

Existing Conditions

2.1 Introduction

The study area is located in the City of Ormond Beach in Volusia County, Florida. The gap begins at Cassen Park and extends to SR A1A. The trail connection at Cassen Park is anticipated to be contiguous with the adjacent section of trail proposed along the east side of Beach Street that will come up from the south. For the eastern project limit at SR A1A, a separate gap study will be developing a plan to continue this section further north as part of the St. Johns River-to-Sea Loop Trail.

Roadway data for SR 40 (Granada Boulevard), from Cassen Park to SR A1A, was collected to assist the Department in determining the most viable route for the St. Johns River-to-Sea Loop Trail.

2.2 Planned Improvements

A review of various transportation plans was performed to document improvements that are currently planned within the study area. The following planned improvements are located in or near the study area:

- FDOT SR 40 (Granada Boulevard) over the Halifax River Intra-Coastal Waterway – Bridge repair and rehabilitation, including repairing the footer of Pier 9 (Preliminary Engineering and construction funded for FY 2017)

Reports in reference to the above planned improvement are included in **Appendix B**.

2.3 Land Use

Land use data was compiled from the Volusia County Property Appraiser parcel data and FDOT District 5 Generalized Land Use Data. This data was used to identify existing and future land uses within the study area.

2.3.1 Existing Land Use

West of Halifax Drive, the existing land use is primarily a combination of public and residential uses. East of Halifax Drive, land use along the SR 40 corridor is primarily retail and office. **Figure 2** provides a map of the existing land use designations.

2.3.2 Future Land Use

The Future Land Uses (FLUs) assigned to the study area, illustrated in **Figure 3**, are generally consistent with the existing land uses along SR 40. The primary land use remains general commercial, while the land which is south of SR 40 and west of Halifax Drive, is designated for Public/Institutional use. The only notable change in land use occurred north of SR 40, between John Anderson Drive and Halifax Drive. This is currently designated as a combination of Residential and Public, and is designated as Commercial in the future.



Figure 2
Existing Land Use Map



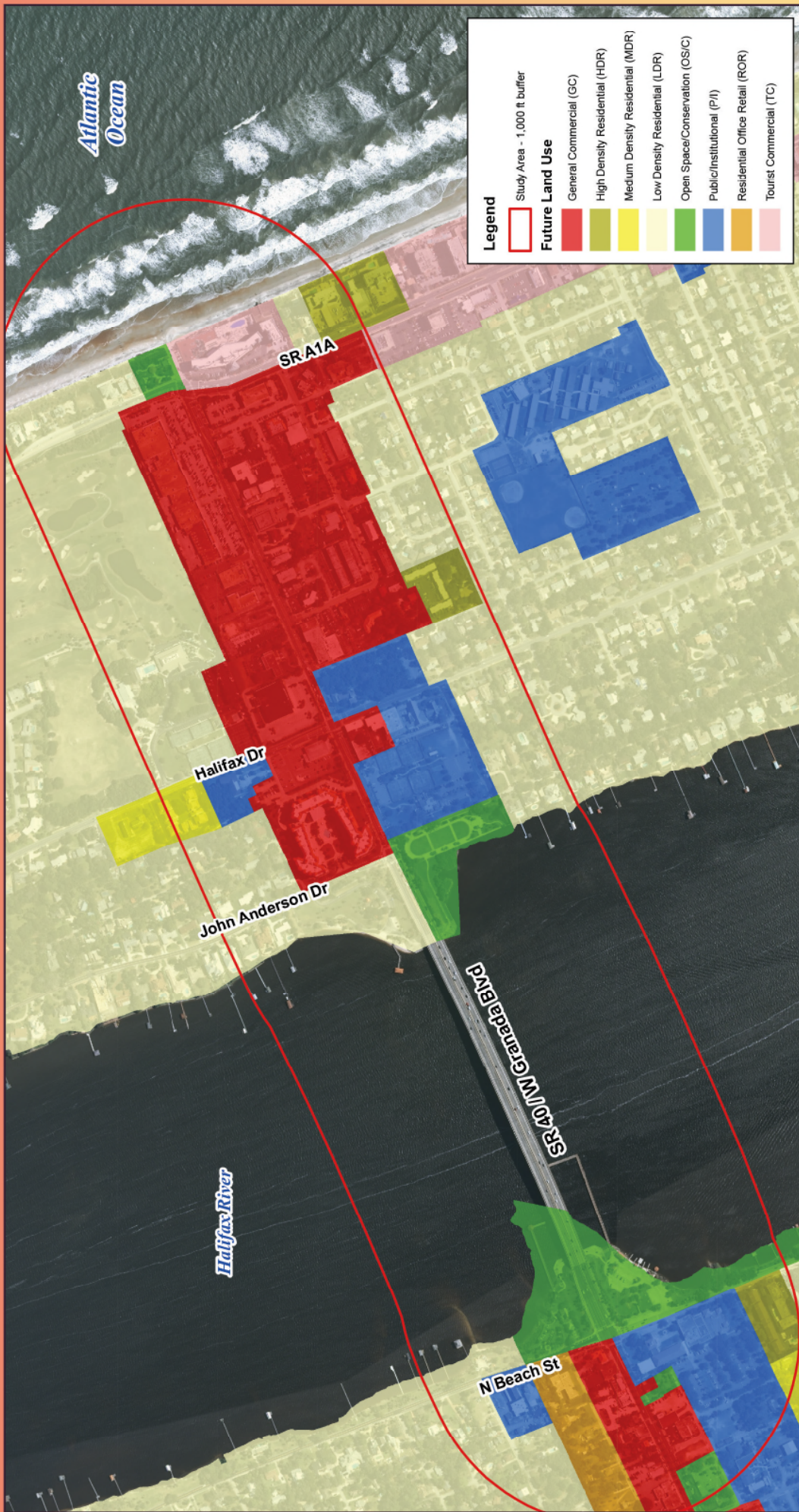


Figure 3
Future Land Use Map



2.4 Existing Physical Features

The existing physical features were collected through field inspection and design/construction plans obtained from FDOT. The features evaluated include typical sections, right-of-way, utilities, on-street parking, lighting, and existing bicycle and pedestrian facilities.

2.4.1 Roadway Classification, Jurisdiction, and Posted Speed

SR 40 (Granada Boulevard) from Cassen Park (near Beach Street) and SR A1A is classified as an “urban principal arterial other”. The roadway (ID# 79150000) from MP 0.430 to MP 1.481 is owned and maintained by FDOT within the limits of the City of Ormond Beach and the Downtown Community Redevelopment Area (CRA) District. The posted speed limit is 35 mph for the entire length of the study corridor.

2.4.2 Right-of-Way

The roadway right-of-way has been inventoried for SR 40 from Cassen Park (near Beach Street) to SR A1A using FDOT right-of-way maps. The right-of-way of SR 40 within the study area is 80 feet wide.

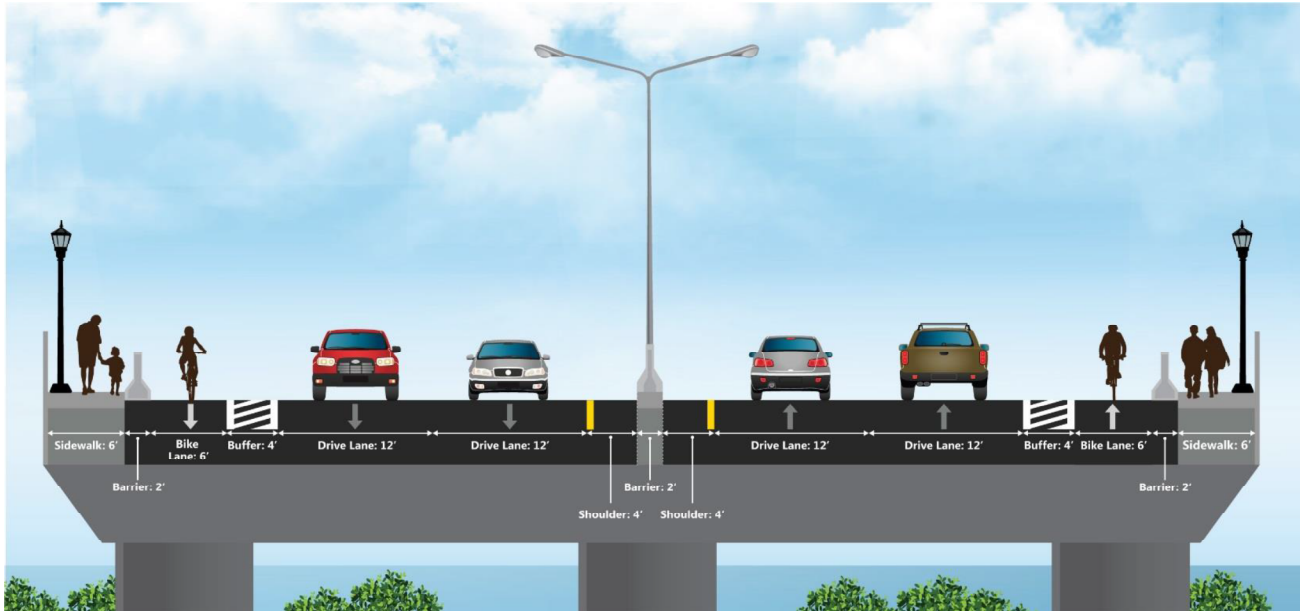
2.4.3 Typical Sections

The typical sections found along SR 40 from Cassen Park to SR A1A are explained and illustrated in this section.

From Cassen Park (near Beach Street) to John Anderson Drive - Bridge

The SR 40 (Granada Boulevard) bridge over Halifax River is a four-lane divided bridge. There are six foot sidewalks provided on both sides of the roadway which are separated from the roadway by a traffic barrier. There are also bicycle lanes provided on both sides of the roadway which are separated by a four-foot chevron buffer. The typical section for SR 40 bridge over Halifax River is illustrated in **Figure 4**.

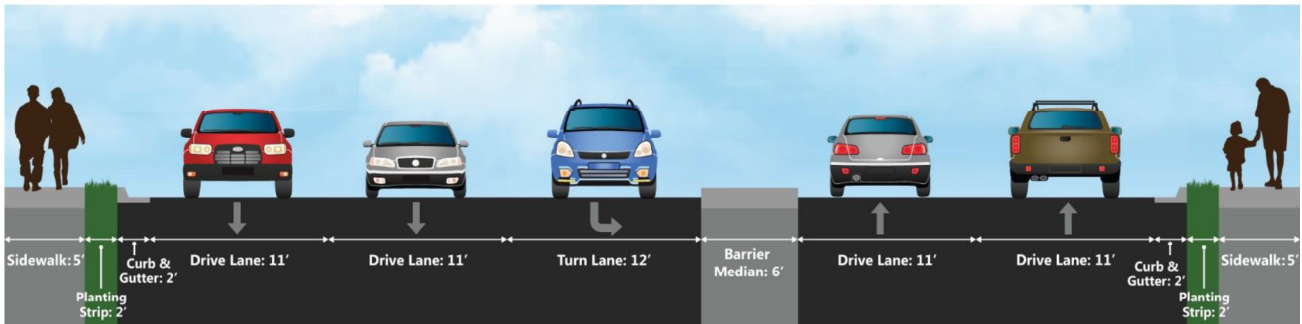
Figure 4: SR 40 from Cassen Park to John Anderson Drive Typical Section (Bridge)



From John Anderson Drive to Halifax Drive

SR 40 from John Anderson Drive to Halifax Drive, shown in **Figure 5**, is a four-lane divided roadway. Five foot sidewalks are provided on both sides, with planting strips where possible. The roadway is divided by an 18-foot raised median, which is narrower when westbound left-turn lanes are provided. At the east end of this segment, there are five on-street parking spots provided on the south side of SR 40. No bicycle lanes are provided for this segment.

