FDOT

DISTRICT ONE

ACTIVE TRANSPORTATION PLAN

JANUARY 2022


FDOT

CONTENTS

Winter Haven, Florida

01

BUILDING A SAFE & COMPLETE TRANSPORTATION NETWORK

INTRODUCTION

An active transportation network invites travel by walking, biking, and transit. Foundational to thriving and sustainable communities, a safe and comfortable active transportation network depends on a strong State Highway System (SHS), which connects neighborhoods, downtowns, commercial centers, and major transit routes.

A resource for local municipalities, this active transportation plan guides investments in bicycle and pedestrian facilities on the Florida Department of Transportation (FDOT) District One SHS. By directing investments on the SHS and integrating recommendations from local and regional plans, this plan will help improve and expand multimodal transportation choices, connectivity, and safety throughout District One's twelve counties.

Local partners can also use this information to update their long range transportation plans or evaluate planned and programmed projects to include needed bicycle and pedestrian infrastructure.

Remember that transit users are ALSO pedestrians at some point during their journey!

DISTRICT ONE COUNTIES

- Charlotte
- Collier
- DeSoto
- Glades
- Hardee
- Hendry
- Highlands
- Lee
- Manatee
- Okeechobee
- Polk
- Sarasota

Winter Haven, Florida

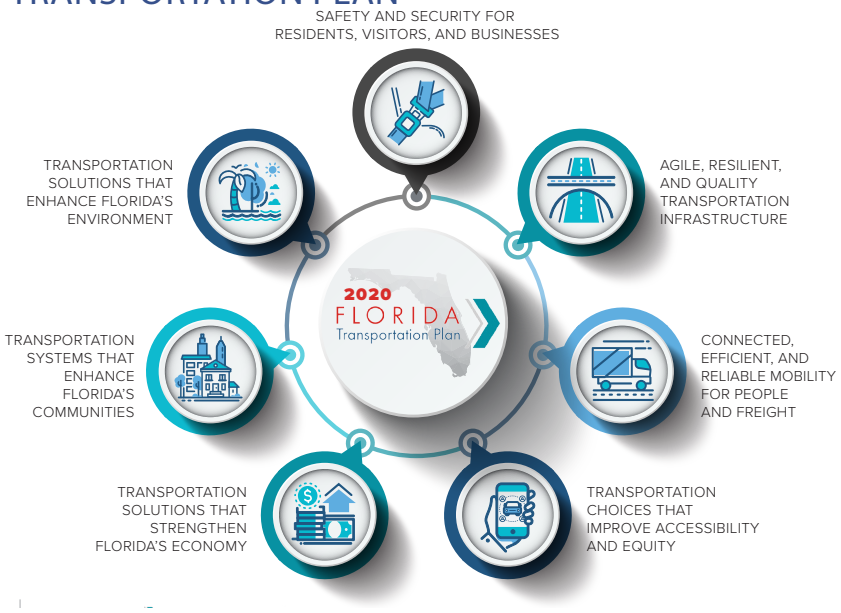
ALIGNING WITH FDOT PROGRAMS

The Florida Transportation Plan aims to create a state transportation network that is safe, secure, agile, resilient, connected, efficient, and reliable. Together, these features provide Florida with affordable and convenient transportation choices, and they strengthen the state's economy, communities, and environment.

FDOT plans and programs support the four Es of traffic safety: engineering, education, enforcement, and emergency response. This active transportation plan provides key engineering support for District One, and its recommendations along with the Bicycle and Pedestrian Facility Decision Tree for District One Projects (pages 64–65) will guide FDOT's efforts to provide universal accessibility to all Floridians.

This Active Transportation Plan aligns with statewide initiatives to provide safe and accessible multimodal transportation for all.

2020 FLORIDA TRANSPORTATION PLAN



FDOT VITAL FEW

Set by FDOT Secretary Kevin J. Thibault, Florida's Vital Few identify the department's top priorities - Improve Safety, Enhance Mobility, and Inspire Innovation.

Collaboratively, the Vital Few Safety Team identified three primary areas of focus.

- LANE DEPARTURES
- INTERSECTIONS
- PEDESTRIANS AND BICYCLISTS

Above all, an active transportation network is safe.

By designing safe roadways for all people who walk and bike, this active transportation plan will help FDOT achieve its vision of a fatality-free transportation network, Target Zero. To recommend safe and equitable facilities, this plan evaluates characteristics leading to traffic violence, categorizes emphasis areas, and identifies engineering tools to mitigate potential factors for people walking and biking.

SAFE SYSTEM APPROACH

This plan is built on Florida's 2021–2025 Strategic Highway Safety Plan (SHSP), which introduced the safe system approach to eliminate fatalities and serious injuries on public roads. Promoted by the Federal Highway Administration, the safe system approach establishes new priorities and strategies to achieve systemwide safety.

The Pedestrian and Bicycle Strategic Safety Plan (PBSSP) created a structure for identifying problem areas, implementing countermeasures, and evaluating outcomes and has served as the cornerstone of Florida's focus on improving the safety, mobility, and accessibility of pedestrians and bicyclists for the past four years. This plan addresses at-risk populations and provides guidance for equitable distribution of resources by prioritizing areas with higher representation of traffic crashes resulting in serious or fatal injuries to pedestrians and bicyclists.

ALERT TODAY ALIVE TOMORROW

Home to multiple programs, Alert Today Alive Tomorrow provides educational media and signage to encourage safe behavior and reduce the occurrence and severity of crashes. The campaign's One Foolish Act Program targets dangerous and risky behaviors that cause crashes. Alert Tonight Alive Tomorrow extends the Alert Today brand to alert the public to dangers of nighttime crashes, which are a significant problem for District One.

WHITE CANE SAFETY DAY & STOP ON RED

White Cane Safety Day raises awareness of Florida's traffic regulations to assist blind pedestrians, and Stop On Red draws attention to Florida's laws for both motorists and non-motorists on stopping at red lights at intersections.

TARGET ZERO
FATALITIES & SERIOUS INJURIES

SAFE SYSTEM APPROACH

The Safe System Approach evaluates and prevents traffic violence using:

- Safe road users
- Safe vehicles
- Safe roadways
- Safe speeds
- Post-crash care

Evaluates crashes by:

- Roadway
- Road user
- Demographics
- Model of travel
- User behavior

Expands strategies beyond the 4Es of traffic safety: Engineering, Education, Enforcement, and Emergency response.

And adds the 4Is: Information Intelligence, Innovation, Insight into Communities, and Investments and Policies.

The SHSP develops 12 emphasis areas split into three categories: roadways, road users, and user behavior.

COMPLETE STREETS

Since 2014, FDOT has had a Statewide Complete Streets Policy that proactively supports the planning, design, construction, reconstruction, and operation of facilities to accommodate all ages, abilities, and modes. By allocating space for pedestrians, bicyclists, transit riders, motorists, and freight handlers, the Complete Streets Policy calls for a context-sensitive process that promotes safety, quality of life, and economic development.

54%
of fatal & severe injury bicycle and pedestrian crashes
HAPPEN AT NIGHT[1]

The FDOT Design Manual (FDM) guides investment in more context-sensitive facilities by helping designers put the right street in the right place.

According to the FDM, FDOT districts should ensure:

- FDOT bicycle facilities integrate with local and regional bicycle transportation systems (FDM 223.1)
- Complex facility types are used efficiently and cost-effectively (FDM 223.1 and 223.2.3)

This active transportation plan combines FDM criteria with crash data and facility assessment to identify District One's most critical needs for people who walk and bike. Designed to work in conjunction with state and districtwide safety initiatives, this active transportation plan provides the next step for making Florida's roads safer and more enjoyable for everyone—whichever mode they choose.

THE PLANNING STUDIO

A District One Culture Change

Linking transportation to land use planning and decision-making leads to more thoughtful transportation investments. Under the direction of the District One Secretary L.K. Nandam, the District's Planning Studio serves as the first step in planning and development and ensures that transportation projects and strategies align closely with and support community visions. The Planning Studio's goal is to partner with and support local communities to better understand their needs and opportunities through meaningful and early engagement. Important resources for aligning local vision with roadway design, corridor vision plans, and this active transportation plan will inform transportation goals and objectives and provide a strong foundation for identifying community-supportive transportation strategies.

This active transportation plan combines FDM criteria with crash data and facility assessment to identify District One's most critical needs for people who walk and bike.

[1] Analysis of 2015–2019 dataset from FDOT's Crash Analysis Reporting System (CARS) and Signal Four Analytics.


NO
BICYCLE
RIDING
ON
SIDEWALK

02

2021 DISTRICT ONE WALKING & BIKING SURVEY

THE 2021 DISTRICT ONE WALKING & BIKING SURVEY

Learning about people who walk and bike in this community

About the Survey

FDOT District One surveyed residents to understand their walking and biking transportation needs and interests. Resident's first-hand travel experiences help the District plan a safer and more connected transportation network.

Hosted by SurveyMonkey, English and Spanish versions of the survey were available online from June 6–August 17, 2021. FDOT posted the survey to social media sites, and many other groups distributed the survey, including

- 17 local governments
- 11 bicycle organizations
- 3 transit agencies
- 3 colleges/universities
- 3 school districts

In total, there were 2,024 responses for the English survey and 9 responses for the Spanish survey. Key takeaways from the survey are highlighted below, and appendix H provides the survey's full results.

37 GROUPS DISTRIBUTED THE SURVEY

2,033 TOTAL RESPONSES

WALKING SAFETY & COMFORT

17% of survey respondents do not feel safe and comfortable walking in their community, and 22% of respondents said they lacked nearby sidewalks. Transit users are pedestrians at some point during their journey; but, in District One, 24% of transit riders are uncomfortable walking in their community.

22% OF RESPONDENTS LACKED NEARBY SIDEWALKS

People who feel unsafe walking in their community.

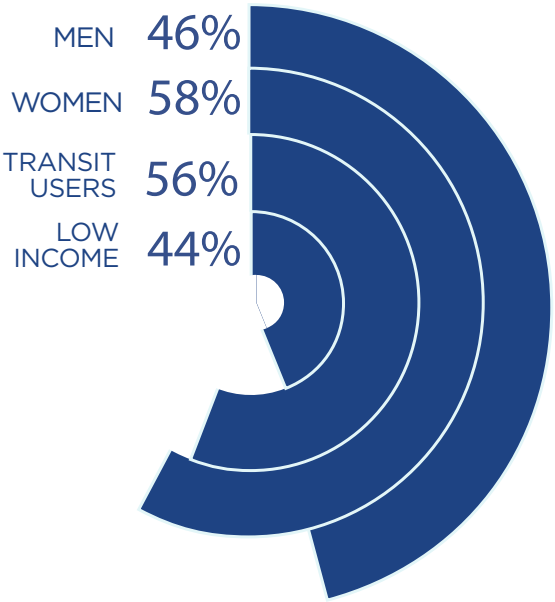
BIKING SAFETY & COMFORT

Survey respondents valued cycling for recreation and health reasons, and the survey revealed District One residents largely prefer to ride separated bicycle facilities. The survey also indicated that transit users ride their bikes to complete daily trips—like going to the grocery store, commuting, riding to bars and restaurants, and visiting friends—at a higher rate than other survey groups.

78% of respondents would feel more comfortable in a bicycle facility physically separated from vehicle traffic. Only 56% of respondents said they would ride in a bicycle lane. Only 22% are comfortable riding on a shoulder, and only 8% feel comfortable riding in mixed traffic. These numbers are likely even lower in the general population due to the overrepresentation of survey respondents who participate in bicycle clubs.

Critical gaps in comfort also exist for biking in District One, especially among, women, transit users, and residents with low incomes. In this survey, 46% of men, 58% of women, 56% of transit users, and 44% of low-income residents responded that they do not feel safe and comfortable biking in their community. Of all survey groups, transit users are least likely to feel safe while biking in their communities.

People who do not feel safe and comfortable biking in their community.



Transit users are less likely than people who do not ride transit to feel safe walking or biking in their communities.

Survey Question: I'm comfortable riding a bicycle on (select all that apply)

96%
A TRAIL

51%
A SIDEWALK

78%
BICYCLE FACILITY PHYSICALLY SEPARATED FROM VEHICLE TRAFFIC

21%
A ROADWAY SHOULDER

56%
BUFFERED BICYCLE LANE

8%
TRAVEL LANE MIXED WITH TRAFFIC

WHAT DISCOURAGES WALKING & BIKING?

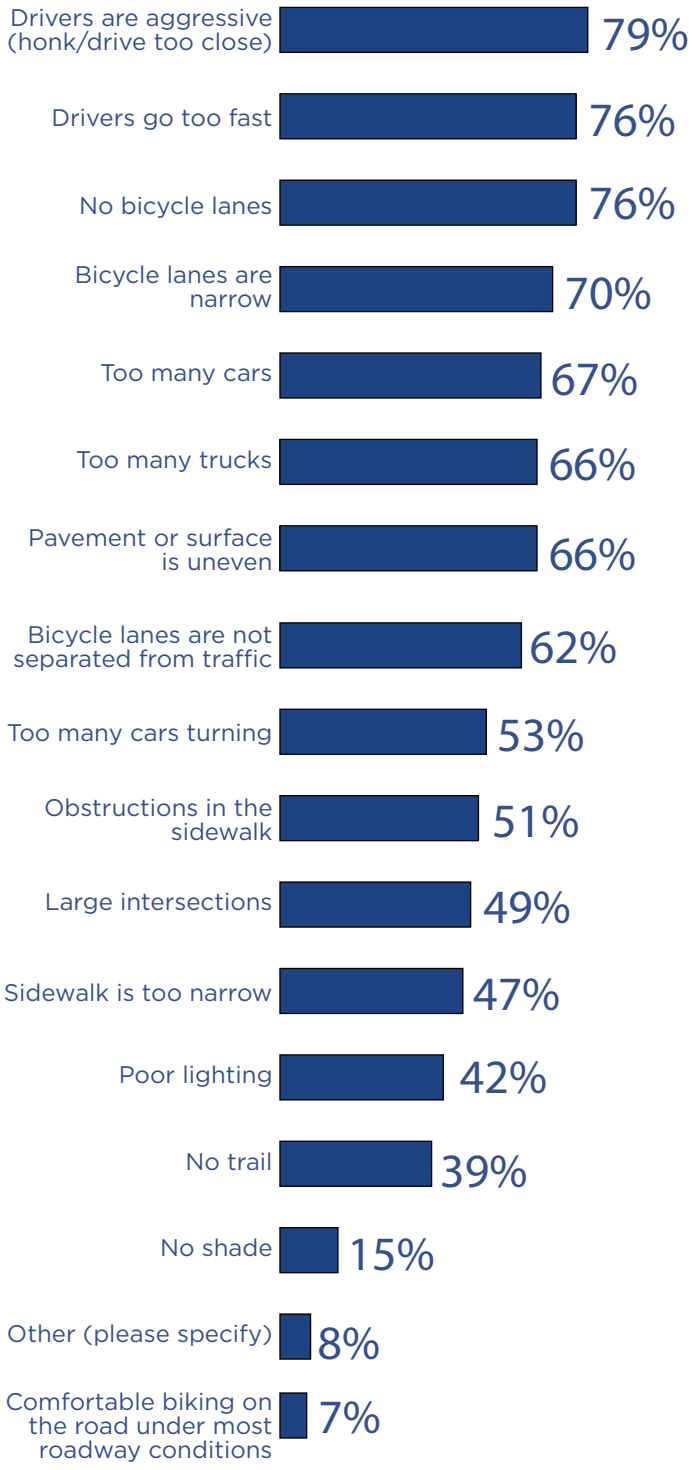
DRIVER BEHAVIOR & A LACK OF BICYCLE FACILITIES

When it comes to comfort cycling on a road, respondents reported concerns with both motor-vehicle driver behavior and bicycle infrastructure. Of the 137 comments provided for this question's write-in option, 42 are about driver behavior and 40 are about bicycle infrastructure. Building appropriate bicycle facilities can help support safer, more connected travel for everyone. Further, managing driver behavior through road design can help create a more favorable environment for people walking and biking.

