



# SR 519 (FISKE BOULEVARD) CONCEPT DEVELOPMENT AND EVALUATION STUDY EXISTING CONDITIONS REPORT

FINANCIAL PROJECT NO. 437241-1-12-01  
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## Chapter 1: Introduction

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### 1.1 Report Purpose

In January 2015, the Florida Department of Transportation (FDOT) began a corridor planning study on State Road (SR) 519 (Fiske Boulevard) from County Road (CR) 502 (Barnes Boulevard)/I-95 Northbound Ramps to SR 520 (King Street). Figure 1 illustrates the study area.

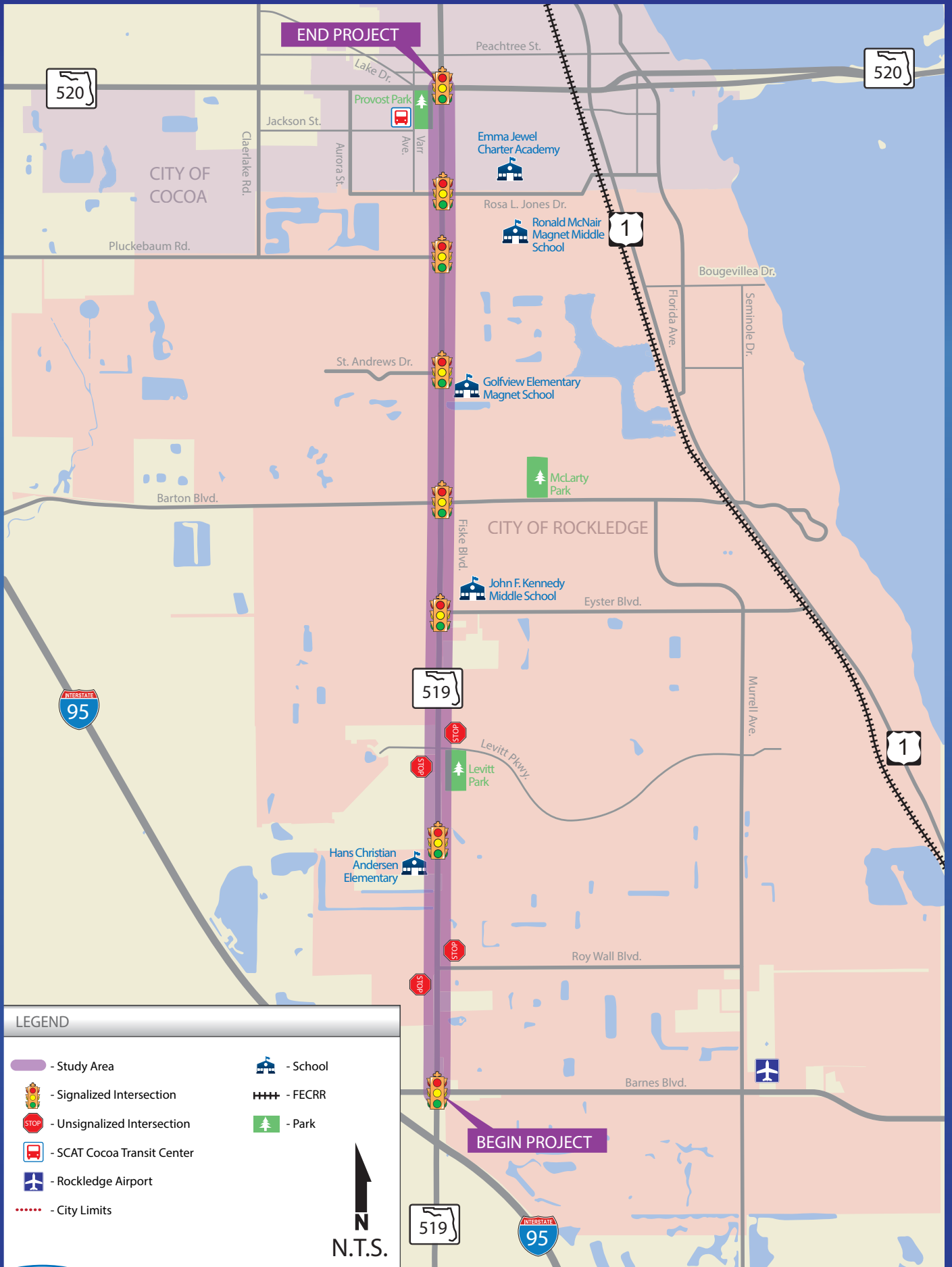
This corridor planning study was a high-level evaluation of safety, environmental, and geometric concerns along Fiske Boulevard to identify possible improvement options and planning level cost estimates. The purpose of the study was to develop a multimodal design-driven vision, rather than a model-driven vision to determine how best to meet the needs of the current and future end users of the corridor, and to establish a long-term plan to guide evolution of the corridor. Multimodal corridor projects are essential to network efficiency, safety, and livability within the context of future transportation needs.

This concept development study is a continuation of the corridor planning study. The objective of this study is to further develop and refine the alternatives identified during the previous study. The purpose of this Existing Conditions Report is to update and document the existing facilities, conditions, and previous studies conducted relevant to SR 519 (Fiske Boulevard).

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### 1.2 Project Background and Purpose

This project has been requested by the Cities of Cocoa and Rockledge to coordinate the development of a multimodal vision for the Fiske Boulevard corridor. This study will involve a community-based evaluation to determine how best to meet the needs of current and future users, and to establish a long-term plan to guide evolution of the corridor which appropriately correlates the balance between land use and transportation planning. This project will be coordinated with local and regional agency partners, such as the Space Coast Transportation Planning Organization (SCTPO), Brevard County, the Cities of Cocoa and Rockledge, Space Coast Area Transit (SCAT), and the City of Cocoa Diamond Square CRA, to develop potential solutions which establish a more multimodal urban environment utilizing a context-sensitive approach.



**LEGEND**

- Study Area
- Signalized Intersection
- Unsignalized Intersection
- SCAT Cocoa Transit Center
- Rockledge Airport
- City Limits
- School
- FECRR
- Park

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# 2

## Chapter 2: Existing Conditions

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### 2.1 Introduction to the Corridor

The Fiske Boulevard Corridor Planning Study is a 4.2 mile-section which passes through the Cities of Rockledge and Cocoa. The corridor study area begins at the CR 502 (Barnes Boulevard)/I-95 Northbound Ramps intersection at the southern end and terminates at the SR 520 (King Street) intersection to the north. Fiske Boulevard serves as a primary north-south route between Viera, I-95 and SR 520 (King Street). Unless otherwise noted, the SR 519 (Fiske Boulevard) study area is defined as a 500-ft buffer east and west of the SR 519 (Fiske Boulevard) corridor.

SR 519 (Fiske Boulevard) is generally a five-lane arterial with varying cross-sections including paved shoulders and curb and gutter, paved shoulder and no curb/gutter or open swale drainage. Travel lanes are generally separated by a center left-turn lane. There are eight signalized intersections along the corridor study area limits.

The character of the corridor is transitional with some commercial/office and a majority of residential land uses. The residential uses generally consist of subdivisions with primary access consolidated along SR 519 (Fiske Boulevard). There are also several schools, churches, parks and recreational areas located along the corridor.

In terms of multi-modal facilities, in general, there are continuous sidewalks along both sides of the corridor with gaps interspersed throughout, and no marked bicycle lanes. Transit is managed by Space Coast Area Transit (SCAT), which operates two routes along this corridor, with an additional two routes which serve the overall study area. Transit stops are typically marked with signage, and in many cases, include benches. Many of the transit stops along SR 519 (Fiske Boulevard) have accessibility challenges.

The remainder of this chapter covers the following topics:

- Summary of Transportation Plans
- Land Use
- Population and Demographics
- Existing Transportation Infrastructure (Roadway, Bike/Pedestrian, Transit)
- Existing Travel Demand Characteristics
- Existing Corridor Operations Summary
- Safety and Crash Analysis
- Existing Corridor Operations Summary Environmental Characteristics

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## 2.2 Summary of Transportation Plans

A review of various transportation plans was performed to identify planned improvements throughout the study area. During this exercise, the following documents were reviewed:

- Space Coast Transportation Planning Organization's (SCTPO) 2040 Long Range Transportation Plan (LRTP);
- SCTPO's Transportation Improvement Plan (TIP);
- FDOT's Five Year Work Program;
- SCTPO's Bicycle & Pedestrian Mobility Plan;
- Space Coast Area Transit's (SCAT) Transit Development Plan; and
- SCTPO's Intelligent Transportation Systems (ITS) Master Plan.

### SCTPO 2040 Long Range Transportation Plan (LRTP)

The SCTPO 2040 LRTP identifies a multimodal range of improvements for Brevard County through 2040.

The SCTPO's 2040 LRTP identifies SR 519 (Fiske Boulevard), from CR 502 (Barnes Boulevard) to SR 520 (King Street), as a multimodal corridor with ITS improvements on its Cost Feasible List.

### SCTPO Transportation Improvement Plan (TIP) FY 2017-2021

The TIP is a priority list of federal and state funded projects which have been scheduled for implementation by the SCTPO. The TIP includes financially feasible multimodal projects which were previously adopted by state and local officials, and transportation agencies funded through FY 2021.

No improvements were identified for SR 519 (Fiske Boulevard) in the TIP.

### FDOT Five Year Work Program

Each year, FDOT develops the Five-Year Work Program in accordance with Section 339.135, Florida Statutes. The Five-Year Work Program is an ongoing process which is used to forecast the funds needed for upcoming transportation system improvements scheduled for the next five years. The development of this Work Program involves extensive coordination with local governments, including Metropolitan/Transportation Planning Organizations and other city and county officials.

No improvements were identified for SR 519 (Fiske Boulevard) in the FDOT Five Year Work Program.

### SCTPO Bicycle & Pedestrian Mobility Plan

The SCTPO Bicycle & Pedestrian Mobility Plan documents future improvements to the bicycle/pedestrian network within Brevard County. It is a synthesis of prior plans, regional projects, and local plans which identifies short- and long-term improvements to address gaps or deficiencies in the bicycle/pedestrian network. More information on bicycle and pedestrian improvements within the study area can be found in Section 2.6.11: Bicycle and Pedestrian Infrastructure of this report.

### SCAT 2013-2022 Transit Development Plan (TDP)

The SCAT 2013-2022 TDP documents future transit improvements throughout Brevard County for the next ten years. Transit improvements can include new routes, expanded hours of operation, or increased frequencies. More information about transit improvements within the study area are documented in Section 2.6.12: Transit Service and Infrastructure of this report.

### SCTPO Intelligent Transportation Systems (ITS) Master Plan

The SCTPO ITS Master Plan documents the region's future ITS needs. The master plan formulated a strategy for the development and maintenance of Brevard County's ITS network with coordination with the FDOT ITS Program and FDOT Transportation System Management and Operations (TSM&O) Program. This report documents proposed ITS improvements for the SR 519 (Fiske Boulevard) corridor, which are summarized in Section 2.6.8: Intelligent Transportation System of this report.

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## 2.2.1 Local Small Area Plans and Community Redevelopment Areas

The Community Redevelopment Agency (CRA) program was created in Florida in 1969 to help communities revitalize generally blighted areas. The Florida Legislature established criteria to allow and encourage CRA redevelopment and revitalization activities when certain conditions exist, including but not limited to the presence of substandard or inadequate structures, higher crime rates than surrounding areas, inadequate infrastructure, insufficient roadways, deterioration of sites or other improvements, and inadequate parking. CRAs established under Florida law (Chapter 163, Part III) within the study area are summarized below.

### Diamond Square CRA

The Diamond Square CRA established a redevelopment plan in 1998, with the most recent update occurring in 2014. The northern portion of the study area, between SR 520 (King Street) and Rosa L. Jones Dr, is located within the City of Cocoa Diamond Square CRA.

Two of the Diamond Square CRA initiatives include enhancing streetscapes and pedestrian connectivity, and creating neighborhood gateways. Specific initiatives include the following:

- Objective 1.4, which identifies the need for a mid-block crossing at Holmes Street, just south of Provost Park.
- Objective 3.3, which identifies street trees along Stone Street, which intersects with SR 519 (Fiske Boulevard). The CRA is currently in the design phase of implementing this improvement, with construction expected to begin in early 2018.
- General coordination with FDOT to implement access management strategies, including reconfiguration of center medians, driveway access points and pedestrian crossings.

### Rockledge CRA

The Rockledge Community Redevelopment Plan, most recently updated in 2012, focuses mainly on the US 1 corridor through the City; however, there are two sub-districts of the CRA which extend west to SR 519 (Fiske Boulevard). The first sub-district, located on the west side of SR 519 (Fiske Boulevard) from Nagle Drive to Pennsylvania Avenue, contains the City's oldest commercial area. The vision for the sub-district includes attracting a new anchor tenant to the Village Green Shopping Center (at the intersection of Fiske and Barton Boulevards) and assembling land to the area north of John F. Kennedy Middle School to encourage mixed-use development, envisioned as a live-work district.

The second sub-district penetrates the study area on the east side of SR 519 (Fiske Boulevard) between Tuckaway Drive/Casa Dolce Casa Circle and I-95. This sub-district consists of Rockledge Marketplace, Lowe's Home Improvement, and a large vacant commercially zoned parcel at the south end of CR 502 (Barnes Boulevard). The City acknowledges this area continues to experience growth and traffic congestion. A key component of this vision is to improve the intersection of SR 519 (Fiske Boulevard) and

CR 502 (Barnes Boulevard), as it is “a significant intersection and serves as the southern entrance” to the City of Rockledge.

**Brevard County**

There are no CRAs located in unincorporated Brevard County, within the study area.

**2.2.2 Developments of Regional Impact**

Information on Developments of Regional Impact (DRIs) was collected from the Florida Department of Economic Opportunity (DEO), Regional Planning Councils, and county governments. A DRI is defined as any development which would have a substantial impact on the health, safety, or welfare of citizens in more than one county, as defined by Chapter 380.06, Florida Statutes.

There is one DRI south of the study area, known as the Viera DRI. This DRI covers approximately 20,646 acres of land and is a mixed-use development; proposed for 31,619 residential units, 3,169,961 square feet of office uses, 3,438,127 square feet of retail and service uses, as well as a hospital, stadium, movie theater, golf courses (72 total holes) and hotels. The Viera DRI has an expiration date of December 29, 2029 and is planned in four phases, summarized below:

**Table 1: Viera DRI Phases 1-4 Development**

Land Use Category	Unit	Phase 1 to 3 Development	Phase 4 Development	Build-Out
Light Industrial	SF	37,112	327,482	364,594
Office/ Warehouse	SF	22,418		22,418
Mini- Warehouse	SF	135,418		135,488
Single Family Residential	DU	9,240	12,781	22,021
Apartments	DU	752	2,918	3,670
Townhome/ Condominium	DU	778	150	928
Senior Housing Detached	DU	2,386	1,207	3,593
Senior Housing Attached	DU	900	213	1,113
Senior Housing Multi-family	DU	294		294
Assisted Living Facility	Beds	956	104	1,060
Hotel	Rooms	128	622	750
Golf Course	Golf Holes	54	18	72
Theatre	Screens	16		16
Hospital	Beds	322		322
General Office	SF	1,772,409	1,732,058	3,504,467
VA Clinic	SF	137,500		137,500
Shopping Center	SF	2,256,030	1,182,097	3,438,127

Source: Viera DRI Land Use Change and Proposed Development Order

Phases 1 and 2 summarized above are completed, phase 3 is currently being developed, and phase 4 has not yet started. No other DRIs are located within, or near the SR 519 (Fiske Boulevard) study area.

## 2.3 Land Use

Existing and future land use patterns along the SR 519 (Fiske Boulevard) corridor are important factors to consider when establishing potential multimodal transportation improvements. This section documents a desktop analysis of the land uses within the SR 519 (Fiske Boulevard) study area. The data used to conduct the inventory of land uses were compiled from the Brevard County Property Appraiser parcel data, US Census, and FDOT District 5 Generalized Land Use Data.

### 2.3.1 Existing Land Use

Existing land uses are summarized in Table 2 and illustrated in Figure 2.

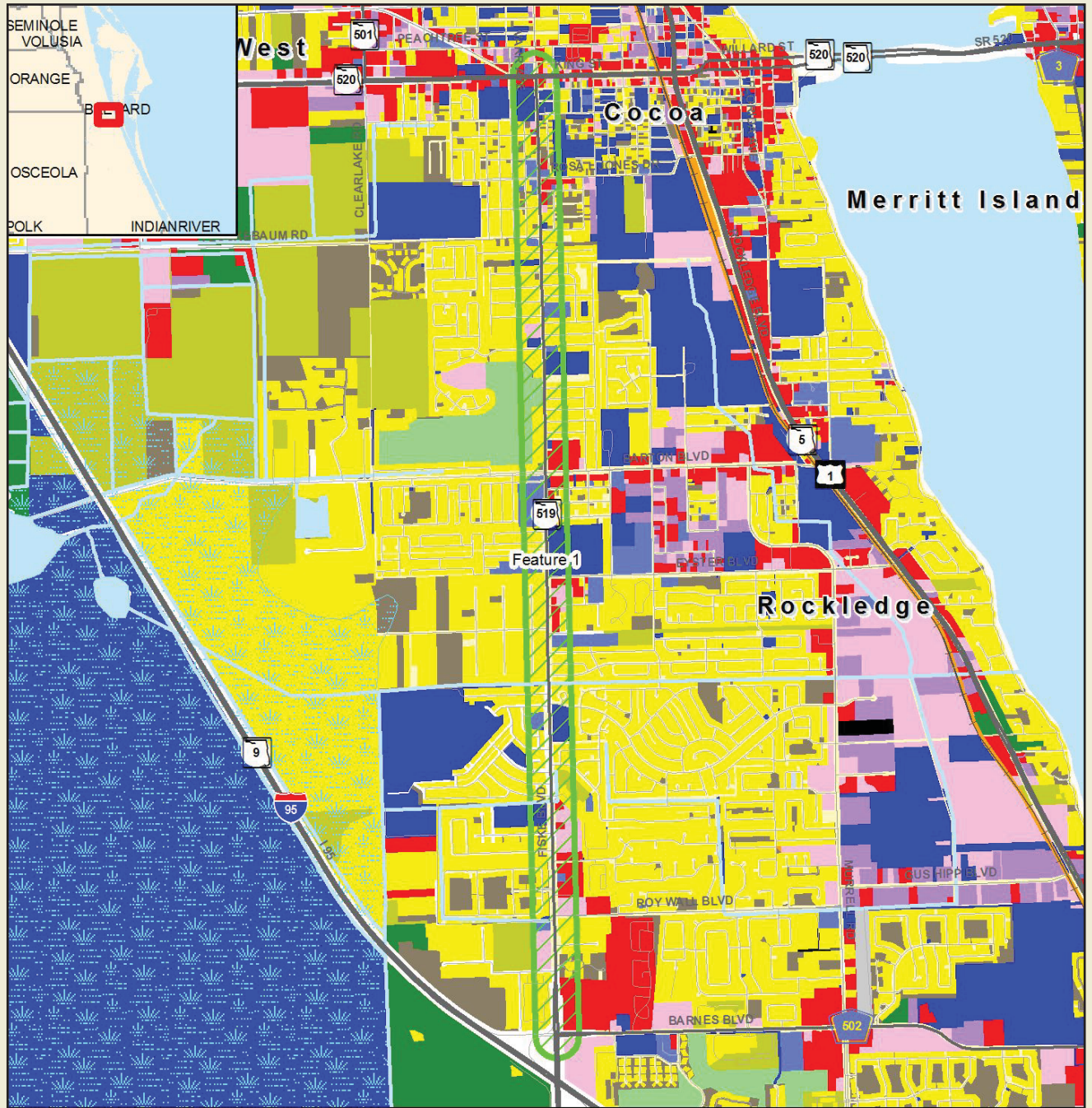
**Table 2: Existing Land Uses**

Land Use	Percent of Study Area (500-ft Buffer)
Residential	45%
Retail/Office	11%
Public/Institutional	21%
Recreation	4%
Vacant	13%
No Data Available	5%

Source: FDOT District 5 Generalized Land Use Data

As identified in Table 2, the predominant land uses in the study area are residential and public/institutional. Public/institutional land uses within the study area include Hans Christian Andersen Elementary, John F. Kennedy Middle, Golfview Elementary, Ronald McNair Middle, and Emma Jewel Charter Academy schools.

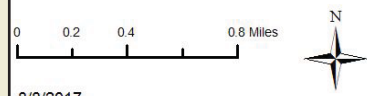
Vacant is the next highest land use. Many of the vacant homesites within the corridor study area are located east of Fiske Boulevard within the City of Cocoa Diamond Square CRA. The Housing Authority of the City of Cocoa (HACoC) owns many of the undeveloped parcels within the Diamond Square CRA. No new construction has occurred since July 2010, when the HACoC experienced major financial difficulties and the effects of a downturn in the economy. The next highest land use category is retail/office.



**Land Use Map**

- Area of Interest
- Agricultural
- Other
- Retail/Office
- Major Road
- Industrial
- Public
- Vacant (Residential)
- Local Road or Trail
- Institutional
- Right-of-Way
- Vacant (Nonresidential)
- Mining
- Recreational
- Water
- Open (Not Agricultural)
- Residential
- No Data

Data Sources:  
 NAVTEQ  
 US Geological Survey  
 Florida Department of Revenue  
 Florida Department of Transportation  
 Florida County Property Appraiser Offices



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### 2.3.2 Future Land Use

The Future Land Uses (FLUs) assigned to the study area (see Figure 3) are generally consistent with the existing land uses. The FLU pattern along the corridor is generally residential (predominantly medium density residential), with some commercial at the northern and southern termini of the corridor, and mixed-use areas near the center.

This pattern is consistent with the adopted FLU maps and designations of the Cities of Cocoa and Rockledge, and Brevard County. FLU designations within the study area are described below.

#### City of Cocoa

The northern terminus of the study area, at the intersection of SR 519 (Fiske Boulevard) and SR 520 (King Street), has been designated as Commercial and Mixed-Use FLU categories along SR 520 (King Street). The FLU east of SR 519 (Fiske Boulevard) is primarily Medium Density Residential, with large Institutional uses. The FLU west of SR 519 (Fiske Boulevard) is primarily Low-Density Residential, with some Recreation/Open Space uses.

#### City of Rockledge

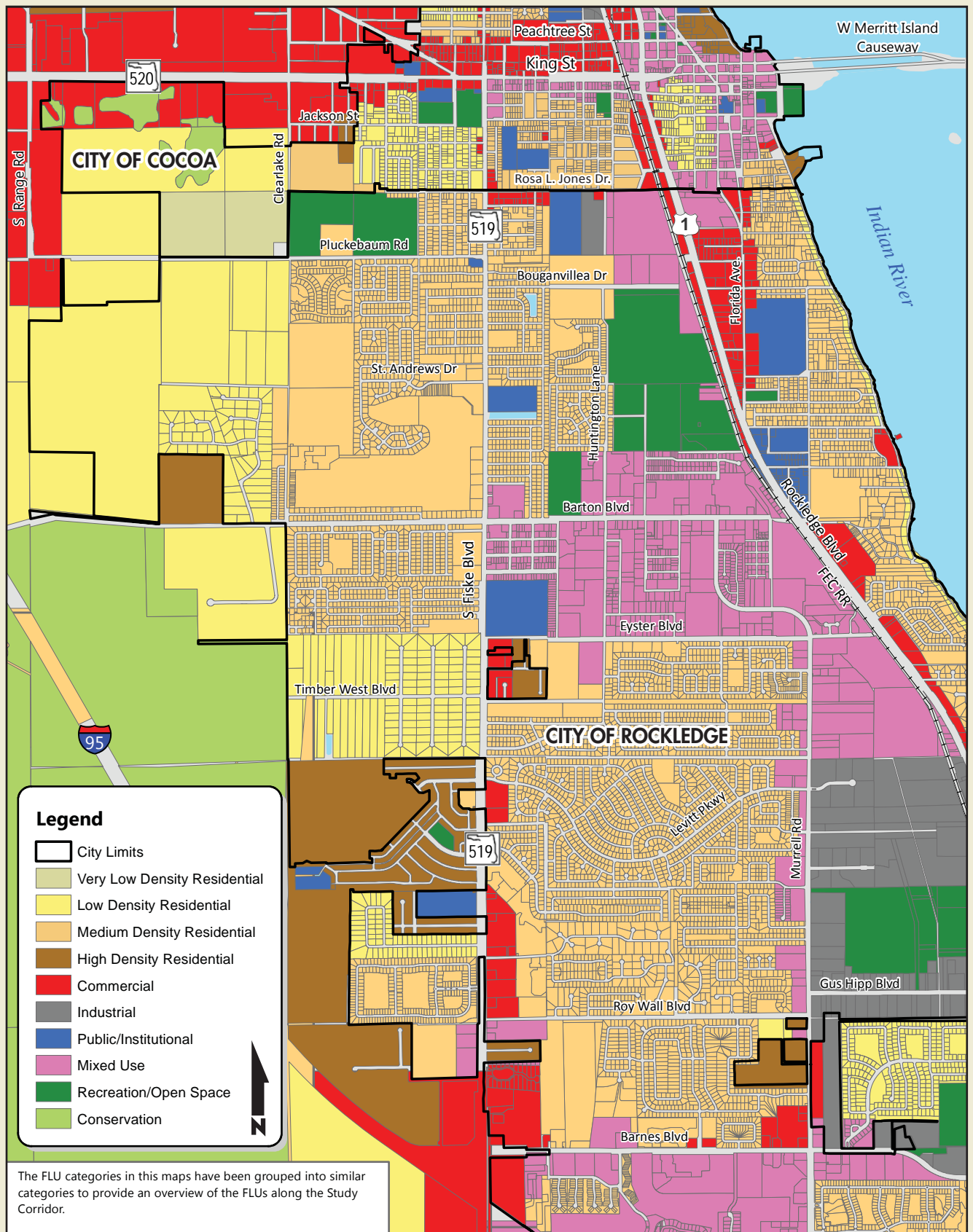
The majority FLUs within the City of Rockledge are designated as residential; primarily Medium Density Residential.

The City of Rockledge has a large Mixed-Use FLU category designated east of SR 519 (Fiske Boulevard) and north of Eyster Boulevard, with a smaller Mixed-Use category south of Roy Wall Boulevard, located east and west of SR 519 (Fiske Boulevard). These residential areas are intended for mixed-use (residential and commercial) redevelopment.

The primary FLU transitions to Commercial at the southern end of the study area.

#### Brevard County

The FLU in unincorporated Brevard County along the southern portion of the study area, west of SR 519 (Fiske Boulevard), is primarily designated as High Density Residential. There are also smaller pockets of Recreation/Open Space and Commercial FLU categories.



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## 2.4 Summary of Supporting Comprehensive Plan Policies

A review of the Comprehensive Plans for the Cities of Cocoa and Rockledge, and Brevard County was performed to assess the degree of adopted policies which support multimodal transportation options, or which specifically the SR 519 (Fiske Boulevard) study area. A summary for the comprehensive plan of each agency is provided below.