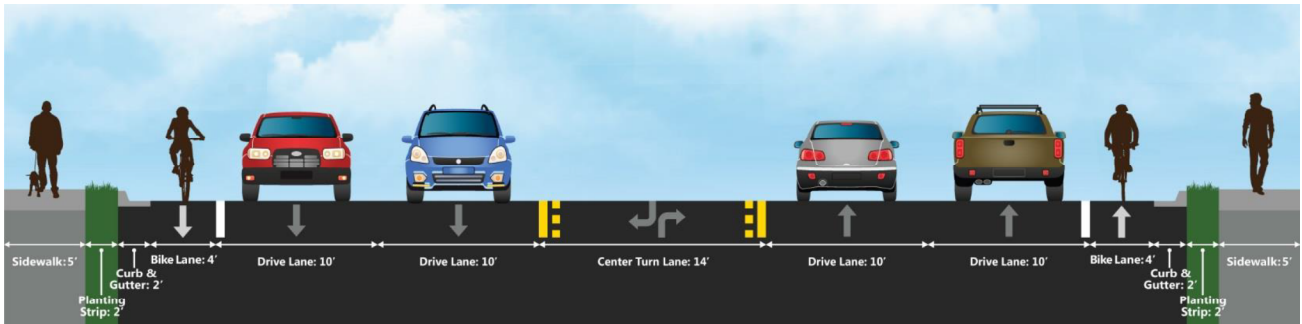
Figure 5: SR 40 from John Anderson Drive to Halifax Drive Typical Section



From Halifax Drive to SR A1A

The typical section from Halifax Drive to SR A1A is a five-lane segment with a bi-directional turn lane, which becomes a directional westbound left-turn lane at Seton Trail and approximately 450 feet west of Bovard Avenue. There are 6-foot-wide sidewalks on both sides, which have either a planted strip or widened sidewalk. There are bicycle lanes provided along both sides of the entire segment. The typical section for SR 40 from Halifax Drive to SR A1A is provided in **Figure 6**.

Figure 6: SR 40 from Halifax Drive to SR A1A Typical Section



2.4.4 Pedestrian and Bicycle Facilities

Sidewalks are provided on both sides of SR 40 for the entire length of the study area. There are no gaps in sidewalk coverage. Marked crosswalks with pedestrian signals are provided at all approaches of the three signalized intersections of the study area. There are no midblock crosswalks located along the study corridor. Bicycle lanes are provided along SR 40 with the exception of segments between John Anderson Drive and Halifax Drive and between Bovard Avenue and SR A1A. The bike lane gaps along SR 40 are displayed in **Figure 7**.

There is a pedestrian underpass at each end of the Granada Bridge. These underpasses provide pedestrians safe access between Cassen Park and Bailey Riverbridge Gardens (west end of the bridge) and between Rockefeller Gardens and Fortunato Park (east end of the bridge). The underpasses also serve to provide a safe crossing point for bicyclists and pedestrians utilizing the features on the bridge.

2.4.5 Transit Infrastructure

Existing transit services in the study area are operated by Volusia County's public transit system Votran. There are five routes (Routes 1, 1n, 1s, 18, and 19) that provide stops along SR 40.

There are seven bus stops along SR 40 within the study area. Most bus stops provide bus stop sign, benches and trash cans, while a few provide bus stop shelters. All bus stops, as shown in **Figure 8**, are located adjacent to the existing sidewalk along SR 40.

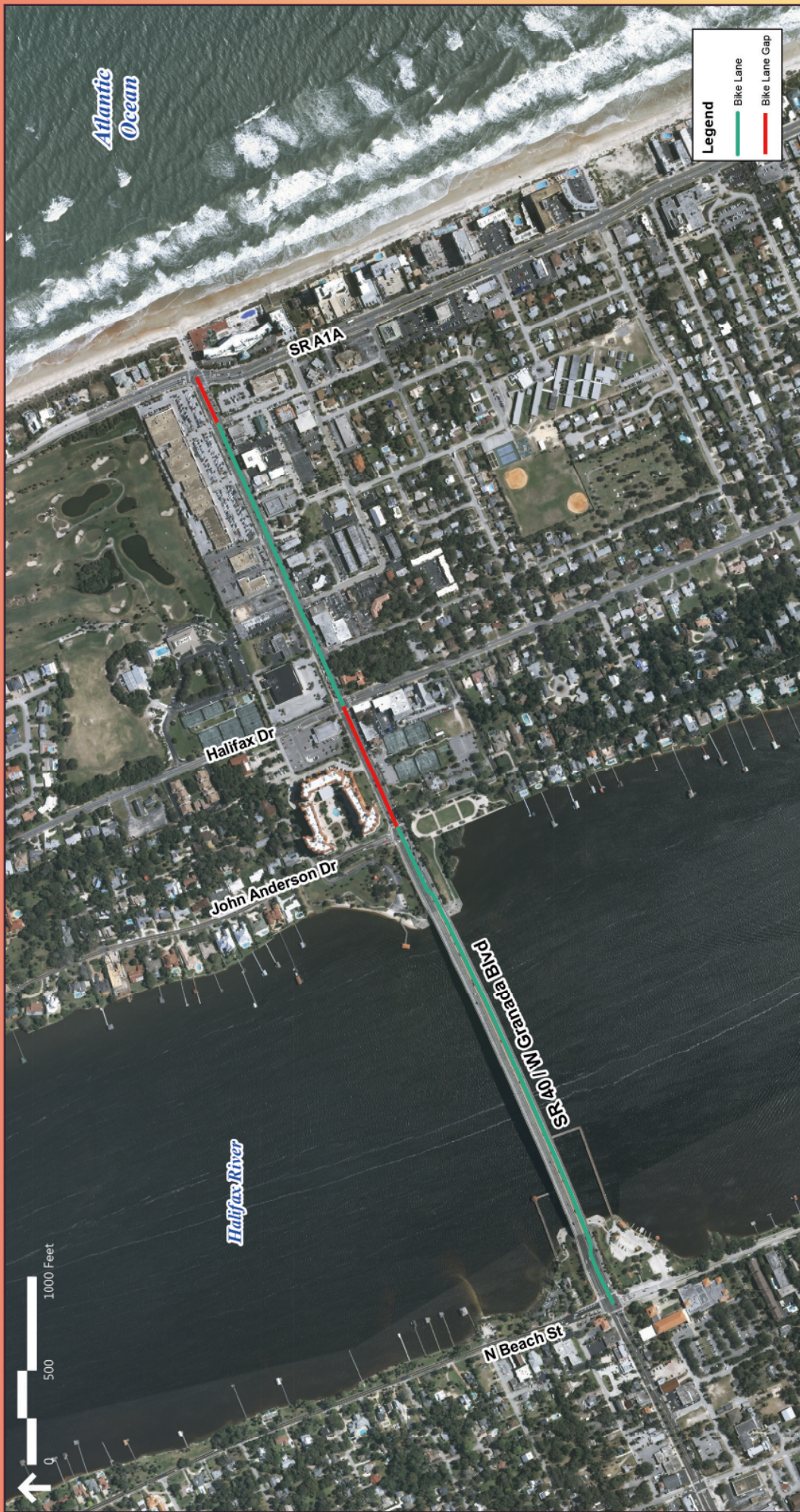


Figure 7
SR 40 Bike Lane Gaps



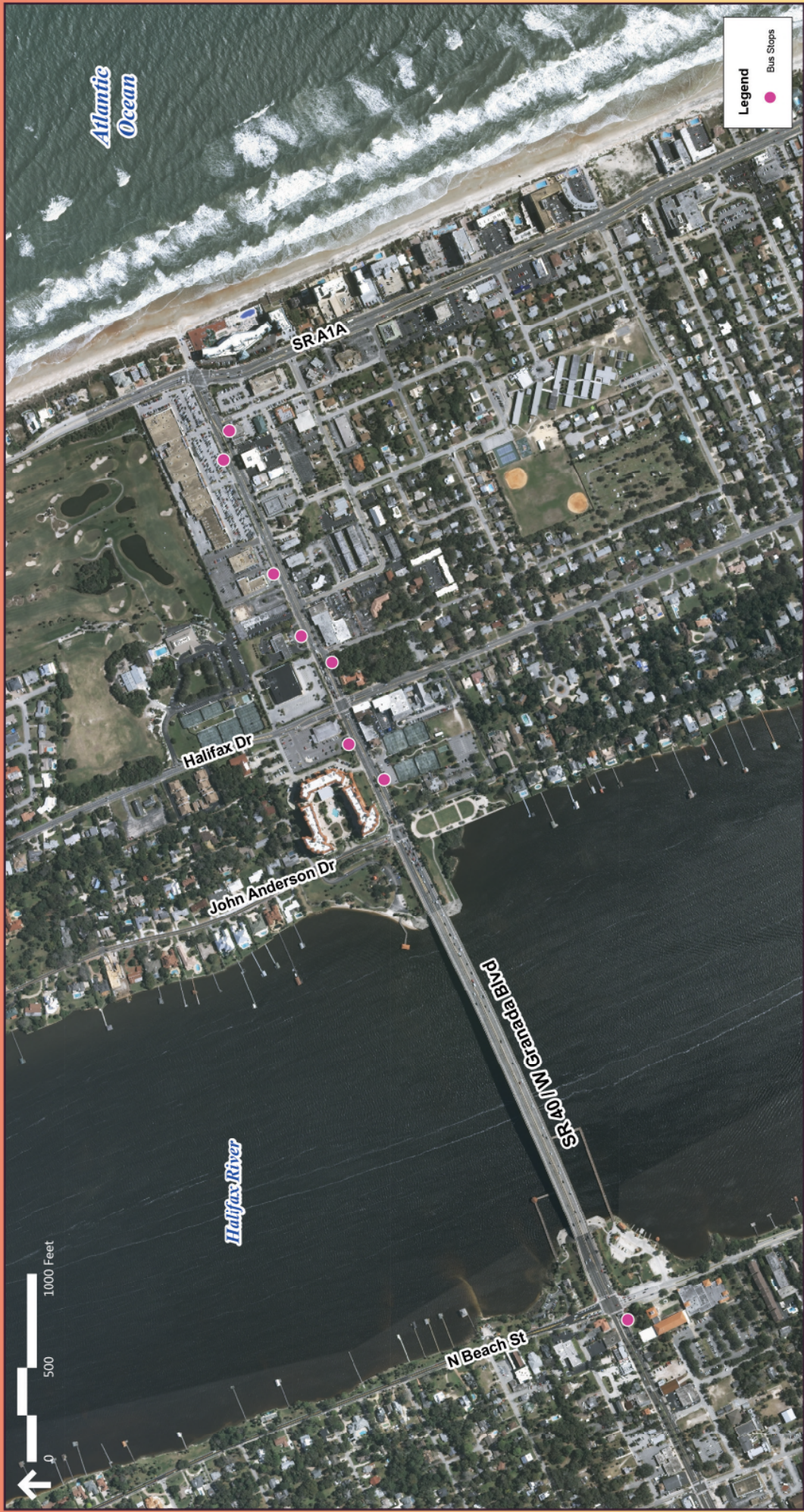


Figure 8
Transit Stop Locations



2.5 Utilities

A Sunshine One Call ticket was processed in December 2016 to identify a list of potential utility providers within the study area. The list of providers in the Sunshine One Call ticket does not indicate definite presence of facilities within the corridor. Therefore, the utility companies were contacted to verify the location and content of the facilities. **Table 1** lists the utility companies provided by the Sunshine One Call ticket along with feedback received from the companies. A copy of the Sunshine One Call ticket and utility coordination emails are provided in **Appendix C**.

