (#750474 and #750475) serve eastbound and westbound SR 417 and one of the existing bridges (#924161) serves both eastbound and westbound Osceola Parkway. The existing drainage system collects roadway stormwater runoff in ditches and conveys the roadway stormwater runoff to treatment ponds via roadside ditches. The proposed improvements include widening SR 535 from four to six lanes, constructing intersection improvements, providing drainage treatment and providing shared use paths along both sides of the roadway. The existing bridges will not be modified. The typical section for the Preferred Alternative is provided in **Figure 1-2**.



Figure 1-1 - Project Location Map

1.2 Purpose & Need

The purpose of the project is to accommodate future projected traffic demand and improve safety, and is based on the following needs:

1.2.1 Transportation Demand

In the existing condition, the section of SR 535 from US 192 to Kyngs Heath Road operates at a Level of Service (LOS) D with an Annual Average Daily Traffic (AADT) of 28,300; the section from Kyngs Heath Road to Poinciana Boulevard operates at LOS D with an AADT of 26,900; the section from Poinciana Boulevard to Polynesian Isle Boulevard operates at LOS D with an AADT of 46,800; the section from Polynesian Isle Boulevard to World Center Drive operates at LOS D with an AADT of 44,300.

Based on the approved Orange County and Osceola County Comprehensive Plan's future landuses that are included in the Central Florida Regional Planning Model (CFRPM) version 7.0, in the future year (2045) No-Build condition, the section of SR 535 from US 192 and Kyngs Heath Road is projected to operate at LOS F with an AADT of 42,000; the section from Kyngs Heath Road to Poinciana Boulevard is projected to operate at LOS E with an AADT of 40,000; the section from Poinciana Boulevard to Polynesian Isle Boulevard is projected to operate at LOS F with an AADT of 69,000; the section from Polynesian Isle Boulevard to World Center Drive is projected to operate at LOS F with an AADT of 66,000.

1.2.2 Safety

A total of 981 crashes were reported on SR 535 from US 192 to Lake Bryan Beach Boulevard in the five-year period from 2014 through 2018. Of those reported crashes, 463 (47%) resulted in injury and four (4) resulted in a fatality. The most frequent crash type was rear end with 605 (62%) total crashes, indicating congestion. Sideswipe crashes were the second highest with 106 (11%), followed by left-turn with 93 (9%) total crashes. Of the 981 crashes, 602 (61%) crashes occurred during daylight conditions. The crash rates along this segment of SR 535 exceed the FDOT statewide averages for similar facilities.

1.3 Project Status

The project is within the jurisdiction of MetroPlan Orlando. The MetroPlan Orlando 2045 Cost Feasible Plan (CFP)(see attached page) includes widening of SR 535 from US 192 in Osceola County to SR 536 in Orange County in years 2031 to 2035 (construction). The SR 535 improvements are funded for design in the FDOT 2024-2029 Five-Year Work Program and MetroPlan Orlando 2023-2028 Transportation Improvement Program (TIP) (see attached pages). This project was screened in the Efficient Transportation Decision Making (ETDM) system as ETDM #14325.

1.4 Commitments

FDOT has made a series of commitments and recommendations during this PD&E Study. The following sections summarize the commitments and recommendations that will be adhered to during the future transportation phases.

- FDOT will require contractors to remove garbage daily from the construction site or use bear proof containers for securing of food and other debris from the project work area to prevent these items from becoming an attractant for the Florida black bear (Ursus americanus floridanus). Any interaction with nuisance bears will be reported to the FWC Wildlife Alert hotline 888-404-FWCC (3922).
- 2. The most recent version of the USFWS Standard Protection Measures for the Eastern Indigo Snake will be utilized during construction.

- 3. If the tricolored bat (*Perimyotis subfalvus*) is listed by USFWS as Threatened or Endangered and the project may affect the species, FDOT commits to re-initiating consultation with USFWS to determine appropriate avoidance and minimization measures for protection of the newly listed species.
- 4. If the Monarch butterfly (*Danaus plexippus*) is listed by USFWS as Threatened or Endangered and the project may affect the species, FDOT commits to re-initiating consultation with USFWS to determine appropriate avoidance and minimization measures for protection of the newly listed species.

1.5 Alternatives Analysis Summary

The following alternatives were evaluated during the study:

- 'No-Build' Alternative
- Construction ('Build') Alternatives

The build alternative consists of widening SR 535 from four to six lanes. The study evaluated a range of typical section and intersection alternatives including inside widening and outside widening of the existing roadway. The build alternative analysis included the evaluation of open and closed stormwater drainage conveyance systems together with the evaluation of pond site locations. The study also evaluated Transportation System Management and Operations (TSM&O) and multimodal improvements.

1.6 Description of Preferred Alternative

The Preferred Alternative consists of inside widening from four to six lanes with a shared use path along both sides and intersection improvements. The preferred alternative is shown on **Figure 1-2**.

The Preferred Alternative has a design speed of 45 mph and consists of full reconstruction with the additional lanes constructed towards the median. The typical section consists of three (3) 11-foot travel lanes in each direction separated by a 32-foot to 47-foot median with a 14-foot shared use path on the west side and a 12-foot shared use path on the east side of the roadway except under the Osceola Parkway Bridge where the shared use path is constrained to 12-foot in width on both sides of the roadway. The Preferred Alternative typical section will generally be constructed within the existing right-of-way width of 200-feet to 224-feet. Swales with ditch bottom inlets in conjunction with flume inlets at the curb line will be provided for drainage conveyance. Stormwater attenuation and floodplain compensation will be provided.



Figure 1-2 - Preferred Alternative Typical Section

SR 535 roadway improvements would not require extending or reconstructing the existing bridges over SR 535 Including the one bridge carrying Osceola Parkway traffic over SR 535 (#924161) and two bridges carrying SR 417 over SR 535 (#750474 and #750475) as all improvements will fit under the existing structures (see **Figure 1-3** and **Figure 1-4**). Due to horizontal constraints, the shared use path will decrease from 14' to 12' on the west side of SR 535 under the Osceola Parkway.









1.6.1 Intersection Improvements

The Preferred Alternative will also implement intersection improvements including the following innovative intersection concepts.

- Polynesian Isle Boulevard Partial Median U-Turn (PMUT): Implementation of the PMUT involves the removal of northbound and southbound direct left turn movements from SR 535 to Polynesian Isle Boulevard and the addition of signalized U-turns at the existing median openings located just north and south of the intersection along SR 535 to accommodate vehicles wishing to travel east or west on Polynesian Isle Boulevard.
- International Drive Partial Displaced Left Turn (PDLT): Implementation of the PDLT involves the removal of direct eastbound and westbound left turns from International Drive at SR 535 with the displaced left turns installed on both legs of International Drive. The northbound and southbound left turn movements for SR 535 continue to take place at the main intersection.
- SR 536 (World Center Drive) PDLT: Implementation of the PDLT involves the removal and replacement of direct northbound and southbound left turns from SR 535 at SR 536 with the displaced left turns installed on both legs of SR 535. The eastbound and westbound left turn movements for the SR 536/World Center Drive continue to take place at the main intersection.

1.6.2 Drainage

There are 4 basins in the existing and proposed condition, and all basins drain to permitted stormwater systems in the existing condition (see **Table 1-1**). Where feasible, stormwater management facilities have been recommended within existing FDOT right-of-way. Below is a summary of the preferred pond alternatives (see **Figure 1-5**).

- <u>Basin 1</u>: Alternative 1A is the Preferred Alternative for Basin 1. Alternative 1A consists of an existing wet detention pond (identified as Exist. Pond 1-1) within FDOT right-of-way to provide the required water quality treatment and attenuation volumes.
- <u>Basin 2</u>: Alternative 2A is the Preferred Alternative for Basin 2. Alternative 2A consists of 2 ponds, one existing wet detention pond within existing FDOT right-of-way (identified as Exist. Pond 2-1) interconnected with a second wet detention pond (identified as Pond 2-2) to provide the required water quality treatment and attenuation volumes. Since there is insufficient area within the existing FDOT right-of-way to provide a stormwater management alternative to meet water quality treatment and attenuation requirements, Pond Alternative 2A will require acquisition of right-of-way.
- <u>Basin 3</u>: Alternative 3A is the Preferred Alternative for Basin 3. Alternative 3A consists of 2 ponds, one existing wet detention pond within existing FDOT right-of-way (identified as Exist. Pond 3-1) interconnected with a second wet detention pond (identified as Pond 3-2) to provide the required water quality treatment and attenuation volumes. Since there is insufficient area within the existing FDOT right-of-way to provide a stormwater management alternative to meet water quality treatment and attenuation requirements, Pond Alternative 3A will require acquisition of right-of-way.
- <u>Basin 4</u>: Alternative 4A is the Preferred Alternative for Basin 4. Alternative 4A consists of an existing wet detention pond (identified as Exist. Pond 4-1) within existing Orange County right-of-way and easement to provide the required water quality treatment and attenuation volumes.

Basin	Preferred Alternative	Ponds	Туре	R/W Req'd. (ac)
1	1A	Exist. Pond 1-1	Wet	0.0
2	2A	Exist. Pond 2-1 and Pond 2-2	Wet	3.0
3	3A	Exist. Pond 3-1 and Pond 3-2	Wet	3.5
4	4A	Exist. Pond 4-1	Wet	0.0

Table 1-1	- Preferred	Pond Alternatives
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An analysis of floodplain impacts and Floodplain Compensation (FPC) alternatives was performed. Project improvements will impact the 100-year floodplain as a result of longitudinal impacts and transverse impacts. The Preferred FPC Alternative and anticipated right-of-way needs associated with the Preferred Alternative are provided in Table 1-2.

Table 1-2	- Preferred	FPC Site
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Name	Floodplain Impacts (ac-ft)	Floodplain compensation Volume Provided (ac-ft)	Estimated Pond R/W Req'd. (including access) (ac)
FPC-1	8.89	14.45	4.3





1.6.3 Right-of-way and Construction Cost

SR 535 has an existing right-of-way of 200 to 224 feet which accommodates the roadway typical section for the Preferred Alternative. Approximately 0.7 acres of right-of-way acquisition is required to construct improvements at the SR 535/International Drive and SR 535/World Center Drive (SR 536) intersections. Approximately 10.8 acres of right-of-way acquisition are associated with the required stormwater and floodplain compensation ponds. The Preferred Alternative will impact a total of 8 parcels. See Table 1-3 for cost estimate.

	Cost
Construction	\$76.5M
Right-of-Way Acquisition	\$38.1M
Utility Relocation	\$7M
Sub Total	\$121.6M
Design (15%)	\$11.5M
CEI (10%)	\$7.7M
Total Estimated Project Cost	\$140.8M

Table 1-3 - Cost Estimate

1.7 List of Technical Documents

The following is a list of technical documents completed during this study.

- Engineering Reports
 - o Traffic Analysis Methodology Memorandum December 2021
 - Project Traffic Analysis Report (PTAR) March 2023
 - Location Hydraulics Report (LHR) February 2024
 - Pond Siting Report (PSR) February 2024
 - o Geotechnical Technical Memorandum March 2024
 - Utility Assessment Package (UAP) November 2023
 - o Transportation Systems Management & Operations (TMS&O) PSEMP May 2024
 - Concept of Operations (ConOps) May 2024
- Environmental Reports
 - Noise Study Report (NSR) April 2024
 - Contamination Screening Evaluation Report (CSER) April 2024
 - o Natural Resource Evaluation Technical Memorandum (NRE) April 2024
 - o Cultural Resource Assessment Survey (CRAS) March 2024

- Type II Categorical Exclusion October 2024
- Public Involvement Reports
 - Public Involvement Plan (PIP) May 2020
 - Comments and Coordination Report (CCR) August 2024
- Other Supporting Documents
 - ETDM Summary Report July 2019
 - Corridor Planning Study November 2017

2.0 EXISTING CONDITIONS

The purpose of the existing conditions analysis is to inform future improvement efforts by gaining an understanding of how the corridor performs today. The topics addressed in the existing conditions analysis include existing typical sections, right of way, roadway characteristics, traffic operations, safety, geotechnical information, and drainage information, among others. The evaluation of existing conditions included the collection and review of all data pertaining to the existing facility. The task involved an on-site inventory and verification of current existing conditions that would serve as the basis for evaluation of how the corridor performs today. This information is then utilized to inform development of future improvements.

Important project features along the SR 535 facility such as roadway characteristics, drainage information, traffic, safety, as well as, the existing social/environmental characteristics, were reviewed and summarized.

2.1 Previous Planning Studies

In November 2017, the FDOT completed a CPS to evaluate State Road 535 (SR 535) from US 192 in Osceola County to I-4 in Orange County. The purpose of the CPS was to identify specific problem areas along the corridor and evaluate multimodal alternatives that will be carried forward into future phases of project development in order to optimize the operations of the existing facility. Improvements identified as a result of the CPS include widening from four to six lanes from north of Kyngs Heath Road to SR 536. The findings from the CPS were used in the development of the purpose and need for this PD&E Study. FDOT is now conducting this PD&E Study to build upon and further evaluate the recommendations from the CPS.

2.2 Study Corridor Segmentation

Prior to initiating the analysis of existing conditions, the project was broken down into four (4) distinct segments (see **Figure 2-1**). Each segment has unique characteristics such as land use, right of way, operational, multimodal accommodations, and geometric features. In general terms, **Segment 1** features an urban typical section and within an existing 150'-180' total right of way.

Figure 2-1 - Segmental Breakdown



This segment has a lower AADT than Segments 3, 4 and 5. **Segment 2** features a suburban typical section with comparable AADT to the previous segment. Although the land use along the west side is also partially similar to Segment 1 (strip retail), additional multifamily residential and hotel land uses are also present. The abutting land use along the east side is generally vacant and the right of way is more ample extending approximately 112' from the center line to both the east and west sides. **Segment 3**: the AADT increases substantially within this segment as compared with the previous two. The available right of way and abutting land uses along both sides are similar to the previous segment. It should be noted that the Polynesian Isle Boulevard/SR 535 intersection (at the terminus of this segment **4** features mostly vacant land uses along both sides except for the Lake Buena Vista Stores and the RACE gas station just south of Lake Buena Vista Factory Stores Drive. The AADT within this segment is also very high (only slightly lower than the previous segments).

2.3 Summary of Funded Improvements

Capacity, operational, intersection and multimodal improvements as part of the PD&E Study for SR 535 have been identified in the MetroPlan Orlando's Transportation Improvement Program (TIP) for fiscal year 2023/2024 and the 2045 Long Range Transportation Plan (LRTP). **Table 2-1** includes some pertinent references to this study.

Facility	Location	Source	Improvement	Project ID/CF#
SR 535	From US 192 to SR 536/ World Center Drive	MetroPlan Orlando TIP	PD&E Study – 2023/2024 Design - 2025/2026	4371751-2
SR 535	From US 192 to SR 536/ World Center Drive	MetroPlan Orlando 2045 LRTP	<u>Widen to 6 lanes</u> PD&E Study - 2023 Design – 2023 R/W – 2026-2030 Construction- 2031-2035	2252

Table 2-1 -	Planned SR	535 Pro	ojects within	Study	Vicinity
				j	

2.4 Roadway Characteristics

2.4.1 Typical Sections

As shown on **Figure 2-2**, the existing SR 535 facility generally features four (4) distinct typical sections. The existing typical sections are generally described as follows:

- Segment 1: Begin Project (US 192) to Kyngs Heath Road, the existing facility generally features a six lane divided urban typical section with 12-foot lanes, curb and gutter and a 41-foot wide, raised, landscaped median. The available right of way varies from 150 feet to 190 feet. A 10-foot wide shared use path is present along both sides of the road and 5-foot sidewalks along both the east and west right of way lines.
- Segment 2: Kyngs Heath Road to Calypso Cay Way, the existing facility generally features a four-lane divided suburban section with 12-foot lanes, 4-foot outside paved shoulders and a 52-foot grass median. The available right of way is 224 feet (112' to each side of the roadway centerline). Discontinuous 5-feet sidewalks are provided along both sides of the right of way lines just north of the Kyngs Heath Road intersection for approximately 450 feet. There are no bicycle facilities or sidewalks present along the rest of the segment.
- Segment 3: Calypso Cay Way to Polynesian Isle Boulevard, the existing facility generally features a five-lane divided suburban section with three 12-foot southbound lanes, two 12-foot northbound lanes, 4-foot outside paved shoulders and a 52-foot grass median. The available right of way is 224 feet (112' to each side of the roadway centerline). This section features a 5-foot continuous sidewalk along the west right of way from Poinciana Boulevard to Polynesia Isle Boulevard.
- Segment 4: Polynesian Isle Boulevard to End Project (north of World Center Drive/SR 536), the existing facility features a divided suburban typical section which varies from four lanes to six lanes. This section has 12-foot-wide lanes, 4-foot outside paved shoulders and a median width that varies from 42 feet to 67 feet. The available right of way varies from 195 feet to 323 feet. The only sidewalks within this segment are located along the west right of way line south of the Osceola/Orange County line and along both the east and west right of way lines in the immediate vicinity of Lake Buena Vista factory Stores Drive.

Figure 2-2 - Existing Typical Sections



2.4.2 Right of way

The existing right of way associated with SR 535 within the project limits is shown in Table 2-2.

From	То	R/W (ft)
Begin Project (US 192)	Kyngs Heath Road	Varies 150' to 190'
Kyngs Heath Road	Calypso Cay Way	224'
Calypso Cay Way	Polynesian Isle Boulevard	224'
Polynesian Isle Boulevard	International Drive	224'
International Drive	End Project (World Center Drive/SR 536)	Varies 195' to 323'

2.4.3 Roadway Classification and Context Classification

SR 535 is functionally classified as an urban minor arterial within the project limits with existing posted speeds ranging between 45 and 50 mph. In terms of its context classification, the project area is designated as C3C Suburban Commercial classification since it closely complies with the distinguishing characteristics of this category in terms of land use types and street patterns.

2.4.4 Adjacent Land Use

Land use cover descriptions provided for both uplands and wetlands are classified utilizing the *Florida Land Use Cover and Forms Classifications System* (FLUCFCS) designations. Existing land uses in the project area were initially determined utilizing US Geological Survey (USGS) maps, historical images, aerial photographs, and land use mapping from the South Florida Water Management District (SFWMD) (2017-2019). Land use categories in the project area reported by SFWMD were verified in the field. Field reviews generally confirmed the SFWMD land use mapping with very minor adjustments. Land use categories in the project area as mapped by SFWMD are shown in **Figure 2-3** and **Figure 2-4** each land use category in the project area is described below.





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Figure 2-4 - Land Use in Orange County Project Area

Residential, Medium Density Under Construction (FLUCCS - 1290)

This category refers to residential areas in the process of construction with a dwelling density of 2 to 5 per acre once completed. If more than 2/3 of the construction if completed, then the area should be coded by the 1200 FLUCCS for medium density residential. This land use type occurs immediately southeast of the on-ramp to eastbound Osceola Parkway from northbound SR 535. Residential High Density, Multiple Dwelling Units (FLUCCS – 1330)

This category refers to a density of six or more dwelling units per acre. This land use category includes two-story town homes, duplexes, and other low-rise residential structures. Low-rise residential areas are newer developments which are commonly located on the urban fringe. This class is found in one location in the project area at the northwestern limits of the study area northwest of the SR 535 and World Center Drive intersection.

Commercial and Services (FLUCCS - 1400)

This is an active land use category that includes a broad range of uses and operations providing diverse products and services which often occur in complex mixtures. Subclasses include retail and wholesale, professional, cultural and entertainment, and tourist services, as well as others. The 1400 class includes shopping centers, commercial strip developments, warehouses, junk yards, campgrounds, and amusement parks. These areas are usually located along main transportation routes or at the intersections of secondary transportation corridors. This land use category accounts for a large portion of the study area and is found in several locations. This includes the southern portion of the project located south of SR 417 to south of US 192, aside from one area of 1900 Open Land and one area of 1290 Residential, Under Construction. This category is also located west of SR 535 from north of Osceola Parkway to SR 417 and east of SR 535 north and south of the World Center Drive intersection near the project's northern terminus.

Shopping Centers (FLUCCS – 1411)

This is land use category includes varying sizes and shapes of buildings which share common parking facilities for customers. These include both connected and unconnected buildings commercial and retail facilities. This land use is found in one location of the project corridor at the outlet stores located south of Lake Buena Vista Factory Stores Drive north of the Osceola-Orange County Line and south of SR 417.

Oil and Gas Storage (FLUCCS - 1460)

This land use category includes storage facilities for petroleum, oil, and lubricant product retail and wholesale sales. This category can be identified by tanks, spill enclosures, internal roads/railroads, spurs, embankments, piers, and maintenance facilities. This land use is found in one location in the project area, west of SR 535 from north of W Osceola Parkway to south of Poinciana Blvd.

Recreational (FLUCCS - 1800)

This land use category is used for outdoor activities such as community sports, open-air performances, and fairgrounds. This includes well organized grounds with parking facilities, which are typically not paved. This land use is found in one location at the northeast limits of the study area in association with the adjacent resort complexes on Lake Bryan around Lake Bryan Beach Blvd.

Golf Course (FLUCCS – 1820)

Golf courses are easily recognizable by their distinctive well-maintained grass areas, fairways, and ponds. Golf courses are typically constructed in low-lying areas such as pine flatwoods and may be adjacent to, or displace wetlands. These wetlands would not be broken out of the 1820 Golf Course land use classification unless they meet the two acre minimum mapping unit criteria. This land use is associated with the Hawk's Landing Golf Club located northwest of the World Center Drive and SR 535 intersection.

Open Land (FLUCCS - 1900)

This land use category includes open, undeveloped land within urban areas which are typically interpreted as transitional or uncertain land uses. This land use does not include forests or wetlands, unless they occur as small areas which do not meet the mapping unit criteria within the 1900 land use. This open land category is found in one location within the study area, south of the Calypso Cay Way to the west of SR 535.

Upland Shrub and Brushland (FLUCCS - 3200)

This category is for upland non-agricultural, non-forested lands which exhibit no evidence of cattle grazing. This class includes areas where tree species are regenerating naturally after clear cutting or fire but are less than 20 feet tall. This includes native hardwood and coniferous species but does not apply to plantations. This land use type occurs in one location in the study area to the east of SR 535 from SR 417 to the commercial land uses immediately south of World Center Drive.

Pine Flatwoods (FLUCCS - 4110)

This class is for naturally generated pine flatwoods. The canopy closure must be 25 percent or more and the trees must average over 20 feet tall. The pine flatwoods class is dominated by slash pine, longleaf pine, or both. Common understory species include saw palmetto, wax myrtle, gallberry, and a wide variety of herbs and brush. Pine flatwoods are the most prevalent community in natural areas. Most pine flatwoods occur on broad, low, flat areas with seasonal high-water

tables but not on hydric soils. They transition into mesic flatwood and hardwood communities on higher ground and into hydric flatwoods, cypress, and other wetlands on the lower edges. Pine flatwoods are found in four places in the project area. One area is located to the east of SR 535 from the county line to south of the factory outlets at Lake Buena Vista Factory Stores Dr and another area is located north of the Lake Buena Vista Factory Stores Dr to south of SR 417. The other two areas are located to the west of SR 535 from SR 417 to World Center Drive and are separated by International Drive S.

Reservoirs (FLUCCS - 5300)

This class is for artificial impoundments of water, or water bodies that have been substantially modified from the natural state. They are used for irrigation, flood control, municipal and rural water supplies, stormwater treatment, recreation, and hydro-electric power generation. Reservoirs are found in multiple places throughout the project area. Reservoirs land use is found in one location in the study area, to the east of SR 535 immediately north of Osceola Parkway. Cypress – Mixed Hardwoods (FLUCCS –6216)

This class is used for forested wetland communities dominated by a mix of pond or bald cypress and hardwood swamps. This land use type is found in one location in the study area, immediately south of Poinciana Blvd to the east of SR 535.

Disturbed Land (FLUCCS - 7400)

This land use class is used for areas where soil or substrate has been altered or removed by human activity, whether or not the cause is known. The Level 1 Barren Land category, including this 7400 Disturbed Land sublevel, is only applied to upland areas. This land use type is found in one location in the study area, to the east of SR 535 from north of Poinciana Blvd to south of the county line.

Roads and Highways (FLUCCS - 8140)

This class includes those highways exceeding 100 feet in width, with 4 or more lanes and median strips. The intent of this data layer is to include only the major transportation corridors. This land use type is mapped for SR 535, US 192, Osceola Parkway, Poinciana Boulevard, SR 417, International Drive South, and World Center Drive.

Electrical Power Facilities (FLUCCS - 8310)

Electrical power facility land uses include fossil fuel and nuclear plants. Associated facilities include transformer yards, cooling ponds or towers, and fuel storage. One electrical power facility is found within the project area approximately 500 feet north of the World Center Drive and SR 535 intersection, to the east of SR 535.

2.4.5 Intersecting Roadway Facilities

There are four principal roadway facilities crossing or intersecting SR 535 within the project limits as described below. The existing intersection geometry for all the intersections evaluated in this study are described in Section 2.6.1 and shown in **Figure 2-16** and **Figure 2-17**.

1) <u>US 192 (W. Irlo Bronson Memorial Highway)</u> US 192 is a 75-mile long four-to-six lane eastwest divided facility extending from Four Corners in Lake County in the west to Indialantic in Brevard County in the east. Within the project vicinity, US 192 serves a substantial proportion of tourist related traffic associated with Walt Disney World and Epcot Center, located north and west of the project limits.

2) <u>Osceola Parkway (CR 522)</u> provides a tolled alternate to US 192 between Walt Disney World and Kissimmee on the east. Within the project confines, the Osceola Parkway features a modified split diamond interchange providing access to and from the west at N. Poinciana Boulevard (just west of the SR 535 intersection) and access to and from the east via SR 535 (on-ramp) and N. Poinciana Boulevard (off-ramp) just east of the SR 535 intersection.

3) <u>SR 417 (Central Florida Greene Way)</u> is a tolled limited-access facility owned by CFX and the Turnpike providing an eastern beltway around the city of Orlando. SR 417 overpasses SR 535 but does not provide any connections to it.

4) <u>World Trade Center Drive (SR 536)</u> is an east-west 6-lane facility extending from an I-4 interchange near the Epcot theme park on the west to an interchange with SR 417 to the east.

2.4.6 Access Management Classification

In terms of access management, the entire project corridor extending from the US 192/SR 535 intersection to just north of SR 536 is currently classified as an Access Class 3 facility with restrictive median treatment.

Access Class 3 facilities are controlled access highways where direct access to abutting land is controlled to maximize the operation of the through traffic movements. This class is used where the adjacent land is generally not extensively developed and/or the probability of substantial land use change exists. These highways are distinguished by existing or planned restrictive medians.

In general terms, most of the driveways within the study limits comply with access class 3 standards, however all of the median openings and signal spacings are non-compliant. A detailed evaluation of the existing facility's compliance with access management criteria is provided in **Section 7.8**.

2.4.7 Design and Posted Speeds

The posted speed limit is 45 mph from the beginning of the project to just north of Kyngs Heath Road. The rest of the project area has a 50-mph posted speed. Based on available as-built information, the design speed of the existing facility is 55 mph.

2.4.8 Vertical and Horizontal Alignment

In terms of horizontal alignment, there are 5 existing curves within the confines of the project (see **Figure 2-5**). This information was developed based on limited available as-builts and aerials. Curve 1, located just north of the Kyngs Heath Road meets FDOT Design Criteria Standards for 50 mph design speed. Existing curves 2, 3, 4 and 5 do not meet the desirable length of 750-feet for 50 mph design speeds. Similarly from the limited survey and as-builts, it resulted that the project corridor is generally flat.



Figure 2-5 – Existing Horizontal Alignment

*Note: Superelevation has not been field verified.

2.4.9 Pedestrian Accommodations

As illustrated on (**Figure 2-6**), pedestrian features are intermittent throughout the study project. There are 5-foot sidewalks and 10-foot shared use paths along both sides of the road extending from the begin project (US 192 at SR 535 intersection) to just north of the Kyngs Heath Road intersection. North of this intersection; existing sidewalks are intermittent and generally located within private property. There are substantial gaps found along the west and east sides.


Figure 2-6 - Existing Bicycle and Pedestrian Facilities

2.4.10 Bicycle Facilities

There are 10-foot-wide shared use paths along both sides of the road extending from the beginning of the project to just north of Kyngs Heath Road, as shown on **Figure 2-6**. North of Kyngs Heath Road, the study corridor lacks designated bicycle facilities.

2.4.11 Transit Facilities

The existing LYNX Transit System bus routes that run within the study area can be seen on **Figure 2-7**. No bus routes run along the study corridor and there are no bus routes provided along SR 535 south of World Center Drive (SR 536). The following information describes the existing LYNX bus routes in the study area:

LYNX Bus Route 304 operates along SR 535 just north of the study limits where it also travels along World Center Drive (SR 536). This route connects the LYNX Central Station in Downtown Orlando to the Disney Springs West Side Transfer Station. Route 304 operates three (3) daily buses (2 westbound and 1 eastbound).

LYNX Bus Routes 55 and 56 operate along US 192 and feature bus stops just west of the SR 535/US 192 intersection (the project's beginning). Route 55 connects the Kissimmee Intermodal

Station and the Four Corners Walmart while Route 56 connects the Kissimmee Intermodal Station and Disney's Magic Kingdom. Both bus routes rank among the top 10 routes in the LYNX system for Saturday ridership.

LYNX Bus Route 306 operates along US 192 and W Osceola Parkway. Route 306 connects to the Disney Springs transfer center and features a stop along US 192. Route 306 operates one (1) trip per direction which include one northbound AM service and one southbound PM service.

In addition to the existing routes, the LYNX master plan shows future LYNX services that are planned to traverse along the study corridor. The plans call for a traditional fixed-route and a limited-stop route, both traveling along SR 535 having endpoints between the LYNX Kissimmee Intermodal Station and Disney Springs. There are also plans for an express route with service from Disney Springs to Poinciana SunRail and the Poinciana Walmart. Per coordination with LYNX staff members, there is no timeline for when these services will be implemented, as well as, no known bus stop locations within the project study area at this time. Coordination with LYNX will continue throughout the study and is recommended throughout the design phase.



Figure 2-7 - Existing Transit Routes

2.4.12 Physical or Operational Restrictions

There are no physical or operational restrictions in relation to this project study.

2.4.13 Managed Lanes

This corridor does not have any managed lanes within the project limits.

2.4.14 Pavement Condition

According to the FDOT's Pavement Condition Survey database the rideability scores throughout the entire project length are generally poor. The historical Pavement Condition Survey reports indicate that within Osceola County (Roadway ID 92040) the pavement rating for the most current year (2021) is 4.5 for cracking, 7.4 for rideability and 9.0 for rutting. Within Orange County (Roadway ID 75035-001) the pavement rating for the most current year (2021) ranges from 3.5 to 7.5 for cracking, 7.6 to 8.0 for rideability and 9.0 for rutting.

Each section of pavement is rated for cracking and rideability on a 0-10 scale with 0 being the worst and 10 being the best. Any crack rating of 6.4 or less is considered deficient pavement. For speed limits less than or equal to 45 MPH a ride rating of 5.4 is considered deficient. A Resurfacing Restoration Rehabilitation (RRR) (FM# 445299-1) that will mill and resurface SR 535 from north of US 192 to south of International Drive is in design as of April 2024 with construction anticipated to begin Summer of 2024 before this widening project begins.

2.4.15 Lighting

There is existing lighting from the US 192 at SR 535 intersection to Kyngs Heath Road. North of Kyngs Heath Road there is no existing lighting along the project with the exception of small sections associated with some of the intersections and driveways.

2.4.16 Traffic Signs

There are various traffic signs throughout the project corridor. There are two guide signs that are located just south and north of the Osceola Parkway bridge along SR 535 that indicate access to East and West Osceola Parkway, respectively. There is an additional guide sign just south of Osceola Parkway indicating access for the Osceola Parkway eastbound on ramp (slip ramp).

2.4.17 Aesthetics

There are no notable aesthetic features within the project.

2.4.18 Existing Structures

There are three (3) existing bridges crossing SR 535 within the study limits at two different locations. **Figure 2-8** has the existing bridge characteristics and the SR 535 existing typical sections under the bridge. The bridge sufficiency ratings are a numerical value from 0 being the worst to 100 being the best and indicates the bridge's overall sufficiency to remain in service. The

health index ranges from 0 being the worst to 100 being the best and is used to assess the overall condition of a bridge. A brief description of each follows:

- Osceola Parkway over SR 535 Bridge No. 924161. This cast in place structure was constructed in 1995 and features an approximate total length of 162' and 116' in width. As per routine inspection (7/26/22), its sufficiency rating is 92.1, a Health Index of 99.41 and has a bridge condition rating of good.
- Northbound SR 417 over SR 535 Bridge No. 750475. This cast in place structure was constructed in 1996 and features dual spans and a total bridge length of 186.4' and 43.3' in width. As per routine inspection (1/4/2022), its sufficiency rating is 96.7, a Health Index of 98.83 and has a bridge condition rating of good.
- Southbound SR 417 over SR 535 Bridge No. 750474. This twin structure is similar to the previous bridge and was constructed at the same time and with similar dimensions. The latest available routine inspection (1/4/2022) assigned it a sufficiency rating of 96.7, a Health Index of 96.59, and has a bridge condition rating of good.



Figure 2-8 - Existing Bridges

2.4.19 Soils and Geotechnical Data

The Natural Resources Conservation Service (NRCS) (2017) indicates 11 soil types occur in the project area (**Figure 2-9**). The soil types in the project area are listed in **Table 2-3** along with descriptions and ratings from NRCS. Two hydric soils are known to occur in the project area: Basinger fine sand and Sanibel Muck. The majority of soils within the project area have been heavily disturbed during the construction of roadways as well as residential and commercial land uses.



Figure 2-9- Existing Soil Information

Table 2-3 - Soils in Project Area

Soil Type	Environmental Association	
Basinger Fine Sand	This soil type consists of very deep, poorly drained, rapidly permeable soil in low flats, sloughs, depressions, and poorly defined drainageways that formed in sandy marine sediments. They are found in Peninsular Florida. This is a hydric soil .	8.24
Immokalee Fine Sand	This soil type consists of very deep, very poorly, and poorly drained soils that form in sandy marine sediments. They are found on flatwoods and low broad flats on marine terraces. This is not a hydric soil.	1.13
Myakka Fine Sand	This soil type consists of very deep, very poorly or poorly drained, moderately rapid or moderately permeable soils that occur primarily in mesic flatwoods of peninsular Florida. They formed in sandy marine deposits. This is not a hydric soil.	39.25
Narcoossee Fine Sand	This soil type consists of very deep, somewhat poorly drained soils that formed in thick sandy sediments of marine origin. These soils are on low knolls and ridges in the flatwoods areas of central and southern peninsular Florida. This is not a hydric soil.	3.20
Ona Fine Sand	This type consists of poorly drained, moderately permeable soils that formed in thick sandy marine sediments. They are in the flatwood areas of central and southern Florida. Permeability is moderate. This is not a hydric soil.	13.22
Pomello Fine Sand	This soil type consists of very deep, moderately well to somewhat poorly drained soils that formed in sandy marine sediments. Pomello soils are on ridges, hills, and knolls in the flatwoods on marine terraces. Permeability is moderately rapid. This is not a hydric soil.	11.90
Sanibel Muck	This soil type consists of nearly level, deep, very poorly drained soil that has a muck surface layer over sandy mineral material located in ponds, drainageways and low broad flats. Permeability is rapid. This is a hydric soil.	1.16
Smyrna Fine Sand	This soil type consists of very deep, poorly to very poorly drained soils formed in thick deposits of sandy marine material. Permeability is rapid to moderate. This is not a hydric soil.	18.11
St. Johns Fine Sand	This soil type consists of very deep, very poorly or poorly drained, moderately permeable soils on broad flats and depressions of the lower Coastal Plain. They formed in sandy marine sediments. Permeability is moderate. This is not a hydric soil.	0.46
Tavares Fine Sand	This soil type consists of very deep, moderately well drained soils that formed in sandy marine or eolian deposits. Tavares soils are on hills, ridges and knolls of the lower Coastal Plain. This is not a hydric soil.	3.10
Zolfo Fine Sand	This soil type consists of very deep, somewhat poorly drained soils that formed in thick beds of sandy marine deposits. These soils are on low broad landscapes that are slightly higher than adjacent flatwoods on the lower coastal plain of central Florida. Permeability is rapid to moderate. This is not a hydric soil.	0.23
	TOTAL	100%

Source: NRCS 2017; USDA 1998: 21,22,24,25,27,28,31,32,34-36,39,41,51,52

In addition to the NRCS soil database, soil borings were performed for this project. There were thirty-nine (39) hand auger borings performed at select locations along the roadway alignment to evaluate the near-surface soil and groundwater conditions and to provide preliminary geotechnical information. In addition, a total of twenty-two (22) Standard Penetration Test (SPT) borings were advanced to depths of 20 feet below existing grades in the areas of the proposed stormwater ponds and floodplain compensation (FPC) sites. In general, the subsurface conditions encountered consisted of sandy soils (A-3/A-2-4) within the boring depths. As an exception, a layer of clayey sand (A-2-6) was encountered at boring AB-3 from a depth of approximately 1.5 to 2.5 feet. Some of the hand auger borings were terminated at depths less than 5 feet below existing grades as a result of borehole collapse due to the shallow groundwater tables. In addition, many of the borings performed within the pond locations encountered intervals of organic sands to muck (A-8). The Preliminary Geotechnical Engineering Services Report including the soil information obtained from each borings is included in **Appendix A**.

2.4.20 Drainage

Four basins have been identified in the existing condition based on existing drainage divides and drainage features (see **Figure 2-10**). All basins are classified as open basins which discharge to Shingle Creek. All roadways within the project limits (SR 535, World Center Drive (SR 536) and International Drive), as well as adjacent developments have permitted stormwater treatment systems. A list of the relevant Environmental Resource Permits within the project corridor is provided in **Table 2-4**. Based on a review of the existing plans, offsite runoff is generally separated from the on-site runoff with the exception of US 192 in Basin 1.

Application No.	Permit No.	Date Issued	Description		
X000008640	85-00118-S	10/10/85	SR 535 Widening from US 192 to Orange County line		
901113-1	48-00592-S	11/3/90	SR 535 from South of SR 536 to I-4		
930909-1	49-00653-S	4/14/94	Osceola Parkway		
971113-1	49-00883-P	3/12/98	SR 530 (US 192) from Bonnet Creek to SR 535		
970147-8	48-00866-S	11/12/98	Greene Property Phase II (International Drive)		
150611-22	49-00908-P	8/3/15	Orchid Bay/Storey Lake		
160208-15	49-00908-P	3/11/16	Orchid Bay (Storey Lake)		
160428-7	49-00908-P	6/7/16	Storey Lake Blvd Phases 2 & 3		

 Table 2-4 - Relevant Environmental Resource Permits



Figure 2-10 - Basin Map

Basin 1:

The existing roadway and stormwater system within Basin 1 was constructed as part of SPN 92090-3543. Runoff from the roadway along SR 535 is drained by closed storm drain systems which convey runoff to an existing wet detention pond (identified as Pond WRA-4 in SPN 92090-3543) located on the south side of US 192 and west of SR 535. The wet detention pond receives

runoff from on-site areas along US 192 and SR 535, as well as offsite areas, and discharges east to Lake Cecile and to Shingle Creek.

Basin 2:

The existing roadway and stormwater system within Basin 2 was constructed as part of SPN 75560-3609 and 75560-3610. Runoff from the roadway along SR 535 is drained by roadside ditches, side drains and cross drains to convey runoff to an existing wet detention located on the east side of SR 535 within the Osceola Parkway interchange infield area and is bounded by Osceola Parkway on the south side and a FGT line on the north side. The wet detention pond receives runoff from on-site area along SR 535, and discharges east along Osceola Parkway to unnamed wetlands associated with Shingle Creek.

Basin 3:

The existing roadway and stormwater system within Basin 3 was constructed as part of SPN 75560-3610. Runoff from the roadway along SR 535 and SR 536 is drained by roadside ditches, side drains and cross drains to convey runoff to existing ponds located on both sides of SR 536 west of SR 535. The existing stormwater system consists of a wet detention pond in the northwest quadrant of the SR 535/SR 536 intersection interconnected with a dry detention pond in the southwest quadrant of the SR 535/SR 536 intersection. The wet detention pond receives runoff from on-site area along SR 535 and SR 536, and the dry detention pond receives runoff from SR 536. There are multiple outfalls from both the wet and dry detention ponds, but the primary discharge is towards SR 535 and to Shingle Creek.

Basin 4:

This section of International Drive and the associated stormwater system within Basin 4 was constructed as part of developer improvements for the Greene property. Runoff from the roadway along International Drive is drained by closed storm drain systems which convey runoff to an existing wet detention pond located on the south side of International Drive and west of SR 535, and a dry detention pond in the northwest quadrant of the SR 535/International Drive intersection. The ponds receive runoff from on-site area along International Drive, and discharge to unnamed wetlands that drain to Shingle Creek.

2.4.20.1 Cross Drains

Five cross drains have been identified under SR 535 and SR 536 within the project limits. A summary of the cross drain locations is provided in **Table 2-5**.

Cross Drain	Road	Location (Milepost)	Basin	Cross Drain Size and Type
CD-1	SR 535	0.600	2	2-30" RCP
CD-2	SR 535	1.037	2	2-24" RCP
CD-3	SR 535	0.382	2 (offsite)	1-24" RCP
CD-4	SR 536	1.694	3	1-3'x8' CBC
CD-5	SR 536	1.920	3	1-36" RCP

Table 2-5 - Cross Drain summary

- Cross drain CD-1 conveys runoff from the west side of SR 535 in Basin 2 to Exist. Pond 2-1
- Cross drain CD-2 conveys runoff from the west side of SR 535 to the east side of SR 535 in Basin 2. Runoff is conveyed by roadside ditch to Exist. Pond 2-1.
- Cross drain CD-3 conveys offsite runoff from the west side of SR 535 (Floodplain 2) on the north side of SR 417 to an existing ditch which runs east to Shingle Creek.
- Cross drain CD-4 is an equalizer pipe under SR 536 that interconnects Exist. Pond 3-1 and Exist. Pond 3-2.
- Cross drain CD-5 conveys runoff from the north side of SR 536 to the south side of SR 536 west of SR 535 (Floodplain 1).

2.4.20.2 Seasonal High Groundwater Table Levels

The Seasonal High Groundwater Table (SHGWT) levels at the hand auger boring locations performed along the roadway alignments and within the borings completed within the proposed stormwater ponds and FPC sites were estimated based on a review of the soil samples including natural soil indicators such as stain lines, mottling, the depth to the root layer, measured

groundwater levels in the borings, information provided in the USDA Soil Survey published by the NRCS, and the surrounding topography. Based on the borings obtained, the estimated Seasonal High Ground Water generally ranges from 0.0 to 4.5 feet below ground within Orange County and 0.0 to 4.5 in Osceola County. Within the Pond and FPC sites, the estimated SHGWT ranges from 0.5 to 7 feet below ground surface. For more details on SHGWT, see **Appendix A**.

2.4.20.3 Floodplains

Floodplain impacts resulting from the project were evaluated pursuant to Executive Order 11988 of 1977, Floodplain Management.

A Pond Siting Report and Location Hydraulics Report were prepared to document the drainage and hydrology analysis for this project and are included in the project file. The Federal Emergency Management Agency (FEMA) has developed Flood Insurance Rate Maps (FIRMs) for the study area. The relevant FIRM panel numbers are 12095C0585F and 12095C0605F for Orange County, Florida dated September 25, 2009, and 12097C0055G for Osceola County, Florida dated June 18, 2013. There are no regulatory floodways within the project limits.

There are no floodplains in the vicinity of the project within the Osceola County limits (see attached maps). There is a floodplain located on the west side of SR 535 between the Osceola/Orange County line and SR 536 within the Osceola County limits, which is designated as Zone A (no base flood elevations determined). The floodplain through this area is traversed by International Drive and SR 417, which creates 3 distinct sections, although the floodplains are hydrologically connected. The preferred alternative results in a total of 8.89 ac-ft of floodplains impacts. The FEMA FIRM panels are located in **Appendix B**.

2.5 Environmental Characteristics

2.5.1 Protected Species and Habitat

This project was evaluated for the potential presence of protected plant and animal species and their habitats in accordance with the FDOT's PD&E Manual, Part 2, Protected Species and Habitat (last updated July 1, 2023), which incorporates the requirements of the National Environmental Policy Act (NEPA) and related federal and state laws. Federal and state listed species with potential to occur in the project corridor were identified through research and coordination with US Fish and Wildlife Service, and the Florida Fish and Wildlife Conservation Commission (**Table 2-6**). There is no Critical Habitat present within the project area. Field

investigations of the project area were also conducted on multiple days and in different seasons to evaluate the potential presence of protected species and habitats.

The northwest quadrant of the intersection of SR 535 and International Drive includes an Orange County drainage easement as well as a South Florida Water Management District (SFWMD) conservation easement. Available mapping data shows overlaps between these easements and right-of-way for International Drive. It is anticipated that the Preferred Alternative may impact up to approximately 0.09 acre of SFWMD Conservation Easement. The area that is under SFWMD conservation easement is privately owned (Parcel number 34-24-28-0000-00-018) and is not under public recreational use. There are no parking areas or public access points, and no Management Plan or other documents describing recreational use were identified. There are no state-owned lands subject to review and approval by the Acquisition and Restoration Council.

	. ,			
Common Name	Scientific Name	Federal Status	State Status	Occurrence Potential
Audubon's crested caracara	Polyborus plancus audubonii	FT	-	Low
Blue-tail mole skink	Eumeces egregius lividus	FT	-	Moderate
Eastern black rail	Laterallus jamaicensis ssp. jamaicensis	FT	-	Low
Eastern indigo snake	Drymarchon corais couperi	FT	-	Low
Everglade snail kite	Rostrhamus sociabilis plumbeus	FE	-	Low
Florida burrowing owl	Athene cunicularia	-	ST	Low
Florida grasshopper sparrow	Ammodramus savannarum floridanus	FE	-	Low
Florida pine snake	Pituophis melanoleucus mugitus	-	ST	Low
Florida sandhill crane	Grus canadensis pratensis	-	ST	Low
Florida sand skink	Neoseps reynoldsi	FT	-	Moderate
Florida scrub-jay	Aphelocoma coerulescens	FT	-	Low
Gopher tortoise	Gopherus polyphemus	-	ST	Low
Little blue heron	Egretta caerulea	-	ST	Low
Red-cockaded woodpecker	Picoides borealis	FE	-	Low
Roseate spoonbill	Platalea ajaja	-	ST	Low
Southeastern American kestrel	Falco sparverius paulus	-	ST	Low
Tricolored heron	Egretta tricolor	-	ST	Low
Wood stork	Mycteria americana	FE	-	Low
Beautiful pawpaw	Deeringothamnus pulchellus	FE	-	Low
Britton's beargrass	Nolina brittoniana	FE	-	Low
Florida greeneyes	Berlandiera subacaulis	FT	-	Low
Gray's beaksedge	Rhynchospora grayi	FT	-	Low
Lewton's polygala	Polygala lewtonii	FE	-	Low
				<u>.</u>

Notes: FE = Federally Endangered, FT = Federally Threatened, and ST = State Threatened



Figure 2-11 - Sensitive Environmental Features

2.5.2 Wetlands

Major hydrologic features mapped by the USFWS National Wetlands Inventory (NWI) in the project area are shown in **Figure 2-11** and **Figure 2-12**. A freshwater pond within a golf course is located north of SR 536 and west of SR 535 that intersects a small portion of the project area. There are also two patches of freshwater forested/shrub wetland that intersect the project area; one patch is located south of International Drive and stretches down south of SR 417 to the border of Orange and Osceola County, and another patch is located north of West Osceola Parkway and east of SR 535.

The project area contains high quality wetlands that are part of the natural drainage system of wetlands across central Florida. SFWMD land use maps that include wetlands are provided on **Figure 2-12** and **2-13**. Aside from wetlands in swales or irrigation features, six wetland or OSW types are mapped by SFWMD in the project area. They are Reservoirs (FLUCCS 5300), Lakes (FLUCCS 5200), Mixed Wetland Hardwoods (FLUCCS 6170), Cypress (FLUCCS 6210), Cypress – Mixed Hardwoods (FLUCCS 6216), and Wetland Forested Mixed (FLUCCS 6300). Wetlands and OSW in the project area mapped by the USFWS NWI are shown in **Figure 2-13**. They include freshwater emergent wetlands, freshwater forested/shrub wetlands, freshwater ponds, and riverine areas. After field reconnaissance it was verified that no wetlands are present within the existing right of way.



Figure 2-12 - Hydrologic Features in Osceola County Project Area



Figure 2-13 - Hydrologic Features in Orange County Project Area

2.5.3 Sole Source Aquifer

The project sits atop the Biscayne Aquifer, a Sole Source Aquifer as identified by the U.S. Environmental Protection Agency (USEPA). This project is located within the SFWMD's Reedy Creek and Shingle Creek Basins. The USEPA determined the project is not expected to cause a significant impact to the Aquifer or its recharge zone.

2.5.4 Potentially Contaminated Sites

A total of 22 sites of potential contamination risk were identified, including 1 High Risk, 8 Medium Risk, and 13 Low Risk sites. Information on each site is summarized in **Table 2-7** and shown on **Figure 2-14 and Figure 2-15**. Individual site descriptions including field observations and a summary of available documentation are provided in the text below.

Site No.	Facility Name	Address	Facility ID (FDEP/RCRA)	Risk Rating
1	7-Eleven Food Store #27584	2975 Vineland Rd	8944621, Discharge ID: 9311	Medium
2	Shell-Southbridge #285	3148 Vineland Rd	9063981, Discharge ID: 59807	Medium
3	RMA	3490 Polynesian Isle Blvd	8945275, Discharge ID: 59075	Low
4	Central FL Pipeline-Release	Hwy 535 & Polynesian Isle Blvd	9800541, Discharge ID: 50141	Low
5	7-Eleven Food Store #29775	8250 World Center Dr	9201333, Discharge ID: 57943	High
6	Progress Energy SARAP Lake Bryan Substation	8350 Lake Bryan Beach Blvd	122410, ERIC ID: ERIC_12781	Low
7	Daneta LLC	13725 SR 535	9808007, Discharge ID: 60792	Low
8	Speedway #6434	3270 Vineland Rd	9803008	Medium
9	Publix Super Market #351	2915 Vineland Rd	9810287	Low
10	Embassy Suites Orlando-LK Buena Vista South	4955 Kyngs Heath Rd	9813192	Low

 Table 2-7 - Site Information

Site	Facility Name	Address	Facility ID	Risk Rating
NO.			(FDEP/RCRA)	
11	W Kissimmee Central Office	3080 Vineland Rd	8627084	Low
12	Wawa Food Market #5116	3140 Vineland Rd	9813385	Medium
13	Murphy USA #7190	3256 Vineland Rd	9807115	Medium
14	Publix Super Market #1607	3221 Vineland Rd	9815653	Low
15	Racetrac #2305	15570 Apopka Vineland Rd	9813548	Medium
16	Orange Co Utility - PS SW #3597	14344 Hwy 535	9401271	Low
17	Wal-Mart Supercenter #5420	3250 Vineland Rd	9807198	Low
18	Rebel #861	7900 World Center Dr	9808444	Medium
19	Hawkeye Heli-Tours LLC	5071 W Irlo Bronson Hwy	9814492	Low
20	Sun Inn and Suites	5020 W Irlo Bronson Hwy	94990	Low
21	Orlando World Center Marriott	8701 World Center Drive	8627488	Low
22	Florida Midland Railroad	Along east side of SR 535	N/A	Medium

Table 2-8 - Site Information (Cont.)







Figure 2-15 - Contaminated Sites in Orange County

2.5.5 Utilities

Utility companies with known facilities within the proposed project limits were contacted and requested to submit as-built plans and all proposed utilities within the project limits. **Table 2-8** presents a list of utilities within the project limits. Approximate locations of the facilities are tabulated from the utility responses received.

Utility Agency/Owner	Facility Type	Contact Person	Phone	Email
AT&T Distribution	Communications	Alan Reynolds	(407) 351-8180	ar2916@att.com
Charter		Jonathan		
Communications	Communications	McLeroy	(407) 467-6147	jonathan.mcleroy@charter.com
Comcast	Communications	Cesar Rivera	(407) 312-5944	cesar_rivera@comcast.com
Duke Energy	Electric	Tomas Macias	(407) 938-6619	tomas.macias@duke-energy.com
Florida Gas				
Transmission	Gas	Joseph Sanchez	(407) 838-7171	joseph.e.sanchez@energytransfer.com
Kinder-Morgan				
(Central Florida				
Pipeline, LLC)	Fuel	Mark Clark	(727) 271-0024	mark.clark@kindermorgan.com
Kissimmee Utility			(407) 933-7777	
Authority	Electric	Carlos Galindez	X6153	cgalindez@kua.com
Lumen (Centurylink)	Communications	Bill McCloud	(850) 599-1444	william.mccloud@lumen.com
Orange County		Christina M.		
Utilities	Water/Sewer	Crosby	(407) 254-9706	christina.crosby@ocfl.net
Osceola County	Irrigation	Juan Diaz	(407) 448-0761	juan.diaz@ferrovialservices.com
Orlando Utilities				
Commission	Electric	Robert Scheuerle	(407) 434-2107	rscheuerle@ouc.com
Summit Broadband	Communications	Michelle Daniel	(407) 920-7468	mdaniel@summit-broadband.com
TECO People's Gas				
Systems	Gas	Shawn Winsor	(407)420-6663	swinsor@tecoenergy.com
TOHO Water				
Authority	Water/Sewer	Calvin Carrero	(407)944-5044	ccarrero@tohowater.com
Uniti Fiber	Communications	James Mosley	(251)654-8216	james.mosley@uniti.com
Verizon/ MCI	Communications	Timothy Cole	(407)506-8635	timothy.cole@version.com

Table 2-9 - Existing Utilities

AT&T Distribution owns the following facilities within the project's study limits:

- 144-count fiber optic cable (FOC) commencing at the south project limits near US-192 along the west right of way of SR-535.
- 24-count FOC along the north right of way of Kyngs Heath Rd. west of SR-535.
- 144-count FOC along the east right of way of SR-535 north of Kyngs Heath Rd.
- 144-count FOC along the south right of way of Osceola Pkwy.
- 48-count FOC along the east right of way of SR-535 extending north of Poinciana Blvd.
- 48-count and 60-count FOC along the east right of way of SR-535 north of International Dr.
- 60-count FOC along north right of way of International Drive crossing SR-535.
- 216-count FOC along the east right of way of SR-535 between International Dr. and SR-536 (World Center Dr.) and extending east along the north right of way of SR-536.
- 48-count FOC west of SR-535 along the north right of way of SR-536.
- 96-count FOC along the east right of way of SR-535 north of SR-536.
- Various cabinets, handholes, manholes, related utility appurtenances, and joint-use attachments to existing utility poles.