> It is usually the lack of respect from drivers on the road that scares me the most. Throwing things at us, screaming to get off the road, swerving at us. Out of all of the counties, Lee seems to have the most aggressive drivers.

> The bike lanes should be larger and separated from vehicular traffic with a concrete barrier on roads with 40 mph or more.

Survey Question: I do not feel comfortable biking when.



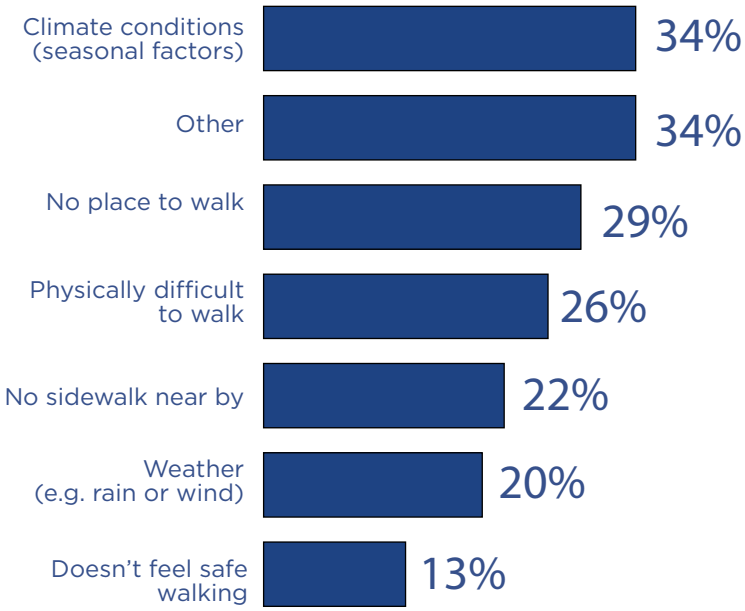
MISSING INFRASTRUCTURE & DISTANCE

Infrastructure plays an important role in pedestrian comfort. The built form and density were also significant reasons why respondents reported not wanting to walk to destinations. When asked why they did not walk to destinations, respondents wrote in 35 comments; 9 of these were about density and the built environment.

> "Nothing is within reasonable walking distance of my home."

NEARLY
30%
OF RESPONDENTS REPORTED THEY HAD NO PLACES FOR THEM TO WALK.

Survey Question: I do not feel comfortable walking along a road when.



EQUITY

WOMEN

While 69% of men reported feeling comfortable biking in a buffered bicycle lane, only 48% of women feel comfortable riding in a buffered bike lane. Women reported a significant difference in comfort levels as compared to men for facilities with less vehicle separation. By ensuring bicycle facilities support safe and comfortable biking for all genders, District One can foster a more equitable biking environment.

Women's responses when asked "I'm comfortable riding a bicycle on"

Trail: 96%

Separated bicycle lane: 74%

Buffered bicycle lane: 48%

Sidewalk: 56%

Roadway shoulder: 12%

Travel lane with vehicles: 4%

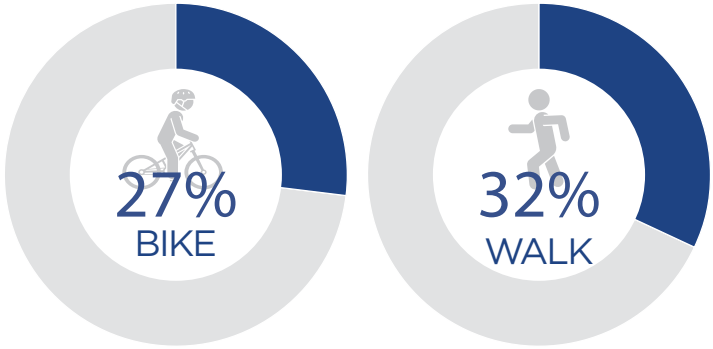
RESIDENTS WITH LOW INCOMES

Of the survey respondents, 4% reported a household income of less than $20,000 a year. Of these low-income District One residents, 32% walk and 27% bike because there are few or no other transportation options available.

TRANSIT USERS

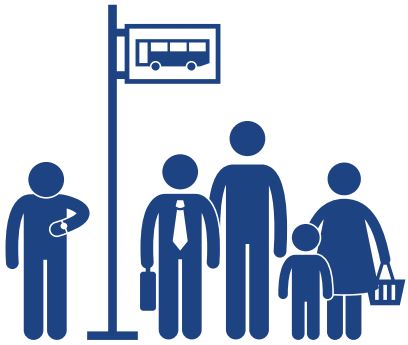
Transit riders are more likely to walk and ride their bikes to move around their community.

Percent of low-income survey respondents that report walking or biking because there are no or few other means available to them



MOVING FORWARD

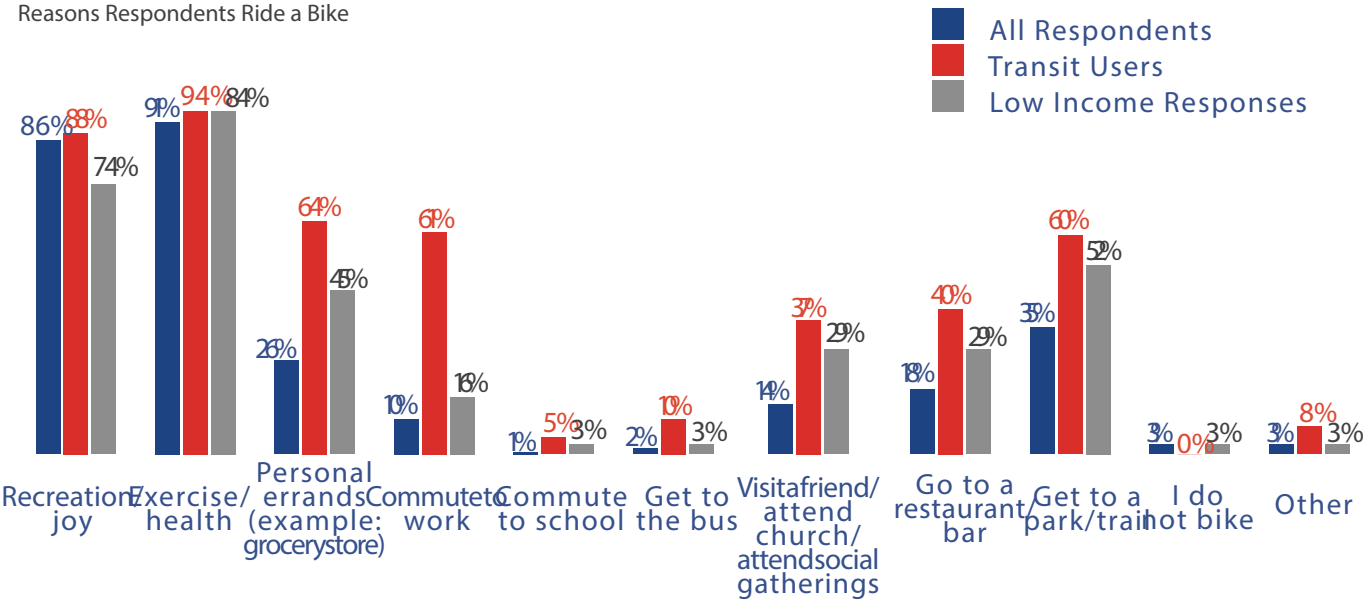
This survey measured how people in District One feel about traveling in their community across all modes. Ultimately, survey responses identified that District One has an opportunity to create safer facilities for vulnerable users by improving and building appropriate walking and biking facilities. Safer and better-connected facilities can also help encourage more District One residents to choose active transportation modes.



61% of transit users BIKE AS PART OF THEIR COMMUTE

64% of transit users BIKE TO COMPLETE PERSONAL ERRANDS

Reasons Respondents Ride a Bike



04

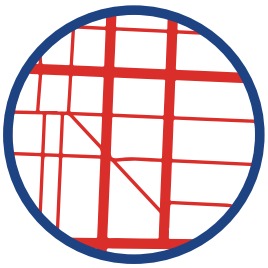
PURPOSE OF THE ACTIVE TRANSPORTATION PLAN

ACTIVE TRANSPORTATION PLAN GOALS

This plan will guide FDOT and its partner agencies through the decision-making process as they prioritize, plan, design, and construct a well-connected, safe, and comfortable active transportation system in District One.

SAFETY

Improve safety for pedestrians and cyclists.



CONNECTIVITY

Create a continuous and connected network.

COMFORT

Foster comfort and convenience for all types of users.

EQUITY

Increase access to employment, education, and civic resources for underserved communities.

ECONOMIC VITALITY

Promote economic growth by connecting cultural facilities, schools, transit hubs, and employment centers.

ADDRESSING SAFETY

Florida is **1st** in the nation IN PEDESTRIAN FATALITIES[2]

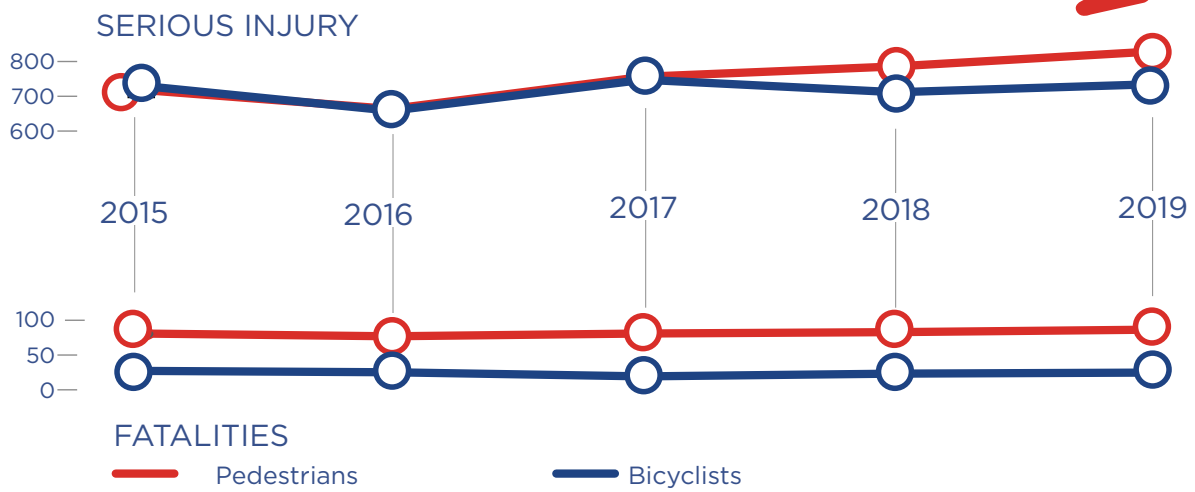
District One is home to **2** OF THE **TOP 10** MOST DANGEROUS places to walk in the United States.[4]

NEARLY **5,900** PEOPLE KILLED ON FLORIDA ROADS BETWEEN 2010–2019[3]

6 PEOPLE WALKING OR BIKING ARE STRUCK BY A CAR **EACH DAY** and **2** ARE KILLED **EVERY WEEK**[5]

Trend of Bicycle and Pedestrian Fatalities and Injuries in District One

Pedestrian crashes are increasing.[6]



[2] Dangerous by Design 2021 https://smartgrowthamerica.org/dangerous-by-design/.

[3] Dangerous by Design 2021 https://smartgrowthamerica.org/dangerous-by-design/.

[4] Dangerous by Design 2021 https://smartgrowthamerica.org/dangerous-by-design/.

[5] FDOT District One.

[6] Existing Conditions Report.

CENTERING EQUITY

Protecting The Most Vulnerable Community Members

Fatal and severe injury crashes disproportionately affect adults 50 and older, people of color, and those walking or biking in lower income communities. Older adults experience a danger rate that is more than 30% higher than the national average for all age groups—adults 75 and older have a rate nearly double the national average. Those with age-related ailments like low vision, hearing loss, or difficulty walking are especially vulnerable.[7]

People of color—especially Black, African American, and American Indian people—are killed in traffic crashes at a significantly higher rate than White, non-Hispanic, and Asian people.[8]

Income also determines a person's risk of injury or death. There is an inverse relationship between the median household income of a community and the number of persons killed while walking: the lower the median income, the higher the fatality rate.[9]

High equity areas in District One were identified to understand the risks to and needs of vulnerable communities. These areas were identified using census data from population below the poverty line, minority populations, zero-vehicle households, populations aged 65 or older and 18 or younger, percentage of means of transportation to work other than personal motor vehicle, and populations with limited English proficiency. High equity areas are those that are overrepresented in 4 or more of the socioeconomic indicators (appendix A).

IN HIGH EQUITY AREAS, ONLY

33%

OF THE SHS ROADS HAVE **SIDEWALKS ON BOTH SIDES** AND ONLY

12% HAVE **BICYCLE FACILITIES**[10]

FATAL AND SERIOUS INJURY BICYCLE AND PEDESTRIAN CRASHES ARE OVERREPRESENTED IN DISTRICT ONE EQUITY HOTSPOTS.

Nearly **24%** of District One's **centerline miles** are in equity hotspots, but

34% of **fatal and serious injury crashes** happened in the district's equity hotspots.[11]

[7] Dangerous by Design 2021 https://smartgrowthamerica.org/dangerous-by-design/.

[8] Study controlled for differences in walking rates and population sizes.

[9] Dangerous by Design 2021 https://smartgrowthamerica.org/dangerous-by-design/ and Existing Conditions Report.

[10] Existing Conditions Report.

[11] Existing Conditions Report.

DISTRICT ONE'S VULNERABLE POPULATION[12]

14.2%
BELOW POVERTY LEVEL

5.0%
LIMITED ENGLISH PROFICIENCY

31.8%
MINORITY BACKGROUND

13.5%
ZERO CAR HOUSEHOLDS

27.6%
AGE 65 OR ABOVE

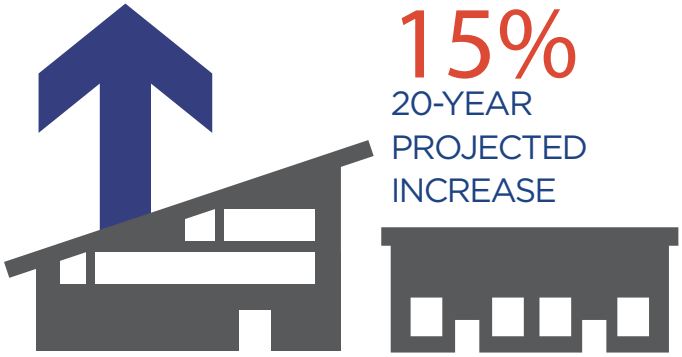
4.1%
TRAVEL TO WORK NOT IN A PERSONAL VEHICLE

[12] U.S. Census Bureau, (2020), 2015–2020 American Community Survey 5-year Estimates.