Table 1: Utilities

Utility Company	Contact Number	Notes
City of Ormond Beach	386-676-3269	<p>Electrical lights and conduit run along the north and south side of SR 40. The only road where the wiring does not cross over is John Anderson Drive, Riverside Drive, S. Halifax Drive, and Atlantic Avenue.</p> <p>Fiber runs along the north side of SR 40, and along the west side of John Anderson Drive until stopping north of Fortunado Park.</p> <p>Reusable water lines run along the west side of N Halifax Drive, then cross over to the east side just north of SR 40.</p> <p>Sewer lines run along the south side of SR 40 from Riverside Drive to Halifax Drive, and just east of Vining Court to SR A1A. They cross over SR 40 at Riverside Drive, Halifax Drive, and after Vining Court. Water lines run along the north and south side of SR 40, the east side of John Anderson Drive and SR A1A, and the west side of N. Halifax Drive. These lines cross over SR 40 at Riverside Drive, Halifax Drive, Seton Trail, and twice between Vining Court and SR A1A.</p>
Florida Power & Light	305-219-9143	No information provided
Level 3 Communications	877-366-8344 EXT 2	No utilities located in the study area.
TECO Peoples Gas	407-420-6609	4-inch Steel piping crosses S.R. 40 at Viking court, runs north along the property line of the vacant lot, and then runs east along the edge of the golf course.
AT&T	561-997-0240	No information provided
Crown Castle Sunesys	-	Fiber runs underneath the Halifax River Bridge, along SR 40 to Halifax Drive, then runs north/south.
Tower Cloud	813-417-2184	No information provided
Bright House Networks	386-446-1420 386-804-1592	No information provided

2.5.1 Lighting

Lighting on the Granada Bridge is integrated within the center barrier. Pedestrian lighting is provided on both sides of the bridge, and is located between the concrete barrier and pedestrian railing. Conventional and accent lighting is provided along both the north and south side of the roadway from John Anderson Drive to SR A1A. On the north side, both forms of lighting are located behind the sidewalk. On the south side, only conventional lighting is provided behind the sidewalk, while accent lighting is provided in the planter strip.

2.6 Adjacent Streets

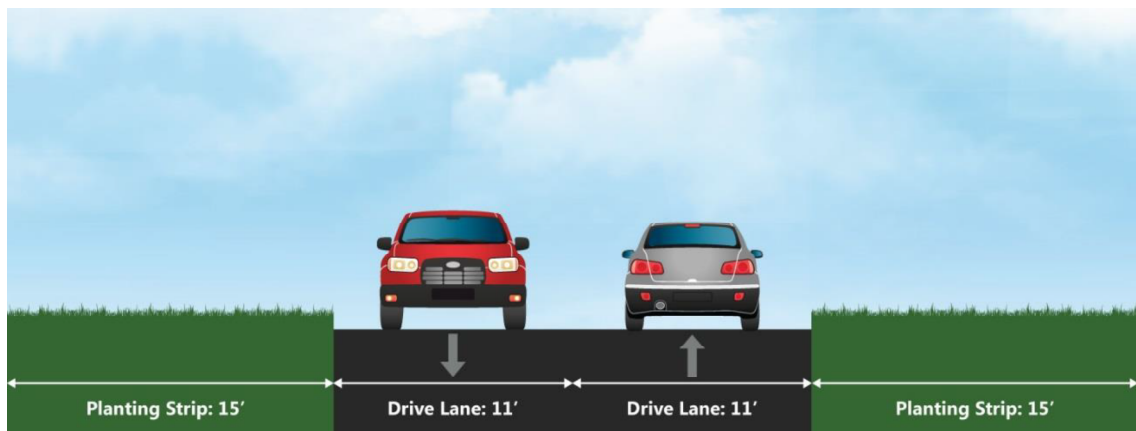
In addition to the primary corridor along SR 40, the adjacent street network within the SR 40 corridor was also explored for possible trail routes. The following roadways were identified as having potential to support alternate routes for the trail alignment:

- John Anderson Drive from SR 40 to Royal Palm Avenue
- Halifax Drive from Bosarvey Circle to Royal Palm Avenue
- SR A1A from Vining Court to Neptune Avenue
- Casements Drive from Riverside Drive to Halifax Drive
- Vining Court from SR 40 to A1A
- Bovard Avenue from SR 40 to Vining Court
- Riverside Drive from SR 40 to Casements Drive

2.6.1 John Anderson Drive

The typical section of John Anderson Drive from SR 40 to Royal Palm Avenue is a two-lane undivided roadway. This is a residential road, with multiple driveways located along both sides of the road. There are no sidewalks, bicycle lanes, or street lighting along either side of the corridor. The typical section for John Anderson Drive is displayed in **Figure 9**.

Figure 9: John Anderson Drive Typical Section (From SR 40 to Royal Palm Avenue)



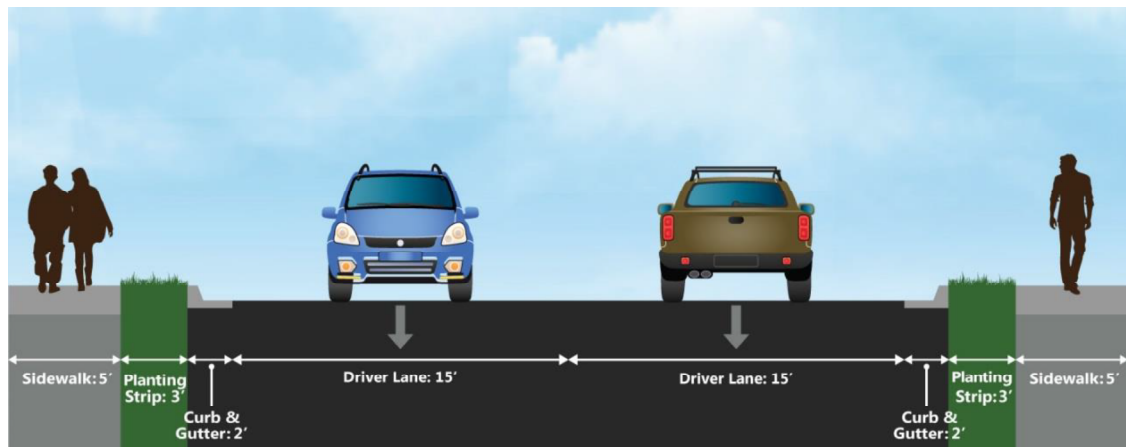
According to right-of-way maps provided by the City of Ormond Beach, the right-of-way within this segment of John Anderson Drive is approximately 52 feet. The city's right-of-way maps are included in **Appendix D**. There are overhead utilities that run along the west side of the roadway.

2.6.2 Halifax Drive

From Bosarvey Circle to SR 40

Halifax Drive from Bosarvey Circle to SR 40 is a two-lane undivided roadway. There are five-foot sidewalks provided along both sides of Halifax Drive, which are separated from the road by planter strips south of Casements Drive. There are no bicycle lanes or marked crosswalks along either side of Halifax Drive. The typical section for Halifax Drive from Bosarvey Circle to SR 40 is shown in **Figure 10**.

Figure 10: Halifax Drive from Bosarvey Circle to SR 40

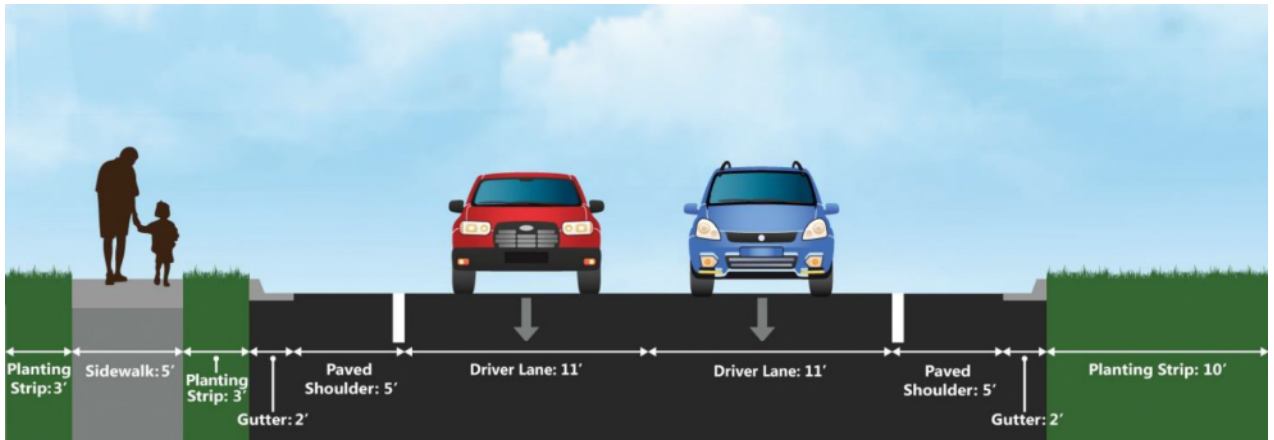


According to the Volusia County Property Appraiser, the right-of-way along Halifax Drive between Bosarvey Circle and SR 40 is approximately 50 feet. There are overhead utilities which are located on both sides of the road, with the poles located in the planter strip between the roadway and sidewalk.

From SR 40 to Royal Palm Avenue

Halifax Drive from SR 40 to Royal Palm Avenue is a two-lane undivided roadway. A five-foot sidewalk is provided along the west side of the roadway, with a planter strip serving as a buffer. Although there is no bicycle lane along either side of Halifax Drive, there are five foot paved shoulders on both sides of the road. A typical section for Halifax Drive between SR 40 and Royal Palm Avenue is presented in **Figure 11**.

Figure 11: Halifax Drive Typical Section (From Royal Palm Avenue to Bosarvey Circle)

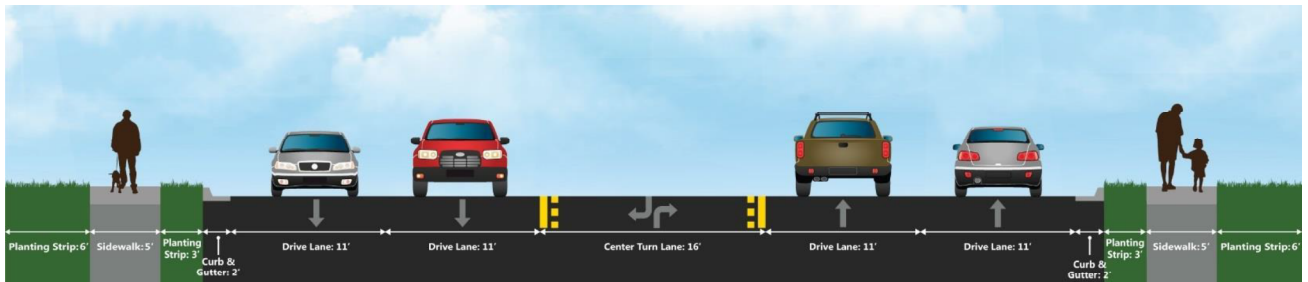


According to the Volusia County Property Appraiser, the existing right-of-way on Halifax Drive is approximately 55 feet wide. Overhead utilities are provided along the west side of the roadway, with the poles located in the buffer between the sidewalk and road.

