

S.R. 518/Eau Gallie Boulevard Concept Development Study Feasibility Technical Memorandum

Project Limits: S.R. 513 to S.R. A1A

FM #: 435632-1

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Section 1.0 – Project Summary

This Feasibility Technical Memorandum summarizes the proposed improvements for S.R. 518 (Eau Gallie Boulevard) between S.R. 513 (South Patrick Drive) and S.R. A1A in Brevard County, Florida as part of the S.R. 518 Concept Development Study.

1.1 Project Description

S.R. 518 is an east-west arterial highway and designated evacuation route that extends from west of I-95 to S.R. A1A, all within Brevard County. The limits of the Concept Development Study are from S.R. 513 (South Patrick Drive) to S.R. A1A, a distance of approximately one mile (**Figure 1.1**). Roadway improvements, such as intersection modifications or changes in lane designations may be considered along S.R. 513 and S.R. A1A north and south of S.R. 518 and along the causeway and Indian River relief bridge (Bridge #700183) west of S.R. 513. The roadway traverses three municipalities: the City of Indian Harbour Beach, the City of Melbourne, and unincorporated Brevard County (**Figure 1.2**).

There are three signalized intersections within the project limits at S.R. 513, the entrance to Winn Dixie/Walmart and S.R. A1A.

1.2 Project History

The S.R. 518 Concept Development Study is the continuation of the Eau Gallie Beachside Corridor Planning Study, completed in March 2016. The objective of the Eau Gallie Beachside Corridor Planning Study was to identify multimodal improvements to provide safe and efficient operations for all modes of transportation on S.R. 518 east of the Indian River Bridge and causeway. The Corridor Planning Study brought together representatives from the local governments and agencies, residents, and businesses from the beachside community as part of a Project Visioning Team (PVT) to identify improvements meeting the project objective that would be studied and evaluated during subsequent phases of project development.

The Corridor Planning Study organized the PVT to focus the study on issues that are of main importance to the local community. Through three PVT meetings and two public meetings, the Corridor Planning Study developed three Priority Groups of potential improvements that are to be analyzed further as part of a Concept Development Study. **Table 1.1** lists the improvements identified in the three Priority Groups identified to move forward in subsequent phases of project development.

Figure 1.1 – Location Map

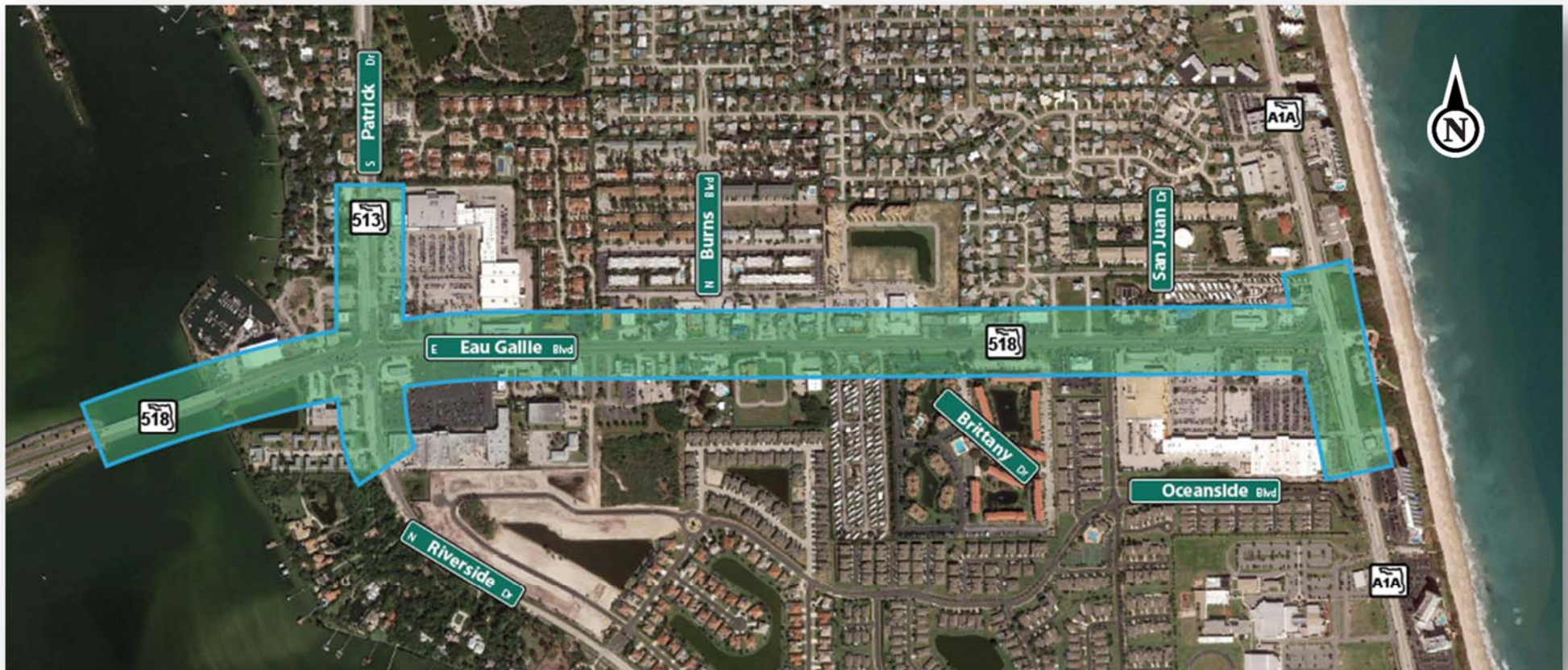


Figure 1.2 – Local Municipal Boundaries

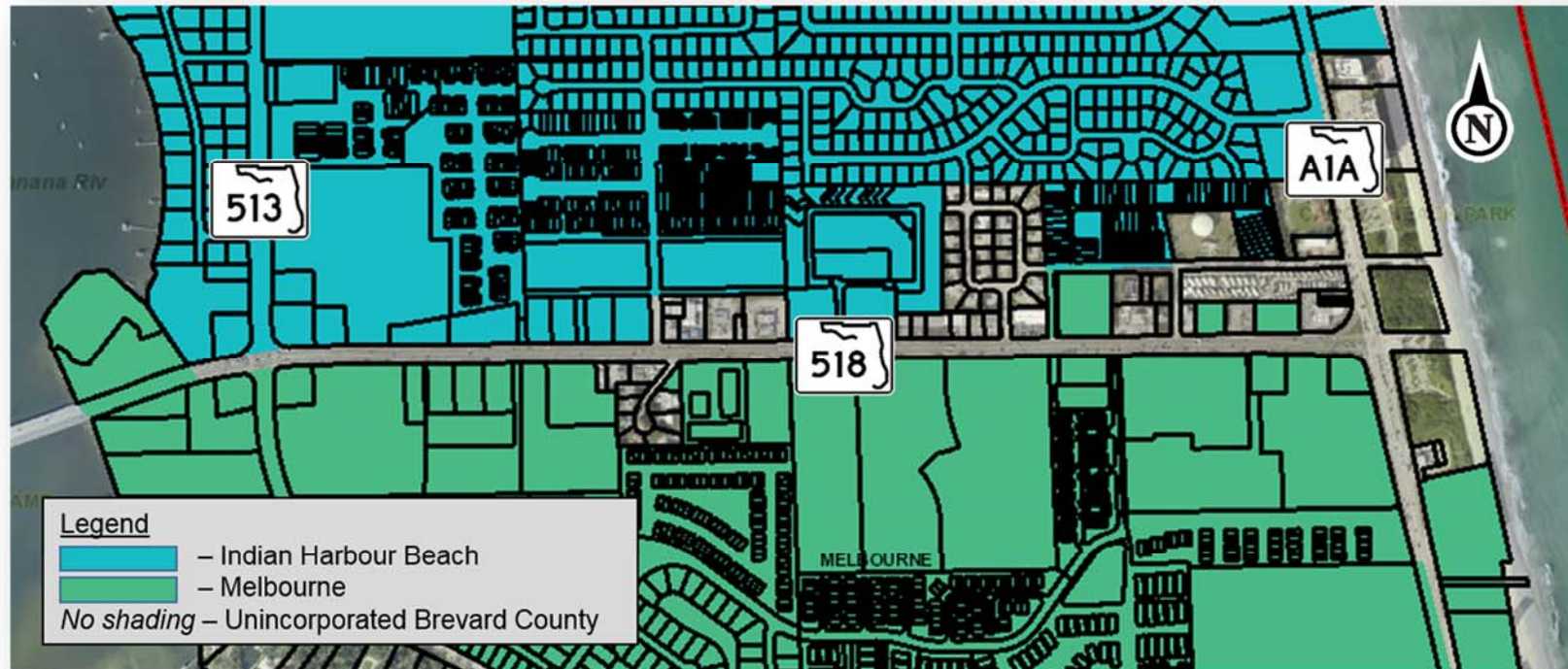


Table 1.1 – Corridor Planning Study Priority Groups

Priority Group	#	Description	Location	Agency Lead	Potential Phases Needed
I	1.a	Sidewalks - North Side	South Patrick Drive to SR A1A	To Be Determined	Concept Development / Design / Construction
	1.b	Crosswalk with audible beacon	Winn-Dixie intersection, east side	To Be Determined	Design / Construction (after sidewalk is in place)
	2	Bike Lanes	Relief Bridge to SR A1A	To Be Determined	Implement during resurfacing
	3	SR A1A Intersection - remove continuous right turn lanes, extend median	Eau Gallie Boulevard at SR A1A. Median changes along Eau Gallie	To Be Determined	Concept Development / Design / Construction
II	4a	Bridge sidewalk and connection of bike lanes	Relief Bridge to SR 513 / South Patrick Drive	To Be Determined	Concept Development / Design / Right-of-way / Construction
	4b	SR 513 / South Patrick Drive Intersection - repurpose westbound lanes (1 left, 2 through, 1 right)	Intersection of Eau Gallie Boulevard and SR 513 / South Patrick Drive	To Be Determined	Concept Development / Design / Right-of-way / Construction
	5	Driveway and median modifications	Publix / Bealls Shopping Center driveways on Eau Gallie	To Be Determined	Concept Development / Design / Construction
III	6	Roundabouts and median	Burns Boulevard to Winn-Dixie driveway	To Be Determined	Gain support then Concept Development / Design / Right-of-way / Construction

1.3 Purpose and Need

The Purpose and Need statement developed as part of the previous Corridor Planning Study is defined below:

Purpose: To provide better pedestrian and bicycle connectivity, reduce vehicular conflicts, and improve operations.

Need: Connectivity improvements are needed based on the mix of uses and current bicycle/pedestrian demand. This corridor provides retail and service uses adjacent to residential areas. The resulting high demand is currently traveling with unfriendly conditions in many areas, which lack sidewalk, bike lanes, access to transit, and other features.

Each of the improvements listed in **Figure 1.3** are consistent with the stated purpose and need of the project.

Section 2.0 Traffic

2.1 Impact of Median Closures on Existing Traffic Operations

The study intersections were analyzed with data collected for this project as outlined in the *Existing Conditions Technical Memorandum* (May 2018) using Synchro Version 9 capacity analysis software and the results are summarized in **Table 2.1**. The intersection of S.R. 518 and S.R. 513 / South Patrick Drive was also analyzed with only one westbound to southbound left turn lane instead of the existing dual left turn lanes. The analysis shows that the net increase in intersection delay due to this lane reduction will be less than one second.

The following sections describe the methodology adopted for the reassignment of traffic due to the proposed median closures.

2.1.1 Median Closure at Gas Station (Murphy Express)

The Murphy Express gas station is located on the north side of S.R. 518. The driveway is approximately 400 feet west of S.R. A1A. The following assumptions were made for the reassignment of traffic from Murphy Express:

1. Southbound left turn traffic from the gas station driveway was added to southbound right turn traffic and logically reassigned to adjacent intersections based on the primary destination. It was assumed that the southbound left turns from the gas station would make a u-turn from westbound S.R. 518 at the signalized intersection at the Walmart Plaza 450 feet to the west.
2. The existing eastbound left turn into Murphy Express was added to the eastbound through movement and was subsequently the left turn at the S.R. A1A intersection. This movement was then added to the southbound S.R. A1A right turn under the assumption that that these vehicles would make a u-turn from northbound S.R. A1A to get to the gas station.

2.1.2 Median Closure at Publix Driveway along S.R. 518 – Scenario 1

The following assumptions were made for the reassignment of traffic under this scenario:

1. The southbound left turn and through truck traffic (4% in the a.m. and 2% in the p.m.) from the Publix Driveway on S.R. 518 (located approximately 550 feet east of S.R. 513) was assigned to the westbound left turn at the northernmost Publix Driveway on S.R. 513 / South Patrick Drive and was logically reassigned to adjacent intersections based on their primary destination.
2. The remaining southbound left turn and through vehicular traffic was added to the southbound right turn traffic and was logically reassigned to adjacent intersections based on their primary destination.
3. The eastbound left turn, the northbound left turn, and northbound through movements at the intersection of Publix / Causeway Shopping Center / S.R. 518 were logically reassigned based on their destinations.

Table 2.1 – Existing and Projected AM and PM Peak Period Delay and LOS

Year	Intersection	AM Peak		PM Peak	
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
Existing Condition					
2017	#1: SR 518 @ South Patrick Drive (Signalized)	53.0	D	59.2	E
	#2: SR 518 @ SR A1A (Signalized)	25.6	C	29.5	C
	#3: SR 518 @ Publix Driveway*	14.3	B	30.1	D
	#4: SR 518 @ Burns Blvd*	20.4	C	27.4	D
	#5: SR 518 @ Gas Station*	14.0	B	14.7	B
	#6: South Patrick Dr @ Publix South Driveway*	11.2	B	19.3	C
	#7: South Patrick Dr @ Publix North Driveway*	27.7	D	427.8	F
Existing Condition with Single Westbound Left Turn Lane					
2017	#1: SR 518 @ South Patrick Drive (Signalized)	53.3	D	60.2	E
Existing Condition with Median Closures - Scenario 1⁽¹⁾					
2017	#1: SR 518 @ South Patrick Drive (Signalized)	54.1	D	61.8	E
	#2: SR 518 @ SR A1A (Signalized)	26.0	C	30.3	C
	#3: SR 518 @ Publix Driveway*	11.7	B	48.3	E
	#4: SR 518 @ Burns Blvd*	20.4	C	27.4	D
	#5: SR 518 @ Gas Station*	12.1	B	12.6	B
	#6: South Patrick Dr @ Publix South Driveway*	11.3	B	19.3	C
	#7: South Patrick Dr @ Publix North Driveway*	28.3	D	434.5	F
Existing Condition with Median Closures and with Single Westbound Left Turn Lane - Scenario 1⁽¹⁾					
2017	#1: SR 518 @ South Patrick Drive (Signalized)	56.1	E	63.4	E
Existing Condition with Median Closure - Scenario 2⁽²⁾					
2017	#1: SR 518 @ South Patrick Drive (Signalized)	57.3	E	63.1	E
	#2: SR 518 @ SR A1A (Signalized)	25.6	C	30.5	C
	#3: SR 518 @ Publix Driveway*	11.5	B	31.5	D
	#4: SR 518 @ Burns Blvd*	20.4	C	27.4	D
	#5: SR 518 @ Gas Station*	12.1	B	12.6	B
	#6: South Patrick Dr @ Publix South Driveway*	11.3	B	19.5	C
	#7: South Patrick Dr @ Publix North Driveway*	34.7	D	999.0	F
Existing Condition with Median Closures and with Single Westbound Left Turn Lane - Scenario 2⁽²⁾					
2017	#1: SR 518 @ South Patrick Drive (Signalized)	57.6	E	64.2	E

*Reflects minor Street worst movement delay

(1) Scenario 1- Only Truck Traffic from the Publix driveway on SR 518 assigned to North Publix Driveway on South Patrick Drive

(2) Scenario 2- All Traffic from the Publix driveway on SR 518 assigned to North Publix Driveway on South Patrick Drive

Note: Median Closures are along SR 518 at the Publix Driveway and at the Gas Station immediately west of SR A1A.

2.1.3 Median Closure at Publix Driveway along S.R. 518 – Scenario 2

All southbound left turn and through traffic from this driveway was assigned to the westbound left turn at the northernmost Driveway on South Patrick Drive and was logically reassigned to adjacent intersections based on their primary destination.

Section 3.0 Alternatives Analysis and Development

3.1 Design Criteria

Table 3.1 presents the roadway design criteria established for the proposed improvements. The design criteria are based on design parameters outlined in *A Policy on Geometric Design of Highways and Streets* (AASHTO, 2011), *FDOT Design Manual* (FDOT, 2018) and *FDOT Standard Plans for Road Construction* (FDOT, 2018). Since the project is considered a resurfacing, restoration and rehabilitation (RRR) project, RRR criteria should be used wherever applicable as stated in the *FDOT Design Manual*. Design variations will be necessary for lane width to account for the 10-foot travel lanes and design speed because of the existing bi-directional turn lane.

3.2 Proposed Improvements

The following sections summarize the Priority Group 1 and Priority Group 2 improvements recommended by the previous Corridor Planning Study and discussed in the *Eau Gallie Beachside Corridor Alternatives and Strategies Report* (March 2016).

3.2.1 Multimodal Accommodations

Improved multimodal connectivity is stated in the purpose and need for the project (see Section 1.3). The proposed improvements provide enhanced facilities for bicyclists, pedestrians and transit riders.

Pedestrians

As noted in the *Existing Conditions Technical Memorandum* (May 2018), there are numerous sidewalk gaps along the north side of S.R. 518 with existing sidewalk only located between S.R. 513 and the Publix shopping center driveway (500 feet), in front of Charlie and Jakes restaurant (200 feet), in front of Catalina Plaza and the Indian Harbour Beach Professional Center (550 feet), in front of Starbucks and Mattress One (300 feet) and in front of the Murphy Express gas station (200 feet). These areas of existing sidewalk on the north side of the road appear to be on private property with no record of public easement. The proposed improvements include a continuous 5-foot sidewalk along the north side of S.R.518 and will connect to the existing sidewalk where applicable. **Figure 3.1** illustrates the proposed typical section for S.R. 518. Locations of new sidewalk and connections to existing sidewalk are shown in the Concept Development Plans in **Appendix A**. The construction of this sidewalk will impact the existing drainage and require the construction of a closed drainage system where swale conveyance is no longer possible. Details of the proposed drainage concept are discussed in **Section 3.3** of this report.

Table 3.1 – Design Criteria

Design Element	Design Standard	Sources
Functional Classification	Urban Principal Arterial Other	Straight Line Diagrams
Context Classification	C3C	FDOT
Design Vehicle	WB-62FL	FDM, Part 2, Section 201.5
Design Speed	45 mph	Recommended, based on FDM, Part 2, Table 201.4.1
Horizontal Alignment		
Maximum Curvature*	8°15'	FDM, Part 2, Section 210.9 & Standard Plans, Index 000-511
Maximum Deflection w/o Horizontal Curve	1°00'00"	FDM, Part 2, Section 210.8.1
Minimum Length of Horizontal Curve*	15(V) = 675 ft Desirable	FDM, Part 2, Table 210.8.2
	400 ft Minimum	
Maximum Deflection for Through Lanes within Intersections	3°00'	FDM, Part2, Table 212.7.1
Minimum Stopping Sight Distance	360 ft	FDM, Part 2, Table 210.11.1
Turn Lane Deceleration Length (including taper) (excluding queue length)	185 ft	FDM, Part 2, Exhibit 212-1
Turn Lane Taper	50 ft (single lane)	FDM, Part 2, Section 212.6 & Exhibits 212-1 & 212-2, Standard Plans 711-001
	100 ft (double lane)	
Turning Radii	45 ft Min	AASHTO WB-62 Template

*RRR criteria to be used where applicable

Table 3.1 – Design Criteria (cont'd)

Design Element	Design Standard	Sources
Vertical Alignment		
General Vertical Alignment*	N/A	FDM Part 2, Section 210.10.4
Maximum Profile Grade*	6%	FDM, Part 2, Table 210.10.1
Maximum Change in Grade w/o Vertical Curve	0.70%	FDM, Part 2, Table 210.10.2
Minimum Gutter Grade	0.30%	FDM, Part 2, Section 210.10.1.1
Min. K Value for Crest Vertical Curve (RRR)*	61	FDM, Part 2, Section 210.10.2.1, Table 210.10.3
Minimum Crest Vertical Curve Length	135 ft	FDM, Part 2, Section 210.10.2.1, Table 210.10.4
Min. K Value for Sag Vertical Curve	79	FDM, Part 2, Section 210.10.2.1, Table 210.10.3
Minimum Sag Vertical Curve Length	135 ft	FDM, Part 2, Section 210.10.2.1, Table 210.10.4
Minimum Distances between VPI's	250 ft	FDM, Part 2, Section 210.10.1.1
Minimum Vertical Clearance	17.5 ft-New, 17 ft-Exist Signage	FDM, Part 2, Section 210.10.3
	17.5 ft-New, 17 ft-Exist Signals	

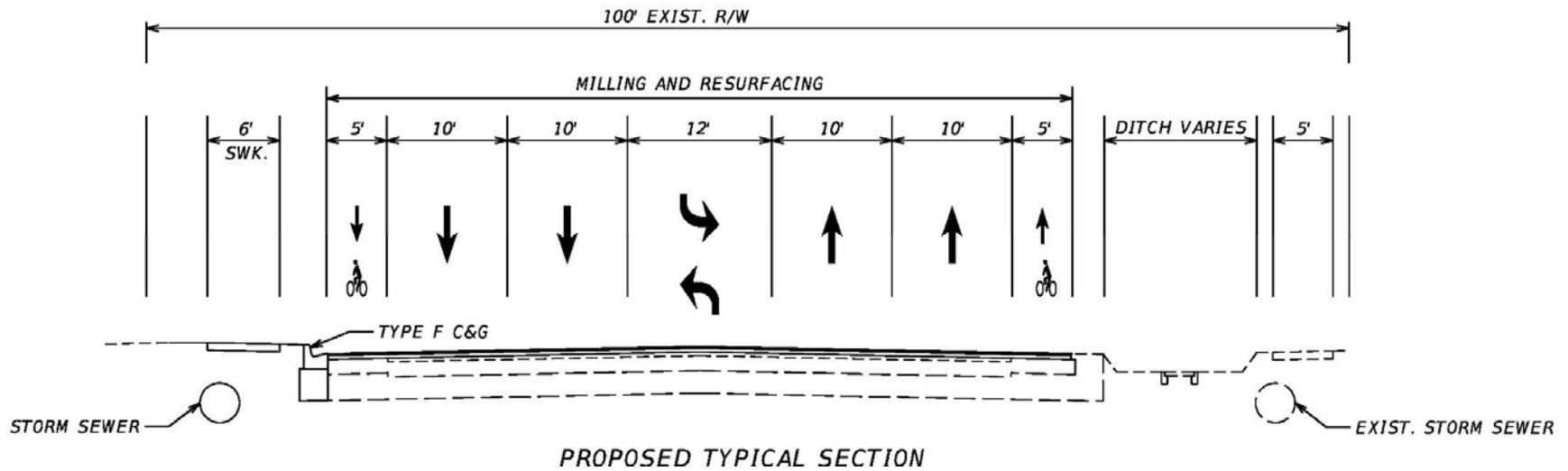
*RRR criteria to be used where applicable

Table 3.1 – Design Criteria (cont'd)

Design Element	Design Standard	Sources
<i>Cross Section</i>		
Lane Width*	11 ft – Urban Area	FDM, Part 2, Table 210.2.1
	12 ft – Rural Area	
Bicycle Lane Width*	Max 7 ft (buffered)	FDM, Part 2, Sections 223.2.1.1, 223.2.1.3
	Min 4 ft	
	Max 7' Keyhole	
	Min 5' Keyhole	
Outside Shoulder Width*	Existing 4 ft paved shoulder	FDM, Part 2, Section 210.4 & Table 210.4.1
Cross Slopes*	0.02 – Lanes	FDM, Part 2, Section 210.2.4.1 and Table 210.2.3
Maximum Lane “Roll-Over”	4%	FDM, Part 2, Figure 210.2.1
Sidewalk Width*	6 ft	FDM, Part 2, Table 222.1.1
Sidewalk Cross Slope	2% Max	FDM, Part 2, Section 222.2.1.3
Sidewalk Grades	5% Max	FDM, Part 2, Section 222.2.1.3
Curb & Gutter	Type E – Inside Type F – Outside	Standard Plans, Index 520-001, FDM, Part 2, Section 210.5, & FDM, Part 3, Chapter 306
Minimum Lateral Offset	4 ft	FDM, Part 2, Section 215.2.4, Table 215.2.2
Border Width*	Travel Lanes - 8 ft	FDM, Part 2, Table 210.7.1 & Section 210.7
	Bike Lanes - 8 ft	

*RRR criteria to be used where applicable

Figure 3.1 – Proposed Typical Section



There are marked crosswalks at S.R. 513 and S.R. A1A and an unmarked crosswalk at the Walmart Plaza entrance. Pedestrian crossings will be maintained and/or enhanced at all intersections. Details regarding pedestrian crossings at intersections are provided in **Section 3.2.2** below.

Approximately one mile separates S.R. 513 and S.R. A1A. Between those two intersections there are no marked pedestrian crossings of S.R. 518. Because of this, the study team investigated potential locations for mid-block crossings. Choosing locations of mid-block crossings can be challenging on an undivided roadway because the raised median required on uncontrolled approaches with volumes greater than 12,000 ADT can interfere with existing access to adjacent properties. The study team identified two locations where mid-block pedestrian crossings may be feasible. The first is approximately 800 feet east of Burns Boulevard at Blue Bird Boulevard (approximately Sta. 46+70). This location is approximately midway between S.R. 513 and S.R. A1A, reducing by half the distance between marked crossings. The second location recommended for a mid-block pedestrian crossing is at approximately Sta. 55+30 in front of the Brittany Apartment Homes that would serve an existing transit stop.

Both mid-block pedestrian crossings should be supplemented with rectangular rapid flashing beacons (RRFB) to enhance visibility of crossing pedestrians and provide additional emphasis for motorists. In addition to the standard beacons placed below the ground mounted "Pedestrian Crossing" warning signs, overhead RRFBs should also be installed for additional visibility, since S.R. 513 is a multilane undivided facility. At the Public Information Meeting (see Section 4.5), the City of Melbourne requested that during final design FDOT reanalyze the feasibility of providing pedestrian hybrid beacons (PHBs) instead of RRFBs at the mid-block crossings to increase driver awareness.

