St. Lucie Transportation Planning Organization

St. Lucie TPO

Jobs Express Terminal Connectivity Study

June 2020

Prepared by

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1.0 Introduction

At the request of the St. Lucie Transportation Planning Organization (TPO), this study reviewed multimodal connectivity to/from the Jobs Express Terminal programmed for construction in 2020. The Terminal will be located along the south side of Gatlin Boulevard east of SR-9/ I-95, as shown in **Figure 1-1**. This transportation multimodal facility is a priority project for the St. Lucie TPO, the City of Port St. Lucie, and the Florida Department of Transportation District Four (FDOT D4). The proposed multimodal center is conceived to support regional commuter trips to and from the St. Lucie County area.

The Jobs Express Terminal will include:

- Connection to existing access road for Gatlin Plaza shopping complex
- Connection to the road/area to the east
- Parking capacity for 162 vehicles
- Bus parking and shelter for 6 buses
- Pedestrian-level lighting, aesthetically-pleasing landscaping, and ADA accessibility
- Bicycle racks
- Electric vehicle charging stations

This study focused on the following tasks:

- Conduct a multimodal safety assessment of Gatlin Boulevard/Tradition Parkway from west of Village Parkway to east of Rosser Boulevard.
- Evaluate nearby pedestrian and bicycle network connectivity.
- Evaluate transit connectivity.

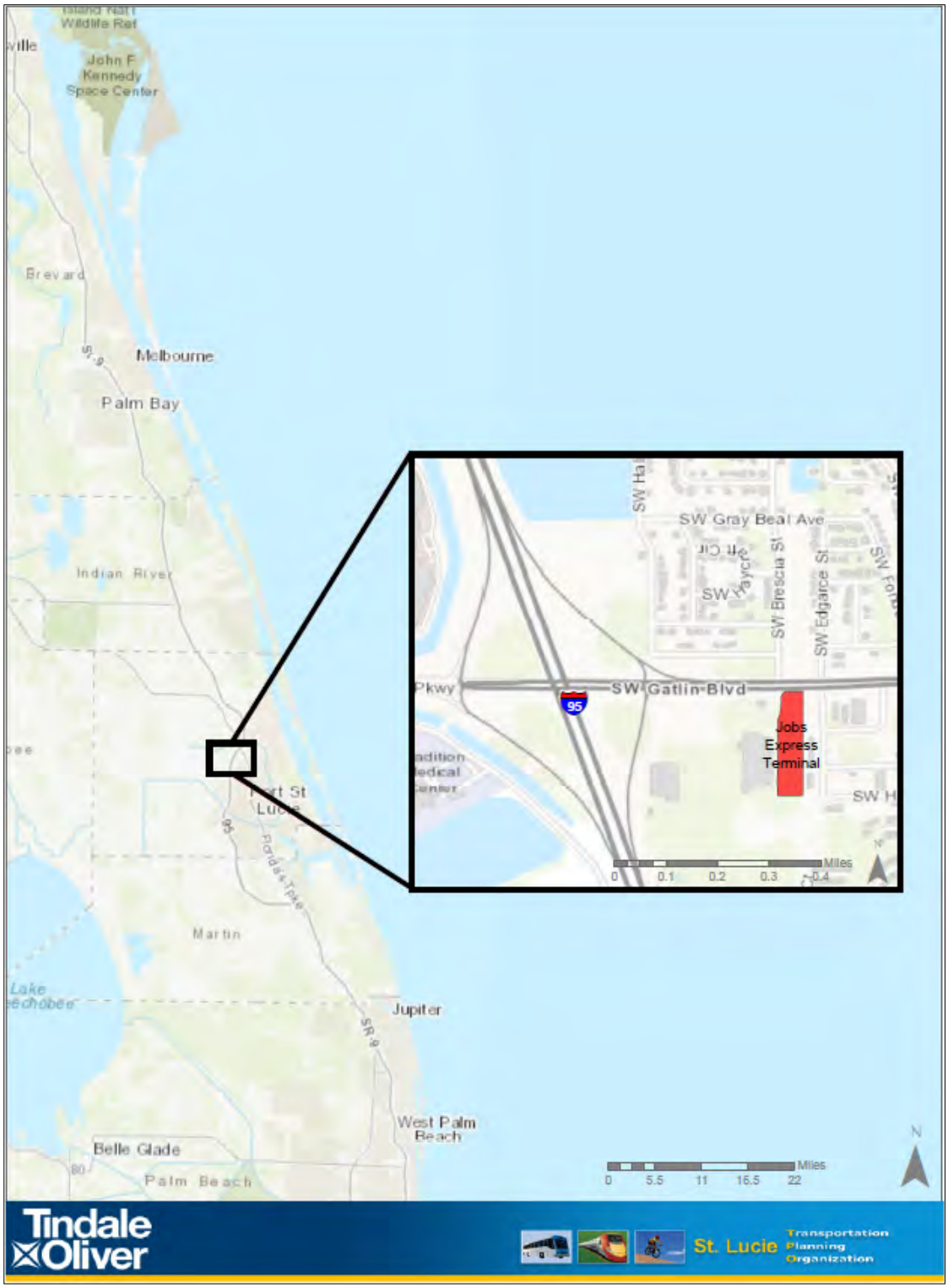


Figure 1-1: Project Location

2.0 Stakeholders and Public Involvement

Based on its adopted Public Participation Plan, the TPO used the following methods to identify the stakeholders to be involved:

- Self-Identification—Anyone who has exhibited previous interest through public meeting attendance, written comments, or contact with the TPO.
- TPO Identification—Agencies, organizations, and the general public identified from the TPO's community profiles and current mailing lists and from public records.
- Third-party Identification—General public and private groups as identified through known stakeholders.

As a result of this analysis, stakeholders identified included the following:

- General public
- Affected local and regional agencies
- Representatives of public transportation agencies
- Representatives of users of bicycle and pedestrian facilities
- Representatives of persons with disabilities and environmental justice (EJ) communities
- Tourist industry
- Native American tribal government
- Natural disaster risk reduction officials
- Community based mobility advocacy groups

Although presentations were made to agency groups such as the study's Advisory Committee, the St. Lucie-Martin Community Traffic Safety Team, and groups that included citizens such as the Bicycle-Pedestrian Advisory Committee and the Local Coordinating Board for the Transportation Disadvantaged, much of the planned grassroots outreach was curtailed by the Covid-19 closure of public facilities. Representatives of the St. Lucie TPO facilitated the public outreach.

3.0 Existing Conditions

3.1 Study Area Characteristics

The area surrounding the location of the proposed Jobs Express Terminal is characterized by suburban residential neighborhoods including a variety of multi-family developments and shopping centers located primarily along Gatlin Boulevard/Tradition Parkway. Major businesses include a Home Depot and a Walmart Super Center, both located east of SR-9/I-95.

A comparative review of existing and future land use showed that the most significant future growth is planned southwest of the SR-9/I-95 interchange, where an approximately 3,650-acre Community Redevelopment Area (CRA) has been designated for residential communities and commercial use. The CRA falls within the Southern Grove Development Regional Impact (DRI). Other DRIs in the vicinity of the proposed Jobs Express Terminal are the Tradition DRI, the Riverland DRI and the Wilson Grove DRI as shown in **Figure 3-1**. Considering that the Tradition DRI is almost completely developed, future

development from the other DRIs will bring approximately 30,850 new dwelling units and 8,095,047 sf of retail and office space which will generate a significant increase in the number of trips in the area. A summary of the types and size of approved development for each of these DRIs is presented in **Table 3-1**. Detailed information is included in **Appendix A**.

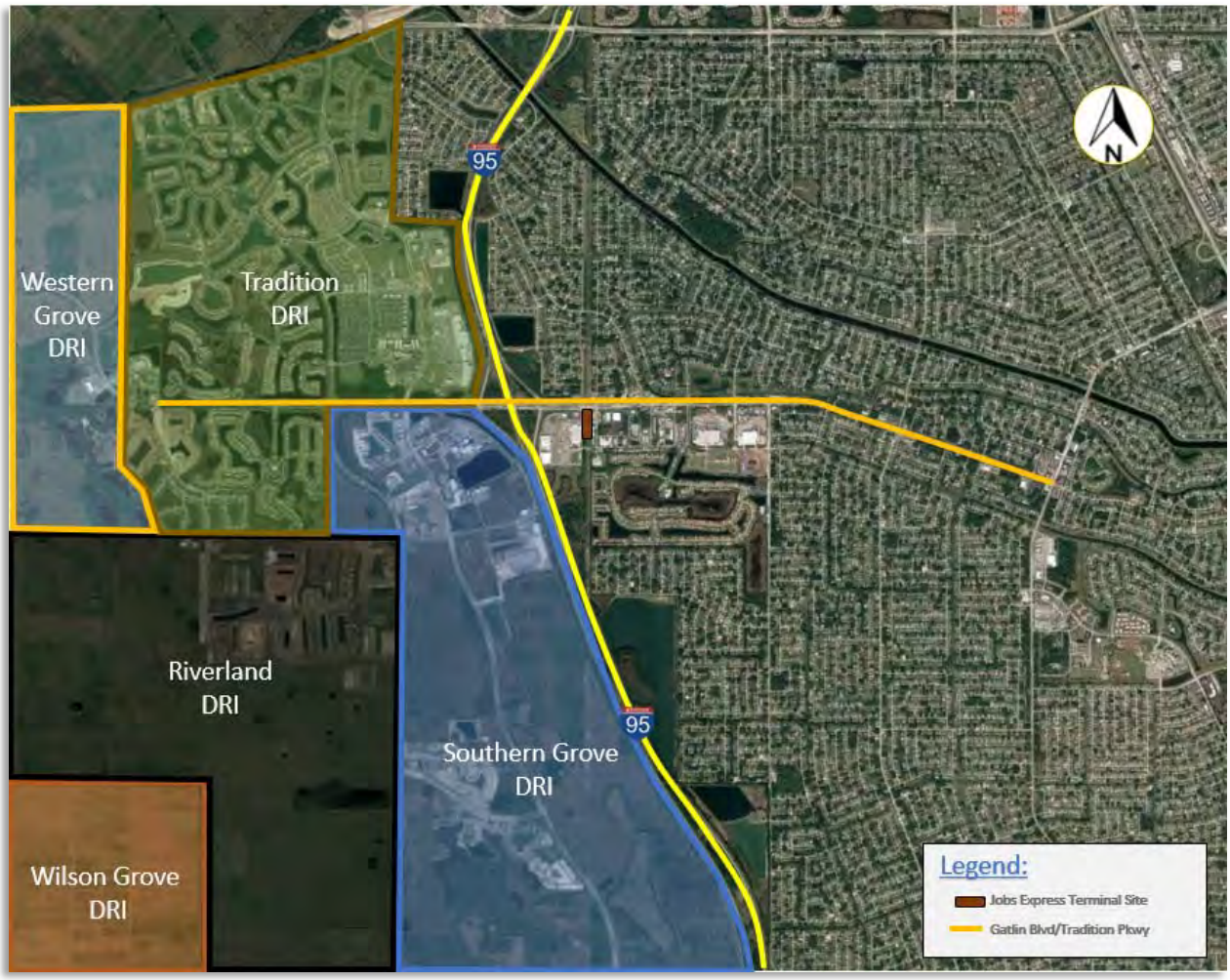


Figure 3-1: Development of Regional Impact Boundaries

Table 3-1: DRI Development Summary

DRI Name	Type/Size of Approved Development	General Location
Southern Grove	7,388 dwelling units 2,164,061 sf retail 2,073,238 sf office 1,999,404 sf industrial/warehouse 500-room hotel	W of I-95, East of Riverland DRI, S of Tradition DRI
Wilson Grove	7,700 dwelling units 765,000 sf retail 222,000 sf office 1,361,250 sf research/office 1,361,250 sf light industrial 382,872 institutional/civic	N of Martin Countyline, S and W of Riverland DRI, W of I-95
Tradition	7,245 dwelling units 675,512 sf retail 1,295,567 sf office 300-room hotel 200-bed hospital	W of I-95, E of Western Grove, N of Riverland/ Kennedy DRI
Riverland	11,700 dwelling units 892,668 sf retail 1,361,250 sf research/office 1,361,250 sf light industrial 327,327 sf private	W of I-95, between Southern Grove & Wilson Groves DRI
Western Grove	4,062 dwelling units 365,904 sf retail 250,906 sf office	W of Tradition DRI, W of 200-ft FPL easement, S of proposed Crosstown Parkway Extension, E of Range Line Road

Map 3-1 shows the Future Land Use designations within and surrounding the study area, which includes commercial, residential and future community development.

Previous studies from the St. Lucie County Transit Development Plan 2020–2029 showed a significant minority population and zero-vehicle households in nearby neighborhoods that could greatly benefit from the proposed Jobs Express Terminal **(Figures 3-2** and **3-3).**

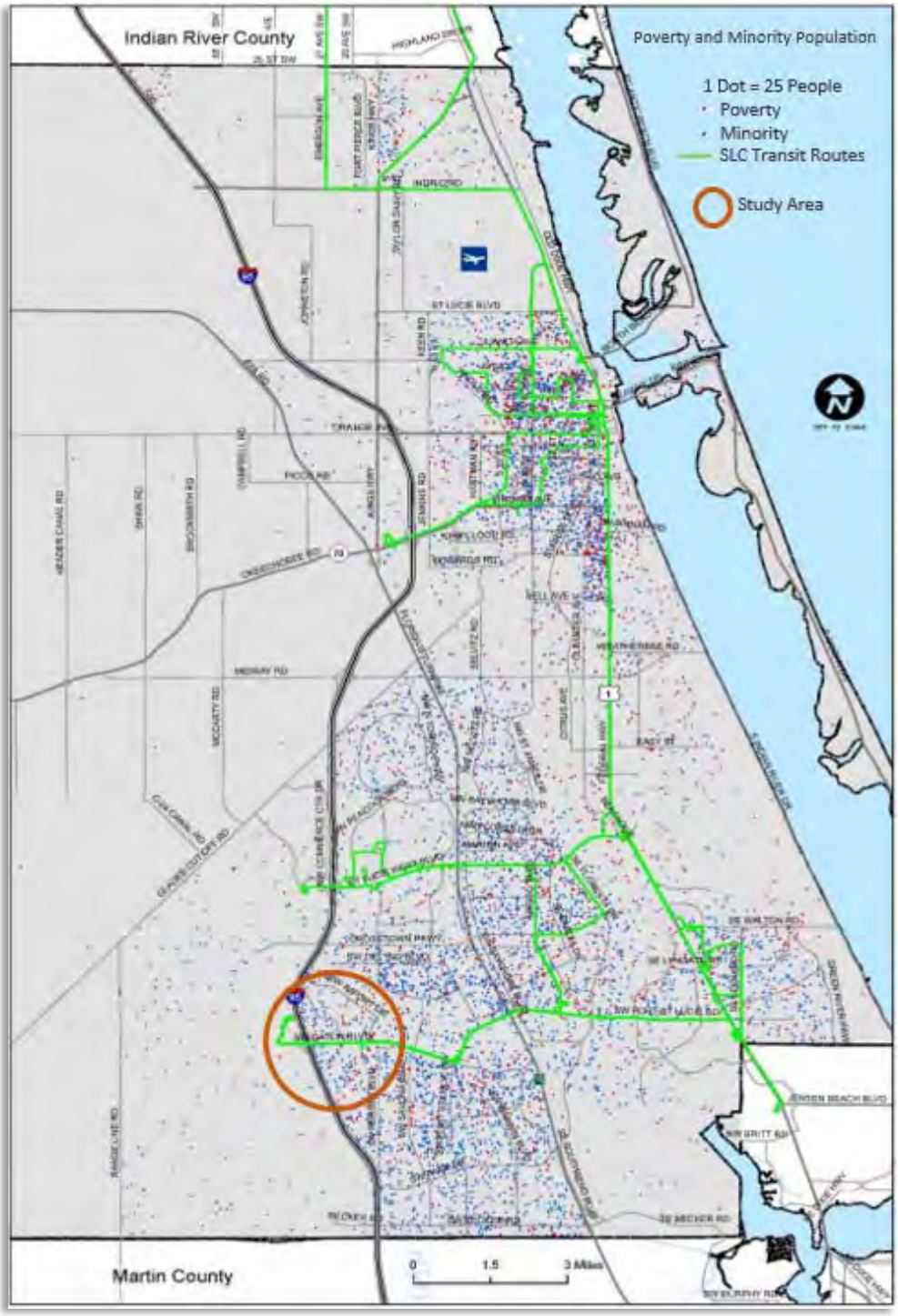


Figure 3-2: Excerpt from St. Lucie County Transit Development Plan 2020–2029, Poverty and Minority Population

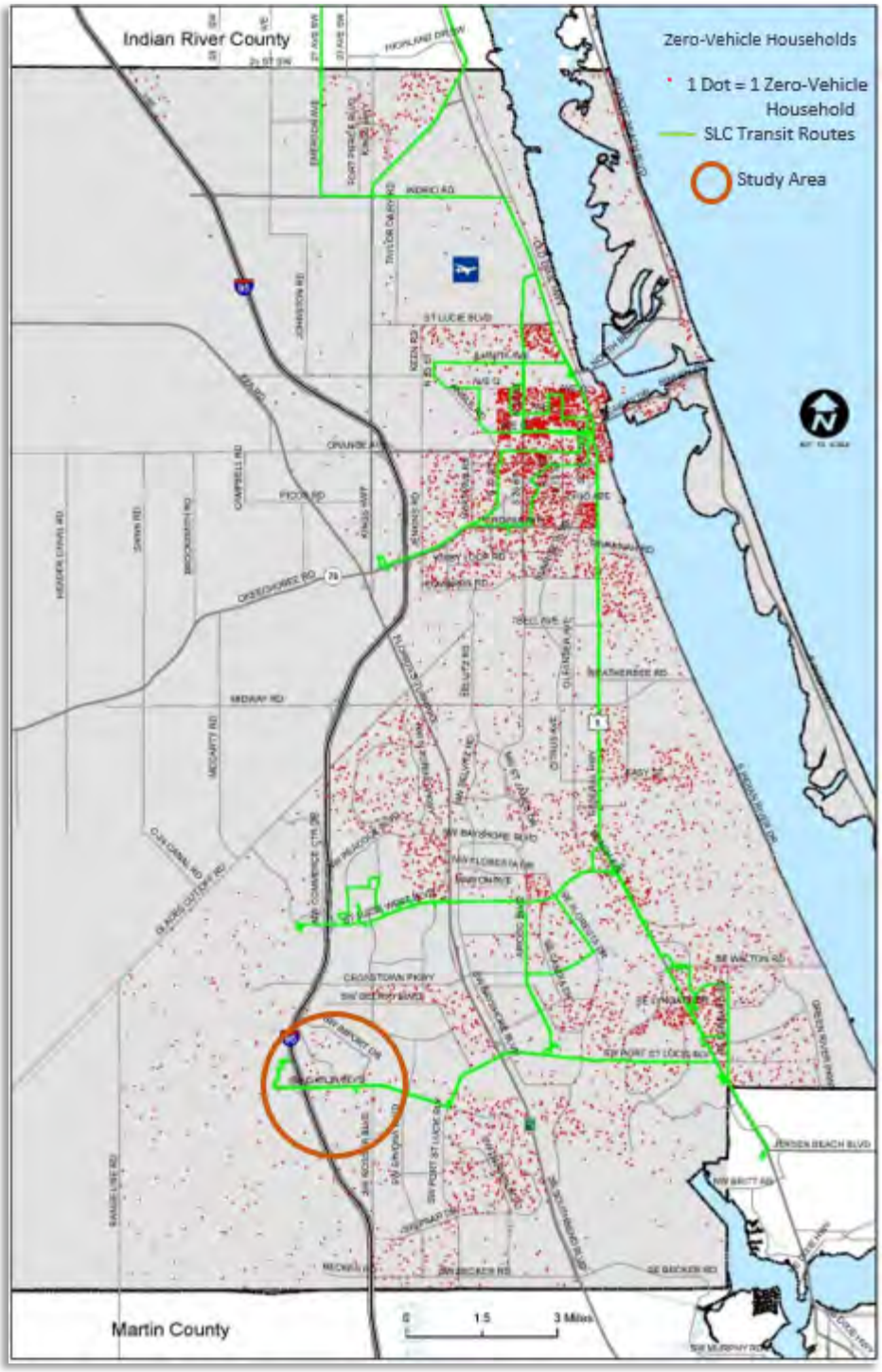
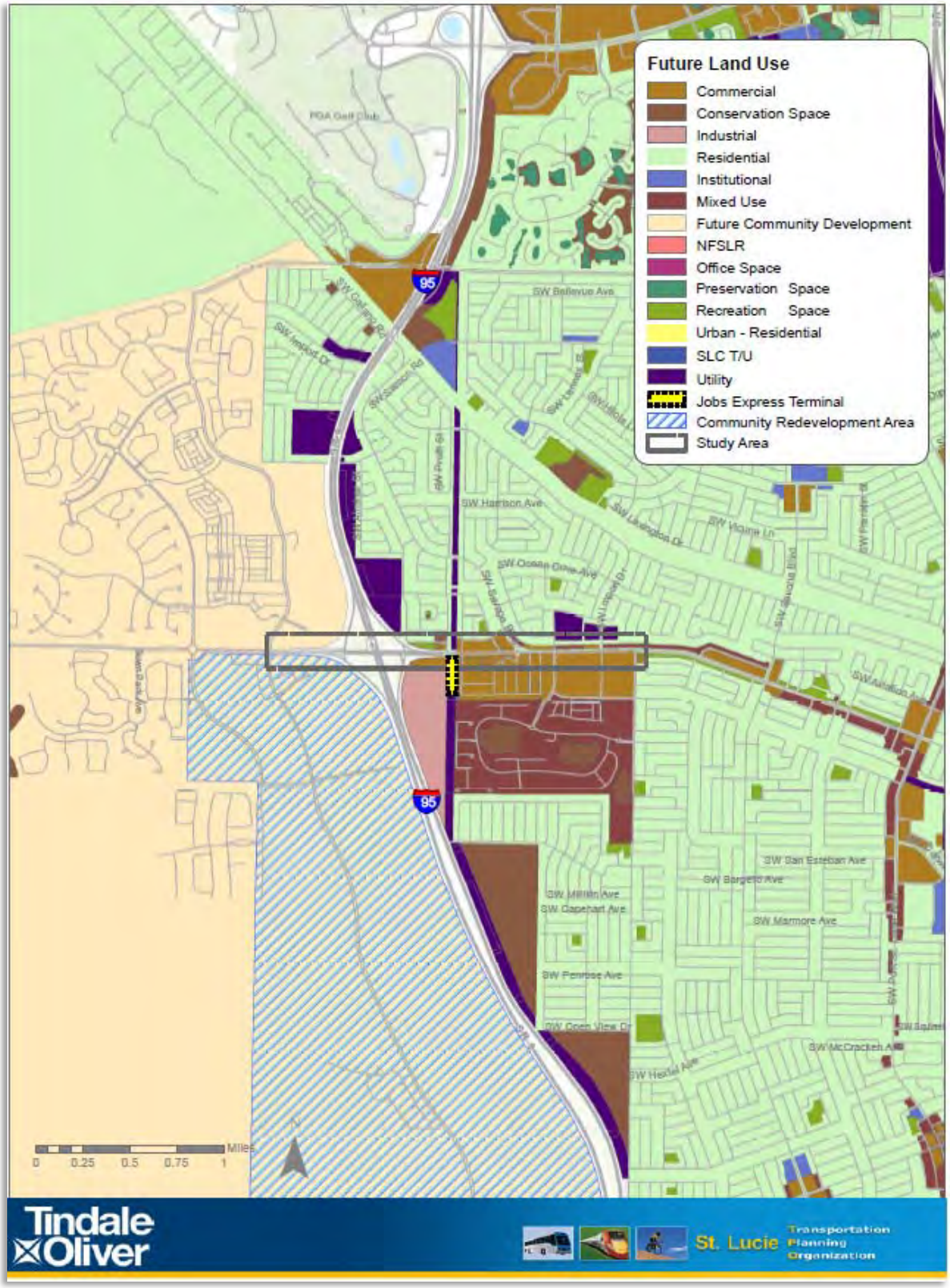


Figure 3-3: Excerpt from St. Lucie County Transit Development Plan 2020–2029, Zero-Vehicle Households



Map 3-1: Future Land Use Map

3.2 Roadway Conditions

Within the study area, Gatlin Boulevard/Tradition Parkway is an east-west, 6-lane divided urban principal arterial with turn lanes and a raised landscaped median. The posted speed limit is 45 miles per hour (mph) along Gatlin Boulevard/Tradition Parkway; the posted speed limit on other local streets ranges from 25–40 mph, as shown in **Map 3-2**.

Sidewalks along Gatlin Boulevard/Tradition Parkway are 6–8 ft wide. Sidewalks along some secondary streets are 5–6 ft wide, except along Village Parkway and Community Boulevard, where sidewalks are 8 ft wide. Most streets in residential neighborhoods north and south of Gatlin Boulevard do not have sidewalks, creating a lack of pedestrian connectivity throughout the street network.

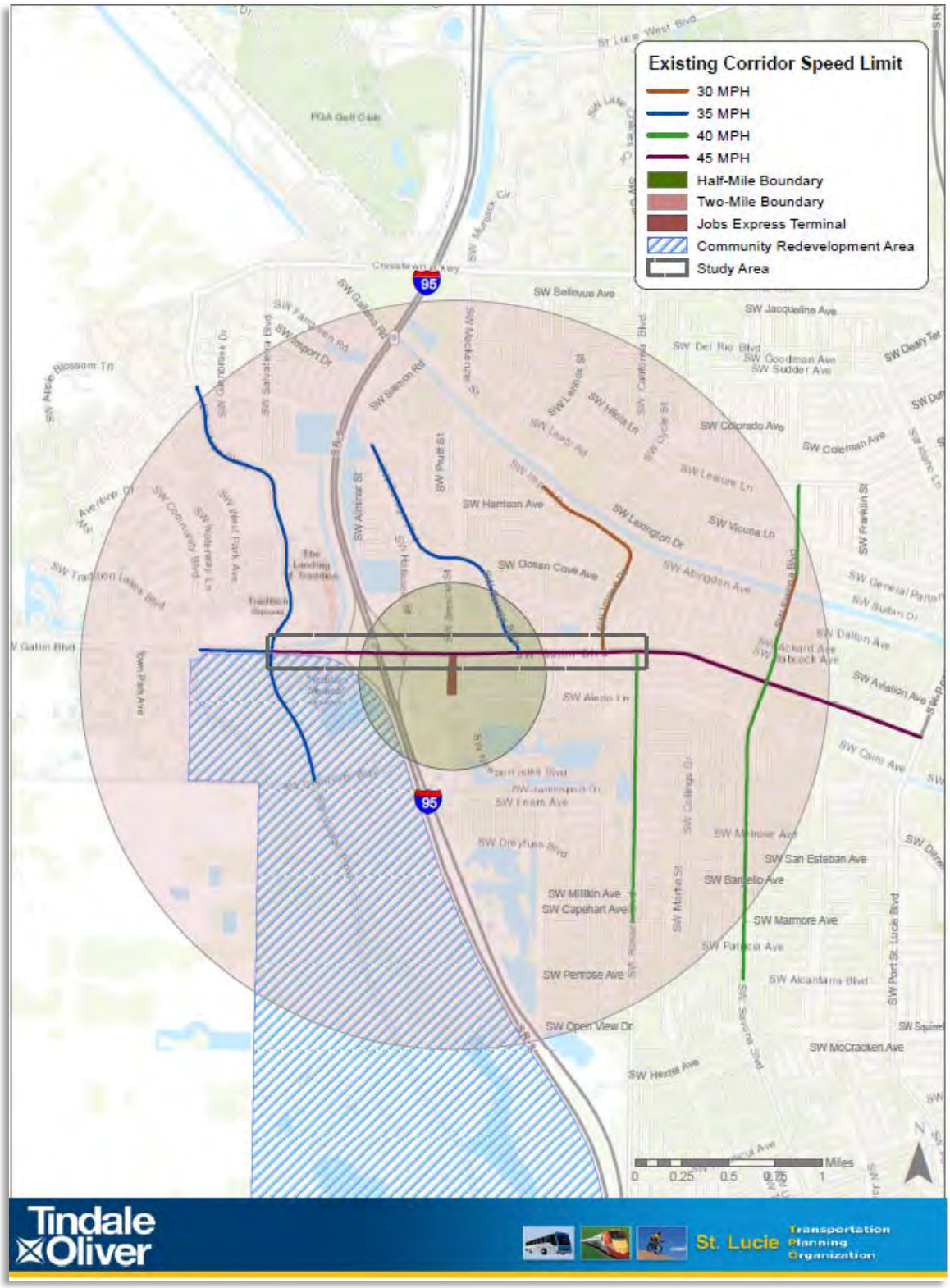
Existing bike lanes are limited to a section of Tradition Parkway west of Village Parkway and along Community Boulevard north of Tradition Parkway. Bike lanes are not present in the rest of the roadway network connecting to the proposed Jobs Express Terminal location. **Map 3-3** illustrates the sidewalks and bike lanes in the study area.

Annual Average Daily Traffic (AADT) during 2018 along major roads neighboring the study area is presented in **Table 3-2**, as extracted form FDOT's Portable Traffic Monitoring Sites (PTMS).