### City of Cocoa

The City of Cocoa has adopted multiple Comprehensive Plan Objectives and Policies which focus on multimodal transportation options, furthering the goal of providing safe and convenient transportation options.

Goal 2.1 of the Comprehensive Plan states *“the City shall provide a safe, efficient, and comprehensive multimodal transportation system available to all residents of and visitors to the City of Cocoa,”* and *“when possible, these facilities should be developed so as to enhance the City’s greenways.”* To further this goal, the City also adopted objectives and policies which *“ensure the safe and adequate movement of pedestrians and bicyclists [Objective 2.1.6]”* and to *“coordinate transportation planning with the land uses shown on the Future Land Use Map, the FDOT 5-Year Transportation Plan, the Space Coast TPO Long Range Plan and plans of neighboring jurisdictions [Objective 2.1.9].”* The Plan also identifies *“public transit services shall be based on existing and proposed major trip generators and attractors, new subdivisions, and population growth [Objective 2.1.12].”*

Objective 2.1.9 recognizes the relationship between land use and transportation and the City of Cocoa has adopted policies acknowledging the need to coordinate transportation and land use goals and policies, including a goal to promote infill development and concentrate mixed-use development along State and Federal highways. These objectives are intended to reduce vehicle miles travelled as well as help to maintain the single-family rural character of other areas of the City.

### City of Rockledge

The City of Rockledge’s Comprehensive Plan includes multiple goals with a focus on developing a safe and efficient multimodal transportation system, and states this system should be based on the City’s and surrounding jurisdictions’ FLU plans.

Section 2-B, identifies the purpose of the Transportation Element of the Comprehensive Plan as *“to guide the City of Rockledge in developing a safe and efficient multi-modal transportation system based on the City’s and surrounding jurisdictions future land use plans, which will provide a mixture of private and public transportation facilities.”*

Objective 2.5 of the Transportation Element specifies *“provisions have been adopted to ensure safe and adequate movement of pedestrians and bicyclists.”* This objective also sets the goal for the City to *“seek to lower bicycle and pedestrian accidents by five (5) percent annually.”* Policy 2.5.2 furthers this objective by stating *“bicycle facilities, pedestrian walkways, and associated facilities shall be included as integral components of roadways”* and notes there is a priority for these facilities *“along roadways between residential centers and schools, employment and retail commercial areas, and recreation and other public facilities.”*

The City of Rockledge also seeks to integrate land use planning and traffic circulation by *“continually monitor[ing] and [evaluating] the impacts of existing and proposed future land development on the transportation system in order to achieve integrated management of the land use decisions, traffic circulation*

*impacts, reduce trips and promote alternative land use patterns for energy conservation,” as stated in Policy 2.5.4.*

Section 2.F identifies SR 519 (Fiske Boulevard) as a hurricane evacuation route.

Objective 9.8 of the Capital Improvement Plan indicates improvements for multiple intersections within the Study Area along Fiske Boulevard, including the following:

- Widen CR 502 (Barnes Boulevard) from 2 to 4 lanes (SR 519 [Fiske Boulevard] to Murrell Road)
- Widen Eyster Boulevard from 2 to 4 lanes (SR 519 [Fiske Boulevard] to Huntington Lane)
- Add traffic control at the SR 519 (Fiske Boulevard)/Roy Wall Boulevard intersection
- Add traffic control at the SR 519 (Fiske Boulevard)/Levitt Parkway intersection

Appendix A of the Future Land Use Element also identifies planning areas for the Study Area. One of these planning areas, Planning Area 5, section 60.50 of the City of Rockledge Comprehensive Plan, includes a mixed-use district which will consist of a balanced mix of commercial, recreational, single-family and multi-family residential uses and directly related land uses such as parks, schools, utilities, streets, and other activities to service both the permanent and tourist populations. This planning area identifies the need for bicycle and pedestrian improvements to be made where feasible. Planning Area 8, section 60.80 of the City of Rockledge Comprehensive Plan, is west of SR 519 (Fiske Boulevard) and is intended to remain as single family residential and more rural in nature than the area to the east.

### **Brevard County**

Brevard County has adopted multiple Objectives and Policies in the Transportation Element of their Comprehensive Plan with multimodal transportation options, including complete streets policies and transportation improvements which are safe and accessible for all users.

Policy 3.7 identifies the County will *“maintain and enforce land development regulations that improve the safety of motorists, pedestrians and bicyclists”* by minimizing points of conflict. Objective 4 includes policies to *“encourage multi-modal transportation alternatives that accommodate existing and proposed major trip generators and attractors.”* These include increasing transit as an alternative to roadway widening, establishing parking strategies to encourage transit use, expanding of transit services throughout the County, and emphasizing more bicycle and pedestrian facilities. Objective 11 includes policies which are part of the County’s effort to *“establish Complete Streets policies to enable safe access for the community”* in order to ensure *“the feasibility of providing safe access for all users is considered during design of roadways.”*

Objective 6, also recognizes the *“inter-relationship of land use patterns and transportation needs”* and the County’s efforts to *“implement methods to address land use/transportation interactions.”* Policies to *“analyze the land use and transportation relationships”* in small areas, *“consider the land use/transportation model...to determine future transportation improvement needs”*, and to *“encourage land use patterns and site planning that can be economically and conveniently served by transit, bicycle and pedestrian modes”* are all aimed at furthering this objective.

The Capital Improvement Element of the Comprehensive Plan specifically identifies a CR 502 (Barnes Boulevard) corridor improvement project, including the SR 519 (Fiske Boulevard) intersection at the southern terminus of the Study Area.

## 2.5 Population and Demographics

The demographics of the SR 519 (Fiske Boulevard) study area are important in identifying appropriate transportation improvements. As detailed in the following sections, portions of the corridor are characterized by low income and transit dependent households which rely on other modes of travel besides personal automobile. This section provides an overview of the transportation-related demographics using data collected from the 2010 US Census and the 2015 American Community Survey. The data presented utilizes the smallest analysis area possible (Census Blocks in some cases, Census Tracts in others). Population characteristics and demographic features have been summarized in tabular format and illustrated on maps in the following subsections.

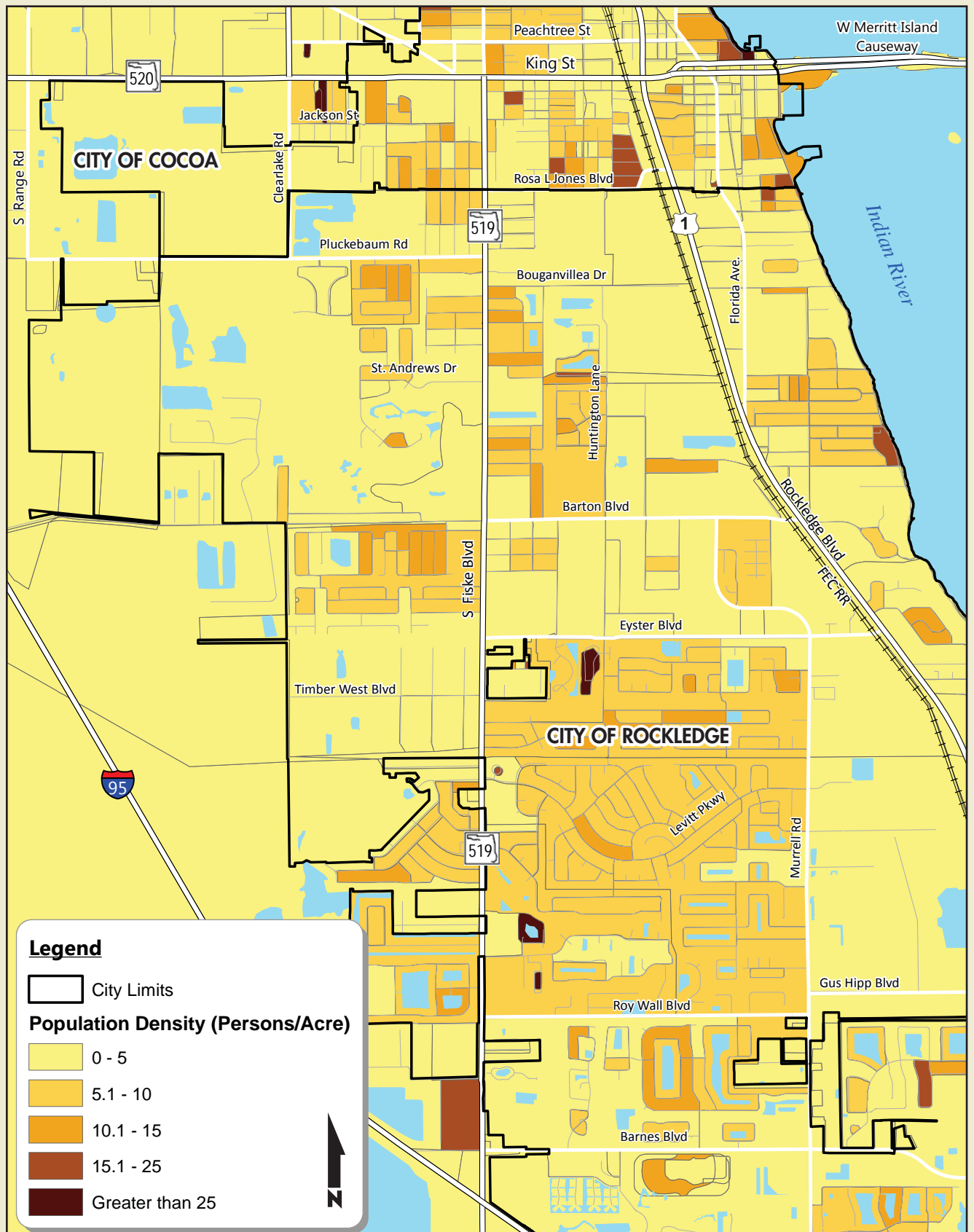
### 2.5.1 Population Characteristics

An overview of the SR 519 (Fiske Boulevard) study area population characteristics is provided in Table 3 and presented graphically in Figure 4 through Figure 6. Figure 4 shows the population density along the corridor, with the densest areas having access via SR 519 (Fiske Boulevard). Figure 5 shows the distribution of the minority population along the corridor study area. The highest percentage of minority residents reside in the City of Cocoa and the very northern portion of the City of Rockledge. Figure 6 shows the distribution of elderly within the corridor study area, which are generally dispersed throughout the corridor.

**Table 3: Population Characteristics**

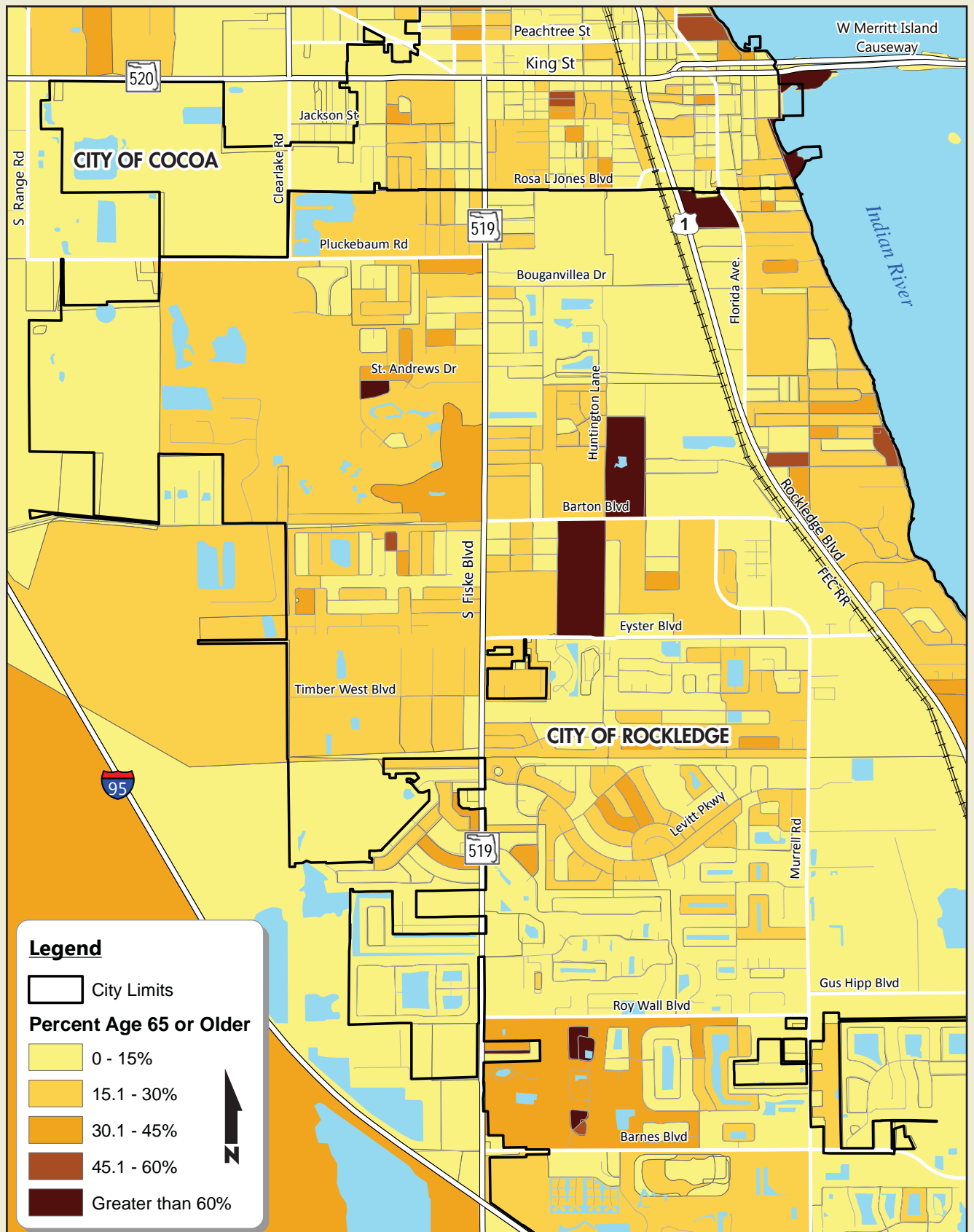
Population Characteristic	Study Area
Total Population	10,715
Population Density (Persons per Acre)	4.73
Total Households	4,203
Average Household Size	2.52
Household Density (Households per Acre)	1.86
Median Age	43
Population Over 65	17.4%
Male	47.5%
Female	52.5%
White	63.5%
Hispanic or Latino	11.1%
Not Hispanic or Latino	52.4%
Black or African American	28.1%
Asian	1.6%
Other	6.8%

Source: 2010 U.S. Census



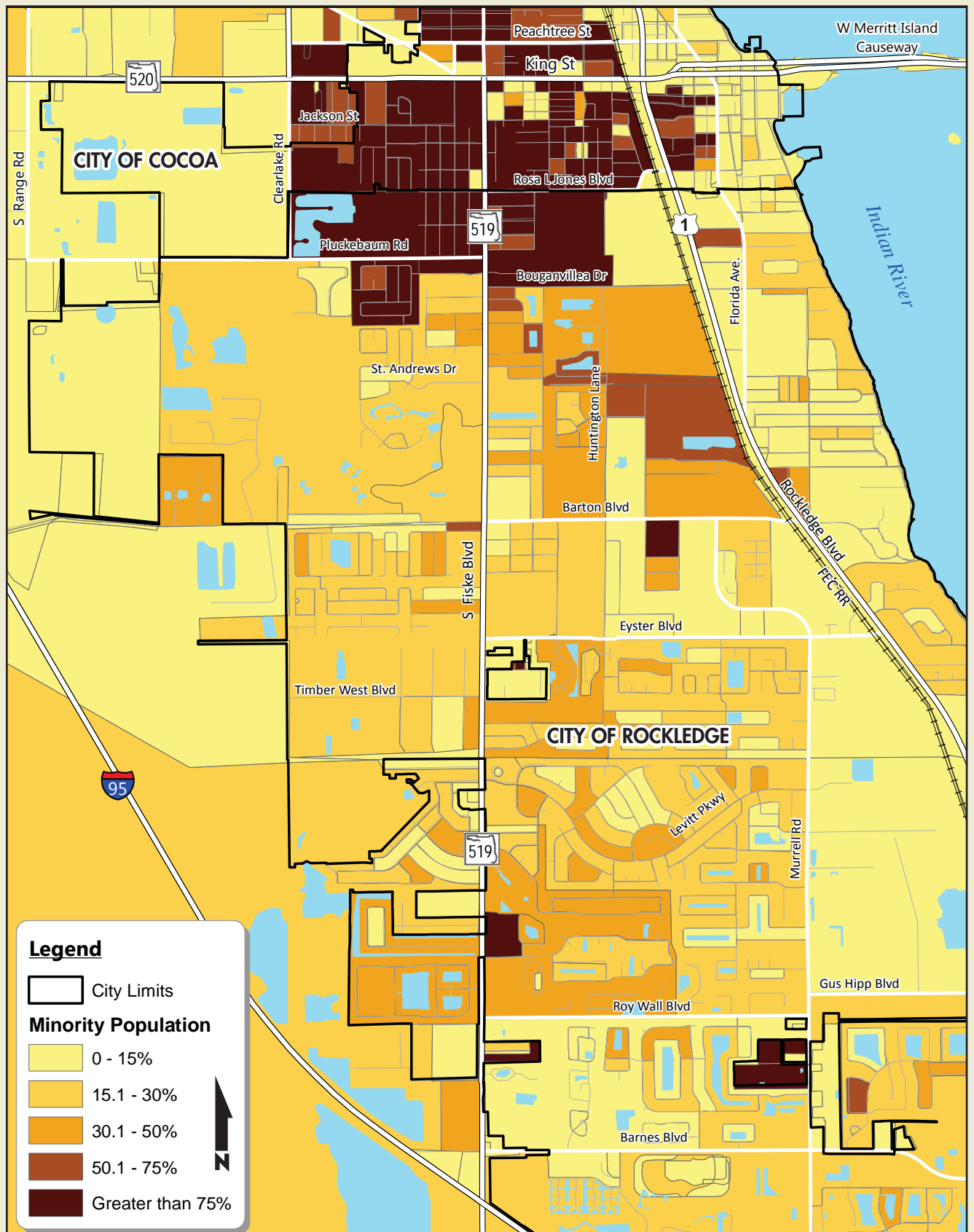
N.T.S.





N.T.S.





N.T.S.



## 2.5.2 Socioeconomic Data

Socioeconomic data was obtained from the 2010 US Census. Table 4 provides an overview of the socioeconomic characteristics. Figure 7 through Figure 10 illustrates these results.

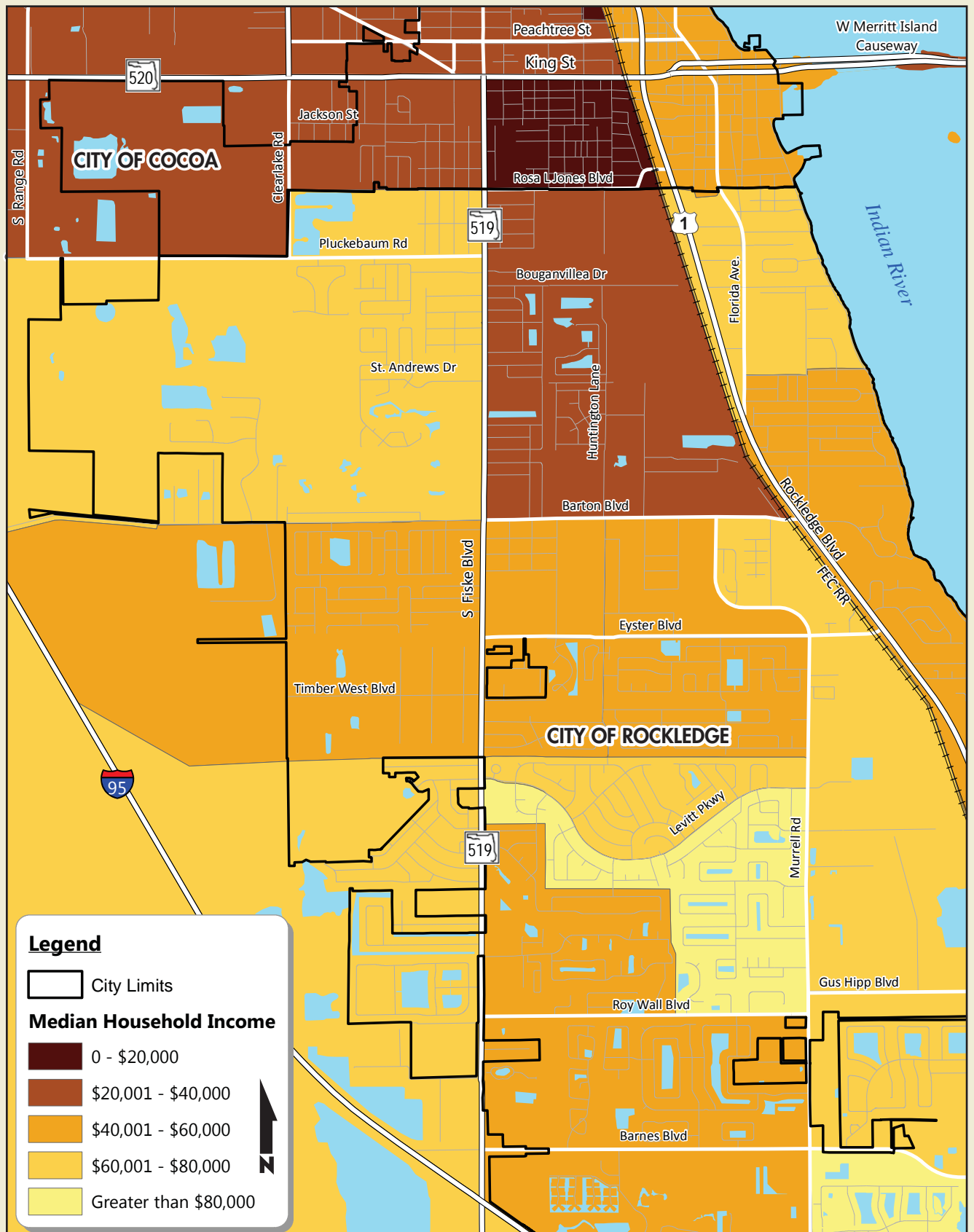
The distribution of median household incomes, households below the poverty line and vacancy rates within the corridor study area are illustrated in Figure 7, Figure 8, and Figure 9. The majority of households with incomes below \$40,000 are within northern Rockledge and Cocoa. The portion of the corridor with the lowest median household incomes (below the poverty level), are within the City of Cocoa Diamond Square CRA. This correlates with the highest number of vacant parcels within the Diamond Square CRA which was identified in Section 2.3.1: Existing Land Use.

Figure 10 shows the distribution of vehicle ownership within the corridor study area. Consistent with the previous data, the majority of households without an automobile are within the City of Cocoa Diamond Square CRA. This emphasizes the need for multimodal improvements along the corridor, especially along the northern segment of the corridor, as most residents in this area are dependent upon other modes of travel.

**Table 4: Socioeconomic Characteristics**

Socioeconomic Characteristic	Study Area
Median Household Income	\$45,763
Households Below Poverty Level	16.4%
Total Housing Units	4,850
Owner-Occupied	53.7%
Renter-Occupied	33.0%
Vacant	13.3%
Households with No Vehicles	10.0%

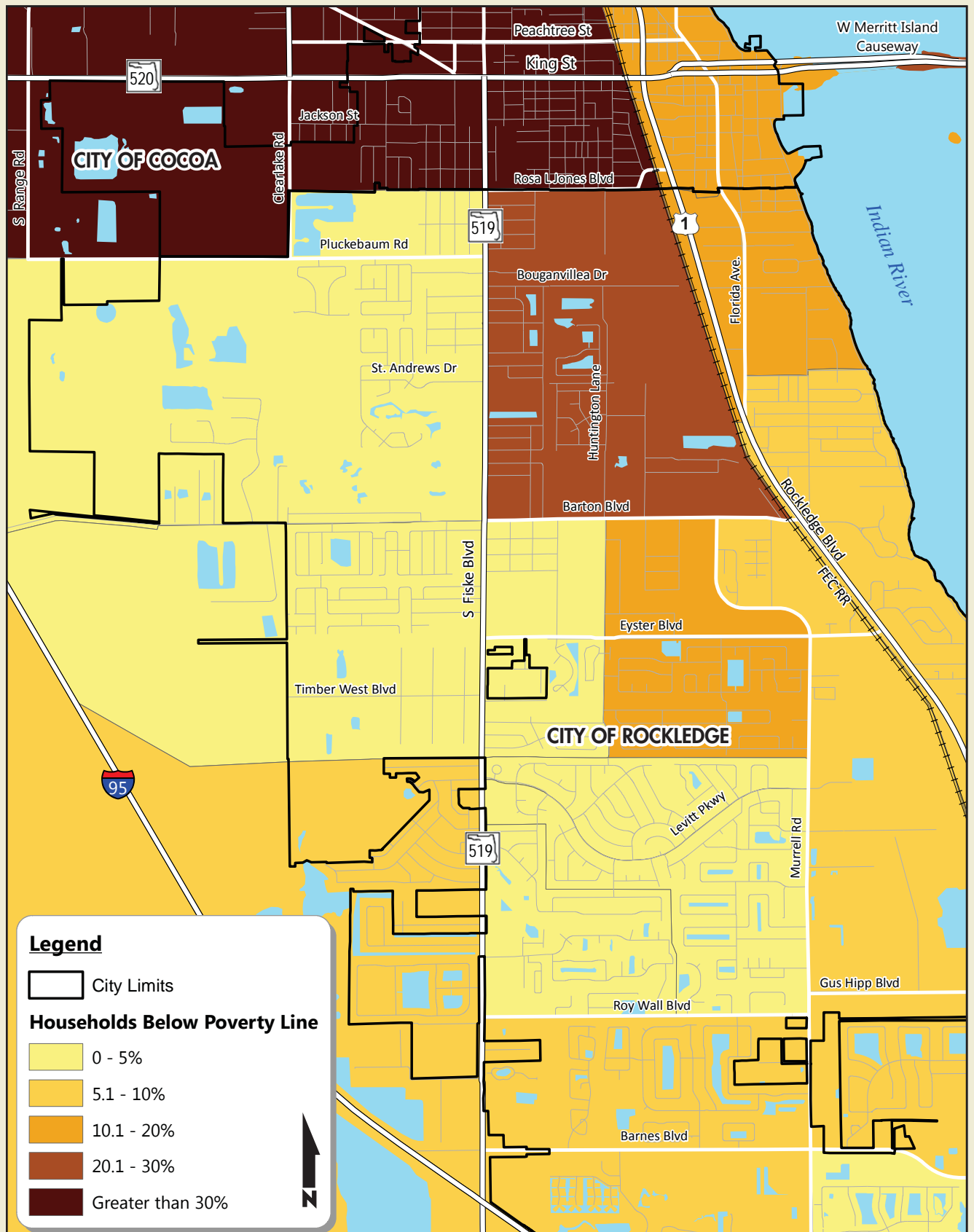
Source: 2010 U.S. Census

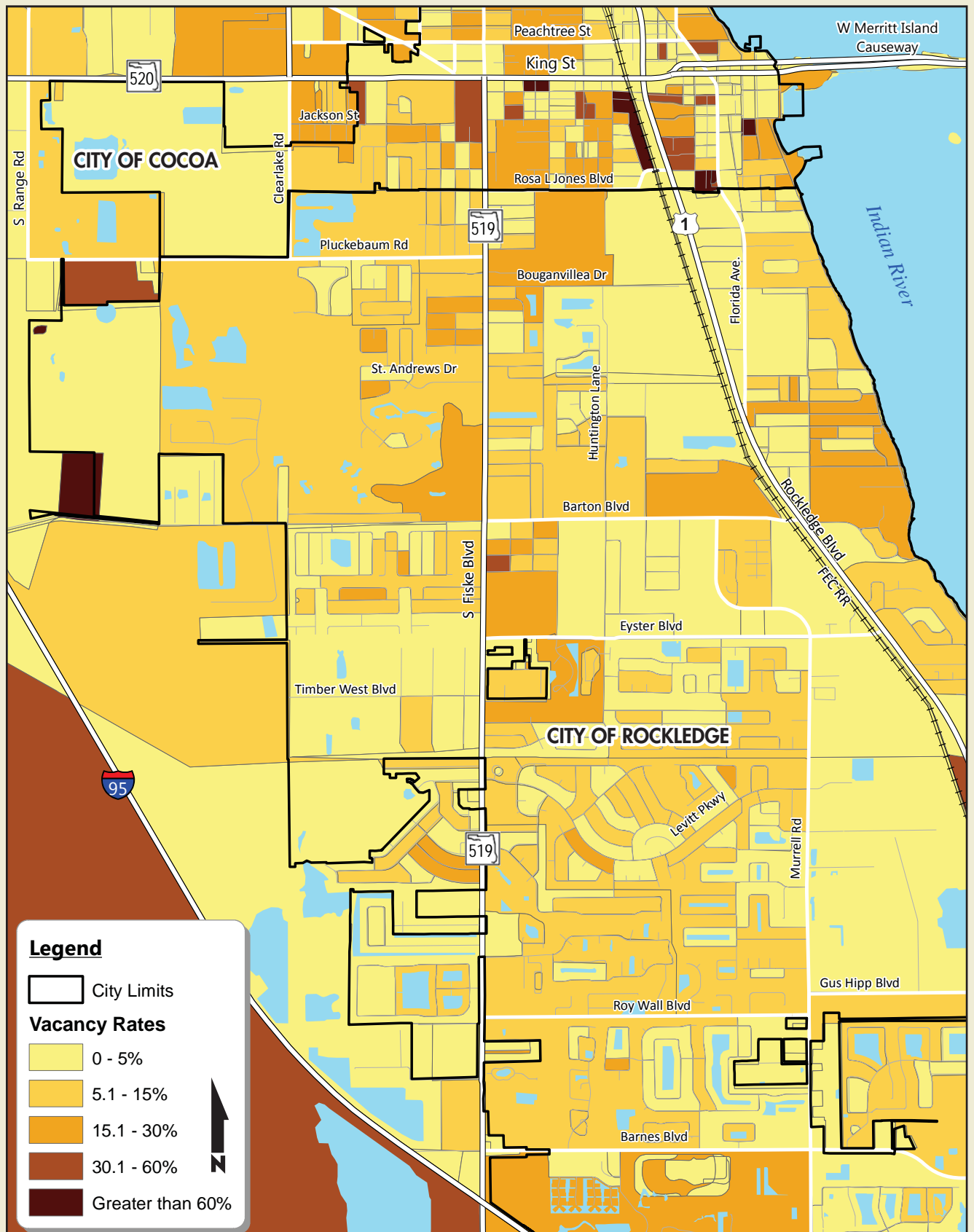


N.T.S.