Charter Communications owns the following facilities within the project's study limits:

- Aerial communications cable attached to utility poles along the east right of way of SR-535 south of Poinciana Blvd
- Aerial communications cable attached to utility poles along the east right of way of SR-535 north of Poinciana Blvd with concurrent underground facilities located within 1.5" to 2" conduit.
- Various handholes and related utility appurtenances.

Comcast owns the following facilities within the project's study limits:

- Underground facilities along the west right of way of SR-535 from Polynesian Isle Blvd. to north of SR-417.
- Underground facilities along the east right of way of SR-535 from north of SR-417 to SR-536.
- Underground facilities along the south right of way of SR-536 east of SR-535.

Duke Energy owns the following facilities within the project's study limits:

 7.2/12.47 kV overhead electric (OE) distribution lines and poles along the west right of way of SR-535 between Polynesian Isle Blvd. to International Dr.

- OE underbuilt distribution (7.2/12.47 kV) and transmission pole line along the east right of way of SR-535 from Osceola County line to north of SR-536.
- 7.2/12.47 kV buried electric (BE) distribution along the south right of way of International Dr. west of SR-535.
- 7.2-12.47 kV BE extending from the Duke Energy substation located on the east side of SR-535 north of SR-536 crossing the SR-535/536 intersection and continuing west along the south right of way of SR-536
- OE underbuilt distribution (7.2/12.47 kV) and transmission lines crossing SR-535 north of SR-536 extending from the Duke Energy substation.
- BE distribution along the west right of way of SR-535 north of SR-536.
- Various distribution-type and transmission-type poles, handholes, switch cabinets, polemounted and pad-mounted transformers, pole risers, down guys and other related utility appurtenances.

Florida Gas Transmission Co. owns the following facilities within the project's study limits:

- 18" steel pipeline crossing SR-535 along the north right of way of Osceola Pkwy.
- FGT-Reedy Creek take-off valve and regulator station located east of SR-535 along the north right of way of Osceola Pkwy.
- 6.625" steel pipeline along the east right of way of SR-535 extending between the FGT-Reedy Creek take-off valve/regulator station and the FGT-TECO People Gas Systems Orlando Meter Station located north of SR-536 east of SR-535 (Orlando Southwest Measurement Station) within an FGT-owned easement.

Kinder Morgan/Central Florida Pipeline, LLC owns the following facilities within the project's study limits:

 16" petroleum fuel pipeline crossing SR-535 at the Osceola County line, generally within an existing OUC transmission corridor located east and west of SR-535.

Kissimmee Utility Authority owns the following facilities within the project's study limits:

- 25kV BE crossing SR-535 along the south right of way of Kyngs Heath Rd.
- OE distribution line along the west right of way of SR-535 from north of Kyngs Heath Rd. to Osceola Pkwy.

- OE transmission line along the east right of way of SR-535 from south of Osceola Pkwy.
 to north of Osceola Pkwy.
- OE transmission line with underbuilt distribution along the east right of way of SR-535 from north of Osceola Pkwy. to Polynesian Isle Blvd.
- Various distribution-type and transmission-type poles, handholes, switch cabinets, polemounted and pad-mounted transformers, pole risers, down guys and other related utility appurtenances.

Lumen (Centurylink) owns the following facilities within the project's study limits:

- Local fiber/underground (UG) copper along the east right of way of SR-535 south of Kyngs Heath Rd.
- Local fiber/UG copper along the east right of way of SR-535 from north of Calypso Cay Way to Osceola County line.
- Local fiber/UG copper along west right of way of SR-535 from north of Osceola County line to SR-536. and continuing west along the south right of way of SR-536.
- Local fiber/UG copper along the east right of way of SR-535 continuing to the north project limits.
- Metro optical ground wire affixed to Duke Energy Transmission poles crossing SR-535 north of SR-536 and along the east right of way of SR-535 north of SR-536.
- Various handholes and related utility appurtenances.

Orange County Utilities owns the following facilities within the project's study limits:

- 4" ductile iron pipe (DIP) force main (FM) along the west right of way of SR-535 from south of SR-417 to SR-536 and continuing west along the south right of way of SR-536.
- 12" polyvinyl chloride pipe (PVC) FM along the west right of way of SR-535 north of SR-536.
- 20" DIP FM crossing SR-535 north of SR-536 within a 36" steel casing.
- 10" PVC FM along the east right of way of SR-535 from south of SR-417 to north of SR-536 with a crossing south of SR-417.
- 20" DIP FM along the north right of way of SR-536 east of SR-535.
- 8" PVC watermain (WM) along the west right of way of SR-535 from Osceola County line and crossing SR-535 within a 30" steel casing south of SR-417.
- 16" DIP WM along the east right of way of SR-535 from south of SR-417 to SR-536.
- 16" high density polyethylene (HDPE) WM pipe crossing SR-535 north of SR-417.

- 12" PVC WM along the south right of way of International Dr. crossing SR-535 within a 30" steel casing and connecting to the 16" DIP WM along the east right of way of SR-535.
- 24" DIP WM along the east right of way of SR-535 north of SR-536 within a casing across SR-536 and connecting to the 24" DIP WM along the south right of way of SR-536 east of SR-535.
- 4" PVC Reclaimed WM along International Dr. west of SR-535.
- 12" PVC Reclaimed WM along west right of way of SR-535 north of SR-536.
- 12" PVC Reclaimed WM within a 24" steel casing crossing SR-535 north of SR-536 and connecting to an existing 24" DIP Reclaimed WM along the east right of way of SR-535 continuing east long the north right of way of SR-536.
- 6" PVC Reclaimed WM along the east right of way of SR-535 connecting to an existing 12" PVC Reclaimed WM along SR-536 east of SR-535.

Orlando Utilities Commission owns the following facilities within the project's study limits:

 OE transmission lines crossing SR-535 along the Osceola County line north of Polynesian Isle Blvd. within an existing easement corridor located east and west of the SR-535 right of way.

Osceola County owns the following facilities within the project's study limits:

 Irrigation lines along the SR-535 east and west right of way and along the median between US-192 and SR-417.

Summit Broadband owns the following facilities within the project's study limits:

- 24-count fiber in (3) 1.25" HDPE conduit crossing SR-55 along the north right of way of Kyngs Heath Rd.
- 288-count fiber in (3) 1.25" HDPE conduit along the west right of way of SR-535 from Osceola Pkwy. to Poinciana Blvd.
- 144-count and 288-count aerial fiber along the east right of way of SR-535 from south of Poinciana Blvd. to south of SR-417.
- 144-count and 288-count aerial fiber along the east right of way of SR-535 from north of SR-417 to north of SR-536.

TECO Peoples Gas Systems owns the following facilities within the project's study limits:

- 4" coated steel (CS) gas main (GM) along the east right of way of SR-535 between Calypso Way and south of SR-417.
- 4" CS GM along the north right of way of US-192 crossing SR-535.
- 4" CS GM crossing SR-535 at Kyngs Heath Rd.
- 4" CS GM crossing SR-535 at Calypso Cay Way.
- 4" CS GM crossing SR-535 at Poinciana Blvd.
- 2" CS GM crossing SR-535 south of Polynesian Isle Blvd.
- 6" CS GM crossing SR-535 at International Dr.
- 6" CS GM along the east right of way of SR-535 from south of SR-417 to north of SR-536.
- 6" CS GM crossing SR-535 north of SR-536.
- 6" CS GM east along SR-536 connecting to the 6" CS GM along SR-535.

Toho Water Authority owns the following facilities within the project's study limits:

- 8" WM, valves, and appurtenances along the south right of way of US-192.
- 10" Gravity Sewer Main, manholes, and appurtenances.
- 12" Gravity Sewer Main and manholes across SR-535 at Kyngs Heath Rd.
- WM (unspecified diameter) across SR-535 at Kyngs Heath Rd.
- 10" WM along the west right of way of SR-535 from Kyngs Heath Rd. to south of Osceola Parkway.
- 12" FM crossing SR-535 south of Osceola Parkway and extending across Osceola Parkway to an existing lift station along N. Poinciana Blvd. west of SR-535.
- A 16" reclaimed WM along the north side of Osceola Parkway crossing SR-535.
- 24" WM along the north side of Osceola Parkway crossing SR-535.
- 6" WM along the west right of way of SR-535 from Poinciana Blvd. to the Osceola County line north of Polynesian Isle Blvd.
- 10" WM crossing SR-535 at Interior Street (south of Polynesian Isle Blvd.).
- 6" WM extending west along the south right of way of Polynesian Isle Blvd. from SR-535.
- 8" Gravity Sewer Main and manholes along the north and south right of way of Polynesian Isle Blvd. west of SR-535.

Uniti Fiber owns the following facilities within the project's study limits:

 (3) 1.25" ducts with 3/4" cable along the east right of way of SR-535 north of SR-536 and extending from the existing Duke Energy substation.

Verizon/MCI owns the following facilities within the project's study limits:

• Fiber optic cable along the SR-535 project limits.

2.6 Roadway Operational Conditions

2.6.1 Existing Lane Geometry

Figure 2-16 and Figure 2-17 show the existing year (2020) intersection geometry for all the intersections evaluated in this study. The existing year intersection geometry information was obtained and verified from field visits and aerial photographs. The existing geometry plays a vital role in assessing the intersection Level of Service (LOS). LOS is a qualitative measure of traffic operations. LOS designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. The existing geometry will be considered as one of the factors in determining potential intersection improvements to accommodate the travel demand.





2.6.2 Existing AADT

The traffic count information available from the data collection effort was used to develop existing traffic characteristics for the SR 535 study corridor and the side streets. Based on a review of the data collected, the following observations were made:

- Several Orange County sites show that the Average Daily Traffic (ADT) data collected in the month of October 2019 is substantially higher than FTO and data from other sources within the study area.
- SR 535 data between SR 536 and Osceola Parkway appear to be consistent between different data sources (FTO and County sources), indicating less variability between different times of the year.
- SR 535 volume and classification counts between Osceola Parkway and US 192 appear to show variability in AADT compared to FTO and County sources. It was also observed that the 72-hour classification count between Poinciana Boulevard and Polynesian Isle Boulevard (42,500) was lower than both FTO and Osceola County AADT.
- For a majority of the locations, the 2019 AADT from FTO or County were generally higher than the traffic data collected during 2020.

Based on above findings and observations, FTO counts were used along SR 535.

Table 2-10 summarizes the existing (2020) AADTs and source for all roadways within the study area. Growth rates, based on appropriate trends, were applied to 2019 FTO traffic data to develop 2020 AADTs. Appropriate seasonal factors were applied to collected traffic data for 2020 AADTs based on collected data. Seasonal factors ranged from 0.98 to 1.02 depending on the date of collection and location (Orange or Osceola Counties).

The roadway arterial operational analysis was performed for the existing year traffic conditions for AM and PM peak hours using Synchro 11 software. In addition, the target LOS for this project is LOS D. **Table 2-11**, summarizes the speed and arterial LOS for the SR 535 study corridor. Detailed Synchro Arterial LOS reports are provided in the PTAR, a companion document to this report.

During the AM peak hour condition, five (5) segments show deficient operations; three (3) of which are noted on northbound segments while two (2) are noted on southbound segments. Overall, the northbound and southbound SR 535 arterial segments operate at LOS E and LOS D,

respectively. During the PM peak hour condition, six (6) segments show deficient operations; three (3) of which are noted on northbound segments and three (3) are noted on southbound segments. Overall, northbound SR 535 arterial segments operate at LOS D while southbound SR 535 operates at LOS E. In general, the southbound SR 535 segments between Calypso Cay Way and Polynesian Isle Boulevard operate at LOS D or better, which may be attributed to the third southbound lane.

Intersection	Segments	2020 AADT	Collected (C) or Estimated (E)
	Lake Bryan Beach Blvd, west of SR 535	500	E
SR 535 @ Lake	Lake Bryan Beach Blvd, East of SR 535	1,400	С
Bryan Beach Blvd	SR 535, North of Lake Bryan Beach Blvd	50,000	С
	SR 535, South of Lake Bryan Beach Blvd	51,500	С
	World Center Dr, west of SR 535	37,500	С
SR 535 @ World	World Center Dr, East of SR 535	36,000	С
Center Dr	SR 535, North of World Center Dr	51,500	С
	SR 535, South of World Center Dr	49,500	С
	International Dr S, West of SR 535	6,400	С
SR 535 @	International Dr S, East of SR 535	-	
International Dr S	SR 535, North of International Dr S	49,500	С
	SR 535, South of International Dr S	48,000	С
	Lake Buena Vista Factory Stores Dr, west of SR 535	500	С
Buena Vista	Lake Buena Vista Factory Stores Dr, East of SR 535	4,900	С
Factory Stores Dr	SR 535, North of Lake Buena Vista Factory Stores Dr	48,000	С
	SR 535, South Lake Buena Vista Factory Stores Dr	56,000	С
SP 535 @ Modian	Median Opening North, East of SR 535	1,500	E
Opening N	SR 535, North of Median Opening North	56,000	С
	SR 535, South of Median Opening North	56,000	С
	Polynesian Isle Blvd, west of SR 535	12,000	С
SR 535 @ Polynesian Isle	Polynesian Isle Blvd, East of SR 535	4,300	С
Blvd	SR 535, North of Polynesian Isle Blvd	56,000	С
	SR 535, South of Polynesian Isle Blvd	54,000	С

Table 2-10 - Existing 2020 Annual Average Daily Traffic (AADT)

Intersection	Segments	2020 AADT	Collected (C) or Estimated (E)
	Median Opening S, West of SR 535	3,400	E
SR 535 @ Median	Median Opening S, East of SR 535	1,900	E
Opening S	SR 535, North of Median Opening S	54,000	С
	SR 535, South of Median Opening S	54,000	С
	Poinciana Blvd, west of SR 535	21,500	С
SR 535 @ Poinciana	Poinciana Blvd, East of SR 535	7,200	С
Blvd	SR 535, North of Poinciana Blvd	54,000	С
	SR 535, South of Poinciana Blvd	39,500	С
SR 535 @ Osceola	Osceola Pkwy EB On Ramp	5,100	С
Pkwy On Ramps	SR 535, North of Osceola Pkwy On Ramps	39,500	С
(North)	SR 535, South of Osceola Pkwy On Ramps	33,500	С
	Calypso Cay Way, west of SR 535	1,800	С
SR 535 @ Osceola	Osceola Pkwy On Ramp (WB), East of SR 535	2,000	С
(South)	SR 535, North of Osceola Pkwy On Ramp	33,500	С
	SR 535, South of Osceola Pkwy On Ramp	32,500	С
	Kyngs Heath Rd, west of SR 535	1,900	С
SR 535 @ Kyngs	Kyngs Heath Rd, East of SR 535	2,700	С
Heath Rd	SR 535, North of Kyngs Heath Rd	32,500	С
	SR 535, South of Kyngs Heath Rd	29,500	С
	US 192, west of SR 535	37,000	С
SR 535 @ US 192	US 192, East of SR 535	49,000	С
C C	SR 535, North of US 192	29,500	С
	SR 535, South of US 192	200	E
	World Center Dr, West of International Dr	36,000	С
World Center Dr @	SR 417 Ramp	38,500	С
International Dr	International Dr, North of World Center Dr	25,000	С
	International Dr, South of World Center Dr	21,000	E

Table 2-10 - Existing 2020 Annual Average Daily Traffic (AADT) (Cont'd)

Intersection	Segments	2020 AADT	Collected (C) or Estimated (E)
	US 192, west of Storey Lake Blvd	49,000	С
US 192 @ Storey Lake Blvd	US 192, east of Storey Lake Blvd	60,000	С
	Storey Lake Blvd, north of US 192	3,000	С
	US 192, west of Poinciana Blvd	45,000	E
US 192 @ N	US 192, east of Poinciana Blvd	37,000	С
Poinciana Blvd	Poinciana Blvd, north of US 192	17,500	E
	Poinciana Blvd, south of US 192	27,000	E
W Osceola Ramp @	Osceola ramp, north of Poinciana Blvd	3,700	С
N Poinciana Blvd (W	Poinciana Blvd, east of Osceola On Ramp	21,500	С
of SR 535)	Poinciana Blvd, west of Osceola Off Ramp	25,500	С
W Osceola Off Ramp	Osceola Off ramp, South of Poinciana Blvd	3,400	С
@ N Poinciana Blvd	Poinciana Blvd, East of Osceola Off Ramp	5,500	E
(WB)	Poinciana Blvd, West of Osceola Off Ramp	7,200	С
	SR 536, west of World Gateway Dr	40,500	E
World Gateway Drive	SR 536, east of World Gateway Dr	37,500	С
Drive	World Gateway Dr, north of SR 536	9,600	E
	World Gateway Dr, south of SR 536	16,700	E
	International Dr, west of World Gateway Dr	10,500	С
@ International Drive	International Dr, east of World Gateway Dr	6,400	С
	World Gateway Dr, north of International Dr	9,600	E
	World Center Dr, west of Buena Vista Suites	36,000	С
World Center Dr @	World Center Dr, east of Buena Vista Suites	36,000	С
Buena Vista Suites	Buena Vista Suites, north of World Center Dr	1,000	E
	Buena Vista Suites, south of World Center Dr	1,300	E
World Center Dr @	World Center Dr, west of Caribe Royale Orlando	36,000	С
Caribe Royale	World Center Dr, east of Caribe Royale Orlando	36,000	С
Orlando	Caribe Royale Orlando, North of World Center Dr	1,650	E

 Table 2-10 - Existing 2020 Annual Average Daily Traffic (AADT) (Cont'd)
Time of	Artorial	Table 2-1	T - Existing Arterial LOS –	Section	Speed	.s Travel		Arte	rial Speed
Day	Segment	From	То	Length ¹ (ft)	Limit (mph)	Time (sec)	(mph)	%	LOS
	Northboun								
		US 192	Kyngs Heath Road	1003	45	28.7	23.6	43%	D
		Kyngs Heath Road	Osceola Pkwy on-ramp	1637	50	33.0	33.6	68%	В
		Osceola Pkwy on-ramp	Poinciana Blvd	1056	50	40.7	17.9	33%	E
		Poinciana Blvd	Polynesian Isle Blyd	1901	50	70.6	18.5	38%	E
		Polynesian Isle Blyd	Lake Buena Vista Factory Stores	1742	50	54.6	21.7	43%	D
		Lake Buena Vista Factory Stores	International Dr	2112	50	43.8	32.5	65%	С
		International Dr	SR 536/World Center Dr	1373	50	95.0	10.0	20%	F
			Total	2.05	50	366.4	17.8	39%	E
	Southbour	nd							
AM		Entry Link	SR 536/World Center Dr	4594	50	131.7	23.8	48%	D
		SR 536/World Center Dr	International Dr	1373	50	52.7	18.0	36%	Е
		International Dr	Lake Buena Vista Factory Stores	2112	50	47.1	30.3	61%	С
		Lake Buena Vista Factory		1710					2
		Stores	Polynesian Isle Blvd	1742	50	44.5	26.6	53%	С
		Polynesian Isle Blvd	Poinciana Blvd	1901	50	60.1	21.8	44%	D
		Poinciana Blvd	Osceola Pkwy on-ramp	1056	50	20.3	35.9	72%	В
		Osceola Pkwy on-ramp	Kyngs Heath Road	1637	50	42.0	26.4	53%	С
		Kyngs Heath Road	US 192	1003	45	133.5	5.1	14%	F
			Total	2.92	50	531.9	19.8	42%	E
	Northboun	d							
		US 192	Kyngs Heath Road	1003	45	34.4	19.7	44%	D
		Kyngs Heath Road	Osceola Pkwy on-ramp	1637	50	36.5	30.4	61%	С
		Osceola Pkwy on-ramp	Poinciana Blvd	1056	50	42.1	17.3	35%	E
		Poinciana Blvd	Polynesian Isle Blvd	1901	50	73.3	17.9	36%	E
		Polynesian Isle Blvd	Lake Buena Vista Factory Stores	1742	50	53.8	22.0	44%	D
		Lake Buena Vista Factory Stores	International Dr	2112	50	43.1	33.1	66%	С
		International Dr	SR 536/World Center Dr	1373	50	83.6	11.3	23%	F
			Total	2.05	50	366.8	17.7	40%	E
PM	Southbour	nd							
		Entry Link	SR 536/World Center Dr	4594	50	147.5	21.2	42%	D
		SR 536/World Center Dr	International Dr	1373	50	81.3	11.6	23%	F
		International Dr	Lake Buena Vista Factory Stores	2112	50	81.2	17.5	35%	E
		Lake Buena Vista Factory Stores	Polynesian Isle Blvd	1742	50	52.3	22.6	45%	D
		Polynesian Isle Blvd	Poinciana Blvd	1901	50	59.2	22.1	44%	D

	Total	2.92 50	682.4	15.4 37%	F
Kyngs Heath Road	US 192	1003 45	199.5	3.4 18%	F
Osceola Pkwy on-ramp	Kyngs Heath Road	1637 50	41.1	27.0 54%	С
Poinciana Blvd	Osceola Pkwy on-ramp	1056 50	20.3	35.9 72%	В

¹ Length based on Arterial LOS Synchro Report length converted from miles to feet

² LOS based on HCM 6th Edition methodology (Avg. Travel Speed Threshold by Base FFS [Speed Limit]). Arterial LOS Synchro Report is based on HCM 2000 methodology; therefore, results may vary.

2.6.3 Crash Data Review and Summary

Crash data for the five-year period of January 1, 2014 through December 31, 2018 was obtained from the FDOT Crash Analysis Reporting (CAR) System database and Signal Four Analytics and is summarized in **Table 2-12**. In addition to the five-year crash summaries, the analysis utilized crash rates, statewide average crash rates and High Crash Location lists to identify high crash locations. Detailed crash data and collision diagrams are located in the PTAR. Based on the crash data obtained from CAR System and Signal Four Analytics for the five-year period, a total of 1,809 crashes were identified within the study area. Three-hundred-and-four (304) crashes were reported in 2014, 358 crashes in 2015, 391 crashes in 2016, 413 crashes in 2017, and 343 crashes in 2018.

Crash Severity & Type			Total				
Crush	seventy a Type	2014	2015	2016	2017	2018	lotai
	Fatal	3	1	2	0	0	6
Severity	Injury	96	151	131	146	144	668
	PDO	205	206	258	267	199	1135
	Rear-End	176	196	235	220	179	1006
	Head-On	1	1	1	0	0	3
	Angle	21	28	22	26	30	127
	Left-Turn	33	48	41	75	59	256
	Right-Turn	4	6	3	4	4	21
	Sideswipe	31	44	43	45	41	204
Crash	Backed Into	0	0	0	0	1	1
Туре	Pedestrian	5	0	3	2	1	11
	Pedalcycle	1	2	3	3	0	9
	Fixed Objects	9	5	11	8	8	41
	Other Non-Fixed Objects	1	2	0	1	0	4
	Non-Collisions	2	5	5	3	1	16
	Other	20	21	24	26	19	110
	Overall	304	358	391	413	343	1809

Table 2-12 Crash Summary

Six-hundred and sixty-eight (668) crashes involving injuries were reported during the five-year period. In addition, three (3) fatal crashes were recorded in 2014, one (1) in 2015, and two (2) in 2016. Rear-end crashes were the most reported crash type, accounting for 1,006 crashes (56% of all crashes). Left Turn crashes were the second highest type of crashes accounting for 256 crashes (14% of all crashes). Most of the crashes (64%) occurred during the daytime and the majority of crashes (89%) under dry conditions.

2.6.4 Railroad Crossings

This corridor does not have any railroad crossings within the project limits.

2.6.5 Noise Walls and Perimeter Walls

This corridor does not have any noise or perimeter walls within the project limits.

2.6.6 Intelligent Transportation Systems (ITS)/Transportation System Management and Operations (TSM&O) Features

The 2.35-mile SR 535 corridor from U.S. 192 to north of SR 536 experiences substantial existing and projected capacity deficiencies as well as various safety deficiencies. This is noted namely towards the northern terminus of the project where access issues arise on roadways which service Disney's Epcot Center and Magic Kingdom. SR 535, within the project corridor, includes ten (10) intersections, comprised of eight (8) signalized and two (2) unsignalized intersections. There are four (4) principal roadway crossings/intersections within the project limits which include: U.S. 192 (W. Irlo Bronson Memorial Highway), Osceola Parkway (C.R. 522), SR 417 (Central Florida GreeneWay), and SR 536 (SR 536). SR 535 experiences frequent crashes and recurring congestion. From 2014 to 2018 there were 4 fatal crashes, 463 injury crashes, and 514 property damage only crashes along SR 535.

Signal controllers along the corridor communicate with hub locations using a Layer 2 Managed Field Ethernet Switch located in each signal cabinet. These switches relay information back to the FDOT Regional Transportation Management Center (RTMC) in Sanford via Layer 3 Networks, which are managed by the respective agencies. Various Advanced Traffic Management System (ATMS) software systems are utilized for the monitoring and control of their respective signal and ITS devices.

The purpose of this ConOps is to review the existing system and identify any additional needs along the corridor for consideration during the design phase of the project. The overall study was initiated with a detailed comprehensive analysis of existing and projected substandard conditions.

Overall, some of the most critical potential needs identified include transportation demand, multimodality, safety/crash rates, and planning consistency, among others.

The objective of this ConOps is to identify additional needs and shortcomings along this corridor that will enable FDOT District 5 and its partners to more efficiently monitor and control traffic along the corridor and provide Performance Measures to document the benefits of this system. By providing these enhancements, road users will benefit from fewer crashes and reduced crash severity in support of FDOT's Target Zero Initiatives as well as less congestion, shorter travel times, and lower fuel consumption and emissions. In addition, the technologies considered for deployment along the corridor would allow incident responders to have signal priority, emergency vehicle preemption, as well as information dissemination to their On Board Units (OBU), if available.

The scope of this effort is to identify enhancements to the corridor as noted previously. The Design Team will complete all Systems Engineering documentation including complete full Signed and Sealed design plans. Proposed devices are anticipated to be on the FDOT approved products list (APL). The contractor will be responsible for installation of all FDOT procured devices, furnishing and installing all other devices, and any wiring and associated infrastructure as needed.

2.6.6.1 Operational Constraints

Overall, the project corridor is equipped with numerous ITS devices and monitored in real time. Operations are presently hindered by:

- Traffic signal controllers firmware in Osceola County not supporting ATSPM capabilities
- Lack of Dynamic Message Signs to support travel information dissemination
- Gap in CCTV coverage at Poinciana Boulevard
- Lack of EVP at signalized intersections for more efficient emergency response travel times.

2.6.6.2 Existing System

The existing conditions of the SR 535 corridor include numerous ITS devices for effective traffic management and monitoring. The study corridor includes:

- One (1) CFX owned CCTV
- Five (5) county owned CCTVs
- Two (2) Bluetooth/Roadside Units (BT/RSUs)

- One (1) CFX owned DMS for northbound traffic approaching International Drive
- Fiber communications owned by FDOT and maintained by the Counties
- Automated Traffic Signal Performance Measures (ATSPMs) for the Orange County signalized intersections
- Active traffic management/monitoring from the RTMC

In summary, these devices provide the ability to track real-time traffic conditions and respond quickly to incidents or congestion. FDOT has full access including Pan-Tilt-Zoom control capabilities of the county owned CCTVs from the RTMC. Overall, there are only a few gaps in the monitored corridor. Finally it should be noted that SR 535 is utilized as a Priority 1 diversion route for incidents that occur on I-4 southbound, just north of the project.

Existing ITS devices along the corridor are illustrated in Figure 2-18 - Existing ITS Devices.

2.6.6.3 Existing ITS Devices

2.6.6.3.1 Orange County

- World Center Drive
 - At the intersection of World Center Drive and SR 535, the CCTV camera is located in the northeast quadrant. This CCTV camera provides detailed coverage of the intersection, with a direct view of the north, south, and east approaches, as well as the outgoing traffic moving from east to west.
- Central Florida GreeneWay (CFX Owned Roadway)
 - The DMS faces cars going northbound and is located just south of Central GreeneWay overpass. While relatively small when compared to other DMS sign, it can still be seen from the Lake Buena Vista Factory Stores Drive intersection.
- Lake Buena Vista Factory Store Drive
 - At the intersection of Lake Buena Vista Factory Store Drive and SR 535, the CCTV camera is located in the northeast quadrant. This CCTV camera provides thorough coverage of the intersection, with a direct view of the north and south approaches and can also see the traffic coming out of the RaceTrac gas station situated at the southwest corner of the intersection.



Figure 2-18 - Existing ITS Devices

2.6.6.3.2 Osceola County

- Polynesian Isle Boulevard
 - At the intersection of Polynesian Isle Boulevard and SR 535, the CCTV camera is located in the northeast quadrant. This CCTV camera provides thorough coverage of the intersection, with a direct view of the north, south, and east approaches, as well as the outgoing traffic moving from east to west.
- W Osceola Parkway
 - At the intersection of W Osceola Parkway and SR 535, the CCTV camera is located in the northeast quadrant. This CCTV camera provides comprehensive coverage of the intersection, with a direct view of the north and south approaches, as well as the outgoing traffic moving from west to east from the left-turn movements at the intersection.
- US 192/W Irlo Bronson Memorial Highway
 - At the intersection of W Irlo Bronson Memorial Highway and SR 535, the CCTV camera is positioned on the mast arm in the northwest quadrant. From this viewpoint, it offers a clear and unrestricted view of all four approaches: north, south, east, and west.

3.0 FUTURE CONDITIONS

3.1 Transportation Plan Review

A RRR (FM# 445299-1) that will mill and resurface SR 535 from north of US 192 to south of International Drive is in design. Construction is anticipated to begin Summer of 2024.

Based on coordination with the Department, the following three Developer Partnership Projects (also shown on **Figure 3-1**) were added to the Build network since they are not in the CFRPM v7.0 2045 Cost Feasible network: Coordination between the County and the projects is ongoing.

- International Drive Extension (SR 535 to World Center Drive)
- Poinciana Boulevard Extension North (Lake Buena Vista Factory Stores Drive to International Drive Extension)
- Polynesian Isle Boulevard (North of County line to Poinciana Boulevard Extension)

3.2 Local Policies

The Osceola County Trails Prioritization and Feasibility Study (Study) developed and documents a strategy for an interconnected trail network which has been adopted into the County's Comprehensive Plan Transportation Element. This Study calls for a trail along SR 535 to serve as a System Trail.

MetroPlan Orlando has outlined SR 535 north of World Center Drive (SR 536) is constrained to six lanes. MetroPlan Orlando as well as Orange and Osceola County staff expressed safety concerns about a potential eight-lane section.

3.3 Context Classification

The future SR 535 section within and adjacent to this project will serve as an effective minor arterial to facilitate mobility and access to abutting land uses in the area. In general terms, this facility has a future classification of C3C-Suburban Commercial since it will serve "mostly non-residential uses with large building footprints and large parking lots network". The Context Classification Form was approved October 28, 2020.

3.4 Target Speed

Target Speed is the highest speed at which vehicles should operate on a thoroughfare along the corridor, which is consistent with the adjacent land uses, mobility for motor vehicles and

supportive environment for pedestrians, bicyclists, etc. The Target Speed Recommendation Report was approved March 9, 2022 and the recommended Target Speed for this corridor is 45 mph throughout the entire corridor.

3.5 Future Land Use

Figure 3-2 Illustrates the generalized future land use along the project area based on data retrieved from Orange and Osceola County GIS database. The prevalent future land uses along both the Osceola and Orange County sections are commercial and mixed-use/activity centers. Both classifications are closely related to the tourist industry. Activity Centers are planned in Orange County immediately adjacent to SR 535 where there is currently unimproved land. Future land use in Osceola County is generally anticipated to remain similar to existing land use.







Figure 3-2 - Future Land Use

3.6 Design Traffic Volumes

The design year (2045) AADT were developed by applying the annual growth rate between 2045 model Build scenario and 2015 scenario to the 2020 AADT following National Cooperative Highway Research Program (NCHRP) 765 procedure. Future AADT's and Directional Design Hour Volume's (DDHV), which are summarized in **Table 3-1**, were calculated based on approved growth rates. More information can be found in the PTAR, a companion document to this report.

Intersection	Segments	2020 AADT	Build Growth Rate	Build 2045	DDHV 2045
	Lake Bryan Beach Blvd, west of SR 535	500	1.18%	650	20
SR 535 @ Lake Bryan Beach	Lake Bryan Beach Blvd, East of SR 535	1,400	1.59%	2,000	70
Blvd	SR 535, North of Lake Bryan Beach Blvd	50,000	0.76%	60,000	2,350
	SR 535, South of Lake Bryan Beach Blvd	51,500	0.83%	62,500	2,450
	World Center Dr, west of SR 535	37,500	1.69%	53,500	2,270
SR 535 @ World Center Dr	World Center Dr, East of SR 535	36,000	0.51%	41,000	1,620
	SR 535, North of World Center Dr	51,500	0.83%	62,500	2,450
	SR 535, South of World Center Dr	49,500	0.45%	55,500	2,170
	International Dr S, West of SR 535	6,400	9.52%	22,000	1,150
SP 535 @ International Dr S	International Dr S, East of SR 535		6.00%	33,000	1,720
	SR 535, North of International Dr	49,500	0.45%	55,500	2,170
	SR 535, South of International Dr S	48,000	1.21%	63,000	2,470
	Lake Buena Vista Factory Stores Dr, west of SR 535	500	2.29%	800	-
SR 535 @ Lake Buena Vista	Lake Buena Vista Factory Stores Dr, East of SR 535	4,900	8.39%	15,500	660
Factory Stores Dr	SR 535, North of Lake Buena Vista Factory Stores Dr	48,000	1.17%	62,500	2,450
	SR 535, South Lake Buena Vista Factory Stores Dr	56,000	1.24%	73,500	2,880
	Median Opening North, East of SR 535	1,500	4.26%	3,100	130
SR 535 @ Median Opening N	SR 535, North of Median Opening North	56,000	1.24%	73,500	2,880
	SR 535, South of Median Opening North	56,000	0.93%	69,000	2,700
	Polynesian Isle Blvd, west of SR 535	12,000	2.08%	18,500	740
SR 535 @ Polynesian Isle	Polynesian Isle Blvd, East of SR 535	4,300	7.88%	13,000	520
Blvd	SR 535, North of Polynesian Isle Blvd	56,000	0.93%	69,000	2,700
	SR 535, South of Polynesian Isle Blvd	54,000	1.08%	69,000	2,700

Table 3-1 - Future AADT

Intersection	Segments	2020 AADT	Build Growth Rate	Build 2045	DDHV 2045
	Median Opening S, West of SR 535	3,400	0.22%	3,600	140
SR 535 @ Median	Median Opening S, East of SR 535	1,900	6.45%	5,000	200
Opening S	SR 535, North of Median Opening S	54,000	1.08%	69,000	2,700
	SR 535, South of Median Opening S	54,000	1.18%	70,000	2,740
	Poinciana Blvd, west of SR 535	21,500	0.62%	25,000	830
SR 535 @ Poinciana Blvd	Poinciana Blvd, East of SR 535	7,200	5.03%	16,500	790
	SR 535, North of Poinciana Blvd	54,000	1.18%	70,000	2,740
	SR 535, South of Poinciana Blvd	39,500	1.45%	54,000	2,110
	Osceola Pkwy EB On-Ramp	5,100	3.44%	9,500	850
SR 535 @ Osceola Pkwy On-Ramps (North)	SR 535, North of Osceola Pkwy On-Ramps	39,500	1.45%	54,000	2,110
	SR 535, South of Osceola Pkwy On-Ramps	33,500	1.16%	43,500	1,700
	Calypso Cay Way, west of SR 535	1,800	0.61%	2,100	90
SR 535 @ Osceola Pkwy	Osceola Pkwy On ramp (WB), East of SR 535	2,000	1.55%	2,800	-
On-Ramps (South)	SR 535, North of Osceola Pkwy On ramp	33,500	1.16%	43,500	1,700
	SR 535, South of Osceola Pkwy On ramp	32,500	1.23%	42,500	1,660
	Kyngs Heath Rd, west of SR 535	1,900	5.33%	4,500	180
SR 535 @ Kyngs Heath Rd	Kyngs Heath Rd, East of SR 535	2,700	9.76%	9,300	360
	SR 535, North of Kyngs Heath Rd	32,500	1.23%	42,500	1,660
	SR 535, South of Kyngs Heath Rd	29,500	1.27%	39,000	1,530
	US 192, west of SR 535	37,000	0.44%	41,500	1,680
SR 535 @ US 192	US 192, East of SR 535	49,000	0.80%	59,000	2,390
	SR 535, North of US 192	29,500	1.27%	39,000	1,530
	SR 535, South of US 192	200	3.40%	400	20

Table 3-2 -	Future	AADT	(Cont.)
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Figure 3-3 and **Figure 3-4** show the 2045 turning movement counts. Projections for the three intersections of International Drive Extension at World Center Drive, SR 535 at SR 536/World Center Drive, and SR 535 at International Drive were adjusted in coordination with FDOT to reasonably consider the expected traffic redistribution associated with the International Drive Extension. It should be noted that intersection volumes for the International Drive Extension and Poinciana Boulevard Extension were not developed since the intersection is not part of the study. However, based on balanced volumes for the International Drive Extension intersections of SR 535 and World Center Drive, it is observed that the Poinciana Boulevard extension intersection will draw traffic from the International Drive Extension.



Figure 3-3 – 2045 Design Year Turning Movement Counts (Osceola County)



Figure 3-4 - 2045 Design Year Turning Movement Counts (Osceola County)

4.0 PROJECT DESIGN CONTROLS & CRITERIA

Design controls and criteria must be established prior to the formulation of design alternatives to ensure an adequate, safe, functional and operational roadway. These criteria are needed to develop typical sections, horizontal and vertical alignments, and other design features such as drainage, aesthetics, landscaping, and multimodal facilities. The controls and standards are those specified by the FDOT for state roadways. In addition, the consideration of the facility's Context Classification strives to ensure that "state roadways are supportive of safe and comfortable travel for their anticipated users".

4.1 Design Control and Criteria

4.1.1 Geometric Design Criteria

The design criteria used in the project area are based on the 2024 Florida Department of Transportation Design Manual (FDM) publication. **Table 4-1** shows the Roadway Design Criteria.

4.1.2 Drainage Design Criteria

The design of the stormwater management facilities for the project is governed by the rules set forth by the South Florida Water Management District (SFWMD), FDOT, Orange and Osceola Counties. Water quality treatment and attenuation requirements will comply with the guidelines as defined in Chapter 62-330.010 of the Florida Administration Code (F.A.C.), the SFWMD Environmental Resource Permit Applicant's Handbooks, and the FDOT Drainage Manual, as well as the pre-application meeting held with SFWMD on 11/16/22. SR 535 within the project limits is located within the Shingle Creek basin (WBID 3169A) and Lake Okeechobee Basin Management Action Plan (BMAP). The Pond Siting Report (PSR) for the project outlines the specific drainage design criteria (water quality, water quantity, and detention/retention pond configuration).

	Roadway & Context Classifications	Curb and Gutter	High Speed with Curb and Gutter	High Speed with Flush Shoulders	Source
eral eria	Context Classification	C3	C3	C3	
Gene Crite	Design Speed	45 mph	50 mph	50 mph	FDM 210 and as-builts
ut a	Max. Defl. w/o Curves	1°00'00"	0°45'00"	0°45'00"	FDM 210.8.1
rizont gnme	Desirable Length of Curves	675'	750'	750'	FDM Table 210.8.1
Hoi Ali	Max Degree of Curvature with Max Superelevation	8°15'00" (e max=0.5)	8°15'00" (e max=0.10)	8°15'00" (e max=0.10)	FDM Table 210.9.1 & Table 210.9.2
	Lane widths, through	11'	12'	12'	FDM Table 210.2.1
on res	Median Widths	22'	30'	30'	FDM Table 210.3.1
Secti ⁻ eatu	Inside Shoulder (# lanes in each direction)	-	6.5'	3 L: 10' (4' Paved)	FDM Table 210.4.1
	Outside Shoulder (# lanes in each direction)	-	6.5'	3 L: 10' (5' Paved)	FDM Table 210.4.1
rtical ırance	Roadway over Roadway	16.5'	16.5'	16.5'	FDM Table 260.6.1
Ve Clea	Overhead Sign Structure	17.5'	17.5'	17.5'	FDM 210.10.3
ar Zone	Lateral Offset from Bridge Piers	16' Travel Lane 6-ft from Inside Aux Lane	16' Travel Lane 6-ft from Inside Aux Lane	16' Travel Lane 6-ft from Inside Aux Lane	FDM Table 215.2.2
Clea	Pavement Cross Slope	2%-3%	2%-3%	2%-3%	FDM Figure 210.2.1
	Border Width	14'	29'	40'	FDM Table 210.7.1
	Max. Grade	6%	6%	6%	FDM Table 210.10.1
ment	Min. Length of Crest Curves	135'	300'	300'	FDM Table 210.10.4
Align	Min. K Value Crest Curves	98'	136'	136'	FDM Table 210.10.3
cal ⊭	Min. Length of Sag Curves	135'	200'	200'	FDM Table 210.10.4
ertio	Min. K Value SAG Curves	79'	96'	96'	FDM Table 210.10.3
>	Longitudinal Grade	Min 0.3%, max 0.7% (w/out curve)	Min 0.3% max 0.5% (w/out curve)	max 0.5% (w/out curve)	FDM 2.10.10.1.1
S	Sidewalk Width	6'	6'	6'	FDM Table 222.2.1
ture	Shared Use Path Width	8' – 14'	8' – 14'	8' – 14'	FDM 224.4
ultimodal Fea	Bicycle Lane Width	Shared Use Path Substitute for design speed of 35 mph or greater	Shared Use Path Substitute for design speed of 35 mph or greater	Shared Use Path Substitute for design speed of 35 mph or greater	FDM 223.2.1.1
Ĩ	Curb and Gutter Type	E (Inside), F (Outside)	E (Inside), E (Outside)	N/A	FDM 210.5 FDM 210.5.1

Table 4-1 Roadway Design Criteria

4.1.2.1 Water Quality Treatment Criteria

SR 535 within the project limits is located within the Shingle Creek basin (WBID 3169A) and Lake Okeechobee Basin Management Action Plan (BMAP), and does not directly discharge to an Outstanding Water (OFW). Retention, detention, or both retention and detention in the overall system, including swales, lakes, canals, greenways, etc., shall be provided for one of the three following criteria or equivalent combinations thereof: (SFWMD Applicant's Handbook, Vol. II, Sec. 4.2.1)

- Wet detention volume shall be provided for the first inch of runoff from the developed project, or the total runoff of 2.5 inches times the impervious area, whichever is greater.
- Dry detention volume shall be provided equal to 75 percent of the above amounts computed for wet detention.
- Retention volume shall be provided equal to 50 percent of the above amounts computed for wet detention.
- Impervious areas subject to non-vehicular traffic do not require water quality treatment, and can be separated out from the calculation of impervious area.
- An additional 50% of water quality treatment should be provided wherever feasible due to the fact that the project is located within the Lake Okeechobee Basin Management Actions Plan (BMAP).
- Net improvement for nutrient loading requirements.

4.1.2.2 Water Quantity (Attenuation) Criteria

SFWMD Criteria

For open basins, the post-development peak rate of discharge must not exceed the predeveloped peak rate of discharge for the 25-year/72-hour event. For closed basins, the postdevelopment peak discharge volume must not exceed the pre-development peak discharge rate and volume during the 100-year, 72-hour storm. (SFWMD Applicant's Handbook, Vol. II, Sec. 3.2 and 3.3).

FDOT Criteria

The design of stormwater management systems for Department projects will comply with the water quality, rate, and quantity requirements of Section 334.044(15), Florida Statues (F.S.), Chapter 14-86, Florida Administrative Code (F.A.C.), Rules of the Department of Transportation,

only in basins closed during storms up to and including the 100-year storm event, or areas subject to historical flooding.

Osceola County and Orange County Criteria

Based on a review of permit documentation, one existing pond evaluated in this report utilizes the Osceola County 10-year/72-hour and 100-year/72-hour event. Several existing ponds evaluated in this report utilize the Orange County 25-year/24-hour event. For more information please see the pond calculations for the design storm utilized in to determine required attenuation volumes in the PSR, a companion document to this report.

5.0 ALTERNATIVES ANALYSIS

Several alternatives were evaluated to determine if they meet the purpose and need of this project. These alternatives are described in the following sections and include the following:

- 'No-Build' Alternative
- Transportation Systems Management and Operations (TSM&O)
- Multimodal Alternatives
- Construction ('Build') Alternatives

5.1 Alternatives Evaluation Process

Previous sections of this report thoroughly document the project area's existing deficiencies, needs and conditions. Based on these factors and also public/agency input, a comprehensive alternative development and evaluation process was initiated and conducted for the proposed project improvements as documented herein.

A multi-phase alternative development, evaluation and selection process was employed to properly assess all build alternatives considered for the proposed improvements as compared to the No-Build Alternative. Four (4) different phases comprised the build alternative selection process. A discussion of each of the different phases follows. A diagram depicting the Alternatives Evaluation Process is shown in **Appendix C.**

5.2 Phase 1: Conceptual Analysis

5.2.1 No-Build Alternative

The "No-Build" alternative is an alternative solution used in PD&E studies that assumes the retainment of existing conditions and includes planned projects in the study area. The "No-Build" Alternative is a viable alternative that is considered all the way through the project. This provides a comparison of existing conditions related to implementing the proposed improvements and those incurred by continuing to use the existing facility. The No-Build alternative eliminates costs related to right of way acquisition and construction, traffic delays caused by construction, and impacts to the natural and social environments. However, the "No-Build" alternative would entail the retainage of the existing conditions within the project limits with its present operational, multimodal, and safety deficiencies in addition to programmed and funded safety and maintenance improvements in the area. The existing facility within the project confines is inadequate in terms of future capacity. It is evident that because of the reasons previously discussed in **Section 2.0**, adoption of this alternative would not address the project's purpose and

need. However, the "No-Build" alternative will be maintained as a viable option providing an effective yardstick or baseline condition by which other project alternatives will be compared throughout the project alternative selection process.

Design year 2045 results reveal that AM and PM peak hour conditions show similarities in their operational results with further levels of degradation and deficiencies. Under the AM peak hour conditions, many of the intersections do not meet the LOS D Target and are projected to operate at deficient LOS. The following intersections do not meet the overall intersection LOS D Target in the design year under the No-Build Alternative.

- SR 535 at Poinciana Boulevard LOS F with an overall delay of 148.3 sec/veh
- SR 535 at Polynesian Ise Boulevard LOS F with a delay of 104.0 sec/veh
- SR 535 at Lake Buena Vista Factory Stores LOS F with a delay of 227.7 sec/veh
- SR 535 at International Drive LOS E with a delay of 60.0 sec/veh
- SR 535 at SR 536/World Center Drive LOS F with a delay of 197.8 sec/veh

Overall, most of the intersections have degraded when compared to the existing and opening year scenarios, with SR 535 and Lake Buena Vista Factory Stores showing the highest delays.

Under the PM peak hour conditions, most of the signalized intersections do not meet the LOS D Target and are projected to operate at deficient LOS. The following intersections do not meet the LOS D Target in the design year under the No-Build Alternative.

- SR 535 at Poinciana Boulevard– LOS F with a delay of 136.7 sec/veh
- SR 535 at Polynesian Isle Boulevard LOS F with a delay of 118.6 sec/veh
- SR 535 at Lake Buena Vista Factory Stores LOS F with a delay of 187.1 sec/veh
- SR 535 at International Drive LOS E with a delay of 68.0 sec/veh
- SR 535 at SR 536/World Center Drive LOS F with a delay of 190.5 sec/veh

Regarding queue length impacts, the design year condition exhibits similar impacts during both the AM and PM peak hour, with much heavier queuing occurring along SR 535 and the cross streets when compared to the existing and opening year conditions.

During the design year, nearly all stop-controlled movements are projected to operate at LOS E or LOS F with the exception of stop-controlled movements at the intersections of SR 535 and Calypso Cay Way. Please see the PTAR prepared for this project for more details regarding the operations of the No-Build Alternative.

5.2.2 Transportation Systems Management and Operations Alternatives (TSM&O)

The Transportation Systems Management and Operations (TSM&O) alternatives are comprised of minor improvement options that are usually generated to alleviate specific traffic congestion/safety problems, or to obtain maximum utilization out of the existing facility by improving operational efficiency. A Concept of Operations (ConOps), a supplemental document to this report, was prepared to identify any additional needs and shortcomings along the corridor and provide performance measures to document the benefits of the system. These alternatives do not serve as a point of reference but rather they ensure that a wide range of realistic alternatives are considered by decision makers. The various TSM&O alternatives that were investigated include the upgrade of the existing facility by means of intersection widening and turning lane storage enhancements, improved/modified signalization, improved signing, pavement markings and delineation, etc. (see **Table 5-1**).

As indicated in the table, it is expected that these TSM&O improvements alone will not alleviate all of the existing corridor deficiencies nor would they suffice to meet future travel demand. It was therefore concluded during the initial stages of the study that in addition to the TSM&O solutions, major reconstruction alternatives (e.g. – corridor widening, grade separation considerations, etc.) would be required to provide the effective improvement of the existing facility at various locations throughout the project corridor.

In summary, even though some beneficial effects can be obtained through the exclusive use of low-cost improvements, the overall capacity restriction of maintaining the existing roadway section precludes the attainment of any substantial improvement in the overall project LOS. It is because of this fact that these alternatives were considered to have only marginal value. However, they will be further considered as valuable components of an integrated final solution.

TSM&O Alternatives	Consequences of Implementation	Remains Viable?
Provision of access management controls	Some minor safety and operational benefits to the arterial at the expense of reducing access. Will not provide sufficient increase in capacity to accommodate current or future travel demand.	No
Provision of Roundabouts or Traffic Circle	Generally used to reduce high vehicular speeds and potentially divert non- local traffic. These were not judged to be critical problems along the subject facility. Will likely increase the number of bicycle/vehicle conflicts. Will restrict mobility of emergency vehicles.	No
Intersection widening, turning lane storage and operational enhancements Some improvements to intersection operations at selected intersection locations. Will not provide sufficient increases in capacity to accommodate future travel demand.		Yes
Improved/ Modified signalization	Some improvements attainable through signal system retiming and installation of PedSafe features. Will not provide sufficient increases in capacity to accommodate future travel demand.	Yes
Improved signing, markings and delineation	Only slight improvements in guidance and possibly safety. Will not alleviate any of the major existing deficiencies.	Yes
Innovative Intersection Design	Partially increases localized mobility and safety. Provides improvements but does not fully address the major corridor capacity needs.	Yes
Smart Signals Initiative (ATC, Type VI Cabinets, etc.)	Features such as Transit Signal Priority (TSP), Emergency Vehicle Pre- emption (EVP), etc. are useful and effective measures to help manage traffic mobility in specific cases but do not add additional capacity.	Yes

Table 5-1 - Evaluation of TSM&O Alternatives

5.2.3 Multimodal Alternatives

The study is analyzing the opportunity to close existing gaps in the sidewalk and bicycle facilities that are along SR 535. The multimodal alternatives that are currently being considered are shared use paths, larger sidewalks and separated bicycle lanes. These alternatives satisfy the project's need by enhancing safety for all modes of travel, including bicycle and pedestrian connectivity.

5.2.4 Phase 2: Preliminary Typical Section/Alignment Evaluation

This phase involved the generation of various potential typical sections and the selection of those viable typical sections to be further evaluated along all project segments within the study corridor. The various components that were considered include design speed, lane widths, median type and width, multimodal considerations (sidewalks and bicycle features), border width, curb and gutter, etc.

On a preliminary basis, six (6) typical roadway sections/alignment options were developed ranging in total width from 200 feet to 224 feet. **Figure 5-1** illustrates and describes the features of typical sections alternatives and their segmental applicability.





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5.2.5 Phase 3: Pre-Final Typical Section/Alignment Evaluation

A numerical/descriptive matrix was developed in order to evaluate all typical section alternatives. The evaluation has been included in **Appendix C** and a summary is provided below. The main purpose of the evaluation is to identify which alternative(s) are clearly inferior so that they can be eliminated before even more stringent evaluation criteria and procedures are used during the next evaluation phase. The evaluation used involved the generation of a weighting scheme for each of the evaluation parameters which considered the input of a multi-disciplinary team of experts. Thirteen (13) different evaluation parameters regarding engineering, social and economic, environmental and cost factors were used. Each parameter was assigned a value ranging from four (4) to ten (10) depending on its degree of importance. These parameters weightings were developed from the average of individual weighting sets prepared by members of the consultant's team reflecting a broad range of professional backgrounds. This evaluation involves a combination of both qualitative and quantitative values resulting in an overall score.

The summary of the results shown on **Table 5-2** show that Alternatives A, C and D were selected for further evaluation. As previously noted, the objective of this phase is not necessarily to determine which options are the best but rather to identify which alternative(s) are clearly inferior so that they can be eliminated before even more stringent evaluation criteria and procedures are used during the next evaluation phase. All alternatives with lower scores that do not exceed the median value for the group were eliminated.

Alternative	S	core	Summary of Evaluation
A	59.4	Remains Viable	Would have the least impacts to drainage, cross streets, and utilities, would require less R/W for stormwater ponds, and a moderate construction cost
В	51.4	Eliminated	Although it provides an additional multimodal feature (separated bicycle lane), it would require the greatest R/W for stormwater ponds, highest cost and potential conflicts with cross streets
С	58.2	Remains Viable	Similar to Alternative A but provides a wider footprint and some base clearance concerns with outside widening and potentially greater utility impacts
D	52.2	Remains Viable	Similar to Alternative B but slightly wider median and less constructability concerns
E	50.2	Eliminated	Larger footprint has greater drainage impacts, requires larger stormwater ponds, has potentially greater utility impacts, encourages faster travel speeds
F	50.6	Eliminated	Encourages faster travel speeds, widest typical section affords no area for landscaping, would require additional R/W for roadside ditches, base clearance concerns

 Table 5-2 - Preliminary Alternative Typical Section Elimination Process

After the Alternatives Public Information Meeting (APIM), the following modifications were made in coordination with local agencies and FDOT.