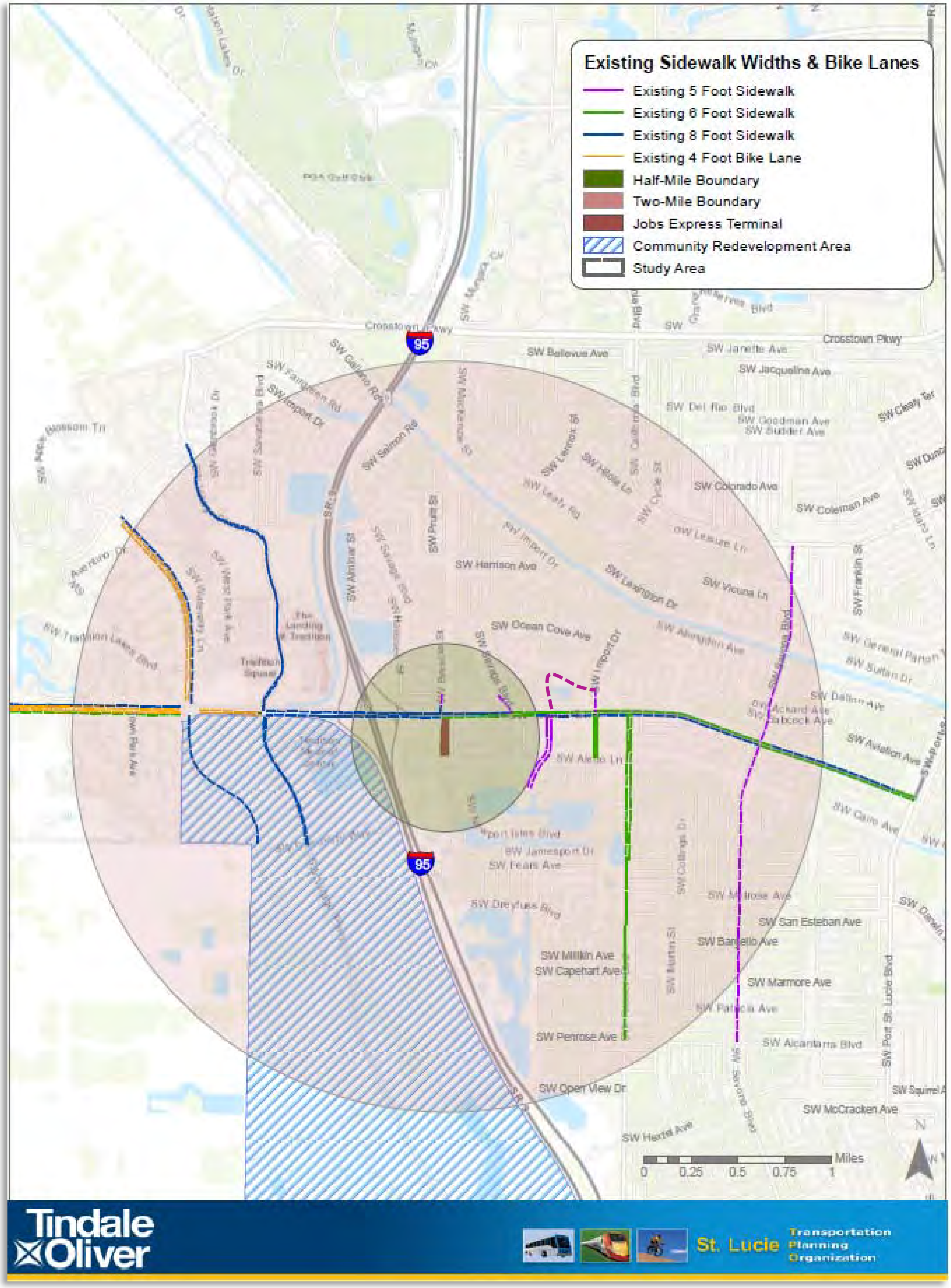
Table 3-2: Major Roads AADT

PTMS	Roadway ID	MP	Roadway	AADT	T-Factor (% Truck)
945075	94 120 000	0.8	Gatlin Blvd	38,000	4.6
948556	94 000 134	0.953	Tradition Pkwy	7,200	4.3
948510	94 000 057	1.347	Rosser Blvd	4,600	6.8
947063	94 000 109	0.104	Savona Blvd	8,400	5.8
-	-	-	Village Pkwy	10,100[1]	-
947053	94 000 107	2.002	Savage Blvd	6,400	5.8
940065	94 000 081	1.103	Import Dr	1,800	6.7

[1] *Estimated from PTMS 947067*

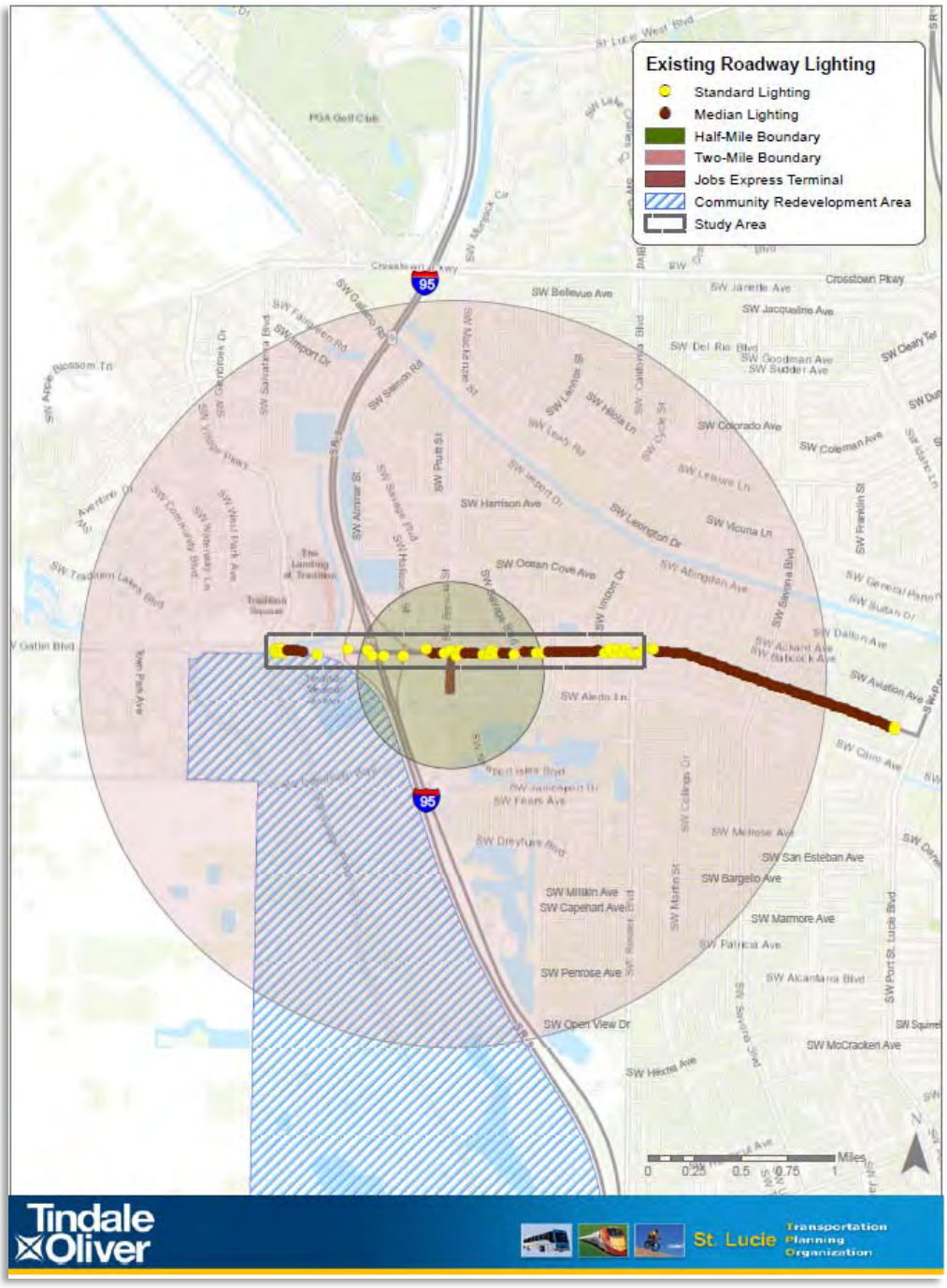


Map 3-2: Area Major Streets Speed Limits

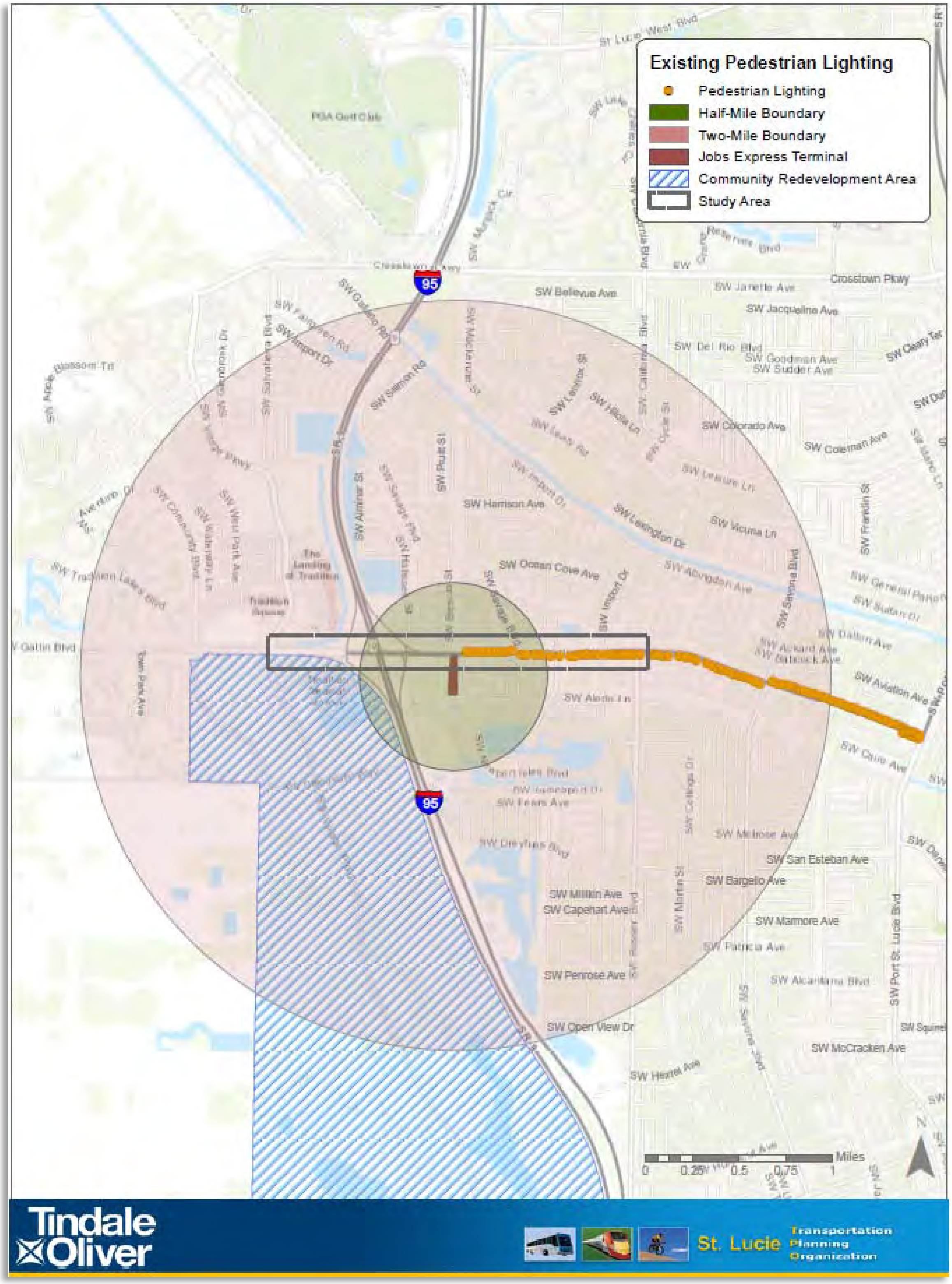


Map 3-3: Existing Sidewalks and Bike Lanes

Lighting conditions appear to be good along Gatlin Boulevard/Tradition Parkway, with lighting on both sides of the roadway and along the raised medians, alternatively, as shown in **Map 3-4**. Additional pedestrian lighting is provided along the 8-ft sidewalk on Gatlin Boulevard from Brescia Street to Port St. Lucie Boulevard, as illustrated in **Map 3-5**.



Map 3-4: Existing Roadway Lighting



Map 3-5: Existing Pedestrian Lighting

Mid-block crossings are not provided throughout the Gatlin Boulevard/Tradition Parkway corridor. Signalized intersections are controlled by mast-arm assemblies with up-to-date pedestrian features such as push buttons, countdown pedestrian signal heads, special emphasis crosswalks, and detectable warning surfaces. Signalized intersections along Gatlin Boulevard/Tradition Parkway within the study area are listed in **Table 3-3.**

Table 3-3: Signalized Intersections Along Gatlin Boulevard/Tradition Parkway

Gatlin Blvd/Tradition Pkwy at	Distance to Nearest Intersection (ft)	
	To East	To West
Village Pkwy	-	2,152
SR-9/I-95 Southbound off-ramp	2,152	1,613
SR-9/I-95 Northbound off-ramp	1,613	1,244
Brescia St	1,244	1,963
Savage Blvd/Fondura Rd	1,963	2,383
Import Dr	2,383	969
Rosser Blvd	969	3,777
Savona Blvd	3,777	-

3.3 Transit Characteristics

The area is serviced by Route 5 of the Treasure Coast Connector (TCC). Five bus stops are located within or near the study area. Route 5 has 19 bus stops, with 6 timepoint bus stops, 1 transfer stop, and 1-hour headways. **Table 3-4** shows the Route 5 – Port St. Lucie/Gatlin Boulevard transit line and stops, and **Map 3-6** shows the bus stop locations in the vicinity of the study area.

Table 3-4: Route 5 – Port St. Lucie / Gatlin Boulevard Transit Line and Stops

Route 5 – Port St. Lucie / Gatlin Blvd Transit Line & Stops, Saturday Service Hours, 8:00 am–12:00pm / 1:00–4:00 pm					
PSL Community Center	**Sansom Ln**	**Import Dr (A)**	**Tradition Landings (B)**	**Walmart (Gatlin Blvd) (C)**	**Cameo Blvd**
6:00	6:10	6:21	6:28	6:38	6:50
7:00	7:10	7:21	7:28	7:38	7:50
8:00	8:10	8:21	8:28	8:38	8:50
9:00	9:10	9:21	9:28	9:38	9:50
10:00	10:10	10:21	10:28	10:38	10:50
11:00	11:10	11:21	11:28	11:38	11:50
12:00	**12:10**	**12:21**	**12:28**	**12:38**	**12:50**
1:00	**1:10**	**1:21**	**1:28**	**1:38**	**1:50**
2:00	**2:10**	**2:21**	**2:28**	**2:38**	**2:50**
3:00	**3:10**	**3:21**	**3:28**	**3:38**	**3:50**
4:00	**4:10**	**4:21**	**4:28**	**4:38**	**4:50**
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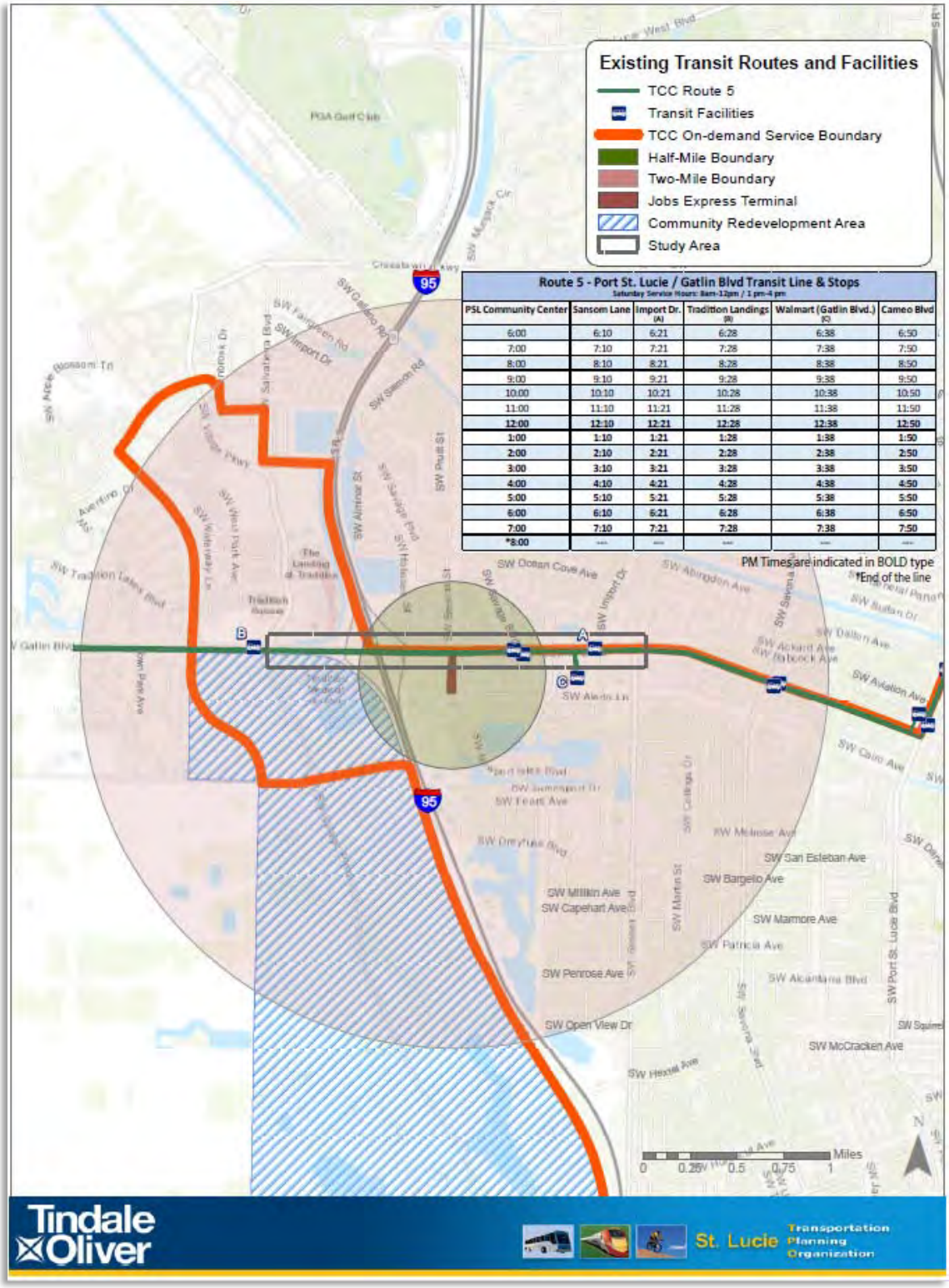
6:00	**6:10**	**6:21**	**6:28**	**6:38**	**6:50**
7:00	**7:10**	**7:21**	**7:28**	**7:38**	**7:50**
8:00[1]	-	-	-	-	-

PM times indicated in BOLD type [1] *End of line*

Additionally, Treasure Coast Connector On-Demand (TCC On-Demand) service provides a curb-to-curb transit option. TCC On-Demand started as a pilot program on December 9, 2019, and serves the study area. The on-demand service can be scheduled using a smart phone app for pick-up and drop-off and runs 6:00 AM to 8:00 PM Monday through Friday and 7:00 AM to 5:00 PM on Saturday. This service is not available on Sundays.

Service area for the TCC On-Demand pilot program is depicted in **Map 3-6**. Additional discussion about this service is presented in Section 6.0.



Map 3-6: Existing Transit Routes and Facilities

4.0 Crash Data Review

Pedestrian and bicycle crash data from January 2013 to December 2019 were extracted from Tindale Oliver's Crash Data Management System (CDMS) and Signal Four Analytics for further analysis. Data from 2020 were not used in this analysis, as processing of recent crash data is not complete. A two-mile-radius area measured from the proposed Jobs Express Terminal was selected for bicycle crashes, and a 0.5-mile-radius area was selected for pedestrian crash retrieval.

Crash data analysis focused on identifying high-crash locations and understanding probable causes to help develop safer pedestrian and bicycle connectivity along the existing and future roadway network in the vicinity of the study area.

Reviewed area crash data revealed 15 bicycle crashes and 3 pedestrian crashes. **Table 4-1** presents crash distribution by year, injury severity, lighting, and surface conditions. **Map 4-1** shows the location of crashes in an aerial image.

Table 4-1: Crash Summary (2013–2019)

Jobs Express Terminal Study Area		Years							7-Year Total	Severe Crashes	Yearly Mean Crashes	%
		2013	2014	2015	2016	2017	2018	2019				
Crash Type	Bike	4	1	2	2	1	1	4	15	2	2.1	83.3%
	Pedestrian	0	1	0	0	0	0	2	3	1	0.4	16.7%
	Total	*4*	*2*	*2*	*2*	*1*	*1*	*6*	*18*	*3*	*2.6*	*100%*
Injury Severity	Fatal	0	0	0	0	0	0	1	1	-	0.1	5.6%
	Incapacitating	0	1	0	0	1	0	0	2	-	0.3	11.1%
	Non-incapacitating	1	1	0	2	0	0	0	4	-	0.6	22.2%
	Possible injury	3	0	1	0	0	1	5	10	-	1.4	55.6%
	None	0	0	1	0	0	0	0	1	-	0.1	5.6%
	Total	*4*	*2*	*2*	*2*	*1*	*1*	*6*	*18*	*-*	*2.6*	*100%*
Lighting Condition	Daylight	3	1	2	2	0	1	6	15	2	2.1	83.3%
	Dawn	0	1	0	0	0	0	0	1	0	0.1	5.6%
	Dusk	0	0	0	0	0	0	0	0	0	0	0.0%
	Dark-lighted	1	0	0	0	1	0	0	2	1	0.3	11.1%
	Dark-not lighted	0	0	0	0	0	0	0	0	0	0	0.0%
	Total	*4*	*2*	*2*	*2*	*1*	*1*	*6*	*18*	*3*	*2.6*	*100%*
Surface Condition	Dry	3	2	2	2	1	1	6	17	0	2.4	94.4%
	Wet	1	0	0	0	0	0	0	1	0	0.1	5.6%
	Total	*4*	*2*	*2*	*2*	*1*	*1*	*6*	*18*	*0*	*2.6*	*100%*

Detailed review of pedestrian and bicycle crashes showed the following key points:

- 4 crashes were at mid-block locations (2 bicycle, 2 pedestrian); 1 was a fatal crash along Gatlin Boulevard.
- 7 crashes were at marked crosswalks (6 bicycles, 1 pedestrian); 6 involved turning vehicles, of which 4 were at signalized intersections along Gatlin Boulevard/Tradition Parkway.
- 10 crashes were outside Gatlin Boulevard/Tradition Parkway on residential and collector streets (9 bicycles, 1 pedestrian).

There were 1 fatal crash and 2 incapacitating crashes; non-incapacitating and possible injury crashes totaled 14. The fatal crash details are presented in **Table 4-2**.

Table 4-2: Fatal Crash Details

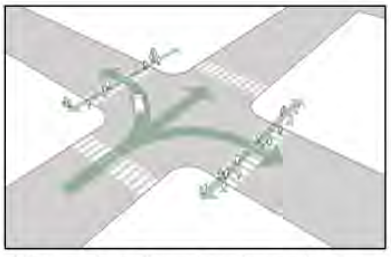
HWMV Report Number	Date	Location	Day, Time, Lighting	Crash Type	Summary
88953857	8/9/2019	Gatlin Blvd 300 ft E of Edgarce St	Friday, 7:33 AM, daylight	Pedestrian	Pedestrian crossing north to south at mid-block location hit by vehicle traveling WB

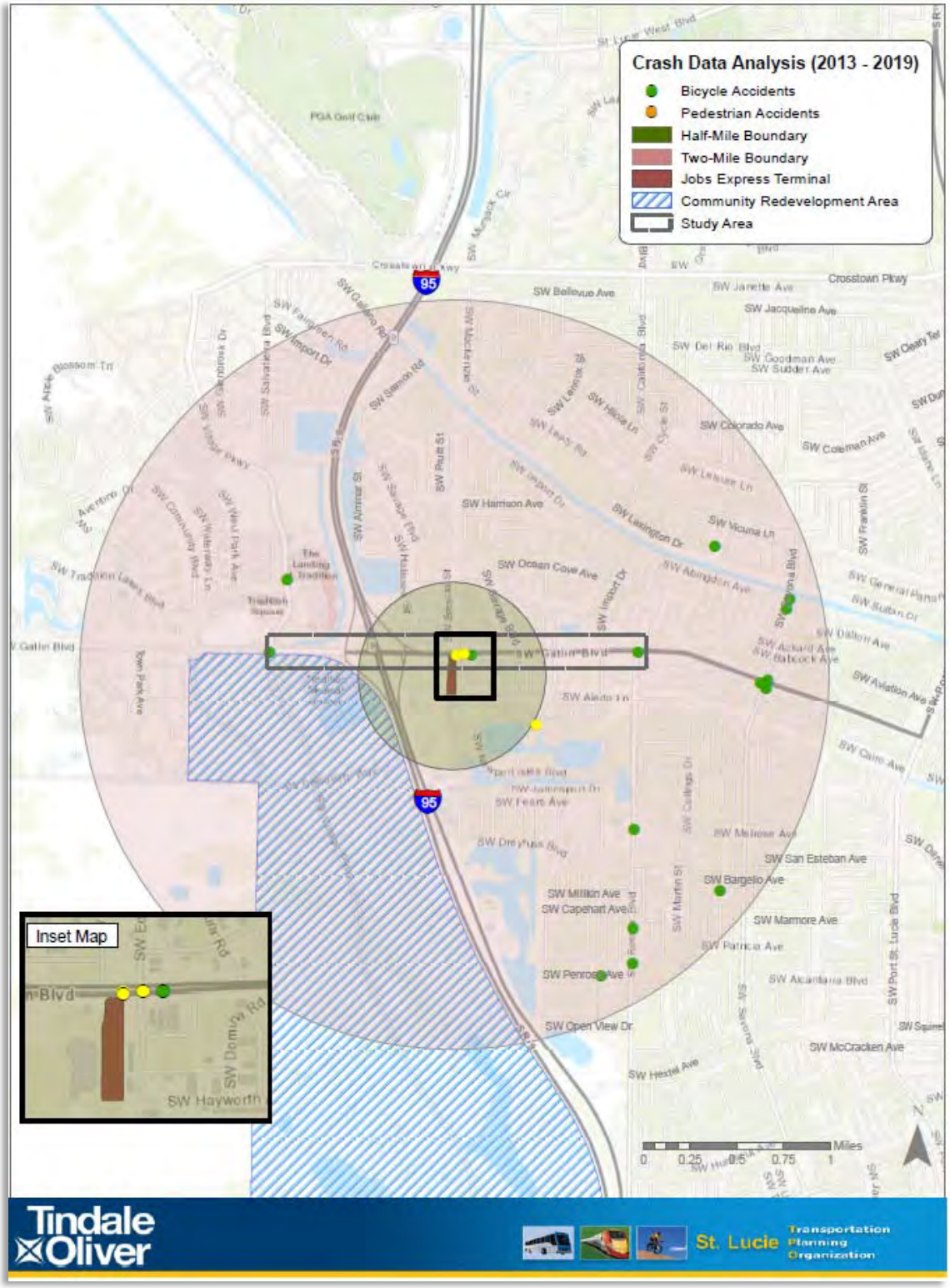
Crash data review and best practice considerations suggest the following strategies would help mitigate the observed crash trends:

- Install R10-15 "Turning Vehicles Stop for Pedestrians" signs at signalized intersections to warn drivers of pedestrian/bicycle presence before turning.
- Increase conspicuity of pedestrians/bicycles at signalized intersections by providing Leading Pedestrian Intervals (LPI), which will provide a pedestrian indication ("Walk") to pedestrians several seconds in advance of conflicting movements and allow them to establish crosswalk presence and increase visibility to drivers. Consideration of an LPI may require an engineering study to review vehicular compliance yielding to pedestrian.
- Increase connectivity for and awareness of bicycles by creating bicycle links within residential neighborhoods.

These recommended strategies are detailed in the final recommendations in Section 7.0.

R10-15 signs remind turning drivers to stop for pedestrians on the crosswalk


LPIs have been shown to reduce pedestrian-vehicle collisions by as much as 60% at treated intersections



Map 4-1: Crash Geographical Distribution

5.0 Document Review

This section reviews projects that could have an impact in the study area and in the programmed Jobs Express Terminal at Gatlin Boulevard. The following documents were reviewed:

- FDOT 5-year Work Program 2014–2019 and 2020–2025
- St. Lucie TPO Transportation Improvement Plan (TIP) 2019–2024
- St. Lucie TPO Long Range Transportation Plan (LRTP) 2040
- St. Lucie TPO Walk-Bike Network 2018–2028
- St. Lucie County Transit Development Plan (TDP) 2020–2029
- St. Lucie County Five-Year Capital Improvement Plan (CIP) 2016–2020
- City of Port St. Lucie Strategic Plan Fiscal Year 2018–2019
- City of Port St. Lucie CIP 2016–2017
- City of Port St. Lucie 10-year Sidewalk Plan 2018–2028

5.1 FDOT Five-Year Work Program

A review of the FDOT Five-Year Work Program for 2020–2025 was conducted to identify any future projects scheduled within the study area. The previous five years (2014–2019) were also researched to acknowledge recent improvements related to pedestrian, bicycle, or transit facilities. This review identified the following relevant projects:

- Traffic Control Devices/Systems FM # 444707-1, Gatlin Boulevard/Tradition Parkway from west of SR-9/I-95 to Port St. Lucie Boulevard – includes installation of traffic cameras at signalized intersections, optimized green time, and addition of adaptive traffic signal control. Schedule for implementation: FY 2024
- Interchange Lane Addition FM# 439761-1, SR-9/I-95 NB and SB off-ramps at Gatlin Boulevard/ Tradition Parkway. Scheduled for construction: FY 2023

  Plans review showed the following interchange pedestrian-related work:

  - Standard crosswalk markings at signalized crossings
  - New pedestrian sign installation at off-ramps
  - Sidewalks and curb ramps rebuilt to be ADA- compliant
  - Some pedestrian signals to be replaced along with push button signs
  - Additional lighting to be installed along SR-9/I-95 NB and SB off-ramp terminals and signalized intersections
  - Existing lighting remain at unsignalized approaches along Gatlin Boulevard/Tradition Parkway

  Lighting plan sheets for FM# 439761-1 are included in **Appendix B**.
- Sidewalk FM# 431735-1, Savona Boulevard from Becker Road to Gatlin Boulevard – includes crosswalks and sidewalk installation on west side of Savona Boulevard from Gatlin Boulevard to PAAR Drive and on east side from PAAR Drive to Becker Road. Project began in FY 2015 and is complete.

5.2 Other Reviewed Documents

The document review also included project provisions from the St Lucie County CIP and TDP, and the St. Lucie TPO TIP, LRTP 2040, and other intermodal strategic studies. In addition, the CIP 2016–2017 (most recently available), the Ten-Year Sidewalk Plan and the Mobility for All Fact sheet from the City of Port St. Lucie were reviewed.

Reviews indicated that the St Lucie TPO TIP includes the same projects identified in the FDOT Five-Year Work Program. Review of the St Lucie County CIP and TDP did not show any projects related to the study area and/or the proposed Jobs Express Terminal.