**Legend**

City Limits

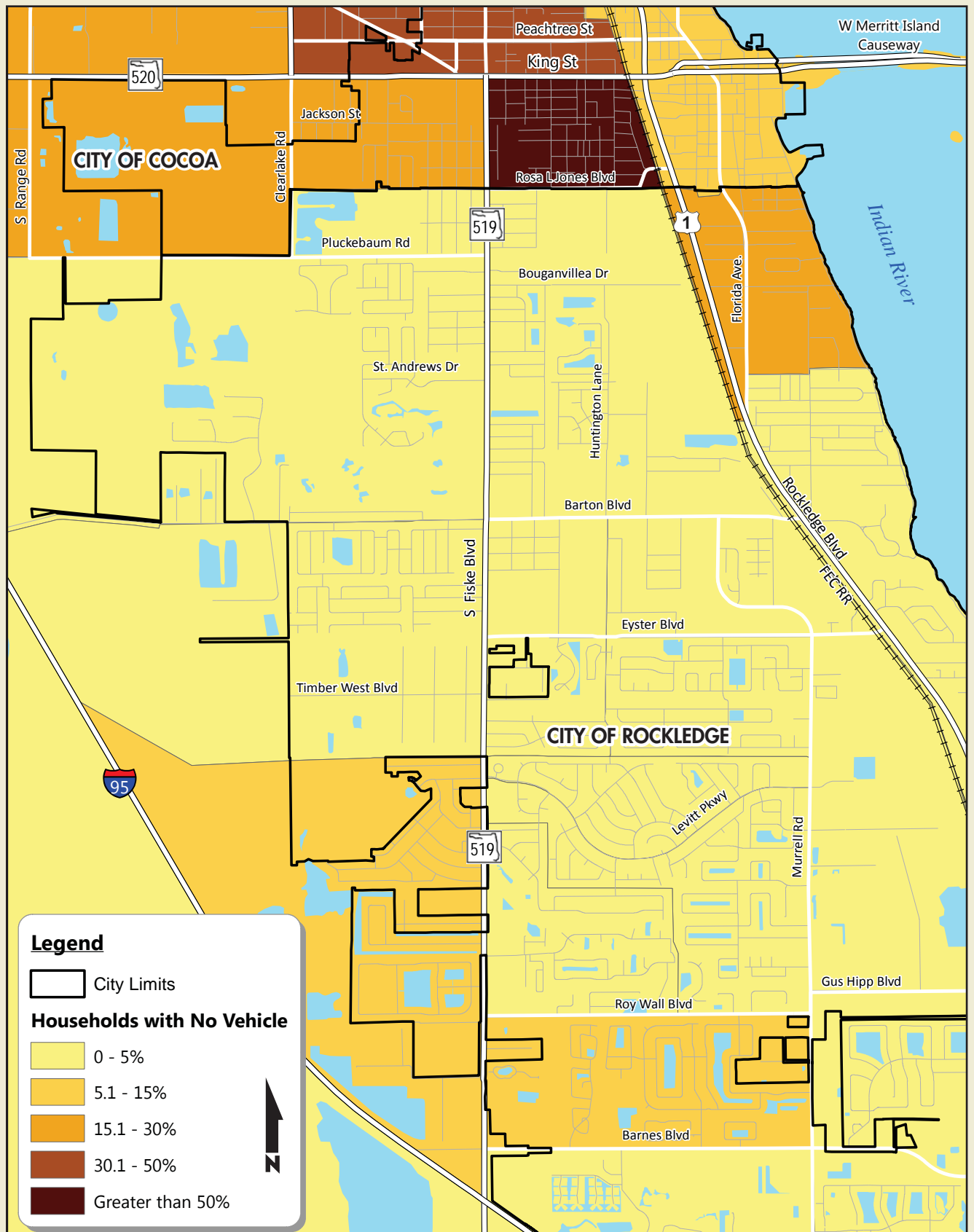
**Vacancy Rates**

- 0 - 5%
- 5.1 - 15%
- 15.1 - 30%
- 30.1 - 60%
- Greater than 60%



N.T.S.





N.T.S.



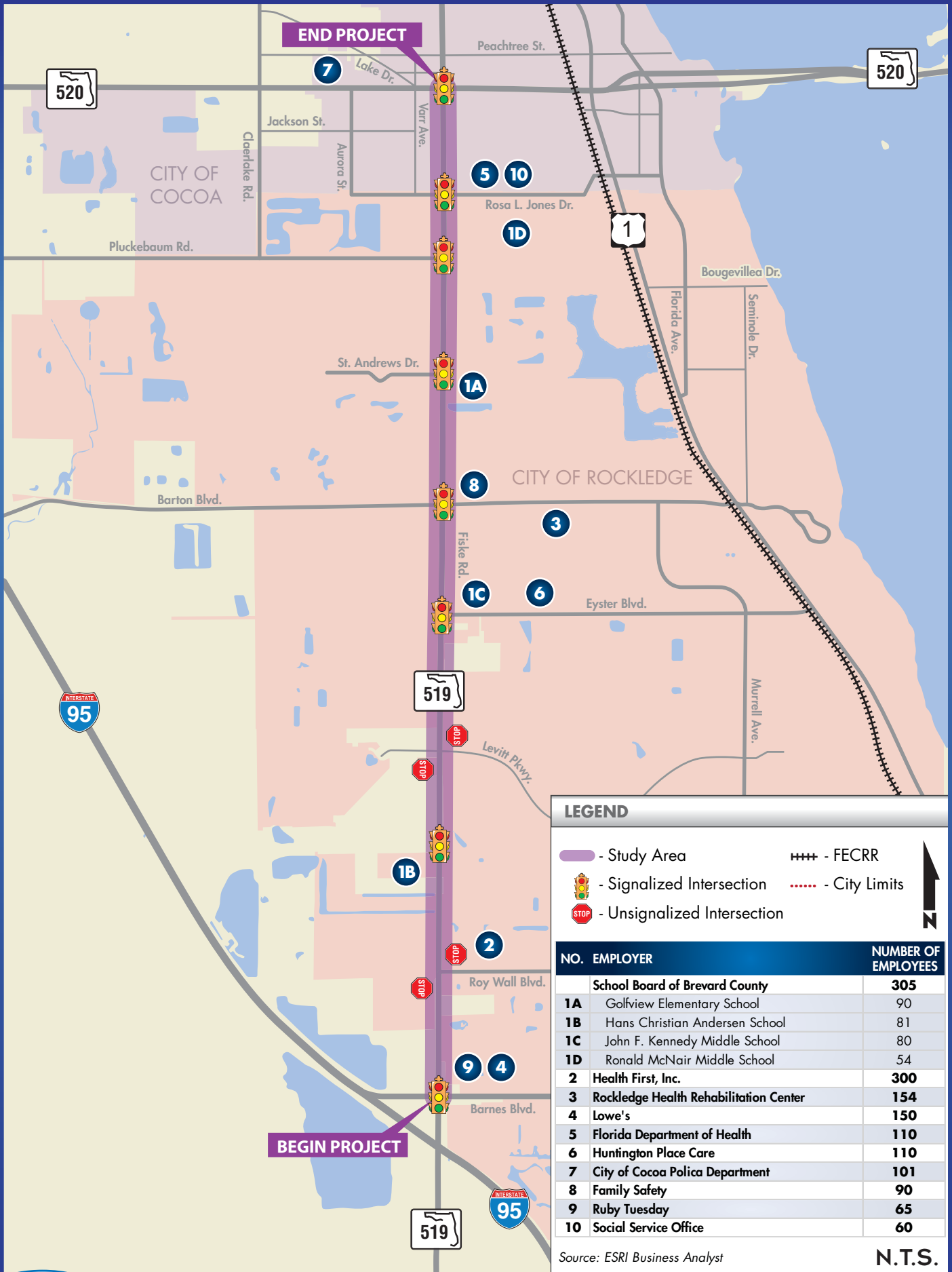
### 2.5.3 Major Employer Types and Activity Centers

The service industry (hotels & lodging, automotive services, motion pictures & amusement, health services, legal services, and education institutions & libraries) employs approximately 194 people along the study corridor. Other major employer types include government, retail trade, finance, insurance, and real estate, and transportation. Table 5 lists the major employer types within the study area. There are no major activity centers within the study area.

**Table 5: Major Employers**

Employer Type	No. of Employees
School Board of Brevard County	305
Health First, Inc.	300
Rockledge Health Rehab. Center	154
Lowe's	150
Florida Department of Health	110
Huntington Place Care	110
City of Cocoa Police Department	101
Family Safety	90
Ruby Tuesday	65
Social Service Office	60

Source: ESRI Business Analyst



## 2.5.4 Commuter Trips by Mode

Understanding how people travel to and from work within the study area is an important initial step in the evaluation of the transportation system’s deficiencies and needs. An evaluation of journey-to-work patterns using the U.S. Census helps measure auto-dependency and mode choice (or lack thereof). Table 6 summarizes how individuals commute to work within the study area.

**Table 6: Commuter Trips by Mode**

Mode of Commute	Percent in Study Area
Private Vehicle	82.2%
Carpooled	8.3%
Public Transit	0.6%
Bicycle	0.7%
Walking	1.1%
Other Means	1.4%
Worked at Home	5.0%

Source: US Census Bureau, 2015 American Community Survey 5-Year Estimates

Much like other communities in Florida, there is a strong reliance on the private vehicle resulting in low transit use. As shown in Table 6, approximately 82.2 percent of the workers within the study area commute to work using their private vehicles, and less than one percent rely on transit. In comparison, more workers worked at home (5.0 percent telecommute to work) than used transit. In terms of bicyclists and pedestrians, a combined percentage of 1.8 percent of the workers walk and bicycle to work.

## 2.6 Existing Transportation Infrastructure

This section includes an evaluation of the physical conditions of the corridor. The existing physical features were collected through field inspection, FDOT design/construction plans, FDOT Straight Line Diagrams (SLDs), and data provided by the Cities of Cocoa and Rockledge. This information is intended to identify current roadway design issues and aid in identifying study area roadway segments and intersections requiring closer examination as part of the corridor future recommendations. Existing features of the SR 519 (Fiske Boulevard) corridor which do not meet current design standards are considered deficient and may be recommended for continued monitoring, rehabilitation, or upgrading.

This section also documents transit, bicycle and pedestrian mobility along the study area corridor.

### 2.6.1 Roadway Classification, Jurisdiction, and Posted Speed

SR 519 (Fiske Boulevard) from CR 502 (Barnes Boulevard)/I-95 Northbound Ramps to SR 520 (King Street) is classified as an “urban principal arterial other” and is owned and maintained by the FDOT. The posted speed on the corridor from CR 502 (Barnes Boulevard)/I-95 Northbound Ramps to south of Cardinal Avenue is 45 mph. The remainder of the SR 519 (Fiske Boulevard) corridor is posted as 40 mph. The City of Rockledge has identified SR 519 (Fiske Boulevard) as a hurricane evacuation route.

### 2.6.2 Right-of-Way

The roadway right-of-way (ROW) has been inventoried for the roadway corridors within the study area using available right-of-way data. Table 7 lists the variation in available right of way for the Fiske Boulevard corridor.

**Table 7: Right-of-Way Summary**

Roadway	Roadway ID	From	To	ROW Width (Feet)
SR 519	70014000	Barnes Blvd	Tuckaway Dr	188 to 316
		Tuckaway Dr	Martin Rd	188 to 190
		Martin Rd	Levitt Pkwy	190 to 200
		Levitt Pkwy	Kings Post Rd	150 to 200
		Kings Post Rd	Eyster Blvd	150
		Eyster Blvd	Pennsylvania Ave	117 to 167
		Pennsylvania Ave	Barton Blvd	130
		Barton Blvd	Pluckebaum Rd	100 to 134
		Pluckebaum Rd	Barbara Jenkins St	100 to 118
		Barbara Jenkins St	SR 520	115 to 120

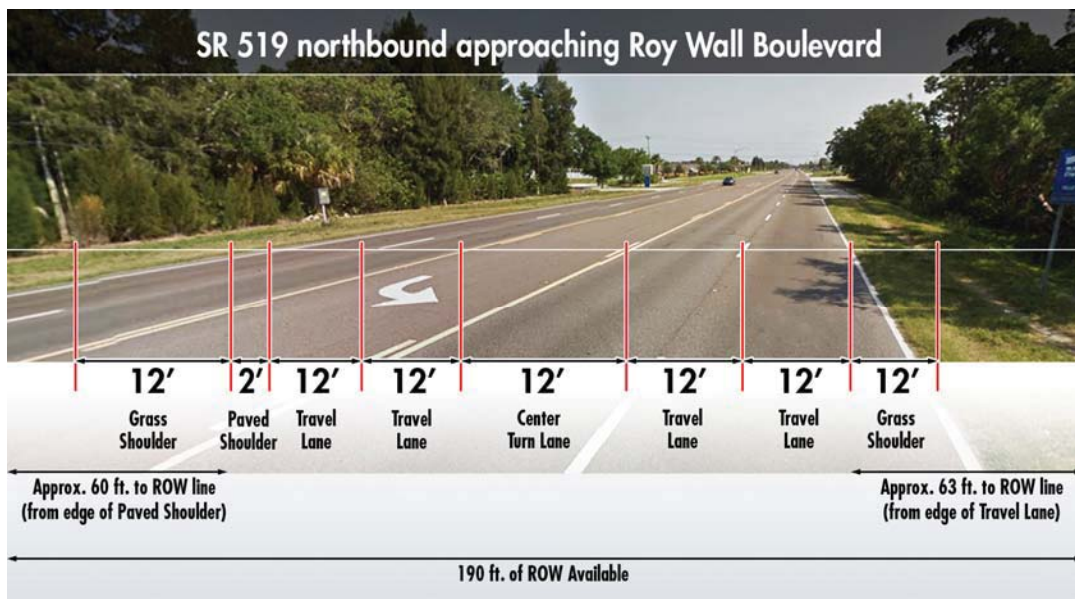
Source: FDOT 3R Files

### 2.6.3 Typical Section

The typical sections found along the study area corridor are illustrated below in Figure 12 through Figure 14.

Figure 12 shows the typical section along Fiske Boulevard just south of Roy Wall Boulevard. This section consists of a varying width median (40 feet at CR 502 [Barnes Boulevard], 18 feet at Tuckaway Drive and 17 feet at Roy Wall Boulevard). There are directional left turns between Tuckaway Drive and CR 502 (Barnes Boulevard). The median transitions from a grass median to a raised concrete median approximately 345 feet south of Tuckaway Drive. Between Tuckaway Drive and Roy Wall Boulevard, the median becomes a continuous center-turn lane.

**Figure 12: Typical Section South of Roy Wall Boulevard**

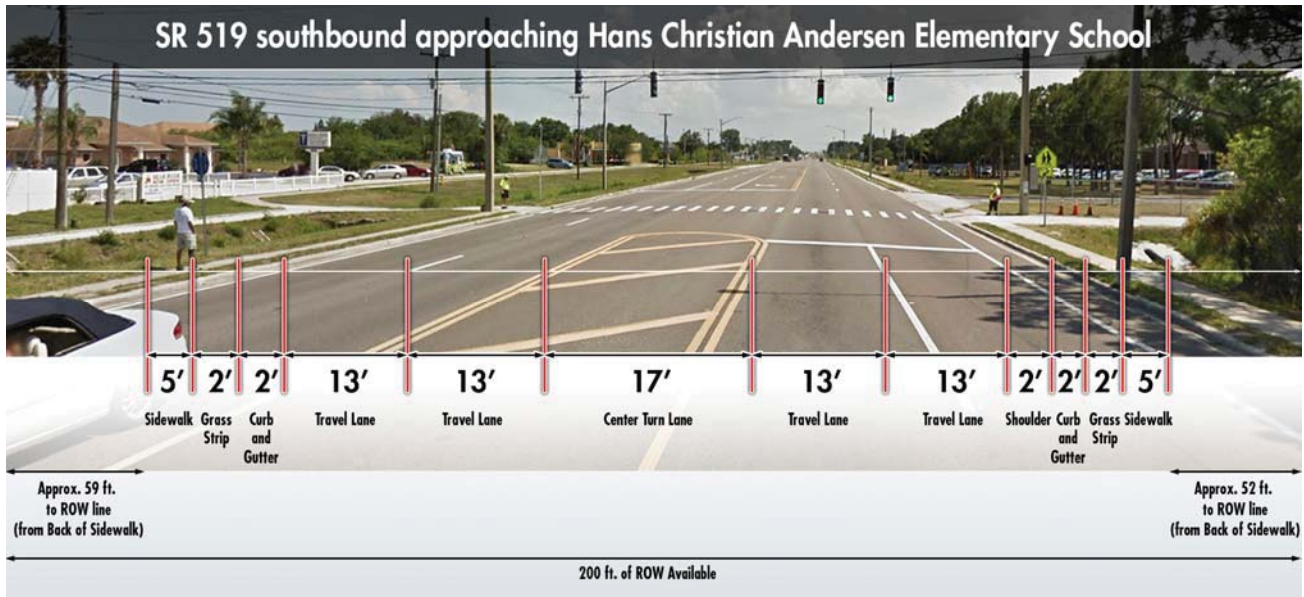


Source: Compiled by VHB.

Figure 13 shows the typical section north of Hans Christian Andersen Elementary School. There are slight exceptions to the typical section between Roy Wall Boulevard and Genevieve Avenue. The median type is a 17-foot continuous center-turn lane, with curb and gutter along both sides of SR 519 (Fiske Boulevard). North of Swiss Pointe Boulevard to Rosa L. Jones Drive, the typical section slightly varies with a 14 to 15-foot continuous center-turn lane and curb and gutter.



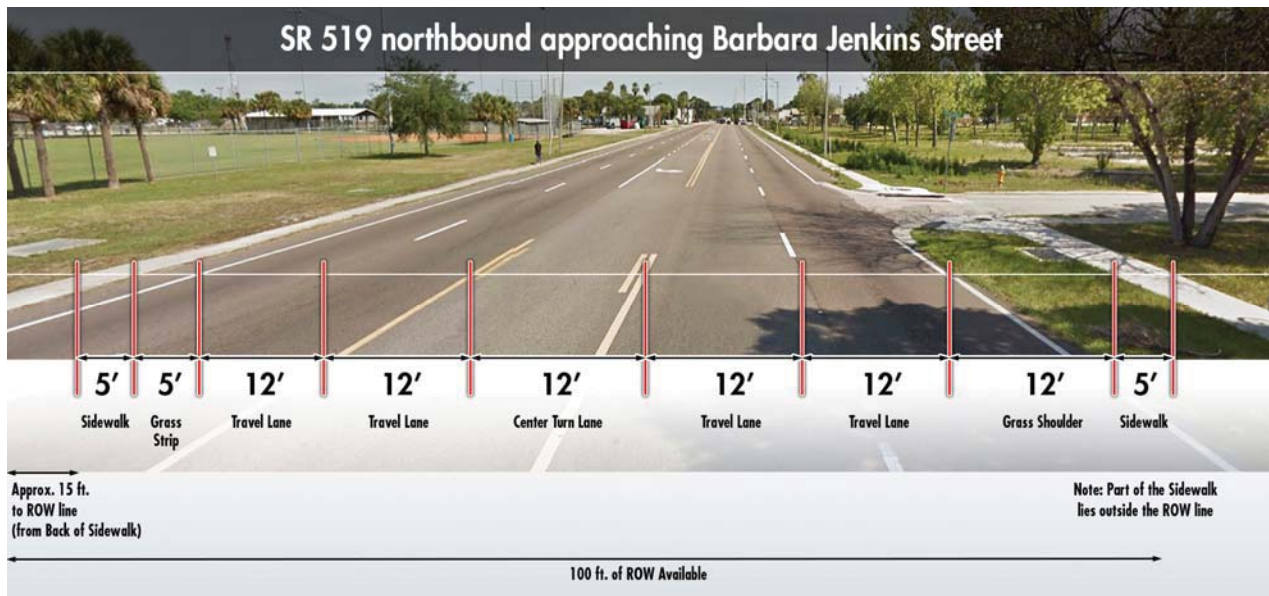
Figure 13: Typical Section North of Hans Christian Andersen Elementary School



Source: Compiled by VHB

Figure 14 shows the typical section south of Barbara Jenkins Street. There are slight exceptions to the typical section between Rosa L. Jones Drive and SR 520. The median type is a continuous 12-foot center-turn lane, without curb and gutter. The shoulder varies between paved to unpaved with various widths between four feet and 12-feet.

Figure 14: Typical Section South of Barbara Jenkins Street



Source: Compiled by VHB

## 2.6.4 Access Management

FDOT classifies access on state roadways using a seven-tier access management system established in Chapter 14-97, Administrative Rules of the Department of Transportation, State Highway System Access Management Classification System and Standards (Rule 14-97). The classification system ranges from Access Class 1, reserved for limited access freeways, to Access Class 7, assigned to lower priority state highways in areas which are already highly urbanized. This classification system assigns standards for driveway connections, spacing, median opening spacing, and signal spacing.

Table 8 shows the approximate limits for Access Class categories for the study area corridor and corresponding posted speed limits (MPH). The spacing standards for each Access Class as per FDOT are shown in Table 9. These Access Classes and posted speeds dictate the allowable spacing of signalized intersections, pedestrian crossing opportunities and local street connections for the Corridor Study Area. The most restrictive Access Class (1) is for limited access roadways and allows for no signalized intersections or driveways. The least restrictive Access Class (7) allows signalized intersections at 1,320-foot (1/4-mile) spacing.

**Table 8: FDOT Access Management Classifications and Posted Speeds**

Roadway	Limits	Access Class	Posted Speed
Fiske Boulevard	I-95 Interchange, NB Off Ramp (MP 0.420) to North of Cardinal Avenue (MP 2.800)	4	45
	North of Cardinal Avenue (MP 2.800) to SR 520/King Street (MP 4.604)	4	40

Source: FDOT Straight Line Diagram.