2.6.3 SR A1A

SR A1A from Vining Court to SR 40 is four lanes with sidewalks separated by grass strips on both sides. There are no bicycle lanes provided within this segment of SR A1A. A typical section for SR A1A from Vining Court to SR 40 is presented in **Figure 12**.

Figure 12: SR A1A Typical Section (From Vining Court to SR 40)

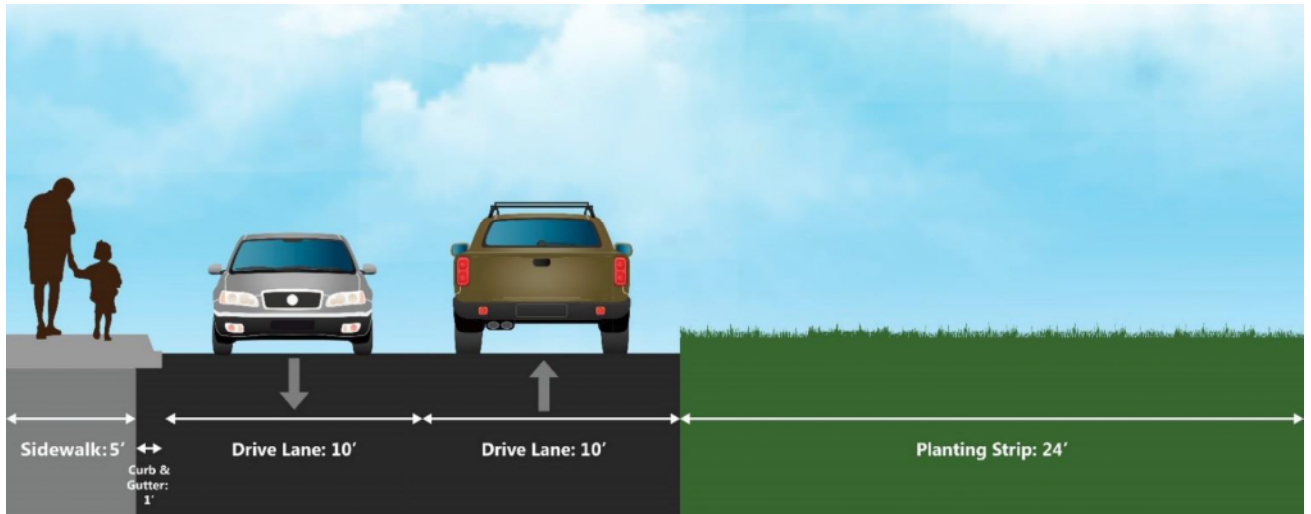


According to the roadway as-built plans, the existing right-of-way on SR A1A from Vining Court to SR 40 is approximately 92 feet wide. Overhead utilities are provided along the west side of the roadway, and lighting is provided on both sides. The right-of-way is limited on both sides by businesses and a resort condominium adjacent to SR A1A.

2.6.4 Casements Drive

Casements Drive is a local residential road that is a two-way undivided roadway. There is a sidewalk provided along the north side of the roadway, which is separated by a planter strip for most of the segment. There are marked crosswalks at driveways as well as at the intersection with Riverside Drive. However, there is no crosswalk at the intersection with Halifax Drive. There are no bicycle lanes along this road. The typical section for Casements Drive is provided in **Figure 13**.

Figure 13: Casements Drive Typical Section

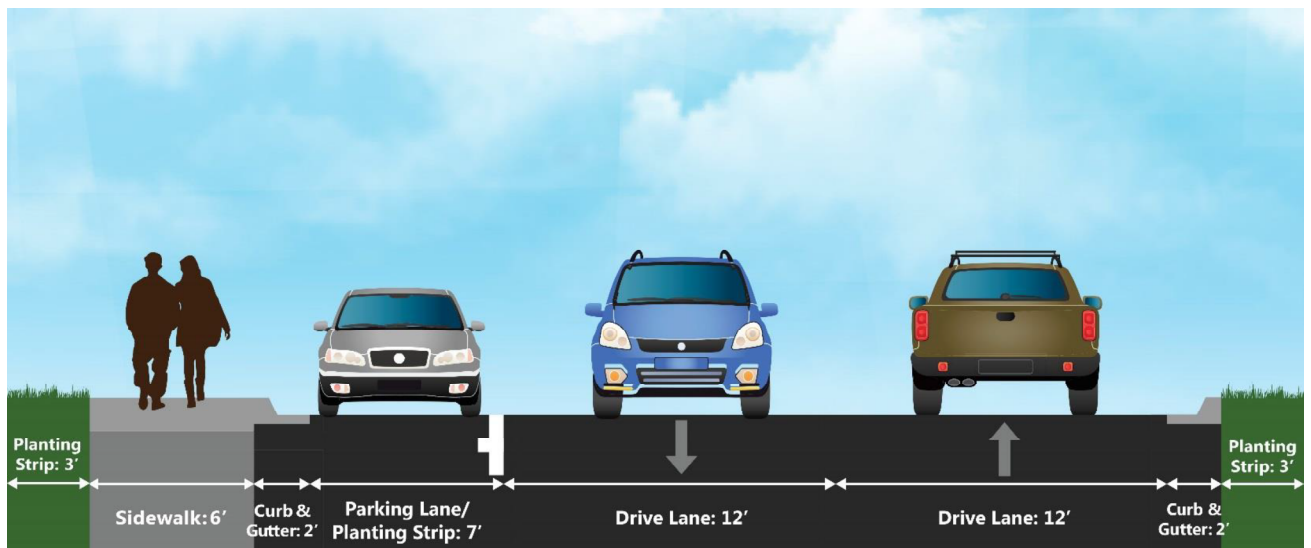


According to right-of-way maps provided by the City of Ormond Beach, the existing right-of-way on Casements Drive is approximately 50 feet. The city's right-of-way maps are included in **Appendix D**. The only overhead utilities observed were located at the intersection with Halifax Drive. There are trees located between the roadway and sidewalk; however, the right-of-way is not restricted north of Casements.

2.6.5 Vining Court

Vining Court is a minor roadway located south of SR 40. It is a two-way undivided roadway, with on-street parking provided along the west and north side. The roadway is primarily 24 feet wide, with one travel lane in each direction. A sidewalk is located along the north side of the roadway, and bicycle lanes are not provided along either side. The typical section for Vining Court is provided in **Figure 14**.

Figure 14: Vining Court Typical Section



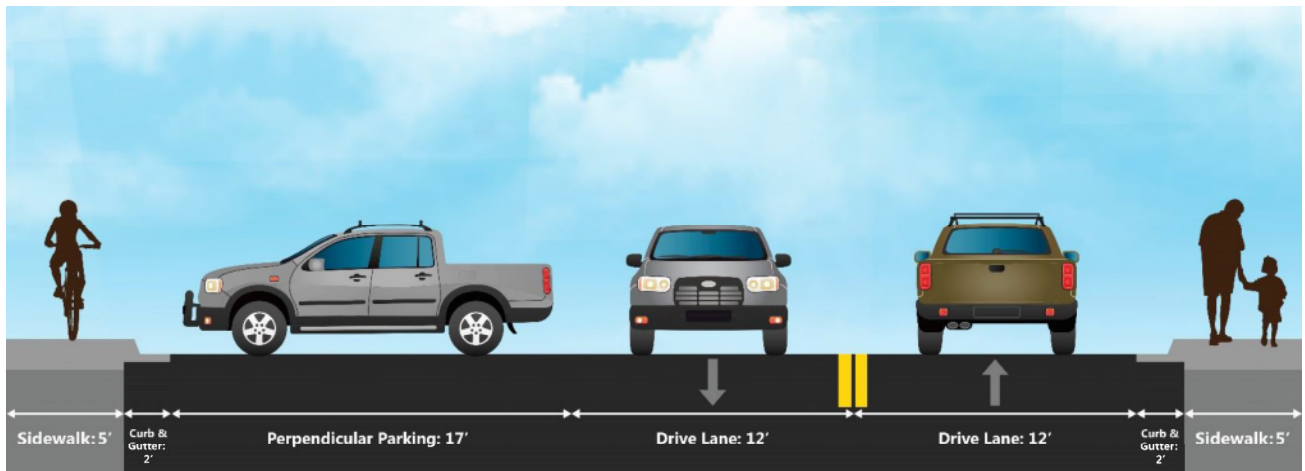
According to right-of-way maps provided by the City of Ormond Beach, the existing right-of-way on Vining Court is approximately 47 feet wide. The city's right-of-way maps are provided in **Appendix D**. There are overhead

utilities that run along the south side of Vining Court for the entire corridor, which also cross over the roadway at Coquina Court. There is potential to use the existing parking/planter strip and sidewalk to widen out and provide a trail with planter strip.

2.6.6 Bovard Avenue

Bovard Avenue, connecting Vining Court and SR 40, is a short two-way undivided roadway segment, with perpendicular on-street parking along the west side. Sidewalks are provided along both sides of the roadway; however, no bicycle lanes are present. The typical section for Bovard Avenue is provided in **Figure 15**.

Figure 15: Bovard Avenue from Vining Court to SR 40 Typical Section

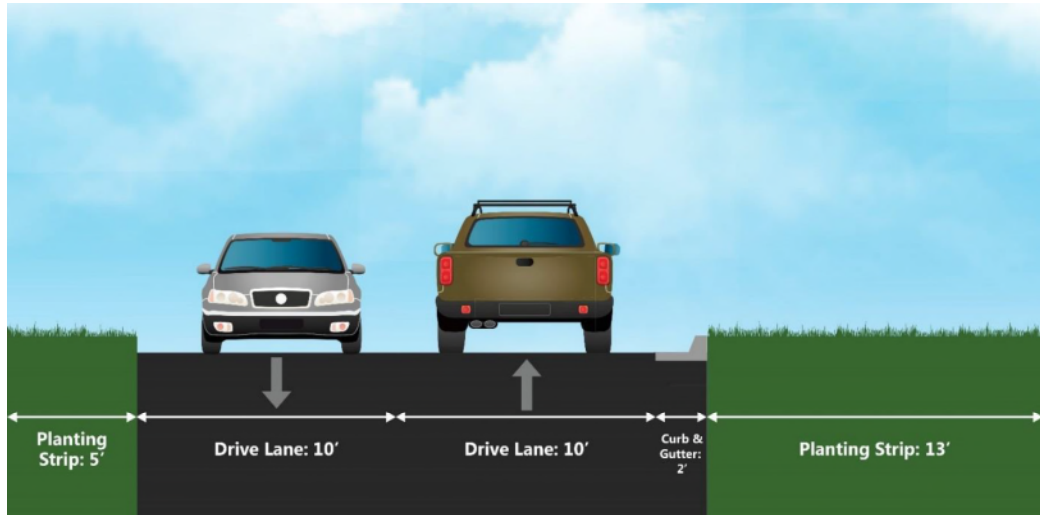


According to right-of-way maps provided by the City of Ormond Beach, the existing right-of-way on Bovard Avenue is approximately 55 feet wide. The city's right-of-way maps are included in **Appendix D**. There are no overhead utilities along the segment, but there is lighting along both sides. The right-of-way is constrained by businesses on both sides of Bovard Avenue, however there is some existing perpendicular on-street parking that represents an opportunity for being repurposed to accommodate a trail improvement.