ADDRESSING GROWTH IN DISTRICT ONE

With an influx of new residents over the next 20 years, District One will see population growth, development density increase, and suburban expansion. In District One, SHS roads with both suburban and commercial development are projected to increase by 15% over the next 20 years. Driving is also expanding rapidly. Since 2014, vehicle miles traveled (VMT) in District One has increased by 24%. Statewide, VMT is increasing at a rate higher than population and number of drivers.[13]

District One's
Suburban Commercial SHS Roadways



15%
20-YEAR
PROJECTED
INCREASE

With growing costs of living, including rising housing costs and the percentage of income spent on housing and transportation, District One's ability to provide safe and comfortable alternatives to driving will be paramount in helping the most vulnerable district members. To keep these neighbors safe and healthy, roadway design must consider land use and built form.

District One's Population

13%
INCREASE
BY 2040

with Collier, Lee, Manatee, and Polk Counties growing faster than the Florida average (19%)

Bureau of Economic and Business Research (BEBR), 2040 Population Estimates

[13] Existing Conditions Report.

SUPPORTING A HEALTHY AND ECONOMICALLY VIBRANT COMMUNITY

Good for community.
Good for people.

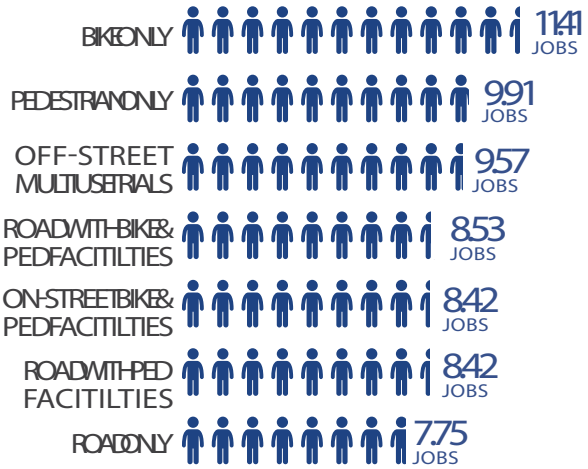
Support Economic Development

Infrastructure that serves people who walk and bike helps local and state economies by creating jobs and fostering equitable spending. Nationwide, in places with systems overly reliant on vehicles, the lowest earning 20% spend nearly a third of their income on transportation. By adding safe and convenient walking and biking routes and amenities, District One can help alleviate the financial burden of traveling across the district.[14]

Improve Health

A lack of affordable housing and transportation options directly impacts a person's health. Sedentary time spent in cars—whether by necessity or choice—negatively affects physical health; longer vehicular commute times are associated with an increase in chronic illness such as diabetes, obesity, and cardiovascular disease. District One has one of the highest rates of overweight and sedentary adults in Florida, according to the Florida Department of Health and the U.S. Census.[15]

Jobs created per dollar spent on infrastructure



Active transportation infrastructure creates more jobs per dollar spent than motorist-focused infrastructure.[16]

Lakeland, Sarasota/Bradenton, and Fort Myers residents spend

NEARLY **2x**

the national average on

TRANSPORTATION COSTS

[14] Safe Routes to School National Partnership (2017) "Investing in Walking, Biking, and Safe Routes to School: A Win for the Bottom Line." https://www.saferoutespartnership.org/sites/ default/files/resource_files/121117-sr2s-investing_report-final.pdf.

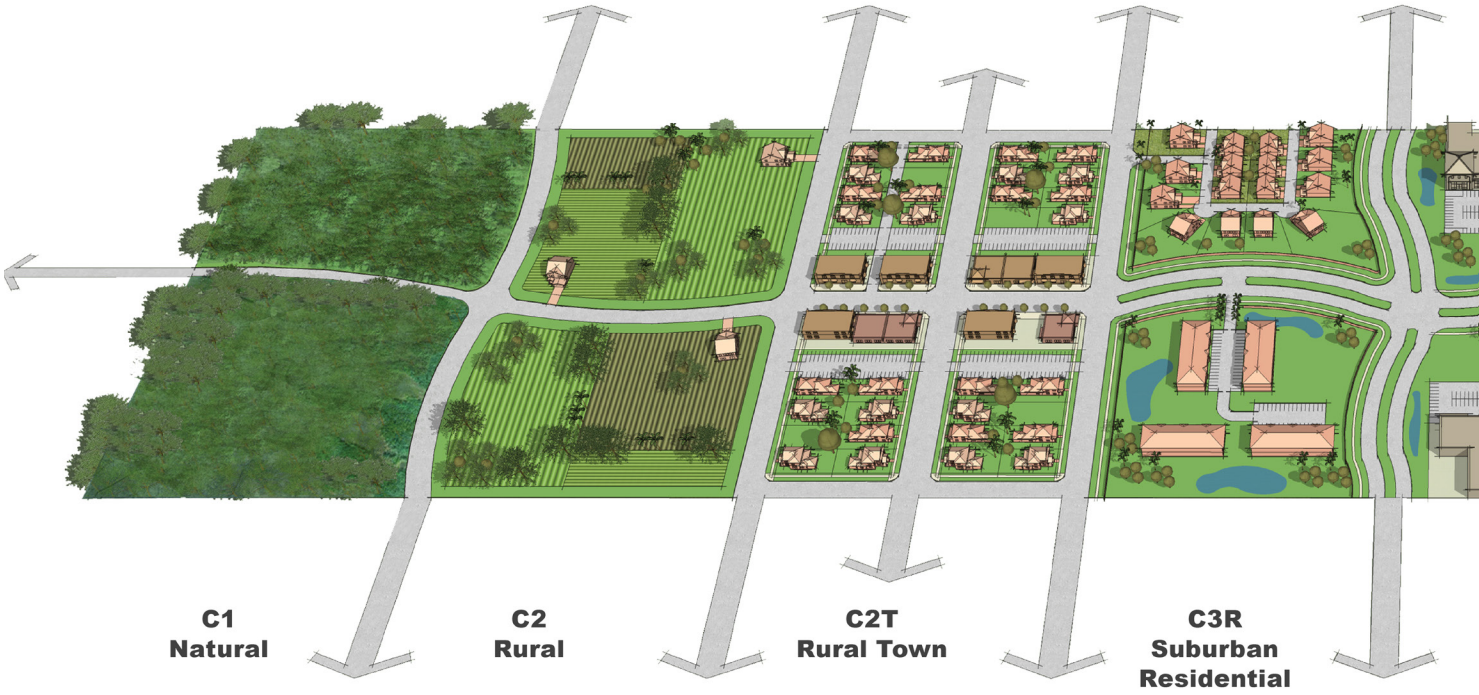
[15] U.S. National Library of Medicine, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3360418/.

[16] Safe Routes to School National Partnership (2017) "Investing in Walking, Biking, and Safe Routes to School: A Win for the Bottom Line." https://www.saferoutespartnership.org/sites/ default/files/resource_files/121117-sr2s-investing_report-final.pdf.

SUPPORTING THE IMPLEMENTATION OF CONTEXT CLASSIFICATION

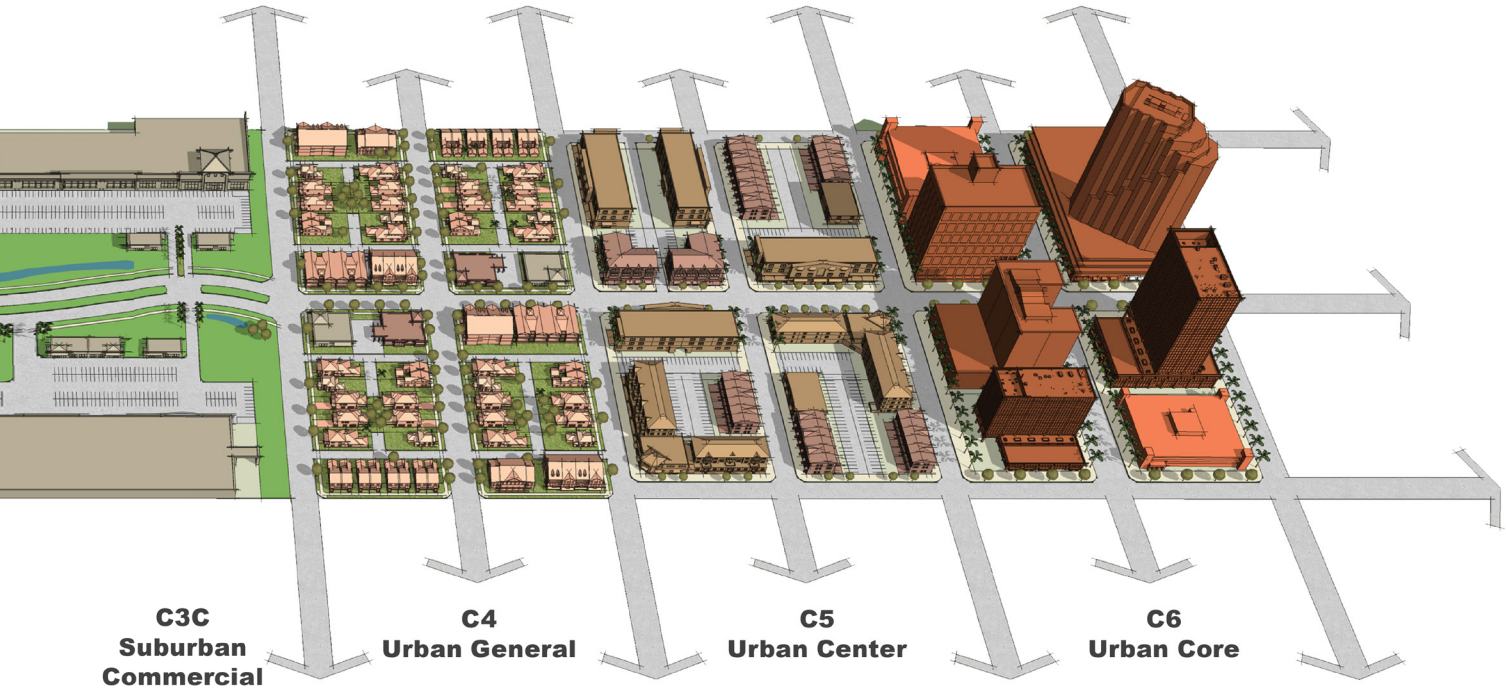
Putting the Right Street in the Right Place

Context classification links land use and transportation planning by categorizing different types of urban and rural environments. Classifying areas based on density characteristics—like employment, residences, buildings, network—and defining features—parking, setbacks, building height—provides a better understanding of how these roads are used by people traveling along, to, and through them as well as what transportation facilities they need to help their communities thrive.



Context classification helps inform a facility's speed, design characteristics, and multimodal facilities for its unique users.

This plan uses context classification to recommend the type of multimodal facility improvements on a road. The right street in the right place contributes to systemic safety for all road users. For example, in District One's many rural towns (C2T classification), there is a demonstrated need to provide network connections to help people who live in rural areas reach commercial centers safely and conveniently.



05

ACTIVE TRANSPORTATION IN DISTRICT ONE TODAY

EXISTING CONDITIONS

Walking and Biking Existing Demand

To understand where people walk and bike in District One, land use, employment, and mobile device data were evaluated.

One estimate of existing travel demand came from 2018 StreetLight data, a platform that uses archival location records created by mobile devices and navigation devices to produce an index of activity per mode of travel. For more on StreetLight data, see appendix A, page 15, "Demand Analysis."

To identify areas in District One with a concentration of multimodal activity, this index was converted to a percentile, which allowed identification of the top 20% roadway segments for demand.

A bicycle and pedestrian demand score was calculated; it combines several key factors to estimate where there may be a demand for walking, biking, or riding transit, including:

- population and employment density
- proximity to key destinations
- existing land uses and activity centers

The final demand score equally weighs the bicycle and pedestrian demand score and StreetLight percentiles to provide an overview of active transportation demand. High multimodal demand areas are defined are those areas that were identified to have the top third active transportation demand score (figure 1). While most high-demand SHS facilities in District One are in urban areas and near the coast, some towns have higher demand that comes from state roads functioning as main streets.

DISTRICT ONE'S KEY DESTINATIONS

schools

colleges & universities

civic & cultural facilities

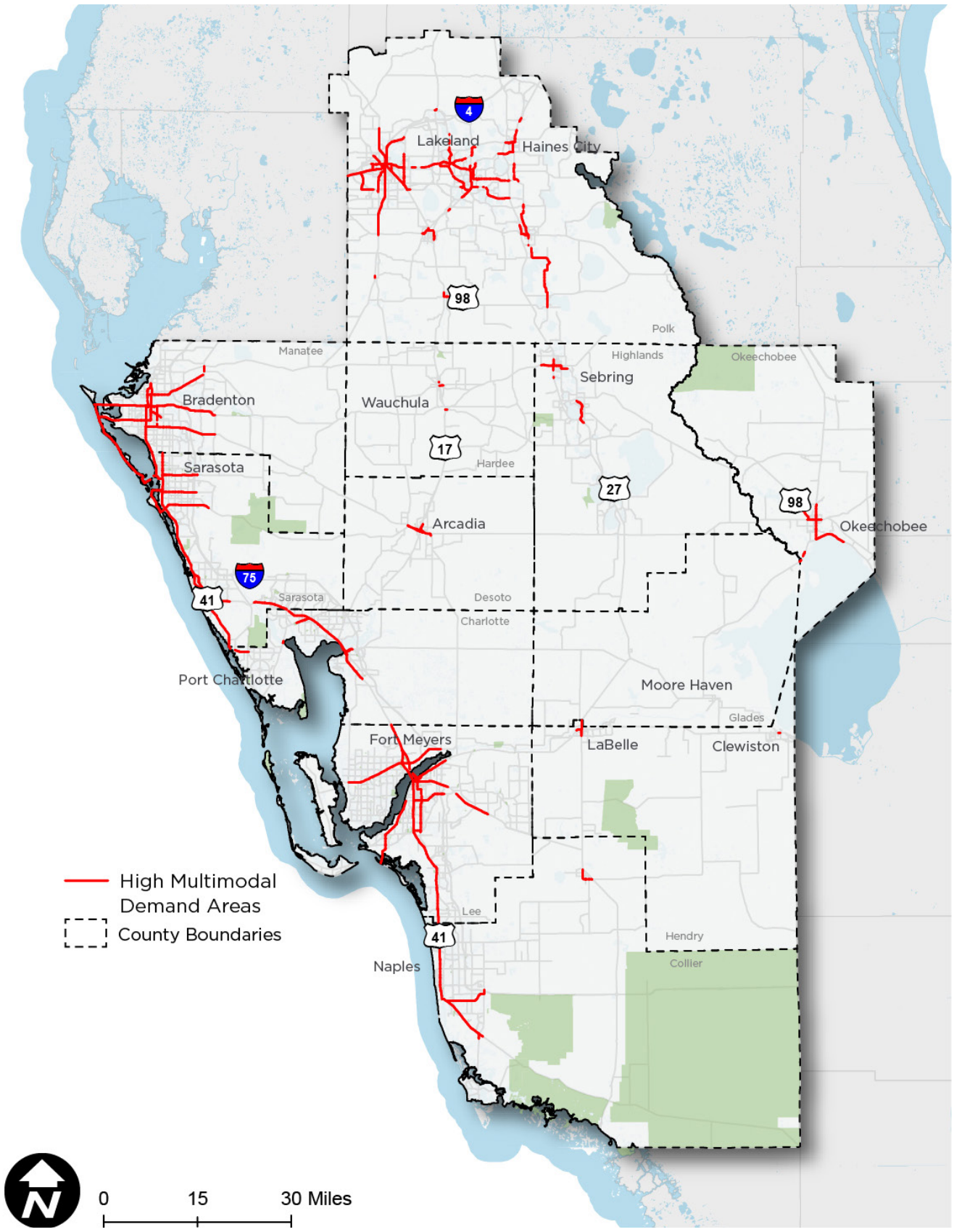
tourist attractions

sports arenas

activity centers

rail/transit stops

Figure 1. High Multimodal Demand Areas in District One



Micromobility in District One

Micromobility devices, sometimes called personal e-mobility devices, are motorized or motor-assisted, low speed (20 miles per hour or below), and small scale devices (typical width is three feet or less). They can be used for commuting, commercial trips, or social activity and are often used to fill the gap of service for short distance trips. On average, the typical scooter user or bike share annual/monthly pass-holder rides for 11–12 minutes and 1–1.5 miles per trip. Shared micromobility is growing across the country. In 2019, people in the United States took 136 million trips on shared bikes, e-bikes, and scooters, 60% more than in 2018.[17] Sarasota has piloted bike and scooter share services, and there are privately owned micromobility options throughout District One.