The following improvements were identified as being relevant to this study:

- The City of Port St. Lucie Ten-Year Sidewalk Plan includes the following programmed projects:
  - Sidewalk on Savage Boulevard (funded for construction FY 2023–2024)
  - Sidewalk on Import Drive (funded for construction FY 2021–2022)
  - Sidewalk on Brescia Street (funded for construction FY 2023–2024)
  - Peacock Trail from proposed Jobs Express Terminal to Peacock Park on Dreyfuss Boulevard (funded for construction FY 2027–2028)

  Projects along Savage Boulevard, Import Drive, and Brescia Street are also included in the St. Lucie TPO Walk-Bike Network 2018, as presented in **Figure 5-1**. Projects along Savage Boulevard and Import Drive are also contained in the LRTP 2040. Peacock Trail will run north-south along existing FPL right-of-way east of I-95. An excerpt from the City of Port St. Lucie Ten-Year Sidewalk Plan is presented in **Figure 5-2**.
- The City of Port St. Lucie has programmed the Tradition Trail and the Riverland Paseo to improve mobility throughout the area west of SR-9/I-95 with multimodal trail network. The Tradition Trail is a Complete Street approach to accommodate pedestrians, bicyclists and transit, including a fleet of autonomous vehicles. Excerpt of the fact sheet provided by the City is included in **Figure 5-3**. Project funding is anticipated through an ongoing Better Utilizing Investments to Leverage Development (BUILD) grant application.
- The St. Lucie TPO Walk-Bike Network 2018 also includes the following projects (see **Figure 5-1** for excerpt showing items in the vicinity of the study area):
  - Sidewalk on Rosser Boulevard (constructed in 2017, west side only)
  - Sidewalk on Savona Boulevard (constructed in 2015, west side only)
- St. Lucie TPO LRTP 2040 key takeaways related to the study area:
  - Largest employment growth for 2020–2040 mainly in area west of I-95 and south of Tradition Parkway
  - Roadway needs (not funded):
    - Add 2 lanes, bike lanes, and sidewalk on Savona Boulevard from Gatlin Boulevard to California Boulevard
  - Multimodal project priority includes the following segments:
    - Bike/walk, Import Drive from Gatlin Boulevard to Savage Boulevard

- Bike/walk, Savage Boulevard from Import Drive to Gatlin Boulevard
- Roadway, Savona Boulevard from Gatlin Boulevard to California Boulevard

– Intersection offering greatest opportunities for safety improvements for vulnerable users, and recommended for further review for safety improvements:
  - Gatlin Boulevard/Tradition Parkway and SR-9/I-95 interchange

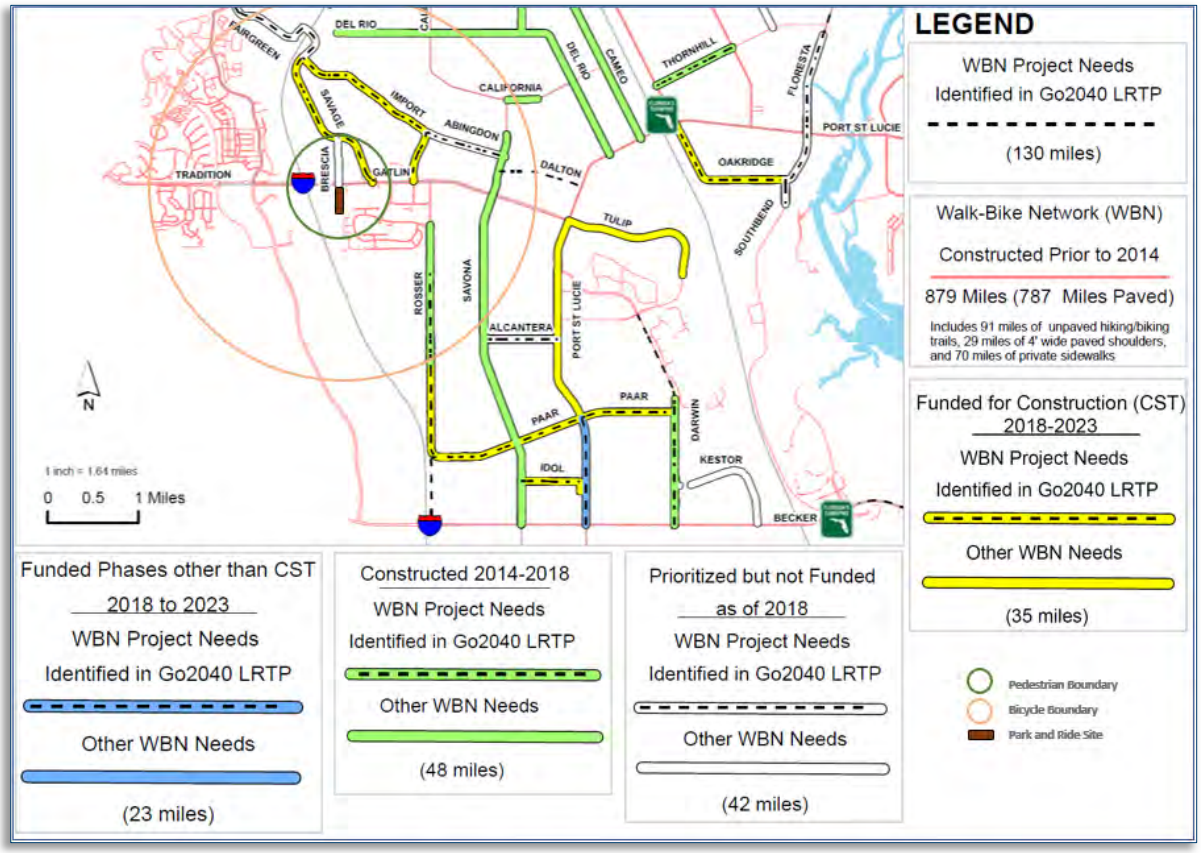


Figure 5-1: Excerpt from St. Lucie TPO Walk-Bike Network 2018

Figure 5-2: Excerpt from City of Port St. Lucie Ten-Year Sidewalk Plan

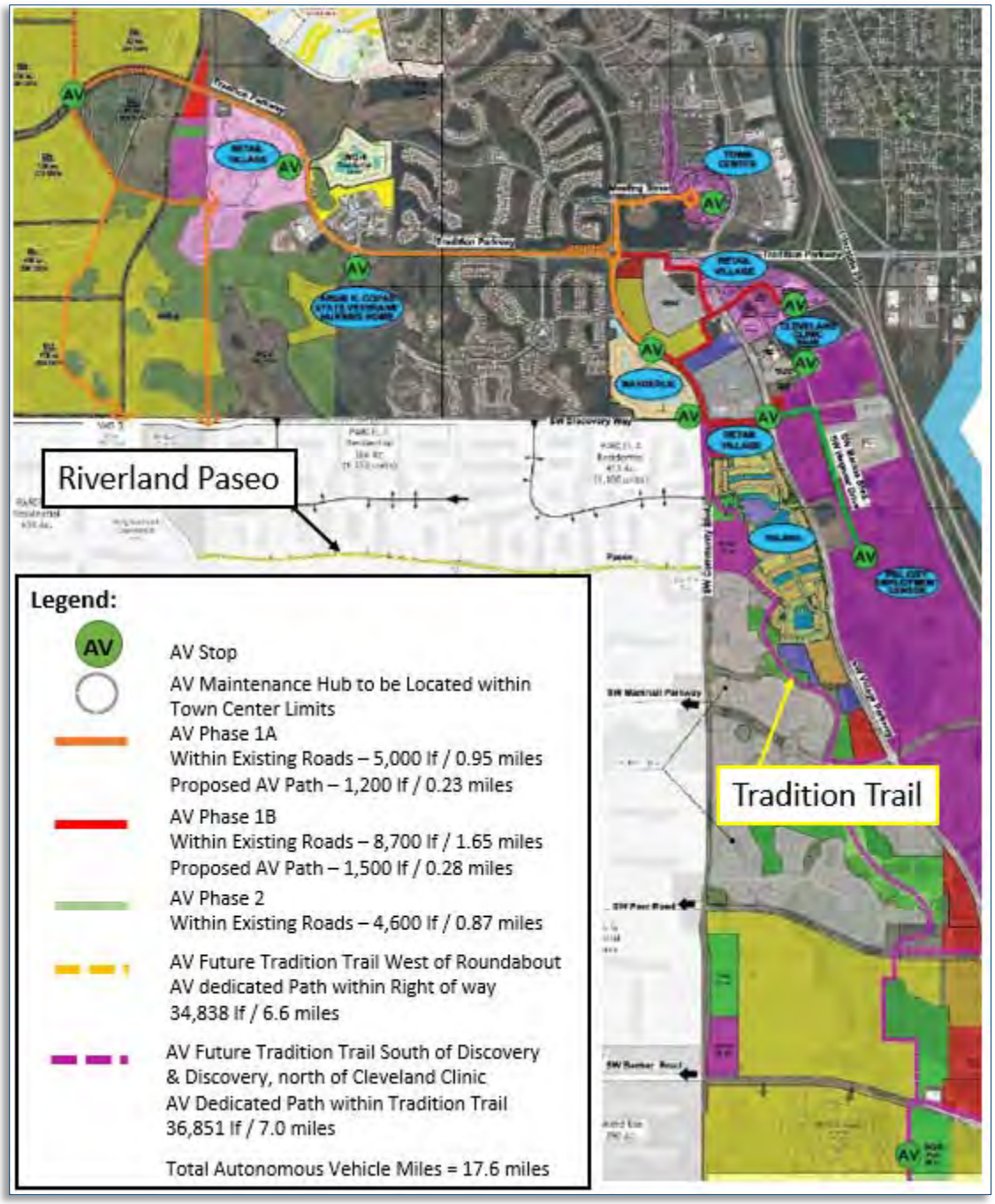


Figure 5-3: Excerpt from City of Port St. Lucie Mobility for All Fact Sheet

6.0 Transit Review

A preliminary analysis of existing transit conditions and potential transit accommodations included the following:

- Consideration of commuter travel demand for a typical weekday peak/off-peak commuter transit service between the Jobs Express Terminal and the West Palm Beach Intermodal Transit Center. Commuter travel demand is based on a low to moderate range of accepted transit productivity range (measured as boardings per vehicle revenue service hour). The commuter bus service concept is designed to serve travel to the Intermodal Transit Center in West Palm Beach at which commuters can transfer to Palm Tran bus service or connect to commuter rail (Tri-Rail and Brightline) for express or local travel to points further south. The commuter bus service may also be designed to operate to West Palm Beach International Airport after leaving the Intermodal Transit Center if demand warrants. Vehicle requirements and annual service hours are provided for a conceptual service plan between the Jobs Express Terminal and the Intermodal Transit Center.
- A mobility on-demand (MOD) connector service will be designed to provide convenient local mobility within the MOD service zone and connections to/from commuter bus.
- The MOD service operating model is described based on peak and off-peak demand based on typical productivity ranges with a focus on home locations to determine the service requirements (number of vehicles) required by time of day (AM, midday, PM, evening) and estimated annual service hours for weekday operations.
- MOD concept of operations and functionality are described for the dynamic scheduling platform and related Mobility as a Service (MaaS) functions recommended to facilitate the operations and rider access to services (ride-hailing). MOD services can be operated directly (in-house) or via contracted third party, similar to the recently deployed Treasure Coast Connector-On Demand.

Note that this is a high-level analysis only; recommendations may include more detailed studies to specifically assess the recommendations herein.

6.1 Background

The Transit Operations Analysis and New Mobility Planning Study, completed in 2018 for St. Lucie County, focused on emerging technologies and the positive potential application of on-demand and autonomous connected vehicle mobility solutions to better serve growing mobility demand within existing land use patterns and densities than is practicable solely with traditional fixed-route services. Key recommendations include the following:

- Pursue new mobility partnerships to meet County goals and priorities.
- Explore pilot projects with private operators.
- Create a framework to realize the benefits of emerging technologies.
- Enhance fixed-route transit to avoid increasing congestion.
- Supplement existing fixed-route service with new mobility options.

- Consider grant programs available to offset purchase of electric buses.
- Consider adding electric buses to the County Transit Asset Management (TAM) Plan.
- Consider partnering with academic institutions or private companies to develop small-scale pilot projects, particularly related to AV applications.
- Consider forming a working group with stakeholders to start dialog around goals for AV implementation and potential policy barriers.
- Explore partnerships with Transportation Network Companies (TNCs) and local taxi companies to provide demand-response trips.

The existing TDP includes transit alternatives developed for enhanced fixed-route services and the addition of three micro-transit mobility solutions areas, as shown on **Map 6-1**. One of the three micro-transit service areas is the Gatlin Boulevard/Tradition Parkway zone and is intended to provide on-demand connectivity within the zone to the proposed Jobs Express Terminal.

The County received an FDOT service development grant in 2019 for deploying flex services and associated vehicle and other capital costs. The TCC On-Demand six-month service pilot started December 9, 2019, and serves the neighborhoods in the service area shown on **Figure 6-1**. The pilot service is a shared-ride mobile app-based service operated by TransLoc (a Ford Mobility Company); the vehicles are ADA-compliant, and the service provides point-to-point mobility on-demand through the mobile app anywhere within the designated mobility zone.

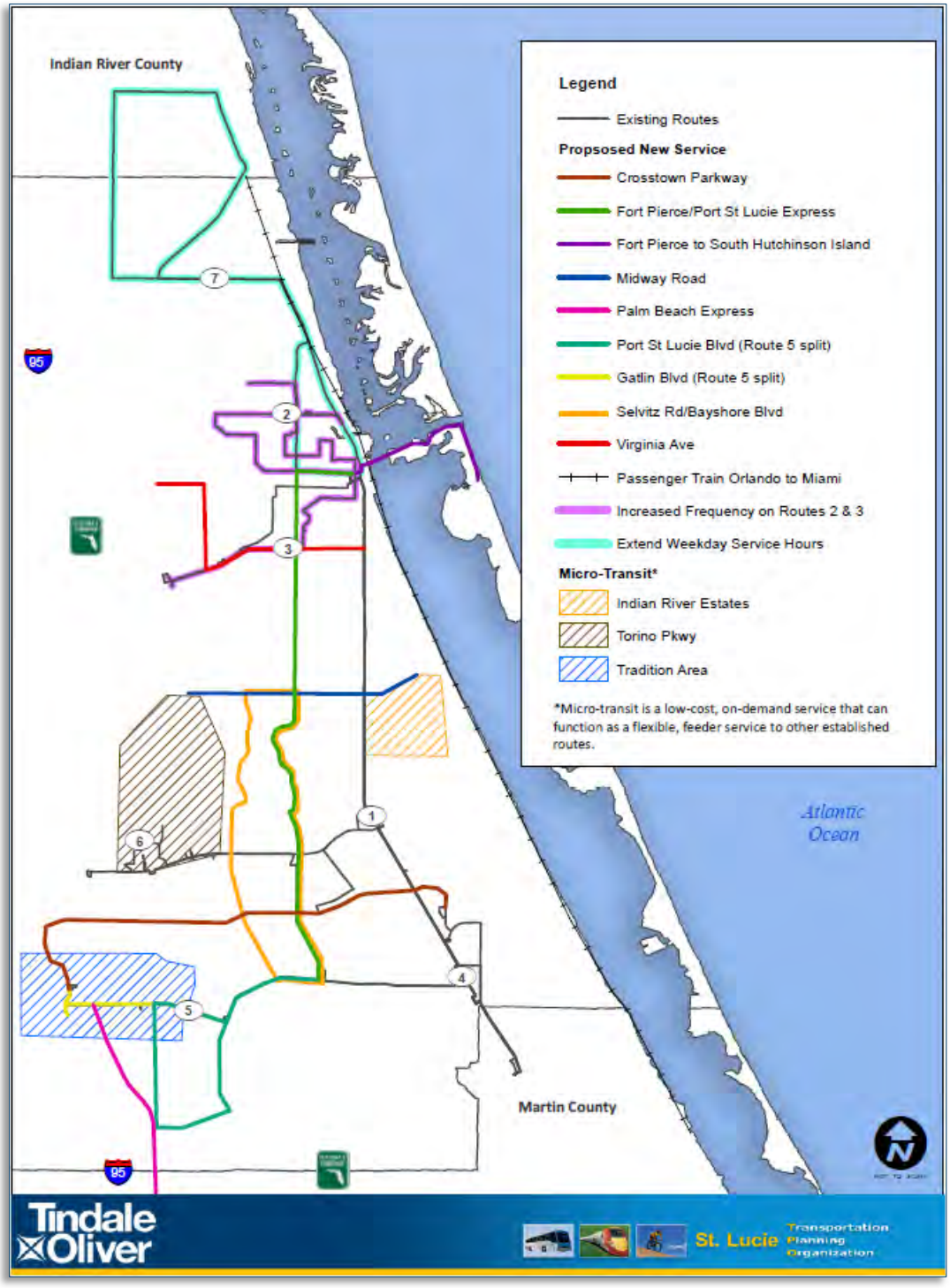
In addition to the TCC and the micro-transit pilot, transit route improvements proposed in the TDP include a Palm Beach Express commuter service from the Jobs Express Terminal, a Crosstown Parkway route, splitting Route 5 to serve Gatlin Boulevard/Port St. Lucie Boulevard, and other improvements not in proximity to the Jobs Express Terminal.

6.2 Commuter Operations and Requirements

Development of commuter services to connect residents and workers with employment in St. Lucie County, Palm Beach County, and points further south is best simplified by developing an initial recurring commuter service between the proposed Jobs Express Terminal and the West Palm Beach Intermodal Center. This will provide connections to the key employment locations within Palm Beach County, a direct connection to the Palm Tran bus network, and connections to both Tri-Rail and Brightline commuter rail services to destinations in Broward and Dade counties. The initial commuter bus service, prior to commencing, should be further defined based on examination of home-job data and cellular travel flow data to map existing origin and destination locations and volumes from which estimates of likely transit mode share capture can be made.

The analysis conducted for this effort defines the planning-level operating requirements and a ridership range based on weekday peak and off-peak commuter service. The operational analysis found that given the round-trip travel times during peak and off-peak periods, it may be desirable to operate round-trip service all day, thus serving the morning commuter peak, midday travel demand, and evening peak service. There is a benefit to ridership to provide midday commuter service; riders are less likely to use the service if they are not able to make return trips home in the middle of the day in case of an emergency. For the service to be attractive to commuters, there need to be more than

two morning and two evening trips; however, given the cycle time, two vehicles are required to operate on a nearly one-hour headway. The estimated cycle time and round-trip travel plus layover



Map 6-1: Proposed New Fixed-Route Service and Microtransit Service Areas

Figure 6-1: TCC Service Area

and recovery time at each end is 2 hours 10 minutes. Therefore, to operate service close to hourly, two vehicles will be required; to operate hourly will require an additional vehicle, and to operate less frequently (every 130 minutes), one vehicle would be required (see **Table 6-1**).

Table 6-1: Commuter Operating Plan

Bus Trips	JET	WPBIC	WPBIC	JET	Recovery
Bus 1	5:30	6:30	6:40	7:30	7:40
Bus 2	6:30	7:30	7:40	8:30	8:40
Bus 1	7:40	8:40	8:50	9:40	9:50
Bus 2	8:40	9:40	9:50	10:40	10:50
Bus 1	9:50	10:50	11:00	11:50	12:00
Bus 2	10:50	11:50	12:00	12:50	13:00
Bus 1	12:00	12:50	13:00	14:00	14:10
Bus 2	13:00	13:50	14:00	15:00	15:10
Bus 1	14:10	15:00	15:10	16:10	16:20
Bus 2	15:10	16:00	16:10	17:10	17:20
Bus 1	16:20	17:10	17:20	18:20	18:30
Bus 2	17:20	18:10	18:20	19:20	19:30
Bus 1	18:30	19:20	19:30	20:30	OOS
Bus 2	19:30	20:20	20:30	21:30	OOS

JET = Jobs Express Terminal; WPBIC = West Palm Beach Intermodal Center

Table 6-1 shows the conceptual commuter schedule. Given the long cycle time and with a midday round trip between 10:50 AM and 1:00 PM, the service hours required to operate all day compared to peak-only and midday round trips are not significantly more. The concept of operating close to hourly service would provide the advantage of bi-directional commuter service to serve travel demand between St. Lucie County and West Palm Beach and connections to points south. The conceptual service schedule provides approximate hourly service, with two vehicles operating from 5:30 AM to 9:30 PM, including consideration for adequate layover and recovery time, which would be essential given the long travel distance and variability of travel times along I-95.

Based on the above operating plan, the commuter service would require two vehicles plus a 20% spare. The resulting daily vehicles service hours, including deadhead travel estimates, is 32 hours. Assuming weekday operations including three no-service holidays (258 days), annual vehicle service hours are estimated to be 8,000. The actual cost of this service would depend on the directly-operated or purchased contract hourly rate. Using the fully-allocated hourly rate of $75.74 reported by the Council on Aging of St. Lucie, Inc. dba Community Transit services in the 2018 National Transit Database (NTD) report, the estimated cost of the commuter service, directly-operated, would be $605,800 annually. Using an average of the 2018 NTD hourly rates reported by Martin County for commuter bus ($60.56) and Indian River County for motor bus ($54.59) for purchased transportation, the cost of the commuter service would be $460,500 annually.

A range in ridership demand was estimated using typical transit productivity observations for commuter services for peak and off-peak service. Passenger productivity per vehicle revenue service hour for peak service ranges from 16–20 passenger boardings. For off-peak service, the productivity range is 7–16 passenger boardings per revenue vehicle hour. Applying these productivities for peak trips (12) and off-peak trips (16) equate to 28 directional vehicle trips each weekday for a daily ridership range of 304–496 boardings. Annually, assuming 258 operating days, the expected ridership range is estimated between 78,400 and 128,000 boardings. The resulting overall productivity in boardings per vehicle revenue service hour would range from 10.1 to 16.5.

6.3 MOD Operations and Requirements

The MOD service concept would serve the Jobs Express Terminal and provide general public on-demand services within the service zone presented in **Figure 6-1**. This service initially would be operated using vehicles driven by operators and may be transitioned to connected autonomous vehicles.

Concept of Operations

The MOD service concept is for an on-demand shared-ride service available to all riders (general public and ADA-eligible persons) and designed to provide point-to-point service within the designated service zone, including connections to/from the Jobs Express Terminal, using a Cloud-based dynamic scheduling and ride-hailing platform to be procured by the County. The service model recommendation would support a range of on-demand mobility service strategies:

- General public point-to-point MOD service for all (applies equally to ambulatory and otherwise ADA-eligible persons) and must be ADA-compliant per FTA guidelines associated with general public dial-a-ride services and other related requirements
- Point-to-point MOD service that can be applied to ADA service in other parts of the county
- First/last mile connections to the Jobs Express Terminal and fixed-route transit services
- Flex (point or route deviation) semi-fixed-route services that may be deployed to serve areas where service area development densities and roadway network are supportive

The ability to include flexibility on-demand and semi-fixed services, including the application to serve ADA demand where appropriate, provides the County with a range of service delivery strategies that can be applied when and where warranted. This strategy offers the County a more cost-effective mobility solution to mobility needs compared to traditional fixed-route and ADA paratransit services where densities are conducive.

The proposed service model for the Tradition area would provide MOD as a service overlay to commuter and fixed-routes services. This model layers service with fixed routes serving corridors with sufficient density of demand (greater than 7 persons/acre) and MOD as a zonal service to provide point-to-point service for all, including serving connections to traditional transit and could be replicated in other parts of the county where warranted.

The MOD service has potential to be more cost-effective by better fitting vehicle service hours to demand when and where needed rather than operating all day regardless of demand. The service model also provides service coverage that is not possible with fixed services. The result will be higher productivity on a per-service-hour basis.

The MOD service may be operated directly by the County, purchased through a third-party contractor, or through a partnership with a taxi or Transportation Network Companies such as Uber or Lyft. In all cases, it is recommended that the County directly license for the cloud-based MaaS or Software as a Service (SaaS) platform to ensure that the County maintains control of service quality, service supply, and operating costs.

Riders would access the service via a phone app or a web portal or by calling the County paratransit call center. The ability to facilitate access for persons without access to a smart phone or computer is a matter of Title VI compliance. In addition, all vehicles would need to be ADA-accessible, and fare payment would need to include a cash option.

MaaS/SaaS Platform Functional Requirements

To support the MOD operating concept, the County would procure, through a license agreement, a platform of cloud-based MaaS/SaaS services, including dynamic and optimized scheduling with ride-hailing and reporting capabilities. The functional requirements of the platform should support the following:

- Register all users and create user accounts that includes name, address, phone number, email, and common destinations, and the ability to link a payment account.

- Via mobile application, web portal, or call center, facilitate trip requests for immediate or future rides, and generate a trip ID that will be used by the vehicle operator to process passenger boarding and fare payment.
- Collect data in real time on trip requests, pick-ups, drop-offs, missed trips, cancelled trips, and revenue miles and hours, sufficient to meet NTD requirements.
- Permit the administrator to set and modify scheduling parameters to optimize service performance and service quality, including factors such as time on board, productivity, travel time, service costs, time between trip request and vehicle arrival, time between requested drop-off and actual drop-off, and connections with other services.
- Permit the administrator to set and modify the boundaries of the MOD service area(s), including identifying sub-area zones and zones where pick-ups and/or drop-offs are not permitted or not permitted at specified days and times.

The County should include similar functionalities in procurement of a MaaS platform to support the MOD service. In advance of a procurement, the County would be required to develop a full procurement document, including expanding on service concept of operations, MaaS platform functional and system requirements, legal and administrative requirements, and MOD service delivery method preference(s).

Operating Requirements and Demand Estimates

The MOD service concept for the Tradition service zone shown on **Figure 6-1** was modeled to be operated based on scenarios for low productivity (3–4 average boardings per service hour) for off-peak service hours and high productivity (4–6 average boardings per service hour) for peak service hours. The resulting findings are presented in **Table 6-2**, with a range in annual service hours of 4,340–8,680 and ridership demand of 14,600–40,900 annual boardings. It should be noted that experience reflects that ridership demand will spike during peak times and create capacity constraints. Therefore, sizing vehicle capacity and managing trips served are essential elements of the MOD operating plan. Typically, vehicle capacity should be twice the expected average peak demand to minimize trip denials and accommodate growth in demand. Further, the demand estimation methodology employed used conservative comparative examples of general public real-time on-demand services, such as NeighborLink operated by LYNX in Orlando. Rather than use existing ridership trends from the TCC-On Demand, this approach was taken for the following reasons:

- The TCC-On Demand services is too new, service commenced in December 2019
- Service was disrupted by Covid-19, both the public health response forcing social distancing and the significant loss of travel demand due to Safer at Home guidelines.

Therefore, the most reasonable means of modelling the expected performance of the TCC-On Demand is by comparing it to other similar services. The impacts of Covid-19 have had significant 60 to 90 percent reductions in transit ridership across the state. The impacts on transit ridership in the near-term are likely to continue due to the significant disruption to the workforce. As the community recovers, we can expect to see ridership increase slowly at first as restrictions are relaxed, commercial

and social activities resume, workers return to work, and displaced workers seek and find employment. The Treasure Coast Connector MOD service model is a very good fit for this resurgence of activity because the model is designed to deliver service to match demand. This is a more cost-effective service delivery strategy than for example, a fixed route service, which provides a set level of service all day regardless of demand fluctuations.

Table 6-2: MOD Service Scenarios

Scenario	Peak Vehicles	Off-peak Vehicles	Annual Service Hours	Low Demand	High Demand	Low Passengers per Hour	High Passengers per Hour
Minimal	1	1	4.340	14,600	20,500	3.4	4.7
Moderate	2	1	5,888	20,800	29,800	3.5	5.1
High	2	2	8,680	29,100	40,900	3.4	4.7

The service scenarios tested include assumptions of one vehicle peak and off-peak, two vehicles peak and one vehicle off-peak, and two vehicles peak and off-peak. Operating assumptions include operating weekdays (258), Saturdays (52), and Sunday/holidays (55), with a weekday and Saturday service span of 6:00 AM–8:00 PM. Recognizing that the productivity of a single vehicle is inherently limited by time and geography in serving a MOD zone, planning for multiple vehicles, especially during peak times, provides the distinct advantage of facilitating greater flexibility in assigning trips to a vehicle and optimizing the sequencing of pick-ups and drop-offs, thus mathematically resulting in a higher rate of trips successfully fulfilled, higher productivity, and higher cost-effectiveness of the service.

Based on the service scenarios model, the Moderate scenario of two peak vehicles and one off-peak vehicle would generate the most productive and cost-effective service scenario, as it leverages and balances the peak and off-peak average productivity assumptions and required service hours. Note that the low and high passenger per hour rates reflected in **Table 6-2** are resulting averages of daily productivity (peak and off-peak) for each scenario. The Moderate scenario results in the highest average boardings (5.1) with peak averages of 6.0) and likely spiking of demand up to twice the peak.

As modeled in this analysis, vehicle capacity requirements suggest the need for a 12-person vehicle to minimize the potential of capacity constraints during peak demand and to allow for growth in demand as service becomes more popular and to minimize trip denials due to capacity constraints during spikes in demand. It also should be noted that with the popularity of ride-hailing services, the MOD service is likely to attract higher demand and more choice riders than would be the case in previous years. Therefore, the Moderate scenario, with two vehicles operating during the peak, would provide the County with the ability to use the second vehicle in the off-peak when needed.

The cost of MOD services is comprised of two basic elements, per vehicle licensing associated with the SaaS or MaaS service, and a per vehicle revenue service hour rate for operating the vehicles. The licensing costs tend to range between $600 and $800 per vehicle per month. In terms of vehicle operations, the costs are generally consistent with regional costs for contracted services. However, the St. Lucie Community Transit costs are rather high for demand response services ($92.02 per hour)

and for fixed route bus operating costs ($75.74 per hour) based on the 2018 NTD. By comparison, the rates for Palm Beach, Indian River, and Martin counties are significantly lower, $14-$36 per hour lower for demand response. While the Palm Tran fixed route costs are higher than Community Transit, the costs for Martin and Indian River are $16-$21 per hour lower than St. Lucie County for fixed route services.

Therefore, the using a more common range for hourly purchased service operating rates for demand responsive service, $40-$60 per hour, the operating cost of the Treasure Coast Connector MOD would be expected to be $235,500 to $353,300. To this is added the per vehicle licensing fee at a range of $600-$800 per vehicle. Assuming four vehicles, including spares and extra vehicle for increased demand and daily spikes in demand, the annual licensing fee would range from $28,800 to $38,400. The total annual operation costs range is thus $264,300 to $391,700. It is recommended that once recovery is underway, an analysis of operations, especially peak demand, vehicle utilization, and unfulfilled service requests be conducted to better assess the existing service and make adjustments to increase awareness and service performance metrics.

The MOD service should be expanded in a phased manner to ensure that demand and service supply is observed and used to project near-term requirements and peaking of demand by time of day and origin and destination. The requirement that all rides must be requested provides the County with the information required to manage and grow the services, and the MaaS/SaaS platform provides the infrastructure required to expand service without significant infrastructure. Ensuring the ability to add vehicles to the service via use of existing operating contracts or through lease agreements or partnerships with taxi and TNC services will allow the County to adjust to growth in demand quickly and expand the service to other parts of the county as demand warrants.

7.0 Connectivity Improvements

The following are improvements for consideration within the two-mile radius of the study area to enhance pedestrian and bicycle safety and connectivity to access the Jobs Express Terminal. Proposed improvements are based on analysis of existing conditions, future development and projects in the area, and industry best practices.

Recommendations herein are categorized as short-term, mid- and long-term referring to the anticipated implementation timeline that includes vetting, design, etc. Generally, based on the magnitude of the project.

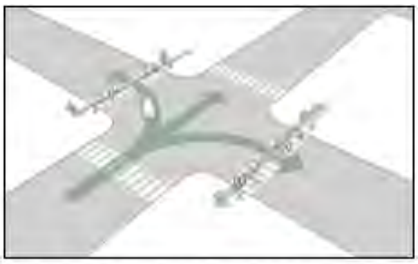
7.1 Short-term Recommendations

- To facilitate enhanced on-site mobility, the following are recommended to be incorporated into the Jobs Express Terminal design plans (see **Figure 7-3**):
  - Upgrade proposed 6-ft sidewalk to 12-ft concrete sidewalk connection from Gatlin Boulevard on north access.
  - Construct 12-ft concrete sidewalk on east side connection from Gatlin Boulevard and from Hayworth Avenue to create direct connection to bike racks.
  - Extend existing right-turn lane on EB approach at Brescia Street past the intersection to north driveway of the Jobs Express Terminal at Gatlin Boulevard; extended section would be right-turn/bus-only lane to access site eastbound from Gatlin Boulevard. Evaluate providing bus priority at signal.

  These improvements would need to be coordinated with the coming work program project and may not be feasible due to current project schedule.
- Provide enhanced Treasure Coast Connector MOD service within designated mobility zone(s) including connecting persons to the Jobs Express Terminal, fixed route, and commuter bus service. Will require monitoring and assessment of existing TCC service to adjust for COVID-19 and as the community returns to normalcy.
- Install R10-15 “Turning Vehicles Stop for Pedestrians” signs at the following signalized intersections to warn drivers of pedestrian/bicycle presence before turning:
  - Brescia Street
  - Savage Boulevard/Fondura Road
  - Import Drive
  - Rosser Boulevard
  - Savona boulevard

R10-15 signs remind turning drivers to stop for pedestrians on the crosswalk

- Review pedestrian clearance times and evaluate implementation of LPIs following guidance from the *FDOT Traffic Engineering Manual* (TEM) 2020 at the following signalized intersections (recommendations could be included in scope of project FM # 444707-1):
  - Brescia Street
  - Savage Boulevard/Fondura Road
  - Import Drive
  - Rosser Boulevard
  - Savona Boulevard



LPIs have been shown to reduce pedestrian-vehicle collisions by as much as 60% at treated intersections

TEM Section 3.11.3 (2)(3) offers the following guidelines for LPI implementation based on Context Classification:

a) Within following context class no need for traffic engineering study:
   - C4-Urban General
   - C5-Urban Center
   - C6-Urban Core

b) All other context class a traffic engineering study shall be required.

When required, the engineering study will include a Failure to Yield study. A vehicular yielding compliance condition is intended for applications at an approach to a signalized intersection where vehicular compliance yielding-to-pedestrian is the principal reason to consider LPI.

Other LPI implementation guidelines are detailed in the TEM Section 3.11.3 (1) and (4), and 3.11.4.

According to the Refined Smoothed 2040 Context Classifications map from FDOT D4, Gatlin Boulevard/Tradition Parkway fall in the following context classifications:

- C4–Urban General from west of Community Blvd to west of I-95 SB off-ramp
- C3C–Suburban Commercial from west of I-95 SB off-ramp to Edgarce St
- C4–Urban General from Edgarce St to west of Rosser Blvd
- C3R–Suburban Residential from west of Rosser Blvd to the east of study area

LPI at the following intersections would require an engineering study:

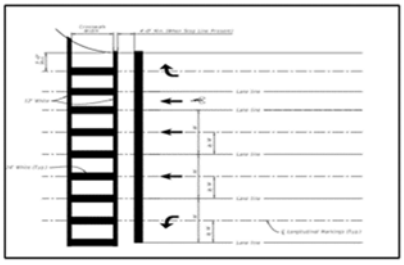
- Brescia Street (C3C-Suburban Commercial)
- Rosser Boulevard (C3R-Suburban Residential)
- Savona Boulevard (C3R-Suburban Residential)

The following intersections would not require an engineering study, as they fall within the Context Classification of C4–Urban General. However, a review should be conducted to verify need due to pedestrian demand after construction and operation of the Jobs Express Terminal. In the absence of demonstrated pedestrian demand, LPI implementation may not be appropriate.

- Savage Boulevard/Fondura Road
- Import Drive

In addition to the LPI implementation, review the locations for upgrade to audible countdown indications.

- Upgrade SR-9/I-95 interchange at Gatlin Boulevard/Tradition Parkway to better accommodate pedestrian and bicycle activity. If feasible, Improvements could be incorporated into future interchange improvement project FM # 439761-1. Proposed recommendations include:
  - Install special emphasis crosswalks at all pedestrian crosswalks.
  - A review of the proposed project indicates that existing lighting is to remain and new lighting will be installed. The proposed condition does not provide for a typical lighting layout for a large intersection per FDM Figure 231.3.4, and is not likely to provide adequate pedestrian lighting at the crosswalks. For further reference Lighting Plans for FM# 439761-1 are included in **Appendix B**.



Special Emphasis Crosswalks improve crosswalk conspicuity

  - Evaluate lighting at all pedestrian crossings, approaches on Gatlin Boulevard/Tradition Parkway to signals at interchange, and underneath overpass. Based on the results of this evaluation, upgrade lighting as needed. Follow required light level criteria as outlined in FDM Section 231.2.
  - Upgrade pedestrian crossings at free-flow on-ramps to include RRFBs; at implementation, consideration should be given to audible RRFBs indications. Follow guidance from FDOT D4 Design Guidance Document (2019-2): Pedestrian and Bicycle Treatments at Interchange Ramps. The D4 Design Bulletin is provided in **Appendix C**, and plans can be obtained from Steve Braun, P.E., District Four Design Engineer.
- Implementation of green sharrows or standard shared-lane markings was evaluated on the following residential streets to improve bicycle connectivity to Gatlin Boulevard.
  - Brescia Street from Gatlin Boulevard to Savage Boulevard
  - Savage Boulevard from Gatlin Boulevard to Galiano Road
  - Import Drive from Gatlin Boulevard to Savage Boulevard

  Considering future installation of sidewalk along these routes which provides safer bicycle path alternative, shared-lane markings were not deemed necessary therefore are not recommended for installation.