2.6.7 Seton Trail

Seton Trail, connecting Bosarvey Drive and SR 40, is a short two-way undivided roadway segment. The typical section for Seton Trail is provided in **Figure 16**.

Figure 16: Seton Trail from Bosarvey Drive to SR 40 Typical Section

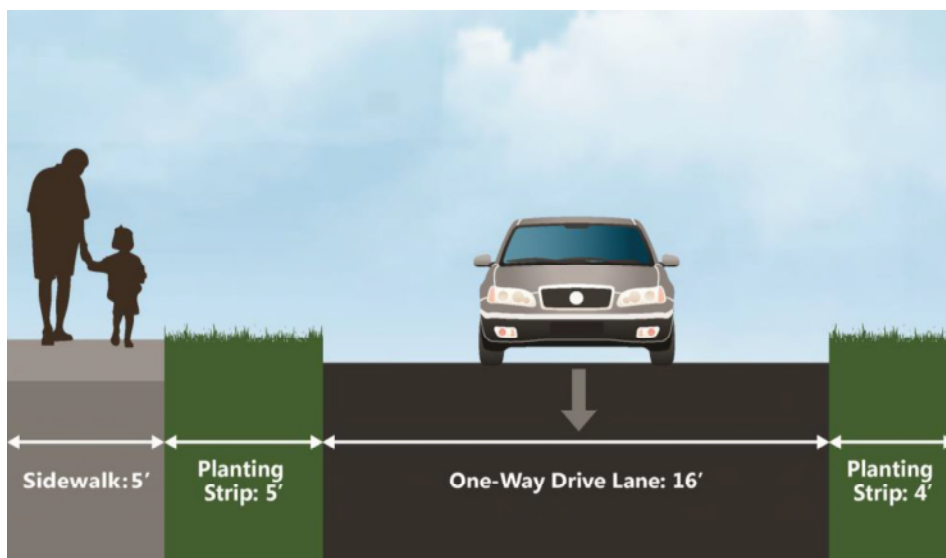


According to right-of-way maps provided by the City of Ormond Beach, the existing right-of-way on Seton Trail is approximately 40 feet wide. There are no sidewalks or bicycle lanes on this segment of Seton Trail. There are overhead utilities along the segment, and some overhead street lighting which begin on the west side of the roadway at SR 40, and crosses to the east side and then back to west near Seton Trail's intersection with Bosarvey Drive.

2.6.8 Riverside Drive

Riverside Drive, connecting Casements Drive and SR 40, is a short southbound one-way segment. The typical section for Riverside Drive is provided in **Figure 17**.

Figure 17: Riverside Drive from Casements Drive to SR 40 Typical Section



According to right-of-way maps provided by the City of Ormond Beach, the existing right-of-way on Riverside Drive between Casements Drive and SR 40 is approximately 30 feet wide. The right-of-way is constrained by The Casements cultural center, a Florida Heritage Site, on the east side of the roadway and Rockefeller Gardens on

the west side, which are both city-owned properties. The city’s right-of-way maps are included in **Appendix D**. There are no overhead utilities along the segment, and there is some pedestrian-oriented overhead lighting along The Casements fence and within the Rockefeller Gardens park. The east side of the roadway has a sidewalk from SR 40 to the main entrance of The Casements. The west side has a sidewalk for the entire segment from SR 40 to Casements Drive.

2.7 Existing Traffic Conditions

This section provides an overview of the existing roadway traffic conditions along SR 40. Existing roadway Annual Average Daily Traffic (AADT) volumes were obtained using FDOT’s Florida Traffic Online Traffic Data Reports published by the Transportation Statistics Office. AADT traffic data was obtained for the following locations:

- SR 40 (Granada Boulevard) between Beach Street and Halifax Drive (08/18/2015)
- SR 40 (Granada Boulevard) between Halifax Drive and SR A1A (09/02/2015)

The existing AADT was adjusted utilizing the latest (2015) FDOT axle (where applicable) and seasonal adjustment factors for Volusia County, to provide average conditions. The AADT data reports and seasonal factors are provided in **Appendix E**. Existing volumes are illustrated in **Figure 18**.

SR 40 roadway counts were compared to the *2013 FDOT Quality/Level of Service Handbook Table 7* to obtain the generalized daily and peak hour Level of Service (LOS), presented in **Table 2**.

Table 2: SR 40 Existing Roadway AADT and LOS

Roadway/Segment	Daily		AM Peak		PM Peak	
	AADT	LOS	Volume	LOS	Volume	LOS
S.R. 40 (Granada Boulevard)						
Beach Street to Halifax Drive	31,000	C	2,480	D	3,332	E
Halifax Drive to S.R. A1A	20,400	C	1,328	C	1,574	C

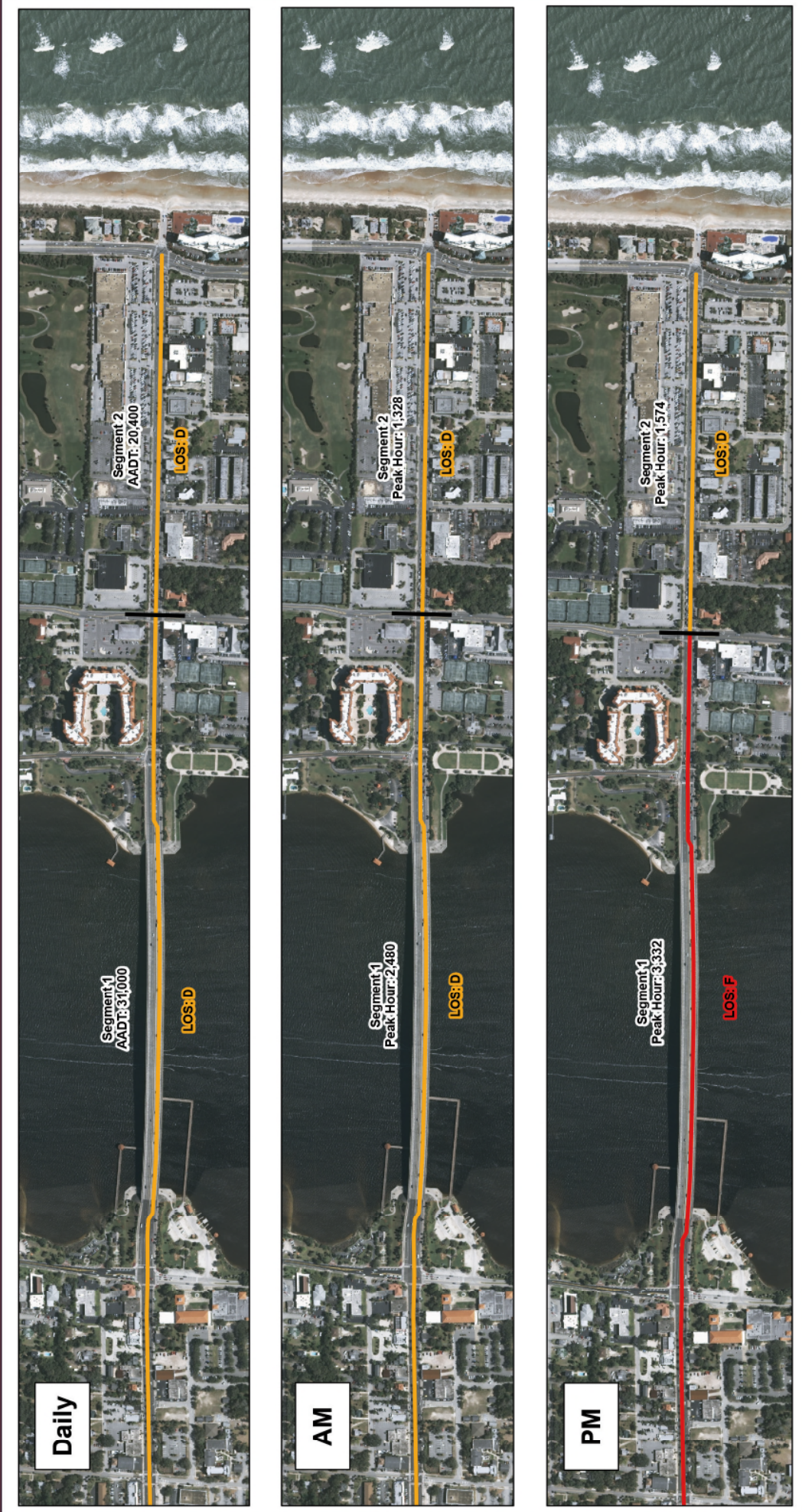


Figure 18
Existing Roadway Traffic Volumes

2.8 Crash Analysis

Crash data was obtained from the FDOT's Signal 4 for the previous five years (January 01, 2011 to December 31, 2015) along SR 40 from Beach Street to SR A1A. A total of 287 crashes, 99 involving injuries, were reported over the five-year period along SR 40 within the study area limits, as detailed in **Table 3**. No fatalities were reported. Crash reports are provided in **Appendix F**.

Table 3: Crash Data Summary

Year	Total Number of Crashes	Number of Injury Crashes	Total Number of Injuries	Number of Fatal Crashes	Total Number of Fatalities	Number of Night Crashes	Number of Wet Crashes	Crashes involving Bicycles	Crashes involving Pedestrians
2011	24	15	23	0	0	3	1	0	1
2012	47	14	20	0	0	6	1	1	1
2013	53	11	15	0	0	7	6	0	0
2014	86	32	40	0	0	21	9	1	1
2015	77	27	36	0	0	12	4	2	1
2011-2015	287	99	134	0	0	49	21	4	4
Average	57.4	19.8	26.8	0	0	9.8	4.2	0.8	0.8
Percent	-	34.5%	-	0.0%	-	17.1%	7.3%	1.4%	1.4%

Table 4 summarizes the number of crashes by harmful event along the SR 40 corridor. The predominant crash types were Rear End (41.5%) and sideswipe (15.0%). There was a total of four (4) crashes involving pedestrians, and a total of four (4) crashes involving bicycles between 2011 and 2015. These were in the vicinity of the intersections with Halifax Drive and SR A1A.

Table 4: Crash Data Summary by Harmful Event

Crash Type	2011	2012	2013	2014	2015	2011-2015	Average per year	Percent
Rear End	13	13	18	39	36	119	23.8	41.5%
Sideswipe	2	4	11	13	13	43	8.6	15.0%
Left Turn	2	6	5	9	10	32	6.4	11.1%
Off Road	0	1	4	5	4	14	2.8	4.9%
Angle	0	1	2	4	1	8	1.6	2.8%
Pedestrian	1	1	0	1	1	4	0.8	1.4%
Bicycle	0	1	0	1	2	4	0.8	1.4%
Right Turn	0	0	0	3	0	3	0.6	1.0%
Head On	2	0	1	0	0	3	0.6	1.0%
Rollover	0	1	0	0	0	1	0.2	0.3%
Other	2	4	7	11	9	33	6.6	11.5%
Unknown	2	15	5	0	1	23	4.6	8.0%
Total	24	47	53	86	77	287	-	100.0%

Since the potential trail alternatives also include streets adjacent to SR 40, the crash data for these roadways was pulled to compare the amount and frequency of crashes involving bicycles/pedestrians. The frequency in which bicycle or pedestrian crashes occur is determined by the average number of crashes per year per mile. **Table 5** lists the number of crashes involving bicycles, pedestrians, and the frequency in which they occur. As seen in the table below, the segment which experiences the most crashes is SR 40 between Beach Street and SR A1A, while 4 of the 8 crashes are located at the intersection of SR 40 and Halifax Drive. **Figure 19** displays the crash locations involving bicycles and pedestrians within the study area.