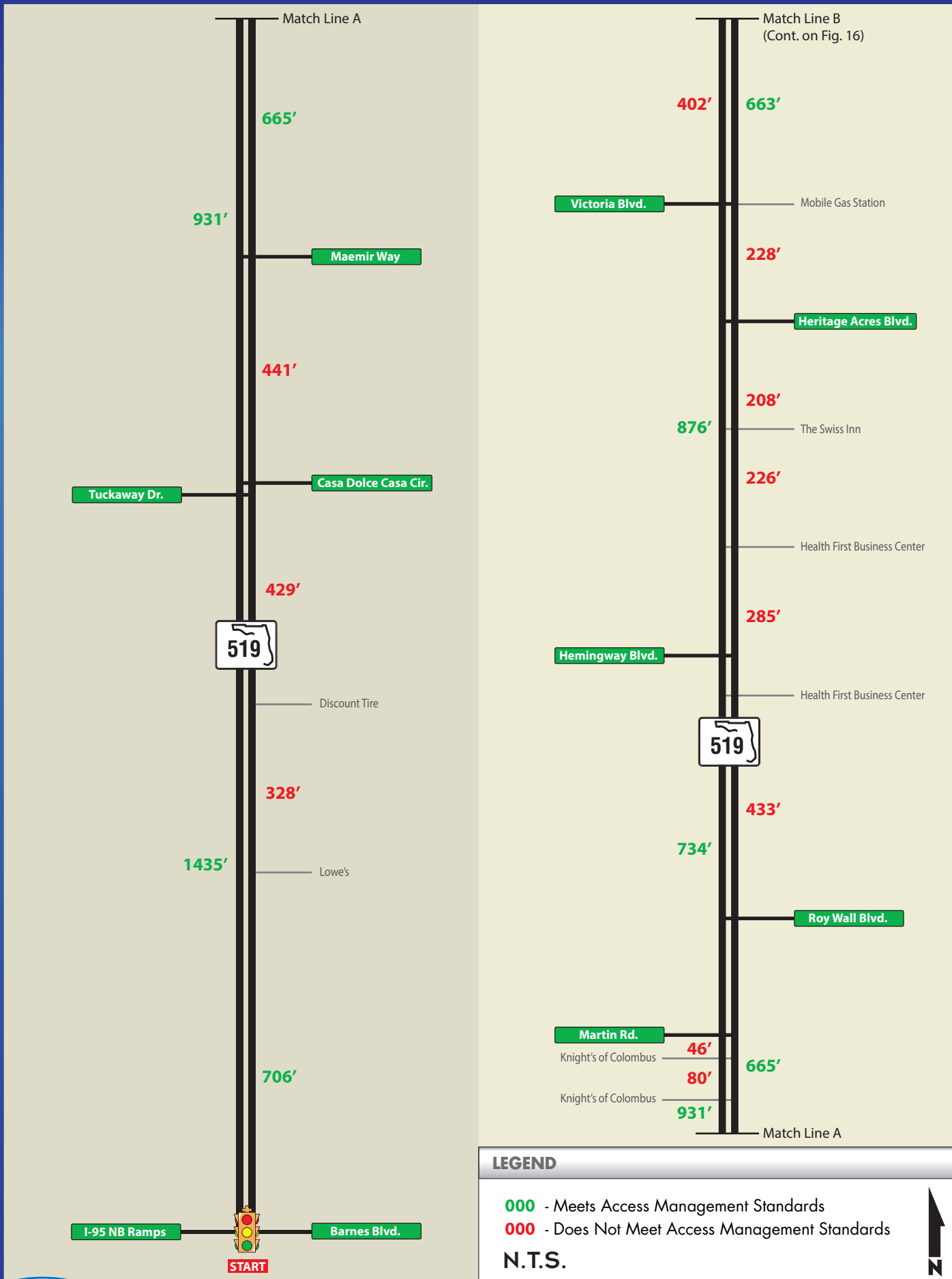
**Table 9: Access Class Spacing Standards**

FDOT Access Management Class	Minimum Connection Spacing (feet)	Minimum Median Opening Spacing (feet)		Minimum Signal Spacing (feet)
		Directional	Full	
Class 4	660/440 <sup>1</sup>	N/A	N/A	2,640

Source: Section 14-97.003, Florida Administrative Code

<sup>1</sup> Greater than 45 MPH / Less than or equal to 45 MPH

SR 519 (Fiske Boulevard) serves many abutting land uses, as discussed previously in Section 2.3. The presence of closely spaced driveways along an arterial and the entering and exiting vehicle movements creates conflict points for vehicles, pedestrians and bicyclists. While necessary to provide access to abutting land uses, there are instances where access management, or a consolidation of driveways to mitigate the conflict points, are recommended to improve mobility and safety. For this reason, a survey of the driveway/connection, median opening, and signal spacing along the study area corridor was completed. Figure 15 through Figure 22 illustrate the existing access management and whether the median, connection, and signal spacings are currently satisfying access management standards.

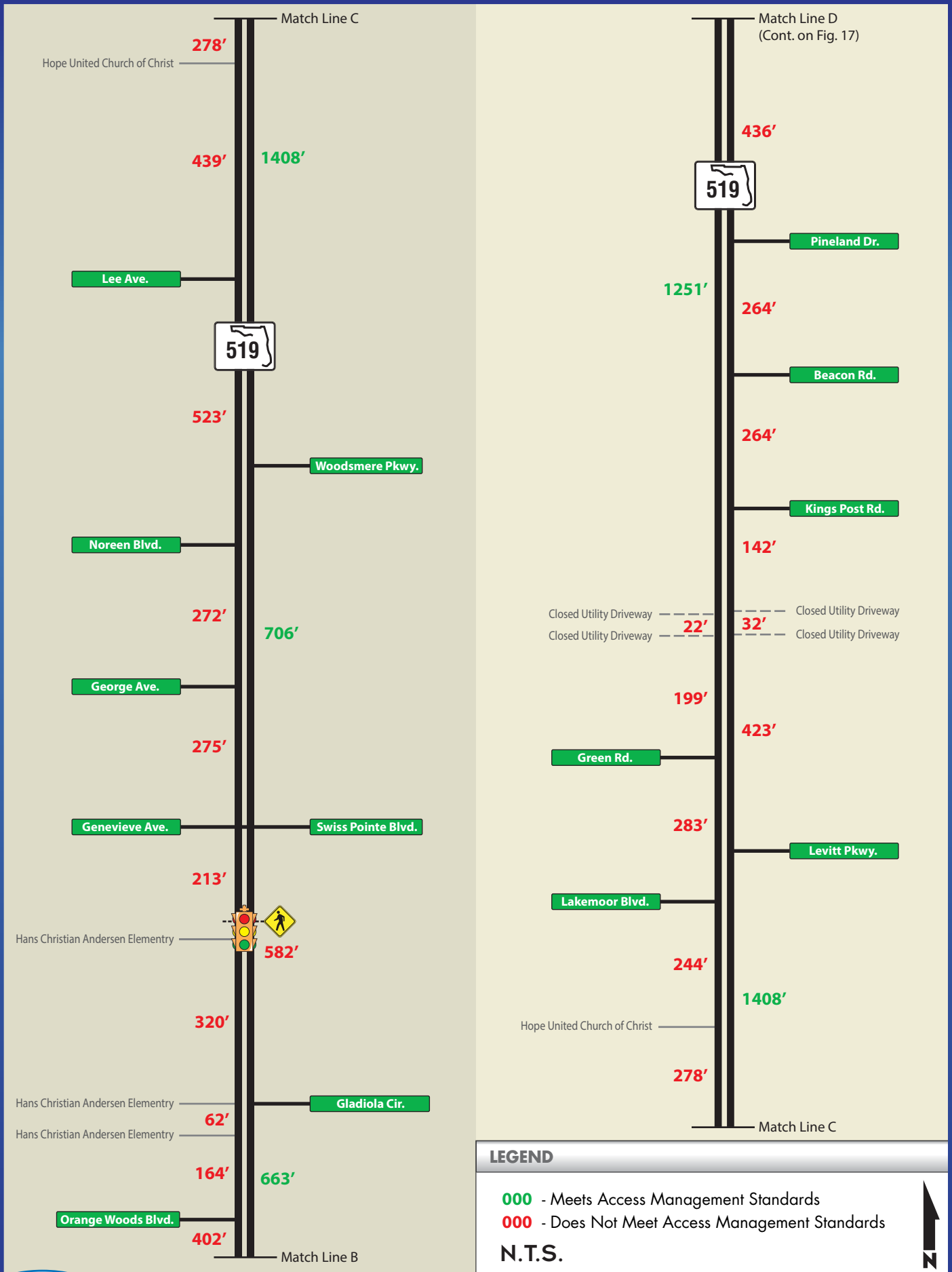


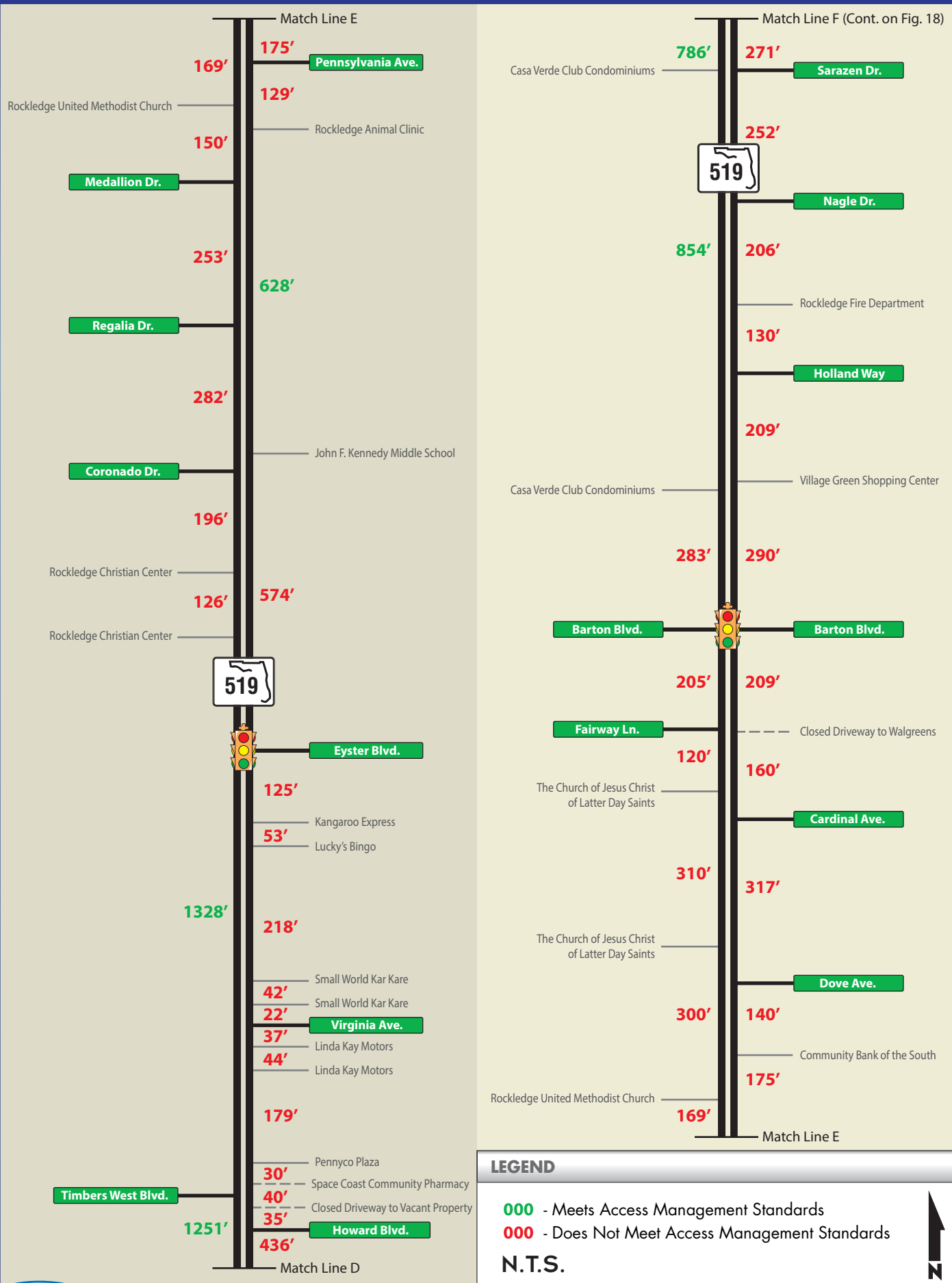
**LEGEND**

- 000 - Meets Access Management Standards
- 000 - Does Not Meet Access Management Standards

**N.T.S.**



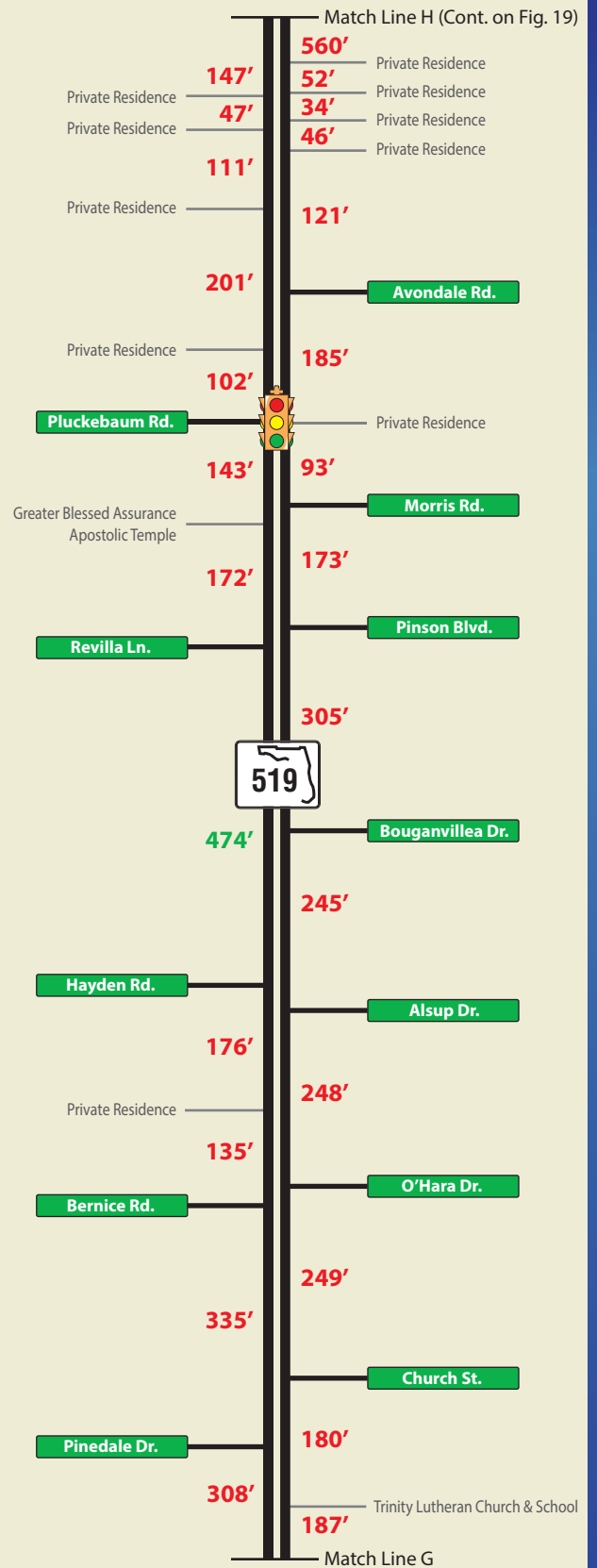
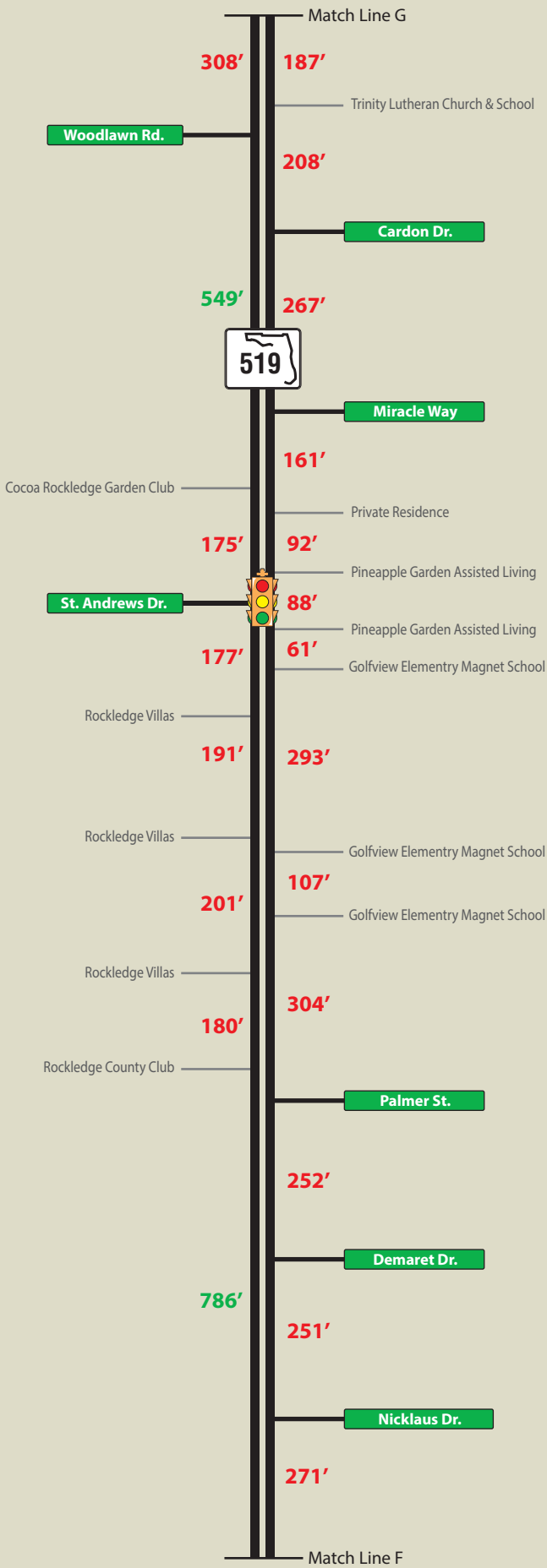




**LEGEND**

- 000 - Meets Access Management Standards
- 000 - Does Not Meet Access Management Standards
- N.T.S.

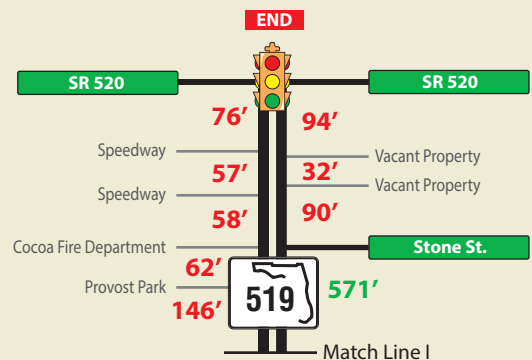
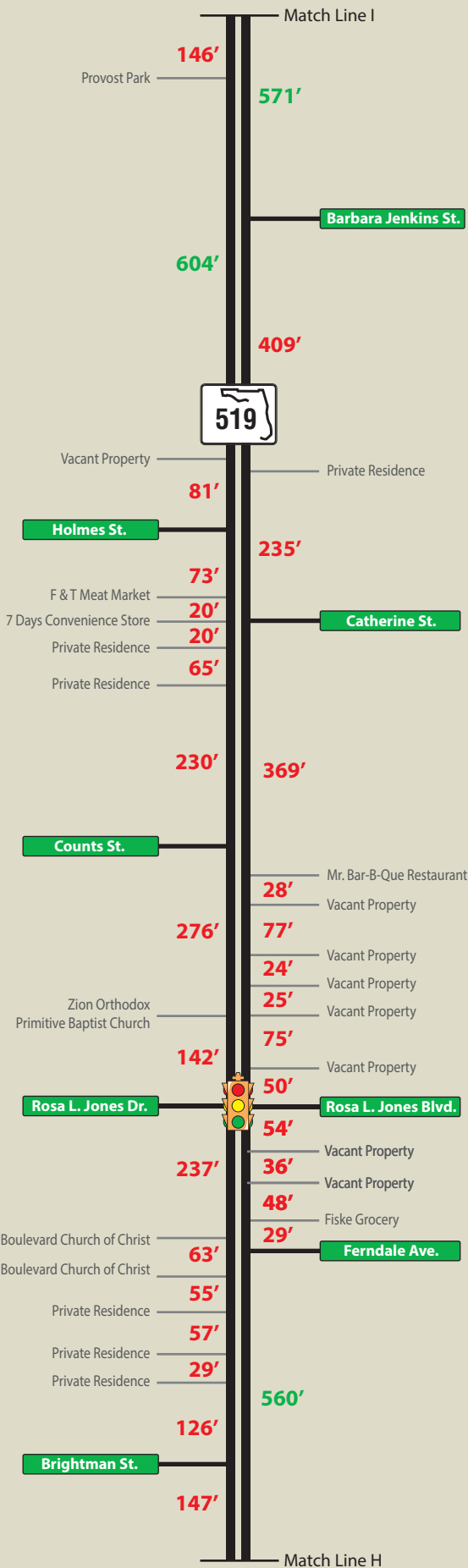




**LEGEND**

- 000 - Meets Access Management Standards
- 000 - Does Not Meet Access Management Standards
- N.T.S.**

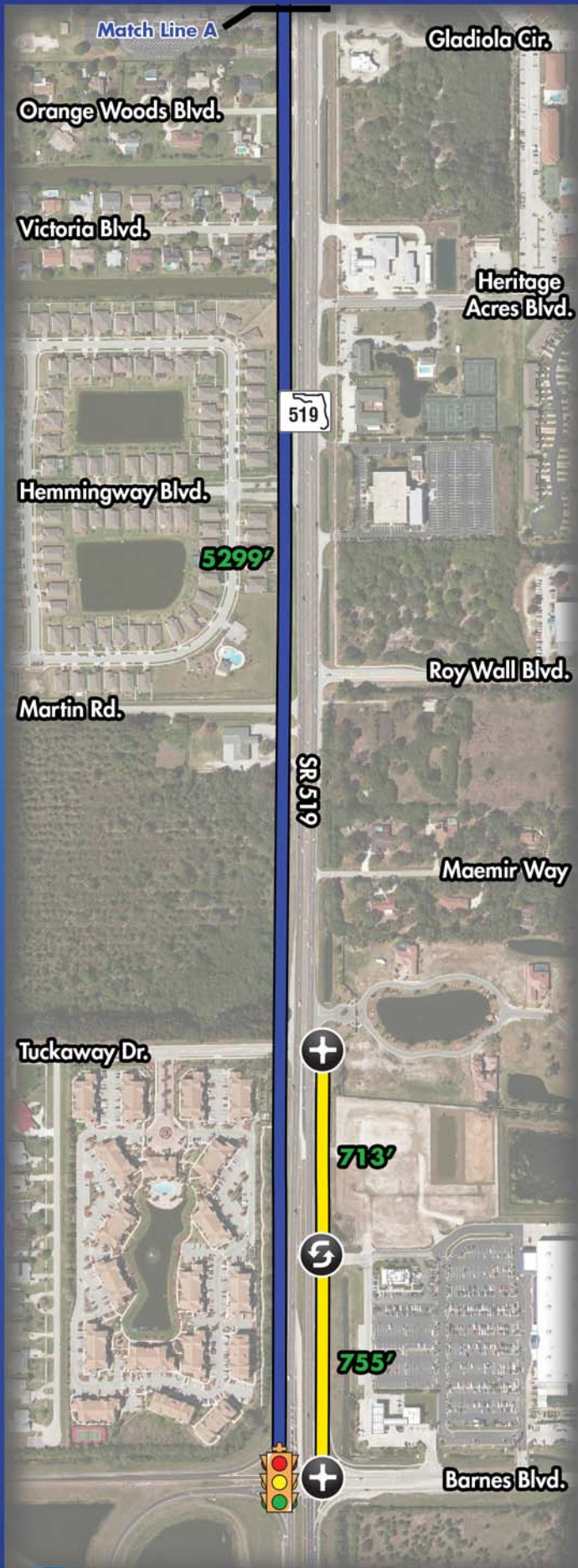




**LEGEND**

- 000 - Meets Access Management Standards
- 000 - Does Not Meet Access Management Standards
- N.T.S.**





**LEGEND**

- Full Median Opening

- Directional Median Opening

- Signalized Intersection

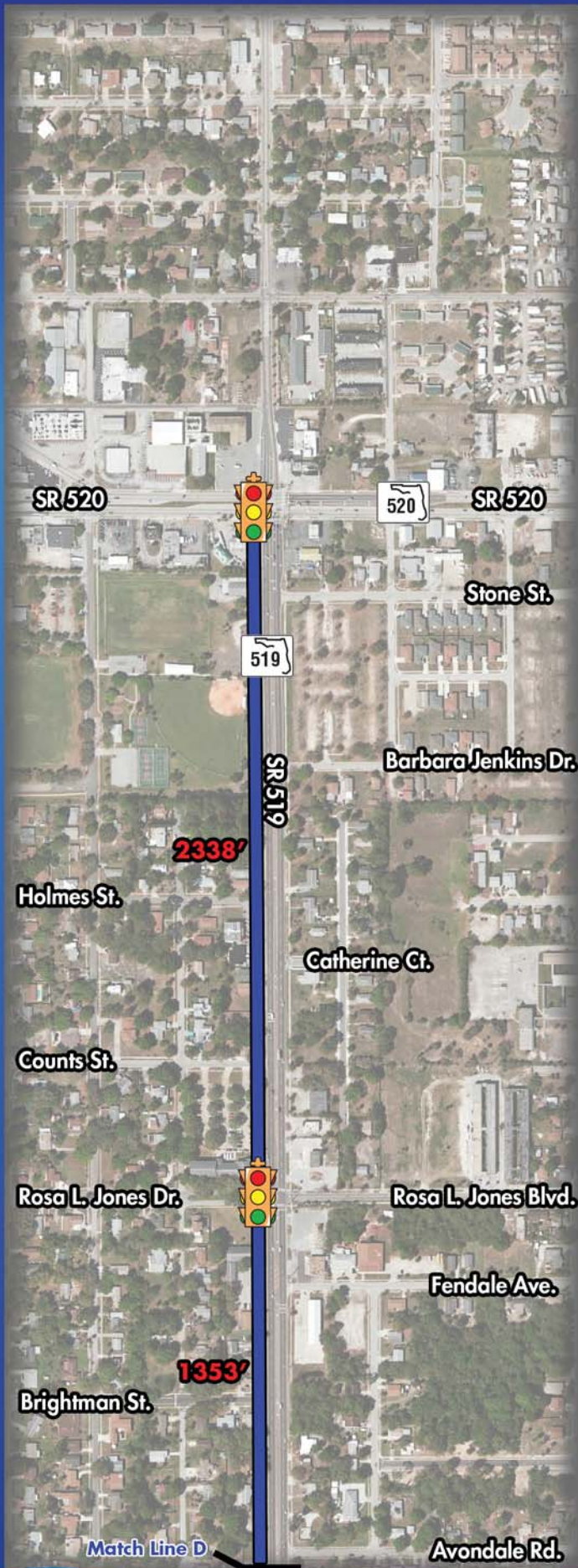
- Meets Access Management Standards

- Does Not Meet Access Management Standards









**LEGEND**

-  - Full Median Opening
-  - Directional Median Opening
-  - Signalized Intersection
-  - Meets Access Management Standards
-  - Does Not Meet Access Management Standards



---

### 2.6.5 Existing Intersection Geometry

Figure 23 illustrates the year 2017 intersection geometries for the following study area intersections:

- SR 519 (Fiske Boulevard)/CR 502 (Barnes Boulevard) - I-95 Northbound Ramps
- SR 519 (Fiske Boulevard)/Roy Wall Boulevard (Unsignalized)
- SR 519 (Fiske Boulevard)/Hans Christian Anderson Elementary School (Pedestrian Signal and Unsignalized school entrance/exit)
- SR 519 (Fiske Boulevard)/Levitt Parkway & Lakemoor Boulevard (Unsignalized)
- SR 519 (Fiske Boulevard)/Eyster Boulevard
- SR 519 (Fiske Boulevard)/Barton Boulevard
- SR 519 (Fiske Boulevard)/St. Andrews Drive
- SR 519 (Fiske Boulevard)/Pluckebaum Road
- SR 519 (Fiske Boulevard)/Rosa L. Jones Drive & Rosa L. Jones Drive
- SR 519 (Fiske Boulevard)/SR 520 (King Street)

Turn lanes are generally provided along SR 519 (Fiske Boulevard) approaching major signalized intersections. Brevard County is responsible for the operation and maintenance of the eight traffic signals within the study area corridor.

