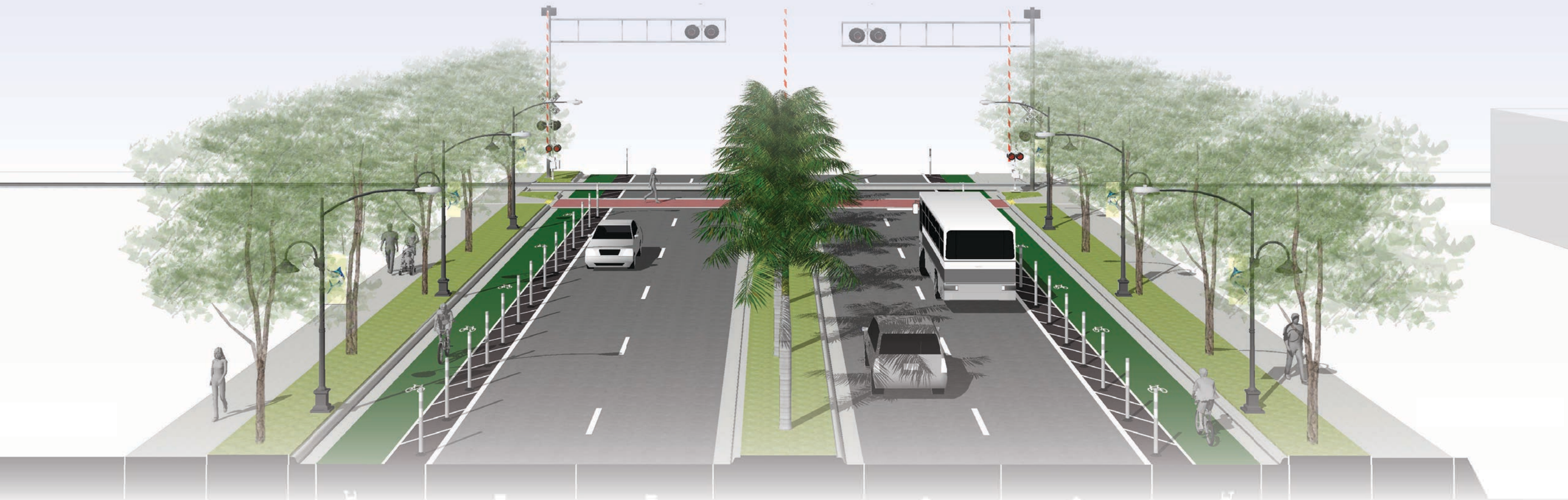
Martin Metropolitan Planning Organization

Complete Streets: Access to Transit Study



TREASURE COAST TCRPC REGIONAL PLANNING COUNCIL

ADOPTED
JUNE 2020

MARTIN MPO Metropolitan Planning Organization

prepared for:

MARTIN MPO
Metropolitan Planning Organization

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LINKS AND ABBREVIATIONS COMMONLY FOUND IN THIS DOCUMENT:

CRA	Community Redevelopment Area
EPA	Environmental Protection Agency
FDOT	Florida Department of Transportation
Martin MPO	Martin Metropolitan Planning Organization
NACTO	National Association of City Transportation Officials
TCRPC	Treasure Coast Regional Planning Council
TDP	Transit Development Plan
LRTP	Long Range Transportation Plan

Public participation is solicited without regard to race, color, national origin, age, sex, religion, disability or family status. Persons with questions or concerns about nondiscrimination, or who require special accommodations under the American with Disabilities Act or language translation services (free of charge) should contact Ricardo Vazquez (Associate Planner) at (772) 223-7983 or rvazquez@martin.fl.us. Hearing impaired individuals are requested to telephone the Florida Relay System at #711.

PURPOSE

The purpose of the MPO's Complete Streets: Access to Transit Study is to improve efficiency, effectiveness, and safety for transit users; enhance safety, functionality, and quality of life; and expand the economic benefits to the community. Acknowledging that each transit trip begins and ends as a pedestrian experience, the advance of Complete Streets is a valuable asset for creating safe and efficient routes to and from transit nodes. This study provides an overview of Complete Streets and a menu of various interventions, a methodology to identify and prioritize Complete Streets projects, and a system for public input which can be replicated over time.

The National Complete Streets Act of 2009 (S. 584 / H.R. 1443, 2009) defines Complete Street to mean "a public road that provides safe and accessible options for multiple travel modes for people of all ages and abilities, including modes such as walking, cycling, transit, automobiles, and freight." Complete Streets are context-sensitive and designed to correspond directly to their unique local conditions. There are a variety of interventions that are grouped by user focus, including zones for pedestrians, bikeways, transit users, vehicles, and roadway amenities such as furnishings. Different techniques vary by location, roadway design and speed, land use, and other factors. The interventions, implemented in various combinations, contribute to the safe and effective function of roadways and access to transit within a planning area. Different interventions are appropriate in the varying zones along the transportation corridor, such as sidewalks and shared-use paths in the pedestrian zone and lighted crosswalks, median refuges, and narrower travel lanes in the vehicular zone. These interventions are essential to the safety of roadways and accessing transit within the planning area. The unique qualities of each roadway should be considered when proposing interventions as not all types of interventions are appropriate for every roadway. This study provides a method for evaluating existing conditions and organizes various interventions by their zone and land use context.

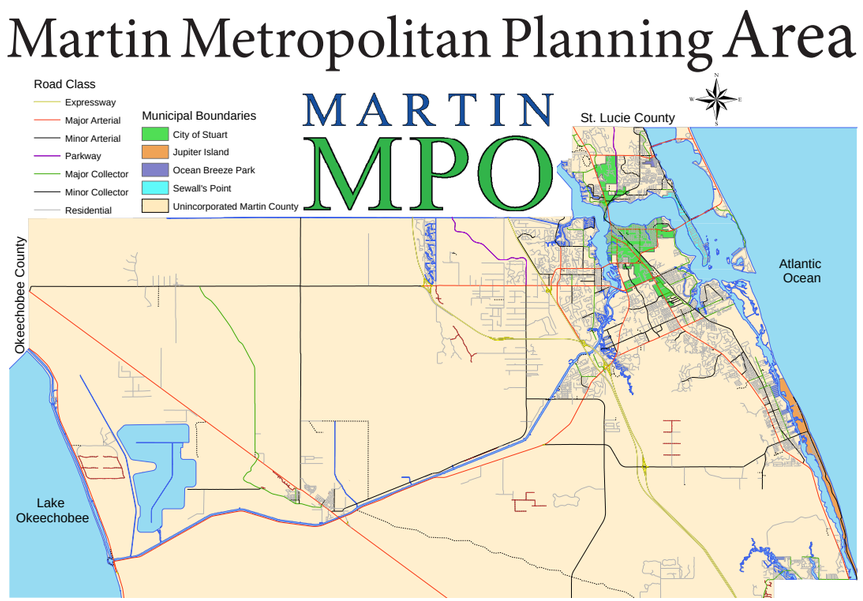
For the purposes of this study, the planning area includes all of Martin County, which constitutes the planning area of the MPO. A map of this area is provided in this section. To focus the study on those areas providing access to transit, a set of selection criteria was developed to identify those portions of roadways (termed "Opportunity Segments") and prioritize them for Complete Streets interventions. The illustrative examples used the narrowest right-of-way dimensions within each selected segment.

- existing or planned transit stop
- degree of transit need [as identified by access to vehicles]
- concentration of residences and jobs
- proximity to schools, libraries, and parks
- safety as identified by crash data
- economic development priority [as identified by inclusion in a city or county Community Redevelopment Area (CRA)].

Based on proximity to existing and planned transit stops, a total of 164 Opportunity Segments are recommended to be re-evaluated periodically by the MPO as it develops its Transportation Improvement Plan, Long-Range Transportation Plan (LRTP), and transit. The evaluation approach also can be integrated into other MPO planning activities as well as the planning efforts of local governments and FDOT as new and resurfaced roadway projects come across Martin County. Following the application of the Selection Criteria, there were a total of 38 segments prioritized as Tier One (19 segments) and Tier Two (19 segments) and therefore advanced for near-term consideration. Utilizing guidance from a multi-disciplinary project steering committee, ten varied segments were selected to illustrate the application of Complete Streets interventions, utilizing the segments' narrowest right-of-way dimensions.

Two Public Open House events enabled the public to review the selection criteria, catalog of interventions, prioritized Opportunity Segments, and illustration of Complete Streets before/after concepts and provide feedback for the study. In addition, open house participants tested additional Complete Streets interventions for various ROW dimensions to expand the understanding of different combinations of interventions and the resulting corridor design alternatives.

The prioritized Opportunity Segments will be re-evaluated annually by the MPO as it develops its Transportation Improvement Program, and the evaluation approach can also be integrated into other MPO planning activities. Further, the study recommendations can be integrated into planning efforts by local governments, the County, and FDOT as new and resurfaced roadway projects are designed and constructed over time.



Map of Martin County and the area within the "Martin Metropolitan Planning Area".

MARTIN MPO 2040 LONG RANGE TRANSPORTATION PLAN GOALS

The goals, objectives, performance measures, and targets reflect the MPO's vision of a safe, efficient, and connected multimodal transportation system. These include:

- An efficient multimodal transportation system that supports the local economy and maintains the quality of life.
- A safe multimodal transportation system.
- Protect the existing transportation system and the natural environment, minimizing adverse community impacts.
- A transportation system that addresses the needs and concerns of the public.

For more information please visit:
Martin MPO Long Range Transportation Plan

PROCESS

To develop the Complete Streets: Access to Transit Study, the Martin MPO engaged the Treasure Coast Regional Planning Council (TCRPC) to coordinate a multi-year effort to engage stakeholders and the public, review national best practices, perform technical analysis and field work, develop selection criteria, and facilitate public input and review of methods by which Martin County's transit system could become enhanced by a network of Complete Streets.

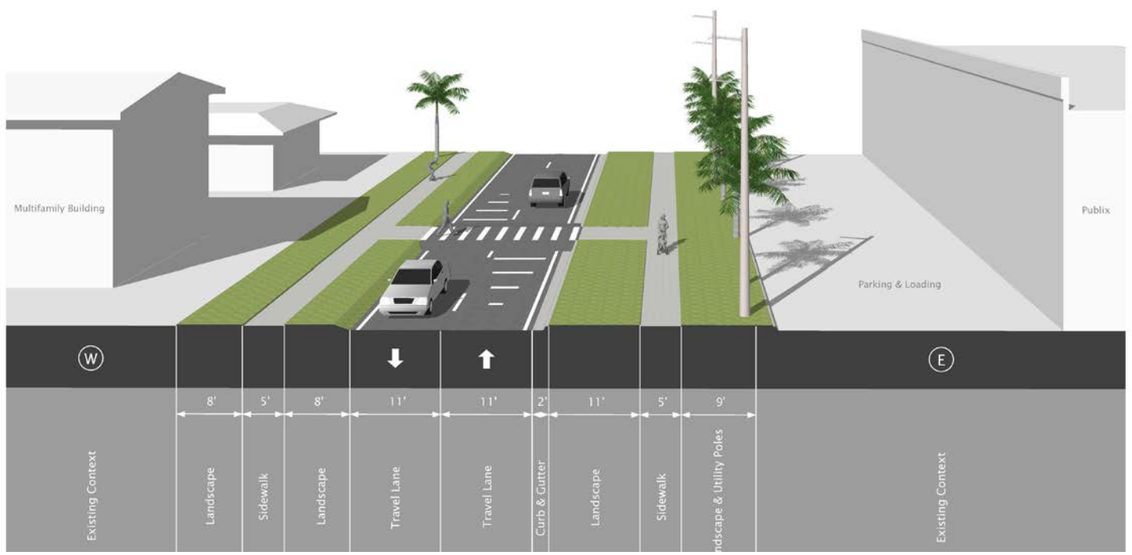
The planning process included the following components:

- Literature review and identification of best practices to help inform a Complete Streets Catalog of Interventions appropriate for Martin County
- Selection criteria and methodology to identify and prioritize "Opportunity Segments" for the application of Complete Streets interventions
- Mapping methodology through Geographic Information Systems (GIS) for the application of selection criteria
- Continued oversight by a multi-disciplinary Complete Streets Advisory Committee, including five committee meetings
- Presentations to the MPO Advisory Committees (e.g., Technical, Bicycle/Pedestrian, and Citizen's), MPO Board, and Martin County CRA Advisory Board
- Two Public Open Houses to inform the public and gain public input
- A consolidated Study Report documenting the process, methodology, findings, and recommendations

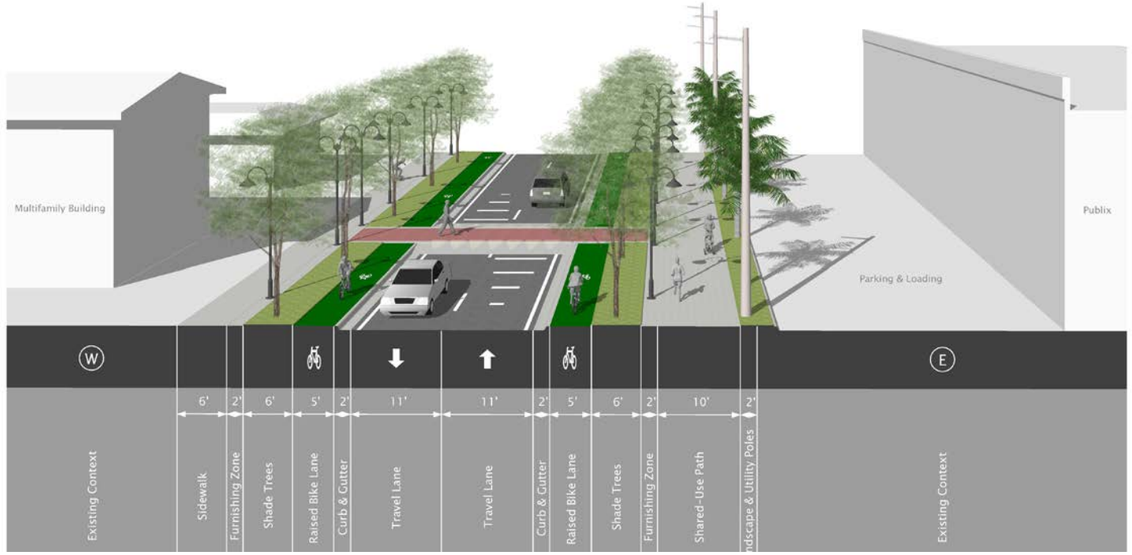
SUMMARY OF FINDINGS & RECOMMENDATIONS

Martin County has an extensive roadway network that spans more than 1,200 miles across the MPO service area. Based on the locations of existing and proposed transit stops, this study represents the first application of the MPO's Complete Streets selection criteria. Accordingly, this effort yielded 164 Opportunity Segments prioritized for Complete Streets interventions and helped inform stakeholders and the public regarding the relationship of Complete Streets and safe, efficient, effective access to transit. To implement this approach with the broadest applicability, the following actions are recommended:

- Adoption of the Complete Streets: Access to Transit Study Report and distribution to local governments, stakeholder organizations, and the public.
- Annual application of selection criteria to Martin County's transportation network with updated data as available.
- Prioritization of Complete Streets interventions for City, for local government and FDOT resurfacing and rehabilitation projects as well as new roadway design.
- Outreach to local governments and CRAs for integration of Complete Streets improvements as part of their capital plans.
- Encourage local governments to adopt Complete Streets policies with supportive land development patterns.
- Support expanded installation of crosswalks on County transportation network to enable expansion of transit service and broader selection of Opportunity Segments.



Complete Streets Illustrative Concept - SW Palm City Road - Existing Conditions



Complete Streets Illustrative Concept - SW Palm City Road - Proposed Condition

INTRODUCTION

Complete Streets are defined as streets that provide safe conditions for all users - pedestrians, bicyclists, motorists, and transit users - of all ages and abilities. Accordingly, there are different types of Complete Streets "interventions" or treatments that improve the function and safety of streets for the different members of the traveling public. This chapter presents the "Catalog of Complete Streets Interventions" designed to improve access to transit along the Martin County transportation network.

The Catalog is organized according to several distinctions, including land use context, roadway design, and focal user. There is not a one-size-fits-all best design for all roadways, but rather, different combinations of physical improvements are appropriate for a particular roadway segment depending upon land use context (e.g., urban, suburban, rural); roadway function; right-of-way; number of lanes and design speed; and context-sensitive design for different user "zones" (e.g., pedestrian, bicyclist, motorist, transit user, "furnishing" or roadway amenity). For each corridor type, the Catalog includes a description of each of these zones along with illustrations of the various interventions and their purpose.

The Complete Streets typologies provide a tool the MPO can use to build and retrofit streets to best serve all members of the traveling public, regardless of mode. While the County's street network has historically been designed to primarily accommodate vehicular needs, Complete Streets are proactively designed to equally accommodate the needs of all users, elevating design components for the safety of pedestrians, bicyclists, and transit users equally with the those of motorists. Martin County's land use composition includes urban, suburban, and rural areas that vary by density and scale. The Catalog provides best practice guidelines that can be applied to these varied land use contexts while balancing the needs of all travelers in roadway design.

FDOT CONTEXT CLASSIFICATIONS

C1-Natural
Lands preserved in a natural or wilderness condition, including lands unsuitable for settlement due to natural conditions.

C2-Rural
Sparsely settled lands; may include agricultural land, grassland, woodland, and wetlands.

C2T-Rural Town
Small concentrations of developed areas immediately surrounded by rural and natural areas; includes many historic towns.

C3R-Suburban Residential
Mostly residential uses within large blocks and a disconnected or sparse roadway network.

C3C-Suburban Commercial
Mostly non-residential uses with large building footprints and large parking lots within large blocks and a disconnected or sparse roadway network.

C4-Urban General
Mix of uses set within small blocks with a well-connected roadway network. May extend long distances. The roadway network usually connects to residential neighborhoods immediately along the corridor or behind the uses fronting the roadway.

C5-Urban Center
Mix of uses set within small blocks with a well-connected roadway network. Typically concentrated around a few blocks and identified as part of a civic or economic center of a community, town, or city.

C6-Urban Core
Areas with the highest densities and building heights, and within FDOT classified Large Urbanized Areas (population >1,000,000). Many are regional centers and destinations. Buildings have mixed uses, are built up to the roadway, and are within a well-connected roadway network

LAND USE CONTEXTS

Similar to many Florida counties, Martin County contains urban, suburban, and rural land use contexts. Each land use context is described in this section with consideration of the distinctions and differences in their built environment.

Urban Land Use Context
- Higher density with more diverse mix of uses
- More attached buildings
- Higher pedestrian activity
- Shallower building setbacks
- Areas with a higher concentration of major destinations
- Highly connected street network with frequent intersections and shorter blocks

Suburban Land Use Context
- Low-to-moderate density residential and commercial development
- Predominately detached buildings
- Deeper building setbacks
- Moderately connected roadway network with moderate to substantial intersection spacing and larger blocks that are less comfortable for pedestrians

Rural Land Use Context
- Sparsely developed areas
- Large presence of conservation and farm lands
- Limited pedestrian activity
- Sparsely connected roadway network with few intersections
- Can include clusters or blocks with mix of uses similar to urban area but surrounded with low-density development or natural/agricultural area

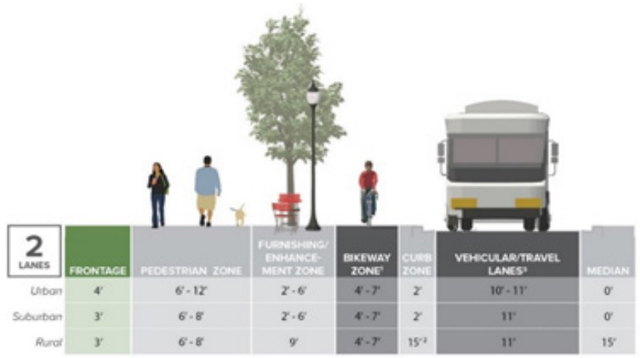
The three land use contexts are integrated into each of the three corridor types in the Complete Streets Catalog, including Two-Lane, Four-Lane, and Six-Lane corridors. The Two-Lane corridor represents a typical, undivided two-lane street; a Four-Lane corridor represents a divided or undivided four-lane street; and a Six-Lane corridor represents a divided six-lane street. The next section describes the corridor types and zones within each type.

TYPICAL STREET SECTION ZONES

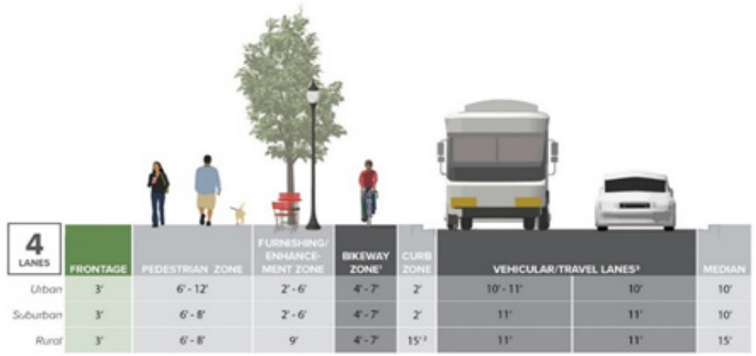
The three street sections modeled in this chapter - 2-lane, 4-lane, and 6-lane - offer a representative sample that integrate the various "zones" along a roadway:

- TRANSIT ZONE
- PEDESTRIAN ZONE
- FRONTAGE ZONE
- FURNISHING ZONE
- BIKEWAY ZONE
- VEHICULAR ZONE
  - TRAVEL LANE ZONE
  - CURB ZONE
  - MEDIAN ZONE
  - INTERSECTIONS
  - STREET DESIGN
  - TRAFFIC CALMING

Each zone of the roadway serves a specific purpose and user. Collectively, the proper combination of interventions within the varied zones will create a street that is safe, comfortable, and convenient for people walking, biking, taking transit, and driving. Land use, available right of way and proximity to nodes of transportation help inform which are the most appropriate interventions within a zone.



2 LANES	FRONTAGE	PEDESTRIAN ZONE	FURNISHING/ ENHANCEMENT ZONE	BIKEWAY ZONE[1]	CURB ZONE	VEHICULAR/TRAVEL LANES[3]	MEDIAN
Urban	4'	6' - 12'	2' - 6'	4' - 7'	2'	10' - 11'	0'
Suburban	3'	6' - 8'	2' - 6'	4' - 7'	2'	11'	0'
Rural	3'	6' - 8'	9'	4' - 7'	15'[2]	11'	15'



4 LANES	FRONTAGE	PEDESTRIAN ZONE	FURNISHING/ ENHANCEMENT ZONE	BIKEWAY ZONE[1]	CURB ZONE	VEHICULAR/TRAVEL LANES[3]		MEDIAN
Urban	3'	6' - 12'	2' - 6'	4' - 7'	2'	10' - 11'	10'	10'
Suburban	3'	6' - 8'	2' - 6'	4' - 7'	2'	11'	11'	10'
Rural	3'	6' - 8'	9'	4' - 7'	15'[2]	11'	11'	15'

6 LANES	FRONTAGE	PEDESTRIAN ZONE	FURNISHING/ ENHANCEMENT ZONE	BIKEWAY ZONE[1]	CURB ZONE	VEHICULAR/TRAVEL LANES[3]			MEDIAN
Urban	5'	6' - 12'	2' - 6'	4' - 7'	2'	11'	11'	11'	10'
Suburban	5'	6' - 8'	2' - 6'	4' - 7'	2'	11'	11'	11'	10'
Rural	5'	6' - 8'	9'	4' - 7'	24'[2]	12'	12'	12'	30'

COMPLETE STREETS CATALOG

The following illustrations depict the three corridor types that have been developed to help organize the Catalog. Dimensions for each corridor type have been established based on the three main land use contexts: urban, suburban, and rural. The dimensions provided herein represent ideal scenarios for each land use context. However, the specific widths of a particular street should be evaluated on a case-by-case basis given available right-of-way and context, with consideration of the Complete Streets Catalog serving as baseline guidance. The subsequent sections of this report provide a detailed description of each zone within the corridor types and offer a menu of options of the different design elements that can be implemented within each zone.

1. Bicycle lanes within the Bikeway Zone may not always be separated from travel lanes. When roadway pavement is continuous to the face of a guardrail or barrier, the minimum bicycle lane width is 5 feet.

2. A 15' "curb and gutter" zone in rural areas is typically a swale area.

3. 10-foot travel lanes are typically provided on lower speed roadways (design speed ≤ 35 mph), but wider lanes should be considered when transit is present or truck volume exceeds 10%.

TRANSIT ZONE


TRANSIT STOP- CHARGING
CREDIT: GROWCHARGE.ORG


TRANSIT SHELTER - BASIC
CREDIT: NACTO

TRANSIT SHELTER-ENHANCED
CREDIT: NACTO


"FLOATING" BUS STOP
CREDIT: TEGIN BENNETT


TRANSIT STOP-MEDIAN
CREDIT: NACTO

REAL-TIME ARRIVAL INFO
CREDIT: NACTO

PEDESTRIAN ZONE


MEDIAN REFUGE
CREDIT: FHWA


LIGHTED CROSSWALK
CREDIT: HOWARD INDUSTRIES


PROTECTED CROSSWALK
CREDIT: EPA.GOV


TEXTURED CROSSWALK
CREDIT: LANDSAVER


SHARED-USE PATH
CREDIT: CITY OF FORT LAUDERDALE


EXTENDED CURB
CREDIT: SEATTLE.GOV

BIKEWAY ZONE


SHARROW
CREDIT: SUN SENTINEL


STANDARD BIKE LANE
CREDIT: MIAMI SAFE STREETS SUMMIT


BUFFERED BIKE LANE
CREDIT: MIAMI SAFE STREETS SUMMIT


PROTECTED BIKE LANE
CREDIT: CITY OF ARLINGTON, VIRGINIA


SEPARATED BIKE LANE
CREDIT: RURAL DESIGN GUIDE


CYCLE TRACK (2 WAY)
CREDIT: CITY OF TAMPA

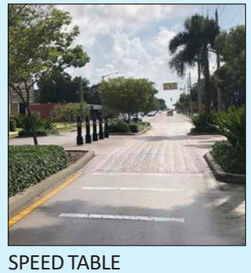
VEHICULAR ZONE


ROUNDABOUT
CREDIT: DOT


MEDIAN
CREDIT: TCRPC


BULB-OUT
CREDIT:


ON-STREET PARKING
CREDIT: NACTO


SPEED TABLE
CREDIT: TCRPC


ROTARY (SMALL)
CREDIT: TCRPC


CHICANE
CREDIT: SFBETTERSTREETS.ORG


PINCH POINT
CREDIT: CITY OF WEST PALM

FURNISHING ZONE


WATER FOUNTAINS
CREDIT: MIAMI BEACH TIMES

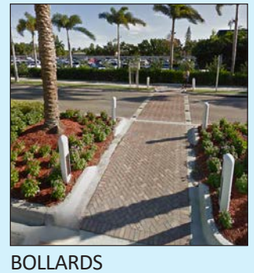

SIDEWALK DESIGNS
CREDIT: CITY OF FORT LAUDERDALE


STREET TREES
CREDIT: GOULD EVANS


PARKLET
CREDIT: STUART MAIN STREET

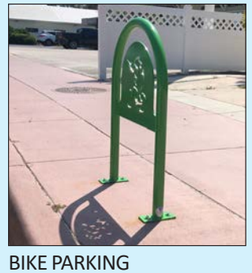

STREET FURNITURE
CREDIT: SFBETTERSTREETS.ORG


PUBLIC ART
CREDIT: CITY OF WEST PALM BEACH


BOLLARDS
CREDIT: LIGHT GUARD SYSTEMS

PEDESTRIAN LIGHTING
CREDIT: STUART MAIN STREET


SIDEWALK DINING
CREDIT: DESTINATION MAIN STREETS


BIKE PARKING
CREDIT: TCRPC

PEDESTRIAN ZONE

The Pedestrian Zone is the main accessible through-way for people to walk. Sidewalks should be implemented on both sides of the street. They should provide a straight path that lines up with crosswalks to facilitate convenient walking and clear lines of sight. The Pedestrian Zone should remain free of obstructions to avoid tripping hazards. Surfaces and slopes must be compliant with the Americans with Disabilities Act (ADA) and should remain slip resistant when wet. Lighting should illuminate this zone to create a safe walking environment, and widths should be sufficient for the anticipated volumes of people. In residential areas, the Pedestrian Zone width should be 6 feet minimum, and as much as 8-15 feet in commercial and downtown areas.

Common Elements and Features

- Sidewalks (6' minimum) or (8-15')
- Walking area free of obstructions
- Pedestrian-scale lighting

IN THE TRANSIT ZONE

Where transit stops exist, amenities should not encroach into the walkway. A bus bulb-out is one example of accommodating both the pedestrian and transit user space at narrow locations. Transit shelters can be installed on either side of the walkway based on the specific context.

FRONTAGE ZONE

The Frontage Zone is the space between the front building facade and the pedestrian through-way zone. The Frontage Zone is typically provided as a buffer between people walking and building operations, such as doors opening and people stopping to view a window display. In residential areas, the Frontage Zone may provide a buffer between the sidewalk and improvements on the adjacent property such as a fence or a hedge. In suburban areas, the Frontage Zone may help buffer the sidewalk from an adjacent parking lot. Café seating, business displays, bicycle parking, and planters are examples of items that can be placed within the Frontage Zone. The Frontage Zone can range from 2 to 10 feet depending on land use context and corridor type.

Common Elements and Features

- Seating such as benches and platform seating
- Landscaping and trees
- Pedestrian-oriented lighting
- Bicycle parking
- Public art
- Sidewalk cafes, parklets, decorative items such as sandwich boards, and functional items such as fixtures and stairs

IN THE TRANSIT ZONE

In areas with high transit use, the Frontage Zone can serve as an extension of the transit boarding and alighting space. For example, in highly commercialized areas, an area of 4-5 feet of ADA-compliant space can be provided behind a sidewalk shelter to create an expanded waiting areas for transit riders. In addition to providing clear space, elements such as landscaping, lighting, and public art in the Frontage Zone can also enhance the transit user experience.

Images of common elements and features of the Pedestrian Zone.
Top left: curb extension with street furniture- Source: sfbetterstreets.org
Center left: water fountains - Source: Miami Beach Times
Center right: Parklet - Source: Stuart Main Street
Left: sidewalk dining - Source: destinationmainstreets.com
Right: bicycle parking - Source: TCRPC - Stuart,FL

FURNISHING ZONE

The Furnishing Zone is located between the Pedestrian Zone and the Curb Zone (which is part of the Vehicular Zone), and it provides public space elements that enhance the experience for people walking. The Furnishing Zone also serves as the primary separation of people walking on the sidewalk and vehicular traffic. Landscaping, street trees, furniture, litter and recycling bins, transit shelters, utility equipment, and parking meters should all be placed within the Furnishing Zone where space permits. In urban areas, café seating can also be provided within the Furnishing Zone in locations where the Frontage Zone is not wide enough to accommodate it. The Pedestrian Zone width should be a minimum of 6 feet with 8-15' sidewalks in commercial and downtown areas.

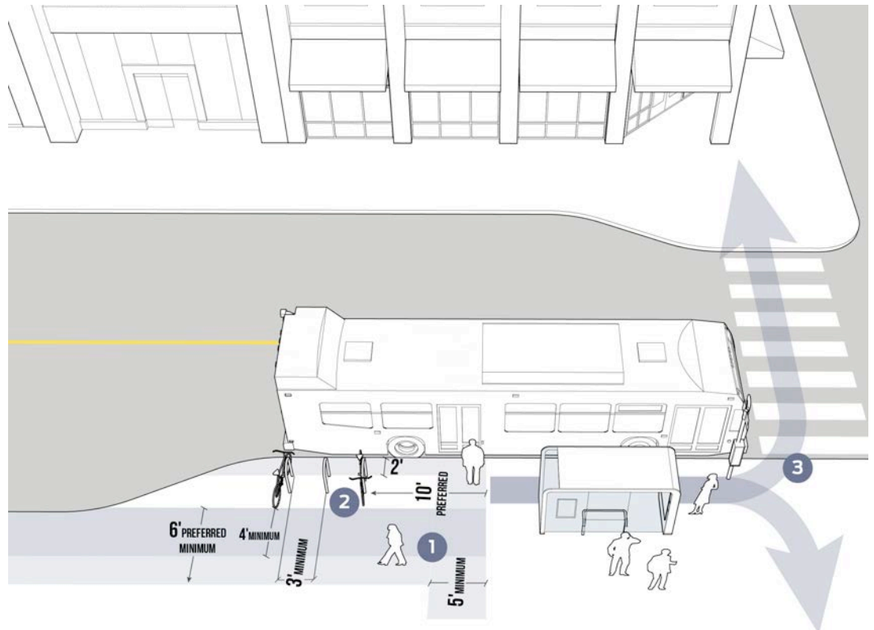
Common Elements and Features

- Street landscaping and trees
- Street lighting
- Public seating
- Transit shelters
- Vehicular and pedestrian wayfinding
- Bicycle parking
- Bollards
- Parking meters
- Utilities such as power and light poles

IN THE TRANSIT ZONE

The Furnishing Zone is the primary space for transit stops and shelters within the public right-of-way. Designing adequate and attractive areas for transit boarding and alighting can improve the public perception and experience of transit, expand use, and increase ridership. Elements that enhance these areas include lighting, shade, seating, and shelters. In addition, the provision of adequate information (such as real-time arrival data), system branding, and ensuring sufficient queuing space can also strengthen the viability of transit.

Images of common elements and features of the Furnishing Zone
Left: solar charging station - Source: growchange.org
Top middle: real time arrival info - Source: NACTO
Bottom middle: enhanced transit-shelter - Source: NACTO
Right: Pedestrian lighting - Source: Stuart Main Street



Bike parking at a transit stop along curb.

1. *Provide a clear zone around bicycle parking to avoid impeding traffic, including near transit vehicle doors, on adjacent sidewalks, and through long-term storage facilities.*
2. *If multiple bicycle racks are installed, place them at least 3 feet apart to allow convenient, uncluttered access.*
3. *Short-term bike parking should be located within 50 feet of stop or station entrance, as well as major destinations.*

Source: NACTO Transit Design Guide

Bike parking at a transit stop along curb.

1. *Ensure the waiting passengers can be seen from the outside by using glass or open design for the back wall. Include lighting in a shelter or locate shelters in a well-lit area.*
2. *Pole and bus stop signs must indicate critical information including the stop name, route number, stop number, direction or destination, and system loop.*

Source: NACTO Transit Design Guide

BIKEWAY ZONE

The Bikeway Zone can accommodate bicyclists in a variety of different ways. Depending on the context, usage, and available right-of-way, the Bikeway Zone can be accommodated in different ways – through a conventional bicycle lane that is level with the travel way, though a shared bicycle-vehicular travel lane (called a "sharrow"), or through a bicycle facility that includes a physical separation between the bicyclists and vehicles (e.g., painted striped buffer, vertical physical buffer). Dedicated bicycle lanes are marked with bicycle pavement markings and can be further enhanced with green paint either to denote points of conflict or for the entire bicycle lane. The placement of the Bikeway Zone within the right-of-way varies, and it can be placed:

- Between the Curb Zone and Vehicular Zone
- Between the Curb Zone and parked cars
- Between the Furnishing Zone and the Curb Zone
- Between the Pedestrian Zone and Furnishing Zone

Bicycle facilities can be designed as one-way lanes on each side of a bi-directional travel street, one-way on one-way vehicular travelways, contraflow to the direction of travel, or two-way on the same side of the street, where they are referred to as "cycle tracks."

Common Elements and Features

- One-way or two-way bicycle lane(s)
- Bicycle lane buffer (painted or physical)
- Signage indicating presence of bicycle lane or facility

IN THE TRANSIT ZONE

The Bikeway Zone should be designed with transit access as a priority such that it would facilitate access to transit amenities in a way that provides first/last mile connectivity. Bicycle lanes can be placed along the travelway in front of transit shelters/stops, or they can be designed to wrap around bus shelters to reduce conflict between transit stop access and bikeway travel. Additionally, it is critical to consider long- and short-term bicycle parking near transit stops to facilitate bicycle-to-transit access.

Images of common elements and features of the Bikeway Zone
Top left: protected bicycle lane - Source: City of Arlington, VA
Bottom left: separated bicycle lane - Source: Rural Design Guide
Top right: cycle track (2 way) - Source: City of Tampa
Bottom right: sharrow - Source: Sun Sentinel

PARTIALLY PROTECTED BICYCLE LANE

FULLY PROTECTED BICYCLE LANE

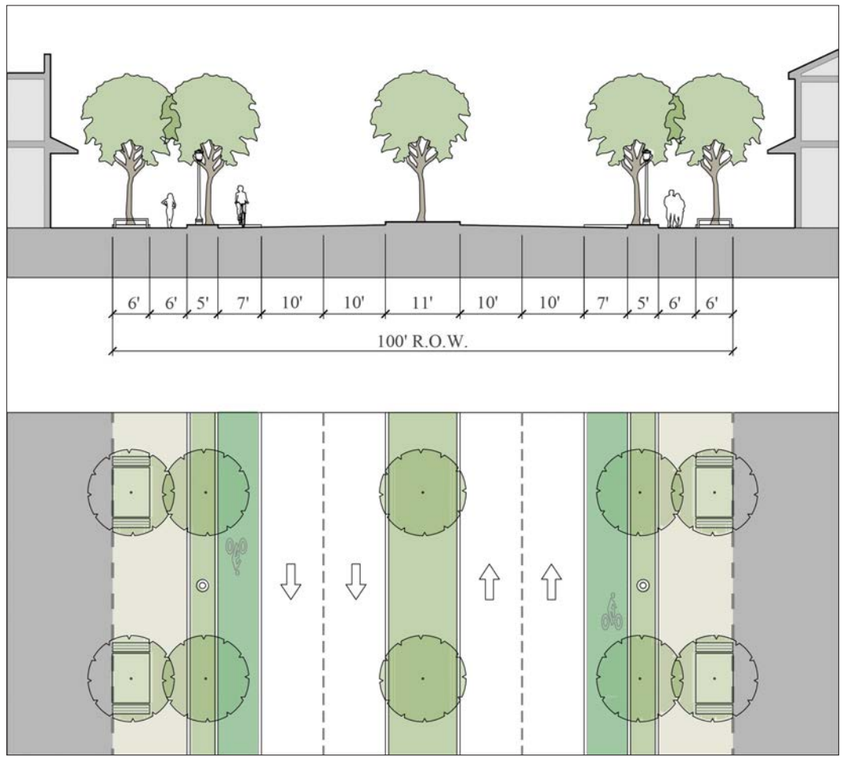
SHARED-USE PATH

VEHICULAR ZONE

The Vehicular Zone is often the predominant component of every corridor type, and consequently, it is the most critical part of any street design. The highest design priority for Complete Streets is the safety of users. Accordingly, it is important to emphasize the Vehicular Zone is not just about moving motorized vehicles – its design affects multi-modal mobility, the safety and comfort of pedestrians and bicylists, and the ability to cross the street. Different travel lane design guidelines exist for the different corridor classifications and land use contexts. Minimum lane widths generally range from 9 to 12 feet, where narrower lanes are typically installed on roadways with posted speeds of 35 mph or less. The number of lanes and lane widths are typically designed with a focus on the anticipated vehicle mix on a specific street. For example, on streets that are anticipated to have higher rates of heavy vehicles and buses, a minimum of 11-foot lanes are usually implemented. Where rights-of-way cannot accommodate 11-foot lane widths for all lanes of a multi-lane street, the outside lanes can be designed at 11 feet while the inside and center lanes can be narrower. Moreover, bicycle lane design is often integrated as part of the travel-way design. While increased spatial and physical separation between bicycles and vehicles is needed on high-speed, high-volume streets, low-volume, low-speed streets can benefit from a shared-space approach, with a shared vehicle/bicycle lane referred to as a sharrow.

Common Elements and Features

- Vehicular travel lanes (typically asphalt but can be comprised of concrete or paver blocks)
- Dedicated transit lane
- Shared vehicle/bicycle lane ("sharrow")



IN THE TRANSIT ZONE

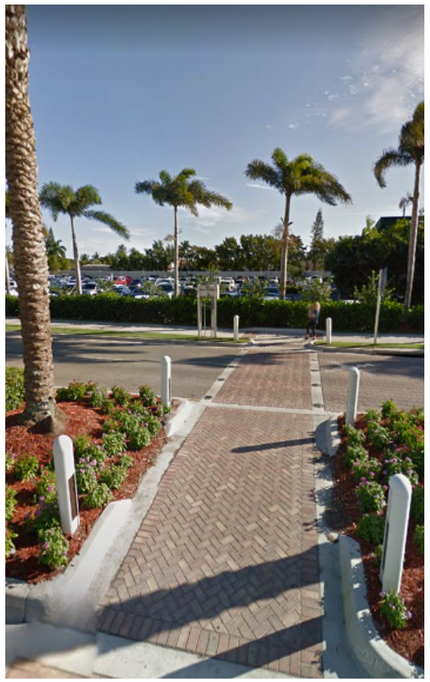
Travelways should always be designed with consideration of transit presence and operations. Accommodating transit use can be achieved through the provision of dedicated space or through space that is shared with other vehicles. Dedicated transit facilities in the roadway can include curbside bus lanes, offset bus lanes that are separated from the curb by on-street parking, and exclusive rail lanes. Dedicated transit facilities are effective tools for increasing the throughput capacity of a street. A dedicated lane can greatly increase the efficiency of transit operations, which can in turn encourage ridership through efficiency and on-time reliability. Reductions in delays also help to lower operating costs.

The image to the left depicts a four-lane roadway with a center median

- *stormwater infrastructure such as curb and gutter*
- *stormwater surfaces such as swales*
- *bicycle lanes, sidewalks, pedestrian scaled lighting, and shade trees*

Source: TCRPC

Top: extended curb - Source: Seattle.gov
Bottom: protected crosswalk - Source: EPA.gov



Light bollards - Source: light guard systems

CURB ZONE

The Curb Zone occupies the space between the travelway and the Furnishing Zone, typically including the street curb, and in some cases, other elements as well. The Curb Zone should remain clear of vertical obstacles. It may also be expanded to include sidewalk-level separated bicycle lanes (raised bicycle lanes) or elements that expand the sidewalk into the roadway, such as parklets. In more rural settings, the Curb Zone may also include swale areas for roadway drainage. Adequate curb design that considers drainage and flooding conditions is critical to creating an overall safe and pleasant road user environment.

Common Elements and Features

- Curb and gutter
- Swales
- Temporary or permanent curb extensions
- Bollards

TRANSIT FUNCTION

Adequate Curb Zone design can greatly enhance the transit user experience through designing a curb with transit vehicles in mind. Curb zones should allow transit vehicles to comfortably and conveniently pull up as close to the sidewalk level as possible facilitate a safe transition to pedestrian travel.

MEDIAN ZONE

The Median Zone is the area in the street typically separating two-way traffic. The separation can be designed as painted pavement markings or with physical separation that can be raised, such as a concrete median, or depressed such as a swale median. Depending on available width, medians can serve a diverse and versatile function for street users.

Medians can enhance safety for both motorized and non-motorized users. For example, physical medians provide a buffer between bi-directional traffic that reduces the frequency and severity of head-on crashes. Medians can also provide protected turn lanes for vehicles crossing the street. Alternatively, medians can channelize traffic to prevent left turns at intersections. Where appropriate, transit stops can be located within center medians.

Medians can also provide significant safety enhancement for pedestrian crossings by protecting crosswalks or pedestrian refuges. Where sufficient right-of-way allows a median width of at least 6 feet, a pedestrian refuge island can be installed within the median to create a resting area for pedestrians and bicyclists crossing the street. On multi-lane, higher volume streets, pedestrian refuge islands can be actuated or signalized to allow a two-step crossing for pedestrians. This is especially important as pedestrians often struggle to find appropriate and safe gaps in traffic to cross busy streets. Additionally, for wider, multi-lane roadways, pedestrian refuges can be designed with offsets that require pedestrians to change direction in the middle of the refuge to face opposing traffic, which raises alertness.

Landscaping is another component of median design that can provide beautification, further separate bi-directional traffic, or capture and clean stormwater runoff. Median design can also incorporate other design elements, such as public art or wayfinding, to further enhance the appearance of streets.

Common Elements/Features

- Pavement markings
- Raised concrete islands
- Depressed/swale medians
- Landscaped medians
- Pedestrian refuge islands
- Mid-block signalization

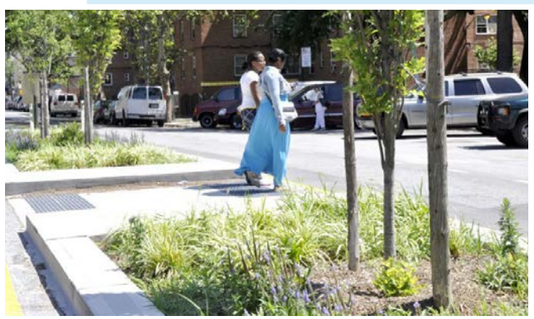
IN THE TRANSIT ZONE

Medians offer a unique opportunity for the location of dedicated transit operations to reduce conflicts with other transportation modes. For example, median bus lanes remove conflicts that occur with parking lanes, loading zones, and driveways by placing the bus lanes in the center of the street. This treatment is effective for high frequency routes that have high ridership and experience significant delay due to traffic congestion. Transit stops can also be located in the median on the right side of the lane and are often placed on the far-side of intersections in offset pairs. Center bus lanes are excellent candidates for conversion to light rail lanes if light rail is planned in the future.

Mid-block crossing with a pedestrian refuge.
Source: NACTO Urban Street Design Guide

Median with transit stop and dedicated travel lanes.
Source: NACTO Urban Street Design Guide

Landscaped median
Source: TCRPC



Median pedestrian refuge
Source: FHWA

Pavement markings
Source: Landsaver

INTERSECTIONS & STREET DESIGN CONTROLS

The transportation network is an intricate combination of nodes and segments with specific design features and operational parameters. This section examines four design and operational elements that significantly affect a transportation system's performance from a multi-modal perspective. Street design controls and median configurations help improve bicycle and pedestrian safety and safe access. Traffic calming features such as chicanes and bulb-outs (see illustrations below) help slow traffic and increase safety.

This section provides an overview of four travelway design options:

- Traffic Calming Strategies
- Intersection Design
- Roadway Design Speed
- Lane Repurposing and Retrofitting Streets

Images of traffic calming features
Top left: roundabout - Source: DOT Bottom left: speed table - Source: TCRPC Top right: chicane - Source: sfbetterstreets.org Bottom right: bulb-out - Source: NACTO

Traffic Calming Strategies
Source: NACTO Urban Street Design Guide

TRAFFIC CALMING STRATEGIES

The speed of vehicles plays a critical role in the perceived and actual safety risk associated with a street. Traffic calming strategies can be used to align the design speed, target speed, and posted speed for a street. In addition to managing travel behavior, traffic calming strategies can improve the appearance, sense of place, and visibility of people along a street. Traffic calming interventions, such as curb extensions, highly visible crosswalks, and raised speed bumps, can slow traffic near transit stops and raise pedestrian and bicyclist safety, enhancing safe transit access.

IN THE TRANSIT ZONE

Traffic calming strategies improve access to transit and create safer streets for people using transit. Traffic calming strategies can improve access for people to cross a street, stop or slow vehicles to create opportunities to cross, and create more comfortable streets with shade and slower vehicles.

Median
Medians create a pinch-point for traffic in the center of the roadway and can reduce pedestrian crossing distances.

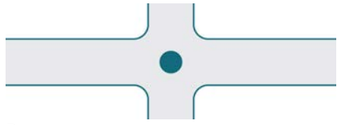
Pinch-point
Chokers or pinch-points restrict motorists from operating at high speeds on local streets and significantly expand the sidewalk realm for pedestrians.

Chicane
Chicanes slow drivers by alternating parking or curb extensions along the corridor.

Lane Shift
A lane shift horizontally deflects a vehicle and may be designed with striping, curb extensions, or parking.

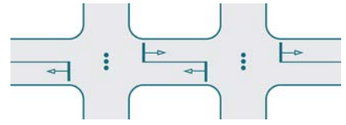
Speed Hump
Speed humps vertically deflect vehicles and may be combined with a mid-block crosswalk.

Two-Way Street
Two-Way streets, especially those with narrower profiles, encourage motorists to be more cautious and wary of oncoming traffic.



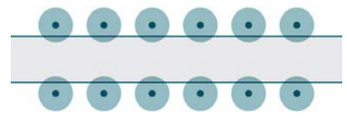
Roundabout
Roundabouts reduce traffic speeds at intersections by requiring motorists to move with caution through conflict points.

Diverter
A traffic diverter breaks up the street grid while maintaining permeability for pedestrians and bicyclists.



Signal Progression
Signals timed to a street's target speed can create lower speeds along a corridor.

Building Lines
A dense built environment with no significant setbacks constrains sightlines, making drivers more alert and aware of their surroundings.



Street Trees
Trees narrow a driver's visual field and create rhythm along the street.

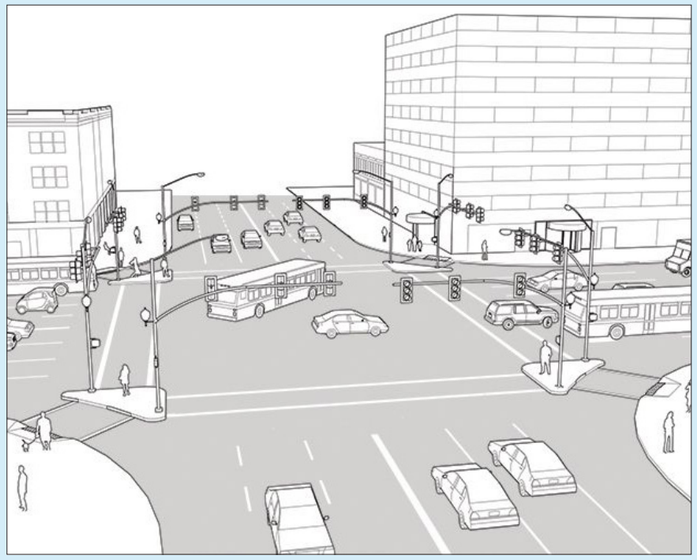
On-Street Parking
On-street parking narrows the street and slows traffic by creating friction for moving vehicles.

INTERSECTION DESIGN

Intersections bring people together and connect people to places in a community. For the most complete streets, intersection designs should meet the demands of all users as safely and efficiently as possible. Additionally, intersections should be designed to be intuitive and predictable for their universe of different types of users.

Equally important for intersections are context-sensitive traffic operations. Users should have sufficient time to cross the street with minimal delay. Intersections should also be designed to minimize conflicts between turning and through vehicles while promoting safe navigation and crossing.

AUTO-ORIENTED INTERSECTION



COMPLETE STREETS INTERSECTION

Intersections should be intuitive and provide adequate space for all users to safely cross the intersection.
Source: NACTO Urban Street Design Guide

IN THE TRANSIT ZONE

Traffic operations within intersections affect transit efficiency, reliability, and operations. On streets with multiple transit routes and high ridership, implementing transit signal priority, where transit vehicles approaching an intersection get the priority of green time, will minimize transit delay. Additionally, designing transit stops at an intersection is important to provide adequate and safe transit boarding and alighting. Whether the intersection is signalized or not, installing the transit stop at the far side of the intersection helps with transit reliability and overall intersection traffic operations as well. In some cases, ridership warrants implementing bus bays at intersections that provide expanded waiting space for transit patrons and create a distinct transit space that helps to minimize conflicts.

DESIGN SPEED

Design speed is a critical factor in the cause and severity of crashes. There is a direct correlation between higher speeds, crash risk, and the severity of injuries. In practice, the desired speed of a street should be the design speed and match the posted speed limit. Additionally, the desired vehicular speed of a street should be designed based on safe operating speeds for everyone using the street. Traffic calming measures should be used to align the design or target speed with the posted speed for a street.

IN THE TRANSIT ZONE

Transit streets should be designed for the safe operation of transit vehicles and people walking and biking. All transit trips begin or end with a walking or biking trip. The design speed of transit streets should be set to minimize the risk of crashes and the severity of crashes, particularly for people walking and biking.

Vision at 20-25-mph Source: NATCO

Speed (MPH)	Stopping Distance (FT)*	Crash Risk (%)†	Fatality Risk (%) †
10-15	25	5	2
20-25	40	15	5
30-35	75	55	45
40+	118	90	85

** Stopping Distance includes perception, reaction, and braking times.*
†Source: Traditional Neighborhood Development Street Design Guidelines (1999), ITE Transportation Planning Council Committee 5P-8.

FDOT References
Section 201 Design Controls of the FDOT Design Manual addresses design speed strategies for state roadways. Table 201.4.1 Design Speed summarizes design speed ranges for different types of land use and roadway classifications.

ROADWAY RECONFIGURATION - ILLUSTRATIVE EXAMPLE

Typical Condition: Six-lane divided facility

Lane Elimination Example: Six to Four Lanes
Source: TCRPC

Lane Elimination
Protected Bicycle Lanes (curbed buffer)

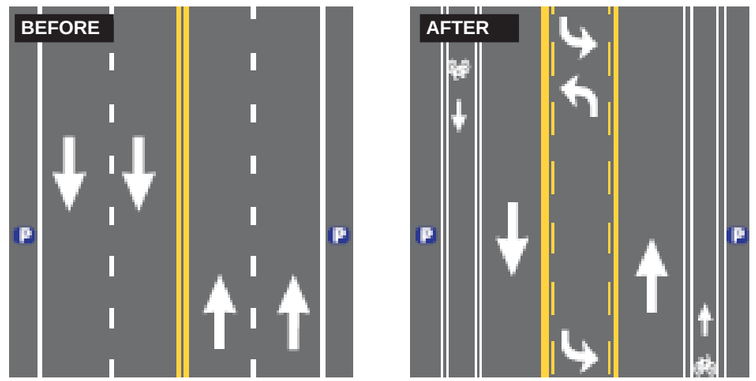
LANE REPURPOSING AND RETROFITTING STREETS

The safest streets are sized appropriately for the volume of traffic utilizing them. Where roadways are wider than necessary, either with excessively wide travel lanes or more travel lanes than necessary, speeding tends to occur, posing safety threats to motorists and non-motorized users alike.