Table 5: Pedestrian & Bicycle Crashes

Roadway	Bike	Ped	Length	Average Crash/yr/mile
SR 40 (From Beach St. to SR A1A)	4	4	1.05	1.52
Casements Drive (From Riverside Dr. to Halifax Dr.)	1	0	0.13	1.54
Vining Court (From Vining Ct. to SR A1A)	0	0	0.25	0.00
Bovard Avenue (From Vining Ct. to SR 40)	0	0	0.10	0.00
Halifax Drive (From SR 40 to Oceanside Country Club)	0	0	0.18	0.00
SR A1A (From Vining Ct. to SR 40)	0	0	0.10	0.00
<i>Total</i>	5	4	-	-

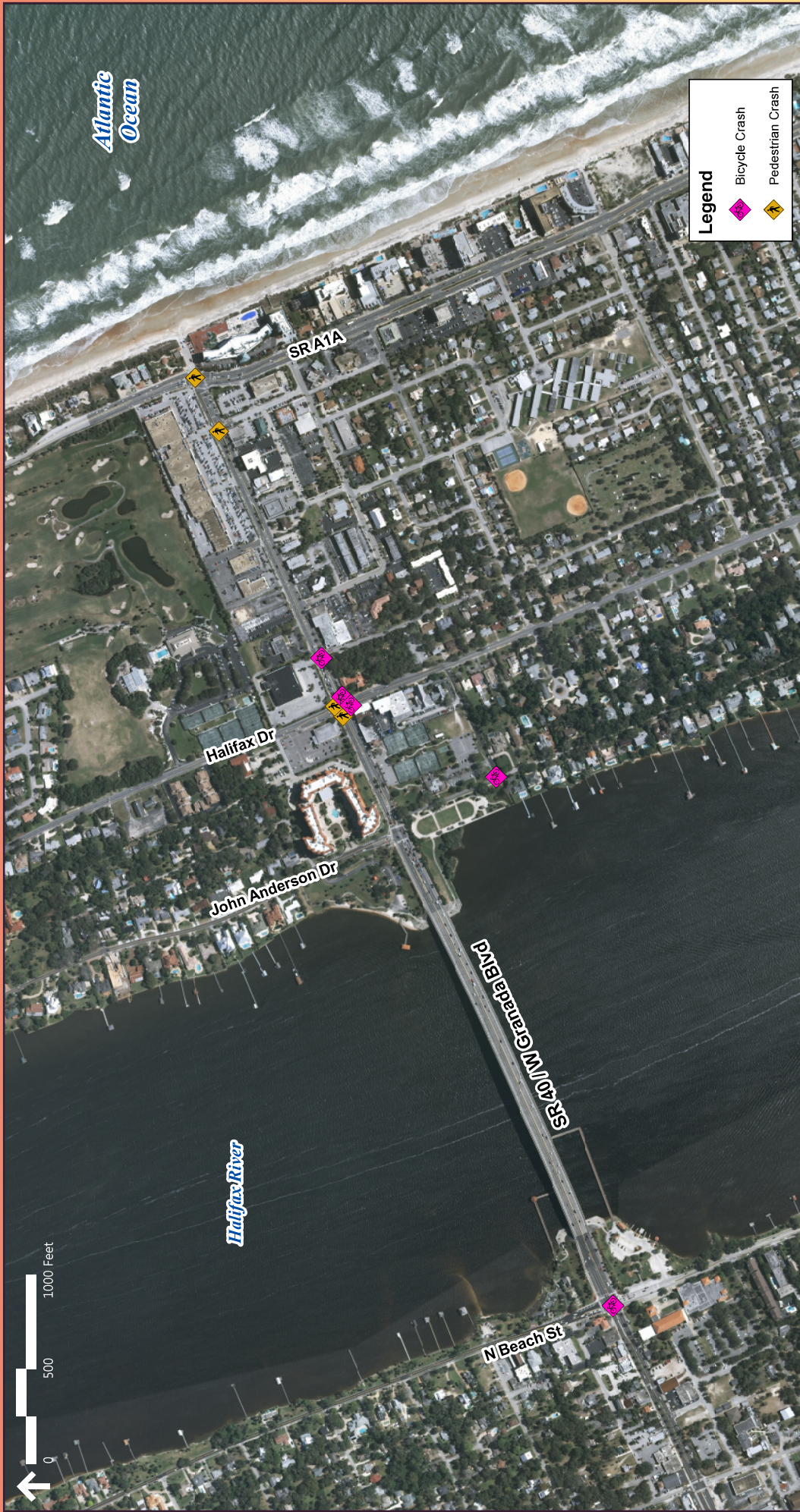


Figure 19
Crash Location Map



2.9 Drainage

The SR 40 Ormond Beach Trail Gap is located within the St. Johns River Water Management District (SJRWMD) and within the City of Ormond Beach Community Redevelopment Agency (CRA) Master Plan. Research was conducted to assess the existing drainage conditions and to identify the project's floodplain, soils, water table, and potential constraints that may arise due to the project's proximity to adjacent water fronts. The City of Ormond Beach CRA Master Plan is the basis for the SJRWMD Environmental Resource Permit (ERP) application. The following information was reviewed:

- City of Ormond Beach CRA
- CRA Master Plan Conceptual ERP number 127584-1
- United States Department of Agriculture Natural Resources Conservation Services (NRCS) Soil Survey
- Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Map 12127C0216J, dated February 19, 2014
- Aerial imagery obtained from Google Earth on April 26, 2017

The CRA Master Plan divides the district into three areas: Ocean District, River District, and Creek District as seen in Figure 20.

Figure 20: Community Redevelopment Agency Master Plan Districts



The proposed improvements are located within the Ocean District and the River District. Each area is divided into multiple sub-basins. Given the nature of the proposed project, it is anticipated that a modification to the conceptual ERP will be required. The improvements may qualify for a permit exemption. Should the permit exemption not be granted, a permit modification will need to be submitted and approved.

Flooding conditions within the limits of the project site were evaluated using FEMA’s FIRM Map 12127C0216J and the site’s conceptual ERP. Based on the FIRM map, no portion of the project lies within an identified 100-year flood plain; however, based on the stormwater report from the above-referenced CRA ERP, portions of the proposed project would potentially be subject to flooding for the 25-year storm event. As shown in **Figure 21**, obtained from the permit’s stormwater report, flooding exists along Vining Court due to this being a low-lying area, which could potentially impact Alternative 3.

Figure 21: Flooding Areas



ERP 127584-1 also identifies existing soil conditions, which are classified as well drained, class A, type of soils. These soils were considered when establishing infiltration parameters for each soil in the City’s Master Plan. Per ERP 127584-1 infiltration rates range between 1.0 inch/hour to 12 inches/hour within Hydrologic Soil Groups A. Using NRCS, a water table of more than 6 feet below existing ground is present throughout this area.

Based on review of the conceptual ERP 127584-1 and the city code, the Halifax River and the Atlantic Ocean do not have any restrictive criteria towards the proposed improvements. It should be noted that stormwater runoff from the Ocean District and the River District both drain into the Halifax River. A tailwater of 0.91 feet NAVD was used when establishing stormwater conditions for the Ocean and River District for the above-referenced ERP.

Aerial imagery helped identify existing surface drainage conditions. Curb and gutter and a series of drainage inlets could potentially be impacted. Details as to the location of existing curb and gutter and drainage structure location are best explained further on in this memorandum.

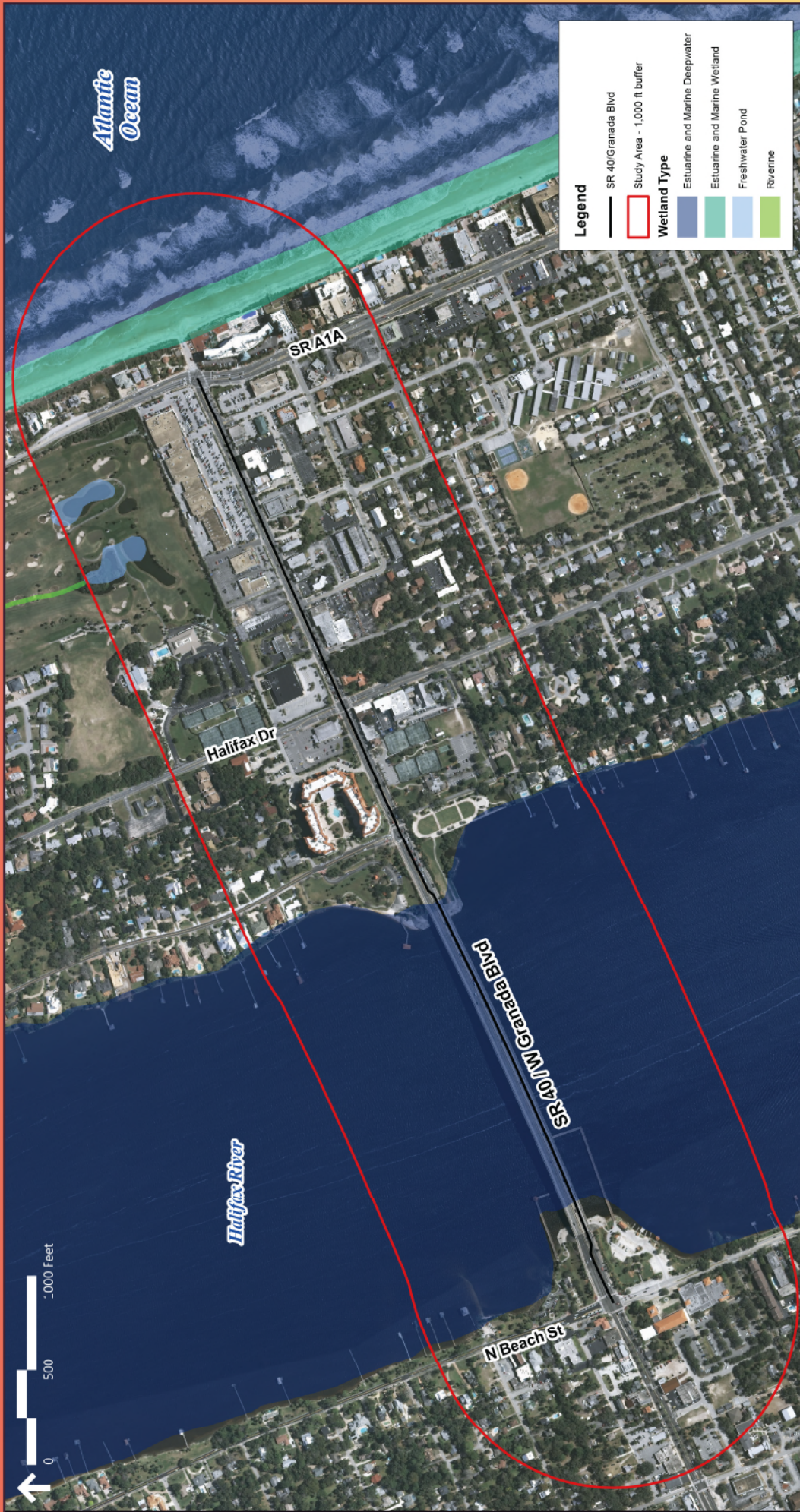
2.10 Natural Resources

Geographic Information Systems (GIS) data on natural resources, including wetlands, habitats, and floodplains within the study area was acquired from the Florida Geographic Data Library (FGDL).