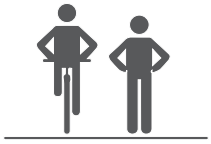
Micromobility options operate at speeds much like a bicycle and require similar infrastructure support, including parking locations. They require clear instructions for use and payment, and they cause significant problems when they are left on sidewalks or discarded on private property. Micromobility has the potential to encourage non-vehicular transportation through communities, but to support these programs, District One must provide safe travel spaces as well as proper parking for micromobility users. The growth of micromobility options underscores the need for safe and comfortable separated facilities that provide enough space to accommodate an increasing number of users traveling at varying speeds.

Micromobility has the potential to encourage non-vehicular transportation through communities.

[17] NACTO, “Shared Micromobility in the U.S.: 2019,” (2019) https://nacto.org/shared-micromobility-2019/.

Existing Facilities

FDOT and partner agencies have invested in infrastructure for people who walk and bike.



Shared-UsePaths,Paved and Unpaved Trails

1,398 MILES
Excluding SUN Trail in District One

219 MILES
Excluding SUN Trail on the State Highway System

513 MILES
Planned and Programmed

Bicycle Lanes

1,064 CENTERLINE MILES
on all roads in District One

523 CENTERLINE MILES
Along State Roads in District One

222 MILES
Planned and Programmed

SUNTrail

230 MILES
Existing Facilities

492 MILES
On FGTS Land Trails Priority Corridors

154 MILES
Identified in Local Plans

Sidewalks

357 MILES
Along State Roads

PavedShoulders

1,868 CENTERLINE MILES
Along State Roads

The Florida SUN Trail Network

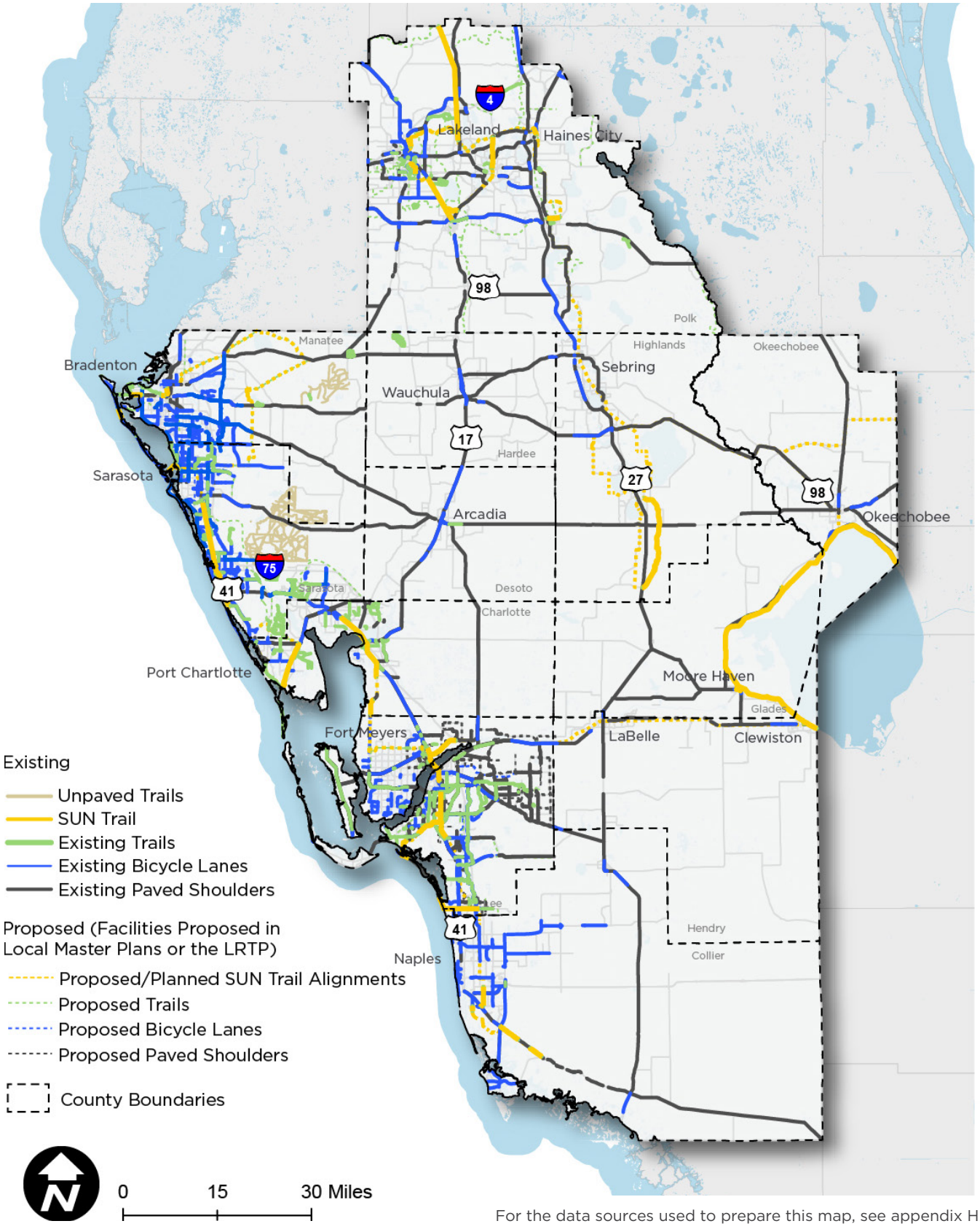
Total Existing SUN Trail Miles in District One: 230 Miles

A statewide system of paved recreational corridors, the SUN Trail Network is part of the Florida Greenways and Trails System (FGTS) land trails priority network. In District One, 24 local corridors make up the existing SUN Trail, stretching from the Lake Okeechobee Scenic Trail to the Van Fleet Trail.

A good trail system connects patrons to small businesses and can revitalize and catalyze economic opportunity by increasing property values, retail spending, and foot traffic.

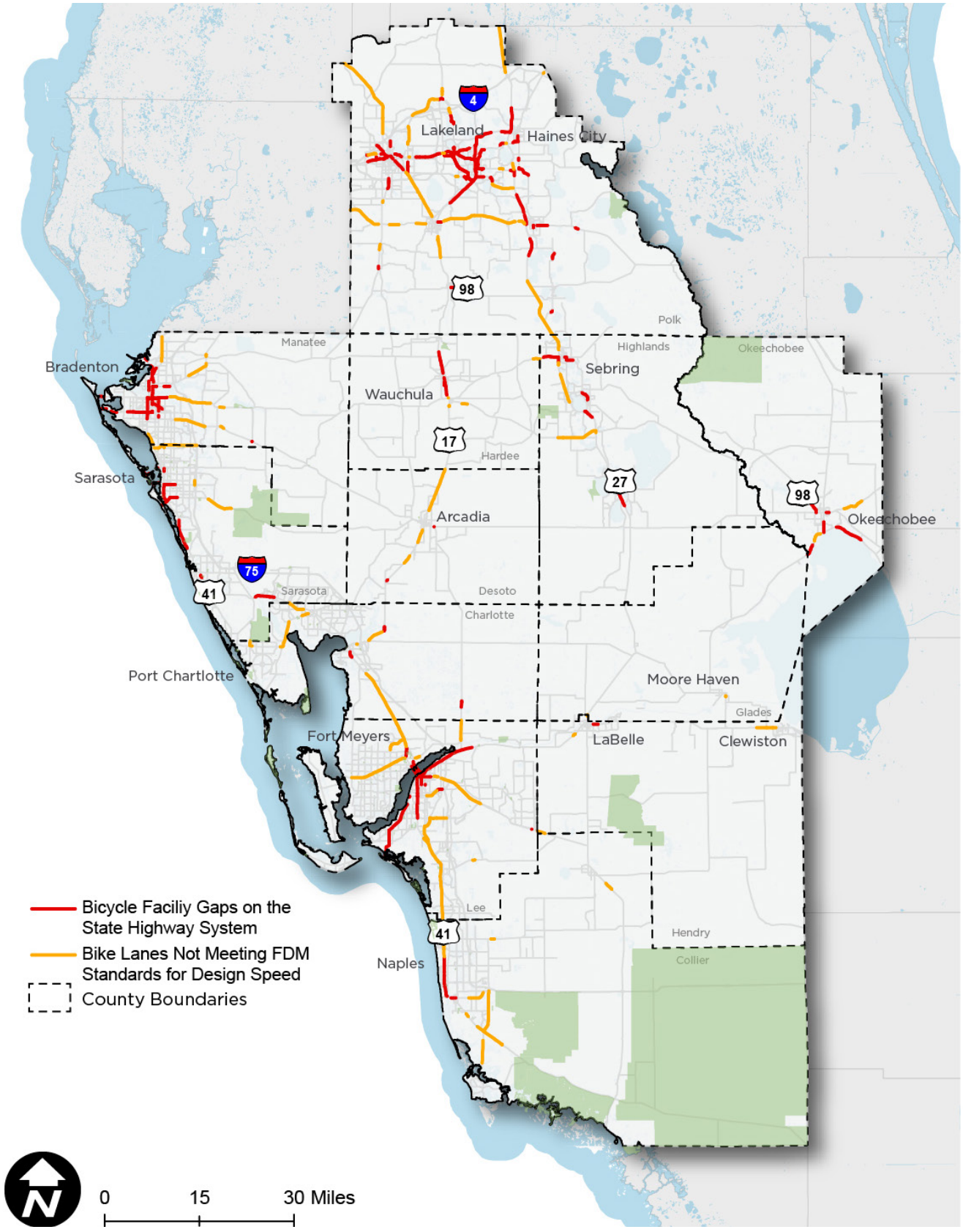
The Florida Department of Environmental Protection's Trail Town Program helps revitalize communities through branding and marketing as trail towns (railstotrails.org).

Figure 2. Existing, Planned, and Programmed Bicycle Facilities in District One



For the data sources used to prepare this map, see appendix H.

Figure 3. Bicycle Facility Gaps in District One on the State Highway System



Existing Bicycle- and Pedestrian-Friendly Intersections and Midblock Crossings

For people who walk and bike, traveling across a roadway is just as critical as traveling along it. To support network permeability, District One has invested in bicycle- and pedestrian-friendly signaled intersection design.

LEADING PEDESTRIAN INTERVALS

Leading pedestrian intervals (LPIs) give people walking extra time to cross, by allowing them to enter the intersection three to seven seconds ahead of the green signal in the same direction of travel. Greater visibility and the right of way communicates that pedestrians take priority over turning vehicles.

LPIs have been shown to reduce vehicle-pedestrian crashes. One study found a crash modification factor of 0.87 with a potential B/C ratio range of 1:207::1:517.[18]

District One has **28** LPIs AT **16** INTERSECTIONS (see table 1 and figure 4).[19]

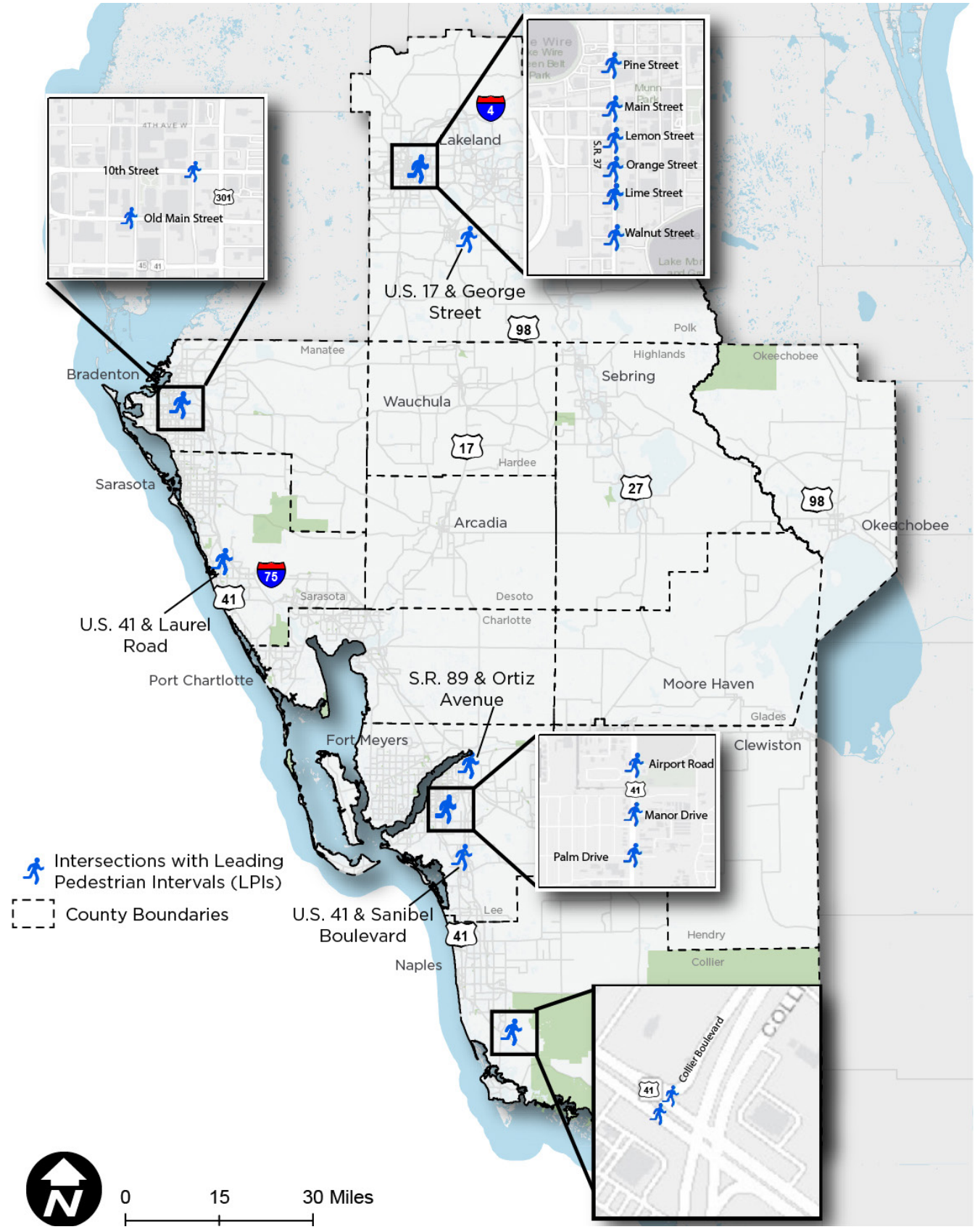
Table 1. Intersections with Leading Pedestrian Intervals (LPIs) in District One

COUNTY	INTERSECTION	NUMBER OF LPIs
Polk	S.R. 37—Florida Avenue & Lime Street	4
Polk	S.R. 37—Florida Avenue & Pine Street	1
Polk	S.R. 37—Florida Avenue & Main Street	1
Polk	S.R. 37—Florida Avenue & Lemon Street	1
Polk	S.R. 37—Florida Avenue & Orange Street	1
Polk	S.R. 37—Florida Avenue & Walnut Street	1
Polk	U.S. 17 & Georgia Street	1
Lee	U.S. 41 & Palm Drive	1
Lee	U.S. 41 & Beacon Manor Drive	1
Lee	U.S. 41 & South Airport Road	1
Lee	S.R. 80—Palm Beach Boulevard & Ortiz Avenue	3
Lee	U.S. 41 & Sanibel Boulevard	1
Sarasota	U.S. 41 & Laurel Road	4
Manatee	U.S. 301 & Old Main Street	2
Manatee	S.R. 64 & 10th Street	2
Collier	U.S. 41 & Collier Boulevard	3

[18] Goughnour, E., D. Carter, C. Lyon, B. Persaud, B. Lan, P. Chun, I. Hamilton, and K. Signor, "Safety Evaluation of Protected Left-Turn Phasing and Leading Pedestrian Intervals on Pedestrian Safety," Report No. FHWA-HRT-18-044, Federal Highway Administration, (October 2018).