7.2 Mid- and Long-term Recommendations

- Complete sidewalk gap along south side of Tradition Parkway east of Community Boulevard. Based on discussion with the City, at least a portion of the gap will be constructed by a coming development project. Any remaining gap should be reviewed for construction through other resources and included in City's Ten-Year Sidewalk Plan.
- On Aledo Lane/Hayworth Avenue, provide east-west bicycle link, extended from Rosser Boulevard to Jobs Express Terminal south access. This link will provide bicyclists coming from

the southeast area with an alternate route that avoids busy intersections at Gatlin Boulevard, which represents a higher number of vehicle-bike conflicts.
Provide the following improvements along the proposed bicycle link (refer to **Figures 7-4** and **7-5**, and **Appendix D** for conceptual representation of improvements):

  - Install Special Emphasis crosswalk for all legs at intersection of Brigantine Place and Aledo Lane.
  - Install ADA-compliant curb ramps along route.
  - Install 12-ft concrete sidewalk along Aledo Lane from Rosser Boulevard to Brigantine Place.
  - Install 12-ft concrete sidewalk connection from Brigantine Place to Buckhart Street along north side of Tire Kingdom Shop. Include in City's Ten-Year Sidewalk Plan.
  - Install 12-ft concrete sidewalk along Hayworth Avenue from Buckhart Street to south access of the Jobs Express Terminal. Include in City's Ten-Year Sidewalk Plan.
  - Provide pedestrian lighting along Hayworth Avenue.
  - Provide wayfinding signs to notify bicyclists of available bicycle routes.

- Provide standard 6-ft concrete sidewalk along following residential streets connecting north to Gatlin Boulevard (refer to **Figure 7-6**, and **Appendix D** for conceptual representation of improvements):
  - Brescia Street
  - Savage Boulevard
  - Import Drive
- Evaluate installation of marked/protected pedestrian crossings at Brigantine Place and Edgarce Street across Gatlin Boulevard.

  As outlined in TEM Section 3.8.7 (3a), Rectangular Rapid Flashing Beacons (RRFB) should be limited to roadways with four or fewer lanes. Section 3.8.7 (2b) also indicates Pedestrian Hybrid Beacons (PHB) are not intended for use at intersections and should be installed at mid-block locations 100 ft from side streets.

  At the proposed locations, conduct an engineering study to evaluate installation of pedestrian signals following guidance from TEM Section 3.8.7 (2a). Consideration should be given to adjacent coordinated traffic control signals as well as signal spacing. Pedestrian crossings, if warranted, would include two-stage crossing with refuge islands, audible countdown indications, pavement markings, signs, and lighting. From Brigantine Place to Rosser Boulevard, no additional pedestrian crossings were deemed necessary.
- Conduct pedestrian level lighting study to evaluate lighting conditions and determine need for lighting improvements along Tradition Parkway between Village Parkway and SR-9/I-95 SB on-ramp, where lighting currently provided only on median.
- Conduct pedestrian-level lighting study to evaluate lighting conditions and determine need for lighting improvements at the following signalized intersections (see concept of lighting layout in **Appendix D**):
  - Brescia Street

  - Savage Boulevard/Fondura Road
  - Import Drive
  - Rosser Boulevard
  - Savona Boulevard

Basic layout of a bus stop

- For Gatlin Boulevard, improve bus stop facilities within the study area to include:
  - Boarding/alighting area
  - Sidewalk connection
  - Shelter and bench
  - ADA accessibility
- Review transit routes to the Jobs Express Terminal to improve connectivity to/from nearby neighborhoods (i.e., circulator routes) with peak-period short headways.
- Based on input from stakeholders, the City of Port St. Lucie is planning the following projects:
  - Peacock Trail to connect the Jobs Express Terminal to Dreyfuss Boulevard. This connection would improve bicycle connectivity in the area to the south (included in **Map 7-1**).
  - Tradition Trail to service area west of SR-9/I-95 with a multimodal network including pedestrian, bicycle, and transit (autonomous vehicles) facilities (**Map 7-2**).

7.3 Within Major Reconstruction Project

During the connectivity improvement review, wider sidewalks along Gatlin Boulevard/Tradition Parkway and along Village Parkway was evaluated as a proposed recommendation (refer to **Figure 7-7 and 7-8)**. Providing 12-ft concrete sidewalk along these sections would better accommodate pedestrians and bicycles as recommended in FDM 2020 when considering two-directional use.

Wide sidewalks provide a travel area separate from motorized traffic

This is a low priority recommendation as existing 6-ft and 8-ft sidewalks are considered acceptable for ped/bike mobility. 12-ft concrete sidewalks along Gatlin Blvd/Tradition Pkwy and Village Pkwy should be evaluated as a long-term strategic mobility improvement to be considered in future construction projects.

Appendix D includes conceptual representation of this proposed future improvements.

A summary of recommended improvements is graphically presented in **Figures 7-1** and **7-2**, and a summary table is provided in Section 9. The ultimate proposed grid showing existing to remain and proposed pedestrian/bike facilities is presented in **Map 7-1.**

Cost estimates based on the FDOT Long Range Estimates (LRE) and FDOT Historical Cost Average were prepared for the following improvements. Cost estimates are included in **Appendix E**.

- Installation of standard 6-ft sidewalk along Brescia Street, Import drive and Savage Boulevard.
- Installation of new sidewalk on south side of Tradition Parkway east of community Boulevard
- East-west bicycle link along Aledo Lane and Hayworth Avenue.
- Widening of existing 8-ft sidewalk along east side of Village Parkway north and south of Tradition Boulevard
- Lighting improvements at signalized intersections along Gatlin Boulevard
- Widening of existing 6-ft/8-ft sidewalk along both sides of Gatlin boulevard/Tradition Boulevard from Community Boulevard to Savona Boulevard

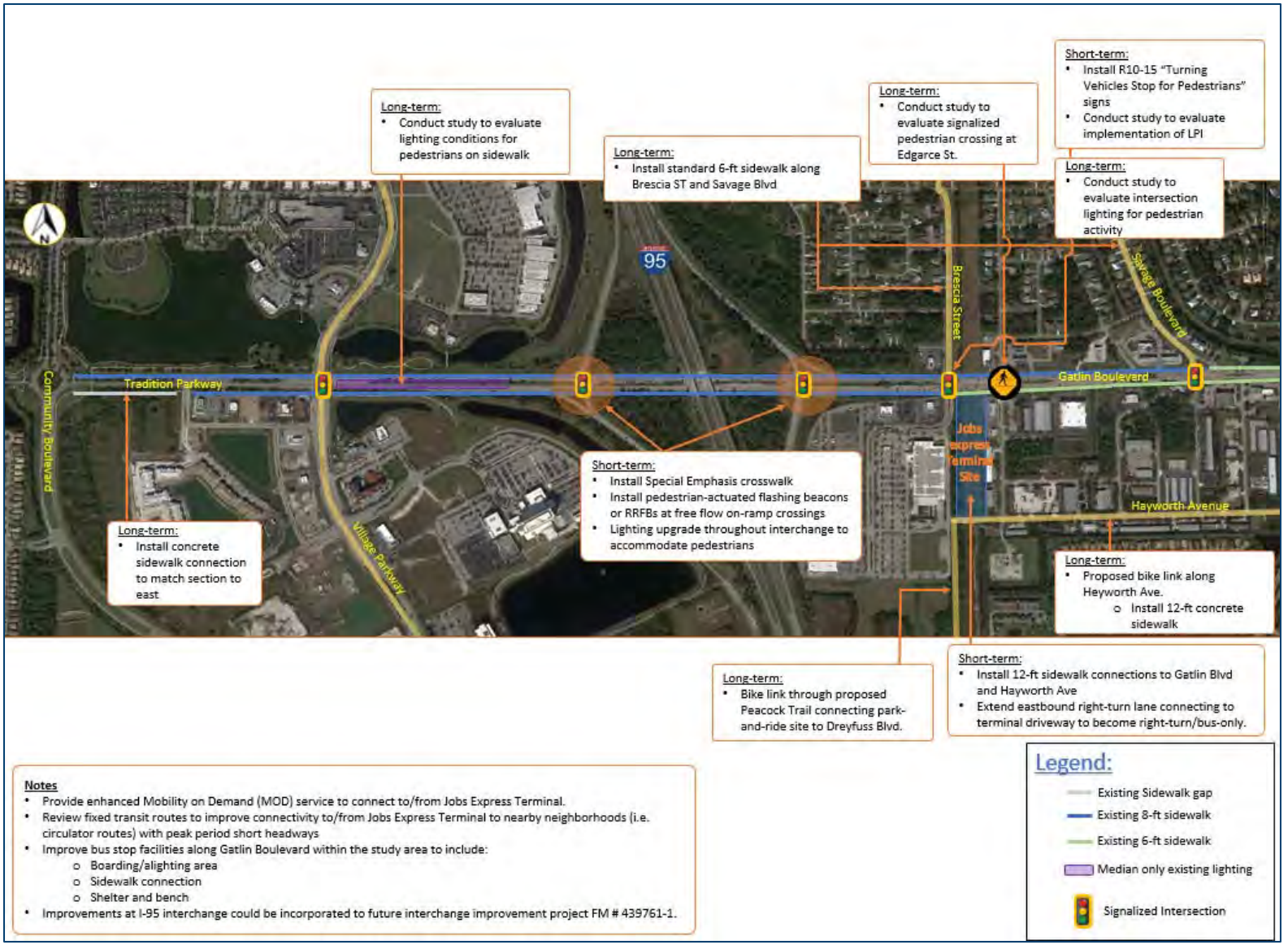


Figure 7-1: Improvement Diagram – Gatlin Boulevard/Tradition Parkway from Savage Boulevard to Community Boulevard

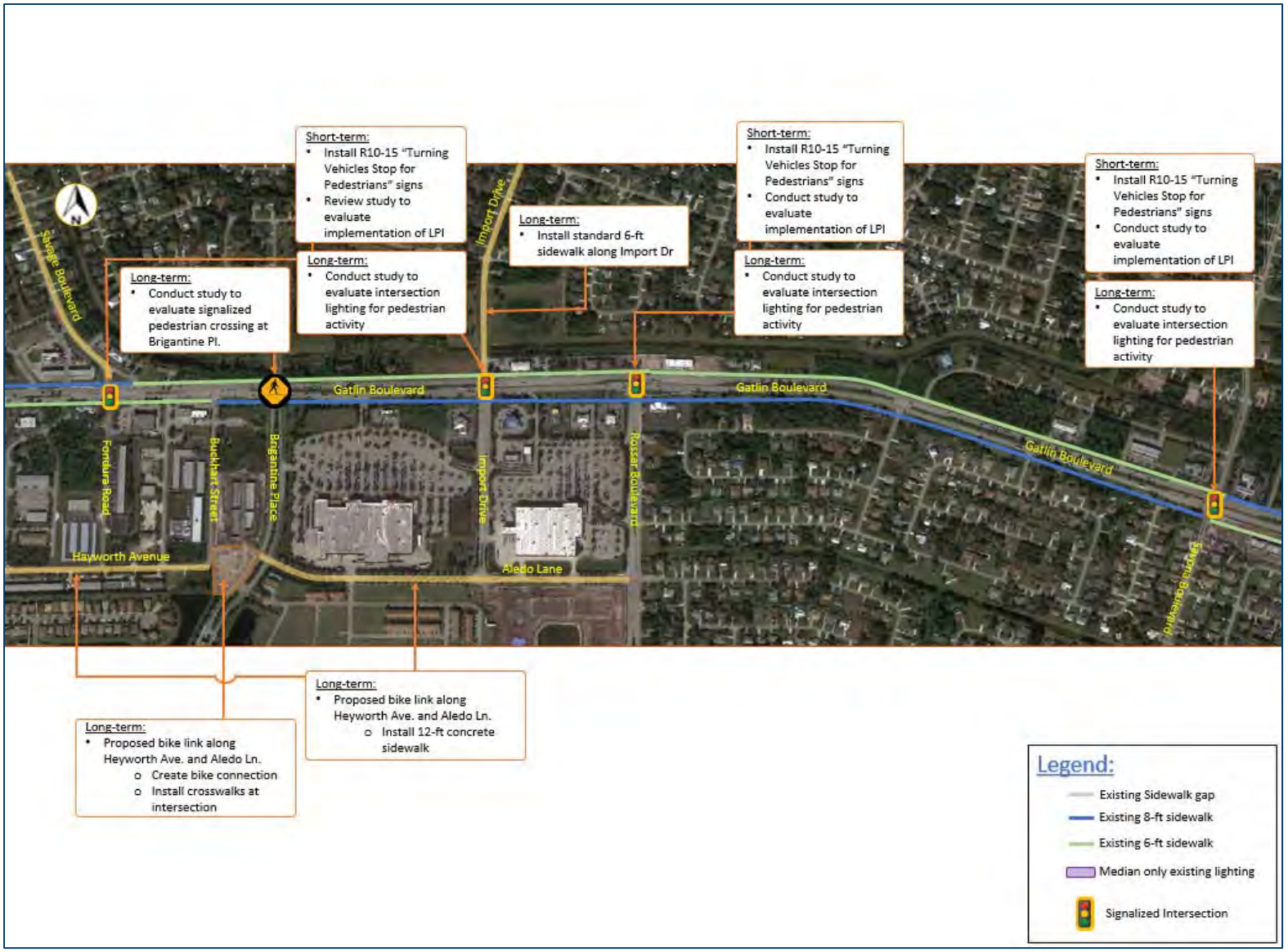


Figure 7-2: Improvement Diagram – Gatlin Boulevard/Tradition Parkway from Savona Boulevard to Savage Boulevard

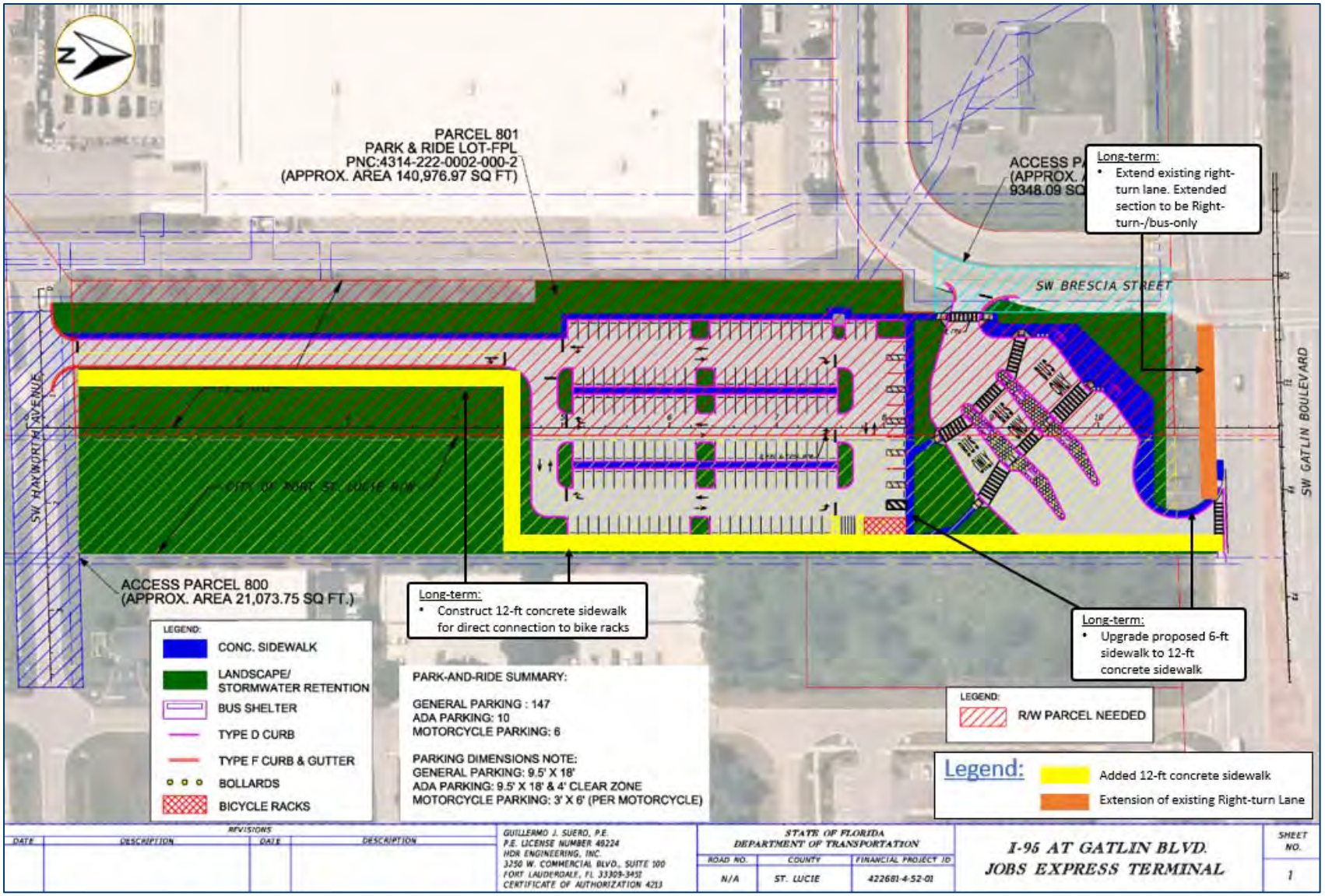
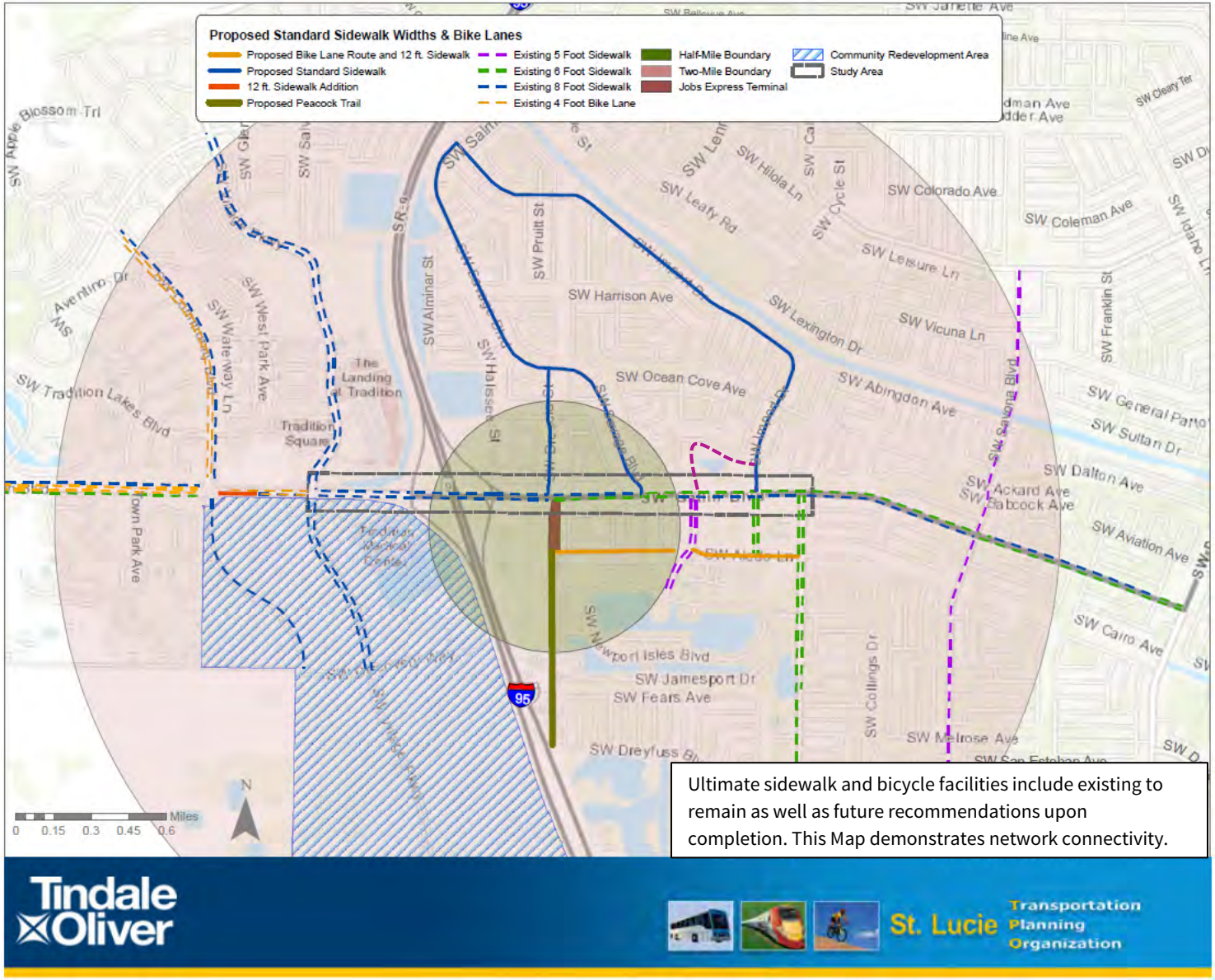


Figure 7-3: Improvement Diagram – Jobs Express Terminal Plan

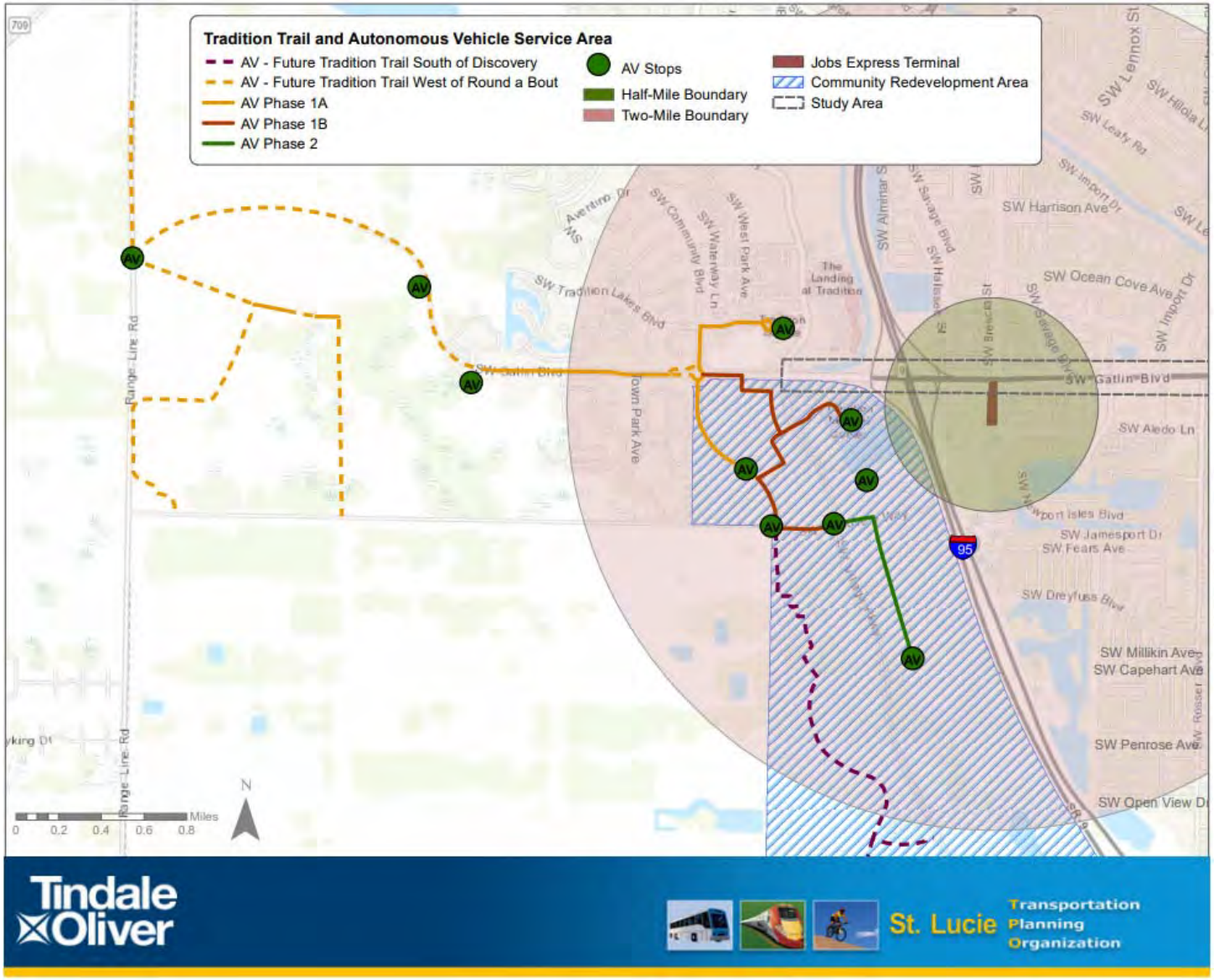


Ultimate sidewalk and bicycle facilities include existing to remain as well as future recommendations upon completion. This Map demonstrates network connectivity.