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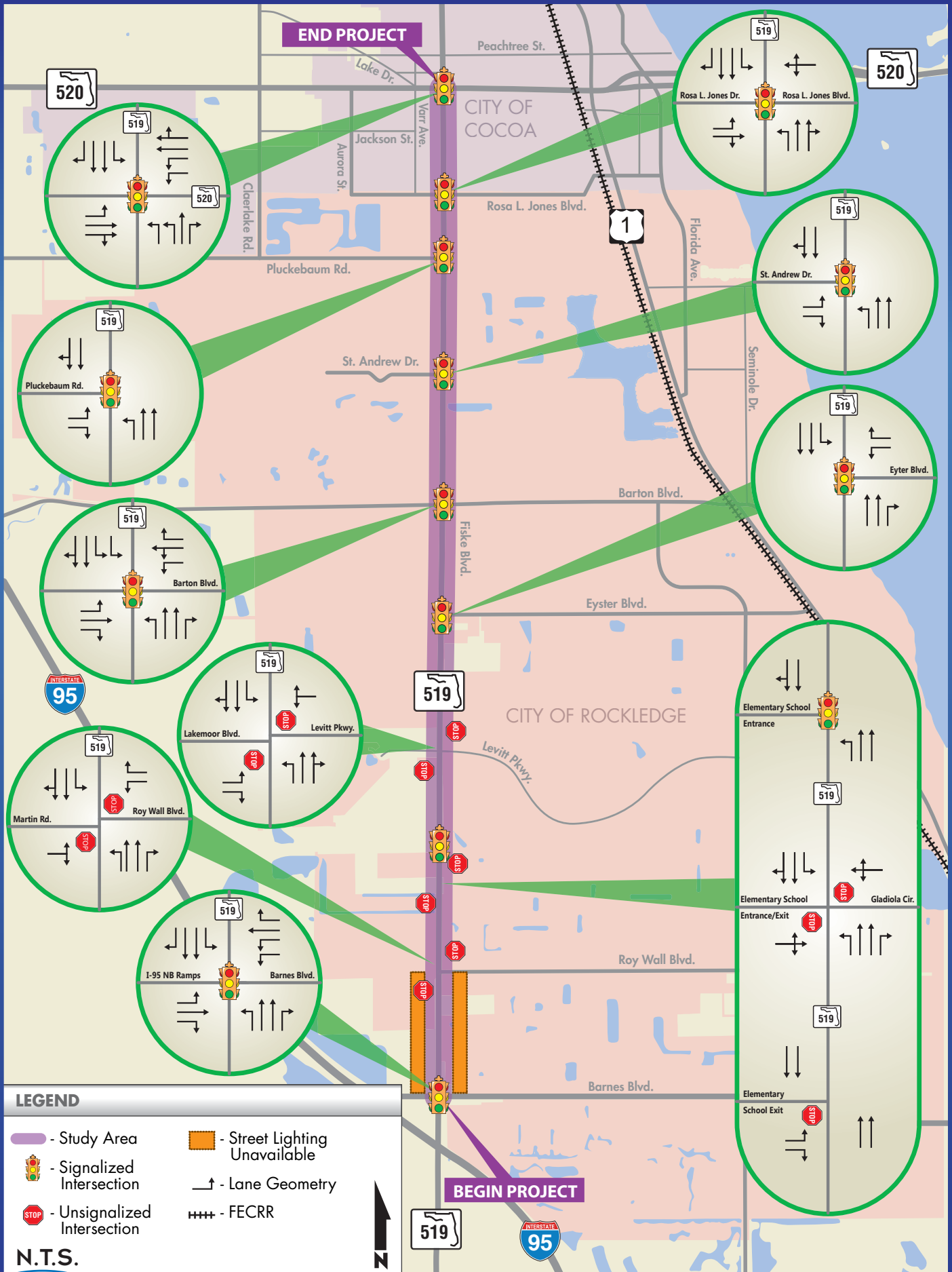
### 2.6.6 Lighting

A lighting inventory was conducted using Google Earth and Google Street View. Throughout most of the study area, there are both freestanding and utility pole lights located on both sides of the roadway except for a half-mile gap between CR 502 (Barnes Boulevard) to Roy Wall Boulevard. Figure 23 shows the portion of the corridor without lighting fixtures.

---

### 2.6.7 Parking

There is no on-street parking or park and ride lots within the SR 519 (Fiske Boulevard) study area.



## 2.6.8 Intelligent Transportation System

The SCTPO, in conjunction with Brevard County, the FDOT Intelligent Transportation System (ITS) Program, and the FDOT Transportation System Management and Operations (TSMO) Program has adopted an ITS Master Plan to address the Space Coast region’s continuing growth and future ITS needs. The plan focuses on maximizing the existing Space Coast transportation system by providing increased accessibility, reliability, and safety as a part of a fully integrated multi-modal experience.

Brevard County currently operates an unofficial Traffic Management Center (TMC) at the Viera Government Center. The County can remotely monitor and communicate with all signals connected to the existing fiber optic network using a signal management software (Naztec’s ATMS.now). All other signals utilize wireless communications. SR 519 (Fiske Boulevard) currently has 2.22 miles of fiber optics installed between SR 520 (King Street) and Eyster Boulevard along the northern section of the study area corridor, which also includes one Advance Dynamic Message Sign and three signals, connected to the existing fiber optic network. The County has considered expanding the fiber optic network and the ITS infrastructure to I-95. SCAT has also considered implementing a Transit Signal Priority (TSP) system to make transit a more competitive option for improving mobility.

## 2.6.9 Utilities

A Sunshine One Call ticket was processed in July 2017 to identify a list of potential utility providers within the corridor. A 500-foot buffer was used around SR 519 (Fiske Boulevard) to understand the utility companies which are located within and adjacent to the corridor. Table 10 presents the utility companies and agencies which have facilities located within the study area.

**Table 10: Utility Agencies and Contact Information**

Utility/Agency	Contact Person	Contact Number
Brevard County Water Resources	Tammy Hurley	321-633-2089
City of Cocoa	George Toler	321-433-8797
City of Rockledge	James Elmore	321-221-7540 Ext: 6
Florida City Gas	Ron Muller	321-638-3424
Florida Power & Light	Joel Bray	954-581-3088
Level 3 Communications LLC	Network Relations	877-366-8344 Ext: 2
AT & T/ Distribution	Bryan Coughlin	321-258-9244
Tower Cloud, Inc.	James Davis	904-813-2063
Transcore	Tushar Patel	386-943-5315
Bright House Networks, LLC	Mike Isom	321-757-6451

Source: Sunshine 811. Data was aggregated to reflect study area section limits.

The listed facilities in the Sunshine ticket do not indicate a definite presence within the corridor. These utility companies may need to be contacted to verify the location and content of the facilities during the alternatives development phase of the study, depending on the type of improvement alternative.

---

### 2.6.10 Drainage

The general stormwater conveyance system which serves SR 519 (Fiske Boulevard) is curb and gutter along the roadway with storm pipes directing runoff from the roadway to localized storm drainage retention ponds. The curb and gutter typical section transitions to an open swale system just north of I-95 to Roy Wall Boulevard and from Rosa L. Jones Drive/Boulevard to the northern limits at SR 520 (King Street). SR 519 (Fiske Boulevard) is generally flat; however, elevations decrease as the corridor approaches the southern limits. The United States Geological Survey (USGS) maps indicate a high point at SR 520 (King Street) to the National Geodetic Vertical Datum (NGVD). The roadway elevation is approximately 24 NGVD at this point and tapers to 18 NGVD at the southern limit of the study area. There are other local low points to facilitate drainage within the closed drainage system.

According to the Federal Emergency Management Agency (FEMA) Federal Insurance Rate Maps (FIRMS) for Brevard County (community panels 12009C0430G and 12009C0440G dated March 2014), the SR 519 (Fiske Boulevard) study area is not located within any flood zones.

Any improvements to Fiske Boulevard will be subject to the St. John's River Water Management District criteria which are current at the time of the improvement. In addition, the FDOT Drainage Manual currently requires roadway projects comply with the Department's drainage connection rule. Based on the existing stormwater regulations of these agencies, any project other than resurfacing would require both stormwater quality treatment and attenuation of runoff rate and volume.

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### 2.6.11 Bicycle and Pedestrian Infrastructure

Bicycle and pedestrian connectivity plays an important role within the study area given the number of destinations, such as schools and shopping centers, which are within a short distance of existing residential development. This subsection details the existing bicycle and pedestrian network in the study area.

---

#### ***Bicycle Lanes***

A desktop inventory of bicycle lanes was completed for SR 519 (Fiske Boulevard) utilizing the latest Google Earth aerial photography, and supplemented with video footage taken during a field visit. No bicycle lanes were identified along SR 519 (Fiske Boulevard). Undesignated bicycle lanes were identified along SR 520 (King Street), crossing through the intersection of SR 519 (Fiske Boulevard)/SR 520 (King Street). In addition, undesignated bicycle lanes (4 feet wide) are being constructed as part of the Barnes Boulevard widening project, which runs from SR 519 (Fiske Boulevard) and Murrell Road.

---

#### ***Sidewalks and Curb Ramps***

Similar to the bicycle lane inventory, a desktop inventory of sidewalk facilities was completed for the study area utilizing the latest Google Earth aerial photography and supplemented with video footage taken during a field visit. This review examined the presence of sidewalks along both sides of SR 519 (Fiske Boulevard) and approximately 50 feet away from SR 519 (Fiske Boulevard) for side streets.

In general, SR 519 (Fiske Boulevard) has sidewalks present on both sides of the road, except for a few small segments. These “gaps” in sidewalk coverage are shown in Figure 24 through Figure 26 and are listed below:

- Approximately 175-foot gap on the west side of SR 519 (Fiske Boulevard) directly north of CR 502 (Barnes Boulevard)
- No sidewalk on east side of SR 519 (Fiske Boulevard) from the Lowe’s Home Improvement store driveway to Roy Wall Boulevard
- No sidewalk on west side of SR 519 (Fiske Boulevard) from Tuckaway Drive to Martin Road
- Sporadic sidewalk coverage on east side of SR 519 (Fiske Boulevard) between Howard Boulevard and Eyster Boulevard
- No sidewalk on east side of SR 519 (Fiske Boulevard) from Ferndale Avenue to Rosa L. Jones Drive/Boulevard
- No sidewalk on west side of SR 519 (Fiske Boulevard) from Catherine Court to Holmes Street
- Approximately 150-foot gap on west side of SR 519 (Fiske Boulevard) north of Stone Street

In terms of side streets, approximately half do not have any type of sidewalk connection to SR 519 (Fiske Boulevard).

In general, where sidewalks are provided, curb ramps are also provided.

---

### ***Crosswalks***

Crosswalks were inventoried throughout the study area and illustrated in Figure 24 through Figure 26. All marked crosswalks on SR 519 (Fiske Boulevard) are signalized, and listed below:

- Mid-block Crossing South of SR 519 (Fiske Boulevard)/Genevieve Avenue (Hans Christian Andersen Elementary School)
- SR 519 (Fiske Boulevard)/Eyster Boulevard
- SR 519 (Fiske Boulevard)/Barton Boulevard
- SR 519 (Fiske Boulevard)/St. Andrews Drive
- SR 519 (Fiske Boulevard)/Pluckebaum Road
- SR 519 (Fiske Boulevard)/Rosa L. Jones Drive – Rosa L. Jones Drive

The general spacing between signalized crosswalks on SR 519 (Fiske Boulevard) is half a mile or greater. This in part contributes to pedestrians and bicyclists crossing SR 519 (Fiske Boulevard) at random, unmarked mid-block locations.



**LEGEND**



- Signalized Intersection



- Marked Crosswalks



- Existing Brevard Zoo Trail



- Planned Brevard Zoo Trail



- Sidewalk Gaps







**LEGEND**



- Signalized Intersection



- Marked Crosswalks



- Existing Brevard Zoo Trail



- Planned Brevard Zoo Trail



- Sidewalk Gaps





**LEGEND**



- Signalized Intersection



- Marked Crosswalks



- Existing Brevard Zoo Trail



- Planned Brevard Zoo Trail



- Sidewalk Gaps



---

### ***School Bus Routes***

There are three public schools with direct access to SR 519 (Fiske Boulevard) which include:

- Hans Christian Andersen Elementary School
- John F. Kennedy Middle School
- Golfview Elementary Magnet School

There is also one public school, Ronald McNair Magnet Middle School, located east of SR 519 (Fiske Boulevard) off Rosa L. Jones Drive, which has six bus routes serving approximately 142 eligible students.

Brevard Public Schools (BPS) generally calculates a two-mile walking radius within a School Attendance Boundary to determine the eligibility for a bussing area. Hans Christian Andersen Elementary School has two bus routes serving approximately 60 eligible students; John F. Kennedy Middle School has 11 bus routes serving approximately 235 eligible students; Golfview Elementary Magnet School has two bus routes serving approximately 16 eligible students.

---

### ***Safe Routes to Schools***

Safe Routes to Schools is a national program which is designed to increase walking and bicycling to and from schools. Funding is provided from the federal government and is used to construct new bicycle lanes and sidewalks as well as to organize educational, promotional, and enforcement campaigns. Participation varies from school to school.

During later phases of this project, coordination will be done with public schools within the study area to ensure any identified improvement builds on and enhances any work already being done with the Safe Routes to Schools program.

---

### ***Trails***

In addition to sidewalks and bicycle lanes, existing and planned regional trails which cross through the study area were inventoried. Local, recreational trails which do not provide regional connectivity were not inventoried. Trails are multi-use paths used by runners, bicyclists and other non-motorized users.

Currently, there is one trail, the Brevard Zoo Trail, within the study area. The Brevard Zoo Trail (documented in the SCTPO's 2040 LRTP and illustrated in Figure 24 through Figure 26), when completed, will provide north-south connectivity from Kings Post Road past the southern boundary of the study area. Within the study area, the majority of this trail has been constructed, except for a missing segment between CR 502 (Barnes Boulevard) and Roy Wall Boulevard. The constructed segments of this trail are approximately eight feet wide and run parallel to an existing sidewalk.

---

### ***Parallel Bicycle and Pedestrian Routes***

There are no parallel bicycle and pedestrian routes within close proximity to the SR 519 (Fiske Boulevard) study area.

---

### ***Future Bicycle/Pedestrian Plans***

A review of the SCTPO's 2040 LRTP, Bicycle & Pedestrian Mobility Plan, and FY 2017-2021 TIP was performed to identify any future bicycle and pedestrian improvements within the study area.

Based on the review, the TPO has a desire to complete the missing segments of the Brevard Zoo Trail which runs along the east side of SR 519 (Fiske Boulevard); however, no additional details have been provided.

---

## **2.6.12 Transit Service and Infrastructure**

Existing transit services in the study area are operated by Space Coast Area Transit (SCAT). Establishing the baseline transit service along the study area corridor is a critical initial step to help identify system deficiencies, shortcomings, or needs which in turn aids in the development of transit-related recommendations. This subsection discusses these services.

---

### ***Overview of SCAT***

SCAT provides transit service within Brevard County, featuring 20 local fixed bus routes. SCAT also provides paratransit service and commuter assistance vanpools. The existing SCAT transit service types found within the study area are described below in more detail.

**Fixed-route** - Regular local bus service providing frequent stops typically spaced every two blocks.

**Paratransit Service** - The paratransit program provides service for eligible individuals who are not able to use the regular fixed-route bus service because of a disability or other limitations. Paratransit service is subsidized depending on the type of trip through one of the following: the Americans with Disabilities Act (ADA) program, the Transportation Disadvantaged (TD) program, or a negotiated agency contract.

**Commuter Assistance Vanpools** - The vanpool program provides vehicles purchased by the Brevard County Commission with support from federal capital grants. These vehicles are then provided to a third party, VSPI, who then lease these vehicles to commuters. The leasing rate includes all maintenance, insurance, and administration costs.

The paratransit service and the commuter assistance vanpool programs are available on a case by case basis, by request.

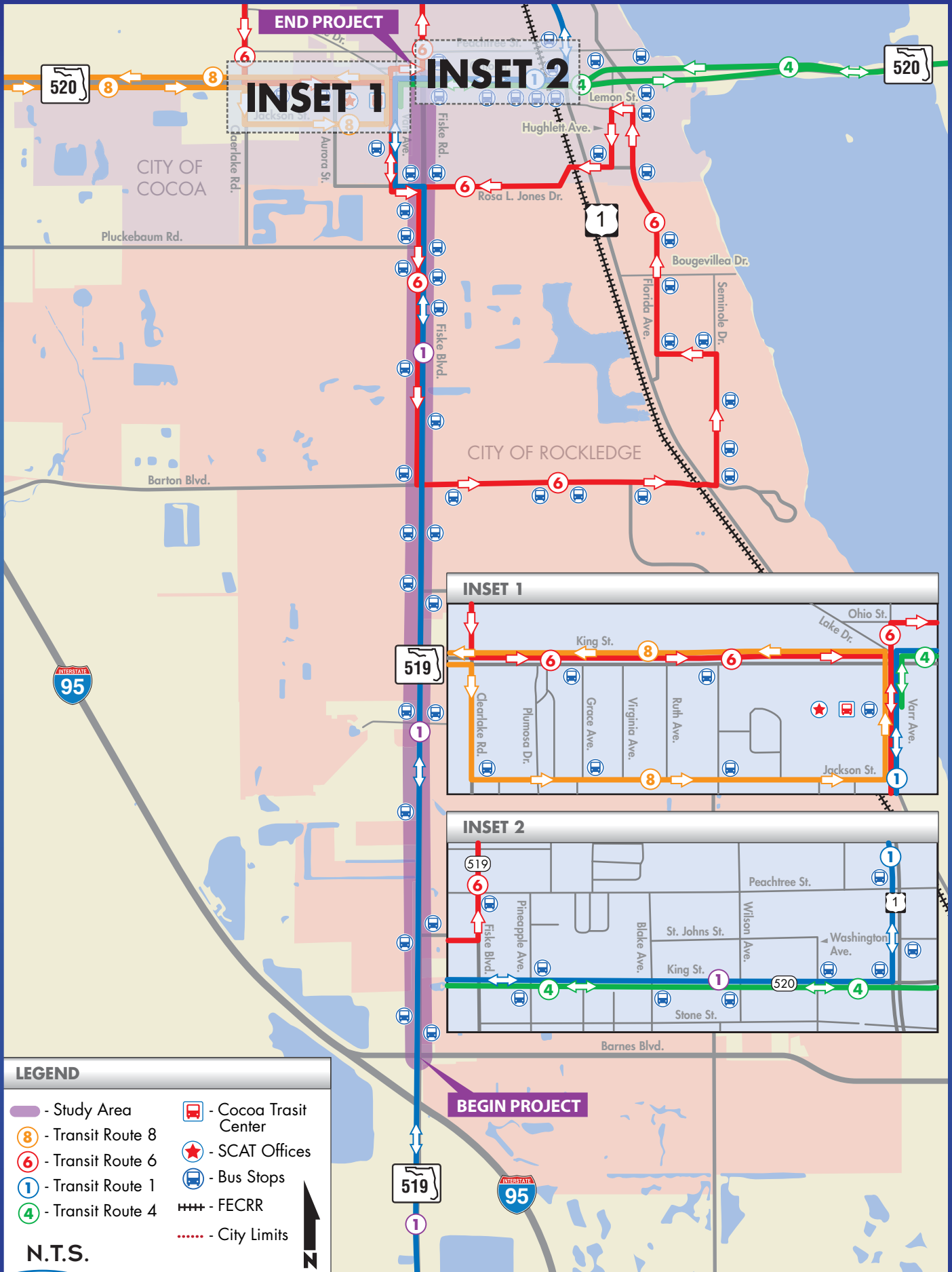
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### **SCAT Transit Service**

Figure 27 shows the four existing SCAT bus routes, transit stops and the transit center serving the study area. The SCAT fixed-routes located along or intersecting with the SR 519 (Fiske Boulevard) study area include Routes 1, 4, 6 and 8; Routes 1 and 6 travel directly along SR 519 (Fiske Boulevard). Following is a summary of the four routes serving the study area:

- *Route 1 (Titusville/Viera)* – This route connects Titusville with Cocoa. It provides service along SR 519 (Fiske Boulevard) from Rosa L. Jones Drive/Boulevard to Judge Fran Jamieson Way (past the southern Study Area boundary). This route also provides service to the Cocoa Transit Center, approximately 600 feet west of the SR 519 (Fiske Boulevard) study area (see below for more information on the transit center).
- *Route 4 (520 Connector)* – This route connects Cocoa to Cocoa Beach via SR 520 (King Street). This route crosses through the northern part of the study area and terminates at the Cocoa Transit Center.
- *Route 6 (Cocoa/Rockledge)* – This route connects Cocoa with Rockledge. This route provides service along SR 519 (Fiske Boulevard) from Rosa L. Jones Drive/Boulevard to Barton Boulevard, Rosa L. Jones Drive/Boulevard (Varr Avenue to Hughlett Avenue) and Barton Boulevard (SR 519 [Fiske Boulevard] to Seminole Drive). This route also provides service to the Cocoa Transit Center.
- *Route 8 (West Cocoa)* – This route connects Cocoa to West Cocoa via SR 520. This route does not cross through or run along SR 519 (Fiske Boulevard); however, it terminates at the Cocoa Transit Center.

The Cocoa Transit Center is located in front of the Space Coast Area Transit property, near the intersection of SR 520 (King Street) and South Varr Avenue. It is a designated location where individuals can transfer from one route to another in a safe manner. This transit center serves all of the routes in the study area.



**LEGEND**

- Study Area
- 8 - Transit Route 8
- 6 - Transit Route 6
- 1 - Transit Route 1
- 4 - Transit Route 4
- Cocoa Transit Center
- SCAT Offices
- Bus Stops
- FECRR
- City Limits

N.T.S.



### **Bus Stop Infrastructure**

A desktop review using current aerial footage, supplemented with video footage from a field visit, was performed to assess the infrastructure present at bus stops within the study area.

In general, the bus stops along the SR 519 (Fiske Boulevard) corridor have a bus stop sign and benches for seating (see Figure 28). One bus stop (intersection of SR 519 [Fiske Boulevard] and Barton Boulevard) was identified as having a shelter (see Figure 29).

**Figure 28: Typical Bus Stop**



Source: Image from Field Video taken by VHB

**Figure 29: Bus Shelter at Fiske Boulevard/Barton Boulevard**



Source: Image from Field Video taken by VHB

Most bus stops are located in areas where there is an existing sidewalk. However, the majority of these lack landing pads which provide a connection from the sidewalk to the bus doors. Landing pads are especially helpful for wheelchair users and the elderly who have difficulty navigating the grass buffer when entering/exiting the bus.

Specific recommendations on transit accessibility will be addressed in a later phase of this project.

### Future Transit Plans

A review of the SCAT 2013-2022 Ten-Year Transit Development Plan (TDP), the SCTPO’s 2040 LRTP, and the SCTPO’s FY 2017-2021 TIP was performed to identify any future transit improvements within the study area. More information about these improvements is included below.

#### SCAT 2013-2022 TDP

The SCAT TDP identified several improvements to the routes running through the Study Area. All these improvements are noted as unfunded. These improvements are summarized by implementation year in Table 11 below.

**Table 11: TDP 2013-2022 Route Improvements**

Route	Improvement	Year
1	Increase weekday frequency to 30 minutes	2019
1	Increase Saturday frequency to 30 minutes	2019
1	Extend service on weekdays to 9 PM	2019
1	Extend Saturday service to 9 PM	2019
4	Increase weekday frequency to 15 minutes during the day and 30 minutes in the evening	2018
4	Increase Saturday frequency to 15 minutes during the day and 30 minutes during the evening	2018
4	Extend Sunday service to 7 PM	2018
4	Increase Sunday frequency to 30 minutes	2021
6	Increase weekday frequency to 15 minutes during the day and 30 minutes in the evening	2018
6	Increase Saturday frequency to 30 minutes	2018
6	Extend service on weekdays to 9 PM	2018
6	Extend Saturday service to 9 PM	2018
6	Start Sunday service	2018
8	Increase weekday frequency to 30 minutes	2020
8	Start Saturday service	2020
8	Extend service on weekdays to 9 PM	2020
8	Start Sunday service on Route	2020
<b>Viera Circulator</b>	A new route with service along CR 502 (Barnes Boulevard) from SR 519 (Fiske Boulevard) to US 1 and SR 519 (Fiske Boulevard) south of CR 502 (Barnes Boulevard)	2019

#### SCTPO 2040 LRTP

The cost feasible plan in the SCTPO 2040 LRTP does not address any transit improvements.

#### SCTPO FY 2017-2021 TIP

The SCTPO TIP did not identify any transit improvements in the study area from FY 2017 to 2021. It is important to note, however, the line item citing a transit service demonstration along SR 520 (Project Number 4206421) through FY 2021 is existing funding for operating SCAT Route 4 (funded by a corridor grant from FDOT).



## 2.7 Existing Travel Demand Characteristics

To gain a better understanding of the travel demand characteristics along the study area corridor, daily and hourly traffic volumes data were collected and reviewed. This section quantifies the existing traffic volumes along the study area corridor for vehicular traffic, as well as bicyclists and pedestrians.