- The study started with 9-ft sidewalks on both sides of the typical section as per recommendations from the CPS. Due to sufficient right of way and to address the need for adequate bicycle facilities, a wider shared use path of 14 feet was selected for the west side and a 12-foot shared use path will be provided on the east side of the roadway.
- Based on review of the limited survey available during this study, the study corridor may have areas where the longitudinal grades and cross slopes are flatter than the minimum per design standards. In order to provide the necessary longitudinal grades and cross slopes to provide for adequate drainage, the Preferred Alternative will recommend full reconstruction (as opposed to widening and milling/resurfacing).
- Per the Speed Management Strategies Memorandum, the Target Speed recommendation for the entire corridor is 45 mph. Thus, the following modifications and recommendations have been made: 11-foot lane widths and lowering the posted speed from 50 mph to 45 mph.

5.2.6 Phase 4: Final Alternative Evaluation

The purpose of this phase was to further screen the remaining three alternatives, Alternatives A, C and D, with respect to more detailed evaluation procedures. This final evaluation is summarized in **Table 5-3 – Final Typical Section/Alignment Evaluation** (ponds and intersections are not included). This phase also entailed performing the Intersection Control Evaluation (ICE) for determination of potential innovative intersection control types to be implemented along with a recommended typical section.

Evaluation Criteria	No-Build	Alternative A	Alternative C	Alternative D
Purpose and Need				
Meet Traffic Demand	No	Yes	Yes	Yes
Enhance Multimodal Features	No	Yes	Yes	Yes
Improve Safety	No	Yes	Yes	Yes
Social Environmental				
Business Parcels Impacted/Relocated	No	0	0	0
Residential Parcels Impacted/Relocated	No	0	0	0
Vacant Land Parcels Impacted/Relocated	No	0	0	0
Cultural Environmental				
Archaeological Sites Impacted	0	0	0	0
Historical Resources Impacted	0	0	0	0
Natural Environment				
Wetland (Acres)	0	0	0	0
Contamination (Sites)	N/A	0	0	0
Total Pond Size Required (Acres)	0	8	8	10
Floodplain (Acres)	0	0	0	0
Sand Skink Suitable Habitat (Acres)	0	0	0	0
Physical Environment				
Utility Impacts (FGT)	No	Yes (No FGT)	Yes (No FGT)	Yes (No FGT)
Right of way Acquisition (Acres)	0	0	0	0
Construction Cost	0	\$62M	\$60M	\$65M

 Table 5-3 - Final Typical Section/Alignment Evaluation

5.2.6.1 Intersection Control Evaluation (ICE)

The study locations included in the CAP-X analysis are SR 535 signalized intersections at Poinciana Boulevard, Polynesian Isle Boulevard, International Drive, and SR 536. Intersection configurations considered include Displaced Left Turn, Partial Displaced Left Turn, Median U-Turn, Roundabout, Restricted Crossing U-Turn, and Quadrant Roadway. The reports and results generated by the ICE CAP-X Analysis worksheets for all intersections and the Stage 1 Screening forms along with the ICE Control Evaluation (ICE) Stage 1 Technical Memorandum is provided in the PTAR.

A summary of the CAP X analysis for the major intersections is provided below.

- SR 535 and Poinciana Boulevard CAP-X results for the intersection of SR 535 and Poinciana Boulevard reveal that the displaced left turn exhibits the lowest overall v/c ratio and highest v/c ranking during the AM and PM peak hour condition. During the AM peak hour condition, the displaced left turn option is followed in v/c ranking by the quadrant roadway (S-E), partial displaced left turn (N-S), quadrant roadway (S-W), partial median U-Turn (N-S), Median U-Turn (N-S), traffic signal, signalized restricted crossing U-Turn (N-S), and 2 by 2 roundabout options, respectively. During the PM peak hour condition, the results slightly differed with the displaced left turn option being followed by quadrant roadway (S-E), partial displaced left turn (N-S), quadrant roadway (S-W), traffic signal, signalized restricted crossing U-Turn (N-S), Median U-Turn (N-S), partial median U-Turn (N-S), and roundabout (2x2) roadway concepts.
- SR 535 and Polynesian Boulevard Results for the intersection of SR 535 and Polynesian Boulevard show that the traffic signal exhibits the lowest overall v/c ratio and highest v/c ranking during the AM peak hour condition. The traffic signal option is followed in v/c ranking by quadrant roadway (N-E), partial median U-turn (N-S), median U-turn (N-S), signalized restricted crossing U-turn (N-S), roundabout (2x2), and unsignalized restricted crossing U-turn (N-S), respectively. The PM peak hour condition reveals the partial median U-turn (N-S) being followed by median U-turn (N-S), quadrant roadway (N-E), signalized restricted crossing U-turn (N-S), traffic signal, roundabout (2x2), and unsignalized restricted crossing U-turn (N-S) roadway concepts.
- SR 535 and International Drive Results for the intersection of SR 535 and International Drive show that displaced left turn exhibits the lowest overall v/c ratio and highest v/c ranking during the AM peak hour condition. The displaced left turn option is followed in v/c ranking by the quadrant roadway (S-E), partial displaced left turn (E-E), quadrant roadway

(N-W), traffic signal, median U-turn (E-E), partial median U-turn (E-W), signalized restricted crossing U-turn (E-W) and roundabout (2x2). Similarly, the PM peak hour condition reveals the displaced left turn as the best option followed by the partial displaced left turn (E-W), quadrant roadway (S-W), median U-turn (E-W), quadrant roadway (N-W), traffic signal, partial median U-turn (E-W), signalized restricted crossing U-turn (E-W), and roundabout (2x2) roadway concepts.

SR 535 and SR 536/World Center Drive - Results for the intersection of SR 535 and SR 536/World Center Drive show that the displaced left turn exhibits the lowest overall v/c ratio and highest v/c ranking during the AM peak hour condition. The displaced left turn option is followed in v/c ranking by the partial displaced left turn (N-S), the quadrant roadway (S-W), partial median U-turn (N-S), traffic signal, median U-turn (N-S), and roundabout (2x2). The PM peak hour condition reveals the displaced left turn as the best option followed by the quadrant roadway (S-W), partial median U-turn (N-S), median U-turn (N-S), and roundabout (2x2) roadway (S-W), partial median U-turn (N-S), median U-turn (N-S), and roundabout (2x2) roadway concepts.

5.2.6.2 ICE Stage 2

Based on these results a Stage 2 evaluation was performed in coordination with the PD&E project team and FDOT as part of the alternative evaluation process and consistent with the selection of the preferred alternatives.

SR 535 and Poinciana Boulevard Alternatives

The primary movements of the interchange are northbound and southbound, with heavy eastbound and westbound left turn movements in both the AM and PM peak hour periods. The following alternatives were evaluated during this stage:

- Alternative A Traffic Signal
 - This concept, shown in Figure 5-2, involves the installation of an additional lane along SR 535 for northbound and southbound movements and provision of triple eastbound left turn lanes.
 - This alternative provides some operational benefits as compared to the No-Build.
 - This alternative avoids right of way impacts and impacts to FGT, thus was selected as the recommended intersection treatment.
- Alternative B Partial Median U-turn N-S + Jug Handle
 - This concept, shown in **Figure 5-2**, involves the removal of the minor street eastbound and westbound direct left turn movements. The eastbound left turn

movements are treated with a jug handle loop in the southeast quadrant. Vehicles enter the free-flowing loop ramp just east of Poinciana Boulevard and SR 535 and exit at the proposed traffic signal just south of Poinciana Boulevard, where they are able to make right turns to head north. The westbound left turn movements are treated with a median U-turn just north of the intersection on SR 535.

- This configuration provides greater reduction in delay and improves the heavy eastbound left turn movements.
- This alternative results in right of way and wetland impacts and potential impacts to FGT thus was eliminated.

At the intersection of SR 535 and Poinciana Boulevard, Alternative A, the traffic signal was selected as the recommended intersection option.

SR 535 and Polynesian Boulevard Alternatives

The primary movements of the interchange are northbound and southbound, with high volumes in both the AM and PM peak hour periods. The following alternatives were evaluated during this stage:

- Alternative A Partial Median U-turn N-S
 - This concept, shown Figure 5-3, involves the removal of northbound and southbound direct left turn movements on SR 535 and the addition of U-turn storage bays at the existing median openings located just north and south of the intersection.
 - U-turn operations may not be as favorable as the movement is combined with an existing median opening. This alternative provides benefits as compared to the No-Build.
 - Avoids impacts to right of way and businesses, thus was selected as the recommended intersection treatment.
- Alternative B Quadrant Roadway N-E
 - This concept, shown Figure 5-3, involves the installation of an additional lane along SR 535 for northbound and southbound movements, replacing direct left turns with right turns via a signal-controlled quadrant roadway in the northeast quadrant, and adding a right turn on the east leg of Polynesian Isle Boulevard.
 - This alternative provides greatest operational benefits.
 - Results in greatest right of way and business impacts, thus was eliminated.

At the intersection of SR 535 and Polynesian Isle Boulevard, Alternative A, the Partial Median U-Turn, was selected as the recommended intersection option.



Figure 5-2 - SR 535 and Poinciana Boulevard Alternatives



Option B: Loop Road

R/W Impacts	Total Impacts - 5 Acres Parcels Impacted - 1 Parcel			
Environmental Impacts	Wetland - 3 Acres			
Construction Cost	\$\$			
Operations	Reduces Delay Compared to No-Build and Option A			



Figure 5-3 - SR 535 and Polynesian Isle Boulevard Alternatives

SR 535 and International Drive Alternatives

This existing T-intersection will be reconfigured to a four-legged intersection with an east leg extension connecting SR 535 to World Center Drive. The intersection has high volumes at all approaches with the heaviest volumes on the northbound approach on SR 535, and higher left turns along International Drive. The following alternatives were evaluated during this stage:

- Alternative A Partial Displaced Left Turn (PDLT) E-W
 - This concept, shown on Figure 5-4, involves the removal of direct eastbound and westbound left turns on International Drive with the displaced left turns installed on both legs of this minor street. The northbound and southbound left turn movements for the major street on SR 535 continue to take place at the main intersection.
 - This alternative provides operational benefits by separating the E-W left turn movements
 - Results in some right of way impacts due to widening of International Drive to accommodate the DLT, thus was selected as the recommended intersection treatment.
- Alternative B Quadrant Roadway S-W
 - This concept, shown **Figure 5-4**, involves the removal of direct left turns with the installation of a quadrant roadway in the southwest quadrant.
 - Provides greatest operational benefits compared to Alternative A and No-Build.
 - Results in substantial right of way, floodplain and wetland impacts and has the highest cost thus was eliminated.

At the intersection of SR 535 and International Drive, Alternative A, the Partial Displaced Left Turn, was selected as the recommended intersection option.


Figure 5-4 - SR 535 and International Drive Alternatives



Option B: Quadrant Road

R/W Impacts	Total Impacts - 19 Acres Parcels Impacted - 5 Parcels
Environmental Impacts	Wetland - 13 Acres Floodplain - 17 Acres
Construction Cost	\$\$\$\$\$
Operations	Reduces Delay Compared to No-Build and Option A

SR 535 and SR 536/World Center Drive

The primary movements of the interchange are northbound and southbound, with high volumes in both the AM and PM peak hour periods. This intersection experiences a high number of left turns on the major street (SR 535) and moderate to high numbers of left tuns on the minor street (World Center Drive). The following alternatives were evaluated during this stage:

- Alternative A Partial Displaced Left Turn (PDLT) N-S
 - This concept, shown in Figure 5-5, involves the removal and replacement of direct northbound and southbound left turns on SR 535 with the displaced left turns installed on both legs of SR 535 (major street). The eastbound and westbound left turn movements for the minor street on SR 536/World Center Drive continue to take place at the main intersection.
 - This alternative provides benefits as compared to the No-Build.
 - Avoids right of way and wetland impacts and reduces costs and thus was selected as the recommended intersection treatment.
- Alternative B Quadrant Roadway S-W
 - This concept, shown in **Figure 5-5**, involves the removal of direct left turns with the installation of a quadrant roadway in the southwest quadrant.
 - Provides greatest operational benefits compared to Alternative A and No-Build.
 - Results in substantial right of way, floodplain and wetland impacts and has the highest cost thus was eliminated.

At the intersection of SR 535 and SR 536/World Center Drive, Alternative A, the Partial Displaced Left Turn, was selected as the recommended intersection option.



Figure 5-5 - SR 535 and SR 536/World Center Drive Alternatives



5.2.6.3 Build Operational Analysis

This summary includes vehicular traffic operational improvements for design year 2045 Build Alternatives 1 and 2. Both alternatives included the widening of SR 535 from four to six lanes from US 192 to SR 536/World Center Drive. From a traffic operational standpoint, Typical section alternatives A, C and D are equivalent and are not distinguished in the operational analysis. In addition to the widening, different innovative intersection treatments are evaluated under each alternative, as summarized in **Table 5-4**. It should be noted that only one intersection alternative is evaluated for the SR 535 intersections of US 192, Kyngs Heath Road, Calypso Cay Way, and Osceola Parkway Eastbound On-Ramp. Please refer to the PTAR for more details.

SR 535 Intersection	Alternative 1	Alternative 2					
US 192	Convert southbound approach to one (1) exclusive right turn lane, one (1) shared through- turn lane, and (2) exclusive left-turn lanes.						
Kyngs Heath Road	Convert east-west signal phasing from split phasing to concurrent phasing with protected/permissive left turn operations. Convert shared westbound left/through lane to exclusive westbound through						
Osceola Parkway On-Ramp		-					
Poinciana Boulevard	Convert eastbound approach to three (3) exclusive left turn lanes and one (1) shared through-right turn lane.	Convert intersection to provide eastbound left-turn movement via an east-to-north loop and provide the westbound left-turn movement via median U- turn at the existing median opening north of the intersection. Provide one (1) additional southbound left turn lane.					
Polynesian Boulevard	Convert intersection to a northeast quadrant road configuration.	Convert intersection to a partial north-south median U-turn intersection. Provide an exclusive eastbound right-turn lane. Convert westbound approach to one (1) exclusive right-turn lane, one (1) shared through-right turn lane, and two (2) exclusive left-turn lanes.					
Lake Buena Vista Factory Stores	Convert westbound approach to three (3) exclusive left-turn lanes and one (1) shared through-right turn lane. Provide one (1) additional southbound left-turn lane.	Alternative 1 westbound approach improvements and the provision of the eastbound left turn movement via southbound U-turn movement at the same signalized median opening for the Polynesian Boulevard northbound U-turn movement.					
International Drive	Convert intersection to an east-west partial displaced left turn intersection configuration.	Convert intersection to a southwest quadrant road configuration.					
SR 536/World Center Drive	Convert intersection to a north-south partial displaced left turn intersection configuration.	Convert intersection to a southwest quadrant road configuration.					

Table 5-4 - Summary of Alternatives

Build Design Year (2045) Alternative 1 Summary

Table 5-5 provides the results of the overall intersection delay and LOS for Alternative 1 for design year 2045. Overall, for Build Alternative 1, the design year condition shows substantial improvement from the No-Build alternative. Under the AM peak hour conditions, all signalized intersections meet or exceed the LOS D Target, showing that the Build Alternative 1 network operations substantially improve along SR 535 when compared to the No-Build scenario for the design year (2045), where No-Build has five (5) intersections operating deficiently.

Under the PM peak hour conditions, one signalized intersection operates deficiently, showing improvement over the No-Build scenario where five (5) intersections operate deficiently. The following intersections do not meet the LOS D Target:

• SR 535 at Poinciana Boulevard – LOS E with a delay of 61.5 sec/veh

During the design year, nearly all stop-controlled movements are projected to operate at LOS E or LOS F with the exception of stop-controlled movements at the intersections of SR 535 and Calypso Cay Way.

For Alternative 1 arterial analysis, shown in **Table 5-6**, the AM peak conditions show deficient operations on seven (7) northbound segments and on six (6) southbound segments. The northbound and southbound SR 535 arterial networks operate at an overall LOS E. The PM peak conditions show deficient operations on five (5) northbound segments and on five (5) southbound segments. The northbound SR 535 arterial network operates at an overall LOS D and southbound SR 535 operates at an overall LOS E. This shows improvement when compared to the design year scenario for the No-Build alternative, where most segments were operating deficiently. Although, a majority of 2045 segment operations are LOS E, overall travel time along SR 535 is reduced by approximately 10 minutes in the northbound direction and seven (7) minutes in the southbound direction. Overall operations are substantially improved under Alternative 1 as compared to the No Build in terms of reducing overall travel time along the corridor and improving average speeds.

Build Design Year (2045) Alternative 2 Summary

Table 5-5 provides the results of the overall intersection delay and LOS for Alternative 2 for design year 2045. Design year (2045) results reveal that overall, both the AM and PM peak hour conditions perform similarly.

Under both the AM and PM peak hour conditions, all signalized intersections meet or exceed the LOS D Target, showing that operations substantially improve along SR 535 when compared to the No-Build scenario, where No-Build has five (5) intersections operating deficiently.

Overall, similar deficiencies are noted on turning movements at all major intersection approaches when compared to the No-Build and Build Alternative 1 scenarios. During the design year, Build Alternative 2 shows evident improvement when compared to No-Build and Build Alternative 1, during both the AM and PM peak hour conditions, most likely due to better delay and capacity management.

Stop-controlled approach operations remain similar to the No-Build and Alternative 1 conditions with the exception of several median openings on SR 535 being signalized under Alternative 2.

For Alternative 2 arterial analysis, shown in **Table 5-6**, the AM peak conditions show deficient operations on six (6) northbound segments and on four (4) southbound segments. The northbound SR 535 arterial network operates at an overall LOS E and the southbound operates at an overall LOS D. The PM peak conditions show deficient operations on seven (7) northbound segments and on four (4) southbound segments. The northbound and southbound SR 535 arterial networks operate at an overall LOS D. Alternative 2 provides the greatest reduction in travel time when compared to No-Build with reduction of 700 seconds (over 11 minutes) in the northbound direction during the 2045 AM peak hour. Overall operations are substantially improved under Alternative 2 in terms of reducing overall travel time along the corridor and improving average speeds.

	2020		2045					
	Exis	Existing		Build	Alternative 1		Alternative 2	
Intersection	AM	PM	AM	PM	AM	PM	AM	PM
SR 535 & US 192	С	D	D	D	C	С	D	D
SR 535 & Kyngs Heath Rd	В	С	D	С	C	С	В	В
SR 535 & Osceola Pkwy On-Ramp	А	А	В	В	В	А	Α	А
SR 535 & Poinciana Blvd	D	D	F	F	D	E	С	С
SR 535 & Poinciana Blvd E-N Loop							В	В
SR 535 & Median Opening S							С	С
SR 535 & Polynesian Isle Blvd	D	D	F	F	С	В	С	С
SR 535 & Qd. Rd. to Polynesian Isle Blvd					В	В		
SR 535 & Median Opening N							В	В
SR 535 & Lake Buena Vista Factory Stores	С	D	F	F	D	D	С	С
SR 535 & Qd. Rd. International Dr							В	В
International Dr & Qd. Rd. to SR 535							В	В
SR 535 & International Dr	В	D	E	E	D	D	С	С
International Dr & EBL Crossover (PDLT)					A	А		
International Dr & WBL Crossover (PDLT)					A	А		
SR 535 & SR 536/World Center Dr	D	F	F	F	С	D	С	D
SR 535 & NBL Crossover (PDLT)					В	А		
SR 535 & SBL Crossover (PDLT)					С	В		
SR 535 & Qd. Rd. to SR 536							В	В
SR 536 & Qd. Rd. to SR 535							С	С

Table 5-5 Intersection Analysis Summary

		2020		2025				2045							
		Evicting		No F	Duild	Altorn	zj ativo 1	Altorn	ativo 2	No	Quild	Altorn	J ativo 1	Altorn	ativo 2
From	То					Allern		Allern				Allem		Allem	
From Northbound SP 525	10	Alvi	PIVI	AW	PIVI	Alvi	P IVI	Alvi	P IVI	Alvi	PIVI	Alvi	P IVI	Alvi	PIVI
	Kunga Haath Dd	D		6	Г	D		D	F	Г		F	-	Г	
US 192	Coocolo Blavy On Domn				E C		0				Г С				
Kyngs Heath Rd	Osceola Pkwy On-Ramp	В	U	C	U	В	U	В	В	D	U	В	В	В	В
Usceola Pkwy On-Ramp		E	Е	F	F	Е	Е	E	D	F	F	F	F		E
Poinciana Blvd E-N Loop	Poinciana Blvd							F	F						<u> </u>
Poinciana Blvd	Median Opening S	E	Е	F	Е	В	В	C		F	F	С	С	E	E
Median Opening S	Polynesian Isle Blvd						_	C	C						C
Polynesian Isle Blvd	Qd. Rd. to Polynesian Isle Blvd	_	_	_	_	F	F	С	D	_	_	F	F	С	С
Qd. Rd. to Polynesian Isle Blvd	Median Opening N	D	D	F	E	С	D			F	F	E	F		
Median Opening N	Lake Buena Vista Factory Stores							D	D					D	E
Lake Buena Vista Factory Stores	Qd. Rd. International Dr	C	C	B	П	П	П	C	С	C	F	F	П	C	С
Qd. Rd. International Dr	International Dr	Ŭ	0		D			D	D	Ŭ	<u> </u>	<u> </u>		F	E
International Dr	SR 535 NBL Crossover (PDLT) (Alt 1)					В	D D	C	C			<u> </u>	B	C	C
	Qd. Rd. to SR 535 (Alt 2)	E	E	E	E	D	D	U	U	E	-	U	В	U	U
SR 535 NBL Crossover (PDLT) (Alt 1)	SD 526/World Contar Dr			Г	Г	F		_	_	Г	Г	E	E	E	Г
Qd. Rd. to SR 535 (Alt 2)	SR 550/World Center Dr					Г	Г	Г	E				Г		Г
SR 536/World Center Dr	SR 535 SBL Crossover (PDLT) (Alt 1)					D	С					E	D		
Total Travel Time (sec)		374.5	366.8	576.9	492.3	395.0	367.1	335.6	338.1	1,128.5	1,038.3	472.8	433.3	428.8	413.7
	Corridor Average Speed (mph)	19.7	20.1	12.8	15.0	20.2	21.8	22.2	22.0	6.5	7.1	16.9	18.4	17.4	18.0
	Overall LOS	D	D	F	E	D	D	D	D	F	F	E	D	E	D
Southbound SR 535				1											
Entry Link	SR 535 SBL Crossover (PDLT) (Alt 1)	_	_	_	_	Α	Α	_		_	_	Α	Α		
SR 535 SBL Crossover (PDLT) (Alt 1)	SR 536/World Center Dr	D	D	E	E	F	F	В	В	F	F	F	F	C	С
	SR 535 NBL Crossover (PDLT) (Alt 1)				ЕE	E E E F F	_			_		_	_		
SR 536/World Center Dr	Qd. Rd. to SR 535 (Alt 2)	_	F	_			E	C	С			F	E	С	D
SR 535 NBL Crossover (PDLT) (Alt 1)		E		E					- F	F			_	_	
Od Rd to SR 535 (Alt 2)	International Dr						F	D	D			F	F	F	F
International Dr	Od Bd International Dr							С	B					B	С
Od Bd International Dr	Lake Buena Vista Factory Stores	С	E	E	E	C	С	C C	ם	F	F	D	D		
Lake Buena Vista Factory Stores	Median Opening N							C C	<u>ם</u>					F	F
Median Opening N	Od Rd to Polynesian Isle Blyd	C	П	п	C	C	D		<u> </u>	F	F	D	D		L.
Od Pd to Polynesian Isle Blyd	Polynesian Isle Blyd	U	D	D	0		П	D	D	L.	L	E	П	D	D
Delynesian Isle Divd	Modian Opening S						U	<u> </u>				<u> </u>	D	E	E
Modion Opening S	Deingione Dud	D	D	D	D	D	D		0	F	F	E	E		
Deineiene Divid															
		— В В		В	В	В	В	<u>В</u>	В	В	В	В	В	<u>В</u>	B
	Osceola Pkwy On-Ramp			_	0			В	<u> </u>			0		B	B
Usceola Pkwy Un-Ramp	Kyngs Heath Rd		C	E	C	В	C	C	C	C	ט	C	C	C	C
Kyngs Heath Rd	US 192	F	+	F	F	F	+		F		F	F	F	F	F
	Total Travel Time (sec)	504.9	568.5	581.2	588.9	510.0	518.7	462.5	464.4	1,025.0	1,030.7	598.2	587.6	510.0	537.8
	Corridor Average Speed (mph)		18.5	18.1	17.9	20.6	20.3	22.8	22.7	10.3	10.2	17.6	17.9	20.7	19.5
Overall LOS		D	E	E	E	D	D	D	D	F	F	E	E	D	D

Table 5-6 - Arterial Analysis Summary

Experienced Travel Time

Alternatives 1 and 2 include several innovative intersection types that displace/re-route certain intersection movements to increase overall intersection efficiency through the reduction of signal phases. Experienced Travel Time (ETT) was calculated for each displaced movement consistent with the *2021 Traffic Analysis Handbook* in order to accurately compare the displaced/re-routed movements to the No-Build conventional intersection movements. ETT is the combination of control delay at intersections and Extra Distance Travel Time (EDTT) for origin-destination paths of the displaced. In general, it is observed that while the quadrant road configurations generate low overall intersection delays as presented in the previous sections, displaced movements ETT are highest compared to other alternatives. This is observed at the intersection of SR 535 and Polynesian Isle Boulevard under Alternative 1 and at the intersections of SR 535 at International Drive and SR 536 intersections show a substantial reduction in delay for displaced movements when compared to No-Build conditions.

5.2.7 Selection of the Preferred Alternative

The previous sections provided a detailed description and evaluation of the No-Build, TSM&O and the various Build alternatives. A multi-phase evaluation process was followed to determine the most efficient build alternative to address the various existing and future project deficiencies. Based on the evaluation it is evident that the best solution to address the needs of the corridor will be a comprehensive build alternative that considers capacity (widening to six lanes), innovative intersections, TSM&O strategies and multimodal enhancements.

As shown on **Table 5-3.** Alternative Typical Sections A, C and D all meet and address the project's purpose and need and all minimize impacts to the natural, physical and social environments with minor differences in construction cost and utility impacts. After receiving input from the agencies and the public and in coordination with FDOT, Alternative A, as shown in **Figure 5-6** was recommended as the Preferred Alternative Typical Section for the following reasons:

- The inside widening would have less impact to the crossing streets and allow more room for development of the innovative intersections.
- Inside widening would still provide adequate median width throughout the project length while allowing more room to provide roadside swales, maximize stormwater quality

treatment along those swales, and provide greater separation between the edge of pavement and the shared use path.

- Inside widening would minimize potential impacts to base clearance. More detailed survey would be looked at in final design.
- A shared use path was preferred over the separated bicycle lanes by the agencies and the public.



Figure 5-6 - Preferred Typical Section

An Intersection Control Evaluation (ICE) was performed, and the following intersections alternatives are recommended as part of the Preferred Alternative.

- At the intersection of SR 535 and Poinciana Boulevard, Alternative A, the traffic signal was selected as the recommended intersection option At the intersection of SR 535 and Polynesian Isle Boulevard, Alternative A, the Partial Median U-Turn, was selected as the recommended intersection option.
- At the intersection of SR 535 and International Drive, Alternative A, the Partial Displaced Left Turn, was selected as the recommended intersection option.
- At the intersection of SR 535 and SR 536/World Center Drive, Alternative A, the Partial Displaced Left Turn, was selected as the recommended intersection option.

6.0 PROJECT COORDINATION & PUBLIC INVOLVEMENT

The purpose of the SR 535 outreach program is to: (1) share project information with the individuals who work and live in this area; (2) listen to ideas and concerns; and (3) incorporate this input into the study process. The outreach program includes agency coordination, communication tools, small group meetings, and community-wide meetings (Alternatives Public Information Meeting and a Public Hearing).

Public involvement activities were integrated into the PD&E study process providing the opportunity for property owners, residents, businesses, government entities and agencies to share their concerns and ideas with the FDOT. The summary of the outreach efforts and meetings conducted to date, as well as selected detailed descriptions of specific activities are also provided in the following sections. A complete summary of the meetings, including meeting notifications, presentations, display materials, comments, sign-in sheets and media coverage is provided in the Comments and Coordination Report, available separately.

6.1 Public Involvement Plan

A Public Involvement Plan (PIP) was developed and was carried out as an integral part of the project and provides an overview of the outreach approach for the PD&E Study. The purpose of the PIP was to guide the public outreach process in establishing and maintaining communication with the public throughout the study and incorporating public input during the alternative evaluation. The PIP was signed on May 4, 2020.

Public involvement activities began when the project started in the Spring of 2020 and have continued throughout the study process. All input received served as valuable information that was taken into consideration for the refinement of the alternatives and the development of the Preferred Alternative. Representatives from the FDOT were available at each meeting to discuss the project and answer questions.

6.2 Agency Coordination

6.2.1 Advance Notification & Programming Screen Summary Report

An Advance Notification Package was prepared and sent to the Florida State Clearinghouse on May 9, 2019, where it was then distributed to the appropriate state agencies for review. The Advance Notification was also distributed to appropriate non-state agencies and tribal nations. A copy of the Advance Notification Package is provided in **Appendix D**.

In addition, a Programming Screen Summary Report was published on July 3, 2019 and republished on May 6, 2024. The purpose of this report is to summarize the results of the Environmental Technical Advisory Team Programming Screen review of the project; providing details concerning agency comments about potential effects to natural, cultural, and community resources; and provide additional documentation of activities related to the Programming Phase of this project. The environmental screening during these processes resulted in summary degrees of effect (DOE) of moderate or lower for all topics. Water quality received a substantial form in the US Environmental Protection Agency due to the presence of potentially contaminated sites, BMAP for Lake Okeechobee and the recharge source zone for the Biscayne Aquifer. A copy of the Programming Screen Summary Report is provided in **Appendix D**.

6.2.2 Agency and Stakeholder Meetings

A key aspect of the PIP for this project included meetings with interested parties other than the Federal and State environmental, permit and review agencies. These include representatives of public agencies and project stakeholders. A Project Visioning Team was formed during the Corridor Planning Study. This group was expanded for the PD&E Study and a Community Advisory Group (CAG) was formed. **Table 6-1** summarizes the various agency and stakeholders meetings conducted to date.

The CAG included participation from the following groups: Orange County, Osceola County, MetroPlan Orlando, LYNX, East Central Florida Regional Council, FDOT District 5, International Drive Resort Area Chamber of Commerce, Kissimmee-Osceola County Chamber of Commerce. A summary of the meeting including comments and more information are available in the Comments and Coordination Report, a companion document to this report.

Date Stakeholder/Government Agency		Торіс		
1/27/21	CAG #1	Kick Off Meeting		
6/16/21	CAG #2	Project Update		
10/11/21 Local Agency Coordination (MetroPlan Orlando, Orange Count, and Osceola County)		Traffic		
11/3/21 Local Agency Coordination (MetroPlan Orlando, Orange Count, and Osceola County)		Traffic		
4/19/22	Orange County	International Drive Extension		
6/20/22	CAG #3	Alternatives Development		
6/23/22	Osceola County	Alternatives Development		
2/1/24	CAG #4	Preferred Alternative		

Table 6-1 - Agency/Stakeholder Coordination

6.2.3 Public Kick-Off Newsletter

An Informational Kick-Off Newsletter was sent in November 2020 in lieu of a Kick-Off Meeting. The newsletter was sent to adjacent property owners within 300 feet of the study corridor, elected officials, agencies, and interested parties. The Newsletter was printed in English and Spanish. In addition, the newsletter was hand delivered to 140 businesses along SR 535, and 30 copies were left at the Celebration Public Library in Osceola County and 30 copies left at the Southwest Public Library in Orange County.

6.2.4 Hybrid Alternatives Public Information Meeting

A Hybrid Alternatives Public Information Meeting (APIM) was held on August 11, 2022 at Embassy Suites - Lake Buena Vista South and online via GoToWebinar. This meeting provided an opportunity for property owners, residents, businesses, elected officials, stakeholders and other interested parties to view project alternatives and ask questions of the study team and provide comments. Public meeting notices were sent via mail to elected officials, agencies, stakeholders, and property owners. The notices were provided in English and Spanish. Newsletters were hand delivered to local businesses along the SR 535 corridor as well as 30 copies left at the Celebration Public Library and Southwest Public Library in Osceola and Orange Counties. The meeting was announced on the Department project website and as a Press Release, advertised in the Orlando Sentinel (Orange and Osceola Editions) in English and in the El Sentinel in Spanish, as well as the Florida Administrative Register.

As individuals signed in at the in-person venue, they received a comment form. Also available were the Project Information Handout, in English and Spanish, and a Newsletter in English and Spanish. The same materials were available to those attending virtually. Individuals could provide their input by submitting a completed comment form at the in-person meeting or by mailing or emailing it at a later date. For those attending virtually, they could type in comments in the "Questions" panel. Responses to the virtually submitted comments were provided after the meeting. At the in-person venue, several project display boards were available for review from 5 p.m. to 7 p.m. in an open house format. Study team members were available to answer questions and have one-on-one conversations with meeting participants. A project video was available was for review throughout the meeting. For those attending virtually, the same project materials were available at the project website. Excluding the project team, 11 individuals attended the meeting in person and 5 attended the meeting virtually. A total of twelve written comments were received. One comment form was submitted at the venue, two comments were submitted virtually, and nine

emails were received during the comment period. Overall, comments received focused on the need for SR 535 improvements, intersection comments, informational requests and comments on other area projects.

6.2.5 Public Hearing

A Public Hearing was held on June 18, 2024 (virtual via GoToWebinar) and on June 20, 2024 (inperson) at Embassy Suites – Lake Buena Vista South. The hearing was held to give interested persons an opportunity to express their views concerning the location, conceptual design, and social, economic, and environmental effects of the proposed improvements. Both formats began at 5:30 p.m. as an open house with the project presentation starting at 6 p.m. After the presentation, individuals had the opportunity to make verbal comments. Letters were emailed to 38 elected officials on May 20, 2024 and to 122 agencies and 55 stakeholders on May 21, 2024 with Project Information Handout and Public Hearing Location Map as attachments. A letter, Project Information Handout (English and Spanish), and Project Hearing location Map (English and Spanish) were mailed to 681 property owners and 36 stakeholders on May 22, 2024. A newspaper ad was published twice in the Orlando Sentinel: May 26, 2024 (English and Spanish versions in Orange Extra and Osceola Extra) and June 9, 2024 (English and Spanish versions in Orange Extra and Osceola Extra). The Public Hearing was also advertised in the Florida Administrative Register on June 7, 2024. One hundred eighty-five (185) copies of Newsletter No. 3 (English and Spanish versions) were hand delivered to local businesses in the SR 535 corridor on May 29 and 30, 2024. Also, 25 sets of Newsletter No. 3 were left at the Osceola County Public Library – West Osceola Branch and the Orange County Public Library – Southwest Branch. The Public Hearing was also announced on www.cflroads.com/project/437174-2 as well as the FDOT website (www.fdot.gov on District Five's public meetings page). On June 11, 2024 the FDOT Public Information Office emailed a news release to Orange and Osceola Counties media outlets. Draft study documents were available for review from May 28, 2024 (21 days before the public hearing) through July 1, 2024 at the Osceola County Public Library – West Osceola Branch, the Orange County Public Library - Southwest Branch, and on the study website at www.cflroads.com/project/431774-2.

The Public Hearing virtual format started at 5:30 p.m. as an open house. A total of 9 people signed into the Virtual Public Hearing, excluding staff members. During this time, individuals could review and/or download the study documents. In addition, individuals could share questions and comments by typing them in the "Questions Box" in the control panel. The "Questions Box" was also where individuals could type requests to speak during the public comment part of the Public

Hearing. The project presentation began at 6 p.m. Afterwards, attendees were invited to verbally share their comments. In the "Questions Box", one set of comments was submitted along with one question. There were no requests to speak during the public comment part of the public hearing. Responses to those written comments were provided after the Public Hearing.

The Public Hearing in-person format began at 5:30 p.m. as an open house. A total of 3 people signed into the in-person Public Hearing, excluding staff members. As individuals signed in, they could pick up copies of: comment form, Project Information Handout (English and Spanish), and Newsletter No. 3 (English and Spanish). Speaker cards were also available for those individuals who wanted to speak during the public comment part of the hearing. Between 5:30 p.m. and 6 p.m., individuals could review the display boards (same ones posted on the study website and at the Virtual Public Hearing). Study team members were available to answer questions and to hold "one-on-one" conversations with the hearing participants. The project presentation began at 6 p.m. Afterwards, attendees were invited to verbally share their comments. No one spoke during the public comment part of the public comment forms were submitted at the Public Hearing.

During the Public Hearing comment period (from May 20, 2024 through July 1, 2024), a total of 4 comments were received, two written comments at the virtual Public Hearing, and two comments were emailed. These included two clarification questions and two comments, summarized below:

- Concerns about the changes (signals to U-turns) at the SR 535 intersections with Polynesian Isle Boulevard and Poinciana Boulevard; need to have left turns onto SR 535 from the Lake Buena Vista Factory Stores and Lake Buena Vista Resort & Spa and the left turn from SR 535 into the shopping center on the south side (1)
- Consider creating a median cut for southbound SR 535 traffic to allow for a left turn onto a future eastbound on-ramp onto SR 417

All comments received were taken into consideration in the development and selection of the alternatives and will be considered further during subsequent project phases. A summary of the meeting including the comments and more information are available in the Comments and Coordination Report. The Public Hearing Transcripts and the Public Hearing Certification Form are attached.

7.0 DESIGN FEATURES OF THE PREFERRED ALTERNATIVE

7.1 Engineering Details of the Preferred Alternative

The results of the Alternative Selection Process indicate that the Preferred Alternative Typical Section is Alternative A, inside widening with a shared use path, in combination with this typical section the following innovative intersections:

- SR 535 and Polynesian Boulevard– Partial Median U-Turn
- SR 535 and International Drive Boulevard
 Partial Displaced Left Turn (East-West) Alternative
- SR 535 and SR 536/World Center Drive Partial Displaced Left Turn Alternative

The following sections describe and highlight the different design elements associated with the preferred alternative. For more details, please refer to the concept plans in **Appendix E.** In addition, 123BIM was utilized to create a 3D model of the preferred alternative to help visualize the corridor.

7.1.1 Typical Section

After a comprehensive alternative generation and evaluation process, one (1) alternative was selected as being the most effective option throughout the project corridor (see **Figure 7-1**). The preferred typical section, Alternative A, consists of total reconstruction with the widening of the additional lane towards the median. This inside widening helps minimize potential impacts to the FGT Line and at the various innovative intersections. The typical section consists of three (3) 11-foot travel lanes in each direction, a median width that varies from 32-feet to 47-feet, a 14-foot shared use path on the west side and a 12-foot sidewalk on the east side. This typical section is anticipated to fit within the existing right of way of SR 535. For additional information the typical section package is in **Appendix F**.

Figure 7-1 - Preferred Typical Section



7.1.2 Intersections

An Intersection Control Evaluation (ICE) was performed for SR 535 signalized intersections at Poinciana Boulevard, Polynesian Isle Boulevard, International Drive, and SR 536. A summary of the CAP X analysis for the major intersections is provided below.

SR 535 and Poinciana Boulevard – Signalized Intersection

The preferred alternative for SR 535 and Poinciana Boulevard, the traffic signal concept (see **Figure 7-2**), involves the removal and replacement of direct northbound and southbound left turns from SR 535 at SR 536 with the displaced left turns installed on both legs of SR 535. The eastbound and westbound left turn movements for the SR 536/World Center Drive continue to take place at the main intersection.





SR 535 and Polynesian Isle Boulevard– Partial Median U-Turn

The preferred alternative for SR 535 and Polynesian Isle Boulevard, Partial Median U-Turn concept (see **Figure 7-3**), involves the removal of northbound and southbound direct left turn movements from SR 535 to Polynesian Isle Boulevard and the addition of signalized U-turns at the existing median openings located just north and south of the intersection along SR 535 to accommodate vehicles wishing to travel east or west on Polynesian Isle Boulevard.



Figure 7-3 - SR 535 and Polynesian Isle Blvd Partial Median U-Turn Intersection

SR 535 and International Drive Boulevard– Partial Displaced Left Turn (East-West)

The preferred alternative for SR 535 and International Drive, Partial Displaced Left Turn concept (see **Figure 7-4**), involves the removal of direct eastbound and westbound left turns from Internation Drive at SR 535 with the displaced left turns installed on both legs International Drive. The northbound and southbound left turn movements for SR 535 continue to take place at the main intersection.



Figure 7-4 - SR 535 and International Drive Partial Displaced Left Turn Alternative

SR 535 and SR 536/World Center Drive - Partial Displaced Left Turn Alternative

The preferred alternative for SR 535 and SR 536/World Center Drive, the Partial Displaced Left Turn concept (see **Figure 7-5**), involves the installation of an additional lane along SR 535 for northbound and southbound movements and the removal and replacement of direct northbound and southbound left turns on SR 535 with the displaced left turns installed on both legs of SR 535 (major street). The eastbound and westbound left turn movements for the minor street on SR 536/World Center Drive continue to take place at the main intersection.



Figure 7-5 - SR 535 and SR 536/World Center Dr Partial Displaced Left Turn Alternative

7.1.3 Bridges and Structures

There are no bridge structures along SR 535. In the project corridor there are three (3) bridge structures over SR 535. One (1) bridge carries Osceola Parkway traffic over SR 535 (#924161) and two (2) bridges carry SR 417 traffic over SR 535 (#750474 and #750475). Roadway improvements would not require extending or reconstructing these bridges as all preferred alternative improvements will fit under the existing structures (see **Figure 7-6** and **Figure 7-7**). Based on the National Bridge Inventory information, the existing vertical clearance for the Osceola Parkway bridge over SR 535 is 16.8 feet and for the bridges that carry SR 417 traffic over SR 535 the vertical clearance is 16.7 feet. It should be noted that for the SR 417 bridges over SR 535 a minimum clearance of 16 feet 6 inches is required, but can be reduced to 16 feet for construction. With the proposed slight shift of the southbound roadway alignment towards the median under the SR 417 bridge, it is anticipated that the vertical height will increase by approximately 1 inch, thus satisfying the required clearance.





Figure 7-7 - SR 417 over SR 535



7.1.4 Right of way

There are 11.5 acres of right of way impacts (excluding FDOT and County owned parcels required) are anticipated as a result of the preferred alternative. Of the 11.5 total acres, 0.7 acres are associated with improvements at the SR 535/International Drive and SR 535/World Center Drive (SR 536) intersections. Of the 11.5 total acres, 10.8 acres are associated with the required stormwater and floodplain compensation ponds (excluding FDOT and County owned parcels required). A total of 8 parcels are anticipated to be impacted from the preferred alternative. Right of way acquisition is anticipated to cost approximately \$38.1 million. Coordination during final design will determine the final right of way requirements of the project. There are no relocations anticipated for the preferred alternative.

7.1.5 Horizontal and Vertical Geometry

The proposed horizontal alignment follows the existing horizontal alignment. The information is located in Section 2.4.8. The curve data is also displayed on the concept plans, see **Appendix E**. Based on a review of available survey, the study corridor may have areas where the existing longitudinal grades may be flatter than the minimum per design standards for curbed roadway. In order to provide the necessary longitudinal grades to provide for adequate drainage as well as provide for adequate base clearance, full reconstruction may be required. It is anticipated that the roadway will generally follow the existing vertical alignment, however, the final analysis of the vertical alignment including analysis of base clearance and longitudinal slope will be completed in the design phase.

7.1.6 Bicycle and Pedestrian Accommodations

The Preferred Alternative includes a 14-foot wide shared use path on the west side and a 12-foot wide shared use path on the east side of the typical section through the entirety of the project. Pedestrian signalization will be included at the signalized intersections within the project limits. It should be noted that there are existing sidewalks within private property along parts of the study corridor. These sidewalks are not anticipated to be impacted.

7.1.7 Multimodal Accommodations

As previously mentioned, the LYNX Transit System of the Central Florida Regional Transportation Authority services the northern portion of the study area with Bus Route 304. Coordination will be on-going throughout the design phase if the bus service will ever be expanded along the study corridor.

7.1.8 Access Management

It is recommended that the entire project corridor remains as the existing Access Class 3 facility. Below is a summary of the proposed access management plan for SR 535 based on the approved Access Management Plan Technical Memorandum. The criteria from the Florida Administrative Code 14-97 and FDOT Design Manual was followed (see **Table 7-1**).

Access	FDOT Context	Median Type	Conne Spacin	ection g (feet)	Median Ope (fe	Signal Spacing		
Class	Classification		>45 mph	<u><</u> 45 mph	Directional	Full	(feet)	
2	C1 Natural, C2 Rural	Restrictive w/Service Roads	1,320	660	1,320	2,640	2,640	
3	C1 Natural, C2 Rural, C2T Rural Town, C3R Suburban Residential, C3C Suburban Commercial	Restrictive	660	440	1,320	2,640	2,640	
4		Non-Restrictive	660	440			2,640	
5	C2T Rural Town, C4 Urban General,	Restrictive	440	245	660	2,640/1,320*	2,640/1,320*	
6	C5 Urban Center, C6 Urban Core	Non-Restrictive	440	245			1,320	
7		Both Median Types	12	25	330	660	1,320	

Table 7-1– Access Management Standards

*Note: 2,640 for > 45 mph; 1,320 for <u><</u> 45 mph

7.1.8.1 Driveway Connection Spacing

There are various driveways and side street connections along both sides of the study providing access to the hotels/commercial developments, etc. The driveway connection is the distance between two adjacent driveways and the corner clearance is the distance from the driveway connection to an intersection. **Figure 7-8** illustrates the Driveway Connections Evaluation for existing driveways. There are four driveway connection spacings that are not to standard. These driveways are either additional access for a hotel, convenience store or gas station or they serve as the only access to the property. For these reasons there are no proposed changes to the existing driveway connections along the project corridor.



Figure 7-8 - Driveway Connections Spacing Compliance

7.1.8.2 Median Spacing

Within the project limits, the proposed roadway segment along SR 535 will maintain the restrictive median. The existing and proposed median spacing and compliance with the standards are shown in **Table 7-2**. All the median openings (full and directional) do not comply with the standards of an Access Class 3 facility. Based on the existing and no build LOS results for the study intersections, consolidation of median openings to meet spacing criteria would increase traffic volumes resulting in further degradation of operations.

	Existing Opening	Proposed Design Speed (mph)	Proposed Stations	Existing Stations	Existing Spacing (feet)	Median Type	Proposed Spacing (feet)	Meets Standard	Deviation from Standard (%)
1	W IRLO BRONSON MEMORIAL HWY	45	1489+41.87	1489+41.87		Full			
2	KYNGS HEATH RD	45	1499+34.87	1499+34.87	993	Full	993	No	62.4%
3	CALYPSO CAY WAY	45	1511+60.87	1511+60.87	1,226	Directional	1,226	No	7.1%
4	W OSCEOLA PKWY RAMP	45	1515+82.87	1515+82.87	422	Directional	422	No	68.0%
5	N POINCIANA BLVD	45	1526+50.87	1526+50.87	1,068	Full	1,068	No	59.5%
6	SHOPPING CENTER ENTRANCE	45	1536+34.87	1536+34.87	984	Directional	984	No	25.5%
7	POLYNESIAN ISLE BVLD	45	1545+72.87	1545+72.87	938	Full	938	No	64.5%
8	SHOPPING CENTER ENTRANCE	45	1554+84.87	1555+24.87	952	Directional	912	No	30.9%
9	LAKE BUENA VISTA FACTORY STORES DR	45	1562+83.87	1562+83.87	759	Full	799	No	69.7%
10	INTERNATIONAL DR	45	1583+85.87	1583+85.87	2,102	Full	2,102	No	20.4%
11	WORLD CENTER DR	45	1597+43.87	1597+43.87	1358	Full	1,358	No	48.6%
12	LAKE BRYAN BEACH BLVD	45	1615+09.87	1615+09.87	1,766	Full	1,766	No	33.1%

Table 7-2 – Median Spacing and Standard Compliance

7.1.8.2.1 Median Closure Analysis

As part of the analysis of the intersection of SR 535 and SR 536 (World Center Drive), a safety and operational qualitative assessment was performed for the closure of the median on World Center Drive (SR 536) east of SR 535 that serves as access to the Buena Vista Suites and Caribe Royale. See **Figure 7-9** for the median opening location and current concept plan of the proposed median closure. This location is a prevalent area for left turn/angle crashes due to the number of travelers attempting to turn into the Buena Vista Suites or the Caribe Royale Hotel. A total of 167 crashes have been recorded, at an increasing rate, within the 5-year period between 2014 to 2018, which is an average of 33 crashes per year. The proposed median opening closure will result in the need for motorists to modify their travel routes to access properties north and south of World Center Drive (SR 536). The following describes proposed travel patterns:

- Northbound left turn and eastbound left turn movements from the existing median opening will be rerouted to perform an eastbound U-turn movement at the median opening 940-ft east of the existing opening.
- Southbound left turn and westbound left turn movements from the existing median opening will be rerouted to perform a westbound U-turn movement at the intersection of SR 535 and World Center Drive (SR 536).

It should be noted that the median closure does provide additional turn bay storage for the westbound left turn movement at the intersection of SR 535 and World Center Drive (SR 536) to accommodate design year projected queue lengths of approximately 200-ft and 350-ft during the 2045 AM and PM peak hours, respectively. Additional details pertaining to this median closure can be found in **Appendix G**.



Figure 7-9 - Existing Median Opening Location

7.1.8.3 Traffic Signal Spacing

A comparison of the proposed signal spacing within the corridor and immediate adjacent signals are shown on **Table 7-3** and indicate the distances between the signalized intersections. It should be noted that for the innovative intersections, all signalized intersections are considered as one signal at the center of the intersection. The distances are shown on **Table 7-3**. Although none of the signal spacings comply with the standard of 2,640 feet, there are no proposed changes to the signal spacing.

FROM	то	SPACING (feet)	MEETS STANDARD
W Irlo Bronson Memorial Hwy	Kyngs Health Rd	980	No
Kyngs Heath Rd	W Osceola Pkwy Ramp	1663	No
W Osceola Pkwy Ramp	N Poinciana Blvd	1060	No
N Poinciana Blvd	Polynesian Isle Bvld	1914	No
Polynesian Isle Bvld	Lake Buena Vista Factory Stores Dr	1720	No
Lake Buena Vista Factory Stores Dr	International Dr	2114	No
International Dr	World Center Dr (SR 536)	1390	No

 Table 7-3 – Signal Spacing Compliance

7.1.8.4 Access Management Conclusions

An Access Management evaluation was performed for the proposed SR 535 PD&E study from US 192 to just north of World Center Drive (SR 536) (see **Appendix G**). The roadway is currently classified as an Access Management Classification 3. The following conclusions can be made from the information provided.

- Proposed signal spacing within the corridor does not comply with Access Class 3 standards but is proposed to remain the same at the existing locations.
- Although the median spacing is not compliant to Access Class 3 standards it is recommended to maintain the existing median locations.
 - With the exception of the median closure on World Center Drive (SR 536) east of SR 535 that serves as access to the Buena Vista Suites and Caribe Royale

Based on the existing and no build LOS results for the study intersections, consolidation of median openings to meet spacing criteria would increase traffic volumes resulting in further degradation of operations. As part of the alternatives development, a comprehensive Intersection Control Evaluation was performed for the project intersections resulting in a series of intersection configurations that provide for more efficient distribution of movements throughout the corridor. For the example, northbound and southbound left turn movements are restricted at the SR 535 intersections of Polynesian Isle Boulevard and SR 536/World Center Drive and are instead serviced through displaced left turn and median U-turn movements at nearby existing and/or new median openings. This approach results in operational and safety improvements throughout the project corridor.

7.1.8.5 Tolled Projects

SR 535 from US 192 to north of World Center Drive (SR 536) is not a tolled facility. SR 417 that has an overpass over SR 535 is a tolled facility but has no direct access along our project corridor.

7.1.9 Intelligent Transportation System and TSM&O Strategies

A Concept of Operations (ConOps) and Preliminary Systems Engineering Management Plan (PSEMP) for the Transportation Systems Management & Operations (TSM&O) component of this project has been completed and seeks to implement strategies as part of FDOT's goals to improve mobility and safety along SR 535. Based on the selected alternative, the ConOps and PSEMP evaluate multiple TSM&O initiatives and Connected Vehicles (CV) technologies, these include but are not limited to improved traffic signal systems, communication systems, travel time systems, Emergency Vehicle Preemption (EVP), LED/Smart Corridor Lighting, Adaptive Traffic Control Systems (ATCS), Smart Signals Initiative, and pedestrian/bicycle CV safety applications (PedSafe) features. In addition, the TSM&O documents summarize the existing and proposed systems along with involved stakeholders, user involvement and intersection, modes of operation, impacts and constraints, and cost, schedule and procurement options.

The TSM&O component of this project is being implemented to improve existing active traffic management activities along the corridor. The goal for this project is to expand the use of TSM&O strategies to eliminate gaps in the network. This project will utilize the existing ITS and signal network communications and additional infrastructure as a base to add the required CCTV, BT/RSUs, and DMS devices. Additionally, the project seeks to expand ATSPM capabilities. When completed, this project will provide the means for FDOT and local counties/cities to obtain additional traffic data for use in managing the roadways and will allow motorists to receive advance warnings of incidents and congestion and be rerouted around the area, thus saving time and fuel while reducing emissions and promoting safety for motorists.

The project's main limitation is existing controller firmware in Osceola County to engage ATSPMs capabilities at signalized intersections. Smart signal detection is also needed in order expand ATSPM capabilities for the signalized intersections located in the Orange County portion of the project.

In order to address the identified constraints, this project proposes the following improvements:

• Upgrade Osceola County traffic signal controller firmware to version 3.28 or later to support ATSPM capabilities.

- Provide smart signals detection for ATSPM capabilities.
- Ensure dedicated curb ramps instead of shared curb ramps are provided for each crosswalk. to allow for compatibility with pedestrian passive detection design requirements.
- Install CCTV and BT/RSU at Poinciana Boulevard to fill the existing device gap.
- Install DMS for southbound traffic travel information notification.
- Coordinate the implementation of EVP.

Figure 7-10 illustrates the locations of proposed ITS devices.

7.1.9.1 Speed Management Strategies

Table 202.3.1 of the FDOT Design Manual (FDM) identifies Speed Management Strategies to achieve a desired operating speed. The table uses context classification and target speed to identify the types of strategies that would be most effective. Based on Table 202.3.1, with context classification of C3R or C3C and a target speed of 45 mph, speed management strategies include Roundabouts, Lane Narrowing, Horizontal Deflection, Speed Feedback Signs, Rectangular Rapid Flashing Beacon (RRFB) and Pedestrian Hybrid Beacon (PHB) for consideration.

A Speed Management Strategies Technical Memorandum was prepared for this study. The proposed improvements for the Preferred Alternative utilize appropriate strategies from the listed above where feasible based on project considerations such as multimodal needs, access management, design criteria and right of way considerations. The following outlines the speed management strategies used for this corridor.