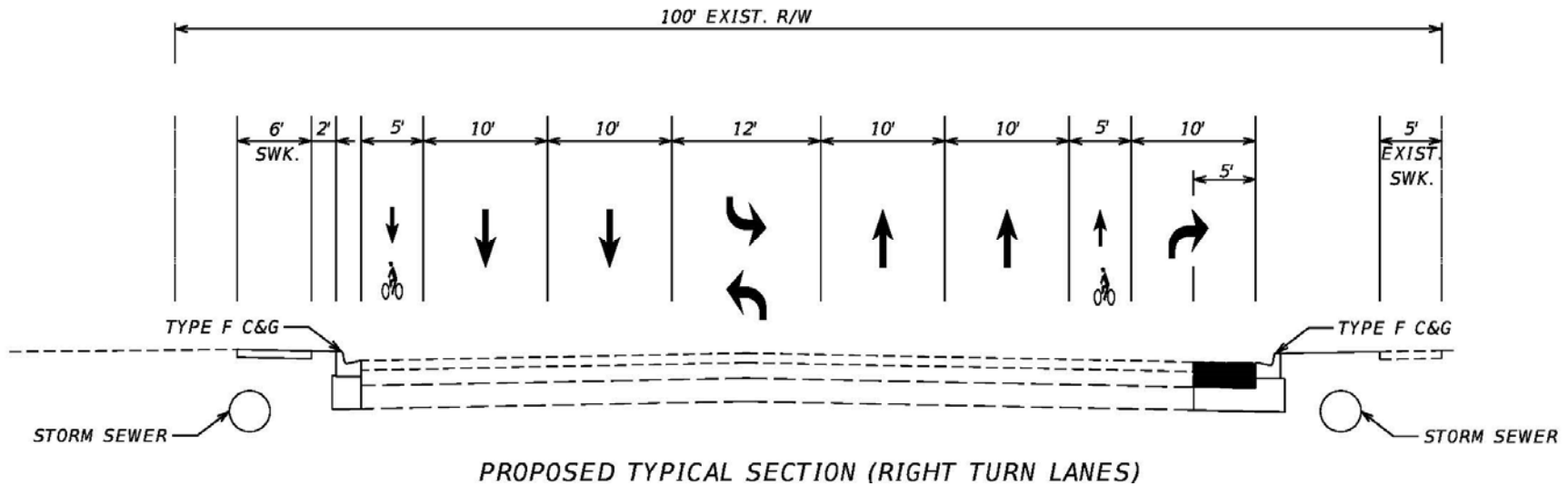
Bicycles

The existing 5-foot shoulders on either side of S.R. 513 operate as undesignated bike lanes. However, there are no keyhole lanes provided adjacent to the right turn lanes within the project limits. Where there are right turn lanes, the roadway must be widened five feet to provide keyhole lanes for bicyclists. Widening to provide keyhole lanes will impact the existing drainage and require the construction of a closed drainage system where swale conveyance is no longer possible. Details of the proposed drainage concept are discussed in **Section 3.3** of this report. **Figure 3.2** illustrates the proposed typical section at locations with right turn lanes. Locations of keyhole lanes are shown in the Concept Development Plans in **Appendix A**.

Transit

Five-foot by eight-foot boarding and alighting pads will be provided at all existing transit stops adjacent to S.R. 513. The proposed improvements include providing access to the pads from the sidewalk. In some instances the transit stop is proposed to be moved a minimal distance. These modifications were discussed with representatives of Space Coast Area Transit (SCAT), who concurred with the team's recommendations at the second PVT meeting. During the final design phase of the project, FDOT should coordinate with SCAT so construction of bus shelters and other amenities by others are not precluded from future construction. Proposed transit stops, boarding and alighting pads, and access to adjacent sidewalks are shown in the Concept Development Plans in **Appendix A**.

Figure 3.2 – Proposed Typical Section (Right Turn Lane)



3.2.2 Intersections

The Corridor Planning Study recommended modifications to the S.R. 513 and S.R. A1A intersections with S.R. 518. In addition, slight modifications are proposed to the signalized intersection at the Walmart Plaza entrance at approximately Sta. 66+00. Details of the proposed intersection modifications are provided below.

Per requests made during the previous Corridor Planning Study, the study team analyzed the feasibility of additional signals at Burns Boulevard and S.R. 518 and at the Publix entrance on S.R. 513. Existing turning volumes from Burns Boulevard do not warrant a signal on S.R. 518, and there is not a history of increased crashes at this location. While the existing turning volumes onto S.R. 513 at the entrance are higher than that at Burns Boulevard and S.R. 518, this intersection is less than 700 feet from the signalized intersection of S.R. 518 and S.R. 513. The project team discussed this issue with the FDOT Technical Team (see **Section 4.2**), and FDOT Traffic Operations indicated that the spacing between the two intersections is too short to allow for a second signalized intersection at the Publix entrance.

S.R. 513

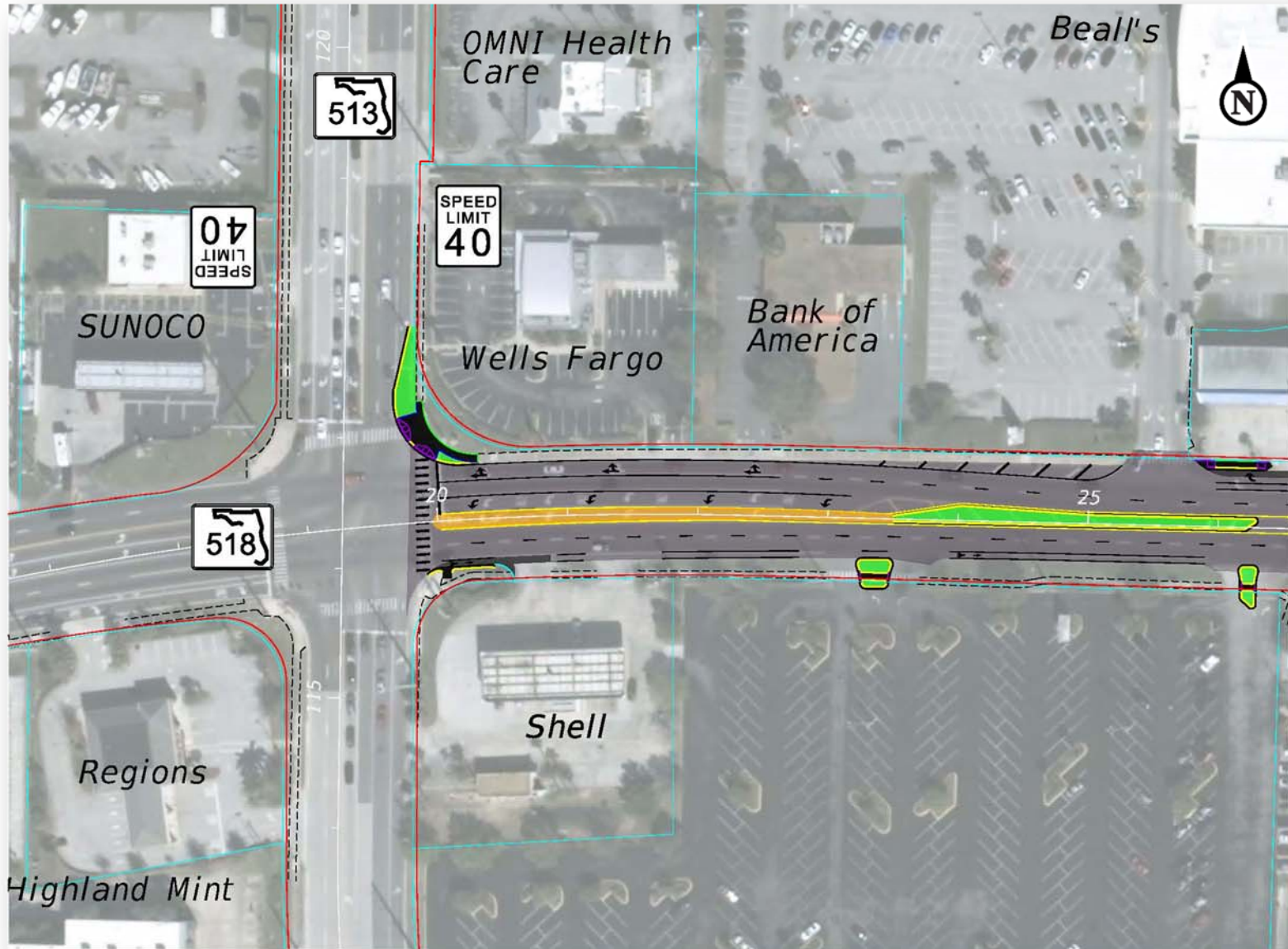
The traffic analysis performed for this Concept Development Study indicated that a dual left turn lane for westbound to southbound traffic is not necessary. The traffic analysis indicates that a westbound configuration of one left turn lane, one through lane and one through-right turn lane can accommodate existing traffic patterns. By extending the eastbound bike lane through the intersection, westbound passenger cars will be able to use the additional width to make a u-turn. A traffic separator and median is proposed from the intersection back to approximately Sta. 26+00, a distance of 600 feet.

The curb return in the northeast quadrant of the intersection is modified to direct westbound to northbound right-turning traffic to a through lane, rather than to a right turn lane as in the existing conditions. This “bulb-out” also shortens the distance a pedestrian needs to cross S.R. 513 north of S.R. 518. **Figure 3.3** illustrates the proposed improvements at the S.R. 513 intersection.

S.R. A1A

The intersection of S.R. 518 with S.R. A1A will be reconfigured to eliminate the two free-flow right turn lanes (eastbound to southbound and southbound to westbound) in order to provide a safer environment for pedestrians. The right turn lanes will be signalized, and eastbound right turning traffic will be directed into the southbound through lane rather than into the right-turn lane into the Walmart plaza as it is in the existing conditions. This eliminates the southbound weave condition created when southbound traffic wishing to enter the Walmart plaza interacts with free-flow right turning traffic. Pedestrians crossing S.R. A1A on the south side of S.R. 518 have a shortened path because of the elimination of the eastbound to southbound free-flow right turn lane. Additionally, the elimination of the southbound to westbound free-flow right turn lane affords the opportunity to provide a crosswalk across S.R. A1A north of S.R. 518 to Canova Beach Park, which does not exist today.

Figure 3.3 – S.R. 513 Intersection



The median along S.R. 518 is proposed to be extended west for 300 feet per the Corridor Planning Study to eliminate left turns that have the potential to interfere with queuing traffic approaching S.R. A1A. The median on the north leg of the intersection is modified to accommodate left turning traffic. **Figure 3.4** illustrates the proposed improvements at the S.R. 513 intersection.

Walmart Plaza Entrance

Major changes are not proposed for the intersection at the entrance to the Walmart Plaza. However, there are no pedestrian signals or painted crosswalks for any pedestrian movements as of August 2018. The proposed improvements will provide pedestrian signals and painted crosswalks across the Walmart Driveway and on the east side of the intersection. Traffic accessing S.R. 518 from San Juan Drive is restricted to right turns out and is not controlled by the signal.

3.2.3 Access Management

Changes to access are proposed in two areas of the project, as documented in the previous Corridor Planning Study. Just east of S.R. 513, a median is proposed to extend from the intersection west to approximately Sta. 26+30, at the entrance to the Causeway Shopping Center / Panera Bread (see **Figure 3.5**). In the existing conditions, left-turning traffic exiting the Publix Shopping Center wishing to travel eastbound on S.R. 518 conflicts with left-turning traffic exiting the Causeway Shopping Center wishing to travel westbound on S.R. 518. Additionally, queuing traffic at the intersection with S.R. 513 occasionally interferes with these movements. By restricting left turn movements from both shopping centers, potential conflicts are eliminated. **Figure 3.6** illustrates the alternative routes available once access at these two driveways are restricted. Traffic wishing to head east on S.R. 518 from Publix would either exit the shopping center to southbound S.R. 513 (yellow line) and turn left onto eastbound S.R. 518 or exit to westbound S.R. 518 and u-turn at S.R. 513 (red line). Westbound S.R. 518 traffic from the Causeway Shopping Center would turn right onto northbound Riverside Drive and turn left at S.R. 518 (green line). During the FDOT Management Meeting (see **Section 4.4**), an alternative was suggested to allow left turns out of the Causeway Shopping Center and install a physical barrier to restrict left turns out of the Publix shopping center. Preliminary discussions with FDOT Traffic Operations indicated that this may be an acceptable option, and should be further explored during the final design phase of the project.

The median along S.R. 518 at the S.R. A1A intersection is proposed to extend west to approximately Sta. 68+60 (see **Figure 3.7**). This would restrict access on the north side of S.R. 518 to a strip mall, gas station and restaurant. To travel east on S.R. 518 in the proposed conditions, traffic would u-turn at the signal to the Walmart shopping center. On the south side of S.R. 518, access from one driveway to the Walmart shopping center would be restricted. To travel west on S.R. 518 in the proposed conditions, traffic would use the driveway at Sta. 66+00. The added benefit to this is that the left turns would be at a signalized intersection, reducing the potential for crashes. **Figure 3.8** illustrates the alternative routes available once access at these driveways are restricted. The red line represents eastbound S.R. 518 traffic from parcels on the north side of the road and the green line represents westbound S.R. 518 traffic from parcels on the south side of the road.

Figure 3.4 – S.R. A1A Intersection

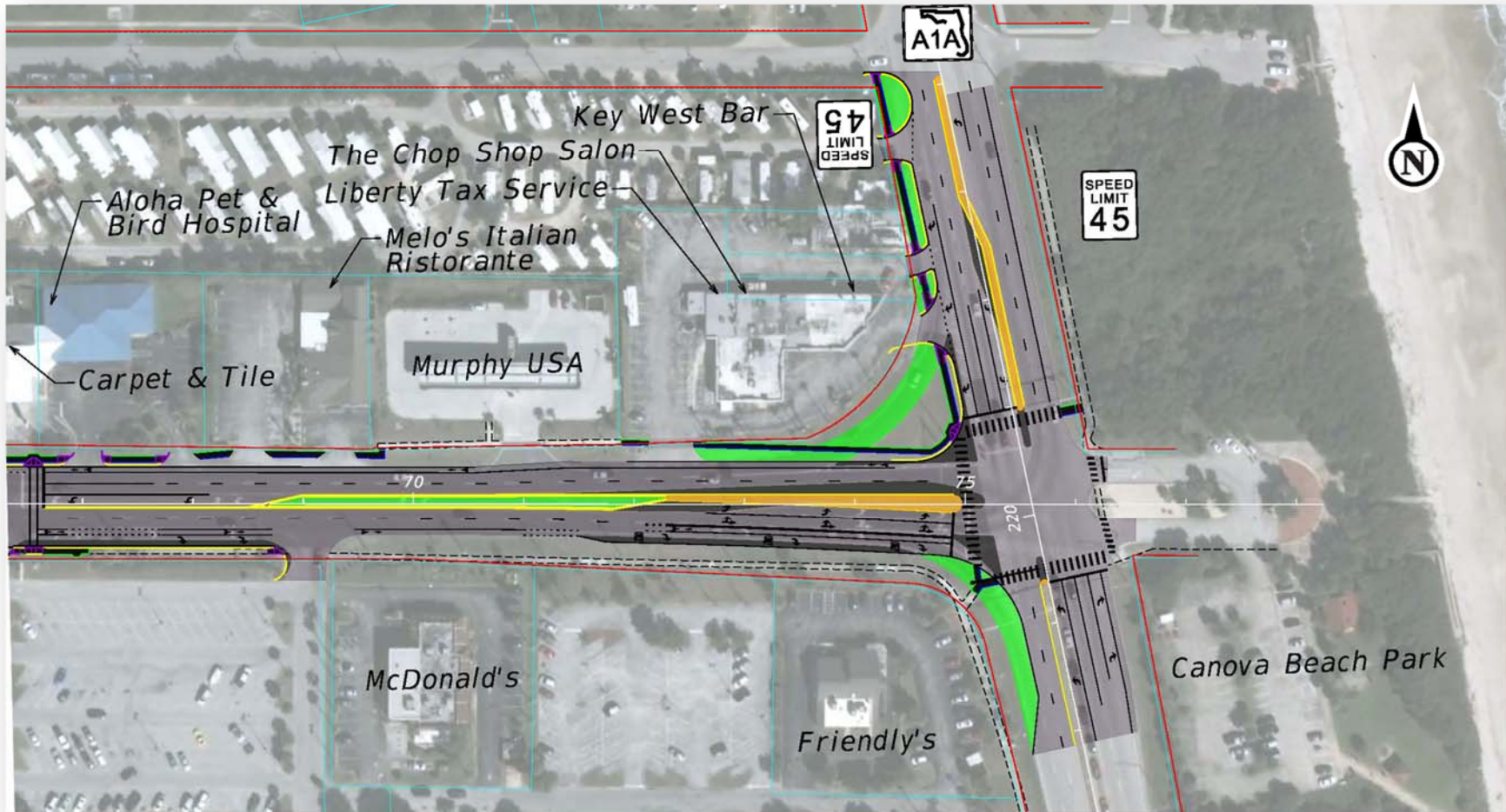


Figure 3.5 – Access Management S.R. 513



Figure 3.6 – Alternate Routes S.R. 513

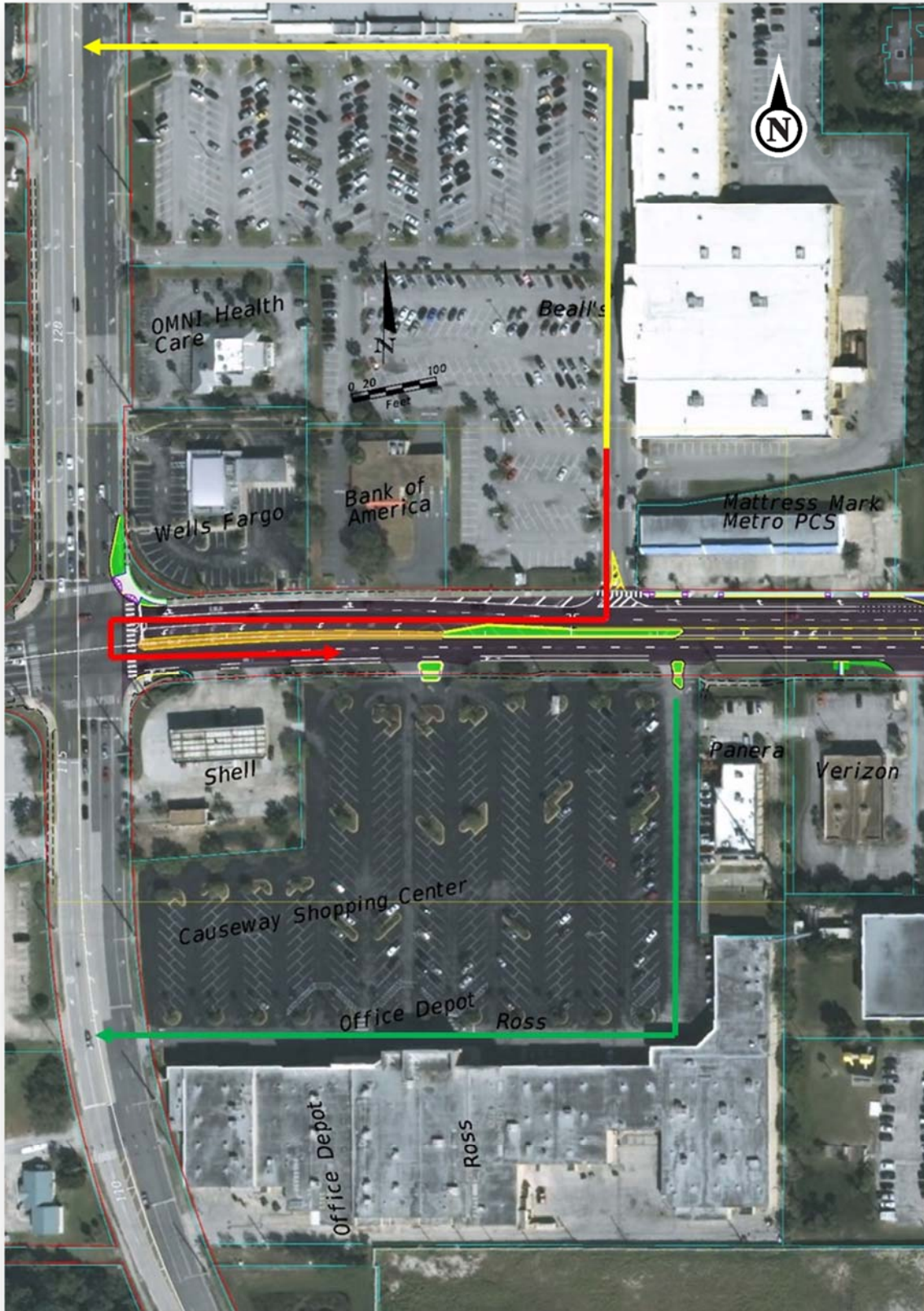


Figure 3.7 – Access Management S.R. A1A



Figure 3.8 – Alternate Routes S.R. A1A



3.2.4 Indian River Relief Bridge

The Corridor Planning Study identified installation of pedestrian facilities on the Indian River relief bridge adjacent to the westbound lanes as a Priority II group improvement. In the existing condition there is no sidewalk on the north side of S.R. 518 that provides access to this bridge, which is signed “NO FISHING FROM BRIDGE”. As part of the Concept Development Study, the project team performed a more detailed analysis of the feasibility of a sidewalk on the north side of the bridge, including discussions with FDOT design, traffic operations and Operations Management. East of the bridge, there is no sidewalk between the bridge and S.R. 513. To build a sidewalk connecting the bridge with the sidewalk at the intersection of S.R. 518 and S.R. 513, approximately seven to 10 feet of right of way would have to be acquired. Additionally, there are no pedestrian facilities on the north side of the causeway between the relief bridge and the main bridge, and there is no safe crossing of S.R 518 for pedestrians in this area. A sidewalk on the relief bridge would not connect to any pedestrian facilities to the east or west. For this reason, and the fact that there is an easily accessible, safe and protected pedestrian facility along the south side of the bridge and causeway, the project team determined that the addition of a sidewalk on the north side of the Indian River relief bridge is not feasible and should not be carried forward into design.

Figure 3.9 illustrates the issues related to pedestrian facilities on the Indian River relief bridge.

Figure 3.9 – Indian River Relief Bridge



3.3 Drainage

The proposed drainage concept does not alter existing drainage patterns for either Basin 1 or 2, and maintains its current outfalls to the existing pond and Atlantic Ocean, respectively. For Basin 1, the conceptual drainage design consists of a series of curb inlets and back of sidewalk inlets along the north side of S.R. 518 to collect and convey surface runoff into the existing pond. A new trunk line is proposed along the north side of S.R. 518 while maintaining the existing trunk line on the south side up to approximately 1,200 feet east of the intersection with S.R. 513. From this location, the existing 48-inch trunk line will need to be upsized 12 inches. The conceptual drainage design for Basin 2 consists of storm drain inlets connected to the existing system discharging to the Atlantic Ocean. Field visits did not indicate that the outfall to the Atlantic Ocean is functional; however, the system may have been modified since the original construction. The final design scope should include time to determine the condition of the existing stormsewer system. There will be special requirements related to outfall into impaired water bodies.

Due to the increase of impervious area associated with the proposed sidewalk and keyhole lanes, the conceptual design includes potentially expanding the existing pond by reducing the existing maintenance berm by five feet on the north, east and south sides. The required volume to provide additional capacity of the existing pond is based on providing additional storage volume from the difference between pre- and post-development runoff. Calculations of additional storage volume on the pond do not include additional volume for water quality treatment. By providing the additional storage volume peak stages within the existing pond, it should not to adversely affect S.R. 518 and adjacent properties. During final design this concept should be explored fully and additional geotechnical information will be required to determine the need and functionality of the existing underdrain system. Drainage calculations are included in **Appendix B**.

The project team contacted the St. Johns River Water Management District (SJRWMD) regarding permitting requirements. On August 21, 2018, SJRWMD responded that the proposed improvements may qualify for an exemption; however, additional coordination would be required during final design to finalize what, if any, permitting would be required. Correspondence with SJRWMD is included in **Appendix B**.

3.4 Utilities

As outlined in the *Existing Conditions Technical Memorandum* (May 2018), there are nine utility agency/owners (UAO) with facilities within the project limits. The potential exists for impacts to any utility that is located within the existing right of way because of the recommended drainage improvements. Coordination with the nine UAOs should be initiated at the inception of the final design phase.

S.R. 518 from U.S. 1 to S.R. A1A has been identified in Table 12 of the *Space Coast Transportation Planning Organization (TPO) Intelligent Transportation Systems (ITS) Master Plan* as having a short-term priority need for new fiber optic cable, which includes the limits of this study. Fiber deployment should be included in future phases of the project. Other ITS strategies to be analyzed in future phases include

deployment of closed circuit television at the S.R. 513 and S.R. A1A intersections and the conversion of these two intersections to Smart Signals. These improvements may require that signal mast arms be installed at the S.R. 513 intersection; however, this is not reflected in the project construction cost estimate.

3.5 Potential Environmental Impacts

Since the proposed improvements do not require any additional right of way, no environmental impacts are expected as a result of the project. A full contamination screening assessment was not conducted as part of the Concept Development Study; however, there are potential contamination sites adjacent to the corridor and a contamination screening is recommended if any right of way acquisition is proposed as part of the final design efforts. Canova Beach Park is protected under Section 4(f) of the United States Department of Transportation Act of 1966.

3.6 Cost Estimates

Design and construction cost estimates prepared as part of the Concept Development Study are detailed below.

3.6.1 Design Cost Estimate

A staffhour estimate was prepared for the final design and is included in the project files and **Appendix C**. The design cost estimate assumes a \$50.00 average hourly raw rate, 150% overhead, 25% operating margin and 15% expenses. The design estimate, including survey and a 10% contingency is approximately \$505,000.

3.6.2 Construction Cost Estimate

In August 2018 a construction cost estimate was prepared in FDOT's Long Range Estimating (LRE) system. **Table 3.2** lists the construction cost estimates for the S.R. 518 improvements.

Table 3.2 – Construction Cost Estimates

Item	Cost
Construction	\$4,214,000
Maintenance of Traffic	\$421,000
Subtotal	\$4,635,000
Mobilization	\$464,000
Subtotal	\$5,099,000
Contingencies	\$566,000
Total	\$5,665,000

While this estimate includes contingencies, the amount is limited in the LRE system. The project team recommends adding an additional 15% contingencies to the estimated construction cost, for a total of \$6,515,000. The LRE is included in **Appendix C**.