Roadway right-of-way is a costly component of road design, and efficiency of design that often results in the prioritization of improvements that can be accommodated within existing curb-to-curb widths. Where roadway conditions lack suitable amenities for non-motorized users, street retrofitting through modified striping and curb modifications can enhance safety for pedestrians, bicyclists, and transit users. For example, restriping a roadway with narrower travel lane widths can produce sufficient space for the installation of bicycle lanes. These types of improvements can be implemented during regularly scheduled repaving or maintenance projects, during streetscape and beautification projects, or as stand alone improvements with minor milling.

LANE REPURPOSING AND FDOT GUIDANCE

Where traffic volumes are well-below the capacity of a roadway, a lane repurposing may be an appropriate strategy to "right-size" a roadway for its vehicular demand. FDOT guidance indicates lane repurposing projects entail the removal of one or more travel lanes to create space for people walking, biking, and taking transit. Lane repurposing projects are also undertaken to improve the safety of roadways by lowering speeds and introducing traffic calming measures. Lane repurposing requires traffic analyses and public outreach to ensure community awareness and consistency with local visions and goals.



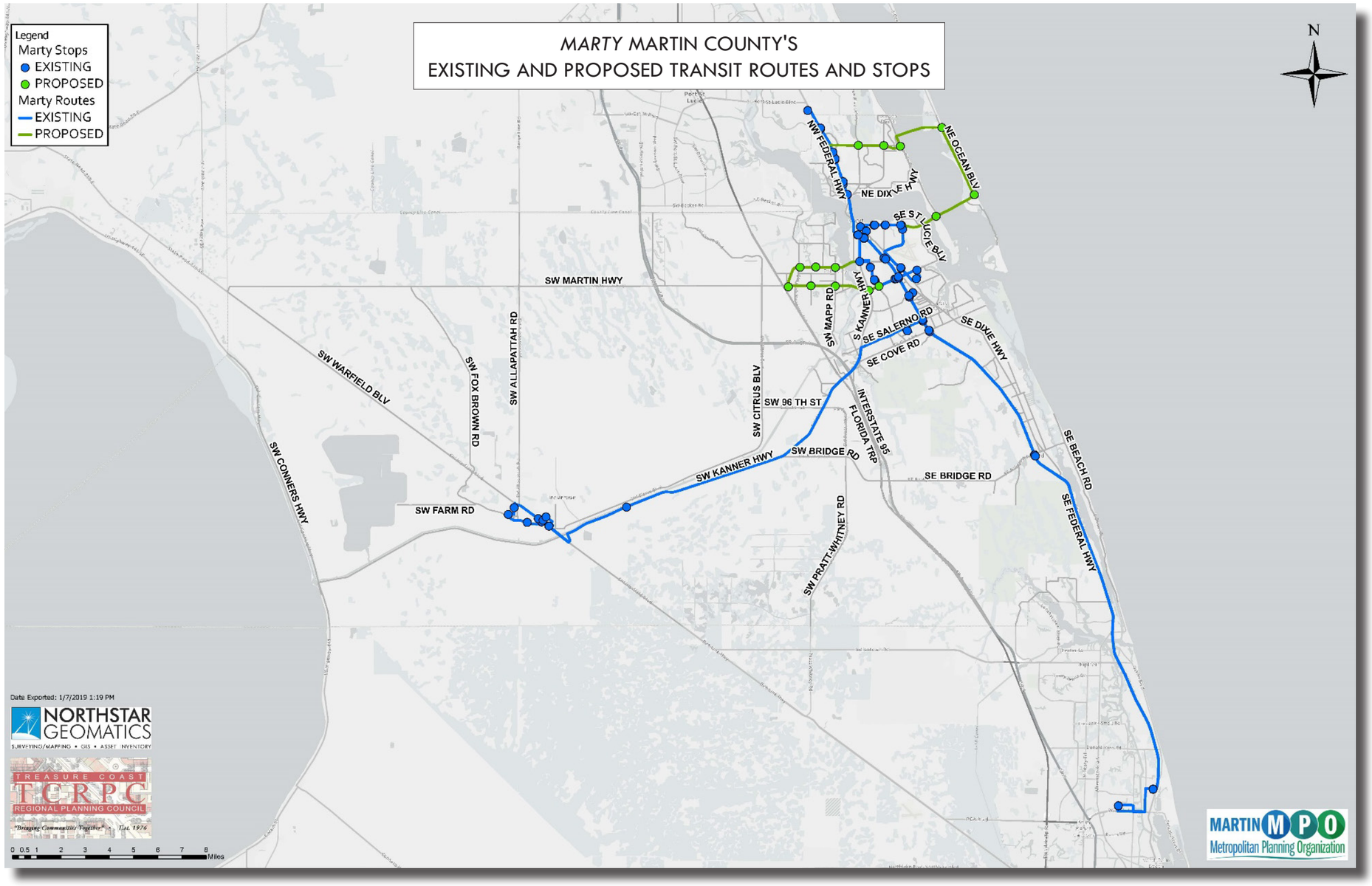
Lane Elimination Example: City of Grand Rapids, Michigan, installed a Road Diet on Burton Street
Source: FHWA-SA-15-052

PROJECT IDENTIFICATION AND PRIORITIZATION:

To identify and prioritize Complete Streets opportunities, eight evaluation criteria were developed to enable a objective, consistent methodology for application to Martin County's roadway network. The eight criteria are summarized below and described in detail in this chapter.

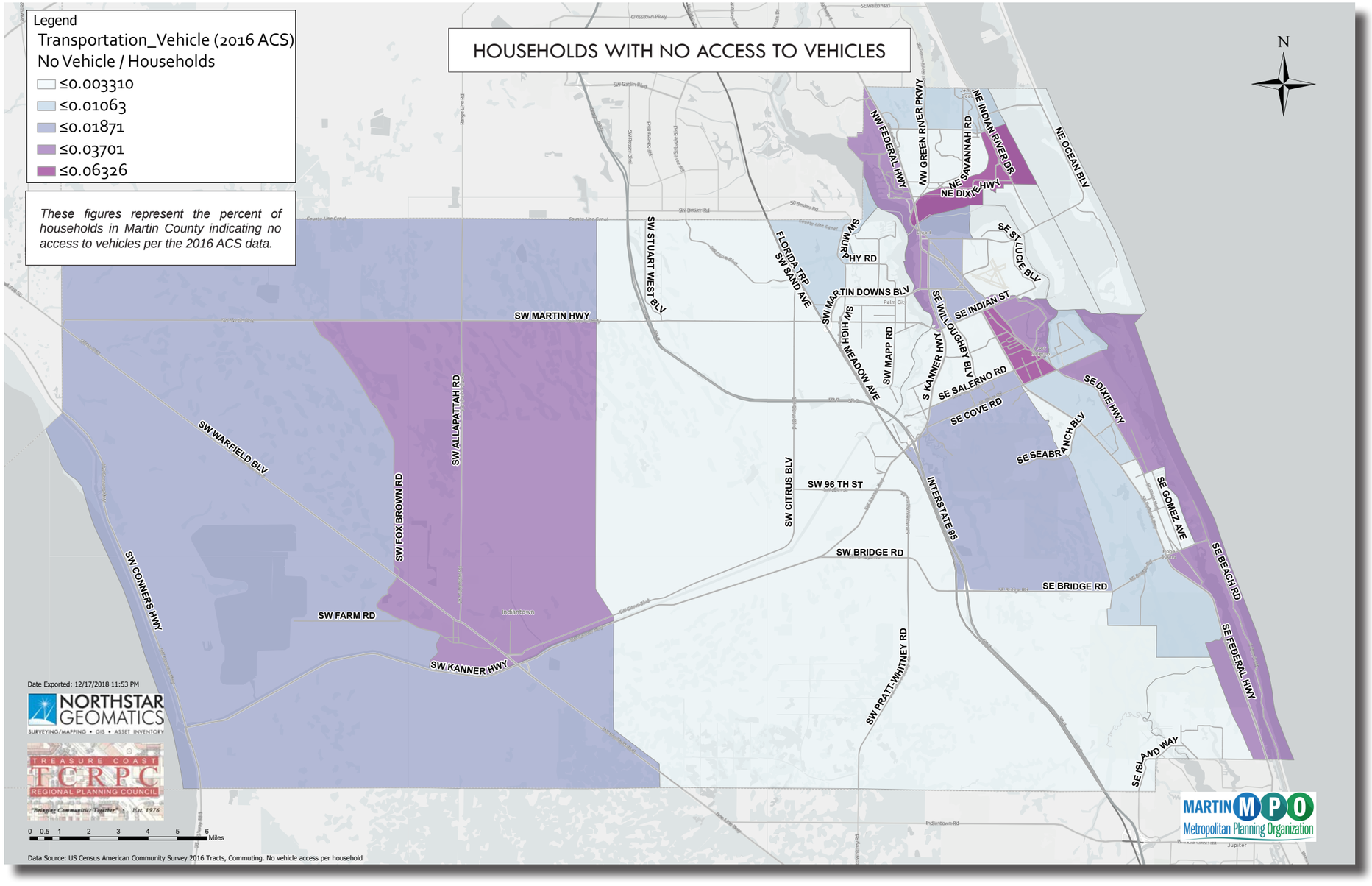
1. Transit Node: focuses on proximity to existing and proposed transit stops as a baseline criterion. National best practices consistently focus on a half-mile pedestrian shed surrounding transit stops as critical for safe, convenient transit access. The bicycle shed surrounding stations is typically 2-miles. Utilizing the Martin County Transit Development Plan (TDP), existing stops were identified for the 2019 routes, and major intersections were identified on proposed routes. Accordingly, the methodology assigned 5 points for segments within a half-mile of existing transit stops and 3 points for segments within a half-mile of proposed stops. However, if a segment was within the boundary of a Community Redevelopment Area (CRA), the catchment was extended to 2 miles given the heightened focus on bicycle and pedestrian conditions and improvements. The Martin County CRAs, City of Stuart CRA, and anticipated Village of Indiantown CRA were all included equally in this criterion.
2. Transit Need: focuses on transit need as defined by a households access to vehicles as reflected in Census data. Segments within census blocks with a statistically significant number of households with access to one or no vehicles were awarded two points.
3. Population Density: focuses on segments within census blocks with higher than average population density were awarded one point.
4. Job Density: focuses on segments within areas with above-average job density were awarded 1 point.
5. Park/Recreational Destinations: focuses on proximity to park and recreational facilities, wherein segments within a half-mile were awarded one point.
6. Educational Destinations: focuses on institutions, and segments within a half-mile of schools, colleges, and libraries were awarded one point.
7. Safety Emphasis: focuses on safety and the propensity of crashes. After analyzing five years of crash data, the high-crash areas for vehicle crashes involving pedestrians and bicyclists were identified (more than 11 crashes per square mile) and awarded two points.
8. And finally, the economic focus of the municipal and County redevelopment efforts were considered as the eighth criterion, and projects within CRA boundaries were awarded two points.

Evaluation Criteria		Measurement	Data Sources + Shapefiles	Approach	Weighting for Opportunity Project Identification	Point(s)
1	Transit Node	Is the project on a transit route with stops on the project corridor?	Martin MPO; Martin County Transit	Score projects within ½-mile of existing/proposed transit stops (outside CRA) and within 2 miles (within CRA) NOTE: "Bike/ped travel distance" areas extended two miles if area touches a CRA boundary to address bike access to transit	Existing Transit: Catchment areas within ½-mile of existing transit stops	**5**
					Proposed Transit: Catchment areas within ½-mile of major intersections along proposed transit routes	**3**
2	Transit Need	What is the household (HH) access to vehicles (none, one, more than one)?	US Census Data	Score Census blocks with constrained access to vehicles (zero or one car per HH)	Census blocks with statistically significant number of HHs with access to no vehicles or one vehicle	**2**
3	Live	Is the area above the average population density?	ESRI "Living Atlas," current (2018) Census block groups; project limits	Score Census blocks with greater than average population density	Census block groups with above average population density	**1**
4	Work	Is the area above the average employment density?	2018 InfoUSA workplace data; current (2018) Census blocks	Score Census blocks with greater than average job density	Census blocks with above average job density	**1**
5	Play	Are parks & recreational areas located near the project?	Parks in Martin County (Local, County, State, and Federal)	Score projects located within ½ mile of park or recreational facility	Areas within ½ mile of park and recreational facilities	**1**
6	Learn	Are schools and libraries located near the project?	Schools, Colleges & Libraries in Martin County	Score projects located within ½ mile of School, Library or College	Areas within ½ mile of schools, libraries or college	**1**
7	Safety	Are crash hotspots occurring on the street?	Bicycle/Pedestrian Crash Data for Martin County (5-years)	Create crash "heat map" with locations of bicycle and pedestrian crashes; score locations with high density of crashes	Areas with above average crash density (11+ crashes/square mile/5 years)	**2**
8	Economic Hub	Are the project limits within a Community Redevelopment Agency boundary?	City of Stuart, Village of Indiantown, Martin County	Score projects located within the boundaries of a CRA	Areas within a CRA	**2**



TRANSIT NODE

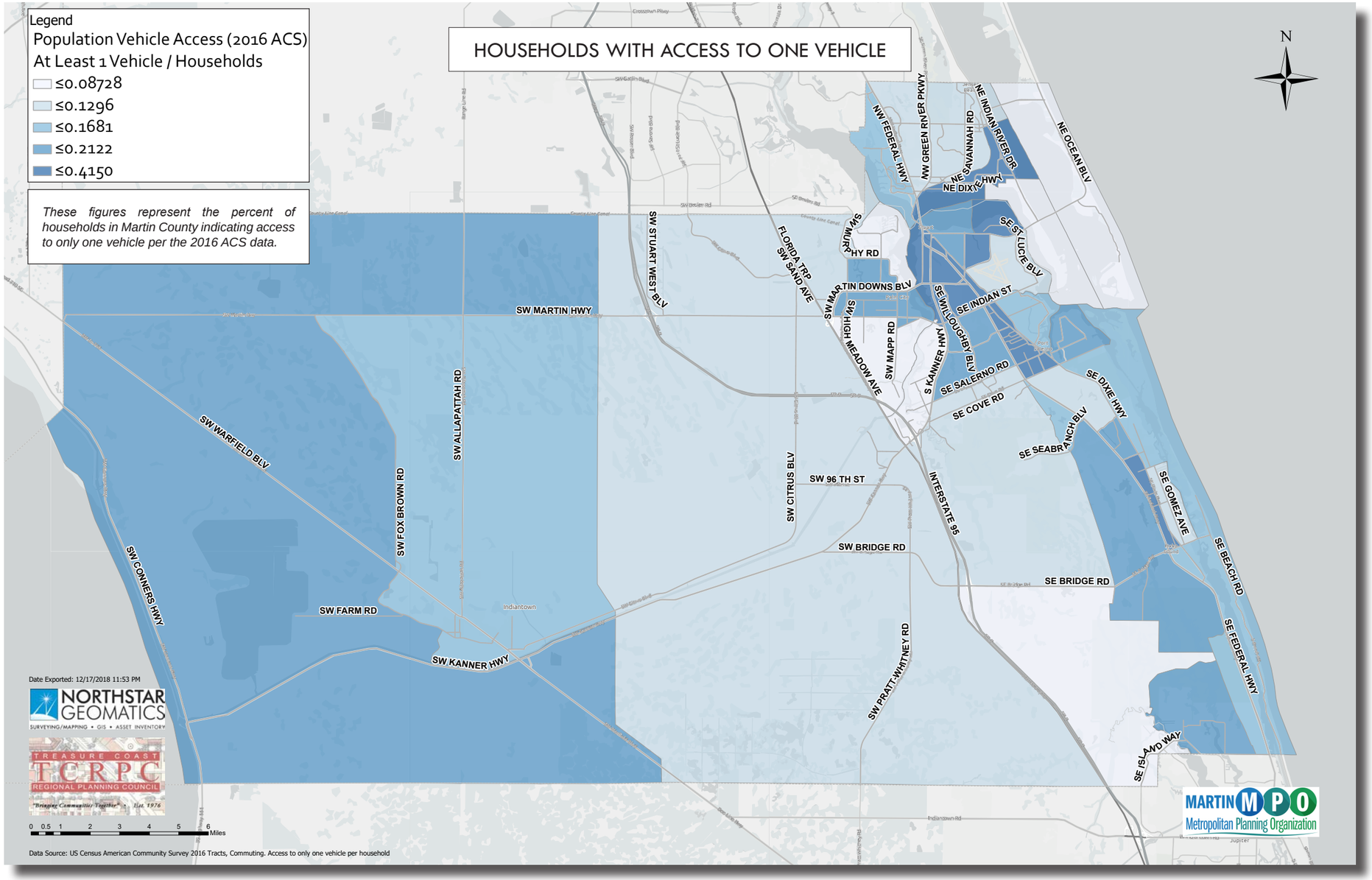
Utilizing the Martin County Transit Development Plan, a series of GIS maps were developed to identify existing and proposed transit routes and stops in Martin County. Existing stops and routes included those in operation in 2019 (identified in blue on the map). For proposed routes, major intersections were identified as proposed stops (identified in green on the map).



TRANSIT NEED

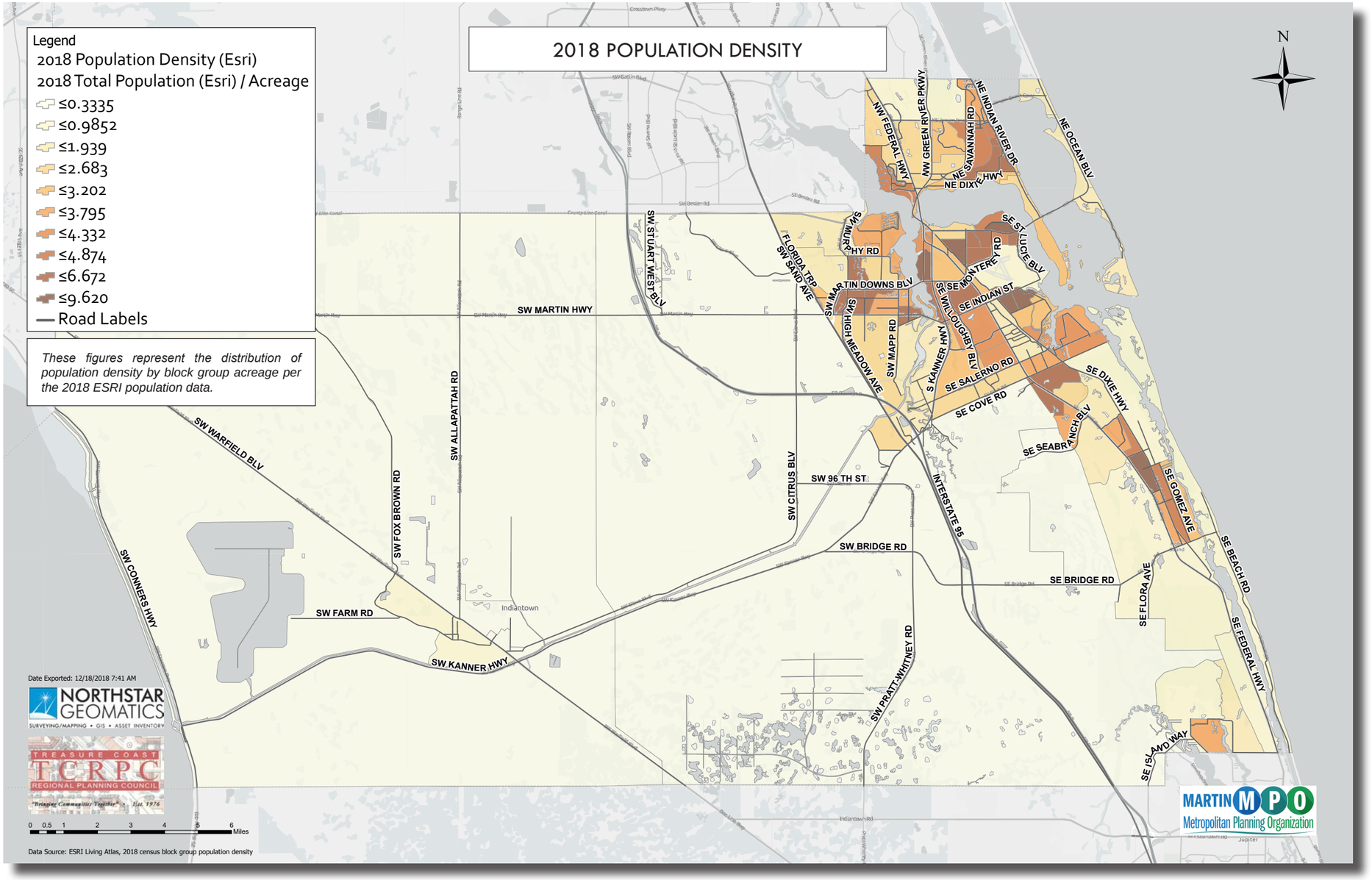
The level of transit need by individuals was identified as a second criterion in the Complete Streets selection criteria. National data indicates there is an average of 1.88 vehicles per household in the United States, with Martin County residents averaging 2 cars per household. Therefore, households with access to fewer vehicles (a single vehicle or no vehicles per household) were presumed to exhibit a greater degree of transit need, with an increased likelihood of transit use and access by foot or bike.

Utilizing Census data, the census tracts with a predominance of households having access either to a single vehicle or no vehicles were identified, aggregated, and mapped in GIS. Those tracts with a statistically significant number of zero and one-car households were assigned 2 points in the analysis.



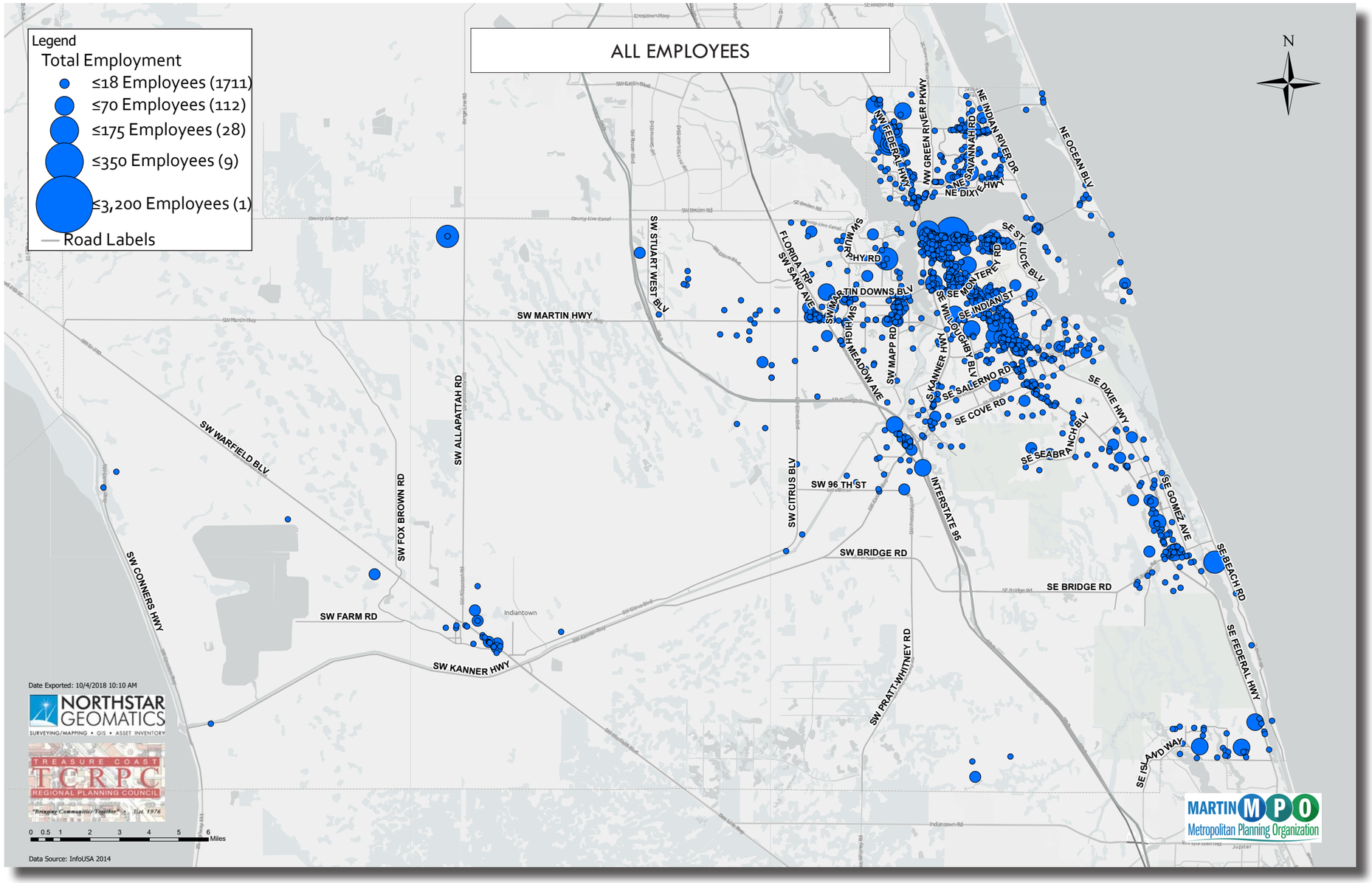
TRANSIT NEED

Accompanying the identification of census tracts without access to vehicles, those census tracts with households having access to a single vehicle were also prioritized in the analysis. The distribution of single-vehicle households is identified in the map on this page. As evidenced by the analysis, there is a higher concentration of single-vehicle households along the coast and in the western portions of Martin County.



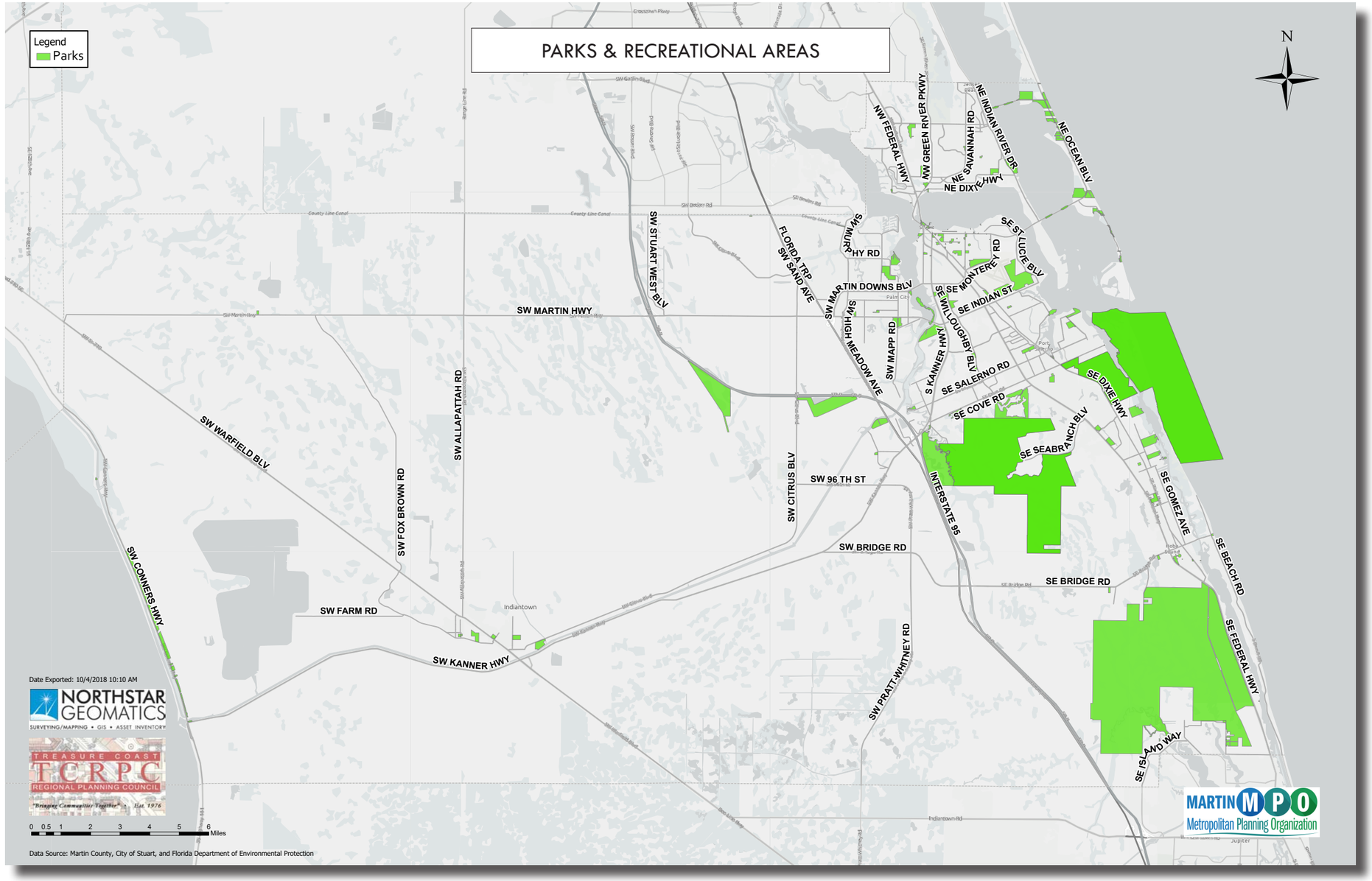
LIVE

Transit service is more efficient when it serves areas of higher density, and transit routes tend to be planned within areas of greater density. Accordingly, population density was identified as a third criterion for the prioritization of Complete Streets improvements. Martin County's census blocks were analyzed and tiered according to population. Those blocks with statistically higher population density were assigned 1 point in the analysis.



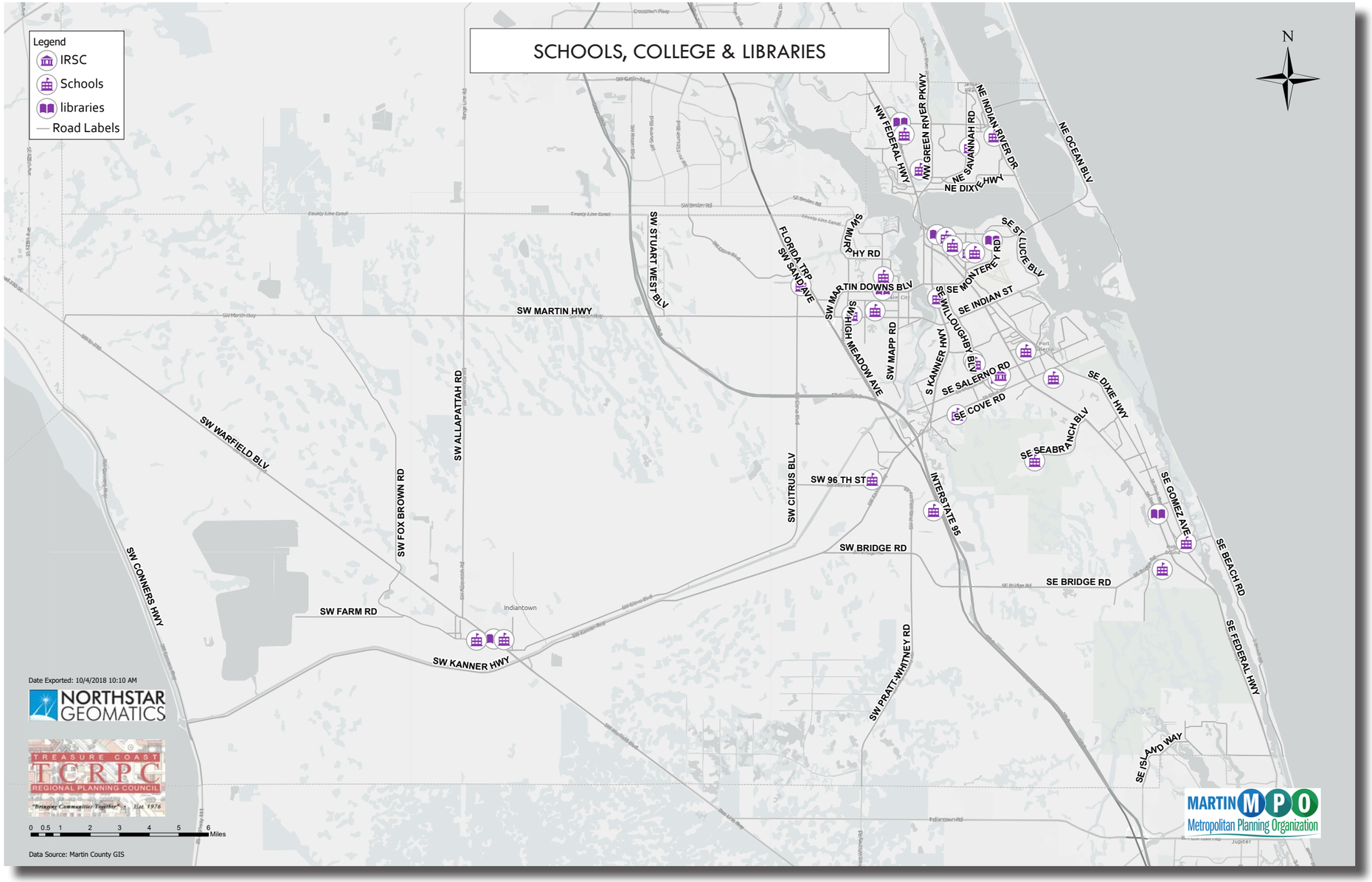
WORK

Complementing population density, employment density, as measured by the number of jobs per acre, was utilized as the fourth criterion in the Complete Streets evaluation matrix. Utilizing data from InfoUSA, all jobs in Martin County were identified and mapped in GIS. In the map to the left, the locationof employers in Martin County are denoted with circles, and circle sizes are correlated with the number of employees in a given location. Based on the map analysis, it is evident that Martin County's jobs tend to be concentrated in Stuart and along major commercial corridors. Those areas with a statistically higher density of jobs/ acre were awarded 1 point in the analysis.



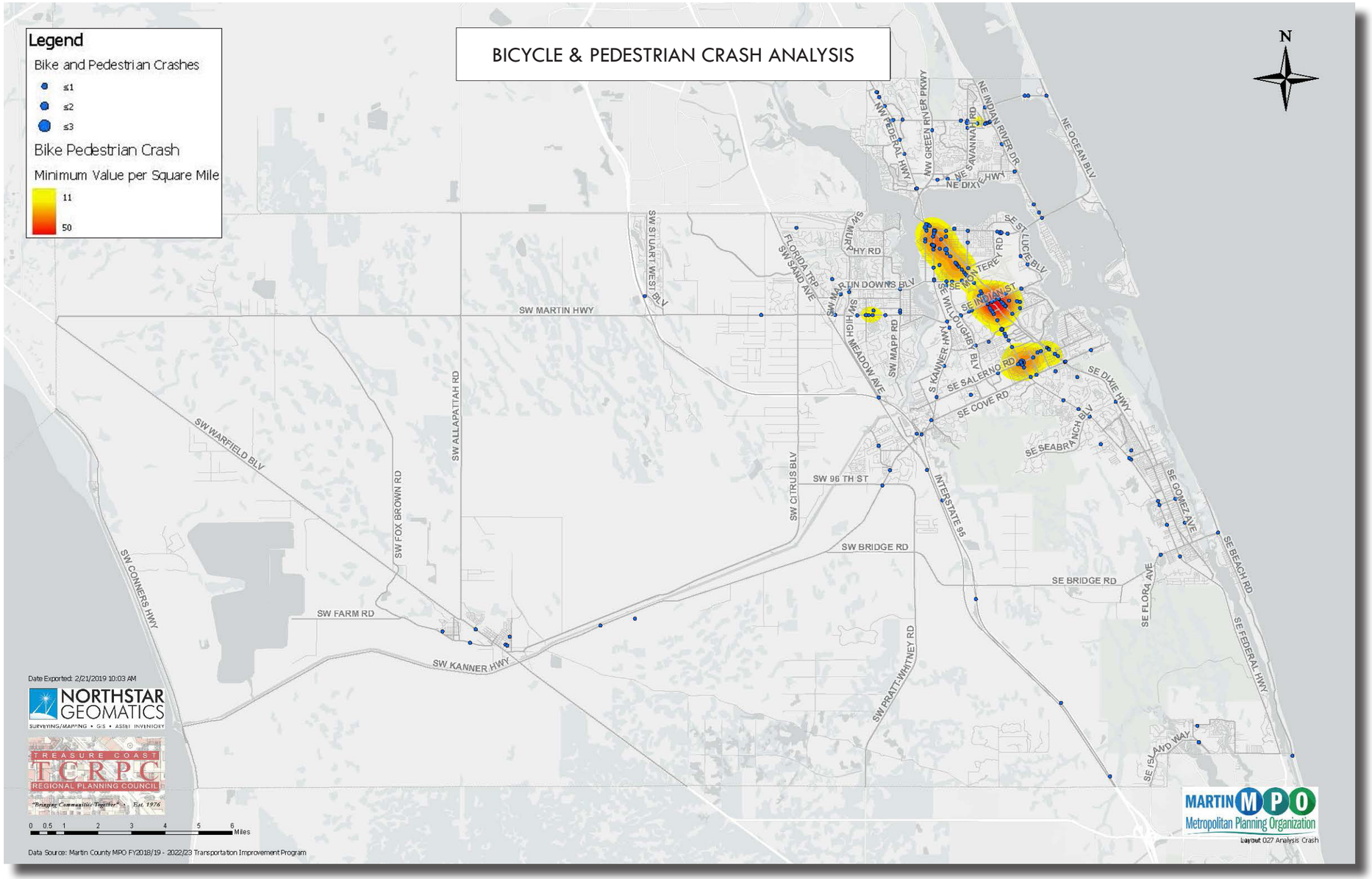
PLAY

Accessing public destinations is considered a priority in planning for transit service. Martin County's parks and recreational areas are popular destinations for all county residents. To underscore the importance of park and recreational access via transit, all local, state, and federal park and recreational facilities were identified and mapped in GIS as depicted in the map to the left, and a half-mile catchment area was applied to each. Roadway segments within a half-mile of these public destinations were awarded one point in the Complete Streets analysis.



LEARN

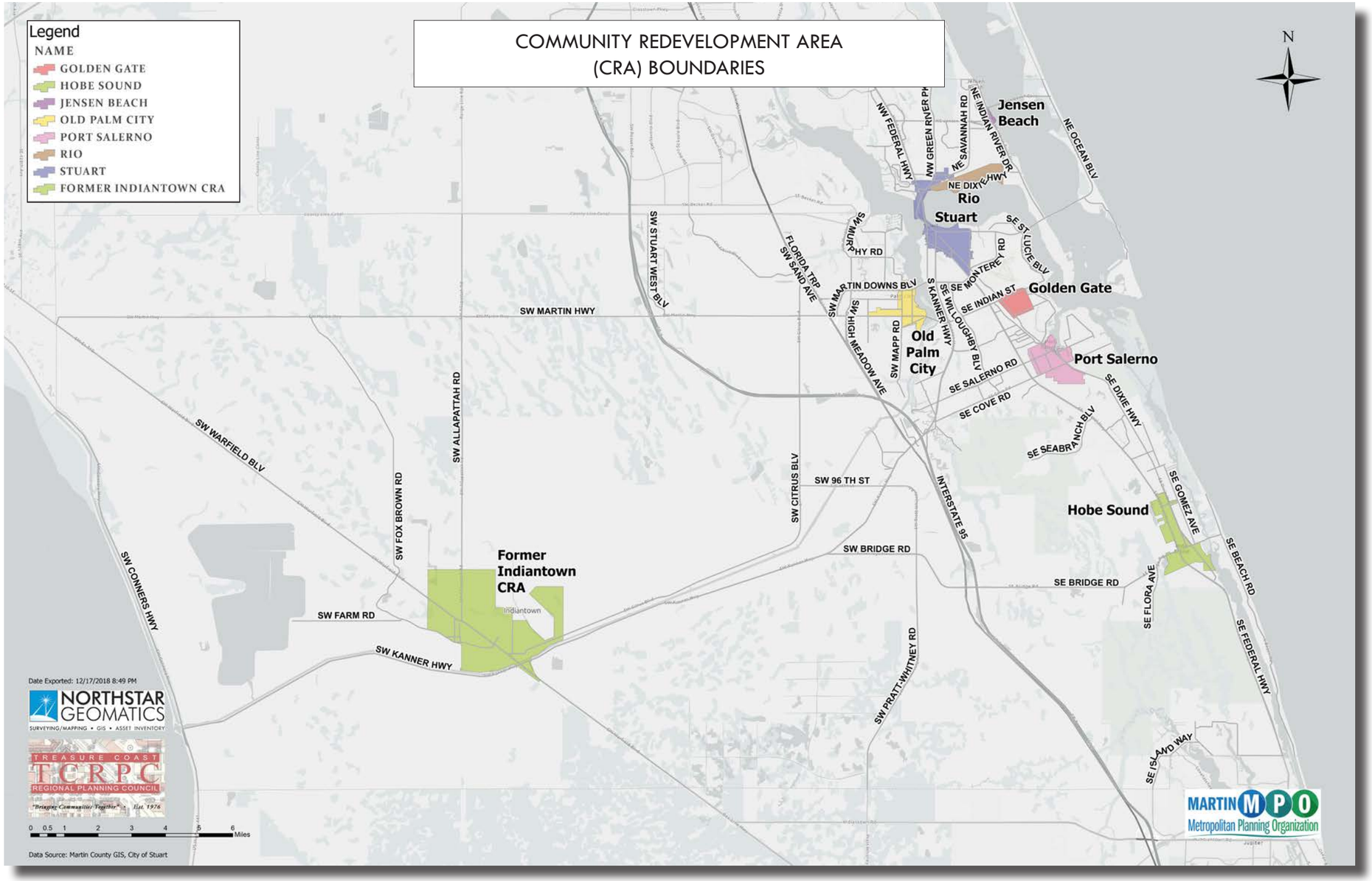
Transit access for education is also a high priority for transit service. In Martin County, there are several different educational assets, including the K-12 schools, Indian River State College, and the County's public libraries. Each of these educational destinations was identified and mapped in GIS as illustrated to the left. A catchment of a half-mile was applied to each educational destination, and roadway segments within a half-mile of each school, college or library were assigned 1 point in the Complete Streets analysis.



SAFETY

Safety considerations for accessing transit are of paramount importance in Martin County and across the U.S. For several years, data from the National Highway Traffic Safety Administration indicates Florida is the most dangerous state in the nation for bicyclist crashes resulting in fatalities. Further, in the past decade, Florida has consistently been ranked in the top five states in regards to pedestrian and bicyclist crashes and deaths overall.

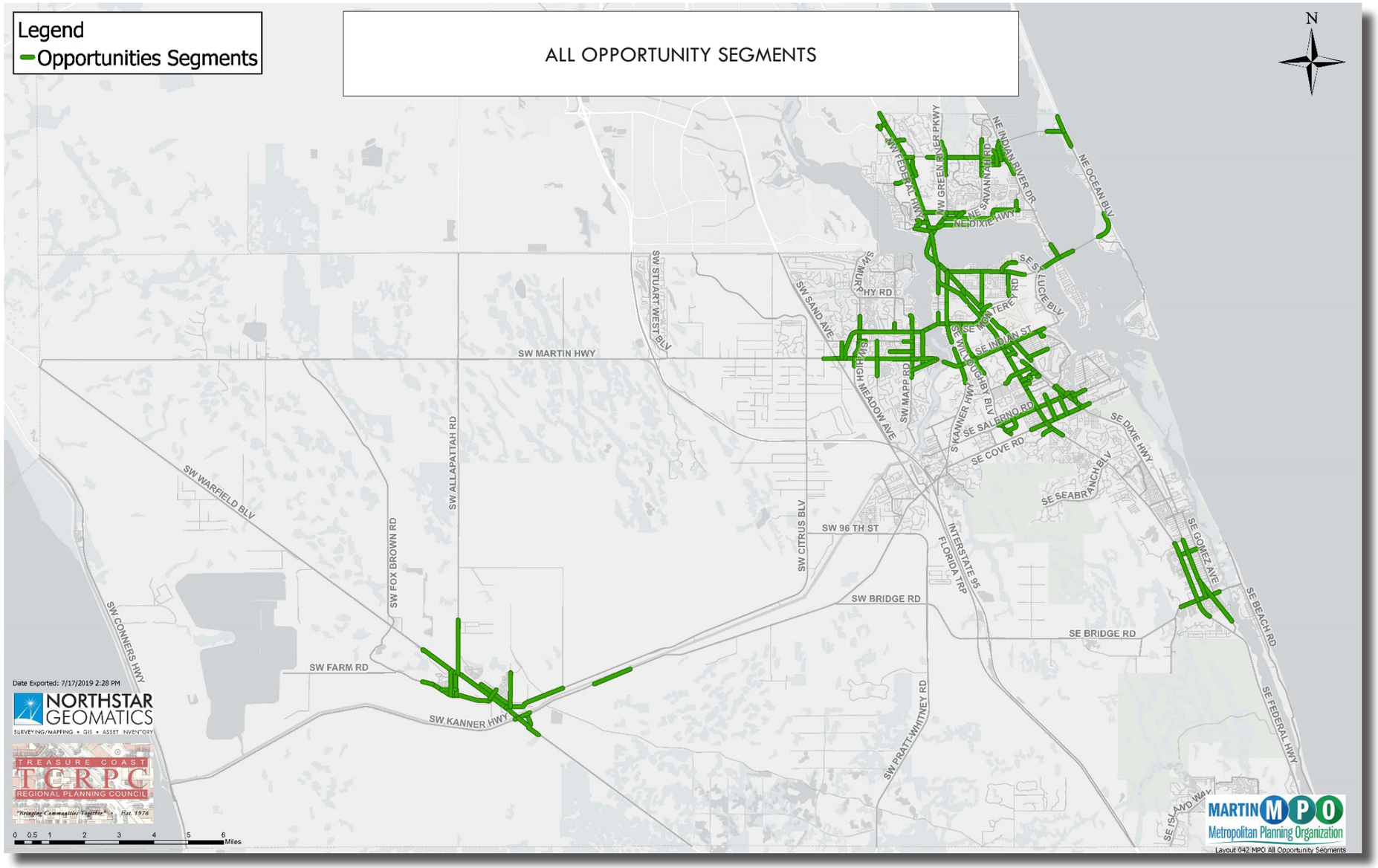
To understand the most dangerous locations for Martin County's bicyclists and pedestrians, five years of bicycle and pedestrian crash data was assembled from the Martin County's Signal Four Analytics (2013-2018), mapped in GIS, and color-coded to indicate crash "hot spots." As illustrated on the map to the left, bicycle and pedestrian crashes (indicated by the blue circles) have occurred across the County's roadway network. The larger the circle, the greater the number of crashes. To identify crash "hot spots," a color shading of yellow to red surrounding those locations where multiple crashes had occurred. Based on the data, those locations with 11 or more crashes per square mile over the five-year study period were determined to be statistically significant. Accordingly, segments within those high-crash areas were assigned 2 points in the Complete Streets evaluation process.



ECONOMIC NEED

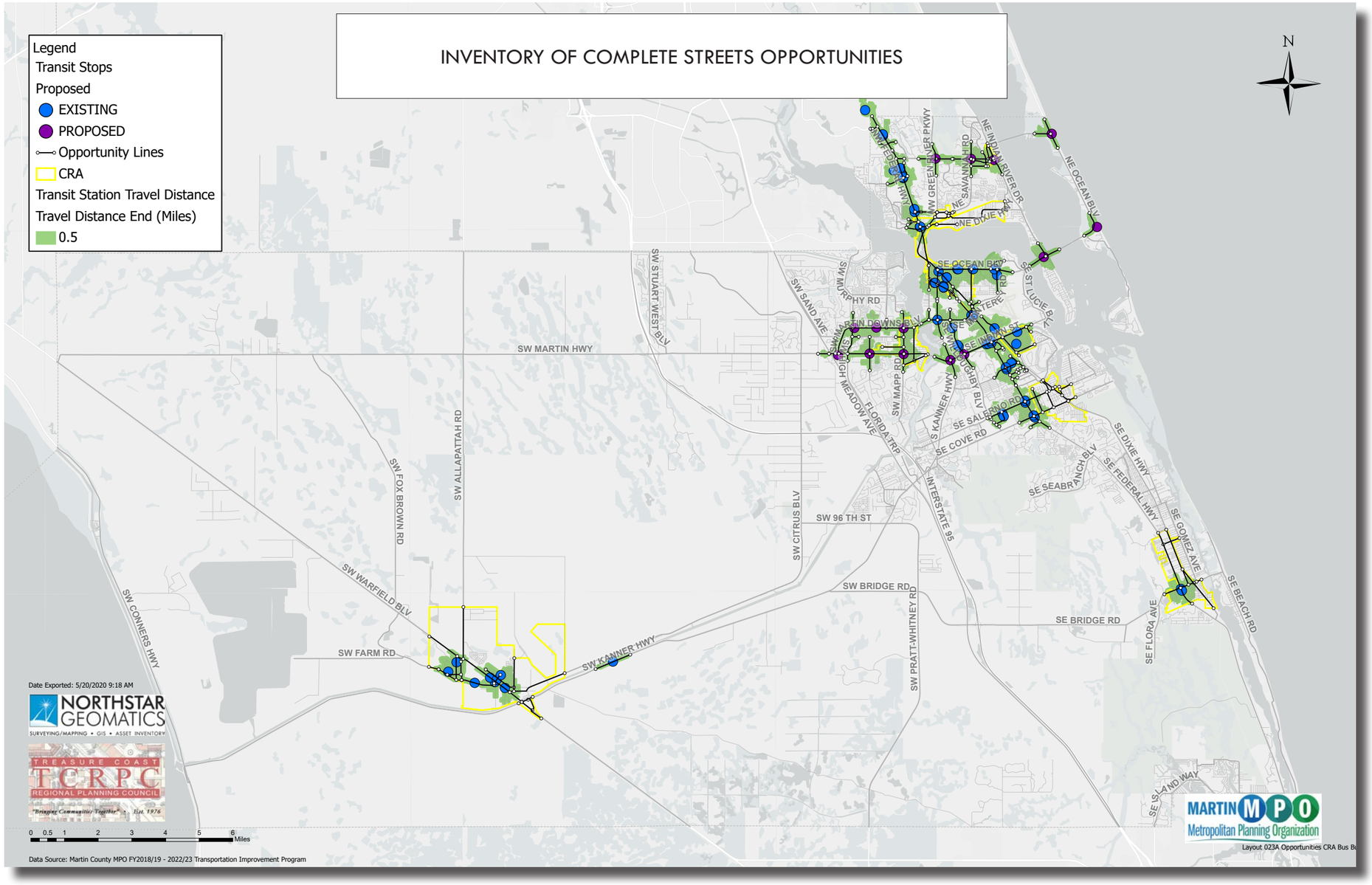
The final Complete Streets selection criterion highlights those areas where local governments have placed higher priority on redevelopment and economic investment with a strong emphasis on bicycle/pedestrian circulation, multi-modal transportation, walkability, and mobility. This priority is reflected with the establishment of Community Redevelopment Areas that are accompanied by statutorily-required Community Redevelopment Plans. These Plans advance infill/redevelopment goals, desired land use patterns, emphasize complete streets and mobility, and include capital projects and programs to implement these activities. CRAs also can access tax increment financing, other public and private funds, and often engage in public/private partnerships for implementation.

There are a total of eight CRAs identified, including the six Martin County CRAs (in Jensen Beach, Rio, Golden Gate, Port Salerno, Hobe Sound, and Old Palm City), the Stuart CRA, and the Indiantown CRA as formerly identified by Martin County prior to the Village of Indiantown's incorporation. As the base data for this study is updated over time, it is noted that CRA boundaries may change and should be confirmed with other periodic data updates.



The Martin County roadway network has thousands of roadway segments; however, the Martin County transit system is limited in its geographic area.

Given the current and planned transit routes and stops, there are 164 "Opportunity Segments" that provide immediate access to transit, which is a baseline criterion in this study. Those 164 segments are highlighted as green lines on the map to the left. As transit stops are relocated, eliminated, or added to the transit network over time, this inventory will change as the study's base data is updated. The evaluation's basis in GIS is designed to enable the MPO to update the base data easily, which will automatically update the maps as a result.



Utilizing the 164 Opportunity Segments, the transit catchment criteria was applied to indicate the half-mile typical pedestrian walk-shed to transit stops as well as the 2-mile bicycle/pedestrian walk-shed that was extended within the boundaries of Community Redevelopment Areas. The more detailed map to the left indicates the Opportunity Segments in green, existing transit stops in blue, planned transit stops in purple, and CRA boundaries in yellow.

APPLICATION OF THE CRITERIA TO THE ROADWAY NETWORK

Utilizing GIS analysis, given the existing and planned transit network in Martin County, there were 164 roadway segments identified for the application of the Complete Streets selection criteria. Each segment was analyzed according to the eight criteria and assigned individual and total point scores, with a maximum of 15 points available for any individual segment.