- Lane Narrowing The lane width will be reduced from 12-foot to a proposed 11-foot.
- Speed Feeback Signs Several segments throughout the corridor provide an opportunity for the placement of speed feedback signs. A traffic speed study is recommended to be conducted after the opening of the improvements to determine the need for speed feedback signs.

On-going coordination is recommended during the Design Phase.



Figure 7-10 - Proposed Intelligent Transportation Systems (ITS) Devices

7.1.10 Landscape

No additional landscaping features are being proposed at this time of the PD&E Study. It is recommended that this can be part of the final design phase.

7.1.11 Lighting

Since a Lighting Justification Study was not conducted as part of this PD&E effort, the potential need for installation of continuous roadway lighting along the study corridor cannot be ascertained at this time. This task remains as part of the final design phase.

7.1.12 Wildlife Crossings

SR 535 from US 192 to north of World Center Drive (SR 536) has no proposed designated wildlife crossings.

7.1.13 Permits

No special permitting requirements have been taken into consideration during this PD&E Study. It is recommended that this task remains as part of the final design phase.

7.1.14 Utilities

The 16 UAO's that occur along the project corridor have a variety of buried and overhead utilities throughout the corridor. The preliminary evaluation of the proposed improvements revealed potential utility conflicts along the corridor. Additional conflicts may be identified during final design due to proposed drainage, signals, Maintenance of Traffic, etc.

Conflict mitigation strategies should include the following:

- Subsurface Utility Engineering (SUE) for verified vertical and horizontal (Vvh) information on existing underground utilities to confirm conflicts.
- Obtaining Vvh information will also help guide the final design phase and ensure that informed decisions are made where practical to reduce potential utility relocations.
- Accurate location of all aerial utility facilities to confirm conflicts with the project final design, temporary work, MOT, and constructability of project improvements.
- Consideration of final design location to maintain Occupational Safety and Health Administration (OSHA) and National Electric Safety Code (NESC) final and temporary clearance requirements from energized overhead powerlines.
- Implementation of Utility Work by Highway Contractor Agreement (UWHCA) for any necessary relocation of water and sewer facilities.

- Completion of utility relocation work prior to the start of roadway construction activities.
- Most UAOs have the capability to adjust their facilities without causing major inconvenience to their customers. Mitigation measures to minimize service disruptions should include the following:
 - Installation and activation of new facilities prior to removal of existing.
 - Allowing service disruptions only during periods of minimum usage.
 - Limiting the duration of service disruptions.
 - Evaluation of innovative approaches to maintaining utility services in temporary work areas.

The estimated utility relocation cost is provided on **Table 7-4**. For additional details this information can be located on the Utility Assessment Package (a companion report to this document).

UAO	ESTIMATED RELOCATION COST
AT&T Distribution	\$ 675,000
Charter Communications	\$ 252,500
Comcast	\$ 144,500
Duke Energy	\$ 2,320,000
Florida Gas Transmission	\$-
Kinder-Morgan (Central FL Pipeline)	\$-
Kissimmee Utility Authority	\$ 1,090,000
Lumen Technologies	\$ 195,500
Orange County	\$ 1,170,000.00
Osceola County	\$ -
Orlando Utilities Commission	\$-
Summit Broadband	\$ 141,000
TECO Peoples Gas	\$ 654,000
TOHO Water Authority	\$ 275,500
Uniti Fiber	\$-
Verizon/MCI	\$ 110,000
TOTAL:	\$ 7,028,000

Table 7-4 - Estimated Utility Relocation Cost

7.1.15 Drainage and Stormwater Management Facilities

In general, basin limits and discharge points in the proposed condition will remain the same as the existing condition except where noted in the proposed basin descriptions. Existing stormwater ponds have been evaluated, and proposed stormwater ponds have been sized to provide the required water quality treatment, attenuation and nutrient load reduction set forth by the SFWMD and FDOT.

A combination of closed storm drain system and shallow roadside ditches located between the proposed curb and gutter and shared use paths are proposed on both sides of the roadway as shown in **Figure 7-1**.

The primary purpose of the shallow ditches is not conveyance, as the proposed ditch footprints do not have adequate capacity to convey runoff to the proposed stormwater ponds and outfalls. The width available for the shallow ditches is generally limited by right of way and utility constraints. Flume inlets or curb openings will convey runoff from the roadway to the shallow ditches, and a storm drain system composed of DBIs and pipe will convey runoff to the outfall.
The shallow ditches will assist in meeting stormwater quality criteria, and also may assist with the phasing of the drainage system construction as noted below.

- Net improvement for nutrient loading for total phosphorus is required due to the project's location within the Lake Okeechobee BMAP. Given that the conversion from a rural typical section in the existing condition to an urban typical section in the proposed condition, there is a substantial increase in the directly connected imperious area (DCIA). This increase in DCIA also results in higher nutrient loads in the proposed condition. Utilizing a proposed drainage system with flume inlets and shallow roadside ditches where feasible will convert the proposed roadway impervious area to non-DCIA, thereby substantially reducing the nutrient load in the proposed condition prior to stormwater treatment.
- The preferred widening for SR 535 is to widen to the inside (towards the median). Construction of storm drain systems outside of the existing roadway footprint may facilitate the Maintenance of Traffic (MOT) plan developed during the design phase.

7.1.15.1 Pond Sizing Methodology

The pond sizing analysis assumes that all ponds will be designed using wet detention criteria due to the soil conditions and groundwater table elevations along the SR 535 corridor. The PSR, a companion document to this report, focuses on the preliminary estimate of required pond volumes necessary for each roadway drainage basin. As all project basins currently drain to permitted stormwater facilities, the existing ponds have been evaluated to determine whether the pond size is sufficient to provide the required water quality treatment and attenuation, or if additional pond volume is required (either through expansion of the existing stormwater pond or by adding a potential stormwater pond to the basin). All existing stormwater ponds serving the project basins are utilized in the proposed condition.

The following parameters were considered in the sizing and location of the potential pond sites:

- Hydrologic and hydraulic factors such as existing ground elevations, soil types, estimated seasonal high groundwater table (SHGWT), stormwater conveyance feasibility, allowable hydraulic grade line (HGL);
- Potential impacts to environmental resources, including wetlands, conservation easements, threatened or endangered species;
- Floodplain impacts;
- Major utility conflict potential;

- Parcel descriptions and land usage;
- Impacts to cultural resources; and
- Impacts to contamination sites

For the purposes of the pond siting analysis in the PD&E, the shared use paths have been included in the calculation of impervious area to provide a conservative estimate of water quality volume required. It is recommended that the impervious area acreage be refined during the design phase of the project to provide a more accurate estimate of water quality treatment volume requirements.

The Preferred Pond Alternative for each basin is provided in **Table 7-5** and **Table 7-6** anticipated right of way needs (excluding FDOT and County owned parcels used for the alternatives) associated with the preferred alternatives are also provided. Existing stormwater ponds within Basins 1 and 4 have sufficient capacity to provide the required water quality treatment and attenuation in the ponds currently serving these basins, so no additional right of way is required based on the calculations contained herein. Proposed ponds are shown on **Figure 7-11**.

Basin	Preferred Alternative	Ponds	Туре	Remarks
1	1A	Exist. Pond 1-1	Wet	Exist. pond sufficient. Reduced drainage area (30.94 ac to 29.16 ac) from exist. to proposed conditions. Increased freeboard in exist. pond.
2	2A	Exist. Pond 2-1 and Pond 2-2	Wet	Interconnected ponds to provide required water quality treatment and attenuation. Utilize Exist. Pond 2-1 outfall to Shingle Creek.
3	3A	Exist. Pond 3-1 and Pond 3-2	Wet	Interconnected ponds to provide required water quality treatment and attenuation. Utilize Exist. Pond 3-1 and Pond 3-2 outfalls to Shingle Creek.
4	4A	Exist. Pond 4-1	Wet	Exist. pond sufficient. Reduced drainage area (8.70 ac to 7.63 ac) from exist. to proposed conditions. Increased freeboard in exist. pond.

Table 7-5 - Preferred Pond Sites

Basin	Preferred Alternative	Ponds	Estimated R/W Req'd.	Remarks
1	1A	Exist. Pond 1-1	0.0	Pond within exist. right of way
2	2A	Exist. Pond 2-1 and Pond 2-2	3.0	Exist. Pond 2-1 within exist. R/W. Estimated R/W needs for Pond 2-2 provided (excluding FDOT or County R/W used for pond).
3	3A	Exist. Pond 3-1 and Pond 3-2	3.5	Exist. Pond 3-1 within exist. R/W. Estimated R/W needs for Pond 3-2 provided (excluding FDOT or County R/W used for pond).
4	4A	Exist. Pond 4-1	0.0	Pond within exist. R/W

Table 7-6 – I	Right of way	Needs for	Preferred	Alternatives

Figure 7-11 - Recommended Ponds



The project lies within the Shingle Creek basin, which is impaired for nutrients (macrophytes). SFWMD stated that nutrient loading calculations are not required for discharges to Shingle Creek due to this type of nutrient impairment, but that net improvement for total phosphorus (TP) is required because the project lies within the Lake Okeechobee BMAP. Impervious areas subject to non-vehicular traffic (e.g., sidewalk and shared use paths) do not require water quality treatment, and can be separated out from the calculation of impervious area.

Based on the SFWMD pre-application meeting, dry detention facilities (existing or proposed) do not receive any credit for providing nutrient load reduction. As all basins discharge to Shingle Creek, net improvement for TP is analyzed on a project-wide basis. Nutrient load calculations using BMPTrains can be found in the pond siting report (a companion document to this report). A summary of the net improvement calculations for the preferred pond sites is included in **Table 7-7**.

Basin	Existing TP Loading (kg/yr)	Proposed TP Loading (kg/yr)	Difference in TP Loading (kg/yr)
1	1.69	1.55	-0.14
2	2.45	2.49	0.04
3	1.91	1.57	-0.34
4	1.58	1.02	-0.56
Total	7.63	6.63	-1.00

Table 7-7 - Nutrient Loading Summary

7.1.16 Floodplain Analysis

The preferred alternative will impact the 100-year floodplain in 2 different ways:

Longitudinal roadway impacts resulting from filling the floodplain areas. Project improvements will impact the 100-year floodplain as a result of longitudinal impacts as SR 535 does not bisect the floodplain but is instead on the upstream fringe of the mapped floodplain. Impacts to the floodplain were conservatively estimated based on the existing profile and the potential impacts of the road widening within the project limits. In addition to the impacts that result from the road widening, the Pond 3-2 maintenance berm will also encroach into the 100-year floodplain. Impacts from Pond 3-2 (part of the preferred Alternative 3A for Basin 3 in the Pond Siting Report) were conservatively estimated at the pond berm.

• Transverse impacts resulting from the extension or replacement of the existing cross drain culverts.

The longitudinal impacts from the roadway improvements cannot be avoided as the project involves the widening of an existing roadway with site constraints (FGT line) to the east of SR 535. Minimization of impacts is accomplished by utilizing an urban typical section with widening to the inside as the preferred typical section. During the design phase, opportunities to minimize these impacts by optimizing the grading for ditches and proposed side slopes, or whether Pond 3-2 (which is an expansion of Exist. Pond 3-2) is able to provide any floodplain compensation, should be investigated. The floodplain limits in the vicinity of project improvements have been identified in the Pond Alternatives Exhibit shown on **Figure 7-12**.

Project improvements will impact the 100-year floodplain as a result of longitudinal impacts as SR 535 does not bisect the floodplain but is instead on the upstream fringe of the mapped floodplain. Impacts to the floodplain were conservatively estimated based on the existing profile and the potential impacts of the road widening within the project limits. During the design phase, opportunities to reduce these impacts by optimizing the grading for ditches and proposed side slopes. In addition to the impacts that result from the road widening, the Pond 3-2 maintenance berm will also encroach into the 100-year floodplain.

Since all three locations of floodplain impacts have been identified as Zone A, no base flood elevation (BFE) was provided on the FIRMs. In order to extrapolate a value for the BFEs to utilize in the floodplain impact calculations, the floodplain shapes were superimposed on contours generated from LiDAR data. The BFEs associated with each impact location have been identified in **Table 7-8** along with the floodplain impacts within each section.





Floodplain Reference*	Station Range	Base Flood Elevation	Floodplain Impacts (ac-ft)	
1	1582+00 to 1600+00	95	4.82	
2	1569+00 to 1582+00	91	1.78	
3	1550+00 to 1569+00	89.5	2.29	
Total 8.89				

 Table 7-8 - Base Flood Elevations and Floodplain Impacts

*reference numbers as noted on the calculations and exhibits

Since the three impact locations are hydraulically connected and within close proximity of each other, it was determined that the impacts from the three locations could be combined for developing compensation options. Five floodplain compensation (FPC) site alternatives have been developed and are included as part of this analysis. Equivalent storage was checked to ensure impacts at the lower elevations could be accommodated at each floodplain compensation site. Pond liners have been assumed at FPC sites 1, 2, and 3 in order to provide compensation at equivalent elevations for those impacts at the lower end of the spectrum. Once more detailed information is obtained during the design phase it is anticipated that additional storage can be provided within the right of way at these lower elevations and the need for liners will either be reduced or eliminated. Since land adjacent to the floodplain in the vicinity of the project is limited due to the extent of floodplain and the conservation easements, four of the five FPC sites will be hydraulically connected to the floodplain utilizing storm drain piping. As discussed with SFWMD at the pre-application meeting, the average wet season water table was used to determine the vertical extents of the floodplain compensation available at each FPC site. The five FPC sites compensations provided at each location is summarized in **Table 7-9**. Detailed calculations for each floodplain compensation site are provided in the Location Hydraulics Report, a companion document to this report. See Figure 7-13 for the locations of the FPC sites.

FPC Site	Station	Side	Floodplain Compensation Provided (ac-ft)
1	1586+00	RT	14.45
2	1581+00	RT	19.74
3	1575+00	RT	19.74
4	1572+00	LT	10.08
5	1566+00	RT	12.75

 Table 7-9 - Floodplain Compensation Alternatives



Figure 7-13 - Floodplain Compensation Map

All FPC site alternatives analyzed will provide the required storage to offset floodplain impacts. Based on this analysis, FPC Site 1 is the preferred alternative. The evaluation matrix which outlines all of the variables included in the analysis is provided in the Location Hydraulics Report, a companion document to this report.

7.1.17 Transportation Management Plan

A Transportation Management Plan (TMP) is required for minimizing activity-related traffic delay and crashes. The goal is to reduce congestion during construction by managing traffic through the project area. Maintenance of Traffic construction plans are necessary in order to demonstrate the ability to properly and safely implement the proposed improvement while maintaining the facility open to traffic. The project will be able to adhere to the FDOT Design Manual and Standard Plans.

7.1.18 Constructability

The conceptual construction sequencing has been divided into three different phases. **Figure 7-14** depicts the conceptual construction sequence schemes along SR 535 for the preferred alternative. Phase 1 will shift the existing traffic slightly to the outside of the existing section to construct the proposed inside widening and drainage. Then Phase 2 will shift over the traffic towards the inside while using the newly constructed inside widening and construct the outside lane. Then in Phase 3 the traffic will shift over to the recently constructed outside widening to construct the middle lane. Once Phase 3 is completed all three traffic lanes can now be utilized.

7.1.19 Construction Impacts

Due to the proposed TMP and construction sequences, there are no anticipated impacts associated with the construction of the preferred alternative.

7.1.20 Special Features

There are no special features associated with this project corridor.

7.1.21 Design Variations and Design Exceptions

There are no design variations or exceptions anticipated for this project.



Figure 7-14 – SR 535 Conceptual MOT

7.1.22 Cost Estimates

The construction cost estimate was taken from the FDOT's Long Range Estimate (LRE) while the design and construction engineering inspection (CEI) was taken as a percentage of the construction cost. See **Table 7-10** for the construction cost estimates. For additional construction cost details see **Appendix H**.

	Cost
Construction	\$76.5M
Right of way	\$38.1M
Utility Relocation	\$7M
Sub Total	\$121.6M
Design (15%)	\$11.5M
CEI (10%)	\$7.7M
Total Estimated Project Cost	\$140.8M

Table 7-10 - Cost Estimates

7.1.23 Value Engineering

Value Engineering (VE) Studies are required, in accordance with Value Engineering Program Topic No. 625-030-002, for all projects with an estimated total cost of \$50 Million dollars or more. A VE study will be performed during the design phase of this project, prior to the completion of the final design.

7.2 Summary of Environmental Impacts of the Preferred Alternative

7.2.1 Section 4(f)

There are no properties in the project area that are protected pursuant to Section 4(f) of the USDOT Act of 1966.

7.2.2 Cultural Resources

A Cultural Resource Assessment Survey (CRAS), conducted in accordance with 36 CFR Part 800, was performed for the project, and the resources listed below were identified within the project Area of Potential Effect (APE). FDOT found that these resources do not meet the eligibility criteria for inclusion in the National Register of Historic Places (NRHP), and State Historic Preservation Officer (SHPO) concurred with this determination on 06/03/2024 Therefore, FDOT, in consultation with SHPO has determined that the proposed project will result in No Historic Properties Affected.

The defined archaeological APE includes the existing right-of-way where improvements are proposed. The architectural history APE included the existing right-of-way and was extended to the back or side property lines of parcels adjacent to the right-of-way or no more than 100 meters (328 feet) from the right-of-way line. Where ponds are proposed, the APE was defined to include the proposed pond footprints in addition to a 30.5-meter (100-foot) buffer of each pond. The "APE" refers to the combined archaeological APE and architectural history APE.

Archaeological Survey

The archaeological survey included the excavation of eight shovel tests and nine "no-dig" points; due to heavy modern development and buried utilities within the archaeological APE, most of the corridor was limited to pedestrian survey and surface inspection. No artifacts were recovered, and no archaeological sites or occurrences were identified within the APE. The results of the CRAS indicate that no further archaeological survey is required.

Architectural Survey

The architectural history survey resulted in the identification and evaluation of one newly recorded historic building at 8350 Lake Bryan Beach Boulevard (8OR11944). Resource 8OR11944 was determined ineligible for the NRHP. The survey also recorded a new segment of the Florida Midland Railroad, a previously recorded resource in Orange and Osceola counties. It is recorded in Orange County as Resource 8OR10235 and in Osceola County as Resource 8OS02541. The SHPO previously evaluated recorded segments of 8OR10235 and 8OS02541 outside the current APE as ineligible for the NRHP. Based on the results of the current architectural history survey and SHPO linear resource guidelines, the segment of 8OR10235/8OS0254 within the APE lacks significance and was determined ineligible for listing in the NRHP. The SHPO concurred with these determinations on 06/03/2024; the concurrence letter is attached.

No historic properties were identified within the APE. No further work is required. For these reasons, no significant impacts to historic resources are anticipated.

7.2.3 Wetlands

This project was evaluated for impacts to wetlands and other surface waters in accordance with FDOT's *PD&E Manual, Part 2, Wetlands and Other Surface,* which incorporates the requirements of the National Environmental Policy Act (NEPA) and related federal and state laws. After field reconnaissance it was verified that no wetlands are present within the existing right of way and

was determined that there would be no direct impacts to wetlands or other surface waters under the Preferred Alternative.

A SFWMD Environmental Resource Permit is anticipated for modifications to an existing drainage system and for increases in permeable cover. There are no Federally jurisdictional wetlands that will be impacted under the Preferred Alternative. Therefore, no Section 404 permit is anticipated. An FDEP National Pollution Discharge Elimination System Permit will also be required.

7.2.4 Protected Species and Habitat

This project was evaluated for impacts to protected plant and animal species and their habitats in accordance with the FDOT's PD&E Manual, which incorporates the requirements of the National Environmental Policy Act (NEPA) and related federal and state laws. Other applicable federal laws protecting wildlife and habitat include the Bald and Golden Eagle Protection Act (16 U.S.C.668-668d) (BGEPA) and Migratory Bird Treaty Act (MBTA). Applicable state laws include Chapter 5B-40 and Chapter 68A-27, Florida Administrative Code (FAC).

A Natural Resources Evaluation was developed for this project. Federal and state listed species with potential to occur in the project corridor were identified through research and coordination with US Fish and Wildlife Service (USFWS), and the Florida Fish and Wildlife Conservation Commission (FWC) and information on each species is provided in the table below. Based on technical consultation with USFWS North Florida Ecological Services Field office on November 29, 2022 and USFWS South Florida Ecological Field Services office on November 21, 2022, it was determined that suitable habitat for sand and blue tail mole skinks and Audubon's crested caracara were unlikely to exist within the project limits and surveys would not be required (see attached letters). Effect determinations were made using USFWS effect determination keys for wood stork and Eastern indigo snake. To avoid potential impacts to Eastern indigo snakes, the USFWS Standard Protection measures will be implemented. For other species the proposed project activities along with the presence and quality of suitable habitat, historical records of occurrence, and field inspections were used to develop effect determinations. No listed species were observed during field investigations. There is no Critical Habitat present within the project area. No adverse impacts are anticipated to any listed species from the Preferred Alternative. Effect determinations for listed species are provided in **Table 7-11**.

Common Name	Scientific Name	Federal Status	State Status	Critical Habitat in Project Area	Effect Determination
Fauna Species					
Audubon's crested caracara	Polyborus plancus audubonii	FT	-	None	No Effect
Blue-tail mole skink	Eumeces egregius lividus	FT	-	None	No Effect
Eastern black rail	Laterallus jamaicensis ssp. jamaicensis	FT	-	None	No Effect
Eastern indigo snake	Drymarchon corais couperi	FT	-	None	NLAA
Everglade snail kite	Rostrhamus sociabilis plumbeus	FE	-	None	No Effect
Florida burrowing owl	Athene cunicularia	-	ST	None	NAEA
Florida grasshopper sparrow	Ammodramus savannarum floridanus	FE	-	None	No Effect
Florida pine snake	Pituophis melanoleucus mugitus	-	ST	None	NAEA
Florida sandhill crane	Grus canadensis pratensis	-	ST	None	NAEA
Florida sand skink	Neoseps reynoldsi	FT	-	None	No Effect
Florida scrub-jay	Aphelocoma coerulescens	FT	-	None	No Effect
Gopher tortoise	Gopherus polyphemus	-	ST	None	NAEA
Little blue heron	Egretta caerulea	-	ST	None	NAEA
Red-cockaded woodpecker	Picoides borealis	FE	-	None	No Effect
Roseate spoonbill	Platalea ajaja	-	ST	None	No Effect Anticipated
Southeastern American kestrel	Falco sparverius paulus	-	ST	None	NAEA
Tricolored heron	Egretta tricolor	-	ST	None	No Effect Anticipated

		(00110)			
Common Name	Scientific Name	Federal Status	State Status	Critical Habitat in Project Area	Effect Determination
Wood stork	Mycteria americana	FE	-	None	No Effect
Flora Species					
Beautiful pawpaw	Deeringothamnus pulchellus	FE	-	None	No Effect
Britton's beargrass	Nolina brittoniana	FE	-	None	No Effect
Florida greeneyes	Berlandiera subacaulis	FT	-	None	No Effect
Gray's beaksedge	Rhynchospora grayi	FT	-	None	No Effect
Lewton's polygala	Polygala lewtonii	FE	-	None	No Effect

Table 7-12 – Effect Determination of Listed Wildlife Species Occurring in Project Area (Cont.)

Notes: FE = Federally Endangered, FT = Federally Threatened; ST = State Threatened, NLAA = Not Likely to Adversely Affect, MANLAA = May Effect, Likely to Adversely Effect, NAEA = No Adverse Effect Anticipated

7.2.5 Essential Fish Habitat

There is no Essential Fish Habitat in the project area thus no impacts are anticipated.

7.2.6 Highway Traffic Noise

A Noise Study Report (NSR) was completed in May 2024 following the Federal Highway Administration (FHWA) and FDOT procedures along with the most recent version of the FDOT PD&E Manual and FDOT Traffic Noise Modeling and Analysis Practitioners Handbook (dated December 1, 2018). The following summarizes the results of the NSR including a description of noise-sensitive areas that may be impacted by the proposed improvements and evaluates noise barriers as an abatement measure for sensitive areas expected to be impacted as a result of the planned improvements. The FHWA has established Noise Abatement Criteria (NAC) for seven land use activity categories. These criteria determine when an impact occurs and when consideration of noise abatement is required. Noise abatement measures must be considered when predicted noise levels approach or exceed the NAC levels or when a substantial noise increase occurs. Following the FDOT procedure, "approach" is defined as within one (1) dB(A) (decibel (dB) using an "A"-scale [dB(A)] weighting) of the FHWA criteria. A substantial noise

increase is defined by FDOT as when the existing noise level is predicted to be exceeded by 15 dB(A) or more as a result of the transportation improvement project.

Land uses surrounding this project corridor consist mainly of commercial land. Very few singlefamily homes (designated noise sensitive areas) are present within the project areas. All singlefamily homes present in this project area are located in The Cove, east of SR 535 and adjacent to Old Vineland Road and Kyngs Heath Road. Four (4) hotels with exterior areas of use were also identified within the project area, which include the Golden Link Hotel, Embassy Suites, Hampton Inn, and Buena Vista Suites. Five (5) restaurants with exterior seating were located within the project corridor which include Smokey Bones, Miller's Alehouse, Starbucks, Twistee Treat, and Wendy's. Lastly, the Mariott Golf Course has been identified as a noise sensitive area. Noise sensitive sites along the project limits are illustrated in **Figure 7-15**.



Figure 7-15 - Noise Sensitive Sites

Traffic noise levels were predicted for deign year 2045 along the project corridor for the Existing Conditions, No-Build, and the Preferred Alternative. Throughout the project corridor, 32 single-family homes (Category B/Residential Areas), four (4) hotels along with five (5) restaurants with exterior use (Category E/Outdoor Use Areas) and one (1) non-residential/special use sites consisting of the Mariott Golf Course (Category C/Recreational Area) were designated as noise sensitive sites. Existing condition predicted noise levels for the entire project range from 54.3 dB(A) to 67.8 dB(A). Under No-Build, traffic noise levels for the entire project are predicted to range from 55.5 dB(A) to 68.9 dB(A). Under the Preferred Alternative, traffic noise levels for the entire project are predicted to range from 56.0 dB(A) to 69.2 dB(A). The highest traffic noise level increase between the Existing Condition and the Preferred Alternative is 2.7 dB(A). Therefore, traffic noise levels throughout the project corridor are not expected to substantially increase above the existing conditions.

Throughout the project corridor, only the Marriot Golf Course special land use site would exceed the NAC. Noise abatement is not feasible and/or reasonable at the Mariott Golf Course due to not meeting the requirements for special land use sites which would not meet the occupancy required to consider the noise wall as reasonable. The results of the NSR indicate that noise abatement measures are not reasonable or feasible. For the above reasons, no impacts from noise are anticipated.

7.2.7 Contamination

A Contamination Screening Evaluation Report was prepared to evaluate the potential risk to the project from contamination and is located in the project file. Regulatory databases and field investigations were conducted to identify sites for evaluation. Sites were identified within applicable buffers of the project, including landfills, Comprehensive Environmental Response, Compensation, and Liability Act sites (CERCLA, also known as Superfund), and National Priorities List (NPL) sites within one half-mile of the project, petroleum contamination, drycleaners, and non-petroleum contamination within 500 feet of the project, and non-landfill solid waste sites within 1,000 feet of the project.

A total of 22 sites of potential contamination risk were identified, including 1 High Risk, 8 Medium Risk, and 13 Low Risk sites (see **Table 7-13** - Contamination Site Information). Level II Contamination Assessment investigations will be completed when proposed dewatering or subsurface work (e.g., pole foundations, drainage features, soil excavation, etc.) would occur at or adjacent to any sites rated High or Medium Risk. If dewatering is necessary during construction,

a FDEP Dewatering Permit will be required. The contractor will be held responsible for ensuring compliance with any necessary dewatering permit(s). A dewatering plan will be necessary to avoid potential contamination plume exacerbation. All permits will be obtained in accordance with Federal, state, and local laws and regulations, and in coordination with the District Contamination Impact Coordinator.

Risk Rating	Number of Sites	Number of Sites proposed for R/W acquisition
Low	13	0
Medium	8	0
High	1	1

 Table 7-13 - Contamination Site Information

Appendix A - Geotechnical Data Analysis

March 7, 2024

Metric Engineering, Inc. 13940 S.W. 136 Street Miami, Florida 33186

Attn: Mr. Paul Carballo, P.E.

RE: Preliminary Geotechnical Engineering Services Report SR 535/Vineland Road PD&E Study from US 192 to North of World Center Drive Orange and Osceola Counties, Florida FPID No.: 437174-2-22-01 Tierra Project No.: 5511-19-052

Mr. Carballo:

Tierra, Inc. (Tierra) has performed preliminary geotechnical services to support the PD&E Study associated with the above referenced project. The results of our study are presented herein.

Review of Published Information

As part of our study, Tierra reviewed soils information obtained from the Soil Survey of Orange and Osceola Counties, Florida published by the United States Department of Agriculture (USDA) Natural Resources Conservation Services (NRCS) and topographic information obtained from the "Kissimmee, Florida" Quadrangle Map published by the United States Geological Survey (USGS). Reproductions of the USDA Soil Survey & USGS Quadrangle Maps for the project vicinity are included in the Appendix A A Summary of USDA Soil Survey Information is also included in Appendix A.

Soil Borings

Tierra performed thirty-nine (39) hand auger borings at select locations along the roadway alignment to evaluate the near-surface soil and groundwater conditions and to provide preliminary geotechnical information. In addition, a total of twenty-two (22) Standard Penetration Test (SPT) borings were advanced to depths of 20 feet below existing grades in the areas of the proposed stormwater ponds and FPC sites. The hand auger borings were performed by manually twisting and advancing a bucket auger into the ground, typically in 6-inch increments. The hand auger boring depths ranged from 3 to 10 feet below existing grades. The SPT borings were performed in general accordance with American Society for Testing and Materials (ASTM) Test Designation D-1586 titled "Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils." SPT resistance N-values were taken continuously to a depth of 10 feet and at intervals of 5 feet thereafter to the boring termination depths. The soil samples were sealed in glass jars, labeled and transported to our laboratory for dassification by a geotechnical engineer.

The borings were initially located and staked in the field by representatives of Tierra using handheld, non-survey grade Global Positioning System (GPS) equipment with a manufacturer's reported accuracy of ±10 feet. The station, offset, and elevation of the borings were based on design files and LiDAR data provided by BCC Engineering, Inc. and GPS coordinates obtained by Tierra, Inc. at the time of fieldwork. The boring locations are presented on the **Boring Location Plan** and **Pond Soil Survey** sheets in **Appendix A** Preliminary Geotechnical Engineering Services Report SR 535/Vineland Road PD&E Study from US 192 to North of World Center Drive Orange and Osceola Counties, Florida FPID No.: 437174-2-22-01 Tierra Project No.: 5511-19-052 Page 2 of 3

In general, the subsurface conditions encountered consisted of sandy soils (A-3/A-2-4) within the boring depths. As an exception, a layer of dayey sand (A-2-6) was encountered at boring AB-3 from a depth of approximately 1.5 to 2.5 feet. Some of the hand auger borings were terminated at depths less than 5 feet below existing grades as a result of borehole collapse due to the shallow groundwater tables. In addition, many of the borings performed within the pond locations encountered intervals of organic sands to muck (A-8). The results of the borings are presented on the **Roadway Soil Profiles** and **Pond Soil Survey** sheets in **Appendix A**.

Laboratory Testing

Representative soil samples collected from the borings were classified and stratified in general accordance with the AASHTO soil classification system. Our classification was based on visual observations, using the results from the laboratory testing as confirmation. The testing performed to date included grain-size analyses, organic content, and natural moisture content determination tests. In addition, environmental corrosion tests were performed on select soil samples to evaluate the corrosive nature of the subsurface soils encountered along the project alignment.

Detailed summaries of the laboratory test results are presented in the Summary of Laboratory Test Results for Soil Classification and Summary of Laboratory Test Results for Environmental Classification in Appendix B.

Seasonal High Groundwater Table Levels

The SHGWT levels at the hand auger boring locations performed along the roadway alignments and within the borings completed within the proposed stormwater ponds and FPC sites were estimated based on a review of the soil samples including natural soil indicators such as stain lines, mottling, the depth to the root layer, measured groundwater levels in the borings, information provided in the USDA Soil Survey published by the NRCS, and the surrounding topography. The estimated SHGWT levels are depicted on the **Roadway Soil Profiles** sheets and **Pond Soil Survey** sheets in **Appendix A** and are summarized in the **Summary of Seasonal High Groundwater Table Estimates for Roadway** and **Summary of Seasonal High Groundwater Table Estimates for Ponds** tables in **Appendix B**.

The SHGWT levels reported in the attached table are estimated historic levels. Man-made influences, such as existing water management ditches, swales, and drainage ponds will affect groundwater levels but are not considered when determining the historical SHGWT. Where appropriate, biological indicators should be used in conjunction with the historic SHGWT levels when setting pavement grades. Once profile and grade lines become available, Tierra requests the opportunity to review the base elevations in relation to the SHGWT estimates.

Preliminary Geotechnical Engineering Services Report SR 535/Vineland Road PD&E Study from US 192 to North of World Center Drive Orange and Osceola Counties, Florida FPID No.: 437174-2-22-01 Tierra Project No.: 5511-19-052 Page 3 of 3

Tierra appreciates the opportunity to be of service to Metric and the Florida Department of Transportation (FDOT) on this project. If you have any questions or comments regarding this report, please contact our office at your earliest convenience.

Sincerely,

TIERRA, INC.



Luis A. Almodovar, P.E. Geotechnical Engineer Florida License No. 93273



Jeremy A. Sewell, P.E. Senior Geotechnical Engineer Florida License No. 62951

This item has been digitally signed and sealed by Jeremy A. Sewell, P.E. on the date adjacent to the seal.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Appendix A

USDA Soil Survey & USGS Quadrangle Maps (1 Sheet) Boring Location Plan (8 Sheets) Roadway Soil Profiles (1 Sheet) Pond Soil Survey (9 Sheets)

Appendix B

Summary of USDA Soil Survey Information (Table 1) Summary of Seasonal High Groundwater Table Estimates for Roadway (Table 2) Summary of Seasonal High Groundwater Table Estimates for Ponds and FPC Sites (Table 3) Summary of Laboratory Test Results for Soil Classification (Table 4) Summary of Laboratory Test Results for Environmental Classification (Table 5) Summary of Hydraulic Conductivity Test Results (Table 6)

APPENDIX A

USDA Soil Survey & USGS Quadrangle Maps (1 Sheet) Boring Location Plan (8 Sheets) Roadway Soil Profiles (1 Sheet) Pond Soil Survey (9 Sheets)






































APPENDIX B

Summary of USDA Soil Survey Information (Table 1) Summary of Seasonal High Groundwater Table Estimates for Roadway (Table 2) Summary of Seasonal High Groundwater Table Estimates for Ponds and FPC Sites (Table 3) Summary of Laboratory Test Results for Soil Classification (Table 4) Summary of Laboratory Test Results for Environmental Classification (Table 5) Summary of Hydraulic Conductivity Test Results (Table 6)

				Table 1					
		Summary of USD SR SSSVir	A NRCS Soil Bland Road fr Orange an Fi	Burvey of Orang om US182 to no d Osceola Coun PID: 437174-2-22 Project No. 5511	e and Oscorol orth of World thes, Florida -Of 1-19-052	l Counties, Flo Center Drive	rida		
P == + == = =		Soil Class	lication		100 H 100 H 100 H 100 H	Seasonal Hi	gh Water Table	Riskof C	orrosion
il Name	Depth (in)	nscs	AASHTO	Permeability (in/hr)	Ŧ	Depth (feet)	Months	Un ocate d Steel	Concrete
			õ	Inge County, Flo	orida				22
(3) Jer fine sand, inty pon ded, eroent slopes	0-80	SP-SM, SM	A-3, A-2-4	6.0 - 20.0	3.57.3	+2.0-0.0	Jun-Dac	Moderate	High
1000	0-35	SP, SP-SM	A-3	6.0 - 20.0	4.5-5.5	19 1920			
(20)	35-67	SP-SM, SM	A-3, A-2-4	0.6 - 2.0	4.5-5.5	0.5-1.0	July-Sept	High	High
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Ine sand,	4-22	SP-SM, SM	A-3, A-2-4	0.6 - 2.0	4.5-6.0	0.5-1.5	Volu-Puov	High	High
eroantslopes	22-80	SP-SM, SM	A-3, A-2-4	6.0 - 20.0	4.5-6.0				1
	0-47	SP-SM	A-3	> 20.0	4.5-6.0				
(34)	47-58	SP-SM	A-2-4	0.6 - 6.0	4.3-6.0	2025	Males Mean	the descent	ţ
io ine zanu , arcanteicnes	53-65	SP-SM	A-3	0.6 6.0	4.5-6.0	e.5-0.2	VOM-VID-	REPRICE	B
	65-80	SР	A-3	6.0 - 20.0	4.0-6.0	5			
(42)	11-0	Ы	A-8	6.0 - 20.0	3.57.3	00044	tine Cart	100	
ibel muck	11-80	SP, SP-SM	A-3	6.0 - 20.0	3.57.3	0.0-0.17	1 dec -euno	iñu	RIFIERO
	1-0	SP, SM, SP-SM	A-2-4	6.0 - 20.0	3.5-4.4				
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a ma sanu. artertelorae	17-21	SP-SM, SM	A-2-4	0.6 - 6.0	3.5-5.5	a.2-0-0	1 dec -euno		iñ.
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		Risk of Corrosion	Uncoate d Steel Concrete	8	3	tendo-oto				High High		5	High High	4200860 0400 0400000		High High	
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	a Counties, Flo Center Drive	Seasonal Hig	Depth (feet)	1 25 25 5		0000	0.0-0.21			0.5-1.5			2.0-3.5	o constances		0.51.5	
	Peand Caceol orth of World ties, Florida -Of	700-01-	H	orida	3.57.3	3.57.3	3.57.3	3.57.3	3.56.5	3.5-6.5	3.5-6.5	3.5-6.0	3.56.0	3.56.0	4.5-6.0	4.5-6.0	
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	DA NRCS Soil S neland Road fr Orange and FF	fication	AASHTO	8	A-2-4	A-2-4, A-3	A-2-4, A-3	A-3	A-3, A-2-4	A-2-4, A-3	A-3, A-2-4	A-2-4	A-2-4, A-3	A-2-4	A-2-4, A-3	A-2-4, A-3	
	Summary of USI SR 535W1	Soil Class?	uscs		SP-SM	SP, SP-SM	SP, SP-SM	SP, SP-SM	SP-SM, SM	SP-SM, SM	SP-SM, SM	SM, SP-SM	SP-SM, SM	SP-SM, SM	SP-SM, SM	SM, SP-SM	
			Depth (in)	2 26 27	0-3	3-8	8-24	24-80	0-20	20-36	36-80	0-22	22-26	26-80	0-4	4-22	
			Soil Name		(8)	Basinger fine sand,	depressional,	0 to 1 percent slopes	(22)	Myakka fine sand,	0 to 2 percent slopes	(24)	Narocesee fine sand,	0 to 2 percent slopes	(27)	Ona Ine sand,	

			Estimated SHG WIT*	Estimated SHG WI ¹⁹ Depth Bebw Elevation Gournet NAVD 88	Extimated SHG Wy1*9 Depth Below Elevation Ground NAVD 38 Surface (feet)	Extimated SHS WIT*9 Depth Below Elevation Ground NAVD 33 Surface (feet) (feet)	Extimated SHGWIT ¹⁰ Depth Below Elevation Groums NAVD88 Surface (feet) (feet) 3.0 78.7	Extimated SHGWT ⁴⁵ Depth Below Elevation Ground NAVD38 Surface (feet) (feet) 3.0 78.7 2.5 79.1	Extimated SHGWT ¹⁵ Depth Below Elevation Ground NAVD33 Surface (feet) (feet) 3.0 78.7 2.5 79.1 4.5 80.2	Extimated SHCWT ⁴⁵ Depth Below Elevation Ground NAVD33 Surface (feet) (feet) 3.0 78.7 2.5 79.1 4.5 80.2 3.0 79.1	Estimated SHSWIT ¹⁵ Depth Below Elevation Ground NAVD33 Surface (feet) (feet) 3.0 78.7 2.5 79.1 4.5 80.2 3.0 79.1 2.0 79.8	Estimated SHSWIT* Depth Below Elevation Ground NAVD38 Surface (feet) (feet) 3.0 78.1 2.5 79.1 4.5 80.2 3.0 79.8 3.0 79.8 3.5 78.1	Estimated SHSWIT ¹⁰ Depth Below Elevation Ground NAVD38 Surface (feet) (feet) 3.0 78.7 3.0 78.1 4.5 80.2 3.0 79.8 3.6 79.8 3.5 79.1 1.5 78.5	Extimated SHSWT** Depth Below Elevation Cound NAVD38 Ground NAVD38 Surface (feet) (feet) 78.7 3.0 78.7 3.0 78.7 3.0 78.7 3.0 78.7 3.0 78.7 3.0 78.7 3.0 78.7 3.0 78.7 3.0 78.1 3.0 79.1 3.0 79.8 3.5 79.8 3.6 79.8 3.7 79.8 3.5 78.2 3.5 78.2 3.5 78.5 3.5 78.5 3.5 78.5 3.5 78.5 3.5 78.5 3.5 78.5	Extimated SHSWIT** Depth Below Elevation Cound NAVD33 Surface (feet) (feet) 78.7 3.0 78.7 3.0 78.7 3.0 78.7 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 79.8 3.5 79.8 3.5 79.8 3.0 79.8 3.0 79.8 3.0 79.5 3.0 79.5 3.0 79.5 3.0 79.5 3.0 80.7	Extimated SHGWT ¹⁴ Depth Below Elevation Courned NAVD 38 Surface (feet) Surface (feet) (feet) 78.7 3.0 78.7 3.0 78.7 3.0 78.7 3.0 78.7 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 79.8 3.5 79.8 3.6 79.8 3.0 79.8 3.0 79.8 3.0 79.8 3.0 70.7 3.0 80.7 3.0 80.7 4.0 79.5	Extimated SHGWT ¹⁴ Depth Below Elevation Oepth Below Elevation Groumd NAVD38 Surface (feet) (feet) 78.7 3.0 78.7 3.0 78.7 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 79.1 3.0 79.8 3.0 79.8 3.0 79.8 3.0 79.8 3.0 79.5 1.5 79.5 1.5 79.5 1.5 80.7	Extimated EHGWIT* Depth Below Elevation Courned NAVD38 Grounned NAVD38 Surface (feet) (feet) (feet) 3.0 78.7 3.0 78.7 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 79.8 3.0 79.8 3.0 79.8 1.5 79.5 1.5 79.5 1.5 80.7 2.0 79.5 3.0 80.7 3.0 80.7 3.0 80.4 3.0 80.4	Eximated ShGWT ⁴⁵ Eximated ShGWT ⁴⁵ Depth Below Elevation Cound NAVD38 Ground NAVD38 Surface (feet) (feet) 78.7 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.2 3.0 78.2 3.0 78.2 3.0 78.2 3.0 78.5 4.0 79.5 4.0 79.5 4.0 79.5 1.5 80.3 2.0 80.4 0.0 82.7	Eximated EHOWIT* Depth Below Elevation Chound NAVD38 Ground NAVD38 Ground NAVD38 Surface 16et) (feet) 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.2 3.0 78.2 3.0 78.2 1.5 78.5 1.5 78.5 1.5 80.3 2.0 80.4 0.0 82.7 0.5 83.1	Eximated SHGWT ¹⁰ Depth Below Elevation Cound NAVD33 Ground NAVD33 Surface (feet) (feet) (feet) 3.0 78.1 3.0 78.1 2.5 79.1 3.0 78.1 3.0 78.1 2.5 79.1 4.5 80.2 3.0 78.1 2.0 78.1 2.0 78.1 3.0 78.1 2.0 79.5 3.0 78.1 2.0 78.2 3.0 79.5 3.0 79.5 1.5 79.5 1.5 79.5 1.5 79.5 0.0 80.4 0.0 82.1 0.5 83.1 0.5 83.1	Extimated SHGWIT** Depth Below Elevation Courned NAVD 38 Surface (feet) 3.0 78.7 2.5 79.1 2.5 79.1 3.0 79.3 3.0 79.5 3.0 79.5 3.0 79.5 3.0 79.5 3.0 79.5 3.0 70.7 3.0 70.7 3.0 80.7 1.5 80.8 2.0 80.4 0.0 82.7 0.5 83.1 0.5 83.1 0.5 83.1 0.5 83.1	Extimated SHGWT ¹¹ Depth Below Elevation Courned NAVD 38 Surface (feet) Surface (feet) (feet) 78.7 3.0 78.7 3.0 78.7 3.0 78.1 3.0 78.7 3.0 78.7 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 79.5 3.0 79.8 3.0 79.8 3.0 80.7 3.0 80.7 3.0 80.7 3.0 80.7 3.0 80.7 3.0 80.4 0.0 82.7 0.5 83.1 0.5 83.1 1.5 84.4	Extimated SHGWT ¹⁴ Depth Below Elevation Courned NAVD 38 Surface (feet) Surface (feet) Surface (feet) (feet) 78.7 3.0 78.7 3.0 78.7 3.0 78.1 4.5 80.2 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.2 3.0 79.5 3.0 79.5 3.0 80.7 3.0 80.7 3.0 80.7 1.5 80.8 2.0 80.4 0.0 82.7 0.5 83.1 0.5 83.1 1.5 84.4 0.0 83.3 0.0 83.3	Extimated SHGWT ¹⁵ Depth Below Elevation Cound Surface Cound Gound Surface NAVD38 Revation 3.0 78.7 3.0 78.7 3.0 78.7 3.0 78.7 3.0 78.7 3.0 78.7 3.0 78.1 4.5 80.2 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 78.1 3.0 79.5 1.5 79.5 1.5 80.9 2.0 80.4 0.0 82.3 0.0 83.9 1.0 84.4 1.0 84.3
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Nortd Center Drive orida Date Groundwater Table Recorded	Date Groundwater Tabe Recorded	Groundwater Table Recorded	Recorded				8/17/2021	8r17r2021 8r12r2021	8/17/2021 8/12/2021 8/17/2021	8/17/2021 8/12/2021 8/17/2021 2 8/12/2021 2	8/17/2021 8/12/2021 8/12/2021 8/12/2021	8/17/2021 8/12/2021 8/12/2021 8/12/2021 8/17/2021	8/17/2021 8/12/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021	8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/12/2021	8/17/2021 8/12/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021	8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/12/2021 8/12/2021 8/12/2021	8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021	8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021	8/17.2021 8/17.2021 8/17.2021 8/17.2021 8/17.2021 8/17.2021 8/17.2021 8/17.2021 8/17.2021 8/17.2021 8/17.2021 8/17.2021 8/17.2021	8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021	8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021	8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021	8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021	8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021 8/17/2021	8/17/2021 8/17/2021
2 to Northof World Courties, Forida 4.2.22.01 . 5511-19-052 GWT Gour NAVD88 Ta (feet) Reco	GWT Elevation NAVD33 Ta (feet) Rec.	Elevation NAVD38 Ta (feet) Rec	(feet) Reco		(muo-	77.7 8/17		77.6 8/12	79.7 8/12 79.7 8/17	71.6 8/12 79.7 8/17 78.1 8/12	71.6 6/12 79.7 8/17 78.1 8/12 78.1 8/12 78.6 8/17	71.6 6/12 78.7 8/17 78.1 8/12 78.6 8/12 77.2 8/12	71.5 8.12 79.7 8.17 78.1 8.12 78.6 8.17 71.2 8.12 71.2 8.12 71.2 8.12	71.6 8/12 78.7 8/17 78.6 8/12 78.6 8/12 71.2 8/12 71.2 8/12 71.3 8/12	71.15 8.172 71.15 8.172 71.15 8.142 71.12 8.142 71.12 8.142 71.12 8.142 71.12 8.142 71.13 8.142 71.13 8.142	71.15 8.172 78.1 8.172 78.6 8.172 71.2 8.172 71.2 8.172 71.2 8.172 71.3 8.172 71.0 8.172	71.5 6.12 79.7 6.11 78.1 8.11 78.6 8.11 71.2 8.12 71.2 8.12 78.3 8.12 78.3 8.12 79.1 8.11 71.0 8.12 71.0 8.11	71.15 6.112 79.7 6.112 78.6 6.117 71.2 6.112 71.2 6.112 78.5 6.112 78.5 6.112 78.5 6.112 79.9 6.112 71.0 6.112 71.0 6.112 71.0 6.112	71.6 6.12 79.7 8.17 78.1 8.17 78.6 8.17 78.6 8.17 77.2 8.12 78.5 8.17 78.5 8.17 78.5 8.17 78.5 8.17 78.3 8.17 78.3 8.17 78.3 8.17 78.3 8.17 79.4 8.17 79.4 8.17 79.4 8.17 71.0 8.17 71.0 8.17 71.0 8.17 71.0 8.17 81.5 8.17	71.6 6.12 79.7 8.17 78.1 8.17 78.5 8.17 71.2 8.12 71.2 8.12 71.2 8.12 71.2 8.12 71.2 8.12 73.5 8.17 78.5 8.17 78.5 8.17 78.3 8.12 78.3 8.12 79.4 8.17 79.4 8.17 79.4 8.17 71.0 8.17 71.0 8.17 71.5 8.17 71.5 8.17 71.5 8.17 71.5 8.17 73.4 8.17 73.4 8.17 81.5 8.17 82.1 8.12	71.6 6.12 79.7 8.17 78.1 8.17 78.6 8.17 78.6 8.17 71.2 8.12 71.2 8.12 71.2 8.12 71.2 8.12 73.5 8.17 78.5 8.17 78.5 8.17 78.3 8.12 78.3 8.12 79.4 8.17 79.4 8.17 79.4 8.17 79.4 8.17 79.4 8.17 79.4 8.17 81.5 8.17 82.4 8.17 82.4 8.17	77.5 57.7 78.1 8.47 78.5 8.47 78.6 8.47 78.5 8.47 77.2 8.47 78.5 8.47 78.5 8.47 78.5 8.47 78.5 8.47 78.5 8.47 78.5 8.47 78.5 8.47 78.3 8.47 79.4 8.47 79.4 8.47 79.4 8.47 79.4 8.47 79.4 8.47 79.4 8.47 79.5 8.47 79.4 8.47 82.4 8.47 82.4 8.42 81.8 8.42	71.8 6.12 78.1 8.17 78.6 8.17 78.6 8.17 78.5 8.12 78.5 8.12 78.5 8.12 78.5 8.12 78.5 8.12 78.5 8.12 78.5 8.12 78.5 8.12 78.7 8.12 78.3 8.12 79.4 8.12 79.4 8.12 81.5 8.12 82.4 8.12 81.8 8.12 81.8 8.12 83.4 8.13	71.8 6.12 78.1 8.17 78.1 8.17 78.6 8.17 78.5 8.12 78.5 8.12 78.5 8.12 78.5 8.12 78.5 8.12 78.5 8.12 78.5 8.12 78.5 8.12 78.5 8.12 78.4 8.12 79.4 8.12 79.4 8.12 81.5 8.12 82.4 8.12 81.8 8.12 81.8 8.12 82.4 8.12 82.4 8.12 82.4 8.12 82.4 8.12	71.8 6/12 78.1 8/12 78.6 8/17 78.6 8/17 78.6 8/17 78.5 8/12 78.5 8/12 77.2 8/12 78.5 8/12 78.5 8/12 78.5 8/12 78.5 8/12 78.5 8/12 78.5 8/12 79.4 8/12 79.4 8/12 79.4 8/12 81.5 8/12 81.5 8/12 81.5 8/12 82.4 8/12 82.4 8/12 83.4 8/12 83.5 8/12
r from U.S. 192 to FPN: 437174-2: FPN: 437174-2: Measured GW Measured GW Surface Surface (feet) (Measured GV P pth Below Ele Surface NA (feet) (P pth Below Ek Ground NA Surface (feet) (Surface ()		Usceolation	4.0 1	4.0		5.0 1	5.0 5.0 4.0 7	50 40 32	50 40 32 45	50 40 32 32 32 32 32 32 32 32 32 32 32 32 32	50 40 32 32 32 32 32 32 32 32 32 32 32 32 32	50 55 55 55 55 55 55 55 55 55 55 55 55 5	50 50 50 50 50 50 50 50 50 50 50 50 50 5	20222222222222222222222222222222222222	50 450 455 255 450 450 450 450 450 450 450 450 450 4	20 20 20 20 20 20 20 20 20 20 20 20 20 2	50 45 55 55 55 55 55 55 55 55 55	20 20 20 20 20 20 20 20 20 20	50 50 50 50 50 50 50 50 50 50 50 50 50 5	20 20 20 20 20 20 20 20 20 20 20 20 20 2	50 50 50 50 50 50 50 50 50 50	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
S PDSE Study fre O range an O range an F Tierra Ground ¹⁰ Contrate Surface Elevation (feet) (Ground ¹⁵ Surface C-A Elevation St. (feet) (Tievation (feet) (feet)	Elevation St (feet) (81.7	81.6		84.7	84.7 82.1	84.7 82.1 81.8	84.7 82.1 81.8 81.7	84.7 82.1 81.8 81.7 81.7 81.0	84.7 82.1 81.8 81.7 81.7 81.0 86.3	84.7 82.1 81.8 81.7 81.7 81.0 83.7	84.7 82.1 81.8 81.7 81.7 83.7 83.7 83.5	84.7 82.1 81.8 81.7 81.0 81.0 83.7 83.5 83.5 83.5 82.4	84.7 82.1 81.8 81.7 81.0 81.0 83.7 83.5 83.5 82.4 82.4	84.7 82.1 81.8 81.7 81.7 81.0 83.7 83.7 82.4 82.4 82.4 82.4	84.7 82.1 81.8 81.7 81.7 81.7 83.7 83.5 82.4 82.4 82.4 82.4 82.4 82.4 82.4 82.4	84.7 82.1 81.8 81.7 81.7 81.7 81.0 83.7 83.5 82.4 82.4 82.4 82.4 82.6 82.6 83.6	84.7 82.1 81.8 81.7 81.7 81.7 81.0 83.7 82.4 82.4 82.4 82.4 82.4 82.4 82.4 82.4	84.7 82.1 81.8 81.7 81.7 81.7 81.0 81.0 82.4 82.4 82.4 82.4 82.4 82.4 82.4 82.4	84.7 82.1 81.2 81.7 81.7 81.7 81.0 81.0 82.4 82.4 82.4 82.4 82.5 83.6 83.6 83.6 83.6 83.9 83.9	84.7 82.1 81.2 81.7 81.7 81.7 81.0 81.0 82.4 82.4 82.4 82.4 82.4 82.4 82.4 82.4
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Boring Boring Boring C/I Number Station C/I (feet) A8 - 21 (feet) (feet) and a contract of the state of the stateoid state of the state of the stateoid state of	g Location"	P. Summers	Concession of the	Tierra Project h Measure	46: S511-19-0. d GWT	8	USDA	A Soil Survey	Fet imeted	SHG WIT ⁴⁹
Aumoer Station (feet) AB - 21 5514-38 AB - 21 5514-38 AB - 21 5514-38	L SR 5 35	Boring Central	Surface	Depth Below Ground	Eeverion NAVD 88	Groundwater	Soil	SHGWT Dech ³	Depth Below Ground	Elevation NAVD88
A8 - 21 851+38 40 22 854-38	n Officet) (feet)	(feet)	Elevation (feet)	Surface (feet)	(feed)	Recorded	Î	(feet)	Surface (feet)	(feet)
AB - 21 551+38 40 32 554-38				O range	County					
00 00 CC1130	81 LT	35	86.3	15	84.8	8/17/2021	4	0.0-35	0.5	858
NB - 66 0041 00	90 RT	4.0	89.2	3.0	86.2	8/13/2021	4	0.0-35	2.5	86.7
AB - 23 557+27	7717	5.0	87.3	25	84.8	8/17/2021	8	0.5-1.5	1.5	858
AB - 24 580+20	85 RT	45	87.4	32	84.2	8/13/2021	4	0.0-35	2.0	854
AB - 25 583+51	113LT	45	89.3	32	86.1	8/16/2021	4	0.0-35	2.0	873
SH- 26 586+58	70 RT	4.0	90.3	25	87.8	8/13/2021	ð	20-35	1.5	888
AB - 27 569+30	87 LT	S.0	91.0	2.0	89.0	8/16/2021	34/44	2.0-3.50.0-3.5	1.0	008
AB - 28 572+29	81 RT	4.0	90.4	12	89.2	8/13/2021	3	20-35	0.0	904
AB - 29 575+28	SCT SCT	4.0	89.68	13	88.3	8/16/2021	4	0.0-35	0.0	89.6
AB - 30 579+30	120 RT	5.0	91.6	3.0	88.6	8/13/2021	4	0.0-35	2.0	89.6
AB - 31 581+30	817	10.0	94.9	7.5	87.4	8/16/2021	4	0.0-3.5	8.5	884
AB - 32 584+26	95 RT	45	91.3	33	88.0	8/16/2021	4	0.0-35	2.5	888
AB - 33 587+05	8ª LT	4.0	93.9	35	90.4	8/16/2021	344	+2.0-0.0/0.0-3.5	2.5	91.4
AB - 34 590+10	78 RT	35	92.2	3.0	89.2	8/16/2021	344	12.0-0.0/00-35	1.5	1.08
AB - 35 593+29	20 LT	3.0	84.0	2.0	92.0	8/16/2021	5	+2.0-0.0	1.0	83.0
AB - 36 595+49	83 LT	4.0	94.S	35	91.0	8/16/2021	5	+2.0-0.0	2.5	92.0
AB - 37 599+35	109 RT	35	92.6	1.0	94.6	8/16/2021	ತ	20-35	0.0	858
AB - 38 802+32	87 RT	35	96.S	2.7	93.8	8/16/2021	3	20-35	1.5	95.0
AB - 39 805+67	11111	4.0	87.8	2.7	95.2	8/16/2021	8	0.5-15	1.5	964

¹⁰ Boing locations and ground writes elevations were provided by WBX Design & Engineering, Inc. ¹⁰ Depth betweenbing geader at time of field services. ¹⁴ Sectional high groundwater table depth reported in the Soi Survey of Orange and Oscoola Counties, Florida published by the USDANRCS. ¹⁵ Sectional high groundwater table depth estimated bared on soil to depth y measured groundwater levels from the borings, ¹⁶ Sectional high groundwater table depth estimated bared on soil to depth y, measured groundwater levels from the borings, ¹⁷ Sectional high groundwater table depth estimated bared on soil to depth y, measured groundwater levels from the borings, ¹⁸ Sectional high groundwater table depth estimated bared on soil to depth y, measured groundwater levels from the borings, ¹⁹ Bare Ost NR CS Soil Survey information, and writer propagatly.