3.7 Technical Scope Guidelines

The Technical Scope Guidelines are included in **Appendix D**.

Section 4.0 Public Involvement and Agency Coordination

Public involvement efforts that began under the previous Corridor Planning Study continued as part of this Concept Development Study. The original Public Involvement Plan was revised to update elected and appointed officials and PVT members, and the property owner mailing list was updated prior to the Public Information Meeting. Details regarding public involvement are provided below.

4.1 Project Visioning Team

The previous Corridor Planning Study included three PVT meetings to aid in developing concepts to be further analyzed during this Concept Development Study. This Concept Development Study included two additional PVT meetings, on November 1, 2017 and on March 20, 2018. Members involved with the PVT from the Planning Phase were invited to participate to discuss refinements made as part of the Concept Development Study. Major issues discussed included:

PVT 1

- Pedestrian activity and accommodations
- Potential new traffic signal
- Speed limit adjustment
- Access management
- Public involvement
- Long term corridor goals

PVT 2

- Pedestrian crossings
- Pedestrian accommodations on the Indian River relief bridge
- Drainage
- Access management
- Transit accommodations and access
- Short and long term corridor goals

Discussions with the PVT helped the project team refine the alternatives developed during the previous planning phase and also enabled the project team to discuss constraints placed upon the conceptual design by the most current FDOT design standards and criteria. Summaries of both PVT meetings and sign in sheets are included in **Appendix E**.

4.2 FDOT Team Meetings

The project team met with FDOT technical staff twice during the Concept Development Study, on January 24, 2018 and again on April 10, 2018. On January 24, 2018, the project team met with representatives from FDOT PLEMO, Design and Traffic Operations to discuss the preliminary concepts. Major issues discussed included:

- Access management
- Pedestrian accommodations
 - Sidewalk gaps
 - Mid-block crossings
 - West of S.R. 513
- Intersection configuration
- Drainage
- Typical Section

On April 10, 2018, the project team met with representatives from FDOT PLEMO, Design, Traffic Operations and Drainage to discuss the revised concepts. Major issues discussed included:

- Indian River relief bridge and causeway
- Drainage
- Pedestrian facilities

Decisions made at these meetings were implemented into the Concept Development Plans, which were subsequently presented to the Space Coast TPO and the public. Summaries of both meetings are included in **Appendix E**.

4.3 Space Coast TPO

The project team presented the project to the Space Coast TPO Technical Advisory Committee (TAC) and Citizens Advisory Committee (CAC) on July 9, 2018 and to the Space Coast TPO Governing Board on July 12, 2018. The TPO had no major issues with the concept and the project team did not revise the concepts based on any input received. Meeting minutes of the Space Coast TPO TAC/CAC and Governing Board meetings are included in **Appendix E**.

4.4 FDOT Management Meeting

The project team presented the project to FDOT Management on July 26, 2018. After a short presentation, the team took questions and comments from FDOT Management. Major issues discussed included:

- Cost estimates
- Access Management
- Drainage
- Indian River relief bridge and causeway
- Intersection configuration

Based on input received at the FDOT Management Meeting, the project team revised the cost estimates to address potential lighting, signalization, and drainage concerns. Meeting minutes of the FDOT management meeting are included in **Appendix E**.

4.5 Public Information Meeting

The project team held a Public Information Meeting on August 30, 2018 in the Council Chambers of the Indian Harbour Beach City Hall. Notices were sent out to all elected and appointed officials with jurisdiction over the project area, all property owners whose property lies, in whole or in part, within 300 feet of the existing right of way, and to all business owners adjacent to the corridor. The meeting was also advertised in the Florida Today and the City of Indian Harbour Beach published a notice in their bimonthly newsletter.

Approximately 37 people attended the meeting, which included a short presentation. The project team received written comments from eight attendees. A summary of the comments is provided below:

- Improved pedestrian connectivity at San Juan Drive
- Keyhole lanes on S.R. 513
- Intersection improvements at San Juan Drive compatible with proposed development
- Pedestrian Hybrid Beacon (PHB) vs. RRFB for mid-block crossings
- Allow left turns from Sunoco to northbound S.R. 513
- Landscaping impedes sight distance at Belaire Drive
- Local funding for bus shelters
- Concern about u-turns at S.R. 513
- Remove causeway to restore lagoon flow
- Lower speed limit
- Consider valley gutter across driveways
- Drainage treatment at Burns Boulevard

The meeting presentation, sign in sheets and comments are provided in **Appendix E**.

Section 5.0 Next Steps

As of September 2018 the improvements to S.R. 518 as outlined in this report are not funded for future phases. However, in preparation for design funding, FDOT can proceed with the technical scoping of the project. The Technical Scope Guidelines, included in **Appendix D**, along with the information contained in this technical memorandum and the Concept Development Plans, included in **Appendix A**, should be used to develop the design scope. When funding becomes available, the design scope should be revisited to address any additional issues that may have arisen since the publication of this Technical Memorandum.

Appendix A

Concept Development Plans

STATE OF FLORIDA
 DEPARTMENT OF TRANSPORTATION
 CONCEPT DEVELOPMENT PLANS

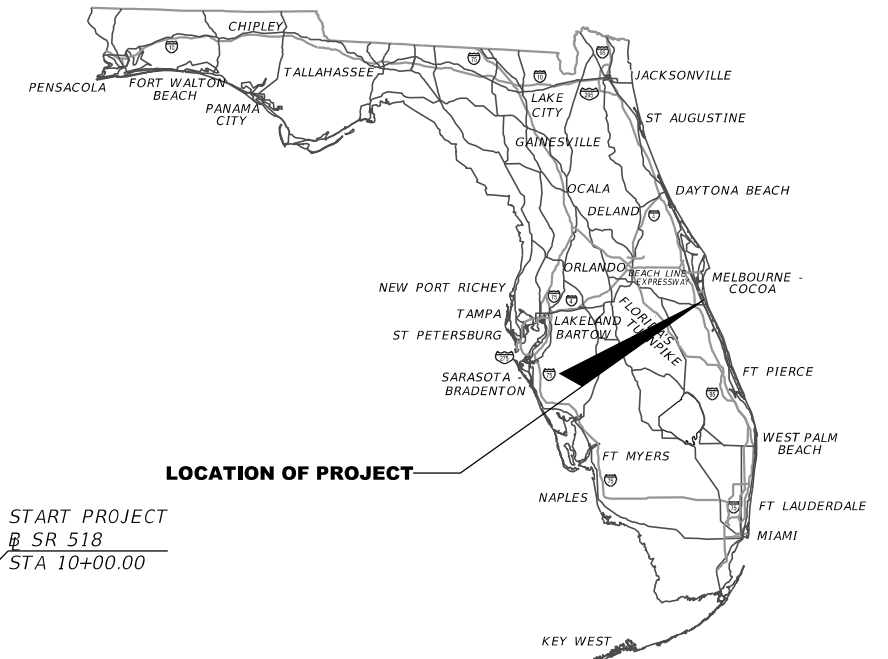
FINANCIAL PROJECT ID 435632-1-12-01

BREVARD COUNTY (70120)

STATE ROAD NO. 518

INDEX OF ROADWAY PLANS

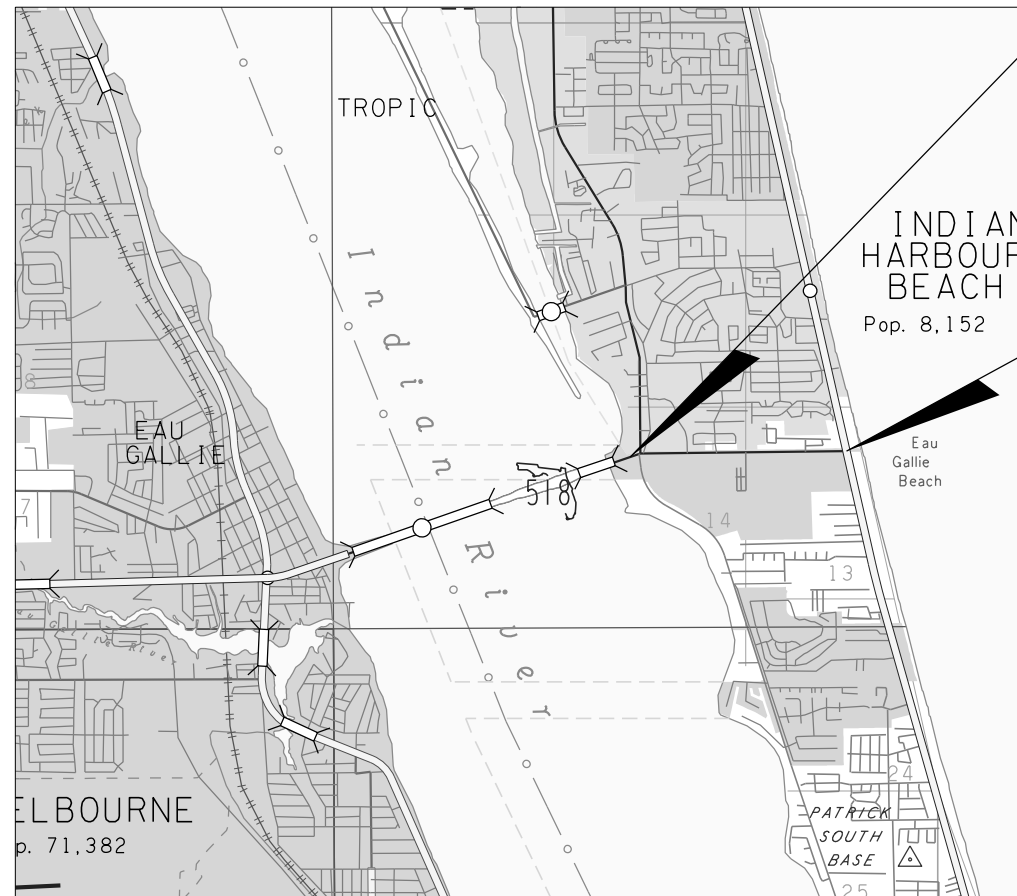
SHEET NO.	SHEET DESCRIPTION
1	KEY SHEET
2	EXISTING TYPICAL SECTIONS
3	PROPOSED TYPICAL SECTIONS
4-8	PRELIMINARY PLANS



LOCATION OF PROJECT

START PROJECT
 @ SR 518
 STA 10+00.00

END PROJECT
 @ SR 518
 STA 78+24.17



ROADWAY PLANS
 ENGINEER OF RECORD:

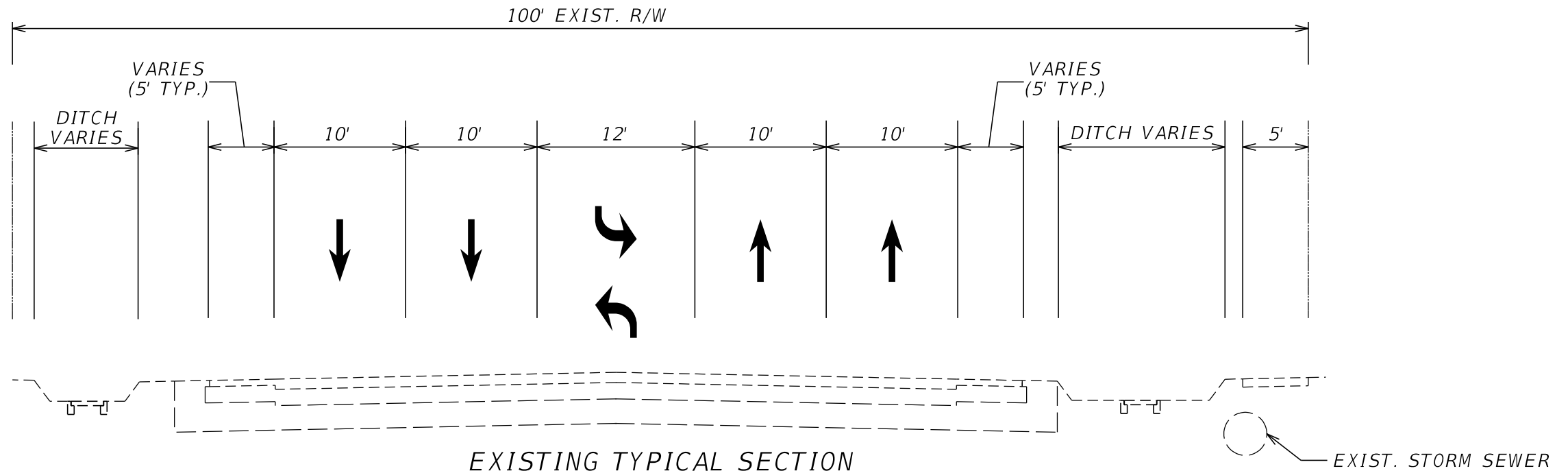
AECOM Technical Services, Inc.
 150 North Orange Avenue, Suite 200
 Orlando, FL 32801
 T 407.843.6552 F 407.839.1789
 Certificate of Authorization No. 8115

FDOT PROJECT MANAGER:

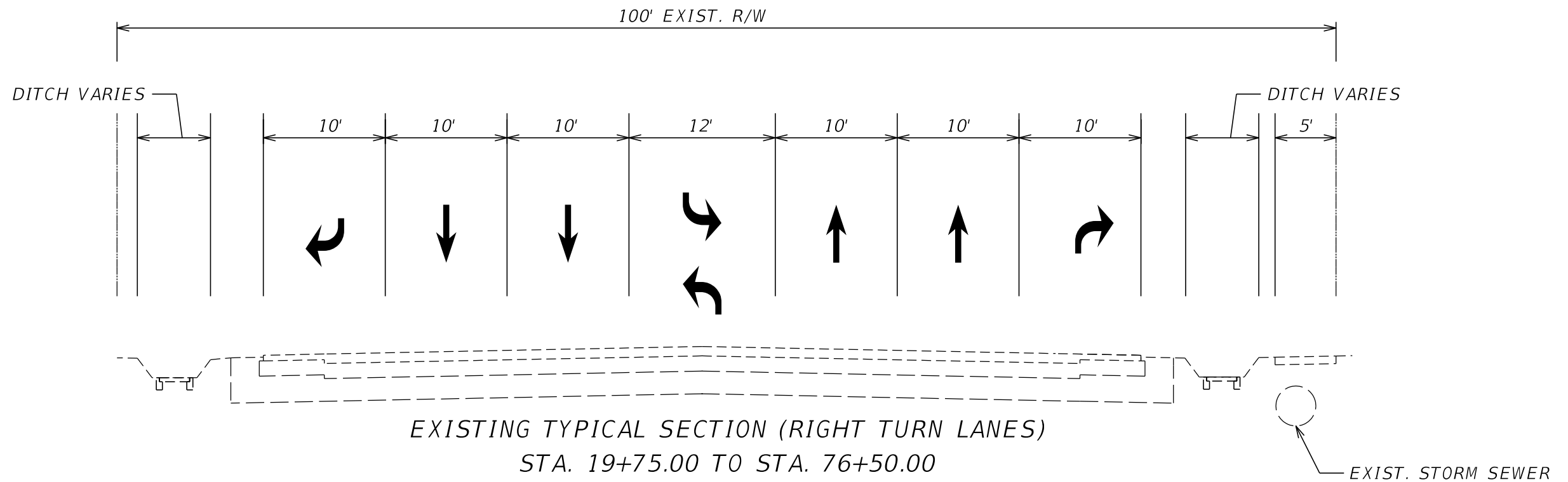
Judy Pizzo

CONSTRUCTION CONTRACT NO.	FISCAL YEAR	SHEET NO.
		1

PRELIMINARY: NOT FOR CONSTRUCTION

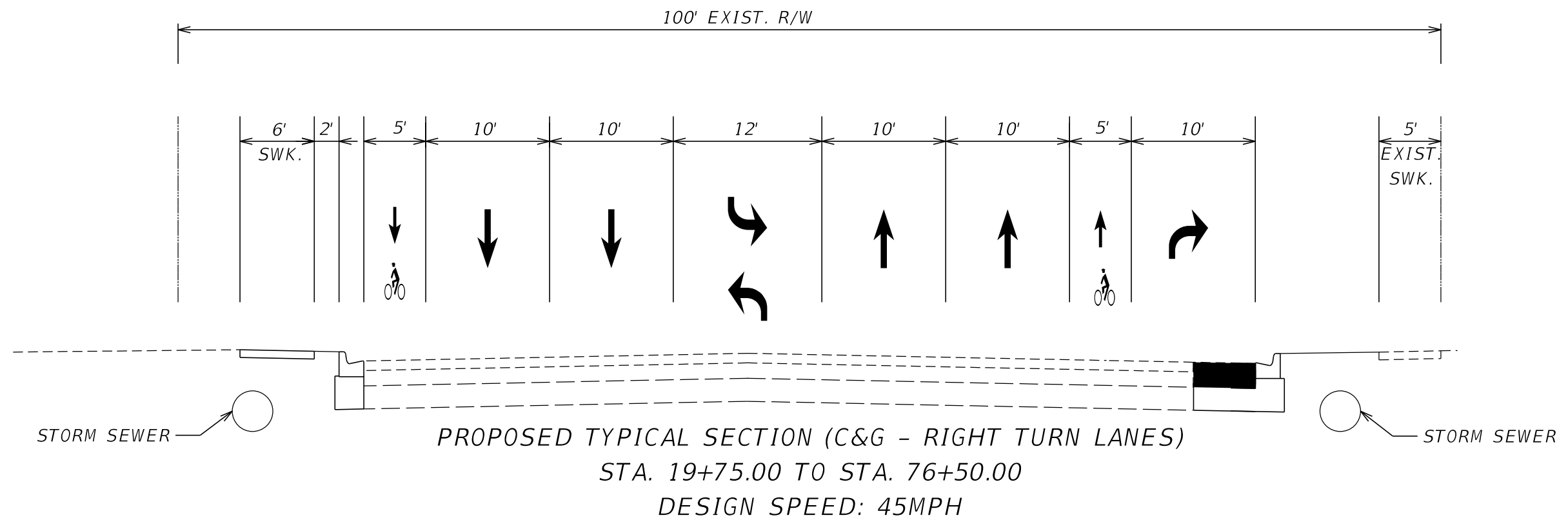
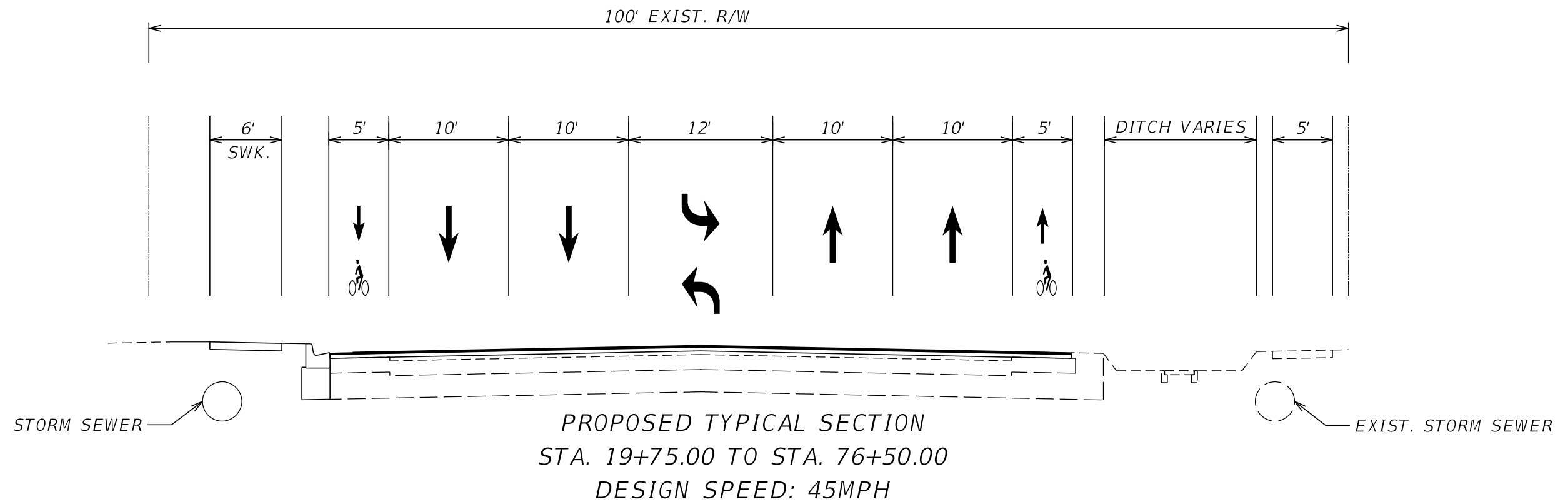


EXISTING TYPICAL SECTION
 STA. 19+75.00 TO STA. 76+50.00
 DESIGN SPEED: 45MPH

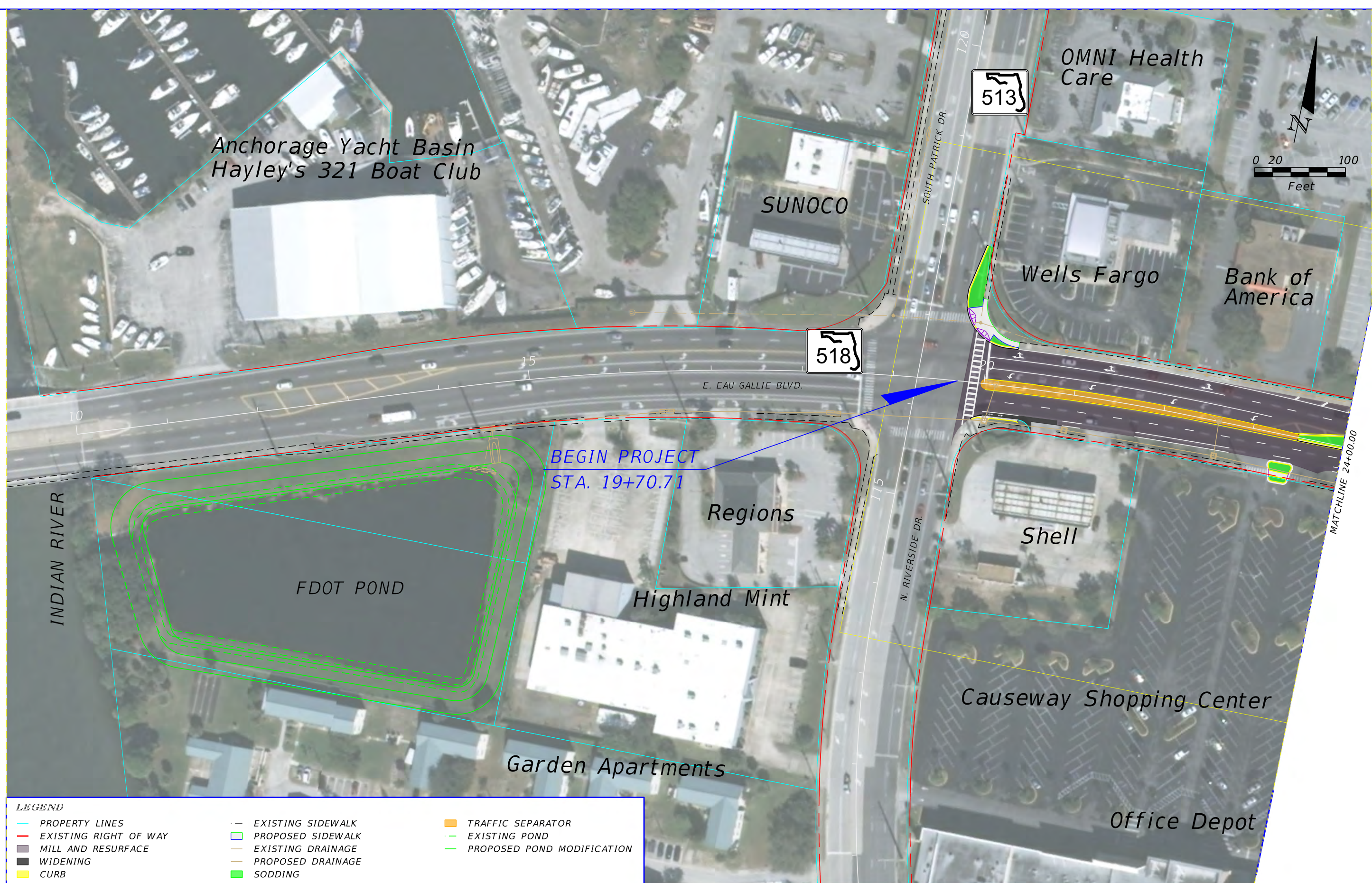


EXISTING TYPICAL SECTION (RIGHT TURN LANES)
 STA. 19+75.00 TO STA. 76+50.00
 DESIGN SPEED: 45MPH

REVISIONS					STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			TYPICAL SECTION	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					518	BREVARD	435632-1-12-01		2