[19] List of LPIs was downloaded from FDOT eTraffic on June 9, 2021.

Figure 4. Intersections with Leading Pedestrian Intervals in District One



Comfort Analysis

Analyzing Comfort in District One

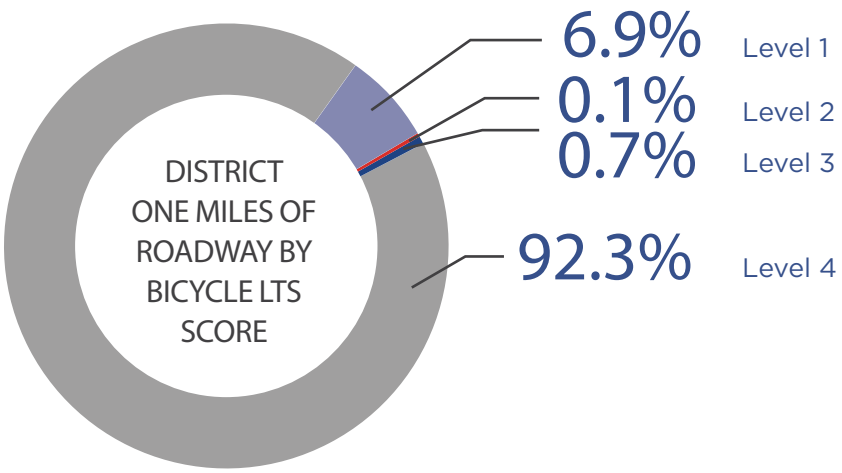
Roadway comfort is evaluated using level of traffic stress (LTS), which measures the stress experienced by people while walking or biking. LTS looks at the number of lanes, posted speed, average daily traffic, and existing biking or walking facilities to determine a score from 1 to 4. Bicycle LTS was calculated for all District One state roads (see appendix A for methodology). More than 90% of District One roads have a bicycle LTS of 4, which is only appropriate for users who are highly confident in interacting with high speeds and minimal separation from motor vehicle traffic, or 4% to 7% of the population.

Figure 5. Bicycle Facilities and Level of Traffic Stress

Facility	Percent of survey respondents that stated there were comfortable riding on the facility	Level of Traffic Stress
A TRAIL 	96%	1
BICYCLE FACILITY PHYSICALLY SEPARATED FROM VEHICLE TRAFFIC 	78%	1

Facility	Percent of survey respondents comfortable riding on the facility	Posted Speed (mph)	On- Street Parking	Bicycle Lane Width	Level of Traffic Stress
BUFFERED BICYCLE LANE 	56%	≤ 30	Present	Bicycle lane and on-street parking width greater than or equal to 13 feet	2
				Bicycle lane and on-street parking width less than 13 feet	3
			Not Present	Greater than 6 feet	1
				5 feet	2
				4 feet	3
		35	Present or not Present	Any	3
		≥ 40	Not Applicable	Any	4

Facility	Percent of survey respondents comfortable riding on the facility	Posted Speed (mph)	Number of Vehicular Travel lanes	Land Use	Level of Traffic Stress
TRAVEL LANE MIXED WITH TRAFFIC 	8%	25	6 or more	Residential area	2
			3 or less	Commercial area	3
			4 or 5	Any	4
			3 or less	Residential area	1
				Commercial area	2
				Any	3
		30	4 or more	Any	4
		35	Any	Any	4



Approximately 40% of District One residents require a separated facility or shared use path as opposed to an on-road bicycle lane, to feel comfortable biking.

Mind the Gap

FACILITY GAPS IN DISTRICT ONE

Gaps in sidewalk and bicycle facilities make travel inconvenient for some and impossible for those with a limited range of abilities. Such holes in the network create dangerous conflict points between motorists and people walking or biking. When sidewalks and bike lanes abruptly end, people are less likely to walk or bike for work, shopping, or leisure. To create an active transportation network, gaps must be filled.

Sidewalks

According to the FDOT Design Manual (FDM), a sidewalk should be provided:

- On all curbed roadways
- On high-speed curbed and flush roadways within C2T, C3R, C4, C5, or C6 context classifications
- On flush shoulder C3C roadways where demand is demonstrated
- On flush shoulder C1 or C2 roadways where demand is demonstrated

For this analysis, if a sidewalk was present on one side of the road but not the other, there is no sidewalk gap. Because demand could not be demonstrated on the full network, this analysis omitted flush shoulder C1 and C2 roadways. C3C roadways were included in the analysis because land uses indicated demand.

Per FDM standards, 31% of the District One network lacks sidewalk—that's 298 miles of identified gaps. The largest gaps are found on C3C and C3R roadways, with 35% and 37%, respectively (See table 1).

THE 2021 DISTRICT ONE WALKING & BIKING SURVEY REVEALED THAT OF RESPONDENTS

22%

DO NOT WALK BECAUSE THERE ARE NO SIDEWALKS NEARBY.

Bicycle Facilities

According to the FDM, all non-limited access SHS roadways should have a bicycle facility, except where establishing one would be contrary to public safety, like limited access facilities.

This analysis defined bicycle gaps as a non-limited access roadway segment that did not include one of the following:

- A shared use path
- Marked shoulders
- 4-foot or larger paved shoulders (C1 or C2)
- Regular or separated bicycle lanes

Many of District One's existing marked bicycle lanes or shoulders do not meet FDM standards. The current FDM states that bicycle lanes or marked shoulders can be used on roadway with a design speed less than or equal to 45 mph (figure 3).

Of C3R Roadways

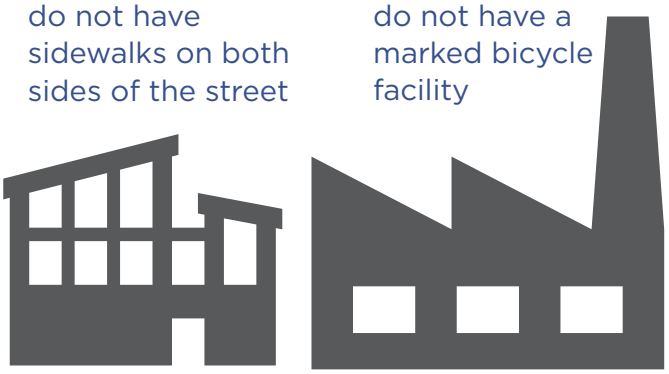
55% do not have sidewalks on both sides of the street

61% do not have a bicycle facility

Of C3C Roadways

53% do not have sidewalks on both sides of the street

57% do not have a marked bicycle facility



2021 District One Walking and Biking Survey

1.7x more bicycle and pedestrian crashes occur in areas WITHOUT SIDEWALKS as areas with them on the District One SHS (2015–2019).

BICYCLE AND PEDESTRIAN CRASHES ON THE DISTRICT ONE SHS (2015-2019)

Without sidewalks	3,368
With sidewalks	1,985

Nearly **58%** in C2T, C3, C4, and C5 of the SHS is MISSING bicycle facilities.

Table 2. Sidewalk Gaps by Context Classification

Classification	% of Gap	Miles of Gap
C5 - Urban Core	0.3	0.01
C4 - Urban General	9.0	5.4
C3R - Suburban Residential	37.0	51.0
C3C - Suburban Commercial	35.0	133.0
C2T - Rural Town	10.0	4.36

Table 3. Bicycle Facilities Gaps by Context Classification

Classification	Centerline Miles	Miles of Facilities	Bicycle Facilities Gaps		Miles of Marked Facilities that do Not Meet the FDM Standard for Design Speed for Marked Bicycle Lane or Shoulder
			Miles	Percentage	
C5 - Urban Coure	4.3	0.0	4.3	100%	0
C4 - Urban General	60.2	7.6	52.6	88%	0
C3R - Suburban Residential	137.7	52.5	85.2	62%	52.6
C3C - Suburban Commercial	380.0	147.8	232.2	61%	159.9
C2T - Rural Town	43.6	5.3	38.3	88%	1.4
C2 - Rural	893.9	125.0	769.0	86%	
C1 - Natural	90.0	90.0	0.0	0%	

Posted speed was used in analysis instead of design speed due to the lack of access to design speed information for all roadways.

TWO-STAGE BICYCLE BOX

Two-stage bicycle boxes help cyclists safely turn left at multi-lane signalized intersections.

Boxes designate a space for riders to wait before making their left turn, critically reducing turning conflicts with motor vehicles.

District One implemented the first two-stage bicycle boxes in the State of Florida on S.R. 786 at Daniels Parkway and Treeline Avenue. A joint effort from FDOT, Lee County Metropolitan Planning Organization (MPO), and the Lee County Department of Transportation, these innovative boxes underscore the importance of teamwork and collaboration between state and local organizations.

ENHANCED CROSSWALKS

By increasing driver awareness, enhanced crosswalks help people cross streets more safely. Effective for multilane crossings with posted speed limits of 35 mph or less, rectangular rapid flashing beacons (RRFBs) are pedestrian-actuated enhancements that improve safety at uncontrolled, marked crosswalks. District One has 15 RRFBs to help people safely cross at midblock locations and to promote local trail continuity:

- Eight along S.R. 789 in Bradenton Beach and Longboat Key
- Six along S.R. 758 in Siesta Key
- One along S.R. 84 in Naples, serving the Rich King Memorial Greenway

Source: FDOT

Location: SR 84 (Davis Boulevard) and Rich King Greenway

BICYCLE AND PEDESTRIAN CRASH ANALYSIS

Preventing Fatalities and Severe Injuries in District One

An in-depth crash data analysis was conducted using a 2015–2019 dataset from FDOT's Crash Analysis Reporting System (CARS) and Signal Four Analytics. By revealing when, where, and why crashes happen in District One, this crash analysis helps identify key systemic safety improvement investment areas for people who walk and bike in District One.

Bicycle and Pedestrian Crashes

6,082 NUMBER OF CRASHES

5,123 INJURIES

469 FATALITIES

86% of pedestrian and bicycle crashes result in an injury or fatality

85 PEOPLE INJURED A MONTH walking or biking

8 PEOPLE KILLED A MONTH walking or biking

26% of all people killed in vehicular crashes were pedestrians or bicyclists

Pedestrian Crashes

2,180 MINOR INJURIES

1,136 SEVERE INJURIES OR FATALITIES

1 in 3 pedestrians hit by motorists were killed or severely injured

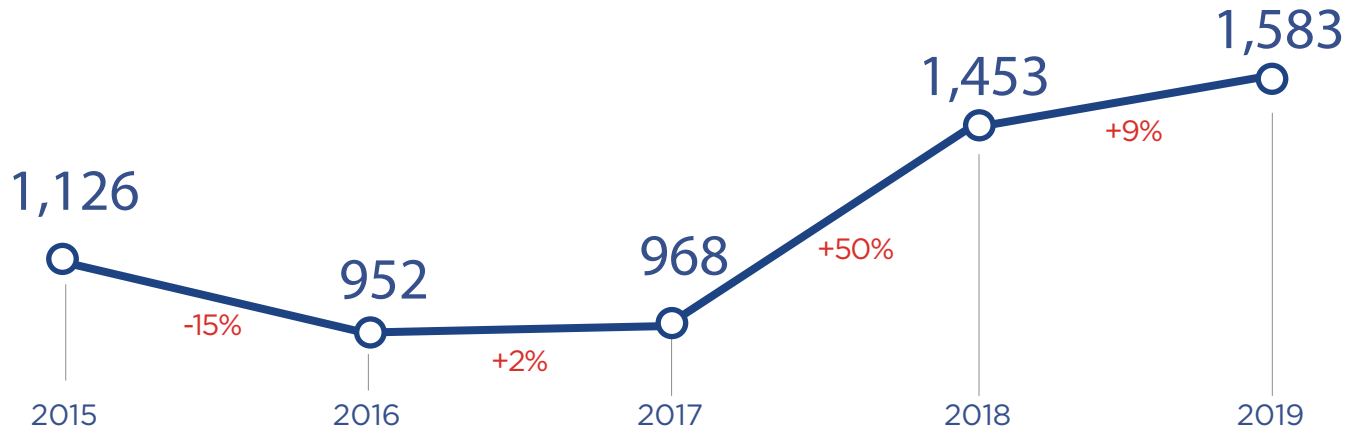
Bicycle Crashes

1,621 MINOR INJURIES

655 SEVERE INJURIES OR FATALITIES

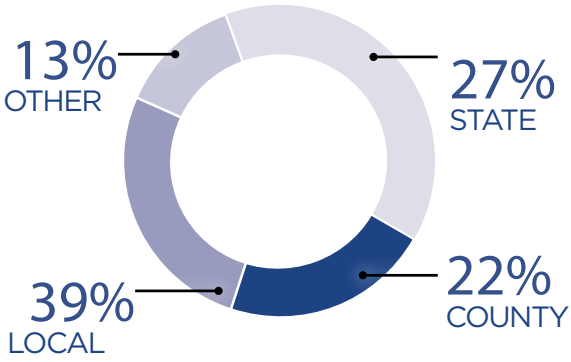
1 in 4 bicyclists hit by motorists were killed or severely injured

When Did Crashes Occur?

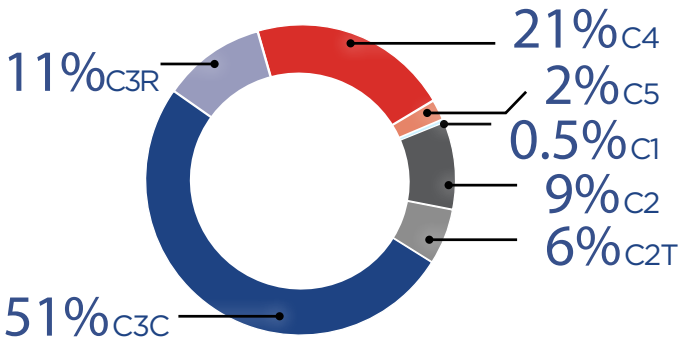


Where Did Crashes Commonly Occur?