Three tiers of project rankings were determined:

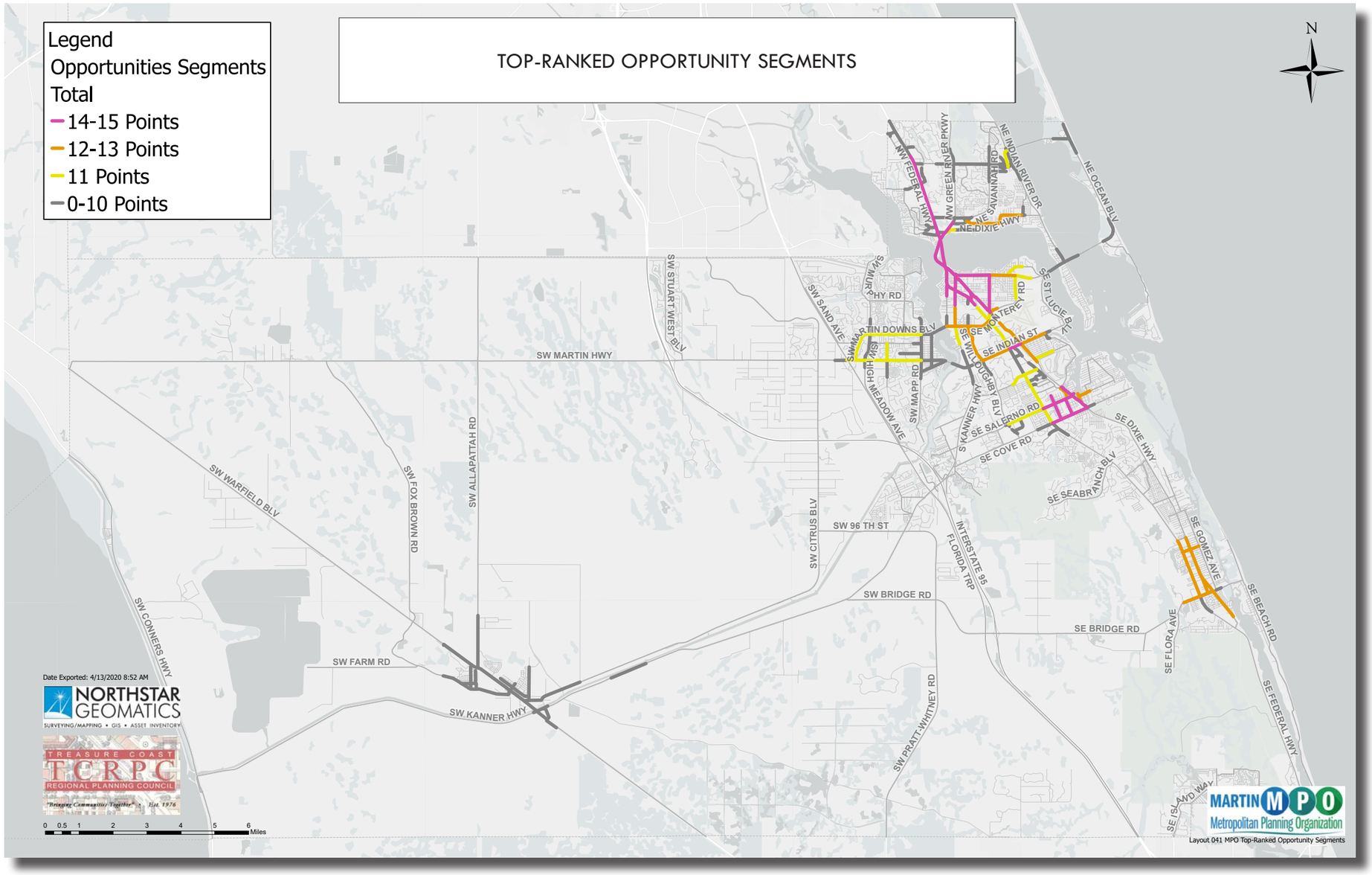
- Tier 1 for the those segments scoring 14-15 points (a total of 19 segments);
- Tier 2 for those segments scoring 12-13 points (a total of 19 segments); and
- Tier 3 for those segments scoring 11 points (a total of 18 segments).

The cutoff for funding consideration under the study were those segments scoring 10 points or below, totaling 108 segments.

The table to the right lists the Tier 1, 2 and 3 segments with the point assignments for each of the 8 criteria along with the total points for each individual segment and is an excerpt of the master table which lists all 164 segments, with color-coding applied to Tiers 1, 2, and 3. The table is included in Appendix B. Ten of the Tier 1 and 2 segments, which are identified with a star, were selected by the study's steering committee to illustrate various conditions in Martin County. The map illustrating the segments ranked by tier is presented on the following page.

	SEGMENT DETAILS						SEGMENT SCORING									
	ID #	SEGMENT NAME	START POINT	END POINT	GENERAL LOCATION	SEGMENT LENGTH (MILES)	ROW WIDTH (FEET)	TOTAL SCORE	EXISTING TRANSIT	PROPOSED TRANSIT	POP'N DENSITY	EMPLOYEE DENSITY	ACCESS TO VEHICLES	BIKE/PED CRASHES	CRA	SCHOOL +/OR LIBRARY	PARK
TIER 1	266	S COLORADO AVE	CONFUSION CORNER	SR 5 (US 1)	Stuart	0.42	90	15	5	0	1	1	2	2	2	1	1
	211	NW DIXIE HWY (SR 707)	NW GREEN RIVER PKWY	CONFUSION CORNER	Stuart	1.98	100	15	5	0	1	1	2	2	2	1	1
	212	SE DIXIE HWY & S COLORADO AVE	SE MONTEREY RD	CONFUSION CORNER	Stuart	1.58	50	15	5	0	1	1	2	2	2	1	1
★	**226**	**SE PALM BEACH RD**	**SE OCEAN BLVD (SR A1A)**	**SE MONTEREY RD**	**Stuart**	**1.09**	**80**	**15**	**5**	**0**	**1**	**1**	**2**	**2**	**2**	**1**	**1**
★	**270**	**SE CHRISTIE WAY**	**SE DIXIE HWY**	**SE PALM BEACH RD**	**Stuart**	**0.08**	**50**	**15**	**5**	**0**	**1**	**1**	**2**	**2**	**2**	**1**	**1**
★	**214**	**SE COVE ROAD**	**SR 5 (US 1)**	**SE DIXIE HWY**	**Salerno**	**1.11**	**75**	**15**	**5**	**0**	**1**	**1**	**2**	**2**	**2**	**1**	**1**
	286	SE JACK ST	PORT SALERNO ELEMENTARY	SE COVE RD	Salerno	0.76	70	15	5	0	1	1	2	2	2	1	1
	242	SR 5 (US 1)	NW SUNSET BLVD	S END OF ROOSEVELT BRIDGE	Stuart	3.57	150	15	5	0	1	1	2	2	2	1	1
	341	SR 5 (US 1)	SW JOAN JEFFERSON WAY	600 FEET SOUTH OF SE TRESSLER DR	Stuart	1.42	150	15	5	0	1	1	2	2	2	1	1
★	**137**	**SE INDIAN ST**	**SR 5 (US 1)**	**SE DIXIE HWY (SR A1A)**	**Stuart**	**0.36**	**100**	**14**	**5**	**0**	**1**	**1**	**2**	**2**	**2**	**0**	**1**
	268	S KANNER HWY (SR 76)	SR 5 (US 1)	SW MANOR DR	Stuart	0.44	110	14	5	0	1	1	2	2	2	0	1
★	**182**	**SE SALERNO RD**	**SR 5 (US 1)**	**SE DIXIE HWY (SR A1A)**	**Salerno**	**0.93**	**65**	**14**	**5**	**0**	**0**	**1**	**2**	**2**	**2**	**1**	**1**
	311	SE SALERNO RD	SE DIXIE HWY (SR A1A)	SE DE SOTO AVE	Salerno	0.08	60	14	5	0	1	1	2	2	2	0	1
	267	SE CUTOFF RD	SR 5 (US 1)	SE DIXIE HWY (SR A1A)	Stuart	0.23	110	14	5	0	0	1	2	2	2	1	1
	210	SE DIXIE HWY	CONFUSION CORNER	SE PALM BEACH RD	Stuart	1.07	90	14	5	0	0	1	2	2	2	1	1
★	**322**	**SE DIXIE HWY (SR A1A)**	**SE SALERNO RD**	**SE COVE RD**	**Salerno**	**0.61**	**90**	**14**	**5**	**0**	**1**	**1**	**2**	**2**	**2**	**0**	**1**
	325	SE DIXIE HWY (SR A1A)	PORT SALERNO CRA (NORTH BOUNDARY)	SE SALERNO RD	Salerno	0.39	90	14	5	0	1	1	2	2	2	0	1
★	**287**	**SE EBBTIDE AVE**	**SE SALERNO RD**	**SE COVE RD**	**Salerno**	**0.5**	**65**	**14**	**5**	**0**	**1**	**0**	**2**	**2**	**2**	**1**	**1**
★	**130**	**SW PALM CITY RD**	**SR 5 (US 1)**	**400 FEET NORTH OF SW INDIAN GROVES DR**	**Stuart**	**0.33**	**80**	**14**	**5**	**0**	**1**	**1**	**2**	**2**	**2**	**0**	**1**
	148	SE COMMERCE AVE	RIO CRA (NORTH BOUNDARY)	SE SALERNO RD	Salerno	0.37	65	13	5	0	0	1	2	2	2	0	1
	269	S KANNER HWY (SR 76)	900 FEET NORTH OF SW S CAROLINA DR	SW MONTEREY RD	Stuart	0.56	110	13	5	0	1	1	2	2	0	1	1
	291	SE DIXIE HWY (SR A1A)	SE DHARLYS ST	HOBE SOUND CRA (SOUTH BOUNDARY)	Hobe Sound	2.75	35	13	5	0	1	1	2	0	2	1	1
	326	SE OCEAN BLVD	SE PALM BEACH RD	SE MONTEREY RD	Stuart	0.76	100	13	5	0	1	1	2	0	2	1	1
★	**185**	**SE MONTEREY RD**	**SW PALM CITY RD**	**SE WILLOUGHBY BLVD**	**Stuart**	**0.64**	**90**	**13**	**5**	**0**	**1**	**1**	**2**	**2**	**0**	**1**	**1**
	290	SE PETTWAY ST	SR 5 (US 1)	SE GOMEZ AVE	Hobe Sound	0.51	25	13	5	0	1	1	2	0	2	1	1
	138	SE INDIAN ST	SE DIXIE HWY (SR A1A)	SE ST LUCIE BLVD	Golden Gate	0.77	110	12	5	0	1	1	0	2	2	0	1
	357	SE INDIAN ST	SE WILLOUGHBY BLVD	SR 5 (US 1)	Stuart	0.87	110	12	5	0	1	1	2	2	0	0	1
TIER 2	327	SE MONTEREY RD	SE DIXIE HWY (SR A1A)	SE OCEAN BLVD	Stuart	0.26	140	12	5	0	1	1	2	2	0	0	1
	237	NE DIXIE HWY (SR 707)	NE SAVANNAH RD	PALMER ST	Rio	1.83	60	12	5	0	1	1	2	0	2	0	1
	312	SE ANCHOR AVE	SE OVERLOOK TER	SE DIXIE HWY (SR A1A)	Rocky Point	0.28	65	12	5	0	1	1	0	2	2	0	1
	195	SE BRIDGE RD	SE PLANDOME DR	SE GOMEZ AVE	Hobe Sound	0.94	70	12	5	0	0	1	2	0	2	1	1
	209	SE DIXIE HWY (SR A1A)	SE INDIAN ST	SE MONTEREY RD	Golden Gate	0.89	100	12	5	0	1	1	0	2	2	0	1
★	**323**	**SE DIXIE HWY (SR A1A)**	**SE INDIAN ST**	**300 FEET SOUTH OF SE KENSINGTON ST**	**Golden Gate**	**0.73**	**90**	**12**	**5**	**0**	**1**	**1**	**0**	**2**	**2**	**0**	**1**
	313	SE HORSESHOE POINT RD	SE ANCHOR AVE	SE MANATEE COVE RD	Rocky Point	0.37	60	12	5	0	1	1	0	2	2	0	1
	293	SE LARES AVE	SE DIXIE HWY	SE BRIDGE RD	Hobe Sound	0.49	35	12	5	0	0	1	2	0	2	1	1
	152	SE MONTEREY RD	SE WILLOUGHBY BLVD	SR 5 (US 1)	Stuart	0.69	110	12	5	0	1	1	2	2	0	0	1
	292	SR 5 (US 1)	HOBE SOUND CRA (NORTH BOUNDARY)	SE BRIDGE RD	Hobe Sound	1.77	225	12	5	0	0	1	2	0	2	1	1
	225	WILLOUGHBY BLVD	SE MONTEREY RD	SE INDIAN ST	Stuart	1.14	150	12	5	0	1	1	2	2	0	0	1
	316	SR 5 (US 1)	SE SALERNO RD	SE SPRINGTREE PL	Stuart	0.55	225	11	5	0	1	1	2	2	0	0	0
	123	SW MARTIN HWY	FLORIDA TURNPIKE (SR 91)	SW MAPP RD	Palm City	2.2	110	11	0	3	1	1	0	2	2	1	1
	358	SE MONTEREY RD	SE OCEAN BLVD (SR A1A)	MARTIN COUNTY AIRPORT	Stuart	0.69	100	11	5	0	1	1	2	0	0	1	1
	254	NE PINEAPPLE AVE	NE INDIAN RIVER DR	NE JENSEN BEACH BLVD	Jensen Beach	0.51	55	11	0	3	1	1	2	0	2	1	1
	259	NW ALICE ST	NW DIXIE HWY	650 FEET WEST OF NE GREEN LAWN DRIVE	Rio	0.27	60	11	5	0	0	1	2	0	2	0	1
	134	SE SALERNO RD	SE WILLOUGHBY BLVD	SR 5 (US 1)	Stuart	1.12	100	11	5	0	1	1	0	2	0	1	1
	280	SE JEFFERSON ST	SE DIXIE HWY (SR A1A)	SE HEMLOCK AVE	Golden Gate	0.6	90	11	5	0	0	1	0	2	2	0	1
	282	SE MARKET PLACE	1200 FEET EAST OF SE EDISON AVE	SE COMMERCE AVE	Stuart	0.87	70	11	5	0	1	1	2	2	0	0	0
	186	SE MONTEREY RD	SR 5 (US 1)	EAST OF SE DIXIE HWY (SR A1A)	Stuart	0.23	90	11	5	0	0	1	2	2	0	0	1
	187	SE MONTEREY RD EXT	SE MONTEREY RD	SR 5 (US 1)	Stuart	0.33	80	11	5	0	1	1	2	2	0	0	0
	125	SR 5 (US 1)	SE SALERNO RD	SE POMEROY ST	Stuart	0.59	225	11	5	0	1	1	2	2	0	0	0
	355	SR 5 (US 1)	SE SALERNO ROAD	SE COVE RD	Stuart	0.5	225	11	5	0	1	1	2	2	0	0	0
	352	SR 5 (US 1)	150 FEET NORTH OF SE CONTRACTOR WAY	SE INDIAN STREET	Stuart	1.55	150	11	5	0	1	1	2	2	0	0	0
	245	S KANNER HWY (SR 76)	SW CABANA POINT CIR	SE MONTEREY RD	Stuart	0.55	110	11	5	0	1	1	2	0	0	1	1
	243	SE OCEAN BLVD (SR A1A)	SE MONTEREY RD	2800 FEET EAST OF SE MONTEREY RD	Stuart	0.47	110	11	5	0	1	1	2	0	0	1	1
	140	SE ST. LUCIE BLVD	SE MONTEREY AVE	SE OCEAN BLVD	Stuart	0.52	80	11	5	0	1	1	2	0	0	1	1
	277	SW BERRY AVE	SW SUNSET TRAIL	SW MARTIN DOWNS BLVD	Palm City	0.5	55	11	0	3	1	1	0	2	2	1	1
	276	SW MARTIN DOWNS BLVD	SW MARTIN HWY	SW MAPP RD	Palm City	2.49	225	11	0	3	1	1	2	0	2	1	1
	191	SW WARFIELD BLVD (SR 710)	INDIANTOWN CRA (WEST BOUNDARY)	SW KANNER HWY (SR 76)	Indiantown	3.42	75	10	5	0	0	1	0	0	2	1	1
	320	SE COMMERCE AVE	300 FT SOUTH OF SE MIAMI AVE	SE MARKET PL	Stuart	0.31	90	10	5	0	0	1	2	2	0	0	0
TIER 3	158	NE INDIAN RIVER DR	NE JENSEN BEACH BLVD	200 FEET NORTH OF NE PELICAN TERR	Jensen Beach	0.5	50	10	0	3	1	1	2	0	2	1	0

The complete list of segments included in study is included in Appendix B.



Once the Complete Streets selection criteria were applied to the Opportunity Segments, the ranked segments were color coded, as illustrated on the map to the left.

Tier 1 segments, with 14-15 points, are identified in purple.

Tier 2 segments, with 12-13 points, are identified in orange.

Tier 3 segments, with 11 points, are identified in yellow.

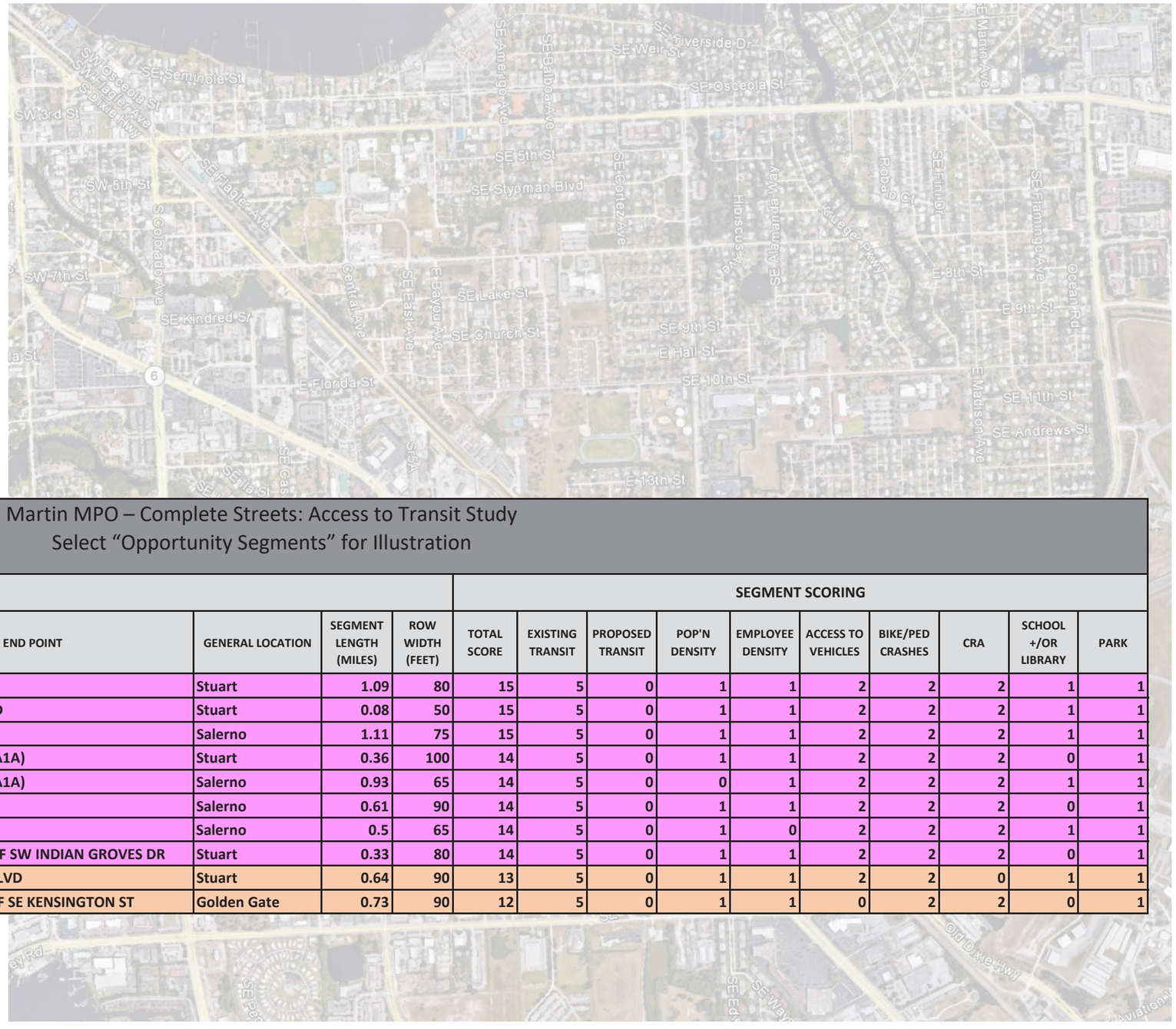
The remaining 108 segments that scored 10 points or below are identified in gray

PRIORITIZE & PROGRAM: COMPLETE STREETS OPPORTUNITY SEGMENTS FOR ILLUSTRATION

To illustrate the various types of Complete Streets interventions in different conditions, a series of 10 representative *Tier 1* and *Tier 2* opportunity segments were selected. To provide the greatest variation, the segments included the following differentiation:

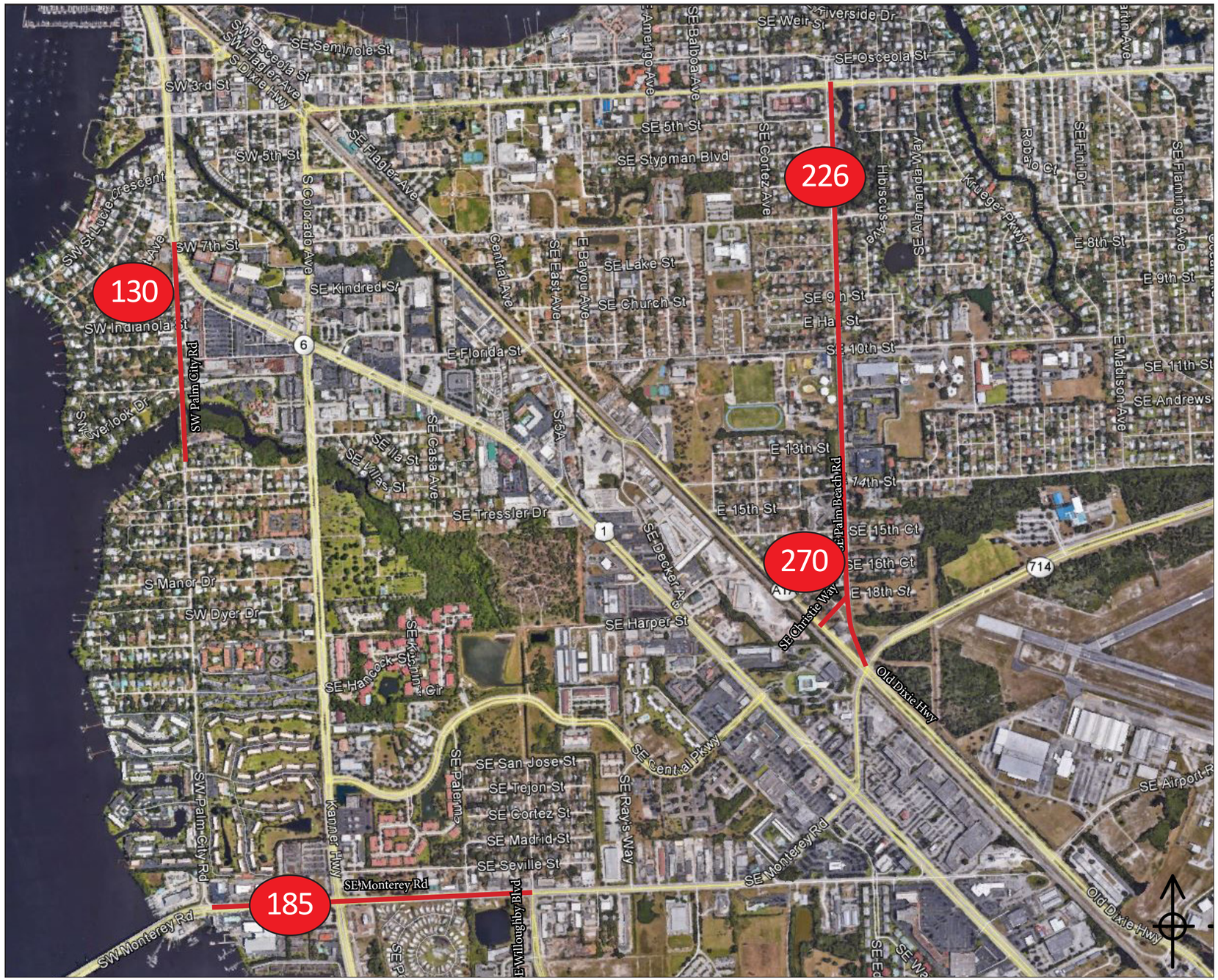
- Facility Type (2, 3, 4 and 5-lane roadway configurations)
- Land Use Context (urban and suburban)
- Geographic Location

The resulting segments are listed in the chart below and are located in the aerial maps on the following two pages. It should be noted that rural roadways do not tend to have proximity to transit or locations within CRAs, and therefore, these roadways did not score highly in the selection methodology. The facility types most commonly illustrated in the selection are two- and five-lane roadways, which are reflected among the ten illustrative segments.



Martin MPO – Complete Streets: Access to Transit Study
Select "Opportunity Segments" for Illustration

SEGMENT DETAILS								SEGMENT SCORING									
Tier	ID #	SEGMENT NAME	START POINT	END POINT	GENERAL LOCATION	SEGMENT LENGTH (MILES)	ROW WIDTH (FEET)	TOTAL SCORE	EXISTING TRANSIT	PROPOSED TRANSIT	POP'N DENSITY	EMPLOYEE DENSITY	ACCESS TO VEHICLES	BIKE/PED CRASHES	CRA	SCHOOL +/OR LIBRARY	PARK
One	226	SE PALM BEACH RD	SE OCEAN BLVD (SR A1A)	SE MONTEREY RD	Stuart	1.09	80	15	5	0	1	1	2	2	2	1	1
	270	SE CHRISTIE WAY	SE DIXIE HWY	SE PALM BEACH RD	Stuart	0.08	50	15	5	0	1	1	2	2	2	1	1
	214	SE COVE ROAD	SR 5 (US 1)	SE DIXIE HWY	Salerno	1.11	75	15	5	0	1	1	2	2	2	1	1
	137	SE INDIAN ST	SR 5 (US 1)	SE DIXIE HWY (SR A1A)	Stuart	0.36	100	14	5	0	1	1	2	2	2	0	1
	182	SE SALERNO RD	SR 5 (US 1)	SE DIXIE HWY (SR A1A)	Salerno	0.93	65	14	5	0	0	1	2	2	2	1	1
	322	SE DIXIE HWY (SR A1A)	SE SALERNO RD	SE COVE RD	Salerno	0.61	90	14	5	0	1	1	2	2	2	0	1
	287	SE EBBTIDE AVE	SE SALERNO RD	SE COVE RD	Salerno	0.5	65	14	5	0	1	0	2	2	2	1	1
	130	SW PALM CITY RD	SR 5 (US 1)	400 FEET NORTH OF SW INDIAN GROVES DR	Stuart	0.33	80	14	5	0	1	1	2	2	2	0	1
Two	185	SE MONTEREY RD	SW PALM CITY RD	SE WILLOUGHBY BLVD	Stuart	0.64	90	13	5	0	1	1	2	2	0	1	1
	323	SE DIXIE HWY (SR A1A)	SE INDIAN ST	300 FEET SOUTH OF SE KENSINGTON ST	Golden Gate	0.73	90	12	5	0	1	1	0	2	2	0	1

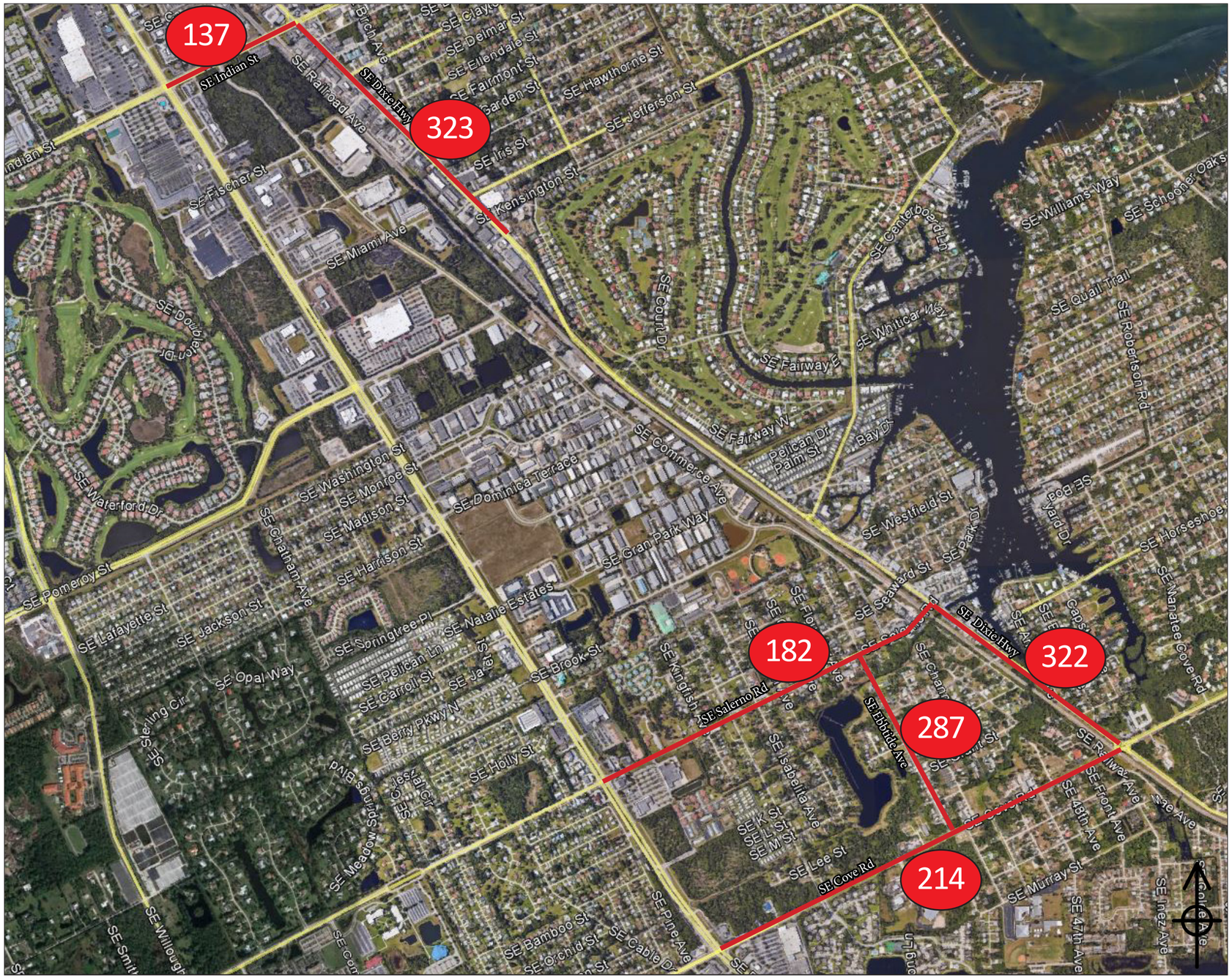


226 2-LANE SUBURBAN ROADWAY
SE PALM BEACH ROAD

270 2-LANE SUBURBAN ROADWAY
SE CHRISTIE WAY

185 5-LANE COMMERCIAL CORRIDOR
SE MONTEREY ROAD

130 2-LANE SUBURBAN ROADWAY
SW PALM CITY ROAD



137 **5-LANE COMMERCIAL CORRIDOR**
SE INDIAN STREET

323 **5-LANE COMMERCIAL CORRIDOR**
SE DIXIE HIGHWAY / GOLDEN GATE

214 **5-LANE COMMERCIAL CORRIDOR**
SE COVE ROAD

287 **5-LANE COMMERCIAL CORRIDOR**
SE EBBTIDE AVENUE

182 **5-LANE COMMERCIAL CORRIDOR**
SE SALERNO ROAD

322 **2-LANE COMMERCIAL CORRIDOR**
SE DIXIE HIGHWAY / PORT SALERNO

PUBLIC ENGAGEMENT: OPEN HOUSE 1

There were two public open houses conducted to gather input from the public to further refine the study. Open House 1 was held on Thursday, September 26, 2019 at the Clark Advanced Learning Center at the Indian River State College in Stuart.

Open House 1 was designed to help inform the public as to what Complete Streets can entail, the various types of interventions utilizing the ten selected segments for illustration, and to solicit public input with regards to priorities, desired interventions, and general feedback. The public was given the opportunity to vote on its preferred Complete Street interventions for each of the ten illustrative segments. Citizens were encouraged to engage MPO and TCRPC staff and utilize a "Complete the Street" interactive activity to construct their ideal Complete Street within a preselected right-of-way width.

Posters illustrating the existing conditions of the selected ten opportunity segments were showcased along with a Complete Streets Catalog of possible interventions. The public chose its preferred Complete Streets interventions for each of the ten segments by placing dots on the provided posters. Small-scale versions of the workshop posters are provided in the following chapter, with the public's preferred interventions highlighted in yellow. These interventions were incorporated into the conceptual designs for the selected segment concepts provided in Chapter IV.

Images: photos from Open House 1.
Source: TCRPC

PUBLIC ENGAGEMENT: OPEN HOUSE 2

A second open house was held on Tuesday, January 14, 2020 at the Indian River State College in Stuart. The purpose of the public session was to help inform the public about Complete Streets, various interventions, the prioritization of opportunity segments in Martin County, and to share examples of how various streets in Martin County could be improved. The public was given the opportunity to discuss the interventions applied to various segments and gain a greater understanding of how different improvements could be combined to improve safety, access, mobility, and functionality of the transportation network. Participants also utilized the "Complete the Street" interactive model to assemble various combinations of interventions to further their understanding of roadway design and the interplay of different techniques.

In addition to project-specific details, information regarding the Martin MPO Long-Range Transportation Plan (LRTP) was available for the public along with "Martin Bucks" for participants to gain insight into the improvements identified in the 2045 LRTP and indicate their priorities by depositing "bucks" into different theoretical funding allocation categories.

Images: photos from the public workshop.
Source: Martin MPO

IMPLEMENTING PROJECTS EXISTING CONDITIONS TO CONCEPT

As described in Chapter III, ten representative segments were selected by the study steering committee to illustrate how the Complete Streets interventions could be applied on specific Martin County roadways. Each of the segments has been described with its existing condition as well as a possible Complete Streets concept. It is important to note the existing conditions reflect the narrowest right-of-way for each segment and illustrates some of the existing challenges for design (e.g., power poles, parking lots, buildings, site improvements). Considering the constraints imposed by existing conditions and the public preferences as provided in Open House 1, conceptional designs were developed for each segment utilizing interventions from the Complete Streets Catalog.

To develop the conceptual designs, each segment was analyzed, and site visits were conducted to gather photographic documentation. Aerials and land use analyses were also performed to understand the context for each segment. The following pages include images from the Open House 1 posters along with illustrative design concepts for each segment. The study segments are organized by geographic proximity.

Segment 130 - SW Palm City Road

Segment 137 - SE Indian Street

Segment 214 - SE Cove Road

Segment 137 - SE Indian Street

Segment 270 - SE Christie Way

Segment 185 - SE Monterey Road

226 2-LANE SUBURBAN ROADWAY SE PALM BEACH ROAD

SE Palm Beach Road has been previously improved with lighting and landscaped medians. The existing conditions include a five-foot bicycle lane through most of the corridor with a six-foot sidewalk on both sides. The corridor is predominately lined by single family homes with a handful of offices. The City of Stuart Water Treatment Facility and J.D. Parker Elementary School are also located on SE Palm Beach Road. Many parents and students walk to the elementary school and rely on the pedestrian and bikeway zone to get to school and connect to existing transit stops along SE Ocean Boulevard.

At Open House 1, shade trees and shared-use path were the most popular interventions. The current sidewalk location creates some challenges for adding shade trees to the corridor. The landscape areas are divided by the existing sidewalk, and narrow green spaces of less then five feet are not sustainable for large canopy growth. Consolidation of landscape areas to one side of the sidewalk allows for more green space will promote healthy, successful tree growth. On the west side, moving the sidewalk closer to the road will shift tree plantings away from the existing utility lines. On the east side of the roadway, the constraints are lesser, and the sidewalk abuts the outside edge of the right-of-way. Although a shared-use path is not proposed in the concept, moving the sidewalk away from the existing lighting and creating a more consistent clear path will enhance the utilization of the available sidewalk.

In the conceptual design, there are several bikeway zone interventions, such as improving the bicycle lane by adding more consistency and marking the bicycle lane. The concept also includes a bicycle box at the signalized intersection to promote safer turning movements for bicyclists. With a bike box, bicyclists are more visible, safer, can move ahead of vehicular traffic at red lights, and pass through intersections as a group. Bike boxes could be implemented at signaled intersections such as SE 10th Street and SE Ocean Boulevard.

EXISTING CONDITIONS:
2-LANE SUBURBAN ROADWAY - SE PALM BEACH ROAD

IMAGE 1 - SOUTH OF THE INTERSECTION OF SE PALM BEACH ROAD AND SE OCEAN BOULEVARD

IMAGE 2 - SE PALM BEACH ROAD NORTH OF MARTIN LUTHER KING JR. BOULEVARD

IMAGE 3 - INTERSECTION OF SE PALM BEACH ROAD AND SE 10TH STREET

IMAGE 4 - INTERSECTON OF SE PALM BEACH ROAD AND EAST 14TH STREET

COMPLETE STREETS:
POSSIBLE INTERVENTIONS


BUFFERED BIKE LANE
CREDIT: BIKE FLORIDA


BIOSWALE
CREDIT: EPA.GOV


SHADE TREES
CREDIT: GOULD EVANS

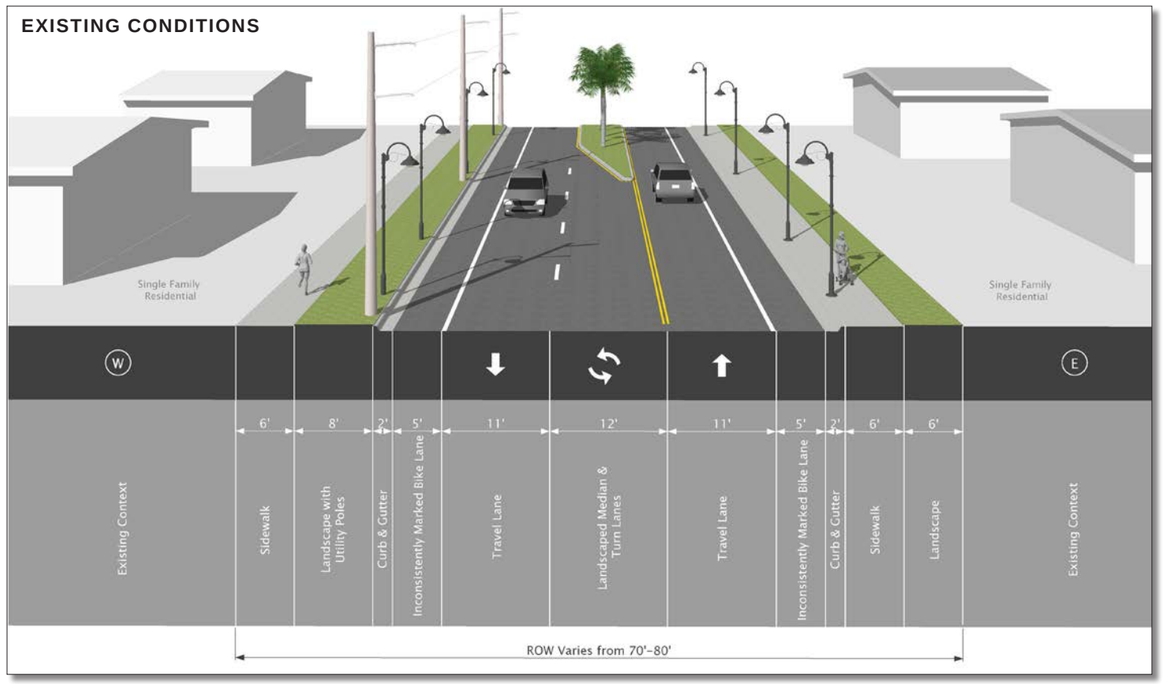

LIGHTED CROSSWALK
CREDIT: HOWARD INDUSTRIES


STANDARD BIKE LANES
CREDIT: MIAMI SAFE STREETS SUMMIT

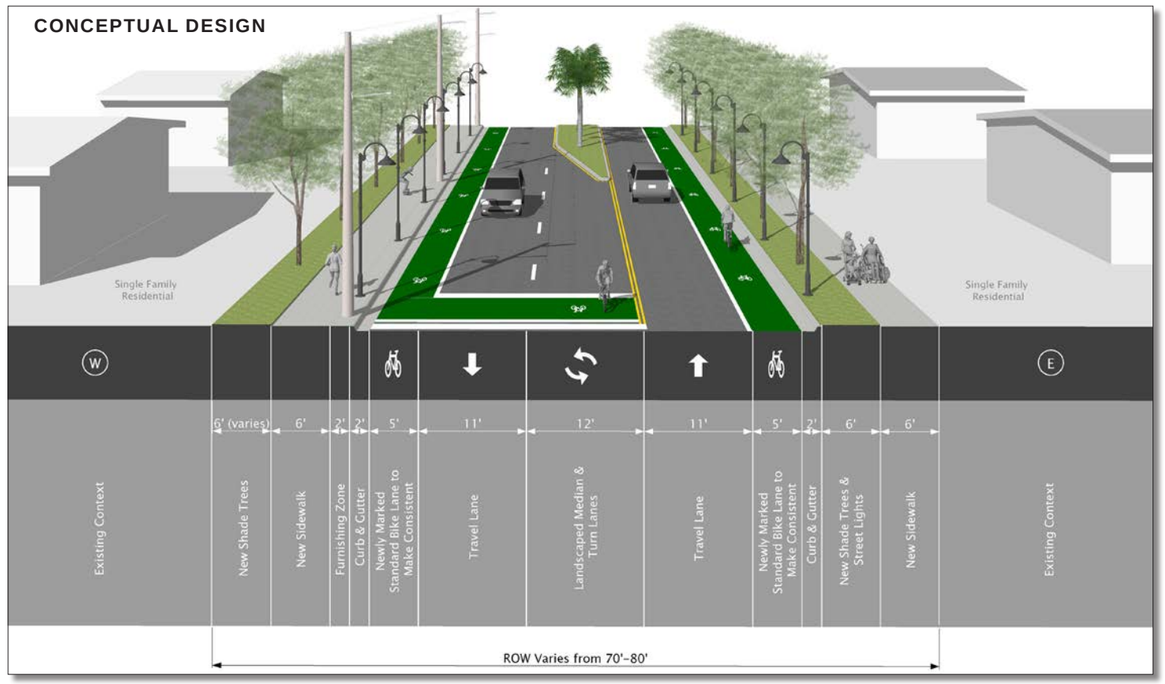

SHARED-USE PATH
CREDIT: CITY OF FORT LAUDERDALE

The yellow box indicates the preferred intervention as expressed by participants at Open House 1.

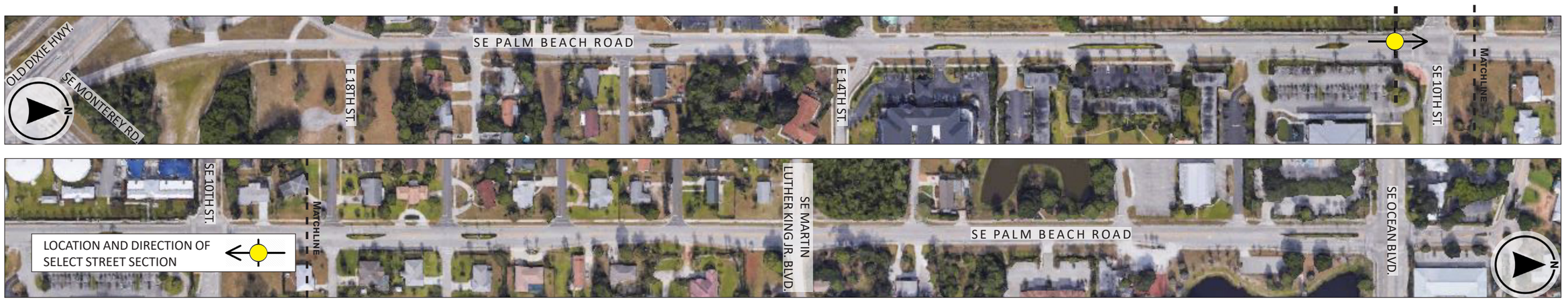
SE PALM BEACH ROAD (CONTINUED)



ROW	Varies 70'-80'	**BIKE / PED FACILITIES**	Inconsistent bike facilities East Side - 6' sidewalk West Side - 6' sidewalk
EDGE CONDITION	Curb / gutter	**LIGHTING**	Inconsistent pedestrian lighting
TRAVEL LANES	2 lanes, 11' each Alternating center turn lane with median, 12'	**LANDSCAPING**	Limited shade trees



ROW	*No change (varies 70'-80')*	**BIKE / PED FACILITIES**	New consistently painted bike lanes with bike boxes at intersections East Side - Relocated 6' sidewalk West Side - Relocated 6' sidewalk *relocation of sidewalks to accommodate existing utility poles, lighting, and new shade trees
EDGE CONDITION	*No change (Curb / gutter)*	**LIGHTING**	New consistent pedestrian-scaled lighting
TRAVEL LANES	*No change (2 lanes, 11' each)* *(Alternating center turn lane with median, 12')*	**LANDSCAPING**	New consistent shade trees to be coordinated with existing utility poles



270 2-LANE SUBURBAN ROADWAY SE CHRISTIE WAY

SE Christie Way is a local 2-lane roadway that connects SE Dixie Highway, SE Monterey Road, and SE Palm Beach Road. The roadway serves as a small local connector and is not immediately adjacent to a destination. Within the existing curbs, there are two one-way travel lanes that terminate at SE Dixie Highway. Because the right-of-way is constrained to 40 feet, interventions along this segment would need to be located outside the existing curb. The roadway currently includes six-foot sidewalks on either side. The concept design adds pedestrian-scale lighting on the south side as well as landscaping on the County-owned vacant property that abuts the roadway.

In Open House 1, participants indicated a preference for shade trees and a shared-use path on SE Christie Way as desired Complete Streets interventions. Given the narrow right-of-way, shade trees would need to be located on adjacent property, which is owned by Martin County in this location. This concept illustrates an example where coordination with an adjacent property can enable corridor improvements where public right-of-way is too narrow to accommodate. Shade trees add a significant benefit to pedestrians by providing shade and enhancing the attractiveness of the area. They can also play a role in reducing heat island effects. If additional land can be given to the right-of-way, the sidewalk could be expanded from a six feet to a ten foot shared-use path. Consistency with the adjacent paths along Dixie Highway and Monterey Road in creating a shared-use path would be an important consideration. The segment is part of completing a route (from SE Ocean Boulevard to SE Dixie Highway), and consistency in the bikeway and pedestrian zones is essential for creating a safe and desirable trip for those users. Ideally, a shared-use path should lead to a similar path or have a very clear transition to another bikeway or pedestrian zone.

On the north side of SE Christie Way, the constrained right-of-way abuts a single family residence. There is a very minimal landscape area of approximately two feet within the right-of-way. In the conceptual design, that area is shown as becoming part of the existing sidewalk to increase the width to an eight-foot shared-use path. An eight-foot sidewalk can more safely accommodate both cyclist and pedestrian traffic than the existing six-foot sidewalk, but it would not encroach into the property beyond the existing right-of-way.

EXISTING CONDITIONS:
2-LANE SUBURBAN ROADWAY - SE CHRISTIE WAY

IMAGE 1 - INTERSECTION OF SE CHRISTIE WAY AND SE ARAPAHO AVENUE

IMAGE 2 - INTERSECTION OF SE CHRISTIE WAY AND SE ARAPAHO AVENUE

COMPLETE STREETS:
POSSIBLE INTERVENTIONS

TEXTURED CROSSWALK
CREDIT: LANDSAVER

PROTECTED CROSSWALK
CREDIT: EPA.GOV

SHADE TREES
CREDIT: GOULD EVANS

PEDESTRIAN LIGHTING
CREDIT: STUART MAIN STREET

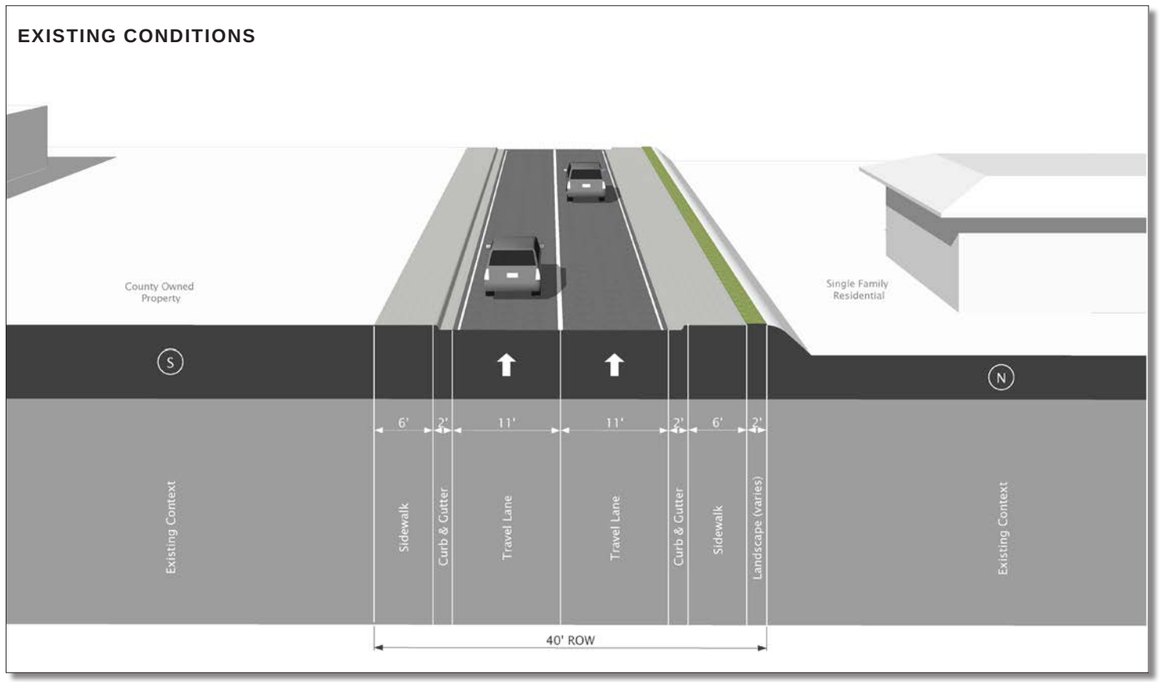
SHARED-USE PATH
CREDIT: CITY OF FORT LAUDERDALE

BUFFERED BIKE LANE
CREDIT: BIKE FLORIDA

The yellow box indicates the preferred intervention as expressed by participants at Open House 1.

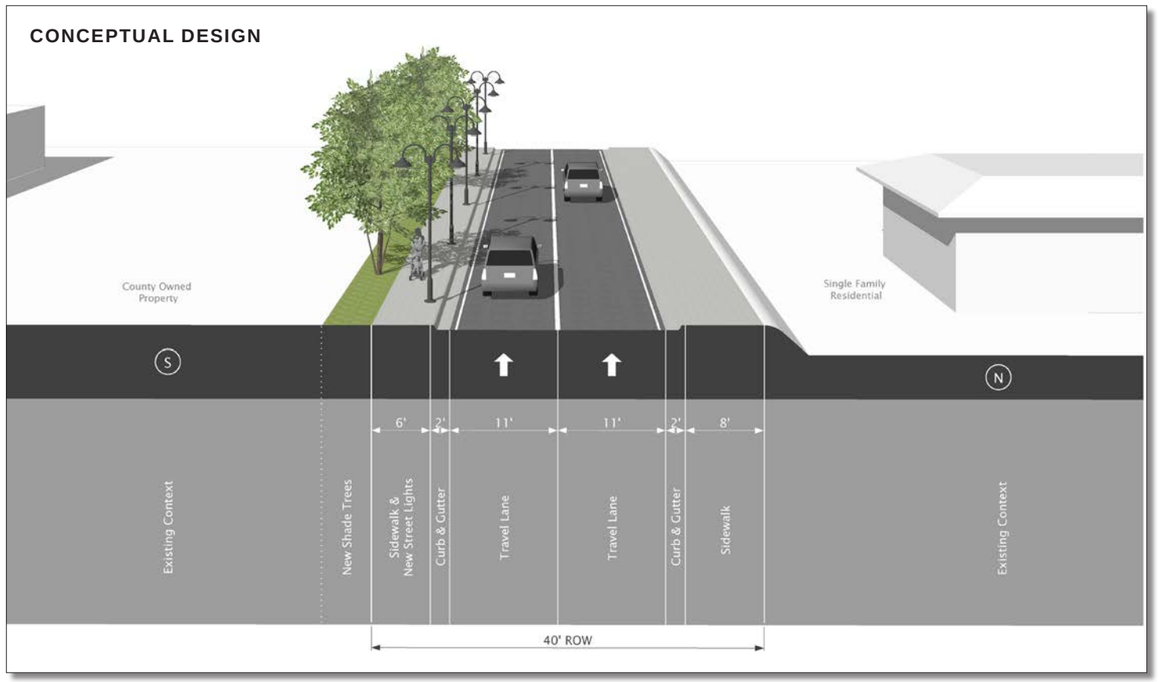
SE CHRISTIE WAY(CONTINUED)

EXISTING CONDITIONS



ROW	40'	**BIKE / PED FACILITIES**	No bike facilities North Side - 6' sidewalk / South Side - 6' sidewalk
EDGE CONDITION	Curb / gutter	**LIGHTING**	No lighting
TRAVEL LANES	2 lanes, 11' each	**LANDSCAPING**	Limited shade trees

CONCEPTUAL DESIGN



ROW	*No change (40')*	**BIKE / PED FACILITIES**	North Side - New 8' sidewalk *South Side - No change (6' sidewalk)*
EDGE CONDITION	*No change (Curb / gutter)*	**LIGHTING**	New pedestrian-scaled lighting
TRAVEL LANES	*No change (2 lanes, 11' each)*	**LANDSCAPING**	New shade trees to be located on County-owned property

185 5-LANE COMMERCIAL CORRIDOR SE MONTEREY ROAD

SE Monterey Road is a five-lane commercial corridor in the City of Stuart. It is characterized by mostly commercial and light industrial uses on both sides of the roadway along with a mobile home park and cemetery near its intersection with SR76. Because it leads to the Palm City Bridge, SE Monterey Road is an important corridor connecting Stuart and Palm City with high commuter demand. The corridor includes 5-6' sidewalks on both sides of the road with no landscape improvements between US1/SE Federal Highway and SR76. Although the corridor's right-of-way varies from 75-90', the segment selected for illustration represents the most constrained portion of the corridor at 75'.