			Summe	ry of Seasona SR 535 PDS	1 High G round w E Study from US Orange and Os FPN:4 Tierra Provi	ster Table Estin 3 192 to North o ceola Counties 37174-2-22-01 ect No: 5511-19	mates for Ponds an of World Center Dr , Florid a -052	nd FPC Skei ive			
		an .		Gound	Measure	HI GWT	ć	U SDA S	loit Survey	Estimated	BHGWT ⁴⁹
Boring	Boring L C/LCon	ocation" etruction	Bo ring De pth ¹³	Surface Elevatio n	Depth Below Ground	Elevation NAVD68	G roundwater Table	Soil Map	SHGWT Depth ¹⁸	Depth Below Ground	Elevation NAVD68
	Stein n	Officet	(feet)	NAVD35 ¹¹⁾ (feet)	Surface (feet)	(feet)	Recorded	ΨĽΩ	(feet)	Surface (feet)	(feet)
					OSCE	DLA COUNTY	~				
						Po rrd 2-3					
8 - 2-3-1	1508+51	165' RT.	20.0	85.0	7.7	77.3	10/02/2023	24	20-35	7.0	78.0
- 2-3-2	1503+49	356' RT.	20.0	82.2	6.0	762	10/02/2023	22	0.5-1.5	4.2	78.0
8 - 2-3-3	1500+65	173' RT.	20.0	82.4	5.2	112	10/26/2023	22	0.5-1.5	3.5	78.9
					ORAN	GE COUNTY	8				
					Constanting of the second	Po md 3-2					
1-2-2 - 3	1600+37	622 LT.	20.0	1.28	4.4	91.3	11/3/2023	26	0.5-1.5	3.5	92.2
18 - 3-2-2	1587+58	327 LT.	20.0	94.7	4.6	1.08	11/3/2023	44	0.0-3.5	2.8	91.9
						Po rrd 3-3					
8 - 3-3-1	1593+91	239' RT.	20.0	<i>L</i> .78	8.3	89.4	10/26/2023	44	0.0-3.5	0.7	80.7
- 3-3-2	1589+39	536' RT.	20.0	88.0	6.5	89.5	10/26/2023	44	0.0-3.5	5.5	80.5
	1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 - 1000 -			100 Contractor 100		Po rrd 4-2	And the second se				
98 - 4-2-1	1585+38	198 LT.	20.0	92.4	3.3	89.1	10/26/2023	44	0.0-3.5	1.2	912
				1		FPC-1	200 - 201 - 201 - 201			100 - 110 - 110 - 110 - 110 - 110 - 110 - 110 - 110 - 110 - 110 - 110 - 110 - 110 - 110 - 110 - 110 - 110 - 110	
80 - 1-1	1586+69	637' RT.	20.0	92.2	1.7	80.5	10/23/2023	44	0.0-3.5	1.3	808
Sc - 1-2	1584+92	622' RT.	20.0	91.8	1.5	90.4	10/23/2023	44	0.0-3.5	1.2	90.7
SC - 1-3	1584+51	886' RT.	20.0	91.6	1.0	90B	10/23/2023	42	+1.0-2.0	0.5	91.1
						FPC-2	10. (22)			10. (A)	
C - 2-1	1579+45	569° RT.	20.0	91.1	1.1	89.4	10/20/2023	44	0.0-3.5	1.4	2,68
C - 2-2	1577+08	780' RT.	20.0	90.6	1.0	89.6	10/20/2023	44	0.0-3.5	0.7	883
×c - 2-3	1580+85	SAT' DT	0.00	010		80.4	2000 million		+30.00	e -	000

		100100			FPN:4 Tierra Proje	-37174-2-22-01 -ot No : 5511-19 - 0107	-052			1	9
Boring	Boring L C/LCon	ocation ^{II)} struction	Bo ring De pth ¹³	G round Surface Elevation	Measure Depth Below Ground	Elevation NAV D88	G Date G oundwater Toto	USUA Soit Map	Soll Survey SHGWT De ct h ¹⁸	Estimated Depth Below Ground	Elevation NAVD88
	Stein n	Offset	(feet)	NA VD 35 ⁽¹⁾ (feet)	Surface (feet)	(feet)	Recorded	С ці	(feet)	Surface (feet)	(feet)
	10		20			FPC-3	100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100		21	100 100	
FPC - 3-1	1576+41	537° RT.	20.0	908	1,4	89.2	10/20/2023	44	0.0-3.5	12	89.4
FPC - 3-2	1572+38	504' RT.	20.0	808	2.1	88.5	10/20/2023	34/44	2.0-3.5/0.0-3.5	1.7	888
FPC - 3-3	1574+07	680' RT.	20.0	90.6	1.7	689	10/20/2023	44	0.0-3.5	1.3	89.3
	202	76	20V	25	245 V	FPC-4	200		20 V		
FPC - 4-1	1574+84	192 LT.	20.0	87.0	2.2	84.8	11/3/2023	44	0.0-3.5	0.0	87.0
FPC - 4-2	1571+52	488 LT.	20.0	89.4	3.5	85.9	11/3/2023	53	+2.0-0.0	1.0	88.4
	2.45	1.05		11	8	FPC -S	100 C			100 C	
FPC - 5-1	1567+49	834' RT.	20.0	89.6	3.8	85.8	10/23/2023	34/44	2.0-3.5/0.0-3.5	2.5	87.1
FPC - 5-2	1567+06	498' RT.	20.0	89.6	4.3	85.3	10/23/2023	34	20-35	2.0	87.6
FPC - 5-3	1584+51	684' RT.	20.0	88.7	4.3	64.4	10/23/2023	44	0.0-3.5	2.0	86.7

			SRSS	mary of La PD&E Stu	thoratory 1 by from U	Table 4 Fest Results S192 to No Decedia Co	s for Soil C rth of Worl	lass fication d Center Dr	. 9				
				1	FPN: «	4571742-22 b No. 5511-	2-01 19-052						
	4.4.4	ASHTO	Shatum		s	ieve Analys	8		At	inil giedat	a,	Organic	Moisture
DOUND NAME	(iii) uiden	Symbol	Number	前0	140	#60	#100	#200	LL	2	ā	Contant	Content
AB-S	1.5 - 2.5	A-3	۲	100	80	65	40	2	20		39 .		37
AB7	30 - 3.5	A-3	2 2 4 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	100	80	70	33	a	20 - 20 20 - 20 20		S 44 3	-20	1
AB-10	6.0 - 6.5	A-3	s. A	100	83	74	38	1	28 °	*	20 N		83
AB-13	2.0 - 2.5	A-3	۲	100	83	88	£	ß	3	30	34 24		3
AB-15	10 - 20	A-3		100	94	70	39	8	939 2 530	•	283 2 2 200	-22	8
AB-16	4.5 - 5.0	A-3	F	100	92	8	30	10		**		*	28
AB-19	1.5 - 2.0	A-3	F	100	84	ស	29	9	80 80 80			-	
AB-23	30 - 3.5	A-3	ر م	100	79	48	27	8	18 18 18	*	" 第一"	8	83
AB-24	10 - 20	A-3	F	100	78	44	24	~	* 25				38) 38)
AB-27	4.5 - 5.0	A-3	F	100	75	42	24	10	1	•	1000 14 10 70	-20	4
AB-30	3.5 - 4.0	A-3	÷	100	73	39	21		े क	-	() 37:	38	23 2
AB-34	10 - 20	A-3		100	67	36	19	4	33 8 33	×	22 44 53		2
AB-36	3.5 - 4.0	A-3	F	100	79	43	22	8	38 (38			. *	3
AB-39	3.0 - 3.5	A-3	Safe S	100	8	39	16	20	С се		1 80 Û		202 202
FPC-1-1	1.5 - 4.0	A-3	F	100	11	37	18	9	1	•	200 44 0 70	г	19
FPC-2-3	1.5 - 4.0	A-3	F	100	11	36	18	8	() (%)	30	0 34 		
PB-23-2	4.0 - 6.0	A-3	23 24 23	8	22	938 200 200 200 200 200	22	2	83 8 80		23 2 2 2 2	с»	24
FPC 3-2	20 - 40	A-3	F	100	74	38	19	2	28 28	23		3	22
FPC-5-3	20 - 50	A-3	Safe S	100	76	42	21	9	Ĩ æ		1 80 Û		
PB-3-2-1	3.0 - 5.0	A-3	100	100	78	42	18	2	2 2 2 2 2	*		3 8	3
PB-23-3	4.5 - 5.5	A-3	((1)	100	61	70	38	8) (% 	38		_ %	32
PB-3-3-1	1.5 - 2.5	A-3	2 - 2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-	100	78	31	10	3	22 14 15 15		29) 4 20	5 - 52 2	5 (10)
AB-1	1.5 - 2.0	A2-4	2	100	91	12	49	20	18		1 St.		
AB-33	0.5 - 1.0	A2-4	2	100	66	95	02	14	10 10 10		4	-000	2
AB3	1.5 - 2.0	A2-6	3	100	94	79	61	33	30	17	13	30 - 70 - 70	15
FPC-2-2	10 - 20	A-8	4				3			30		\mathbb{Z}	36
FPC 3-3	1.0 - 2.5	A-8	4	2	ē	933 Viet 830	ę	8	223 24 550	-	232 4 4 1000	8	42
FPC-4-1	10 - 20	A-8	4		23		100	38 		x	() 39 () ()	8	32
FPC-4-2	2.5 - 5.5	A-8	4	100	2	i an i	(m)	22 22	55 56	×	20 AA	49	252
PB-4-2-1	20 - 3.5	A-8	4	200 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100 - 100	37	2002	8	33	8		39 29	8	28

	Classification	Concrete Substructure	Sightly Aggrazsive	Sightly Aggressive	Sightly Aggressive	Sightly Aggrazsive	Moderately Aggressive	Sightly Aggressive	Moderately Aggressive	Modenately Aggressive
affication Drive	Environmental	Steel Substructure	Slightly Aggressive	Sightly Aggressive	Modenately Aggressive	Sightly Aggressive	Modenately Aggressive	Slightly Aggressive	Extremely Aggressive	Extremely Aggressive
imental Class Korid Center [orida 2	Sulfates	L (Wdd)	4 S	< 5	د 5 ا	< 5	s S	v v	< 5	5 S S
E S a for Environ to North of V Countes, Fi +-2-22-01 . 5511-19-05	Chlorides	(m qq)	30	45	45	30	30	8	30	30
TABL /Test Results /form US192 and Oscacia FPN: 43717/ FPN: 43717/ FPN: 43717/	Resistivity	(пр-тно)	28,000	20,000	27,000	72,000	25,000	48,000	52,000	56,000
Laboratory PD&E Study Orange Tian	На	- 11 - 10 -	7.4	7.2	6.6*	7.4	6.0*	8.4	5.1*	5.1°
Jummary of SR 5351	Stratum	NUMDer	E	E.	F	Ч. Ч		F	2	34
0	AASHTO	Sý HDOI	A-3	A-3	A-3	A-3	A-3	A-3	A-2-4	A-8
	Depth (ft)		1.0 - 2.0	1.0 - 2.0	1.0 - 2.0	0.0 - 4.5	3.0 - 5.0	1.5 - 2.5	1.5 - 2.5	3.5 - 5.0
	Boring Name		AB-15	AB-24	AB:34	PB-2-3-3	PB-3-2-1	PB-3-3-1	A-5	PB-4-2-1

* hdicates governing factor(s) for environmental classification

Porra (D. 2-3	Boring No/Test Location PBS/2-3-1 PBS/2-3-2	Boring/Test Station 1500#151 1500#65	S.R. 535 P S.R. 535 P (166 स) 166 स). 366 स). 173 सी.	J.M.M.R.Y.OF.HYI DS.E.Study from Orange Tier Ter Ground Surface Elevation ⁰ (#et, NAVD33) 32.0 22.0 22.0 23.0	Ta BLE 6 DRa ULIC CO ND U.S. 182 to No A and Osceola Co FPN: 4.37174-2 is Project No.: 5 is 792 792 792	UCTIVITY TEST I h of Work Cente unties, Florida 22-01 511-19.052 Estimated SHGW Elevation (feet, NaVD33) 78.0 78.0 78.0 78.0	RESULTS r Drive (S.R. 536) Werkbal Hydraulic Contructivhy ³ (feetMay) 13 13) Horizontal Hydraulic Comuctivity (feetidag) S0 20	Confining Layer Elevation (feet, NAVD33) 75.0 72.4	Effective Poncety(%) 28 29
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¹⁰ Station, dited, and elevation of the borings were based on design the and LID (R date provided by BOC Engineering, incland OPS coordinates of tained by Trena, lat the time of faildwork. ¹³ Measured hy dealis conductivy, date of totik encountered at the time of beding. No recommend the point designer apply the appropriate safety footes to these values.

Appendix B - FEMA Floodplain Map





A-6





Appendix C - Alternative Evaluation Details

APPENDIX C

This appendix provides more details into the Alternative Evaluation Process that was undertaken for this PD&E Study.

Alternatives Evaluation Process

As illustrated on **Figure 1**, a multi-phase alternative development, evaluation and selection process was employed to properly assess all build alternatives considered for the proposed improvements. Essentially, four (4) different phases comprised the build alternative selection process.

Phase 3: Pre-Final Typical Section/Alignment Evaluation

Table 1 is a numerical/descriptive matrix, which evaluates all typical section alternatives. It is important to note that the main purpose of this evaluation is not necessarily to determine the best option, but rather to identify which alternative(s) are clearly inferior so that they can be eliminated before even more stringent evaluation criteria and procedures are used during the next evaluation phase. The evaluation used involved the generation of a weighting scheme for each of the evaluation parameters. Thirteen (13) different evaluation parameters regarding engineering, social and economic, environmental and cost factors were used. Each parameter was assigned a value ranging from four (4) to ten (10) depending on its degree of importance. These parameters weightings were developed from the average of individual weighting sets prepared by members of the consultant's team reflecting a broad range of professional backgrounds. In addition, the alternative performance with respect to each parameter was compared using two criteria; 1) the overall effect on the specified parameter, and/or 2) the relative effect between the competing typical section alternatives. The overall effect received one of the five judgmental values (++ = 1.00, + = 0.80, 0 = 0.60, - = 0.40, - = 0.20). If, however any of the alternatives had an overall negative effect, then the worst alternative received a (--) and the relatively better alternative received a higher score (-). If any two values were approximately equal, then they both received the relatively lowest score. If the alternatives had an overall positive effect, then the best alternative received a (++) and the relatively worse alternative received a lower score (+). A common value, therefore, signifies an equal overall and relative effect.

This evaluation involves a combination of both qualitative and quantitative values resulting in an overall score. Each score indicated on the table is the result of multiplying the judgmental analysis rating times the relative weight for that parameter. For example, in **Table 5-2** Alternatives B and D under the "multimodal issues" parameter were given a (++) designation (judgmental value =

1.0) since they provide adequate sidewalk width (6) and bike lane width (7). This judgment value of 1.0 was then multiplied by the relative weight of the 'multimodal issues' parameter (8.0) resulting in an overall score of 8.0.

35

Appendix C



St. 353 PDAC Study - Profemany Inger round Riport

2404

Appendix C

1	Partners Distribution market	Type inter 1, (16) has been in the set for	Description (. 154 down Welson, Send to Ser	and and a second	Appellation the hand (4) Plans, that	Townson the Real Property lies and the
1	The second		and the second s			tion of a party set of the set of
		and the second s	And the second s	The second product of the sec-	1	
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2: 553 PDAL Study - Preliminery Ingerseeing Ripoli

Appendix D - Efficient Transportation Decision Making



Florida Department of Transportation

RON DESANTIS GOVERNOR 605 Suwannee Street Tallahassee, FL 32399-0450 KEVIN J. THIBAULT SECRETARY

ETDM Summary Report

Project #14325 - SR 535 from US 192 to N. of SR 536/World Center Dr.

Programming Screen - Published on 07/03/2019

Printed or: 3/10/2020

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Introduction to Programming Screen Summary Report

The Programming Screen Summary Report shown below is a read-only version of information contained in the Programming Screen Summary Report generated by the ETDM Coordinator for the selected project after completion of the ETAT Programming Screen review. The purpose of the Programming Screen Summary Report is to summarize the results of the ETAT Programming Screen review of the project; provide details concerning agency comments about potential effects to natural, cultural, and community resources; and provide additional documentation of activities related to the Programming Phase for the project. Available information for a Programming Screen Summary Report includes:

- Screening Summary Report chart
- Project Description information (including a summary description of the project, a summary of public comments on the project, and community-desired features identified during public involvement activities)
- Purpose and Need information (including the Purpose and Need Statement and the results of agency reviews of the project Purpose and Need)
- Alternative-specific information, consisting of descriptions of each alternative and associated road segments; an overview of ETAT Programming Screen reviews for each alternative; and agency comments concerning potential effects and degree of effect, by issue, to natural, cultural, and community resources.
- Project Scope information, consisting of general project commitments resulting from the ETAT Programming Screen review, permits, and technical studies required (if any)
- Class of Action determined for the project
- Dispute Resolution Activity Log (if any).

The legend for the Degree of Effect chart is provided in an appendix to the report.

For complete documentation of the project record, also see the GIS Analysis Results Report published on the same date as the Programming Screen Summary Report.



#14325 SR 535 from US 192 to N. of SR 536/World Center Dr.

District: Estiot5 Courty: Orange, Osceola Planning Organization: FDOT Detriot5 Plan ID: Not Available

Phase: Programming Screen From: US 192 (Osceola Colimy) To: N. of SR 536/World Center Dr. Financial Management No.: 437174-2-22-01

Federal Involvement: FHWA Runding Other Federal Permit

Contact Information: Sarah Van Gundy (386) 943-5551 sarah vangUndy@dotstate./[Us

Snapshot Data From: Project Published 7/03/2019

lastes and Categories are reflective of what was in ble

d Use Changes	ED.	Bocation Potential	spreime	esthelic Effects	Conomic	obility	edion 4(1) Potential	istoric and Archaeok	ecreation Areas	Atlands and Surface	kiter Quality and Qu	ochiains	Aidife and Habitat	occial and Marine	oče	ir Quality	ortamination	fratruture	avigation	ecal Desonations
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Alternative #1 From: US 192 To: N. of SR 536/World Center Dr. Publicsed: 07/03/2019 Reviewed San 05/10/2019 to 06/24/2019)

Purpose and Need

Purpose and Need

PURPOSE

The purpose of the project is to accommodate future projected traffic demand and improve safety.

NEED

The need for the project is based on transportation demand and safety.

TRANSPORATION DEMAND

In the future year (2040) no-build condition, the section of SR 535 from US 192 and Kyngs Heath Road is projected to operate at LOS F with an AADT of 42,000; the section from Kyngs Heath Road to Poinciana Boulevard operates at LOS E with an AADT of 40,000; the section from Poinciana Boulevard to Polynesian Isle Boulevard operates at LOS F with an AADT of 69,000; the section from Polynesian Isle Boulevard to World Center Drive operates at LOS F with an AADT of 66,000.

In the existing condition, the section of SR 535 from US 192 and Kyngs Heath Road operates at LOS D with an AADT of 28,300; the section from Kyngs Heath Road to Poinciana Boulevard operates at LOS D with an AADT of 28,900; the section from Poinciana Boulevard to Polynesian Isle Boulevard operates at LOS D with an AADT of 48,800; the section from Polynesian Isle Boulevard to World Center Drive drive operates at LOS D with an AADT of 44,300.

SAFETY

A total of 823 crashes were reported on SR 535 from US 192 to World Center Drive in the five-year period from 2012 through 2016. Of those reported crashes, 652 (85%) resulted in injury and 3 resulted in a fatality. The most frequent crash type was rear end with 499 (61%) total crashes, *indicating congestion*. Angle crashes were the second highest with 153 (19%), followed by side swipe with 86 (10%) total crashes. 485 (59%) of the 823 crashes occurred during daylight conditions. The crash rates along this segment of SR 535 exceed the FD OT statewide averages for similar facilities. PROJECT STATUS

The SR 535 project is located within the jurisdiction of MetroPlan Orlando. The Project Development and Environment (PD&E) Study, is documented in MetroPlan Orlando's Transportation Improvement Program (TIP) for fiscal year 2019/20 with an anticipated cost of \$1.4 million. There is currently no funding for the design, right-of-way or construction phases.

Purpose and Need Reviews

FDOT Office of Environmental Management

Ac knowledge ment	Date Reviewed	Reviewer	Comments	6
Accepted	06/19/2019	Kaio BrittWilliams (Kaio BrittWilliams@dot.s tate.fl.Ls)	No Fundace and Need comments found.	

FL Department of Agriculture and Consumer Services

Ac knowledge ment	Date Reviewed	Reviewer	Comments	
Understood	06/24/2019	Brian Camposano (Brian Camposano@Fres h FromRorida.com)	No Rungose and Need comments found.	

FL Department of Economic Opportunity

Ac knowledge ment	Date Reviewed	Rev iewer	Comments	
Understood	06/24/2019	Matt Reston (mattpreston@dec myfor ida.com)	No Furgose and Need comments found.	

10

FL Department of State

Acknowledgement	Date Reviewed	Reviewer	Comments	
Understood	06/14/2019	Adrianne Daggett (Adrianne Daggett@dos. myforida.com)	No Rupose and Need comments found.	

FL Fish and Wildlife Conservation Commission

Ac knowledge ment	Date Reviewed	Reviewer	Comments	
Understood	06/12/2019	Fritz Wettstein (fitz.wettstein@myfwo.co m)	No Rupose and Need comments found.	

1

National Marine Fisheries Service

Ac knowledge ment	Date Reviewed	Reviewer	Comments	
Understood	05/31/2019	Jernifer Sohul (Jennifer Sohull@noaa.go v)	No Rupose and Need comments found.	

100

National Park Service

Acknowledgement	Date Reviewed	Reviewer	Comments	
Understood	06/19/2019	Anita Barnett (anita_barnett@nps.gov)	No Ringose and Need comments found.	

111

0404000

South Florida Water Management District

Ac knowledge ment	Date Reviewed	Reviewer	Comments	
Understood	06/16/2019	Trisha Stone (tatone@sijvmd.gov)	No Rungose and Need comments found.	

US Army Corps of Engineers

Ac knowledge ment	Date Reviewed	Reviewer	Comments	
Understood	06/17/2019	Randy Turner (Randy L.Turner@Usace. army.mit)	No Rupose and Need comments found.	

Acknowledgement	Date Reviewed	Reviewer	Comments	
Understood	05/14/2019	Randall Overton (randall.d.overton@Usog. mil)	No Coast Guard involvement	

US Environmental Protection Agency,

Acknowledgement	Date Reviewed	Reviewer	Comments
Understood	06/24/2019	Rochanna White (White.Rochanna@epa.g ov)	The project description states that SR-535 will be widened within the project limits but does not give the increase in nUmber of lanes for the project. Along with the current number of lanes, in future documents please state the increase number of lanes and any connections or intersection improvements of the project.

US Fish and Wildlife Service

Ac knowledge ment	Date Reviewed	Reviewer	Comments	
Understood	05/28/2019	Zakia Williams (zakia_williams@fws.gov)	No Runjose and Need comments found.	

Project Description Data

Project Description

In the existing condition, SR 535 is an urban minor arterial, access class 3 facility with posted speeds ranging from 45 miles per hour (MPH) to 50 MPH. The roadway has four travel lanes (two in each direction) from US 192 to SR 536/World Center Drive. The project involves the widening of SR 535 from US 192 to World Center Drive, a project length of approximately 2.2 miles.

Summary of Public Comments

In October of 2015 the proposed project was presented at MetroPlan Orlando's Citizen's Advisory Committee (CAC) and Bicycle and Pedestrian Advisory Committee (BPAC). Comments received included concern for high crash rates and bike/ped safety on the corridor and suggestion for a context sensitive evaluation and consideration of BRT (Bus Rapid Transit).

Planning Consistency Status

No information available.

Potential Lead Agencies

FDOT Office of Environmental Management

Exempted Agencies

Age noy Name	Justification	Date	
US CoastGilard	US Count Gillard has requested to be exemptifiom reviewing any projects that do not impact navigable waterways.	04/14/2017	

Community Desired Features

No desired features have been entered into the database. This does not necessarily imply that none have been identified.

User Defined Communities Within 500 Feet

- com esti aims interio http:UnableToRngEstimapException

Census Places Within 500 Feet

- com.esri.aims.miterio.http.UnableToRngEsrimapException

Alternative #1

Alternative D	escription	- 3	-	L		8 <u>-</u>			6	
Name	From	To	Түре	5.2	15	TotalLe	ngth	Cost	Modes	515
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Segment Des	cription(s)									
Location and L	ength	8 1	- 34	2		8	3	1	5 B2	
Segment No.	Name	Beginnin Locatio	ng n Ending I	Location	Leng	th(mi)	Roa	dway id	EMP	ЕмР
75035001 (MP 0 to 0.694.)	75035001 (MP0 to 0.894))			0.	892	75	035001		
92040000 (MP0 1o1.147)	92040000 (M PC to 1.147)	1	5		1.	148	92	040000		
Jurisdiction ar	nd Class	6								
Segment No.		1	Jurisdiction			Urban Service Area			Functional Class	
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Segment 1	No.	Year		AAD	л			Lanes	C	onfig
75035001(MP0	to 0.694)		1							
92040000 (MP0	to 1.147)		5			61			34	

Funding Sources

No funding sources found.

Project Effects Overview for Alternative #1

Line Sale	Degree of Effect	Organization	Date Reviewed	
Social and Economic				
Land Use Changes	Minimat	R. Department of Economic Opportunity	06v2472019 06v2472019 06v2472019	
Social	3 Moderate	US Environmental Protection Agency		
Economio	Minimat	R. Department of Economic Opportunity		
Cultural				
Historio and Archaeological Sites	Minimal Ninimal	South Rorida Water Management District	06/18/2019	
Historio and Archaeological Sites	Minimal	R. Department of State	05/10/2019	
Recreation Areas		South Rorida Water Management District	06/16/2019	
Repression Areas

Natural

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Widife and Habitat

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Widifo and Habitat

Widifp and Habitat

Coastal and Marine

Coastal and Marine

Physical

Air Quality

Contamination

Contamination

Navigation

Navigation

Special Designations

Special Designations

Special Designations

Special Designations

47A	N/A/ No Involvement	National Park Service	05/24/2019
2	Minimal	US Army Corps of Engineers	06/17 <i>/2</i> 019
2	Minimal	US Environmental Protection Agency	06/24/2019
2	Moina	US Fish and Wildlife Service	06/11/2019
T	Minimat	R. Department of Environmental Rotection	06/21/2019
3	Moderate	South Rorida Water Management District	06/18/2019
3	Moderate	National Marine Risheries Service	05/31/2019
2	Minimat	R. Department of Environmental Rotection	06/21/2019
4	Substantial	US Environmental Protection Agency	06/24/2019
3	Moderate	South Rorida Water Management District	06/18/2019
3	Moderate	South Rorida Water Management District	06/18/2019
474	N/A/ No Involvement	R. Department of Agriculture and Consumer Services	06/24/2019
2	Minima	US Rish and Wildlife Service	06/11/2019
2	Moina	South Rorida Water Management District	06/18/2019
3	Moderate	R. Reh and Wildlife Conservation Commission	06r 12r20 19
3	Moderate	National Marine Risheries Service	05/31/2019
47A	N/A/No involvement	South Rorida Water Management District	06(16/2019
2	Minimal	US Environmental Protection Agency	06/24/2019
47A	N/A/ No Involvement	South Rorida Water Management District	06/18/2019
3	Moderate	US Environmental Protection Agency	06r24 <i>r</i> 2019
47A	N/A/ No involvement	US Army Corps of Engineers	06/ 17 <i>/2</i> 0 19
٩XA	N/A/ No Involvement	US CoastGliard	05/14/2019
3	Moderate	South Rorida Water Management District	06/ 16/20 19
47A	N/A/ No Involvement	National Park Service	06/19/2019
3	Moderate	US Environmental Protection	06/24 <i>/2</i> 019

Emergency Response

ETAT Reviews and Coordinator Summary: Social and Economic

Land Use Changes

Project Effects

Coordinator Summary Degree of Effect:

Comments:

Minimal assigned 07/01/2019 by FDOT District5.

The Rorida Department of Economic Opportunity (DEO) assigned a Degree of Effect of "Minima" for Land Use Changes. The Degree of Effect was assigned because the projectis compatible and consistent with the planned land Uses documented in the Orange County Comprehensive Plan's Transportation Bement, "Ruture Lynx Transit Routes 2017 and is neither consistent, nor inconsistent with the Osceola Comprehensive Ran. Transportation Maps will need to be amended in the future. The FDOT has assigned a DOE of "Minimal" for land Use changes.

Degree of Effect: Mining/assigned 06/24/2019 by Matt Preston, R. Department of Economic OpportUnity

Coordination Document: No Involvement

Direct Effects

identified Resources and Level of Importance: <u>Comprehensive Plan(s) Reviewed:</u> *Orange County 2010-2030*, adopted on May 19, 2009 (Updated Reb 6, 2016). *Osceola, County 2023*, last Updated April 2016.

Comments on Effects to Resources:

Compatibility with CommUnity Development Goals and Comprehensive Ran:

Orange County Response:

SR 535 has been identified as a New FOID e-Transit Rolle on Map 28 of the County's Complemensive Plan's Transbortation Bement "FUIDre Lynx" Transit Rolles 2017."

As breviously stated, this area has many abbroved Planned Developments and is designated an Activity Center in Grange County's addoted Combrehensive Plan. In bractice, it is an area of high tourist activity and seeing higher levels of bedestrian movements. To be consistent with the land Use addects of the International Onive and other FUCIre Land Use bolicies of the Addoted Grange Country Completional Onive and other FUCIre Land. I use addects of the International Onive and other FUCIre Land. Use bolicies of the Addoted Grange Country Completional Onive Addoted for a seeing high and the Island recommends that the widening broject incorborate complete streets and context sensitive interovements throughout its length, including features such as wider sidewalks, bedestrian opossatelies and medians, bus shellers, single trees, lighting and bedestrian accommodations etc. Pertinent bolicies are summarized below.

Also, the SR 535 Corridor Planning Study recommended that TSM O and multimodal into to vements including adaptive PedSale, signal control, transit enhancements, and LSD corridor lighting be incorporated. It is not clear how these interventents will be Used within the broject. The study also recommended that a bortion of the corridor be designed as a RUral Tybical Section. This is of concern since the future vision for growth in the area is Ultran. Therefore, we recommend the broject corridor (noluding the segments from Kyngs Heath Road to Vistana Off be designed as an Ultran Tybical Section (bossibly with a consistent to stad, sheed of 45 mbh throughout the corridor), as well as incorporate the complete streets and context sensitive interventents for Ultran Tybical Section, e.g. nervower lane widths, wider sidewalks, etc.

Considerable gLidance has been adopted, which gLides and establishes oritoria for Orange CoUnty's *Mixed, Use Activity Center*, ID2.3.5 indicates that Streetscape oritoria shall be established in order to promote economic viability and create interest in waiking. It is intended to sUpport mLifple modes, inolUding premiLim transitiand encoUraging waiking.

Osceola County: Recently adopted a new planning scheme. Generally, it includes plusling higher densities and intensities within the Urban Growth Boundary (UGB) with the goal of accommodating premium transit. The *Urban Center* and *ToUrist. Commencial* land use categories provide the highest density and intensity standards and are by design intended to support transit and connections. Compatibility with their planning scheme should acknowledge the County's priority for premium transit.

Osceola County Response: A six lane readway is neither consistent, nor inconsistent with the Complehensive Ren: however, the blan requires a walkable U/can form. This entails the development of a connected, street grid with redevelopment of broberties. Design of the state readway must include sidewalks. Fighting, and transit dobor/Unities - and be designed to brioritize transit Use.

Two of Osceola's transportation five planning goals include; *Establish ment of a MULtimodial Transbortation System (Goal 3)* and *Management of the MULtimodial Transbortation System (Goal 3)* and *Management of the MULtimodial Transbortation System (Goal 3)* and Management of the MULtimodial Transbortation for Complete Sitests and also land Use transportation alignment with transit (rail and B RT), bioyole and pedestrian modes. The Transportation maps series includes (Little planning scenarios) for Roadway Networks, MULtimodal Contract, Transit System, Bioyole and Trait Facilities through planning horizons; 2025, 2040 and 2080. Additional support for other modes has been adopted into the Land DevelopmentCode.

Ruture Transportation Map:

The 6 taning project for SR 535 is identified in the 10-year schedule in the Orange CoUnty Comprehensive Ran, Policy CIE1.6.2, from the Osceola CoUnty fine to World Center Drive/SR 538.

The details of this projectare not depicted on Osceola CoUnty's Transportation maps series UGB 2025, 2040 or 2080. DEO staffrecommends that Osceola CoUnty Update its (Utiline transportation map(s) to include the proposed project.

Land Uses:

Ruture Land Use Map categories that surround the projectinolude: Orange County: Activity Center Mixed Use and Activity Center Residential. Osceola County: ToliristCommercial and Urban Center.

Parks:

The northwestern end of the projectis in less than 1,000 ft. from Lake Bliena Vista, an area with considerable recreation activity.

Area of Critical State Concern (ACSC), Coastal High Hazard Area (CHHA), and Military Bases:

The projectic noticeated within an Area of Critical State Concern, or the CHHA, nor does it encroach on any military installations.

Other Planning Related Items:

Orange County: Orange County's main concern is that the entire SR 535 planning corridor in Orange County should be treated as an Urban Typical Section with complete streets and context sensitive improvements. The current plan only accommodates the complete streets improvements in the northern section of the project limits.

Oscepta Response: The Sunrise City project will include up to 900 apartments and can access this roadway via Reinciana Bollevard and the adjacent -Sunrise City shopping center.

Contact Information:

Emails to Cori Carpenter Osceola County Senior Ranner and Tina Burnett, (cori carpenter@csceola.org and (RhotenieBurnett@Osceola.org 407-742-0293).

Orange CoUnty Comprehensive Ranning staffmembers Karen McGuire 407-836-5815, or Maria Cahill 407-836-5322.

Additional Comments (optional):

CLC Commitments and Recommendations:

FDOT District 5 Feedback to FL Department of Economic Opport unity's Review (07/01/2019): Thank you for your review and comments. The FDOT will work with Orange and Osceola Counties to Update the future transportation map and any applicable contentin the local government comprehensive plans.

Social

Project Effects

Coordinator Summary Degree of Effect:

3 Modelate assigned 07/01/2019 by FEOT District5

Comments:

USEPA reviewed this issue and assigned a Degree of Effecto ("Moderate" because some census blocks have the potential to be affected. While there is limited potential for disproportionately high and adverse effects on minority and low-income populations, proactive measures will be taken to involve the affected community in the decisions related to alternative selection, impactanalysis, and mitigation. The FDOT has assigned a DOE of "Moderate" for this category.

Degree of Effect: 3 Mbde/ete azzigned 06/24/2019 by Rozhanna White, US Environmental Protection Agency

Coordination Document: To Be Determined: Ruther Coordination Reguired

Direct Effects

Identified Resources and Level of Importance:

FDOT acknowledges in its Preliminary Environmental Discussion (PED) comments that the SocialsUH hal Data Report identified a minority population of 58.19% within a project buffer of 500-ft, and low-rise multiple dwelling Units and high-rise multiple dwelling Units. Also, FDOT acknowledged that the majority of the improvements are anticipated to coold within the existing right of way (216-ft, to 224-ft) with the exception of storm water ponds. FDOT states that development of alternative pond sites for each basin would fools on minimizing potential residential relocations and/or business displacements. Additionally according to G/S Analysis for Social:

-Within a 100-ftbUffer there is a walk-in clinic

--Within a 200-ftbuffer there are four developments of regional impactin the State of Rorida that exist within the right of way: Legacy Park, Little England (Xentury City), Wind Song and World Gateway

-Within a 500-ftbuffer there are Condominiums (likely the multiple dwelling units)

The acquisition of homes, blainesses, and community features and the impaction the community from the removal and/or temporary impacts will further determine the degree of impaction Social. Therefore, ER4 assigns a Moderate degree of effection Social Impacts.

Comments on Effects to Resources:

FDOT acknowledged in its Reliminary Environmental Disclassion (PED) comments that the project would be developed in accordance with the Civil Rights Act of 1964 and 1968, along with Title V of the Civil Rights Act, and E.O. 12896 (Environmental Justice). Partial and full right of way acquisitions . business and other community features may affect quality of life. Environmental features and community elements help individuals maintain health and well-being.

Additional Comments (optional):

CLC Commitments and Recommendations:

FDOT District 5 Feedback to US Environmental Protection Agency's Review (07/01/2019): Thank you for your review and comments. Executive Orders 13045 and 12898 will be considered during the public outreach and alternative analysis phases of the Reject Development and Environment (PD&E) Study.

This projectivill be developed without regard to race, color, national origin, age, sex, religion, disability, or family status.

A preactive public involvement approach, consistent with the PD&E ManUal, will be implemented to ensure that opportunity is given to all residents and businesses along the consider to provide imputing this project. (Inecessary, the FDOT will (Infremanalyze sociocultural effects during the FD&E study consistent with the Sociocultural Effects. Evaluation Handbook.



The Department of Economic OpportUnity assigned a Degree of Effect(DOE) of "Minimal". This DOE is based on the potential of the project to attract new development. The FDOT has assigned an overall DOE of "Enhanced" because the project is anticipated to enhance the economic resources of the area by improving the transportation system and enhancing connectivity to/from major employment centers and toltrist attractions, such as Walt Beney World.

Degree of Effect:

Mining/actingted 06/24/2019 by Matt Preston, R. Department of Economic OpportUnity

Coordination Document: No Involvement

Direct Effects identified Resources and Level of Importance: Comprehensive Plan(s) Reviewed: Orange CoUnty 2010-2030, adopted on May 19, 2009 (Updated Feb 6, 2018). Osceols Collety 2025, Last Updated April 2018.

Comments on Effects to Resources: The project is not located within a Rural Area of OpportUnity.

The projecthat potential to attractnew development. The potential type of employment within the adopted land Lise categories is likely to be to Linist supportive, service industry and transportation.

Additional Comments (optional):

CLC Commitments and Recommendations:

FDOT District 5 Feedback to FL Department of Economic Opport unity's Review (07/01/2019): Thank you for your review and comments.

Mobility

Project Effects

Coordinator Summary Degree of Effect:

Enhanced assigned 07/01/2019 by FDOT District S

Comments:

No ETAT reviews were submitted for this issue. A Degree of Effect of "Enhanced" is being assigned to this issue based on the additional roadway capacity and sidewalk connectivity to be provided in the build condition.

None found

ETAT Reviews and Coordinator Summary: Cultural

Section 4(f) Potential

Project Effects

Coordinator Summary Degree of Effect:

Minimal assigned 07/01/2019 by FDOT District5

Comments:

No ETAT reviews were submitted for this issue. The FDOT has assigned a DOE of "Minimal" because the one potential Section 4 fresource is owned. by the South Rorida Water Management District (Districtowned mitigation lands), and would likely not be protected Under Section 4(f) of the Department of Transportation Act of 1966.

During the PDSE Study, a Section 4(f) Determination of Applicability may be prepared, although the proposed project is expected to result in minimal to no involvement with this or other Section 4(f) resolutces.

None found

Historic and Archaeological Sites

Project Effects

Coordinator Summary Degree of Effect:

Miging/assigned 07/01/2019 by FDOT District5

Comments:

The South Rovida Water Management District and the Rovida Department of State, Division of Historic Resources both assigned a Degree of Effect (EOE) of "Minima". The FDOT has also assigned a DOE of "Minima".

A Cultural Resource Assessment Survey (CRAS) report that follows the specifications set forth in Chapter 1A-46 Borida Administrative Code, FDOT PD&E ManUal Part2, Chapter 8 will be developed.

🌌 Miyingal azzigned 06/18/2019 by Trisha Stone, SoUth Rorida Water Management Estrict Degree of Effect:

Coordination Document: Permit Regulared

Coordination Document Comments:

An Environmental Resource Permit would be required from the South Rorida Water Management District(SPAMD). A pre-application meeting with SPAMD staff is recommended.

Direct Effects

Identified Resources and Level of Importance: The SPARAD will coordinate with the Division of Historical Resources during the Environmental Resource Permit application process.

Comments on Effects to Resources: Rease see comment above.

AdditionalComments (optional):

An Environmental Resource Permit would be required from the South Rorida Water Management District (SPAMD). A pre-application meeting with SPAMD staff is recommended.

CLC Commitments and Recommendations:

FDOT District 5 Feedback to South Florida Water Management District's Review (07/01/2019): Thank you for your review and comments. A Cultural Resource Assessment Survey will be prepared during the PD&ES10dy.

Degree of Effect: Minimal assigned 05/10/2019 by Adrianne Daggett, R. Department of State

Coordination Document: PD&E Support Document As Per PD&E Manual

Direct Effects Identified Resources and Level of Importance: As reported.

Comments on Effects to Resources:

The projecthas some potential to impact cultural resources within and adjacent to the proposed project.

Additional Comments (optional):

CLC Commitments and Recommendations:

FDOT District 5 Feedback to FL Department of State's Review (07/01/2019): Thank you for your review and comments. Ruther coordination with your agency will take place during the PD&ES10dy, which will include a Cultural Resource Assessment Survey.

Recreation Are.	35		
Project Effects			
Coordinator Summ	nary Degree of Effect:	Minimal assigned 07/01/2019 by FDOT District5	
Comments: South Rorida Water Involvement". The p easement that were these sites.	Management District assign roposed projectis anticipate docUmented within 500 feet	red a Degree of Effect (DOE) of "None", while the National Park Service assigned d to avoid impacts to future/planned trails, a privately owned golf course, and the tof the project, however, a DOE of "Minimal" will be assigned by FDOT because	t a DOE of 'N/A No SRVM Doonservation of the proximity to
Degree of Effect:	0 None assigned 06/18	2019 by Trisha Stone, South Rorida Water Management District	
Coordination Docu	ment: No Involvement		
Direct Effects Identified Resource	es and Level of Importance	8	
Comments on Effe	ctsto Resources:		
Additional Comme	rts (optional):		
CLC Commitments	and Recommendations:		
FDOT District 5 Re-	ed back to South Florida W	ater Management District's Review (07/01/2019): Thank you for your review.	
Page 12 of 55	Screening Summary Re	eport-Rojeot#14325 -SR535 from US 192 to N.ofSR536/World Center Dr.	Rinted on: 3/10/2020

Degree of Effect: 🔰 N/A / No kyvolvenzekt assigned 05/24/2019 by Anita Barnett, National Park Service

Coordination Document: No Involvement

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

Additional Comments (optional):

CLC Commitments and Recommendations:

FDOT District 5 Feedback to National Park Service's Review (07/01/2019): Thank you for your review.

ETAT Reviews and Coordinator Summary: Natural

Wetlands and Surface Waters

Project Effects

Coordinator Summary Degree of Effect:

3 Moderate assigned 07/01/2019 by FEOT EstrictS

Comments:

The Wetlands and Surface Water issue was given a "Moderate" Degree of Effect(DOE) by South Rorida Water Management District and the National Marine Reherics Service. The US Environmental Rotection Agency (USERA), Rorida Department of Environmental Rotection (FDEP), US Reh and Wildlife Service (PWS) and the US Army Corps of Engineers (USACE) assigned a EOE of "Minimal". Given the Uncertainty of the impacts, and the responses from the ETAT, the FEOT is assigning a DOE of "Moderate" to this issue.

Measures to avoid and/or minimize impacts to wetlands, mitigation options, as well outmutative impacts will be documented in the Natural Resource. Evaluation report that will be prepared as part of this study. The project will be designed to meet state water quality and quantity requirements, and the FDOT will implement proper bestmanagement practices during constituction.

Degree of Effect: 🔰 🌌 *Minimal a*ssigned 06/17/2019 by Randy Turner, US Army Corps of Engineers.

Coordination Document: Permit Required Coordination Document Comments:

The projectas proposed, may qualify for the Department of the Army's Regional General Permit(RGP) - 92 for impacts to any proposed impacts to waters of the U.S. (we tands or surface waters). If the project does not qualify for a general permitthen it would need to be permitted using a Standard Individual Permitwhich includes the need to publish a Rublic Notice to other federally and State resource agencies as well as all adjacent property owners. If the wettand impacts are 0.5 acre or below, the Corps recommends using the Nationwide Permit 14 (NWP-14) for any proposed impacts to waters of the U.S. (Wettands or surface waters).

Direct Effects

Identified Resources and Level of Importance:

A review of the EST revealed the presence of approximately 17 acres of pallstrine wetlands within a 500 (bot buffer; 1 acres of pallstrine wetlands, within a 200 (botbuffer; and, 0.29 acre of pallstrine wetlands within a 100 (botbuffer. The level of importance would be minimal.

Comments on Effects to Resources:

Any pallistine wetands in the project area deemed to be jurisdictional along the readway conider already have been secondarily impacted so a [Unotional assessmentshould reveal a lower guality of wetands.

AdditionalComments (optional):

The projectas proposed, may qualify for the Department of the Army's Regional General Permit (RGP) - 92 for impacts to any proposed impacts to waters of the U.S. (we tands or surface waters). If the project does not qualify for a general permittion it would need to be permitted using a Standard Individual Permitwhich includes the need to publish a Rublic Notice to other federally and State resource agencies as well as all adjacent property owners. If the wettand impacts are 0.5 acre or below, the Corps recommends using the Nationwide Permit 14 (NWP-14) for any proposed impacts to waters of the U.S. (Wettands or surface waters).

CLC Commitments and Recommendations:

FDOT District 5 Feedback to US Army Corps of Engineers's Review (07/01/2019): Thank you for your comments and identifying the permits and mitigation bank opportUnities available.

Degree of Effect: 2 Mining/ accigned 06/24/2019 by Rochanna White, US Environmental Protection Agency

Coordination Document: To Be Determined: Further Coordination Reguired

Direct Effects

Identified Resources and Level of Importance:

FDOT acknowledges in its Preliminary Environmental Disclassion (PED) comments that within a 500-ftbUffer there are 16.75 acres of pallstrine wetands. According to GS Analysis for Wetands and SUrface Waters within a 500-ftbUffer there are 294.83 acres of the Lake Okeechobee Watershed, a Northern Everglades and EstUaries Protection Program Watershed. The proposed project requires additional right-of-way, which requires placement of fill into wetands. FDOT's PED comments state they expect minimal involvement with wetands and mitigation for Unavoidable wetand impacts will coold in fulling phases. The EPA does not expect significant impacts on wetands from the proposed project. Therefore, EPA assigns a Minimal Degree of office to Wetands and Surface waters.

Comments on Effects to Resources:

Northern Everglades and Estilaries. Proteotion Program Watershed can be negatively affected by hilman activities. The loss of wetlands (Unotion, loss of wildlife habitat, degradation of water quality in wetlands, potential impacts to water quality in surface waters, and reduction in flood storage and capacity may be impacted by the proposed project. Therefore, protection of ground water quality from loss of environmental resolutions is a concern. Consistent with Section 404 of the Clean Water Act, the selected site should avoid and minimize to the maximum extent practicable, placement of fill into junisdictional waters of the U.S., which include wetlands and streams. Additionally, impervicus or semi-impervicus surfaces will contribute to surface drainage and non-pointsolarces, that will impact surface and ground water quality.

AdditionalComments (optional):

CLC Commitments and Recommendations:

FDOT District 5 Feedback to US Environmental Protection Agency's Review (07/01/2019): Thank you for your review and comments. The limits of wetlands will be preliminarily established during the PD&ES tudy and then surveyed during the design phase. Measures to avoid and/or minimize impacts to wetlands will be documented in the Natural Resource Evaluation report that will be developed as part of this study. The project will be designed to meet state water quality and quantity requirements, and the FEOT will implement proper best management practices during constitucion.

Degree of Effect: 22 Mining/accigned 06/11/2019 by Zakia Williams, US Fish and Wildlife Service.

Coordination Document: PD&E Support Document As Per PD&E Mantial

Direct Effects

Identified Resources and Level of Importance:

Sand skink (Neoseps reynoldsi)

The EST tool identified that the projectarea falls within the candiskink consultation area. The potential for candiskink within this proposed corridor is not likely. There is no habitat in the area or the surrounding areas to provide suitable habitat for the species. The US RVS has no documented coolumences of sandiskink in the area.

Wood Stork (Mysteria a merica ra)

The action area falls within the Core Foraging Area (CFA) of the wood stork. The projectis not located close to any wood stork resting colonies. Although the projectarea falls within the CFA it is Unlikely that wood storks are Utilizing this area for foraging.

Comments on Effects to Resources:

Wood Stork (Mysteria a merica ra)

DependentUpon the design of the project direct impacts should be avoided. To minimize adverse effects to the wood stock and other we hand dependent species, we recommend that impacts to suitable for aging habitat be avoided. If avoidance is not possible, minimization measure should be employed and best management practices to avoid [Unther degradation of the site. Mitigation for wetland impacts should be disclassed with US RVS and will require [Unther coordination. Rease refer to the North Rorida Reid Office website for WOST colony locations. http://www.jws.gov/horth/orida

Coordination with the Office of Migratory birds will be needed for all projects involving migratory birds and eagles, please contact Ugonda Kilpatrick in our Migratory Birds. Permit Office at

Migratory Birds, Permit Office 1875 Century Bollievard, NE Atlanta, Georgia 30345

352-406-6780 cell (MAIN)

Surveys for all federally listed plants found in Orange and Osceola counties (the list can be found on our vebsite north/orida (vs.gov) should be conducted by a trained botanist during the appropriate time of year.

Rorida has 229 species of plants found nowhere else in the world, and most of them are rare and declining. Diverse plant communities are essential for maintaining a healthy environment for fish, wildlife, and people, and improved land conservation and land management can help restore these rare plants. To this end, the Service worked with the Rorida Department of Agriculture and Consumer Services, and many Universities and non-profile, to establish the Rorida Rare Plant Conservation Endowment (Unde projects that are critical to preventing the extinction of Rorida's rare plants. To this end, the Service Worked with the Rorida Department of Agriculture and Consumer Services, and many Universities and non-profile, to establish the Rorida Rare Plant Conservation Endowment. The Endowment (Unde projects that are critical to preventing the extinction of Rorida's rare plants. To ensure the subvival of Rorida's Unique and rare plants the Service encourages the applicant to make a volUntary contribution of \$5,000 to the Endowment. All contributions are volUntary and tex deductible.