Tindale Oliver

St. Lucie Transportation Planning Organization

Map 7-1: Ultimate Sidewalk and Bicycle Improvements Summary



Map 7-2: Future Tradition Trail and Autonomous Vehicle Service Area

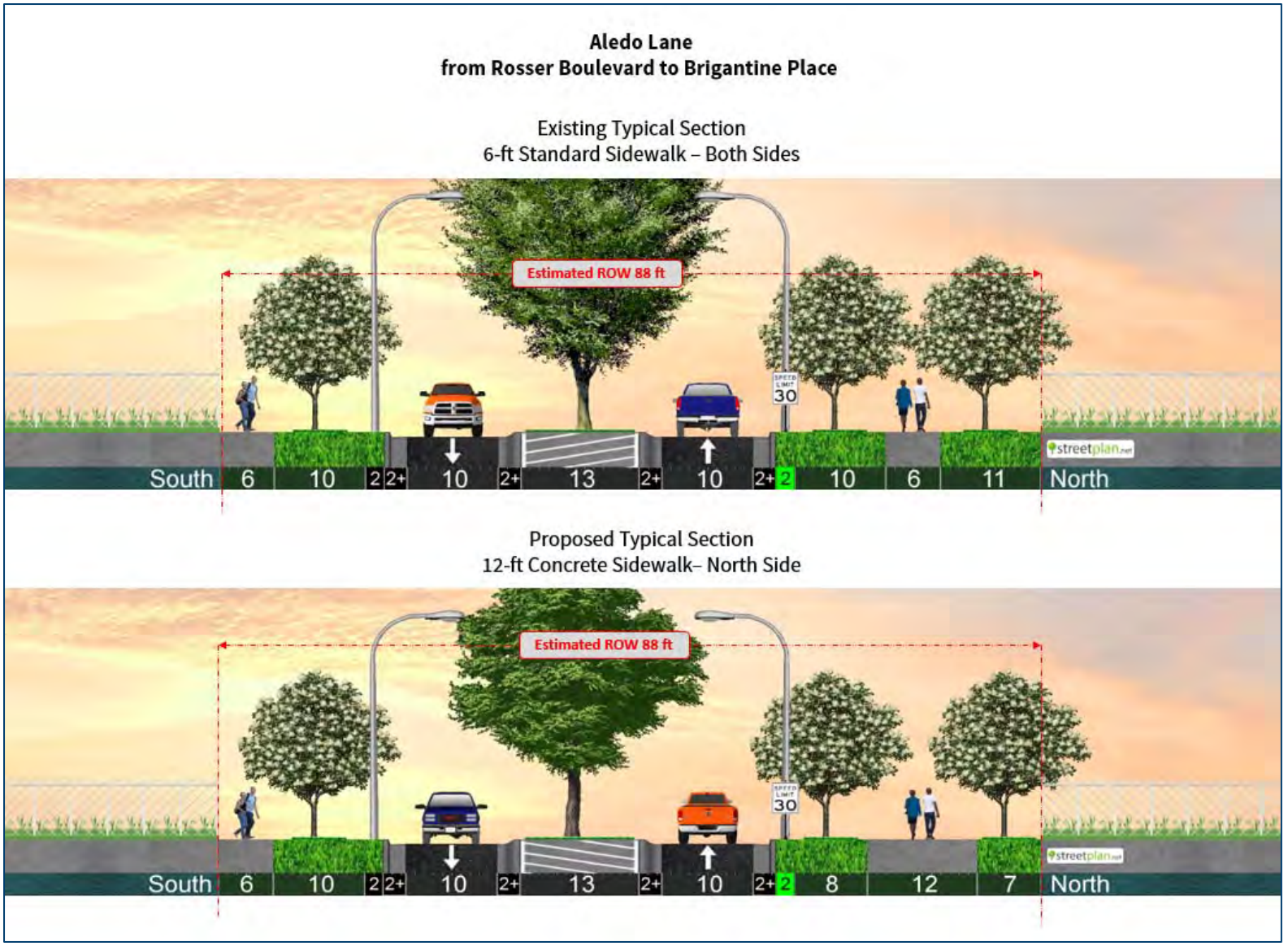


Figure 7-4: Aledo Lane Typical Section

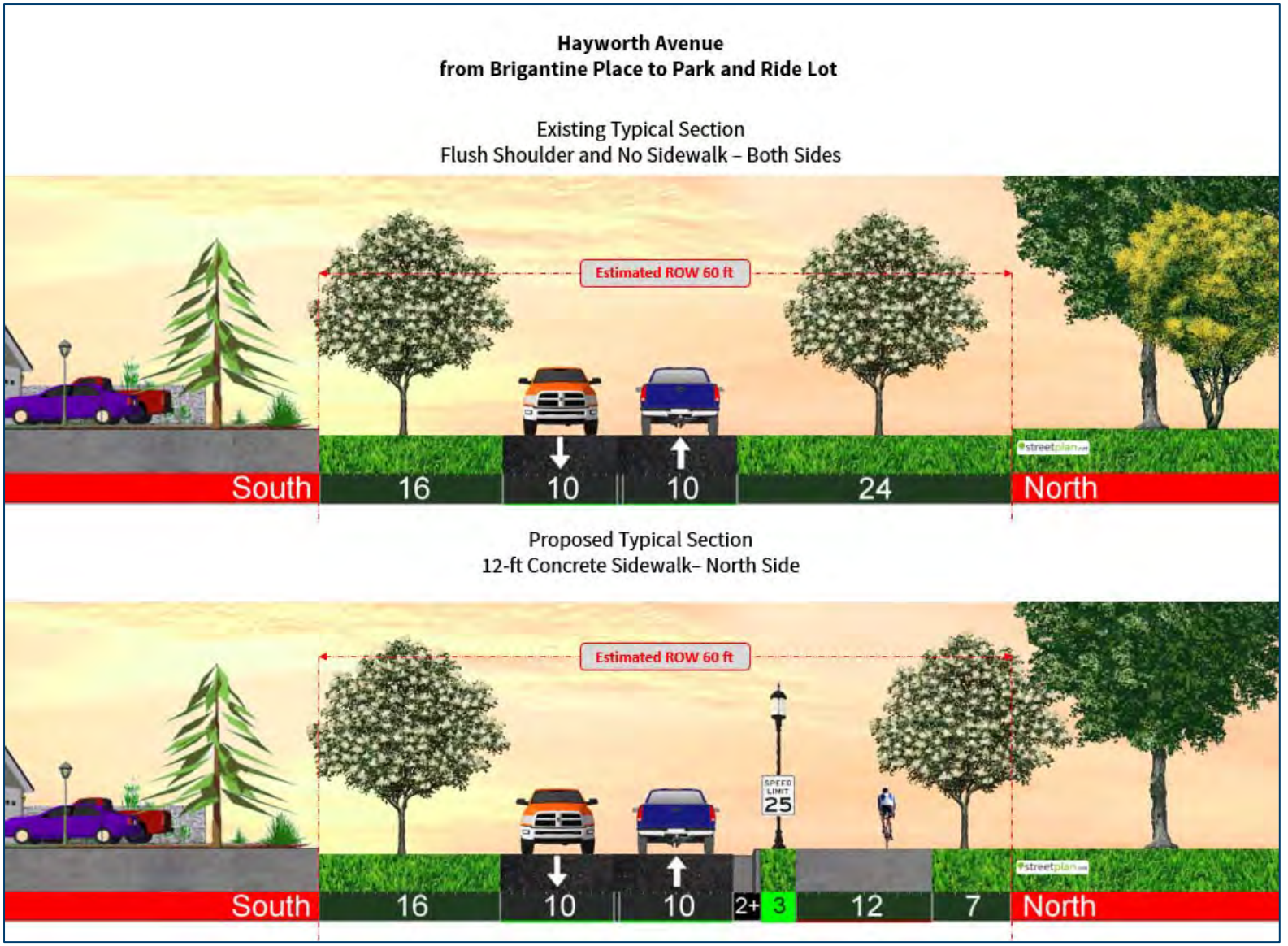


Figure 7-5: Hayworth Avenue Typical Section

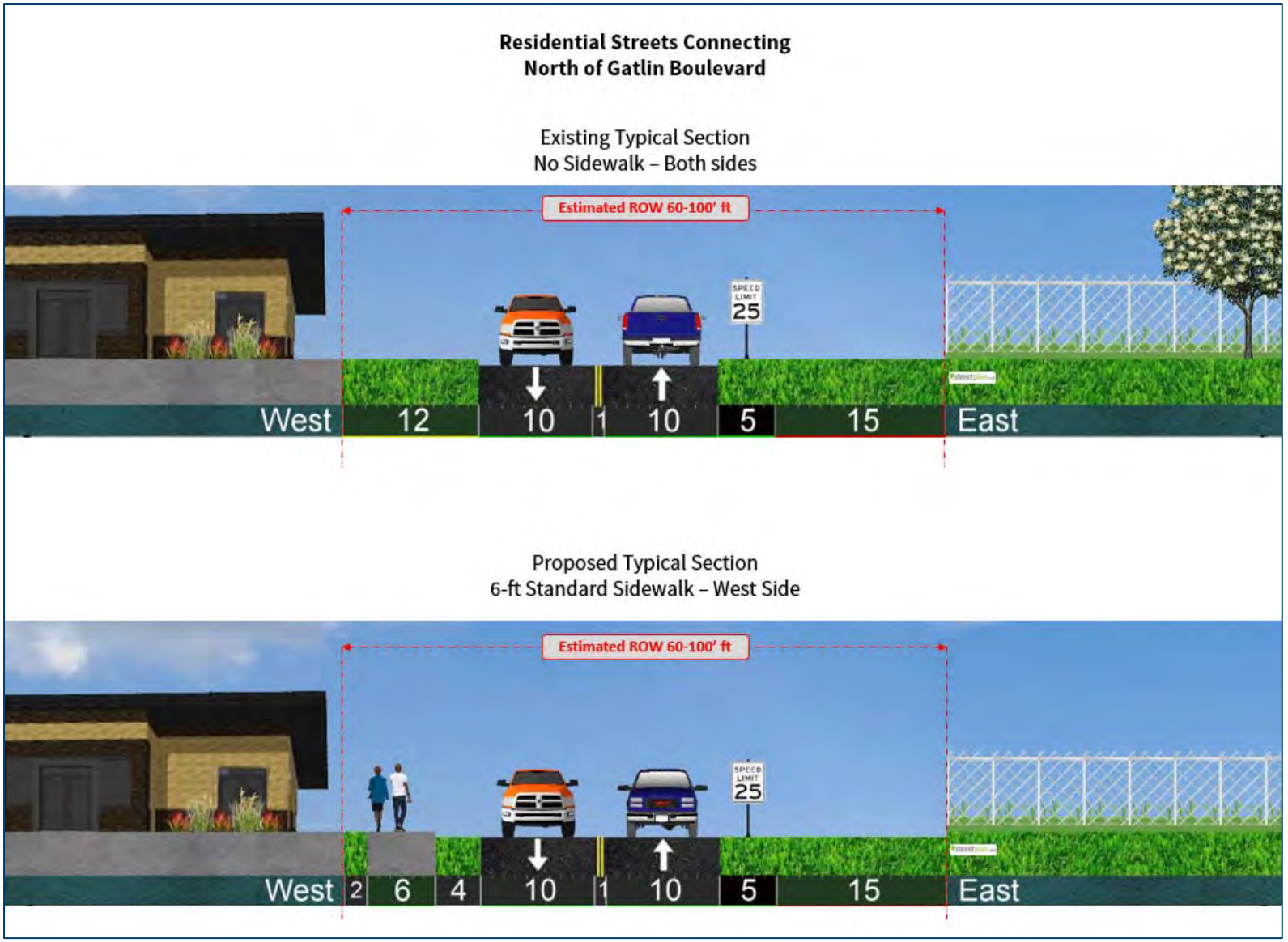


Figure 7-6: Residential Connectors Typical Section

Figure 7-7: Gatlin Boulevard Typical Section

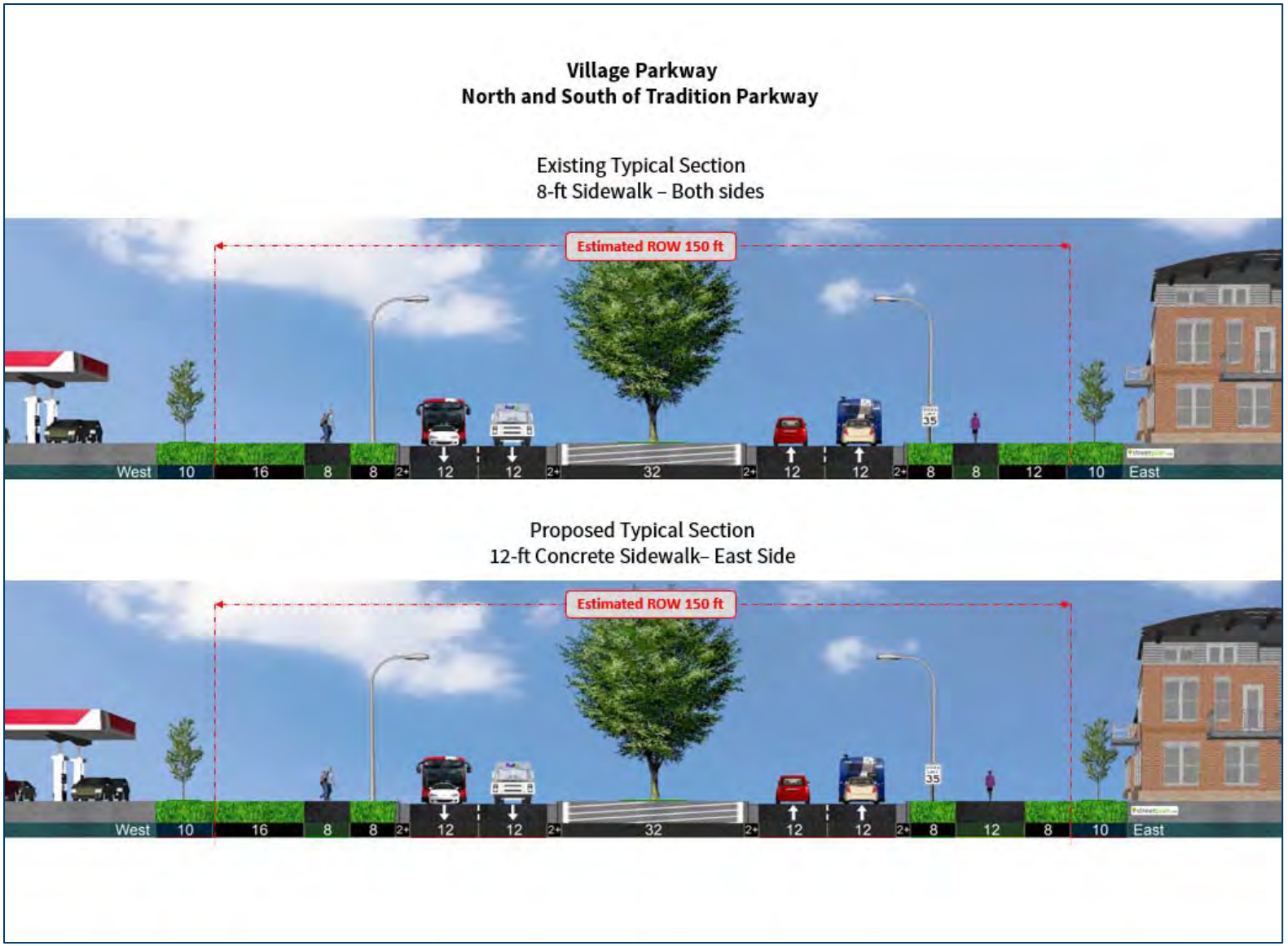


Figure 7-8: Village Parkway Typical Section

8.0 Other Considerations

8.1 Exclusive pedestrian phase

At the request of stakeholders, consideration was given to an exclusive pedestrian phase at the intersection of Gatlin Boulevard and Brescia Street, which would stop all vehicular traffic and allow pedestrians to cross all legs of the intersection simultaneously; in some instances, it also would allow crossing diagonally.

America Walks provides the following guidance for implementation of an exclusive pedestrian phase, also called Pedestrian Scramble or Barnes Dance (see https://americawalks.org/pedestrian-scramble-or-barnes-dance/):

- Benefits:
  - Improves pedestrian safety by removing conflicting traffic from the pedestrian crossing phase
  - Provides better separation between vehicles and pedestrians
- Considerations:
  - Potentially increases wait times for pedestrians and the possibility of pedestrians crossing against the signal
  - Potentially confuses visually impaired pedestrians who rely on traffic sounds to decide when and where to cross
  - Potentially hampers ability to synchronize timing at adjacent traffic signals
- Where to use it:
  - Areas with high pedestrian volumes (e.g. >1,200 pedestrians crossing per day)
  - Area with high speed turning vehicles that threaten pedestrians
  - Area with heavy conflicts between turning vehicles and crossing pedestrians

The intent of requesting an exclusive pedestrian phase at this location was to allow easy access to retail/restaurant uses on the north side of Gatlin Boulevard from the Jobs Express Terminal. This request was reviewed and was not recommended based on the following:

- The application of an exclusive pedestrian phase is rare and typically is applied only in dense downtown or urban areas.
- An exclusive pedestrian phase is typically deployed on lower-speed dense urban locations with high pedestrian traffic. This location is a suburban major arterial with anticipated higher speeds and low pedestrian volumes.
- An exclusive pedestrian phase would have significant impacts on delay for vehicular traffic along Gatlin Boulevard.
- This location has pedestrian crossings on all legs to allow pedestrians access to uses on all quadrants of the intersection through controlled crossings.

Based on the information and analysis above, an exclusive pedestrian phase is not recommended at the intersection of Gatlin Boulevard and Brescia Street.

9.0 Recommended Improvement Summary

Table 9-1 summarizes the recommended improvement from this study. The following notes apply to the table below:

1. Short-term vs. Mid- and Long-term refer to the anticipated implementation timeline that includes vetting, design, etc. Generally, based on the magnitude of the project.
2. Priority ranks projects based on their ease of implementation and/or the near-term benefit to the Jobs Express Terminal and nearby mobility. Medium and Low priority items are estimated to have lower impact or improvement to Jobs Express Terminal operations and mobility and therefore may be deferred and implemented based on post-opening need. High priority items would be anticipated to have an immediate impact and improvement on operations and mobility.
3. Cost estimates are planning level and include a 30% contingency. Cost estimates do not include estimated design costs. Cost sources included the FDOT LRE, 12-month statewide averages, and other sources. All costs are in 2020 dollars.

Table 9-1: Proposed Improvement Summary

Roadway	Description	Improvement	Notes	Priority	Cost Estimate (Includes 30% Contingency)	Concept Drawings (Appendix D)
Short-term						
Jobs Express Terminal	On site	Improve bike connectivity including:	Improvements should be coordinated with the coming Work Program project to construct the Jobs Express Terminal, if schedule permits.	High	To be coordinated with construction project	-
		• Upgrade proposed 6-ft sidewalk to 12-ft concrete sidewalk connection from Gatlin Blvd.		High		
		• Provide 12-ft concrete sidewalk connection from Gatlin Blvd and from Hayworth Ave to bike racks.		High		
		Extend right-turn lane on eastbound approach at Brescia St past intersection connecting to the Jobs Express Terminal driveway. Extended right-turn section to be right-turn/bus-only lane. Evaluate providing bus priority at signal.		High		
Jobs Express Terminal	Mobility On-Demand (MOD) Service.	Provide enhanced Treasure Coast Connector MOD service within designated mobility zone(s) including connecting persons to the Jobs Express Terminal, fixed route, and commuter bus service. Will require monitoring and assessment of existing TCC service to adjust for COVID-19 and as the community returns to normalcy.	See Section 6.3 for details.	High	$264,300 to $391,700	-
Gatlin Blvd	At Brescia Street	Install R10-15 "Turning Vehicles Stop for Pedestrians" signs at signalized intersections.		High	$9,176.00	-
Gatlin Blvd	At Savage Blvd/Fondura Rd	Install R10-15 "Turning Vehicles Stop for Pedestrians" signs at signalized intersections.		High	$9,176.00	-
Gatlin Blvd	At Import Dr	Install R10-15 "Turning Vehicles Stop for Pedestrians" signs at signalized intersections.		High	$9,176.00	-
Gatlin Blvd	At Rosser Blvd	Install R10-15 "Turning Vehicles Stop for Pedestrians" signs at signalized intersections.		High	$9,176.00	-
Gatlin Blvd	At Savona Blvd	Install R10-15 "Turning Vehicles Stop for Pedestrians" signs at signalized intersections.		High	$9,176.00	-

Gatlin Blvd	At Brescia Street	Review pedestrian clearance times and evaluate implementation of LPIs. Additionally, review the locations for upgrade to audible countdown indications.	LPI implementation requires an engineering study per TEM Section 3.8. If warranted, evaluate incorporation into FM# 444707-1 scheduled for implementation in FY 2024.	High	N/A	-
Gatlin Blvd	At Savage Blvd/Fondura Rd	Review pedestrian clearance times and evaluate implementation of LPIs. Additionally, review the locations for upgrade to audible countdown indications.	LPI implementation does not require an engineering study. Recommend verifying need based on pedestrian demand. Evaluate incorporation into FM# 444707-1 scheduled for implementation in FY 2024.	High	N/A	-
Gatlin Blvd	At Import Dr	Review pedestrian clearance times and evaluate implementation of LPIs. Additionally, review the locations for upgrade to audible countdown indications.	LPI implementation does not require an engineering study. Recommend verifying need based on pedestrian demand. Evaluate incorporation into FM# 444707-1 scheduled for implementation in FY 2024.	High	N/A	-
Gatlin Blvd	At Rosser Blvd	Review pedestrian clearance times and evaluate implementation of LPIs. Additionally, review the locations for upgrade to audible countdown indications.	LPI implementation requires an engineering study per TEM Section 3.8. If warranted, evaluate incorporation into FM# 444707-1 scheduled for implementation in FY 2024.	High	N/A	-
Gatlin Blvd	At Savona Blvd	Review pedestrian clearance times and evaluate implementation of LPIs. Additionally, review the locations for upgrade to audible countdown indications.	LPI implementation requires an engineering study per TEM Section 3.8. If warranted, evaluate incorporation into FM# 444707-1 scheduled for implementation in FY 2024.	High	N/A	-

Gatlin Blvd/Tradition Pkwy	At SR-9/I-95 Interchange	Upgrade to accommodate pedestrian activity including:	Coordinate recommendations for inclusion in the scope of project FM # 439761-1 scheduled for construction in FY 2023.		To be coordinated with construction project	-
		• Install Special Emphasis markings at all crosswalks.		High		
		• Conduct pedestrian level lighting study at all pedestrian crossings, approaches on Gatlin Boulevard/Tradition Parkway to signals at interchange, and underneath overpass. Based on the results of this evaluation, upgrade lighting as needed. Follow required light level criteria as outlined in FDM Section 231.2.		High		
		• Installation of audible RRFBs indications at free flow on-ramps. Follow guidance from FDOT D4 Design Guidance Document (2019-02): Pedestrian and Bicycle Treatments at Interchange Ramps.		High		

Roadway	Description	Improvement	Notes	Priority	Cost Estimate (Includes 30% Contingency)	Concept Drawings
Mid-term / Long-term						
Tradition Pkwy	Along 800 ft section east of Community Blvd	Complete 800 ft of sidewalk gap east of Community Blvd with concrete sidewalk to match section to the east.	This section of sidewalk is recommended to be included in City of Port St. Lucie Ten-Year Sidewalk Plan	High	$73,297.89	Page D-10
Aledo Ln/Hayworth Ave	From Rosser Boulevard to Jobs Express Terminal	Provide east-west bike link including:	Sections of sidewalk along Hayworth Ave and Buckhart St are recommended to be included in City of Port St. Lucie Ten-Year Sidewalk Plan		$662,780.06	Page D-14
		• 12-ft concrete sidewalk along Aledo Ln from Rosser Blvd to Brigantine Pl		Medium		
		• Special emphasis crosswalk at intersection of Brigantine Pl and Aledo Ln		Medium		
		• 12-ft concrete sidewalk connection from Brigantine Pl to Buckhart St along north side of Tire Kingdom Shop		Medium		
		• 12-ft concrete sidewalk along Hayworth Ave from Buckhart St to south access of the Jobs Express Terminal		Medium		
		• Pedestrian lighting along Hayworth Ave		Medium		
		• Wayfinding signs to notify bicyclists of available bicycle route		High	To be determined	
Brescia St	From Gatlin Blvd to Savage Blvd	Provide standard 6-ft concrete sidewalk to improve pedestrian and bike connectivity to Gatlin Blvd.	See also share lane markings recommendation in short-term improvements, above. Coordinate with SOURCE project programmed/funded for construction FY 2023-2024.	High	$94,850.65	Pages D-2 to D-3

Savage Blvd	From Gatlin Blvd to Galiano Rd	Provide standard 6-ft concrete sidewalk to improve pedestrian and bike connectivity to Gatlin Blvd.	See also share lane markings recommendation in short-term improvements, above. Coordinate with SOURCE project programmed/funded for construction FY 2023-2024. Identified in LRTP 2040 as bike/walk multimodal project priority.	High	$460,025.65	Pages D-4 to D-6
Import Dr	From Gatlin Blvd to Savage Blvd	Provide standard 6-ft concrete sidewalk to improve pedestrian and bike connectivity to Gatlin Blvd.	See also share lane markings recommendation in short-term improvements, above. Coordinate with SOURCE project programmed/funded for construction FY 2021-2022. Identified in LRTP 2040 as bike/walk multimodal project priority.	High	$521,678.57	Pages D-7 to D-9
Gatlin Blvd	At Brigantine Place	Conduct engineering study to evaluate installation of marked/protected pedestrian crossings. If warranted, crossings would include refuge islands, stop bars, pedestrian signs, audible countdown indications and lighting.	Analysis per TEM Section 3.8.	Low	N/A	-
Gatlin Blvd	At Edgarce St	Conduct engineering study to evaluate installation of marked/protected pedestrian crossings. If warranted, crossings would include refuge islands, stop bars, pedestrian signs, audible countdown indications and lighting.	Analysis per TEM Section 3.8.	Low	N/A	-
Tradition Pkwy	From Village Pkwy to SR 9/ I-95 SB on- and off-ramps	Conduct pedestrian level lighting study to evaluate lighting conditions on sidewalk as existing lighting currently provided only on median.	Requires a detailed lighting analysis and design.	Medium	N/A	-

Gatlin Blvd	At Brescia Street	Conduct pedestrian level lighting study to evaluate lighting conditions and determine need for lighting improvements.	Requires a detailed lighting analysis and design.	High	$110,746.39	Page D-21
Gatlin Blvd	At Savage Blvd/Fondura Rd	Conduct pedestrian level lighting study to evaluate lighting conditions and determine need for lighting improvements.	Requires a detailed lighting analysis and design.	Medium	$110,746.39	Page D-21
Gatlin Blvd	At Import Dr	Conduct pedestrian level lighting study to evaluate lighting conditions and determine need for lighting improvements.	Requires a detailed lighting analysis and design.	Medium	$110,746.39	Page D-21
Gatlin Blvd	At Rosser Blvd	Conduct pedestrian level lighting study to evaluate lighting conditions and determine need for lighting improvements.	Requires a detailed lighting analysis and design.	Medium	$110,746.39	Page D-21
Gatlin Blvd	At Savona Blvd	Conduct pedestrian level lighting study to evaluate lighting conditions and determine need for lighting improvements.	Requires a detailed lighting analysis and design.	Medium	$110,746.39	Page D-22
Gatlin Blvd/Tradition Pkwy	Along study section (5 stops)	Improve bus stop facilities within study area to include: · Boarding/alighting area · Sidewalk connection · Shelter and bench		High	$75,000.00	-
Proposed Peacock Trail	From Dreyfuss Blvd to Jobs Express Terminal	Provide a connection from Peacock Trail to Jobs Express Terminal.	Planned by the City for construction in FY 2027-2028, will provide shared-use trail connection improving bicycle connectivity in area to south.	Low	N/A	-
Tradition Trail	Area west of SR-9/I-95	Multimodal trail to improve mobility. Includes pedestrian, bicycle and transit (Autonomous Vehicles) facilities	Funding through BUILD grant application currently ongoing.	Medium	N/A	
Jobs Express Terminal	Connection to nearby neighborhoods	Directly-operated Commuter Service	See Section 6.0 for details.	Medium	$605,800.00	-
		Commuter Service through purchased transportation option			$460,500.00	

Roadway	Description	Improvement	Notes	Priority	Cost Estimate (Includes 30% Contingency)	Concept Drawings
Low Priority to be Considered in Future Major Reconstruction Project						
Gatlin Blvd/Tradition Pkwy	From Community Blvd to Savona Blvd	Provide 12-ft concrete sidewalk along both sides of roadway:	Give priority to south side of Gatlin Blvd (12-ft desired, 8-ft minimum). North side should be considered optional.			Pages D-10 to D-13
		• If feasible, upgrade existing section of 6-ft sidewalk from Savona Boulevard to Brescia Street to 12-ft concrete sidewalk.		Medium	$184,895.59	
		• If feasible, upgrade existing section of 8-ft sidewalk from Savona Boulevard to east of Community Boulevard to 12-ft concrete sidewalk.		Low	$6,200.00	
Village Pkwy	North and south of Tradition Pkwy	Provide 12-ft concrete sidewalk along east side to improve pedestrian and bike mobility and safety.	Will require a detailed review of potential ROW impacts, impacts to the bridge N of Tradition Pkwy, and impacts to existing lighting.	High	2791477.579	Pages D-15 to D-20

Appendix A
Developments of Regional Impact (DRI)

Treasure Coast Regional Planning Council, Developments of Regional Impact Map web site:

http://www.tcrpc.org/departments/dri/dri_map/dri_base_map_home.htm#

DRI Name	SOUTHERN GROVE
ADA No	2005-022
Name of DRI Applicant	Southern Grove
Address	Horizon Acquisitions 5, LLC
County	St. Lucie
DCA Project #	04-326
Effective Date of Development Order	9/19/2006
Expiration Date	12/31/2032
Buildout Date	12/31/2025
Type/Size of Approved Development	7,388 DU's 2,164,061 SF Retail 2,073,238 SF Office 1,999,404 SF Industrial/Warehouse 500 Room Hotel
Local Government	Port St. Lucie
General Location	West of I-95, East of Riverland DRI, South of Tradition DRI
Acres	3,606

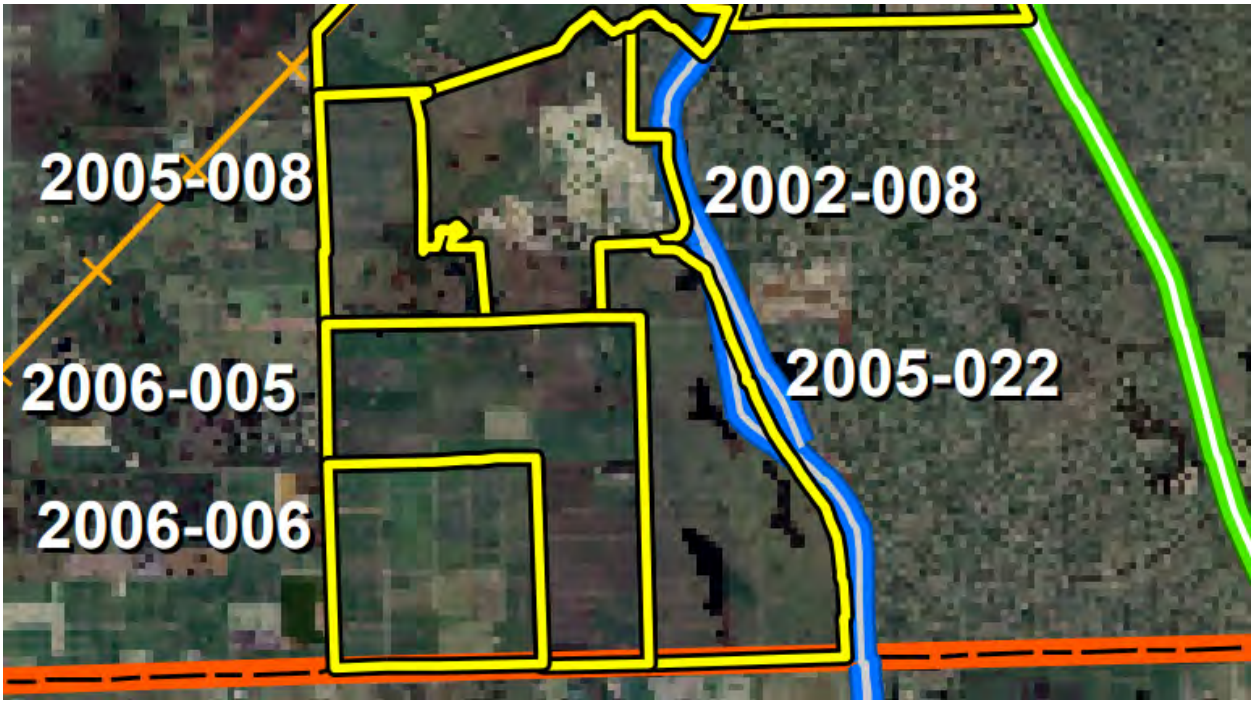
DRI Name	TRADITION
ADA No	2002-008
Name of DRI Applicant	Tradition
Address	Traditon Development Company 1850 Fountainview Boulevard Port St. Lucie, FL 34986
County	St. Lucie
DCA Project #	
Effective Date of Development Order	11/6/2003
Expiration Date	12/31/2032
Buildout Date	12/31/2022
Type/Size of Approved Development	7,245 DU's 675,512 SF Retail 1,295,567 SF Office 300 Room Hotel 200 Bed Hospital
Local Government	Port St. Lucie
General Location	West of I-95, to the east of Western Grove, & North of Riverland/Kennedy DRI
Acres	2,515

DRI Name	RIVERLAND
ADA No	2006-005
Name of DRI Applicant	Riverland/ Kennedy
Address	Kevin Ratterree St. Lucie Associates, III 1401 University Dr., Ste. 200 Coral Springs, FL 33071
County	St. Lucie
DCA Project #	
Effective Date of Development Order	12/6/2006
Expiration Date	12/31/2032
Buildout Date	12/31/2025
Type/Size of Approved Development	11,700 DU's 892,668 SF Retail 1,361,250 SF Research/Office 1,361,250 SF Light Industrial 327,327 SF Private
Local Government	Port St. Lucie
General Location	West of I-95, between Southern Grove & Wilson Groves DRI
Acres	3,845

DRI Name	WILSON GROVE
ADA No	2006-006
Name of DRI Applicant	Wilson Groves
Address	Wilson Groves ACR Properties, LLC 333 S. Congress Ave. #401 Delray Beach, FL 33455
County	St. Lucie
DCA Project #	
Effective Date of Development Order	11/3/2006
Expiration Date	12/31/2032
Buildout Date	12/31/2025
Type/Size of Approved Development	7,700 DU's 765,000 SF Retail 222,000 SF Office 1,361,250 SF Research/Office 1,361,250 SF Light Industrial 382,872 Institutional/Civic
Local Government	Port St. Lucie
General Location	North of Martin Countyline, South & West of Riverland DRI, West of I-95
Acres	2,451

DRI Name	WESTERN GROVE
ADA No	2005-008
Name of DRI Applicant	Western Grove
Address	Tradition Development Co., LLC Horizons St. Lucie Development, LLC
County	St. Lucie
DCA Project #	04-327
Effective Date of Development Order	3/8/2007
Expiration Date	12/31/2027
Buildout Date	12/31/2020
Type/Size of Approved Development	4,062 DU's 365,904 SF Retail 250,906 SF Office
Local Government	Port St. Lucie
General Location	West of Tradtion DRI, West of 200ft. FPL easement, South of proposed Crosstown Parkway Extension, East of Rangeline Road
Acres	1,585

Excerpt from Treasure Coast DRI Boundary Map



Appendix B
Lighting Plans Sheets FM# 439761-1

STATE OF FLORIDA

DEPARTMENT OF TRANSPORTATION

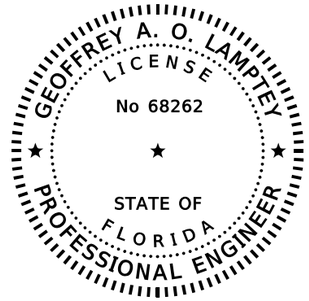
CONTRACT PLANS

FINANCIAL PROJECT ID 439761-1-52-01

ST. LUCIE COUNTY (940010)
STATE ROAD NO. 9
I-95 NORTHBOUND AND SOUTHBOUND OFF-RAMPS
AT GATLIN BOULEVARD

LIGHTING PLANS

INDEX OF LIGHTING PLANS



THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY

ON THE DATE ADJACENT TO THE SEAL

PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

LIGHTING PLANS
ENGINEER OF RECORD:

GEOFFREY LAMPTEY, P.E., PTOE
P.E. NO. 68262
GOAL ASSOCIATES INC.
14750 NW 77TH COURT, SUITE 320
MIAMI LAKES, FLORIDA 33016
(786) 600-3350
CONTRACT NO.: C9Z37
VENDOR NO.: F464649215
CERTIFICATE OF AUTHORIZATION NO.: 30697

FDOT PROJECT MANAGER:

ANSON SONNETT, P.E.