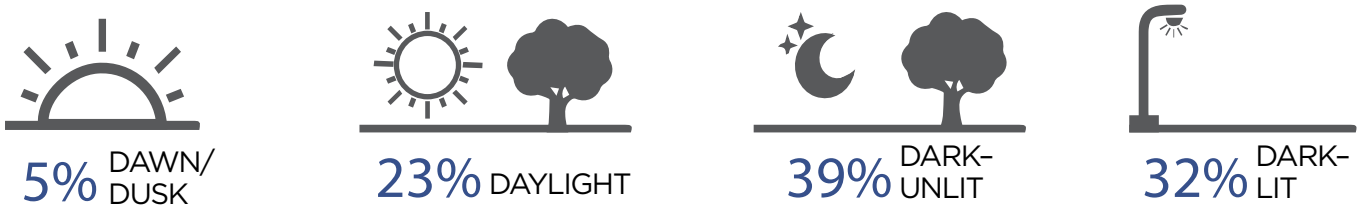
STREET OWNERS



CONTEXT CLASSIFICATION FOR ROADS ON THE STATE HIGHWAY SYSTEM



Lighting Conditions During Fatal Crashes



Crash Index Analysis

Each segment of non-limited access SHS was assessed using a crash index—a range from 0–100 that reflects the number of bicycle and pedestrian crashes per mile, total crashes, and bicycle and pedestrian fatalities (appendix B). In District One, 60% of segments with a crash index of 90 or higher are on C3C roadways.

UNDERSERVED POPULATIONS ARE DISPROPORTIONATELY IMPACTED BY CRASHES

Where there were concentrations of underserved populations—whether in rural, rural town, and suburban commercial contexts—the average crash score increased.

ROAD SIZE AND SPEED AFFECT SAFETY

Five- to six-lane roadways and roadways with 45 mph posted speeds see disproportionately more crashes. While the lack of lighting and sidewalks contribute to increased fatal and injury crashes, speed and size are dominant factors in District One. Here, 40–45 mph roadways with five or six lanes represent 31% of bicycle and pedestrian crashes in District One, despite the fact that these roadways account for only 6% of the district's SHS roads.

42%

of crashes occur on 5/6-lane roadways, which are 14% of the network

45%

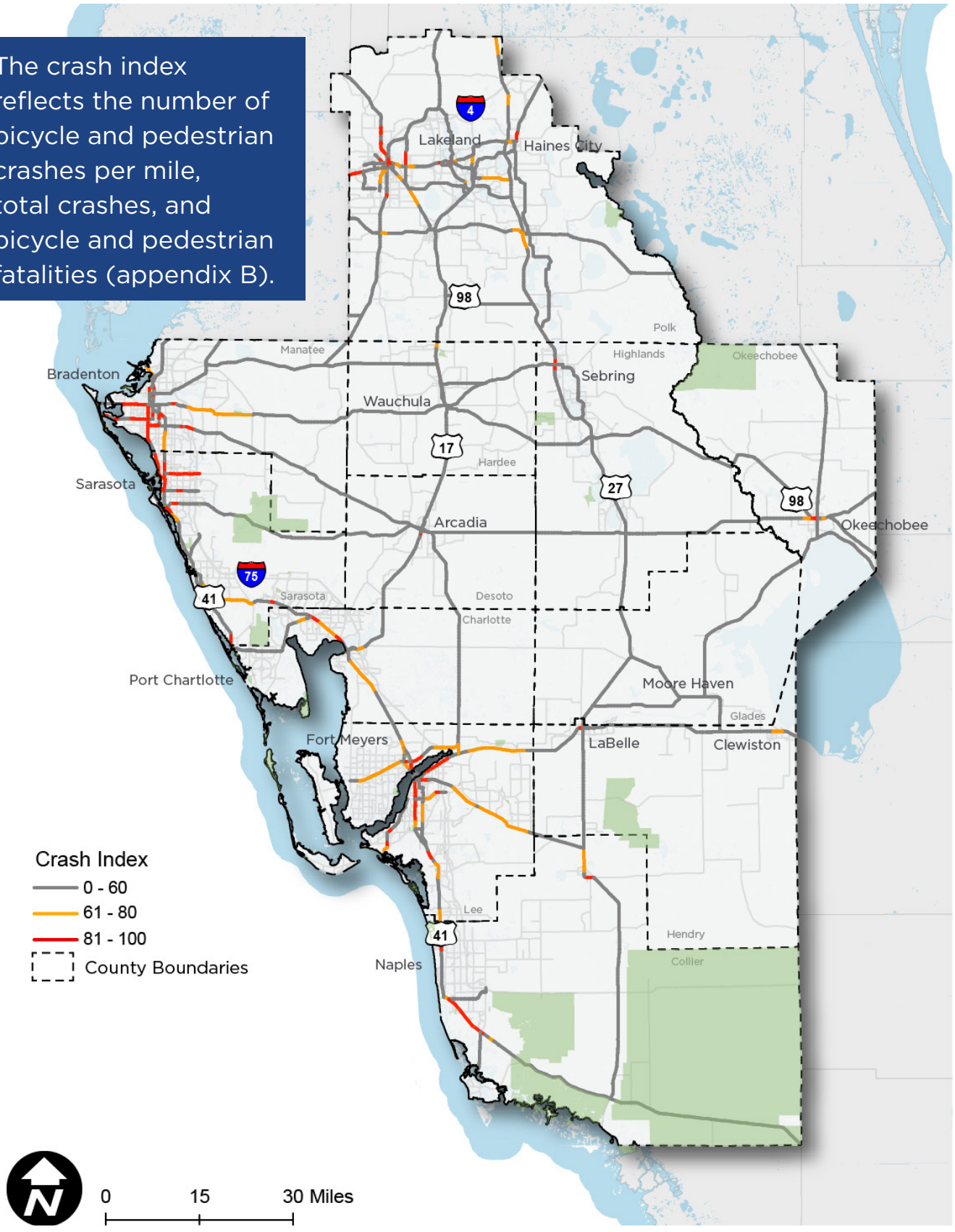
of crashes occur on roadways with a posted speed of 45 mph, which are 17% of the network

Better Tools for a Better District One

To make the district safe for everyone, bicycle and pedestrian safety demands new contextual tools that reduce vehicle speeds and separate people who walk and bike from vehicle traffic.

Figure 6. Crash Index

The crash index reflects the number of bicycle and pedestrian crashes per mile, total crashes, and bicycle and pedestrian fatalities (appendix B).



Intersection Crash Analysis

BUILDING A PERMEABLE TRANSPORTATION NETWORK

An intersection-level high-injury network (HIN) analyzes crashes within 200 feet of a signalized intersection to find the SHS intersections with more severe and frequent bicycle and pedestrian crashes. This analysis used equivalent property damage only (EPDO) to score bicycle or pedestrian crashes by severity. By far, intersections in District One's C3C suburban commercial contexts had the most crashes. The intersections ranked by EPDO score were used for prioritizing intersection improvements (see Identify Priority Intersections on page 52).

64%

of roadways with bicycle or pedestrian crash index of 90 or higher are C3C suburban commercial corridors

60%

of the worst intersections for bicycle or pedestrian crashes are on are C3C suburban commercial corridors

06

BUILDING A SAFE & COMPLETE TRANSPORTATION NETWORK

PRIORITY BICYCLE AND PEDESTRIAN INVESTMENT AREAS

COLLABORATION

Collaboration with MPOs and local governments will make District One safer for everyone

By focusing investments in areas with highest need as well as prioritizing areas with a history of high crash numbers, District One can get closer to Target Zero. The advanced safety score and the advanced safety tool help indicate which areas need the most help.

FDOT District One will work with partner agencies to fund, plan, design, and implement projects that will improve safety and comfort for people using active transportation.

This section details the selection of priority multimodal corridors, priority speed management corridors, and priority signalized intersections in the District.

The process used to identify the priority multimodal corridors and priority signalized intersections prioritizes multimodal demand, connectivity, equity and crash history.

The process used to identify priority speed management corridors aligns with the safe systems approach, identifying roadway and context characteristics that lead crashes.

Partner MPOs can implement these analyses, in conjunction with local planning efforts, to prioritize projects.

This analysis highlights priority areas. Further studies are needed to determine the system safety and specific improvements needed for the priority multimodal corridors and priority signalized intersections.

THE ADVANCED SAFETY TOOL

Calculating the Advanced Safety Score

The advanced safety score helps prioritize multimodal improvements for corridors by county (appendix B). Five components make up the advanced safety score: demand, connectivity, comfort, equity, and safety.

Figure 7. Advanced Safety Score Calculation Equation

$$Advanced\ Safety\ Score: \frac{Demand\ Score}{5} + \frac{Connectivity\ Score}{5} + \frac{Comfort\ Score}{5} + \frac{Equity\ Score}{5} + \frac{Safety\ Score}{5}$$

	SCORES USED TO CATEGORIZE CORRIDORS		
	Low	Medium	High
Demand Score: Combines BikePed Demand, PedStreetlight, and BikeStreetLight data to understand segment-level bike and pedestrian travel. BikePedDemand uses roadway proximity to key destinations as well as population and employment data from the District One Regional Planning Model 2040 traffic analysis zones (TAZ). StreetLight data from both pedestrians and bikes come from archived navigation device location data. Demand Score = (BikePedDemand*0.5) + (PedStreetlight*0.25) + (BikeStreetLight*0.25)	≤ 40	41–69	≥ 70
Connectivity Score: Identifies where bicycle and pedestrian infrastructure investment would improve network connection (see transportation score in appendix B).	≤ 11	12–35	≥36
Comfort Score: Uses bicycle LTS to evaluate cyclist comfort along roadways. LTS measures unprotected road users' stress with a score from one to four. LTS considers lane number, posted speed, average daily traffic, and existing biking or walking facilities. LTS 1 roads are comfortable for most people, including children; LTS 4 roads are uncomfortable for only the most experienced riders.	See page 32 for an overview of LTS and see appendix A for a full description of the methodology		
Equity Score: Identifies underserved populations using census data for population below poverty line, minority populations, zero-vehicle households, populations aged 65 or older and 18 or younger, percentage of means of transportation to work other than personal motor vehicles, and populations with limited English proficiency.	≤ 30	31–69	≥ 70
Safety Score: Defines the crash index by total crashes, bicycle or pedestrian crashes, and bicycle or pedestrian fatalities. The advanced safety score can be used to prioritize projects on a city, county, MPO or district level. The elements of the advanced safety tool can also be used when determining design elements for specific projects.	≤ 40 Bottom 1/3 by County	45–90 Middle 1/3 by County	100 Top 1/3 by County

The Advanced Safety Tool

Developed online with ArcGIS, the Advanced Safety Tool identifies priority areas for District One Planning Studio's projects.

The tool presents

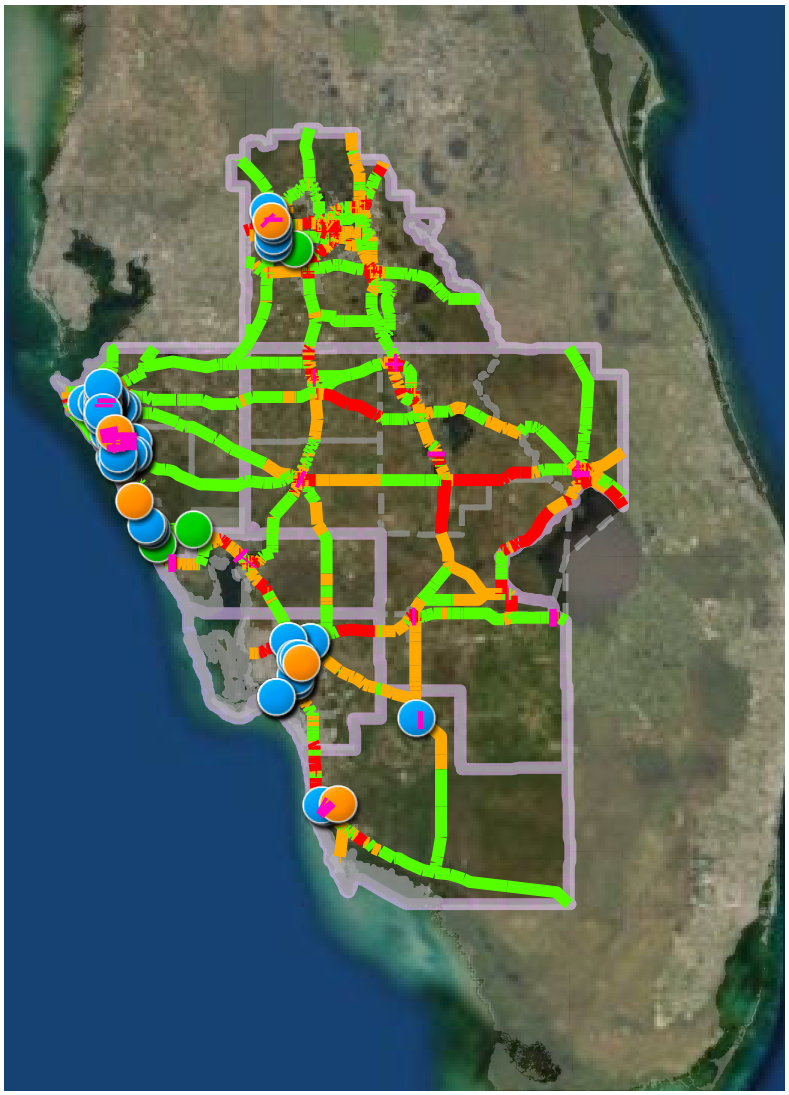
- Existing preliminary context classification
- Future preliminary context classification
- Advanced safety score components and composite score
- Bicycle StreetLight data
- Pedestrian StreetLight data
- Level of Traffic Stress

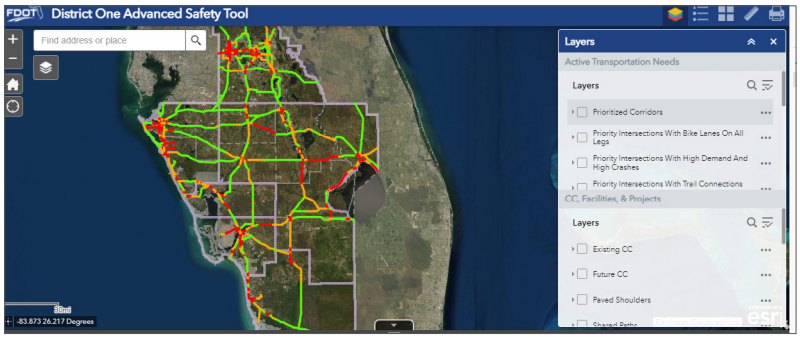
The tool helped determine

- Priority multimodal corridors
- Priority signalized intersections

The interactive map displaying overall need by county and all components can be found here:

https://bit.ly/D1ATMP





PRIORITY INVESTMENTS

Prioritize Multimodal Investment Corridors by County

To identify priority multimodal corridors, the advanced safety tool overlays the advanced safety score, work program, existing and proposed facility information, and local plan data. District One prioritized corridors by county.

After comparing priority multimodal investment corridors and intersections to the MPO Long Range Transportation Plans and Transportation Improvement Plans, five near-term opportunities to combine multimodal facility improvements with proposed or planned projects were identified. These are highlighted in table 4.