Wet lands

Wetands provide importanthabitat for fish and wildlife. BestManagement Plactices (BMPs) should be used to prevent degradation of wetand and other aquationesources from erosion, siltation, and nutrient discharges associated with the projects its. We recommend that the project be designed to avoid these valuable resources to the greatest extent practicable. If impacts to wetands are Unavoidable, we recommend that the FDOT provides mitigation that fully compensates for the loss of wetand resources.

DependentUpon the alternative(s) selected, the proposed projectis expected to result in minimal to moderate involvement with wildlife and habitat resources. If it is determined the project will affect and federally listed species and/or their habitat, the Department will initiate consultation with RVS during the Reject Development process.

Additional Comments (optional):

CLC Commitments and Recommendations:

FDOT District 5 Feedback to US Fish and Wildlife Service's Review (07/01/2019): Thank you for your review and comments. Measures to avoid and/or minimize impacts to wetlands as well as mitigation opportunities will be documented in the Natural Resource Evaluation report that will be prepared as part of this study. The projectivil be designed to meetstate water quality and quantity requirements, and the FDOT will implement proper bestmanagement practices during construction.

Degree of Effect: 🔰 🌌 Mining/accigned 06/21/2019 by Chris Stahl, R. Department of Environmental Protection

Coordination Document: PD&E Support Document As Per PD&E ManUal

Direct Effects

Identified Resources and Level of Importance:

National Wetlands, inventory GIS data indicates, that there are approximately 8.57 acres of wetlands, within the 500-ft buffer area.

Comments on Effects to Resources:

An Environmental Resolutoe Permit (ERP) will be required from the Soluth Rorida Water Management Estrict. The ERP applicant will be required to eliminate or reduce the proposed wetland resolutoe impacts of the pathway to the greatest extent practicable:

Minimization should emphasize avoidance-oriented corridor alignments, wetland fit reductions via pite bridging and steep/vertically retained side.
 Boges, and median width reductions within safety limits.

 We tands should not be displaced by the installation of stormwater conveyance and treatment swales; compensatory treatment in adjacent Uplands is the preferred alternative.

 After avoidance and minimization have been exhausted, mitigation must be proposed to offset the adverse impacts of the project to existing wetland. [Inotions and values, Significant attention is given to forested we fand systems, which are difficult to mitigate.

The olimitative impacts of conclinent and future transportation improvement projects in the violative impacts of the subject project should also be addressed.

Additional Comments (optional):

CLC Commitments and Recommendations:

FDOT District 5 Feedback to FL Department of Environmental Protection's Review (07/01/2019): Thank you for your review and comments. Measures to avoid and/or minimize impacts to wetlands as well as state cumulative impact origina will be documented in the Natural Resource Evaluation report that will be developed as part of this study. The project will be designed to meet state water quality and quantity requirements, and the FDOT will implement proper bestmanagement practices during construction.

Degree of Effect: 3 Moderate assigned 06/18/2019 by Trisha Stone, South Rorida Water Management District

Coordination Document: Permit Reguired

Coordination Document Comments:

An Environmental Resource Permit would be required from the South Rorida Water Management District (SPAMD). A pre-application meeting, with SPAMD staff is recommended.

Direct Effects

identified Resources and Level of Importance:

Wetland resolutoeswolld be affected impacts reduction and elimination options are available. The Districtholds conservation easements on the vestside of SR 535 from World Center Drive to the Orange/Osceola CoUntylline, impacts to the easements could be reduced by eliminating roadwaywidening on the westside of the road.

Comments on Effects to Resources: See comments above.

AdditionalComments (optional):

An Environmental Resource Permit would be required from the South Rorida Water Management District (SPAMD). A pre-application meeting with SPAMD staff is recommended.

CLC Commitments and Recommendations:

FDOT District 5 Feedback to South Florida Water Management District's Review (07/01/2019): Thank you for your review and comments regarding wetlands and conservation easements that coold within the project confider. Measures to avoid and/or minimize impacts to wetlands will be documented in the Natural Resource Evaluation report that will be developed as part of this study. The project will be designed to meet state water guality and guanity requirements, and the FDOT will implement proper bestmanagement practices during construction.

Degree of Effect: 3 Mbde/ste assigned 05/31/2019 by Jennifer Schull, National Marine Fisheries Service

Coordination Document: No Involvement

Direct Effects

identified Resources and Level of Importance:

Based on oUr review of the information provided on the EST website, GIS-based effects analysis on wetands, and interpretation of aerial photographs, NOAA's National Marine Reherics Service (NMFS) has determined that mixed forested wetands, cypress-mixed hardwood wetands, and pallistine wetands are located within the project corridor. These we tands range from low to moderate in guality.

Comments on Effects to Resources:

The wetands along the proposed readway expansion provide water guality functions, such as removal of sediments, excess rultients, and contaminants, which benefit and support these aquatic ecceptions. Through hydrological connections, these wetands also contribute plant material and other Useable nutrients (both dissolved and particulate organic matter) into aquatic food webs that include recreationally, commercially, and ecclogically important species within downstream estuaries. If wetland impacts are Unavoidable, sequential minimization and mitigation should take place.

In addition to the direct impacts from filling we lands, construction activities may impact adjacent we lands through sedimentation and runoff.

Additional Comments (optional):

CLC Commitments and Recommendations:

FDOT District 5 Feedback to National Marine Fisheries Service's Review (07/01/2019): Thank you for your review and confirmation that the project, will not affect National Marine Reheries Service #UstresoUrces.

Water Quality and Quantity

Project Effects

Coordinator Summary Degree of Effect:

3 Modelete assigned 07/01/2019 by FEOT Detriot5

Comments:

The Water Quality issue was given a "Substantial" Degree of Effect(DOE) by the US Environmental Rotection Agency, while the South Rorida Water Management District assigned a DOE of "Moderate" and the Rorida Department of Environmental Rotection assigned a DOE of "Minimal". A Summary DOE of "Moderate" is being assigned due to the project crossing/in close proximity to Okeechobee Basin Management Action Plan and four Water Biody Identification Numbers (WBID's), one of which [Shingle Creek (WBID 3169A)] is a verified impaired Rorida Water for nultrients.

Degree of Effect: 💦 🌆 Mining/ accigned 06/21/2019 by Chris Stahl, R. Department of Environmental Protection

Coordination Document: PD&E Support Document As Per PD&E ManUal

Direct Effects

Identified Resources and Level of Importance:

The EST GIS analysis identified the project is within the Lake Okeechobee Watershed.

Comments on Effects to Resources:

Every effortsholld be made to maximize the treatment of stormwater runoff from the proposed pattway/road widening project to prevent ground and surface water contamination. If an ERP permittis required to construct the project, stormwater treatment sholld be designed to maintain the natural predevelopment hydroperiod and water quality, as well as to protect the natural functions of adjacent wetlands. We recommend that the PDSE study include details on possible future stormwater treatment facilities. We recommend that the PDSE study include an evaluation of existing stormwater treatment adequacy and details on the future stormwater treatment facilities. Reito-fitting of stormwater conveyance systems would help reduce impacts to water guarty.

AdditionalComments (optional):

CLC Commitments and Recommendations:

FDOT District 5 Feedback to FL Department of Environmental Protection's Review (07/01/2019): Thank you for your review and comments. The potential impact the proposed project will have on water quality will be evaluated according to Part2, Chapter 11 of the FDOT Reject Development and Environment (PD&E) Manual. The FDOT will include an evaluation of existing stormwater treatment and details on the future stormwater treatment facilities. The project will be designed to meet state water guality and guanity requirements and the FDOT will implement proper bestmanagement practices during constitution.

Degree of Effect: 4. Subatential assigned 06/24/2019 by Roshanna White, US Environmental Proteotion Agency

Coordination Document: Tech Memo Reguired

Coordination Document Comments:

Rease contact Larry Cole, Water Protection Evision, at cole Jarry@epa.gov or 404.582.9474 for a Sole Solarce Aquifer Impact Determination Letter.

Direct Effects

Identified Resources and Level of Importance:

FDOT acknowledges in its Pretiminary Environmental Discussion (PED) comments a Basin Management Action Ran (BMAP) for Lake Okeechobee (Northern Everglades and EstUaries Protection Program Watershed), Principal Aquifers of the State of Rorida and Recharge area, the Biscayne Aquifer Sole Source Aquifer streamflow and recharge source zone, four onsite sewage treatment and disposal systems, four Super Act Risk Sources, and one Super Act Risk Well. Also, FDOT acknowledged 4 water bodies within a 500-ft buffer-Lake Cecile, Lake Bryan, Reedy Creek, and Shingle Creek (a Verified impaired water for nutrients).

According to GIS Analysis, the Rorida's aquifer systems is "more vulnerable" (FAVA Theme Response) to contamination. At this time, ERA assigns a Substantial degree of effect. Detailed protection measures for these resources as the project continues into (uture phases of development will (urther determine the degree of effect for Water Quality and Quantity.

Comments on Effects to Resources:

Healthy waters provide clean drinking water and productive fisheries which support a healthy environment and guaity of ife. Human activities have the potential to degrade ground water and surface water. Excavation may contribute to soil erosion and a reduction in vegetation can increase sediment runoff.

An increase in impervicus or semi-impervicus surfaces can contribute to surface drainage and non-point solurces that will impact surface and groundwater quality. Common readway pollutants such as heavy metals, volatile organic chemicals, petroletim hydrocarbons, and suspended solids, degrade near-by water bodies through storm water runoff. These contaminants can increase the turbidity of a water body. Turbid waters heatmore rapidly when exposed to subright and decrease primary production and dissolved exygen levels. Therefore, it is a potential for an increase in water degradation. Additionally, constitution activities may produce the release of hazardotis pollutants through spills and improper storage of materials. Hazardotis pollutants can injutrate the aquifer to an area of discharge.

The EPA acknowledges and support FDOT comment in the PED of the project and encourages the Use of the following activities during project design and development meet water quality and quantity requirements, and utilize bestmanagement practices during constitucion.

AdditionalComments (optional):

Rease contact Larry Cole, Water Protection Evision, at cole Jarry@epa.gov or 404.562.9474 for a Sole SolFice Aguifer Impact Determination Letter.

CLC Commitments and Recommendations:

FDOT District 5 Feedback to US Environmental Protection Agency's Review (07/01/2019): Thank you for your review and comments. The potential impactifie proposed projectivill have on water quality will be evaluated according to Part 2, Chapter 11 of the FDOT Reject Development and Environment (PD&E) Manual. The FDOT will include an evaluation of existing stormwater treatment and details on the Utility stormwater treatment facilities. The projectivil be designed to meet state water quality and quantity requirements, and the FDOT will implement proper bestmanagement practices during constitution.

A Water Quality Impact Evaluation will also be prepared as part of this study.

Degree of Effect: 3 Mode/ste assigned 06/18/2019 by Trisha Stone, Solith Rorida Water Management District

Coordination Document: Permit Required

Coordination Document Comments:

An Environmental Resource Permit would be required from the South Rorida Water Management District (SPAMID). A pre-application meeting , with SPAMID staff is recommended.

Direct Effects

Identified Resources and Level of Importance:

Water guality treatment offering of 2.5 inches of runoff imes the newly-proposed impervicus area in addition to any existing water guality treatmentwill need to be provided in the proposed project. There are numerous developments alongside the corridor of this project; it is possible that joint Use facilities may provide existing water guality treatment. This is a very old area and previously-issued permit parameters and existing storm water management facility properties may be challenging to research as some permits may have been issued through Orange and/or Osceola counties prodating SPWMD permitting. For linear projects with site constraints such as this one, compensating water guality treatment is allowed. Water guality oritoria needs to be met showing that the post-development discharge rate does not exceed the pre-development discharge rate in the area. Also, the projectiles within the Shingle Creek Basin which has a discharge limitation as described in Appendix II.

Comments on Effects to Resources:

See comments above

AdditionalComments (optional):

An Environmental Resource Permit would be required from the South Rorida Water Management District(SPAMD). A pre-application meeting with SPAMD staff is recommended.

CLC Commitments and Recommendations:

FDOT District 5 Feedback to South Florida Water Management District's Review (07/01/2019): Thank you for your review and comments regarding permittinformation. The potential impact the proposed project will have on water guality will be evaluated according to Part 2, Chapter 11 of the FDOT Project Development and Environment (PDSE) Manual. The FDOT will include an evaluation of existing stomwater treatment and details on the fUture stomwater treatment facilities. The project will be designed to meet state water guality and guanity requirements and the FEOT will implement proper best management practices during construction.

Floodplains

Project Effects

Coordinator Summary Degree of Effect:

3 Moderate assigned 07/01/2019 by FEOT District5

Comments:

The SPWMD assigned a Degree of Effect(DOE) of "Moderate". Due to the presence of floodplain areas within 100 feet of the corridor, it is likely that floodplain will be affected by the proposed road widening. As such an overall EO E of "Moderate" is being assigned for floodplains. An evaluation of floodplain impacts and alternatives to avoid impacts will be Undertaken as part of the Roject Development and Environment (PD&E) Study. Efforts will be made to avoid or minimize impacts to floodplain resolutions and functions. Engineering design features and hydrological drainage

stillotizes will be designed slich that stormwater transport, flow, and discharge meet or exceed flood control regulirements.

Degree of Effect: 3. Moderate assigned 06/16/2019 by Trisha Stone, South Rorida Water Management District

Coordination Document: Remit Reguired

Coordination Document Comments:

An Environmental Resource Permitwould be required from the South Rorida Water Management District(SPAMD). A pre-application meeting with SPAMD staff is recommended.

Direct Effects

Identified Resources and Level of Importance:

Any foodplain impacts as a result of the activities proposed in this projectivil need to be mitigated based on a ollp-for-ollp analysis. It should be noted that no impacts will be allowed in flood zone areas. In addition, any existing or previously permitted floodplain compensating storage will need to be maintained in the proposed design.

Comments on Effects to Resources: Rease see comments above.

AdditionalComments (optional):

An Environmental Resource Permit would be required from the South Rorida Water Management District (SPAMD). A pre-application meeting with SPAMD staff is recommended.

CLC Commitments and Recommendations:

FDOT District 5 Feedback to South Florida Water Management District's Review (07/01/2019): Thank you for your review. An evaluation of foodplain impacts and alternatives to avoid potential impacts will take place during the Reject Development and Environment (PD&E) Study.

Wildlife and Habitat

Project Effects

Coordinator Summary Degree of Effect:

3 Modelate accigned 07/01/2019 by FEOT Extint5

Comments:

The Rorida Rich and Wildlife Conservation Service assigned a Degree of Effect(DOE) of "Moderate" for this issue, while US Fish and Wildlife Service (PAS) and South Rorida Water Management District assigned a "Minima" DOE. Rorida Department of Agriculture and Consumer Services (FDACS) assigned a "No Involvement" DOE. These agencies provided comments on Wildlife and Habitatissues oiting that the project is within the geographic range and consultation area for a number of species including the Rorida south-jay, Everglade shaik kite, red cockaded woodpecker, Audubon's created caractra, Rorida grasshopper sparrow, Lake Wates. Roge plants, the blue-tailed mole skink, and the sand skink. However, the presence of these species along this primarity Urban corridor is Unlikely.

The FDOT will conduct wild ife curveys during the Project Development and Environment (PD&E)Study and coordinate with the PAS and PWC. A Natural Resource Evaluation (NRE) will be prepared during the PD&E Study to assess potential impacts to listed species, develop avoidance and minimization efforts, and to document any involvement with wild ife and habitat resources. The NRE will assess potential for all and fathal species within the corridor, as well as potential habitat for these species. The results of the NRE will be coordinated with federal and/or state resource/regulatory agencies as applicable.

Degree of Effect: N/A / No Involvement assigned 06/24/2019 by Brian Camposano, R. Department of Agriculture and Consumer Services. Coordination Document: No Involvement

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

AdditionalComments (optional):

CLC Commitments and Recommendations:

FDOT District 5 Feedback to FL Department of Agriculture and Consumer Services's Review (07/01/2019): Thank you for your review.

Degree of Effect: 💦 🗱 Minimal assigned 06/11/2019 by Zakia Williams, US Fish and Wildlife Service

Coordination Document: PD&E Support Document As Per PD&E Mantial

Direct Effects

identified Resources and Level of Importance:

Sand skink (Neoseps reynolds))

The EST tool identified that the projectarea falls within the sand skink consultation area. The potential for sand skink within this proposed corridor is not likely. There is no habitat in the area or the subrounding areas to provide suitable habitat for the species. The US RVS has no documented occurrences of sand skink in the area.

Wood Stork (Mysteria a merica ra)

The action area falls within the Core Foraging Area (CFA) of the wood stork. The projectis not located close to any wood stork nesting colonies. Although the projectarea falls within the CFA it is Unlikely that wood storks are Utilizing this area for foraging.

Comments on Effects to Resources:

Wood Stork (Mysteria a merica ra)

DependentUpon the design of the project direct impacts should be avoided. To minimize adverse effects to the wood stork and other we hand dependent species, we recommend that impacts to suitable for aging habitat be avoided. If avoidance is not possible, minimization measure should be employed and best management practices to avoid [Unther degradation of the site. Mitigation for we hand impacts should be disclassed with US RVS and will require [Unther coordination. Rease refer to the North Rorida Reid Office website for WOST colony locations. http://www.jws.gov/north/orida

Coordination with the Office of Migratory birds will be needed for all projects involving migratory birds and eagles, please contact Ugonda Kitpatrick in oUr Migratory Birds. Fermit Office at:

Migratory Birds, Permit Office 1875 Century Bollevard, NE Atlanta, Georgia 30345 352-406-6780 cell (MAIN)

Surveys for all federally listed plants found in Orange and Osceola counties (the list can be found on our website north/orida.(ws.gov) should be conducted by a trained botanist during the appropriate time of year.

Rorida has 229 species of plants found nowhere else in the world, and most of them are rare and declining. Diverse plant communities are essential for maintaining a healthy environment for fish, wildlife, and people, and improved land conservation and land management can help restore these rare plants. To this end, the Service worked with the Rorida Department of Agriculture and Consumer Services, and many Universities and non-profile, to establish the Rorida Rare Plant Conservation Endowment funds projects that are orifical to preventing the extinction of Rorida's rare plants. To ensure the survival of Rorida's unique and rare plants the Service encourages the applicant to make a volUntary contribution of \$5,000 to the Endowment. All contributions are volUntary and tex deductible.

Wetlands

Wetands provide importanthabitat for fish and wildlife. Best Management Plactices (BMPs) should be used to prevent degradation of wetand and other aquatio resources from erosion, siltation, and nutrient discharges associated with the projects ite. We recommend that the project be designed to avoid these valuable resources to the greatest extent practicable. If impacts to wetands are Unavoidable, we recommend that the FDOT provides mitigation that fully compensates for the loss of wetand resources.

DependentUpon the alternative(a) selected, the proposed projectis expected to result in minimal to moderate involvement with wildlife and habitat resources. If it is determined the project will affect and federally listed apecies and/or their habitat, the Department will initiate consultation with RVS during the Project Development process.

AdditionalComments (optional):

CLC Commitments and Recommendations:

FDOT District 5 Feedback to US Fish and Wildlife Service's Review (07/01/2019): Thank you for your review and comments. A Natural Resource Evaluation report will be prepared as part of the Roject Development and Environment (PD&E)Study. This report will document the results official surveys and the potential for effects to federally protected species. The FCOT will coordinate with USPAS during the PD&E Study regarding species effect determinations and any impacts that cannot be avoided.

Degree of Effect:

Minimal assigned 06/16/2019 by Trisha Stone, Solith Rorida Water Management Estrict

Coordination Document: Permit Required

Coordination Document Comments:

An Environmental Resource Permit would be required from the South Rovida Water Management District (SPAMD): A pre-application meeting

withS RVM Distaff is recommended.

Direct Effects

identified Resources and Level of Importance: Quality of wetland habitats is minimal along the roadway corridor.

Comments on Effects to Resources: Rease see comment above.

Additional Comments (optional): An Environmental Resource Permitwould be required from the South Rorida Water Management District(SPAMD). A pre-application meeting with SPAMD staff is recommended.

CLC Commitments and Recommendations:

FDOT District 5 Feedback to South Florida Water Management District's Review (07/01/2019): Thank you for your review and comments.

Degree of Effect: 3 Mode/ste assigned 06/12/2019 by Fritz Wettstein, R. Fish and Wildlife Conservation Commission

Coordination Document: To Be Determined: Ruther Coordination Reguired Coordination Document Comments:

We appreciate the opportUnity to provide input on highway design and the conservation of fish and wildlife resources. Please call Kristee B coth at (850) 383-6298 or email Kristee.Booth@MyPWC.com and Conservation RanningServices@MyPWC.com for questions or further coordination on this project.

Direct Effects

Identified Resources and Level of Importance:

Rorida Fish and Wildlife Conservation Commission (PAC) staffhave reviewed ETDM #14325, Orange & Osceola CoUnties, and provide the following comments related to potential effects to fish and wildlife resolutoes of this Riogramming Phase project.

The Roject Description Summary states that this readway currently has four travel lanes (two in each direction) with limits from US 192 to SR 538 Month Center Drive for a project length of approximately 2.2 miles. The project includes the widening of SR 535 from four to six lanes and alternatives for Urban interchanges at SR 535 and SR 538 Month Center Drive. At this time, FDOT will not be purchasing any right of way (ROW). If officite ponds are needed, then additional ROW will be purchased, otherwise FEOT will keep the drainage within the existing footprint. The project is in FDOT District 5.

An assessment of the projectarea was performed on lands within 500 feet of the proposed alignment to determine potential impacts to habitat which supports listed species and other fish and wildlife resources. Our inventory included a review of aerial and ground-level photography, various wildlife observation and landcover data bases, along with coordination with FAC biologists and other State and Federal agencies. A GIS analysis was performed Using the Rorida Department of Transportation's (FEOT) Environmental Screening Tool (EST) to determine the potential quality and extent of upland and wetland habitat, and other wildlife and fisheries resource information. We have reviewed the Prefiminary Environmental Discussion Comments Report provided by the FDOT, and offer the following comments and recommendations.

Our assessmentrove dis that land lise in the assessment area is primarily litban (74,46%, 219,58 acres). The rest of the corridor is a mixture of various other landcover types that include Mesic Ratwoods (12,71%, 37,47 acres), Freshwater Forested Wetland (3,86%, 11,37 acres), Extractive (3,22%, 9,49 acres), Raines and Biogs (2,79%, 6,23 acres), Cypress/Tupeto (1,43%, 4,23 acres), Rural (0,92%, 2,72 acres), and Cultural -Lacustrine (0,62%, 1,63 acres).

Based on range and preferred habitatitype, the following species (isted by the Federal Endangered Species Act and the State of Rorida as Federally Endangered (FE), Federally Threatened (FT), or State-Threatened (ST) have the potential to cool/r in the project area: Abdubon's created caracara (FT), Eastern indigo snake (FT), Everglade snail kite (FE), Rorida sand skink (FT), blue-tail mole skink (FT), wood stork (FE), Rorida billrowing owl (ST), Rorida pine snake (ST), Rorida sandhill orane (ST), gopher tortoise (ST), little blue heron (ST), rossate spoonbill (ST), Southeastern American kestrel (ST), and tricolored heron (ST). The wetland species are likely to Utilize appropriate habitats in the vicinity of the project alignment.

The GS analysis revealed several specific characteristics associated with lands along the project alignment that provide an indication of potential habitat guality or sensitivity that will require field studies to verify the presence or absence of listed wildlife species and the guality of wildlife habitat resources. The project is within the Central Porida Black Bear Management Unit with known mortality in the region. The project is within the Central Porida Black Bear Management Unit with known mortality in the region. The project is within the Central Porida Black Bear Management Unit with known mortality in the region. The project is within the U.S. Fish and Wildlife Service Consultation Areas for Audubon's Created Caracara, Everglade Shail Kite, Rorida Grasshopper Sparrow, Rorida Sand Skink, Rorida Sorub Jay, Lake Wales. Roge Rants, and Red-cockaded Woodpecker. The project is within a US PMS Core Foraging Area for the wood stork. The projectate includes the Shingle Create watershed containing the rare and imperied fish species the iron color shiner.

Comments on Effects to Resources:

Rimary wildlife issues associated with this project include : potential loss of wildlife habitat from expanded readway construction; potential adverse effects to a moderate number of species listed by the Federal Endangered Species Actas Endangered or Threatened, or by the State of Rorida as Threatened; and potential water quality degradation because of additional stormwater runoff from the new readway surface draining into nearby wetlands.

Based on the projectinformation provided, PWC staff believe that direct and indirect effects of this project could be moderate, if roadway construction is confined to the existing cleared ROW to the maximum degree possible as was stated in the project description, and degradation of adjacentor downstream water quality is avoided via inclusion of Best Management Practices in the project description.

Additional Comments (optional):

We appreciate the opportUnity to provide input on highway design and the conservation of fish and wildlife resources. Please call Kristee Booth at (850). 383-6298 or email Kristee Booth@MyPWC.com and Conservation RanningServices@MyPWC.com for guestions or further coordination on this project.

CLC Commitments and Recommendations:

FDOT District 5 Feedback to FL Fish and Wildlife Conservation Commission's Review (07/01/2019): Thank you for your review and comments. A Natural Resource Evaluation report will be developed as part of the Project Development and Environment (PD&E) Study. This report will document the results of field surveys and the potential for effects to state protected species.

Coastal and Marine

Project Effects

Coordinator Summary Degree of Effect:

N/A N/A / No In volvement assigned 07/01/2019 by FDOT District5

Comments:

The SoUth Rorida Water Management District assigned a Degree of Effect (DOE) of "N/A, No involvement". National Marine Fisheries Service assigned aDOE of "Moderate" because mixed forested wetlands, oppress-mixed hardwood wetlands, and patientine wetlands are located within the project corridor. The proposed projectic anticipated to have no involvement with coastal or marine resources and as such was assigned a "N/A No involvement" DOE for Coastal and Marine.

Degree of Effect: 3 Moderate assigned 05/31/2019 by Jennifer Schull, National Marine Risheries Service

Coordination Document: No Involvement

Direct Effects

Identified Resources and Level of Importance:

Based on oUr review of the information provided on the EST website, GIS-based effects analysis on wetands, and interpretation of aerial photographs, NOAA's National Marine Reherics Service (NMFS) has determined that mixed forested wetands, cypress-mixed hardwood wetands, and pallistine wetands are located within the project corridor. These we tands range from low to moderate in guality.

Comments on Effects to Resources:

The wetlands along the proposed readway expansion provide water quality (Unotions, slich as removal of sediments, excess rutients, and contaminants, which benefit and support these aquatic ecceystems. Through hydrological connections, these wetlands also contribute plant material and other Useable nutrients (both dissolved and particulate organic matter) into aquatic food webs that include recreationally, commercially, and ecclosically important species within downstream estuaries. If wetland impacts are Unavoidable, sequential minimization and mitigation should take place.

In addition to the direct impacts from filling we lands, construction activities may impact adjacent we lands through sedimentation and rUnoff.

Additional Comments (optional):

CLC Commitments and Recommendations:

FDOT District 5 Feedback to National Marine Fisheries Service's Review (07/01/2019): Thank you for your review and confirmation that the project, will not affect National Marine Service (Untresources).

Degree of Effect: N/A / No Involvement assigned 06/18/2019 by Trisha Stone, South Rorida Water Management District

Coordination Document: No Involvement

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

AdditionalComments (optional):

CLC Commitments and Recommendations:

FDOT District 5 Feedback to South Florida Water Management District's Review (07/01/2019): Thank you for your review.

ETAT Reviews and Coordinator Summary: Physical

Noise

Project Effects

Coordinator Summary Degree of Effect:

3 Moderate assigned 07/01/2019 by FEOT District5

Comments:

No ETAT reviews were submitted for this issue. A Degree of Effect of "Moderate" is being assigned to this resource based on the noise censitive sites present. Noise impacts will be documented in the Noise Study Report as part of the Project Development and Environment (PD&E) study in accordance, with Part 2, Chapter 18 of the FDOT PD&E Manual.

None found

Air Quality

Project Effects

Coordinator Summary Degree of Effect:

Minimal assigned 07/01/2019 by FDOT District5

Comments:

USEPA reviewed this issue and assigned a Degree of Effect of "Minimal" since this project is within an attainment area, and the impacts to air quality are expected to be minimal.

Degree of Effect: 🛛 🧱 Mining/accigned 06/24/2019 by Rochanna White, US Environmental Proteotion Agency

Coordination Document: To Be Determined: Ruther Coordination Reguired

Direct Effects

Identified Resources and Level of Importance:

A wide varie ty of air polUtants can be emitted from stationary and mobile sources. The EPA establishes the National Ambient Air QUality Standards (NAAQS) to proteotpublic health and public welfare and regulates emissions of hazardoUs air polUtants. The proposed project is in an attainment area, so origina polUtants Under NAAQS are considered to be an acceptable level. Therefore, EPA expects the project to have Minimal impact on air guality.

Comments on Effects to Resources:

The projectarea air guality can possibly be affected by airborne dust, and other ambient air pollutants, from project construction.

Additional Comments (optional):

CLC Commitments and Recommendations:

FDOT District 5 Reed back to US Environmental Protection Agency's Review (07/01/2019): Thank your review and comments.

Contamination

Project Effects

Coordinator Summary Degree of Effect:

Moderate assigned 07/01/2019 by FEOT Estiot5

Comments:

The US Environmental Robotion Agency assigned a COE of "Moderate", while South Rorida Water Management District assigned a Degree of Effect (COE) of "NANo Involvement". The FCOT is assigning a DOE of "Moderate" based on the potentially contaminated sites in the area, including five (5) Hazardous Waste Facilities; four (4) Onsite Sewage Sites; seven (7) PetroleUm Contamination Monitoring Sites; five (5) Biomedical Waste Sites; one (1) Brownfield area (West 192 Development Authority Area); seven (7) PetroleUm Contamination monitoring Sites; 12 Storage Tark Contamination Monitoring Sites; five (5) Super Act Rek Sources; 11 US Environmental Rotection Agency (EPA)National PolUtant Discharge Elimination System (NPDES); and four (4) USEPA Resource Conservation and Recovery Act(RCRA) Regulated Facilities within the 500-foot projectouffer area. Degree of Effect: N/A / No ky volve mant assigned 06/16/2019 by Trishe Stone, South Rorida Water Management District

Coordination Document: No Involvement

Direct Effects Identified Resources and Level of Importance:

Comments on Effects to Resources:

AdditionalComments (optional):

CLC Commitments and Recommendations:

FDDT District 5 Feedback to South Florida Water Management District's Review (07/01/2019): Thank you for your comments. A Contamination Screening Evaluation Report will be conducted during the Project Development and Environment (PD&E) Study. Ruture phases of project development will incorporate the measures of the your comments.

Degree of Effect: 3 Abde/gte assigned 06/24/2019 by Roshanna White, US Environmental Protection Agency

Coordination Document: To Be Determined: Further Coordination Reguired

Direct Effects

Identified Resources and Level of Importance:

Within a 500-ft buffer FDOT acknowledged in its Preliminary Environmental Discussion comments:

-SBiomedical Waste Site

-One Brownfield location (West 192 Development Althority Area)

-4 Oncito Servage Sites

-12 Storage Tank Contamination Monitoring Sits

-SSUper Act Rek Sources

-7 PetroleUm Contamination Monitoring Sites

11 EPA National Pollutant Discharge Bimination System (NPDES) permits.

-4 USERA Resource Conservation and Recovery Act (RCRA) Regulated Facilities.

Within a 500-ft. projectbuffer, Water Quarity and Quanity GIS analysis identified Lake Okeechobee (Northern Everglades and Estuaries Rotection Rogram Watershed), the Biscayne Aquifer Sole Source Aquifer stream flow and recharge source zone, and a Rincipal Aquifer of the State of Rorida and Recharge Area with a Rorida Aquifer System FAVA response theme as more vulnerable. Contamination to the aforementioned resources is a concern. Therefore, the ERA assigns a Moderate degree of Effect to Contamination.

Comments on Effects to Resources:

PetroleUm hydrocarbons are the primary constituents in oil, gasoline, diesel, as well as solvents. PetroleUm hydrocarbons are the primary folls of many site and risk assessments. The petroleUm constituents of primary interest to hUman health are aromatic hydrocarbons (berzene ethylberzene, toUene, and xylenes), polycyclic aromatic hydrocarbons (PAHs), gasoline additives (MTBE, TBA) and combUsion emissions from (Lets. Other contaminated site features, eUch as HazardoUs Waste Sites and USEPA RCRA Sites, involve other types of hazardoUs and solid wastes. Releases of hazardoUs wastes into the groUnd can contaminate groUndwater and degrade land Use. Ruthermore, owners or operators have corrective obligations Under RCRA. Owners and operators are to properly install storage systems and protect their storage systems from spills, overfills, and corrosion. It is also required that correctfilling practices to be followed. In addition, owners and operators must report the existence of new storage systems, subpacted releases, storage system closures, and keep records of operation and maintenance. If wastes are not cleaned-Up the property may become a brownfield site. Blighted and potentially contaminated sites negatively affect the aesthetics, originality, and economic value of a community.

Also, constituction activities may produce the release of hazardous pollutants through spills and improper storage of materials. Hazardous pollutants can inflittate the aquifer to an area of discharge.

The EPA acknowledges and supports the following comments in the PED of the project and encourages the Use of these activities during project design and development:

-A Containingtion screening evaluation will be conducted and a Containingtion Screening Evaluation Report will be prepared.

AdditionalComments (optional):

CLC Commitments and Recommendations:

FDOT District 5 Feedback to US Environmental Protection Agency's Review (07/01/2019): Thank you for your comments. A Contamination Screening Evaluation Report will be conducted during the Project Development and Environment (PD&E) Study. Ruture phases of project development will incorporate the measures of third in your comments.

Infrastructure

Project Effects

Coordinator Summary Degree of Effect:



Mining/assigned 07/01/2019 by FDOT District5

Comments:

No ETAT reviews were submitted for this issue. A Degree of Effect of "Minima" is being assigned to this resolute based on the identified one (1) Federal Aviation Administration (FAA) aviation transportation facility (Magio Air Adventure), five (5) FAA obstructions, one (1) PM tower structures (Auditorium of Prayer and Worship, Inc.), two (2) Television Broadcast Structure Locations (both WKM E-C D), one (1) electric substation (Lake Bryon substation), and two (2) wireless antenna structures (Sprinteon and Crowneaste) within a 5,280-footbuffer. Overhead and Underground Utilities and other features may be impacted, but only on a temporary basis, mostly related to short-term construction-related activities. None found

Navigation

Project Effects

Coordinator Summary Degree of Effect:

N/A N/A / No ky volvement assigned 07/01/2019 by FDOT District5

Comments:

The US CoastGillard and the US Army Corps of Engineers both assigned a Degree of Effectof"N/A7 No Involvement" for Navigation noting that there would be no involvement with navigable waters.

Degree of Effect: N/A / No ky volve np.yt assigned 06/17/2019 by Randy Turner, US Army Corps of Engineers.

Coordination Document: Permit Reguired Coordination Document Comments:

The projectwould require Department of the Armyauthorization for impacts to waters of the U.S. (we tands) Under Section 404 of the Clean Water Act but nor Under Section 10 of the Rivers and Harbor Act. The projectas proposed, may qualify for the Department of the Army's Regional General Permit (RGP) - 92 for impacts to any proposed impacts to waters of the U.S. (we tands or surface waters). If the project does not qualify for a general permit then it would need to be permitted Using a Standard Individual Permit which includes the need to publish a Rublic Notice to other federally and State resource agencies as well as all adjacent property owners. If the wettand impacts are 0.5 acre or below, the Corps recommends Using the Nationwide Permit 14 (NWP-14) for any proposed impacts to waters of the U.S. (Wettands or surface waters).

Direct Effects Identified Resources and Level of Importance: None - No Involvement.

Comments on Effects to Resources: None

Additional Comments (optional):

The projectwould require Department of the Armyauthorization for impacts to waters of the U.S. (we tands) Under Section 404 of the Clean Water Act but nor Under Section 10 of the Rivers and Harbor Act. The projectas proposed, may qualify for the Department of the Army's Regional General Permit (RGP) - 92 for impacts to any proposed impacts to waters of the U.S. (we tands or surface waters). If the project does not qualify for a general permit then it would need to be permitted Using a Standard Individual Permit which includes the need to publish a Rublic Notice to other federally and State resource agencies as well as all adjacent property owners. If the wettand impacts are 0.5 acre or below, the Corps recommends Using the Nationwide Permit 14 (NWP-14) for any proposed impacts to waters of the U.S. (Wettands or surface waters).

CLC Commitments and Recommendations:

FDOT District 5 Feedback to US Army Corps of Engineers's Review (07/01/2019): Thank you for your review and comments.

Degree of Effect: N/A / No Involvement assigned 05/14/2019 by Randall D Overton, US CoastGuard

Coordination Document: No Involvement

Direct Effects Identified Resources and Level of Importance: No Coast Guard involvement

Comments on Effects to Resources:

Additional Comments (optional):

CLC Commitments and Recommendations:

FDOT District 5 Reedback to US Coast Guard's Review (07/01/2019): Thank you for your review.

ETAT Reviews and Coordinator Summary: Special Designations

Special Designations

Project Effects

Coordinator Summary Degree of Effect:

3 Mbderate assigned 07/01/2019 by FEOT District5

Comments:

Both the US Environmental Robotion Agency and South Rorida Water Management District assigned a Degree of Effect (DOE) of "Moderate" for Special Designations issues because the project coolins within the Biscayne Sole Source Aquifer and Recharge Zone and the District holds a conservation easement in the westside of SR 535. The National Park Service assigned a DOE of N/A-No Involvement. The GIS analysis showed that there are no aquatic preserves, Outstanding Rorida Waters, Scenio Highways, or wild and scenio rivers within a 500-foot buffer of the projectures. The FDOT will assign a "Moderate" Degree of Effectrecognizing that effects to the sole source aquifer and conservation easement will be evaluated during the PDS Estudy.

Degree of Effect:

3 Mode/eta assigned 06/18/2019 by Trisha Stone, South Rorida Water Management District

Coordination Document: Permit Required

Coordination Document Comments:

An Environmental Resource Permitwould be required from the South Rorida Water Management District(SPAMID). A pre-application meeting with SPAMID staff is recommended.

Direct Effects

Identified Resources and Level of Importance: The District holds a conservation easement in the west side of SR 535.

Comments on Effects to Resources: Rease see comment above.

Additional Comments (optional):

An Environmental Resource Permit would be required from the South Rorida Water Management District(SPAMD). A pre-application meeting with SPAMD staff is recommended.

CLC Commitments and Recommendations:

FDOT District 5 Feedback to South Florida Water Management District's Review (07/01/2019): Thank you for your review and comments.

Degree of Effect: N/A / No kyvolve.npr/t accigned 06/19/2019 by Anita Barnett, National Park Service

Coordination Document: No Involvement

Direct Effects

Identified Resources and Level of Importance:

Comments on Effects to Resources:

AdditionalComments (optional):

CLC Commitments and Recommendations:

FDOT District 5 Feedback to National Park Service's Review (07/01/2019): Thank you for your review.

Degree of Effect: 3 Mbde/ste azzigned 06/24/2019 by Rochanna White, US Environmental Poteotion Agency

Coordination Document: Tech Memo Required Coordination Document Comments:

Technical Occument: Sole Source Aquiler Impact Octermination Letter

Rease contact Larry Cole, Water Protection Evision, at cole Jarry@epa.gov or 404.582.9474 for a Sole SolFice Aguiter Impact Determination Letter.

Direct Effects

Identified Resources and Level of Importance:

The Biscayne Sole SolFree Aquifer (SSA) is not field as an OUtstanding Borida Water Under Borida Administrative Code 62.302.700, but the January 2015 Agency Operating and Runding Agreement for Continuing Participation in Efficient Transportation Decision Making and Transportation Project Development Processes between the EPA and Federal Highway Administration, and FDOT states in Section 4-Statement of Work that USEPA will review issues for Special Designations focusing on Sole Source Aquifers pursuant to the Safe Drinking Water Act. As the project continues into future phases of development and more detailed information on the impacts to the SSA will determine the degree of effect to this resource.

Comments on Effects to Resources: Contaminant infiltration is of concern.

AdditionalComments (optional):

Technical Continent: Sole Soline Aptiler Interact Catermination Letter Rease context Larry Cole, Water Protection Division, at cole Larry@epa.gov or 404.582.9474 for a Sole Solince ApUifer Impact Determination Letter.

CLC Commitments and Recommendations:

FDOT District 5 Feedback to US Environmental Protection Agency's Review (07/01/2019): Thank you for your review. A Sole Source Aquifer Impact Determination Letter will be submitted to USEPA as part of the coordination associated with this PDS Estudy.

ETAT Reviews and Coordinator Summary: Emergency Response

Eliminated Alternatives

There are no eliminated alternatives for this project.

Project Scope

General Project Recommendations

There are no general projectrecommendations identified for this projectin the EST, \sim

Anticipated Permits

Anticipated Permits Permit	Туре	Conditions	Review Org	Review Date
Environmental Resource Remit	Water		FDOT District S	07/01/19
Environmental Protection Agency Sole Source Aquifer Review	Fodoral		FDOT District 5	05/10/19
SPWMD Environmental Resolutos Permit	Water		FDOT District S	07/01/19
National PollUtant Discharge Biminated System	FDEP		FDOT District 5	07/01/19
Sole Source Aquifer	USEPA		FDOT District 5	07/01/19
Gopher Tortoise Remit	FPACC		FDOT District S	07/01/19
Standard (Individual) Remit	USACE		FDOT District S	07/01/19

Anticipated Technical Studies

Technical Study Name	Туре	Conditions	Review Org	Review Date
Design Traffic Technical MemorandLim	BNGINEERNG		FDOT District S	07/01/2019
Rnat Reliminary Engineering Report(signed and sealed)	BIGINEERING		FDOT District S	07/01/2019
Drainage/ Rond Sifing Report	BIGINEERING		FDOT District S	07/01/2019
ConceptLat Design Roadway Ran Set	BNGINEERNG		FDOT District S	07/01/2019
Typical Section Package	BIGINEERING		FDOT District S	07/01/2019
/al⊔e Engineering nformation Report	BNGINEERNG		FDOT District S	07/01/2019
Aublio Involvement Plan	BNVIRONMENTAL		FDOT District 5	07/01/2019
Class of Action Determination	BNVIRONMENTAL		FDOT District S	07/01/2019
loise Study Report	BNVIRONMENTAL		FDOT District 5	07/01/2019
Contamination Screening Evaluation Report	BNVIRONMENTAL		FDOT District S	07/01/2019
ConceptLat Stage Relocation Ran	BNVIRONMENTAL		FDOT District S	07/01/2019
Aublio Hearing Transcript	BNVIRONMENTAL		FDOT District 5	07/01/2019
Type 2 CE	BNVIRONMENTAL		FDOT District S	07/01/2019
Laity Control Ran	BNVIRONMENTAL		FDOT Distict S	07/01/2019
SociooUtUral Effects Evaluation	Other		FDOT District S	07/01/2019
Comments and Coordination Report	BNVIRONMENTAL		FDOT District S	07/01/2019
Vir Quality Technical Memorandum	BIVIRONMENTAL		FDOT District S	07/01/2019
Nater Quality Impact Evaluation	BNVIRONMENTAL		FDOT District S	07/01/2019
Cultural Resolution Assessment Survey	BNVIRONMENTAL		FDOT District S	07,01,2019
Design Variations and Exceptions Package	BNGINEERING		FDOT District S	07/01/2019
Location HydraLlics Technical MemorandUm	ENGINEERING		FDOT District 5	07/01/2019

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Utility Assocsment Package	BIGINEERING	FDOT District S	07/01/2019
QA/QC Ran	BIGINEERING	FDOT District S	07/01/2019
Section 4(f) Determination of Applicability	ENVIRONMENTAL	FDOT Distist 5	0770172019
Farmland Conversion Impact Rating Form	BIVIRONM BITAL	FDOT District 5	07,01/2019
Natural Resolutions Evaluation (NRE)	BNVIRONM BNTAL	FDOT District 5	07/01/2019

Dispute Resolution Activity Log There are no dispute actions identified for this projectin the EST.

Hardcopy Maps: Alternative #1



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14325 SR 535 from US 192 to N. of SR 536/World Center Dr., Alternative #1





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14325 SR 535 from US 192 to N. of SR 536/World Center Dr., Alternative #1





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Appendices

PED Comments

Advance Notification Comments

FL Department of Agric ulture and Consumer Services Comment --No additional comment

-Brian Camposano, 6/24/2019

-, \$ tools.date.format("M'd'yyyy",\$commentresponseTimestamp)

US Army Corps of Engineers Comment --

The Corps has no instant with the Advance Notification Package and concurs with the initial assessment of Wetlands and Surface Water and Navigation inclus.

--Randy Turner, 6/17/2019

Response -

-, \$tools.date.format("M'dyyyy" \$commentresponseTimestamp)

FL Fish and Wildlife Conservation Commission Comment --

PAC comments have been recorded in the ETDM Programming Screen. We appreciate the opportUnity to provide input on highway design and the conservation of fish and wildlife resolutoes. Please call Kristee B coth at (850) 363-6296 or email Kristee Booth @MyPWC.com and ConservationRanningServices@MyRVC.com for guestions or further coordination on this project.

- Fritz Wettetein, 6/12/2019

Response -

- , \$tools.date.format("M/d/yyyy",\$commentresponseTmestamp);

FL Department of State Comment --No comments

-Adrianne Daggett, 5/10/2019

Response -

-, \$tools.date.format("M'dlyyyy" \$commentresponseTmestamp)

GIS Analyses

Since there are so many GS Analyses available for Roject #14325 - SR 535 from US 192 to N. of SR 536World Center D., they have not been included in this ETDM Summary Report GIS Analyses, however, are always available for this projection the Public ETDM Website. Please click on the tink below (or copy this link into your Web Browser) in order to view detailed GIS tabular information for this project.

h tip //e timplib.fla-etat.org/est/index.jsp?tpiD=14325&startPageName=GIS%20Analysis%20Restlits.

Special Note: Rease be site that when the GS Analysis Resilfs page loads, the Project Published 7/03/2019 Milestone is selected. GS Analyses enapehole have been taken for Project #14325 at various points throughout the project's life-oyole, so it is important that you view the correct enapehot.

Project Attachments

Note : Attachments are not included in this Summary Report, but can be accessed by clicking on the links below:				
Date	Туре	Size	Link / Description	

Response -

	Form SF424:	°
	Application for	003555553
05/10/2019	Federal Assistance	1.15 MB

http://etdmpUb.fla-etat.org/es/tservie/tblobViewer?blob/D=27579

Form SF-424: Application for Federal Assistance

Degree of Effect Legend

ColorCode	Meaning	ETAT	Public Involvement	
NA	Not Applicable / No Involvement	There is no presence of the issue in relationship to the project, or the issue is intelevant in relationship to the proposed transportation action.		
0	None (after 12/5/2005)	The issue is present, but the project will have no impact on the issue; project has no adverse effection ETAT resolitore; permitizatione or consultation involves rolline impraction with the agency. The <i>Naya</i> degree of effectis new as of 12/5/2005.	No commUnity opposition to the planned project No adverse effection the commUnity.	
	Enhanced	Rejecthas positive effection the ETAT resolutes or can revenue a providus adverse effectie ading to environmental improvement.	Affected community supports the proposed project. Project has positive effect.	
2	Minimal	Rejecthas little adverse effecton ETAT resources. Permit isolance or consultation involves roll the interaction with the agency. Low cost options are available to address concerns.	MinimUm commUnity opposition to the planned project. MinimUm adverse effection the commUnity.	
2	Minimal to None (azzigned prior to 12/5/2005)	Rejecthas little adverse effecton ETAT resources. Permit issuance or consultation involves roll fine interaction with the agency. Low cost options are available to address concerns.	MinimUm commUnity opposition to the planned project. MinimUm adverse effection the commUnity.	
3	Moderate	Agency resources are affected by the proposed project, bit avoidance and minimization options are available and can be addressed during development with a moderated amount of agency involvement and moderate cost impact.	Rejecth as adverse effect on elements of the affected commUnity. Public involvement is needed to seek alternatives more acceptable to the commUnity. Moderate commUnity interaction will be regulired during project development.	
4	Substantial	The projecthas substantial adverse effects but ETAT Understands the project need and will be able to seek avoidance and minimization or mitigation options during project development. Substantial interaction will be required during project development and permitting.	Rejecthas substantial adverse effects on the community and faces substantial community opposition. Intensive community interaction with focused Rublic Involvement will be required during project development to address community concerns.	
Ť	Rotential Dispute (Ranning Sor∞n)	Rejectmay not conform to agency statutory regultements and may not be permitted. Reject modification or evaluation of alternatives is required before advancing to the LRTP Regramming Screen.	CommUnity strongly opposes the project. Rejectis notin conformity with local comprehensive plan and has severe negative impacton the affected commUnity.	
8	Displite Resolution (Regramming Screen)	Rejectdoss not conform to agency statutory requirements and will not be permitted. Dispute resolution is required before the projectproceeds to programming.	CommUnity strongly opposes the project. Rejectis notin conformity with local comprehensive plan and has severe negative impacton the affected commUnity.	
	No ETAT Consensus	ETAT members from different agencies assigned a different ETDM coordinator has not assigned a sUmmary degree of e	degree of effect to this project, and the flect.	
	No ETAT Reviews	No ETAT members have reviewed the corresponding issue (has not assigned a summary degree of effect	for this project, and the ETDM coordinator	



Florida Department of Transportation

GOVERNOR

715 South Woodland Boulevard DeLand, Flor da 32720-6834 KEVIN J. THIBALL T. P.F. SECRETARY

May 9, 2019

Mr. Chris Stahl, Environmental Manager Florida State Clearinghouse Department of Environmental Protection 3900 Commonwealth Boulevarc, Mail Station 47 Tallahassee, FL 32399-3000

RE: Advance Notification

S.R. 535 from U.S. 192 to N. of S.R. 536 Project Development and Environment Study ETDM Number: 14325 Financial Management Number: 437:74-2-22-01 Orange & Osceola Counties, Florida

Dear Mr. Stahl:

This Advance Notification (AN] package is being sent to your office for distribution to State agencies that conduct federal consistency reviews (consistency reviewers) in accordance with the Coastal Zone Management Act and Presidential Executive Order 12372. Although we will request specific comments during the permitting process, we are asking that consistency reviewers examine the attached information and provide us with their comments.

Consistency reviewers have 45 days from the Programming Screening Notification to provide their comments. Once you have received their comments, please submit a consistency determination for the State of Florida within 60 days of the Programming Screen Notification. If you need more review time, send a written request for an extension to our office within the initial 60-day comment perioc.

This is a federal action. 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 Flor da Department of Transportation (FDOT) pursuant to 23 U.S.C. § 327 and a Memorandum of Understanding cated December 14, 2016 and executed by the Federal Highway Administration and FDOT. FDOT will determine what type of environmental documentation will be necessary. The determination will be based upon n-house environmental evaluations and comments received through coordination with other agencies. Please provide a consistency review for this project in accordance with the State's Coastal Zone Management Program.

In addition, please review this project's consistency, to the maximum extent feasible, with the requirements of Chapter 163 of the Florida Statutes.

FDOT District Five is submitting this project through the Programming Screen of the Efficient Transportation Decision Making (ETDM) Environmental Screening Tool (EST) in coordination with this AN Package. The project is listed as #14325 - SR 535 from US 192 to N. of SR 536/World Center Drive.

www.dot.state.fl.us

Mr. Stahl ETDM #14325 Page 2

The Environmental Technical Advisory Team (FTAT) members may review this report on the ETDM website. Non-ETAT agencies may review this report on the public access website located at: http://etdmpub.fla-etat.org/.

Your comments should be submitted via the EST if you are an ETAT representative, or enailed or mailed to the District contact

Sarah Van Gundy F.orida Department of Transportation 719 South Woodland Boulevard, MS #2-542 DeLand, Flcrida 32720-6800 sarah.vangundy@dot.state.fl.us

Sincerely,

Ham Q. Smyler

Karen A. Snyder, P.E. Froject Development Manager

KS/kl Attachments

Advance Notification Package

Project #14325 - SR 535 from US 192 to N. of SR 536W orld Center Dr. Programming Screen - Published on 05/10/2019 Printed on: 5/10/2019

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IV. Transmittal List

I. Location Maps

14325 SR 535 from US 192 to N. of SR 536/World Center Dr.

US 192 (Osceola County) to N. of SR 536/World Center Dr.





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II. Fact Sheet

Disclaimer

DISCLAIMER: The Fact Sheet data consists of the most up-to-date information available at the time the Advance Notification Package is published. Updates to this information may be found on the ETDM website at <u>http://wetompub.fla-etatorg</u> Special Note: Please be aware of the selected Milestone date when viewing project data on the ETDM website. Snapshots of project and analysis data have been taken for Project #14325 at various points throughout the project's life-cycle. On the website these **P**roject Milestone Dates are listed in the the project header immediately after the project contact information. Click on any of the dates listed to view the information available on that date.

Overview

 # 14325 SR 535 from US 192 to N. of SR 536/World Center Dr.

 District: Datrict 5
 Phase: Programming Screen

 County: Orange, Osceola
 From: US 192 (Osceola County)

 Planning Organization: FDOT Datrict 5
 To: N. of SR 536/World Center Dr.

 Plan ID: Not Available
 Financial Management No.: 437174-2-22-01

 Federal Involvement: FHWA Funding Other Federal Permit
 Sarah VanG undy (386) 943-5551

 Sarah.vangundy@dotstate.fl.us

a. Purpose and Need

PURPOSE

The purpose of the project is to accommodate future projected traffic demand and improve safety.

NEED

The need for the project is based on transportation demand and safety.

TRANSPORATION DEMAND

In the future year (2040) no-build condition, the section of SR 535 from US 192 and Kyngs Heath Road is projected to operate at LOS F with an AADT of 42,000, the section from Kyngs Heath Road to Poinciana Boulevard operates at LOS E with an AADT of 40,000; the section from Poinciana Boulevard to Polynesian Isle Boulevard operates at LOS F with an AADT of 69,000; the section from Polynesian Isle Boulevard to World Center Drive operates at LOS F with an AADT of 66,000.