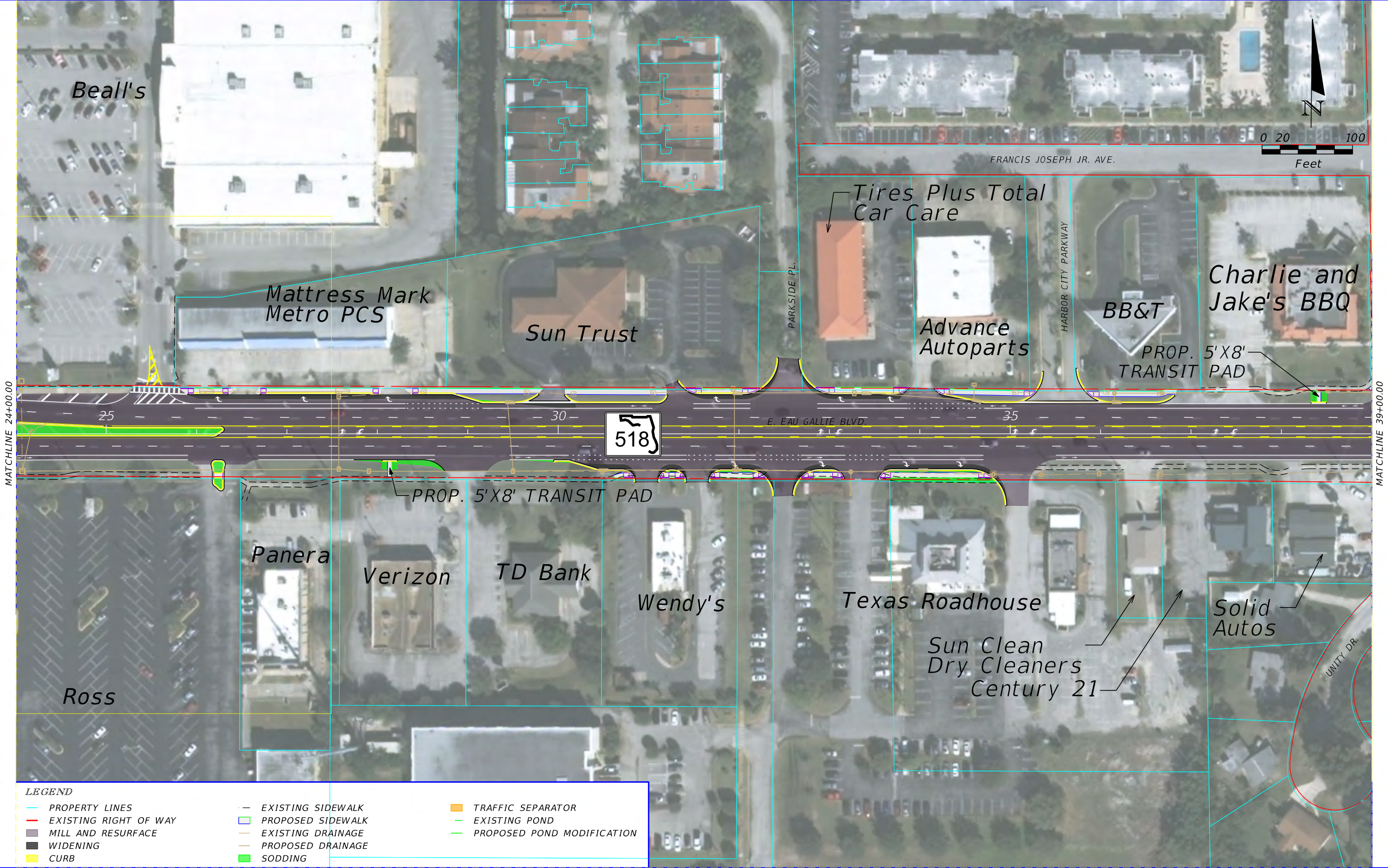
REVISIONS					STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			TYPICAL SECTION	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		3
					518	BREVARD	435632-1-12-01		



LEGEND

PROPERTY LINES	EXISTING SIDEWALK	TRAFFIC SEPARATOR
EXISTING RIGHT OF WAY	PROPOSED SIDEWALK	EXISTING POND
MILL AND RESURFACE	EXISTING DRAINAGE	PROPOSED POND MODIFICATION
WIDENING	PROPOSED DRAINAGE	SODDING
CURB		

REVISIONS		REVISIONS		STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION	ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
				518	BREVARD	435632-1-12-01	4



LEGEND

PROPERTY LINES	EXISTING SIDEWALK	TRAFFIC SEPARATOR
EXISTING RIGHT OF WAY	PROPOSED SIDEWALK	EXISTING POND
MILL AND RESURFACE	EXISTING DRAINAGE	PROPOSED POND MODIFICATION
WIDENING	PROPOSED DRAINAGE	SODDING
CURB		

REVISIONS		REVISIONS		STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION	ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
				518	BREVARD	435632-1-12-01	5



LEGEND

PROPERTY LINES	EXISTING SIDEWALK	TRAFFIC SEPARATOR
EXISTING RIGHT OF WAY	PROPOSED SIDEWALK	EXISTING POND
MILL AND RESURFACE	EXISTING DRAINAGE	PROPOSED POND MODIFICATION
WIDENING	PROPOSED DRAINAGE	SODDING
CURB		

REVISIONS	
DATE	DESCRIPTION

--

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
518	BREVARD	435632-1-12-01

--

SHEET NO.
6



MATCHLINE 54+00.00

MATCHLINE 69+00.00

LEGEND

— PROPERTY LINES	— EXISTING SIDEWALK	— TRAFFIC SEPARATOR
— EXISTING RIGHT OF WAY	— PROPOSED SIDEWALK	— EXISTING POND
— MILL AND RESURFACE	— EXISTING DRAINAGE	— PROPOSED POND MODIFICATION
— WIDENING	— PROPOSED DRAINAGE	
— CURB	— SODDING	

REVISIONS		REVISIONS		STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION	ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
				518	BREVARD	435632-1-12-01	7



LEGEND



PROPERTY LINES	EXISTING SIDEWALK	TRAFFIC SEPARATOR
EXISTING RIGHT OF WAY	PROPOSED SIDEWALK	EXISTING POND
MILL AND RESURFACE	EXISTING DRAINAGE	PROPOSED POND MODIFICATION
WIDENING	PROPOSED DRAINAGE	SODDING
CURB		

REVISIONS		REVISIONS		STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION	ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
				518	BREVARD	435632-1-12-01	8

Appendix B

Drainage Calculations

SJRWMD Correspondence

SR 518 CDS					
PROJECT TITLE:	SR 518				
PROJECT NUMBER:	-				
BASIN DESIGNATION:	EX_BSNSR518				DATE
POND/NODE DESIGNATION:	EX_PNDSR518	MADE BY:	JNP	04/02/2018	
BASIN ANALYSIS (PRE/POST):	PRE	CHECKED BY:			


SFWMD SANTA BARBARA WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Existing Pond NWL (Estimated)	N/A	N/A	100	1.45	145.00
			TOTALS	1.45	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Existing Roadway (Untreated)	N/A	N/A	98		0.00
Existing Roadway (Treated)	N/A	N/A	98	26.66	2612.68
			TOTALS	26.66	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Existing Roadway (Untreated)	N/A	N/A	98	0.00	0.00
Existing Roadway (Treated)	N/A	N/A	98	0.00	0.00
			TOTALS	0.00	
PERVIOUS AREAS					
Open Space - Fair Condition	Canaveral-Palm Beach-Urban, Palm Beach Sand, Welaka Sand, Pomelo Urban Land	A/D	40	21.51	860.40
			TOTALS	21.51	

ICPR DATA					
* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	28.11	TOTAL BASIN AREA	49.62	COMPOSITE CN	40.00
PERCENT DCIA	56.65%				

ESTIMATE OF RUNOFF VOLUME					
PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:					
1) DETERMINE SOIL STORAGE - S	----->	$S = (1000 / CN) - 10$			(inches)
2) DETERMINE RUNOFF - R	----->	$R = (P - 0.2 * S)^2 / (P + 0.8 * S)$			(inches)
		P = rainfall in inches			
3) DETERMINE RUNOFF VOLUME - V(R)	----->	$V(R) = (R / 12) * \text{BASIN AREA}$			(acres-feet)
CALCULATION TABLE					
			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN	72.92	
Agency	Design Storm Frequency	P (in)	S (in)	R (in)	V(R) (ac-ft)
FDOT	10yr/24hr				
SJRWMD	Mean-Annual/24hr				
SJRWMD	10yr/24hr	8.00	3.71	4.80	19.85
SJRWMD	25yr/24hr				

Drainage calculations are based on limited information to establish a concept of the stormwater management for this project.

SR 518 CDS				
PROJECT TITLE:	SR 518			AECOM
PROJECT NUMBER:	-			DATE
BASIN DESIGNATION:	EX_BSNSR518		MADE BY:	JNP
POND/NODE DESIGNATION:	EX_PNDSR518		CHECKED BY:	04/02/2018

Water Quality

Total Basin Area =	49.62	ac
Pond Area at NWL =	1.45	ac
Exist. Paved Area (Treated) =	26.66	ac
Prop. Paved Area (Untreated) =	0.00	

Old Criteria

A.	1.0	" Over Total Basin Area =	4.14	Ac-Ft
		Required PAV =	4.14	Ac-Ft

New Criteria



A.	1.0	" Over Total Basin Area =	4.14	Ac-Ft
B.	1.25	" Times Treated Paved Area =	2.78	Ac-Ft
C.	0.50	" Over the drainage area over the greater volume =	2.07	Ac-Ft
		Required PAV =	6.20	Ac-Ft

EX_PNDSR518 Stage Storage Calculations

ELEV. (ft)	AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)
4.00	Inside Berm	1.82			6.03
			1.77	1.00	1.77
3.00		1.72			4.26
			1.68	0.60	1.01
2.40	(ATT) 10 / 24	1.65			3.25
			1.63	0.40	0.65
2.00	(PAV)	1.61			2.60
			1.56	1.00	1.56
1.00		1.52			1.04
			1.48	0.70	1.04
0.30	(NWL)	1.45			0.00

Provided PAV = 2.60 ac-ft.

Drainage calculations are based on limited information to establish a concept of the stormwater management for this project.

SR 518 CDS					
PROJECT TITLE:	SR 518				
PROJECT NUMBER:	-				
BASIN DESIGNATION:	BSNSR518				DATE
POND/NODE DESIGNATION:	EX_PNDSR518	MADE BY:	JNP	04/02/2018	
BASIN ANALYSIS (PRE/POST):	POST	CHECKED BY:			



SFWMD SANTA BARBARA WORKSHEET

LAND-USE DESCRIPTION	SOIL NAME	SOIL GROUP	CN	AREA (ac)	PRODUCT
WATER SURFACE					
Existing Pond NWL (Estimated)	N/A	N/A	100	1.69	169.00
			TOTALS	1.69	
DIRECTLY CONNECTED IMPERVIOUS AREA (DCIA)					
Additional Prop. Roadway (Treated)	N/A	N/A	98	1.24	121.52
Exist. Roadway (Treated)	N/A	N/A	98	26.66	2612.68
			TOTALS	27.90	
NON-DIRECTLY CONNECTED IMPERVIOUS AREA (NDCIA)					
Roadway (Untreated)	N/A	N/A	98	0.00	0.00
Roadway (Treated)	N/A	N/A	98	0.00	0.00
			TOTALS	0.00	
PERVIOUS AREAS					
Open Space - Fair Condition	Canaveral-Palm Beach-Urban, Palm Beach Sand, Welaka Sand, Pomelo Urban Land	A	40	20.03	801.20
			TOTALS	20.03	

ICPR DATA					
* BASED ON TOTAL DRAINAGE AREA		* BASED ON TOTAL DRAINAGE AREA		* BASED ON NDCIA AND PERVIOUS AREAS	
TOTAL DCIA	29.59	TOTAL BASIN AREA	49.62	COMPOSITE CN	40.00
PERCENT DCIA	59.63%				

ESTIMATE OF RUNOFF VOLUME					
PROCEDURE TO DETERMINE RUNOFF VOLUME IS BASED ON THE SCS EQUATION AND IS AS FOLLOWS:					
1) DETERMINE SOIL STORAGE - S	----->	$S = (1000 / CN) - 10$			(inches)
2) DETERMINE RUNOFF - R	----->	$R = (P - 0.2 * S)^2 / (P + 0.8 * S)$			(inches)
		P = rainfall in inches			
3) DETERMINE RUNOFF VOLUME - V(R)	----->	$V(R) = (R / 12) * \text{BASIN AREA}$			(acres-feet)
CALCULATION TABLE					
			BASED ON TOTAL DRAINAGE AREA		
			COMPOSITE CN	74.66	
Agency	Design Storm Frequency	P (in)	S (in)	R (in)	V(R) (ac-ft)
FDOT	10yr/24hr				
SJRWMD	Mean-Annual/24hr				
SJRWMD	10yr/24hr	8.00	3.39	5.00	20.68
SJRWMD	25yr/24hr				

Drainage calculations are based on limited information to establish a concept of the stormwater management for this project.

SR 518 CDS				
PROJECT TITLE:	SR 518			
PROJECT NUMBER:	-			
BASIN DESIGNATION:	BSNSR518		MADE BY:	JNP
POND/NODE DESIGNATION:	EX_PNDSR518		CHECKED BY:	
				
			DATE	
			04/02/2018	

Water Quality

Total Basin Area =	49.62	ac
Pond Area at NWL =	1.69	ac
Paved Area (Treated) =	27.90	ac
Paved Area (Untreated) =	0.00	

Old Criteria

A.	1.0	" Over Total Basin Area =	4.14	Ac-Ft
		Required PAV =	4.14	Ac-Ft

New Criteria

A.	1.0	" Over Total Basin Area =	4.14	Ac-Ft
B.	1.25	" Times Treated Paved Area =	2.91	Ac-Ft
C.	0.50	" Over the drainage area over the greater volume =	2.07	Ac-Ft
		Required PAV =	6.20	Ac-Ft

EX_PNDSR518 Stage Storage Calculations

ELEV. (ft)	AREA (ac)	AVG AREA (ac)	Delta D (ft)	Delta storage (ac-ft)	Sum Storage (ac-ft)
4.00	Inside Berm	2.09			6.99
			2.04	1.00	2.04
3.00		1.98			4.95
			1.96	0.40	0.78
2.60	(ATT) 10 / 24	1.94			4.17
			1.90	0.60	1.14
2.00	(PAV)	1.87			3.03
			1.82	1.00	1.82
1.00		1.76			1.21
			1.73	0.70	1.21
0.30	(NWL)	1.69			0.00

Provided PAV = 3.03 ac-ft.

Drainage calculations are based on limited information to establish a concept of the stormwater management for this project.

From: [Pereira, Jose N.](#)
To: [Rizzolo, Chris](#)
Cc: [Chandler, John](#)
Subject: FW: SR 518 PDEX-009-154567-1
Date: Tuesday, August 21, 2018 3:57:27 PM
Attachments: [image001.png](#)
[image002.png](#)
[image005.png](#)

Chris,

Below is the email SJRWMD sent me in regards to the permitting requirements for SR 518.

Let me know if you have any questions.

Jose N. Pereira, P.E.

Senior Drainage Engineer, Surface Transportation, Greater Florida
D +1-407-992-4494

jose.pereira1@aecom.com

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aecom.com

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From: Leslie Church [mailto:LChurch@sjrwmd.com]
Sent: Tuesday, August 21, 2018 3:46 PM
To: Pereira, Jose N.
Cc: Nanette Church
Subject: SR 518 PDEX-009-154567-1

Mr. Pereira,

The District received your e-mail regarding permitting requirements for proposed improvements along a section of SR 518. Some of the proposed work may qualify for an exemption under 62-330.051, Florida Administrative Code (F.A.C.). Section 62-330.051(4), F.A.C. allows for some exempt activities associated with bridges, driveways, and roadways such as construction of sidewalks having a width of six feet or less, turn lanes less than 0.25 mile in length, and certain minor roadway safety construction, alteration, or maintenance and operation. Please refer to Section 62-330.051, F.A.C. for

details of authorized exemptions and to ensure the proposed work will qualify for an exemption.

Typically, regrading of the banks of an existing wet detention pond to original condition is considered maintenance. A permit may be required if the work is more extensive. Additional details of the proposed drainage improvements must be provided in order to identify the permitting requirements for the improvements. Please feel free to call me if you have any questions or would like to discuss.

Leslie Church, P.E.
Division of Regulatory Services
St. Johns River Water Management District
Palm Bay Service Center
525 Community College Parkway, S.E. • Palm Bay, FL 32909
Office: (321) 676-6621
Email: lchurch@sjrwmd.com
Website: sjrwmd.com
Connect with us: [Newsletter](#), [Facebook](#), [Twitter](#), [YouTube](#)



floridaswater.com/epermitting

We value your opinion. Please take a few minutes to share your comments on the service you received from the District by clicking this [link](#)

Notices

- Emails to and from the St. Johns River Water Management District are archived and, unless exempt or confidential by law, are subject to being made available to the public upon request. Users should not have an expectation of confidentiality or privacy.
- Individuals lobbying the District must be registered as lobbyists (§112.3261, Florida Statutes). Details, applicability and the registration form are available at <http://www.sjrwmd.com/lobbyist/>

Appendix C

Design Cost Estimate

Long Range Estimate

ESTIMATE OF WORK EFFORT AND COST - PRIME CONSULTANT

Name of Project: Pedestrian/Bicycle Safety Improvements
 County: Brevard
 FPN: 435632-1-12-01
 FAP No.: N/A

Consultant Name: AECOM
 Consultant No.: enter consultants proj. number
 Date: 9/18/2018
 Estimator: insert name

Staff Classification	Hours From "SH Summary - Firm"	Project Manager	Staff Classification 2	Staff Classification 3	Staff Classification 4	Staff Classification 5	Staff Classification 6	Staff Classification 7	Staff Classification 8	Staff Classification 9	Staff Classification 10	Staff Classification 11	Staff Classification 12	SH By Activity	Salary Cost By Activity	Average Rate Per Task
		\$100.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$50.00		
3. Project General and Project Common Tasks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	#DIV/0!
4. Roadway Analysis	824	0	0	0	0	0	0	0	0	0	0	0	824	824	\$41,200	\$50.00
5. Roadway Plans	440	0	0	0	0	0	0	0	0	0	0	0	440	440	\$22,000	\$50.00
6a. Drainage Analysis	414	0	0	0	0	0	0	0	0	0	0	0	414	414	\$20,700	\$50.00
6b. Drainage Plans	154	0	0	0	0	0	0	0	0	0	0	0	154	154	\$7,700	\$50.00
7. Utilities	198	0	0	0	0	0	0	0	0	0	0	0	198	198	\$9,900	\$50.00
8. Environmental Permits, Compliance & Clearances	40	0	0	0	0	0	0	0	0	0	0	0	40	40	\$2,000	\$50.00
9. Structures - Misc. Tasks, Dwgs, Non-Tech.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	#DIV/0!
10. Structures - Bridge Development Report	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	#DIV/0!
11. Structures - Temporary Bridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	#DIV/0!
12. Structures - Short Span Concrete Bridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	#DIV/0!
13. Structures - Medium Span Concrete Bridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	#DIV/0!
14. Structures - Structural Steel Bridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	#DIV/0!
15. Structures - Segmental Concrete Bridge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	#DIV/0!
16. Structures - Movable Span	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	#DIV/0!
17. Structures - Retaining Walls	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	#DIV/0!
18. Structures - Miscellaneous	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	#DIV/0!
19. Signing & Pavement Marking Analysis	157	0	0	0	0	0	0	0	0	0	0	0	157	157	\$7,850	\$50.00
20. Signing & Pavement Marking Plans	66	0	0	0	0	0	0	0	0	0	0	0	66	66	\$3,300	\$50.00
21. Signalization Analysis	199	0	0	0	0	0	0	0	0	0	0	0	199	199	\$9,950	\$50.00
22. Signalization Plans	58	0	0	0	0	0	0	0	0	0	0	0	58	58	\$2,900	\$50.00
23. Lighting Analysis	24	0	0	0	0	0	0	0	0	0	0	0	24	24	\$1,200	\$50.00
24. Lighting Plans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	#DIV/0!
25. Landscape Architecture Analysis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	#DIV/0!
26. Landscape Architecture Plans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	#DIV/0!
27. Survey (Field & Office Support)	108	0	0	0	0	0	0	0	0	0	0	0	108	108	\$5,400	\$50.00
28. Photogrammetry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	#DIV/0!
29. Mapping	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	#DIV/0!
30. Terrestrial Mobile LIDAR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	#DIV/0!
31. Architecture Development	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	#DIV/0!
32. Noise Barriers Impact Design Assessment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	#DIV/0!
33. Intelligent Transportation Systems Analysis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	#DIV/0!
34. Intelligent Transportation Systems Plans	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	#DIV/0!
35. Geotechnical	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	#DIV/0!
36. 3D Modeling	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$0	#DIV/0!
Total Staff Hours	2,682	0	0	0	0	0	0	0	0	0	0	0	2,682	2,682		
Total Staff Cost		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$134,100.00		\$134,100.00	\$50.00

Survey Field Days by Subconsultant
 4 - Person Crew:

- Notes:
 1. This sheet to be used by Prime Consultant to calculate the Grand Total fee.
 2. Manually enter fee from each subconsultant. Unused subconsultant rows may be hidden.

Check = \$134,100.00			
SALARY RELATED COSTS:			\$134,100.00
OVERHEAD:		150%	\$201,150.00
OPERATING MARGIN:		25%	\$33,525.00
FCCM (Facilities Capital Cost Money):		0.00%	\$0.00
EXPENSES:		15.00%	\$20,115.00
Survey (Field - if by Prime)	37	4-person crew days @	\$ 1,900.00 / day \$70,300.00
SUBTOTAL ESTIMATED FEE:			\$459,190.00
Subconsultant: Enter Name Sub 1			\$0.00
Subconsultant: Sub 2			\$0.00
Subconsultant: Sub 3			\$0.00
Subconsultant: Sub 4			\$0.00
Subconsultant: Sub 5			\$0.00
Subconsultant: Sub 6			\$0.00
Subconsultant: Sub 7			\$0.00
Subconsultant: Sub 8			\$0.00
Subconsultant: Sub 9			\$0.00
Subconsultant: Sub 10			\$0.00
Subconsultant: Sub 11			\$0.00
Subconsultant: Sub 12			\$0.00
SUBTOTAL ESTIMATED FEE:			\$459,190.00
Geotechnical Field and Lab Testing			\$0.00
SUBTOTAL ESTIMATED FEE:			\$459,190.00
Optional Services			\$0.00
GRAND TOTAL ESTIMATED FEE:			\$459,190.00

Date: 8/10/2018 4:02:07 PM

FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: 435632-1-12-01

Letting Date: 01/2099

Description: SR 518 (EAU GALLIE BLVD) FROM RIVERSIDE DR TO A1A

District: 05 County: 70 BREVARD Market Area: 08 Units: English

Contract Class: 4 Lump Sum Project: N Design/Build: N Project Length: 1.292 MI

Project Manager: JCP

Version 1-P Project Grand Total**\$5,664,770.47**

Description: SR 518 (EAU GALLIE BLVD) FROM RIVERSIDE DR TO A1A (Created by KNAECLB on 4/9/2018)

Sequence: 2 WUR - Widen/Resurface, Undivided, Rural

Net Length: 0.377 MI
1,988 LF

Description: Mainline SR 518 with no right turns and no medians. Includes Drainage and Lighting for entire project.

EARTHWORK COMPONENT**User Input Data**

Description	Value
Standard Clearing and Grubbing Limits L/R	0.00 / 0.00
Incidental Clearing and Grubbing Area	0.50
Alignment Number	1
Distance	0.377
Top of Structural Course For Begin Section	0.17
Top of Structural Course For End Section	0.17
Horizontal Elevation For Begin Section	0.00
Horizontal Elevation For End Section	0.00
Existing Front Slope L/R	6 to 1 / 6 to 1
Existing Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Front Slope L/R	6 to 1 / 6 to 1
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	0.50	AC	\$23,289.37	\$11,644.68
Earthwork Component Total					\$11,644.68

ROADWAY COMPONENT**User Input Data**

Description	Value
Number of Lanes	5
Existing Roadway Pavement Width L/R	31.00 / 31.00
Structural Spread Rate	165
Friction Course Spread Rate	80
Widened Outside Pavement Width L/R	0.00 / 0.00
Widened Structural Spread Rate	275

Widened Friction Course Spread Rate 165

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
327-70-5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH	13,694.56	SY	\$2.68	\$36,701.42
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	1,129.80	TN	\$105.28	\$118,945.34
337-7-83	ASPH CONC FC, TRAFFIC C, FC-12.5, PG 76-22	547.78	TN	\$137.85	\$75,511.47

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
522-3	BUS BOARDING PAD- CONCRETE Comment: In front of Charlie and Jacks BBQ, Brittany Apartments, and Causeway Mowers	21.00	SY	\$90.34	\$1,897.14

Turnouts/Crossovers Subcomponent

Description	Value
Asphalt Adjustment	10.00
Milling Code	Y
Stabilization Code	N
Base Code	N
Friction Course Code	Y

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
327-70-5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH	1,369.46	SY	\$2.68	\$3,670.15
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	112.98	TN	\$105.28	\$11,894.53
337-7-83	ASPH CONC FC, TRAFFIC C, FC-12.5, PG 76-22	54.78	TN	\$137.85	\$7,551.42

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	2
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	4

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE/RAISED PAVEMENT MARKERS	305.00	EA	\$5.36	\$1,634.80
710-11-101	PAINTED PAVT MARK, STD, WHITE, SOLID, 6"	1.51	GM	\$1,194.73	\$1,804.04
710-11-231	PAINTED PAVT MARK, STD, YELLOW, SKIP, 6"	3.01	GM	\$580.00	\$1,745.80

Peripherals Subcomponent

Description	Value
-------------	-------

Off Road Bike Path(s)	0
Off Road Bike Path Width L/R	0.00 / 0.00
Bike Path Structural Spread Rate	0
Noise Barrier Wall Length	0.00
Noise Barrier Wall Begin Height	0.00
Noise Barrier Wall End Height	0.00

Roadway Component Total

\$261,356.12

SHOULDER COMPONENT

User Input Data

Description	Value
Existing Total Outside Shoulder Width L/R	0.00 / 0.00
New Total Outside Shoulder Width L/R	0.00 / 0.00
Total Outside Shoulder Perf. Turf Width L/R	0.00 / 0.00
Existing Paved Outside Shoulder Width L/R	5.00 / 5.00
New Paved Outside Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	110
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	T
Rumble Strips 1/2 No. of Sides	0

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
327-70-1	MILLING EXIST ASPH PAVT, 1" AVG DEPTH	2,208.80 SY	\$5.83	\$12,877.30
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	121.48 TN	\$105.28	\$12,789.41
337-7-83	ASPH CONC FC, TRAFFIC C, FC-12.5, PG 76-22	88.35 TN	\$137.85	\$12,179.05

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F Comment: Type F curb around transit stop and curb ramps though none widening section	1,840.00 LF	\$20.17	\$37,112.80
520-2-4	CONCRETE CURB, TYPE D Comment: Type D curb around pedestrian refuge islands	240.00 LF	\$22.80	\$5,472.00
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" Comment: Sidewalk and Ramps	664.00 SY	\$43.10	\$28,618.40
570-1-1	PERFORMANCE TURF Comment: Sodding required for median and some minor asphalt removal.	187.00 SY	\$2.01	\$375.87

Erosion Control

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	4,572.22 LF	\$1.06	\$4,846.55
104-11	FLOATING TURBIDITY BARRIER	37.65 LF	\$8.77	\$330.19
104-12	STAKED TURBIDITY BARRIER- NYL REINF PVC	37.65 LF	\$7.86	\$295.93
104-15		1.00 EA	\$3,612.25	\$3,612.25

SOIL TRACKING PREVENTION DEVICE				
104-18	INLET PROTECTION SYSTEM	1.00 EA	\$91.23	\$91.23
107-1	LITTER REMOVAL	0.91 AC	\$44.06	\$40.09
107-2	MOWING	0.91 AC	\$62.57	\$56.94
Shoulder Component Total				\$118,698.02