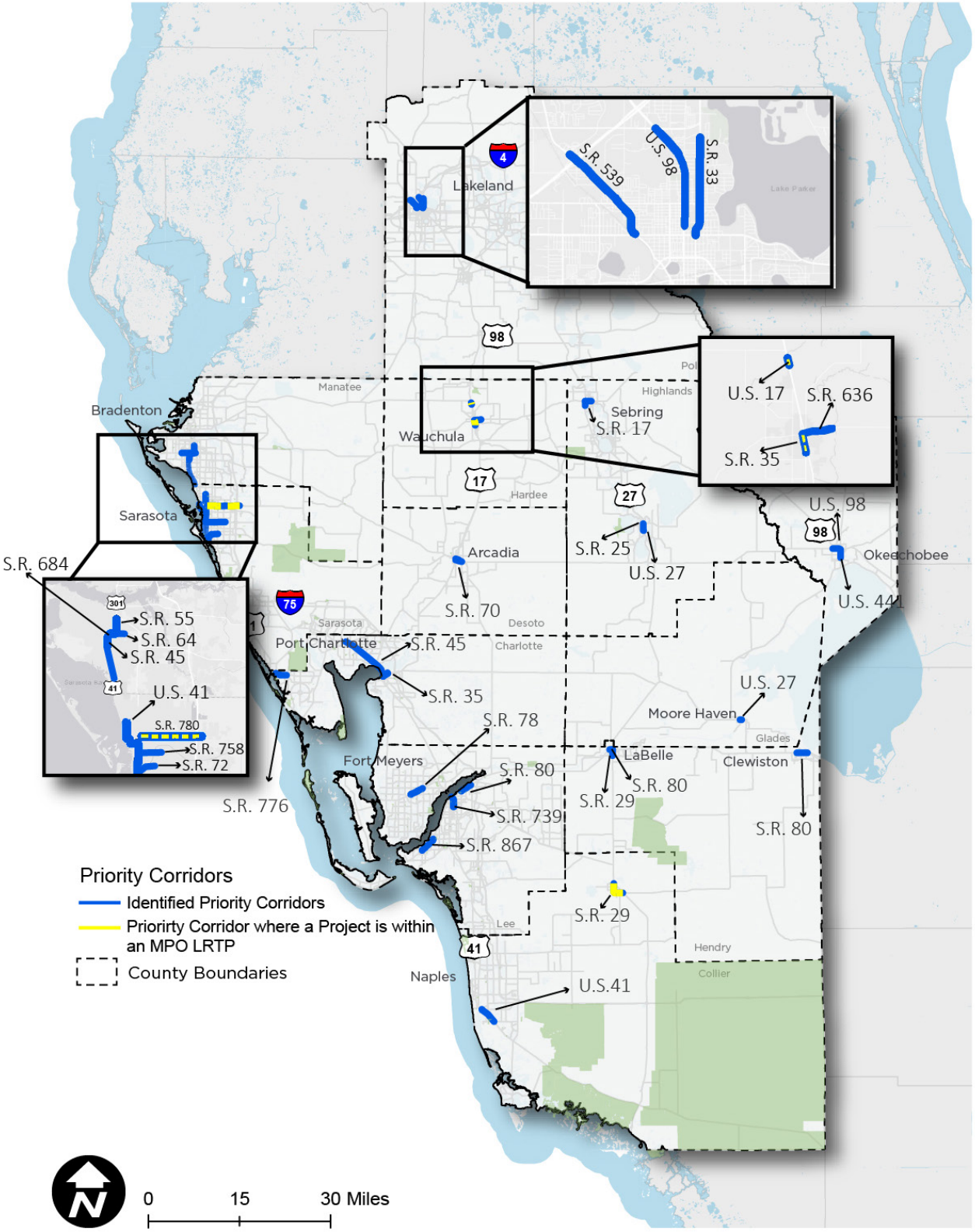
Table 4. Priority Multimodal Corridors

NAME	BEGIN MILE POST	END MILE POST	FROM	TO	CITY / TOWN	COUNTY
S.R. 776 (S. McCall Road)	2.24	3.98	Placido Road	Oriole Boulevard	Englewood	Charlotte
S.R. 45 (Tamiami Trail)	15.535	21.911	Enterprise Dr	Melbourne Street	Port Charlotte	Charlotte
S.R. 35 (Olympia Avenue)	0.71	1.84	Tamiami Trail	Cooper Street	Punta Gorda	Charlotte
S.R. 35 (Marion Avenue)	0	0.89	Tamiami Trail	Cooper Street	Punta Gorda	Charlotte
S.R. 29 (Main Street)	37.953	39.784	New Market Street	9th Street	Immokalee	Collier
S.R. 29 (Main Street)	36.834	37.953	9th Street	C.R. 846	Immokalee	Collier
U.S. 41 (Tamiami Trail)	12.894	15.747	S.R. 84 (Davis Boulevard)	Rattlesnake Hammock Road	Naples	Collier
S.R. 70 (Hickory Street)	0	0.729	N. DeSoto Avenue	Roger Avenue	Arcadia	DeSoto

NAME	BEGIN MILE POST	END MILE POST	FROM	TO	CITY / TOWN	COUNTY
S.R. 70 (Magnolia Street)	13.478	14.095	N. DeSoto Avenue	Roger Avenue	Arcadia	DeSoto
S.R. 70 (Oak Street)	14.195	14.539	Roger Avenue	S.E. Airport Road	Arcadia	DeSoto
U.S. 27	5.018	5.27	6th Street	3rd Street	Moore Haven	Glades
U.S. 17	17.317	17.602	Maxwell Drive	Pine Cone Park	Wauchula	Hardee
S.R. 636 (Main Street)	0	1.121	S.R. 35 (S. 6th Avenue)	900′ East of Riverside Drive	Wauchula	Hardee
S.R. 35 (S. 6th Avenue)	0.691	1.464	Main Street	Carlton Street	Wauchula	Hardee
S.R. 80 (Sugarland Highway)	2.228	3.967	Berner Road	San Pedro Street	Clewiston	Hendry
S.R. 80 (Hickpochee Avenue)	8.895	9.354	Hardee Street	S.R. 29 (Main Street)	LaBelle	Hendry
S.R. 29 (Main Street)	15.91	16.94	S.R. 80 (Hickpochee Avenue)	Cowboy Way	LaBelle	Hendry
S.R. 25	13.464	14.217	Main Street	Hal McRae Boulevard	Avon Park	Highlands
S.R. 17 (U.S. 27)	10.157	11.144	S.R. 25 (U.S. 27)	DeSoto Avenue	Avon Park	Highlands
U.S. 27	17.896	19.073	Lake Clay Drive	McCoy Drive	Lake Placid	Highlands
S.R. 80 (Palm Beach Boulevard)	2.51	4.36	Veronica Shoemaker Boulevard	Ortiz Avenue	Fort Myers	Lee
S.R. 867 (McGregor Boulevard)	0	2.66	Paul Schultz Way	Cypress Lake Drive	Fort Myers	Lee
S.R. 78 (Pine Island)	9.64	11.88	600′ West of Santa Barbara Boulevard	900′ East of Del Prado Boulevard	North Fort Myers	Lee

NAME	BEGIN MILE POST	END MILE POST	FROM	TO	CITY / TOWN	COUNTY
S.R. 739 (Fowler Avenue)	0.495	2.295	S.R. 80/ BUS U.S. 41	S.R. 739 (Hanson Street)	Fort Myers	Lee
S.R. 739 (Evens Street)	0.000	1.060	S.R. 82/ MLK Boulevard	S.R. 739 (Hanson Street)	Fort Myers	Lee
S.R. 64 (Manatee Avenue)	2.69	5.56	29th Street E.	75th Street W.	Bradenton	Manatee
S.R. 55 (1st Street)	0.117	1.257	301 Boulevard	U.S. 301	Bradenton	Manatee
S.R. 684 (Cortez Road)	0.67	8.50	12th Street W.	U.S. 301	Bradenton	Manatee
S.R. 45/U.S. 41 (14th Street W/ Tamiami Trail)	4.256	5.284	Sarasota County Line	8th Avenue West	Bradenton	Manatee
U.S. 98 (Park Street)	8.21	9.22	21st Avenue	5th Avenue	Okeechobee	Okeechobee
U.S. 441 (Parrott Avenue)	1.63	2.95	3rd Street	22nd Street	Okeechobee	Okeechobee
S.R. 33 (Lakeland Hills Boulevard)	0.75	2.37	Aida Street	Memorial Boulevard	Lakeland	Polk
U.S. 98 (Florida Avenue)	0.9	2.68	Griffin Road	4th Street	Lakeland	Polk
S.R. 539 (Kathleen Road)	0.833	2.583	I-4 Westbound Off-Ramp	S.R. 546 (Memorial Boulevard)	Lakeland	Polk
U.S. 41 (N. Tamiami Trail)	12.28	15.25	Gulf Gate Drive	S.R. 758 (Bee Ridge Road)	Sarasota	Sarasota
S.R. 72 (Stickney Pointe Road)	0.01	1.81	U.S. 41 (Tamiami Trail)	Beneva Road	N/A	Sarasota
S.R. 758 (Bee Ridge Road)	0.00	4.83	U.S. 41	Cattleman Road	Sarasota	Sarasota
S.R. 780 (Fruitville Road)	0.392	5.692	School Avenue	I-75	Sarasota	Sarasota

Figure 8. Priority Multimodal Corridors



Priority Speed Management Corridors

REDUCING CRASHES ON HIGH SPEED CORRIDORS

In District One, roadways with speed limits of 45 mph or higher, five or more lanes, and C3C suburban commercial contexts are at the highest risk for severe crashes.

A three-phase process was developed to help District One identify corridors that should be reviewed for better speed management (appendix F).

1

Screen

Identifies district one corridors with top crash factors: high speed limits, number of lanes, and C3C suburban commercial context classifications

2

Prioritize

Ranks corridors by crash factors assigned during the initial screening process by weighted fatal and severe injury crashes using a killed or severely injured (KSI) score

3

Implement

Determines what screened and prioritized corridors have already been planned and programmed.

Figure 9 maps the speed management corridors by tier.

TIER 1

Corridors that meet all three of the over-represented risk categories for bicycle and pedestrian crashes: posted speed limit of 45 mph or higher, 5 or more vehicular travel lanes, and a Context Classification of C3C (Suburban Commercial).

TIER 2

Corridors that meet two of the following:

- posted speed limit of 45 mph or higher
- 3 or more vehicular travel lanes
- Context Classification of C2T or higher

TIER 3

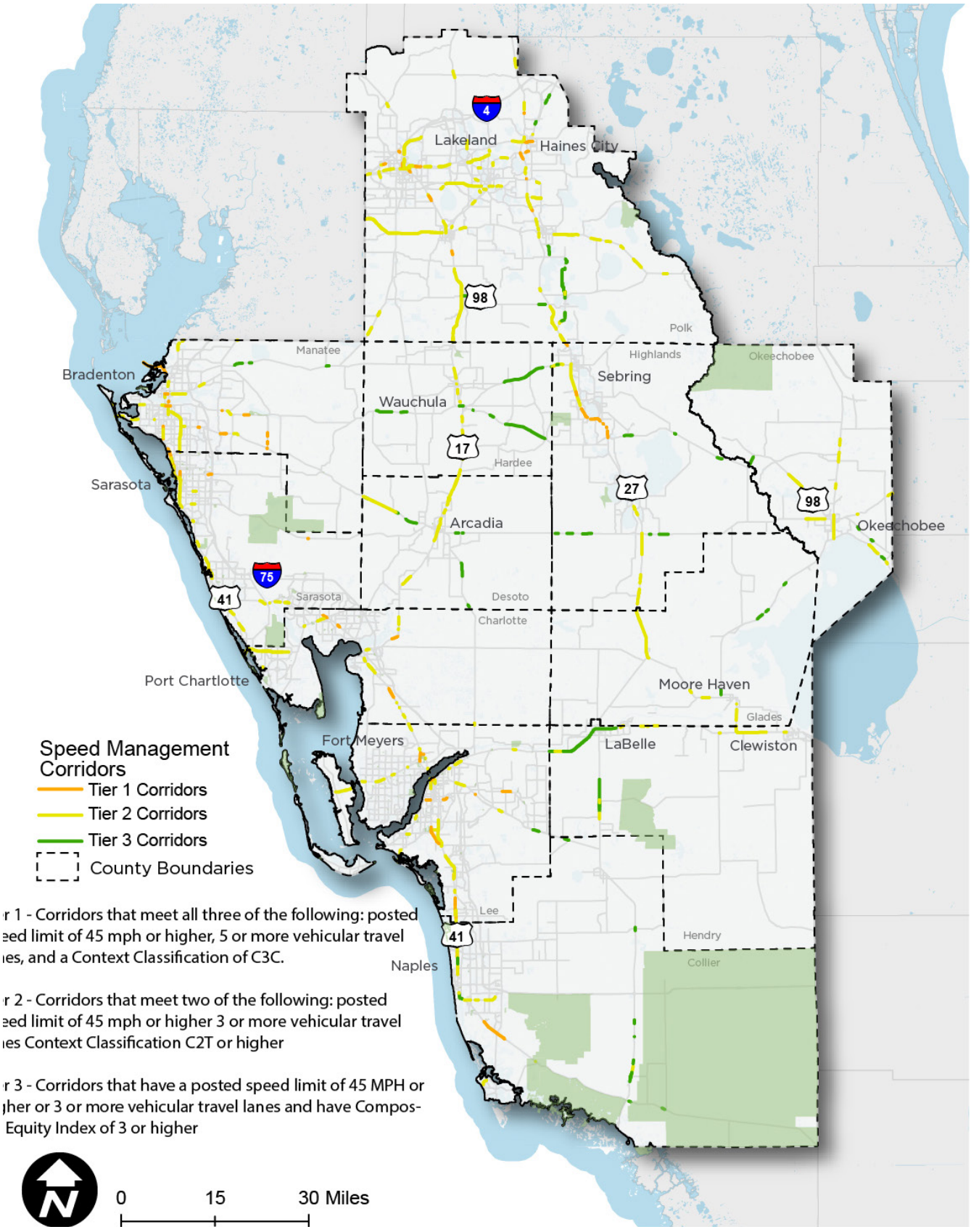
Corridors that have a posted speed limit of 45 mph or higher or 3 or more vehicular travel lanes AND have Composite Equity Index of 3 or higher (appendix A).

Of these, one aligns with partner agency planned or programmed project locations. The U.S. 17 from mileposts 15.7 to 17.3 in Hardee County has a planned sidewalk project. This speed management corridor also aligns with the priority corridor identified by the advanced safety tool.

To view the speed management tier map, visit the online Active Transportation Plan Executive Summary at https://bit.ly/D1ATMP.

In District One, roadways with speed limits of 45 mph or higher, five or more lanes, and C3C suburban commercial contexts are at the HIGHEST RISK FOR SEVERE BICYCLE AND PEDESTRIAN CRASHES.

Figure 9. Speed Management Tier Map



Priority Signalized Intersections

Improving Permeability in District One's Network

An intersection safety and comfort analysis was used to develop a list of District One intersections that could be improved with geometric modifications or signalization changes. These improvements or changes might include bicycle boxes, two stage bicycle boxes, or protected intersections.

Potential locations for bicycle boxes were identified by using FDM 223.2.1.5 criteria. However, due to high numbers of through lanes, a lack of bicycle lanes, or high posted speed limits, no current District One road meets the criteria for a bicycle box.