In the existing condition, the section of SR 535 from US 192 and Kyngs Heath Road operates at LOS D with an AADT of 28,300; the section from Kyngs Heath Road to Poinciana Boulevard operates at LOS D with an AADT of 26,900; the section from Poinciana Boulevard to Polynesian Isle Boulevard operates at LOS D with an AADT of 46,800; the section from Polynesian Isle Boulevard operates at LOS D with an AADT of 46,800; the section from Polynesian Isle Boulevard operates at LOS D with an AADT of 46,800; the section

SAFETY

A total of 823 crashes were reported on SR 535 from US 192 to World Center Drive in the five-year period from 2012 through 2016. Of those reported crashes, 652 (85%) resulted in injury and 3 resulted in a fatality. The most frequent crash type was rear end with 499 (61%) total crashes, *indicating congestion*. Angle crashes were the second highest with 153 (19%), followed by side swipe with 86 (10%) total crashes. 485 (59%) of the 823 crashes occurred during daylight conditions. The crash rates along this segment of SR 535 exceed the FDOT statewide averages for similar facilities. PROJECT STATUS

The SR 535 project is located within the jurisdiction of MetroPlan Orlando. The Project Development and Environment (PD&E) Study, is documented in MetroPlan Orlando's Transportation Improvement Program (TIP) for fiscal year 2019/20 with an anticipated cost of \$1.4 million. There is currently no funding for the design, right-of-way or construction phases.

b. Project Description

In the existing condition, SR 535 is an urban minor arterial, access class 3 facility with posted speeds ranging from 45 miles per hour (MPH) to 50 MPH. The roadway has four travel lanes (two in each direction) from US 192 to SR 536/World Center Drive. The project involves the widening of SR 535 from US 192 to World Center Drive, a project length of approximately 2.2 miles.

c. Preliminary Environmental Discussion

i. Social and Economic

1. Land Use Changes

Project PED Comments

This portion of SR 535 is located within the jurisdiction of South Florida Water Management District (SFWMD). At the 500foot buffer, the GIS analysis of the 2008-2015 SFWMD Florida Land Use and Land Cover identified Roads and Highways with 97.17 acres (33%); Commercial and Services with 69.43 (22%); Pine Flatwoods with 31.65 acres (11%); and Open Land with 28.35 acres (8.0%) as the four-major existing land uses. The project is not within 500 feet of any Census Designated Places.

The project is consistent with future land uses and will not affect land use or development patterns. Therefore, the project will result in no involvement with land use.

2. Social

Project PED Comments

The Environmental Screening Tool (EST) Sociocultural Data Report (SDR) was used for demographic data (the SDR can be found within the Community Coordination section of the EST). The SDR uses the Census 2017 American Community Survey (ACS) data and reflects the approximation of the population based on a 500-foot project buffer area intersecting the Census Block Groups along the project corridor. At the 500-foot buffer, the SDR identified the following demographics: Population and Income

96 households with a population of 287 people. The median household income is \$44,809. Several households are below poverty level (15.62%) and 2.08% households receive public assistance.

Race and Ethnicity

The minority population makes up 58.19% of the total population comprising of "Asian Alone" with 23 people (8.01%), "Black or African American Alone" with a population of 13 people (4.53%), "Some Other Race Alone" with 12 people (4.18%), and "Claimed 2 or More Races" with 10 people (3.48%) within the 500-foot project buffer area. There are 122 people (42.51%) that have a "Hispanic or Latino of Any Race" ethnicity. Ageand Disability

The median age is 28 and persons age 65 and over comprise 7.32% of the population. There are 20 people (10.31%) between the ages of 20 and 64 that have a disability.

Housing

There are 174 housing units. The housing consists of multi-family units (58%), single family units (39%), and mobile home units (3%). These units are vacant units (45%), renter occupied (33%), and owner occupied (22%).

Language

There are 20 people (7.46%) that speak English "not well" and 6 people (2.24%) that speak English "not at all". Based on US DOT Policy Guidance, the FDOT has identified four factors to help determine if Limited English Proficiency (LEP) services would be required as listed in the FDOT PD&E Manual. Based on a review of these factors and the fact that there is 9.7% LEP population for this project, LEP services may be required. Refinement of the LEP population totals and requirements will be further evaluated in PD&E as part of the public involvement efforts.

Community features along, or in close proximity to SR 535, include the Masjid An-Noor Mosque, The Worship Place Church and the Indian Wells Recreation Area.

This project will be developed in accordance with the Civil Rights Act of 1964, the Civil Rights Act of 1968, along with Title VI of the Civil Rights Act, Executive Order 12898 (Environmental Justice) which requires Federal agencies to take the appropriate steps to identify and address any disproportionately high and adverse human health or environmental effects of Federal programs, policies, and activities on minority and low-income populations. Where there is potential for disproportionately high and adverse effects on minority and low-income populations, proactive measures to involve the affected community in the decisions related to alternative selection, impact analysis, and mitigation.

The project is expected to result in minimal involvement with social resources.

3. Relocation Potential

Project PED Comments

At the 500-foot buffer, the GIS analysis of the 2008 SFWMD Florida Land Use and Land Cover identified Low-Rise multiple dwelling units [2.05 acres (0.69%)] and High-Rise multiple dwelling units [0.11 acres (0.04%)] as the only existing residential land uses.

The existing, apparent right of way varies from 224 feet to 216 feet; therefore, the majority of the improvements are anticipated to occur within the existing right of way with the exception of stormwater ponds. During the pond siting process, the FDOT will develop alternative pond sites for each basin, with a focus on minimizing potential residential relocations and/or business displacements.

The project will be evaluated for disproportion ately high and adverse effects, and where it is found that disproportionate impacts would result, every effort will be made to avoid or minimize those impacts and, where impacts are unavoidable, special public outreach will be undertaken to involve the affected population in the decisions regarding the alternatives, including mitigation, if needed. Should residents, businesses, or community structures require relocation, a right-of-way (ROW) and relocation program will be implemented in accordance with the Uniform Relocation Assistance and Real

Property Acquisition Policies Act of 1970. A Conceptual Stage Relocation Plan will be prepared for this project if relocations occur.

The project is expected to result in minimal relocations.

4. Farmlands

Project PED Comments

The GIS data identified prime farmland, "Farmland of Unique Importance", with 139.48 acres (47.2.9%) within the 500-foot buffer. 18.75 acres (or 6.3.6% of the project area) within the 500-foot buffer area of the project is categorized as Agricultural according to the Generalized Agricultural Land Use data layer in the EST.

The project is expected to result in minimum involvement with farmlands; however, the FDOT will coordinate with the Natural Resources Conservation Service (NRCS) during the PD&E study.

5. Aesthetic Effects

Project PED Comments

The GIS data 2008-2015 SFWMD Florida Land Use and Land Cover identified Roads and Highways with 97.17 acres (33%); Commercial and Services with 69.43 (22%); Pine Flatwoods with 31.65 acres (11%); and Open Landwith 28.35 acres (8.0%) as the four-major existing land uses.

Capacity improvements to SR 535 are anticipated to have minimal impacts, and will likely, enhance aesthetics along the corridor, therefore, minimal involvement with aesthetics is anticipated.

6. Economic

Project PED Comments

The GIS data identified five (5) Developments of Regional Impact (DRIs) [Legacy Park (ADA No.: 1988-022); Little England-Xentury City (ADA No.: 1980-018; Sierra Land (ADA No.: 1994-002); Wind Song (ADA No.: 1974-001); and World Gateway (ADA No.: 1982-031)] within the 500-foot buffer.

SR 535 is located in Lake Buena Vista, an area that attracts tourists and support the tourism industry. The corridor is located less than two miles east of Disney properties, and supporting resorts, hotels, factory outlet stores, and other ancillary developments are present throughout the corridor.

The project is anticipated to enhance economic resources.

7. Mobility

Project PED Comments

The GIS data identified one Office of Greenways and Trails (OGT) existing multi-use trail (Shingle Creek West Connector) within the 500-foot buffer.

There are three (3) transit routes (Route 304-Lynx 3D: Rio Grande/Vistan a Resort, Route 56-West U.S. 192/Magic Kingdom, and Route 55-West U.S. 192/Orange Lake) identified within the 500-foot buffer. There are existing non contiguous sidewalks located along both sides of the roadway.

The project will enhance mobility.

ii. Cultural

1. Section 4(f) Potential

Project PED Comments

Within the 500-foot buffer of the project, the GIS data identified one property owned by the South Florida Water Management District (District-owned mitigation lands), which would likely not be protected under Section 4(f) of the Department of Transportation Act of 1966. During the PD&E Study further an alysis will take place.

The proposed project is expected to result in minimal to no involvement with Section 4(f) resources.

2. Historic and Archaeological Sites

Project PED Comments

The GIS data did not identify any documented archaeological sites within the 500-foot buffer. There is one identified linear resource (Florida Midland Railroad) identified within the 500-foot buffer that was determined to be ineligible for NRHP by SHPO. According to the GIS analysis, there is one (1) parcel with a 1972 construction date located within the 500-foot buffer. There also no documented historic bridge structures, or other historic standing structures within the 500-foot buffer.

A CRAS will be prepared during the PD&E Study, and coordination with the SHPO will be conducted.

The project is expected to result in minimal involvement with historic and archaeological sites.

3. Recreation Areas

Project PED Comments

Within the 500-foot buffer, the GIS data identified one Office of Greenways and Trails (OGT) multi-use trail opportunity (Shingle Creek West Connector); a privately-owned golf course (Hawks Landing Golf Course); and 23.28 acres of easement owned by SFWMD within the 500-foot buffer.

The project is anticipated to result in minimal involvement with recreational areas.

iii. Natural

1. Wetlands and Surface Waters

Project PED Comments

The National Wetlands Inventory (NWI) dataset of the GIS data identified 16.75 acres (5.68% of the project area) as palustrine wetlands within the 500-foot buffer. The SFWMD 2008-2015 wetlands dataset identifies 8.50 acres of wetlands within 500 feet of the corridor as cypress-mixed hardwoods and wetland forested mixed habitat types.

A Natural Resources Evaluation (NRE) will be conducted during the PD&E Study and will include coordination with the USACE, FDEP, and SFWMD.

Based on the small percentage of wetland resources within 500 feet of the project, minimal involvement with wetland resources is expected. Mitigation for unavoidable wetland impacts will occur in a future phase prior to or concurrent with the impacts.

2. Water Quality and Quantity

Project PED Comments

Within the 500-foot buffer, the GIS data identified one (1) Basin Management Action Plan (BMAP): Lake Okeechobee, SR 535 is within close proximity to the following FDEP Water Body Identification Numbers (WBID's): Shingle Creek (WBID 3169A), Lake Cecile (WBID 31690), Lake Bryan (WBID 3169N), and Reedy Canal (WBID 3169B). Shingle Creek is a Verified impaired Florida Water for nutrients. According to the EST, the project does not occur in proximity to any FDEP designated Outstanding Florida Waters.

Within the 500-foot buffer, principal Aquifers of the State of Florida described the Sufficial Floridan Aquifer System as 294.93 acres (100%). Within this buffer, the Recharge Areas of the Floridan Aquifer shows a "Discharge' 1 to 10" as 100%. As part of the Water Quality Impact Evaluation (WQIE), a Sole Source Aquifer Impact Determination will be prepared for USEPA's review and approval. The project corridor is also located within the designated Biscayne Aquifer sole source aquifer (SSA) streamflow and recharge source zone.

There are four (4) onsite sewage treatment and disposal systems, four (4) Super Act Risk Sources, as well as one (1) Super Act Well located within the 500-foot project buffer area. Potential contamination facilities are listed under the Contamination issue.

The project will be designed to meet state water quality and quantity requirements, and best management practices will be utilized during construction. The proposed project is expected to result in moderate involvement with water quality and quantity resources.

3. Floodplains

Project PED Comments

The GIS data identified Special Flood Hazard Areas within 500 feet of the project with 42.07 acres (14.26%) within Zone A and 252.86 acres (85.74%) outside the 100-year floodplain. The D-FIRM 100-year Floodplain dataset identifies 1.04 acres (1.86%) of area within the 100-foot project buffer area that is within the 100-year floodplain. The project will be designed such that stormwater transport, flow, and discharge meet or exceed flood control requirements.

The project is expected to have minimal involvement with floodplains.

4. Coastal Zone Consistency

Coastal Zone Consistency Determination is Required: Yes Project is subject to a consistency review as required by 15 CFR 930.

5. Wildlife and Habitat

Project PED Comments

The GIS data identified the project as within the USFWS designated Consultation Area for Florida scrub-jay, Everglade snail kite, red cockaded woodpecker, Audubon's created caracara, Florida grasshopper sparrow, Lake Wales Ridge

plants, the blue-tailed mole skink, and the sand skink. No documented occurrences of these species have been identified as the corridor, however, approximately 41.68 acres (14.3%) of the 500-foot buffer of the project is above the 82 feet elevation and has the appropriate well drained soil types to be considered potential habitat for this skinks.

The project is located within the Central Florida Black Bear Management Unit and black bear mortality has been documented in the region. The project occurs within the Core Foraging radius of several wood stork nesting colonies. No nesting eagle territories are documented along the corridor.

A Natural Resources Evaluation (NRE) will be conducted during the PD&E Study and will include coordination with the USFWS and FFWCC.

The project is expected to result in moderate involvement with wildlife and habitat resources.

6. Coastal and Marine

Project PED Comments

The GIS data did not identify any Environmentally Sensitive Shorelines or Coastal Barrier Resources within the 500-foot buffer. The project is located within the Lake Okeechobee Coastal Assessment Framework.

The project is anticipated to have no involvement with coastal or marine resources.

iv. Physical

1. Noise

Project PED Comments

The 2008 SFWMD Florida Land Use and Land Cover GIS data identified two (2) multiple dwelling units (2.16 acres/ 0.73%) as the only residential land uses within the 500-foot buffer.

According to the GIS data, the following potential noise sensitive sites are found within a 500-foot buffer of the project: one (1) religious center (the Good Shepherd Evangelical Lutheran Church); one (1) health care facility (Med-Life Institute, Inc.); 15 planned unit developments; and five (5) Development of Regional impacts areas.

A noise analysis will be conducted during the PD&E Study and a Noise Study Report will be completed. The proposed project is expected to result in moderate involvement with noise.

2. Air Quality

Project PED Comments

This area of Osceola/Orange Counties has not been designated as nonattainment or maintenance for ozone, carbon monoxide (CO), particulate matter (PM), or any of the National Ambient Air Quality Standards (NAAQS) in accordance with the Clean Air Act. An Air Quality Screening will occur during Project Development.

The proposed project is expected to have minimal impact on air quality.

The GIS data identified five (5) Hazardous Waste Facilities; four (4) Onsite Sewage Sites; seven (7) Petroleum Contamination Monitoring Sites; five (5) Biomedical Waste Sites; one (1) Brownfield area (West 192 Development Authority Area); seven (7) Petroleum Contamination monitoring Sites; 12 Storage Tank Contamination Monitoring Sites; five (5) Super Act Risk Sources; 11 US Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES); and four (4) USEPA Resource Conservation and Recovery Act (RCRA) Regulated Facilities within the 500-foot project buffer area. No solid waste facilities or Toxic Release Inventory Sites were identified within the 500-foot project buffer area of the project area.

A contamination screening evaluation will be conducted during the PD&E Study and a Contamination Screening Evaluation Report (CSER) will be prepared. The project is expected to result in moderate involvement with potential sources of contamination.

4. Infrastructure

Project PED Comments

At the 500-foot buffer, the GIS data identified one Federal Aviation Administration (FAA) aviation transportation facility (Magic Air Adventure), five (5) FAA obstructions, one FM tower structures (Auditorium of Prayer and Worship, Inc.), two (2) Television Broadcast Structure Locations (both WKME-CD), one (1) electric substation (Lake Bryon substation), and two (2) wireless antenna structures (Sprintcom and Crowncastle) within a 5,280-foot buffer.

Various utilities are present, including communications/electric; gas pipeline; fiber CATV and phone lines; wastewater and reclaimed Water; fiber optic; traffic signals and fiber, water, telephone; sewer, oil; and telecom cable and fiber. A Utility Assessment Package will be developed during the PD&E Study to determine impacts to utilities.

The project is expected to result in minimal involvement with existing and planned infrastructure.

5. Navigation

Project PED Comments

The GIS data did not identify any potential navigable waterways within the 500-foot buffer.

The project is expected to have no involvement with navigation resources.

v. Special Designations

1. Special Designations: Outstanding Florida Waters

Project PED Comments

The GIS data did not identify any Outstanding Florida Waters within the 500-foot buffer.

The project is expected to have no involvement with Outstanding Florida Waters.

2. Special Designations: Aquatic Preserves

Project PED Comments

The GIS data did not identify any Aquatic Preserves within the 500-foot buffer.

This project will have no involvement with Aquatic Preserves.

3. Special Designations: Scenic Highways

Project PED Comments

The GIS data did not identify any Scenic Highways within the 500-foot buffer.

The project will have no involvement with Scenic Highways.

4. Special Designations: Wild and Scenic Rivers

Project PED Comments

The GIS data did not identify any Wild and Scenic Rivers within the 500-foot buffer.

The proposed project will have no involvement with Wild and Scenic Rivers.

d. Anticipated Permits

There are no anticipated permits identified for this project in the EST.

e. Anticipated Technical Studies

There are no anticipated technical studies identified for this project in the EST.

III. Form SF-424: Application for Federal Assistance

Application for Federal Assistance SF-424 Verson 02				
*1. Type of Submission:	*2. Type of Applicat	ion * If Ravision, select appropriate letter(s)		
Preapplication	🖾 New			
Application	Continuation	*Other (Specify)		
Changed'Corrected Application				
3. Date Received:	 Applicant Identifier: 437174-2-22-0 	И		
5a. Federal Entity Identifier:		*5b. Federal Award Identifier:		
State Use Only:				
6. Date Received by State:	7. State Ap	pplication Identifier.		
8. APPLICANT INFORMATION:				
*a. Legal Name: Florida Departme	nt of Transportation			
*b. Employer/Taxpayer Identificatio 59–6001874	n Numper (EIN/TIN):	*c. Organizational DUNS:		
d. Address:				
*Street 1: 719.5. V	loodland Blvd.			
Street 2:				
*City: DeLand				
County:			3	
*State: Florida				
Province:				
*Country: USA				
*Zip / Fostal Code 32720				
e. Organizational Unit:				
Cepartment Name:		Division Name:		
FDOT Environmental Management	Office	District 5		
1. Name and contact information	of person to be contac	ated on matters involving this application:		
Prefix: <u>Ms.</u>	*First Name:	Sarah		
Niddle Name:				
Last Name: Van Gundy				
Suffix.				
Title: Project Manager				
Organizational Affliation FDOT Distric: 5				
*Telephone Number: 386-943-555	1	Fax Number: 385-943-5718		
*Email saich.vongundy@dct.stel	ie.fl.ua			

OM3 Number: 4040-0004 Expiration Date: 0431/2012

Application for Federal Assistance SF-424	Varsien 02
*9. Type of Applicant 1: Select Applicant Type:	
A State Government	
Type o' Applicant 2: Select Applicant Type:	
Type of Applicant 3: Select Applicant Type:	
*Other (Specfy)	
*10 Name of Federal Agency:	
U.S. Department of Transportation -Federal Highway Administration	
11. Catalog of Federal Domestic Assistance Number:	
23-205	
CFDA Title:	
*12 Funding Opportunity Number:	
*Title:	
13. Competition Identification Number:	
T tie:	
14. Areas Affected by Project (Cities, Counties, States, etc.):	
Crange and Osceola Counties, Florida	
*15. Descriptive Title of Applicant's Project	
This project will address the proposed wideping of S D 535 kers U.S. 100 in Occash Occ	shi, Forida la North of 6 D. 530 in
Orange County, Florida.	ny, Forma to Notice of S.N. 530 In

Application for	or Federal Assistance SF-42	24		Version 02
16. Congressio *a. Applicant: F	nal Districts Of: L-6 *b.	Program/Project: FL-9 and	FL-10	
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18. Estimated	Funding (\$):			
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21. *By signing herein are trun, with any resultin me to criminal, o I ** I AGREE ** The Ist of cer agency specific	this application, I certfy (1) to the complete and accurate to the be g terms if I accept an award. I a civil or administrative penalties. tifications and assurances, or an instructions	e statements contained in the st of my knowledge. I also p im aware that any talse, fictit IU. S. Code, Title 218, Secti Internat site where you may	e list of certifications revide the required ous, or fraudulent s or 1001) obtain this list, is c	s** and (2) that the statements assurances** and agree to comply statements or claims may subject entained in the announcement or
Authorized Rep	presentative:			
Prefix: Middle Name *Last Name: Suffix:	Ms Van Gundy	*First Name: <u>Sarah</u>		
*Title: Projec: M	Nanager			
*Telephone Number: 386-943-5551			Fax Number: 386-943-5718	
*Email: sarah.v	vangundygdotstate.ll.us			
*8ignature of Ar	ultrurized Representative.	an Such		*Date Signed: 05/09/2019

OM8 Number: 40+0-0004 Expiration Date: 04/31/2012

Application for Federal Assistance SF-424

Version 02

*Applicant Federal Debt Delirquency Explanation

The following should contain an explanation if the Applicant organization is delinquent of any Federal Debt.

IV. Transmittal List

Official Transmittal List

Organization

- FDOT District 5
- FDOT District 5
- FDOT Office of Environmental Management
- 4. FDOT Office of Environmental Management
- 5. FDOT Office of Environmental Management
- 6. FDOT Office of Environmental Management
- 7. FDOT Office of Environmental Management
- 8. FDOT Office of Environmental Management
- 9. Federal Aviation Administration
- 10. Federal Transit Administration
- 11. Federal Transit Administration
- 12. FL Department of Agriculture and Consumer Services
- 13. FL Department of Agriculture and Consumer Services
- 14. FL Department of Economic Opportunity
- 15. FL Department of Environmental Protection
- 16. FL Department of State
- 17. FL Department of State
- 18. FL Department of State
- 19. FL Fish and Wildlife Conservation Commission
- 20. FL Fish and Wildlife Conservation Commission
- 21. FL Fish and Wildlife Conservation Commission
- 22. FL Fish and Wildlife Conservation Commission
- 23. METROPLAN Orlando
- 24. METROPLAN Orlando
- Miccosukee Tribe of Indians of Florida
- 26. Miccosukee Tribe of Indians of Florida
- 27. Muscogee (Greek) Nation
- Muscogee (Creek) Nation
- 29. National Marine Fisheries Service
- 30. National Park Service
- 31. Natural Resources Conservation Service
- 32. Poarch Band of Creek Indians
- 33. Poarch Band of Creek Indians
- 34. Seminole Nation of Oklahoma
- 35. Seminole Tribe of Florida
- 36. Seminole Tribe of Florida
- Seminole Tribe of Florida
- 38. Seminole Tribe of Florida
- 39. South Florida Water Management District
- 40. South Florida Water Management District
- US Army Corps of Engineers
- 42. US Army Corps of Engineers
- US Army Corps of Engineers
- 44. US Army Corps of Engineers
- 45. US Coast Guard

Name Ganey, Jim

Walsh, William G.

Britt, Katherine

Clark, Thu-Huong

Comwell, Katasha

Kirby, Marjorie

- McGilvray, Peter Muchuruza, Victor
- * Federal Aviation Administration
- Orlando Airports District Office

Gosman, Richelle

- Mitchell, Stan
- Camposano, Brian
- Morris, Vincent
- Preston, Matt
- Stahl, Chris
- Aldridge, Jason
- Daggett, Adrianne
- McManus, Alyssa
- Fischer, Judy
- Gilbert, Terry
- Goff, Jennifer
- Wettstein, Fritz
- Barley, Harry
- Caskey, Keith * Dayhoff, Fred
- The Honorable Mr. Billy Cyprose (
- * The Honorable Mr. Billy Cypress, Chairman
- * Historic & Cultural Preservation Department
- * The Honorable Mr. James Floyd, Principal Chief Schull, Jennifer
- Barnett, Anita
- Crockett, Leroy
- * The Honorable Ms. Stephanie A. Bryan, Tribal Chair
- * White, Carolyn M.
- * The Honorable Mr. Leonard M. Harjo, Principal Chief Backhouse, Paul N.
- Menchaca Victoria
- Swing Alison
- * The Honorable Mr. Marcellus W. Osceola, Chairman
- Burkett, Annette
- Stone, Trisha
- Kizlauskas, Andrew A.
- Ovdenk, Oynthia
- Tamblyn, Mark M.
- Turner, Randy
- Overton, Randall D.

- 46. US Coast Guard
- 47. US Coast Guard
- 48. US Coast Guard
- 49. US Department of Health and Human Services
- 50. US Department of Housing and Urban Development
- 51. US Department of Interior
- 52. US Department of Interior
- 53. US Environmental Protection Agency
- 54. US Environmental Protection Agency
- 55. US Environmental Protection Agency
- 56. US Environmental Protection Agency
- 57. US Fish and Wildlife Service
- 58. US Fish and Wildlife Service
- 59. US Fish and Wildlife Service
- 60. US Forest Service
- * Hardcopy recipient

Tate, William G. Tompkins, Darayl Zercher, Jennifer * National Center for Environmental Health Centers for Disease Control and Prevention * Regional Environmental Officer * Bureau of Land Management, Southeastern States Field Office Director, USGS-FISC Kajumba, Ntale Singh-White, Alya Somerville, Amanetta White, Roshanna Cantrell, Mark Williams, Zakia Wrublik, John Davis, Erika

Appendix E - Roadway Concept Roll Plot


Appendix F - Typical Section Package

		STATE OF FLORIDA	e
		DEPARTMENT OF TRANSPORTATION	
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Appendix G- Access Management



Date: 05/05/2023

From: Paul Carballo, P.E. To: David Graeber, P.E.

Subject:Draft Access Management Plan Tech MemoRe:SR 535 PD&E Study from US 192 to SR 536 (World Center Drive)FPID:437174-2

1. Access Management Classification

Florida Administrative Code 14-97 establishes the seven classifications for state highways that contain separation standards for access features as stated in the FDOT Access Management Guidebook (2019). The entire project corridor (see **Figure 1**) extending from the US 192/SR 535 intersection to just north of SR 536 (World Center Drive) is currently classified as an Access Class 3 facility with restrictive median treatment.

Access Class 3 facilities are controlled access high ways where direct access to abutting land is controlled to maximize the operation of the through traffic movements. This class is used where the adjacent land is generally not extensively developed and/or the probability of significant land use change exists. These highways are distinguished by existing or planned restrictive medians.



Figure 1 - Edisting Access Management Classification

Page 1 of 7

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2. Access Managament Criteria

The posted speed limits along SR 535 is 45 mph from the begin project to just north of Kyngs Heath Road and 50 mph from just north of Kyngs Heath Road to the end of the project limits. Target Speed is the highest speed at which vehicles should operate on a thoroughfare along the corridor, which is consistent with the adjacent land uses, mobility for motor vehicles and supportive environment for pedestrians, bicyclists, etc. The Target Speed recommendation for this corridor is 45 mph throughout the entire corridor.

SR 535 from US 192 to just north of SR 536 (World Center Drive) within and adjacent to this project will serve as an effective minor arterial to facilitate mobility and access to abutting land uses in the area. This facility has a context classification of C3C-Suburban Commercial since it will serve the adjacent land uses that are primarily Commercial, interspersed with some Residential and Conservation. There are no fronting uses and parking is primarily in front of the buildings. In general terms, mostly non-residential uses with large building footprints and large parking lots network (see **Figure 2**).





The criteria from the Florida Administrative Code 14-97 and FDOT Design Manual was followed (see **Table 1**).

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Page 2 of 7



Table 1 – Access Management Standards

Access	FDOT Context	Median Type	Conn Specin	ection g (feet)	Median Op (f	aning Spacing ant)	Signal
Cars	Classification	niversit ()pv	>45 mph	≤45 mph	Directional	Full	(feet)
2	C1 Natural, C2 Rural	Restrictive w/Service Roads	1,320	660	1,320	2,640	2,640
3	C1 Natural, C2 Rural, C2T Rural Town, C3R Suburban Residential, C3C Suburban Commercial	Restrictive	660	440	1,320	2,640	2,640
4		Non-Restrictive	660	440	10 <u>2202</u>	12 77 <u>22/07</u>	2,640
5	C2T Rural Town, C4 Urban General,	Restrictive	440	245	660	2,640/1,320*	2,640/1,320*
6	C5 Urban Center, C6 Urban Core	Non-Restrictive	440	245	3 2		1,320
7		Both Median Types	1	25	330	660	1,320

*Note: 2,640 for > 45 mph; 1,320 for < 45 mph

3. Driveway Connection Specing

There are various driveways and side street connections along both sides of the study providing access to the hotels/commercial developments, etc. The driveway connection is the distance between two adjacent driveways and the corner clearance is the distance from the driveway connection to an intersection. **Figure 3** illustrates the Driveway Connections Evaluation.

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Page 3 of 7

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Marie Erginweng, Inc. 13945 SW 1384 Staat. Suite 200-Mari, E. 23196 1 305 253 298 Ammenitary.com



4. Median Spacing

Within the project limits, the proposed roadway segment along SR 535 will maintain the restrictive median. The existing and proposed median spacing and compliance with the standards are shown in **Table 2**. All of the median openings (full and directional) do not comply with the standards of an Access Class 3 facility.

	Existing Opening	Proposed Design Speed	Proposed Stations	Editing Stationa	Edisting Specing	Median Type	Proposed Specing	Meets Standard	Deviation from Standard (%)
	W IRLO BRONSON	(mpau)	1 400 - 44 07	1 400 - 44 0 7	(ICOL)	a Fault	(neer)	20 20	1/-0
10	MEMORIAL HWY	45	1489+41.87	1489+41/87	1999	EUIR	93 1		
2	KYNGS HEATH RD	45	1499+34.87	1499+34.87	993	Full	993	No	62,4%
3	CALYPSO CAY WAY	45	1511+60.87	1511+60.87	1,226	Directional	1,226	No	7.1%
4	W OSCIEDLA PKWY RAMP	45	1515+82.87	1515+82.87	422	Directional	422	No	68.0%
5	N POINCIANA BLVD	45	1526+50.87	1526+50.87	1,068	Full	1,068	No	59.5%
6	SHOPPING CENTER ENTRANCE	45	1536+34.87	1536+34.87	984	Directional	984	No	25.5%
7	POLYNESIAN ISLE BVLD	45	1545+72.87	1545+72.87	938	Full	938	No	64.5%
8	SHOPPING CENTER ENTRANCE	45	1554+84.87	1555+24.87	952	Directional	912	No	309%
9	LBV FAC TO RY STORES DR	45	1562+83.87	1562+83.87	759	Full	799	No	69.7%
10	INTERNATIONAL DR	45	1583+85.87	1583+85.87	2,102	Full	2,102	No	20.4%
11	WORLD CENTER DR	45	1597+43.87	1597+43.87	13 58	Full	1,358	No	48.6%
12	LAKE BRYAN BEACH BLV D	45	1615+09.87	1615+09.87	1,766	Full	1,766	No	33.1%

Table 2 - Median Spacing and Standard Compliance

5. Traffic Signal Specing

A comparison of the proposed signal spacing within the corridor and immediate adjacent signals are shown on **Table 3** and indicate the distances among the signalized intersections. It should be noted that for the innovative intersections, all signalized intersections are considered as one signal at the center of the intersection. The distances are shown on Table 3. All of the signal spacings do not comply with the standards of 2,640 feet.



FROM	то	SPACING (feet)	MEETS STANDARD
W IRLO BRONSON MEMORIAL HWY	KYNGS HEALTH RD	980	No
KYNGS HEATH RD	W OSCEOLA PKWY RAMP	1663	No
W OSCEOLA PKWY RAMP	N POINCIANA BLVD	1060	No
N POINCIANA BLVD	POLYNESIAN ISLE BYLD	1914	No
POLYNESIAN ISLE BYLD	LBV FACTORY STORES DR	1720	No
LBV FACTORY STORES DR	INTERNATIONAL DR	2114	No
IN TERNATIONAL DR	WORLD CENTER DR	1390	No

Table 3 - Signal Specing and Standard Compliance

6. Conclusions

An Access Management evaluation was performed for the proposed SR 535 PD&E study from US 192 to just north of SR 536 (World Center Drive) (see **Attachment 1**). The roadway is currently classified as an Access Management Classification 3. The following conclusions can be made from the information provided.

- Proposed Signal Spacing withing the corridor are not in compliance with Access Class 3 but are proposed to remain the same as the existing locations.
- Although the median spacing is not compliant to Access Class 3 standards it is recommended to maintain the existing median locations.
 - The proposed SR 535 median locations will remain at the existing locations (with the exception of one median just north of Polynesian Isle).

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Attachment 1 - Access Management Plan

Page 7 of 7

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Date: November 7, 2023

From: Stefan Escanes, P.E., PTOE To: David Graeber, P.E.

Subject:	Median Closure Technical Memorandum
Re:	SR 535 PD&E Study from US 192 to SR 536 (World Center Drive)
FPID:	437174-2

Introduction

The Florida Department of Transportation (FDOT) is conducting a Project Development and Environment (PD&E) Study, State Financial Project Number 437174-2, to evaluate the widening of a 2.35-mile section of SR 535 from US 192 (in Osceola County) to north of SR 536/World Center Drive (in Orange County). The portion of SR 535 included in the study falls within section 92040000 located in Osceola County and section 75035001 located in Orange County. This memorandum summarizes the safety and operational qualitative assessment for the closure of the median on World Center Drive east of SR 535 that serves as access to the Buena Vista Suites and the Caribe Royal. See **Figure 1** for the median opening location and current concept plan of the proposed median closure.



Figure 1 - Edisting Median Opening Location

Page 1 of 2



Safety Review

This location is a prevalent area for left turn/angle crashes due to the number of travelers attempting to turn into the Buena Vista Suites or the Caribe Royale Hotel. **Table 1** provides the sum of angle and left turn crash types that were identified at the study location which are correctable by closure of the median opening. As shown in **Table 1**, a total of 167 crashes have been recorded, at an increasing rate, within the 5-year period between 2014 to 2018, which is an average of 33 crashes per year. Excerpts from the SR 535 PD&E Study Project Traffic Analysis Report which illustrates the historical crash data is included in **Attachment A.** A detailed crash summary can be found in **Attachment B**.

Year	Angle + Loft Turn Crashes
2014	20
2015	29
2016	34
2017	44
2018	40
Total	167

Operational Review

As shown in **Figure 1**, the proposed median opening closure will result in the need for motorists to modify their travel routes to access properties north and south of World Center Drive. The following describes proposed travel patterns:

- Northbound left turn and eastbound Left turn movements from the existing median opening will be rerouted to perform an eastbound U-turn movement at the median opening 940-ft east of the existing opening
- Southbound left turn and westbound left turn movements from the existing median opening will be rerouted to perform a westbound U-turn movement at the intersection of SR 535 and SR 536/World Center Drive.

It should also be noted that the median closure does provide additional turn bay storage for the westbound left turn movement at the intersection of SR 535 and SR 536/World Center Drive to accommodate design year projected queue lengths of approximately 200-ft and 350-ft during the 2045 AM and PM peak hours, respectively. Similarly, the longer storage bay will also provide access to the left turn lanes from potential blockage due to the design year westbound through project queue lengths of approximately 560-ft and 510-ft during the 2045 AM and PM peak hours, respectively.

Page 2 of 2

Attachmenta

- A) Excerpts from the SR 535 PD&E Study Project Traffic Analysis Report
- 8) Crash Summery

Attachment A

Excerpts from the SR 535 PD&E Study Project Treffic Analysis Report











Attachment B

Crash Summary

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CRASH DATA 2 017

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2	World Onter Dide from 2.0. 5% for international Dide	0000	2084505	2107	202426	HI452B	Lifelum	0	•	Horn	Delati	ACA.	904	Chur	
8	Wettone role ison 10.5% billember lote	0000	201010	2102	210/02	Masisti	Letter	•	•	Hor	0.650	at up	90	Cher	
F	World order Date Intel 10. 5% folds and for the form	0000	206540	2107	2107474	HEOR	Lifelum	•	~	Hor	Delan	444	đ	Cher	
7.	WeldOrthrDite Ism 10, 5% bildramboniDite	0000	202012	2107	202424	H40021	Liftum	•	100	Hor	Delan	474	ŧ	Cher	
8	WetGorbröche imm 10. 5% bildera Boallode	0000	20140	2107	200.00.4	10:45AH	Lettum	•	•	E.H	0.650	4.4	đ	Chur	
18	Wold Onter Date Ison 3.0. 5% folds are found of the	0000	2(2)/686	2107	207919	254PH	ACK.	•	2	Hor	Delan	404	đ	Cher	
101	World on the famility 5% folds and being the	0000	H\$1122	2107	2007919	HALLE	Liftum	0	~	Hor	D40-11000	404	- Carles	Chur	
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18	World on the fam 20, 5% folds an familia to	0000	2(20)(1)	2102	2007429	Masos	Lettum	•	•	Hor	Delan	44	0.04	Chur	
111	3.0. Shel WoldContends	202	2/0/420	2012	207071	PLANE S	Lettum	•	^	Hore	Detall	Holooga	đ	Cher	
18	3.0. Shel WebContender	2054	5(107)2	2107	21074-5	1 test	And a	•	T.S.	Hor	Delan	Part of the state	đ	Clean	
13	3.R. Shat Word Contender	2054	12131212	2107	210255	Habit	Lifelum	0	۰	Hor	Delan	Pribato Station Structures	90	Cher	
18	WeldOrderDite Ism 10, 5% bildembonibite	0000	H+0272	2107	2102-05	HIOOD	Lifelum	0	•	Hor	Delan	***	904	Cloudy	1
\$	WoldOnterDite Ism 10, 5% foldsmilloute	0000	202022	2102	210250	HASSE	Lifelum	0	*	Hor	Detail	Ante -	đ	Cher	1.00
5	WellOrderDide Ism 10.5% bildem Bonibile	0000	NOWIS	2107	20/0/0	ESSPH	Liftum	•	-	Hor	Delan	Act.	- Carles	Cher	1.1.1
5	WeldOnterDite Ism 10, 5% foldemications	0000	201N02	2107	202514	Habits	Lifelum	0	~	Horn	Delati	ACA.	- State	Chur	
18	3.R. Shel WoldCenterDe	1020	204812	2107	2107914	11005	Lettum	•	•	Hor	Delan	PER DIO VERDINGHOUMS	004	Chur	
22	Weld Onter Date Ison 1.0. 5% folds million (Date	0000	MS2N/2	2102	2007678	HASSI	Lettum	0	2	Hor	Delan	Act.	đ	Cher	
22	World Onter Dive Item 1.0. 5% folds and Banilla to	0000	2(2972	2012	212/012	HNSOE	Liftum	0	-	Hor	Delan	Arrise	Ę	Cher	
744	WetGorbridge term 10, 5% folds an local Diffe	0000	20100732	2102	210205	EACPU	Right turn	0	•	Hor	Delan	404	500	Cloudy	
747	World Onter Date from 1.0. 5% for international Date.	0000	2(2092)	2102	2142012	ESSAH	Lifelum	0	0	Her	Delan	And A	500	Cher	1
144	World Onter Diffe I tem 1.0. 5% folds an iboni Diffe	0000	2120194	2102	2142012	2 JOPH	Lettum	0	\$	Hor	Detall	And .	(inter	Cher	
ą	World Onter Date Ison 1.0. 5% folds million (Dife	0000	2(2013)	2107	2142012	HUSE	Lifelum	0	•	Hore	Delan	104	90	-	
222	World Onter Dirte Item 1.0. 5% folds milloral Dirte	0000	251212	2102	20/0/5	120054	Lettum	0	2	Hore.	Design	afux.	ŝ	Char	
G,	3.0. Weit World Center Dr	2054	2200428	2102	2026-01	Massa .	ACA.	0	2	Hor	0690	Improper tum	(ifi	Ling	
52	3.0. Wall Wald Center Dr	2054	2(24)0	2107	210211-01	B158H	And a	0	•	Hors	Delan	(upober ger gu	004	Cher	
29	World Onder Dide from 1.0. 555 folderen Bornibile	0000	2519-1022	2107	10142015	HIOLA	Lifelum	0	•	Hore	Delan	404	900	Clouds	-
18	3.R. Stal World Carborde	2054	1021-022	2107	102/02012	ESSPH .	Leftum	0	•	Hor	Delati	Improper Ium	500	Cher	
182	World Onter Dide from 1.0. 5% folds and Bonel Dide	0000	2002002	2012	102/2015	11:13AH	Lifelum	0	•	Hor	Detall	And .	- Sta	Cher	
208	World Onter Dide from 1.0. 5% folds million block	0000	39430022	2107	11/24/2018	11:575H	404	0	100	Hor	Delan	And a	inter.	Cher	
22	WorldonerDite Ism 1.0. 5% Isidemibile	0000	1001000	2102	1211208	10016AH	Lettum	0	•	Hore	Design	Acres .	004	Char	
5	S.R., Shel WoldConterDe	1020	200 002	2102	210/02/11	Mai/28	Lettum	•	•	Hor	Date-Light	HACADO	980	Cher	

CRASH DATA 2 018

Appendix H - Construction Cost Estimate

# FDOT Long Range Estimating System - Production R3: Project Details by Sequence Report

Project 437174-2-	-22-01		Letting Da	ata: 01/2099
Description: SR 5	85/VINELAND RD FROM US 192 TO NO	ORTH OF WORLD C	ENTER DR	
District 05 Contract Class: 1	County: 99 DISTRICT/STATEWIDE Lump Sum Project N	MarketArea: 99 Design/Build: N	Units:English ProjectLength:	2.250 MI
Project Manager.	LFC-MET			
Version 10 Projec Description: Prefe	t Grand Total rred Alternative		\$76	,505,097.76
Sequence: 3 NDU	- New Construction, Divided, Urban		NetLength:	1.316 MI 6.9501.F
Description: Alten Special Conditions: Main	native 1 - Inside Widening - Shared Use F line Full Reconstruction	Path		0,000 E

#### EAR THWORK COMPONENT

User InputDa	ta			
Description				Value
Standard Clea	ring and Grubbing Limits UR			112.00 / 112.00
Incidental Clea	iring and Grubbing Area			0.00
Alignment Nun	nber			1
Distance				2.353
Top of Structur	al Course For Begin Section			102.00
Top of Structur	al Course For End Section			102.00
Horizontal Elev	ation For Begin Section			100.00
Horizontal Elev	ation For End Section			100.00
Front Slope UI	R			6 to 1/6 to 1
Median Should	ler Cross Slope L/R			4.00 % / 4.00 %
Outside Should	der Cross Slope L/R			2.00%/2.00%
Roadway Cros	s Slope UR			2.00 % / 2.00 %
Pay Items				
Pay item	Description	Quantity Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	35.73 AC	\$51,330.22	\$1,834,028.76
120-6	EMBANKMENT	99,418.33 CY	\$41.73	\$4,148,726.91

#### Earthwork Component Total

\$5,982,755.67

#### ROADWAY COMPONENT

User Input Data	
Description	Value
Number of Lanes	6
Roadway Pavement Width UR	33.00/33.00
Structural Spread Rate	275
Friction Course Spread Rate	165

Pay Items

Pay i tem Description

160-4	TYPE B STABILIZATION	58,932.07 SY	\$39.15	\$2,307,190.54
285-709	OPTIONAL BASE, BASE GROUP 09	50,963.26 SY	\$87.57	\$4,462,852.68
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	7,007.45 TN	\$3 13.97	\$2,200,129.08
337-7-83	ASPH CONC FC,TRAFFIC C,FC- 12.5,PG76-22	4,204.47 TN	\$385.91	\$1,622,547.02
Turnouts/Cros	sovers Subcomponent			
Description AsphaltAdjustn Stabilization Co	nent	<b>Valu</b> 20.0	ie )0 Y	
Base Code			Ŷ	
Friction Course	Code		Y	
Pay Items				
Pay i tem	Description	Quantity Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	11,786.41 SY	\$39.15	\$461,437.95
285-709	OPTIONAL BASE, BASE GROUP 09	10,192.65 SY	\$87.57	\$892,570.36
334-1-13	SUPER PAVE A SPHALTIC CONC, TRAFFIC C	1,401.49 TN	\$3 13.97	\$440,025.82
337-7-83	ASPH CONC FC,TRAFFIC C,FC- 12.5,PG7 6-22	840.89 TN	\$385,91	\$324,507.86
PavementMar	king Subcomponent			
Description		Valu	e	
Indude Thermo	VTape/Other		Y	
Pavement Type	nanangera astas	Aspha	alt	
Solid Stripe No.	of Paint Applications		1	
Solid Stripe No.	. of Stripes		4	
Skip Stripe No.	of PaintApplications		1	
Skip Stripe No.	or outpes		7	
Pay Items				
Pay i tem	Description	Quantity Unit	Unit Price	Extended Amount
706-1-3	RAISED PAVMT MARK, TYPE B	888.00 EA	\$7.91	\$7,024.08
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6*	5.26 GM	\$1,239.37	\$6,519.09
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6*	5.26 GM	\$715.71	\$3,764.63
711-16-101	THERMOPLASTIC, STD-OTH, WHITE, SOLID, 6"	5.26 GM	\$6,093.38	\$32,051.18
711-16-131	THERMOPLASTIC, STD-OTH, WHITE, SKIP, 6"	5.26 GM	\$2,416.07	\$12,708.53
	Roadway Component Total			\$12,773,328.82

#### SHOULDER COMPONENT

Description	Value
Total Outside Shoulder Width L/R	7.25/7.25
Total Outside Shoulder Perf. Turf Width UR	5.00/ 5.00
Sidewalk Width L/R	0.007 0.00

Pay Items

User Input Data

Pay i tem Description

520-1-10	CONCRETE CURB & GUTTER, TYPE F	6,949.54 LF	\$71.44	\$496,475.14
520-1-10	CONCRETE CURB & GUTTER, TYPE F	6,949.54 LF	\$71.44	\$496,475.14
570-1-1	PERFORMANCETURF	7,721.71 SY	\$10.74	\$82,931.17
Erosion Cont	ol			
Pay Items				
Pay item	Description	Quantity Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	13,899.07 LF	\$5.43	\$75,471.95
104-11	FLOATING TURBIDITY BARRIER	329.05 LF	\$14.29	\$4,702.12
104-12	STAKED TURBIDITY BARRIER- NYL REINF PVC	329.05 LF	\$15.11	\$4,971.95
104-15	SOIL TRACKING PREVENTION DEVICE	2.00 EA	\$4,694.65	\$9,389.30

68.00 EA

33.50 AC

33.50 AC

\$247.08

\$115.24

\$182.07

\$16,801.44

\$3,860.54

\$6,099.34

<u> </u>	Shoulder Component Total			\$1,197,178.09
	MEDIA	N COMPONENT		
User InputDa	ta			
Description		Valu	а	
Total Median V	Vidth	47.0	10	
Performance T	urf Width	42.5	i0	
Pay Items				
Pay i tem	Descrip tion	Quantity Unit	Unit Price	Extended Amount

INLET PROTECTION SYSTEM

LITTER REMOVAL

MOWING

104-18

107-1

107-2

	Median Component Total			\$1,729,438.12
570-1-1	PERFORMANCETURF	32,817.25 SY	\$10.74	\$352,457.26
520-1-7	CONCRETE CURB & GUTTER, TYPE E	13,899.07 LF	\$99.07	\$1,376,980.86

#### DRAINAGE COMPONENT

Pay Items				
Pay item	Description	Quantity Unit	Unit Price	Extended Amount
425-1-351	INLETS, CURB, TYPE P-5, <10'	48.00 EA	\$11,608.98	\$557,231.04
425-1-451	INLETS, CURB, TYPE J-5, <10'	14.00 EA	\$11,913.85	\$166,793.90
425-1-521	INLETS, DT BOT, TYPE C, <10"	7.00 EA	\$11,655.39	\$81,587.73
425-2-41	MANHOLES, P-7, <10'	7.00 EA	\$10,67 4.45	\$74,721.15
430-175-124	PIPE CULV, OPT MATL, ROUND, 24°S/CD	3,488.00 LF	\$228.03	\$795,368.64
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	312.00 LF	\$236.89	\$73,909.68
430-175-148	PIPE CULV, OPT MATL, ROUND, 48°S/CD	6,584.00 LF	\$396.00	\$2,607,264.00
570-1-1	PERFORMANCETURF	400.12 SY	\$11.07	\$4,429.33
	Drainage Component Total			\$4,361,305.47

Intersection 1		
Description		Value
Mainline No. of Left Turn Lanes		3
Mainline No. of Right Turn Lanes		2
Mainline Design Speed		45
Cross Street Thru Lanes		4
Cross Street No. of Left Turn Lanes		4
Cross Street No. of Right Turn Lanes		0
Cross Street Design Speed		45
T-Intersection?		N
Multiplier		1
Description Poinciana - Signalized Intersection		

Pay Items				
Pay item	Description	Quantity Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	2.75 AC	\$41,531.15	\$114,210.66
120-1	REGULAR EXCAVATION	2,139.04 CY	\$63.44	\$135,700.70
160-4	TYPE B STABILIZATION	2,946.61 SY	\$30.76	\$90,637.72
160-4	TYPE B STABILIZATION	5,164.69 SY	\$30.76	\$158,865.86
285-709	OPTIONAL BASE, BASE GROUP 09	2,946.61 SY	\$91.52	\$269,673.75
285-709	OPTIONAL BASE, BASE GROUP 09	5,164.69 SY	\$91.52	\$472,672.43
334-1-13	SUPER PAVE ASPHALTIC CONC, TRAFFIC C	405.16 TN	\$362.83	\$147,004.20
334-1-13	SUPER PAVE ASPHALTIC CONC, TRAFFIC C	852.17 TN	\$362.83	\$309,192.84
337-7-83	ASPH CONC FC,TRAFFIC C,FC- 12.5,PG7 6-22	243.10 TN	\$406.29	\$98,769.10
337-7-83	ASPH CONC FC,TRAFFIC C,FC- 12.5,PG7 6-22	426.09 TN	\$406.29	\$173,116.11
520-1-7	CONCRETE CURB & GUTTER, TYPE E	405.68 LF	\$99.07	\$40,190.72
520-1-10	CONCRETE CURB & GUTTER, TYPE F	1,058.00 LF	\$79.13	\$83,719.54
520-5-11	TRAF SEP CONC-TYPE I, 4' WIDE	620.00 LF	\$113.77	\$70,537.40
520-5-11	TRAF SEP CONC-TYPE I, 4' WIDE	370.00 LF	\$113.77	\$42,094.90
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4*	587.78 SY	\$96.41	\$56,667.87
522-2	CONCRETE SIDEWALK AND DRIVEWAYS, 6*	173.89 SY	\$133.33	\$23,184.75
570-1-1	PERFORMANCETURF	587.78 SY	\$11.07	\$6,506.72
	Intersections Component Total			\$2,292,7 45.27

#### SIGNING COMPONENT

.