DRAINAGE COMPONENT**Pay Items**

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
570-1-1	PERFORMANCE TURF	152.11 SY	\$2.01	\$305.74

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
425-1-351	INLETS, CURB, TYPE P-5, <10'	26.00 EA	\$5,205.16	\$135,334.16
	Comment: Added inlets			
425-1-412	INLETS, CURB, TYPE J-1, >10'	4.00 EA	\$7,449.59	\$29,798.36
425-1-422	INLETS, CURB, TYPE J-2, >10'	1.00 EA	\$7,496.72	\$7,496.72
425-1-522	INLETS, DT BOT, TYPE C, >10'	3.00 EA	\$4,822.54	\$14,467.62
425-1-532	INLETS, DT BOT, TYPE C, MOD, >10'	18.00 EA	\$6,525.24	\$117,454.32
425-1-542	INLETS, DT BOT, TYPE D, >10'	1.00 EA	\$4,879.33	\$4,879.33
425-1-562	INLETS, DT BOT, TYPE F, >10'	3.00 EA	\$9,660.71	\$28,982.13
425-1-572	INLETS, DT BOT, TYPE G, >10'	4.00 EA	\$8,548.77	\$34,195.08
425-2-72	MANHOLES, J-7, >10'	4.00 EA	\$8,578.01	\$34,312.04
430-174-148	PIPE CULV, OPT MATL, ROUND,48"SD	4,392.00 LF	\$183.00	\$803,736.00
430-174-160	PIPE CULV, OPT MATL, ROUND,60"SD	1,744.00 LF	\$280.04	\$488,389.76
	Comment: 60" upsized 48" from pond to 1200' n of s patrick			
430-984-145	MITERED END SECTION, OPTIONAL ROUND, 72"	1.00 EA	\$5,300.00	\$5,300.00

Retention Basin 1

Description	Value
Size	.5 AC
Multiplier	1
Depth	6.00
Description	

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	0.50 AC	\$47,470.83	\$23,735.42
120-1	REGULAR EXCAVATION	4,840.00 CY	\$18.95	\$91,718.00
400-2-2	CONC CLASS II, ENDWALLS	18.00 CY	\$1,171.75	\$21,091.50
425-1-541	INLETS, DT BOT, TYPE D, <10'	1.00 EA	\$3,574.55	\$3,574.55
425-2-71	MANHOLES, J-7, <10'	1.00 EA	\$5,624.15	\$5,624.15
430-175-142	PIPE CULV, OPT MATL, ROUND, 42"S/CD	56.00 LF	\$209.67	\$11,741.52
430-175-160	PIPE CULV, OPT MATL, ROUND, 60"S/CD	200.00 LF	\$333.00	\$66,600.00

550-10-220	FENCING, TYPE B, 5.1-6.0', STANDARD	600.00 LF	\$13.15	\$7,890.00
550-60-234	FENCE GATE, TYP B, SLIDE/CANT, 18.1-20' OPEN	1.00 EA	\$2,090.35	\$2,090.35
570-1-1	PERFORMANCE TURF	2,420.00 SY	\$2.01	\$4,864.20
Drainage Component Total				\$1,943,580.95

SIGNING COMPONENT**Pay Items**

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	1.00	AS	\$313.41	\$313.41
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	8.00	AS	\$1,245.19	\$9,961.52
700-1-50	SINGLE POST SIGN, RELOCATE	1.00	AS	\$177.74	\$177.74
700-1-60	SINGLE POST SIGN, REMOVE	8.00	AS	\$23.74	\$189.92
700-2-13	MULTI- POST SIGN, F&I GM, 21-30 SF	1.00	AS	\$3,597.28	\$3,597.28
700-2-60	MULTI- POST SIGN, REMOVE	1.00	AS	\$529.92	\$529.92
Signing Component Total				\$14,769.79	

SIGNALIZATIONS COMPONENT**Signalization 1**

Description	Value
Type	6 Lane Mast Arm
Multiplier	1
Description	A1A and SR 518 - New mast arm in the SW corner, new ped post, new ped push button in mast arm in NE corner.

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F&I, OPEN TRENCH	1,050.00	LF	\$7.06	\$7,413.00
630-2-12	CONDUIT, F&I, DIRECTIONAL BORE	450.00	LF	\$26.23	\$11,803.50
632-7-1	SIGNAL CABLE- NEW OR RECO, FUR & INSTALL	1.00	PI	\$4,458.53	\$4,458.53
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	44.00	EA	\$806.32	\$35,478.08
639-1-112	ELECTRICAL POWER SRV, F&I, OH, M, PUR BY CON	1.00	AS	\$2,638.00	\$2,638.00
639-2-1	ELECTRICAL SERVICE WIRE, F&I	120.00	LF	\$10.94	\$1,312.80
641-2-11	PREST CNC POLE, F&I, TYP P-II, PEDESTAL	1.00	EA	\$1,041.04	\$1,041.04
649-1-10	STEEL STRAIN POLE, F&I, PEDESTAL	1.00	EA	\$975.35	\$975.35
649-21-21	STEEL MAST ARM ASSEMBLY, F&I, 78'	2.00	EA	\$56,269.53	\$112,539.06
650-1-14	VEH TRAF SIGNAL, F&I ALUMINUM, 3 S 1 W	20.00	AS	\$933.49	\$18,669.80
653-1-11	PEDESTRIAN SIGNAL, F&I LED COUNT, 1 WAY	8.00	AS	\$643.80	\$5,150.40

660-1-102	LOOP DETECTOR INDUCTIVE, F&I, TYPE 2	20.00 EA	\$176.18	\$3,523.60
660-2-106	LOOP ASSEMBLY, F&I, TYPE F	20.00 AS	\$881.37	\$17,627.40
665-1-11	PEDESTRIAN DETECTOR, F&I, STANDARD	8.00 EA	\$255.49	\$2,043.92
670-5-111	TRAF CNTL ASSEM, F&I, NEMA, 1 PREEMPT	1.00 AS	\$25,407.38	\$25,407.38
700-3-101	SIGN PANEL, F&I GM, UP TO 12 SF	4.00 EA	\$202.20	\$808.80

Signalization 2

Description	Value
Type	2 Lane Mast Arm
Multiplier	1
Description	RRFBs for both midblock crossings

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
649-21-1	STEEL MAST ARM ASSEMBLY, F&I, 30'	4.00	EA	\$27,779.68	\$111,118.72
	Comment: Steel Mast arms for the RRFBs to go across traffic				
654-2-21	RECT RAPID FLASH BEACON, F&I SOL, 1 SIGN	8.00	AS	\$7,461.38	\$59,691.04
	Comment: RRFB signs on the mast arm and on the sides				
Signalizations Component Total					\$421,700.42

LIGHTING COMPONENT

Rural Lighting Subcomponent

Description	Value				
Multiplier (Number of Poles)	27				
Pay Items					
Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	5,400.00	LF	\$6.57	\$35,478.00
635-2-11	PULL & SPLICE BOX, F&I, 13" x 24"	27.00	EA	\$728.92	\$19,680.84
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL, NO.4-2	16,200.00	LF	\$2.51	\$40,662.00
715-500-1	POLE CABLE DIST SYS, CONVENTIONAL	27.00	EA	\$599.02	\$16,173.54
Subcomponent Total					\$111,994.38

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
715-4-13	LIGHT POLE COMPLETE, F&I-STD, 40'	27.00	EA	\$4,834.71	\$130,537.17
Lighting Component Total					\$242,531.55

Sequence 2 Total	\$3,014,281.53
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Sequence: 3WUR - Widen/Resurface, Undivided, Rural**Net Length:** 0.428 MI
2,259 LF**Description:** Sections of 518 with right turn lanes**EARTHWORK COMPONENT****User Input Data**

Description	Value
Standard Clearing and Grubbing Limits L/R	0.00 / 0.00
Incidental Clearing and Grubbing Area	0.52
Alignment Number	1
Distance	0.428
Top of Structural Course For Begin Section	102.00
Top of Structural Course For End Section	102.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Existing Front Slope L/R	6 to 1 / 6 to 1
Existing Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Front Slope L/R	6 to 1 / 6 to 1
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	0.52	AC	\$23,289.37	\$12,110.47
120-2-2	BORROW EXCAVATION, TRUCK MEASURE	430.21	CY	\$31.88	\$13,715.09

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-4-10	REMOVAL OF EXIST CONC Comment: Curb, gutter and sidewalk removal	150.00	SY	\$15.34	\$2,301.00

Earthwork Component Total \$28,126.57**ROADWAY COMPONENT****User Input Data**

Description	Value
Number of Lanes	5
Existing Roadway Pavement Width L/R	31.00 / 31.00
Structural Spread Rate	165
Friction Course Spread Rate	80
Widened Outside Pavement Width L/R	5.00 / 0.00
Widened Structural Spread Rate	275
Widened Friction Course Spread Rate	165

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
160-4	TYPE B STABILIZATION	1,254.88	SY	\$8.54	\$10,716.68
285-709	OPTIONAL BASE,BASE GROUP 09	1,337.70	SY	\$18.74	\$25,068.50
327-70-5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH	15,560.51	SY	\$2.68	\$41,702.17

334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	1,283.74 TN	\$105.28	\$135,152.15
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	172.55 TN	\$105.28	\$18,166.06
337-7-83	ASPH CONC FC,TRAFFIC C,FC- 12.5,PG 76-22	622.42 TN	\$146.35	\$91,091.17
337-7-83	ASPH CONC FC,TRAFFIC C,FC- 12.5,PG 76-22	103.53 TN	\$146.35	\$15,151.62

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
522-3	BUS BOARDING PAD- CONCRETE Comment: Bus Stop at Verizon	10.00 SY	\$90.34	\$903.40
570-1-1	PERFORMANCE TURF Comment: Fillet removal and sidewalk removal sodding	161.00 SY	\$2.01	\$323.61

Turnouts/Crossovers Subcomponent

Description	Value
Asphalt Adjustment	10.00
Milling Code	Y
Stabilization Code	N
Base Code	N
Friction Course Code	Y

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
327-70-5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH	1,556.05 SY	\$2.68	\$4,170.21
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	128.37 TN	\$105.28	\$13,514.79
337-7-83	ASPH CONC FC,TRAFFIC C,FC- 12.5,PG 76-22	62.24 TN	\$146.35	\$9,108.82

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	2
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	4

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE/RAISED PAVEMENT MARKERS	347.00 EA	\$5.36	\$1,859.92
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	1.71 GM	\$1,194.73	\$2,042.99
710-11-231	PAINTED PAVT MARK,STD,YELLOW,SKIP,6"	3.42 GM	\$580.00	\$1,983.60

Peripherals Subcomponent

Description	Value
Off Road Bike Path(s)	0
Off Road Bike Path Width L/R	0.00 / 0.00
Bike Path Structural Spread Rate	0
Noise Barrier Wall Length	0.00
Noise Barrier Wall Begin Height	0.00
Noise Barrier Wall End Height	0.00
Roadway Component Total	\$370,955.69

SHOULDER COMPONENT

User Input Data

Description	Value
Existing Total Outside Shoulder Width L/R	0.00 / 0.00
New Total Outside Shoulder Width L/R	0.00 / 0.00
Total Outside Shoulder Perf. Turf Width L/R	0.00 / 0.00
Existing Paved Outside Shoulder Width L/R	5.00 / 5.00
New Paved Outside Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	110
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	T
Rumble Strips 1/2 No. of Sides	0

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
327-70-1	MILLING EXIST ASPH PAVT, 1" AVG DEPTH	2,509.76	SY	\$5.83	\$14,631.90
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	138.04	TN	\$105.28	\$14,532.85
337-7-83	ASPH CONC FC, TRAFFIC C, FC-12.5, PG 76-22	100.39	TN	\$146.35	\$14,692.08

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F	2,257.00	LF	\$20.17	\$45,523.69
	Comment: Curb and Gutter along right turn lanes				
520-2-4	CONCRETE CURB, TYPE D	63.00	LF	\$22.80	\$1,436.40
	Comment: Curb and Gutter along right turn lanes				
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	1,103.00	SY	\$43.10	\$47,539.30
	Comment: Sidewalk and ramps along right turn segments				

Erosion Control

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	5,195.20	LF	\$1.06	\$5,506.91
104-11	FLOATING TURBIDITY BARRIER	42.78	LF	\$8.77	\$375.18
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	42.78	LF	\$7.86	\$336.25
104-15		1.00	EA	\$3,612.25	\$3,612.25

	SOIL TRACKING PREVENTION DEVICE			
104-18	INLET PROTECTION SYSTEM	1.00 EA	\$91.23	\$91.23
107-1	LITTER REMOVAL	1.04 AC	\$44.06	\$45.82
107-2	MOWING	1.04 AC	\$62.57	\$65.07

Shoulder Component Total

\$148,388.94

DRAINAGE COMPONENT**Pay Items**

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	7.70 CY	\$1,171.75	\$9,022.48
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	72.00 LF	\$133.50	\$9,612.00
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	32.00 LF	\$198.00	\$6,336.00
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	5.00 EA	\$1,586.60	\$7,933.00
570-1-1	PERFORMANCE TURF	172.83 SY	\$2.01	\$347.39

Drainage Component Total

\$33,250.87

SIGNING COMPONENT**Pay Items**

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	1.00 AS	\$313.41	\$313.41
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	9.00 AS	\$1,245.19	\$11,206.71
700-1-50	SINGLE POST SIGN, RELOCATE	1.00 AS	\$177.74	\$177.74
700-1-60	SINGLE POST SIGN, REMOVE	9.00 AS	\$23.74	\$213.66
700-2-13	MULTI- POST SIGN, F&I GM, 21-30 SF	1.00 AS	\$3,597.28	\$3,597.28
700-2-60	MULTI- POST SIGN, REMOVE	1.00 AS	\$529.92	\$529.92

Signing Component Total

\$16,038.72

Sequence 3 Total

\$596,760.79

Sequence: 4 WDR - Widen/Resurface, Divided, Rural**Net Length:** 0.118 MI
625 LF**Description:** Resurfacing along A1A**EARTHWORK COMPONENT****User Input Data**

Description	Value
Standard Clearing and Grubbing Limits L/R	0.00 / 0.00
Incidental Clearing and Grubbing Area	0.53
Alignment Number	1
Distance	0.118
Top of Structural Course For Begin Section	102.00
Top of Structural Course For End Section	102.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Existing Front Slope L/R	6 to 1 / 6 to 1
Existing Median Slope L/R	6 to 1 / 6 to 1
Existing Median Shoulder Cross Slope L/R	5.00 % / 5.00 %
Existing Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Front Slope L/R	6 to 1 / 6 to 1
Median Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	5.00 % / 5.00 %
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-1-1	CLEARING & GRUBBING	0.53	AC	\$23,289.37	\$12,343.37

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
110-4-10	REMOVAL OF EXIST CONC	440.00	SY	\$15.34	\$6,749.60
	Comment: Sidewalk removal and curb and gutter removal				

Earthwork Component Total \$19,092.97**ROADWAY COMPONENT****User Input Data**

Description	Value
Number of Lanes	3
Existing Roadway Pavement Width L/R	35.00 / 0.00
Structural Spread Rate	220
Friction Course Spread Rate	80
Widened Outside Pavement Width L/R	0.00 / 0.00
Widened Inside Pavement Width L/R	0.00 / 0.00
Widened Structural Spread Rate	330
Widened Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
327-70-5		2,431.15	SY	\$2.68	\$6,515.48

	MILLING EXIST ASPH PAVT, 2" AVG DEPTH			
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	267.43 TN	\$105.28	\$28,155.03
337-7-25	ASPH CONC FC,INC BIT,FC-5,PG76-22	97.25 TN	\$165.07	\$16,053.06

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-5-11	TRAF SEP CONC-TYPE I, 4' WIDE Comment: Traffic Separator along A1A	316.00 LF	\$36.22	\$11,445.52

Turnouts/Crossovers Subcomponent

Description	Value
Asphalt Adjustment	20.00
Milling Code	Y
Stabilization Code	N
Base Code	N
Friction Course Code	Y

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
327-70-5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH	486.23 SY	\$2.68	\$1,303.10
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	53.49 TN	\$105.28	\$5,631.43
337-7-25	ASPH CONC FC,INC BIT,FC-5,PG76-22	19.45 TN	\$165.07	\$3,210.61

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	1

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE/RAISED PAVEMENT MARKERS	32.00 EA	\$5.36	\$171.52
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	0.95 GM	\$1,194.73	\$1,134.99
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	0.24 GM	\$531.46	\$127.55

Roadway Component Total

\$73,748.29

SHOULDER COMPONENT**User Input Data**

Description	Value
Existing Total Outside Shoulder Width L/R	0.00 / 0.00
New Total Outside Shoulder Width L/R	0.00 / 0.00
Total Outside Shoulder Perf. Turf Width L/R	0.00 / 0.00
Existing Paved Outside Shoulder Width L/R	0.00 / 0.00
New Paved Outside Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	110
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	T
Rumble Strips $\frac{1}{2}$ No. of Sides	0

X-Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
520-1-10	CONCRETE CURB & GUTTER, TYPE F Comment: Type F Curb and Gutter along A1A	340.00	LF	\$20.17	\$6,857.80
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" Comment: Sidewalk along A1A	155.00	SY	\$43.10	\$6,680.50
570-1-1	PERFORMANCE TURF Comment: Grass along A1A	860.00	SY	\$2.01	\$1,728.60

Erosion Control**Pay Items**

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	1,437.85	LF	\$1.06	\$1,524.12
104-11	FLOATING TURBIDITY BARRIER	11.84	LF	\$8.77	\$103.84
104-12	STAKED TURBIDITY BARRIER- NYL REINF PVC	11.84	LF	\$7.86	\$93.06
104-15	SOIL TRACKING PREVENTION DEVICE	1.00	EA	\$3,612.25	\$3,612.25
107-1	LITTER REMOVAL	0.86	AC	\$44.06	\$37.89
107-2	MOWING	0.86	AC	\$62.57	\$53.81
Shoulder Component Total					\$20,691.87

DRAINAGE COMPONENT**Pay Items**

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	2.13	CY	\$1,171.75	\$2,495.83
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	96.00	LF	\$133.50	\$12,816.00
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	16.00	LF	\$198.00	\$3,168.00
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	5.00	EA	\$1,586.60	\$7,933.00
570-1-1	PERFORMANCE TURF	83.35	SY	\$2.01	\$167.53
Drainage Component Total					\$26,580.36

SIGNING COMPONENT

Pay Items

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	1.00	AS	\$313.41	\$313.41
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	3.00	AS	\$1,245.19	\$3,735.57
700-1-50	SINGLE POST SIGN, RELOCATE	1.00	AS	\$177.74	\$177.74
700-1-60	SINGLE POST SIGN, REMOVE	3.00	AS	\$23.74	\$71.22
700-2-14	MULTI- POST SIGN, F&I GM, 31-50 SF	1.00	AS	\$4,555.90	\$4,555.90
700-2-60	MULTI- POST SIGN, REMOVE	1.00	AS	\$529.92	\$529.92
Signing Component Total					\$9,383.76
<hr/>					
Sequence 4 Total					\$149,497.25
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Sequence: 5WDR - Widen/Resurface, Divided, Rural**Net Length:** 0.244 MI
1,290 LF**Description:** SR 518 Median sections at the intersections of the S Patrick and A1A**EARTHWORK COMPONENT****User Input Data**

Description	Value
Standard Clearing and Grubbing Limits L/R	0.00 / 0.00
Incidental Clearing and Grubbing Area	0.00
Alignment Number	1
Distance	0.244
Top of Structural Course For Begin Section	102.00
Top of Structural Course For End Section	102.00
Horizontal Elevation For Begin Section	100.00
Horizontal Elevation For End Section	100.00
Existing Front Slope L/R	6 to 1 / 6 to 1
Existing Median Slope L/R	6 to 1 / 6 to 1
Existing Median Shoulder Cross Slope L/R	5.00 % / 5.00 %
Existing Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Front Slope L/R	6 to 1 / 6 to 1
Median Slope L/R	6 to 1 / 6 to 1
Median Shoulder Cross Slope L/R	5.00 % / 5.00 %
Outside Shoulder Cross Slope L/R	6.00 % / 6.00 %
Roadway Cross Slope L/R	2.00 % / 2.00 %

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
120-2-2	BORROW EXCAVATION, TRUCK MEASURE	503.40 CY	\$31.88	\$16,048.39

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
110-4-10	REMOVAL OF EXIST CONC Comment: Curb and gutter and sidewalk removal	183.00 SY	\$15.34	\$2,807.22

Earthwork Component Total \$18,855.61**ROADWAY COMPONENT****User Input Data**

Description	Value
Number of Lanes	6
Existing Roadway Pavement Width L/R	31.00 / 41.00
Structural Spread Rate	220
Friction Course Spread Rate	80
Widened Outside Pavement Width L/R	0.00 / 0.00
Widened Inside Pavement Width L/R	0.00 / 5.00
Widened Structural Spread Rate	330
Widened Friction Course Spread Rate	80

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
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160-4	TYPE B STABILIZATION	3,009.78 SY	\$8.54	\$25,703.52
285-709	OPTIONAL BASE,BASE GROUP 09	763.91 SY	\$18.74	\$14,315.67
327-70-5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH	10,319.23 SY	\$2.68	\$27,655.54
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	1,135.12 TN	\$105.28	\$119,505.43
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	118.24 TN	\$105.28	\$12,448.31
337-7-25	ASPH CONC FC,INC BIT,FC-5,PG76-22	412.77 TN	\$165.07	\$68,135.94
337-7-25	ASPH CONC FC,INC BIT,FC-5,PG76-22	28.66 TN	\$165.07	\$4,730.91

Turnouts/Crossovers Subcomponent

Description	Value
Asphalt Adjustment	10.00
Milling Code	Y
Stabilization Code	N
Base Code	N
Friction Course Code	Y

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
327-70-5	MILLING EXIST ASPH PAVT, 2" AVG DEPTH	1,031.92 SY	\$2.68	\$2,765.55
334-1-13	SUPERPAVE ASPHALTIC CONC, TRAFFIC C	113.51 TN	\$105.28	\$11,950.33
337-7-25	ASPH CONC FC,INC BIT,FC-5,PG76-22	41.28 TN	\$165.07	\$6,814.09

Pavement Marking Subcomponent

Description	Value
Include Thermo/Tape/Other	N
Pavement Type	Asphalt
Solid Stripe No. of Paint Applications	2
Solid Stripe No. of Stripes	4
Skip Stripe No. of Paint Applications	2
Skip Stripe No. of Stripes	4

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
706-3	RETRO-REFLECTIVE/RAISED PAVEMENT MARKERS	165.00 EA	\$5.36	\$884.40
710-11-101	PAINTED PAVT MARK,STD,WHITE,SOLID,6"	1.95 GM	\$1,194.73	\$2,329.72
710-11-131	PAINTED PAVT MARK,STD,WHITE,SKIP, 6"	1.95 GM	\$531.46	\$1,036.35

Roadway Component Total

\$298,275.76

SHOULDER COMPONENT**User Input Data**

Description	Value
Existing Total Outside Shoulder Width L/R	0.00 / 0.00
New Total Outside Shoulder Width L/R	0.00 / 0.00
Total Outside Shoulder Perf. Turf Width L/R	0.00 / 0.00
Existing Paved Outside Shoulder Width L/R	0.00 / 0.00
New Paved Outside Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	110
Friction Course Spread Rate	80
Total Width (T) / 8" Overlap (O)	T
Rumble Strips $\frac{1}{2}$ No. of Sides	0

X-Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
520-1-7	CONCRETE CURB & GUTTER, TYPE E Comment: Median curbing at S Patrick	565.00 LF	\$37.27	\$21,057.55
520-1-10	CONCRETE CURB & GUTTER, TYPE F Comment: Curb at S Patrick	355.00 LF	\$20.17	\$7,160.35
520-2-4	CONCRETE CURB, TYPE D Comment: Median Curbing at A1A	725.00 LF	\$22.80	\$16,530.00
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4" Comment: Sidewalk through these sections	355.00 SY	\$43.10	\$15,300.50
570-1-1	PERFORMANCE TURF Comment: Grass in median and edges	630.00 SY	\$2.01	\$1,266.30

Erosion Control**Pay Items**

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
104-10-3	SEDIMENT BARRIER	2,966.78 LF	\$1.06	\$3,144.79
104-11	FLOATING TURBIDITY BARRIER	24.43 LF	\$8.77	\$214.25
104-12	STAKED TURBIDITY BARRIER-NYL REINF PVC	24.43 LF	\$7.86	\$192.02
104-15	SOIL TRACKING PREVENTION DEVICE	1.00 EA	\$3,612.25	\$3,612.25
107-1	LITTER REMOVAL	1.78 AC	\$44.06	\$78.43
107-2	MOWING	1.78 AC	\$62.57	\$111.37
Shoulder Component Total				\$68,667.81

MEDIAN COMPONENT**User Input Data**

Description	Value
Total Median Width	40.00
Performance Turf Width	5.34
New Total Median Shoulder Width L/R	8.00 / 8.00
New Paved Median Shoulder Width L/R	0.00 / 0.00
Existing Total Median Shoulder Width L/R	8.00 / 8.00
Existing Paved Median Shoulder Width L/R	0.00 / 0.00
Structural Spread Rate	110
Friction Course Spread Rate	80

Total Width (T) / 8" Overlap (O)	T
Rumble Strips 1/2 No. of Sides	0

Pay Items

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
570-1-1	PERFORMANCE TURF	765.34 SY	\$2.01	\$1,538.33
Median Component Total				\$1,538.33

DRAINAGE COMPONENT**Pay Items**

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
400-2-2	CONC CLASS II, ENDWALLS	4.40 CY	\$1,171.75	\$5,155.70
430-174-124	PIPE CULV, OPT MATL, ROUND,24"SD	200.00 LF	\$133.50	\$26,700.00
430-175-136	PIPE CULV, OPT MATL, ROUND, 36"S/CD	24.00 LF	\$198.00	\$4,752.00
430-984-129	MITERED END SECT, OPTIONAL RD, 24" SD	10.00 EA	\$1,586.60	\$15,866.00
570-1-1	PERFORMANCE TURF	171.99 SY	\$2.01	\$345.70
Drainage Component Total				\$52,819.40