The existing conditions along SE Monterey Road are very dangerous for pedestrians and bicyclists. There are numerous driveway curb cuts along the corridor, with both angled and head-in parking. For many of the older commercial properties, the entire frontage is utilized as a continuous driveway, giving sidewalk users no protection. On the north side of the road, several existing plazas have expanded their parking lots into the right-of-way. In Open House 1, participants emphasized shared-use paths and protected bicycle lanes as the most desired improvements on the corridor; however, the limited right-of-way presents a constraint on design opportunities. To produce the most effective complete streets conditions in the segment, a combination of improvements within the public right-of-way along with urban design improvements through redevelopment on private property, guided through land development regulations, would be needed.

The conceptual illustration for the segment includes the establishment of furnishing zones on both sides of the street, with sidewalks, street lighting and tree grates to accommodate shade trees. Because the right-of-way is too narrow to accommodate bicycle lanes, it is presumed the sidewalk would likely be used by both pedestrians and bicyclists, and the furnishing zone will provide a more usable and safer condition. In addition to providing shade in the daytime and light in the evening, the furnishing zone will also provide a physical barrier between the vehicular travel lanes and the sidewalk. The concept also depicts an alternating center turn lane with median as opposed to a continuous center turn lane. A detailed study of the length of the corridor could identify strategic locations where turning movements or stacking are not necessary, creating the opportunity for medians. In addition to landscaping and lighting opportunities, a median within the corridor could provide for pedestrian refuge locations at intersections such as SE Willoughby Boulevard.

To further improve the complete streets conditions on the corridor will require interventions related to urban design and site development. On the north side of the road, SE Seville Street runs parallel to SE Monterey Road roughly one block to the north, and many properties fronting SE Monterey also utilize rear-access from SE Seville Street. As properties redevelop over time, or through partnerships among existing properties, there are opportunities to consolidate driveways and parking areas and formalize sidewalk conditions for improved pedestrian safety and aesthetic improvement. Redevelopment could reorganize parking and driveways, such as relocating access to the rear of properties from SE Seville Street. If parking is removed from the right-of-way, the sidewalk could be expanded into a wider shared-use path that would more safely accommodate bicyclists and pedestrians. Local government regulatory guidance may be necessary through land development regulations to direct the reorganization of buildings, parking, and driveways over time for a safer and more attractive condition.

EXISTING CONDITIONS:
5-LANE COMMERCIAL CORRIDOR - MONTEREY ROAD

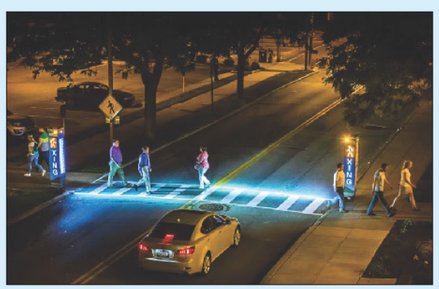
IMAGE 1 - INTERSECTION OF SE MONTEREY ROAD AND SE WILLOUGHBY BLVD.

IMAGE 2 - SE MONTEREY ROAD APPROACHING THE INTERSECTION OF KANNER HIGHWAY

IMAGE 3 - INTERSECTION OF SE MONTEREY ROAD AND KANNER HIGHWAY

IMAGE 4 - SW MONTEREY ROAD APPROACHING SW PALM CITY ROAD

COMPLETE STREETS:
POSSIBLE INTERVENTIONS


LIGHTED CROSSWALK
CREDIT: HOWARD INDUSTRIES

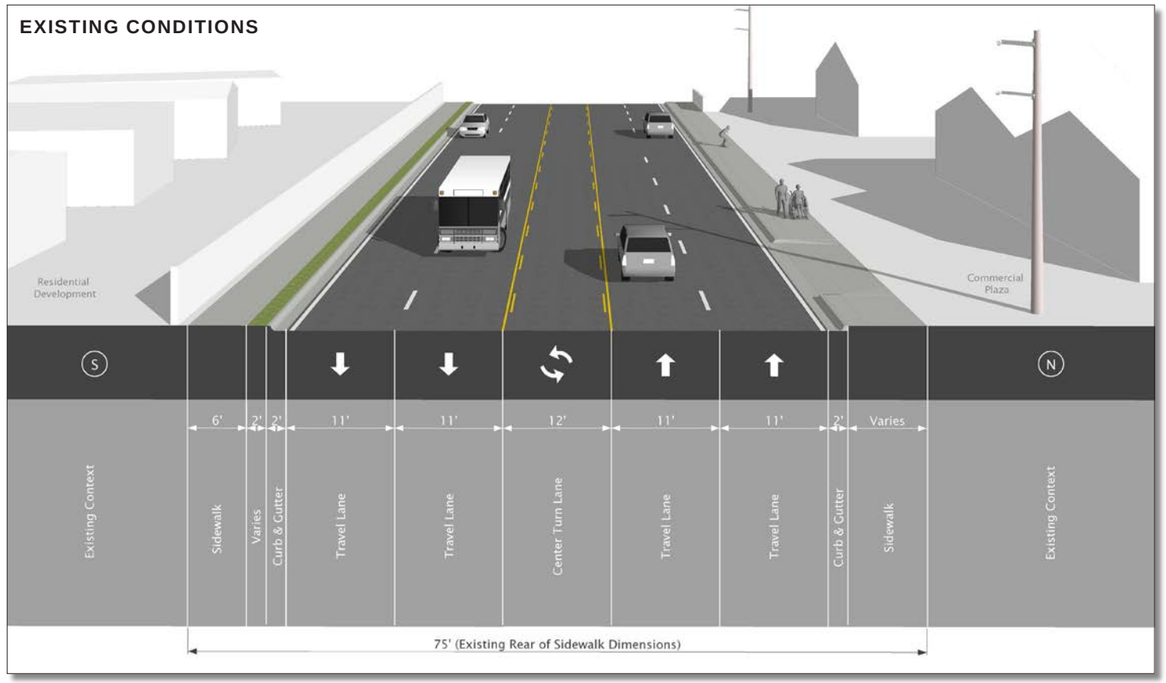

SHARED-USE PATH
CREDIT: CITY OF FORT LAUDERDALE


PROTECTED BIKE LANE
CREDIT: CITY OF ARLINGTON, VA

The yellow box indicates the preferred intervention as expressed by participants at Open House 1.

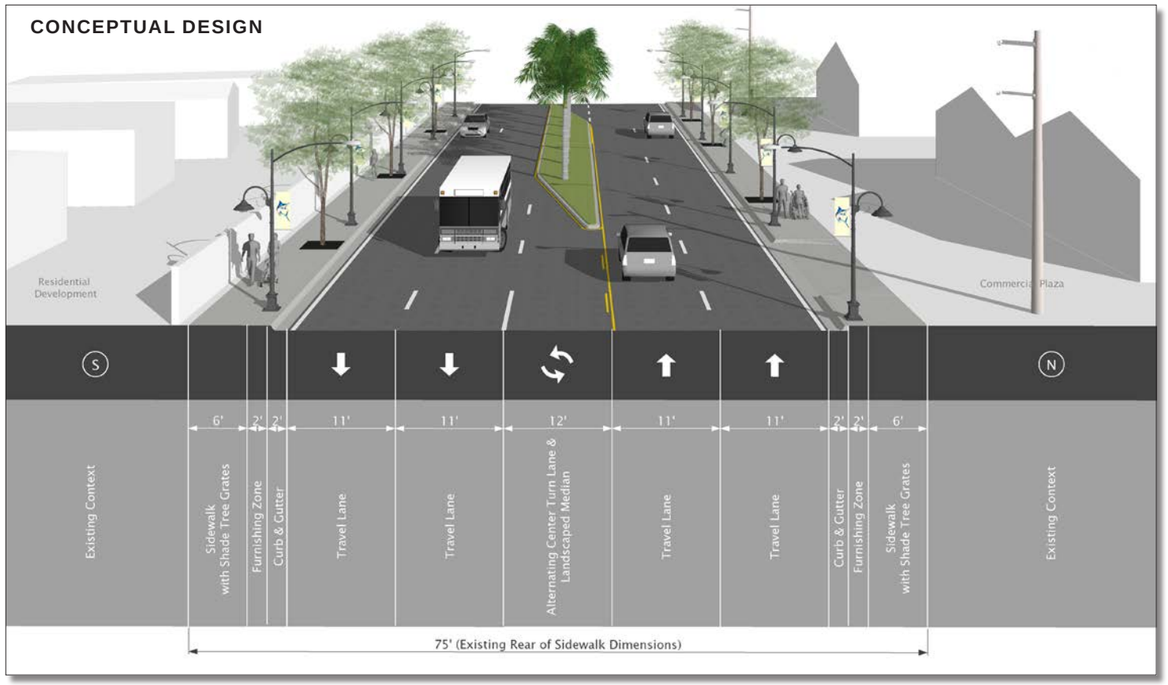
SE MONTEREY ROAD (CONTINUED)

EXISTING CONDITIONS



ROW	75' Rear of Sidewalk Dimension	**BIKE / PED FACILITIES**	No bike facilities North Side - 6' sidewalk South Side - 6' sidewalk
EDGE CONDITION	Curb / gutter	**LIGHTING**	North Side - Inconsistent street lighting South Side - Inconsistent street lighting
TRAVEL LANES	4 lanes, 11' each Alternating center turn-lane, 12'	**LANDSCAPING**	No shade trees

CONCEPTUAL DESIGN



ROW	*75' Rear of Sidewalk Dimension (no change)*	**BIKE / PED FACILITIES**	*North Side - 6' sidewalk (no change)* *South Side - 6' sidewalk (no change)*
EDGE CONDITION	*North Side - No change* *South Side - No change*	**LIGHTING**	North Side - New pedestrian-scaled street lighting South Side - New pedestrian-scaled street lighting
TRAVEL LANES	*4 lanes, 11' each (no change)* New Alternating center turn-lane / median, 12'	**LANDSCAPING**	North Side - New shade trees in tree grates South Side - New shade trees in tree grates New palm trees in median

130 2-LANE SUBURBAN ROADWAY SW PALM CITY ROAD

SW Palm City Road connects SE Monterey Road and US1/Federal Highway in the City of Stuart. The corridor has a posted speed of 25 MPH. Uses along the roadway are primarily single family and multi family residential, with commercial uses near the SE Monterey Road and US1/Federal intersections. Although traffic demand on SW Palm City Road is moderate during most of the day, the roadway carries significant PM commuter traffic from Stuart to the Palm City Bridge.

The segment chosen for illustration is just west of the intersection with US1/Federal Highway, with a commercial plaza on the west side with mixed residential uses on the east. Existing conditions include inconsistent sidewalks on both sides of the corridor that vary from 5-6' with sporadic gaps. On the east side, there are existing utility poles that create design challenge and coordination with FPL and private owners may be needed to accommodate more extensive interventions. Lighting and landscaping are also inconsistent along the corridor, with irregularly placed palm trees that provide limited shade for pedestrians. The corridor also includes a number of mid-block crossings that have recently been upgraded from at-grade painted crosswalks to raised, painted crosswalks with distinct signage that also provide traffic calming. One of the mid-block crossing locations is included in the segment chosen for illustration, and it provides important access between the commercial and residential uses on either side of the road. Currently, there are no bicycle lanes on the corridor, and bicyclists either ride in the roadway or share the sidewalk with pedestrians. Stormwater on the corridor is accommodated by curb and gutter on the east side and a grassed swale on the west.

In Open House 1, participants were most interested in the addition of a buffered bike lane and a shared-use path. Given the available right-of-way, there is sufficient room for both interventions to improve safety and access through the segment. In the proposed concept illustrated on the following page, the corridor is depicted in an urban form, with curb and gutter added to the west side of the street as well. By utilizing the existing and newly added curbs, raised bicycle lanes are depicted which require less right-of-way than a buffered bicycle lane while still creating a separate, safer path for bicyclists. The 6' sidewalk on the west side is maintained, but a wider 10' shared-use path is illustrated on the east side, closer to the commercial uses. Within the furnishing zone, the conceptual illustration indicates the installation of shade trees and pedestrian-scale lighting. In addition, the existing mid-block crosswalk is depicted as a textured-surface, raised speed table with integral lighting and distinct signage to maximize safety and visibility for pedestrians. All interventions can be accommodated within the existing right-of-way without encroaching into private property.

EXISTING CONDITIONS:
2-LANE SUBURBAN ROADWAY - SW PALM CITY ROAD

IMAGE 1 - APPROACHING THE INTERSECTION OF SW PALM CITY ROAD AND US 1

IMAGE 2 - SW PALM CITY ROAD JUST BEFORE PLAZA ENTRANCE

IMAGE 3 - SW PALM CITY ROAD AND POPPLETON CREEK

IMAGE 4 - SW PALM CITY ROAD SOUTH OF POPPLETON CREEK

COMPLETE STREETS:
POSSIBLE INTERVENTIONS


LIGHTED CROSSWALK
CREDIT: HOWARD INDUSTRIES

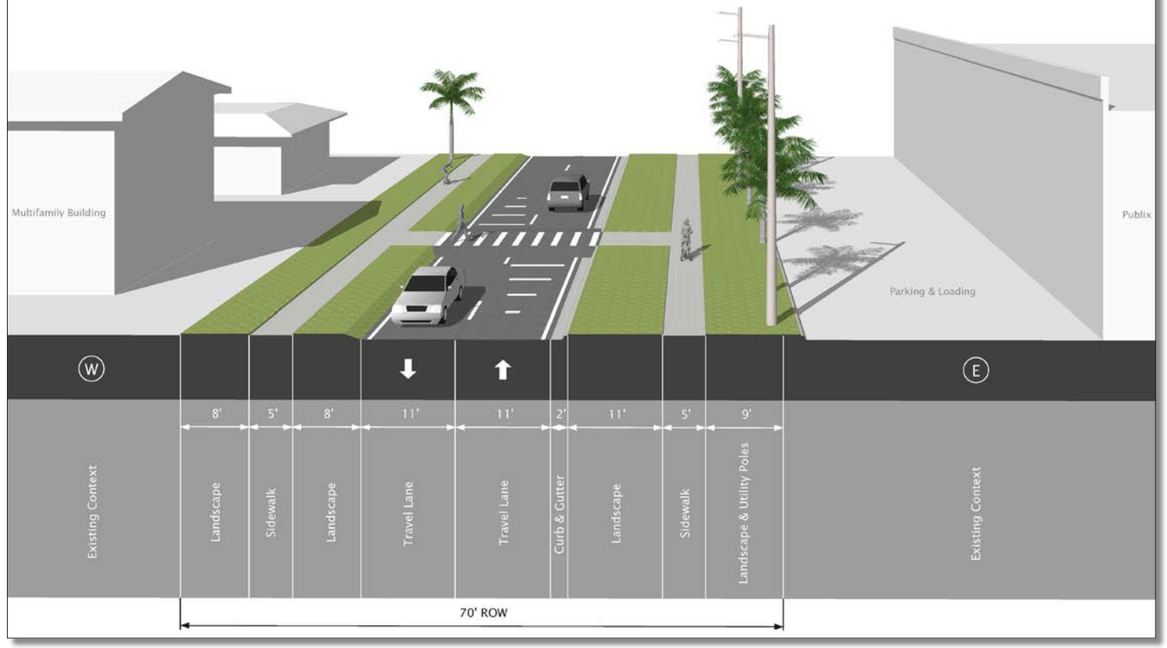

SHARED-USE PATH
CREDIT: CITY OF FORT LAUDERDALE


BUFFERED BIKE LANE
CREDIT: BIKE FLORIDA

The yellow box indicates the preferred intervention as expressed by participants at Open House 1.

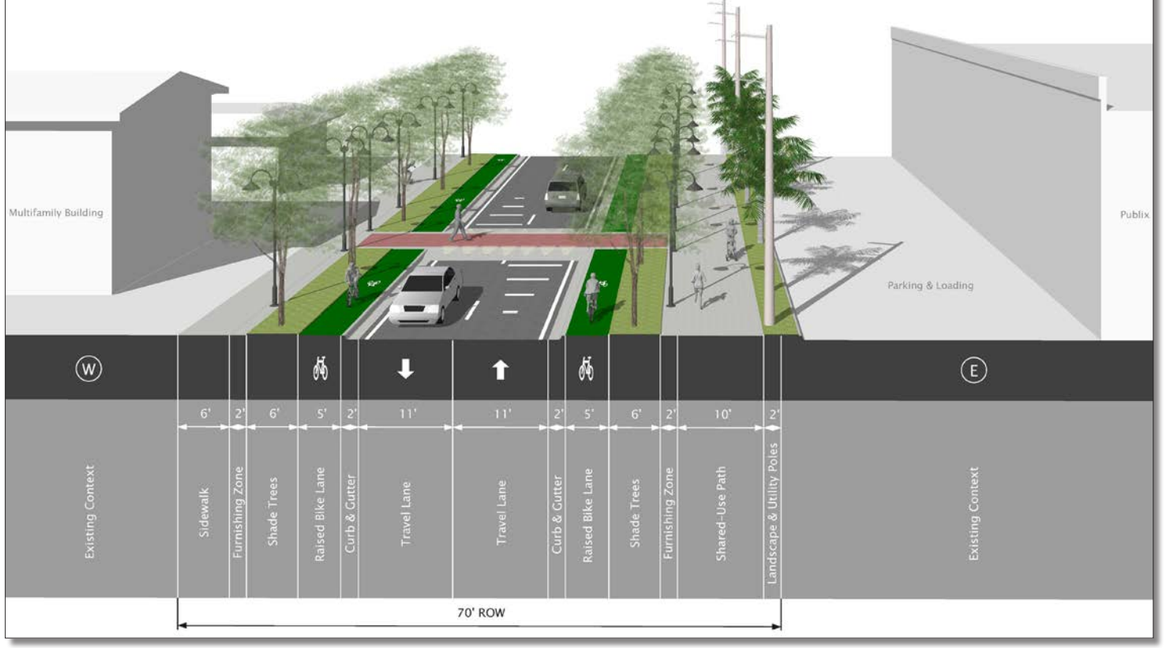
SW PALM CITY ROAD (CONTINUED)

EXISTING CONDITIONS

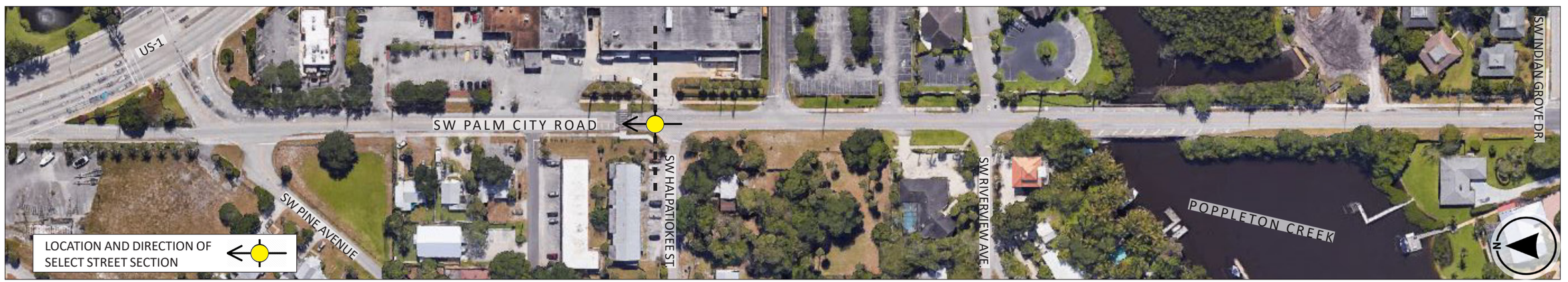


ROW	Varies from 70'-80'	**BIKE / PED FACILITIES**	No bike facilities Existing painted crosswalk & speed table East Side - 5'-6' sidewalk West Side - Inconsistent sidewalk
EDGE CONDITION	East Side - Curb/gutter US1- Poppleton Creek) West Side - Soft shoulder	**LIGHTING**	Inconsistent pedestrian and street lighting
TRAVEL LANES	2 lanes, 11' each	**LANDSCAPING**	Inconsistent, limited shade trees

CONCEPTUAL DESIGN



ROW	*No change* *(Varies from 70'-80')*	**BIKE / PED FACILITIES**	New raised, painted bike lanes East Side - New 10' shared-use path West Side - Improved 6' sidewalk New lighted, raised, colored crosswalk / speed table
EDGE CONDITION	*East Side - (No change)* West Side - Added curb and gutter* *Curb/gutter for improved stormwater treatment	**LIGHTING**	New pedestrian scaled lighting
TRAVEL LANES	*No change* *(2 lanes, 11' each)*	**LANDSCAPING**	New consistent shade trees



137 5-LANE COMMERCIAL CORRIDOR SE INDIAN STREET

SE Indian Street between US1 Federal Highway and Dixie is only about a third of a mile long, but within that 0.36 miles, there is a lot of activity. There are numerous commercial businesses, a railroad crossing, four travel lanes, a center turn lane, three additional turning lanes at the intersections, a Marty transit stop, and many people bicycling and walking from the Golden Gate community to commercial destinations and transit along US1. The corridor has 6' sidewalks on both sides, but no bicycle lanes, landscaping, or pedestrian-scale lighting. Although the corridor has a posted speed of 45 MPH, travel lanes on the corridor are wider than necessary at 12.5'.

Due to the heavy traffic on the corridor and the width of the roadway, it is common to see bicyclists crossing SE Indian Street within the FEC Railway crossing as opposed to crossing at the intersections. While there are as many as seven travel lanes to cross at the intersections, at the mid-block adjacent to the FEC, a pedestrian or cyclist only needs to cross four lanes, and there is an existing median. It is an understandable alternative route; however, crossing within the FEC right-of-way is illegal, dangerous, and represents trespassing.

In Open House 1, participants suggested shade trees and a protected bicycle lane were the most important types of interventions for this corridor segment. Accordingly, the conceptual illustration depicts protected bicycle lanes which can be accommodated within the existing curbs if the travel lanes are restriped to 10' and 11', and the center two-way uncontrolled turning lane was replaced with a landscaped median. Additionally, there are opportunities to strategically place new lighting and desired shade trees within some of the existing green space adjacent to existing sidewalks. To further enhance pedestrian safety on the corridor, the conceptual design illustrates a proper mid-block crossing just west of the FEC corridor, which would allow pedestrians to safely cross while the train is present and maintain to cross in a location with fewer vehicular movements than the intersections. It is recommended that the new mid-block crossing should utilize additional measures to increase its visibility and safety, such as a speed table, pedestrian lighting, and a median pedestrian refuge.

EXISTING CONDITIONS:
5-LANE COMMERCIAL CORRIDOR - SE INDIAN STREET

IMAGE 1 - INTERSECTION OF SE INDIAN STREET AND OLD DIXIE HIGHWAY

IMAGE 2 - SE INDIAN STREET APPROACHING THE FEC RAILWAY

IMAGE 3 - SE INDIAN STREET WEST OF THE FEC RAILWAY

IMAGE 4 - INTERSECTION OF SE INDIAN STREET AND SE CARNIVALE COURT

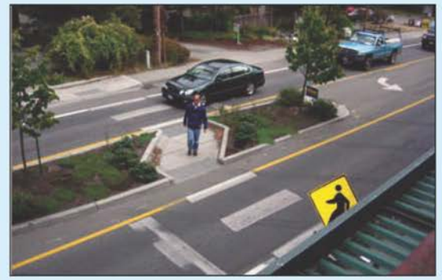
COMPLETE STREETS:
POSSIBLE INTERVENTIONS


PROTECTED BIKE LANE
CREDIT: CITY OF ARLINGTON, VIRGINIA


BIOSWALE
CREDIT: EPA.GOV


SHADE TREES
CREDIT: GOULD EVANS

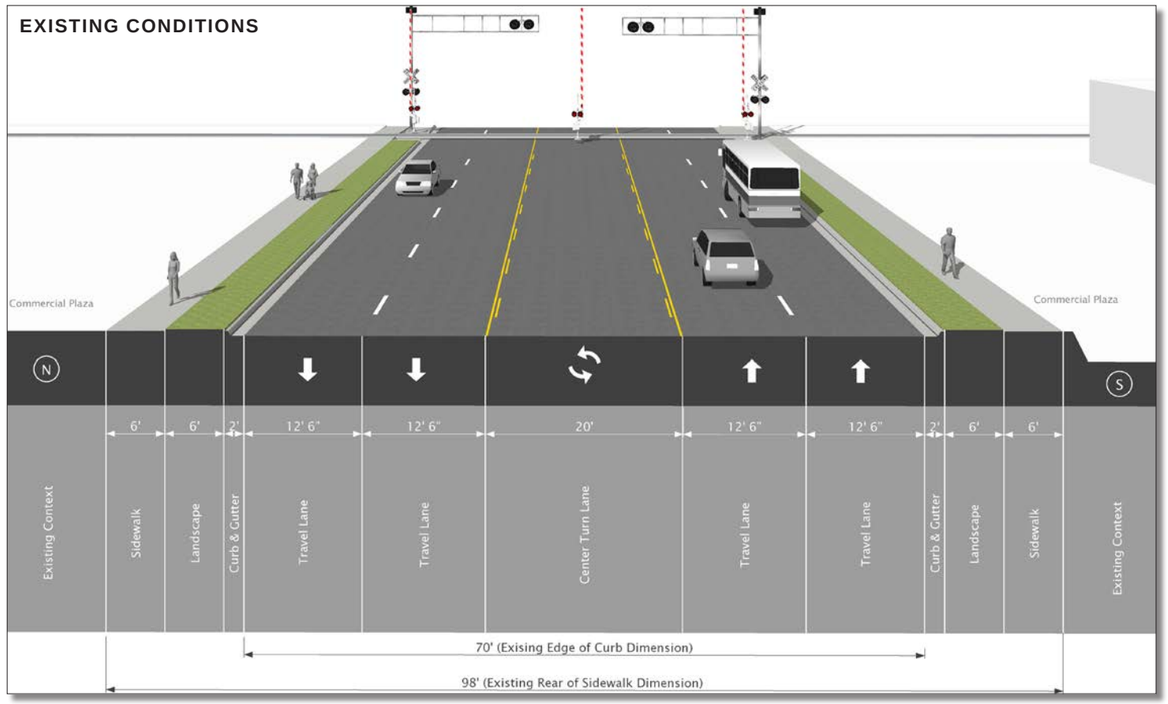
PEDESTRIAN LIGHTING
CREDIT: STUART MAIN STREET

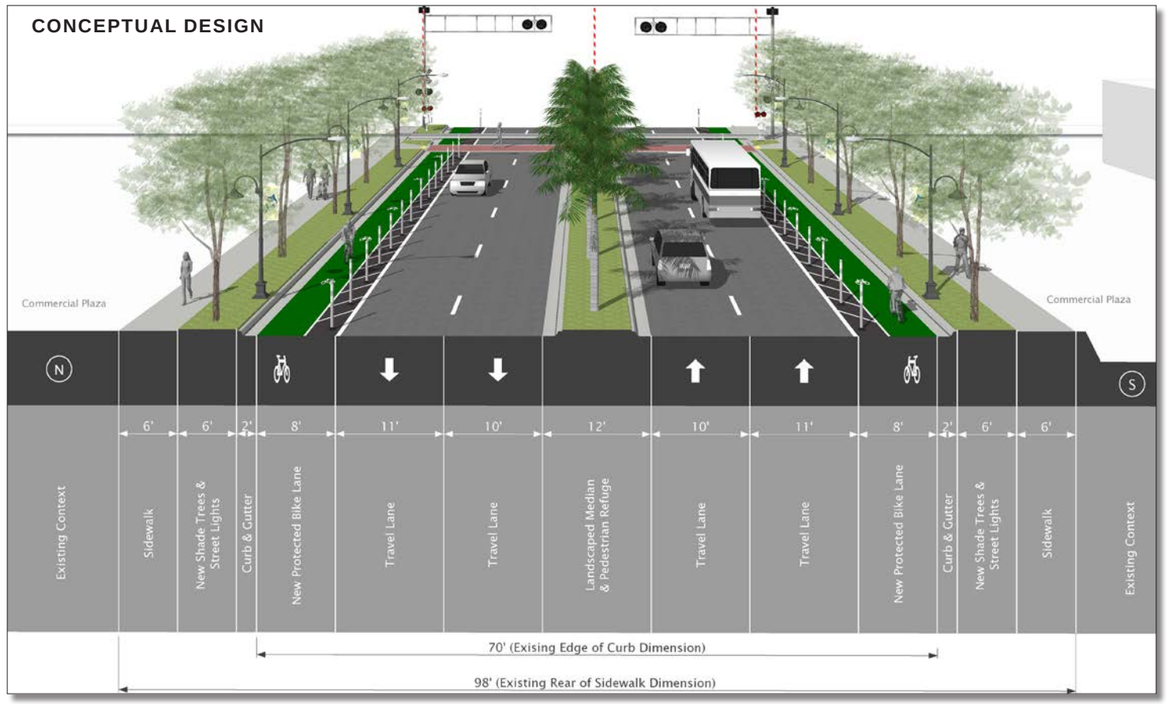

MEDIAN REFUGE
CREDIT: FHWA


SHARED-USE PATH
CREDIT: CITY OF FORT LAUDERDALE

The yellow box indicates the preferred intervention as expressed by participants at Open House 1.

SE INDIAN STREET (CONTINUED)





ROW	Varies from 70'-85'	**BIKE / PED FACILITIES**	No bike facilities No pedestrian crossing / median refuge North Side - 6' sidewalk South Side - 6' sidewalk
EDGE CONDITION	Curb / gutter	**LIGHTING**	No pedestrian or street lighting
TRAVEL LANES	4 lanes, 12.5' each Alternating median & center turn-lane, 20'	**LANDSCAPING**	No shade trees

ROW	*No change* *(Varies from 70'-85')*	**BIKE / PED FACILITIES**	New protected painted bike lanes *North Side - 6' sidewalk (no change)* *South Side - 6' sidewalk (no change)* New lighted / colored crosswalk with median refuge
EDGE CONDITION	*North Side - No change* *South Side - No change*	**LIGHTING**	New pedestrian / street lighting
TRAVEL LANES	4 lanes - 2 x 10' each, 2 x 11' each New median & alternating center turn-lane, 12'	**LANDSCAPING**	New shade trees

323 5-LANE COMMERCIAL CORRIDOR SE DIXIE HIGHWAY / GOLDEN GATE

SE Dixie Highway in Golden Gate is a busy roadway that is highly utilized by motorists, pedestrians, bicyclists, and transit users. Uses fronting SE Dixie Highway in the Golden Gate area are commercial and industrial uses, with extensive, lower-income residential neighborhoods just east of SE Dixie Highway. As reflected in the Census data, this area is home to many households that have limited or no access to personal vehicles. Residents often travel along SE Dixie Highway and then SE Indian Street to access additional commercial, workplace, and transit stops on US1/SE Federal Highway to the west. Enhancing the corridor with complete streets interventions will greatly benefit the community and improve safety for all users. SE Dixie Highway is also the alignment for the East Coast Greenway, which is a multimodal pathway through the County as part of a national trail network. The illustrated section of the corridor includes a property where an existing building and a parking lot directly abut the right-of-way. The corridor has six-foot sidewalks on both sides but lacks bicycle lanes, landscaping, and pedestrian-scale lighting. Lighted intersections are substantially distanced, which contributes to common pedestrian jaywalking across the roadway. Due to the existing context, the selected section is one of the most restrictive along the SE Dixie Highway corridor.

EXISTING CONDITIONS:
5-LANE COMMERCIAL CORRIDOR - SE DIXIE HIGHWAY

IMAGE 1 - NEAR THE INTERSECTION OF SE INDIAN STREET AND SE DIXIE HIGHWAY

IMAGE 2 - NEAR THE INTERSECTION OF SE DIXIE HIGHWAY AND SE BONITA STREET

IMAGE 3 - NEAR THE INTERSECTION OF SE DIXIE HIGHWAY AND SE ELLENDALE STREET

IMAGE 4 - NEAR THE INTERSECTION OF SE DIXIE HIGHWAY AND SE KENSINGTON STREET

At Open House 1, participants reinforced the strong desire to create safe movements through the corridor, prioritizing a protected bicycle lane and pedestrian median refuge among the various design interventions. While maintaining the existing travel lanes and curbs, the existing striping could be modified as shown in the illustrated concept to allow for standard bicycle lanes. The concept indicates a center landscaped median as opposed to the existing continuous center turn lane. The median can also provide for a pedestrian refuge and a connection for mid-block crossings located between SE Indian Street and Jefferson Street.

The conceptual illustration maintains the existing six-foot sidewalks on each side of the roadway corridor. The remainder of the right-of-way has a small landscape area which is not large enough to support substantial landscaping. Considering the little value provided by the the small area of turf, the concept illustrate instead allocates that space to the busy sidewalk to better allow pedestrians and cyclist to pass one another or walk as families. Shade trees would also enhance the corridor; however, the right-of-way is too constrained for them to be accommodated. Alternatively, shade trees could be installed on private property outside the right-of-way in cooperation with private property owners and the CRA, whereby complementary complete streets interventions can occur to further improve the safety, function, and appearance of the roadway.

COMPLETE STREETS:
POSSIBLE INTERVENTIONS


MEDIAN REFUGE
CREDIT: FHWA

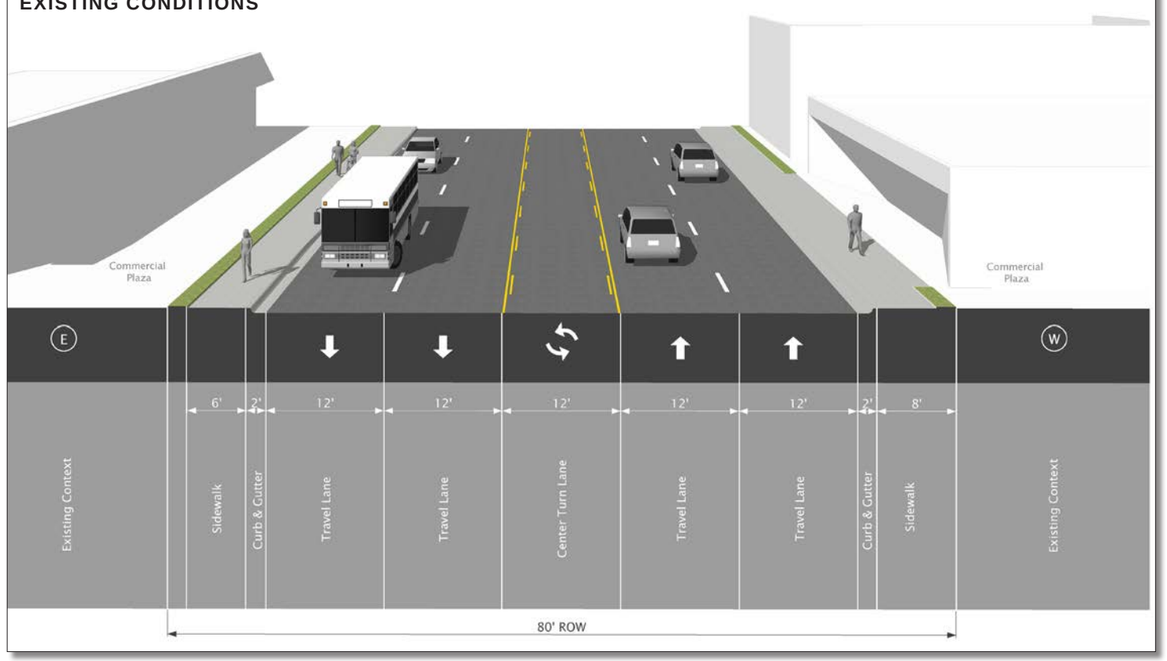

PROTECTED BIKE LANE
CREDIT: CITY OF ARLINGTON, VA


CYCLE TRACK (2-WAY)
CREDIT: NACTO

The yellow box indicates the preferred intervention as expressed by participants at Open House 1.

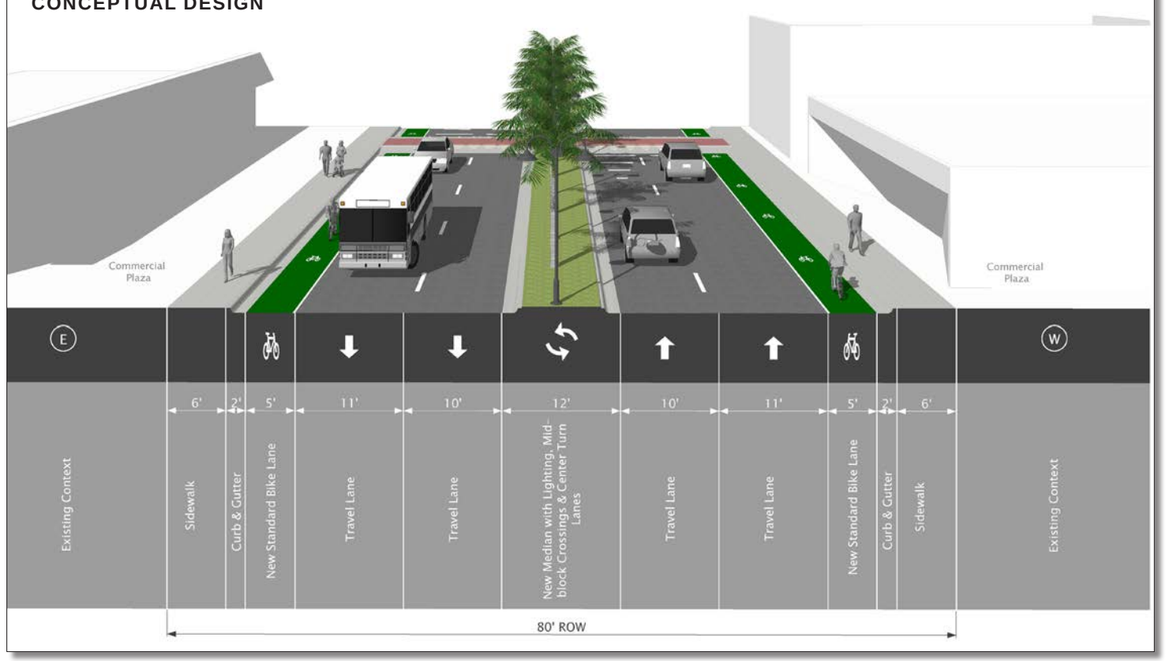
SE DIXIE HIGHWAY / GOLDEN GATE (CONTINUED)

EXISTING CONDITIONS



ROW	80’	**BIKE / PED FACILITIES**	No bike facilities / No pedestrian crossings East Side - 6’ sidewalk West Side - 8’ sidewalk
EDGE CONDITION	Curb / gutter	**LIGHTING**	East Side - Inconsistent street lighting West Side - No lighting
TRAVEL LANES	4 lanes, 12’ each Alternating center turn-lane, 12’	**LANDSCAPING**	No shade trees

CONCEPTUAL DESIGN



ROW	*80’ (no change)*	**BIKE / PED FACILITIES**	East Side - New standard painted bike lane, *6’ sidewalk (no change)* West Side - New standard painted bike lane, new 6’ sidewalk New Improved lighted / colored crosswalk with median refuge
EDGE CONDITION	*East Side - No change* *West side - No change*	**LIGHTING**	*East Side - Inconsistent street lighting (no change)* *West Side - No lighting (no change)*
TRAVEL LANES	2 lanes, 11’ each 2 lanes, 10’ each New Alternating center turn-lane	**LANDSCAPING**	New palm trees in median

214 2-LANE URBAN ROADWAY SE COVE ROAD

SE Cove Road is an important east/west roadway that runs from SR 76 to the Intracoastal Waterway. The study segment is the portion from US1/Federal Highway to SE Dixie Highway, which places the majority of the study segment within the Port Salerno CRA. Uses along the corridor are mixed, including single-family residential, commercial, institutional, and light industrial, with extensive residential neighborhoods both north and south of the road. Murray Middle School is located several blocks to the south.

The existing conditions on SE Cove Road include a five-foot sidewalk on one side of the roadway and an at-grade, painted mid-block crosswalk, but the corridor is lacking bicycle facilities, shade trees, and pedestrian-scale lighting. The two travel lanes are off-center from the middle of the right-of-way, and there are existing utility lines which run along both sides of the roadway. Stormwater is handled through grassed swales.

EXISTING CONDITIONS:
2-LANE URBAN ROADWAY - SE COVE ROAD EXAMPLE

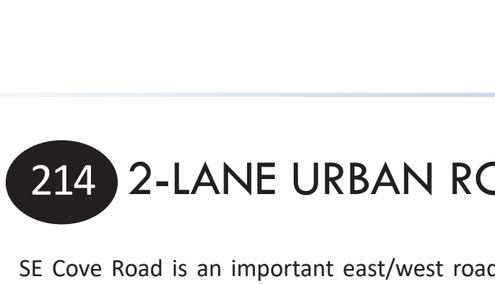


IMAGE 1 - SE COVE ROAD AND SE 47TH AVENUE

IMAGE 2 - APPROACHING THE INTERSECTION OF SE COVE ROAD AND SE DRIFTWOOD AVENUE

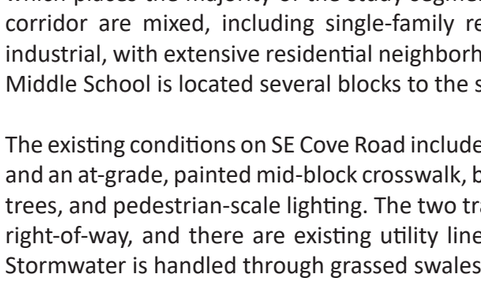


IMAGE 3 - SE COVE ROAD AND SE EBBTIDE AVENUE NEAR REVIVE CHURCH

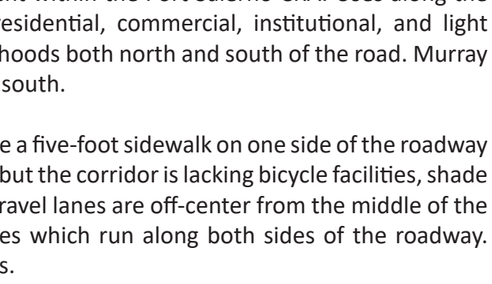


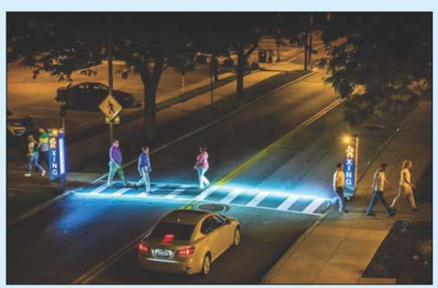
IMAGE 4 - SE COVE ROAD EAST OF US-1

At Open House 1, participants voiced a desire for safer pedestrian and bikeway facilities, prioritizing a multi-path and separated bicycle lane for the corridor. SE Cove Road has a right-of-way of sixty-five feet, which provides ample space to accommodate these interventions.

In the design illustrated on the following page, the north side is depicted with a furnishing zone including an eight-foot shared-use path that can incorporate the utility poles for maximum utility. The placement of new pedestrian-scale lighting is shown interspersed but in alignment with existing utility poles to maximize the clear space for users of the shared-use path. On the south side, a six-foot sidewalk is illustrated that has been widened by two feet to incorporate the utility poles and allows interspersed but aligned pedestrian-scale lighting as well. Because the shared-use path can accommodate both pedestrians and bicyclists with a high degree of safety and contributes to the bikeway zone for the corridor, the additional bicycle facility illustrated is a standard bicycle lane to reduce costs.

As new impervious surfaces are added to a roadway corridor, stormwater management must be considered. SE Cove Road's stormwater is currently addressed through grassed swales, and there is not existing curb and gutter infrastructure along the study corridor. Accordingly, the conceptual design suggests a new landscape area with shade trees located within a bioswale, and there are specified species that thrive in bioswales designed for water storage and treatment. In addition, Martin County's CRA Stormwater Tool Kit can provide further guidance for other alternative solutions including pervious concrete and asphalt.

COMPLETE STREETS:
POSSIBLE INTERVENTIONS


LIGHTED CROSSWALK
CREDIT: HOWARD INDUSTRIES

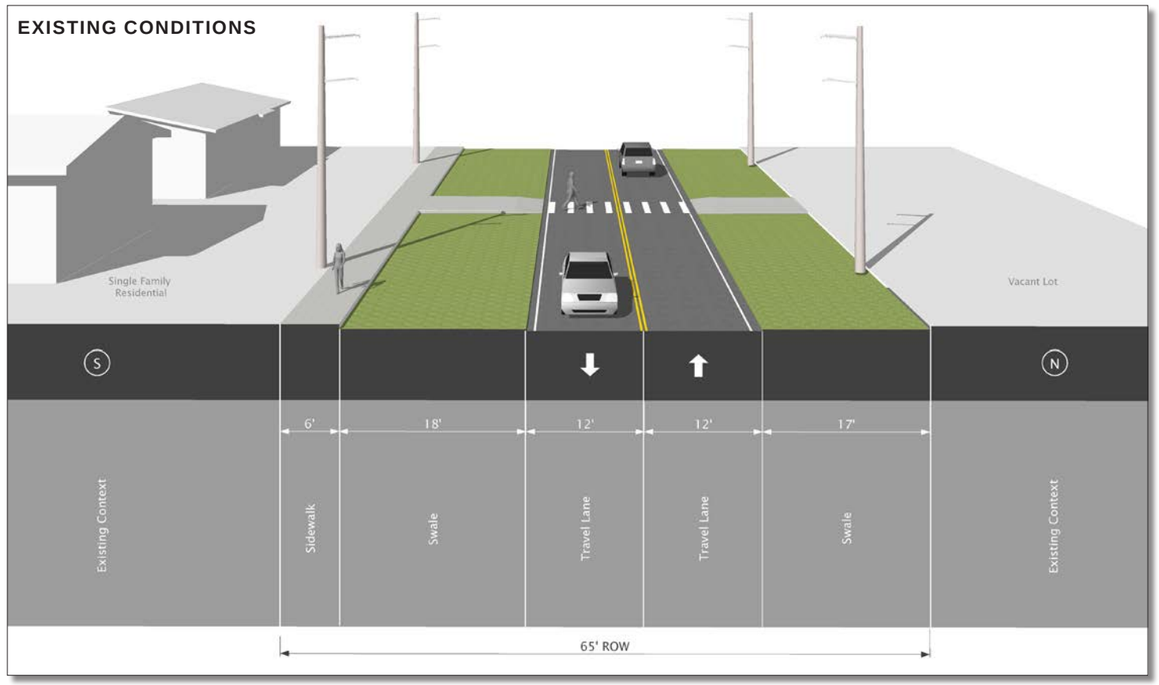

SHARED-USE PATH
CREDIT: CITY OF FORT LAUDERDALE


SEPARATED BIKE LANE
CREDIT: RURAL DESIGN GUIDE

The yellow box indicates the preferred intervention as expressed by participants at Open House 1.

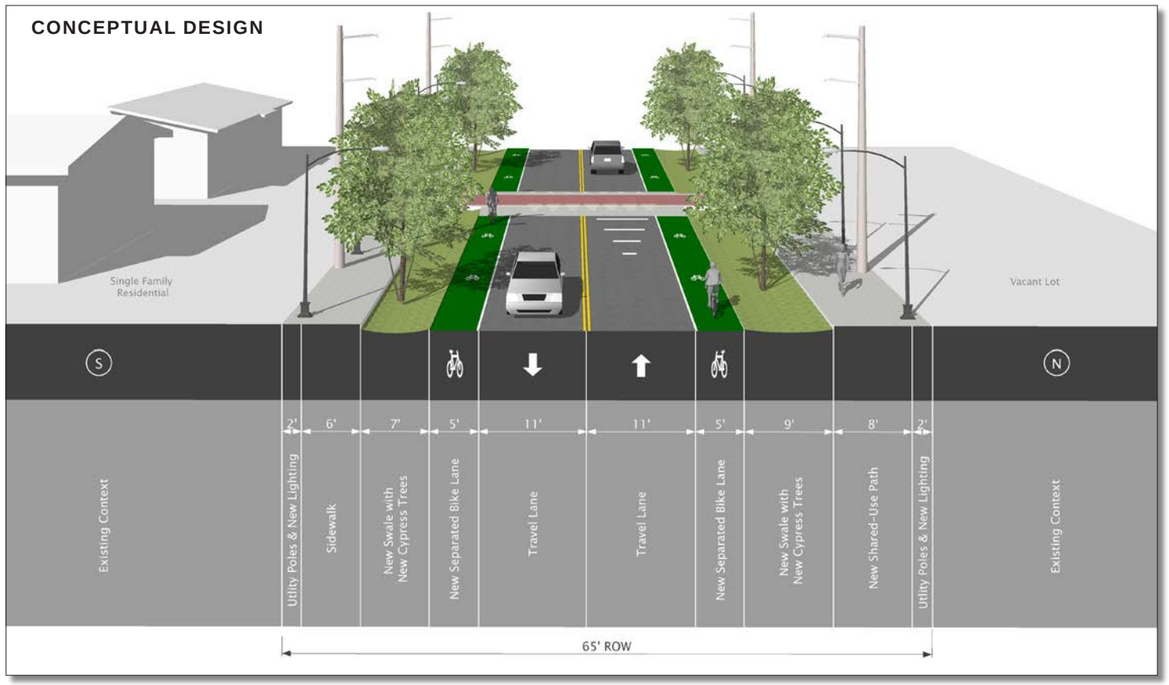
SE COVE ROAD (CONTINUED)

EXISTING CONDITIONS



ROW	65'	**BIKE / PED FACILITIES**	No bike facilities / Existing painted crosswalk North Side - No sidewalk South Side - 6' sidewalk
EDGE CONDITION	Soft shoulder	**LIGHTING**	North side - No lighting South side - Inconsistent street lighting
TRAVEL LANES	2 lanes, 11' each	**LANDSCAPING**	No shade trees

CONCEPTUAL DESIGN



ROW	*65' (no change)*	**BIKE / PED FACILITIES**	North Side - New painted bike lane, 10' shared-use path South Side - New painted bike lane, 6' *sidewalk (no change)* New lighted, raised, colored crosswalk / speed table
EDGE CONDITION	North Side - New bioswale* South Side - New bioswale* *Bioswale for additional stormwater treatment	**LIGHTING**	North side - New street lighting South side - New consistent street lighting
TRAVEL LANES	*2 lanes, 11' each (no change)*	**LANDSCAPING**	New shade trees / bioswale vegetaton

287 2-LANE SUBURBAN ROADWAY SE EBBTIDE AVENUE

SE Ebbtide Avenue is a unique roadway within the Port Salerno neighborhood and CRA. It is one of the few north-south connections between SE Salerno Road and SE Cove Road, which are the two primary east/west corridors in Port Salerno. SE Salerno and SE Cove Road include an array of commercial uses, schools, churches, and entrances to residential neighborhoods. Given their connectivity to the rest of the County, these roadways are critical to the transportation network. US1/SE Federal Highway and SE Dixie Highway are primary north/south commercial corridors, but unlike those roads, SE Ebbtide Avenue is a neighborhood road that provides a parallel connection. With a narrow right-of-way measuring 65 feet, SE Ebbtide Aveue is characterized by single family dwellings and numerous driveways. The existing conditions include a six-foot sidewalk on the west side with no other notable improvements.

In Open House 1, participants preferred limited interventions for the corridor, prioritizing buffered bicycle lanes and shade trees among other potential alternatives. Considering the land use context and function of the roadway, the interventions to improve the road should not change its character but still enhance safety. In the conceptual design provided on the following page, the existing vehicular travel lanes have been retained in their current location, but additional roadway surface has been added to create buffered bicycle lanes. The concept depicts a new sidewalk on the east side of the roadway. The remaining green space is illustrated with shade tree plantings. The shade trees are not just a beautiful asset to the neighborhood, but they provide necessary functions. A shade tree acts as physical barrier to help protect pedestrians. They visually "frame the street," which provides a traffic calming effect, and they shade the sidewalk making it a more usable and pleasant mode of transportation. For tree plantings, it is important to note there are existing utility poles on the west side of the road that should be considered with FPL's Right Tree/Right Place Guidelines.

The addition of the bicycle lanes and sidewalk must consider the impact to stormwater and the existing water storage within the existing swale. SE Ebbtide Avenue could be a candidate for implementing some of the strategies outlined in the CRA Stormwater Tool Kit including pervious concrete and asphalt which would mitigate the impact of reduced swale. The plant species for the shade tree should be carefully considered if the landscaping area is designed as a bioswale, as only certain shade tree species can tolerate the soil condition.