Pay Items					
Pay i tem	Description	Quantity Unit	Unit Price	Extended Amount	
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	32.00 AS	\$718.46	\$22,990.72	
700-1-12	SINGLE POST SIGN, F&I GM, 12- 20 SF	3.00 AS	\$2,180.43	\$6,541.29	
700-2-15	MULT F POST SIGN, F&I GM, 51- 100 SF	3.00 AS	\$12,032.19	\$36,096.57	
700-2-16	MULT F POST SIGN, F&I GM, 101- 200 SF	3.00 AS	\$14,994,53	\$44,983.59	
Signalization 1					
-----------------	---------------------------------------------	--------------------	--------------	-----------------	--
Description	Value				
Туре	6 Lane MastArm				
Multiplier			1		
Description	Poinciana	Blvd Signalization			
Pay Items					
Pay i tem	Description	Quantity Unit	Unit Price	Extended Amount	
630-2-11	CONDUIT, F& I, OPEN TRENCH	700.00 LF	\$20.02	\$14,014.00	
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	300.00 LF	\$35.27	\$10,581.00	
632-7-1	SIGNAL CABLE- NEW OR RECO, FUR & INSTALL	1.00 PI	\$12,340,48	\$12,340.48	
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24	22.00 EA	\$1,396.69	\$30,727.18	
639-1-112	ELECTRICAL POWER SRV,F&I,OH,M,PUR BY CON	1.00 AS	\$4,226.06	\$4,226.06	
639-2-1	ELECTRICAL SERVICE WIRE, F&I	60.00 LF	\$9.20	\$552.00	
641-2-11	PREST CNC POLE, F&I, TYP P- II, PEDESTAL	1.00 EA	\$2,511.64	\$2,511.64	
649-21-21	STEEL MAST ARM ASSEMBLY, F&I, 78'	4.00 EA	\$131,844.51	\$527,378.04	
650-1-14	VEH TRAF SIGNAL,F&I ALUMINUM, 3 S 1 W	20.00 AS	\$2,388.58	\$47,771.60	
653-1-11	PEDESTRIAN SIGNAL, F&I LED COUNT, 1 WAY	8.00 AS	\$959.47	\$7,675.76	
660-1-102	LOOP DETECTOR INDUCTIVE, F&I, TYPE 2	20.00 EA	\$937.34	\$18,746.80	
660-2-106	LOOP ASSEMBLY, F&I, TYPE F	20.00 AS	\$1,719.18	\$34,383.60	
665-1-11	PEDESTRIAN DET ECT OR, F&I, STANDARD	8.00 EA	\$422.46	\$3,379.68	
670-5-111	TRAF CNTLASSEM, F&I, NEMA, 1 PREEMPT	1.00 AS	\$40,621.55	\$40,621.55	
700-3-101	SIGN PANEL, F&I GM, UP TO 12 SF	4.00 EA	\$394.71	\$1,578.84	
	Signalizations Component Total			\$756,488.23	

SIGNALIZATIONS COMPONENT

LIGHTING COMPONENT

Conventiona	Lighting Subcomponent			
Description				Value
Spacing				MIN
Pay Items				
Pay item	Description	Quantity Unit	UnitPrice	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	6,949.54 LF	\$20.02	\$139,129.79
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	1,37938LF	\$35.27	\$48,650.73
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24	47.00 EA	\$1,396.69	\$65,644.43
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	25,381.60 LF	\$7.74	\$196,453.58
715-61-342	LIGHT POLE CMPLT,STD,F&I, 40MH,12'ARM L	47.00 EA	\$14,570.60	\$684,818.20

Sequence 3	' Total			\$30,376,457.83
	Lighting Component Total			\$1,172,605.99
	Subcomponent Total			\$1,172,606.00
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	47.00 EA	\$806.58	\$37,909.26

Sequence: 4MIS - Miscellaneous Construction

NetLength: 2.353 Mi 12,425 LF

Description: 14-ft Shared Use Path Special Conditions: 14-ft Shared Use Path

	ROADWAY COM	MPONENT		
X-I tems				
Pay item	Descrip tion	Quantity Unit	UnitPrice	Extended Amount
110-1-1	CLEARING & GRUBBING	3.90 AC	\$39,374.56	\$153,560.78
570-1-2	PERFORMANCETURF, SOD	2,347.00 SY	\$13.12	\$30,792.64
Peripherals Su	bcomponent			
Description		Value	3	
Off Road Bike F	Path(s)	(	)	
Off Road Bike F	Path Width UR	7.00/7.00	)	
Bike Path Struc	tural Spread Rate	150	)	
Noise Barrier W	/all Length	0.00		
Noise Barrier W	/all Begin Height	0.00		
Noise Barrier W	/all End Height	0.00	0	
Pay Items				
Pay item	Descrip tion	Quantity Unit	UnitPrice	Extended Amount
160-4	TYPE B STABILIZATION	24,849.79 SY	\$39.15	\$972,869.28
285-701	OPTIONAL BASE, BASE GROUP 01	19,327.62 SY	\$10.00	\$193,276.20
334-1-11	SUPERPAVE ASPHALTIC CONC, TRAFFIC A	1,449.57 TN	\$92.97	\$134,766.52
2	Roadway Component Total			\$1,485,265.42
Sequence 4To	otal			\$1,485,265.42

Sequence: 5MIS - Miscellaneous Construction

NetLength: 2.353 Mi 12,425 LF

Description: 12-ft Shared Use Path Special Conditions: 12-ft Shared Use Path

	ROADWAY COM	MPONENT		
X-I tems				
Pay item	Description	Quantity Unit	UnitPrice	Extended Amount
110-1-1	CLEARING & GRUBBING	3.90 AC	\$39,374.56	\$153,560.78
570-1-2	PERFORMANCETURF, SOD	2,347.00 SY	\$13.12	\$30,792.64
Peripherals Su	bcomponent			
Description		Value	1	
Off Road Bike F	Path(s)	C	)	
Off Road Bike F	Path Width UR	6.007 6.00	)	
Bike Path Struc	tural Spread Rate	150	)	
Noise Barrier W	/all Length	0.00		
Noise Barrier W	/all Begin Height	0.00		
Noise Barrier W	all End Height	0.00	)	
Pay Items				
Pay item	Descrip tion	Quantity Unit	UnitPrice	Extended Amount
160-4	TYPE B STABILIZATION	22,088.70 SY	\$39.15	\$864,772.60
285-701	OPTIONAL BASE, BASE GROUP 01	16,566.53 SY	\$10.00	\$165,665.30
334-1-11	SUPERPAVE ASPHALTIC CONC, TRAFFIC A	1,242.49 T N	\$92.97	\$115,51430
4	Roadway Component Total			\$1,330,305.62
Sequence 5 To	otal			\$1,330,305.62

Description: World Center Drive - Displaced Left

# EARTHWORK COMPONENT

User InputDa	ta			
Description				Value
Standard Clea	ring and Grubbing Limits UR			105.00/105.00
Incidental Clea	aring and Grubbing Area			0.00
Alignment Nur	nber			1
Distance				0.322
Top of Structur	al Course For Begin Section			102.00
Top of Structural Course For End Section				102.00
Horizontal Elev	ation For Begin Section			100.00
Horizontal Elevation For End Section Front Slope UR Median Shoulder Cross Slope UR				100.00
				6 to 1/6 to 1
				4.00 % / 4.00 %
Outside Shoul	der Cross Slope L/R			2.00 % / 2.00 %
Roadway Cros	s Slope L/R			2.00%/2.00%
Pay Items				
Pavitem	Description	Quantity Unit	UnitPrice	Extended Amount
110-1-1	CLEARING & GRUBBING	820 AC	\$39.374.56	\$322.87139
120-6	EMBANKMENT	8.724.97 CY	\$41.73	\$364,093,00
	Earthwork Component Total			\$686,964.39
	ROADWAY CO	MPONENT		
User Input Da	ta			
Description		Valu	ы	
Number of Lar	les		6	
Roadway Pave	ement Width L/R	33.00/33.0		
Structural Spre	ad Rate	23	75	
Friction Cours	e Spread R <i>a</i> te	1	65	
Pay Items				
Pay i tem	Description	Quantity Unit	UnitPrice	Extended Amount
160-4	TYPE B STABILIZATION	14,417.36 SY	\$39.15	\$564,439.64
285-709	OPTIONAL BASE BASE GROUP 09	12.467.84 SY	\$87.57	\$1.091.808.75
	SUPERPAVE ASPHALTIC CONC.			
334-1-13	TRAFFIC C	1,714.33 TN	\$3 13.97	\$538,248.19
337-7-83	ASPH CONC FC, TRAFFIC C, FC-	1 028 60 TM	\$3.95.04	\$308.047 m
	12.5,PG 76-22	1,020,00 114	4000.0T	4000,00,00,00

Turn outs/CrossoversSubcomponent

Description	Value
AsphaltAdjustment	20.00
Stabilization Code	Y
Base Code	Y
Friction Course Code	Y

 Pay items
 Quantity Unit
 UnitPrice
 Extended Amount

 160-4
 TYPE B STABILIZATION
 2,883.47 SY
 \$39.15
 \$112,887.85

 285-709
 OPTIONAL BASE,BASE GROUP 09
 2,493.57 SY
 \$87.57
 \$218,361.92

334-1-13	SUPERPAVE ASPHALTIC CONC,	342.87 TN	\$313.97	\$107.650.89
200703-00	TRAFFIC C		100100000	1000000000
337-7-83	ASPH CONC FC, TRAFFIC C, FC- 12.5, PG 76-22	205.72 TN	\$385.91	\$79,389.41
PavementMa	rking Subcomponent			
Description		Valu	18	
Indude Them	o/Tape/Other		Y	
Pavement Type	Evanoration and an	Aspha	alt	
Solid Stripe No	o. of Paint Applications		1	
Solid Stripe No	), of Stripes		4	
Skip Stripe No	. of PaintApplications		1	
Skip Stripe No	. of Stripes		4	
Pay Items				
Payitam	Description	Quantity Unit	UnitPrice	Extended Amount
706-1-3	RAISED PAVMT MARK, TYPE B	217.00 EA	\$7.91	\$1,716.47
710-11-101	PAINTED PAVT MARK, STD, WHITE, SOLID, 6*	1.29 GM	\$1,239.37	\$1,598.79
710-11-131	PAINTED PAVT MARK, STD, WHITE, SKIP, 6*	1.29 GM	\$715.71	\$923.27
711-16-101	THERMOPLASTIC, STD-OTH, WHITE, SOLID, 6*	1.29 GM	\$6,093.38	\$7,860.46
711-16-131	THERMOPLASTIC, STD-OTH, WHITE, SKIP, 6*	1.29 GM	\$2,416.07	\$3,116.73
	Roadway Component Total			\$3,124,94939
	SHOULDER C	OMPONENT		
User Input Da	ta			
Description		Valu	e	
Total Outside S	Shoulder Width L/R	7.25/7.25		
Total Outside S	Shoulder Perf. Turf Width L/R	5.00/ 5.0	00	
Sidewalk Width L/R		0.007 0.0	00	
Pay Items				
Payitam	Description	Quantity Unit	UnitPrice	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	1,700.16 LF	\$71.44	\$121,459.43
520-1-10	CONCRETE CURB & GUTTER, TYPE F	1,700.16 LF	\$71.44	\$121,459.43
570-1-1	PERFORMANCE TURE	1.889.07 SY	\$10.74	\$20,288.61

Erosion Control

Pay item	Description	Quantity Unit	UnitPrice	Extended Amount
104-10-3	SEDIMENT BARRIER	3,400.32 LF	\$5.19	\$17,647.66
104-11	FLOATING TURBIDITY BARRIER	80.50 LF	\$14.13	\$1,137.47
104-12	STAKED TURBIDITY BARRIER- NYL REINF PVC	80.50 LF	\$15.20	\$1,223.60
104-15	SOIL TRACKING PREVENTION DEVICE	1.00 EA	\$4,586.88	\$4,586.88
104-18	INLET PROTECTION SYSTEM	17.00 EA	\$245.64	\$4,175.88
107-1	LITTER REMOVAL	8.19 AC	\$131.39	\$1,076.08
107-2	MOWING	8.19 AC	\$230.40	\$1,886.98

Pay Items

160-4

Extended Amount \$114,210.66

\$30.76

\$155,985.00

\$101,886.66

#### MEDIAN COMPONENT

	INCOUNT OF			
User InputDat	a			
Description		Valu	e	
Total Median W	lidth	22.0	00	
Performance Tr	urf Width	17.5	50	
Pay Items				
Pay i tem	Description	Quantity Unit	UnitPrice	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	3,400.32 LF	<b>\$</b> 87.38	\$297,119.96
570-1-1	PERFORMANCE TURF	3,305.87 SY	\$10.74	\$35,505.04
	Median Component Total			\$332,625.00

#### DRAINAGE COMPONENT

Pay item	Description	Quantity Unit	UnitPrice	Extended Amount
425-1-351	INLETS, CURB, TYPE P-5, <10"	12.00 EA	\$11,155.49	\$133,865.88
425-1-451	INLETS, CURB, TYPE J-5, <10'	4.00 EA	\$9,948.78	\$39,795.12
425-1-521	INLETS, DT BOT, TYPE C, <10"	2.00 EA	\$11,211.81	\$22,423.62
425-2-41	MANHOLES, P-7, <10'	2.00 EA	\$10,972.13	\$21,944.26
430-175-124	PIPE CULV, OPT MATL, ROUND, 24°S/CD	856.00 LF	\$211.56	\$181,095.36
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"SICD	80.00 LF	\$236.89	\$18,951.20
430-175-148	PIPE CULV, OPT MATL, ROUND, 48°S/CD	1,616.00 LF	\$422.94	\$683,471.04
570-1-1	PERFORMANCE TURF	97.89 SY	\$10.74	\$1,051.34
	Drainage Component Total			\$1,102,597.82

## INTERSECTIONS COMPONENT

3,312.31 SY

Intersection 1				
Description		Value		
Mainline No. o	f Left Turn Lanes	4		
Mainline No. o	f Right Turn Lanes	3		
Mainline Desig	in Speed		45	
Cross Street T	hru Lanes		4	
Cross Street N	lo. of Left Turn Lanes		4	
Cross Street N	lo. of Right Turn Lanes		2	
Cross Street D	lesign Speed	45		
T-Intersection?	<b>b</b>	N		
Multiplier			1	
Description		World Center Drive at 535		
Pay Items				
Pay item	Description	Quantity Unit	UnitPrice	
110-1-1	CLEARING & GRUBBING	2.75 AC	\$41,531.15	
120-1	REGULAR EXCAVATION	2,458.78 CY	\$63.44	

TYPE B STABILIZATION

160-4	TYPE B STABILIZATION	5,936.69 SY	\$30.76	\$182,612.58
285-709	OPTIONAL BASE, BASE GROUP 09	3,312.31 SY	\$91.52	\$303,142.61
285-709	OPTIONAL BASE, BASE GROUP 09	5,936.69 SY	\$91.52	\$543,325.87
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	455.44 T N	\$362.83	\$165,247.30
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	979.55 T N	\$362.83	\$355,410.13
337-7-83	ASPH CONC FC, TRAFFIC C, FC- 12.5, PG 76-22	489.78 T N	\$406.29	\$198,992.72
337-7-83	ASPH CONC FC, TRAFFIC C, FC- 12.5, PG 76-22	273.27 T.N	\$406.29	\$111,026.87
520-1-7	CONCRETE CURB & GUTTER, TYPE E	405.68 LF	\$99.07	\$40,190.72
520-1-10	CONCRETE CURB & GUTTER, TYPE F	1,058.00 LF	<b>\$7</b> 9.13	\$83,719.54
520-5-11	TRAF SEP CONC-TYPE I, 4 WIDE	570.00 LF	\$113.77	\$64,848.90
520-5-11	TRAF SEP CONC-TYPE I, 4'WIDE	370.00 LF	\$113.77	\$42,094.90
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	587.78 SY	\$96.41	\$56,667.87
522-2	CONCRETE SIDEWALK AND DRIVEWAYS, 6*	173.89 SY	\$133.33	\$23,184.75
570-1-1	PERFORMANCE TURF	587.78 SY	\$11.07	\$6,506.72
Intersection 2				
Description		Valu	ы	
Mainline No. o	f Left Turn Lanes		0	
Mainline No. o	f Right Turn Lanes		0	
Mainline Desig	n Speed	28	45	
Cross StreetT	hru Lanes		2	
Cross Street N	lo. of Left Turn Lanes		0	
Cross Street N	lo, of Right Lum Lanes		U 4E	
T Internection?	esign opeed	18	+0 V	
Multiplier			2	
Description	Crossov er N	ų.	-	
Pav Items				
Pay item	Description	Quantity Unit	UnitPrice	Extended Amount
110-1-1	CLEARING & GRUBBING	1.78 AC	\$39,374,56	\$70,086.72
120-1	REGULAR EXCAVATION	749.64 CY	\$44.51	\$33,366.48
160-4	TYPE B STABILIZATION	706.44 SY	\$39.15	\$27,657.13
160-4	TYPE B STABILIZATION	1,810.02 SY	\$39.15	\$70,862.28
285-709	OPTIONAL BASE, BASE GROUP 09	706.44 SY	\$87.57	\$61.862.95
126423-6424	가장 아내는 귀엽 방법을 가지 않는 것을 가지 않는 것이 많은 것을 많았다.	10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	28.20-25-20	33500 SAS 0.850

100-4	TTTED STADIEIZATION	1,010.02 01	40.0.10	410,002.20
285-709	OPTIONAL BASE, BASE GROUP 09	706.44 SY	\$87.57	\$61,862.95
285-709	OPTIONAL BASE, BASE GROUP 09	1,810.02 SY	\$87.57	\$158,503.45
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	116.56 T N	\$313.97	\$36,596.34
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	298.66 T N	\$313.97	\$93,770.28
337-7-83	ASPH CONC FC, TRAFFIC C, FC- 12.5, PG 76-22	149.32 T N	\$385.91	\$57,624.08
337-7-83	ASPH CONC FC, TRAFFIC C, FC- 12.5, PG 76-22	58.28 T N	\$385.91	\$22,490.83
520-1-7	CONCRETE CURB & GUTTER, TYPE E	202.84 LF	\$87.38	\$17,724.16
520-1-10	CONCRETE CURB & GUTTER, TYPE F	658.00 LF	\$71.44	\$47,007.52
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	365.56 SY	\$95.00	\$34,728.20

522-2	CONCRETE SIDEWALK AND DRIVEWAYS, 6*	173.88 SY	\$124.52	\$21,651.54
570-1-1	PERFORMANCE TURF	365.56 SY	\$10.74	\$3,926.11
	Intersections Component Total			\$3,306,911.90
	SIGNING CO	MPONENT		
Pay Items				
Pay i tem	Description	Quantity Unit	UnitPrice	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	8.00 AS	\$710.60	\$5,684.80
700-1-12	SINGLE POST SIGN, F&I GM, 12- 20 SF	1.00 AS	\$1,985.18	\$1,985.18
700-2-15	MULTI- POST SIGN, F&I GM, 51- 100 SF	1.00 AS	\$11,560.60	\$11,560.60
700-2-16	MULTI- POST SIGN, F&I GM, 101- 200 SF	1.00 AS	\$14,162.48	\$14,162.48
	Signing Component Total			\$33,393.06

## SIGNALIZATIONS COMPONENT

Signalization 1	
Description	Value
Туре	6 Lane MastArm
Multiplier	1
Description	

Pay item	Description	Quantity Unit	UnitPrice	Extended Amount
630-2-11	CONDUIT, F&I, OPEN TRENCH	700.00 LF	\$19.96	\$13,972.00
630-2-12	CONDUIT, F&I, DIRECTIONAL BORE	300.00 LF	\$33.24	\$9,972.00
632-7-1	SIGNAL CABLE- NEW OR RECO, FUR & INSTALL	1.00 PI	\$10,716.81	\$10,716.81
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	22.00 EA	\$1,281.29	\$28,188.38
639-1-112	ELECTRICAL POWER SRV,F&I,OH,M,PUR BY CON	1.00 AS	\$4,111.62	\$4,111.62
639-2-1	ELECTRICAL SERVICE WIRE, F&I	60.00 LF	\$8.97	\$538.20
641-2-11	PREST CNC POLE, F&I, TYP P- II, PEDESTAL	1.00 EA	\$2,509.08	\$2,509.08
649-21-13	STEEL MAST ARM ASSEMBLY, F&I, 60'- 50'	1.00 EA	\$146,682.38	\$146,682.38
649-21-15	STEEL MAST ARM ASSEMBLY, F&I, 70'	3.00 EA	\$125,145.24	\$375,435.72
649-21-21	STEEL MAST ARM ASSEMBLY, F&I, 78'	4.00 EA	\$131,848.06	\$527,392.24
650-1-14	VEH TRAF SIGNAL, F&I ALUMINUM, 3 S 1 W	27.00 AS	\$2,519.26	\$68,020.02
653-1-11	PEDESTRIAN SIGNAL, F&I LED COUNT, 1 WAY	8.00 AS	\$944.43	\$7,555.44
660-1-102	LOOP DETECTOR INDUCTIVE, F&I, TYPE 2	27.00 EA	\$1,209.40	\$32,653.80
660-2-106	LOOP ASSEMBLY, F&I, TYPE F	27.00 AS	\$1,711.49	\$46,210.23
665-1-11	PEDESTRIAN DETECTOR, F&I, STANDARD	8.00 EA	\$431.99	\$3,455.92

670-5-111	TRAF CNTLASSEM, F&I, NEMA, 1 PREEMPT	1.00 AS	\$40,647.83	\$40,647.83		
700-5-22	INTERNAL ILLUM SIGN, F&I OM, 12-18 SF	8.00 EA	\$6,502.70	<b>\$5</b> 2,021.60		
Signalization 2						
Description		Val	пе			
Туре		2 Lane MastA	m			
Multiplier			2			
Description	Crossov er Intersections					
Pay Items						
Pay i tem	Description	Quantity Unit	UnitPrice	Extended Amount		
630-2-11	CONDUIT, F&I, OPEN TRENCH	1,600.00 LF	\$19.96	\$31,936.00		
630-2-12	CONDUIT, F&I, DIRECTIONAL BORE	400.00 LF	\$33.24	\$13,296.00		
632-7-1	SIGNAL CABLE- NEW OR RECO, FUR & INSTALL	2.00 PI	\$10,716.81	\$21,433.62		
633-3-11	FIBER OPTIC CONN HDWR, SPLICE ENCLOSURE	4.00 EA	\$1,084.66	\$4,338.64		
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	24.00 EA	\$1,281.29	\$30,750.96		
639-1-112	ELECTRICAL POWER SRV,F&I, OH, M, PUR BY CON	2.00 AS	\$4,111.62	\$8,223.24		
639-2-1	ELECTRICAL SERVICE WIRE, F&I	120.00 LF	\$8.97	\$1,076.40		
649-21-4	STEEL MAST ARM ASSEMBLY, F&I, 40'-30'	2.00 EA	\$115,000.00	\$230,000.00		
650-1-14	VEH TRAF SIGNAL, F&I ALUMINUM, 3 S 1 W	24.00 AS	\$2,519.26	\$60,462.24		
660-1-102	LOOP DETECTOR INDUCTIVE, F&I, TYPE 2	24.00 EA	\$1,209.40	\$29,025.60		
660-2-106	LOOP ASSEMBLY, F&I, TYPE F	24.00 AS	\$1,711.49	\$41,075.76		
665-1-11	PEDESTRIAN DETECTOR, F&I, STANDARD	16.00 EA	\$431.99	\$6,911.84		
670-5-111	TRAF CNTLASSEM, F&I, NEMA, 1 PREEMPT	2.00 AS	\$40,647.83	\$81,295.66		
700-5-22	INTERNAL ILLUM SIGN, F&I OM, 12-18 SF	8.00 EA	\$6,502.70	\$52,021.60		
	Signalizations Component Total			\$1,981,930.83		

# LIGHTING COMPONENT

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Conventional	Lighting Subcomponent			
Description Spacing				Value MIN
Pay Items				
Pay item	Description	QuantityUnit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	1,700.16LF	\$19.96	\$33,935.19
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	337.46LF	\$33.24	\$11,217.17
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	12.00EA	\$1,281.29	\$15,375.48
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.42	6,209.45LF	\$8.52	\$52,904.51
715-61-342	LIGHT POLE CMPLT,STD,F&I, 40MH,12'ARM L	12.00EA	\$14,570.60	\$174,847.20
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	12.00 EA	\$1,345.46	\$16,145.52

Lighting Component Total	\$304,425

Sequence 6 Total

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\$11,168,739.48

Description: International Drive - Displaced Left

# EAR THWORK COMPONENT

User InputDa	ta			
Description				Value
Standard Clea	ring and Grubbing Limits UR			105.00/105.00
Incidental Clea	aring and Grubbing Area			0.00
Alignment Nur	nber			1
Distance				0.322
Top of Structur	al Course For Begin Section			102.00 102.00 100.00 100.00
Top of Structur	al Course For End Section			
Horizontal Elev	ation For Begin Section			
Horizontal Elev	ation For End Section			
Front Slope U	R			6 to 1/6 to 1
Median Should	ler Cross Slope L/R			4.00 % / 4.00 %
Outside Shoul	der Cross Slope L/R			2.00 % / 2.00 %
Roadway Cross Slope L/R				2.00 % / 2.00 %
Pay Items				
Payitem	Description	Quantity Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	8.40 AC	\$39,374,56	\$330.746.30
120-6	EMBANKMENT	8,724.97 CY	\$41.73	\$364,093.00
	Earthwork Component Total			\$694,839.30
	ROADWAY CO	MPONENT		
User Input Da	ta			
Description		Valu	ы	
Number of Lar	ies		6	
Roadway Pave	ement Width L/R	33.00/33.00		
Structural Spre	ead Rate	2	75	
Friction Cours	e Spread Rate	1	65	
Pay Items				
Pay i tem	Description	Quantity Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	14,780.03 SY	\$39.15	\$578,638.17
285-709	OPTIONAL BASE, BASE GROUP 09	12,781.47 SY	\$87.57	\$1,119,273.33
	SUPERPAVE ASPHALTIC CONC.			
334-1-13	TRAFFIC C	1,757.45 TN	\$313.97	\$551,786.58
337-7-83	ASPH CONC FC,TRAFFIC C,FC- 12.5,PG7 6-22	1,054.47 TN	\$385.91	\$406,930.52
Turn ou ts/Cros	ssovers Subcomponent			
Description		Valu	ы	

Description AsphaltAdjustment Stabilization Code Base Code Friction Course Code

 Pay items
 Quantity Unit
 Unit Price
 Extended Amount

 160-4
 TYPE B STABILIZATION
 2,956.01 SY
 \$39.15
 \$115,727.79

 285-709
 OPTIONAL BASE,BASE GROUP 09
 2,556.29 SY
 \$87.57
 \$223,854.32

20.00

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Description	Ta Vic	Valu	a	
	SHOULDER C	OMPONENT		
	Roadway Component Total			\$3,203,529.69
711-16-131	THERMOPLASTIC, STD-OTH, WHITE, SKIP, 6"	1.32 GM	\$2,416.07	\$3,189.21
711-16-101	THERMOPLASTIC, STD-OTH, WHITE, SOLID, 6"	1.32 GM	<b>\$6,09</b> 3.38	\$8,043.26
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6*	1.32 GM	\$7 15.7 1	\$944.74
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	1.32 GM	\$1,239.37	\$1,635.97
706-1-3	RAISED PAVMT MARK, TYPE B	223.00 EA	\$7.91	\$1,763.93
Payitam	Description	Quantity Unit	Unit Price	Extended Amount
Pay Items				
Skip Stripe No	. of Stripes		4	
Skip Stripe No	. of PaintApplications		1	
Solid Stripe No	o. of Stripes		4	
Solid Stripe No	o, of Paint Applications	10110	1	
Pay ement Type	e	Asph	alt	
Description Indude Thema	olTan alOthar	Vail	A 18	
PavementMa	nking Subcomponent		Uda	
337-7-83	ASPH CONC FC,TRAFFIC C,FC- 12.5,PG7 6-22	210.89 TN	\$385.91	\$81,384.56
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	351.49 TN	\$3 13.97	\$110,357.32

Description	A SID 6
Total Outside Shoulder Width UR	7.25/7.25
Total Outside Shoulder Perf. Turf Width L/R	5.00/ 5.00
Sidewalk Width L/R	0.0070.00

Pay Items	
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Pay i tam	Descrip tion	Quantity Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	1,7.42.93 LF	\$71.44	\$124,514.92
520-1-10	CONCRETE CURB & GUTTER, TYPE F	1,7.42.93 LF	\$71.44	\$124,514.92
570-1-1	PERFORMANCETURF	1,936.59 SY	\$10.74	\$20,798.98

Erosion Control

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	3,485.86 LF	\$5.19	\$18,091.61
104-11	FLOATING TURBIDITY BARRIER	82.52 LF	\$14.13	\$1,166.01
104-12	STAKED TURBIDITY BARRIER- NYL REINF PVC	82.52 LF	\$15.20	\$1,25430
104-15	SOIL TRACKING PREVENTION DEVICE	1.00 EA	\$4,586.88	\$4,586.88
104-18	INLET PROTECTION SYSTEM	17.00 EA	\$245.64	\$4,175.88
107-1	LITTER REMOVAL	8.40 AC	\$131.39	\$1,103.68
107-2	MOWING	8.40 AC	\$230.40	\$1,935.36
107-1 107-2	LITTER REMOVAL MOWING	8.40 AC 8.40 AC	\$131.39 \$230.40	\$1,103.0 \$1,935.1

\$93,273.86

#### MEDIAN COMPONENT

User Input Dat	ta			
Description		Valu	e	
Total Median W	lidth	22.0	)0	
Performance T	urf Width	17.5	50	
Pay Items				
Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	3,485.86 LF	\$87.38	\$304,594.45
570-1-1	PERFORMANCETURF	3,389.03 SY	\$10.74	\$36,398.18
	Median Component Total			\$3 40,992.63

## DRAINAGE COMPONENT

Description	Quantity Unit	Unit Price	Extended Amount
INLETS, CURB, TYPE P-5, <10"	12.00 EA	\$11,155.49	\$133,865.88
INLETS, CURB, TYPE J-5, <10'	4.00 EA	\$9,948.78	\$39,795.12
INLETS, DT BOT, TYPE C, <10"	2.00 EA	\$11,211.81	\$22,423.62
MANHOLES, P-7, <10'	2.00 EA	\$10,972.13	\$21,944.26
PIPE CULV, OPT MATL, ROUND, 24°S/CD	880.00 LF	\$211.56	\$186,172.80
PIPE CULV, OPT MATL, ROUND, 36"S/CD	80.00 LF	\$236.89	\$18,951.20
PIPE CULV, OPT MATL, ROUND, 48°S/CD	1,656.00 LF	\$422.94	\$700,388.64
PERFORMANCETURF	100.35 SY	\$10.74	\$1,077.76
Drainage Component Total			\$1,124,619.28
	Description INLETS, CURB, TYPE P-5, <10' INLETS, CURB, TYPE J-5, <10' INLETS, DT BOT, TYPE C, <10' MANHOLES, P-7, <10' PIPE CULV, OPT MATL, ROUND, 24'S/CD PIPE CULV, OPT MATL, ROUND, 36'S/CD PIPE CULV, OPT MATL, ROUND, 48'S/CD PERFORMANCE TURF	DescriptionQuantity UnitINLETS, CURB, TYPE P-5, <10'	Description         Quantity Unit         Unit Price           INLETS, CURB, TYPE P-5, <10'

## INTERSECTIONS COMPONENT

3,032.31 SY

\$30.76

Intersection 1					
Description		Val	ыe		
Mainline No. o	f Left Turn Lanes		4		
Mainline No. o	f Right Turn Lanes		2		
Mainline Desig	n Speed		45		
Cross StreetT	hru Lanes		4		
Cross Street N	o. of Left Turn Lanes		4		
Cross Street No. of Right Turn Lanes		3			
Cross Street Design Speed		45			
T-Intersection?		N			
Multiplier		1			
Description		International Dr/ SR 535			
Pay Items					
Pay item	Description	Quantity Unit	Unit Price	Extended Amount	
110-1-1	CLEARING & GRUBBING	2.75 AC	\$41,531.15	\$114,210.66	
120-1	REGULAR EXCAVATION	2,607.33 CY	\$63.44	\$165,409.02	

TYPE B STABILIZATION

160-4

160-4	TYPE B STABILIZATION	6,295.36 SY	\$30.76	\$193,645.27
285-709	OPTIONAL BASE, BASE GROUP 09	3,032.31 SY	\$91.52	\$277,517.01
285-709	OPTIONAL BASE, BASE GROUP 09	6,295.36 SY	\$91.52	\$576,151.35
334-1-13	SUPER PAVE ASPHALTIC CONC, TRAFFIC C	416.94 TN	\$362.83	\$151,27834
334-1-13	SUPER PAVE ASPHALTIC CONC, TRAFFIC C	1,038.73 TN	\$362.83	\$376,882.41
337-7-83	ASPH CONC FC,TRAFFIC C,FC- 12.5,PG7 6-22	519.37 TN	\$406.29	\$211,014.84
337-7-83	ASPH CONC FC,TRAFFIC C,FC- 12.5,PG7 6-22	250.17 TN	\$406.29	\$101,641.57
520-1-7	CONCRETE CURB & GUTTER, TYPE E	405.68 LF	\$99.07	\$40,190.72
520-1-10	CONCRETE CURB & GUTTER, TYPE F	1,058.00 LF	\$79.13	\$83,719.54
520-5-11	TRAF SEP CONC-TYPE I, 4' WIDE	570.00 LF	\$113.77	\$64,848.90
520-5-11	TRAF SEP CONC-TYPE I, 4' WIDE	370.00 LF	\$113.77	\$42,094.90
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	587.78 SY	\$96.41	\$56,667.87
522-2	CONCRETE SIDEWALK AND DRIVEWAYS, 6"	173.89 SY	\$133.33	\$23,184.75
570-1-1	PERFORMANCETURF	587.78 SY	\$11.07	\$6,506.72
Intersection 2				
Description		Valu	в	
Mainline No. o	f Left Turn Lanes		0	
Mainline No. o	f Right Turn Lanes		0	
Mainline Desig	in Speed	26	45	
Cross Street T	hru Lanes		2	
Cross Street N	lo. of Left Turn Lanes		0	
Cross Street N	io. of Right Lum Lanes		0	
Lines Street L	vesign opeed	1	40	
Multipliar			4	
Description	Crossovery	u.	3E	
Dessiption	Closed er /	20		
Pay Items				
Pay item	Description	Quantity Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	0.89 AC	\$39,374.56	\$35,043.36
120-1	REGULAR EXCAVATION	374.82 CY	\$44.51	\$16,683.24
160-4	TYPE B STABILIZATION	353.22 SY	\$39.15	\$13,828.56
160-4	TYPE B STABILIZATION	905.01 SY	\$39.15	\$35,431.14
285-709	OPTIONAL BASE, BASE GROUP 09	353.22 SY	\$87.57	\$30,931.48

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160-4	TYPE B STABILIZATION	905.01 SY	\$39.15	\$35,431.14
285-709	OPTIONAL BASE, BASE GROUP 09	353.22 SY	\$87.57	\$30,931.48
285-709	OPTIONAL BASE, BASE GROUP 09	905.01 SY	\$87.57	\$79,251.73
334-1-13	SUPER PAVE ASPHALTIC CONC, TRAFFIC C	58.28 TN	\$3.13.97	\$18,298.17
334-1-13	SUPER PAVE ASPHALTIC CONC, TRAFFIC C	149.33 TN	\$3.13.97	\$46,885.14
337-7-83	ASPH CONC FC,TRAFFIC C,FC- 12.5,PG7 6-22	74.66 TN	\$385.91	\$28,812.04
337-7-83	ASPH CONC FC,TRAFFIC C,FC- 12.5,PG7 6-22	29.14 TN	\$385.91	\$11,245.42
520-1-7	CONCRETE CURB & GUTTER, TYPE E	101.42 LF	\$87.38	\$8,862.08
520-1-10	CONCRETE CURB & GUTTER, TYPE F	329.00 LF	\$71.44	\$23,503.76
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	182.78 SY	:\$95:00	\$17,364.10

	SIGNING CO	MPONENT		
	Intersections Component Total			\$2,957,166.78
570-1-1	PERFORMANCETURF	182.78 SY	\$10.74	\$1,963.06
522-2	CONCRETE SIDEWALK AND DRIVEWAYS, 6*	86.94 SY	\$124.52	\$10,825.77

Pay i tem	Description	Quantity Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	8.00 AS	\$710.60	<b>\$5</b> ,684.80
700-1-12	SINGLE POST SIGN, F&I GM, 12- 20 SF	1.00 AS	\$1,985.18	\$1,985.18
700-2-15	MULT F POST SIGN, F&I GM, 51- 100 SF	1.00 AS	\$11,560.60	\$11,560.60
700-2-16	MULT F POST SIGN, F&I GM, 101- 200 SF	1.00 AS	\$14,162.48	\$14,162.48
	Signing Component Total			\$33,393.06

# SIGNALIZATIONS COMPONENT

Signalization 1	
Description	Value
Туре	6 Lane MastArm
Multiplier	1
Description	

Description	Quantity Unit	Unit Price	Extended Amount
CONDUIT, F& I, OPEN TRENCH	700.00 LF	\$19.96	\$13,972.00
CONDUIT, F& I, DIRECTIONAL BORE	300.00 LF	\$33.24	\$9,972.00
SIGNAL CABLE- NEW OR RECO, FUR & INSTALL	1.00 PI	\$10,716.81	\$10,716.81
PULL & SPLICE BOX, F&I, 13"x 24"	22.00 EA	\$1,281.29	\$28,188.38
ELECTRICAL POWER SRV,F&I,OH,M,PUR BY CON	1.00 AS	\$4,111.62	\$4,111.62
ELECTRICAL SERVICE WIRE, F&I	60.00 LF	\$8.97	\$538.20
PREST CNC POLE, F&I, TYP P- II, PEDESTAL	1.00 EA	\$2,509.08	\$2,509.08
STEEL MAST ARM ASSEMBLY, F&I, 70'	3.00 EA	\$125,145.24	\$375,435.72
STEEL MAST ARM ASSEMBLY, F&I, 78'	4.00 EA	\$131,848.06	\$527,392.24
VEH TRAF SIGNAL,F&I ALUMINUM, 3 S 1 W	25.00 AS	\$2,519.26	\$62,981.50
PEDESTRIAN SIGNAL, F&I LED COUNT, 1 WAY	8.00 AS	\$944.43	\$7,555.44
LOOP DETECTOR INDUCTIVE, F&I, TYPE 2	25.00 EA	\$1,209.40	\$30,235.00
LOOP ASSEMBLY, F&I, TYPE F	25.00 AS	\$1,711.49	\$42,787.25
PEDEST RIAN DET ECT OR, F&I, STANDARD	8.00 EA	\$431.99	\$3,455.92
TRAF CNTLASSEM, F&I, NEMA, 1 PREEMPT	1.00 AS	\$40,647.83	\$40,647.83
	Description CONDUIT, F& I, OPEN TRENCH CONDUIT, F& I, DIRECTIONAL BORE SIGNAL CABLE- NEW OR RECO, FUR & INSTALL PULL & SPLICE BOX, F&I, 13"x 24" ELECTRICAL POWER SRV,F&I, OH, M, PUR BY CON ELECTRICAL SERVICE WIRE, F&I PREST CNC POLE, F&I, TYP P- II, PEDESTAL STEEL MAST ARM ASSEMBLY, F&I, 70" STEEL MAST ARM ASSEMBLY, F&I, 70" STEEL MAST ARM ASSEMBLY, F&I, 70" STEEL MAST ARM ASSEMBLY, F&I, 78" VEH TRAF SIGNAL, F&I ALUMINUM, 3 S 1 W PEDEST RIAN SIGNAL, F&I LED COUNT, 1 WAY LOOP DETECTOR INDUCTIVE, F&I, TYPE 2 LOOP ASSEMBLY, F&I, TYPE F PEDEST RIAN DETECT OR, F&I, STANDARD TRAF CNTL ASSEM, F&I, NEMA, 1 PREEMPT	DescriptionQuantity UnitCONDUIT, F& I, OPEN TRENCH700.00 LFCONDUIT, F& I, DIRECTIONAL300.00 LFBORESIGNAL CABLE- NEW OR RECO,1.00 PIFUR & INSTALLPULL & SPLICE BOX, F&I, 13"x22.00 EAPULL & SPLICE BOX, F&I, 13"x22.00 EA24"ELECT RICAL POWER1.00 ASSRV,F&I,OH,M,PUR BY CON60.00 LFPREST CNC POLE,F&I,TYP P-1.00 EAII,PEDESTAL3.00 EASTEEL MAST ARM ASSEMBLY,3.00 EAF&I, 70'STEEL MAST ARM ASSEMBLY,STEEL MAST ARM ASSEMBLY,4.00 EAVEH TRAF SIGNAL,F&I25.00 ASPEDEST RIAN SIGNAL, F&I LED8.00 ASCOUNT, 1 WAY8.00 ASLOOP DETECTOR INDUCTIVE,25.00 EAF&I, TYPE 225.00 EALOOP ASSEMBLY, F&I, TYPE F25.00 ASPEDEST RIAN DETECT OR, F&I,8.00 EASTANDARDTRAF CNTLASSEM, F&I, NEMA, 1TRAF CNTLASSEM, F&I, NEMA, 11.00 AS	DescriptionQuantity UnitUnit PriceCONDUIT, F&I, OPEN TRENCH700.00 LF\$19.96CONDUIT, F&I, DIRECTIONAL300.00 LF\$33.24BORESIGNAL CABLE- NEW OR RECO,1.00 PI\$10,716.81PULL & SPLICE BOX, F&I, 13 *x22.00 EA\$1,281.2924*ELECT RICAL POWER1.00 AS\$4,111.62SRV,F&I, OH, M, PUR BY CON1.00 AS\$4,111.62ELECT RICAL SERVICE WIRE, F&I60.00 LF\$8.97PREST CNC POLE, F&I, TYP P-1.00 EA\$2,509.08I, PEDESTAL3.00 EA\$125,145.24STEEL MAST ARM ASSEMBLY, F&I, 78*3.00 EA\$125,145.24VEH TRAF SIGNAL, F&I25.00 AS\$2,519.26ALUMINUM, 3 S 1 W8.00 AS\$944.43COUNT, 1 WAY8.00 AS\$944.43LOOP DETECTOR INDUCTIVE, F&I, TYPE 225.00 EA\$1,209.40LOOP ASSEMBLY, F&I, TYPE F25.00 AS\$1,711.49PEDEST RIAN DET ECT OR, F&I, STANDARD8.00 EA\$431.99TRAF CNTLASSEM, F&I, NEMA, 1 PREEMPT1.00 AS\$40,647.83

700-5-22	INTERNAL ILLUM SIGN, F&I OM, 12-18 SF	8.00 EA	\$6,502.70	\$52,021.60
Signalization 2				
Description		Val	ua	
Туре		2 Lane MastA	m	
Multiplier			1	
Description	Crossov er	Intersection		
Pay Items				
Pavitam	Description	Quantity Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	800.00 LF	\$19.96	\$15,968.00
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	200.00 LF	\$33.24	\$6,648.00
632-7-1	SIGNAL CABLE- NEW OR RECO, FUR & INSTALL	1.00 PI	\$10,716.81	\$10,716.81
633-3-11	FIBER OPTIC CONN HDWR, SPLICE ENCLOSURE	2.00 EA	\$1,084.66	\$2,169.32
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24	12.00 EA	\$1,281.29	\$15,375.48
639-1-112	ELECTRICAL POWER SRV,F&I,OH,M,PUR BY CON	1.00 AS	\$4,111.62	\$4,111.62
639-2-1	ELECTRICAL SERVICE WIRE, F&I	60.00 LF	\$8.97	\$538.20
649-21-4	STEEL MASTARM ASSEMBLY, F&I, 40'-30'	1.00 EA	\$115,000.00	\$115,000.00
650-1-14	VEH TRAF SIGNAL,F&I ALUMINUM, 3 S 1 W	5.00 AS	\$2,519.26	\$12,596.30
660-1-102	LOOP DETECTOR INDUCTIVE, F&I, TYPE 2	5.00 EA	\$1,209.40	\$6,047.00
660-2-106	LOOP ASSEMBLY, F&I, TYPE F	5.00 AS	\$1,711.49	\$8,557.45
670-5-111	TRAF CNTLASSEM, F&I, NEMA, 1 PREEMPT	1.00 AS	\$40,647.83	\$40,647.83
700-5-22	INTERNAL ILLUM SIGN, F&I OM, 12-18 SF	4.00 EA	\$6,502.70	\$26,010.80
	Signalizations Component Total			\$1,476,907.40

# LIGHTING COMPONENT

Conventional	Lighting Sub component	689.19987-1999864175		
Description Spacing				Value MIN
Pay Items				
Pay item	Description	Quantity Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	1,7 42,93 LF	\$19.96	\$34,788.88
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	345.94LF	\$33.24	\$11,499.05
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24	12.00 EA	\$1,281.29	\$15,375.48
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	6,365.65LF	\$8.52	\$54,235.34
715-61-342	LIGHT POLE CMPLT,STD,F&I, 40MH,12'ARM L	12.00 EA	\$14,570.60	\$174,847.20
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	12.00 EA	\$1,345.46	\$16,145.52
	Subcomponent Total			\$306,891.47
	Lighting Component Total			\$306,891.47

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Description: Polynesian Isle Blvd - Partial MUT

EARTHWORK	COMPONENT
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а			
			Value
ing and Grubbing Limits UR			105.00/105.00
Incidental Clearing and Grubbing Area			0.00
ber			1
			0.387
al Course For Begin Section			102.00
al Course For End Section			102.00
Horizontal Elevation For Begin Section Horizontal Elevation For End Section			100.00
			100.00
1			6 to 1/6 to 1
er Cross Slope L/R			4.00 % / 4.00 %
ler Cross Slope UR			2.00%/2.00%
s Slope L/R			2.00%/2.00%
Description	Quantity Unit	UnitPrice	Extended Amount
CLEARING & GRUBBING	9.85 AC	\$3937456	\$3.87 \$39.42
EMBANKMENT	10,486.22 CY	\$41.73	\$437,589.96
Earthwork Component Total			\$825,429.38
ROADWAY CO	MPONENT		
a			
	Value		
es	6		
ment Width L/R	33.00/33.00		
ad Rate	27	5	
Spread Rate	16	5	
Description	Quantity Unit	UnitPrice	Extended Amount
TYPE B STABILIZATION	17,341.13 SY	\$39.15	\$678,905.24
OPTIONAL BASE, BASE GROUP 09	14,996.26 SY	\$87.57	\$1,313,222.49
SUPERPAVE ASPHALTIC CONC, TRAFFIC C	2,061.99 TN	\$3 13.97	\$647,403.00
ASPH CONC FC,TRAFFIC C,FC- 12.5,PG 76-22	1,237.19 TN	\$385.91	\$477,443.99
sovers Subcomponent			
	Valu	A	
	a ing and Grubbing Limits UR ing and Grubbing Area ber al Course For Begin Section ation For Begin Section ation For End Section a	a ing and Grubbing Limits UR ing and Grubbing Area ber al Course For Begin Section ation For End Section ati	a ing and Grubbing Limits L/R ing and Grubbing Area ber al Course For Begin Section ation For Begin Section ation For Begin Section ation For End Section

AsphaltAdjustment Stabilization Code

Stabilization Gode	
Base Code	
Friction Course Code	

Pay Items	
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Pay item	Description	Quantity Unit	UnitPrice	Extended Amount
160-4	T YPE B STABILIZATION	3,468.23 SY	\$39.15	\$135,781.20
285-709	OPTIONAL BASE, BASE GROUP 09	2,999.25 SY	\$87.57	\$262,644.32

20.00 Y Y Y

334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	412.40 T N	\$3 13.97	\$129,481.23
337-7-83	ASPH CONC FC, TRAFFIC C, FC- 12.5, PG 76-22	247.44 T N	\$385.91	\$95,489.57
PavementMar	king Subcomponent			
Description		Value	8	
Indude Therm	o/Tap e/Other	CP-30	4	
Pavement Type Solid Stripe No. of Paint Applications		Asphal	t	
			1	
Solid Stripe No	. of Stripes		4	
Skip Stripe No.	of PaintApplications		1	
SKIP STIPE NO.	or surpes	3	3	
Pay Items				
Pay item	Description	Quantity Unit	UnitPrice	Extended Amount
706-1-3	RAISED PAVMT MARK, TYPE B	261.00 EA	\$7.91	\$2,064.51
710-11-101	PAINTED PAVT MARK, STD, WHITE, SOLID, 6"	1.55 GM	\$1,239.37	\$1,921.02
710-11-131	PAINTED PAVT MARK, STD, WHITE, SKIP, 6"	1.55 GM	\$715.71	\$1,109.35
711-16-101	THERMOPLASTIC, STD-OTH, WHITE, SOLID, 6*	1.55 GM	\$6,093.38	\$9,444.74
711-16-131	THERMOPLASTIC, STD-OTH, WHITE, SKIP, 6*	1.55 GM	\$2,416.07	\$3,744.91
	Roadway Component Total			\$3,758,655.58
User Input Da	SHOULDER C	OMPONENT		
Description		Value	8	
Total Outside S	houlder Width L/R	7.2577.2	5	
Total Outside S Sidewalk Width	Shoulder Perf. Turf Width UR 1 UR	5.007 5.0	0	
Pay Items				
Payitam	Description	Quantity Unit	UnitPrice	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	2,044.94 LF	\$71.44	\$146,090.51
520-1-10	CONCRETE CURB & GUTTER, TYPE F	2,044.94 LF	\$71.44	\$146,090.51
570-1-1	PERFORMANCETURF	2,272.16 SY	\$10.74	\$24,403.00
Erosion Contr Pay Items	ol			
Pay item	Description	Quantity Unit	UnitPrice	Extended Amount
104-10-3	SEDIMENT BARRIER	4,089.89 LF	\$5.19	\$21,226.53
104-11	FLOATING TURBIDITY BARRIER	96.82 LF	\$14.13	\$1,368.07
104-12	STAKED TURBIDITY BARRIER- NYL REINF PVC	96.82 LF	\$15.20	\$1,471.66
104-15	SOIL TRACKING PREVENTION DEVICE	1.00 EA	\$4,586.88	\$4,586.88
104-18	INLET PROTECTION SYSTEM	20.00 EA	\$245.64	\$4,912.80
107-1	LITTER REMOVAL	9.86 AC	\$131.39	\$1,295.51
107-2	MOWING	9.86 AC	\$230.40	\$2,271.74

#### MEDIAN COMPONENT

User Input Data	
Description	Value
Total Median Width	22.00
Performance Turf Width	17.50
Pay Items	

Pay item	Description	Quantity Unit	UnitPrice	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E	4,089.89 LF	\$87.38	\$357,374.59
570-1-1	PERFORMANCETURF	3,976.28 SY	\$10.74	\$42,705.25
	Median Component Total			\$400,079.84

## DRAINAGE COMPONENT

Pay item	Description	Quantity Unit	UnitPrice	Extended Amount
425-1-351	INLETS, CURB, TYPE P-5, <10"	14.00 EA	\$11,155.49	\$156,176.86
425-1-451	INLETS, CURB, TYPE J-5, <10"	4.00 EA	\$9,948.78	\$39,795.12
425-1-521	INLETS, DT BOT, TYPE C, <10"	2.00 EA	\$11,211.81	\$22,423.62
425-2-41	MANHOLES, P-7, <10'	2.00 EA	\$10,972.13	\$21,944.26
430-175-124	PIPE CULV, OPT MATL, ROUND, 24'S/CD	1,024.00 LF	\$211.56	\$216,637.44
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"SICD	96.00 LF	\$236.89	\$22,741.44
430-175-148	PIPE CULV, OPT MATL, ROUND, 48"S/CD	1,944.00 LF	\$422.94	\$822,195.36
570-1-1	PERFORMANCETURF	117.74 SY	\$10.74	\$1,264.53
	Drainage Component Total			\$1,303,178.63

## SIGNING COMPONENT

Pay Items				
Pay item	Description	Quantity Unit	UnitPrice	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	10.00 AS	<b>\$7</b> 10.60	\$7,106.00
700-1-12	SINGLE POST SIGN, F&I GM, 12- 20 SF	1.00 AS	\$1,985.18	\$1,985.18
700-2-15	MULT F POST SIGN, F&I GM, 51- 100 SF	1.00 AS	\$11,560.60	\$11,560.60
700-2-16	MULTH POST SIGN, F&I GM, 101- 200 SF	1.00 AS	\$14,162.48	\$14,162.48
	Signing Component Total			\$34,814.26

SIGNALIZATIONS COMPONENT

Signalization 1 Description Type Multiplier

Pay Items

Value 6 Lane MastArm 1

## Description

Pay Items		<b>1</b>		2 8 N
Payitem	Description	Quantity Unit	UnitPrice	Extended Amount
630-2-11	CONDUIT, F&I, OPENTRENCH	700.00 LF	\$19.96	\$13,972.00
630-2-12	BORE	300.00 LF	\$33.24	\$9,972.00
632-7-1	SIGNAL CABLE- NEW OR RECO, FUR & INSTALL	1.00 PI	\$10,716.81	\$10,716.81
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	22.00 EA	\$1,281.29	\$28,188.38
639-1-112	ELECTRICAL POWER SRV,F&I,OH,M,PUR BY CON	1.00 AS	\$4,111.62	\$4,111.62
639-2-1	ELECTRICAL SERVICE WIRE, F&I	60.00 LF	\$8.97	\$538.20
641-2-11	PREST CNC POLE, F&I, TYP P- II, PEDESTAL	1.00 EA	\$2,509.08	\$2,509.08
64 <del>9-</del> 21-15	STEEL MAST ARM ASSEMBLY, F&I, 70'	2.00 EA	\$125,145.24	\$250,290.48
650-1-14	VEH TRAF SIGNAL,F&I ALUMINUM, 3 S 1 W	9.00 AS	\$2,519.26	\$22,673.34
653-1-11	PEDESTRIAN SIGNAL, F&I LED COUNT, 1 WAY	8.00 AS	\$944.43	\$7,555.44
660-1-102	LOOP DETECTOR INDUCTIVE, F&I, TYPE 2	9.00 EA	\$1,209.40	\$10,884.60
660-2-106	LOOP ASSEMBLY, F&I, TYPE F	9.00 AS	\$1,711.49	\$15,403.41
665-1-11	PEDESTRIAN DETECTOR, F&I, STANDARD	8.00 EA	\$431.99	\$3,455.92
670-5-111	TRAF CNTLASSEM, F&I, NEMA, 1 PREEMPT	1.00 AS	\$40,647.83	\$40,647.83
700-3-101	SIGN PANEL, FÅI GM, UP TO 12 SF	4.00 EA	\$399.91	\$1,599.64
Signalization 2				
Description		Valu	e	
Туре		6 Lane MastAn	m	
Multiplier	MUTS		2	
Description	MOTS			
Pay Items				
Pay item	Description	Quantity Unit	UnitPrice	Extended Amount
630-2-11	CONDUIT, F&I, OPENTRENCH	1,400.00 LF	\$19.96	\$27,944.00
630-2-12	BORE	600.00 LF	\$33.24	\$19,944.00
632-7-1	SIGNAL CABLE- NEW OR RECO, FUR & INSTALL	2.00 PI	\$10,716.81	\$21,433.62
635-2-11	PULL & SPLICE BOX, F&I, 13*x 24*	44.00 EA	\$1,281.29	\$56,376.76
639-1-112	ELECTRICAL POWER SRV,F&I,OH,M,PUR BY CON	2.00 AS	\$4,111.62	\$8,223.24
639-2-1	ELECTRICAL SERVICE WIRE, F&I	120.00 LF	\$8.97	\$1,076.40
641-2-11	PREST CNC POLE, F&I, TYP P- II, PEDESTAL	2.00 EA	\$2,509.08	\$5,018.16
649-21-15	STEEL MAST ARM ASSEMBLY, F&I, 70'	4.00 EA	\$125,145.24	\$500,580.96
650-1-14	VEH TRAF SIGNAL,F&I ALUMINUM, 3 S 1 W	18.00 AS	\$2,519.26	\$45,346.68
653-1-11	PEDESTRIAN SIGNAL, F&I LED	16.00 AS	\$944.43	\$15,110,88
	COUNT, 1 WAY	10.00110		
660-1-102	COUNT, 1 WAY LOOP DETECTOR INDUCTIVE, F&I, TYPE 2	18.00 EA	\$1,209.40	\$21,769.20

665-1-11	PEDESTRIAN DETECTOR, F&I, STANDARD	16.00 EA	<b>\$4</b> 31.99	<b>\$</b> 6,911.84
670-5-111	TRAF CNTLASSEM, F&I, NEMA, 1 PREEMPT	2.00 AS	\$40,647.83	\$81,295.66
700-3-101	SIGN PANEL, F&I GM, UP TO 12 SF	8.00 EA	\$399.91	\$3,199.28
	Signalizations Component Total			\$1,267,556.25

# LIGHTING COMPONENT

Conventional	Lighting Subcomponent			
Description Spacing Pay Items				Value MIN
Pay item	Description	Quantity Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	2,044.94LF	\$19.96	\$40,817.00
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	405.89LF	\$33.24	\$13,491.78
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24	14.00EA	\$1,281.29	\$17,938.06
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.42	7,468.69LF	\$8.52	\$63,633.24
715-61-342	LIGHT POLE CMPLT,STD,F&I, 40MH,12'ARM L	14.00EA	\$14,570.60	\$203,988.40
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	14.00 EA	\$1,345.46	\$18,836.44
	Subcomponent Total			\$358,704.92
	Lighting Component Total			\$358,704.92

Sequence 8 Total

\$8,302,136.08

Date: 5/13/2024 5:38:18 PM FDOT Long Range Estimating System - Production

# R3: Project Details by Sequence Report

Project 437174-2	-22-01	Letting Date: 01/2099			
Description: SR !	535/VINELAND RD FROM US 192 TO N	IORT H OF WORL	LD CENTER D	R	
District 05 Contract Class: 1	County: 99 DISTRICT/STATEWIDE Lump Sum Project N	MarketArea: Design/Build	99 Units:E :N Project	English Langth: 2.250 MI	
Project Manager.	LFC-MET				
Version 10 Project Description: Prefe	t Grand Total med Alternative			\$76,505,097.76	
- ProjectSequence	as Subtotal			\$63,103,386.58	
102-1 M	aintenance of Traffic	10.00 %		\$6,310,338.66	
101-1 M	obilization	10.00 %		\$6,941,372.52	
ProjectSequence	as Total			\$76,355,097.76	
Project Unknowns		0.00 %		\$0.00	
Design/Build		0.00 %		\$0.00	
Non-Bid Compon	ien ts:				
Pay item D	ascrip tion	Quantity Unit	Unit Price	Extended Amount	
999-25 IN (D	IT IAL CONTINGENCY AMOUNT IO NOT BID)	LS	\$150,000.00	\$150,000.00	
Project Non-Bid Sub total				\$150,000.00	
Version 10 Projec	at Grand Total			\$76,505,097.76	