PHASE II
(CONSTRUCTABILITY)
SUBMITTAL

JANUARY 2020

CONSTRUCTION CONTRACT NO.	FISCAL YEAR	SHEET NO.
TXXXX	23	B - 2 L-1

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

TABULATION OF QUANTITIES

PAY ITEM NO.	DESCRIPTION	UNIT	SHEET NUMBERS														TOTAL THIS SHEET		GRAND TOTAL	
			L-5		L-6		L-7													
			PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL	PLAN	FINAL
0630 2 11	CONDUIT, FURNISH & INSTALL, OPEN TRENCH	LF	1075		270		1675										3020		3020	
0630 2 12	CONDUIT, FURNISH & INSTALL, DIRECTIONAL BORE	LF	310				580										890		890	
0635 2 11	PULL & SPLICE BOX, F&I, 13" x 24" COVER SIZE	EA	6		2		8										16		16	
0715 1 12	LIGHTING CONDUCTORS, F&I, INSULATED, NO.8 - 6	LF	4490		945		7205										12640		12640	
0715 4 13	LIGHT POLE COMPLETE, FURNISH & INSTALL STANDARD POLE STANDARD FOUNDATION, 40' MOUNTING HEIGHT	EA	5		2		5										12		12	
0715 500 1	POLE CABLE DISTRIBUTION SYSTEM, CONVENTIONAL	EA	5		2		5										12		12	

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

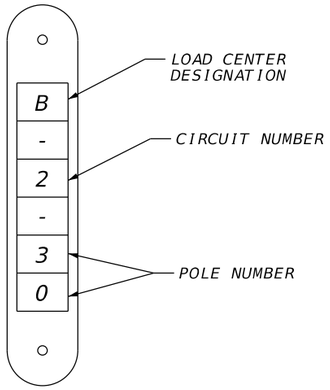
GEOFFREY A. O. LAMPTEY, P.E., PTOE
P.E. LICENSE NUMBER 68262
GOAL ASSOCIATES, INC.
14750 NW 77TH COURT, SUITE 320
MIAMI LAKES, FL 33016
CERTIFICATE OF AUTHORIZATION 30697

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	ST. LUCIE	439761-1-52-01

TABULATION OF QUANTITIES

SHEET NO.
B - 3
L-2



POLE IDENTIFICATION NUMBERS SHALL BE AS SHOWN IN THE POLE DATA SHEET

POLE IDENTIFICATION TAG DETAIL

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

GEOFFREY A. O. LAMPTEY, P.E., PTOE
P.E. LICENSE NUMBER 68262
GOAL ASSOCIATES, INC.
14750 NW 77TH COURT, SUITE 320
MIAMI LAKES, FL 33016
CERTIFICATE OF AUTHORIZATION 30697

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	ST. LUCIE	439761-1-52-01

GENERAL NOTES

SHEET NO.
B - 4
L-3

POLE DATA

POLE NO.	CIRCUIT	STATION	OFFSET	BL/CL	ARM LENGTH	LUMINAIRE WATTAGE	MOUNTING HEIGHT	REMARKS	PAY ITEM
1	A-1	41+81.44	65.47' RT	BL SURVEY GATLIN BLVD	10'	274	40'	NEW POLE	715-4-13
2	A-1	201+11.23	64.22' RT	CL CONST. RAMP C	10'	274	40'	NEW POLE	715-4-13
3	A-1	201+11.98	64.93' LT	CL CONST. RAMP C	10'	274	40'	NEW POLE	715-4-13
4	A-1	204+30.93	57.65' LT	CL CONST. RAMP C	10'	274	40'	NEW POLE	715-4-13
5	A-1	206+30.31	57.65' LT	CL CONST. RAMP C	10'	274	40'	NEW POLE	715-4-13
6	A-1	212+97.82	29.65' LT	CL CONST. RAMP C	10'	274	40'	NEW POLE	715-4-13
7	A-1	214+71.51	29.65' LT	CL CONST. RAMP C	10'	274	40'	NEW POLE	715-4-13
8	B-1	110+00.54	29.43' RT	CL CONST. RAMP A	10'	274	40'	NEW POLE	715-4-13
9	B-1	116+90.98	45.65' RT	CL CONST. RAMP A	10'	274	40'	NEW POLE	715-4-13
10	B-1	120+67.24	71.78' RT	CL CONST. RAMP A	10'	274	40'	NEW POLE	715-4-13
11	B-1	120+52.66	59.03' LT	CL CONST. RAMP A	10'	274	40'	NEW POLE	715-4-13
12	B-1	57+43.73	66.06' LT	BL SURVEY GATLIN BLVD	10'	274	40'	NEW POLE	715-4-13

CONVENTIONAL ROADWAY LIGHTING DESIGN CRITERIA

Average Initial Horizontal Illumination	1.5 Foot Candles
Uniformity Ratio Avg./Min.	4:1 Or Less
Uniformity Ratio Max./Min.	10:1 Or Less
Veiling Luminance Ratio	0.3:1 Or Less
Wind Speed	160 MPH

SIGNALIZED INTERSECTION LIGHTING DESIGN CRITERIA

Average Initial Horizontal Illumination	3.0 Foot Candles
Average Initial Vertical Illumination	2.3 Foot Candles
Uniformity Ratio Avg./Min.	4:1 Or Less
Uniformity Ratio Max./Min.	10:1 Or Less
Wind Speed	160 MPH

LEGEND

SYMBOL:	DESCRIPTION:
	LIGHT POLE COMPLETE WITH LED LUMINAIRE DESIGNED FOR 30,491 LUMENS, TYPE III DISTRIBUTION, 4000 K CCT, 7 PIN PHOTOCONTROL RECEPTACLE WITH SHORTING CAP, AND WIRED FOR 480 VOLT OPERATION. NO PHOTOCELL REQUIRED. SINGLE ARM POLE WITH FRANGIBLE BASE.
	PULL BOX
	EXIST. PULL BOX TO REMAIN
	EXIST. HIGH MAST POLE AND LUMINAIRES TO REMAIN
	2" SCHEDULE 40 PVC CONDUIT (DIRECTIONAL BORE) WITH THREE RHW-2/XLP CONDUCTORS INSIDE THE CONDUIT: ONE WITH BLACK INSULATION, ONE WITH WHITE INSULATION, AND ONE GROUND WITH GREEN INSULATION.
	2" SCHEDULE 40 PVC CONDUIT (OPEN TRENCH) WITH THREE RHW-2/XLP CONDUCTORS INSIDE THE CONDUIT: ONE WITH BLACK INSULATION, ONE WITH WHITE INSULATION, AND ONE GROUND WITH GREEN INSULATION.

REVISIONS

DATE	DESCRIPTION	DATE	DESCRIPTION

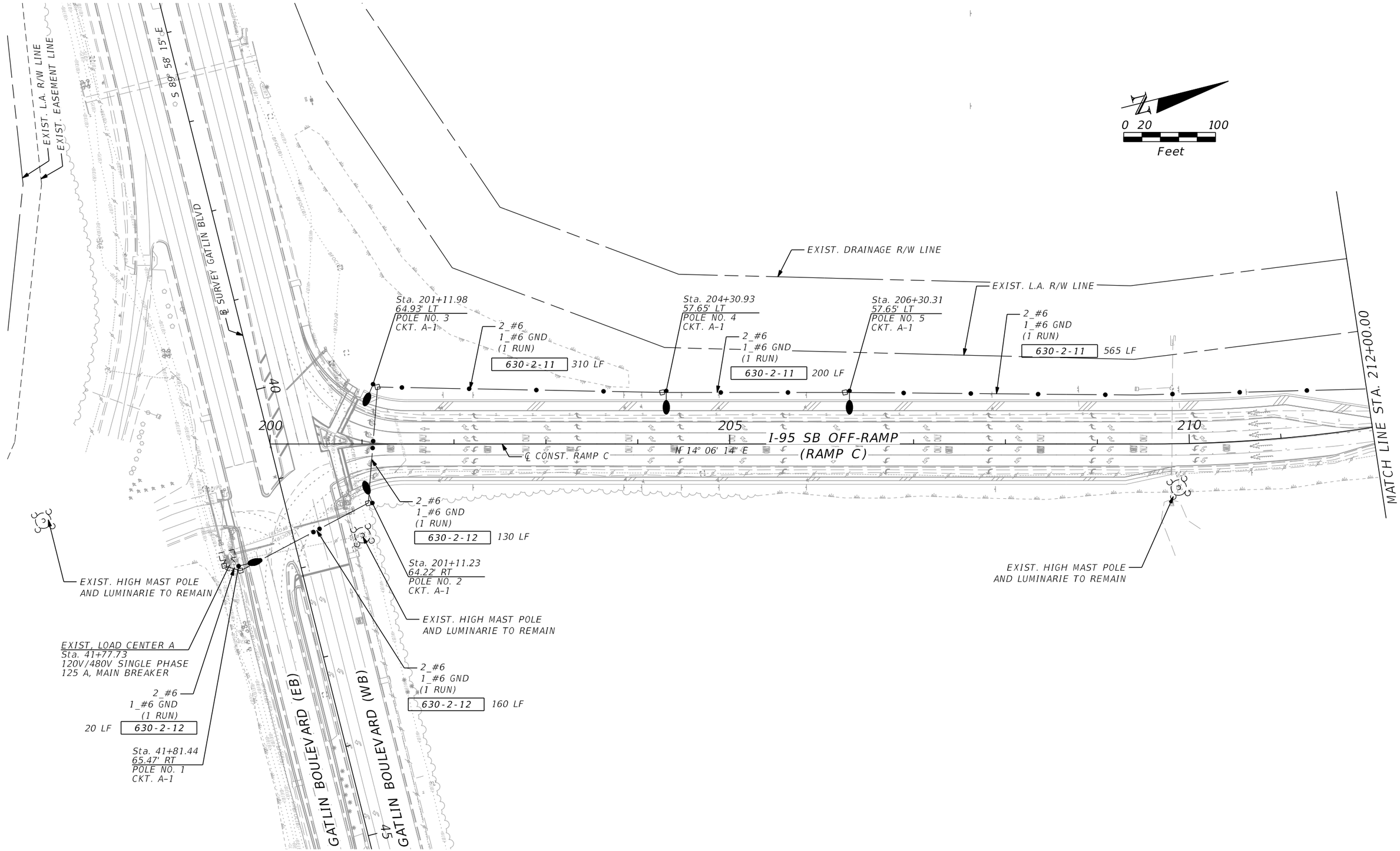
GEOFFREY A. O. LAMPTEY, P.E., PTOE
P.E. LICENSE NUMBER 68262
GOAL ASSOCIATES, INC.
14750 NW 77TH COURT, SUITE 320
MIAMI LAKES, FL 33016
CERTIFICATE OF AUTHORIZATION 30697

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	ST. LUCIE	439761-1-52-01

POLE DATA AND LEGEND

SHEET NO.
B - 5
L-4



THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

GEOFFREY A. O. LAMPTEY, P.E., PTOE
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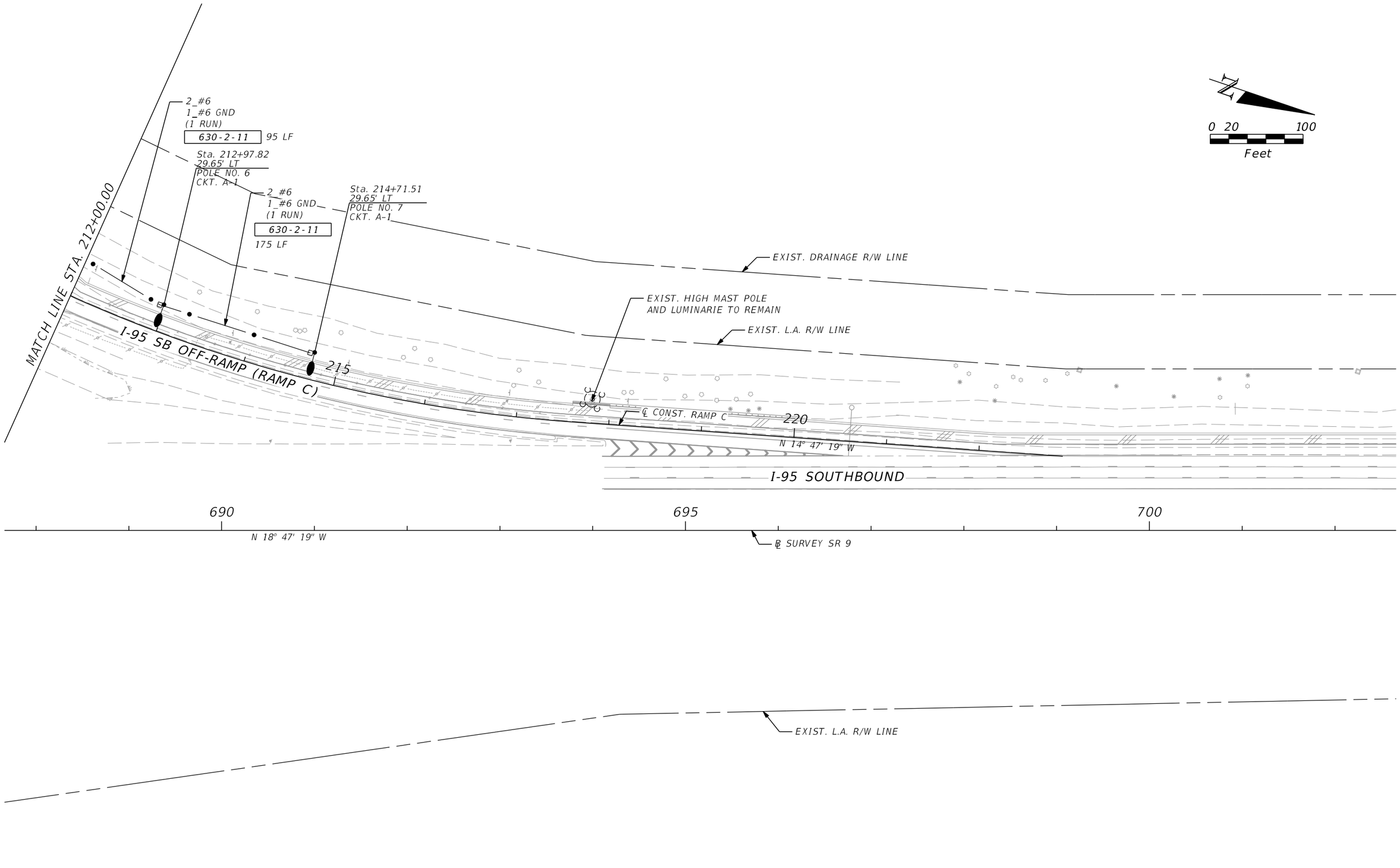
14750 NW 77TH COURT, SUITE 320
MIAMI LAKES, FL 33016
CERTIFICATE OF AUTHORIZATION 30697

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	ST. LUCIE	439761-1-52-01

LIGHTING PLAN

SHEET NO.
B - 6
L-5



THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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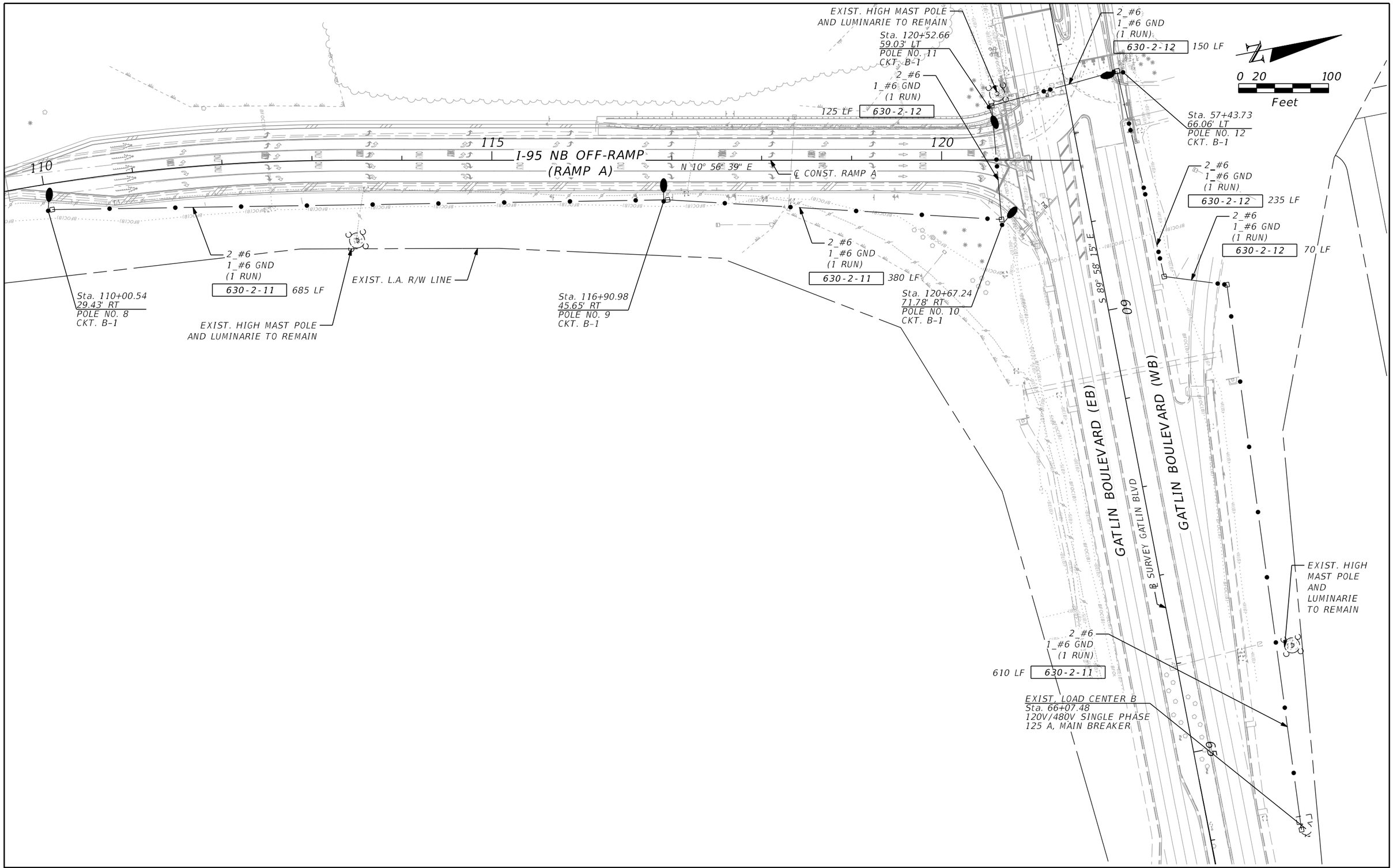
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	ST. LUCIE	439761-1-52-01

LIGHTING PLAN

SHEET NO.
B-7
L-6



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

GEOFFREY A. O. LAMPTEY, P.E., PTOE
P.E. LICENSE NUMBER 68262
GOAL ASSOCIATES, INC.
14750 NW 77TH COURT, SUITE 320
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CERTIFICATE OF AUTHORIZATION 30697

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 9	ST. LUCIE	439761-1-52-01

LIGHTING PLAN

SHEET NO.
B - 8
L-7

Appendix C
FDOT D4 Design Bulletin Ped-Bike Treatments at Interchange

FDOT

Florida Department of Transportation

RON DESANTIS
GOVERNOR

3400 West Commercial Boulevard
Fort Lauderdale, FL 33309

KEVIN J. THIBAULT, P.E.
SECRETARY

DISTRICT FOUR DESIGN GUIDANCE DOCUMENT (2019-02)

DATE: February 26, 2019

TO: District Four Management Council and Project Managers

FROM: Mark Plass, P.E., District Traffic Operations Engineer
Steven Braun, P.E., District Design Engineer
Amie Goddeau, P.E. District Modal Administrator

SUBJECT: **Pedestrian and Bicycle Treatments for District Four Interchanges**

This memorandum serves as notice to all District Four Departments of recommended pedestrian and bicycle treatments that shall be considered along arterials at all interchange locations in this District.

REQUIREMENTS

The recommended typical plans serve as examples for pedestrian and bicycle treatments to be included in conceptual and final design plans for all interchange projects. The most recent version of the typical plans for recommended treatments will be available on the District Four Design Office SharePoint site.

BACKGROUND

Based on the District's emphasis on pedestrian and bicycle safety; Traffic Operations, in conjunction with Design, OMD and PLEMO, developed typical designs for pedestrian and bicycle treatments given various configurations of interchanges. These typical designs serve as a guide for recommended best practices to improve safety and mobility for pedestrians and bicyclists through interchanges.

IMPLEMENTATION

The adopted recommendations will be implemented in the following phases:

- Inclusion in all active projects with current schedules prior to the Constructability Phase. The project manager must provide documentation to the District Traffic Operations Engineer (DTOE) and District Design Engineer (DDE) of those improvements that are not considered feasible.
- Inclusion in all upcoming projects. The project manager must provide documentation to the District Traffic Operations Engineer (DTOE) and District Design Engineer (DDE) of those improvements that are not considered feasible.
- Departments will review interchange stand-alone projects that are not being managed by Design (i.e., Traffic Operations or Maintenance Push-Button projects) to determine if the recommended treatments are viable.

CONSIDERATION

The plans provide guidance on what designers should consider. Each interchange location will require detailed design of location-specific treatments.

It should also be noted that the attached document and recommended treatments will be updated based on comments received during implementation along with updated standards or evolving industry practices.

CONTACT

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Larry Wallace
Bicycle-Pedestrian Coordinator
Florida Department of Transportation
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Larry.Wallace@dot.state.fl.us

Appendix D
Conceptual Designs Sheets

PROJECT START

PROJECT END

SW GATLIN BOULEVARD

SW KENWICK AVENUE

SW ELMWOOD AVENUE

SW LUSBY AVENUE

SW GRAY BEAL AVENUE

SW CULPEPPER AVENUE

SW DAPSCO AVENUE

CONTINUE A 6' SIDEWALK ALONG WEST SIDE STARTING NORTH OF SW ELMWOOD AVENUE TO SW SAVAGE BOULEVARD

RIGHT-OF-WAY

SW BRESCIA STREET

RIGHT-OF-WAY

SW GATLIN BOULEVARD

SW GRAY BEAL AVENUE

SW SAVAGE BOULEVARD

Note: Right-of-way data is from Florida Department of Revenue's tax database and will need to be verified during design with detailed survey.

LEGEND

RIGHT OF WAY

PROPOSED SIDEWALK

FDOT

N

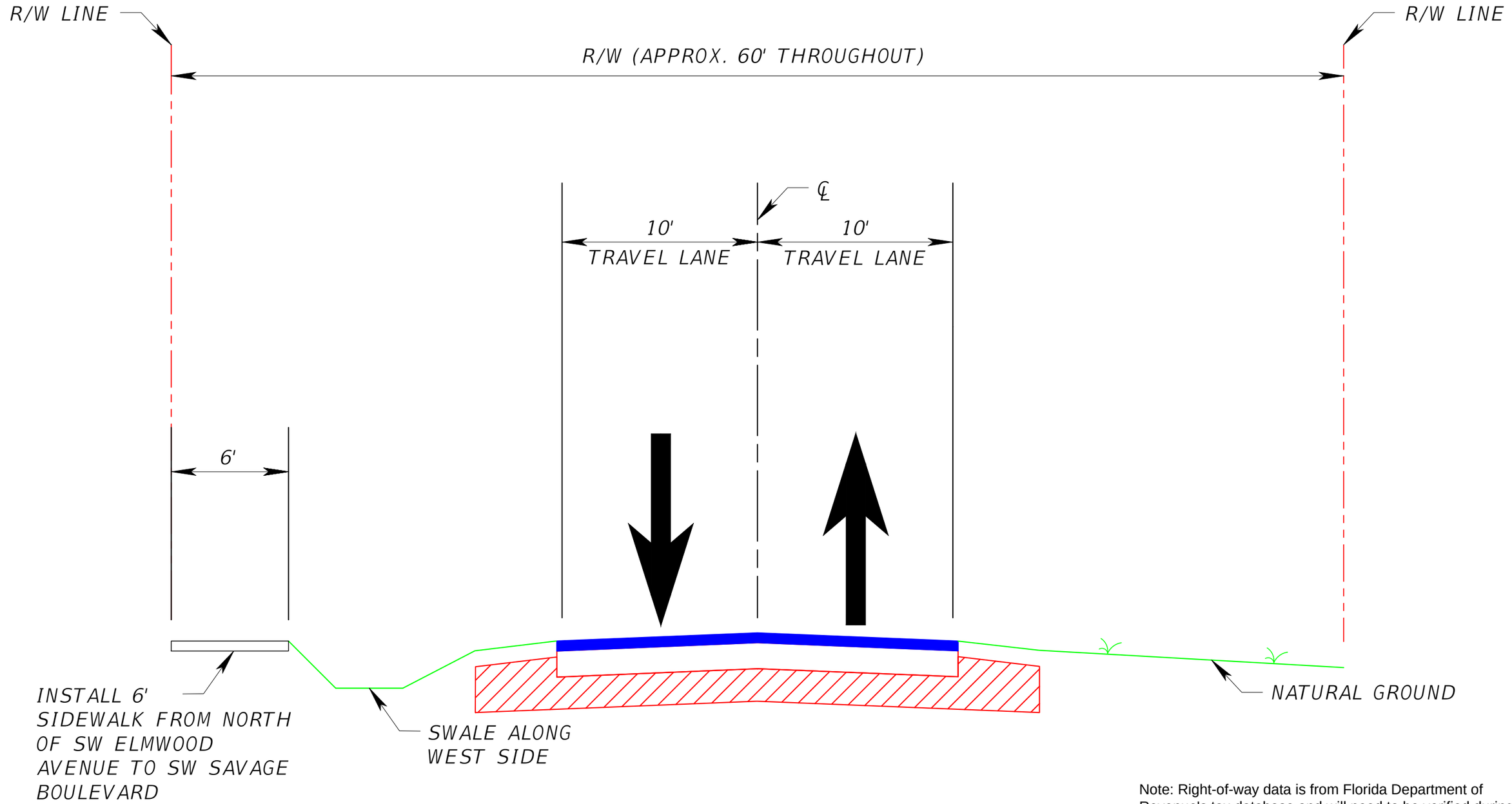
0 50' 100'

Scale: 1" = 200'

SW BRESCIA STREET FROM SW GATLIN BOULEVARD TO SW SAVAGE BOULEVARD PROPOSED CONCEPT

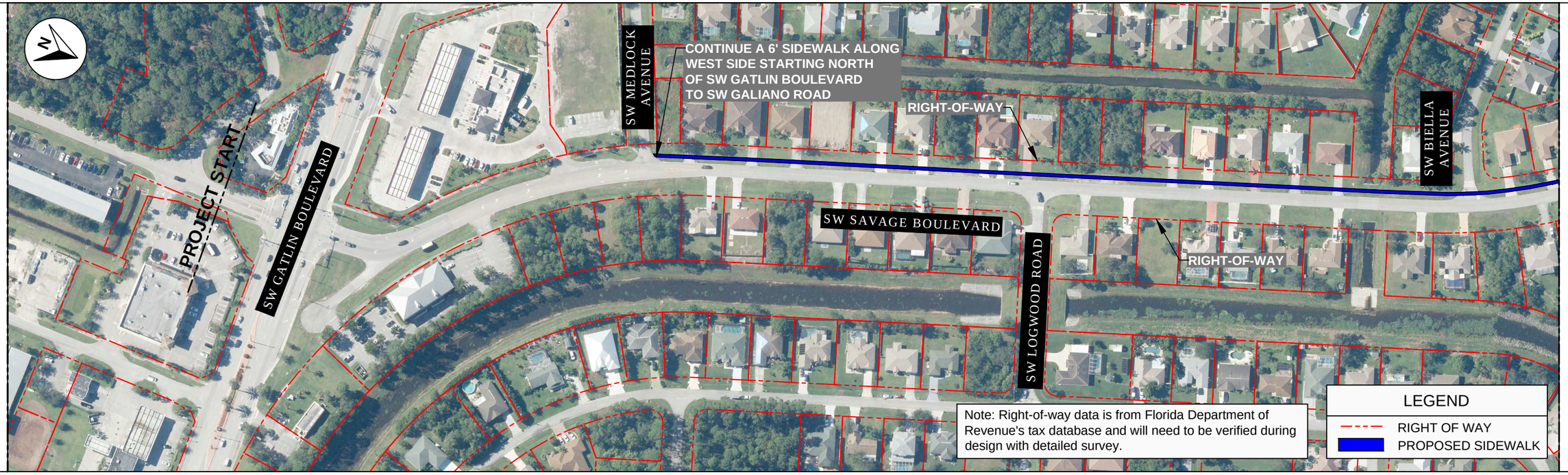
Sheet

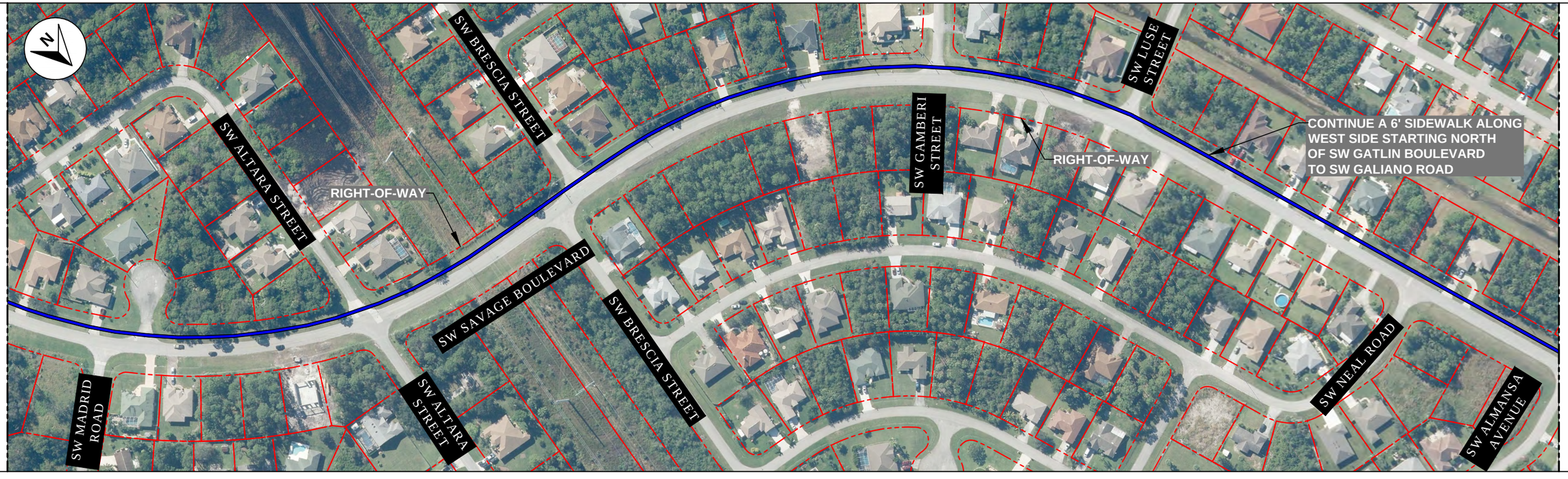
1



Note: Right-of-way data is from Florida Department of Revenue's tax database and will need to be verified during design with detailed survey.

FDOT	NOT TO SCALE	**SW BRESCIA STREET FROM SW GATLIN BOULEVARD TO SW SAVAGE BOULEVARD PROPOSED TYPICAL**	**Sheet** 1





FDOT

0 50' 100'

Scale: 1" = 200'

SW SAVAGE BOULEVARD FROM SW GATLIN BOULEVARD TO SW GALIANO ROAD PROPOSED CONCEPT

Sheet 1

MATCHLINE SEE SHEET 1
BELOW RIGHT

MATCHLINE BELOW LEFT

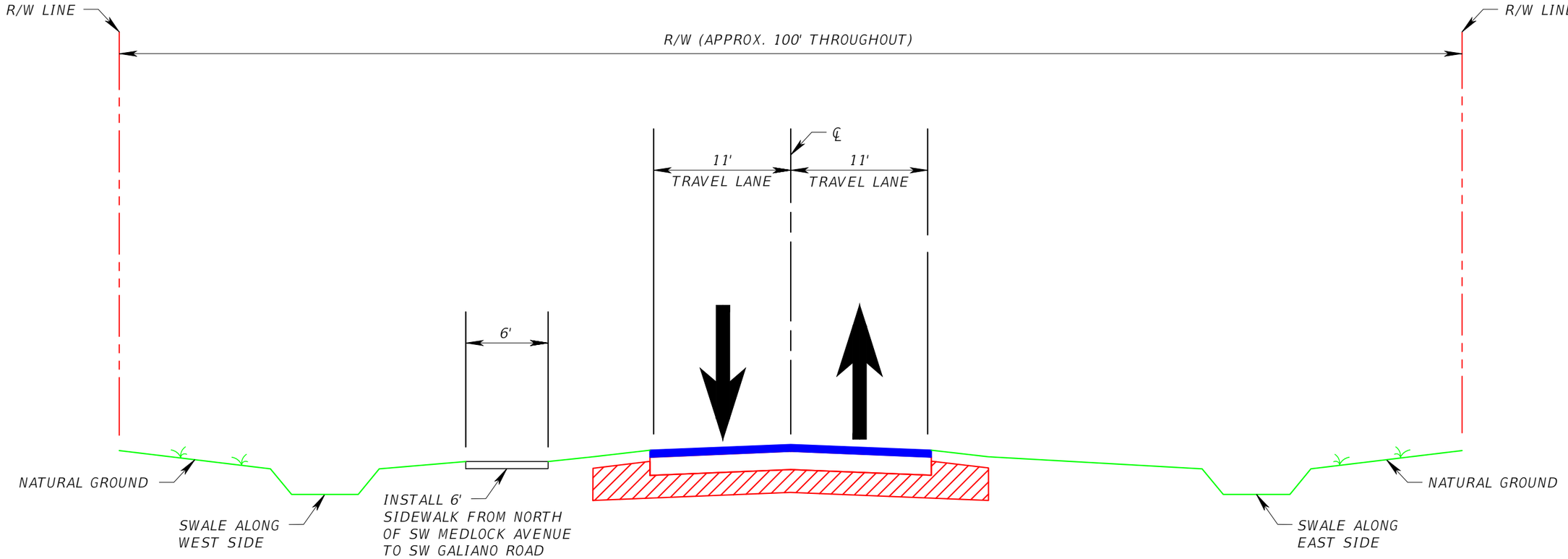
MATCHLINE ABOVE RIGHT

FDOT

0 50' 100'
Scale: 1" = 200'

SW SAVAGE BOULEVARD FROM SW GATLIN BOULEVARD TO SW GALIANO ROAD PROPOSED CONCEPT

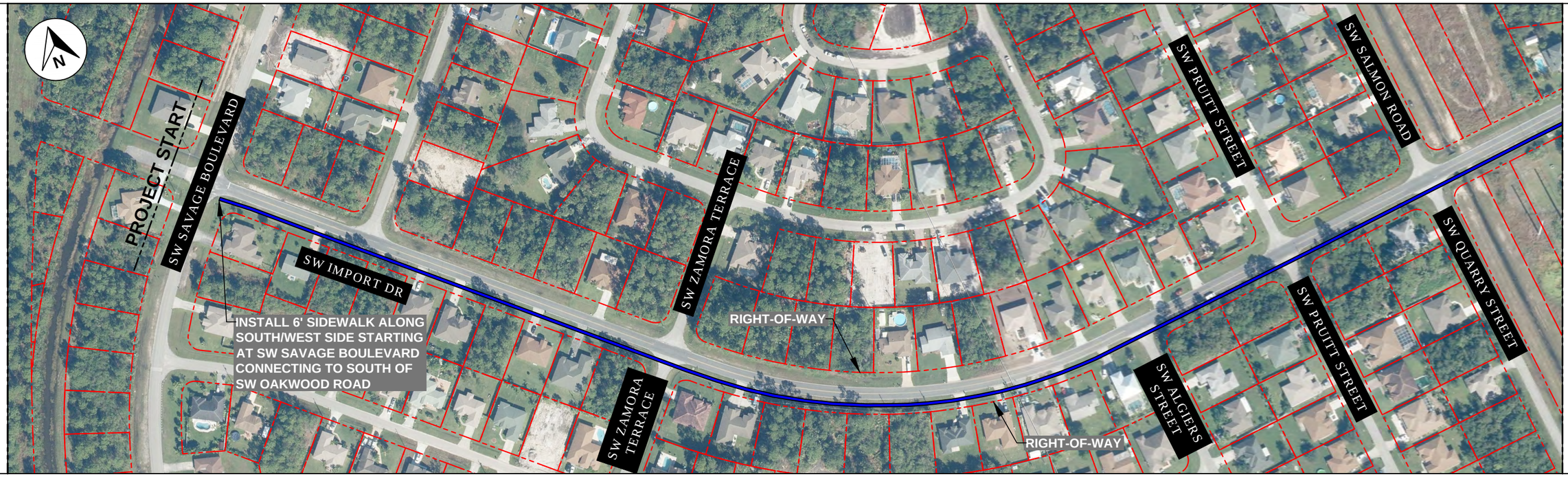
Sheet
2

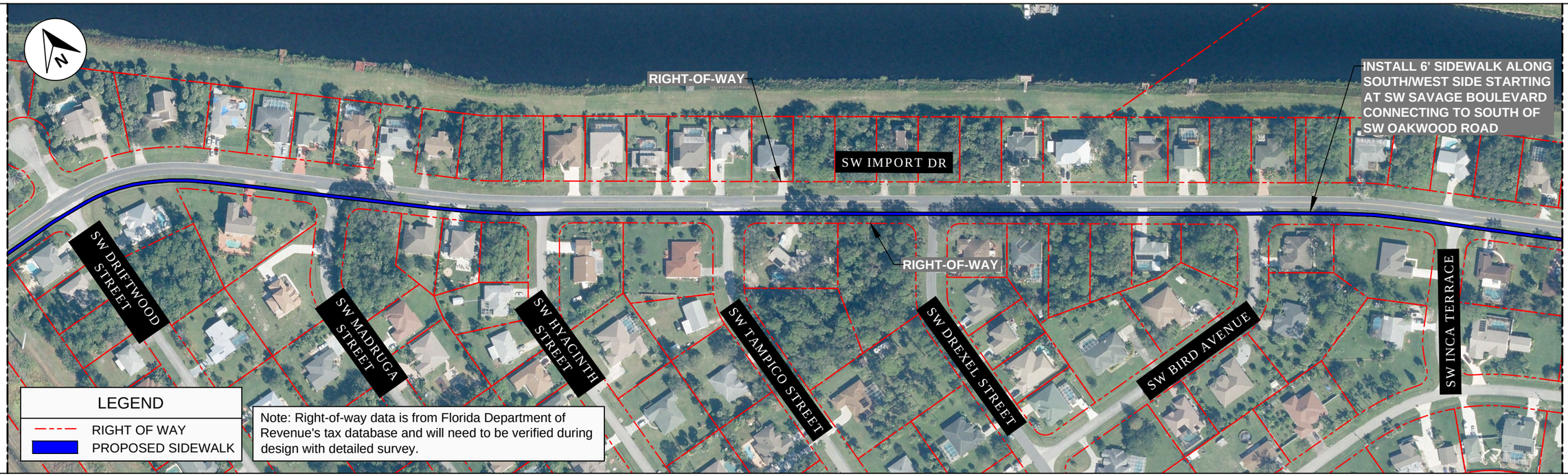


Notes:

1. Right-of-way data is from Florida Department of Revenue's tax database and will need to be verified during design with detailed survey.
2. During detailed design, along curve at SW Plum Court and bridge to north, sidewalk on west side may require a design of a crossing before curve and a sidewalk on east side in order to cross the bridge and another crossing back to west side north of bridge.