EXISTING CONDITIONS:
2-LANE SUBURBAN ROADWAY - SE EBBTIDE AVENUE

IMAGE 1 - INTERSECTION OF SE EBBTIDE AVENUE AND SE COVE ROAD

IMAGE 2 - SE EBBTIDE AVENUE NORTHWEST OF SE LEE STREET

IMAGE 3 - INTERSECTION OF SE EBBTIDE AVENUE AND SE GRANT STREET

IMAGE 4 - SE EBBTIDE AVENUE AS IT CROSSES THE EBBTIDE AVENUE BRIDGE

COMPLETE STREETS:
POSSIBLE INTERVENTIONS


BUFFERED BIKE LANE
CREDIT: BIKE FLORIDA


BIOSWALE
CREDIT: EPA.GOV


SHADE TREES
CREDIT: GOULD EVANS

PEDESTRIAN LIGHTING
CREDIT: STUART MAIN STREET

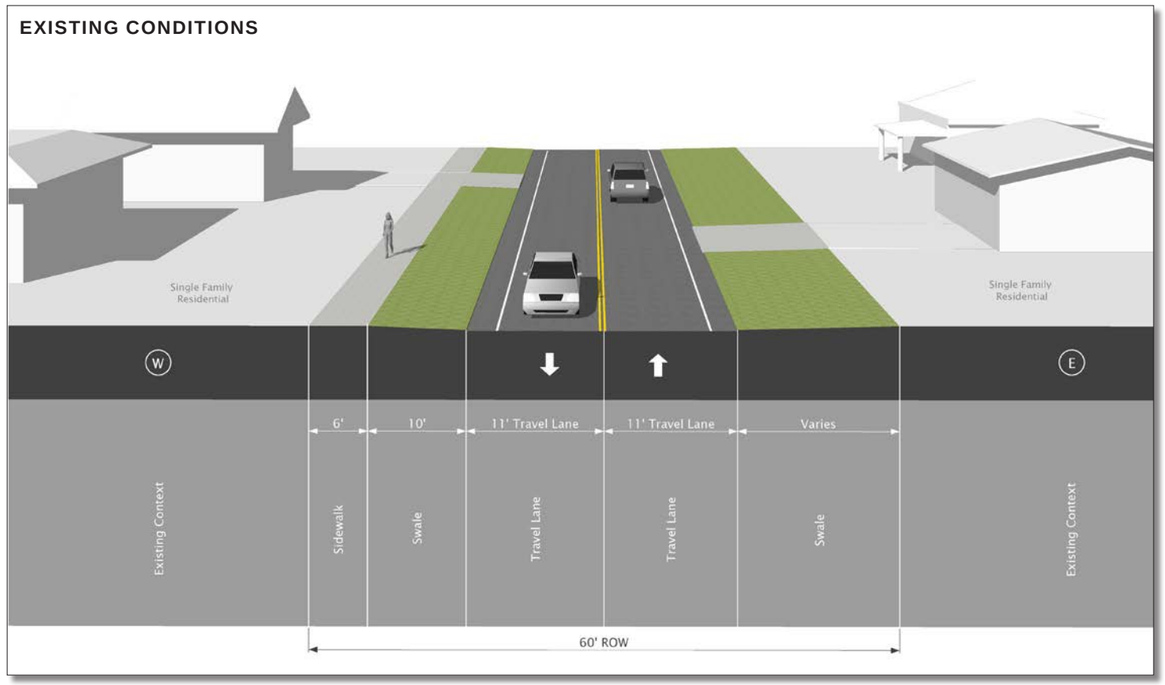

STANDARD BIKE LANES
CREDIT: MIAMI SAFE STREETS SUMMIT


SHARED-USE PATH
CREDIT: CITY OF FORT LAUDERDALE

The yellow box indicates the preferred intervention as expressed by participants at Open House 1.

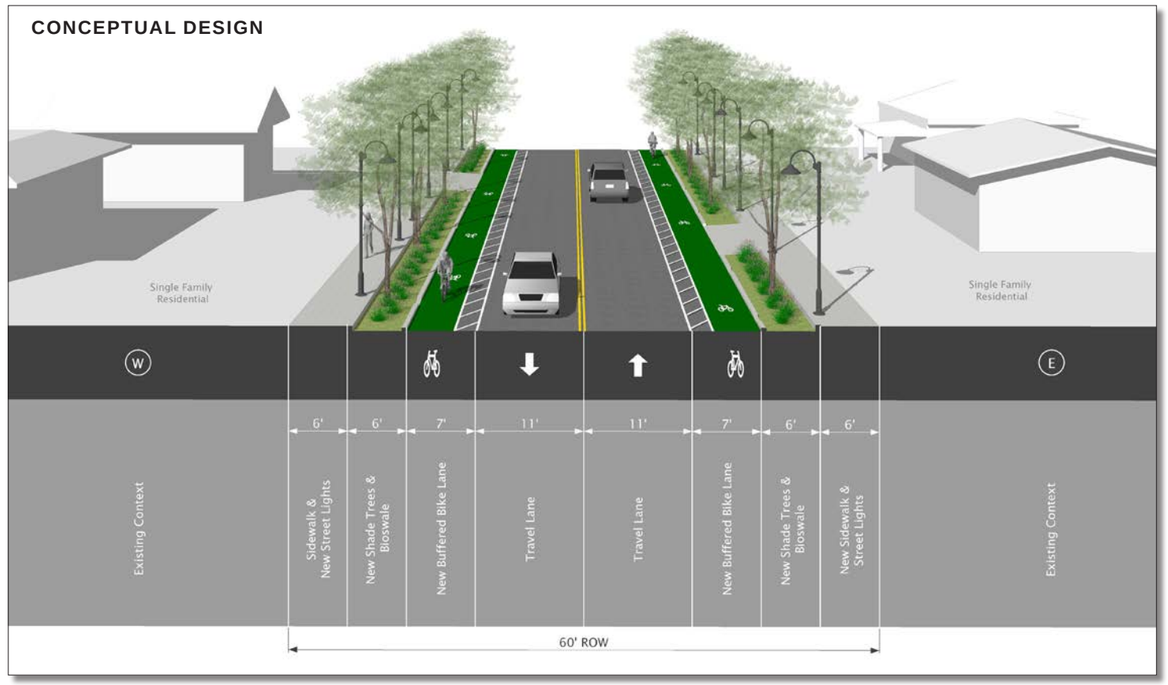
SE EBBTIDE AVENUE (CONTINUED)

EXISTING CONDITIONS



ROW	60'	**BIKE / PED FACILITIES**	No bike facilities East Side - No sidewalk / West Side - 6' sidewalk
EDGE CONDITION	Soft Shoulder	**LIGHTING**	No pedestrian / street lighting
TRAVEL LANES	2 lanes, 11' each	**LANDSCAPING**	No shade trees

CONCEPTUAL DESIGN



ROW	*60' (no change)*	**BIKE / PED FACILITIES**	East Side - New buffered / painted bike lane, new 6' sidewalk West Side - New buffered / painted bike lane, *6' sidewalk (no change)*
EDGE CONDITION	East Side - New bioswale* West Side - New bioswale*	**LIGHTING**	New consistent pedestrian-scaled lighting
TRAVEL LANES	*2 lanes, 11' each (no change)*	**LANDSCAPING**	New shade trees / bioswale vegetaton

182 2-LANE URBAN ROADWAY SE SALERNO ROAD

SE Salerno Road is a highly traveled east/west roadway that runs from SR 76 east to the water's edge in the Port Salerno CRA. The one-mile segment identified for illustration has predominately residential uses on both sides of the roadway. Within the 60-foot right-of-way, SE Salerno Road is a two-lane facility, with a six-foot sidewalk on one side and a mid-block pedestrian crosswalk. The corridor is otherwise lacking shade trees, bicycle facilities, pedestrian light, and street lighting. On the south side of the road are existing utility poles to be considered in the design. Although the illustrated segment has grassed swales for drainage, there is curb and gutter east and west of the subject segment for illustration.

In Open House 1, participants emphasized safe facilities for pedestrians and bicyclists and prioritized protected bike lanes and shared-use paths for the corridor. This may reflect the sad history of the segment, which includes a pedestrian fatality when a pedestrian was struck at a marked crosswalk.

The conceptual design provided on the following page acknowledges several notable features of the corridor. The posted speed is only 35 MPH, and the roadway is used frequently by families with young children traversing the district; accessing transit stops, schools, and churches; and patronizing commercial uses at either end of the corridor. The concept illustrates a shared-use path on both sides of the road to accommodate both pedestrians and bicyclists in a manner where they are fully separated from vehicular traffic. The shared-use path is designed at the outer edges of the right-of-way, and shade trees and lighting are located adjacent to the roadway to provide a physical barrier between the vehicles and pedestrian and bikeway zone.

Given the existing utility poles, careful design consideration should be focused at the ground level when interfacing with the pedestrian zone. It may be necessary to adjust paths to avoid conflicts from poles and select shade tree species with canopies that will not interfere with the overhead lines. Because curb and gutter is located at either end of the segment, the conceptual design illustrates new curb and gutter as well. Future roadway improvements offer an opportunity to integrate road work into larger stormwater management and infrastructure planning efforts for improved efficiency. Additionally, the existing painted mid-block crosswalk is illustrated as a lighted, raised speed table to increase visibility and add traffic calming to the corridor for enhanced safety.

EXISTING CONDITIONS:
2-LANE URBAN ROADWAY - SE SALERNO ROAD

IMAGE 1 - INTERSECTION OF SE SALERNO ROAD AND RAILWAY AVENUE

IMAGE 2 - INTERSECTION OF SE SALERNO ROAD AND SE COMMERCE AVENUE

IMAGE 3 - SE SALERNO ROAD EAST OF GROUPER AVENUE

IMAGE 4 - SE SALERNO ROAD WEST OF KINGFISH AVENUE

COMPLETE STREETS:
POSSIBLE INTERVENTIONS

PEDESTRIAN LIGHTING
CREDIT: STUART MAIN STREET


BIOSWALE
CREDIT: EPA.GOV


PROTECTED BIKE LANE
CREDIT: CITY OF ARLINGTON, VA


LIGHTED CROSSWALK
CREDIT: HOWARD INDUSTRIES

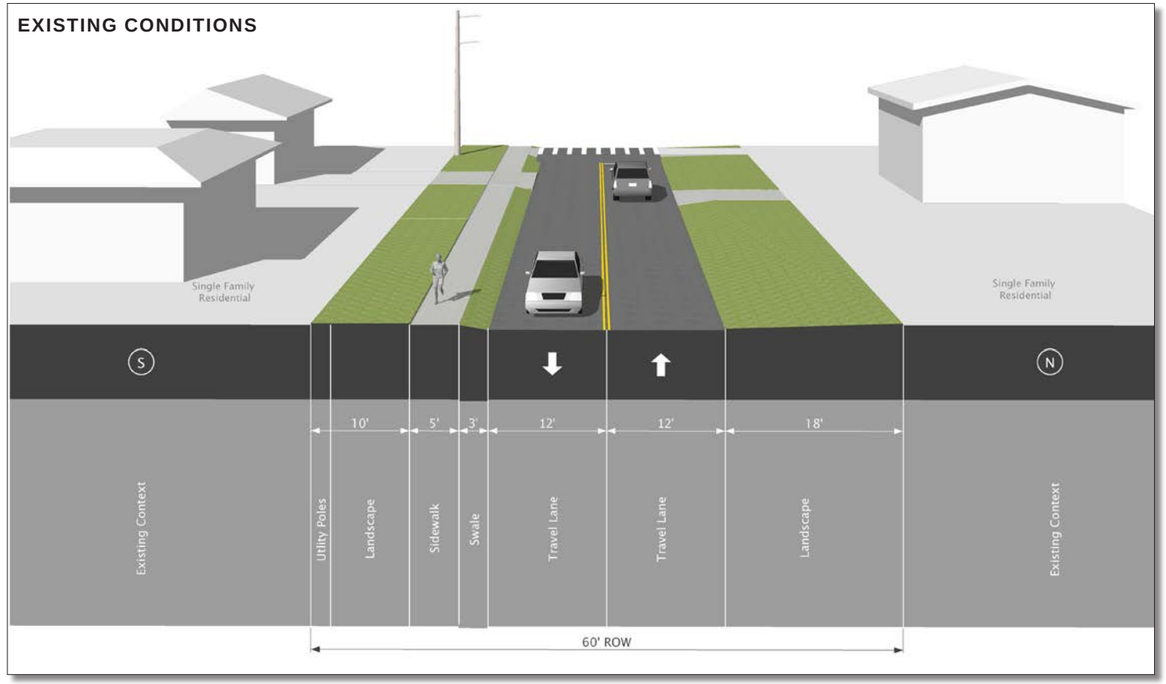

SHARED-USE PATH
CREDIT: CITY OF FORT LAUDERDALE


BUFFERED BIKE LANE
CREDIT: BIKE FLORIDA

The yellow box indicates the preferred intervention as expressed by participants at Open House 1.

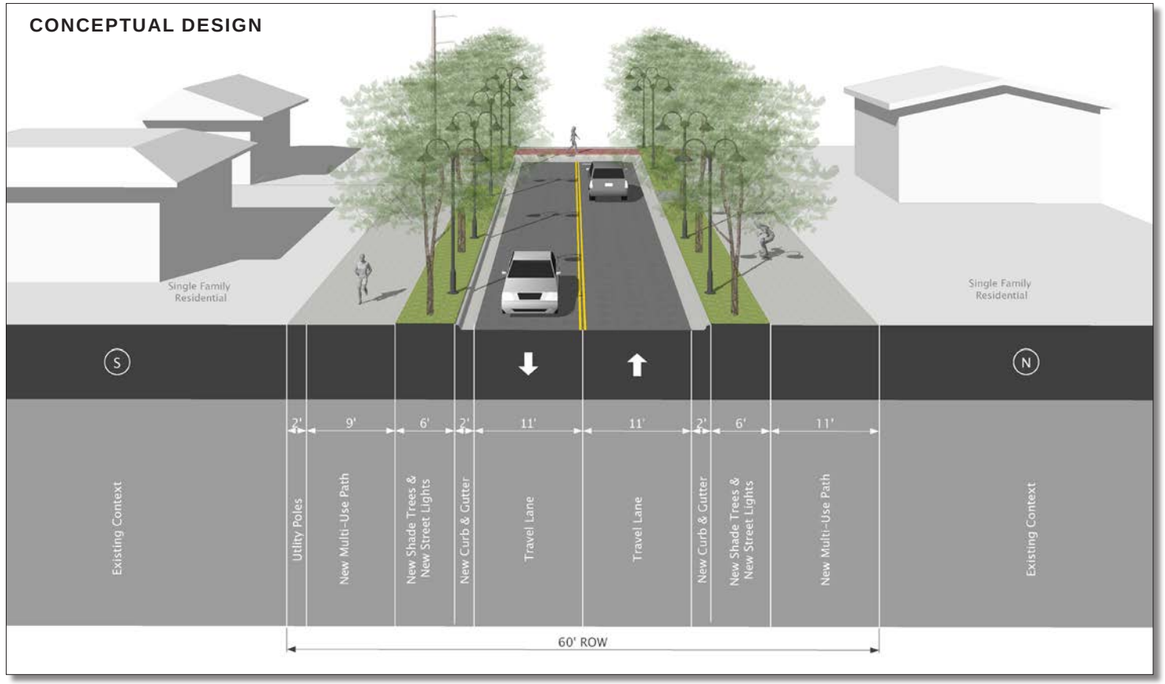
SE SALERNO ROAD (CONTINUED)

EXISTING CONDITIONS



ROW	60'	**BIKE / PED FACILITIES**	No bike facilities / Existing pedestrian crossing North Side - No sidewalk South Side - 5' sidewalk
EDGE CONDITION	Soft shoulder	**LIGHTING**	No pedestrian or street lighting
TRAVEL LANES	2 lanes, 12' each	**LANDSCAPING**	No shade trees

CONCEPTUAL DESIGN



ROW	*60' (no change)*	**BIKE / PED FACILITIES**	North Side - New 9' shared-use path South Side - New 9' shared-use path New Improved lighted / colored crosswalk / speed table
EDGE CONDITION	North Side - Added curb and gutter* South Side - Added curb and gutter* *Curb/gutter for improved stormwater treatment	**LIGHTING**	New pedestrian scaled street lighting
TRAVEL LANES	2 lanes, 11' each	**LANDSCAPING**	New shade trees

322 2-LANE URBAN ROADWAY SE DIXIE HIGHWAY / PORT SALERNO

SE Dixie Highway is the north/south heart of the Port Salerno CRA, and the area has benefited from a number of improvements in the past decade. The section includes six-foot sidewalks on both sides of the road and a painted mid-block crossing. There is existing on-street parking that helps slow traffic and provides parking for the nearby restaurants and businesses. There are existing landscaped medians, shoulder landscaping, and public art installations. The investments in the public realm, waterfront access, mixed-use condition, and special event programming have helped produce high levels of active pedestrian and cyclist activity with active street frontages. The complexity of this segment resulted in a conceptual design presented on the next page along with two alternatives on the following page.

Similar to SE Dixie Highway in Golden Gate, SE Dixie Highway in Port Salerno is also part of the East Coast Greenway alignment in Martin County. In Open House 1, participants emphasized a shared-use path and shade trees as the most desirable for this segment. There are already several locations where planting has occurred within the right-of-way, and the conceptual design identifies the few additional areas with adequate space to sustain trees. Cooperation with property owners and the CRA may be an avenue for adding additional shade trees outside the public right-of-way.

Bicycle traffic is especially challenging to accommodate in the narrow right-of-way in this segment, and there is insufficient room to maintain the on-street parking if bicycle lanes were to be added. Drivers exiting parked vehicles would be opening doors into a bicycle lane, creating conflicts and safety hazards for bicyclists. Alternatively, since the corridor has a 30 MPH posted speed, the conceptual design illustrates the bikeway zone as a sharrow, with painted sharrow markings located within the travel lanes to clearly indicate to drivers that bicyclists are sharing the roadway. The on-street parking area is illustrated in a colored asphalt to clearly differentiate this area from the travel lanes, which dramatically affects the appearance of the corridor. The color differentiation helps frame the roadway visually, narrowing and thereby slowing vehicular travel in the available travel lane. While vehicles can cross into the on-street parking area and its buffer, the demarcation of the travel lane encourages drivers to stay in their alignment. Bicyclists needing room to "escape" from vehicles can cross into this area as needed.

In addition, the conceptual design illustrates the pedestrian crossings as lighted crosswalks with textured surfaces that could be raised to provide additional traffic calming. Visibility in the evening, especially in a district with restaurants, is an important safety consideration. Adding texture or color to the crosswalk increases the visibility throughout the day, and lighting adds additional emphasis after sunset. And finally, a parklet is illustrated as a means to introduce an additional pedestrian amenity into the corridor. Parklets can be temporary or permanent installations.

Two alternatives are also provided that introduce other considerations for the design of a segment in this context. One alternative excludes the colored asphalt to illustrate the impact of this intervention. The other converts the parklet to a transit stop with the addition of a bench, shelter, and signage. Given the employment concentration adjacent to the segment, a Marty stop may become warranted, and the alternative illustrates how the pedestrian zone can expand to encompass a transit stop seamlessly in the complete streets environment.

EXISTING CONDITIONS:
2-LANE URBAN ROADWAY - SE DIXIE HIGHWAY

IMAGE 1 - NEAR THE INTERSECTION OF SE DIXIE HIGHWAY AND SE SALERNO ROAD

IMAGE 2 - SE DIXIE HIGHWAY NEAR THE ENTRANCE OF MANATEE MARINA

IMAGE 3 - INTERSECTION OF SE DIXIE HIGHWAY AND SE ANCHOR AVENUE

IMAGE 4 - INTERSECTION OF SE DIXIE HIGHWAY AND SE COMPASS WAY

COMPLETE STREETS:
POSSIBLE INTERVENTIONS


BIOSWALE
CREDIT: EPA.GOV


SHADE TREES
CREDIT: GOULD EVANS

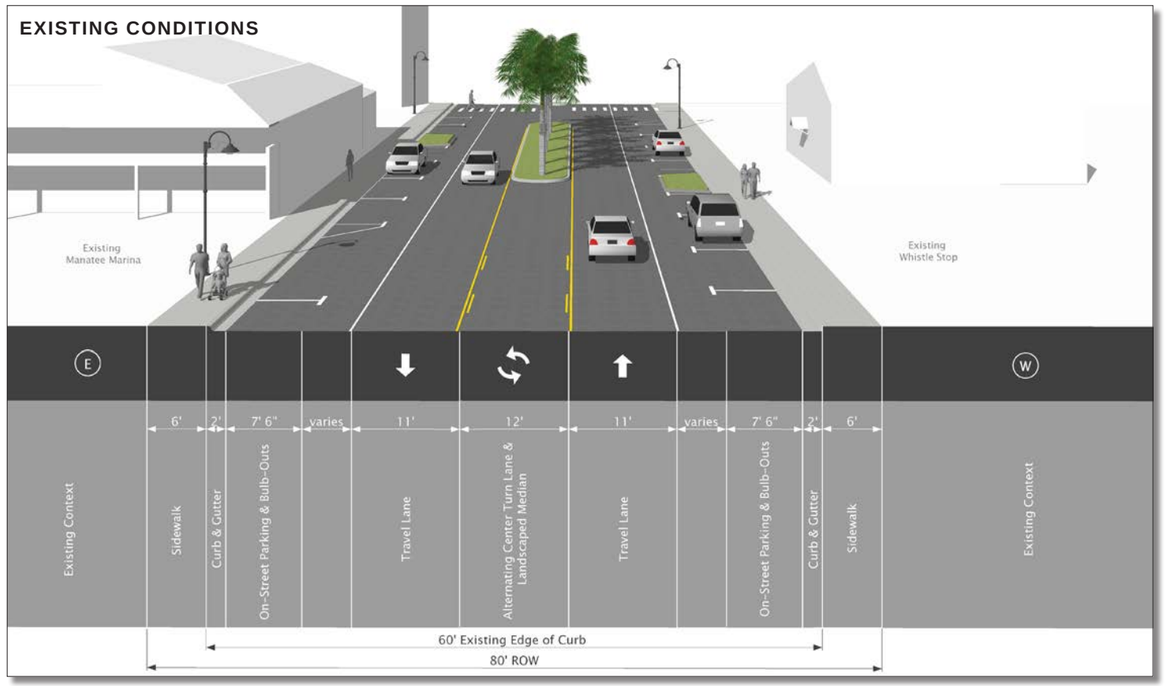

STANDARD BIKE LANES
CREDIT: MIAMI SAFE STREETS SUMMIT


SHARED-USE PATH
CREDIT: CITY OF FORT LAUDERDALE

The yellow box indicates the preferred intervention as expressed by participants at Open House 1.

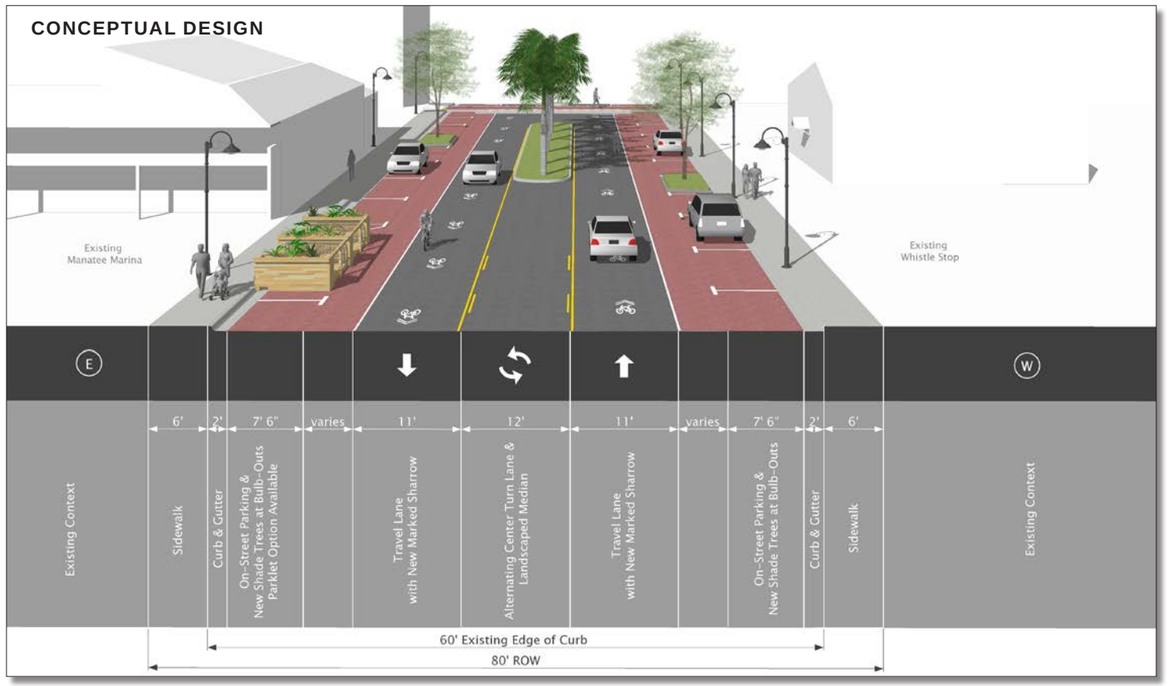
SE DIXIE HIGHWAY / PORT SALERNO (CONTINUED)

EXISTING CONDITIONS

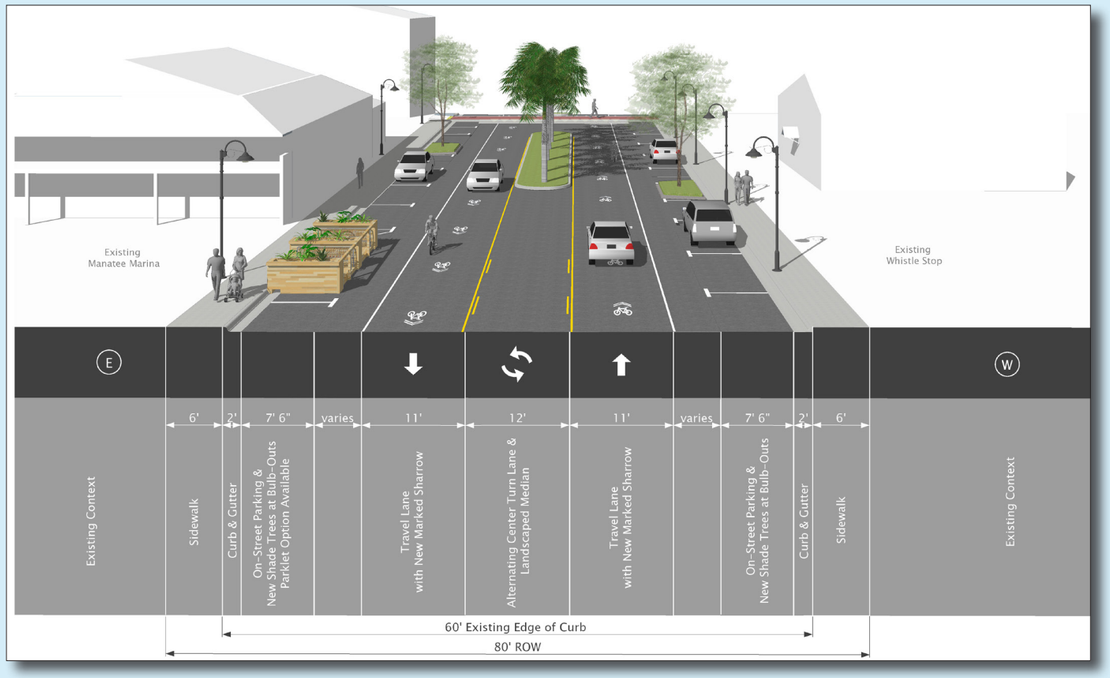


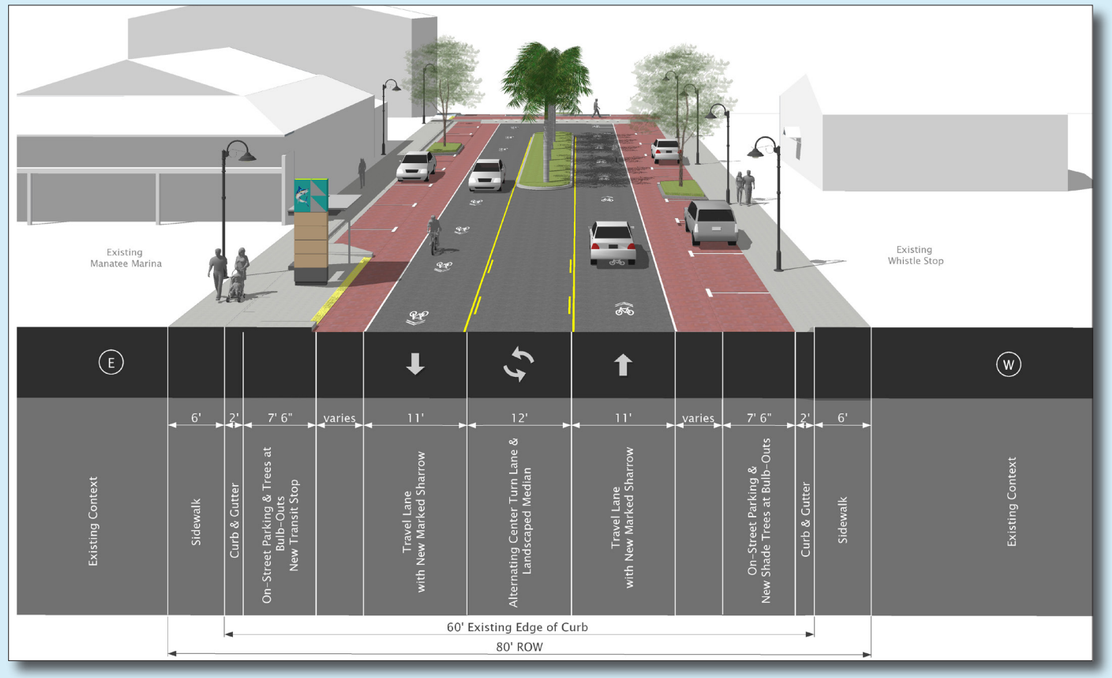
ROW	80'	**BIKE / PED FACILITIES**	No bike facilities / Existing pedestrian crossings East Side - 6' sidewalk West Side - 6' sidewalk
EDGE CONDITION	Curb / gutter	**LIGHTING**	Inconsistent pedestrian / street lighting
TRAVEL LANES	2 lanes, 11' each Alternating center turn-lane and median, 12' *On-Street Parking (East / West side) 9'*	**LANDSCAPING**	No shade trees

CONCEPTUAL DESIGN



ROW	*80' (no change)*	**BIKE / PED FACILITIES**	East Side - New marked sharrow in travel lane West Side - New marked sharrow in travel lane New lighted / colored crosswalk with median refuge
EDGE CONDITION	*East Side - No change* *West Side - No change*	**LIGHTING**	New consistent pedestrian-scaled lighting
TRAVEL LANES	*2 lanes, 11' (no change)* *Alternating center turn-lane / median, 12'* New colored On-Street Parking 9'	**LANDSCAPING**	New shade trees in existing bulb -outs New parklet

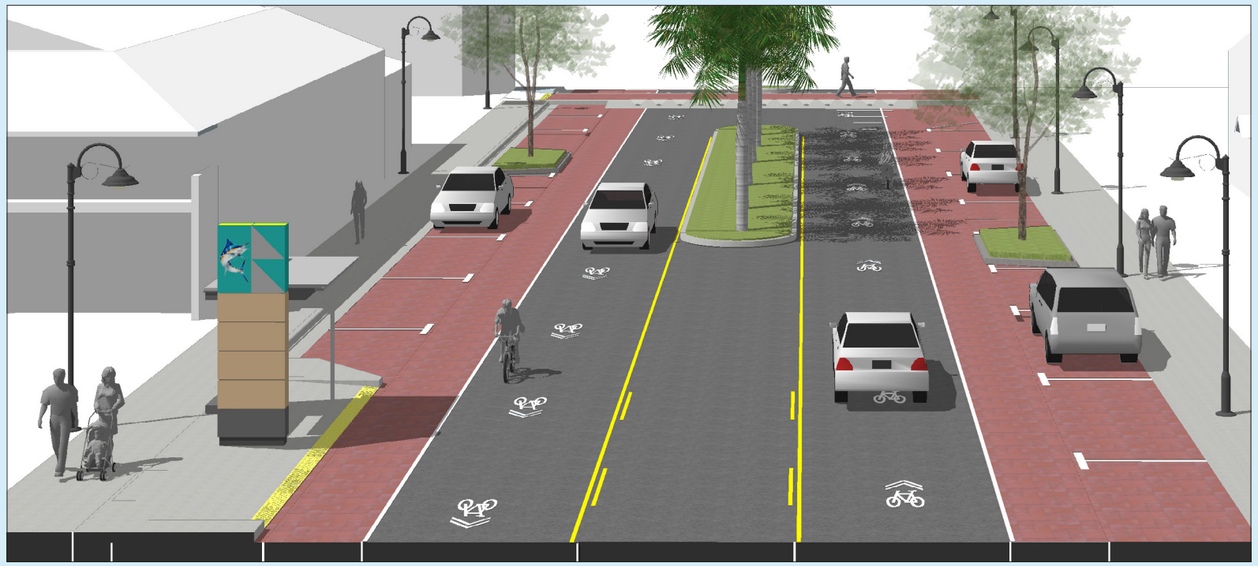




Additional concepts are illustrated on this page for SE Dixie Highway in Port Salerno.

As depicted above, the option on the left illustrates the corridor without the colored asphalt. While still functional, the corridor appears far wider and lacks the visual cues and traffic calming of the color differentiation.

Alternatively, the additional concept illustrates the conversion of the parklet to a potential transit stop, with a shelter, bench, and integrated signage.



FINDINGS & RECOMMENDATIONS

Martin County has an extensive roadway network that spans more than 1,200 miles across the MPO service area. Given the history of crashes in Martin County and across the state, the implementation of Complete Streets interventions is crucial for improving the safety, effectiveness, and quality of access to transit within the County. The various interventions as described herein have been derived from national best practices, and they can be integrated across the transportation network on local, county, and state roadways. Further, the interventions can supplement the County and municipal engineering standards for roadway design. Projects already in design can be reviewed to incorporate these techniques to improve efficiency and expedite implementation. Additionally, local government land development regulatory documents can be amended to reference this study and utilize it as guidance for more supportive development patterns adjacent to roadways to further expand safe, reliable, well-planned access to transit.

Based on the locations of existing and proposed transit stops, this study represents the first application of the MPO's Complete Streets selection criteria. Given today's network and transit plans, the applied methodology produced a total of 164 "Opportunity Segments," prioritized for Complete Streets interventions, and helped inform stakeholders and the public regarding the relationship of Complete Streets and safe, efficient, effective access to transit.

Complete Streets is a holistic, multi-agency process that will take prioritized commitment by each of the different Martin County stakeholders for the most effective implementation. Continued leadership by the MPO will be instructive to maintain an updated transit network and evaluative data, identify new and refined Complete Streets interventions, and help maintain priority on the implementation of a Complete Streets network. Implementation items, lead agencies, and timeframes for actions are detailed in the following table.

ACTION	LEAD AGENCY (COORDINATING ENTITIES)	TIMEFRAME
Adoption of Complete Streets: Access to Transit Study Report and distribution to local governments, stakeholder agencies and organizations, and the public.	Martin MPO	Year One
Consideration of Tier One and Tier Two "Opportunity Segments" for integration into MPO Transportation Improvement Program.	Martin MPO	Year One (and annually)
Integration of Complete Streets: Access to Transit Study recommendations into Martin MPO Long-Range Transportation Program.	Martin MPO	Year One (commensurate with adoption of 2045 LRTP and on-going)
Annual Application of Complete Streets Evaluation Criteria to Martin County Roadway Network with Updated Data.	Martin MPO (FDOT, Martin County and its municipalities)	Year Two (and annually)
Prioritization of Complete Streets interventions for local, County and FDOT resurfacing and rehabilitation projects as well as new roadway design.	Martin MPO (FDOT, Martin County and its municipalities)	Year One (and annually)
Outreach to local governments and CRAs for integration of Complete Streets improvements as part of their capital plans.	Martin MPO Local Governments	Year One (and annually)
Encourage local governments to implement this plan through adoption into Comprehensive Plans, CRA Plans, strategic plans, and other visionary documents.	Local Governments	Year One
Encourage local governments to implement this plan through amendments to their Land Development Regulations and municipal codes to complement Complete Streets with land development patterns that contribute towards safer access to transit, improved walkability, interconnectivity, mobility and driveway consolidations as recommended. As well as driveway consolidations as recommended.	Martin MPO Local Governments	Year One
Support expanded installation of crosswalks on County/ municipal transportation network to enable expansion of transit service and broader selection of Opportunity Segments.	Martin MPO Local Governments	Year One (and ongoing)
Martin County Complete Streets: Access to Transit Performance Evaluation to annually assess the extent of the County's complete streets network as part of the Martin MPO Project Prioritization Process.	Martin MPO	Year Two (and annually)

Appendix A

Literature Review

MARTIN MPO – COMPLETE STREETS: ACCESS TO TRANSIT STUDY

TASK 3: LITERATURE REVIEW

TECHNICAL MEMORANDUM

The purpose of this memorandum is to provide a summary of the Literature Review and Analysis undertaken to provide background details and ascertain best practices to inform the Complete Streets: Access to Transit Study. Distinctions between the Regulatory Framework and Design Guidance are noted, and summaries of key documents are provided below.

Complete Streets is a nationally recognized term referring to streets and sidewalks that are designed, operated and maintained to enable safe and convenient access and travel for all users – pedestrians, bicyclists, transit riders, and people of all ages and abilities, as well as freight and motor vehicle drivers.

Task 3.1: Literature Review and Analysis

Complete streets are designed to enhance mobility and accessibility by serving people of all ages and abilities and providing options to walk, bike, take transit, use shared mobility, or drive. A complete street network provides people with true transportation options that connect them to destinations through reliable and convenient travel means. With land use and development pattern considerations as the complementing element, complete street networks can offer a connected system that is context-sensitive to the street user's trip length, purpose, and personal ability.

A review of relevant national, state, and local documents was reviewed to identify best practices and further inform the Martin MPO's Complete Streets: Access to Transit Study. In addition, this technical memorandum also includes a summary of local policies and plans that emphasize complete streets elements. A summary of key points from the most relevant literature is summarized below.

Regulatory Standards Vs Design Guidance

Regulatory standards are often codified by federal, state, and local laws, ordinances and development standards. They set industry standards for applying design features, such as signage and pavement striping. Design guidelines help to understand regulatory standards by illustrating concepts within appropriate settings.

In planning for and implementing complete streets, national and state standards can assist in selecting the appropriate design tools that provide for safe, convenient, and comfortable streets for all users. Local development and engineering standards and requirements should reflect state and national best practices. A summary matrix of Complete Streets Standards and Design Guidance is provided in this section.

Regulatory Framework	
National	State
Federal Highway Administration (FHWA) • The ***Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD)*** defines street control devices and minimum standards nationwide. The MUTCD is the primary source of guidance for lane striping, signal warrants, and recommended signage and pavement markings. **American Association of State Highway Transportation Officials (AASHTO)** • The ***2018 Policy on Geometric Design of Highways and Streets (AASHTO Greenbook)*** was an update from the 2011 version which includes more flexible, multimodal, and performance-based guidance than previous guides. It includes design guidelines for various types of roadway facilities, both urban and rural, with emphasis on design flexibility. • The ***2012 Guide for the Development of Bicycle Facilities*** is the current bicycle facility manual published by AASHTO. The manual is anticipated to be updated with new facilities and treatments in 2019. • The ***2004 Guide for the Planning, Design, and Operation of Pedestrian Facilities*** offers planning and design guidance for pedestrian facilities.	**Florida Department of Transportation (FDOT)** • The ***Florida Design Manual*** is the state equivalent to the MUTCD and provides similar criteria for the Florida Highway System. • The ***Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways (Florida Greenbook***) provides similar regulations to streets within Florida that are not part of the Florida Highway System. The Florida Greenbook is a guidebook for municipal or county streets. An update to this manual is anticipated to be released by the end of 2020.

Design Guidance	
National	State
Transit	
American Public Transit Association (APTA): Sustainability and Urban Design Program • Design of On-street Transit Stops and Access from Surrounding Areas **Federal Transit Administration (FTA)** • Manual on Pedestrian and Bicycle Connections to Transit **FHWA** • Pedestrian Safety Guide for Transit Agencies **National Association of City Transportation Officials (NACTO)** • Transit Street Design Guidelines **Transit Cooperative Research Program (TCRP)** • TCRP Report 153: Guidelines for Providing Access to Public Transportation Stations • TCRP Synthesis 62: Integration of Bicycles and Transit	**FDOT** • Accessing Transit: Design Handbook for Florida Bus Passenger Facilities
General Street Design	
FHWA • Achieving Multimodal Networks: Applying Design Flexibility and Reducing Conflicts • Small Town and Rural Multimodal Networks Design Guide • Strategic Agenda for Pedestrian and Bicycle Transportation **NACTO** • Global Street Design Guide • Urban Street Design Guide • Urban Street Stormwater Guide	**FDOT** • Complete Streets Handbook • Complete Streets Implementation Plan • Complete Streets Policy • Multi-Modal Corridor Planning Handbook (District 5) • Statewide Lane Elimination Guidance

Walkways	
Institute of Transportation Engineers • Designing Walkable Urban Thoroughfares: A Context Sensitive Approach **US Access Board** • 2010 American's with Disabilities Act Standards for Accessible Design • Public Rights-of-Way Accessibility Guidelines (Referred to as "PROWAG")	
Bikeways	
FHWA • Bikeway Selection Guide • Separated Bike Lane Planning and Design Guide **NACTO** • Urban Bikeway Design Guide	

Additional details from several noted federal and state guidance documents are provided below.

Florida Department of Transportation Complete Streets Handbook

Working in conjunction with Smart Growth America, FDOT published the Complete Streets Implementation Plan in December 2015 as a lead document to recalibrate the state's approach to roadway design. The Plan was published to guide FDOT's efforts to implement the Complete Streets Policy adopted in September 2014. The Plan outlines a five-part implementation framework and process for integrating a Complete Streets approach into FDOT's practices to ensure that future transportation decision-making and investments address the needs of all users of the transportation network and respond to community goals and context. The Plan provides detailed recommendations for updating ten FDOT documents including the Plans Preparation Manual (PPM), which is in the process of being transitioned into the FDOT Design Manual (FDM), which will include a new section establishing a framework for making decisions based on a context-sensitive approach during project development.

A hallmark component of FDOT's Complete Streets approach is the implementation of a Context Classification Guide, adopted in August 2017, to enable differentiation of transportation facilities based upon land use characteristics. The manual includes a classification range from rural/natural to urban/downtown with design flexibility to "rightsize" lane widths and transportation facility components in relation to land use environment and user expectations. Context classification is intended to help inform FDOT's planning, design, construction, and maintenance approaches to ensure that state roadways are supportive of safe and comfortable travel for all users.

Federal Transit Administration Manual on Pedestrian and Bicycle Connections to Transit

Published in August 2017, this FTA Manual provides an array of best practices for improving pedestrian and bicycle safety and access to transit. An overview of the benefits of improved walk and bike access to transit is described, including safety, health, efficiency, equity, and functionality. Access sheds and connected networks are detailed, noting the network dispersion utilized by nonmotorized travelers versus the radial "as the crow flies" distance and emphasis upon the "last mile" as the key component to expand transit access.

Station area comfort, safety, and legibility are addressed regarding pedestrian access in particular, along with the need for complete sidewalks and safe, convenient crossings. To expand bicycle access, the Manual describes bicycle-focused amenities such as bicycle parking, on-transit accommodations, and the benefits and differentiated demand for bike share. Additionally, the Manual includes sections on implementation, funding, marketing, and the need for interagency coordination.

The key directives noted in the FTA Manual include the following:

- Safety, comfort, and convenience are baseline requirements to inspire people to want to walk and bicycle to transit.
- Interagency, multidisciplinary collaboration is critical among agencies, service providers, and others to create safe, comfortable, and convenient conditions for walking and biking to transit.
- Expanded public messaging and technology enhancements are needed to help people become knowledgeable and understand the benefits of walking and bicycling for transit access.
- Planning is a key element in knowing where change and improvements are needed and being prepared to take advantage of opportunities to implement change.

National Association of Community Transportation Officials Complete Streets Guidance

The National Association of City Transportation Officials (NACTO)'s Transit Street Design Guide (2016) provides detailed design guidance in a number of areas, including designing streets and lanes, stops, stations, and intersections to accommodate transit vehicles and users. The publication breaks guidance into elements that are critical to the design, those that are recommended, and those that are optional, along with recommended engineering dimensions. Design suggestions throughout the manual focus on the needs of pedestrians and bicyclists to access and share space with transit.

LOCAL DOCUMENTS

Martin County Transit Development Plan: 2014-2023 (adopted June 2014)

The Martin County Transit Development Plan (2014-2023) embodies the strategic blueprint for public transportation in Martin County for the next ten years. The TDP vision statement is "to enhance the overall quality of life of Martin County residents and workers by providing safe, accessible, reliable, interconnected, and attractive public transportation system that is effective and efficient in meeting their mobility and accessibility needs."
While the TDP it is not a "cost-feasible" plan as is the Long-Range Transportation Plan, it includes a series of alternatives to provide information regarding the maintenance of existing services as well as the costs of expanded services, equipment, and facilities over a ten-year horizon as follows:

- Status Quo Alternative: No Change from Existing Service.
- More Frequent Bus Service, with the operation of more frequent buses on all three existing routes.
- Weekday Service Expansion - Alternative A, with the extension of the service day until 7:00PM on all three existing routes.
- Weekday Service Expansion - Alternative B, with the extension of the service day until 9:00PM on all three existing routes.
- Weekend Service: Introduce Saturday and Sunday service between 8AM and 5PM on all three existing routes.
- Hub and Spoke System/New Routes, with the addition of new routes between Stuart and Palm City, Stuart and Hutchinson Island, and the extension of the Treasure Coast Connector south along US 1 to Palm Beach.

The TDP recommends the continuation of maintaining and operating the existing bus service through 2023, with the introduction of a new regional bus service (Treasure Coast Express, with 90-minute headways) between 2014 and 2020. Longer-term improvements include the following service expansions:

- Increase frequency on Indiantown route (45-minute headway)
- Increase frequency on Treasure Coast Connector (TCC) (30-minute headway)
- Increase frequency on Stuart route (80-minute headway)
- New cross-town Palm City bus route to serve the residents and business (30-minute headway)
- New Hutchinson Island bus route to serve the beaches and key tourist destinations (45-minute headway)

Key goals, objectives, and measures relate the implementation of complete streets measures to improve access to transit, as identified below:

GOAL	RELEVANT OBJECTIVES	PERFORMANCE MEASURE
Develop a high-quality public transportation service to move people within Martin County and the Treasure Coast region.	Provide bus shelters and amenities (bike racks, benches, trash receptacle) including ADA upgrades	Number of bus stops identified for upgrades
	Provide sidewalk and bicycle facilities for customers to access transit services	Total miles of bike/ped improvements within 1/2 mile of bus stops
Increase ridership levels by capturing traditional and new transportation markets.	Capture choice riders, tourists, and students to increase transit ridership to the extent possible	Number of jobs within 1/2 mile of bus stops; Number of key tourist destinations served by fixed bus routes; Number of middle and high schools within 1/2 mile of bus stops
Continue building strong partnerships with community and private sector entities as well as transportation agencies in the region.	Help support and advance local jurisdictions' transit supportive land use policies	Develop population and job density thresholds and coordinate with local jurisdictions to design unconventional mechanisms to provide transit service including micro transit

The existing and planned transit routes and stops, with focus on major intersections along planned routes, were utilized as data layers in the Study.

Martin MPO Long-Range Transportation Plan

Moving Martin Forward, 2040 Long Range Transportation Plan (LRTP) The 2040 Long Range Transportation Plan (LRTP), also known as Moving Martin Forward, details how Martin County's multimodal transportation system will evolve over the next 25 years. The LRTP includes prioritized recommendations for the long-term maintenance and expansion of Martin County's multimodal transportation network, including a cost-feasible plan for implementation. The plan places strong emphasis on the maintenance of roads and streets as public assets, bicycle/pedestrian safety, congestion management and livable communities, health and the built environment, age-friendly considerations, and the movement of freight and goods to and through the County in the determination of project priorities. The Multimodal Cost Feasible Plan projects were utilized as a data layer in the Study.

Martin MPO Community Characteristics Report (2017)

This report contains a summary of census, environmental, socio-cultural, and socio-economic data regarding Martin County, its municipalities, and census designated places. The report provides summary data regarding eleven Martin MPO Planning Areas, including Hobe Sound, Hutchinson Island, Indiantown, Mid-County, North-County, North River Shores, Palm City, Port Salerno/SR 76, South County, Stuart Urban, West County, and Martin County overall. Relevant census data was incorporated into the Study.

Martin MPO Bicycle/Pedestrian Safety Action Plan (May 2016)

The 2016 Bicycle & Pedestrian Safety Action Plan (BPSAP) was adopted by the Martin MPO in May 2016. The BPSAP is intended to assist local and state agencies in further enhancing their existing bicycle and safety programs and activities. Strategies were developed and selected using the "4Es – Engineering, Enforcement, Encouragement, and Emergency Medical Services (EMS)" concept to enhance bicycle and pedestrian safety. Recommended countermeasures from the 2016 BPSAP are summarized below:

- Engineering Countermeasures, including corridor specific engineering projects for six "representative" locations based on a corridor approach (e.g., US 1, Dixie Highway/SR A1A, SR 710/Warfield Boulevard, SR 732/Jensen Beach Boulevard, Palm City Road, Indian Street). Facility-specific measures were identified for state, city and county roads, potential for "roadway reconfiguration," railroad crossings, and prioritization for crash "hot spots."

- Capital Improvements Countermeasures, wherein nearly 32 of the bicycle and pedestrian crash hot spots (or 47 percent) in the County were synchronized with the programmed projects in the FDOT's Five Year Work Program (FY 2017 – FY 2021) and the local agency plans that could potentially address bicycle and pedestrian issues in the County.

- Education and Encouragement Countermeasures, including general outreach via marketing, advertising, public service announcements, and literature distribution; targeted outreach to vulnerable populations (e.g., elderly, seniors, students, multi-lingual materials); and enforcement countermeasures through the utilization of high visibility enforcement (HVE), progressive ticketing, and training for law enforcement officers

Martin MPO Bicycle/Pedestrian/Trails Master Plan (November 2017)

The Martin Metropolitan Planning Organization (MPO) Bicycle, Pedestrian & Trails (BPT) Master Plan provides the foundation for the County becoming a pedestrian and bicycle friendly, walkable and livable community. The goal of the BPT Master Plan is to establish a multimodal transportation system that will expand transportation options and improve quality of life. The BPT includes an evaluation of he bicycling and pedestrian environment in Martin County, with research regarding trends of non-motorized transportation patterns, and a series of prioritized recommendations regarding bicycle/pedestrian facilities, safety, policy, and measures to encourage increased and safer biking and walking. Recommended projects included predominately shared use paths (162 miles), buffered bike lanes (44 miles), bike lanes (25 miles) and shared lanes/sharrows (24 miles) along with "rightsizing" roadway facilities, sidewalks, bike boxes, midblock crosswalks, pedestrian bridges, and bridge improvements and replacements. The BPT Plan highlights a "top ten" list of recommended projects as well as planning level cost estimates for facility recommendations. The recommended bicycle, pedestrian, and trails projects were utilized as a data layer in the Study.

Martin County Community Redevelopment Agency Vision Plans

Martin County implements a community redevelopment agency with six CRA districts, including Golden Gate, Hobe Sound, Jensen Beach, Old Palm City, Rio, and Port Salerno. Martin County's CRA also included an Indiantown CRA, which is anticipated to be re-established by the newly incorporated Village of Indiantown. Each of the remaining six CRA districts is implemented through the County's Community Redevelopment Plan. Development within each district is also guided by a vision plan to guide long-range planning and programs along with an overlay zone within the Martin County Land Development Regulations. The Martin County CRA Plan and individual district plans place heavy emphasis on compact, mixed-use development with a focus on sustainability, preservation of local neighborhood and historic character, economic development, and environmental preservation. Multimodal transportation is a core component of the future redevelopment planning associated with the CRAs, with a Transportation, Transit & Parking, Goal #10 noted as to "encourage safe, convenient, efficient and effective motorized and alternative-means transportation and transit systems throughout Martin County."

Local Government Comprehensive Plans

Each of the comprehensive plans for Martin County's local governments were reviewed with respect to public transit, complete streets, pedestrian and cyclist safety and prioritization, and related capital improvements emphasis. Excerpts of the most relevant goals, objectives, and policies of each are included as attachments to this memorandum. Noted components of the individual comprehensive plans are summarized below.

Martin County Comprehensive Plan (see Attachment 1)

Martin County's Comprehensive Plan places strong emphasis on sustainability as a core driver in the plan, with emphasis on consideration of ecology, quality of life, and fiscal sustainability, including long-term cumulative impacts of decision-making. The plan makes strong distinctions between urban and rural development patterns and appropriateness, focusing on density and public infrastructure availability as a means to help direct growth into desirable locations. The plan prioritizes development and investment within its six Community Redevelopment Areas (CRAs) as one such tool and prioritizes capital improvements within CRAs towards that end.

Within the CRAs and for Traditional Neighborhood Development, Martin County's Comprehensive Plan highlights the County's desire for "pedestrian-friendly communities that reduce the dependence on the automobile" (Future Land Use Element, Goal 4.3). More broadly, Goal 4.8 emphasizes the importance of energy conservation and energy-efficient land use and development that implements sustainable development. The Plan encourages compact building design and walkable neighborhoods with a variety of transportation choices between employment centers, tourism destinations, public facilities, and residential neighborhoods (Future Land Use Element, Policy 4.8A.1).

Martin County's Transportation Element also highlights the importance of walkability, bicycle and pedestrian efficiency and safety, and integration of public transit, both County-wide and inter-County

with Palm Beach and St. Lucie counties. Goal 5.4 notes the importance of bicycle and pedestrian friendliness and safety, with a series of policies emphasizing the importance of prioritized facilities for bicycle/pedestrian activity (Policies 5.4A.1-5.4A.10). Policies related to Objective 5.4B advance the discussion of a bicycle/pedestrian transportation system with connections to major travel destinations and population concentrations. The Transportation Element then discusses the importance of the public transportation system, its access and connectivity as related to the reduction of greenhouse gases and the economy (Goal 5.5).

Transit and its connectivity to major destinations is also discussed in Chapter 15, which is the County's Economic Element. The establishment of transit routes and transportation corridors to connect key destinations is highlighted in Policy 15.2C.8, and further connectivity to targeted businesses and employment centers in Policy 15.2D.3.