SIGNING COMPONENT**Pay Items**

Pay item	Description	Quantity Unit	Unit Price	Extended Amount
700-1-11	SINGLE POST SIGN, F&I GM, <12 SF	1.00 AS	\$313.41	\$313.41
700-1-12	SINGLE POST SIGN, F&I GM, 12-20 SF	6.00 AS	\$1,245.19	\$7,471.14
700-1-50	SINGLE POST SIGN, RELOCATE	1.00 AS	\$177.74	\$177.74
700-1-60	SINGLE POST SIGN, REMOVE	6.00 AS	\$23.74	\$142.44
700-2-14	MULTI- POST SIGN, F&I GM, 31-50 SF	1.00 AS	\$4,555.90	\$4,555.90
700-2-60	MULTI- POST SIGN, REMOVE	1.00 AS	\$529.92	\$529.92
Signing Component Total				\$13,190.55

Sequence 5 Total	\$453,347.46
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Date: 8/10/2018 4:02:08 PM

FDOT Long Range Estimating System - Production

R3: Project Details by Sequence Report

Project: 435632-1-12-01

Letting Date: 01/2099

Description: SR 518 (EAU GALLIE BLVD) FROM RIVERSIDE DR TO A1A

District: 05

County: 70 BREVARD

Market Area: 08

Units: English

Contract Class: 4 Lump Sum Project: N

Design/Build: N

Project Length: 1.292 MI

Project Manager: JCP

Version 1-P Project Grand Total

\$5,664,770.47

Description: SR 518 (EAU GALLIE BLVD) FROM RIVERSIDE DR TO A1A (Created by KNAECLB on
4/9/2018)

Project Sequences Subtotal **\$4,213,887.03**

102-1	Maintenance of Traffic	10.00 %	\$421,388.70
101-1	Mobilization	10.00 %	\$463,527.57

Project Sequences Total **\$5,098,803.30**

Project Unknowns	10.00 %	\$509,880.33
Design/Build	0.00 %	\$0.00

Non-Bid Components:

Pay item	Description	Quantity	Unit	Unit Price	Extended Amount
999-25	INITIAL CONTINGENCY AMOUNT (DO NOT BID)		LS	\$56,086.84	\$56,086.84

Project Non-Bid Subtotal **\$56,086.84**

Version 1-P Project Grand Total

\$5,664,770.47

Appendix D

Technical Scope Guidelines

1. Existing R/W Map Project Numbers:	Project No 1197(5483) Road No. 101 (dated 1940) Index Map (includes causeway). 100' Minimum Width
2. Old Construction Project Numbers:	7012-150 (dated 1957) from Indian River relief Bridge to Canova Beach Park, reconstruction 70120-3518 (dated 1984), S.R. 518 / S.R. 513 intersection and drainage improvements Brevard County Project No. 90-005-C-096 (dated 1997) from S.R. 513 to S.R. A1A, sidewalk on south side and drainage improvements
3. Additional R/W Required?	No. Right of way maintenance maps should be included as part of the design scope. If more detailed drainage analyses performed during design indicate that additional stormwater management facilities are required then additional right of way will be necessary. A Pond Siting Report should be included as part of the scope. Yes. Consider stating the reason that is required, or simply refer to the R/W Scope Items and describe in more detail there.
4. Level of Community Awareness Plan:	Level 2
5. Are there any bridges within the limits?	No. Improvements to the Indian River relief bridge are not included as part of this project. Yes. Include the bridge number and crossing feature.
6. Are there any RR Crossings within the project limits or in the vicinity?	No. Yes. Provide the crossing number and if railroad funding is to be included in the work program.
7. Are there any Airports within 5-miles?	No. Yes. Orlando Melbourne International Airport (MLB). Western terminus of the project is approximately 2.9 miles (straight line distance) from airport property.
8. Storm Water Management Jurisdiction:	SJRWMD
9. Is the Project within CCCL (Coastal Construction Control Line)	Yes or No.
10. Existing Utilities per Sunshine One Call: Estimated number of underground: #	Brevard County Water Resources Brevard County Public Works Engineering Division Florida City Gas Florida Power & Light – Brevard Level 3 Communications City of Melbourne – Traffic City of Melbourne Utilities Administration Water AT&T / Distribution Bright House Networks, LLC Brevard List the utilities as reported by Sunshine One Call and the type if known. Include any utilities noted during field review that were not on Sunshine One Call. Compare the utility list to the District utility address book to obtain currently used company names. No. EMO has reviewed this project and has no concerns.

11. Is the project near a significant archaeological site?	Yes. Refer to Permitting or Archaeological Scope Items if needed or provide a description here if brief.
12. Any Special MOT concerns?	No.
13. Any Construction Concerns?	No.
14. Posted/Design Speed Limits:	45 mph / 45 mph
15. Design Criteria and Highway System:	Use RRR criteria. Design variation may be required for lane width and design speed. SHS, Context Classification C3C
16. Lump Sum or Pay Item?	Lump Sum is typical.
	Pay Item per PPM Guidance, requires concurrence from District Construction Office after reviewing the Scope.
17. Proposed Design Schedule:	R/W - 3-4 years
	No R/W - 18-24 months

Appendix E

PVT Meetings – Sign-in Sheets and Meeting Summaries

FDOT Team Meeting Summaries

TPO Meeting Minutes

FDOT Management Meeting Summary

Public Information Meeting – Presentation, Sign-in Sheets and Comments

Project Visioning Team Meeting I

Date of Meeting:	11/01/17	Project Number:	435632-1
Project Name:	SR 518 (Eau Gallie Blvd.) Conceptual Design Study		
Location:	Indian Harbour Beach City Hall		
Attendees:	Judy Pizzo, Janna Taylor, Devin Swanson, Abby Rex, Laura Carter, Kim Smith, Todd Scaldo, Mark Ryan, David Butler, Tami Gillen, Todd Corwin, Rachelle Benken, Chris Rizzolo, Pramod Choudhary, Elizabeth Mackiewicz		

Project team members met to discuss the SR 518 (Eau Gallie Boulevard) corridor from SR 513 (South Patrick Drive) east to SR A1A on November 01, 2017 between 10AM and 12PM. The following Team Members were in attendance:

<i>Judy Pizzo – FDOT</i>	<i>David Butler – City of Indian Harbour Beach</i>
<i>Janna Taylor – FDOT</i>	<i>Tami Gillen – City of Melbourne</i>
<i>Devin Swanson – Brevard County</i>	<i>Todd Corwin – City of Melbourne</i>
<i>Abby Rex – Space Coast TPO</i>	<i>Rachelle Benken – Brevard Public Schools</i>
<i>Laura Carter – Space Coast TPO</i>	<i>Chris Rizzolo – AECOM</i>
<i>Kim Smith – Space Coast TPO</i>	<i>Pramod Choudhary - AECOM</i>
<i>Todd Scaldo – City of Indian Harbour Beach</i>	<i>Elizabeth Mackiewicz – AECOM</i>
<i>Mark Ryan – City of Indian Harbour Beach</i>	

The following topics were discussed during the meeting.

- Pedestrian Crossing
 - Means for pedestrians to cross SR 518 were discussed. It was noted through the planning study that pedestrians were observed crossing all along SR 518, showing that there is no one origin or destination.
 - Beacons/signals were discussed and the following locations were suggested:
 - West of Burns Blvd.
 - Transit stops along SR 518
- Signal at Burns Blvd.
 - A signal light for southbound left turns onto SR 518 is wanted by Indian Harbour Beach. The traffic count conducted on October 02, 2017 shows that the volume of southbound left turns does not warrant a signal light. AECOM will continue to analyze the traffic data and consider seasonal traffic patterns.
- SR 518 Speed Limit
 - The current speed limit of SR 518 is 45 miles per hour. Based on a spot speed study documented in the Planning Study, the 85th percentile speed of users was 44 MPH in the eastbound direction and 47 MPH in the westbound direction. As users drive at the speed they are most comfortable at, these results show that SR 518 is signed appropriately.
- Publix Driveways
 - To move forward with the design of making the southern Publix/Bealls driveway right turn only, it was suggested that users could make a U-turn at the intersection of SR 513. As the SR 518 lanes are 10 feet wide, it will have to be determined if large trucks can make such a maneuver.
 - It was requested that the crosswalk across SR 518 be looked at to determine if it meets senior citizen standards and amended if not.
 - A separator at the right turn only Publix driveway on SR 513 was suggested as a means to prevent illegal left turns onto SR 513.

- Public Involvement
 - The team discussed the importance of reaching out to residents and businesses through mailing lists, social media, newsletters, and business flyers to advertise the public meeting for this study.
- Long Term Goals
 - The team discussed long term goals for this corridor, including the potential use of roundabouts, connectivity between side streets, and creating a complete urban corridor.
 - As this corridor is shared between 3 municipalities, collaboration to reach these goals is needed.
 - Recommendations to reach these goals, including a separate PD&E Study, were requested to be included in the final results of this study.



Florida Department of Transportation

RICK SCOTT
GOVERNOR

719 S. Woodland Boulevard
DeLand, Florida 32720-6834

MIKE DEW
SECRETARY

SUMMARY **SR 518 Project Visioning Team #2** **March 20, 2018**

Project team members met to discuss the SR 518 (Eau Gallie Boulevard) corridor from SR 513 (South Patrick Drive) east to SR A1A on March 20, 2018 between 10AM and 12PM. The following Team Members were in attendance:

Judy Pizzo – FDOT

Janna Taylor – FDOT

Georgeanna Gillette – Space Coast TPO

Devin Swanson – Brevard County

Abby Hemenway – Space Coast TPO

Laura Carter – Space Coast TPO

Sarah Kraum – Space Coast TPO

Todd Scaldo – City of Indian Harbour Beach

Mark Ryan – City of Indian Harbour Beach

Tami Gillen – City of Melbourne

Terry Jordan – SCAT

Larry Redmond – SCAT

Paul Haydt – East Coast Greenway Alliance

Chris Rizzolo – AECOM

The following topics were discussed during the meeting.

- Pedestrian Crossings/Accommodations
 - The project team presented two locations for midblock crossings – one east of Burns Boulevard (by the Lucky Clover Mobile Home Park) and one at the transit stop in front of The Brittany Apartments).
 - Locating mid-block crossings were a challenge due to the number of driveways and turning movements to accommodate.
 - The use of Rectangular Rapid Flashing Beacons (RRFBs) were temporarily halted by FHWA due to patent issues
 - *Note: FDOT recently received interim approval from FHWA to use RRFBs, on the State Road System (SRS) so they will be included at midblock crossings as part of this study.*
 - The PVT suggested performing a separate pedestrian safety study to determine location and number of existing pedestrian crossings.
- Pedestrian Accommodation on Relief Bridge
 - During an internal meeting prior to the PVT meeting, FDOT Design did not support separate pedestrian accommodations on the north side of the bridge for the following reasons:
 - There is no sidewalk east or west of the bridge on the north side of SR 518
 - There is a safe and protected pedestrian facility along the length of the south side of the causeway that can be accessed by crossing SR 518 north to south at SR 513.
 - Discussion focused on the possibility of barrier protection for people fishing or shrimping from the north side of the Indian River relief bridge. While it is understood that there are “No Fishing” signs on the north side of the bridge, people continue to fish from the bridge and dart across the highway.
 - Other crossings of the river in Brevard County have pedestrian facilities on both sides of the relief bridge, such as US 192, and do not connect to sidewalks

- Placing a barrier on the north shoulder of the relief bridge would result in a substandard shoulder (less than 10 feet) and would connect a protected pedestrian facility to the roadway shoulder east and west of the bridge, which is not the case on US 192
- In lieu of reducing the shoulder width, a suggestion was made to reduce the median (currently 30-feet). Reduction in either the shoulder or median widths would require a design variation.
- Team members asked about the potential for a separate study to provide a pedestrian facility along the north side of the causeway from SR 513 to the Indian River bridge, looping under the Indian River bridge to connect to the existing pedestrian facility on the south side of the causeway.
- Ultimately, the City of Indian Harbour Beach is most concerned about safety and eliminating the potential for additional fatalities on the bridge above all else.
- Drainage
 - The project team presented the proposed drainage concept to the PVT
 - A suggestion was made to look at potential alternative stormwater management solutions or joint use facilities during design phase. This is performed as the Environmental Look Around (ELA) during PD&E and design projects. This could include the use of pervious pavement for sidewalks.
- Access Management
 - The PVT discussed the potential for closing the median similar to previous work performed on US 192. However, this does not appear to be a feasible option for SR 518 because there is no connectivity (or grid system) in the surrounding area and the road is too narrow for U-turns.
 - The project team will investigate the feasibility of a “pork chop” island at the southernmost Public shopping plaza entrance to eliminate illegal left turns to southbound SR 513.
- Transit
 - Boarding and alighting pads are proposed at all existing transit stops
 - Minor relocations of existing transit stops were discussed with SCAT. SCAT representatives did not have any issues with the proposed stop locations.
- Short and Long Term Goals
 - While the previous Planning Study suggested that reconstruction of the road to current standards would require massive relocations and right of way acquisition, this does not appear to be the case. A reconstruction of the roadway using current FDOT Design Manual Standards could likely be accomplished with minimal right of way acquisition and business disruption, and could address issues like future projected inundation due to climate change and sea level rise. However, any PD&E Study would likely be placed on the bottom of the SCTPO Project Priority List and not be funded for many years.
 - The PVT agreed that the concepts as shown are a good interim solution to address the lack of multimodal connectivity along SR 518 and should progress into future phases.



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FDOT Internal Technical Meeting Summary

Date of Meeting:	1/24/18	Project Number:	435632-1
Project Name:	SR 518 (Eau Gallie Blvd.) Conceptual Design Study		
Location:	FDOT – District 5		
Attendees:	Judy Pizzo, Heather Garcia, George Borchik, Zach Zalneraitis – FDOT; Chris Rizzolo, Jose Pereira, John Chandler - AECOM		

The project team met with FDOT Design and Traffic Operations to discuss preliminary concepts for the SR 518 (Eau Gallie Boulevard) corridor from SR 513 (South Patrick Drive) east to SR A1A.

The following topics were discussed during the meeting.

- Plans/Permits
 - There are limited existing plans and permits available for the segment of SR 518 between SR 513 and SR A1A. Existing plans include improvements to the SR 513 intersection (1984) and milling and resurfacing (1990). No existing permits for any previous roadway improvements are available from the WMD.
- Signal on SR 513 at Publix Shopping Center:
 - Traffic counts indicate that a signal may be warranted for left turning traffic exiting the Publix Shopping Center to SB SR 513 at the shopping center's main entrance (closest to Azalea Terrace).
 - The distance between the intersection of SR 518 and SR 513 and the Publix Shopping Center access is approximately 600 feet.
 - SR 513 has an access classification of 5. The standard for distance between signals on an Access Class 5 facility is 1,320 feet (45 mph or less). It would not be acceptable to Traffic Operations to have two signals on SR 513 at half of the standard spacing, especially close to a major intersection like SR 518 and SR 513.
- Pedestrian facilities
 - The group discussed the location of the mid-block pedestrian crossing initially proposed just to the west of Burns Boulevard near Harbor City Parkway. After discussing potential locations for this crossing, the consensus was to move it to approximately Sta. 47+00 just east of Bluebird Boulevard.
 - EB left turns to Mediterranean Way could be maintained.
 - Sidewalk agreements would be required to connect to existing sidewalks on private property (the existing sidewalks on the north side are all on private property). Ideally, these existing sidewalks could be placed into a dedicated easement for public use.
 - Look into crosswalk markings at San Juan Drive, although a split phased signal could make crossing at this location difficult.
 - The team should look into the possibility of placing pedestrian refuges in the bidirectional turn lanes, preferably at transit stop locations. The refuges should be raised and long enough for motorists to recognize in advance.
- SR A1A intersection
 - Eliminate the free-flow right from SB A1A to WB SR 518 and bring it to the signal.
 - Check the queue length for the SB to WB right turn and modify the bulb-outs, if necessary.
 - Increase the length of the right turn lane into Wal-Mart south of the intersection.
- Existing right turn lanes
 - Some of the existing right-turn lanes on SR 518 may be permitted and others may be "de facto" right-turn lanes that a county or city municipality may have marked after the fact.
 - Check with Brevard ops for driveway permits

- Do not add additional pavement (or shoulder) outside bike lanes to accommodate right turning traffic.
- Sidewalk west of SR 513
 - Check with Amir Asgarinik for past project that may have analyzed a sidewalk on the north side of SR 518 west of SR 513 that extended onto the relief bridge.
 - There is ample accommodation of pedestrians on the south side of SR 518 that accesses both the Eau Gallie Causeway Boat Ramp and fishing pier beneath the Indian River bridge. Because safe pedestrian facilities exist on the south side of the causeway and there are no public facilities on the north side of the causeway, the addition of a sidewalk on the north side of the causeway has been eliminated from further study.
- Drainage
 - There are two basins within the limits of the project. Basin 1 extends from Eau Gallie Causeway over the Indian River to 600 feet west of the SR 518/SR A1A intersection. The second basin is located within the limits of the SR 518/SR A1A intersection.
 - Available existing plans indicate that drainage consists of a series of roadside ditches which collect runoff and convey it to a storm drain system running along south side of SR 518. These existing plans show a portion (from approximately 700' east of SR 513 to the west) of Basin 1 discharging into an existing pond located west of the SR 518/SR 513 intersection. But the plans do not show a connection between the drainage collection system and existing stormwater management facilities (ponds, exfiltration or other types) for the remaining area including the SR 518/SR A1A intersection.
 - In order to determine the permitting efforts for this project, existing stormwater management facilities need to be identified to determine if there's capacity to handle additional runoff from the proposed improvements. The team should check with Kyle Howard, who may have some existing permits on file, and Ferrell Hickson to better determine existing drainage patterns and stormwater management facilities.
 - Based on the conceptual plans, the project may be exempt from permitting through the Saint Johns River Water Management District (SJRWMD) due to the net amount of additional impervious area from the proposed sidewalk and pavement widening.
 - Should AECOM determine that additional stormwater management facilities are required, additional volume can be provided by reducing the maintenance berm of the existing pond to the standard minimum of 15' and/or proposing exfiltration trenches along the limits of the project.
- Typical Section
 - Revise proposed typical section to accurately reflect shoulder width.



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FDOT Team Meeting #2 Summary

Date of Meeting:	4/10/18	Project Number:	435632-1
Project Name: SR 518 (Eau Gallie Blvd.) Conceptual Design Study			
Location: FDOT – District 5			
Attendees: Amy Sirmans, George Borchik, Jim Stroz, Zach Zalneraitis, Ferrell Hickson – FDOT; Chris Rizzolo, Jose Pereira, John Chandler, Oluchi Anyachukwu - AECOM			

The project team met with FDOT Design, Traffic Operations and Drainage to discuss revised concepts for the SR 518 (Eau Gallie Boulevard) corridor from SR 513 (South Patrick Drive) east to SR A1A.

The following topics were discussed during the meeting.

- Relief Bridge and Causeway:
 - At the last Project Visioning Team (PVT) meeting held on March 20, 2018, the PVT indicated that they would like to see a barrier erected along the WB shoulder to protect anybody fishing on the north side of the relief bridge, even though it is signed “No Fishing”. Safety is the City of Indian Harbour Beach’s top priority.
 - FDOT informally analyzed the addition of a pedestrian facility on the north side of the bridge. As there are no dedicated pedestrian facilities adjacent to the WB lanes and a fully protected and accessible pedestrian facility adjacent to the EB lanes, FDOT concluded that a pedestrian facility is not feasible.
 - The PVT also indicated a desire for a separate study for a full pedestrian facility along the north side of the relief bridge and causeway.
 - A request from the City to fund the study should go through the Space Coast TPO. A request to perform the study could be made to the Director of Transportation Development through the FDOT PM.
 - *Action Item: George to provide email regarding previous sidewalk/bridge study, if available.*
- Drainage:
 - The project team presented plans obtained from Brevard County for a sidewalk and drainage project along the corridor dated 1997. The project constructed a sidewalk and updated the drainage system on the south side of SR 518.
 - The existing pond east of SR 513 and south of SR 518 is a sediment pond and was likely not designed for modern treatment criteria. Since the proposed SR 518 improvements are not capacity improvements, the project may not have to comply with current permit conditions and the pond may not have to be modified for treatment. AECOM staff indicated the design criteria utilized for establishing the size of the pond consisted of 1” of runoff from the overall contributing basin.
 - Discussion centered on the feasibility of retaining conveyance ditches versus adding curb and gutter beyond what is shown in the concept plans. FDOT team would like to verify how much of project would require c&g. It may not be feasible to retain any existing ditches or provide new ditches that conform to FDOT standards.

- The eastern basin appears to be draining to the Atlantic Ocean, and the proposed improvements would work with the existing system.
- A PD&E Study would not be required for improvements to the drainage system.
- *Action Item: AECOM to refine drainage concept to make final determination on which areas could retain ditches.*
- *Action Item: AECOM to verify permitting criteria with SJRWMD.*
- *Action Item: AECOM to verify outfall to ocean is open and functioning.*
- *Action Item: AECOM to contact Jack West at Brevard Operations to discuss any flooding issues or system breakdowns.*
- *Action Item: Add the Brevard County sidewalk plans as an appendix to the final document*
- Pedestrian facilities
 - A crosswalk can be provided at the east approach to the Winn-Dixie/Wal-Mart entrance.
 - Sidewalks constructed outside of the right of way may be under public easement.
 - There are no specific locations where pedestrian crossings appear to be concentrated.



**Space Coast Transportation Planning Organization (TPO)
Technical Advisory Committee/Citizens Advisory Committee**

Brevard County Government Center
2725 Judge Fran Jamieson Way, Melbourne, Florida
Space Coast Room, Building C, 2nd Floor

Meeting Date: July 9, 2018

APPROVED MEETING MINUTES

AGENDA

1. Call to Order of the Space Coast Transportation Planning Organization Technical and Citizens Advisory Committees
2. Pledge of Allegiance
3. Public Comment
4. Approval of Minutes – May 7, 2018 (TAC&CAC)
5. Space Coast Transportation Planning Organization (TPO) Actions
6. Bicycle Pedestrian/Trails Advisory Committee (BPTAC)
7. Transportation Disadvantaged Local Coordinating Board (TDLCB)
8. Approval RE: 2019 Strategic Intermodal System (SIS) Project Priorities
9. Approval RE: Resolution 19-01, Adoption of FY 2019-23 Transportation Improvement Plan (TIP)
10. Approval RE: Work Order 19-06K, 2045 Long Range Transportation Plan (LRTP) Scope of Services
11. Aurora Road Corridor Study
12. SR 518 (Eau Gallie Boulevard) Conceptual Design
13. SR 519 (Fiske Boulevard) Conceptual Design
14. Staff Report
15. Public Engagement Report
16. Local Government Report
17. Multi-Modal Agencies Report
18. Regional Coordination Report
19. Florida Department of Transportation Report
20. Adjourn

Technical Advisory Committee Members Present:

Erin Sterk	Brevard County Planning & Development
Cheryl Campbell (ALT)	Brevard County Planning & Development
Devin Swanson	Brevard County Public Works
David Lindemann	Brevard County School Board
Veronica Narvaez-Lugo	Canaveral Port Authority
Todd Morley	City of Cape Canaveral
Karen Hamilton	City of Cocoa
Frank Guertin	City of Indian Harbour Beach
Jenni Lamb	City of Melbourne
Conroy Jacobs (ALT)	City of Palm Bay
Michael Jarusiewicz (ALT)	City of Rockledge
Courtney Barker	City of Satellite Beach
Brad Parrish	City of Titusville
Scott Morgan	City of West Melbourne
Cliff Graham	Orlando-Melbourne International Airport
Terry Jordan	Space Coast Area Transit
Steve Szabo	Space Florida
Abby Johnson	St. Johns River Water Management
Christopher Chinault	Town of Indialantic
Matthew Stinnett	Town of Malabar

Citizens Advisory Committee Members Present

Bob Klaproth	City of Melbourne
Howard Ralls	City of Melbourne
Daniel Spradling	City of Melbourne
James Boothroyd	City of Palm Bay
Philip Weinberg	City of Palm Bay
Pete Petyk	City of Titusville
Rodney Honeycutt	District 1
Bob Baugher	District 2
Tony Sasso	District 2
Peter Fusscas	District 3
George Bovell	District 4
Eric Hoppenbrouwer	District 4
Martin Lamb	District 5
David Miller	District 5

Others Present:

Georganna Gillette	Space Coast TPO Staff
Sarah Kraum	Space Coast TPO Staff
Lisa Hickman	Space Coast TPO Staff
Laura Carter	Space Coast TPO Staff
Abby Hemenway	Space Coast TPO Staff
Steven Bostel	Space Coast TPO Staff
Carol Holden	Space Coast TPO Staff
Kayleen Hamilton	FDOT Liasion
Jamie Kersey	FDOT Liasion
Todd Davis	VHB
Don Krieger	Town of Malabar
Travis Hills	KAI
Judy Pizzo	FDOT
Chris Rizzolo	AECOM
Jim Martin	FDOT-FTE

Item 1. Call to Order

Scott Morgan, TAC Chairman called the meeting to order at 9:30 a.m.

Item 2. Pledge of Allegiance

Moment of Silence for Robert S. Kamm, former SCTPO Executive Director

Item 3. Public Comment

No comment heard

Item 4. Approval of Minutes – May 7, 2018

TAC motion by Mr. Guertin, second by Mr. Swanson, to adopt the meeting minutes of May 7, 2018.

CAC motion by Mr. Fusscas, second by Mr. Miller, to concur with the TAC motion.

Hearing no objections, the CAC motion passed unanimously.

The TAC motion passed unanimously.

Item 5. Space Coast Transportation Planning Organization (TPO) Actions

Ms. Gillette stated the actions taken at the May 10, 2018 TPO Board meeting are summarized in the TAC/CAC agenda package and include:

- Approved Executive Director contract for Mrs. Gillette
- Acceptance of FY Ending September 30, 2017 Audit
- Approved Resolution 18-20, Adopting FY 19 – FY 20 Unified Planning Work Program (UPWP)
- Approved Resolution 18-21, Adopting FY 18 – FY 22 Transportation Improvement Program
- Received the Regional Transit Study results

Item 6. Bicycle/Pedestrian/Trails Advisory Committee (BPTAC)

Ms. Kraum reported on the May 21, 2018 BPTAC meeting:

- Committee Service and Attendance Recognition Awards were presented.
- 2018 Project Priorities - Transportation Alternatives (Bicycle/Pedestrian Improvement) and Regional Trails (SUN Trails), approved with minor changes.
- Heard a presentation by Mr. Paul Haydt on the East Coast Greenway.