The wetlands analysis used GIS data made available from the U.S. Fish and Wildlife shapefile dated 2016. The wetlands in the study area consist of Estuarine and Marine Wetlands along the beach, and freshwater ponds found on the golf course north of SR 40. The only other surface water found within the study area is the Halifax River. Wetlands and surface water in the study area are shown in **Figure 22**.

After review of the U.S. Fish and Wildlife Conservation Commission's threatened and endangered species habitat maps, there were several locations where threatened or endangered species could potentially exist. These species included the Atlantic Salt Marsh Snake, the Painted Bunting, the Southern Bald Eagle, the American Swallow-tailed Kite, and Limpkins. The potential locations for threatened and endangered species and/or critical habitats are shown in **Figure 23**.

Since the study area is located in close proximity to the ocean and runs over the Halifax River, floodplains in the area are important for planning purposes. Special Flood Hazard Areas are located on both sides of the Halifax River, and on the east side of the corridor closest to the Atlantic Ocean. Both the Halifax River and the beach bordering the Atlantic Ocean are a part of the 100-Year Floodplain. The land on both sides of the Halifax River is a part of the 500-Year Floodplain. This area includes Cassen Park, Bailey Riverbridge Gardens, Fortunado Park, and Rockefeller Gardens. The floodplains found within the study area can be seen in **Figure 24**.



Legend

- SR 40/Granada Blvd
- Study Area - 1,000 ft buffer

Wetland Type

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Pond
- Riverine



Figure 22
Wetlands Map





Figure 23
Threatened and Endangered Species
Habitat Map



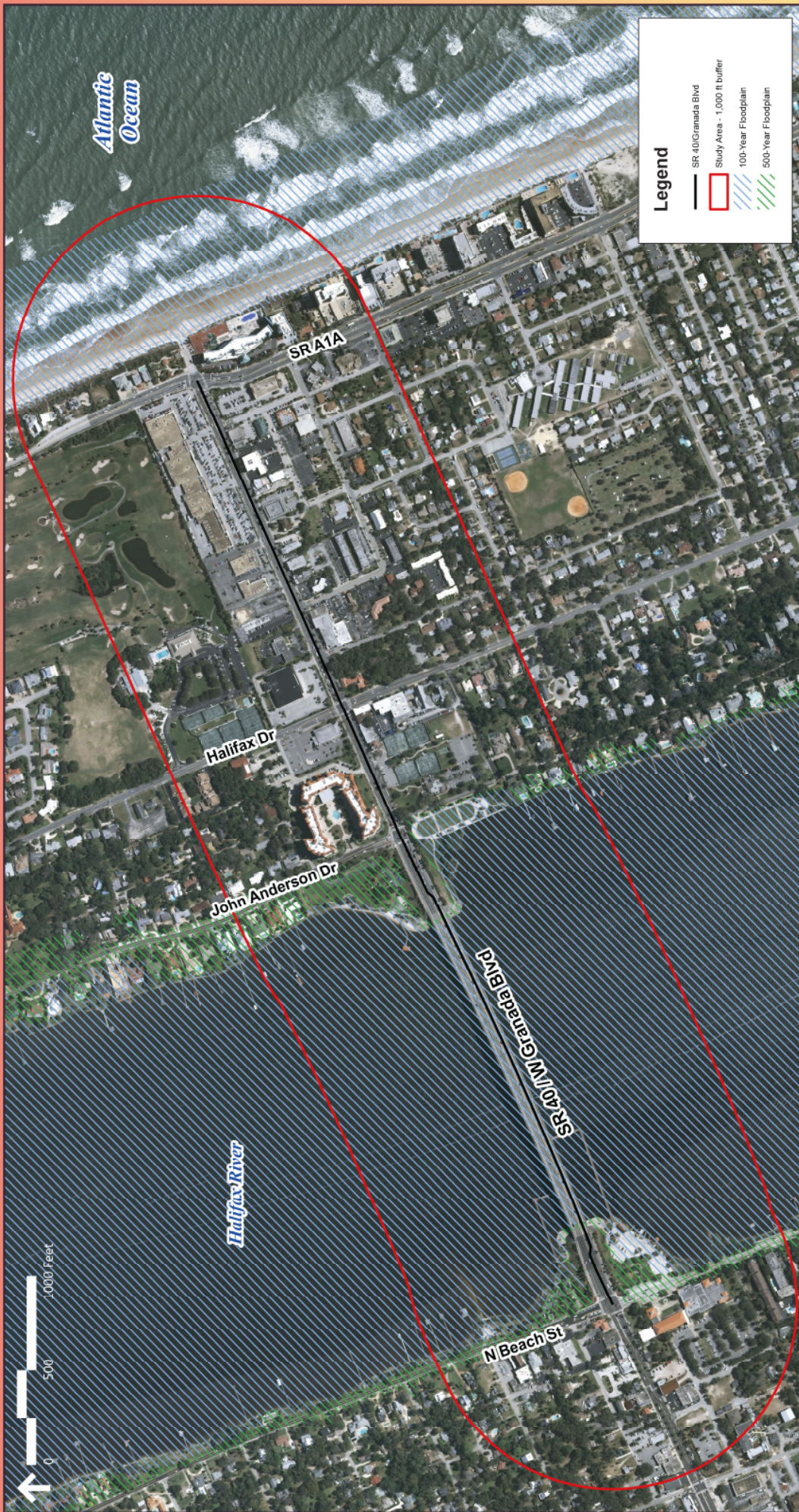


Figure 24
Floodplains Map



2.11 Social Resources

The Efficient Transportation Decision Making (ETDM) tool maintained by FDOT, was utilized to identify social resources within the study area. Social resources are facilities that benefit or serve the public, such as churches, community centers/resources, schools, hospitals, Developments of Regional Impact (DRI), Planned Unit Developments (PUD), cemeteries, and publicly owned lands. The social / community resources within the study area are listed in **Table 6**, and mapped in **Figure 25**.

Table 6: Public Facilities

Facility Name	Facility Type	Address
Ormond Beach Regional Library	Cultural Center	30 S Beach
Gallery Jeanette	Cultural Center	45 W Granada Blvd
Ormond Memorial Art Museum & Gardens	Cultural Center	78 E Granada Blvd
St James Episcopal School	FDOH Group Care Facilities	38 S Halifax Dr
Ormond Beach Union Church Lear	FDOH Group Care Facilities	56 N Beach St
Rockefeller Gardens – The Casements	Florida Parks and Recreational Facility	25 Riverside Dr
Birthplace of Speed Park	Florida Parks and Recreational Facility	21 Ocean Shore Blvd
Ormond Beach Memorial Gardens	Florida Parks and Recreational Facility	78 E Granada Blvd
Bosarvey Drive Public Beach Access	Florida Parks and Recreational Facility	Bosarvey Ave
Bailey Riverbridge Gardens	Florida Parks and Recreational Facility	1 N Beach St
Cassen Park & Boat Ramp	Florida Parks and Recreational Facility	1 S Beach St
Ormond Beach Tennis Center	Florida Parks and Recreational Facility	38 E Granada Blvd
Fortunato Park	Florida Parks and Recreational Facility	2 John Anderson Dr
Granada Fishing Pier	Florida Parks and Recreational Facility	Beach St & Granada Blvd
Rockefeller Gardens	Florida Parks and Recreational Facility	25 Riverside Dr

East Granada Boulevard Beach Access	Florida Parks and Recreational Facility	E Granada Blvd & S Atlantic Ave
City of Ormond Beach City Hall	Government Building	22 S Beach St
US Post Office – Ormond Beach Beachside	Government Building	55 E Granada Blvd
Shores Medical Center – OB	Healthcare Facility	169 Granada Blvd E
Walgreens Pharmacy	Healthcare Facility	205 Granada Blvd E
Ormond Beach Elementary School	Healthcare Facility	100 Corbin Avenue
CVS Pharmacy 501	Healthcare Facility	250 Granada Boulevard E
St James Episcopal School	Public or Private School	38 S Halifax Dr
Happy Hearts Preschool	Public or Private School	56 N Halifax Dr
Ormond Beach Union Church	Religious Center	56 N Beach Street
Unitarian Universalist Society	Religious Center	56 N Halifax Drive
St James Episcopal Church	Religious Center	44 S Halifax Dive
Salty Church Beachside	Religious Center	221 Vining Ct
Ormond Beach	US Census Place	