City of Stuart Comprehensive Plan (see Attachment 2)

Stuart's Comprehensive Plan is also highly focused on walkability, livability, and compact urban development as a strategy towards sustainable economic development (Future Land Element, Objective B1). The Plan places emphasis on energy efficiency, mixed-use development, and multi-modal accessibility, with reference to accessibility to transit and internal trip capture (Future Land Use Element, Policy A6.5). Objective C3 discusses urban development and the City's desire to emphasize its role as an urban center for the County, with pedestrian mobility and high occupancies. Policy C3.12 highlights land use patterns that complement multiple modes of transportation, and the desire for good pedestrian mobility is further noted in Policy C3.14.

Within the Plan's Transportation Element, Stuart leads with its commitment to a safe, efficient traffic network with alternate modes of transportation in Goal Statement A. The Goal continues with the City's desire for compact development, maximized internal trip capture, transit-oriented development, and the benefits of efficient land development patterns that result. Objective 6 details the City's coordination with transit providers, its support of expanded public transit (Policy 6.2) and land use patterns and investments to support transit access (Policies 6.3 and 6.4). Objective 7 indicates the City's emphasis on bicycle, pedestrian and multi-modal transportation. The Plan includes requirements for bicycle/pedestrian infrastructure (Policies 7.8 and 7.9), multiuse pathways (Policies 7.10, 7.11 and 7.13). Policy 7.15 requires new commercial development to provide safe access to alternative transportation modes.

Multi-modal transportation and its benefits for business recruitment and economic development is also discussed in the Plan's Economic Element, particularly noting Policies A1.7 regarding transportation investments and Policy A2.5, wherein the City encourages multi-modal transportation as a means to emphasize its position as a regional destination.

Town of Sewall's Point Comprehensive Plan (see Attachment 3)

The Comprehensive Plan for the Town of Sewall's Point indicates the Town's desire for safe bicycle and pedestrian ways (Traffic Circulation Element, Objective 8.0), with requirements for facilities within new development (Policy 8.2). The Town indicates its desire for interagency coordination to pursue strategies and alternatives for reducing traffic circulation, access management, and ridesharing in Policy 9.1). Within the Plan's Housing Element, the Town indicates its commitment to cooperate with local governments regarding public mass transportation and the designation of a bus stop in Policy 1.5.

Town of Jupiter Island Comprehensive Plan (see Attachment 4)

The Town's Comprehensive Plan includes policies regarding alternative transportation, particularly with reference to bicycle/pedestrian mobility along "The Ramble," which is an internal pathway utilized primarily by residents (Transportation Element, Policy 02.01.01.02). Alternative transportation in the form of bicycle, pedestrian, and golf cart usage, is lauded for its benefits towards the reduction of greenhouse gases and energy conservation (Objective 02.01.01.00 and Policy 02.01.01.03. The Town indicates its commitment to coordinate with Martin County regarding transportation planning and traffic improvement programs in Objective 02.01.04.00.

Town of Ocean Breeze Comprehensive Plan (see Attachment 5)

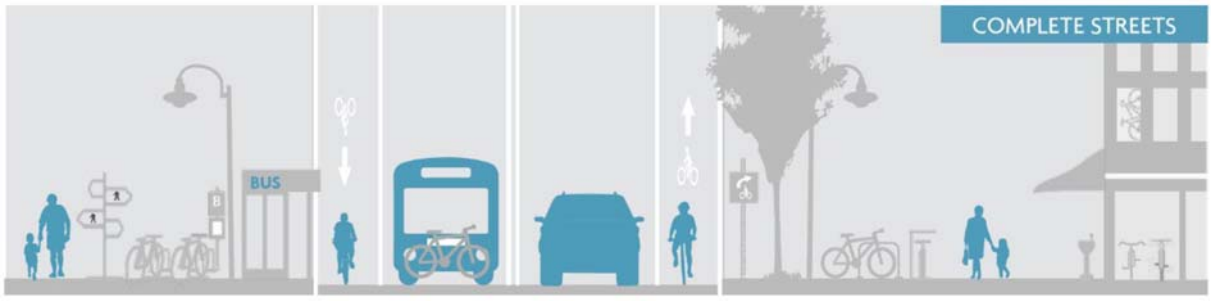
The Town of Ocean Breeze, located in northern Martin County, also places emphasis on motorized and non-motorized transportation alternatives in its Comprehensive Plan to sustain the community's small-town character and aesthetic characteristics (Transportation Element, Goal 1). Policy 1.2 places a limitation on roadway widths to not more than two through lanes, and Policy 1.11 indicates the Town's commitment to work with agencies and owners to promote transit to and from Ocean Breeze, with the identification of safe stopping places for mass transit and assistance with access. The Town further notes the encouragement of alternative modes, including mass transit, bicycles, golf carts, and pedestrian facilities to reduce vehicle miles traveled in Policy 1.12.

Task 3.2: Identification of Best Practices

Based on the literature review, a summary of "best practices" addressing complete streets, improved bicycle and pedestrian access to transit, and transit facilities is provided in this section.

Complete streets applications offer infrastructure investments for neighborhoods and governments that consider all road users. The FHWA has outlined the different reasons for considering building complete street networks in their Strategic Agenda for Pedestrian and Bicycle Transportation, including:

- **Improved Safety:** Complete street networks offer people of all ages and abilities the freedom to choose routes and modes freely in a safe and convenient manner.
- **Mobility of People and Goods:** Multi-modal complete street networks are better suited to distribute traffic more efficiently and reduce the likelihood of congestion and crash-related delays.
- **Equity and Resiliency:** Cities and regions that have implemented complete networks of streets have shown to be more resilient to natural and man-made disasters. Complete streets also improve public health and safety in socially and economically disadvantaged areas.



Different streets require different design elements. For example, the same bikeway and traffic calming elements for local streets may not be allowed on arterial streets per state and federal standards. Each type of street requires its own considerations for complete streets elements and transit access. The different street types identified below include complete streets applications by street type.

Transit Stops

Martin County's Public Transit program "MARTY" provides fixed-route service Monday through Friday along the US1 corridor, and in the Cities of Indiantown and Stuart. In addition, a commuter route runs from the Robert Morgade Library to the Veteran's Administration Hospital in West Palm Beach, making a stop at the Gardens Mall. All buses are equipped with wheelchair lifts and bike racks.

Conflict points interacting with this mode are where people walking, bicycling, or driving interfere with people's safe, convenient, and comfortable use of the transit system. This could occur in walkways, bikeways, or in vehicular travel lanes as buses board and alight the bus.

Design considerations for transit include:

- **Bus Islands:** Facilities that extend the sidewalk's accessibility to where people using transit board and alight the bus while also eliminating conflicts between modes. These are also known as boarding islands or "floating bus stops."

- **Bike Lanes and Walkways:** Design of the bikeway and walkway should not interfere with people attempting to board a bus. Signing and striping plans should include elements that designate the right-of-way to people using transit along bikeways.

- **Shelters:** Shelters are places where people rest and are provided refuge from the elements. They can be enhanced with public art, trash receptacles, bike racks, wayfinding, and real time information displays.

Local Streets

- **Traffic Calming**: Use visual and physical calming elements to protect people walking and biking from motor vehicles. This includes bulb-outs and chicanes along local streets.

- **Local Wayfinding**: Directional and confidence wayfinding to destinations such as parks, schools, and libraries can help orient and encourage people to walk, bike or take transit to their destination.

- **Crossings**: Although local streets are typically easier to cross than collector or arterial streets, crossing considerations at intersections and mid-block crossings near destinations are key connections to completing individual trips in a comfortable way for people of all ages and abilities.

Collector Streets

- **Speed Management:** Streets with narrower travel lanes, speed tables, or speed cushions are typically implemented to provide a more comfortable setting for people walking and bicycling by reducing vehicular speeds.

- **Dedicated Space for People Walking and Biking:** Visual separation may suffice for people walking and biking on a collector street, but physical protection may be necessary depending on existing conditions.

- **Crossings:** Crossings on collector streets require a right sized approach to ensure the safety of all users. Use the Pedestrian Crossing Contextual Guidance Matrix to guide the decision-making process on related improvements.

Arterial Streets

- **Transit Station Access:** Transit stops are not just a place for a person to wait. They are publicly owned properties where dignity, public safety, convenience, and user comfort must be integrated. Design considerations should include seating, protection from the sunlight and rain, trash receptacles, transit user staging areas, and separation from bikeways, walkways, and vehicle lanes.

- **Physically Separated Space:** Arterial streets often require a physically separated facility for people walking or biking. Sometimes, a shared-use path can accommodate people walking and biking, but they should be designed with both modes and both directions of travel in mind. Refer to the Bicycle Facility Selection Matrix for more information.

- **Crossings:** Enhancing and providing new mid-block crossings on arterial streets creates a more convenient walking and bicycling environment by reducing trip times between destinations. Special consideration should be given to areas with concentrations of destinations for the use of mid-block crossings to facilitate ease of access.

Walkways and Crossings

Walkways are the most fundamental element of the pedestrian network, as they dedicate a portion of the public space for people to walk, and that space is separated from vehicular traffic. Sidewalks and shared-use paths are typically constructed out of concrete or asphalt and are separated by a curb and gutter, and sometimes a landscaped planting strip. Common sidewalk attributes to consider while implementing a connected walkability network include:

- **Accessibility**: A network of walkways should be accessible to all users, including people with disabilities.

- **Adequate Width**: Two people should be able to walk side-by-side and pass a third comfortably. Different walking speeds should be possible. In areas with high volumes of people walking, walkways should accommodate this demand through design.

- **Safety**: Walkway design features should allow people walking to have a sense of security and predictability. People should not feel that they are at risk due to the presence of adjacent traffic. This includes integrating visibility elements such as adequate lighting and buffered walkways from high speed traffic as appropriate.

- **Continuity**: Routes should be obvious and continual, not requiring people walking to travel out of their way unnecessarily.

- **Landscaping**: Plantings and street trees should contribute to the overall psychological and visual comfort of sidewalk users and be designed in a manner that contributes to shade and the safety of people.

- **Drainage**: Walkways should be well graded to minimize standing water.

- **Social Space**: There should be places for standing, visiting, and sitting. The sidewalk area should be a place where adults and children can safely participate in public life.

- **Quality of Place**: Walkways should contribute to the character of neighborhoods and business districts.

Walkway Zones:

The following illustration provides typical uses and widths of the public walkway realm. These will vary depending on the surrounding context.

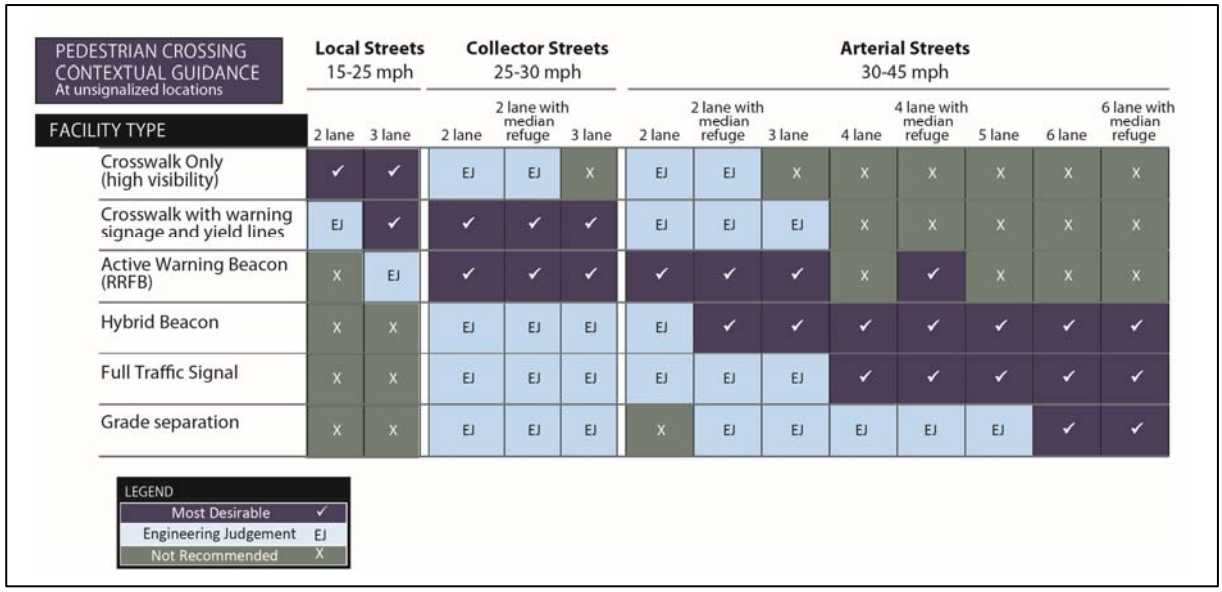
Street Classification	Parking Lane/Enhancement Zone	Furnishing Zone	Pedestrian Through Zone	Frontage Zone	Total
Local Streets	Varies	2-5 feet	4-6 feet*	n/a	6-11 feet
Commercial Areas	Varies	4-6 feet	6-12 feet	2.5-10 feet	12.5-28 feet
Arterials & Collectors	Varies	2-6 feet	4-8 feet	2.5-5 feet	8.5-19 feet

** Six feet enables two people walking or using a mobility device to travel side-by-side on a walkway or to pass each other comfortably.*

Pedestrian Crossing Selection Matrix

The need to improve places where people cross often requires improving existing intersections or constructing mid-block crossings so people can safely and conveniently cross a street. The quality of a walkway network can drastically improve a person's walking comfort, safety, and convenience. While a complete network of complete streets will provide sidewalks and shared-use paths to get to daily destinations, unsafe intersections or a lack of crossings will influence a person's ability to effectively and safely use such a network.

The Pedestrian Crossing Contextual Guidance Matrix provides information on the type of crossing treatments based on street design elements. The placement of a crossing treatment is influenced by the type of street, number of lanes, presence of a median, and the posted vehicle speed limit. Based on these factors, the higher the speed, the greater the number of lanes, and the higher the order of street typology, the greater the emphasis is on enhancing the crossing.



PEDESTRIAN CROSSING CONTEXTUAL GUIDANCE At unsignalized locations	Local Streets 15-25 mph		Collector Streets 25-30 mph			Arterial Streets 30-45 mph							
FACILITY TYPE	2 lane	3 lane	2 lane	2 lane with median refuge	3 lane	2 lane	2 lane with median refuge	3 lane	4 lane	4 lane with median refuge	5 lane	6 lane	6 lane with median refuge
Crosswalk Only (high visibility)	✓	✓	EJ	EJ	X	EJ	EJ	X	X	X	X	X	X
Crosswalk with warning signage and yield lines	EJ	✓	✓	✓	✓	EJ	EJ	EJ	X	X	X	X	X
Active Warning Beacon (RRFB)	X	EJ	✓	✓	✓	✓	✓	✓	X	✓	X	X	X
Hybrid Beacon	X	X	EJ	EJ	EJ	EJ	✓	✓	✓	✓	✓	✓	✓
Full Traffic Signal	X	X	EJ	EJ	EJ	EJ	EJ	EJ	✓	✓	✓	✓	✓
Grade separation	X	X	EJ	EJ	EJ	X	EJ	EJ	EJ	EJ	EJ	✓	✓

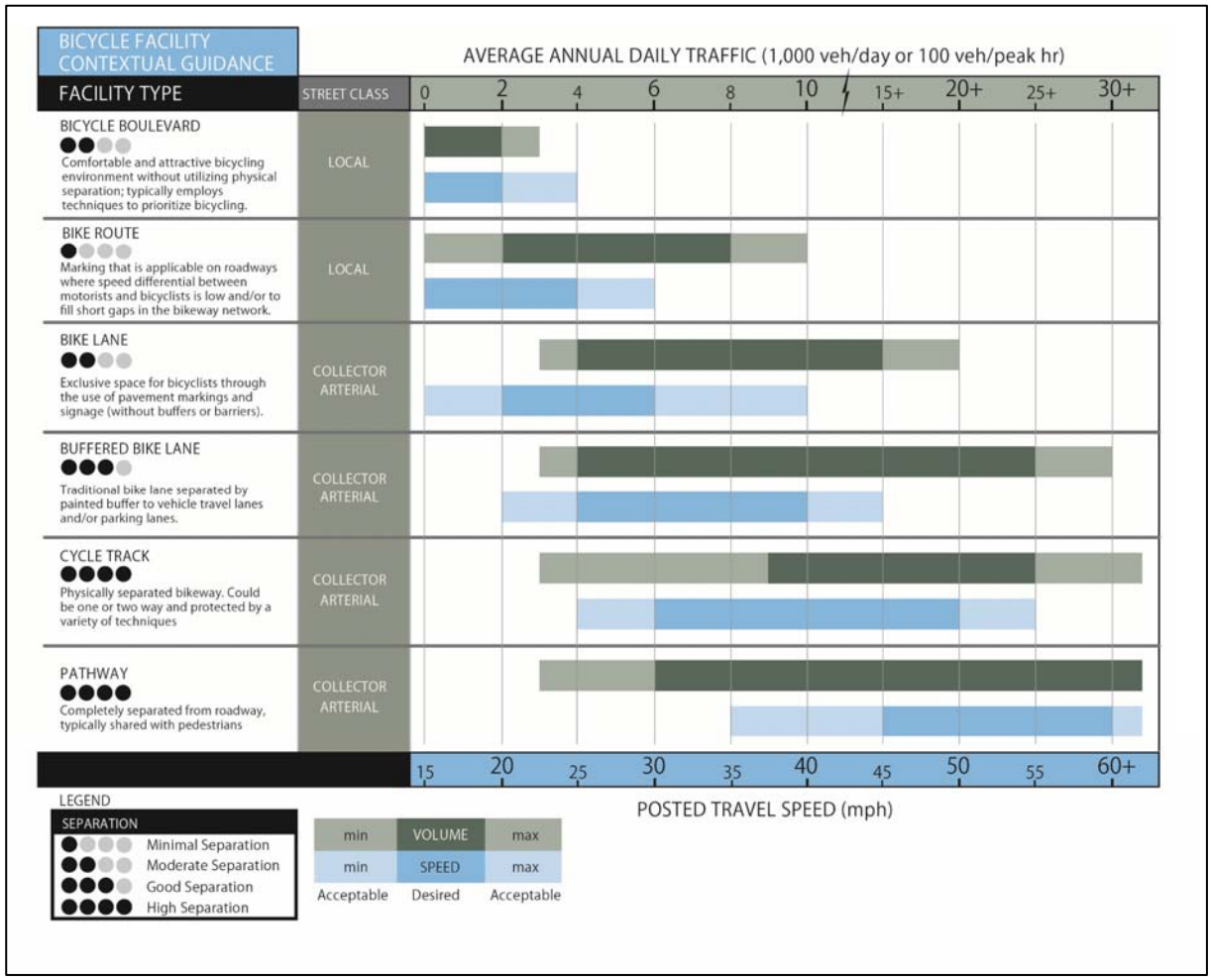
LEGEND
Most Desirable ✓
Engineering Judgement EJ
Not Recommended X

Bicycle Facility Selection Matrix

People biking use a variety of facilities to reach destinations. A safe, convenient, and comfortable network of bikeways on complete streets provides people with multiple routes to reach a destination, similar to that of the network available to people driving. In some instances, people biking may choose to ride on the sidewalk, yet this is not a preferred option for most people biking and can be more dangerous than biking on the street.

The Bicycle Facility Selection Matrix provides design considerations for bikeway facility selection based on vehicle speeds, volumes, and number of travel lanes. As these parameters increase, the separation between people biking and people driving motor vehicles should also increase. On local streets, a bicycle boulevard or bicycle lane will typically suffice if the conditions are met. On major streets, visual or physical separation is typically necessary to create a safe and convenient bikeway.

Bicycle Facility Selection Matrix



Strategies for Complete Streets Retrofits

In some cases, public right-of-way can be reallocated to increase the safety, comfort, and convenience for people walking, biking, or taking transit. A "retrofit" typically occurs when street lanes and medians are narrowed, eliminated, or a combination of these strategies is applied to increase the visual or physical separation between people walking, biking, and driving. This approach is typically less expensive than reconstructing or widening streets to accommodate bikeways or sidewalks.

Complete Streets: Access to Transit Illustrative Concepts

A series of graphics are provided on the following pages. These illustrations are intended to provide context to the design guidance provided in this section.

Design elements can be utilized to formalize transit access and improve safety versus unmarked conditions. In the before/after images above, a package of design enhancements is illustrated, including the installation of sidewalks with drainage improvements, bicycle storage racks, and formal crosswalks at the unsignalized intersection. These enhancements improve safety, differentiate user spaces, and enhance access to and from the transit stop.

Due to different travel speeds, sizes and stopping patterns, buses and bicycles can engage in substantial conflicts when sharing the same space. One remedy is the separation of traffic, such as a protected bicycle lane, that can direct cyclists away from "floating bus stops," such as the one pictured to the left. Image from www.CityLab.com

Transit shelters provide refuge from the elements, help identify transit stops, and enable refuge from the elements. Designs can be simplistic, convey community character, or add visual and user interest.

Images from FDOT Accessing Transit (2013); TCRPC; https://m.baklol.com; www.pbhconstruction.net

Pedestrian mid-block crossings increase safe access to transit stops, especially in conditions with substantial signal spacing, which is common in suburban environments. A best practice as identified in the FTA "Manual on Pedestrian and Bicycle Connections to Transit" is the inclusion of pedestrian hybrid beacon crossings located behind bus stops to maintain pedestrian visibility and discourage jaywalking.

DESIGN STRATEGIES

BUS AND BIKE CONFLICTS

A common conflict between buses and bicyclists is referred to as bus-bike leapfrogging. Bus-bike leapfrogging occurs when a bus and bike are traveling on a roadway in the same direction and pass each other at multiple places. The bicyclist is traveling at a constant speed with the bus passing, pulling into a stop, departing the stop, passing the bicyclist, and traveling to the next stop. This crossing of users can create multiple instances where conflicts can occur.

Bus-bike leap-frogging is uncomfortable for bicyclists as well as for bus drivers and passengers as it can impact bus schedules. On one-way streets it may be feasible to avoid transit conflicts entirely by locating bicycle facilities on the other side of the street. Otherwise, implementation of a floating bus stop can eliminate leap-frogging, improving bicyclist's comfort and bus operation.

CONSIDERATIONS

- Provide clear indication of the purpose and operations of the floating bus stop for pedestrians and bicyclists.
- Provide adequate tapers for bicyclists to transition from bicycle lane to behind the bus stop. 1
- Provide bus stop passengers amenities such as shelters, benches, and trash barrels outside of bicycle travel. 2
- Maintain accessible pedestrian access to stop amenities, sidewalk, and boarding areas.
- Provide continuous separated bicycle facility behind the boarding area. For more information, refer to the design topic on Separated Bike Lanes 3 (FHWA Separated Bike Lane Guide 2015, pp. 92–96).
- Provide clearly marked crosswalks from the island to the adjacent sidewalk 4 (FHWA Separated Bike Lane Guide 2015, pp. 92–96).
- Consider a raised crosswalk across the bicycle facility 5 (FHWA Separated Bike Lane Guide 2015, pp. 92–96).
- Consider yield or stop lines and YIELD [or STOP] HERE FOR PEDESTRIANS (R1-5) signs to alert bicyclists of the passenger crosswalks (MUTCD 2009, Sec. 2B.11).

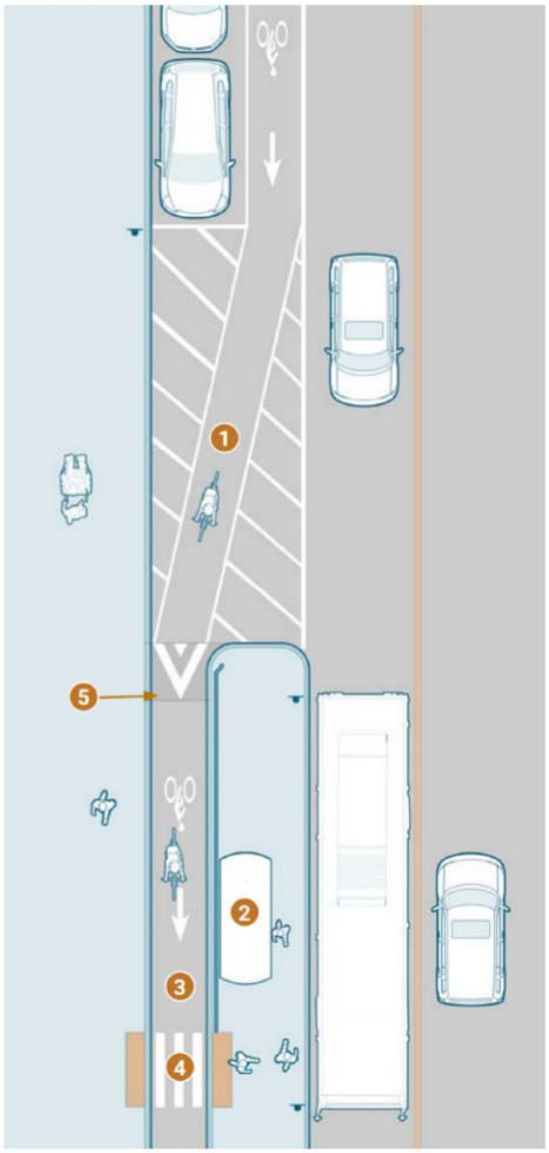


Figure 2-5 *Bus and Bike Conflicts diagram from* FHWA Achieving Multimodal Networks *document*

As illustrated in the FTA "Manual on Pedestrian and Bicycle Connections to Transit," bike/bus conflicts require special consideration to ensure safe access. Ideally, bike lanes are located inside the bus stop to prevent conflicts, with clearly marked pedestrian crossings to enable access to transit stops.

ATTACHMENT 1

MARTIN COUNTY: COMPLETE STREETS: ACCESS TO TRANSIT STUDY

Martin County Comprehensive Plan

Relevant Goals, Objectives & Policies

(Adopted September 29, 2018)

CHAPTER 2 – OVERALL GOALS AND DEFINITIONS

Section 2.1. - Overall Goals for Martin County's Comprehensive Growth Management Plan

Martin County has endeavored to establish a Comprehensive Growth Management Plan which broadens, enhances, and protects the quality of life for its residents. The overall goals for the Comprehensive Growth Management Plan are keyed to maintaining quality residential and nonresidential uses, natural resource conservation and preservation of beneficial and protective natural systems, enhanced economic development, and fiscal conservancy. The Overall Goals, Objectives and Policies contained in this chapter summarize Goals, Objectives and Policies in other parts of the Plan.

Martin County has been proclaimed a 'Sustainable County' by the state land planning agency. Sustainable means meeting the needs of the present without compromising the ability of future generations to meet their needs. All planning decisions made by the County shall be based upon a consideration of impacts on the ecology, quality of life and fiscal sustainability of such actions, including the long term cumulative impacts.

CHAPTER 4 – FUTURE LAND USE ELEMENT

Section 4.2. - Analysis of Land Use Features

4.2.A. *Land use issues.* Martin County has experienced steady population growth over the years. All available evidence supports the premise that this population expansion will continue into the foreseeable future. Such growth will increase the pressure for urbanization, at the possible expense of agriculture uses and the natural environment. Therefore, it is important for the Board of County Commissioners and the citizens of the County to address growth and its associated impacts as a primary concern.

Many considerations need to be weighed in developing a growth management strategy. For example, a balance should be struck between the needs of the population and those of the natural systems in order to maintain the integrity of both. Specific land use issues that must remain in the forefront of growth management planning include the planned use of coastal areas and vacant lands, preservation of natural resources, provision of public services and utilities, and maintenance of agriculture as a strong economic force. These issues are discussed below and detailed in relevant chapters

(7) *Public services supporting development.* The cost of energy is increasing as the supply diminishes. This cost is affecting the County's public service operations and maintenance requirements. Operation, maintenance and capital improvement needs to support development are becoming more costly.

Urban development located outside existing urban service areas to take advantage of low land costs results in higher future costs. This leapfrog development requires extension of public services past undeveloped land, which can be very costly in both dollars and energy. Isolated single-use developments, such as large single-family subdivisions removed from commercial or industrial centers, force residents into needlessly long trips for shopping, public schools and services. The County is

encouraging the development of multiple-use projects that consolidate urban activities so they can be served in a planned expansion of urban services within the boundaries set forth in Figure 4-2.

Transportation access is a key factor affecting the location and magnitude of growth. As coastal land diminishes and growth continues, development pressures will lead to demands for access to the County's westerly areas. However, the County shall only entertain suburban and urban uses and densities (i.e., commercial, industrial and residential densities in excess of two units per acre) for lands located in the Primary Urban Service District, as amended periodically (see Figure 4-2).

Objective 4.2B. To encourage redevelopment through the designation of CRAs.

Policy 4.2B.5. Analysis of land use impacts. Any Plan amendment and/or FLUM amendment that expands the boundary of a CRA or creates a new CRA must contain an analysis of the impacts of potential land use changes. Since designation of a CRA allows mixed use under certain conditions, there must be data and analysis supporting the conclusion that the potential impacts of the CRA creation or expansion are consistent with the CGMP. The analysis shall include review of the availability and adequacy of public facilities and the level of service necessary to support mixed use as well as potential fiscal impacts, land use impacts and land use need relative to population.

Policy 4.2B.6. Priority for capital improvements in CRAs. In developing its Capital Improvement Plan and as provided in the Capital Improvements Element, Martin County shall give priority to capital projects identified in adopted community redevelopment plans that provide infrastructure improvements in designated CRAs.

Goal 4.3. To provide opportunities for mixed residential and nonresidential uses, including Traditional Neighborhood Development. The goal of allowing mixed use in specified areas of CRAs and in Traditional Neighborhood Development is to:

- Encourage redevelopment and in-fill;
- Provide for livable urban areas that mitigate the impacts of mixing uses;
- Provide a coordinated system of recreation and open space;
- Provide for pedestrian-friendly communities that reduce dependence on the automobile;
- Reduce infrastructure needs by integrating and sharing parking, drainage and other public facilities;
- Meet the needs of neighborhood residents;
- Provide residents with a variety of housing choices.

Objective 4.3A. To encourage, but not mandate, mixed use in designated CRAs as described in Policies 4.3A.1 through 4.3A.9. Mixed-use projects shall contain a mix of uses in close proximity to each other and shall be planned as a unified, complementary whole to reduce transportation and other infrastructure impacts. The mix of uses in each project shall be pedestrian oriented and neighborhood friendly. Mixed-use projects may contain both nonresidential and residential components. The nonresidential component shall be made up of commercial or light industrial uses, which shall include a use from one or more of the following: Commercial Office/Residential (COR), Limited Commercial (LC), General Commercial (GC) and compatible Industrial consistent with the requirements of this objective. The residential component is important to encourage residents to live, work and shop in the same neighborhood. Mixed-use projects shall be functionally integrated to encourage shared vehicular and pedestrian access and parking areas. The mix of uses may include residential, institutional, retail, office, recreation and open space and other appropriate uses as determined by the Board of County Commissioners.

Policy 4.3B.2. Traditional Neighborhood Development regulations. Traditional Neighborhood Development Regulations shall:
(1) Allow clustering of living, working, recreational, shopping and other activities supportive of the local population into self-contained neighborhood;
(2) Require pedestrian circulation systems that functionally and physically integrate the various land use activities;
(3) Incorporate performance standards that regulate buildings by type rather than use;
(4) Include building setback requirements allowing buildings to abut front sidewalks;
(5) Allow on-street parking, where deemed appropriate, to buffer walkways from roadways and increase pedestrian safety;
(6) Concentrate any necessary boundaries along back-to-back property borders so that similar uses front across streets;
(7) Allow the residents and/or landowners of an area, together with experienced design consultants, to determine the desired character of the community through joint development of controls for architectural and landscape design, signs, streetlights, trees and preservation of natural vistas;
(8) Include parking standards that acknowledge the pedestrian nature of the community;
(9) Require well-defined public spaces, buildings and vistas that terminate on focal points, thereby making the area memorable and contributing to a sense of place;
(10) Permit well-designed, unobstructive sidewalk cafes, including tables and accessory items, where appropriate, to generate business and improve ambiance; and
(11) Allow for mixed residential and commercial development, i.e., residential uses with supportive commercial uses within a single structure or complex of structures.

Goal 4.8. To encourage energy conservation and promote energy-efficient land use and development that implements sustainable development and green building principles.

Objective 4.8A. Martin County's Land Development Regulations shall be revised to ensure that development and redevelopment activities maximize energy conservation through effective and cost-efficient land use and design.

Policy 4.8A.1. Encouragement of sustainable development principles. Land Development Regulations shall encourage the following sustainable development principles:

(1) Encourage the location and scale of land use activities to minimize long-term energy commitments for construction, operation, maintenance and replacement;

(2) Encourage the design, siting and orientation of buildings to use the sun, wind, tree canopies and plant materials to reduce the demand for artificial heating, cooling, ventilation and lighting.

(3) Ensure energy conservation in building, heating and cooling systems.

(4) Take advantage of compact building design.

(5) Create walkable neighborhoods.

(6) Foster distinctive, attractive communities with a strong sense of place.

(7) Provide a variety of transportation choices between employment centers, tourism destinations, public facilities and residential neighborhoods.

CHAPTER 5 – TRANSPORTATION ELEMENT

5.3.B. *Public transportation.*

Plan development. Public transportation planning in Martin County is identified in the most recent versions of the county's Transit Development Plan or the MPO's Long Range Transportation Plan or Transportation Disadvantaged Service Plan. The County is required to update the Transit Development Plan by Rule 14-73, Florida Administrative Code, in order to be eligible for grant funds.

2. *Purpose and intent.* Florida Statutes require all local governments with a population of 50,000 or more to include public transportation considerations in their comprehensive plans. The purpose of this section is to ensure that the public transportation needs of all Martin County residents are adequately addressed and realistic plans are developed to meet future needs, based on changing service needs, demographics and traffic patterns.

3. *Existing conditions.* Martin County operates its own public transportation service. It provides fixed-route services in Indiantown and Stuart and operates along US-1 providing connections between St. Lucie and Palm Beach counties. It provides complementary ADA paratransit services as governed by the Federal Transit Administration to continue receiving federal grant funds.

The Community Transportation Coordinator (CTC) for Martin County arranges transportation for the transportation disadvantaged individuals in accordance with the Memorandum of Agreement with the Florida Commission for the Transportation Disadvantaged and in accordance with Chapter 427, Florida Statutes.

The existing Public Transportation System is shown on Figure 5-3.

5.3.C. *Non-motorized transportation systems.* The non-motorized transportation system serves bicyclists and pedestrians. The State Transportation Plan requires bicyclists and pedestrians receive full consideration in the planning, design and construction of transportation facilities. Sidewalks and bikeways should be incorporated into state and regional plans along with local transportation plans and programs. The State also requires establishment of bikeways and sidewalks in conjunction with construction, reconstruction or changes in state facilities within five miles of an urban area. Exceptions may be made if consideration of a non-motorized facility is contrary to public safety, cost is disproportionate to need or probable use, or the absence of need or use has been determined.

As part of the Long Range Transportation Plan, the MPO developed and adopted the Multimodal Cost Feasible Plan. This Plan serves as the guiding document Martin County uses to plan for and fund non-motorized transportation facilities and is hereby incorporated as data and analysis by reference.

Pedestrian and bicyclist facilities. The interface of pedestrians and vehicles requires careful design to ensure their safety and movement. Crashes involving pedestrians and bicyclists are included in the Crash Surveillance Report described above. The existing Non-motorized Transportation System is shown on Figure 5-4.

Future public transportation needs.

Plan requirements. The Transit Development Plan (TDP) is updated every five years. Future plans must keep in mind the County's mandates and recognize that increasing demands and decreasing resources will require the exploration of funding agreements between the FDOT, incorporated municipalities, and the private sector to share responsibility for public transportation. During development of these plans corridors for public transportation should be designated.

1. A public transportation system in Martin County should be complemented by inter-community linkages with Palm Beach and St. Lucie Counties, and a special "fast-link" system between the City of Port St. Lucie and the Stuart urban area.

2. Future public transportation plans should consider the possible impacts of anticipated street and highway improvements on the public transportation system as well as transportation management programs and designated public transportation corridors.

Goal 5.4. To establish the County as friendly to pedestrians and bicyclists by developing a safe bicycle and pedestrian transportation system accessible to all major public and private facilities.

Objective 5.4A. To improve the transportation system to appropriately accommodate bicycle and pedestrian design and facility requirements.

Policy 5.4A.1. Report crashes involving bicyclists and pedestrians. The County shall develop a bicycle and pedestrian crash reporting program to identify road segments and intersections having frequent bicyclist- and pedestrian-related crashes, with particular attention given to hazards, bottlenecks and barriers.

Policy 5.4A.2. Construct sidewalks and bicycle facilities in state projects. The County shall request construction of sidewalks and bicycle facilities in conjunction with the construction, reconstruction or change in any state facility within five miles of an urban area.

Policy 5.4A.3. Include bicycle lanes on new/resurfaced collectors and arterials. The County shall mandate bicycle lanes or paved shoulders (or the equivalent) on all new or resurfaced collector or arterial roadways that are not physically or financially constrained.

Policy 5.4A.4. Construct sidewalks on collectors and arterials. The County shall provide a sidewalk along both sides of all arterials and collectors.

Policy 5.4A.5. Develop a sidewalk and bicycle facilities improvement program. The County shall develop an improvement and maintenance program for sidewalks and bicycle facilities that establishes a committee to review bicycle facilities and recommend improvements.

Policy 5.4A.6. Prioritize needed sidewalks and bicycle facilities. The County shall identify and prioritize sidewalks and bicycle facilities intended to connect or complete both existing and proposed facilities in a manner that provides a complete pedestrian and bicyclist circulation system. The County shall consider such improvements in the Capital Improvements Plan.

Policy 5.4A.7. Identify and seek funding for sidewalks and bicycle facilities. The County shall identify and seek funding sources for sidewalks and bicycle facilities improvements and maintenance programs.

Policy 5.4A.8. Require pedestrian displays at traffic signals. Where appropriate and in conjunction with the FDOT, the County shall require or provide pedestrian displays at the time of traffic signal installation and modification, and shall pursue signal coordination with the State.

Policy 5.4A.9. Meet the needs of bicyclists and pedestrians in developments. The County shall require developers to provide bicycle facilities and sidewalks in proposed developments in accordance with acceptable engineering standards. The County shall encourage the development of communities that foster nonvehicular travel.

Policy 5.4A.10. Inform public of bicycle facility and sidewalk standards. The County shall inform public and private sector planning/engineering and development agencies of the most recent standards for sidewalks and bicycle facilities from the FDOT and American Association of State Highway and Transportation Officials (AASHTO).

Objective 5.4B. To develop a pedestrian and bicycle transportation system that connects all major travel destinations to population concentrations.

Policy 5.4B.1. Establish pedestrian and bicycle facilities around schools. In accordance with guidelines from the AASHTO and the FDOT, the County shall establish pedestrian and bicycle facilities around schools, with emphasis on areas not serviced by school buses.

*Policy 5.4B.2. Provide bicyclists and pedestrians access to retirement and handicapped residence centers.*In accordance with AASHTO or FDOT guidelines, the County shall provide for bicycle access in areas encompassing retirement and handicapped residence centers, as well as public, commercial and service buildings. This should include bicycle parking at these locations.

Policy 5.4B.3. Develop sidewalks and bicycle facilities in public areas. The County shall work with local municipalities, neighboring counties and the Florida Department of Environmental Protection to develop sidewalks and bicycle facilities in beach access areas, community, regional, and state parks, and other facilities, such as off-roadway travel corridors and drainage canal, railroad and utility rights-of-way.

Policy 5.4B.4. Provide sidewalks and bicycle facilities at County facilities. The County shall assure that all County facilities, which are accessible to the public (such as libraries, community centers, and administrative offices), address the needs of bicyclists and pedestrians. Where sidewalks and bicycle facilities are needed, the County shall incorporate the current FDOT design standards.

Goal 5.5. To ensure the coordination and continuation of an efficient and economical system of public transportation to benefit all County residents, in an effort to reduce the reliance on single-occupancy vehicles and fuels that emit high levels of carbon, thereby reducing greenhouse gases.

Objective 5.5A. To provide efficient public transportation services based on existing and proposed major trip generators and attractors;, safe and convenient public transportation terminals; land uses; and accommodation of the special needs of the transportation disadvantaged.

Policy 5.5A.1. Provide financial support for public transportation. The County shall provide local financial support towards the public transportation system, as required by federal or state grants, including the required match and operations deficit. The County shall encourage provision of public transportation services by qualified public and private agencies.

Policy 5.5A.2. Fund the needs of the transportation disadvantaged. The County shall continue to maintain the current level of service provided through its funding contribution to meet the needs of the transportation disadvantaged.

Policy 5.5A.3. Plan for a regional public transportation authority. The County shall assist the Martin MPO in long range planning and development of strategies for the creation of a regional public transportation authority.

Policy 5.5A.4. Provide transportation service to the elderly and disadvantaged. The County shall support the designated transportation coordinator's top priority of providing safe and convenient transportation to accommodate the special needs of the physically, socially and economically disadvantaged riders of all ages.

Policy 5.5A.5. Support the paratransit system. The County shall continue to support a paratransit system (i.e., van pool) and shall educate the public concerning alternative transportation services.

Policy 5.5A.6. Encourage additional funding to the transportation provider. The County shall investigate and encourage additional funding sources available to the transportation provider.

Policy 5.5A.7. Encourage employers to promote public transportation. The County shall assist the FDOT to encourage and/or require major employers in the County to use innovative means of providing access to public transportation to their employees while recognizing the availability of public transportation alternatives and constrained roadways. Examples of potential programs include flexible work hours and, sponsored car/van pool programs.

Policy 5.5A.8. Require major industrial development to incorporate access to public transportation. Any new major industrial development within one-half mile of a public transportation corridor, as designated through the adoption of the Transit Development Plan, shall incorporate at least one public transportation stop (such as a bus bay or loop).

Policy 5.5A.9. Strive to expand the fixed-route public transportation system. The Indiantown to Stuart shuttle, the Stuart shuttle, and the Treasure Coast Connector routes should be expanded to provide access to the community centers in each of the Community Redevelopment Areas, transit centers with access to rail, regional and community parks, and other major shopping centers.

Objective 5.5B. To continue to protect existing public transportation rights-of-way.

Policy 5.5B.1. Establish minimum lane widths to support public transportation. The County's minimum right-of-way requirements for roadways shall ensure that lanes are wide enough to accommodate public transportation vehicles.

Objective 5.5C. To continue to protect future public transportation rights-of-way and exclusive public transportation corridors, as appropriate, as part of the long range planning process.

Policy 5.5C.1. Accommodate curbside pick-up and bus movement. The designation of rights-of-way and construction/reconstruction of arterial and collector roadways and residential streets shall allow for adequate curbside pick-up and bus turning in appropriate areas.

Policy 5.5C.2. Designate public transportation corridors. In coordination with the master public transportation plan being developed by the MPO and the FDOT, exclusive public transportation corridors shall be designated as needed.

Implementation of this policy shall improve levels of service on the roadways as people reduce vehicle use in favor of mass transport.

Objective 5.5D. To establish transit within Martin County to connect to nearby major regional hubs such as Port St. Lucie, Palm Beach County and points beyond.

Policy 5.5D.1. Encourage transit-friendly neighborhoods. The County shall establish transit corridors and transit neighborhood centers that provide for specific design features to encourage and support the use of transit.

CHAPTER 15 – ECONOMIC ELEMENT

Section 15.3. - Goals, objectives and policies

Goal 15.1. To improve the quality of the Martin County economy.

Objective 15.1A. To maintain and enhance programs designed to expand and improve its economic base

Policy 15.1B.7. Martin County shall create and maintain incentives and programs that promote economic development in specifically defined areas such as Community Redevelopment Areas,

Small Business Administration Hub Zones, Enterprise Zones and Brownfield locations that have potential for redevelopment, along with others as they are identified.

Objective 15.2C. To continue Martin County's strong history of tourism and its recognition as a desirable tourist destination.

Policy 15.2C.8. Martin County shall work with the Metropolitan Planning Organization, the Tourist Development Council and other organizations to identify and establish transit routes and/or transportation corridors to connect tourism nodes, such as hotels, regional parks and environmental tourism attractions.

Objective 15.2D. To promote a strong regional economy enhanced by cooperation, recognizing that Martin County is not an isolated entity, but an integral component of the Treasure Coast/Research Coast Region.

Policy 15.2D.3. Martin County shall coordinate with the Florida Department of Transportation and local governments, through its designated agencies or representatives, to expand and enhance the overall transportation network to provide access to tourism, targeted businesses, office, industrial, research and development, and employment centers throughout the County.

Goal 15.3. To promote orderly and balanced economic growth while protecting natural resources, enhancing the quality of life, and providing prudent fiscal management.

Objective 15.3A . Martin County shall adopt land use regulations that will encourage economic development to the extent consistent with the goals, objectives and policies of the CGMP.

Policy 15.3A.2. Martin County shall place a high priority on coordinating public infrastructure improvements that facilitate future economic development.

ATTACHMENT 2

MARTIN COUNTY: COMPLETE STREETS: ACCESS TO TRANSIT STUDY

City of Stuart Comprehensive Plan

Relevant Goals, Objectives & Policies

ELEMENT I - FUTURE LAND USE ELEMENT

Policy A6.5. The City shall promote energy efficiency through mixed-se developments that increases multi-modal accessibility and reduces automobile travel. The characteristics of mixed use may include but not limited to the following:

- Provide housing and commercial services near employment centers.
- Contain the mix of uses allowed within the underlying land use designation.
- Accessibility to existing or planned transportation system.
- Provide transit stops in new developments.

Objective B1. - Compact urban form.

Discourage urban sprawl by facilitating urban redevelopment and infill development of properties and planning for urban infill and redevelopment of lands located within Stuart in order to achieve a compact urban form.

Policy B1.1. The City shall continue to market itself as a hub for commercial, social, and institutional governmental activities in Martin County. Provide for commercial opportunities within Stuart beyond the historical conditions in order to provide alternatives to urban sprawl.

Objective C3. - Urban redevelopment.

Revitalize the designated Urban Redevelopment Area (URA), including the CRA, by:

A. Maintaining or increasing the amount of development and redevelopment.

B. Maintaining or increasing the percentage of County-wide employment located in the URA and CRA and the City of Stuart as a whole.

C. Reducing blight conditions as defined by F.S. § 163.340(8)(a) and (b).

D. Achieving and maintaining a 90 percent occupancy rate of commercial and office spaces.

E. Enhancing the City's marine resources.

F. Promote pedestrian mobility throughout the CRA.

Policy C3.11. The City shall require commercial development in the URA to utilize urban design features consistent with FLUE Policy B3.10 so as to create a more attractive and distinctive environment, promote pedestrian friendly design and establish a "sense of place" and character unique to Stuart that will attract complementary non-residential uses.

Policy C3.12. The City of Stuart shall promote land use patterns which complement multiple modes of transportation, including transit, pedestrian and bicycle amenities, and marine

transit such as ferries, water taxis and upland support facilities (e.g., designated anchorages, marinas, dinghy accommodations, canoe/kayak launches and the City's "blueways" program)

Policy C3.14. The City through the CRA redevelopment shall encourage and promote pedestrian mobility and linkages throughout the CRA.

Objective D1. - [East Stuart Special Studies District.]

To reduce substandard housing conditions, increase affordable housing opportunities, improve infrastructure and safety conditions, and provide for land use regulations that reflect and strengthen the neighborhood character of East Stuart.

Policy D1.1. The City shall encourage new and in-fill development in the East Stuart neighborhood:

- Replace substandard housing with code compliant housing;
- Create accessible and safe neighborhood;
- Encourage a mix of housing types;
- Encourage neighborhood infrastructure, such as sidewalks and walkway linkages.

ELEMENT II - TRANSPORTATION ELEMENT

GOAL STATEMENT A

Implement a transportation program that provides for a safe and efficient traffic network and provides optimum access to the City's major activity centers. As resources permit, the City shall support mobility citywide through alternate modes of transportation.

The City shall seek to reduce greenhouse gas emissions by discouraging urban sprawl; promoting compact development and maximize internal trips within the development; promote transit-oriented development within urban service area; promote affordable and workforce housing in proximity of major employment centers; and promote infrastructure investment in greenhouse gas efficient projects.

Policy 1.8. The following strategies shall be implemented by the City in its efforts to maintain and improve traffic conditions throughout the City.

ATTACHMENT 2

TRANSPORTATION SYSTEMS AND DEMAND MANAGEMENT STRATEGIES

Strategy	Action
Traffic operation	Intersection and roadway widening. One-way streets. Turn-lane installation.
Traffic signalization	Coordinate with Martin County and the State of Florida regarding synchronization of traffic signals, intelligent traffic systems (ITS) and similar programs.
Pedestrian, bicycle and other alternative modes	Widen sidewalks. Pedestrian grade separation. Bikeways. Bike storage. Interconnected sidewalk system: sidewalks and/or bikeways shall be provided for internal circulation and linkage to other projects when such facilities are possible given the particular physical characteristics of the site, type of project, and adjacent land uses. Traffic calming. Downtown rail station/transportation depot.
Route diversion	Auto restricted zones. Residential traffic control. Truck-restricted zones and routes.
Parking management	Curb parking restrictions on U.S. 1 within the TCEA. On-street parking. Common parking areas. Off-street parking incentives. "In-lieu of" parking incentives. Public/private shared parking. Public/private shared parking through joint ownership or leasing or issuing licensing agreements. Valet parking for commercial businesses.
Inter-modal coordination (Implementation is contingent upon a joint Martin-St. Lucie public transit system that serves Stuart.)	Park-and-ride facilities. Coordinate transfer improvements with Martin and St. Lucie Counties (see Policy 6.3).
Commercial vehicles	On-street loading zones. Off-street loading zones. Restrict peak-hour on-street loading. Truck route system. Restrict truck traffic in residential neighborhoods.
Work schedule	Encourage flexible work scheduling to maximize infrastructure efficiency, including compressed work weeks, off-peak work hours

	and telecommuting. Encourage establishment of home offices.
Pricing The City of Stuart supports the application of these policies by the service providers.	Peak/off-peak transit fares. Fares for elderly and handicapped. Reduced transit fares.
Para-transit	Support the para-transit provided by the Council on Aging of Martin County, including service for the elderly and handicapped. Taxi/group riding program. Dial-a-ride. Jitney service.
Carpool and vanpool	Encourage carpool and vanpool matching programs by public and private employers. Preferential parking for carpool and vanpool.

Objective 5. - [Width of roadway corridors.]

Through smart growth principles, the City shall maintain its small-town character by limiting the width of roadway corridors throughout the City to no more than six through lanes.

Policy 5.1. East Ocean Boulevard shall not be more than four through lanes.

Policy 5.2. No roadway facility in the City shall be more than six through lanes.

Policy 5.3. While seeking to minimize impacts on residential neighborhoods and established business districts, the City and Martin County shall continue to work together to develop and effectively utilize major north-south alternate corridors for U.S. 1, including Green River Parkway (which is currently under construction and scheduled for completion by November 2010) and the Willoughby Boulevard extension project.

Policy 5.4. The City shall emphasize intersection improvements and the synchronization of signals prior to the widening of roadways.

Policy 5.5. Where space allows, pedestrian accessways (sidewalks) shall be separated from traffic by landscape areas, on-street parking and other design elements.

Policy 5.6. Within the CRA and where appropriate, the City shall encourage increased transportation efficiency and pedestrian mobility by advocating creative transportation planning methods such as the reduction of lanage to promote pedestrian access, on-street parking, and landscaping.

Objective 6. - [Mass transit and para-transit services.]

The City will continue to pursue grant funding and technical assistance through Metropolitan Planning Organization (MPO) and other sources for creation of multi-modal transportation opportunities, with a particular emphasis on developing downtown Stuart as a transportation hub.

Policy 6.1. The City will continue to endorse the public transit efforts of the Council on Aging of Martin County, the designated provider of FDOT support to the transportation disadvantaged.

Policy 6.2. The City will participate in efforts to establish an expanded public transit system as outlined in the MPO Long Range Transit Plan, as amended and the Martin County Comprehensive Plan, should the County or private enterprise implement the recommendations or policies of the respective plans. The City will continue to provide financial support to the Council on Aging of Martin County, Inc., for the provision of transit and para-transit services to Stuart and the Stuart Transportation Concurrency Exception Area (TCEA).

Policy 6.3. The City shall work with transit providers in Martin and St. Lucie Counties to promote transit to and from the TCEA by:

A. Supporting the MPO's Long Range Transit Plan, as amended.

B. Collecting TCEA ridership statistics annually.

C. Requesting both counties, other cities in Martin County, and Port St. Lucie to participate in a joint study to examine the effects of urban sprawl on public transit usage and feasibility so that land use plans throughout the region may be modified to encourage rather than discourage public transit and its associated benefits: energy conservation, reduction in air pollution, less traffic congestion, and infill development and redevelopment.

D. Coordinating planning, design and implementation of infrastructure to support transit and para-transit programs, such as park-and-ride lots, transfer stations, and similar facilities.

Policy 6.4. The City shall continue to work with Martin County and the Martin County MPO as well as local and regional transportation providers, to maintain and enhance the use of existing park-and-ride facilities in the downtown area. (Ord. No. 2205-2010, § 1(Exh. I), 9-27-2010)

Objective 7. - [Bicycle paths, pedestrian pathways and multi-modal transportation.]

A safe, convenient and energy efficient multi-modal transportation system enhanced through mixed use development patterns.

Policy 7.1. Prepare a bicycle path master plan that reduces reliance upon automotive travel and, whenever feasible, connects residential areas to recreational areas, schools and shopping areas.

Policy 7.2. The City shall encourage private developers to plan for pedestrian circulation including internal walks, bicycle paths and linkages to other projects where possible. The City shall require all new development and redevelopment to install sidewalks along all abutting public rights-of-way.

In the land development codes the City shall encourage private developers to plan for and adopt standards addressing the provision of pedestrian circulation facilities including internal walks, bicycle paths and linkages to other projects where possible.

Policy 7.3. The City land development regulations shall address the determination of feasibility for the consideration of bicycle paths with construction of new developments or roadways facilities. This will include review of FDOT district Transportation Improvement Programs, the State Transportation Plan (Bicycle Element) and future community comprehensive bicycle transportation plans.