Ms. Kraum stated the City of Titusville has been designated as Florida's second Trail Town. Ms. Kraum gave a brief update on the Bicycle/Pedestrian Master Plan and on July 18, 2018 the plan's Steering Committee, made up of municipality technical staff, will have its first meeting.

Mr. Petyk inquired why citizens were not included as part of the steering committee membership. Ms. Kraum replied the steering committee is comprised of technical staff because of their knowledge about the current planning and needs of their municipalities. Citizens will have multiple opportunities to participate, comment on and guide the plan's development throughout the project and during the programmed six (6) public meetings scheduled throughout the county.

Item 7. Transportation Disadvantaged Local Coordinating Board (TDLCB) Report

Mr. Jordan reported on the May 14, 2018 TDLCB meeting:

- Discussed the ADA Bus Stop Assessment
- Regional Transit Studies
- Bike/Ped Master Plan Update
- Transit Project Priorities

Item 8. Approval RE: 2019 Strategic Intermodal System (SIS) Project Priorities

Ms. Gillette gave a brief overview of the 2019 Strategic Intermodal System (SIS) Project Priorities.

Mr. Chinault requested a correction to the name SR 192 to US 192 as shown on page 6 of 6 under the Space Coast Area Transit, Item number 2 in the description. Ms. Gillette agreed to make the correction.

Ms. Sterk asked for more information on the Transit Asset Management Plan. Mr. Jordan from Space Coast Area Transit replied this is a FDOT and USDOT mandated plan for any Transit System which maintains and operates over 90 vehicles. It will provide information on the fleet vehicles usage, maintenance and identifies all assets. This is also a part of the FHWA Performance Measures.

TAC motion by Mr. Chinault second by Mr. Graham, to approve the 2019 Strategic Intermodal System (SIS) Project Priorities.

CAC motion by Mr. Fusscas, second by Mr. Sasso, to concur with the TAC motion.

Hearing no objections, the CAC motion passed unanimously.

The TAC motion passed unanimously.

Item 9. Approval RE: Resolution 19-01, Adoption of FY 2019-2023 Transportation Improvement Plan (TIP)

Ms. Gillette provided a summary and overview of the FY 2019-2023 Transportation Improvement Plan (TIP).

Ms. Sterk inquired if the Eau Gallie Project limits are going to be extended **to the intersection of Sarno** per her email request to Amir at FDOT. Ms. Gillette said that FDOT is working on it and needs to change the limits in the Work Program and then the TIP would be amended.

Ms. Sterk requested the TPO to facilitate some discussion about the Malabar Road PD& E widening and clarify who will be providing the required local match. Ms. Gillette stated the PD&E is scheduled for July 1, 2019 and the FDOT would be reaching out soon to have those discussions. Mr. Jacobs stated the City of Palm Bay and Brevard County are currently in discussion regarding this project and the match requirement.

TAC motion by Mr. Swanson, second by Mr. Chinault, to approve Resolution 19-01, Adopting FY 2019-2023 Transportation Improvement Plan (TIP).

CAC motion by Mr. Baugher, second by Mr. Sasso, to concur with the TAC motion.

Hearing no objections, the CAC motion passed unanimously.

The TAC motion passed unanimously.

Item 10. Approval RE: Work Order 19-06K, 2045 Long Range Transportation Plan (LRTP) Scope of Services

Mr. Bostel gave a presentation on the 2045 Long Range Transportation Plan (LRTP) Scope of Services and the various steps and actions the committee's and board will be considering and approving over the course of the project.

Mr. Sasso asked if the Plan will include regional information and data for not only weekday but weekends. Mr. Bostel responded that the LRTP will include a new requirement of considering tourism and its impact on the system. The Plan will include as much as possible to show these travel patterns and any weekend information from data that is available.

Mr. Szabo from Space Florida commented that the space port will be growing outward into the community. Space Florida is planning on having hubs in the area so it is important they understand the future land use for the area.

Ms. Barker would like to see the TAC/CAC committee make an official recommendation to find additional funding needs for public transportation for the mixed use areas. Mr. Bostel stated a full needs list with cost estimates is something the LRTP will have that will include transit needs.

Mr. Baugher suggested working with the TDC since they have a program that uses cell phone data that can be attributed to tourist.

Ms. Sterk asked what demographic information will be used. Mr. Bostel replied Census Bureau, Property Appraiser, Bureau of Economic and Business Research (BEBR) data, Central Florida Regional Planning Model (CFRPM) and current and future land uses data, all of which will be reviewed with each local agency.

Mr. Petyk inquired about a second source of revenue besides the gas tax. Mr. Bostel stated other revenue sources is a conversation that will be had during the project.

Mr. Sasso commented about density and public transportation issues in the county.

TAC motion by Mr. Chinault , second by Mr. Jacobs , to approve Work Order 19-06K, 2045 Long Range Transportation Plan Scope of Services.

CAC motion by Mr. Baugher , second by Mr. Sasso, to concur with the TAC motion.

Hearing no objections, the CAC motion passed unanimously.

The TAC motion passed unanimously.

Item 11. Aurora Road Corridor Study

Mr. Travis Hills, from Kittelson & Associates gave a presentation on the Aurora Road Corridor Study.

Mr. Petyk asked if reducing the speed limit has been considered. Mr. Hills stated a study would have to be conducted to analyze speed however the speed data collected for the study did not indicate that motorists were speeding.

Mr. Chinault asked what the minimum width of a bike lane is. Mr. Hills stated the FDOT standard is 4 foot paved shoulder but guidance is 7 feet.

Ms. Barker commented on the results of the Aurora Road Corridor Study which included the political and public meeting process and citizens input, however the roadway is only going to be repaved. The study findings reflect the roadway has numerous rear end crashes and is surrounded by many neighborhoods. It is unfortunate that the citizens did not want change to provide for bicycles and sidewalks to accommodate all the school children and to make the corridor safer for all modes. Continuing to conduct planning studies in the future should be re-evaluated, even though these studies identify safer, multi-modal improvements, they are not supported and are not being implemented.

Mr. Ralls suggested to pave the road and strip the road with 3 driving lanes and a bike lane. If it doesn't work return it to current four lane configuration. This option was discussed at the public meetings.

Mr. Lamb stated that the pedestrian traffic is very high in the area and on bicycle and pedestrian safety.

Mr. Boothroyd commented on the drainage issue that Aurora Road has. Mr. Hills replied that the resurfacing project will not fix the drainage. The recommended long term alternative would include curb and gutter that addresses the drainage needs along the corridor.

Mr. Baugher asked about travel time and if that is why everyone didn't want the change from a four lane to a two lane with a center turn lane. Mr. Hills replied that the recommended road diet option would average about a 30 second to a 1 ½ minute increase in commute time going from Stewart Avenue to Wickham Road. This information was provided at the public meetings and is in the final report.

Mr. Sasso stated this committee is a recommending body and the board is elected to make the hard decisions based on our recommendations. The facts clearly show that there is a better way than keeping the four lanes. It is obligatory for us to recommend the better choice. Public opinion is very important but it is opinion and we are dealing with facts and figures and we have an obligation to make the correct decision.

Item 12. SR 518 (Eau Gallie Boulevard) Conceptual Design Study

Judy Pizzo Project Manager for FDOT and Chris Rizzolo Consultant Project Manager for AECOM gave a presentation on the SR 518 (Eau Gallie Boulevard) Conceptual Design Study.

Item 13. SR 519 (Fiske Boulevard) Conceptual Design Study

Judy Pizzo Project Manager for FDOT and Todd Davis, FDOT Consultant gave a presentation on the SR 519 (Fiske Boulevard) Conceptual Design Study.

Mr. Morgan asked if the intersection of Fiske and Barnes at I-95, would the improvement of completing the dual left turn lanes be eligible for consideration in the SIS pool funds since traffic cues back onto the interstate. Ms. Gillette stated this is a good point and she will inquire if this could be added to SIS projects, possibly as a safety project which would make it eligible for potentially a quicker implementation process.

Mr. Chinault asked for clarification on the bike lane width. Mr. Rizzolo stated the state guidelines for designing a corridor starts with a 7 foot buffered bike lane and can move all the way down to a 4 foot if necessary so that it doesn't impact right of ways.

Mr. Sasso inquired about what the definition of a gravity wall is. Mr. Rizzolo stated it is a retaining wall.

Item 14. Staff Report

Ms. Gillette announced that Bob Kamm's Celebration of Life will be held on Saturday, July 21, 2018 at 10:00 a.m. in the Life Event Center at Florida Memorial Gardens. All friends and family are welcome.

Item 15. Public Participation Report

Ms. Hemenway reported on the April and May Public Engagement Report

Item 16. Local Government Report

Mr. Swanson announced that today is the first day of the Pineda Causeway Project and it is expected to be a 18-24 month project.

Item 17. Multi-Modal Agencies Report

Mr. Bostel gave a brief update on the multi-modal coordination efforts.

Item 18. Regional Coordination Report

Ms. Gillette stated the MPOAC Staff and Governing Board Meeting will be held August 2, 2018. The TBARTA meeting and the 2018 Freight Priorities Project List information are in the agenda package.

Item 19. Florida Department of Transportation

Ms. Gillette introduced Kayleen Hamilton and Jamie Kersey as the TPO's new FDOT Liasons.

Ms. Hamilton announced the SR 520/Merritt Island Causeway Public Hearing on Tuesday, July 24, 2018 and US 192 to S of A1A Public Hearing on July 31, 2018.

Item 20. Adjourn

There being no further discussion, the meeting adjourned at 12:12 p.m.



Space Coast Transportation Planning Organization (TPO)

Brevard County Government Center
2725 Judge Fran Jamieson Way, Melbourne, Florida
Space Coast Room, Building C, 2nd Floor

Meeting Date: July 12, 2018

APPROVED MEETING MINUTES

1. **Call to Order of the Space Coast Transportation Planning Organization Governing Board**
2. **Pledge of Allegiance**
3. **Public Comment**
4. **Reports from Committees**
 - A. Technical Advisory Committee (TAC)/Citizens Advisory Committee (CAC)
 - B. Bicycle/Pedestrian/Trails Advisory Committee (BPTAC) Report
 - C. Transportation Disadvantaged Local Coordinating Board (TDLCB)
5. **Consent Agenda**
 - A. Approval RE: TPO Board Minutes – May 10, 2018
 - B. Approval RE: Committee Appointments
 - C. Finance and Budget
6. **Action Items**
 - A. Approval RE: 2019 Strategic Intermodal System (SIS) Project Priorities
 - B. Acceptance RE: Resolution 19-01, Adoption of FY 2019-2023 Transportation Improvement Plan (TIP)
 - C. Approval RE: Work Order 19-06K, 2045 Long Range Transportation Plan (LRTP) Scope of Services
7. **Reports and Presentations**
 - A. Aurora Road Corridor Study
 - B. SR 518 (Eau Gallie Boulevard) Conceptual Design
 - C. SR 519 (Fiske Boulevard) Conceptual Design
 - D. Draft FY 19 Operating Budget
 - E. Staff Report
 - F. Public Engagement Report
 - G. Local Government Report
 - H. Multi-Modal Agencies Report
 - I. Regional Coordination Report
 - J. Florida Department of Transportation Report
8. **Adjourn**

Space Coast Transportation Planning Organization Board Members:

Commissioner Jerry Allender	Canaveral Port Authority		Present
Council Member Jeff Bailey	City of Palm Bay		Present
Commissioner Jim Barfield	BOCC District 2		Present
Deputy Mayor Jeri Blanco	City of Cocoa		Present
Council Member Frank Forester	City of Rockledge	Absent	
Council Member Tres Holton	City of Palm Bay		Present
Commissioner Kristine Isnardi	BOCC District 5	Absent	
Mayor Walt Johnson	City of Titusville		Present
Council Member Teresa Lopez	City of Melbourne		Present
Chair Kathy Meehan	City of Melbourne		Present
Council Member Betty Moore	City of Melbourne		Present
Council Member Jo Lynn Nelson	City of Titusville		Present
Council Member Steve Osmer	South Beaches Coalition		Present
Commissioner Rita Pritchett	BOCC District 1		Present
Council Member Rocky Randels	North Beaches Coalition		Present
Council Member Harry Santiago, Jr.	City of Palm Bay	Absent	
Commissioner Curt Smith	BOCC District 4		Present
Commissioner John Tobia	BOCC District 3	Absent	
Council Member Andrea Young	City of West Melbourne		Present
Councilman Brian Anderson (ALT)	City of Palm Bay		Present

Council Member Tom Price	City of Rockledge	Present
Kayleen Hamilton (non-voting)	Florida Department of Transportation	Present
Paul Gougelman (non-voting advisor)	Space Coast TPO Legal Counsel	Present

Others Present:

Lisa Hickman	Space Coast TPO staff
Sarah Kraum	Space Coast TPO staff
Georganna Gillette	Space Coast TPO staff
Laura Carter	Space Coast TPO staff
Steven Bostel	Space Coast TPO staff
Abby Hemenway	Space Coast TPO staff
Kim Smith	Space Coast TPO staff
Carol Holden	Space Coast TPO staff
Pat O'Neil	Citizen
Marcia Newell	D1 Commissioner Office
Pat Woodward	D2 Commissioner Office
Judy Pizzo	FDOT
Chris Rizzolo	AECOM
Todd Davis	VHB
Dimitre Guenov	VHB
Travis Hills	KAI
John Rice	RS&H
Mo Hassan	FDOT
Terry Jordan	SCAT
Veronica Naravez-Lugo	CPA

Item 1. Call to Order of the Space Coast TPO Board

Chair, Kathy Meehan called the meeting to order at 1:30 p.m.

Item 2. Pledge of Allegiance

Moment of Silence for Robert S. Kamm, former SCTPO Executive Director was observed.

Item 3. Public Comment

No comments heard.

Item 4A. Technical Advisory and Citizens Advisory Committee Report

Ms. Gillette summarized the TAC/CAC action items from their July 9, 2018 meeting to include:

- Approved May 7, 2018 Meeting Minutes
- Approved 2019 Strategic Intermodal System (SIS) Project Priorities
- Approved Resolution 19-01, Adoption of FY 2019-2023 Transportation Improvement Plan (TIP)
- Approved Work Order 19-06K, 2045 Long Range Transportation Plan (LRTP) Scope of Services

Motion by Mr. Price, second by Mr. Holton, to be in receipt of the TAC/CAC Draft Meeting Minutes from May 7, 2018.

Hearing no objections, the motion passed unanimously.

Item 4B. Bicycle/Pedestrian/Trails Advisory Committee (BPTAC)

Ms. Kraum reported on the May 21, 2018 BPTAC meeting:

- Committee Service and Attendance Recognition Awards were presented.
- 2018 Project Priorities - Transportation Alternatives (Bicycle/Pedestrian Improvement) and Regional Trails (SUN Trails), approved with minor changes.
- Heard a presentation by Mr. Paul Haydt on the East Coast Greenway.

Ms. Kraum stated the City of Titusville has been designated as Florida's second Trail Town. Ms. Kraum gave a brief update on the Bicycle/Pedestrian Master Plan and on July 18, 2018 the plan's Steering Committee will have its first meeting.

Item 4C. Transportation Disadvantaged Local Coordinating Board (TDLCB) Report

Ms. Kraum reported on the May 14, 2018 TDLCB meeting:

- Discussed the ADA Bus Stop Assessment
- Regional Transit Studies
- Bike/Ped Master Plan Update
- Transit Project Priorities

Item 5. Consent Agenda

Ms. Gillette read aloud the consent agenda.

Item 5A. Approval RE: TPO Board Minutes – May 10, 2018

Item 5B. Approval RE: Committee Appointments

Item 5C. Finance and Budget

*Motion by Ms. Moore, second by Mr. Osmer, to approve the consent agenda.
Hearing no objections, the motion passed unanimously.*

Item 6A. Approval RE: 2019 Strategic Intermodal System (SIS) Project Priorities

Ms. Gillette gave a brief overview of the 2019 Strategic Intermodal System (SIS) Project Priorities.

Motion by Mr. Allender, second by Mr. Randels, to approve the 2019 Strategic Intermodal System (SIS) Project Priorities. Hearing no objections, the motion passed unanimously.

Item 6B. Approval RE: Resolution 19-01, Adoption of FY 2019-2023 Transportation Improvement Plan (TIP)

Ms. Gillette provided a summary and overview of the FY 2019-2023 Transportation Improvement Plan (TIP).

*Motion by Ms. Young, second by Mr. Johnson, to approve Resolution 19-01, adopting the FY 2019-2023 Transportation Improvement Plan (TIP).
Hearing no objections, the motion passed 17-0 via roll call vote.*

Item 6C. Approval RE: Work Order 19-06K, 2045 Long Range Transportation Plan (LRTP) Scope of Services

Mr. Bostel gave a presentation on the 2045 Long Range Transportation Plan (LRTP) Scope of Services and the various steps and actions the committee's and board will be considering and approving over the course of the project.

Mr. Holton made comments on the land use study and encourages all municipalities to work with the TPO when developing their comprehensive plans.

Motion by Mr. Randels, second by Mr. Osmer, to approve the Work Order 19-06K, 2045 Long Range Transportation Plan (LRTP) Scope of Services. Hearing no objections, the motion passed.

Item 7A. Aurora Road Corridor Study

Mr. Travis Hills, Kittelson & Associates gave a presentation on the Aurora Road Corridor Study.

Ms. Moore commented on the need for more sidewalks and better drainage and how the community doesn't want a "road diet". She was also concerned about more traffic on Eau Gallie Boulevard.

Mr. Holton asked if there is a road similar to this proposed road diet concept locally for people to drive and experience how one would work. Mr. Hills responded that road diets have been successful in many areas including some in Orlando, however, there are no roadways in Brevard that have had this exact concept implemented.

Mr. Osmer commented on the travel capacity on Aurora.

Item 7B. SR 518 (Eau Gallie Boulevard) Conceptual Design

Judy Pizzo Project Manager for FDOT and Chris Rizzolo Consultant Project Manager for AECOM gave a presentation on the SR 518 (Eau Gallie Boulevard) Conceptual Design Study.

Ms. Young asked about the drainage and utility cost. These items are included in the analysis.

Ms. Moore commented on the drainage, cost of the project and wants to make sure it is done correctly.

Item 7C. SR 519 (Fiske Boulevard) Conceptual Design

Judy Pizzo Project Manager for FDOT and Todd David FDOT Consultant gave a presentation on the SR 519 (Fiske Boulevard) Conceptual Design Study.

Mr. Price commented about the proposed roundabout on Fiske, requested sidewalks large enough for golf carts that operate near the golf course and maintenance of open ditches.

PUBLIC COMMENT:

Pat O'Neill, Rockledge, FL commented against the proposed roundabout on Fiske Boulevard at Roy Wall.

Ms. Moore commented on the roundabout and reminded the TPO Board that this item was previously discussed several years ago and the Board voted against the roundabout, supporting the City of Rockledge. Ms. Pizzo stated the new FDOT policy is to evaluate roundabouts for all state intersections.

Item 7D. Draft FY 19 Operating Budget

Ms. Carter gave a brief overview of the draft FY 19 Operating Budget. The final budget will be brought to the TPO board in September for final approval with an effective date of October 1, 2018.

Ms. Young requested the presentation to be sent out by email for further review.

Item 7.E Staff Report

Ms. Gillette announced that Bob Kamm's Celebration of Life will be held on Saturday, July 21, 2018 at 10:00 a.m. in the Life Event Center at Florida Memorial Gardens. All friends and family are welcome.

Item 7F. Public Engagement Report

Ms. Hemenway gave a brief update on the Space Coast TPO April and May public engagement efforts and initiatives.

Item 7G. Local Government Report

No report.

Item 7H. Multi-Modal Agencies Report

Mr. Bostel gave a brief update on the multi-modal coordination efforts.

Mr. Osmer commented on the demolition of Launch Complex 17 towers and how quickly they plan to clean up the area for future use.

Item 7I. Regional Coordination Report

Ms. Gillette stated the MPOAC Staff and Governing Board Meeting will be held August 2, 2018. The TBARTA meeting and the 2018 Freight Priorities Project List information are in the agenda package.

Item 7J. Florida Department of Transportation Report

Ms. Gillette introduced Kayleen Hamilton and Jamie Kersey as the TPO's new FDOT Liaison.

Ms. Hamilton announced the SR 520/Merritt Island Causeway Public Hearing on Tuesday, July 24, 2018 and US 192 to S of A1A Public Hearing on July 31, 2018.

Item 9. Adjourn

There being no further discussion, the meeting adjourned at 3:39 p.m.



Florida Department of Transportation

RICK SCOTT
GOVERNOR

719 S. Woodland Boulevard
DeLand, Florida 32720-6834

MIKE DEW
SECRETARY

SUMMARY **435632-1 SR 518 FDOT Management Meeting** **July 26, 2018**

FDOT Management met to discuss the SR 518 (Eau Gallie Boulevard) corridor from SR 513 (South Patrick Drive) east to SR A1A on July 26, 2018. The following people were in attendance:

Mike Shannon

Alan Hyman

Loreen Bobo (via teleconference)

Alison Stettner

Amy Sirmans

Heather Garcia

Jim Stroz

Ferrell Hickson

Ayman Mohamed

Kathy Alexander

Kayleen Hamilton

Kellie Smith

Carol Scott

Judy Pizzo

Chris Rizzolo – AECOM

The following topics were discussed during the meeting.

- SR 518 Corridor
 - Include replacement of existing lighting in the LRE.
 - Add right of way maintenance maps to the design scope.
- SR A1A Intersection
 - Suggested include the replacement of two mast arms in the LRE to be conservative.
 - Check truck access to Wal-Mart to see if U-turns would have to be provided at SR A1A.
 - *Note: After the meeting the project team determined that truck access to the Wal-Mart plaza would not be block on SR 518 or SR A1A.*
 - Contact Megan Owens regarding mid-block crossing design project on SR A1A.
 - *Note: The project team met with Megan Owens on July 30, 2018 regarding Project No. 439512-1. There is no conflict between the mid-block crossing design and the SR 518 CDS.*
- Drainage
 - Add a Pond Siting Report to the design scope.
 - Indicate the potential for right of way acquisition for ponds during scoping.
 - Add longitudinal slope correction in areas of curb and gutter in the design scope.
 - Indicate whether or not the outfall to the beach east of SR A1A is still functional.
 - Include in LRE estimated costs to “rock” the lane and for galvanized grates.
- Pedestrian Accommodation on Relief Bridge
 - The management team agreed that FDOT will not provide pedestrian accommodations on the north side of the relief bridge since there is a safe, barrier separated crossing on the south side that is accessible by crossing from north to south at the signalized intersection of SR 518 and SR 513.
- SR 513 Intersection
 - The team received a suggestion to modify the access at Publix (to the north) and Panera Bread (to the south) to accomplish the same goal of reducing conflict but maintaining the ability for full access at Panera Bread.

State Road (S.R.) 518 / Eau Gallie Boulevard Concept Development Study Public Information Meeting

FPID 435632-1

August 30, 2018



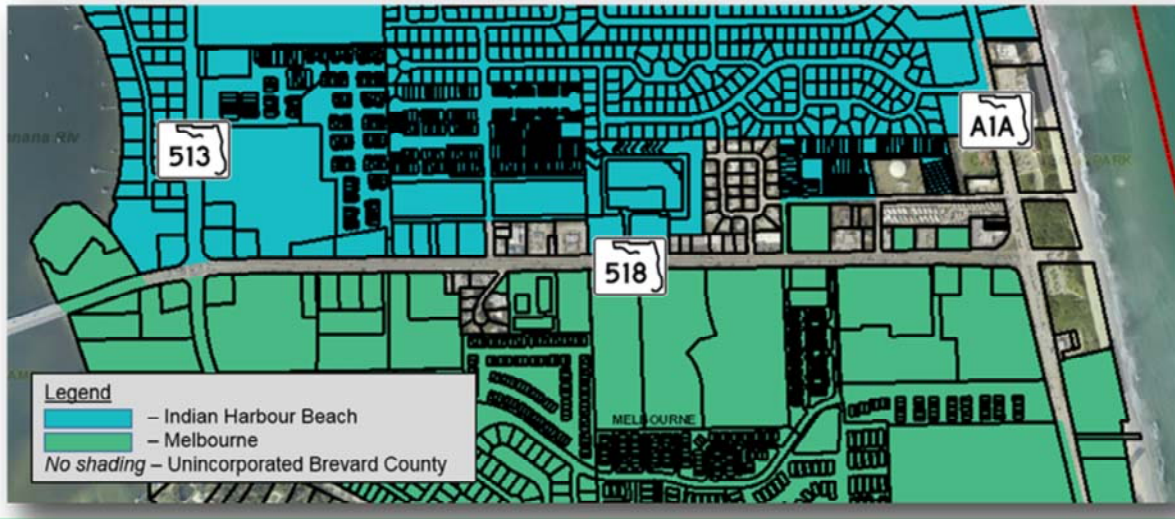
Good evening. Welcome to the Public Information Meeting for the State Road 518 / Eau Gallie Boulevard Concept Development Study. My name is Judy Pizzo, and I am the FDOT Project Manager for this study. With me tonight is Chris Rizzolo of AECOM, the consultant project manager. The State Road 518 Concept Development Study is a continuation of the previous Concept Planning Study, which analyzed ways to improve multimodal connectivity on the beachside.

Project Limits



The project includes all of State Road 518 from the Indian River to the Atlantic Ocean, including the intersections of South Patrick Drive and A1A. The specific project limits are from the Indian River Relief bridge to State Road A1A.

Municipal Boundaries



The project limits include three jurisdictions: The City of Indian Harbour Beach, shown here in blue, the City of Melbourne, shown here in green, and Brevard County, represented by the unshaded areas.