FDOT	NOT TO SCALE	**SW SAVAGE BOULEVARD FROM SW GATLIN BOULEVARD TO SW GALIANO ROAD PROPOSED TYPICAL**	Sheet 1





FDOT

0 50' 100'

Scale: 1" = 200'

SW IMPORT DRIVE FROM SAVAGE BOULEVARD TO SW GATLIN BOULEVARD PROPOSED CONCEPT

Sheet

1

MATCHLINE SEE SHEET 1
BELOW RIGHT

MATCHLINE BELOW LEFT

MATCHLINE ABOVE RIGHT

RIGHT-OF-WAY

SW IMPORT DRIVE

SW ABINGDON AVENUE

INSTALL 6' SIDEWALK ALONG SOUTH/WEST SIDE STARTING AT SW SAVAGE BOULEVARD CONNECTING TO SOUTH OF SW OAKWOOD ROAD

SW CABALLERO STREET

SW WYNNEWOOD STREET

SW ANTIQUERA STREET

SW VALNERA STREET

SW VARDON STREET

RIGHT-OF-WAY

SW OCEAN COVE AVENUE

SW LA GORCE AVENUE

SW OAKWOOD ROAD

INSTALL 6' SIDEWALK ALONG SOUTH/WEST SIDE STARTING AT SW SAVAGE BOULEVARD CONNECTING TO SOUTH OF SW OAKWOOD ROAD

SW GATLIN BOULEVARD

PROJECT END

RIGHT-OF-WAY

SW IMPORT DRIVE

SW OCEAN COVE AVENUE

RIGHT-OF-WAY

SW OAKWOOD ROAD

Note: Right-of-way data is from Florida Department of Revenue's tax database and will need to be verified during design with detailed survey.

LEGEND

RIGHT OF WAY

PROPOSED SIDEWALK

FDOT

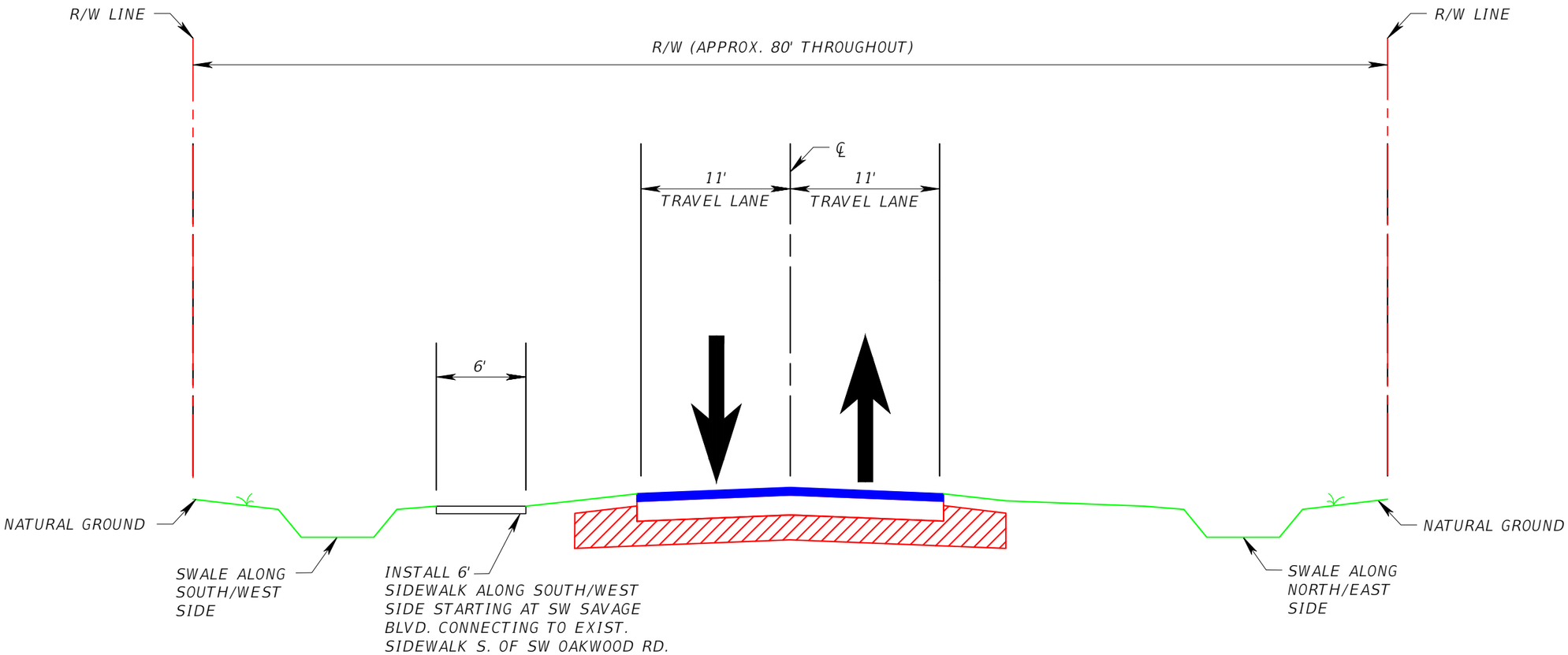
0 50' 100'

Scale: 1" = 200'

SW IMPORT DRIVE FROM SAVAGE BOULEVARD TO SW GATLIN BOULEVARD PROPOSED CONCEPT

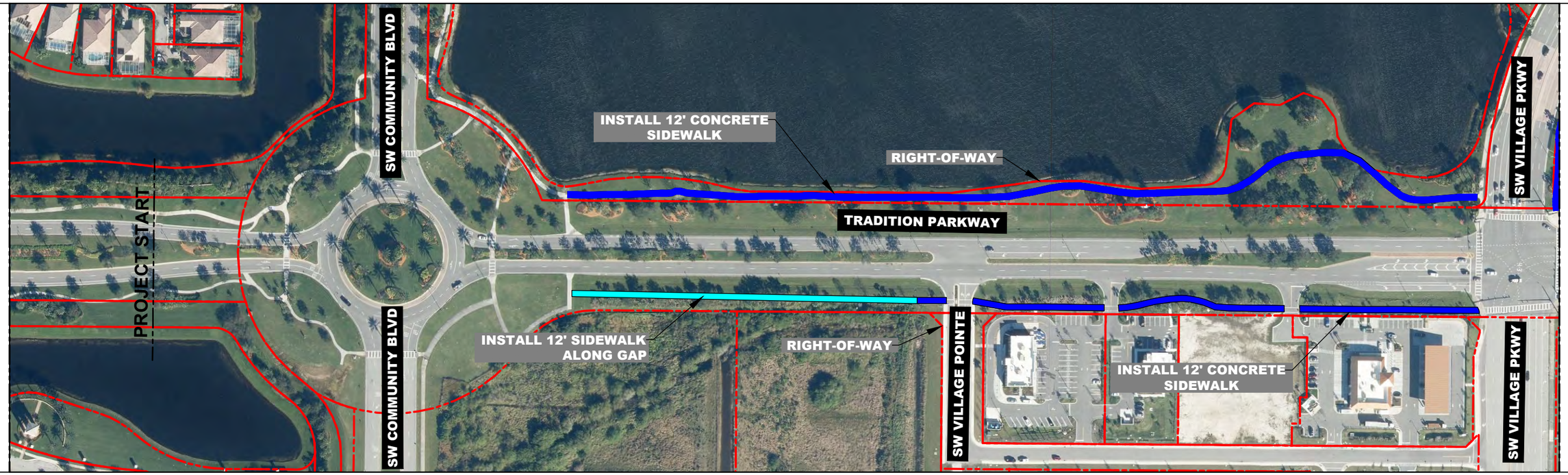
Sheet

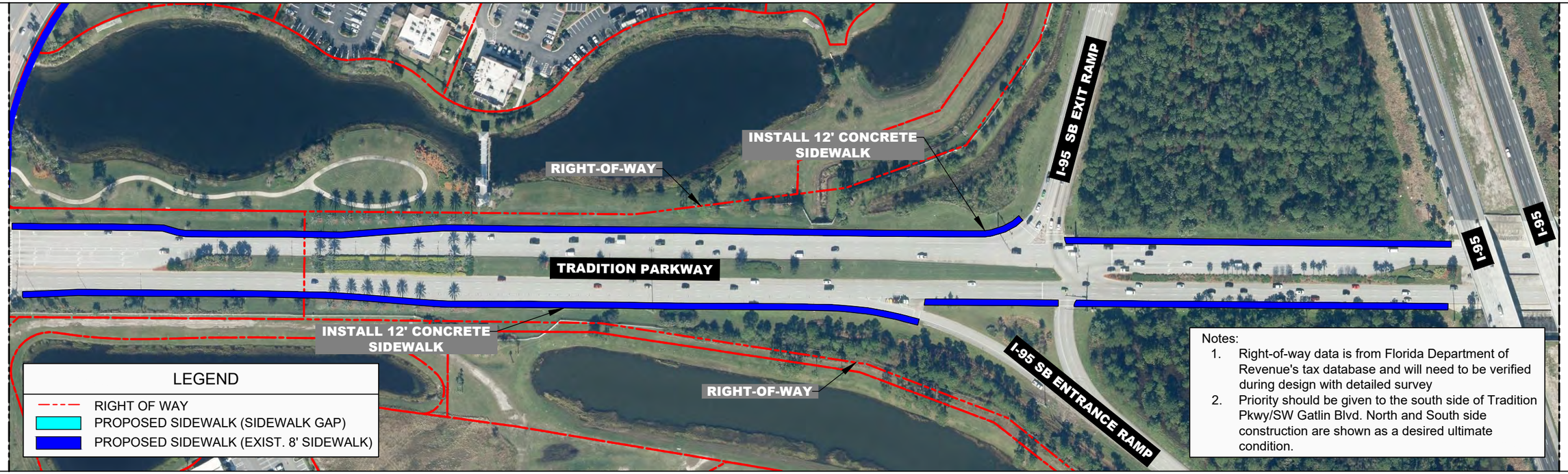
2



Note: Right-of-way data is from Florida Department of Revenue's tax database and will need to be verified during design with detailed survey.

FDOT	NOT TO SCALE	**SW IMPORT DRIVE FROM SAVAGE BOULEVARD TO SW GATLIN BOULEVARD PROPOSED TYPICAL**	**Sheet** 1





FDOT

N

0 50' 100'

Scale: 1" = 200'

TRADITION PARKWAY/SW GATLIN BOULEVARD FROM SW COMMUNITY BOULEVARD TO SW SAVONA BOULEVARD PROPOSED CONCEPT

Sheet

1

D - 10

MATCHLINE SEE SHEET 1
BELOW RIGHT

I-95 NB ENTRANCE RAMP

RIGHT-OF-WAY

INSTALL 12' CONCRETE SIDEWALK

SW BRESCIA ST

SW EDGARCE ST

SW GATLIN BOULEVARD

I-95

I-95 NB EXIT RAMP

INSTALL 12' CONCRETE SIDEWALK

RIGHT-OF-WAY

SW EDGARCE ST

MATCHLINE BELOW LEFT

MATCHLINE ABOVE RIGHT

SW FONDURA RD

SW SAVAGE ST

INSTALL 12' CONCRETE SIDEWALK

RIGHT-OF-WAY

SW KENSINGTON ST

SW GATLIN BOULEVARD

SW FONDURA RD

RIGHT-OF-WAY

SW CASELLA ST

SW BUCKHART ST

BRIGANTINE PL

INSTALL 12' CONCRETE SIDEWALK

MATCHLINE SEE SHEET 3
ABOVE LEFT

Notes:

1. Right-of-way data is from Florida Department of Revenue's tax database and will need to be verified during design with detailed survey
2. Priority should be given to the south side of Tradition Pkwy/SW Gatlin Blvd. North and South side construction are shown as a desired ultimate condition.

LEGEND

- RIGHT OF WAY
- PROPOSED SIDEWALK (SIDEWALK GAP)
- PROPOSED SIDEWALK (EXIST. 8' SIDEWALK)

FDOT

N

0 50' 100'

Scale: 1" = 200'

TRADITION PARKWAY/SW GATLIN BOULEVARD
FROM SW COMMUNITY BOULEVARD TO SW SAVONA BOULEVARD
PROPOSED CONCEPT

Sheet

2

MATCHLINE SEE SHEET 2
BELOW RIGHT

MATCHLINE BELOW LEFT

MATCHLINE ABOVE RIGHT

SW IMPORT DR

INSTALL 12' CONCRETE SIDEWALK

RIGHT-OF-WAY

SW GATLIN BOULEVARD

SW IMPORT DR

INSTALL 12' CONCRETE SIDEWALK

SW ROSSER BLVD

RIGHT-OF-WAY

SW MERRICK ST

SW FEATHER TERRACE

SW BOUGAINVILLEA AVE

INSTALL 12' CONCRETE SIDEWALK

RIGHT-OF-WAY

SW SAVONA BLVD

PROJECT END

SW GATLIN BOULEVARD

MOODY PL

INSTALL 12' CONCRETE SIDEWALK

RIGHT-OF-WAY

SW SAVONA BLVD

LEGEND

- RIGHT OF WAY
- PROPOSED SIDEWALK (SIDEWALK GAP)
- PROPOSED SIDEWALK (EXIST. 8' SIDEWALK)

Notes:

1. Right-of-way data is from Florida Department of Revenue's tax database and will need to be verified during design with detailed survey
2. Priority should be given to the south side of Tradition Pkwy/SW Gatlin Blvd. North and South side construction are shown as a desired ultimate condition.

FDOT

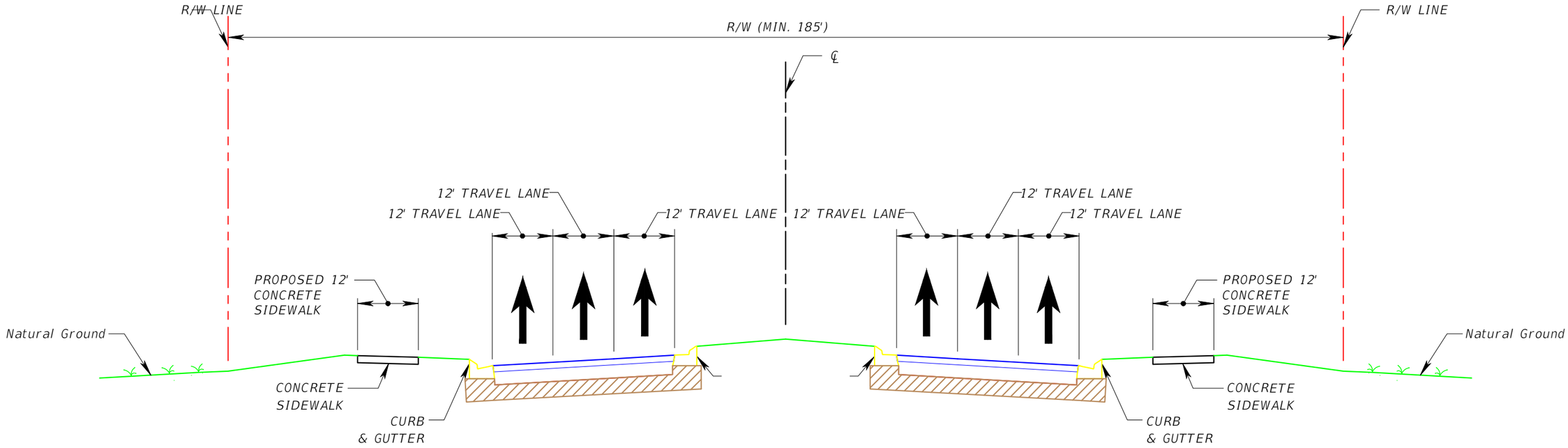
0 50' 100'

Scale: 1" = 200'

TRADITION PARKWAY/SW GATLIN BOULEVARD FROM SW COMMUNITY BOULEVARD TO SW SAVONA BOULEVARD PROPOSED CONCEPT

Sheet

3



Note: Right-of-way data is from Florida Department of Revenue's tax database and will need to be verified during design with detailed survey.

FDOT	NOT TO SCALE	**TRADITION PARKWAY/SW GATLIN BOULEVARD FROM SW COMMUNITY BOULEVARD TO SW SAVONA BOULEVARD PROPOSED TYPICAL**	**Sheet** **1** D - 13

PROJECT START

JOBS EXPRESS TERMINAL

SW EDGARCE STREET

NOTE: DURING DETAILED DESIGN, RECONSTRUCTION OF DRAINAGE SWALES MAY BE REQUIRED.

SW DOMINA ROAD

SW CAMPANA STREET

SW FONDURA ROAD

SW HAYWORTH AVENUE

SW CASELLA STREET

SW BUCKHART STREET

RIGHT-OF-WAY

RIGHT-OF-WAY

INSTALL PEDESTRIAN LIGHTING ALONG SW HAYWORTH AVENUE

INSTALL 12' CONCRETE SIDEWALK

MATCHLINE BELOW LEFT

LEGEND

RIGHT OF WAY

PROPOSED SIDEWALK

PROPOSED PED LIGHTING

Note: Right-of-way data is from Florida Department of Revenue's tax database and will need to be verified during design with detailed survey.

MATCHLINE ABOVE RIGHT

BRIGANTINE PLACE

BRIGANTINE PLACE

INSTALL SPECIAL EMPHASIS CROSSING ON NORTH AND EAST LEGS

SW IMPORT DRIVE

RIGHT-OF-WAY

INSTALL 12' CONCRETE SIDEWALK

SW ROSSER BOULEVARD

PROJECT END

SW ROSSER BOULEVARD

SW ALEDO LANE

RIGHT-OF-WAY

SW GIRABALDI STREET

FDOT

N

0 50' 100'

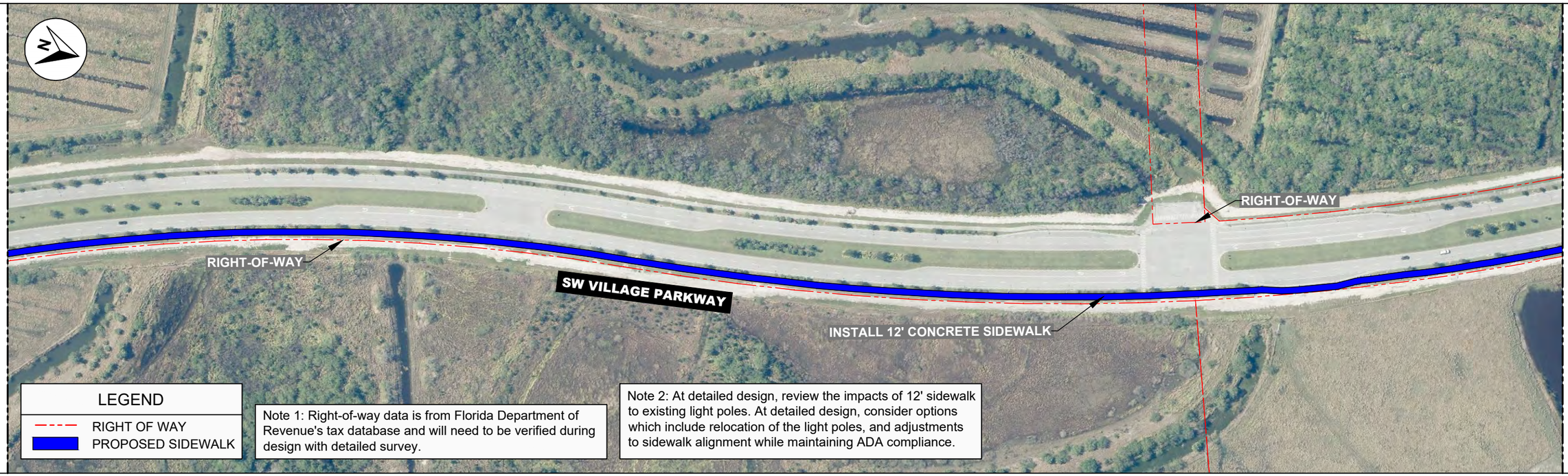
Scale: 1" = 200'

SW HAYWORTH AVEUE/SW ALEDO LANE
FROM JOBS EXPRESS TERMINAL TO SW ROSSER BOULEVARD
PROPOSED CONCEPT

Sheet

1

D - 14



LEGEND

- RIGHT OF WAY
- PROPOSED SIDEWALK

Note 1: Right-of-way data is from Florida Department of Revenue's tax database and will need to be verified during design with detailed survey.

Note 2: At detailed design, review the impacts of 12' sidewalk to existing light poles. At detailed design, consider options which include relocation of the light poles, and adjustments to sidewalk alignment while maintaining ADA compliance.

FDOT

0 50' 100'

Scale: 1" = 200'

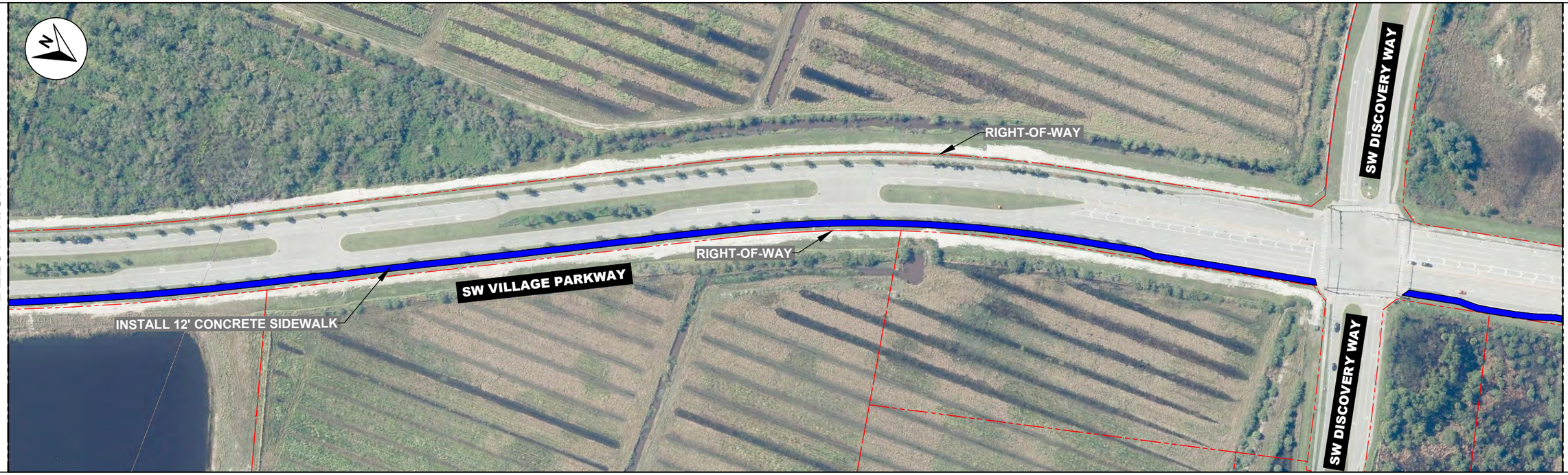
SW VILLAGE PARKWAY FROM OPEN VIEW ROAD TO CROSSTOWN PARKWAY PROPOSED CONCEPT

Sheet

1

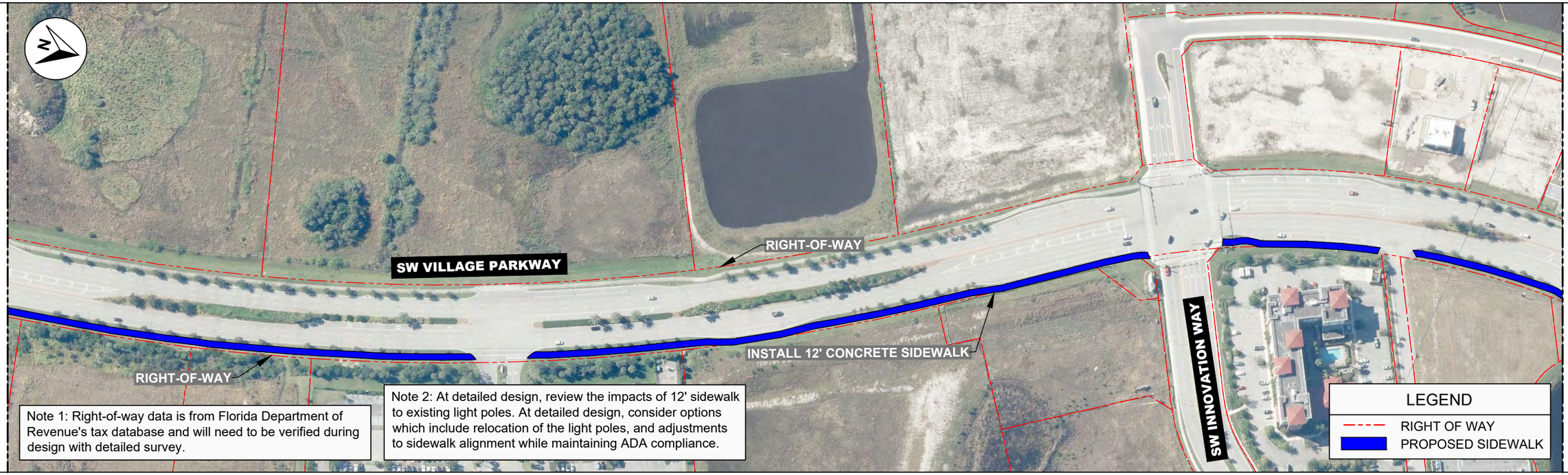
D - 15

MATCHLINE SEE SHEET 1
BELOW RIGHT



MATCHLINE BELOW LEFT

MATCHLINE ABOVE RIGHT



MATCHLINE SEE SHEET 3
ABOVE LEFT

Note 1: Right-of-way data is from Florida Department of Revenue's tax database and will need to be verified during design with detailed survey.

Note 2: At detailed design, review the impacts of 12' sidewalk to existing light poles. At detailed design, consider options which include relocation of the light poles, and adjustments to sidewalk alignment while maintaining ADA compliance.

FDOT

0 50' 100'
Scale: 1" = 200'

SW VILLAGE PARKWAY FROM OPEN VIEW ROAD TO CROSSTOWN PARKWAY PROPOSED CONCEPT

Sheet
2
D - 16

MATCHLINE SEE SHEET 2
BELOW RIGHT

MATCHLINE BELOW LEFT

TRADITION PARKWAY

TRADITION PARKWAY

DURING DETAILED DESIGN, CROSSING STRATEGIES FOR SIDEWALK ACROSS BRIDGE WILL NEED REVIEWED WHICH MAY INCLUDE A CANTILEVER PATH, LANE REALLOCATION, AND/OR AN EXCEPTION FOR LESS THAN 12' SIDEWALK (BUT WIDEST POSSIBLE) ALONG THE BRIDGE.

RIGHT-OF-WAY

SW MEETING STREET

DURING DETAILED DESIGN, POTENTIAL ROW ENCROACHMENTS WILL NEED TO BE REVIEWED.

SW STEPHANIE WAY

SW ASHLYN WAY

RIGHT-OF-WAY

INSTALL 12' CONCRETE SIDEWALK

SW VILLAGE PARKWAY

MATCHLINE ABOVE RIGHT

SW ACADEMIC WAY

RIGHT-OF-WAY

RIGHT-OF-WAY

INSTALL 12' CONCRETE SIDEWALK

SW VILLAGE PARKWAY

MATCHLINE SEE SHEET 4
ABOVE LEFT

Note 1: Right-of-way data is from Florida Department of Revenue's tax database and will need to be verified during design with detailed survey.

Note 2: At detailed design, review the impacts of 12' sidewalk to existing light poles. At detailed design, consider options which include relocation of the light poles, and adjustments to sidewalk alignment while maintaining ADA compliance.

LEGEND

RIGHT OF WAY

PROPOSED SIDEWALK

FDOT

0 50' 100'

Scale: 1" = 200'

SW VILLAGE PARKWAY FROM OPEN VIEW ROAD TO CROSSTOWN PARKWAY PROPOSED CONCEPT

Sheet

3

MATCHLINE SEE SHEET 3
BELOW RIGHT

MATCHLINE BELOW LEFT

SW ROWLEY VILLAGE

SW BERENGER STREET

WESTCLIFFE LANE

SW CHADWICK DRIVE

SW VILLAGE PARKWAY

RIGHT-OF-WAY

RIGHT-OF-WAY

INSTALL 12' CONCRETE SIDEWALK

CLARIDGE DRIVE

MATCHLINE ABOVE RIGHT

SW CHERRY TREE DRIVE

SW VILLAGE PARKWAY

RIGHT-OF-WAY

RIGHT-OF-WAY

INSTALL 12' CONCRETE SIDEWALK

CROSSTOWN PARKWAY

PROJECT END

Note 1: Right-of-way data is from Florida Department of Revenue's tax database and will need to be verified during design with detailed survey.

Note 2: At detailed design, review the impacts of 12' sidewalk to existing light poles. At detailed design, consider options which include relocation of the light poles, and adjustments to sidewalk alignment while maintaining ADA compliance.