### 2.7.1 Existing Traffic Volumes

Weekday daily and hourly traffic volumes along the study area roadway segments and intersections were collected from various sources such as the FDOT Florida Transportation Information (FTI) and the SCTPO's annual traffic counts program. These counts were supplemented by 24-hour tube counts, 4-hour (7:00 – 9:00 AM and 4:00 – 6:00 PM) manual turning movement counts, and 24-hour pedestrian mid-block crossing counts conducted in August 2017 at the following locations:

#### Intersection Turning Movement Counts

1. SR 519 (Fiske Boulevard) at CR 502 (Barnes Boulevard)/I-95 NB Ramps
2. SR 519 (Fiske Boulevard) at Roy Wall Boulevard (Unsignalized)
3. SR 519 (Fiske Boulevard) at Levitt Parkway/Lakemoor Boulevard (Unsignalized)
4. SR 519 (Fiske Boulevard) at Eyster Boulevard
5. SR 519 (Fiske Boulevard) at Barton Boulevard
6. SR 519 (Fiske Boulevard) at St. Andrews Drive
7. SR 519 (Fiske Boulevard) at Pluckebaum Road
8. SR 519 (Fiske Boulevard) at Rosa L. Jones Drive
9. SR 519 (Fiske Boulevard) at SR 520 (King Street)

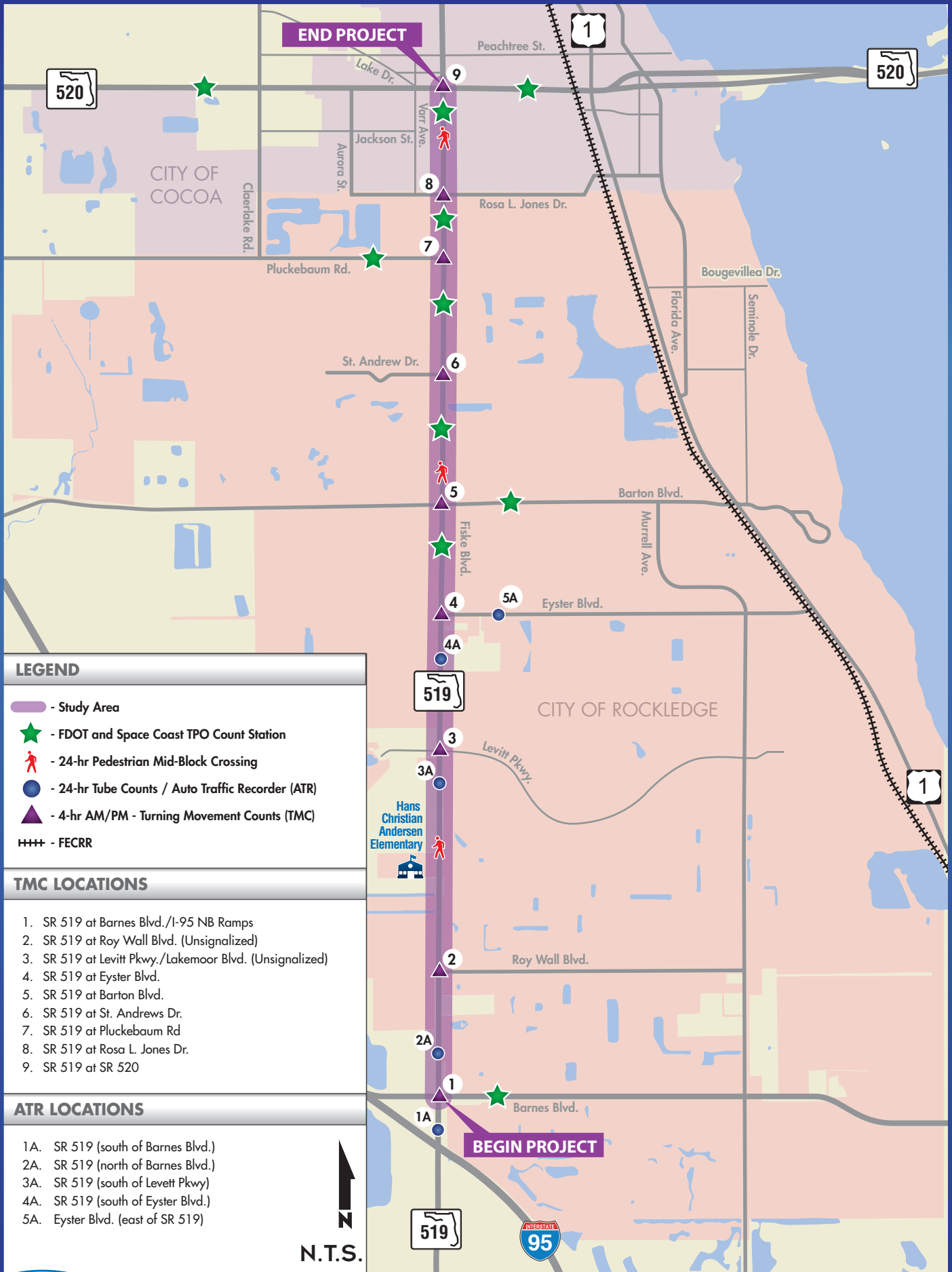
#### 24-hr Continuous Volume (Tube) Count Locations

1. SR 519 (Fiske Boulevard) south of Barnes Boulevard
2. SR 519 (Fiske Boulevard) north of Barnes Boulevard
3. SR 519 (Fiske Boulevard) south of Levitt Parkway
4. SR 519 (Fiske Boulevard) south of Eyster Boulevard
5. Eyster Blvd. east of SR 519 (Fiske Boulevard)

#### 24-hr Pedestrian Mid-Block Crossing

1. SR 519 (Fiske Boulevard) near Hans Christian Andersen Elementary School
2. SR 519 (Fiske Boulevard) north of Barton Boulevard
3. SR 519 (Fiske Boulevard) near Provost Park

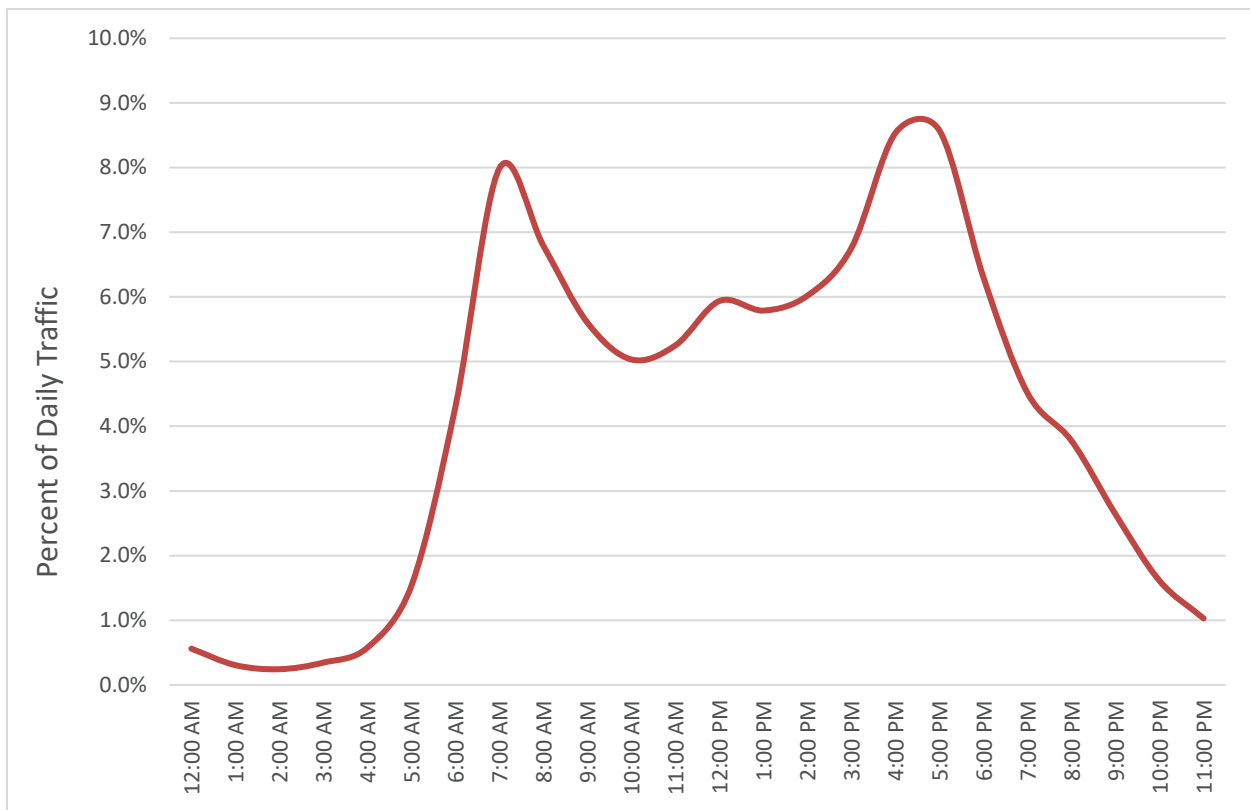
All traffic count data collected was adjusted utilizing the latest (2016) FDOT axle (where applicable) and seasonal adjustment factors for Brevard County to provide 2016 annual average conditions. All collected traffic counts are provided in Appendix B. Figure 30 illustrates data collected locations along the study area corridor.



Based on the data collected, the busiest roadway segment along the corridor was north of I-95 which carries 25,000 vehicles per day. The busiest intersection traffic volumes were observed at the intersection of SR 519 (Fiske Boulevard) and CR 502 (Barnes Boulevard) which carries over 41,500 vehicles per day.

Traffic demand along the study area corridor fluctuates over the course of the day as illustrated in Figure 31. As illustrated, there are distinct surges in traffic during the morning, midday, and evening periods. Traffic is notably higher in the evening peak period compared to the morning. Because there are several schools located within the study area, school related traffic during dismissal contributes to the continuing increase in traffic demand after 2:00 PM to the evening peak period. Therefore, peak hour turning movement counts were conducted to correspond with the school arrival and departure time periods.

**Figure 31: Weekday Traffic Fluctuation along Study Area Corridor**



Source: 2017 supplemental counts by VHB

### 2.7.2 Pedestrian and Bicycle Traffic Volumes

Pedestrian and bicycle volumes were collected as part of the supplemental traffic counts at the study area intersections during the morning and evening peak hour periods. As presented in an earlier section, crosswalks are generally provided at signalized intersections. The relatively long spacing of these crossings encourages pedestrians to cross SR 519 (Fiske Boulevard) at unmarked locations. 24-hour pedestrian mid-block counts were collected along the corridor and summarized in Table 12: 2017

Existing Pedestrian and Bicycle Traffic Volumes, which also includes the pedestrian and bicycle traffic volumes at those locations.

**Table 12: 2017 Existing Pedestrian and Bicycle Traffic Volumes**

Intersection	Pedestrian Volumes			Bicycle Volumes	
	Daily	AM	PM	AM	PM
SR 519 (Fiske Boulevard) at CR 502 (Barnes Blvd)	N/A	0	13	1	3
SR 519 (Fiske Boulevard) at Roy Wall Blvd	N/A	2	0	1	2
SR 519 (Fiske Boulevard) at Ped Crosswalk/HC Anderson School	437	156	253	4	3
SR 519 (Fiske Boulevard) at Levitt Pkwy/Lakemoor Blvd	N/A	19	5	13	8
SR 519 (Fiske Boulevard) at Eyster Blvd	N/A	98	112	6	5
SR 519 (Fiske Boulevard) at Barton Blvd	N/A	29	32	10	5
SR 519 (Fiske Boulevard) north of Barton Blvd	8	0	1	0	0
SR 519 (Fiske Boulevard) at St Andrews Dr	N/A	239	35	4	6
SR 519 (Fiske Boulevard) at Pluckebaum Rd	N/A	1	3	6	7
SR 519 (Fiske Boulevard) at Rosa L Jones Dr	N/A	28	26	9	7
SR 519 (Fiske Boulevard) south of Barbara Jenkins St	25	2	7	0	5
SR 519 (Fiske Boulevard) at SR 520 (King Street)	N/A	9	20	7	8

Source: VHB supplemental TMC counts

As expected, the highest pedestrian and bicycle traffic volumes were observed near the three schools with direct access on to SR 519 (Fiske Boulevard); the highest volumes were at the existing signalized pedestrian crossing north of the Han Christian Andersen Elementary School. The other significant pedestrian count occurred at St. Andrews Drive which serves Golfview Elementary School. The pedestrian mid-block crossing counts indicate a relatively low number of pedestrian crossings at unmarked locations. Both pedestrian and bicycle volumes are considered moderate along the northern section of the study area.

### 2.7.3 Existing Corridor Operations Summary

Understanding the relationship between the supply and demand on a roadway is a fundamental consideration in evaluating how well a transportation facility safely and efficiently accommodates the traveling public. This section summarizes the traffic operations assessment for key study area roadway segments and intersections.

The existing 2017 operational analysis was conducted to determine the Level of Service (LOS) for the roadway segments and the study area intersections. Peak hour peak direction volumes along the different segments were compared against the latest Generalized Peak Hour Directional Service Volumes Tables from the 2012 FDOT Quality/Level of Service Handbook to obtain the arterial LOS. The LOS for the study area intersections were determined using the procedures as outlined in the Transportation Research Board’s (TRB) – Highway Capacity Manual (HCM 2010) using Synchro Software (version 9.0). The traffic signal timings used for the analysis were provided by Brevard County based on the actual timings extracted from their controllers.

### 2.7.4 Arterial/Roadway Segment Level of Service Analysis

According to FDOT, SR 519 (Fiske Boulevard) is classified as an “urban principal arterial other” and has an adopted LOS “D”, which is consistent with the adopted LOS standards for both the Cities of Cocoa and Rockledge. A summary of the LOS analysis for the study area roadway segments is included in Table 13.

As shown in Table 13, the SR 519 (Fiske Boulevard) corridor currently operates above the adopted LOS standard “D”, at an acceptable LOS “C”. LOS “C” is defined as restricted flow which remains stable, but with a noticeable decline in general level of comfort and convenience. The detailed LOS analysis is included in Appendix C.

**Table 13: Fiske Boulevard Existing Roadway Level of Service**

Roadway / Segment	Adopted LOS <sup>1</sup>	Daily LOS <sup>2</sup>	V/C Ratio
Barnes Boulevard to Eyster Boulevard	D	C	0.61
Eyster Boulevard to Barton Boulevard	D	C	0.54
Barton Boulevard to St. Andrews Drive	D	C	0.61
St. Andrews Drive to Pluckebaum Road	D	C	0.59
Pluckebaum Road to Rosa L. Jones Drive	D	C	0.46
Rosa L. Jones Drive to SR 520	D	C	0.35

Source: Compiled by VHB.

1 2012 FDOT Quality/Level of Service Handbook

2 FDOT FTI, SCPTOP

In addition to the LOS for the general motorists, the LOS for bicycle, pedestrian, and transit modes was also evaluated. The LOS for the bicycle and pedestrian modes are based on the number of vehicles traveling on the roadway and the coverage of available bicycle lanes and sidewalks provided along the corridor. The LOS for transit is based on the frequency of buses in peak hour-peak direction, and the sidewalk coverage available along the corridor.

As shown in Table 14, the LOS for bicycles along the corridor is mainly “D” due to the lack of a bicycle lane along the corridor. Table 14 indicates the pedestrian LOS along the corridor is “C” or better. The detailed bicycle and pedestrian LOS analyses is included in Appendix C.

**Table 14: Fiske Boulevard 2017 Existing Bicycle Level of Service**

Roadway / Segment	No. of Lanes <sup>1</sup>	Bike Lane Coverage <sup>1</sup>	Daily Bicycle LOS <sup>2</sup>
I-95 NB interchange to Barnes Boulevard	4LD	0-49%	D
Barnes Boulevard to Eyster Boulevard	4LD	0-49%	D
Eyster Boulevard to Barton Boulevard	4LD	0-49%	D
Barton Boulevard to St. Andrews Drive	4LD	0-49%	D
St. Andrews Drive to Pluckebaum Road	4LD	0-49%	D
Pluckebaum Road to Rosa L. Jones Drive	4LD	0-49%	D
Rosa L. Jones Drive to SR 520	4LD	0-49%	C

Source: Compiled by VHB.

1 FDOT Straight Line Diagrams (SLD)

2 FDOT FTI, SCPTOP

**Table 15: 2017 Existing Pedestrian Level of Service**

Roadway / Segment	No. of Lanes <sup>1</sup>	Sidewalk Coverage <sup>1</sup>	Daily Pedestrian LOS <sup>2</sup>
I-95 NB interchange to Barnes Boulevard	4LD	85-100%	C
Barnes Boulevard to Eyster Boulevard	4LD	85-100%	C
Eyster Boulevard to Barton Boulevard	4LD	85-100%	C
Barton Boulevard to St. Andrews Drive	4LD	85-100%	C
St. Andrews Drive to Pluckebaum Road	4LD	85-100%	C
Pluckebaum Road to Rosa L. Jones Drive	4LD	85-100%	B
Rosa L. Jones Drive to SR 520	4LD	85-100%	B

Source: Compiled by VHB.

1 FDOT Straight Line Diagrams (SLD)

2 FDOT FTI, SCPTOP

Based on the SCAT bus service frequency presented in an earlier section, SCAT Route No. 1 has a service frequency of 30 minutes during the morning peak hour period, which results in two bus services during the peak hour. Based on the evaluation criteria in Tables 1 and 7 of the 2012 FDOT Quality/Level of Service Handbook, buses are operating at LOS “E” along the corridor. SCAT Route No. 6 operates with a service frequency of 15 minutes during the morning peak hour period, which results in four bus services during the peak hour and an acceptable LOS “D”.

### 2.7.5 Intersection Level of Service Analysis

The year 2015 intersection LOS was obtained by applying the seasonally adjusted field turning movement counts to the existing intersection geometries. A summary of the LOS analysis for the study intersections is included in Table 16.

As shown in Table 16, the SR 519 (Fiske Boulevard) study area signalized intersections currently operate at an acceptable LOS during the AM and PM peak hours except at the intersection of SR 519 (Fiske Boulevard) and CR 502 (Barnes Boulevard), which operates at LOS “F” during the AM and PM peak hours.

In addition, the unsignalized intersections at SR 519 with Roy Wall Boulevard and Levitt Parkway/Lakemoor Boulevard operate adversely with significant delay in the existing PM condition. The existing intersection LOS conditions are graphically displayed in Figure 32. The Synchro Summary Sheets are provided in Appendix E.

**Table 16: 2017 Existing Intersection Level of Service**

Intersection	Control	AM Peak Hour		PM Peak Hour	
		Delay <sup>1</sup>	LOS <sup>2</sup>	Delay <sup>1</sup>	LOS <sup>2</sup>
SR 519 (Fiske Boulevard) at I-95 NB Ramps	Signalized	112.7	F	97.4	F
SR 519 (Fiske Boulevard) at Roy Wall Boulevard	Un-Signalized <sup>3</sup>	11.0/66.9	B/F	12.3/385.4	B/F
SR 519 (Fiske Boulevard) at Levitt Parkway/Lakemoor Boulevard	Un-Signalized <sup>3</sup>	11.0/58.9	B/F	11.9/108.5	B/F
SR 519 (Fiske Boulevard) at Eyster Boulevard	Signalized	9.6	A	15.5	B
SR 519 (Fiske Boulevard) at Barton Boulevard	Signalized	42.3	D	62.6	E
SR 519 (Fiske Boulevard) at St. Andrews Drive	Signalized	8.0	A	8.1	A
SR 519 (Fiske Boulevard) at Pluckebaum Road	Signalized	18.2	B	27.8	C
SR 519 (Fiske Boulevard) at Rosa L. Jones Drive	Signalized	9.7	A	10.7	B
SR 519 (Fiske Boulevard) at SR 520 (King Street)	Signalized	61.8	E	65.2	E

Source: VHB using Synchro 9 software.

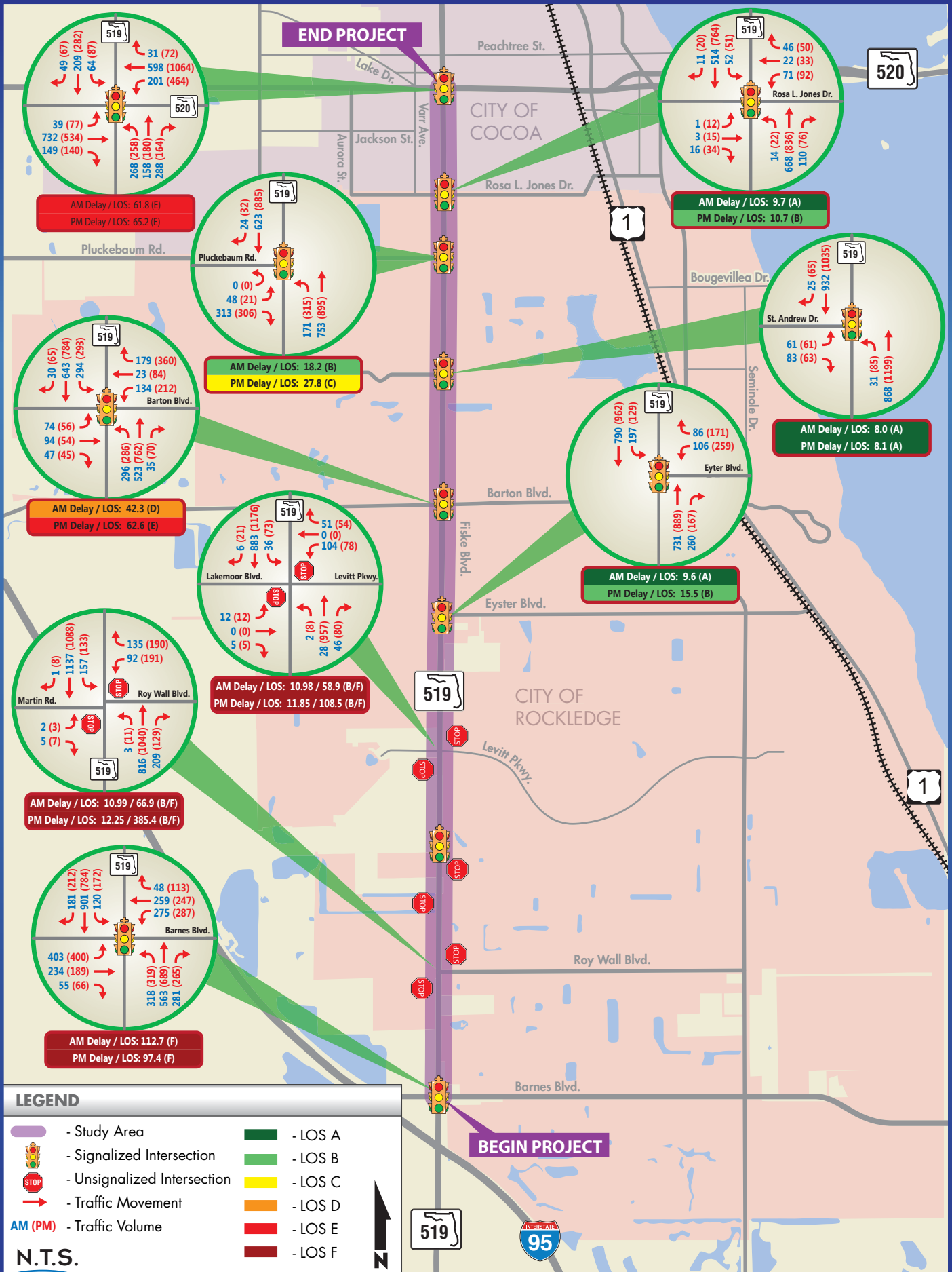
- 1 Overall intersection average delay in seconds per vehicle
- 2 Overall intersection level of service
- 3 Mainline/side street delay and level of service (worst operating movements reported)

It is important to note the capacity analyses evaluate the operations at the intersections only. Interruptions to vehicular traffic flow caused by pedestrians, standing vehicle queues at adjacent intersections, and bus blockages can often occur between signalized intersections along the study area corridor. These interruptions can block traffic from getting to and/or through the study area intersections, resulting in additional delay and related congestion.

Because the capacity analysis does not entirely account for disruptions in traffic flow between intersections, the reported LOS can be understated if there is a substantial degree of disruption between intersections. Effort has been made to calibrate the LOS analyses subject to the limitations and functionality of the capacity analysis software.

During field observations at dismissal times at Hans Christian Andersen Elementary School, there was interrupted and/or restricted traffic flow along Fiske Boulevard, which resulted in long queues which extended beyond Heritage Acres Boulevard in the northbound direction and Noreen Boulevard in the southbound direction. The northbound queues (left-turning traffic into the school) were stacked along the center turn lane without blocking the two northbound through lanes. However, the southbound queues (right-turn traffic into the school) were stacked on the right lane shoulder, spilling out onto the through lane. In addition to school crossing guards controlling traffic at the signalized crosswalk and at the intersection of Gladiola Circle/School Driveway, a police cruiser is parked in the center turn lane to allow traffic to exit out of Gladiola Circle and the School driveway.

To a lesser degree, the Golfview Elementary School operations during dismissal also interrupted and/or restricted traffic flow along Fiske Boulevard.





## 2.8 Safety and Crash Analysis

A multimodal safety analysis was completed for the SR 519 (Fiske Boulevard) study area roadway segments and intersections to determine if the traffic demands combined with geometric conditions pose potential safety issues. To identify crash patterns along the corridor, crash data was obtained from the FDOT's Crash Analysis Reporting System (CARS) for the previous five years (January 01, 2012 to December 31, 2016) along the Fiske Boulevard corridor limits.

### 2.8.1 Total Crashes

A total of 562 crashes resulted in 271 injuries and one fatality over the five-year period, as presented in Table 17 below.

**Table 17: Crash Data Summary by Year**

Year	Total Number Of Crashes	Number of Injury Crashes	Number of Injuries	Number of Fatal Crashes	Number of Fatalities	Number of Night Crashes	Number of Wet Crashes
<b>Roadway: SR 519 (S Fiske Boulevard)</b>							
<b>Roadway ID: 70014000</b>							
2012	61	30	44	0	0	14	5
2013	88	42	63	0	0	13	5
2014	131	41	60	0	0	25	10
2015	137	39	52	0	0	25	14
2016	145	35	52	1	1	23	15
<b>2012-2016</b>	<b>562</b>	<b>187</b>	<b>271</b>	<b>1</b>	<b>1</b>	<b>100</b>	<b>49</b>
<b>Average</b>	<b>187.33</b>	<b>37.40</b>	<b>54.20</b>	<b>0.20</b>	<b>0.20</b>	<b>20.00</b>	<b>9.80</b>
<b>Percent</b>	-	<b>33.27%</b>	-	<b>0.18%</b>	-	<b>17.79%</b>	<b>8.72%</b>

Source: FDOT's CARS and Signal Four

One fatal crash occurred on or near the SR 519 (Fiske Boulevard) corridor between 2012 and 2016. The fatal crash was a head on collision which occurred on SR 519 (Fiske Boulevard) near Barbara Jenkins Street. This fatality resulted from a driver going northbound and crossing over into the southbound lane. The crash occurred during the day under clear weather conditions and a dry road.

Table 18 summarizes the number of crashes by harmful event along the SR 519 (Fiske Boulevard) corridor. The predominant crash types were rear end crashes (33.6 percent), head on crashes (25.4 percent), and other crashes (13.4 percent).

**Table 18: Crash Data Summary by Harmful Event**

Crash Type	2012	2013	2014	2015	2016	2012-2016	Average per Year	Percent
<b>Roadway: SR 519 (Fiske Boulevard)</b>								
<b>Roadway ID: 7001400</b>								
<b>Angle</b>	1	4	5	4	8	22	<b>7.33</b>	<b>3.91%</b>
<b>Animal</b>	0	0	0	0	0	0	<b>0.00</b>	<b>0.00%</b>
<b>Rear End</b>	23	37	34	39	56	189	<b>37.80</b>	<b>33.63%</b>
<b>Head On</b>	8	6	49	40	40	143	<b>28.60</b>	<b>25.44%</b>
<b>Left Turn</b>	10	16	6	9	10	51	<b>10.20</b>	<b>9.07%</b>
<b>Sideswipe</b>	5	10	11	14	11	51	<b>10.20</b>	<b>9.07%</b>
<b>Pedestrian</b>	2	0	4	1	0	7	<b>1.40</b>	<b>1.25%</b>
<b>Right Turn</b>	0	0	2	3	3	8	<b>1.60</b>	<b>1.42%</b>
<b>Rollover</b>	1	1	1	1	0	4	<b>0.80</b>	<b>0.71%</b>
<b>Bicycle</b>	0	3	0	2	0	5	<b>1.00</b>	<b>0.89%</b>
<b>Off Road</b>	0	0	4	2	1	7	<b>1.40</b>	<b>1.25%</b>
<b>Other</b>	11	11	15	22	16	75	<b>15.00</b>	<b>13.35%</b>
<b>Total</b>	<b>61</b>	<b>88</b>	<b>131</b>	<b>137</b>	<b>145</b>	<b>562</b>	<b>-</b>	<b>100.00%</b>

Source: FDOT's CARS and Signal Four

Segment crash rates in crashes per million vehicle-miles traveled were calculated for the SR 519 (Fiske Boulevard) corridor in order to compare the actual crash rate of the corridor to the statewide average crash rate for similar facilities during the study period. Table 19 compares the crash rates for the major roadway segments to the FDOT statewide average crash rate, and is also illustrated in Figure 33.