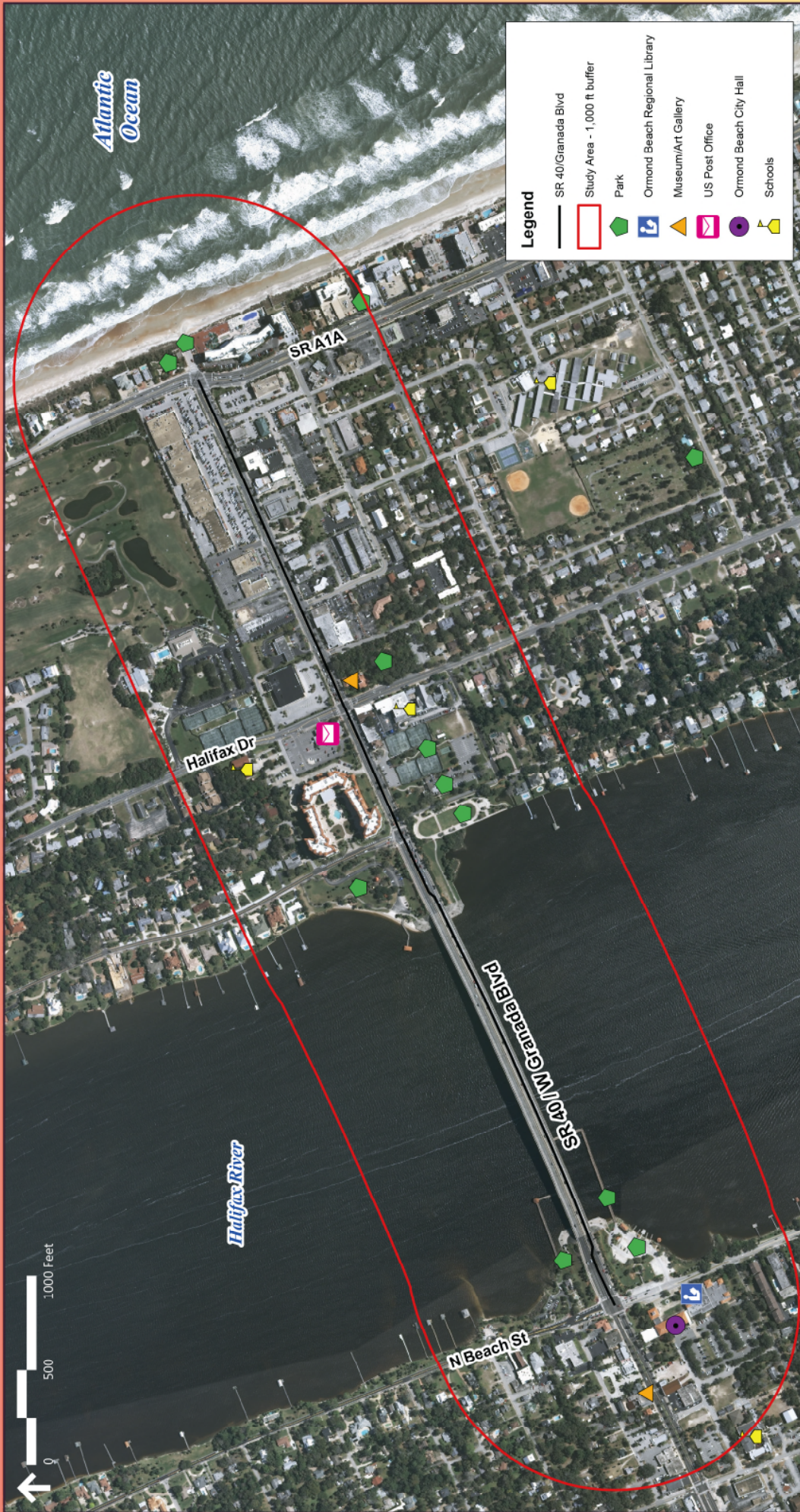


Figure 25
Community Resources Map

An overview of the study area demographics data collected from the American Community Survey (ACS) 2015 are provided in **Table 7**. The demographics within the study area reveal that the median household income is \$37,208. Households with no vehicle make up 6.90 percent of the study area. The majority of the population, 89.43 percent, in the study area are identified as white, and 4.70 percent are identified as African American. The Sociocultural Data Report for the study area generated by the ETDM tool is included in the attachments of this memorandum.

Table 7: Study Area Demographics

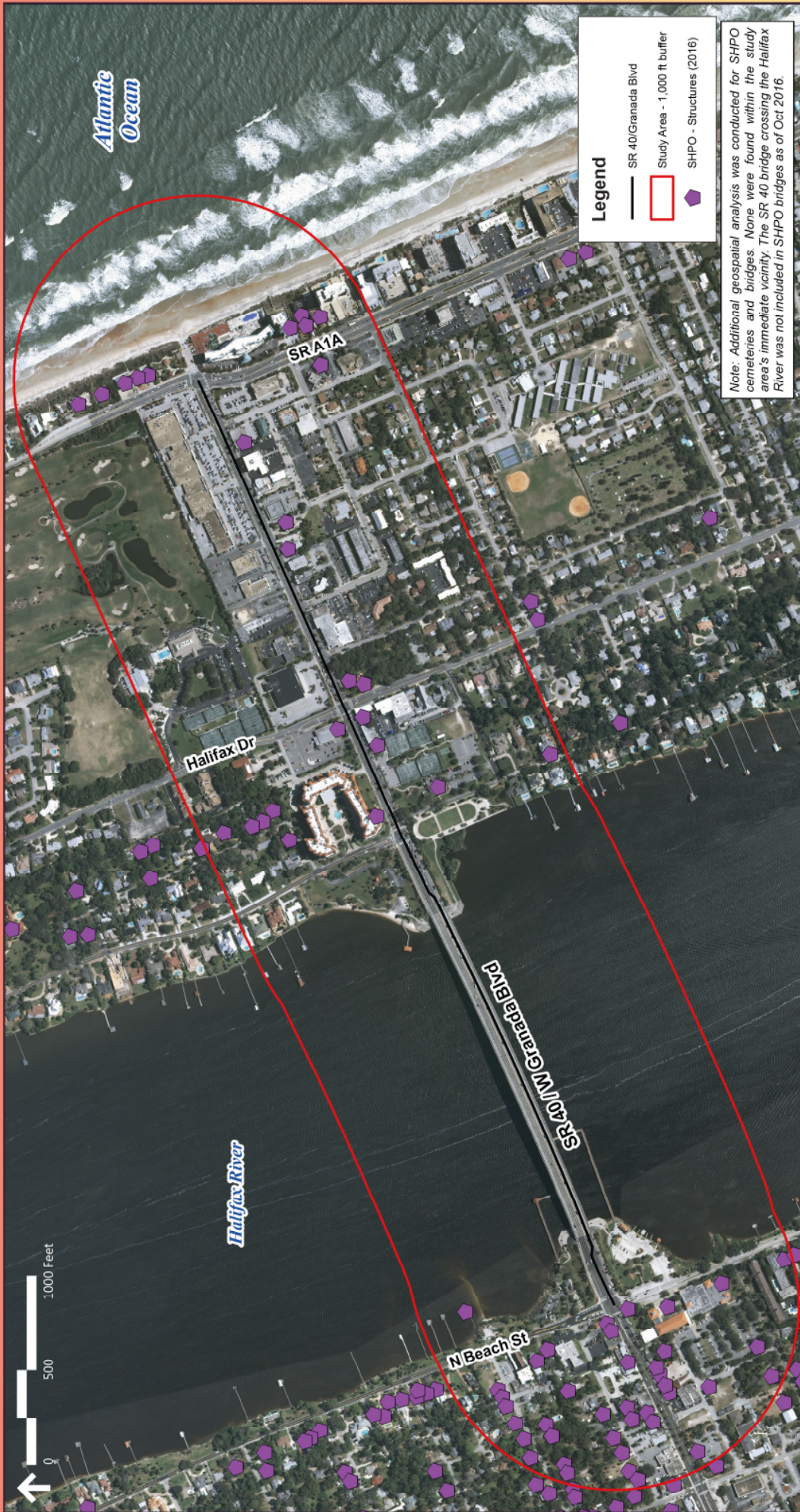
Demographic	Project Study Area
White (Race)*	89.24%
African-American (Race)*	4.70%
“Other”** (Race)*	2.02%
Hispanic (Ethnic Group)*	1.51%
Non-English Speaking**	2.91%
Age 65+*	31.04%
Under age 18*	19.47%
Households w/o car*	6.90%
Median Family Income**	\$37,208

* Source: American Community Survey (2011-2015)

** “Other” includes Asian, Native American, Native Hawaiian & Other Pacific Islander Alone, & Other Race.

2.12 Cultural and Historical Resources

An inventory was compiled of cultural and historical resources found within the study area. These are important with regard to acquiring right-of-way or relocating the roadway. It was determined that 65 Historic Standing Structures exist within the 1,000-foot study area, including six structures listed on the National Register of Historic Places (NRHP). A Cultural Resource Assessment Survey (CRAS) will need to be completed in a future phase of the project in order to better identify potential impacts to any cultural resources within the study area. **Table 8** lists historic structures found along the SR 40 corridor. The location for these historic resources can be seen in **Figure 26**.



Legend

- SR 40/Granada Blvd
- Study Area - 1,000 ft buffer
- ⬠ SHPO - Structures (2016)

Note: Additional geospatial analysis was conducted for SHPO cemeteries and bridges. None were found within the study area's immediate vicinity. The SR 40 bridge crossing the Halifax River was not included in SHPO bridges as of Oct 2016.



Figure 26
Historic Resources Map

Table 8: Historic Standing Structures

Site ID	Structure Name	NRHP?	Site ID	Structure Name	NRHP?
VO00443	Ormond Beach Woman’s Club	Yes	VO00895	51 Lincoln	
VO01692	218-220 E. Granada		VO00896	56 Lincoln	
VO01693	38 W Granada		VO00897	61 Lincoln	
VO01694	48 W Granada		VO00898	70 Lincoln	
VO00741	54 S. Atlantic Ave		VO00900	78 Lincoln	
VO00742	59 S. Atlantic Ave		VO00938	31 New Britain	
VO00743	63 S. Atlantic Ave		VO00939	49 New Britain	
VO00744	63 ½ S. Atlantic Ave		VO00940	50 New Britain	
VO00745	69 S. Atlantic Ave		VO00941	56 New Britain	
VO00748	40 N. Beach		VO00942	65 New Britain	
VO00749	Ormond Yacht Club	Yes	VO00943	73 New Britain	
VO00765	Ormond Beach City Hall		VO00944	83 New Britain	
VO00766	58 S. Beach		VO00945	91 New Britain	
VO00767	96 S. Beach		VO00948	25 Ocean Shore	
VO00799	27 Corbin		VO00949	29 Ocean Shore	
VO00800	50 Corbin		VO00950	33 Ocean Shore	
VO00836	38 E. Granada		VO00951	51 Ocean Shore	
VO00837	58 E. Granada		VO00952	67 Ocean Shore	
VO00838	78 E. Granada		VO00963	Talahloka Hotel	Yes
VO00839	156 E. Granada		VO00964	57 Orchard Ln	
VO00840	Ormond Fire House		VO00965	65 Orchard Ln	
VO00841	2 W. Granada		VO00966	John Anderson Lodge	Yes
VO00842	11-13 W. Granada		VO00967	85 Orchard Ln	
VO00843	Bushman Building		VO01012	87 Riverside Dr	
VO00844	25 W. Granada		VO01028	49 Tomoka	
VO00845	34 W. Granada		VO01029	69 Tomoka	
VO00847	44 W. Granada		VO00188	Ormond Hotel	Yes
VO00848	57 W. Granada		VO00194	The Casements	Yes
VO00849	63 W. Granada		VO00211	Ormond Garage	
VO00850	90 W. Granada				
VO00860	6-8 Halifax				
VO00890	Union Church Fish House				
VO00891	27 Lincoln				
VO00892	31 Lincoln				
VO00893	43 Lincoln				
VO00894	48 Lincoln				

2.13 Contamination Sites

Contaminated sites within the study area were identified using data related to brownfield areas and cleanup sites, made available by the Florida Department of Environmental Protection (2016). As illustrated in **Figure 27**, the entire SR 40 corridor and adjacent properties are located within a brownfield area. A brownfield area represents a contiguous area of one or more brownfield sites, some of which may not be contaminated, that has been designated as such by a local government resolution. Such areas may include all or portions of community redevelopment areas, enterprise zones, empowerment zones, other designated economically deprived areas, and Brownfield Site pilot projects that have been designated by the Environmental Protection Agency.

In May 2013, Ormond Beach Resolution Number 2013-90 was adopted to establish the brownfield area located within the SR 40 study area. The resolution establishes certain financial incentives and local incentives for redevelopment within the brownfield area.

In addition to the brownfield area, three FDEP cleanup sites (2017) were identified within the study area. One petroleum cleanup site was noted at the intersection of Bovard Avenue and Coquina Court. Two dry-cleaning cleanup sites were identified: one at the intersection of Vining Court and Florence Street, and the other along SR 40, west of the Granada Plaza.



Legend

- SR 40M Granada Blvd
- Study Area - 1,000 ft buffer
- SUPERACT Risk Sources
- Storage Tank Contamination Monitoring
- Brownfields

Note: The STCM point dataset indicates all registered petroleum facilities. This coverage includes facilities with registered above-ground or underground storage tanks. This dataset includes both currently and previously regulated facilities. The SUPERACT Risk Sources dataset indicates petroleum and dycleaning facilities investigated as part of the State underground Petroleum Environmental Response Act Program. There were no Waste Cleanup Responsible Party Sites - Closed (2016) identified in the area.



Figure 27
Contamination Sites Map