LEGEND

RIGHT OF WAY

PROPOSED SIDEWALK

FDOT

0 50' 100'

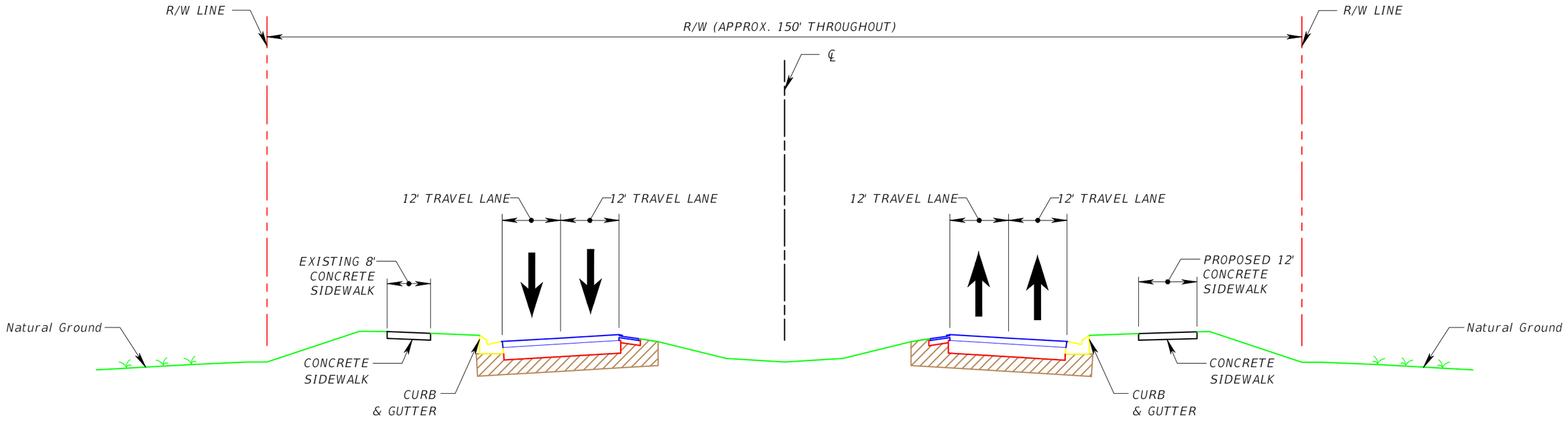
Scale: 1" = 200'

SW VILLAGE PARKWAY FROM OPEN VIEW ROAD TO CROSSTOWN PARKWAY PROPOSED CONCEPT

Sheet

4

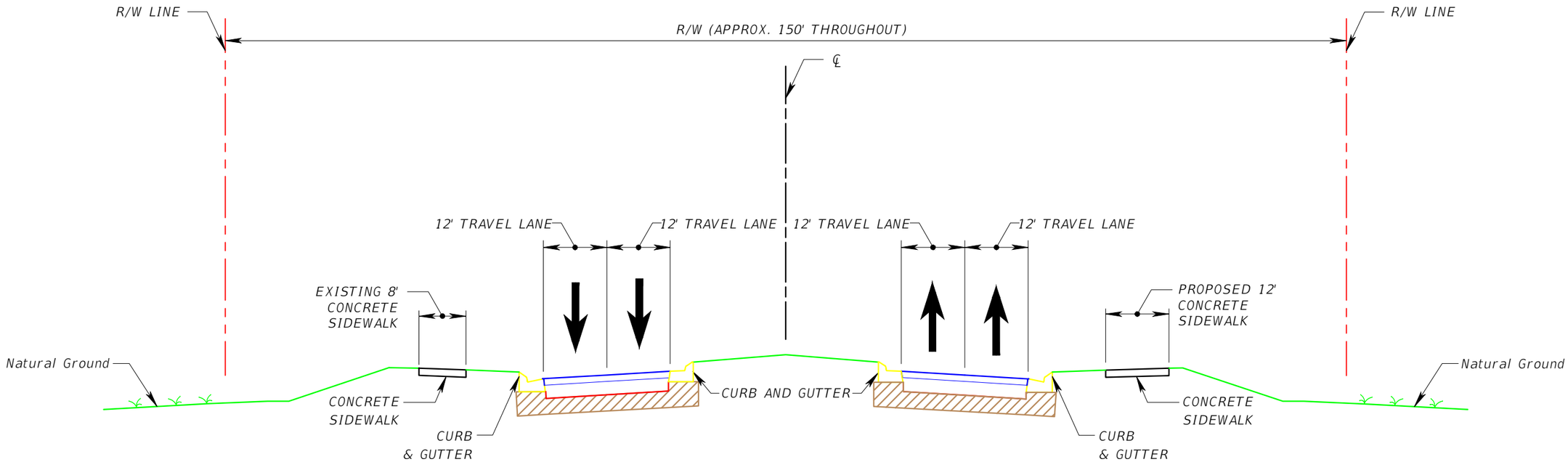
D - 18



TYPICAL SECTION
FROM PROJECT BEGIN
TO SW DISCOVERY WAY

Note: Right-of-way data is from Florida Department of Revenue's tax database and will need to be verified during design with detailed survey.

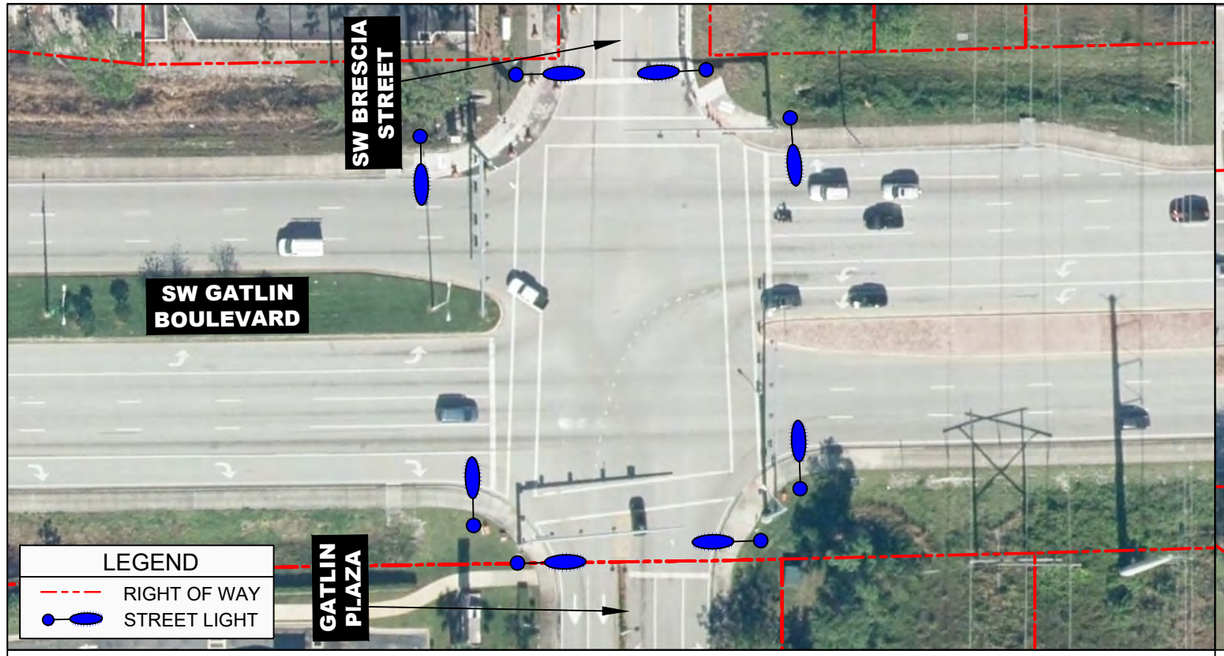
FDOT	NOT TO SCALE	**SW VILLAGE PARKWAY FROM OPEN VIEW ROAD TO CROSSTOWN PARKWAY PROPOSED TYPICAL**	**Sheet** 1 D - 19



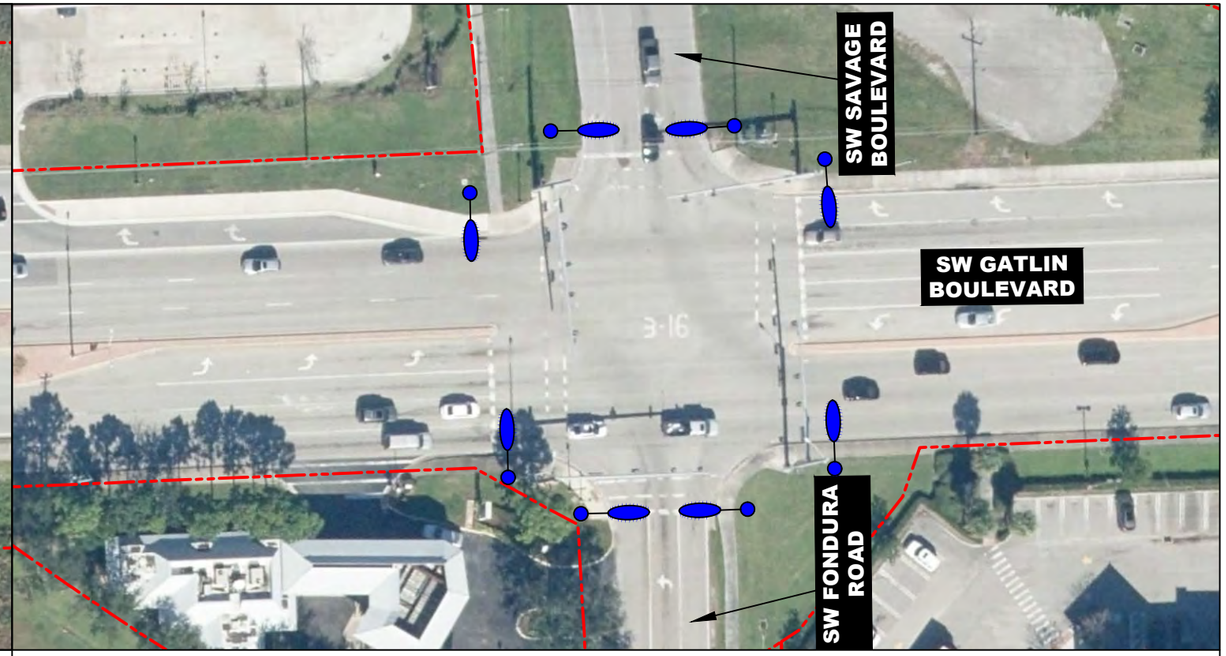
TYPICAL SECTION
FROM SW DISCOVERY WAY
TO PROJECT END

Note: Right-of-way data is from Florida Department of Revenue's tax database and will need to be verified during design with detailed survey.

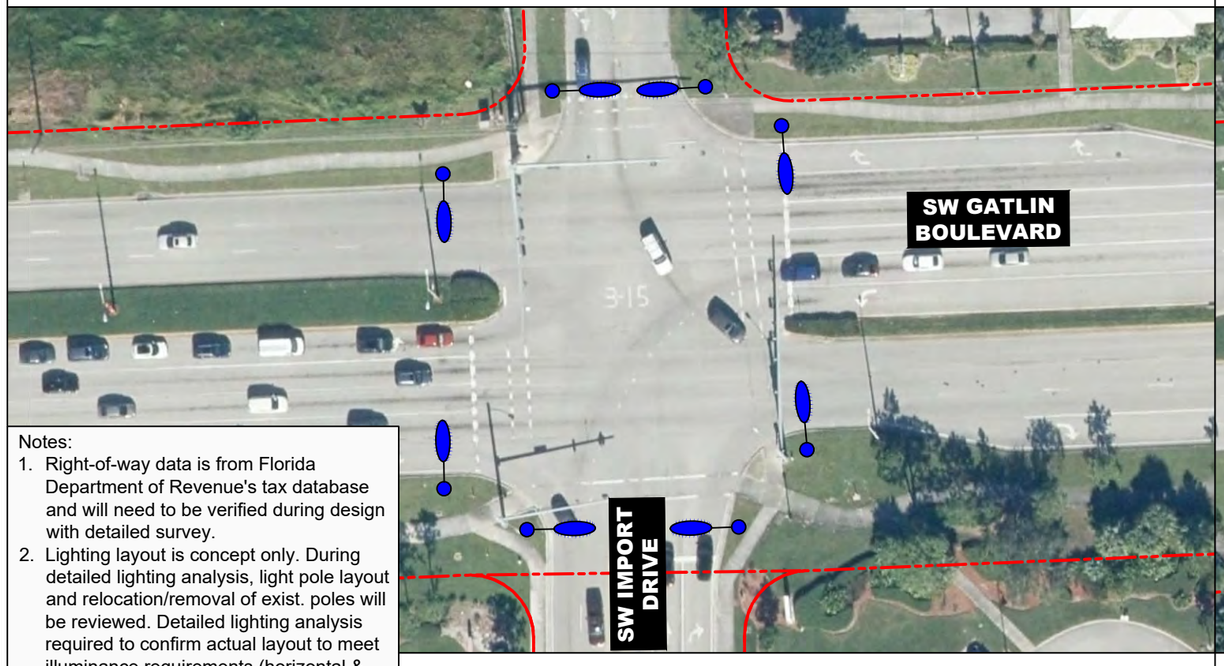
FDOT	NOT TO SCALE	**SW VILLAGE PARKWAY FROM OPEN VIEW ROAD TO CROSSTOWN PARKWAY PROPOSED TYPICAL**	**Sheet** 2 D - 20



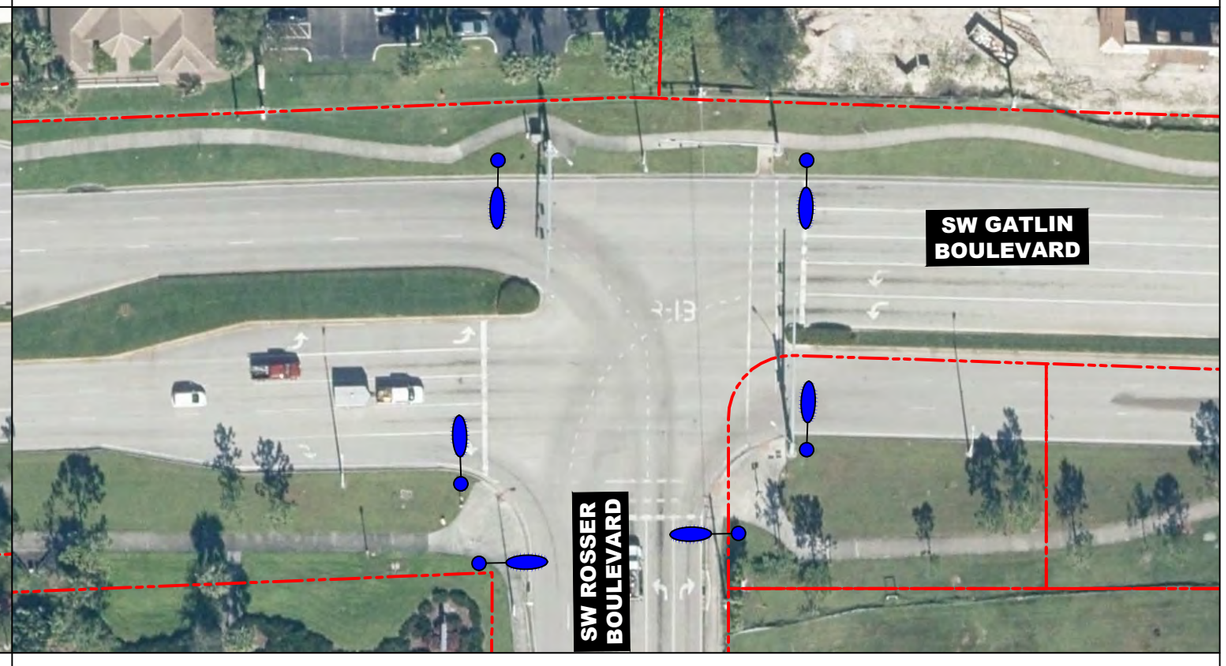
AT SW BRESCIA STREET



AT SW FONDURA ROAD/SW SAVAGE BOULEVARD



AT SW IMPORT DRIVE



AT SW ROSSER BOULEVARD

Notes:
1. Right-of-way data is from Florida Department of Revenue's tax database and will need to be verified during design with detailed survey.
2. Lighting layout is concept only. During detailed lighting analysis, light pole layout and relocation/removal of exist. poles will be reviewed. Detailed lighting analysis required to confirm actual layout to meet illuminance requirements (horizontal & vertical) per FDM Section 231.

FDOT

N

0 15' 30'

Scale: 1" = 60'

INTERSECTIONS ALONG SW GATLIN BOULEVARD PROPOSED LIGHTING IMPROVEMENTS

Sheet

1

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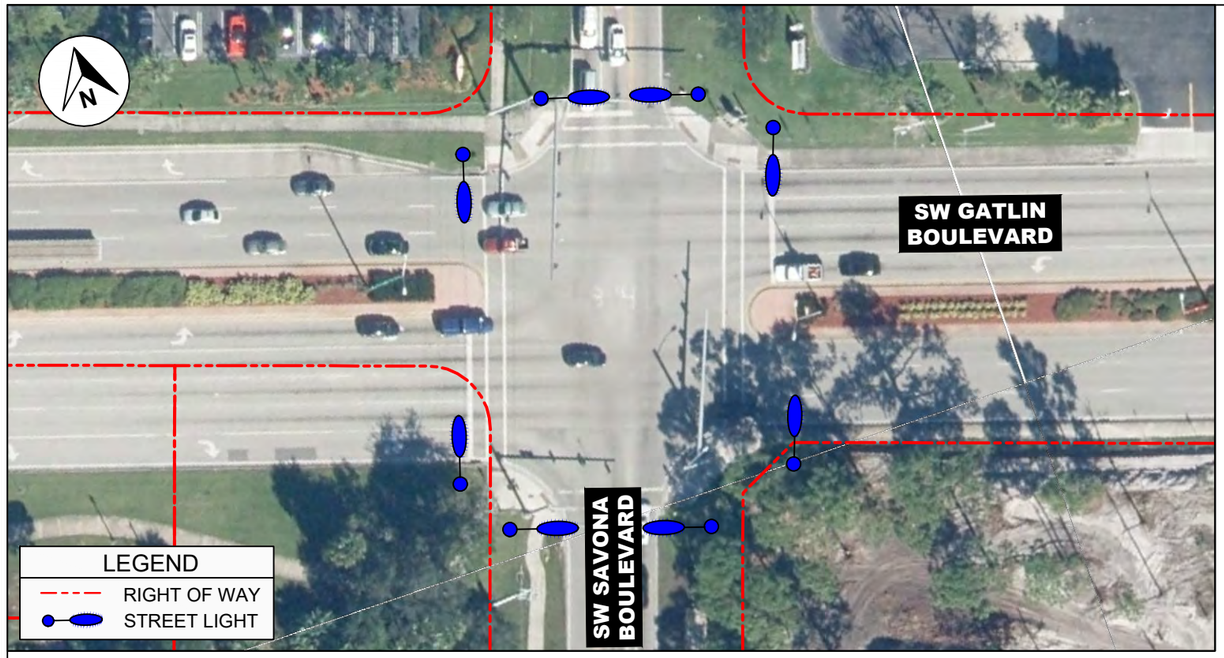

AT SW SAVONA BOULEVARD

Notes:
1. Right-of-way data is from Florida Department of Revenue's tax database and will need to be verified during design with detailed survey.
2. Lighting layout is concept only. During detailed lighting analysis, light pole layout and relocation/removal of exist. poles will be reviewed. Detailed lighting analysis required to confirm actual layout to meet illuminance requirements (horizontal & vertical) per FDM Section 231.

FDOT

0 15' 30'
Scale: 1" = 60'

INTERSECTIONS ALONG SW GATLIN BOULEVARD
PROPOSED LIGHTING IMPROVEMENTS

Sheet
2
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Appendix E
Cost Estimates

UNIT COST TABLES

6 FT CONCRETE SIDEWALK from new (one side)

Pay Item	Description	Total Quantity	Unit	Weighted Avg. Unit Price	Total Amount
110-1-1	CLEARING AND GRUBBING	1.25	AC	$ 11,000.00	$ 13,750.00
120-1	REGULAR EXCAVATION	322.66	CY	$ 5.00	$ 1,613.30
522-1	CONCRETE SIDEWALK ANDDRIVEWAYS, 4"	3,520.00	SY	$ 40.00	$ 140,800.00
570-1-1	PERFORMANCE TURF	3,121.07	SY	$ 1.30	$ 4,057.39
					$ 160,220.69

12 FT CONCRETE SIDEWALK from new (one side)

Pay Item	Description	Total Quantity	Unit	Weighted Avg. Unit Price	Total Amount
110-1-1	CLEARING AND GRUBBING	3.90	AC	$ 11,000.00	$ 42,900.00
120-1	REGULAR EXCAVATION	322.66	CY	$ 5.00	$ 1,613.30
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	7,040.00	SY	$ 40.00	$ 281,600.00
570-1-1	PERFORMANCE TURF	3,121.07	SY	$ 1.30	$ 4,057.39
					$ 330,170.69

Lighting corridor (light poles every 250 ft, one side only)

Pay Item	Description	Total Quantity	Unit	Weighted Avg. Unit Price	Total Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	5,280.00	LF	$ 7.51	$ 39,652.80
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	1,000.00	LF	$ 20.00	$ 20,000.00
635-2-11	PULL & SPLICE BOX, F&I, 13" X 24"	22.00	EA	$ 667.28	$ 14,680.16
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL,NO.4-2	5,500.00	LF	$ 1.97	$ 10,835.00
715-4-13	LIGHT POLE COMPLETE, F&I- STD, 40'	22.00	EA	$ 3,035.50	$ 66,780.89
715-500-1	POLE CABLE DIST SYS,CONVENTIONAL	22.00	EA	$ 685.06	$ 15,071.32
					$ 167,020.17

Crosswalks and ADA ramps (one intersection, 2 legs)

Pay Item	Description	Total Quantity	Unit	Weighted Avg. Unit Price	Total Amount
527-2	DETECTABLE WARNINGS	48.00	SF	$ 27.00	$ 1,296.00
630-2-12	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	48.00	SY	$ 40.00	$ 1,920.00
711-11-123	THERMOPLASTIC, STANDARD, WHITE, SOLID, 12" FOR CROSSWALK AND ROUNDABOUT	316.00	LF	$ 2.48	$ 783.68
711-11-125	THERMOPLASTIC, STANDARD, WHITE, SOLID, 24" FOR STOP LINE AND CROSSWALK	316.00	LF	$ 4.68	$ 1,478.88
					$ 5,478.56

Crosswalks and ADA ramps (one intersection, 2 legs)

Pay Item	Description	Total Quantity	Unit	Weighted Avg. Unit Price	Total Amount
527-2	DETECTABLE WARNINGS	48.00	SF	$ 27.00	$ 1,296.00
630-2-12	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	48.00	SY	$ 40.00	$ 1,920.00
711-11-123	THERMOPLASTIC, STANDARD, WHITE, SOLID, 12" FOR CROSSWALK AND ROUNDABOUT	316.00	LF	$ 2.48	$ 783.68
711-11-125	THERMOPLASTIC, STANDARD, WHITE, SOLID, 24" FOR STOP LINE AND CROSSWALK	316.00	LF	$ 4.68	$ 1,478.88
					$ 5,478.56

12 FT CONCRETE SIDEWALK from existing (one side)

Pay Item	Description	Total Quantity	Unit	Weighted Avg. Unit Price	Total Amount
110-1-1	CLEARING AND GRUBBING	3.90	AC	$ 11,000.00	$ 42,900.00
110-4-10	REMOVAL OF EXISTING 8 ft CONCRETE SIDEWALK	4,694.00	SY	$ 21.12	$ 99,137.28
522-1	CONCRETE SIDEWALK AND DRIVEWAYS, 4"	7,040.00	SY	$ 40.00	$ 281,600.00
570-1-1	PERFORMANCE TURF	3,121.07	SY	$ 1.30	$ 4,057.39
					$ 427,694.67

R10-15 (4 per intersection)

Pay Item	Description	Total Quantity	Unit	Weighted Avg. Unit Price	Total Amount
700-3401	SIGN PANEL, INSTALL, UP TO 12 SF	4.00	EA	$ 1,550.00	$ 6,200.00
					$ 6,200.00

Lighting per Intersection (8 light poles)

Pay Item	Description	Total Quantity	Unit	Weighted Avg. Unit Price	Total Amount
630-2-11	CONDUIT, F& I, OPEN TRENCH	200.00	LF	$ 7.51	$ 1,502.00
630-2-12	CONDUIT, F& I, DIRECTIONAL BORE	500.00	LF	$ 20.00	$ 10,000.00
635-2-11	PULL & SPLICE BOX, F&I, 13" X 24"	8.00	EA	$ 667.28	$ 5,338.24
715-1-13	LIGHTING CONDUCTORS, F&I, INSUL,NO.4-2	2,000.00	LF	$ 1.97	$ 3,940.00
715-4-13	LIGHT POLE COMPLETE, F&I- STD, 40'	8.00	EA	$ 6,070.99	$ 48,567.92
715-500-1	POLE CABLE DIST SYS,CONVENTIONAL	8.00	EA	$ 685.06	$ 5,480.48
					$ 74,828.64

COST SUMMARY TABLES

Project No.	Project Name	Project Description	Cost Per Unit	Units	Units	Cost
	Brescia St from Gatlin Blvd to Savage Blvd	Provide 6-ft concrete sidewalk on one side of the roadway to improve connectivity and safety. See also share lane markings improvement cost.				
	New 6-ft concrete sidewalk on one side.		$ 160,220.69	LM	0.40	$ 64,088.28
	Construction Cost					$ 64,088.28
	MOT/MOB (10%/8%)					$ 11,535.89
	Contingency (30%)	30% at all preliminary phases				$ 19,226.48
	Total Cost					**$ 94,850.65**

Project No.	Project Name	Project Description	Cost Per Unit	Units	Units	Cost
	Savage Blvd from Gatlin Blvd to Galiano Rd	Provide 6-ft concrete sidewalk on one side of the roadway to improve connectivity and safety. See also share lane markings improvement cost.				
	New 6-ft concrete sidewalk on one side		$ 160,220.69	LM	1.94	$ 310,828.14
	Construction Cost					$ 310,828.14
	MOT/MOB (10%/8%)					$ 55,949.07
	Contingency (30%)	30% at all preliminary phases				$ 93,248.44
	Total Cost					**$ 460,025.65**

Project No.	Project Name	Project Description	Cost Per Unit	Units	Units	Cost
	Import Dr from Gatlin Blvd to Savage Blvd	Provide 6-ft concrete sidewalk on one side of the roadway to improve connectivity and safety. See also share lane markings improvement cost.				
	New 6-ft concrete sidewalk on one side		$ 160,220.69	LM	2.20	$ 352,485.52
	Construction Cost					$ 352,485.52
	MOT/MOB (10%/8%)					$ 63,447.39
	Contingency (30%)	30% at all preliminary phases				$ 105,745.66
	Total Cost					**$ 521,678.57**

Project No.	Project Name	Project Description	Cost Per Unit	Units	Units	Cost
	Tradition Pkwy east of Community Blvd	Complete sidewalk gap				
	Installation of new concrete sidewalk on south side		$ 330,170.69	LM	0.15	$ 49,525.60
	Construction Cost					$ 49,525.60
	MOT/MOB (10%/8%)					$ 8,914.61
	Contingency (30%)	30% at all preliminary phases				$ 14,857.68
	Total Cost					**$ 73,297.89**

Project No.	Project Name	Project Description	Cost Per Unit	Units	Units	Cost
	Gatlin Blvd at signalized intersections	Lighting improvements at signalized intersections considering pedestrian activity				
	Typical signalized intersection		$ 74,828.64	Intersection	1.00	$ 74,828.64
	Construction Cost					$ 74,828.64
	MOT/MOB (10%/8%)					$ 13,469.16
	Contingency (30%)	30% at all preliminary phases				$ 22,448.59
	Total Cost					**$ 110,746.39**

Project No.	Project Name	Project Description	Cost Per Unit	Units	Units	Cost
	Gatlin Blvd at signalized intersections	Installation of R10-15 signs				
	Typical signalized intersection (4 signs)		$ 6,200.00	Intersection	1.00	$ 6,200.00
	Construction Cost					$ 6,200.00
	MOT/MOB (10%/8%)					$ 1,116.00
	Contingency (30%)	30% at all preliminary phases				$ 1,860.00
	Total Cost					**$ 9,176.00**

Project No.	Project Name	Project Description	Cost Per Unit	Units	Units	Cost
	Aledo Ln/Hayworth Ave from Rosser Boulevard to Jobs Express Terminal	Provide 12-ft concrete sidewalk to create connectivity link for pedestrian and bike				
	Installation of new 12-ft concrete sidewalk on north side along Hayworth Ave		$ 330,170.69	LM	0.56	$ 184,895.59
	Upgrade from existing 6-ft sidewalk to a 12-ft concrete sidewalk on north side along Aledo Ln		$ 427,694.67	LM	0.42	$ 179,631.76
	Lighting installation along north side of Hayworth Ave		$ 167,020.17	LM	0.42	$ 70,148.47
	Special emphasis crosswalk and ADA ramps at Brigantine Pl and Aledo Ln		$ 5,478.56	Intersection	2.40	$ 13,148.54
	Construction Cost					$ 447,824.36
	MOT/MOB (10%/8%)					$ 80,608.39
	Contingency (30%)	30% at all preliminary phases				$ 134,347.31
	Total Cost					**$ 662,780.06**

Project No.	Project Name	Project Description	Cost Per Unit	Units	Units	Cost
	Gatlin Blvd/Tradition Pkwy along study section	Bus stop facilities improvements within study area to include: •Boarding/alighting area •Sidewalk connection •Shelter and bench				
	Typical bus stop layout (5 bus stops inside study area)		$ 15,000.00	Bus Stop	5.00	$ 75,000.00
	Construction Cost					$ 75,000.00
	Total Cost					**$ 75,000.00**

Project No.	Project Name	Project Description	Cost Per Unit	Units	Units	Cost
	Commuter Service	Two-vehicles Commuter Service, directly operated or purchased transportation. Options considered mutually exclusive.				
	Commuter Service (directly operated)	Annual cost of operation	$ 605,800.00	annual	1.00	$ 605,800.00
	Total Cost (directly operated)					**$ 605,800.00**
	Commuter Service (purchased transportation)	Annual cost of operation	$ 460,500.00	annual	1.00	$ 460,500.00
	Total Cost (purchased transportation)					**$ 460,500.00**

Project No.	Project Name	Project Description	Cost Per Unit	Units	Units	Cost
	Mobility On-Demand (MOD) Service	MOD assuming four vehicles, including spares and extra vehicle.				
	MOD Service	Annual cost of operation, includes cloud-based platform license	$264,300 to $391,700	annual	1.00	$264,300 to $391,700
	Total Cost					**$264,300 to $391,700**

Project No.	Project Name	Project Description	Cost Per Unit	Units	Units	Cost
	Gatlin Blvd/Tradition Pkwy from east Community Blvd to Savona Blvd	Widening existing 8-ft sidewalk to a 12-ft concrete sidewalk to improve ped/bike mobility and safety.				
	Upgrade from 8-ft sidewalk to 12-ft concrete sidewalk (one side only)		$ 427,694.67	LM	2.36	$ 1,009,359.42
	Construction Cost					$ 1,009,359.42
	MOT/MOB (10%/8%)					$ 181,684.70
	Contingency (30%)	30% at all preliminary phases				$ 302,807.83
	Total Cost					**$ 1,493,851.95**

Project No.	Project Name	Project Description	Cost Per Unit	Units	Units	Cost
	Gatlin Blvd/Tradition Pkwy from east Community Blvd to Savona Blvd	Widening existing 6-ft sidewalk to a 12-ft concrete sidewalk to improve ped/bike mobility and safety.				
	Upgrade from 6-ft sidewalk to 12-ft concrete sidewalk		$ 427,694.67	LM	0.50	$ 213,847.34
	Construction Cost					$ 213,847.34
	MOT/MOB (10%/8%)					$ 38,492.52
	Contingency (30%)	30% at all preliminary phases				$ 64,154.20
	Total Cost					**$ 316,494.06**

Project No.	Project Name	Project Description	Cost Per Unit	Units	Units	Cost
	Village Pkwy from north and south of Tradition Blvd	Widening existing 8-ft sidewalk to a 12-ft concrete sidewalk to improve ped/bike mobility and safety. One side only.				
	Upgrade from existing 8-ft sidewalk to 12-ft concrete sidewalk (on one side)		$ 427,694.67	LM	4.41	$ 1,886,133.50
	Construction Cost					$ 1,886,133.50
	MOT/MOB (10%/8%)					$ 339,504.03
	Contingency (30%)	30% at all preliminary phases				$ 565,840.05
	Total Cost					**$ 2,791,477.58**