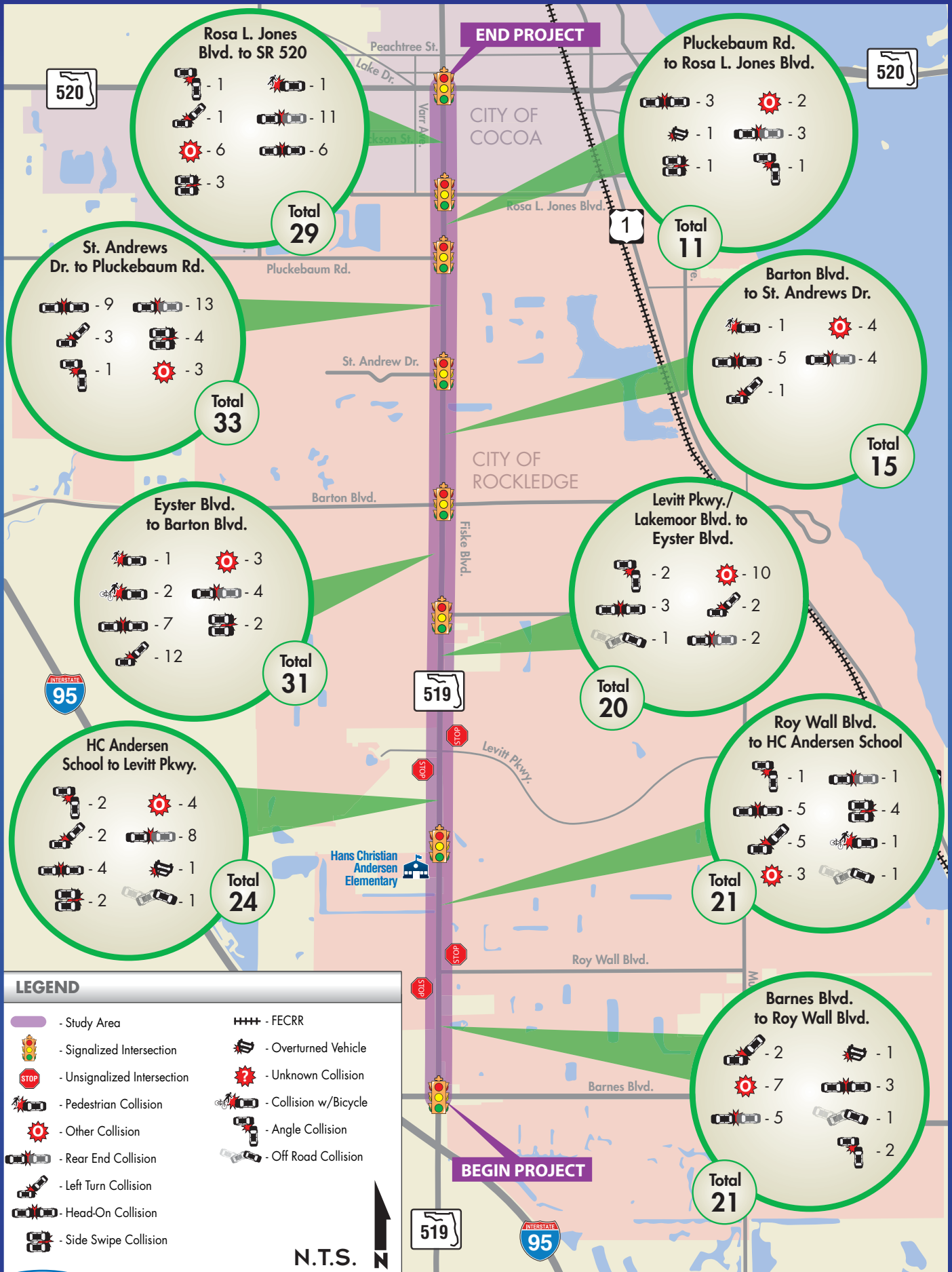
**Table 19: Summary of Roadway Segment Crash Rates**

From/To	Number of Crashes <sup>1</sup>	Length (miles)	AADT <sup>2</sup>	ACR <sup>3</sup>	Crash Rate Category	AVG <sup>4</sup>	High Crash Segment?
<b>Roadway: SR 519 (S Fiske Boulevard)</b>							
<b>Roadway ID: 70014000</b>							
Barnes Blvd to Roy Wall Blvd	21	0.513	25,500	0.88	Urban 4-5 Lane 2-way Divided Raised	2.63	NO
Roy Wall Blvd to HC Andersen School	21	0.412	25,500	1.10	Urban 4-5 Lane 2-way Divided Paved	4.37	NO
HC Andersen School to Levitt Pkwy/ Lakemoor Blvd	24	0.502	25,500	1.03	Urban 4-5 Lane 2-way Divided Paved	4.37	NO
Levitt Pkwy/ Lakemoor Blvd to Eyster Blvd	20	0.598	25,500	0.72	Urban 4-5 Lane 2-way Divided Paved	4.37	NO
Eyster Blvd to Barton Blvd	31	0.414	21,540	1.90	Urban 4-5 Lane 2-way Divided Paved	4.37	NO
Barton Blvd to St Andrews Dr	15	0.539	24,200	0.63	Urban 4-5 Lane 2-way Divided Paved	4.37	NO
St Andrews Dr to Pluckebaum Rd	33	0.483	23,490	1.59	Urban 4-5 Lane 2-way Divided Paved	4.37	NO
Pluckebaum Rd to Rosa L Jones Dr	11	0.257	18,210	1.29	Urban 4-5 Lane 2-way Divided Paved	4.37	NO
Rosa L Jones Dr to SR 520 (King Street)	29	0.441	14,100	2.56	Urban 4-5 Lane 2-way Divided Paved	4.37	NO

Notes:

- 1- Number of crashes from January 1, 2012 to December 31, 2016.
- 2- Data collected from FTI
- 3- Average Crash Rate =  $(N * 1,000,000) / (365 * Y * AADT * L)$ , where N = number of crashes, Y = number of years, AADT = Annual Average Daily Traffic, and L = Length of the segment in miles.
- 4- AVG = Statewide Average Crash Rate for Corresponding Category.

The average crash rates for the roadway segments within the study area were lower than the average crash rates for similar facilities.



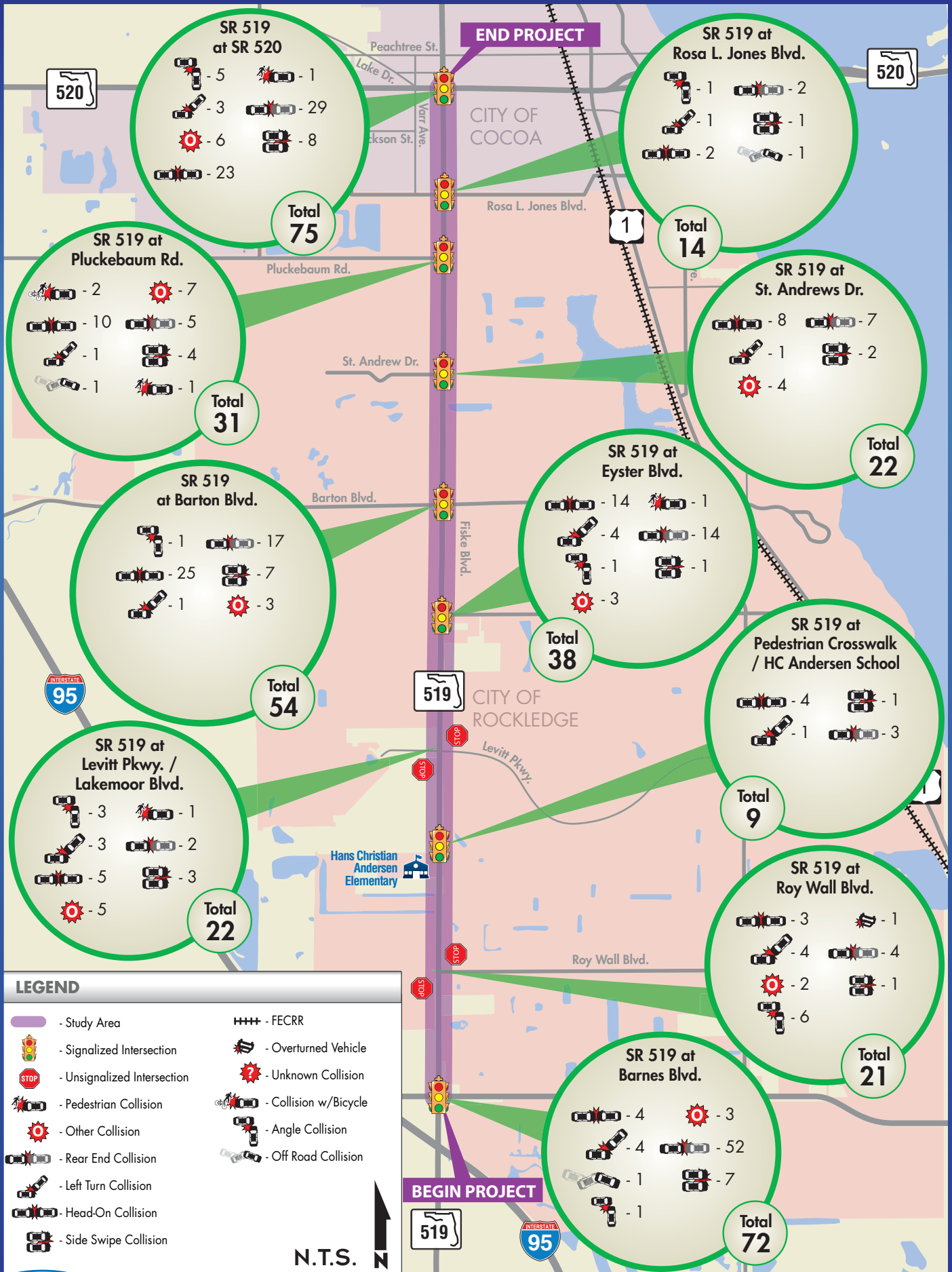
In terms of roadway intersections within the study area, Table 20 shows four out of the ten intersections have an average crash rate higher than the statewide average for similar facilities; and is also illustrated in Figure 34.

**Table 20: Summary of Intersection Crash Rates**

Intersection	Number of Crashes <sup>1</sup>	AADT <sup>2</sup>	ACR <sup>3</sup>	Crash Rate Category	AVG <sup>4</sup>	High Crash Intersection?
<b>Roadway: SR 519 (S Fiske Boulevard)</b>						
<b>Roadway ID: 70014000</b>						
SR 519 (Fiske Boulevard) at CR 502 (Barnes Blvd)	72	41,588	0.95	Urban 4-5 Lane 2-way Divided Raised (4 legs)	0.44	YES
SR 519 (Fiske Boulevard) at Roy Wall Blvd	21	30,340	0.38	Urban 4-5 Lane 2-way Divided Paved (4 legs)	0.55	NO
SR 519 (Fiske Boulevard) at Ped Crosswalk/HC Anderson School	9	25,500	0.19	Urban 4-5 Lane 2-way Divided Paved (4 legs)	0.55	NO
SR 519 (Fiske Boulevard) at Levitt Pkwy/ Lakemoor Blvd	22	25,794	0.47	Urban 4-5 Lane 2-way Divided Paved (4 legs)	0.55	NO
SR 519 (Fiske Boulevard) at Eyster Blvd	38	28,644	0.73	Urban 4-5 Lane 2-way Divided Paved (3 legs)	0.37	YES
SR 519 (Fiske Boulevard) at Barton Blvd	54	34,168	0.87	Urban 4-5 Lane 2-way Divided Paved (4 legs)	0.55	YES
SR 519 (Fiske Boulevard) at St Andrews Dr	22	27,855	0.43	Urban 4-5 Lane 2-way Divided Paved (3 legs)	0.37	YES
SR 519 (Fiske Boulevard) at Pluckebaum Rd	31	27,266	0.62	Urban 4-5 Lane 2-way Divided Paved (3 legs)	0.37	YES
SR 519 (Fiske Boulevard) at Rosa L Jones Dr	13	22,284	0.32	Urban 4-5 Lane 2-way Divided Paved (4 legs)	0.55	NO
SR 519 (Fiske Boulevard) at SR 520 (King Street)	75	37,666	1.09	Urban 4-5 Lane 2-way Divided Paved (4 legs)	0.55	YES

Notes:

- 1- Number of crashes from January 1, 2009 to December 31, 2013.
- 2- Data collected by VHB, Inc.
- 3- Average Crash Rate =  $(N * 1,000,000) / (365 * Y * AADT)$ , where N = number of crashes, Y = number of years, and AADT = Annual Average Daily Traffic.
- 4- AVG = Statewide Average Crash Rate for Corresponding Category.



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## 2.8.2 Bicycle and Pedestrian Crashes

Crashes in the study area involving bicyclists or pedestrians were also reviewed and illustrated on Figure 33 and Figure 34. There is a high concentration of bicycle and pedestrian crashes in the northern section of the study area near the SCAT Cocoa Transit Center and Provost Park. A total of seven pedestrian and five bicycle crashes occurred on the SR 519 (Fiske Boulevard) corridor from 2012 to 2016. The bicycle crashes all involved an injury. Three of the seven pedestrian crashes did not involve an injury, and only two occurred at night.

---

## 2.9 Environmental Characteristics

The existing environmental information for the study area was extracted from Geographical Information System (GIS) datasets maintained by the Florida Geographic Data Library (FGDL). For purposes of this environmental analysis, a buffer of 300 feet was used for the study area.

The following were examined as part of this review:

- Cultural Resources
- Social Resources
- Wetlands
- Floodplains
- Contamination
- Soils
- Threatened and Endangered Species

---

### 2.9.1 Cultural Resources

Section 106 of the National Historic Preservation Act (NHPA) provides a general process for cultural resource assessments and requires historic and archaeological resources be considered in project planning for federally funded or permitted projects. Cultural resources or “historic properties” include any “prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in the *National Register of Historic Places (NRHP)*.”

Any archaeological sites or historic resources falling within the State Historic Preservation Office (SHPO) survey area determined eligible, or considered potentially eligible for listing in the NRHP are listed in Table 21. These sites along with other state recorded sites and survey locations are graphically depicted in Figure 35.

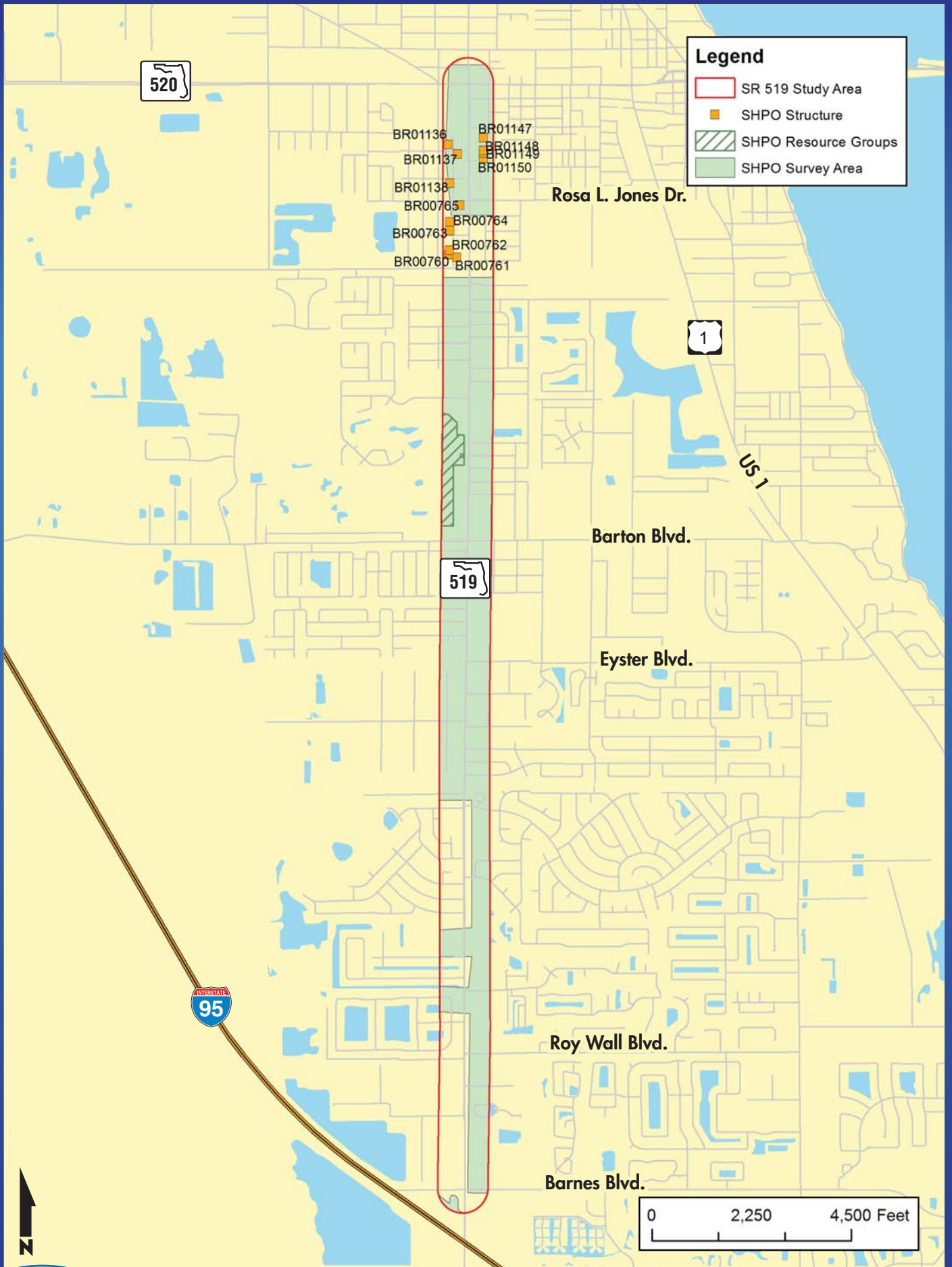
**Table 21: Summary of Cultural Resources**

<b>Cultural Resources</b>	<b>Within Study Area</b>
SHPO Structures	13
SHPO Bridges	0
SHPO Resource Groups	1
Archaeological Sites	0
SHPO Surveys	4

Source: FGDL, ETDM

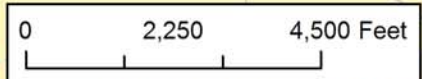
According to the Florida Master Site File (FMSF), there are no sites or structures listed or eligible for listing on the NHRP within the study area. However, 13 structures are listed as having been built between 1924 and 1930. In addition, the Rockledge Country Club Resource Group is listed as a designed historic landscape with insufficient information with regard to listing.





**Legend**

- SR 519 Study Area
- SHPO Structure
- SHPO Resource Groups
- SHPO Survey Area



## 2.9.2 Social Resources

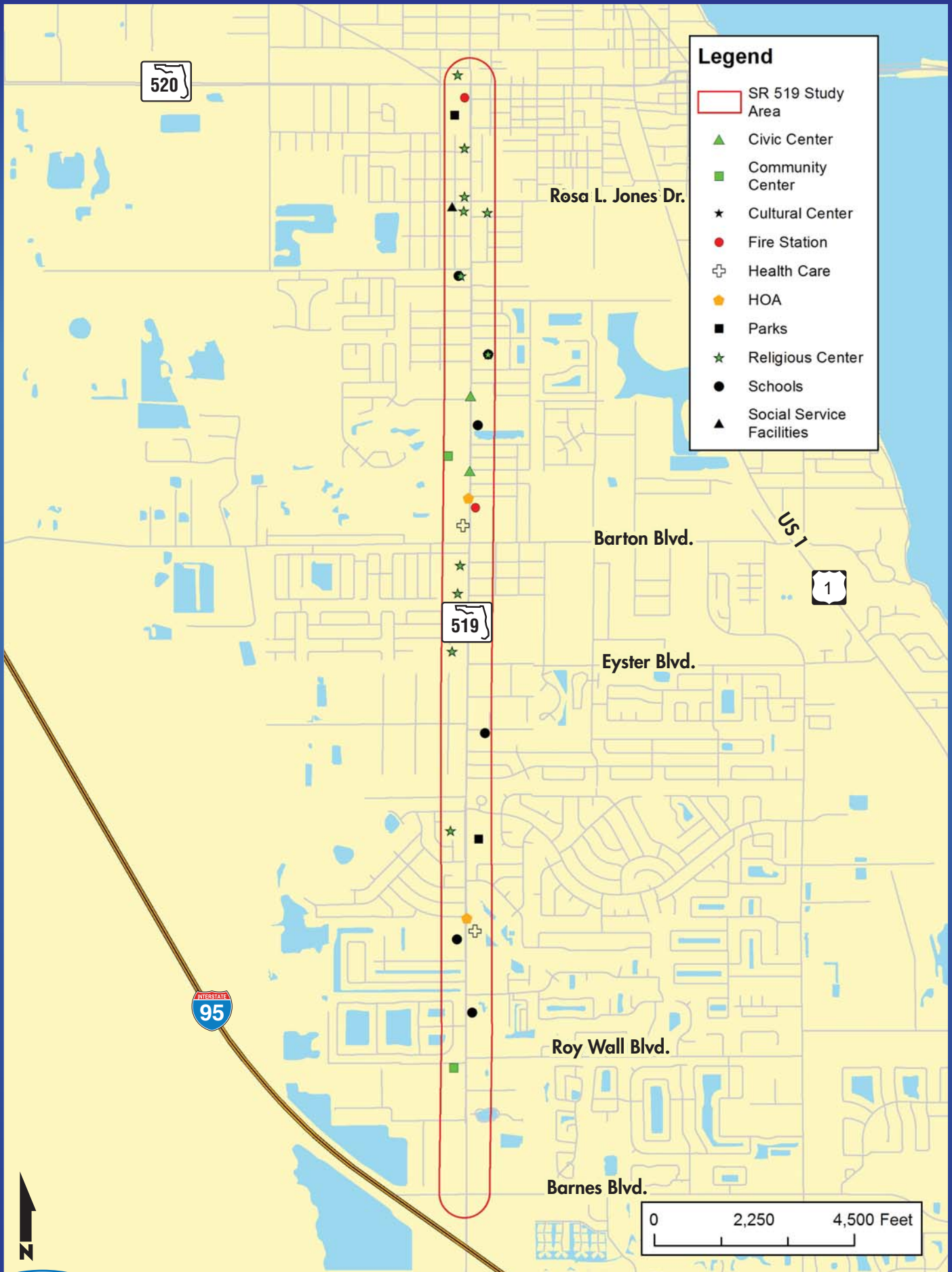
Any public or private social resources considered relevant to the study area were tabulated. Table 22 below summarizes the Social Resource evaluation for the study area. Figure 36 graphically displays the results of the Social Resource evaluation.

**Table 22: Summary of Social Resources**

Social Resources	Within Study Area
Places of Worship	0
Florida Marine Facilities	0
Cemeteries	0
Community Centers	2
Cultural Centers	0
Fire Stations	2
Government Buildings	0
Health Care Facilities	1
Homeowner and Condominium Associations	2
Parks	2
Religious Centers	11
Schools	5
Social Service Facilities	1
Veteran Facilities	0

Source: FGDL, ETDM

The project corridor is adjacent to Provost Park and Levitt Park. These parks are protected under the Department of Transportation Act (DOT Act) of 1966-section 4(f). Similarly, John F Kennedy Middle School's track area may also be protected under section 4(f) if it is deemed to be publicly accessible.



**Legend**

- SR 519 Study Area
- ▲ Civic Center
- Community Center
- ★ Cultural Center
- Fire Station
- ⊕ Health Care
- HOA
- Parks
- ★ Religious Center
- Schools
- ▲ Social Service Facilities



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### 2.9.3 Wetlands

The wetlands analysis used GIS data made available from the St John's River Water Management District (SJRWMD) dated 2009. The data shows one (1) vegetated non-forested wetland is located within the southeast portion of the Study Corridor. "Other surface waters", which include ponds and drainage swales/ditches are also present within the area. Figure 37 illustrates the wetland location and surface water systems as presented in the data; however, drainage swales and ditches are not depicted.

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### 2.9.4 Floodplains

The floodplains were identified using the latest FEMA Flood Rate Insurance maps and the 100-year flood plain localities. Figure 38 illustrates the floodplain areas. A small portion of the southern Study Corridor area contains special flood hazard zones (Zone AE) associated with 100-year flood events which have a 1% chance of annual flooding and a determined based flood elevation of 17 feet NAVD.

---

### 2.9.5 Contamination

Brownfield and Contaminated sites within the Study Area were identified using data made available by the Florida Department of Health (FDOH) and the Florida Department of Environmental Protection (FDEP). Table 24 summarizes the areas which have the potential for contamination and Figure 39 illustrates the location of these sites. The facilities shown in the figure are regulated facilities which have the potential for contamination or environmental concern, but are not necessarily contaminated.

It is important to point out brownfields are designated areas for economic redevelopment where previous uses may have led to the presence or potential presence of a hazardous substance, pollutant, or contaminant. This designation allows the Environmental Protection Agency (EPA) or FDEP to empower communities to work together to prevent, assess, safely cleanup, and sustainably reuse brownfields. This designation allows for reinvesting in these properties while increasing local tax bases, facilitating job growth, and improving and protecting the environment. This designation does not necessarily mean the properties are contaminated, they simply allow a community to incentivize redevelopment and allow for additional site testing and clean up if necessary.