Policy 7.4. All new development and redevelopment shall be required to install and maintain a pedestrian sidewalk network with ramps.

Policy 7.5. The City shall investigate the possibility of reduced roadway impact fees for mixed-use development which promotes trip capture.

Policy 7.6. The City shall continue to consider the use of roadway and other impact fees to promote multi-modal transportation (e.g., sidewalks and their beautification, park-and-ride lots, bicycle amenities, trolley stops and common parking areas).

Policy 7.7. Annually, the City will seek grant funding from FDOT to design and construct multi-modal improvements (e.g., TEA-21, ferry boat and water taxi grant program).

Policy 7.8. The City shall require all new large-scale (greater than 20,000 square feet in gross building area) non-residential development to provide pedestrian and bicycle amenities, such as bike racks, benches, shaded seating areas and water fountains.

Policy 7.9. Where sufficient right-of-way exists, the City shall require bicycle and pedestrian amenities along all new and reconstructed roadways.

Policy 7.10. As resources permit, the City shall consider developing a design plan to utilize SR 707 and the old Roosevelt Bridge as a bicycle/pedestrian pathway linking the northern and southern sections of the TCEA.

Policy 7.11. As resources permit, the City will consider completing the Riverwalk from Shepard's Park to the Festival Deck at City Hall Park.

Policy 7.12. The City shall maintain a City-wide sidewalk master plan and provide for annual funding through its CIP.

Policy 7.13. The City shall promote the development of the Green River Parkway as a bicycle/pedestrian corridor between the Jensen Beach CRA and the Stuart CRA.

Policy 7.14. A commercial development for which more than 200 parking spaces are required shall also make provisions for the inclusion of a transit stop in a location which is proximate to the roadway network. When demand for such transit stops is identified and documented, the developer/landowner shall provide transit stop infrastructure which may include seating facilities, trash receptacles, lighting and a covered structure for the transit stop. If there is no existing transit service on the proximate roadways, the immediate construction of a transit stop may be temporarily postponed provided that a binding agreement is executed which would require such a transit stop at such future date when transit becomes available.

Policy 7.15. All commercial development shall be designed to provide safe opportunities for alternative modes of transportation by connecting with existing and future pedestrian and bicycle pathways within the City and the County and to provide safe passage from public right-of-way to the building or project, between projects and between alternative modes of transportation.

Policy 7.16. In the event the number of parking spaces that are constructed by the developer exceeds the number of parking spaces required by the Stuart land development regulations, the required landscape area shall be increased to offset additional impervious area for each additional parking space. Development within the CRA which is governed by the Urban Code and is consistent with the Urban Code and adopted CRA Master Plan shall be exempted from this policy.

Policy 7.17. Buffer areas separating residential and non-residential uses shall allow for interconnecting passages to facilitate pedestrian or vehicular traffic to reduce off-site vehicular impacts consistent with FLUE Policy 6.4.

Objective 10. - [Intergovernmental coordination.]

Policy 10.2. The City shall continue to encourage expansion of Tri-Rail, passenger rail service, bus service and other multi-modal forms of transportation, with a particular emphasis on developing downtown Stuart as a transportation hub.

Policy 10.3. Through (1) direct advocacy aimed at elected officials, as well as federal, state and local transportation agencies, (2) active participation in the Martin County MPO, and (3) acquisition of grants and other appropriate funding sources, the City shall actively support the reestablishment of passenger rail service on the Florida East Coast (FEC) Rail Road right-of-way, including the construction of a downtown rail station/transportation depot, preferably on Flagler Avenue between East Ocean Boulevard and Martin Luther King Jr. Boulevard. Moreover, the City shall actively support the introduction of commuter rail services to the FEC right-of-way.

Objective 15. - [Transportation Concurrency Exception Area.]

Establish a Transportation Concurrency Exception Area (TCEA) consistent with the boundaries of the Community Redevelopment Area (CRA) and included within the Existing Urban Service Area (EUSA) to promote urban redevelopment and infill development. Establish policies to promote urban redevelopment and infill development and mitigate (reduce) potential traffic congestion increases caused by the concurrency exemption and provide for a level of service transition zone to mitigate the impact of the TCEA on adjacent properties.

Policy 15.1. The TCEA is a specific geographic area established in the Comprehensive Plan for urban redevelopment and infill development. The TCEA exists entirely within the designated CRA and EUSA. Transportation level of service standards shall not be applied (for concurrency purposes) to any development occurring within the TCEA as depicted on the TCEA Map in order to promote urban redevelopment and infill development.

Policy 15.3. Where appropriate, parking requirements shall be reduced citywide, including within the TCEA. The City shall promote the use of shared parking arrangements throughout its jurisdiction in order to reduce vehicular movement on roadways thereby reducing congestion and increasing the amount of land available for building or attractive landscaping when the following conditions are met:

1. The shared parking spaces are in close proximity and readily accessible to the uses served thereby; and
2. The uses served thereby have different peak parking demands and operating hours; and
3. There will be a reduction in vehicle movements by the users of the shared parking spaces; and

4. The design of the parking area in terms of traffic circulation, vehicular and pedestrian access, stormwater management, landscaping, open space preservation and public safety will be improved.

Policy 15.4. The City shall develop incentives for developers who provide preferential parking and other support facilities for high-occupancy vehicles, community bus services, shuttle services and car pools within the TCEA. The policies addressing mobility strategies must be developed by July 1, 2011.

Policy 15.5. The City shall require the interconnection of parking lots on adjacent commercial properties at the time of development or redevelopment.

Policy 15.6. Where possible, the City shall expand multi-modal transportation facilities within the TCEA as described in Policies 7.7 through 7.12.

Policy 15.7. The City shall support public transit within the TCEA as described in Policies 6.3, 6.4, 7.8, 7.14, 7.15, 7.16, and 7.17.

Objective 17. - [Greenhouse gas emission reduction.]

The City shall pursue and support transportation systems (e.g. high-speed rail, express buses, high-occupancy vehicles, bikeways) that reduce air quality degradation and help conserve energy.

Policy 17.1. Through incentives, which may include development review fast tracking, permit fee rebates, impact fee deferrals, and reduced parking requirements, the City will encourage private and public sector employers to promote fewer work-based vehicle trips through methods including but not limited to:

- Carpooling, bicycling and public transit use.
- Video conferencing or conference calls.
- Flex time programs for eligible employees.
- Green building educational materials to the community.
- Energy efficiency and cost saving measures.

Element VIII - CAPITAL IMPROVEMENTS ELEMENT AND CONCURRENCY MANAGEMENT SYSTEM

Objective A1. - [Identification and ranking of capital facility needs.]

Policy A1.2. Proposed capital improvement projects shall be evaluated and ranked in order of priority according to the following guidelines:

a. Whether the project is needed to protect public health, welfare and safety; to fulfill the City's legal commitment to provide facilities and services; or to preserve or achieve full use of existing facilities;

b. Whether the project increases efficiency of use of existing facilities; prevents or reduces future improvement cost; provides service to developed areas lacking full service to eliminate existing deficits; serves public schools; or promotes in-fill development and redevelopment;

c. Whether the project represents a logical extension of facilities and services within a designated urban service area;

d. Local budget impact; financial feasibility, accommodation of new development; or plans of State agencies and the South Florida Water Management District that may provide public facilities within Stuart; and

e. Locational needs based on projected growth patterns.

f. Increase energy efficiency by shifting to renewable fuel sources in buildings and vehicles.

g. Consider more efficient vehicles, reduce vehicles miles traveled, and switch to low carbon fuels when evaluating vehicles for City purchase.

Policy A1.3. The City shall promote traffic-calming measures on local, residential streets.

Policy A1.4. To maintain the City's small town character, the City shall limit the width of roadway corridors throughout the City to no more than six through lanes.

Element XI - ECONOMIC DEVELOPMENT ELEMENT

GOAL STATEMENT - A

The City will develop and maintain an economic environment that will encourage the creation, expansion and retention of business within city limits while maintaining a high quality of life for its residents.

Objective A1. - Retain existing businesses and attracting new businesses.

Provide supporting services for the retention of existing businesses and attracting new businesses.

Policy A1.7. The City will seek to coordinate, where appropriate, City investment in utilities, transportation, and other public facilities with business, employment, and other economic development opportunities.

Objective A2. - Economic development opportunities.

Policy A2.5. The City acknowledges its strategic location and where appropriate will encourage multi-modal transportation as a means of emphasizing its position as a regional destination.

ATTACHMENT 3

MARTIN COUNTY: COMPLETE STREETS: ACCESS TO TRANSIT STUDY

Town of Sewall's Point Comprehensive Plan

Relevant Goals, Objectives & Policies

(December 13, 1989)

ELEMENT 2 – TRAFFIC CIRCULATION

GOAL STATEMENT It is the intention of the Town to provide both its citizens and those visiting the community with safe, convenient and efficient vehicular access ways as well as proper non-vehicular spaces through maintaining supervision, and maintenance over both roads and rights-of-way owned by the Town and to require proper Levels of Services on such roads along with the utilization of good planning practices.

Objective 1.0 The Town shall provide for a safe, convenient and efficient motorized and non-vehicular transportation system by adopting LOS for all roads by requiring concurrently for all proposed development and by meeting with Martin County and FOOT to plan traffic circulation strategies to reduce hazardous traffic conditions and maintain LOS.

Objective 8.0 To provide bicycle and pedestrian ways that are safe and that do not interfere with existing or projected traffic circulation by revising land development regulation in 1990 to require non-vehicular accessways in new subdivisions. 9J-5.007(3)(b)l]

Policy (8.2) The Town will require bicycle or pedestrian ways in all future subdivision developments whenever feasible. This shall be incorporated into the 1990 Land Development Code.

Policy 9.1 The Town will meet with FOOT and Mart i n County within 12 months of plan adoption and formally discuss possible strategies and alternatives to reduce or maintain traffic circulation on SR AlA including access management and encouragement of ride sharing where appropriate. The Town shall adopt one or more policies to aid traffic circulation of AlA within 24 months after plan adoption.

ELEMENT 3 - HOUSING ELEMENT

Goal Statement Providing suitable neighborhoods and housing for residents of the Town and assisting in regional policies and concerns through the policies established in the plan. [9J-5.010(3)(a)

Objective 1.0 The Town will, by 1992, provide any low income and affordable housing need that is generated by the Town, through negotiated participation on an equitable basis, in housing programs for low and moderate income persons by Martin County. Housing for the elderly and special needs housing will be provided by allowing apartment uses in conjunction with residential uses of homes for elderly or ill family members to be implemented in the 1990 Land Development Code.

Policy 1.5 The Town will cooperate with public mass transportation efforts of Martin County and the City of Stuart by designating a bus stop within the Town to help provide the necessary infrastructure and support for housing needs.

ATTACHMENT 4

MARTIN COUNTY: COMPLETE STREETS: ACCESS TO TRANSIT STUDY

Town of Jupiter Island Comprehensive Plan

Relevant Goals, Objectives & Policies

TRANSPORTATION ELEMENT

02.01.00.00 GOAL: To establish the desired transportation system in the Town and particularly to plan for future motorized and non-motorized Transportation systems.

02.01.01.00 OBJECTIVE: To provide safe, efficient, and cost-effective vehicular and pedestrian movement through the Town while providing for reduction of greenhouse gases.

02.01.01.02 POLICY: The Town will continue to maintain “The Ramble” , a pedestrian and bicycle path used by residents and visitors, which provides for an alternative mode of transportation that reduces greenhouse gases and helps with energy conservation.

02.01.01.03 POLICY: The Town’s 30 MPH speed limit encourages using golf carts as an alternative transportation method. The use of golf carts provides a reduction in greenhouse gas emissions.

02.01.02.00 OBJECTIVE: The Town has determined that relocating the road right-of way on both North Beach and South Beach Roads is unfeasible.

02.01.02.01 POLICY: The Town has assumed ownership of the North Beach Road right-of-way and no modification of the road profile has been accomplished. The Town has determined that relocating the road right-of-way is unfeasible.

02.01.04.00 OBJECTIVE: To coordinate transportation planning and traffic improvements with the future transportation plans and traffic improvement programs of Martin County.

02.01.04.01 POLICY: The Town should convey to Martin County its concerns regarding anticipated rapid county population growth, which could have a significant impact on the Town’s roadway system.

ATTACHMENT 5

MARTIN COUNTY: COMPLETE STREETS: ACCESS TO TRANSIT STUDY

Town of Ocean Breeze Comprehensive Plan

Relevant Goals, Objectives & Policies

Element I - FUTURE LAND USE ELEMENT

OBJECTIVE 1: The Town of Ocean Breeze, through its Zoning and Land Development Code and/or Planned Unit Development (PUD) agreements, will establish zoning standards that will apply to a specific parcel of land such that the resulting development will be of superior quality and design while protecting the health, safety and welfare of the general public.

Element II - TRANSPORTATION ELEMENT

GOAL 1: To Provide a safe, convenient and efficient motorized and non-motorized transportation facilities in a way that sustains the community small Town character and its aesthetic characteristics.

OBJECTIVE 1: The Town will cooperate with Martin County and private land owners to achieve coordinated planning of land uses, transportation programs and traffic circulation as to achieve and maintain level of service adopted by the County and to protect the necessary rights of way through development permitting.

POLICY 1.2 The Town will maintain its small-town character by limiting the width of roadway corridors throughout the Town to no more than two through lanes.

POLICY 1.11 The Town shall work with Martin County, Martin County MPO and private land owners as well as local and regional mass transit providers to promote transit to and from the Town of Ocean Breeze. This coordination shall include: identifying destinations and traffic generators preferred by Town residents, identifying safe stopping places for mass transit, and identifying and helping to obtain needed right-of-way for mass transit stops.

POLICY 1.12 As the means to reduce the vehicles miles traveled, the Town shall encourage alternate transportation mode including mass transit, bicycles, golf carts and pedestrian facilities as a condition for development approvals.

Appendix B

Quantitative Analysis

SEGMENT DETAILS							SEGMENT SCORING									
TIER	SEGMENT NAME	START POINT	END POINT	GENERAL LOCATION	SEGMENT LENGTH (MILES)	ROW WIDTH (FEET)	TOTAL SCORE	EXISTING TRANSIT	PROPOSED TRANSIT	POP'N DENSITY	EMPLOYEE DENSITY	ACCESS TO VEHICLES	BIKE/PED CRASHES	CRA	SCHOOL +/OR LIBRARY	PARK
	S COLORADO AVE	CONFUSION CORNER	SR 5 (US 1)	Stuart	0.42	90	15	5	0	1	1	2	2	2	1	1
	NW DIXIE HWY (SR 707)	**NW GREEN RIVER PKWY**	**CONFUSION CORNER**	**Stuart**	**1.98**	**100**	**15**	**5**	**0**	**1**	**1**	**2**	**2**	**2**	**1**	**1**
	SE DIXIE HWY & S COLORADO AVE	SE MONTEREY RD	CONFUSION CORNER	Stuart	1.58	50	15	5	0	1	1	2	2	2	1	1
	SE PALM BEACH RD	**SE OCEAN BLVD (SR A1A)**	**SE MONTEREY RD**	**Stuart**	**1.09**	**80**	**15**	**5**	**0**	**1**	**1**	**2**	**2**	**2**	**1**	**1**
	SE CHRISTIE WAY	**SE DIXIE HWY**	**SE PALM BEACH RD**	**Stuart**	**0.08**	**50**	**15**	**5**	**0**	**1**	**1**	**2**	**2**	**2**	**1**	**1**
ONE	**SE COVE ROAD**	**SR 5 (US 1)**	**SE DIXIE HWY**	**Salerno**	**1.11**	**75**	**15**	**5**	**0**	**1**	**1**	**2**	**2**	**2**	**1**	**1**
	SE JACK ST	PORT SALERNO ELEMENTARY	SE COVE RD	Salerno	0.76	70	15	5	0	1	1	2	2	2	1	1
	SR 5 (US 1)	NW SUNSET BLVD	S END OF ROOSEVELT BRIDGE	Stuart	3.57	150	15	5	0	1	1	2	2	2	1	1
	SR 5 (US 1)	SW JOAN JEFFERSON WAY	600 FEET SOUTH OF SE TRESSLER DR	Stuart	1.42	150	15	5	0	1	1	2	2	2	1	1
	SE INDIAN ST	**SR 5 (US 1)**	**SE DIXIE HWY (SR A1A)**	**Stuart**	**0.36**	**100**	**14**	**5**	**0**	**1**	**1**	**2**	**2**	**2**	**0**	**1**
	S KANNER HWY (SR 76)	SR 5 (US 1)	SW MANOR DR	Stuart	0.44	110	14	5	0	1	1	2	2	2	0	1
	SE SALERNO RD	**SR 5 (US 1)**	**SE DIXIE HWY (SR A1A)**	**Salerno**	**0.93**	**65**	**14**	**5**	**0**	**0**	**1**	**2**	**2**	**2**	**1**	**1**
	SE SALERNO RD	SE DIXIE HWY (SR A1A)	SE DE SOTO AVE	Salerno	0.08	60	14	5	0	1	1	2	2	2	0	1
	SE CUTOFF RD	SR 5 (US 1)	SE DIXIE HWY (SR A1A)	Stuart	0.23	110	14	5	0	0	1	2	2	2	1	1
	SE DIXIE HWY	CONFUSION CORNER	SE PALM BEACH RD	Stuart	1.07	90	14	5	0	0	1	2	2	2	1	1
	SE DIXIE HWY (SR A1A)	**SE SALERNO RD**	**SE COVE RD**	**Salerno**	**0.61**	**90**	**14**	**5**	**0**	**1**	**1**	**2**	**2**	**2**	**0**	**1**
	SE DIXIE HWY (SR A1A)	PORT SALERNO CRA (NORTH BOUNDARY)	SE SALERNO RD	Salerno	0.39	90	14	5	0	1	1	2	2	2	0	1
	SE EBBTIDE AVE	**SE SALERNO RD**	**SE COVE RD**	**Salerno**	**0.5**	**65**	**14**	**5**	**0**	**1**	**0**	**2**	**2**	**2**	**1**	**1**
	SW PALM CITY RD	SR 5 (US 1)	400 FEET NORTH OF SW INDIAN GROVES DR	Stuart	0.33	80	14	5	0	1	1	2	2	2	0	1
TWO	SE COMMERCE AVE	RIO CRA (NORTH BOUNDARY)	SE SALERNO RD	Salerno	0.37	65	13	5	0	0	1	2	2	2	0	1
	S KANNER HWY (SR 76)	900 FEET NORTH OF SW S CAROLINA DR	SW MONTEREY RD	Stuart	0.56	110	13	5	0	1	1	2	2	0	1	1
	SE DIXIE HWY (SR A1A)	SE DHARLYS ST	HOBE SOUND CRA (SOUTH BOUNDARY)	Hobe Sound	2.75	35	13	5	0	1	1	2	0	2	1	1
	SE OCEAN BLVD	SE PALM BEACH RD	SE MONTEREY RD	Stuart	0.76	100	13	5	0	1	1	2	0	2	1	1
	SE MONTEREY RD	**SW PALM CITY RD**	**SE WILLOUGHBY BLVD**	**Stuart**	**0.64**	**90**	**13**	**5**	**0**	**1**	**1**	**2**	**2**	**0**	**1**	**1**
	SE PETTWAY ST	SR 5 (US 1)	SE GOMEZ AVE	Hobe Sound	0.51	25	13	5	0	1	1	2	0	2	1	1
	SE INDIAN ST	SE DIXIE HWY (SR A1A)	SE ST LUCIE BLVD	Golden Gate	0.77	110	12	5	0	1	1	0	2	2	0	1
	SE INDIAN ST	SE WILLOUGHBY BLVD	SR 5 (US 1)	Stuart	0.87	110	12	5	0	1	1	2	2	0	0	1
	SE MONTEREY RD	SE DIXIE HWY (SR A1A)	SE OCEAN BLVD	Stuart	0.26	140	12	5	0	1	1	2	2	0	0	1
	NE DIXIE HWY (SR 707)	NE SAVANNAH RD	PALMER ST	Rio	1.83	60	12	5	0	1	1	2	0	2	0	1
	SE ANCHOR AVE	SE OVERLOOK TER	SE DIXIE HWY (SR A1A)	Rocky Point	0.28	65	12	5	0	1	1	0	2	2	0	1
	SE BRIDGE RD	**SE PLANDOME DR**	**SE GOMEZ AVE**	**Hobe Sound**	**0.94**	**70**	**12**	**5**	**0**	**0**	**1**	**2**	**0**	**2**	**1**	**1**
	SE DIXIE HWY (SR A1A)	SE INDIAN ST	SE MONTEREY RD	Golden Gate	0.89	100	12	5	0	1	1	0	2	2	0	1
	SE DIXIE HWY (SR A1A)	**SE INDIAN ST**	**300 FEET SOUTH OF SE KENSINGTON ST**	**Golden Gate**	**0.73**	**90**	**12**	**5**	**0**	**1**	**1**	**0**	**2**	**2**	**0**	**1**
	SE HORSESHOE POINT RD	SE ANCHOR AVE	SE MANATEE COVE RD	Rocky Point	0.37	60	12	5	0	1	1	0	2	2	0	1
	SE LARES AVE	SE DIXIE HWY	SE BRIDGE RD	Hobe Sound	0.49	35	12	5	0	0	1	2	0	2	1	1
	SE MONTEREY RD	**SE WILLOUGHBY BLVD**	**SR 5 (US 1)**	**Stuart**	**0.69**	**110**	**12**	**5**	**0**	**1**	**1**	**2**	**2**	**0**	**0**	**1**
	SR 5 (US 1)	HOBE SOUND CRA (NORTH BOUNDARY)	SE BRIDGE RD	Hobe Sound	1.77	225	12	5	0	0	1	2	0	2	1	1
	WILLOUGHBY BLVD	SE MONTEREY RD	SE INDIAN ST	Stuart	1.14	150	12	5	0	1	1	2	2	0	0	1
THREE	SR 5 (US 1)	SE SALERNO RD	SE SPRINGTREE PL	Stuart	0.55	225	11	5	0	1	1	2	2	0	0	0
	SW MARTIN HWY	FLORIDA TURNPIKE (SR 91)	SW MAPP RD	Palm City	2.2	110	11	0	3	1	1	0	2	2	1	1
	SE MONTEREY RD	SE OCEAN BLVD (SR A1A)	MARTIN COUNTY AIRPORT	Stuart	0.69	100	11	5	0	1	1	2	0	0	1	1
	NE PINEAPPLE AVE	NE INDIAN RIVER DR	NE JENSEN BEACH BLVD	Jensen Beach	0.51	55	11	0	3	1	1	2	0	2	1	1
	NW ALICE ST	NW DIXIE HWY	650 FEET WEST OF NE GREEN LAWN DRIVE	Rio	0.27	60	11	5	0	0	1	2	0	2	0	1
	SE SALERNO RD	SE WILLOUGHBY BLVD	SR 5 (US 1)	Stuart	1.12	100	11	5	0	1	1	0	2	0	1	1
	SE JEFFERSON ST	SE DIXIE HWY (SR A1A)	SE HEMLOCK AVE	Golden Gate	0.6	90	11	5	0	0	1	0	2	2	0	1
	SE MARKET PLACE	1200 FEET EAST OF SE EDISON AVE	SE COMMERCE AVE	Stuart	0.87	70	11	5	0	1	1	2	2	0	0	0
	SE MONTEREY RD	SR 5 (US 1)	EAST OF SE DIXIE HWY (SR A1A)	Stuart	0.23	90	11	5	0	0	1	2	2	0	0	1

THR	SE MONTEREY RD EXT	SE MONTEREY RD	SR 5 (US 1)	Stuart	0.33	80	11	5	0	1	1	2	2	0	0	0
	SR 5 (US 1)	SE SALERNO RD	SE POMEROY ST	Stuart	0.59	225	11	5	0	1	1	2	2	0	0	0
	SR 5 (US 1)	SE SALERNO ROAD	SE COVE RD	Stuart	0.5	225	11	5	0	1	1	2	2	0	0	0
	SR 5 (US 1)	150 FEET NORTH OF SE CONTRACTOR WAY	SE INDIAN STREET	Stuart	1.55	150	11	5	0	1	1	2	2	0	0	0
	S KANNER HWY (SR 76)	SW CABANA POINT CIR	SE MONTEREY RD	Stuart	0.55	110	11	5	0	1	1	2	0	0	1	1
	SE OCEAN BLVD (SR A1A)	SE MONTEREY RD	2800 FEET EAST OF SE MONTEREY RD	Stuart	0.47	110	11	5	0	1	1	2	0	0	1	1
	SE ST. LUCIE BLVD	SE MONTEREY AVE	SE OCEAN BLVD	Stuart	0.52	80	11	5	0	1	1	2	0	0	1	1
	SW BERRY AVE	SW SUNSET TRAIL	SW MARTIN DOWNS BLVD	Palm City	0.5	55	11	0	3	1	1	0	2	2	1	1
	SW MARTIN DOWNS BLVD	SW MARTIN HWY	SW MAPP RD	Palm City	2.49	225	11	0	3	1	1	2	0	2	1	1
	SW WARFIELD BLVD (SR 710)	INDIANTOWN CRA (WEST BOUNDARY)	SW KANNER HWY (SR 76)	Indiantown	3.42	75	10	5	0	0	1	0	0	2	1	1
	SE COMMERCE AVE	300 FT SOUTH OF SE MIAMI AVE	SE MARKET PL	Stuart	0.31	90	10	5	0	0	1	2	2	0	0	0
	NE INDIAN RIVER DR	NE JENSEN BEACH BLVD	200 FEET NORTH OF NE PELICAN TERR	Jensen Beach	0.5	50	10	0	3	1	1	2	0	2	1	0
	SW OSCEOLA ST	WEST END OF SW OSCEOLA ST	SW INDIAN MOUND DR	Indiantown	1.01	90	10	5	0	0	1	0	0	2	1	1
	NE JENSEN BEACH BLVD	NE SAVANNAH RD	NE INDIAN RIVER DRIVE	Jensen Beach	0.71	90	10	0	3	1	1	0	2	2	1	0
	SW MAPP ROAD	SW MOORING DR	SW MARTIN DOWNS BLVD (SR 714)	Palm City	0.5	90	10	0	3	1	1	2	0	2	0	1
	SW MONTEREY RD / PALM CITY BRIDGE	PALM CITY BRIDGE	SW PALM CITY RD	Stuart	0.25	110	10	5	0	1	1	2	0	0	0	1
	NE ALICE ST	NW ALICE ST	NE RIO ST	Rio	0.6	55	10	5	0	0	0	2	0	2	0	1
	NE BAKER RD	NW GREEN RIVER PKWY	NE SAVANNAH RD	Rio	0.5	100	10	5	0	0	1	0	0	2	1	1
	NE DIXIE HWY (SR 707)	NW GREEN RIVER PKWY	NE CARDINAL AVE	Rio	0.43	80	10	5	0	0	1	0	0	2	1	1
	NW NORTH RIVER SHORES BLVD	NW SPRUCE RIDGE DR	SR 5 (US 1)	Stuart	0.21	110	10	5	0	1	1	0	0	2	0	1
	NW BAKER RD	SR 5 (US 1)	NW GREEN RIVER PKWY	Rio	0.66	65	10	5	0	0	1	0	0	2	1	1
	NW FORK RD	700 FT WEST OF SUNSET DR	SR 5 (US 1)	Stuart	0.5	65	10	5	0	1	1	0	0	2	0	1
	NW WRIGHT BLVD	SR 5 (US 1)	NW DIXIE HWY (SR 707)	Stuart	0.22	65	10	5	0	1	1	0	0	2	0	1
	SE BRIDGE RD	SE GOMEZ AVE	SE LAUREL LN	Hobe Sound	0.16	120	10	5	0	0	1	0	0	2	1	1
	SE COVE ROAD	SE DIXIE HWY (SR A1A)	SE MANATEE COVE RD	Rocky Point	0.26	130	10	5	0	1	1	0	0	2	0	1
	SE DIXIE HWY (SR A1A)	SE MONTEREY RD	1200 FEET SOUTH OF SE MONTEREY ROAD	Stuart	0.23	145	10	5	0	0	0	2	2	0	0	1
	SR 5 (US 1)	BRIDGE ROAD	HOBE SOUND CRA (400 FEET SOUTH OF SOUTH BOUNDARY)	Hobe Sound	0.59	225	10	5	0	0	1	0	0	2	1	1
	SE FISCHER ST	SR 5 (US 1)	SE COMMERCE AVE	Stuart	0.21	70	10	5	0	1	0	2	2	0	0	0
	SR 5 (US 1)	SE COVE RD	SE LILLIAN CT	Stuart	0.59	225	10	5	0	1	1	0	2	0	0	1
	SW ADAMS AVE	SW PALM WAY	SW 150TH ST	Indiantown	0.32	90	10	5	0	0	1	0	0	2	1	1
	SW BERRY AVE	SW MARTIN HWY	1500 FEET SOUTH OF SW HORSESHOE TR	Palm City	0.49	70	10	0	3	1	0	0	2	2	1	1
	SW FARM RD	SW 169TH AVE	SW RAILROAD AVE	Indiantown	1	60	10	5	0	0	1	0	0	2	1	1
	SW INDIAN MOUND DR	INDIANTOWN CRA (NORTH BOUNDARY)	SW CITRUS BLVD	Indiantown	0.98	55	10	5	0	0	1	0	0	2	1	1
	SE COMMERCE AVE	SE INDIAN ST	400 FEET SOUTH OF SE FISHER ST	Stuart	0.37	90	9	5	0	0	0	2	2	0	0	0
	NW GREEN RIVER PKWY	NE BAKER RD	NW DIXIE HWY (SR 707)	Rio	0.15	130	9	5	0	0	0	0	0	2	1	1
	NE INDIAN RIVER DR	NE CAUSEWAY BLVD	NE JENSEN BEACH BLVD	Jensen Beach	0.45	40	9	0	3	1	1	0	0	2	1	1
	SE INDIAN ST	S KANNER HWY (SR 76)	SE WILLOUGHBY BLVD	Stuart	0.45	120	9	5	0	1	0	2	0	0	0	1
	NE RICOU TER	NE PINEAPPLE AVE	NE INDIAN RIVER DR	Jensen Beach	0.12	85	9	0	3	1	1	0	0	2	1	1
	SE COVE ROAD	400 FEET EAST OF SE AVALON DR	SR 5 (US 1)	Stuart	0.48	100	9	5	0	1	1	0	2	0	0	0
	SR 5 (US 1)	SE POMEROY ST	SE INDIAN ST	Stuart	0.87	225	9	5	0	1	1	0	2	0	0	0
	S KANNER HIGHWAY (SR 76)	SE NORTHFOLD BLVD	2900 FEET NORTH OF SE INDIAN ST	Stuart	1.03	130	9	0	3	1	1	2	0	0	1	1
	SW 169TH AVE	SW RAILROAD AVE	SW FARM RD	Indiantown	0.56	35	9	5	0	0	0	0	0	2	1	1
	SW 34TH ST	WEST END OF 34TH ST	SW MAPP RD	Palm City	0.64	55	9	0	3	1	1	0	0	2	1	1
	SW CHARLESTON ST	SW FARM RD	SW 169TH AVE	Indiantown	0.41	55	9	5	0	0	1	0	0	2	0	1
	SW DR MARTIN L KING, JR DR	SW WARFIELD BLVD	SW FARM RD	Indiantown	0.72	55	9	5	0	0	1	0	0	2	0	1
	SW FARM RD	SW ANDALUCIA CT	SW 169TH AVE	Indiantown	0.77	75	9	5	0	0	0	0	0	2	1	1
	SW PALM CITY RD	1800 FEET NORTH OF SW MONTEREY RD	SW MONTEREY RD	Stuart	0.3	80	9	5	0	1	1	2	0	0	0	0
	NW BAKER RD	SR 5 (US 1)	1000 FEET EAST OF SR 5 (US 1)	Stuart	0.18	80	8	5	0	0	1	0	0	0	1	1
	SW CITRUS BLVD	SW WARFIELD BLVD (SR 710)	INDIANTOWN CRA (EAST BOUNDARY)	Indiantown	1.78	75	8	5	0	0	0	0	0	2	0	1
	SE COMMERCE AVE	SE WAALER ST	SE MARKET PL	Stuart	0.34	90	8	5	0	0	1	2	0	0	0	0
	NE INDIAN RIVER DR	NE CAUSEWAY BLVD	NE 1ST ST	Jensen Beach	0.07	60	8	0	3	1	1	0	0	2	0	1

	NE CAUSEWAY BLVD	NE INDIAN RIVER DRIVE	JENSEN BEACH CRA (EAST BOUNDARY)	Jensen Beach	0.06	95	8	0	3	1	1	0	0	2	0	1
	SW MAPP ROAD	SW MARTIN HWY (SR 714)	SW MARTIN DOWNS BLVD	Palm City	0.77	110	8	0	3	1	1	0	0	2	0	1
	SW MAPP ROAD	SW MARTIN HWY (SR 714)	500 FEET SOUTH OF SW CATALINA ST	Palm City	0.54	110	8	0	3	1	1	0	0	2	0	1
	SW MONTEREY RD / PALM CITY BRIDGE	SW MAPP RD	PALM CITY BRIDGE	Palm City	0.5	90	8	0	3	1	1	0	0	2	0	1
	NW SPRUCE RIDGE DR	400 FEET W OF NW 11TH TER	300 FEET WEST OF SUNSET DR	Stuart	0.27	65	8	5	0	1	1	0	0	0	0	1
	SE COMMUNITY DR	SE WILLOUGHBY BLVD	SE SALERNO RD	Stuart	0.53	90	8	5	0	1	1	0	0	0	1	0
	SE DOMINICA TER	SR 5 (US 1)	850 FEET EAST OF SR 5 (US 1)	Stuart	0.16	80	8	5	0	0	1	2	0	0	0	0
	SE MONROE ST	SR 5 (US 1)	100 FEET EAST OF SE WAALER ST	Stuart	0.3	90	8	5	0	0	1	2	0	0	0	0
	SE MONROE ST	600 FEET WEST OF SE COMMERCE AVE	SE COMMERCE AVE	Stuart	0.1	90	8	5	0	0	1	2	0	0	0	0
	SE ST. LUCIE BLVD	SE INDIAN ST	300 FEET EAST OF GOLDEN GATE CRA BOUNDARY	Golden Gate	0.23	75	8	5	0	1	0	0	0	2	0	0
	SE ST. LUCIE BLVD	SE INDIAN ST	EAST INTERSECTION OF SE INLET HARBOR TRAIL	Golden Gate	0.17	110	8	5	0	1	0	0	0	2	0	0
	SE SUMMERFIELD WAY	1700 FEET WEST OF SR 5 (US 1)	SR 5 (US 1)	Stuart	0.32	90	8	5	0	1	1	0	0	0	0	1
	SE WAALER ST	600 FEET WEST OF SE COMMERCE AVE	SE COMMERCE AVE	Stuart	0.06	55	8	5	0	0	1	2	0	0	0	0
	SE WAALER ST	SE MONROE ST	370 FEET SOUTH OF SE MONROE ST	Stuart	0.07	50	8	5	0	0	1	2	0	0	0	0
	SW CORNELL AVE	SW MARTIN DOWNS BLVD	ALL AMERICAN BLVD	Palm City	0.98	55	8	0	3	1	1	0	0	2	0	1
	SW MARTIN HWY	SW MAPP RD	WEST END OF VETERANS MEMORIAL BRIDGE	Palm City	0.71	200	8	0	3	1	1	0	0	2	0	1
	SW SUNSET TRAIL	1300 FEET WEST OF SW MAPP RD	SW MAPP RD	Palm City	0.23	70	8	0	3	1	1	0	0	2	0	1
	SW WARFIELD BLVD (SR 710)	SW KANNER HWY	INDIANTOWN CRA (SOUTH BOUNDARY)	Indiantown	0.8	240	7	5	0	0	0	0	0	2	0	0
	NW BRITT RD	150 FEET EAST OF NW PINE LAKE DR	SR 5 (US 1)	Jensen Beach	0.51	95	7	5	0	0	1	0	0	0	1	0
	SW HIGH MEADOWS AVE	SW MARTIN DOWNS BLVD	SW MARTIN HWY	Palm City	0.79	110	7	0	3	1	1	0	0	0	1	1
	SW HIGH MEADOWS AVE	2600 FEET NORTH OF SW MARTIN DOWNS BLVD	SW MARTIN DOWNS BLVD	Palm City	0.44	180	7	0	3	1	1	2	0	0	0	0
	SW HIGH MEADOWS AVE	SW MARTIN HWY	1300 FEET SOUTH OF SW MARTIN HWY	Palm City	0.21	110	7	0	3	1	1	0	0	0	1	1
	NW JENSEN BEACH BOULEVARD	SR 5 (US 1)	NW GOLDENROAD RD	Jensen Beach	0.24	130	7	5	0	0	1	0	0	0	1	0
	KANNER HWY	INDIANTOWN CRA (WEST BOUNDARY)	SW WARFIELD BLVD	Indiantown	0.11	140	7	5	0	0	0	0	0	2	0	0
	NE CARDINAL AVE	NE BAKER RD	NE SAVANNAH RD	Rio	0.12	110	7	5	0	0	0	0	0	2	0	0
	NE DIXIE HWY (SR 707)	NE PALMER ST	250 FEET NORTH OF MARIAN ST	Rio	0.27	50	7	0	0	1	1	2	0	2	0	1
	NE SAVANNAH RD	NE CARDINAL AVE	900 FEET NORTH OF NE CARDNINAL AVE	Rio	0.15	95	7	5	0	0	0	0	0	2	0	0
	NE SKYLINE DR	340 FEET NORTH OF NE INDIAN DR	NE SOUTH ST	Jensen Beach	0.45	50	7	0	3	1	1	0	2	0	0	0
	NE SOUTH ST	NE SAVANNAH RD	360 FEET EAST OF SKYLINE DR	Jensen Beach	0.5	55	7	0	3	1	1	0	0	0	1	1
	NE SUNVIEW TER	NE JENSEN BEACH BLVD	NE CANDICE AVE	Jensen Beach	0.46	60	7	0	3	1	1	0	2	0	0	0
	NE PALMER ST	RIO CRA (EAST BOUNDARY)	600 FEET W OF RIO CRA (EAST BOUNDARY)	Rio	0.1	60	7	0	0	1	1	2	0	2	0	1
	NE SAVANNAH ROAD	NE SILVER MAPLE WAY	NE JENSEN BEACH BLVD	Jensen Beach	0.52	90	7	0	3	1	1	0	0	0	1	1
	SR 5 (US 1)	NORTH MARTIN COUNTY LINE	1300 FEET SOUTH OF NW GOLDENROD RD	Jensen Beach	1.18	225	7	5	0	0	1	0	0	0	1	0
	SW ALL AMERICAN BLVD	SW MAPP RD	SW ST LUCIE SHORES DR	Palm City	0.73	75	7	0	3	1	0	0	0	2	0	1
	SW ALLAPATAH RD	INDIANTOWN CRA (NORTH BOUNDARY)	SW WARFIELD BLVD	Indiantown	1.54	110	7	5	0	0	0	0	0	2	0	0
	SW FARM RD	INDIANTOWN CRA (WEST BOUNDARY)	SW ANDALUCIA CT	Indiantown	0.3	50	7	5	0	0	0	0	0	2	0	0
	SW INDIANTOWN AVE	SW KANNER HWY (SR 76)	SW WARFIELD BLVD	Indiantown	0.42	220	7	5	0	0	0	0	0	2	0	0
	SW KANNER HWY (SR 76)	SW WARFIELD BLVD (SR 710)	INDIANTOWN CRA (EAST BOUNDARY)	Indiantown	0.35	140	7	5	0	0	0	0	0	2	0	0
	VETERANS MEMORIAL BRIDGE	S KANNER HWY (SR 76)	2650 FEET WEST OF S KANNER HWY (SR 76)	Stuart	0.5	170	7	0	3	1	0	2	0	0	0	1
	SE WILLOUGHBY BLVD	SE INDIAN ST	500 FEET SOUTH OF SE WESTMINSTER PL	Stuart	0.5	150	7	5	0	1	0	0	0	0	0	1
	NW BRITT RD	SR 5 (US 1)	NW GOLDENROD RD	Jensen Beach	0.14	140	6	5	0	0	0	0	0	0	1	0
	NW JENSEN BEACH BLVD	NW HILLMAND DR	NW GREEN RIVER PKWY	Jensen Beach	0.52	140	6	0	3	0	1	0	0	0	1	1
	NE JENSEN BEACH BLVD	1500 FEET WEST OF NE HOLLY CREEK DR	NE SAVANNAH RD	Jensen Beach	0.53	110	6	0	3	1	1	0	0	0	0	1
	NE JENSEN BEACH BLVD	NW GREEN RIVER PKWY	800 FEET EAST OF NE PINECREST LAKES BLVD	Jensen Beach	0.48	140	6	0	3	1	1	0	0	0	0	1
	NW GOLDENROD RD	1400 FEET SOUTH OF NW JENSEN BEACH BLVD	NW BRITT RD	Jensen Beach	0.42	140	6	5	0	0	0	0	0	0	1	0
	NW GOLDENROD RD	1600 FEET WEST OF SR 5 (US 1)	1400 FEET EAST OF SR 5 (US 1)	Jensen Beach	0.51	90	6	5	0	0	1	0	0	0	0	0
	NW GOLDENROD RD	NW WESTMORELAND BLVD	400 FEET SOUTH OF NW WESTMORELAND BLVD	Jensen Beach	0.08	90	6	5	0	0	1	0	0	0	0	0
	NW WESTMORELAND BLVD	SR 5 (US 1)	NORTH MARTIN COUNTY LINE	Jensen Beach	0.23	110	6	5	0	0	1	0	0	0	0	0
	SE SALERNO RD	SE SMITH AVE	SE WILLOUGHBY BLVD	Stuart	0.09	90	6	5	0	0	0	0	0	0	0	1
	SW MURPHY RD	SW MARTIN DOWNS BLVD	500 FEET NORTH OF SW MARTIN DOWNS BLVD	Palm City	0.24	130	6	0	3	0	0	2	0	0	1	0
	SE WILLOUGHBY BLVD	600 FEET NORTH OF COMMUNITY DR	600 FEET SOUTH OF COMMUNITY DR	Stuart	0.2	165	6	5	0	0	0	0	0	0	1	0

	SE WILLOUGHBY BLVD	400 FEET NORTH OF SE SALERNO RD	SE SALERNO RD	Stuart	0.07	140	6	5	0	0	0	0	0	0	0	1
	SE WILLOUGHBY BLVD	SE SALERNO RD	400 FEET SOUTH OF SE SALERNO RD	Stuart	0.07	140	6	5	0	0	0	0	0	0	0	1
	NE SAVANNAH RD	NE JENSEN BEACH BLVD	3000 FEET NORTH OF NE JENSEN BEACH BLVD	Jensen Beach	0.52	50	5	0	3	1	1	0	0	0	0	0
	SE OCEAN BLVD (SR A1A)	N SEWALL'S POINT RD	3000 FEET WEST OF N SEWALL'S POINT RD	Sewall's Point	0.56	110	5	0	3	0	1	0	0	0	0	1
	N SEWALL'S POINT RD	SE OCEAN BLVD (SR A1A)	400 FEET NORTH OF KNOWLES RD	Sewall's Point	0.45	40	5	0	3	0	1	0	0	0	0	1
	NE OCEAN BLVD (SR A1A)	N SEWALL'S POINT ROAD	2700 FEET OF N SEWALL'S POINT RD	Sewall's Point	0.45	225	5	0	3	0	1	0	0	0	0	1
	SW KANNER HWY (SR 76)	1/2 MILE WEST OF ST LUCIE MOBILE HOME PARK	1/2 MILE EAST OF ST LUCIE MOBILE HOME PARK	Indiantown	1.11	225	5	5	0	0	0	0	0	0	0	0
	SW SUNSET TRAIL	SW HIGH MEADOWS AVE	1200 FEET EAST OF SW HIGH MEADOWS AVE	Palm City	0.19	65	5	0	3	1	1	0	0	0	0	0
	NE OCEAN BLVD (SR A1A)	400 FEET NORTH OF NE COLUSA CT	400 FEET WEST OF MACARTHUR BLVD	Hutchinson Island	0.85	120	4	0	3	0	0	0	0	0	0	1
	NE OCEAN BLVD (SR A1A)	NE CAUSEWAY BLVD	2800 FEET SOUTH OF NE CAUSEWAY BLVD	Hutchinson Island	0.47	120	4	0	3	0	0	0	0	0	0	1
	NW GREEN RIVER PKWY	2700 FEET NORTH OF NE JENSEN BEACH BLVD	3000 FEET SOUTH OF NE JENSEN BEACH BLVD	Jensen Beach	0.96	110	4	0	3	0	0	0	0	0	0	1
	NE CAUSEWAY BLVD	NE MOON RIVER CIR	NE OCEAN BLVD (SR A1A)	Hutchinson Island	0.48	120	4	0	3	0	0	0	0	0	0	1
	NE OCEAN BLVD (SR A1A)	2500 FEET NORTH OF NW CAUSEWAY BLVD	NE CAUSEWAY BLVD	Hutchinson Island	0.47	120	4	0	3	0	0	0	0	0	0	1
	SW ARMELLINI AVE	300 FEET SOUTH OF SW SAND TRAIL	SE MARTIN HWY (SR 714)	Palm City	0.46	90	4	0	3	0	1	0	0	0	0	0
	SW MARTIN HWY (SR 714)	SW 42ND AVE	FLORIDA TURNPIKE (SR 91)	Palm City	0.33	110	3	0	3	0	0	0	0	0	0	0

Appendix C

Geographic Information System Maps

2018 Population Density (Esri)

Legend
- 2018 Population Density (Esri)
- 2018 Total Population (Esri) / Acreage
- ≤0.3335
- ≤0.9852
- ≤1.939
- ≤2.683
- ≤3.202
- ≤3.795
- ≤4.332
- ≤4.874
- ≤6.672
- ≤9.620
- Road Labels

N

SW MARTIN HWY
SW WARFIELD BLV
SW CONNERS HWY
SW FOX BROWN RD
SW ALLAPATTAH RD
SW FARM RD
SW KANNER HWY
SW STUART WEST BLV
SW BECKER RD
SW MARTIN DOWNS BLV
SW MAPP RD
SW HIGH MEADOW AVE
SW CITRUS BLV
SW 96 TH ST
SW BRIDGE RD
SW PRATT-WHITNEY RD
INTERSTATE 95
NW FEDERAL HWY
NW GREEN RIVER PKWY
NE INDIAN RIVER DR
NE OCEAN BLV
NE SAVANNAH RD
NE DIXIE HWY
SE ST LUCIE BLV
SE MONTEREY RD
SE INDIAN ST
SE WILLOUGHBY BLV
S KANNER HWY
SE SALERNO RD
SE COVE RD
SE DIXIE HWY
SE SEABRANCH BLV
SE GOMEZ AVE
SE BEACH RD
SE FEDERAL HWY
SE FLORA AVE
SE BRIDGE RD
SE ISLAND WAY
FLORIDA TRP
SW SAND AVE
Indiantown
Jupiter

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NORTHSTAR GEOMATICS
SURVEYING/MAPPING • GIS • ASSET INVENTORY

TREASURE COAST TCRPC REGIONAL PLANNING COUNCIL
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0 0.5 1 2 3 4 5 6 Miles

Data Source: ESRI Living Atlas, 2018 census block group population density

MARTIN MPO Metropolitan Planning Organization

Business Types

Legend
Category
- Key Workplace Uses (1058)
- Key Retail Uses (371)
- Hospitals & Medical Offices (352)
- Other Tourist Destinations (76)
- Hospitality & Lodging Facilities (22)
- Cultural & Historic Uses (15)
- Colleges, Universities & Educational Facilities (15)
- Road Labels

N

SW MARTIN HWY
SW WARFIELD BLVD
SW CONNERS HWY
SW FOX BROWN RD
SW ALLAPATTAH RD
SW STUART WEST BLV
SW FARM RD
SW KANNER HWY
SW BRIDGE RD
SW 96 TH ST
SW CITRUS BLVD
SW PRATT-WHITNEY RD
INTERSTATE 95
SE BRIDGE RD
SE BEACH RD
SE FEDERAL HWY
SE GOMEZ AVE
SE ISLAND WAY
SE COVE RD
SE SALERNO RD
SE DIXIE HWY
SE SEABRANCH BLV
SE WILLOUGHBY BLV
SE INDIAN ST
SE ST LUCIE BLV
NE OCEAN BLV
NE DIXIE HWY
NE SAVANNAH RD
NE INDIAN RIVER DR
NW GREEN RIVER PKWY
NW FEDERAL HWY
SW MURPHY RD
SW MARTIN DOWNS BLV
SW HIGH MEADOW AVE
SW MAPP RD
S KANNER HWY
FLORIDA TRP
SW SAND AVE
Indiantown
Jupiter

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NORTHSTAR GEOMATICS
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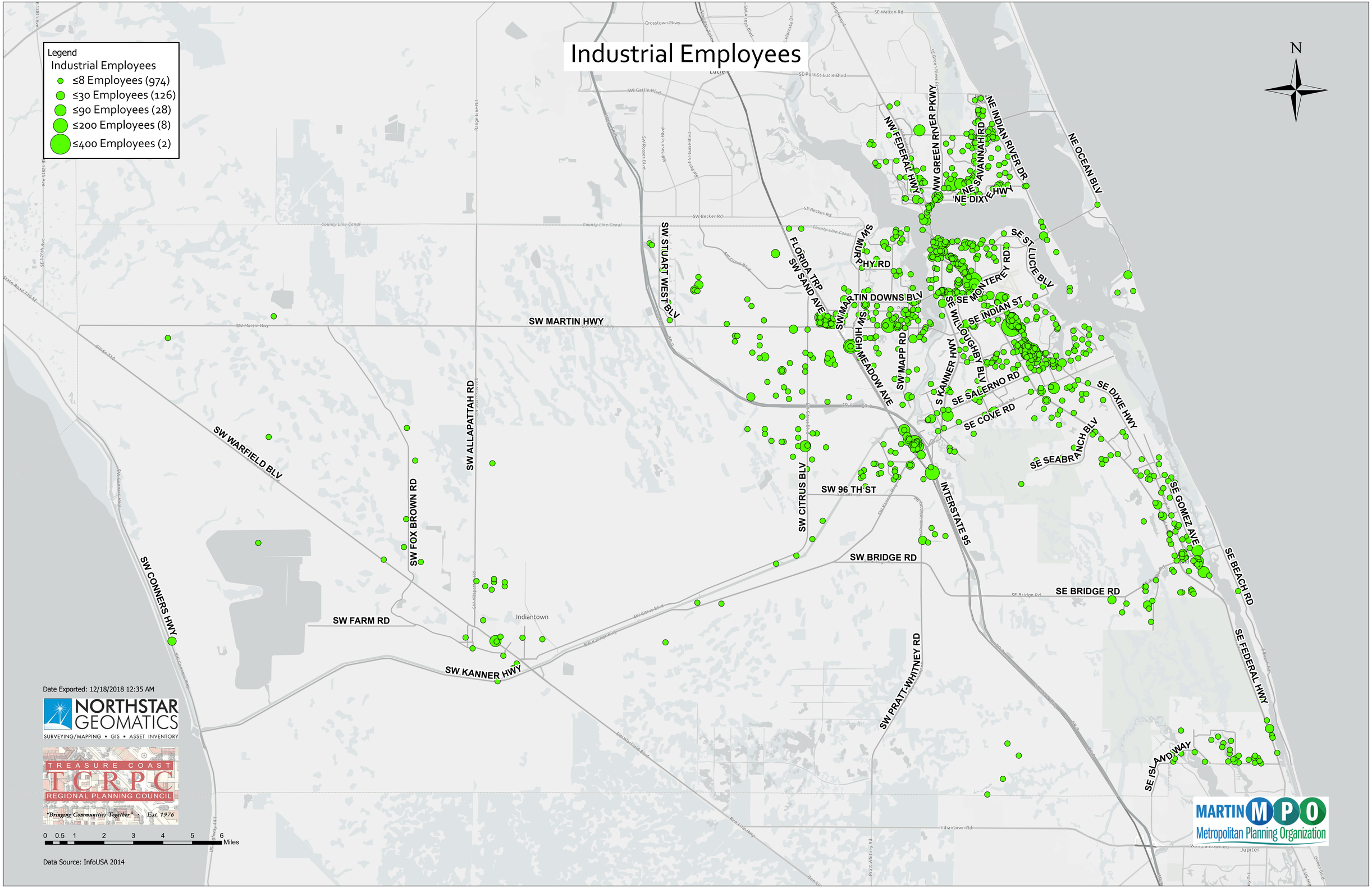
0 0.5 1 2 3 4 5 6 Miles

Data Source: InfoUSA 2014

MARTIN MPO Metropolitan Planning Organization

Industrial Employees



Service Employees

Legend
Service Employees
- ≤18 Employees (4811)
- ≤75 Employees (251)
- ≤220 Employees (61)
- ≤650 Employees (14)
- ≤3,200 Employees (1)

N

SW MARTIN HWY
SW WARFIELD BLVD
SW ALLAPATTAH RD
SW FOX BROWN RD
SW CONNERS HWY
SW FARM RD
SW KANNER HWY
SW STUART WEST BLV
FLORIDA TRP
SW SAND AVE
SW MURPHY RD
SW MARTIN DOWNS BLV
SW HIGH MEADOW AVE
SW MAPP RD
SW CITRUS BLVD
SW 96 TH ST
SW BRIDGE RD
SW PRATT-WHITNEY RD
INTERSTATE 95
NW FEDERAL HWY
NW GREEN RIVER PKWY
NE INDIAN RIVER DR
NE SAVANNAH RD
NE DIXIE HWY
NE OCEAN BLV
SE ST LUCIE BLV
SE MONTEREY RD
SE INDIAN ST
SE WILLOUGHBY BLV
SE SALERNO RD
SE COVE RD
SE DIXIE HWY
SE SEABRANCH BLV
SE GOMEZ AVE
SE BEACH RD
SE FEDERAL HWY
SE ISLAND WAY
SE BRIDGE RD
Indiantown
Jupiter