Planning Phase

- Completed March 2016
- Three Priority Groups
- I – Bike Lanes, Sidewalks, S.R. A1A Intersection Reconfiguration
- II – Relief Bridge North Side Pedestrian Facility, Access Management, S.R. 513 Intersection Reconfiguration
- III – Roundabouts, Median (Burns to San Juan)

CORRIDOR ALTERNATIVES AND STRATEGIES REPORT

Table 6. Summary of Improvement Physical Improvements

Priority Group	#	Description	Location	Agency Lead	Potential Phases Needed
I	1A	Sidewalk north side	South Palms Drive to SR A1A	To Be Determined	Concept Development / Design / Construction
	1B	Chinook with accessible transit	West-Over Intersection, and side	To Be Determined	Design / Construction (after access to in place)
	2	Bike Lanes	Relief Bridge to SR A1A	To Be Determined	Implement during reworking
	3	SR A1A Intersection - improve pedestrian crossing along East Gate	East Gate Intersection of SR A1A. Median change along East Gate	To Be Determined	Concept Development / Design / Construction
II	4A	Bridge access and construction of the area	Relief Bridge to SR 513 / South Palms Drive	To Be Determined	Concept Development / Design / Right-of-Way / Construction
	4B	SR 513 - South Palms Drive Intersection - regional maintenance area (SR 513 - South Palms Drive)	Intersection of East Gate Intersect and SR 513 - South Palms Drive	To Be Determined	Concept Development / Design / Right-of-Way / Construction
	5	Chinook and median modifications	Palms / South Intersecting corner (Palms and East Gate)	To Be Determined	Concept Development / Design / Construction
III	Roundabouts and median	Burns Roadway to West-Over driveway	To Be Determined	Both require Area Concept Development / Design / Right-of-Way / Construction	

Now for a little bit of project history. The Concept Planning Study was completed in March 2016 and identified three priority groups of improvements for further study. Priority Group 1 included improvements to bicycle and pedestrian facilities and a reconfiguration of the State Road A1A intersection. Priority Group 2 included a pedestrian facility on the north side of the Indian River Relief Bridge, adjustments to access management on the east and west ends of the project, and reconfiguration of the S.R. 513 intersection. Priority Group 3 included roundabouts at Burns and San Juan with a median between the two.

Concept Development Study

- Initiated July 2017
- Priority Groups 1 and 2
 - No roundabout or median
- Agency Coordination
- Two Project Visioning Team (PVT) Meetings

Table 2. Summary of Development Phases and Recommendations

Priority Group	Description	Location	Agency Lead	Potential Phases Needed
1	On-ramp - North Side	South Patrick Drive to SR A1A	To Be Determined	Concept Development / Design / Construction
	Crosswalk with audible beacon	With On-ramp Intersection, east side	To Be Determined	Design / Construction (after On-ramp is in place)
	SR A1A Lane	Partial bridge to SR A1A	To Be Determined	Implementation during re-routing
2	SR A1A Intersection - remove central island and extend median	East Gate Boulevard @ SR A1A. Median changes using East Gate	To Be Determined	Concept Development / Design / Construction
	Bridge structure and connection of SR 912	Partial bridge to SR 912 / South Patrick Drive	To Be Determined	Concept Development / Design / Right of way / Construction
3	SR 912 - South Patrick Drive Intersection - Reprovision Roundabout with (1) LR, 2 Through, 1 Right	Intersection of East Gate Boulevard and SR 912 / South Patrick Drive	To Be Determined	Concept Development / Design / Right of way / Construction
	Conceptual and further modifications	Partial - Realign existing corner streets on East Gate	To Be Determined	Concept Development / Design / Construction
4	Roundabouts and median	Route 912/ SR 912 to SR 912	To Be Determined	Gain support from Concept Development / Design / Right of way / Construction

The Concept Development Study was initiated in July 2017 with the intent to further refine and determine the feasibility of the Priority Groups identified in the previous study. Only Priority Groups 1 and 2 are included in the scope of this study; no roundabouts were analyzed. The Concept Development Study continues the agency coordination and Project Visioning initiated in the previous phase.

PVT Meetings

- Two meetings
- Continuation of Concept Planning Study Team
- Assist in Focusing Issues and Refinement of Concepts

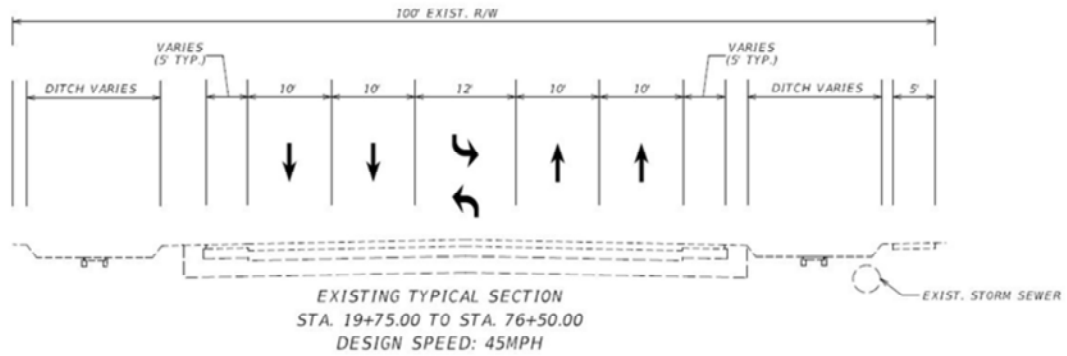
SR 518/Eau Gallie Beachside Concept Development Study				
Project Visioning Team Meeting #1				
Name	Agency	Address	Phone #	Email
Dawn Spindler	B.C. Hills, Inc.	2725 Jody Lane, Titusville, Fla	688-2077	dawn.spindler@bc-hills.com
SR 518/Eau Gallie Beachside Concept Development Study				
Project Visioning Team Meeting #1				
Name	Agency	Address	Phone #	Email
Dawn Spindler	B.C. Hills, Inc.	2725 Jody Lane, Titusville, Fla	688-2077	dawn.spindler@bc-hills.com
Laura Carter	SC TPO	2725 Jody Lane, Titusville, Fla	321-688-2077	laura.carter@spacecoasttpo.com
Rhelle Bonken	Indian Harbour Beach	1200 Jody Lane, Titusville, Fla	321-688-2077	rhelle@indianharbourbeach.com
Janna Taylor	FDOT	771 S. Woodland Blvd, Deland, FL	386-993-9922	janna.taylor@flhwy.com
John H. Ben	SC TPO	2725 Jody Lane, Titusville, Fla	321-688-2077	john.ben@spacecoasttpo.com
Allen Fox	SC TPO	2725 Jody Lane, Titusville, Fla	321-688-2077	allen.fox@spacecoasttpo.com
Toni Givens	City of Melbourne	700 E. Broadway, Melbourne, FL	321-953-7500	toni.givens@cityofmelbourne.com
Mark Ryan	Space Coast Area Transit	2055 S. Federal St, Titusville, FL	321-725-7000	mark.ryan@spacecoasttransit.com
Todd Garcia	Melbourne	700 E. Broadway, Melbourne, FL	321-688-2077	todd.garcia@cityofmelbourne.com

Two project visioning team, or PVT meetings were held as a part of this Study. Team members who were part of the previous study were included in the PVT with the intent to assist and focus the refinement of concepts. Team members included representatives from the following:

- FDOT
- Space Coast TPO
- Indian Harbour Beach
- Melbourne
- Brevard County
- Brevard County School Board
- Space Coast Area Transit
- Florida Space Coast Office of Tourism
- Advocacy groups, such as Keep Brevard Beautiful and the East Coast Greenway Alliance
- And local business owners

Now I would like to pass the presentation over to Chris who will discuss with you the results of the Concept Development Study.

Typical Section

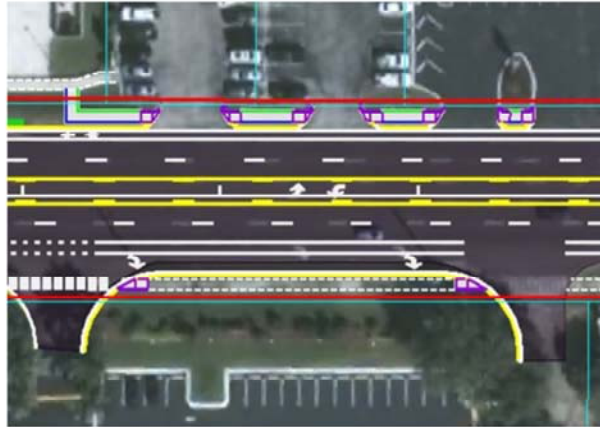


Thanks, Judy. This is the existing typical section for State Road 518. There are two 10-foot lanes in each direction with a 12-foot bidirectional turn lane, providing free access to all properties along the road. There is a 5 foot shoulder on either side of the road that can be used by bicyclists. There is a continuous sidewalk on the south side, and there is no sidewalk within the roadway right of way on the north side, although some sidewalks exist on private property. Stormwater is conveyed through ditches to a stormwater system under the sidewalk on the south side of the road. All of this exists within 100 feet of right of way.

I will now discuss the proposed improvements on the next several slides.

Pedestrians – Sidewalk

- Add to north side of S.R. 518
- Connect to existing
- Requires Closed Drainage



The first improvement proposed is to add a continuous sidewalk on the north side of the road where it does not exist today. This sidewalk will connect to existing sidewalks and provide a safe, continuous facility for pedestrians. Construction of the sidewalk will eliminate the existing drainage swales and necessitate construction of a closed drainage system, which includes curb and gutter.

Pedestrians – Mid-Block Crossings

- Locations
 - Near Burns Boulevard
 - Transit Stop
- Visibility
 - Rectangular Rapid Flashing Beacons (RRFB's)



In addition to a continuous sidewalk on the north side of the road, the project team proposed two mid-block crossings. Currently, there are only marked crosswalks at State Road 513 and State Road A1A, which are approximately one mile apart. The concept development study proposed two locations for mid-block crossings: one to the east of Burns Boulevard and one at an existing transit stop in front of the Brittany Apartment Homes. The mid-block crossings will include ground mounted and overhead Rectangular Rapid Flashing Beacons, or RRFBs. In addition to the mid-block crossings, a marked crosswalk will be provided at the signal in front of the Wal-Mart shopping plaza.

Transit

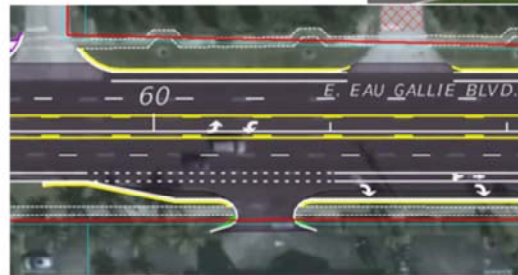
- Relocations of Transit Stops
- Add Bus Pads, access from sidewalks



There are two bus routes that use this section of SR 518. While the concept planning study did not specifically address transit, the project team recommended some minor changes in location for the existing transit stops in order to provide concrete bus pads and access to sidewalks.

Bicycle Facilities

- Existing 5-foot shoulder with no “keyholes” at right turn lanes
- Addition of keyholes provides continuous route, but may impact existing drainage



The existing 5 foot shoulders can be used by bicyclists; however, there are no keyhole lanes at the numerous right turn lanes along the road. The project team proposes the addition of five-foot keyhole lanes at all right turn lanes, which requires five feet of widening at these locations. The addition of bicycle keyhole lanes provides a continuous route for bicyclists but will impact existing swales where they exist adjacent to right turn lanes, requiring construction of curb and gutter in these areas.

S.R. A1A Intersection

- Removal of Free-flow Right Turn Lanes
 - Accommodates pedestrian crossing
- Remove weave condition on Southbound S.R. A1A
- Extend median on S.R. 518 to the west
 - No conflicts with queuing traffic

The Concept Planning Study identified improvements to State Road A1A. These improvements include removing the free-flow right turn lanes, which act as an impediment to pedestrians, removing the weave condition between southbound State Road A1A through traffic and southbound State Road A1A traffic wishing to turn right into the Wal-Mart Plaza and the extension of the median in State Road 518 to the west to reduce vehicular conflict.

S.R. A1A Intersection



This slide illustrates the proposed improvements to the State Road A1A intersection. Note that all turning movements are now signalized and there are crosswalks both north and south of the intersection.

S.R. 513 Intersection

- Removal of one WB left-turn lane to accommodate u-turns
- Bulb-out in NE quadrant
- Extend median on S.R. 513 to the east
 - Eliminate conflicts with left turning traffic

Improvements to the State Road 518 intersection with State Road 513 include removing one westbound left turn lane to accommodate u-turns, adding a bulb-out in the northeast quadrant to shorten the crossing distance across State Road 513 for pedestrians and extending the median on S.R. 518 to the east to eliminate conflicts between left-turning traffic from shopping centers north and south of the road.

S.R. 513 Intersection



This slide illustrates the proposed improvements to the State Road 513 intersection. Left turns onto S.R. 518 are restricted from the driveways highlighted in the red circle.

Indian River Relief Bridge

- Barrier separated pedestrian accommodations on south side
- Safe crossing from north to south at S.R. 513
- Safe protected route to Eau Gallie Causeway Boat Ramp and Indian River Bridge fishing pier
- Maintain existing conditions at relief bridge
 - Discussions with FDOT Design and Traffic Operations
 - No safe crossing north to south across S.R. 518 west of S.R. 513
- Separate Trail Project to be Placed on SCTPO Trail Priority List

The Concept Planning Study recommended a barrier-separated pedestrian facility on the north side of the bridge. Currently, there is a safe and protected route across the bridge on the south side leading to the Eau Gallie Causeway boat ramp. Pedestrians currently cross from the north side of State Road 518 to the south side at the signalized intersection with State Road 513. Through extensive discussions with FDOT design and operations, this concept will not move forward into final design because there are no pedestrian facilities east or west of the bridge. However, as a result of discussions with the Project Visioning Team, a separate trail project will be placed on the Space Coast Transportation Planning Organization's Trail Priority List that will include pedestrian accommodations along the north side of the causeway, including the relief bridge.

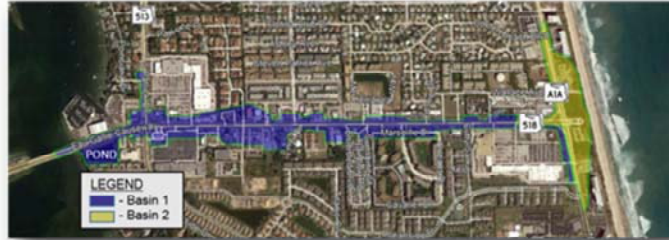
Drainage



There is one commonality between all of the proposed improvements. Each impacts the existing drainage system to varying degrees and will require additional construction to accommodate the projected stormwater runoff.

Drainage

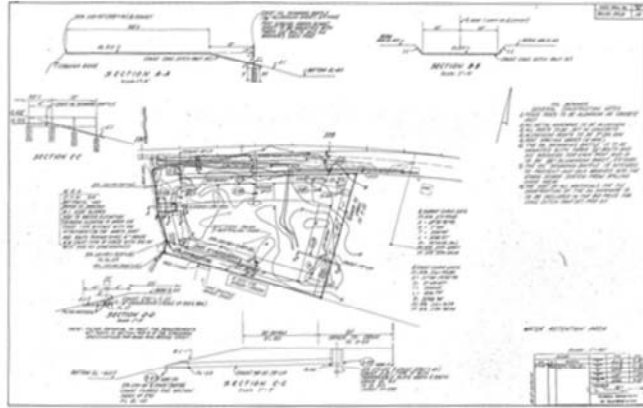
- Existing System
 - Ditches and Stormsewer
 - Conveyed to Pond west of S.R. 513



Existing stormwater is collected via ditches and stormsewer. The majority of the project shown here in blue drains west to the pond south of State Road 518 and west of State Road 513. The portion of the project shown here in yellow drains to the east.

Existing Drainage System

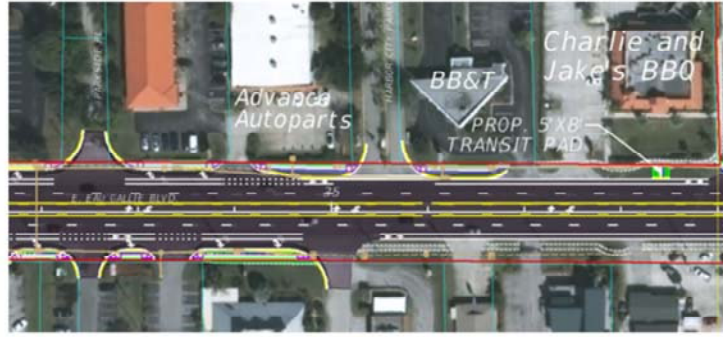
- Stormwater Ponds
 - Large pond south of S.R. 518, west of S.R. 513
 - Two smaller ponds north and south of S.R. 518
 - Built as part of 1984 intersection improvements



The existing pond was built in 1984 along with two smaller ponds on State Road 513 north and south of State Road 518 as part of the improvements to the intersection of State Road 518 and State Road 513. A Brevard County sidewalk project in the 1990s included additional improvements to the drainage system. Adjacent properties are permitted to drain into the existing system.

Potential Drainage Concepts

- Additional Impervious Areas
 - Sidewalk to north
 - Bicycle Keyholes at Right Turn Lanes
 - Reduce / Eliminate conveyance swales



The addition of sidewalks on the north side of State Road 518 and the 5 feet of roadway widening proposed at right turn lanes to provide keyholes reduces or eliminates the space required for conveyance swales and inlets.

Potential Drainage Concepts

- Closed drainage system (curb and gutter) where swale not feasible
 - Approximately 5,400 ft. of additional curb and gutter
- May require modification to roadway grade



In these areas where a swale is not feasible, a closed drainage system, which uses a curb and gutter and inlets, are proposed. Approximately 5,400 feet of additional curb and gutter are proposed. Minor changes to the roadway grade may be required in these areas to facilitate drainage.

Potential Drainage Concepts

- Stormsewer
 - Construction of new trunk line / Reconstruction of existing trunk line
 - Pond treatment
 - Expand Existing Pond
 - Impacts to Utilities
 - S.R. 513 Intersection
 - Detailed analysis during next phase (Final Design)



The proposed improvements would require construction of a new drainage system or a reconstruction of the existing one. Reconstruction of the drainage system will likely result in impacts to existing utilities both adjacent to the road and at the State Road 513 intersection. At this early phase of project development it appears that the existing pond can be modified. A detailed drainage analysis will be required during the design phase of the project to accurately determine impacts and costs.

Estimated Project Costs

- Design
 - ~\$500,000
- Construction
 - ~\$6,500,000



The project team prepared rough estimates of project costs. The final design phase cost estimate is approximately \$500,000. The estimated construction costs are approximately \$6,500,000, which includes contingencies to accommodate project unknowns at this early phase of project development. Judy will now discuss the next steps in the Concept Development process.

Next Steps

- Refine Alternatives
- Documentation
- Final Design
 - Not funded



Thank you Chris. With this Public Information Meeting the project is nearly complete. Concepts will be revised as necessary based on input received at this meeting and a technical memorandum will be prepared that documents the analyses performed as part of this Concept Development Study. The project will then go through the technical scoping process as it awaits funding for the final design phase.



Contact Information

Judy Pizzo, MSURP
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719 S. Woodland Blvd
DeLand, FL 32720
(386) 943-5167
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Consultant Project Manager
AECOM
150 N. Orange Ave., Ste. 200
Orlando, FL 32801
(407) 992-5794
chris.rizzolo@aecom.com

This concludes the presentation. If you have any questions or comments, FDOT and consultant staff will be available to discuss the project with you until 7 o' clock. There are also comment forms available for you to fill out and either leave with us or mail in at a later date. Both my and Judy's contact information are on the screen and will remain posted for the remainder of this meeting. Thank you for attending tonight's meeting.

SR 518 Concept Development Study

Financial Project ID: 435632-1



August 30, 2018 | Public Information Meeting

Indian Harbour Beach City Hall

2055 South Patrick Dr.

Indian Harbour Beach, FL 32937



Name(s)	Business or Organization (if any)	Email	Mailing Address
MARIO AMARAL		2020 AMARAL@GMAIL.COM	284 Coastal Hill Drive IHB 32937
LINDA AMARAL			Same as above
TODD SCALDO	IHB	TSCALDO@INDIANHARBORFL.ORG	
J. FARRAR			514 S. RIVER OAKS DR IHB,
GWEN BURLEY		cburley@cfl.rc.com	710 Unity Dr IHB 32937
ROBERT & MARIELLA L'HEUREUX		BRALUCE4@GMAIL.COM	225 MARION ST. IHB 32937
JIM NOLAN, SR	IHB		
CHUCK BOGLE	MLBFL	CHUCK.BOGLE@MLBFL.ORG	
Todd Corwin	City of Melbourne	todd.corwin@mlbfl.org	
Kim Smith	Space Coast TRC		
Shauna Hume	IHB	shume@indianharbour.org	
Frae Plet	Altha Hospital	Managu@PiataEngineering.com	
PAUL GREENIS	I.H.B	PGREENIS@cfl.vv.com	

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Name(s)	Business or Organization (if any)	Email	Mailing Address
Jack & Julie Bradford		jabradford@cf1.rr.com	6 Yacht Club Ln Indian Harbour Beach FL 32937
TERRY SURAN	SCAT	TERRY.SURAN@BREVARD.FL.CD	
JERRY EVANS	EVANS RETAIL, LLC	jce@cf1.rr.com	P.O. Box 1885 (1685) New Smyrna Bch, FL 32170
Tami GilLEN	City of Melb.	Tami.gillen@mlbfl.org	
Betty Moore	City of Melb. Dist 2		
Gene Davis	Pan Gallie CRA Adv. Cmte.	-	
Ser. M. Jankowski	IH3PD	mjankowski@indianharbour.org	
Kelly Grennen	Alona Pet + Bird	kellyg@aloharet.com	
Jeff Calhou		Todecorum@401.com	209 W. Mico Drive IHB FL 32937
Tim Dwight	GREEN TURTLE	jtdwight@mc.com	

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Name(s)	Business or Organization (if any)	Email	Mailing Address
DAVID W. GROVER	SUN HARBOR NURSERY		920 E. EAU GALLIE BLVD. INDIAN HARBOR BCH, 32951
CATHERINE ALEXANDER	RETIRED		15 WINDJAMMER PT. NEAR # ISL, FL 32952
Joanne Infurna	Dale Foreuser R.E.	joanneinfurna1@gmail	436 5th Ave Chudalonte FL 32903
Ken HORTON	Retired	KJHORTON@GMAIL.COM	520 Palm Springs Bl #104 IHB FL 32937
GREG RAIN			1185 YACHT CLUB BLVD.
SCOTT NIKKLE	IHB - DEPUTY MAYOR		306 SALUDA DR IHB, FL.
Abby Hemenway	SCTPO	abby.hemenway@brevardfl.gov	
Ben Elliott	Bob's Bicycle Shop	ben@bobsbicycles.com	510 E. Eau Gallie Blvd. IHB FL 32937
Christine Miesowicz		chris mieso@aol.com	760 Lanai Cir #104 IHB FL 32937
ROGER MEREDITH		TSQUARE22@AOL.COM	520 PALM SPRINGS BLVD. #809 IHB FL 32937
Georganna Gillette	Space Coast tpo	georganna.gillette@brevardfl.gov	
Jonathan Schuman	Brevard County	soil.water@gmail.com	3092 Jacobaeus Lane Indian Lake, FL 32903

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WOULD LIKE TO HAVE SAN JUAN
DR. CROSSWALK ACROSS EAU GALLIE
BE SYNCED WITH THE TRAFFIC
SIGNAL AT WINN DIXIE EXIT.

NAME: GREG RAY
ADDRESS: 1185 YACHT CLUB BLDG.

NOTE: Please complete and place in the "Comments" box at this meeting or mail to Judy Pizzo at the address on the back of this Comment Form by September 10, 2018.

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Key hole lane on SR 513 N. of
SR 518 - for all 3 R-turn
into plaza

NAME: as told to Judy P.

ADDRESS: _____

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WE NEED TO COMPLETE THE INTERSECTION SAFETY
IMPROVEMENTS PROPOSED IN 2012 :

- 1.) LEFT TURN SIGNAL HEAD FOR 1 OR 2 VEHICLES
MAX AT SAN JUAN DRIVE / WINN DIXIE
- 2.) PEDESTRIAN CROSSWALK AT EAST SIDE OF
WINN DIXIE DRIVEWAY.
- 3.) R/W IS AVAILABLE FOR SIDEWALK ALL
THE WAY ON NORTH SIDE FROM SN JUAN
TO AIA. SINCE GASSTATION HAS ALREADY.
- 4.) THESE ITEMS NEED TO BE COMPLETED SINCE
FREE TURN SOUTH FROM EAU GALLIE TO AIA.
WILL CREATE HEAVY QUEUE LONG TRAFFIC WILL USE
THE 800 LF DISTANCE

NAME: KELLY GRENNAN, FRANK PLATA
ADDRESS: 21 243 4040
ALOHA ANIMAL HOSPITAL.

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Judy Pizzo at the address on the back of this Comment Form by September 10, 2018.

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Lieu

PLEASE CONSIDER "HAWK" IN ADDITION
~~TO~~ RT OF RIFB FOR THE
FOLLOWING REASONS:

① SPEEDS ARE VERY HIGH
ON EAU GALLIE BLVD
SR 518.

② THERE'S A MILE
IN BETWEEN SIGNALS.
ADD A "RED" # SIGNAL
HAWK WOULD BE
WARRANTED.
DUE TO SAFETY.

NAME: Tami Gillen

ADDRESS: 2616 CANARY ISLES DR.
MELBOURNE FL 32907

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Sanaco - make L turn North on SR 518

Belaire Drive - sign & shrubbery
encroachment impedes lined
@ right

NAME: as told to Judy
ADDRESS: _____

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PLEASE ENCOURAGE THE CITIES OF
IHB + MELBOURNE TO
PLAN FOR + FUND BUS SHELTERS
AT EACH TRANSIT STOP. - SCAT
HAS THEM AVAILABLE - JUST NEED
COOPERATION FROM CITIES -
PE- MARKETING OPPORTUNITY FOR
CITIES - LOGO ON BACK
PANEL OF SHELTER.

Also - U-TURNS AT 518 + 513
IS A NO GO! WILL CAUSE
ACCIDENTS.

NAME: CATHERINE ALEXANDER
ADDRESS: 15 WINDJAMMER PT,
MERRITT ISLAND, FL 32952

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To allow for proper cycling of water and nutrients from the lagoon, we need to replace the Race Course and Pinnacle causeways with bridges that allow for an unobstructed flow of water.

This will assist mightily in preserving the 7 Billion dollar economic engine we call the St. Johns River lagoon.

NAME: Jonathan Schuman

ADDRESS: 3092 Jacobus Lane
Indian Harbour, FL 32903

321-213-7805

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Great Presentation. Great improvements to initial thought Processes for corridor updates.

1- would like to see a lower speed limit between S. Patrick & A-1-A.

45mph as posted is only a guideline to motorists going 50+. 35 suggested/40 better

2- Clarify "curbing type" across driveway to keep traffic ingress/egress smooth.
- valley gutter a must -

3- Clarify drainage treatment at Bunns & 518 with regards to turning ~~radii~~ radii & exist FH on corner.

NAME: Ben Elliott / Bob's Bicycle Shop
ADDRESS: 510 E. EAU Gallie Blvd.
IHB, FL 32937

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