**Table 23: Summary of Contamination Analysis**

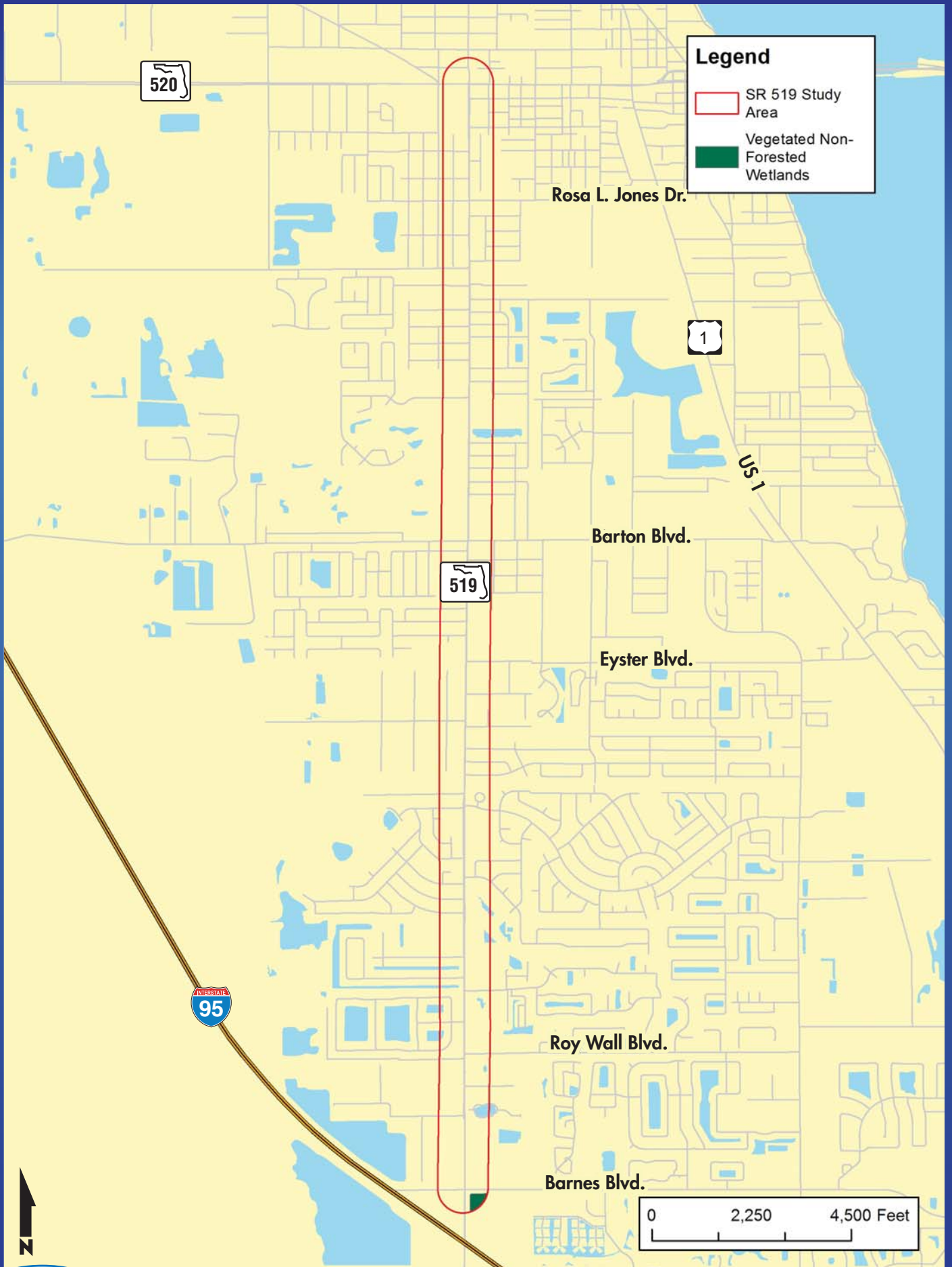
Analysis Type	Within Study Area
Brownfield Location Boundaries	2
Biomedical Waste	7
Hazardous Waste Facilities	11
Petroleum Contamination Monitoring Sites	10
Storage Tank Contamination Monitoring (STCM)	19
US EPA Resource Conservation and Recovery Act (RCA) Regulated Facilities	14
Toxic Release Inventory Sites	0
Waste Cleanup Responsible Party Sites - Closed	3

Source: FDOH, FDEP, FGDL, ETDM

As shown in the figure, the Study Corridors contains “potential” hazards and risk sites. The study area contains four facilities being monitored for petroleum contamination with clean-up work underway, four facilities which have been closed, and two facilities which require no cleanup. No offsite contamination notices have been issued by FDEP within the Study Corridors. No other known hazardous contamination sites were found.

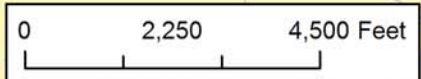
### 2.9.6 Soils

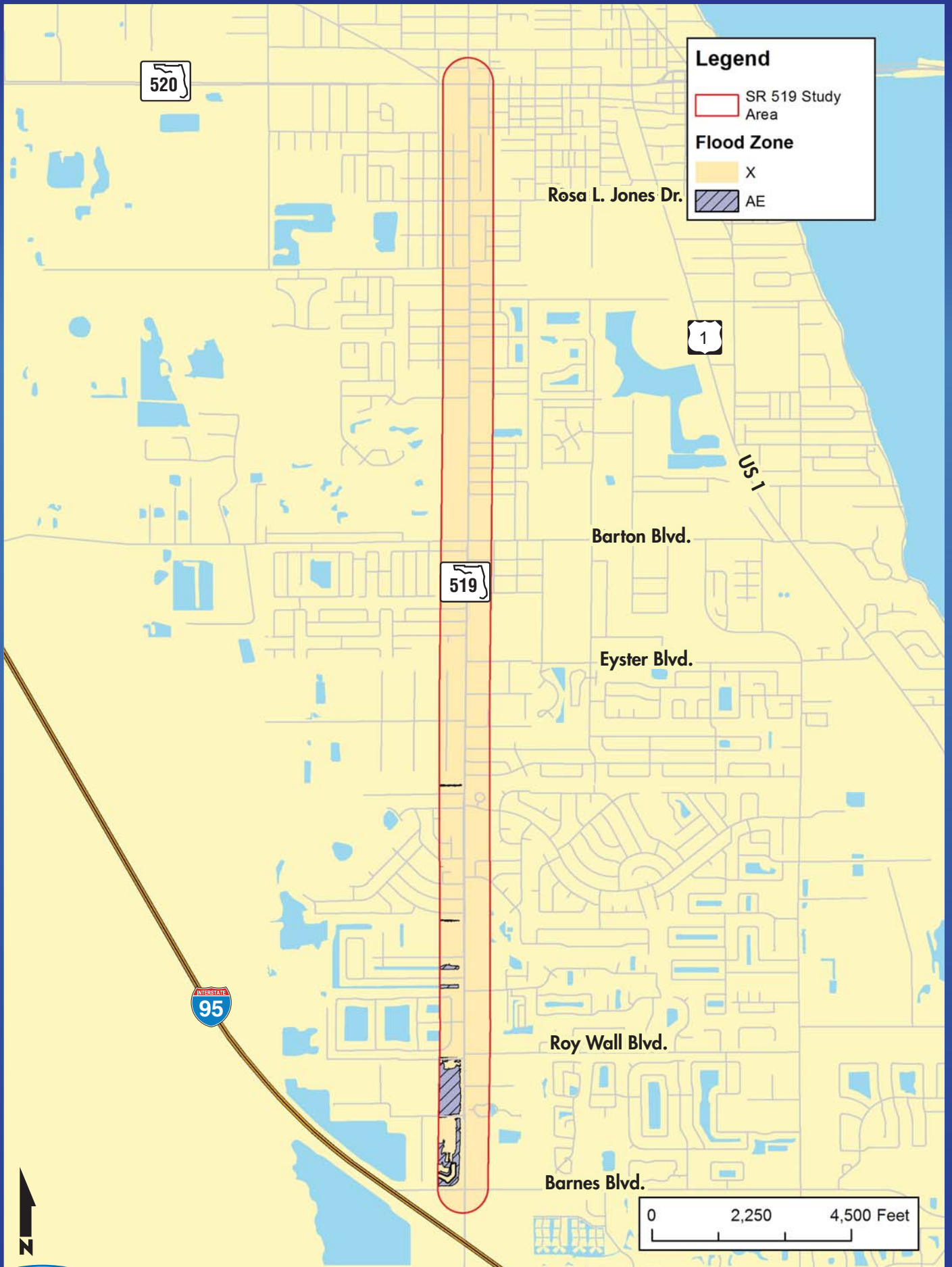
Soil conditions were inventoried within the study area using data provided by the National Resources Conservation Service. Fifteen soils types and open water occur within the Study Corridor and are represented on Figure 40. However, given the level of urbanization, most of the soils have been disturbed and reworked during development.

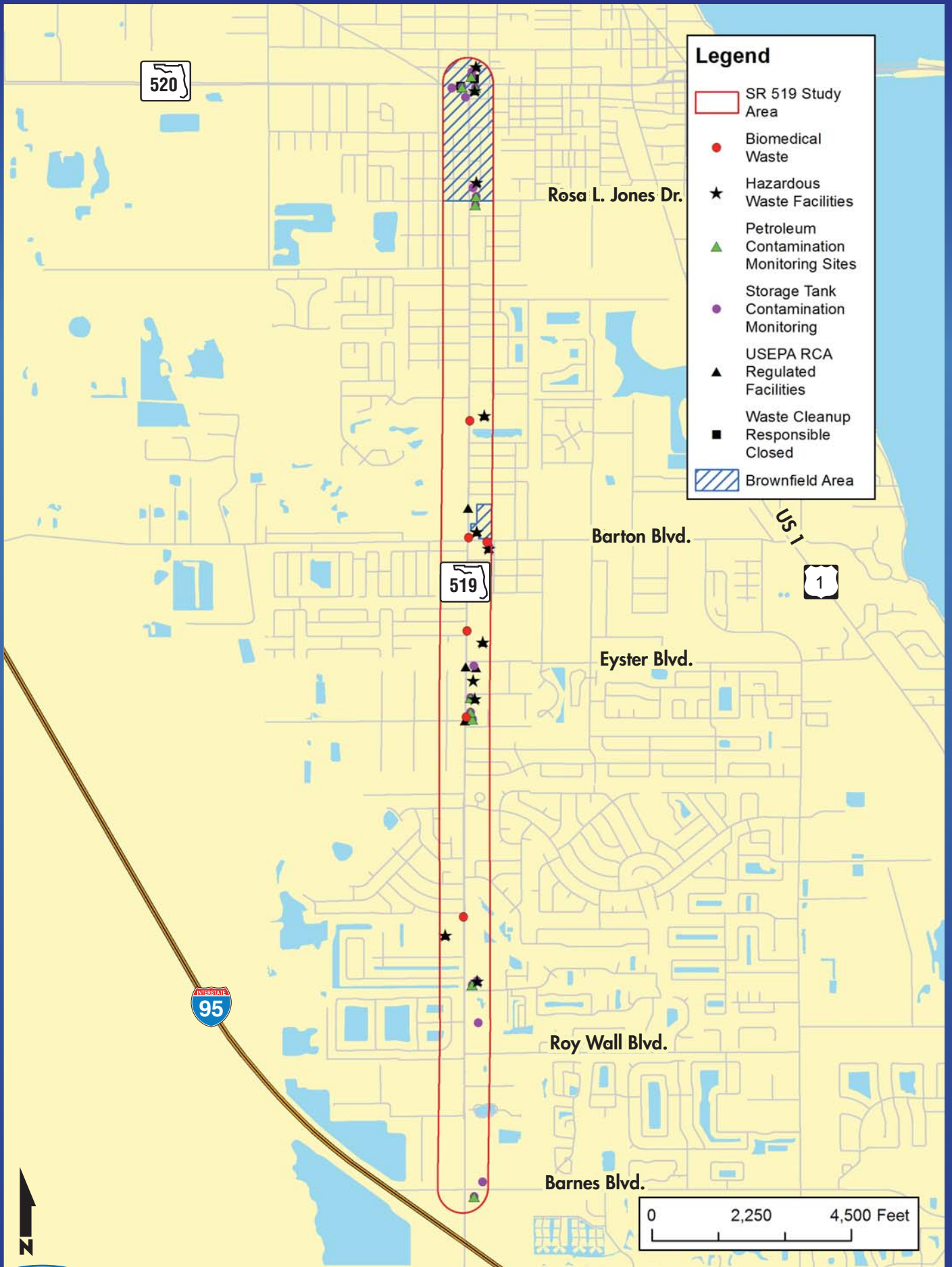


**Legend**

- SR 519 Study Area
- Vegetated Non-Forested Wetlands





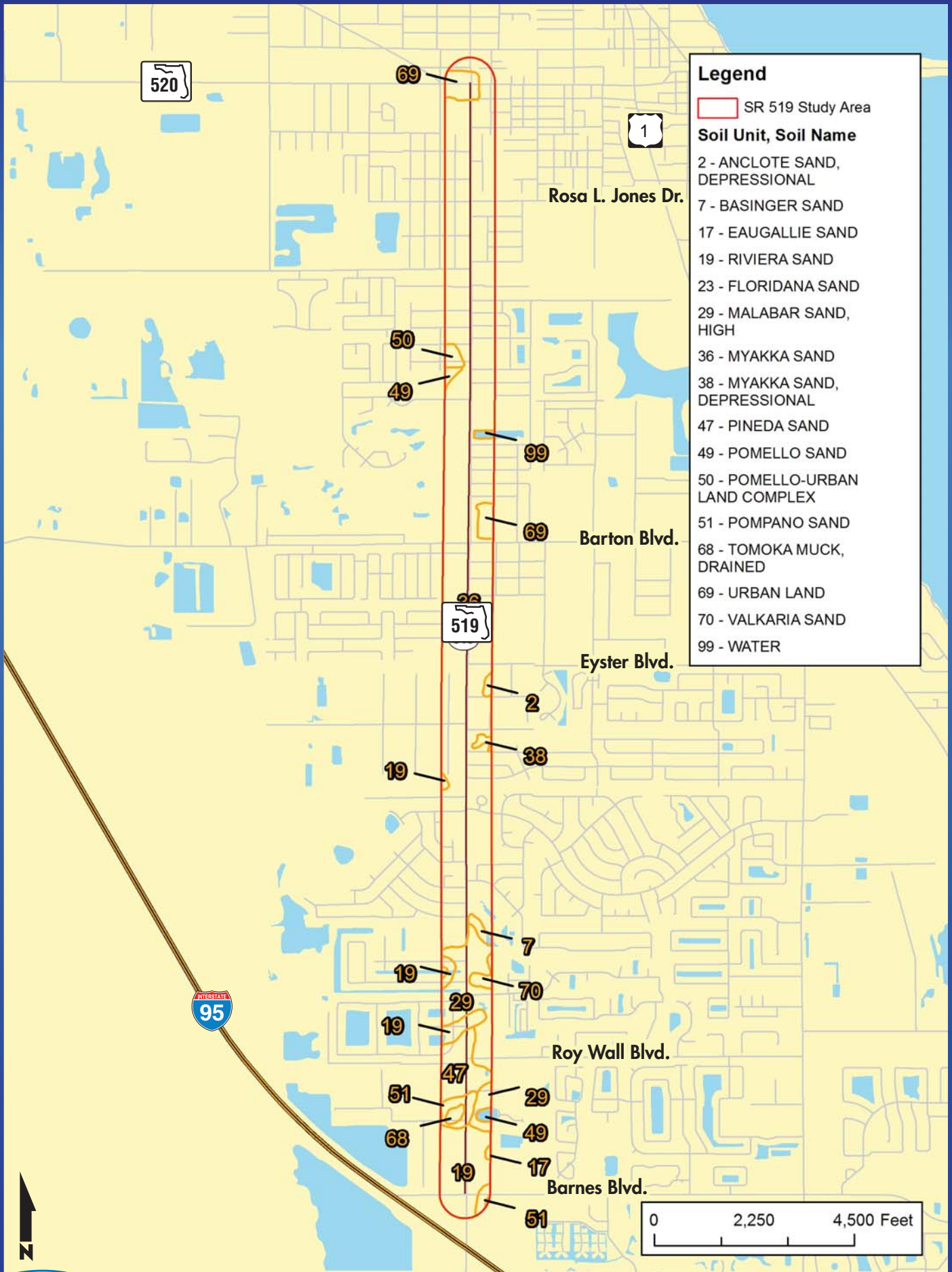


**Legend**

- SR 519 Study Area
- Biomedical Waste
- ★ Hazardous Waste Facilities
- ▲ Petroleum Contamination Monitoring Sites
- Storage Tank Contamination Monitoring
- ▲ USEPA RCA Regulated Facilities
- Waste Cleanup Responsible Closed
- Brownfield Area







## 2.9.7 Threatened and Endangered Species

Reviews of the Florida Natural Areas Inventory (FNAI) and GIS data from the US Fish and Wildlife Service (USFWS) identified critical habitat and/or consultation areas for threatened or endangered species. Consultation areas, identified by USFWS, encompass all areas where populations are known to exist. These threatened and endangered species consultation areas and/or critical habitats are summarized in Table 24 and shown in Figure 41. It must be noted the entire corridor is located within low quality habitat with limited habitat richness due to the developed nature of the area.

**Table 24: Summary of Wildlife and Habitat**

Wildlife and Habitat	Abutting Buffer	One-Mile Buffer	Study Area
Bald Eagle Nest*	No	Yes	No
Black Bear Range**	Yes	Yes	Yes
Caracara Consultation Area	Yes	Yes	Yes
Scrub-Jay Consultation Area	Yes	Yes	Yes
Shorebird Nesting Location (Least Tern)	Yes	Yes	Yes
Wood Stork Core Foraging Area	Yes	Yes	Yes

Source: USFWS, 2011; FNAI, 2009, Florida Fish and Wildlife Conservation Commission Nest Locator.

\* Last surveyed and known Active in 2012

\*\* Species no longer listed as Threatened or Endangered

The only species-specific location known is for the least tern. This protected bird species was noted as nesting upon a rooftop on an existing building. The wood stork (*Mycteria americana*) is state and federally protected as Endangered and consultation with the USFWS is required for any proposed work which impacts wood stork core foraging habitat. No wood storks were detected on or adjacent to the Project site during any of the field assessments, however the property provides excellent habitat, and it is likely wood storks utilize the site for foraging. All wetlands or shallow surface waters including ditches impacted by the proposed project will need to be mitigated in a federally-approved mitigation bank located within a wood stork core foraging area if impacts exceed 0.47 acres. There are several vacant parcels within the project area which may contain habitat suitable for gopher tortoises (*Gopherus Polyphemus*). If gopher tortoise burrows are found onsite or need to be relocated at a later date, the appropriate permits will need to be obtained from FWC to relocate the tortoises to an approved offsite recipient area prior to any construction activities. No permit will be required if all burrows can be avoided by a 25-foot radius.

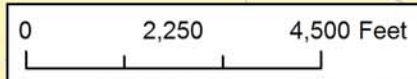


**Legend**

- SR 519 Study Area
- Least Tern Nesting (Rooftop)
- 🐻 Black Bear Range 100%

**USFWS Consultation Area**

- 🐦 Woodstork 100%
- 🦉 Crested Caracara 100%
- 🦉 Scrub-Jay 100%





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# 3

## Chapter 3: Issues and Opportunities

The assessment of existing conditions is developed to provide a more-comprehensive understanding of the SR 519 (Fiske Boulevard) study corridor, and to provide a solid foundation to support the next phases of the planning process. This involves an extensive due diligence process to collect the appropriate available data from a variety of sources, to inventory physical features of the roadway and surrounding land uses, assess current operating conditions, and review safety characteristics. This process also provides an opportunity for the Study Team to develop a feel for the community and its socio-cultural characteristics, to identify natural features, and to document other unique attributes.

This section is intended to summarize the issues identified along the corridor to be evaluated during the study, as well as opportunities to consider in the development of potential improvement strategies. During the data collection and existing conditions inventory process, elements within the corridor found to be deficient were noted appropriately as summarized in this section. Wherever possible, other aspects of the corridor which represent potential opportunities to support future enhancements were also documented. In addition, the current local agency transportation plans were scoured to identify planned and programmed improvements within the study area or nearby, as these can represent additional opportunities to combine or coordinate efforts in the future.

---

### 3.1 Existing Physical Features

The following issues and opportunities identified are directly related to the physical features of the roadway and its accompanying facilities. These items will be reviewed and discussed as part of the public engagement process, starting with the Project Visioning Team in the early stages of the project. Through the discussions which come from this interaction, additional items may be identified for consideration as part of the planning process to identify a range of potential improvement strategies.

---

#### 3.1.1 Existing Typical Section

Due to the variation in cross sections along the corridor from a rural cross-section with open drainage swales in some areas, to a more traditional urban cross-section with curb and gutters in others, there are inconsistent center turn lane widths throughout the SR 519 (Fiske Boulevard) study corridor. There are segments where the center-turn lane width varies between 12 feet to 17 feet, which could be repurposed as a raised median with controlled left-turn lanes.

### 3.1.2 Access Management

There are a high number of driveways with direct access to Fiske Boulevard due to the designated land uses surrounding the corridor. Locations with multiple driveways to individual parcels have been identified as well. There may be opportunities to condense driveway access without restricting access or circulation.

### 3.1.3 Bicycle and Pedestrian Infrastructure

As mentioned in Section 2.6.11, there are several sidewalk gaps along SR 519 (Fiske Boulevard). Filling in these gaps has the potential to create a continuous sidewalk network which will encourage and enable travel to be completed by foot between the residential properties along the corridor and the various schools and retail establishments.

In the same section, it was also mentioned part of the Brevard Zoo Trail is currently completed within the study area. The current width of this trail is 8 feet wide, slightly less than the ideal width of 10 feet. If right of way is available, widening this facility will also help to enhance the bicycle and pedestrian connectivity along this corridor.

In addition to the two improvements mentioned above, exploration should also be done to determine whether it is possible to accommodate bicycle lanes within the existing pavement width.

## 3.2 Transit Service

As mentioned in Section 2.6.12, most bus stops within the study area are located in areas where there are sidewalks (Figure 42). However, the majority of these lack landing pads which provide a connection from the sidewalk to the bus doors. Constructing landing pads has the potential to improve transit accessibility to wheelchair users and the elderly who have difficulty navigating the grass buffer when entering/exiting the bus.

**Figure 42: Existing Transit Amenities**



Source: Google Earth 2015

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### 3.2.1 Transit-dependent Population

After review of the average household income and the no car household maps there is an opportunity to identify potential areas along the corridor which would benefit from providing or upgrading the existing transit amenities and/or service. This may also involve upgrades to the existing bicycle and pedestrian network to serve these transit dependent neighborhoods; primarily located at the northern end of the corridor.

---

## 3.3 Existing Traffic Conditions

An analysis of existing traffic volumes and Level of Service (LOS) revealed most study area intersections and roadway segments currently operate at an acceptable LOS during the AM and PM peak hours. Specific traffic-related data gleaned from field observations and the SR 519 (Fiske Boulevard) Project Visioning Team (PVT) include the following:

### **SR 519 (Fiske Boulevard) and Roy Wall Boulevard Intersection**

The SR 519 (Fiske Boulevard) and Roy Wall Boulevard intersection currently operates at an acceptable LOS “F”. The analysis indicates there are some delay and queuing issues for the traffic exiting Roy Wall Boulevard onto SR 519 (Fiske Boulevard) during AM and PM peak hours. This could be an opportunity to perform a signal warrant study for this intersection. A signal would minimize the delays and address and/or correct potential angle crashes at the intersection.

### **Congestion at the Hans Christian Anderson Elementary School**

As noted in Section 2.6.11, there was observed queuing issues during the school dismissal time along SR 519 (Fiske Boulevard). The student pick-up and drop-off area may need to be modified to allow for a longer vehicle stacking area. This could eliminate or minimize the queuing issues on SR 519 (Fiske Boulevard). However, this will require coordination with the Brevard County School Board.

The SCTPO 2013 State of the System (SOS) Report highlighted the “Walking School Bus” initiative which was implemented by Robert Louis Stevenson Elementary School in North Merritt Island. A “Walking School Bus” was put into place where parents can drop-off and pick-up their children at nearby Kelly Park. The student can then walk along a supervised trail to the school (approximately 10-minute walk). The plan was successful in alleviating congestion at the school. This could also be a consideration to help alleviate vehicular traffic at Hans Christian Andersen.

### **Levitt Parkway**

Based on the collected traffic volumes and the intersection geometry, there is some delay and vehicle queuing at the SR 519 (Fiske Boulevard) and Levitt Parkway intersection; creating challenges for residents leaving or entering Levitt Park and adjacent neighborhood. Under existing conditions, the segments of SR 519 (Fiske Boulevard) approaching Levitt Parkway (from both the north and south directions) operates at an acceptable LOS “D”.

The traffic exiting Levitt Parkway and travelling on SR 519 (Fiske Boulevard) during the AM meets the threshold for a traffic signal. However, this needs to be further explored in the next phase of the project.

### **SR 519 (Fiske Boulevard) and Pluckebaum Road Intersection**

Based on the collected traffic volumes, intersection geometry, and signal timings provided by the County, there appear to be minor queuing issues at the intersection. During the previous phase of this project, several members of the SR 519 (Fiske Boulevard) PVT stated the queuing along SR 519 (Fiske Boulevard) occurs in the northbound left-turn lane for vehicles turning onto Pluckebaum Road. This queuing is intermittent at various times of the day,

and blocks vehicles attempting a southbound left-turn onto SR 519 (Fiske Boulevard) from Morris Road. As a result, additional traffic data was collected at this intersection. Based on the new data, while it was confirmed there are queues in the left-turn lane, the queues cleared within the same traffic signal cycle. However, the queuing during the red-light phase, does impact the Morris Road left-turn movement onto SR 519 (Fiske Boulevard).

This intersection will be revisited during the next phase of this study to address the queuing issue, as well as safety issues with bicyclists and pedestrians. This intersection has the highest bicycle and pedestrian crash rate along the study corridor.

### **Provost Park/Stone Street**

There is an opportunity to provide crossing alternatives for bicyclists and pedestrians crossing SR 519 (Fiske Boulevard) from the neighborhood east of SR 519 (Fiske Boulevard) to reach the various destinations west of SR 519 (Fiske Boulevard), including Provost Park, the Community Action Agency and the SCAT transit center; as well as trips for residents west of SR 519 (Fiske Boulevard) attending the Emma Jewel Charter School east of SR 519 (Fiske Boulevard).

In addition, the SR 519 (Fiske Boulevard) and SR 520 (King Street) intersection was identified by the PVT for peak-hour northbound queues for the left-turn and through movements, which extend south beyond Stone Street. The queuing at this interchange prevents vehicles from making the southbound left-turn onto SR 519 (Fiske Boulevard) from Stone Street. As a result, additional traffic data was collected at this location.

Based on the new data collected at Stone Street, the queuing issues were confirmed along SR 519 (Fiske Boulevard), preventing southbound left-turns from and to Stone Street. This intersection will be revisited during the next phase of this study to address the queuing.

---

### **3.3.1 Crash Analysis and Safety**

As noted in Section 2.8, the following six intersections have crash rates above the statewide average for the same roadway type:

- SR 519 (Fiske Boulevard)/ CR 502 (Barnes Boulevard)
- SR 519 (Fiske Boulevard)/Eyster Boulevard
- SR 519 (Fiske Boulevard)/Barton Boulevard
- SR 519 (Fiske Boulevard)/St Andrews Drive
- SR 519 (Fiske Boulevard)/Pluckebaum Road
- SR 519 (Fiske Boulevard)/SR 520 (King Street)

These locations will be analyzed further to determine appropriate improvements (if any) to reduce the occurrence of crashes at these locations.

---

### **3.3.2 Lighting**

As stated in Section 2.6.6, there is approximately a half mile long stretch of SR 519 (Fiske Boulevard) from CR 502 (Barnes Boulevard)/I-95 Northbound Ramps to Roy Wall Boulevard without any street lighting. Installing street lighting along this stretch of roadway has the potential to increase safety for both motorists and pedestrians/bicyclists as well as make it easier for SCAT bus drivers to see individuals waiting at bus stops at night.





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### 3.4 Next Steps

The issues and opportunities identified in this section will be the framework for proposing improvements throughout the SR 519 (Fiske Boulevard) Study Area. The next step in the project will be to develop a Purpose and Need as well as Goals and Objectives which ultimately will guide the identification/prioritization of improvements within the Study Area.



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