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MARTIN MPO Metropolitan Planning Organization

0 0.5 1 2 3 4 5 6 Miles

Data Source: InfoUSA 2014

Commercial Employees

Legend
Commercial Employees
- 1 Employee (182)
- ≤2 Employees (429)
- ≤4 Employees (402)
- ≤9 Employees (408)
- ≤300 Employees (386)

N

SW MARTIN HWY
SW WARFIELD BLVD
SW FOX BROWN RD
SW ALLAPATTAH RD
SW CONNERS HWY
SW FARM RD
SW KANNER HWY
SW STUART WEST BLV
FLORIDA TRP
SW SAND AVE
SW MARTIN DOWNS BLV
SW HIGH MEADOW AVE
SW MAPP RD
SW CITRUS BLV
SW 96 TH ST
SW BRIDGE RD
SW PRATT-WHITNEY RD
INTERSTATE 95
NW FEDERAL HWY
NW GREEN RIVER PKWY
NE INDIAN RIVER DR
NE SAVANNAH RD
NE DIXIE HWY
NE OCEAN BLV
SE ST LUCIE BLV
SE MONTEREY RD
SE INDIAN ST
SE WILLOUGHBY BLVD
S KANNER HWY
SE SALERNO RD
SE COVE RD
SE DIXIE HWY
SE SEABRANCH BLV
SE GOMEZ AVE
SE BEACH RD
SE FEDERAL HWY
SE BRIDGE RD
SE ISLAND WAY
Indiantown
Jupiter

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NORTHSTAR GEOMATICS
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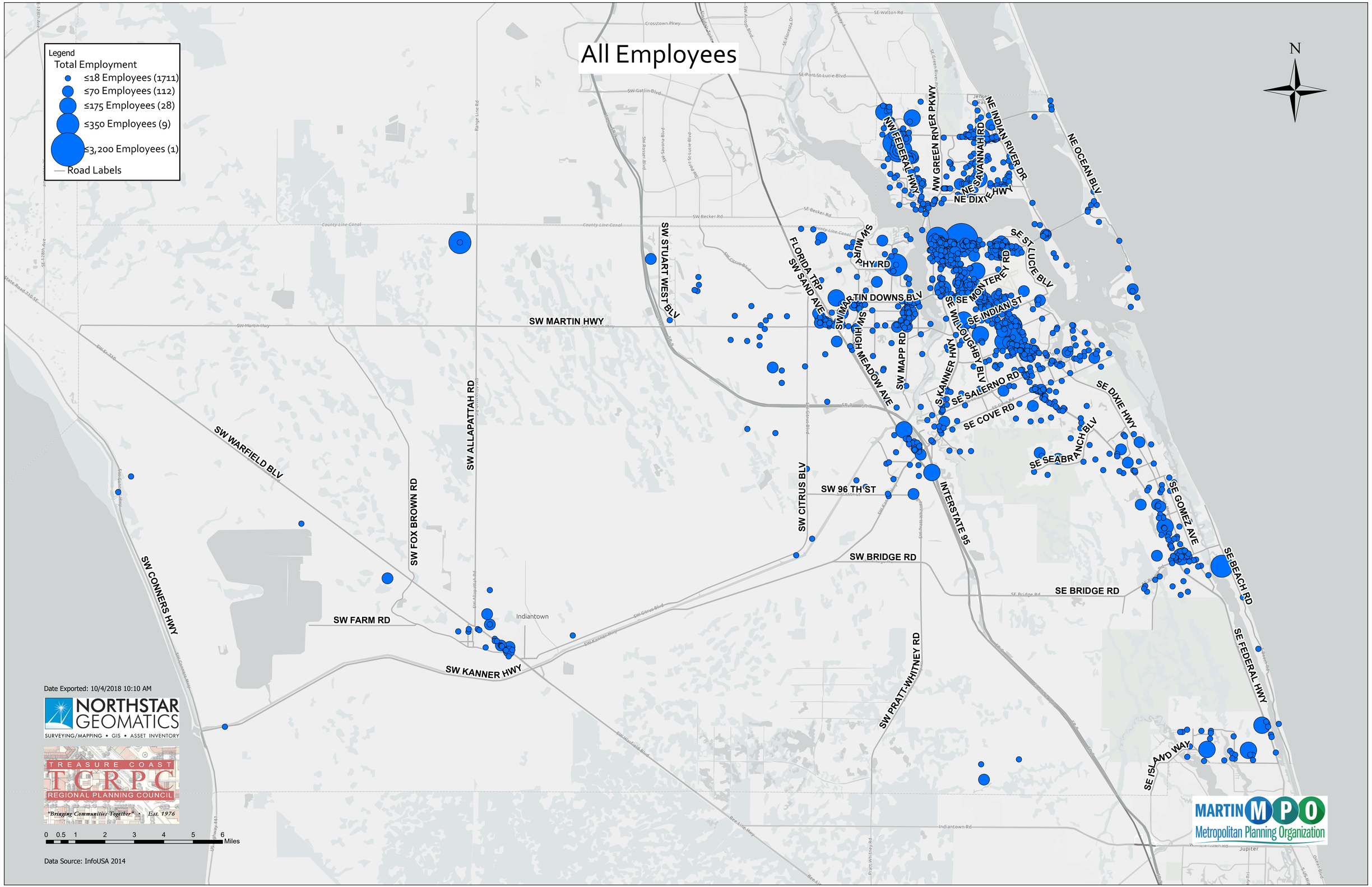
0 0.5 1 2 3 4 5 6 Miles

Data Source: InfoUSA 2014

MARTIN MPO Metropolitan Planning Organization

All Employees



Parks & Recreational Areas

Legend
Parks

N

SW MARTIN HWY
SW WARFIELD BLVD
SW FOX BROWN RD
SW ALLAPATTAH RD
SW CONNERS HWY
SW FARM RD
SW KANNER HWY
SW STUART WEST BLV
FLORIDA TRP
SW SAND AVE
SW MURPHY RD
SW MARTIN DOWNS BLV
SW HIGH MEADOW AVE
SW MAPP RD
S KANNER HWY
SW CITRUS BLV
SW 96 TH ST
SW BRIDGE RD
SW PRATT-WHITNEY RD
INTERSTATE 95
NW FEDERAL HWY
NW GREEN RIVER PKWY
NE SAVANNAH RD
NE INDIAN RIVER DR
NE DIXIE HWY
NE OCEAN BLV
SE ST LUCIE BLV
SE MONTEREY RD
SE INDIAN ST
SE WILLOUGHBY BLV
SE SALERNO RD
SE COVE RD
SE SEABRANCH BLV
SE DIXIE HWY
SE GOMEZ AVE
SE BEACH RD
SE FEDERAL HWY
SE BRIDGE RD
SE ISLAND WAY
Indiantown
Indiantown Rd
Jupiter

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NORTHSTAR GEOMATICS
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TREASURE COAST TCRPC REGIONAL PLANNING COUNCIL
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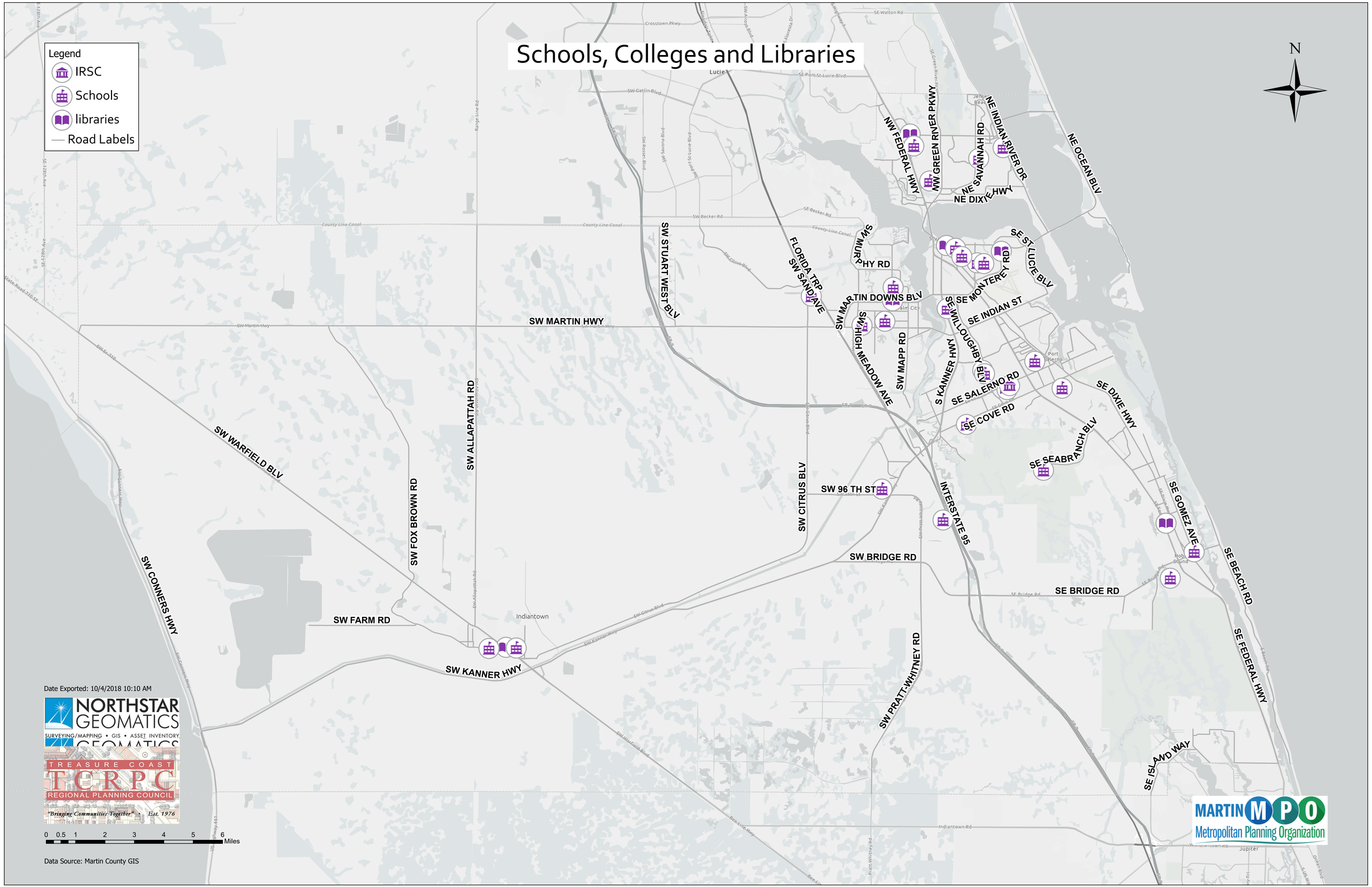
0 0.5 1 2 3 4 5 6 Miles

Data Source: Martin County, City of Stuart, and Florida Department of Environmental Protection

MARTIN MPO Metropolitan Planning Organization

Schools, Colleges and Libraries



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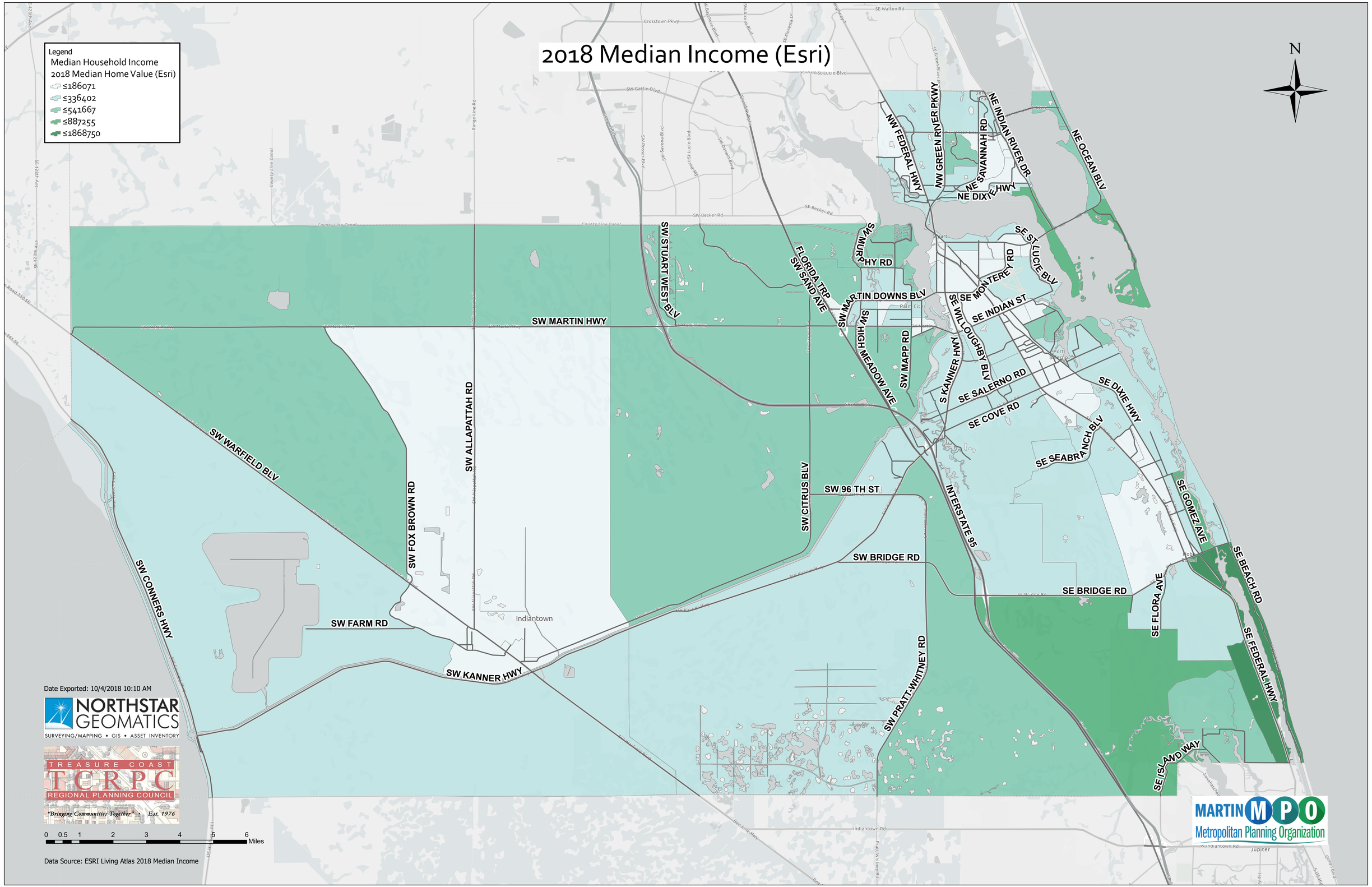
Data Source: Martin County GIS

2018 Median Income (Esri)



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NORTHSTAR GEOMATICS
SURVEYING/MAPPING • GIS • ASSET INVENTORY

TREASURE COAST TCRPC REGIONAL PLANNING COUNCIL
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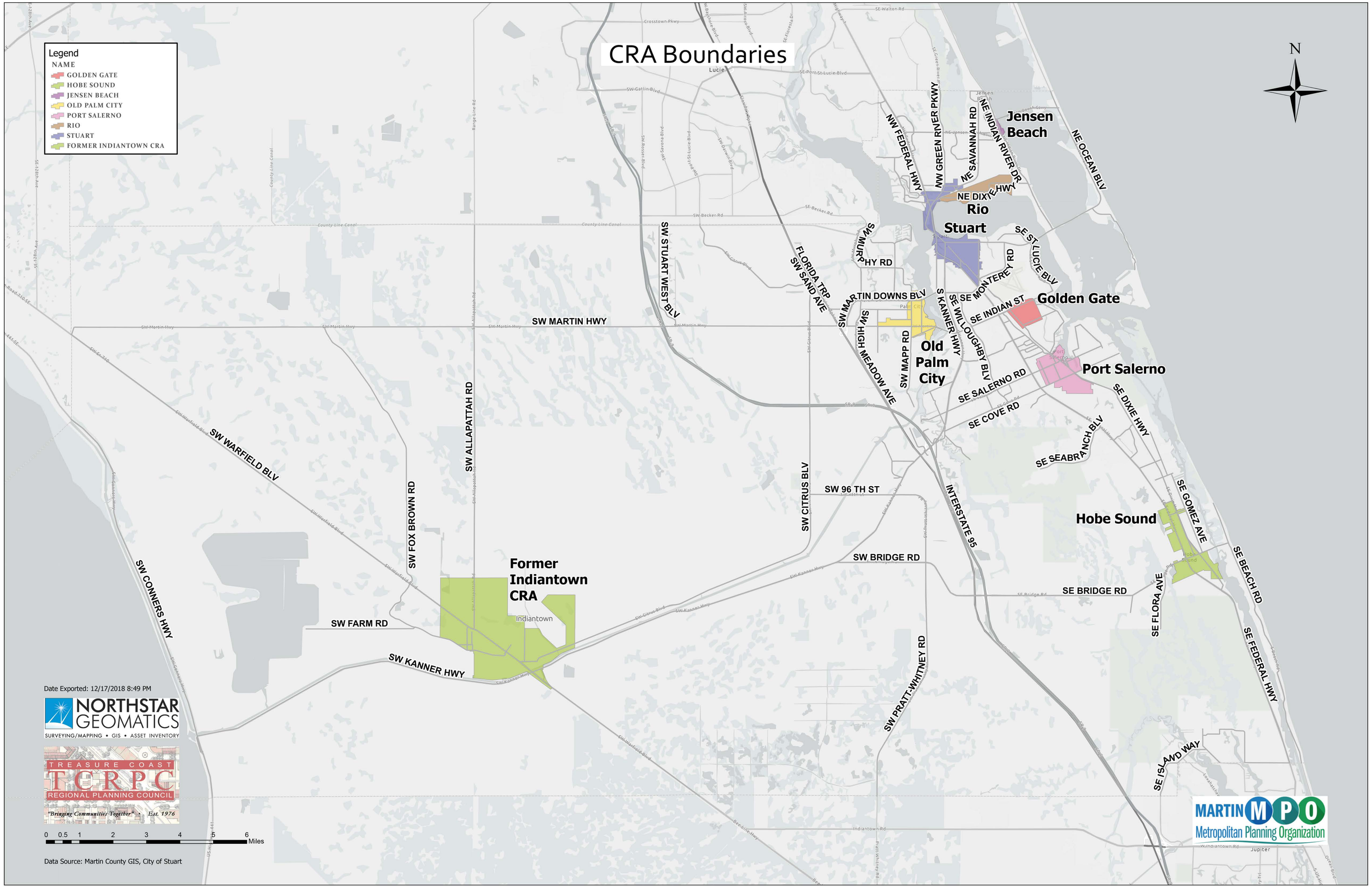
0 0.5 1 2 3 4 5 6 Miles

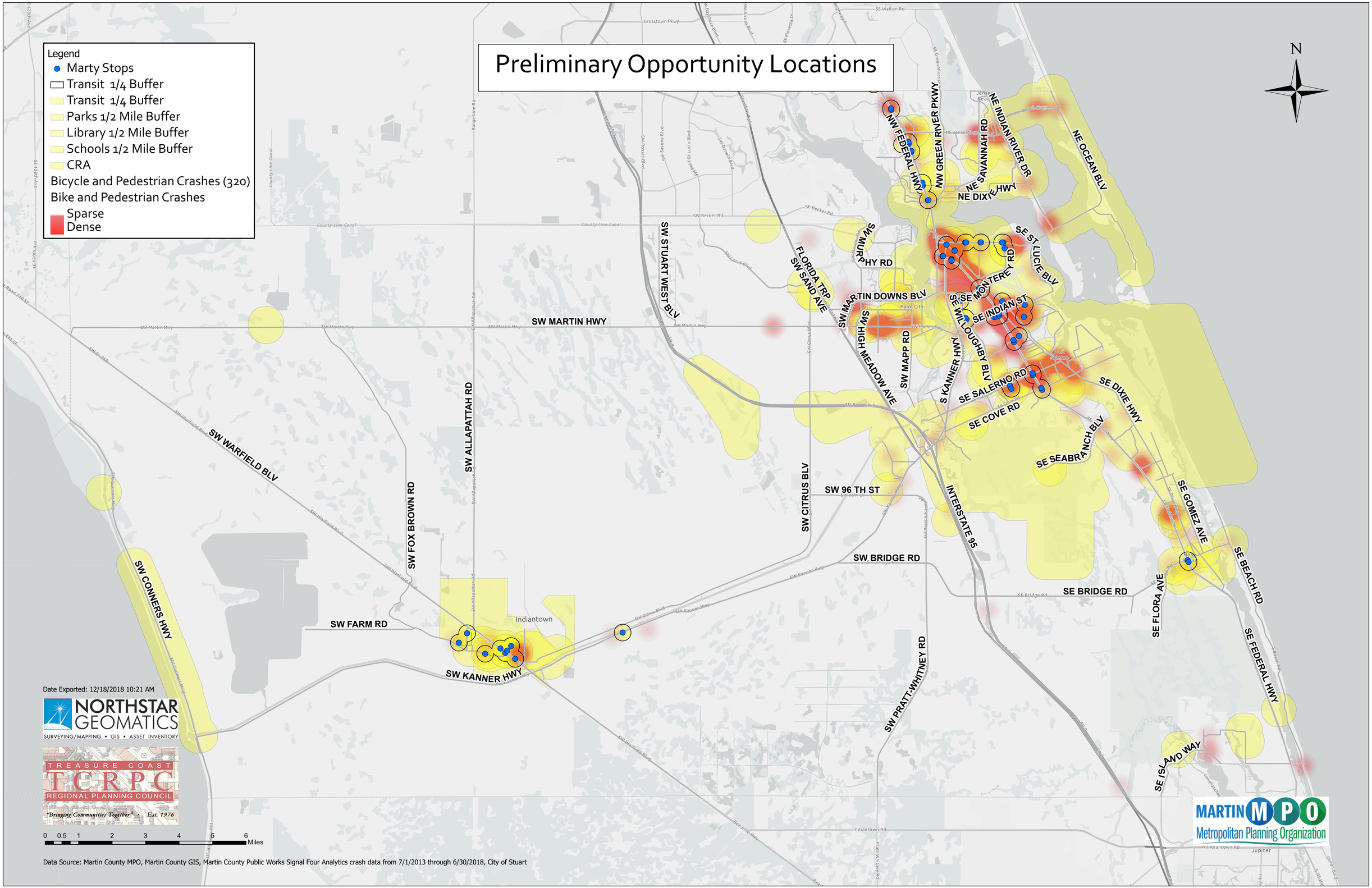
Data Source: ESRI Living Atlas 2018 Median Income

MARTIN MPO Metropolitan Planning Organization

CRA Boundaries

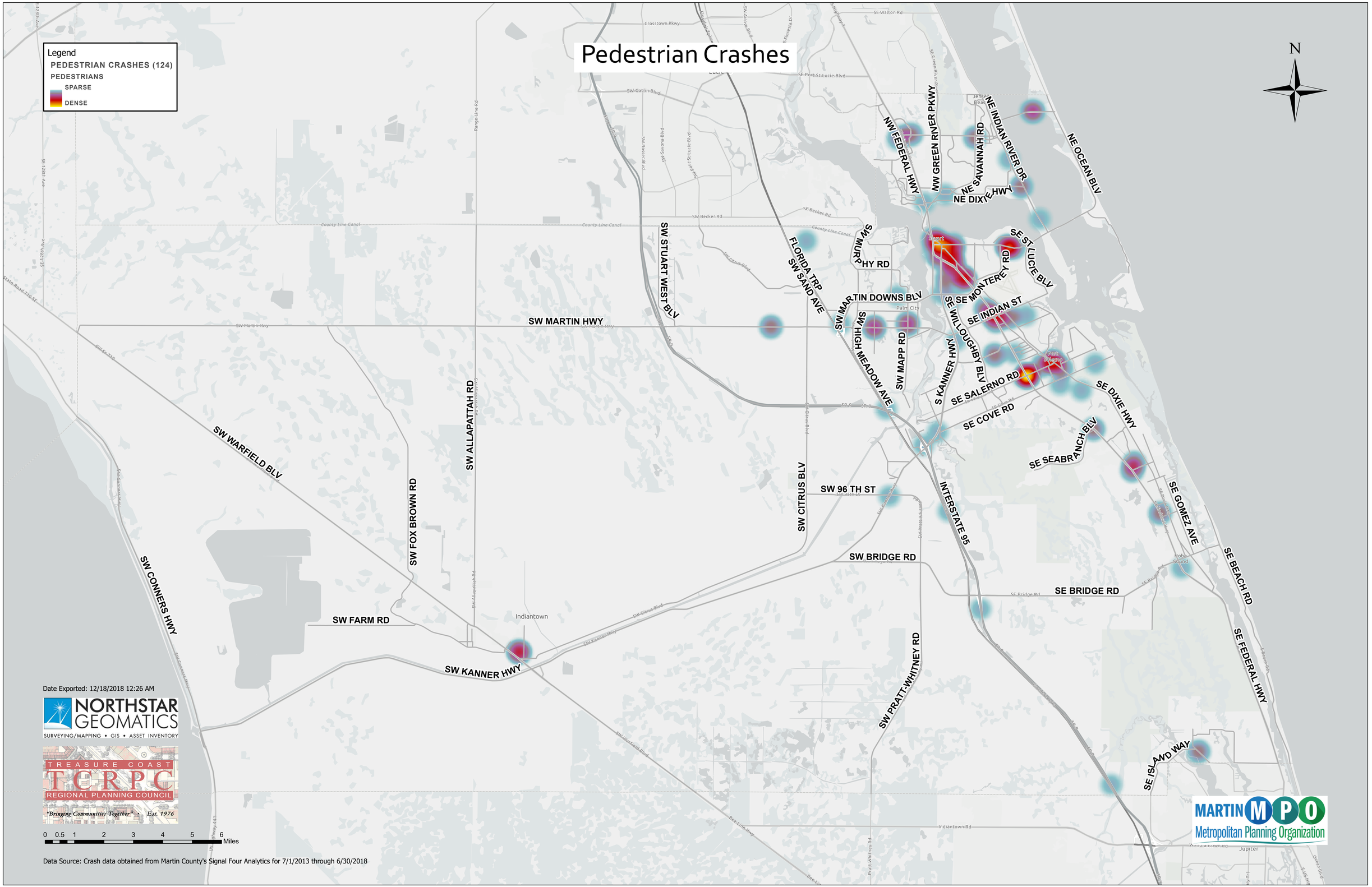


Preliminary Opportunity Locations



Data Source: Martin County MPO, Martin County GIS, Martin County Public Works Signal Four Analytics crash data from 7/1/2013 through 6/30/2018, City of Stuart

Pedestrian Crashes



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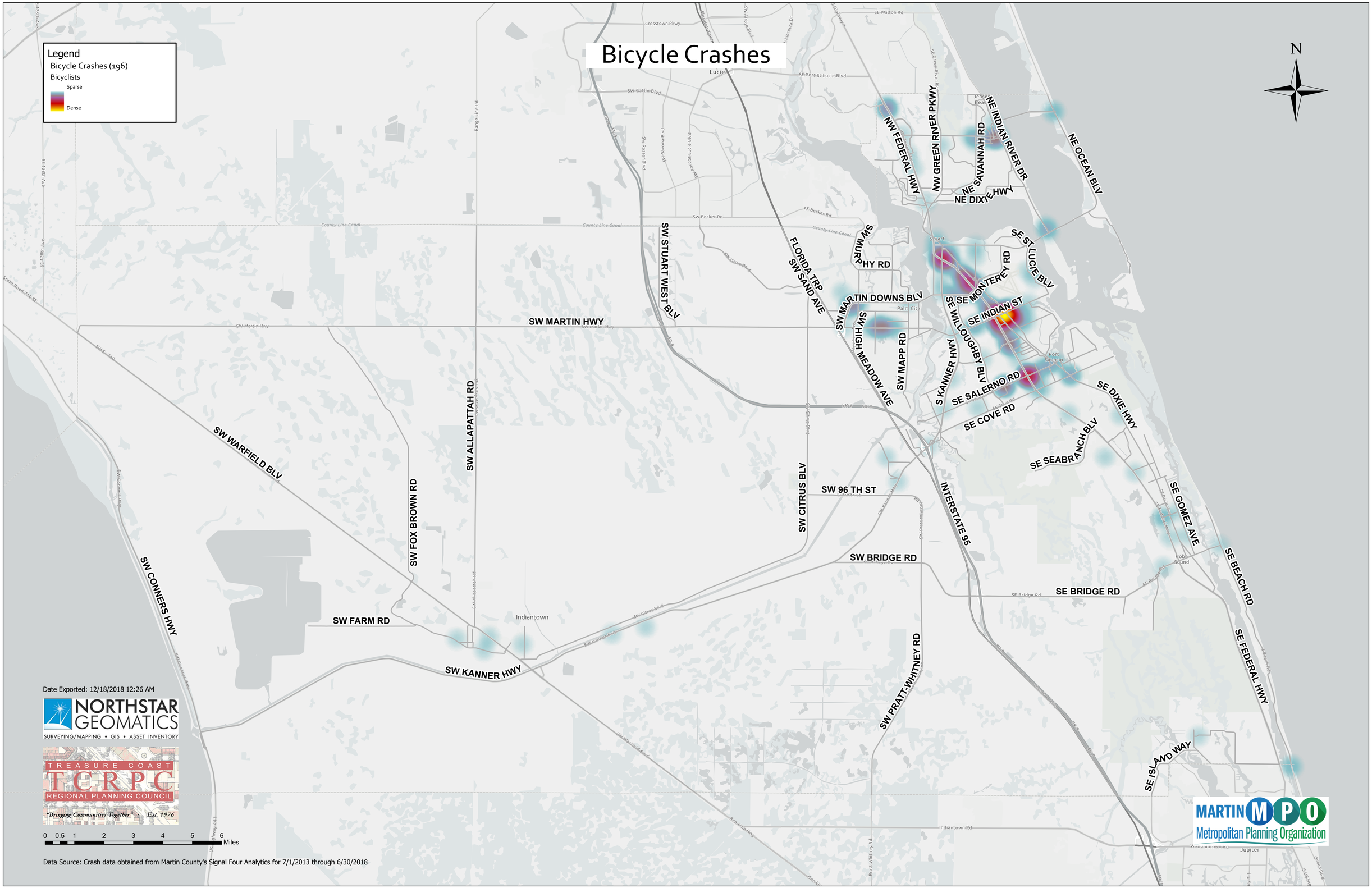
NORTHSTAR GEOMATICS
SURVEYING/MAPPING • GIS • ASSET INVENTORY

TREASURE COAST TCRPC REGIONAL PLANNING COUNCIL
"Bringing Communities Together" • Est. 1976

MARTIN MPO Metropolitan Planning Organization

Data Source: Crash data obtained from Martin County's Signal Four Analytics for 7/1/2013 through 6/30/2018

Bicycle Crashes



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NORTHSTAR GEOMATICS
SURVEYING/MAPPING • GIS • ASSET INVENTORY

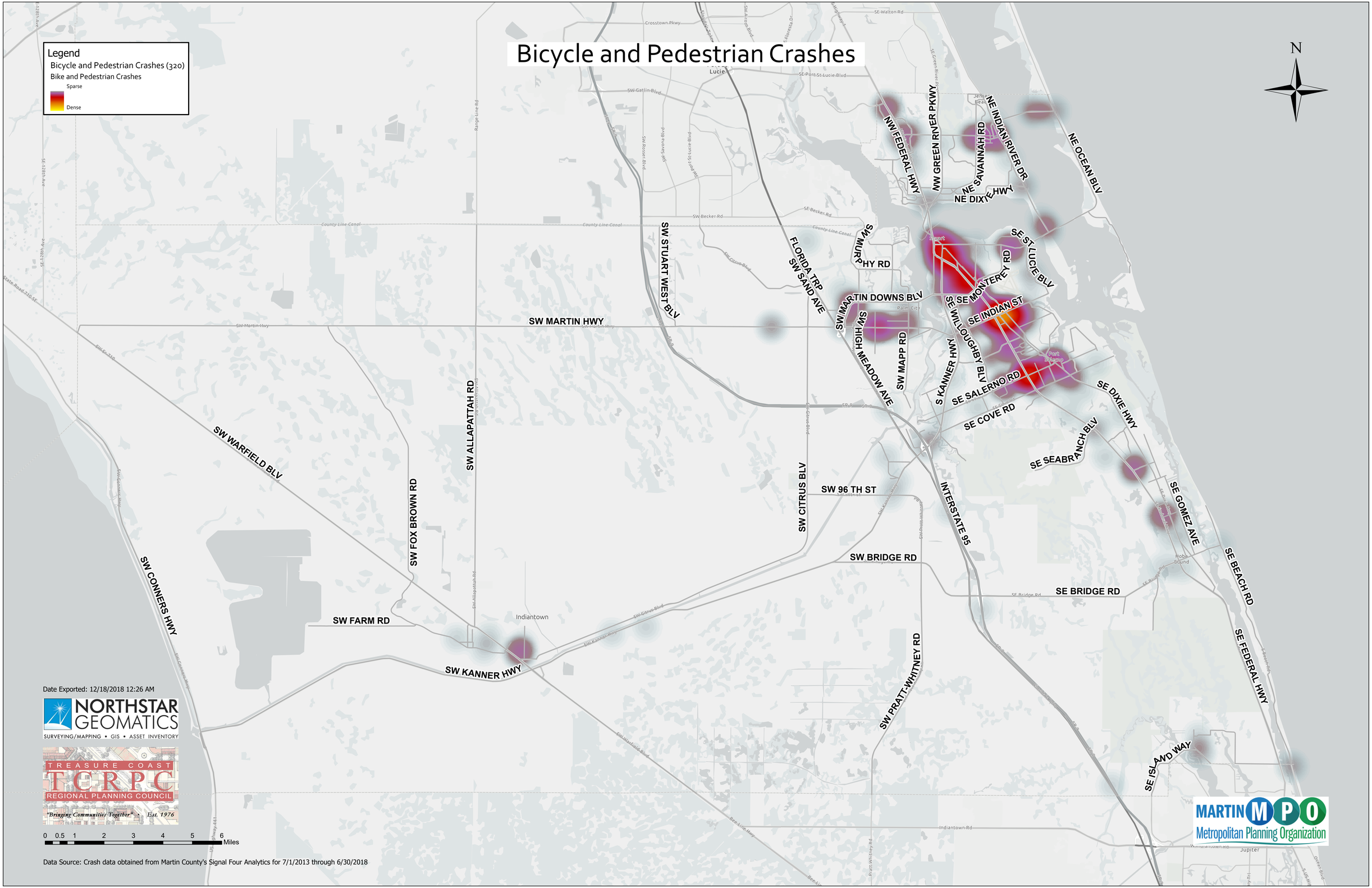
TREASURE COAST TCRPC REGIONAL PLANNING COUNCIL
"Bringing Communities Together" • Est. 1976

0 0.5 1 2 3 4 5 6 Miles

Data Source: Crash data obtained from Martin County's Signal Four Analytics for 7/1/2013 through 6/30/2018

MARTIN MPO Metropolitan Planning Organization

Bicycle and Pedestrian Crashes



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MARTIN MPO Metropolitan Planning Organization

Data Source: Crash data obtained from Martin County's Signal Four Analytics for 7/1/2013 through 6/30/2018

Access to One Vehicle

Legend
Population Vehicle Access (2016 ACS)
At Least 1 Vehicle / Households
- ≤0.08728
- ≤0.1296
- ≤0.1681
- ≤0.2122
- ≤0.4150

N

SW MARTIN HWY
SW WARFIELD BLV
SW FOX BROWN RD
SW ALLAPATTAH RD
SW CONNERS HWY
SW FARM RD
SW KANNER HWY
SW STUART WEST BLV
FLORIDA TRP
SW SAND AVE
SW MURPHY RD
SW MARTIN DOWNS BLV
SW HIGH MEADOW AVE
SW MAPP RD
SW CITRUS BLV
SW 96 TH ST
SW BRIDGE RD
SW PRATT-WHITNEY RD
INTERSTATE 95
NW FEDERAL HWY
NW GREEN RIVER PKWY
NE SAVANNAH RD
NE INDIAN RIVER DR
NE DIXIE HWY
NE OCEAN BLV
SE ST LUCIE BLV
SE INDIAN ST
SE WILLOUGHBY BLV
S KANNER HWY
SE SALERNO RD
SE COVE RD
SE DIXIE HWY
SE SEABRANCH BLV
SE GOMEZ AVE
SE BEACH RD
SE FEDERAL HWY
SE BRIDGE RD
SE ISLAND WAY

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NORTHSTAR GEOMATICS
SURVEYING/MAPPING • GIS • ASSET INVENTORY

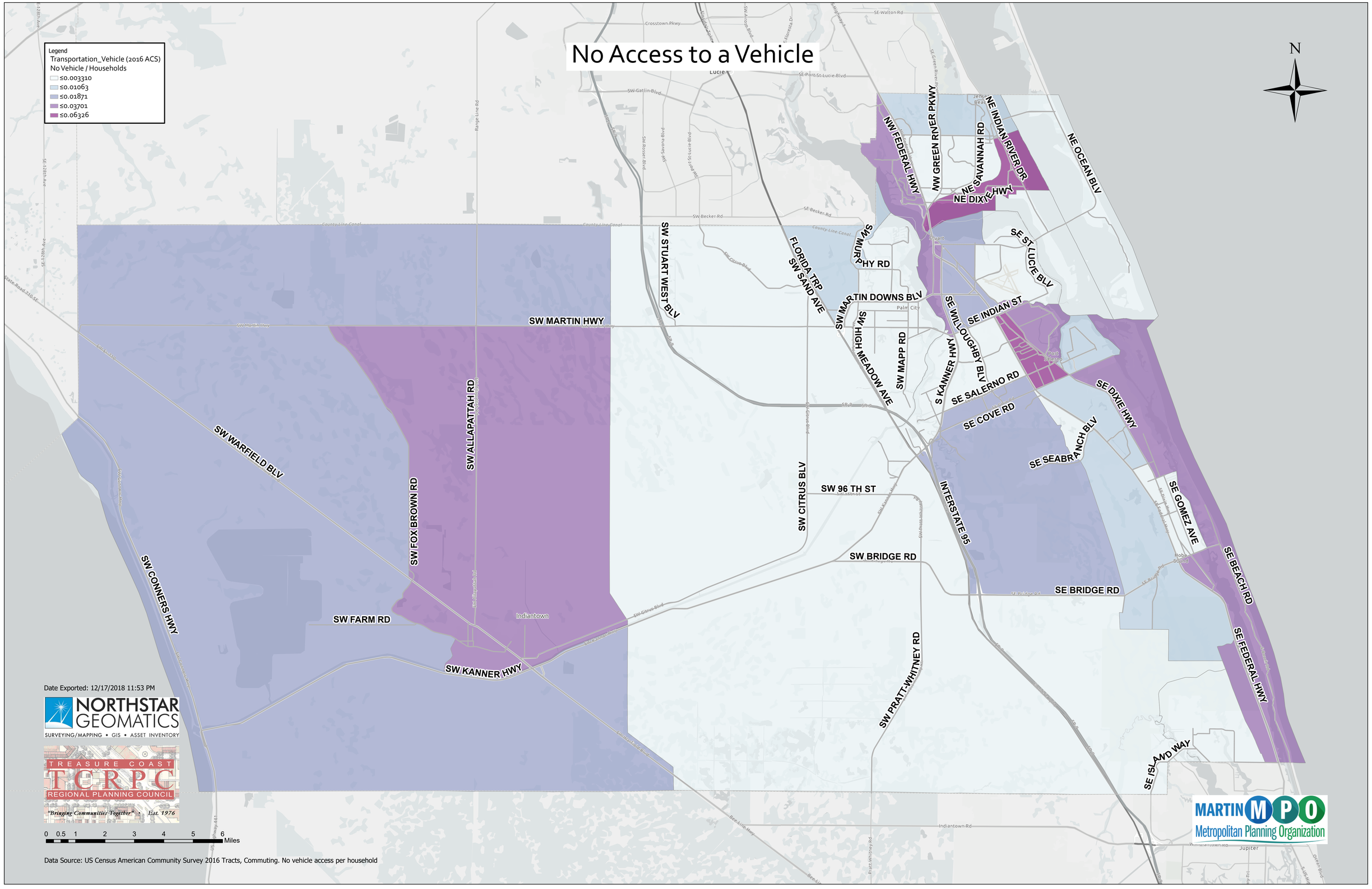
TREASURE COAST TCRPC REGIONAL PLANNING COUNCIL
"Bringing Communities Together" • Est. 1976

0 0.5 1 2 3 4 5 6 Miles

MARTIN MPO Metropolitan Planning Organization

Data Source: US Census American Community Survey 2016 Tracts, Commuting. Access to only one vehicle per household

No Access to a Vehicle



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NORTHSTAR GEOMATICS
SURVEYING/MAPPING • GIS • ASSET INVENTORY

TREASURE COAST TCRPC REGIONAL PLANNING COUNCIL
"Bringing Communities Together" • Est. 1976

MARTIN MPO Metropolitan Planning Organization

Data Source: US Census American Community Survey 2016 Tracts, Commuting. No vehicle access per household

Planned Resurfacing and Bridge Work

Legend
RRR
Project Type
- Bridge
- Capacity
- Resurfacing
- Safety

N

SW MARTIN HWY
SW STUART WEST BLV
SW ALLAPATTAH RD
SW FOX BROWN RD
SW WARFIELD BLV
SW CONNERS HWY
SW FARM RD
SW KANNER HWY
SW BRIDGE RD
SW 96 TH ST
SW CITRUS BLV
SW PRATT-WHITNEY RD
INTERSTATE 95
FLORIDA TRP
SW SAND AVE
SW MULBERRY RD
SW MARTIN DOWNS BLV
SW HIGH MEADOW AVE
SW MAPP RD
S KANNER HWY
SE WILLOUGHBY BLV
SE MONTEREY RD
SE ST LUCIE BLV
SE INDIAN ST
SE SALERNO RD
SE COVE RD
SE DIXIE HWY
SE SEABRANCH BLV
SE GOMEZ AVE
SE BEACH RD
SE FEDERAL HWY
SE ISLAND WAY
SE FLORA AVE
NW FEDERAL HWY
NW GREEN RIVER PKWY
NE SAVANNAH RD
NE INDIAN RIVER DR
NE OCEAN BLV
NE DIXIE HWY

Indiantown
Palm City
Port Salerno
Hobe Sound
Jupiter
Stuart

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NORTHSTAR GEOMATICS
SURVEYING/MAPPING • GIS • ASSET INVENTORY

TREASURE COAST TCRPC REGIONAL PLANNING COUNCIL
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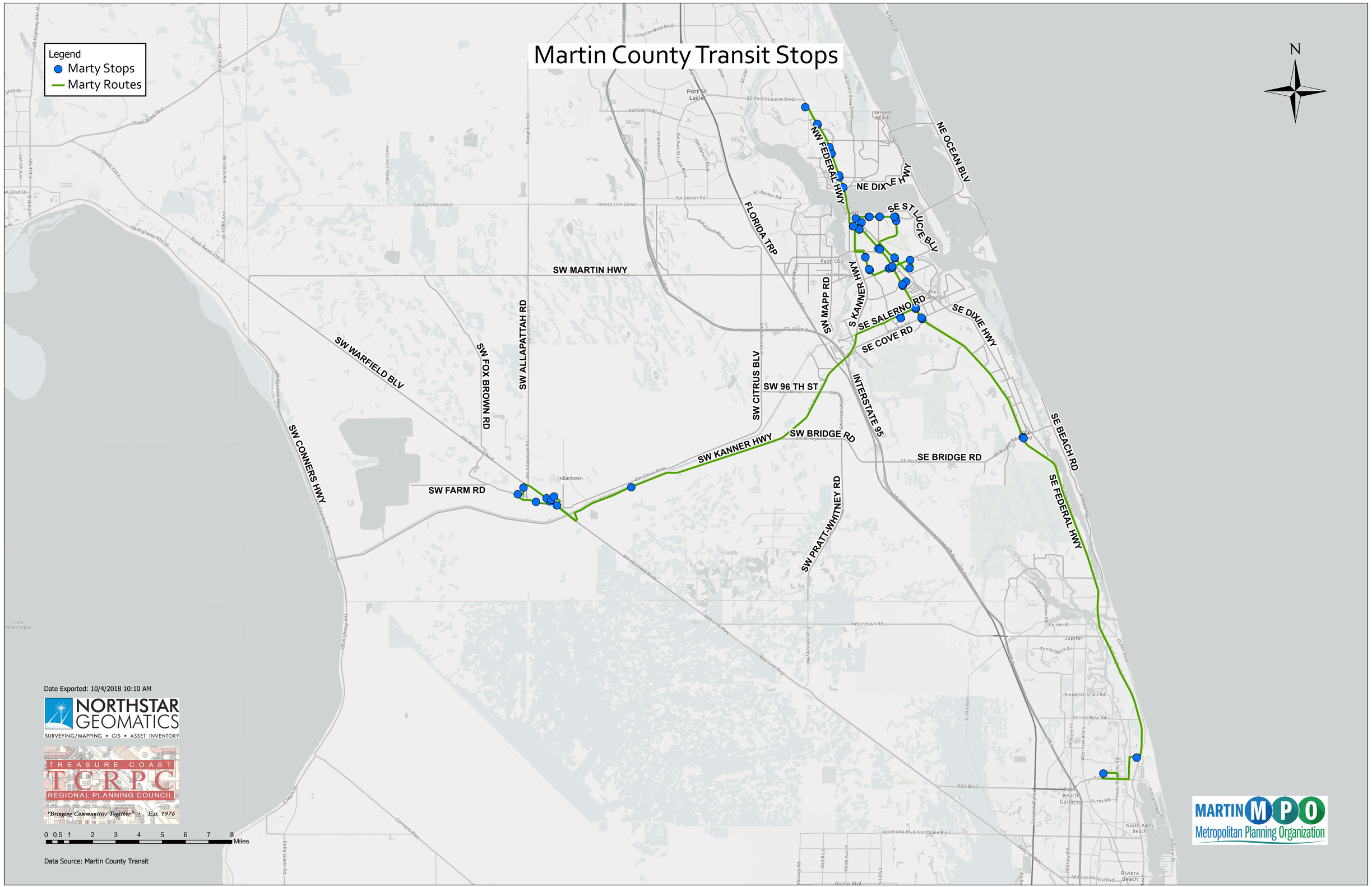
0 0.5 1 2 3 4 5 6 Miles

Data Source: Martin County MPO FY2018/19 - 2022/23 Transportation Improvement Program

MARTIN MPO Metropolitan Planning Organization

Martin County Transit Stops



Martin County School Bus Stops

Legend
- School Bus Stops 20182019

N

SW MARTIN HWY
SW STUART WEST BLV
SW ALLAPATTAH RD
SW WARFIELD BLV
SW FOX BROWN RD
SW CONNERS HWY
SW FARM RD
SW KANNER HWY
SW BRIDGE RD
SW PRATT-WHITNEY RD
SW CITRUS BLV
SW 96 TH ST
INTERSTATE 95
FLORIDA TRP
SW SAND AVE
SW MURPHY RD
SW MARTIN DOWNS BLV
SW HIGH MEADOW AVE
SW MAPP RD
S KANNER HWY
SW WILLOUGHBY BLV
NW FEDERAL HWY
NW GREEN RIVER PKWY
NE SAVANNAH RD
NE INDIAN RIVER DR
NE DIXIE HWY
NE OCEAN BLV
SE ST LUCIE BLV
SE MONTEREY RD
SE INDIAN ST
SE SALERNO RD
SE COVE RD
SE DIXIE HWY
SE SEABRANCH BLV
SE GOMEZ AVE
SE BEACH RD
SE FEDERAL HWY
SE FLORA AVE
SE BRIDGE RD
SE ISLAND WAY
Indiantown
Crosstown Pkwy
SE Walton Rd
SW Gatlin Blvd
SW Becker Rd
SE Becker Rd
County Line Canal
Range Line Rd
SE 128th Ave
SW Martin Hwy
SW Warfield Blvd
SW Citrus Blvd
Indiantown Rd
Bee Line Hwy
Pratt Whitney Rd
Jupiter

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NORTHSTAR GEOMATICS
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TREASURE COAST TCRPC REGIONAL PLANNING COUNCIL
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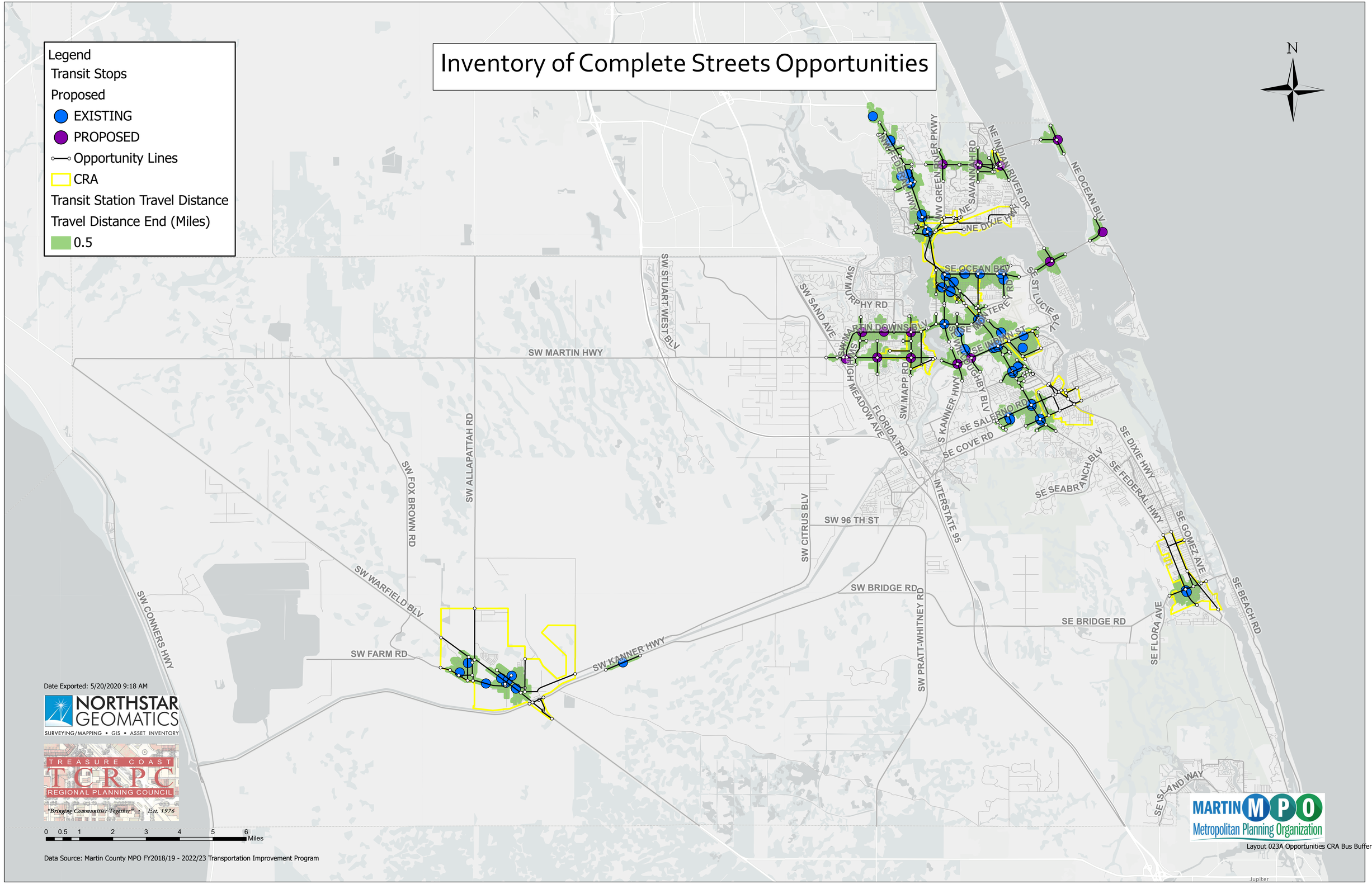
MARTIN MPO Metropolitan Planning Organization

0 0.5 1 2 3 4 5 6 Miles

Data Source: Martin County School District

Inventory of Complete Streets Opportunities



Martin MPO Complete Streets Project: Access to Transit
Top-Ranked Opportunity Segments

Legend
Opportunities Segments
Total
- 14-15 Points
- 12-13 Points
- 11 Points
- 0-10 Points

N

SW MARTIN HWY
SW WARFIELD BLV
SW FOX BROWN RD
SW ALLAPATTAH RD
SW CONNERS HWY
SW FARM RD
SW KANNER HWY
SW STUART WEST BLV
SW SAND AVE
SW MURPHY RD
SW MARTIN DOWNS BLV
SW HIGH MEADOW AVE
SW MAPP RD
SW CITRUS BLV
SW 96 TH ST
SW BRIDGE RD
SW PRATT-WHITNEY RD
INTERSTATE 95
FLORIDA TRP
NW FEDERAL HWY
NW GREEN RIVER PKWY
NE SAVANNAH RD
NE INDIAN RIVER DR
NE OCEAN BLV
NE DIXIE HWY
SE ST LUCIE BLV
SE MONTEREY RD
SE INDIAN ST
SE WILLOUGHBY BLV
S KANNER HWY
SE SALERNO RD
SE COVE RD
SE SEABRANCH BLV
SE DIXIE HWY
SE GOMEZ AVE
SE FLORA AVE
SE BEACH RD
SE FEDERAL HWY
SE BRIDGE RD
SE ISLAND WAY

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NORTHSTAR GEOMATICS
SURVEYING/MAPPING • GIS • ASSET INVENTORY

TREASURE COAST TCRPC REGIONAL PLANNING COUNCIL
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0 0.5 1 2 3 4 5 6 Miles

MARTIN MPO Metropolitan Planning Organization

Layout 041 MPO Top-Ranked Opportunity Segments