FDM 223.2.1.5 criteria was also used to identify potential locations for two-stage bicycle turn boxes. The following steps were used to identify candidate intersections:

1 IDENTIFY INTERSECTIONS WHERE ALL APPROACHES HAVE A POSTED SPEED LIMIT OF 45 MPH OR LESS

Key:

- Intersection
- Serious injury crash
- Fatal crash
- Characteristic met

2 APPLY DEMAND CHARACTERISTICS AT INTERSECTIONS WITH POSTED SPEED LIMIT OF 45 MPH OR LESS

Bicycle Lanes on All Legs

OR

High Demand and High Intersection-level High-injury Network (HIN) Score

OR

Trail Connectivity and High Intersection-level (HIN) Score

ANALYSIS RESULTS

District One Priority Intersections

Table 5. Intersections with Bicycle Lanes on All Legs

INTERSECTION	CITY/TOWN	COUNTY
Santa Barbara Boulevard and S.R. 84 (Davis Boulevard)	Naples	Collier
S.R. 739 (Metro Parkway) and Winkler Avenue	Fort Myers	Lee
U.S. 98 (N. Florida Avenue) and Parkview Place	Lakeland	Polk
U.S. 41 (N. Tamiami Trail) and Laurel Road	Venice	Sarasota
U.S. 301 (Washington Boulevard) and Myrtle Street	Sarasota	Sarasota

Table 6. Intersections with Trail Connections and High Intersection-level High-injury Network Score

INTERSECTION	CITY/TOWN	COUNTY
Honore Avenue and S.R. 780 (Fruitville Road)	Sarasota	Sarasota
S.R. 776 (Englewood Road) and Englewood Isles Parkway	Englewood	Sarasota
Honore Avenue and S.R. 758 (Bee Ridge Road)	Sarasota	Sarasota
U.S. 98 (Bartow Road) and S.R. 540 (Clubhouse Road)	Highland City	Polk
Ortiz Avenue and S.R. 80 (Palm Beach Boulevard)	Fort Myers	Lee
S.R. 865 (San Carlos Boulevard) and Summerlin Road	Fort Myers	Lee
U.S. 41 (S. Tamiami Trail) and S.R. 876 (Daniels Parkway)	Sarasota	Sarasota
U.S. 41 (Tamiami Trail E.) and Thomasson Drive	Fort Myers	Lee

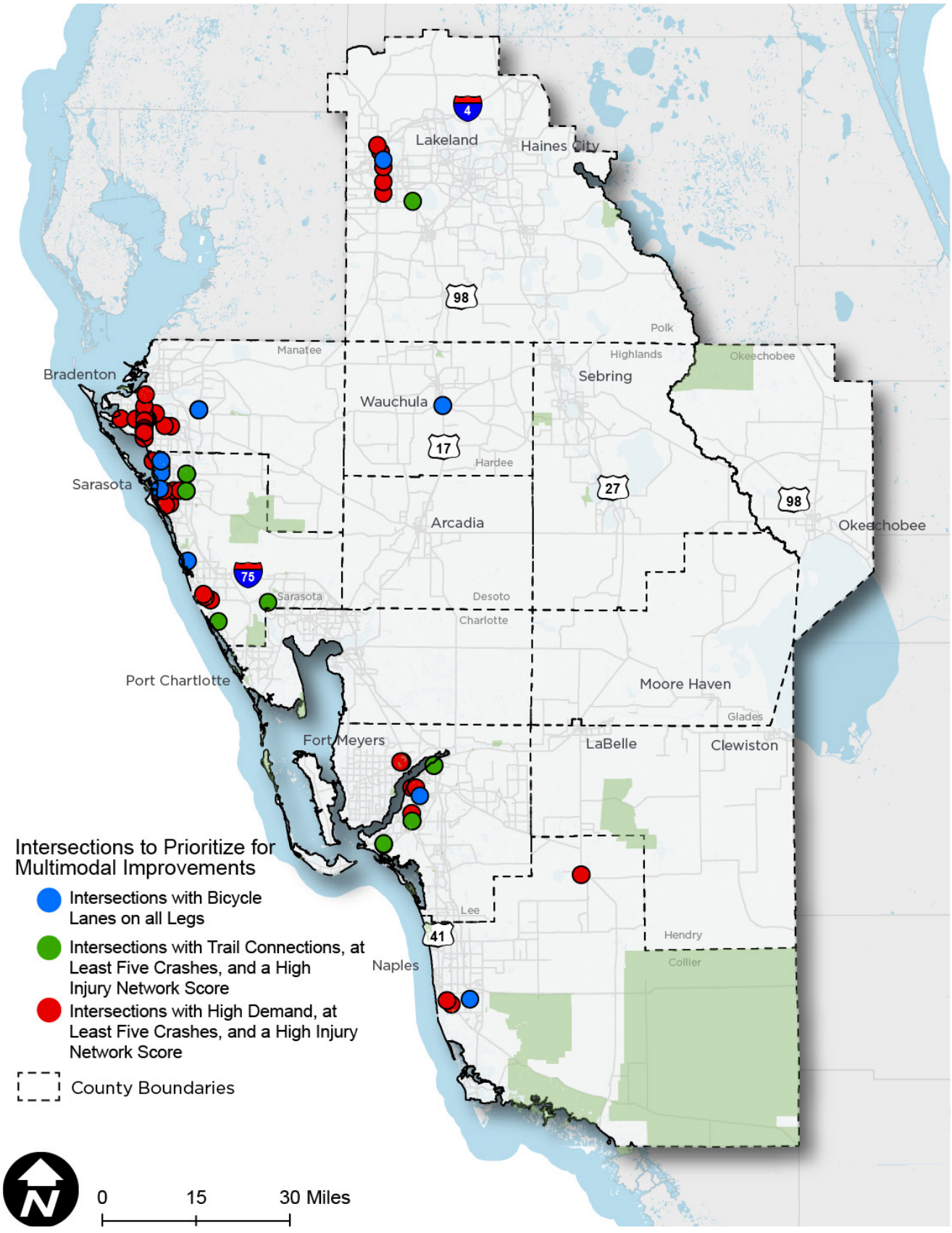
Table 7. Intersections with High Demand and High Intersection-level High-injury Network Score

INTERSECTION	CITY/TOWN	COUNTY
26th Street and S.R. 684 (44th Avenue)	Bradenton	Manatee
20th Street and S.R. 684 (44th Avenue)	Bradenton	Manatee
U.S. 41 (Tamiami Trail E.) Business and 39th Avenue	Bradenton	Manatee
U.S. 41 (Tamiami Trail E.) Business and 44th Avenue	Bradenton	Manatee
U.S. 41 (Tamiami Trail E.) and 53rd Avenue	Bradenton	Manatee
U.S. 41 (Tamiami Trail E.) and 60th Avenue	Bradenton	Manatee
U.S. 41 (Tamiami Trail E.) and Florida Boulevard	Bradenton	Manatee
Beneva Road and S.R. 758 (Bee Ridge Road)	Sarasota	Sarasota
U.S. 41 (Tamiami Trail E.) and Seminole Drive	Venice	Sarasota
U.S. 41 (Tamiami Trail E.) and Alligator Drive	Venice	Sarasota
U.S. 301 (Washington Boulevard) and Myrtle Street	Sarasota	Sarasota
U.S. 41 (Tamiami Trail E.) and 57th Avenue	Bradenton	Manatee
Honore Avenue and S.R. 780 (Fruitville Road)	Sarasota	Sarasota
Jacaranda Boulevard and U.S. 41 (Tamiami Trail E.)	Venice	Sarasota
Woodward Avenue and S.R. 78 (Pine Island Road)	Fort Myers	Lee
U.S. 41 (9th Street) and Cortez Road	Bradenton	Manatee
U.S. 41 (Tamiami Trail E.) Bayshore Gardens Parkway	Bradenton	Manatee
S.R. 72 (Stickney Point Road) and Gateway Avenue	Sarasota	Sarasota
S.R. 684 (44th Avenue) and Cortez Road	Bradenton	Manatee
U.S. 41 (Tamiami Trail E.) and Crystal Drive	Fort Myers	Lee
U.S. 41 (Tamiami Trail E.) and 69th Avenue	Bradenton	Manatee

INTERSECTION	CITY/TOWN	COUNTY
U.S. 301 (S. Irby Street) and 17th Street	Sarasota	Sarasota
U.S. 41 (8th Avenue) and 7th Street	Palmetto	Manatee
Shade Avenue and S.R. 758 (Bee Ridge Road)	Sarasota	Sarasota
U.S. 98 and S.R. 582 (Griffin Road)	Lakeland	Polk
33rd Street and S.R. 70 (53rd Avenue)	Oneco	Manatee
Honore Avenue and S.R. 758 (Bee Ridge Road)	Sarasota	Sarasota
S.R. 37 (Florida Avenue) and Highland Drive	Lakeland	Polk
U.S. 41 (Tamiami Trail E.) Business and 9th Avenue	Bradenton	Manatee
U.S. 41 (Tamiami Trail E.) and Proctor Road	Sarasota	Sarasota
S.R. 739 (Fowler Street) and Hanson Street	Fort Myers	Lee
Lockwood Ridge Road and S.R. 70 (53rd Avenue)	Oneco	Manatee
Commercial Drive and U.S. 41 (Tamiami Trail E.)	Naples	Collier
Ortiz Avenue and S.R. 80 (Palm Beach Boulevard)	Fort Myers	Lee
S.R. 29 (15th Street) and U.S. 301	Samoset	Manatee
U.S. 98 and Sleepy Hill Road	Lakeland	Polk
S.R. 29 (15th Street) and Immokalee Drive	Immokalee	Collier
McIntosh Road and S.R. 758 (Bee Ridge Road)	Sarasota	Sarasota
Airport Pulling Road and U.S. 41 (Tamiami Trail E.)	Naples	Collier
U.S. 41 (Tamiami Trail E.) and Hanson Street	Fort Myers	Lee
S.R. 865 (San Carlos Boulevard) and Whitewater Court	Fort Myers	Lee
U.S. 98 (Florida Avenue) and Pine Street	Lakeland	Polk
U.S. 41 (Tamiami Trail E.) and Pine Island Road	Fort Myers	Lee

INTERSECTION	CITY/TOWN	COUNTY
5th Street and S.R. 684 (Cortez Road)	Bradenton	Manatee
U.S. 41 (Tamiami Trail E.) Business and 39th Avenue	Bradenton	Manatee
Lockwood Ridge Road and S.R. 72 (Clark Road)	Sarasota	Sarasota
U.S. 41 (Tamiami Trail E.) and Orlando Avenue	Bradenton	Manatee
U.S. 41 (Tamiami Trail E.) and Daniels Parkway	Fort Myers	Lee
San Carlos Boulevard and S.R. 869 (Summerlin Road)	Fort Myers	Lee
U.S. 301 (Washington Boulevard) and S.R. 780 (Fruitville Road)	Sarasota	Sarasota
U.S. 41 (Tamiami Trail E.) and Myrtle Street	Sarasota	Sarasota
75th Street and S.R. 684 (Cortez Road)	Bradenton	Manatee
U.S. 98 (N. Florida Avenue) and Edgewood Drive	Fort Myers	Lee

Figure 10. Intersections to Prioritize for Multimodal Improvements



Protected Intersection Pilot

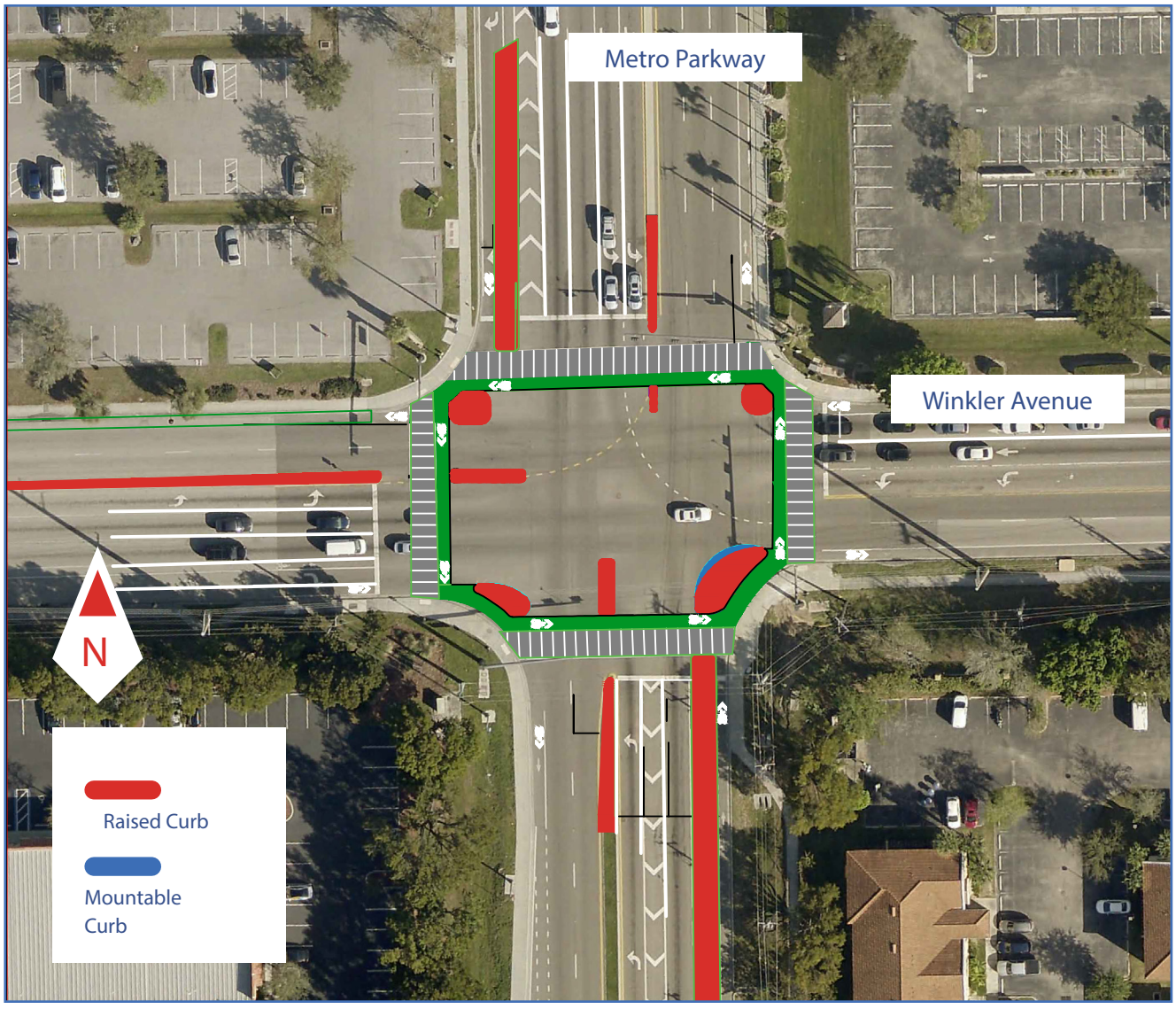
Opportunity in Fort Myers, Bonita Springs, and Sarasota

Protected intersections are geometrically configured to allow the safe movement of all modes by improving visibility and reducing vehicle conflict for people walking and biking by using green paint, exclusive bicycle lanes or bicycle boxes, and innovative signal timing (see page 17 of the Bicycle and Pedestrian Facilities Toolkit). FDOT is looking for opportunities to introduce protected intersections through corridor studies and ongoing projects.

As part of the Fruitville Road Corridor Vision Plan, FDOT is recommending a buffered bicycle lane along S.R. 780 in the interim and a 10-foot-wide path in the long term. The recommendations include a protected intersection at S.R. 780 (Fruitville Road) and S. Beneva Road and S.R. 780 (Fruitville Road) and Honore Avenue.

FDOT completed an Intersection Safety Study on U.S. 41/S.R. 45 at Terry Street/Bonita Bay Boulevard. A bicycle trail is planned to cross on the north side of the intersection. The study recommended a protected intersection to facilitate pedestrian and bicyclist movement.

Figure 11. Protected Intersection Preliminary Concept at Metro Parkway and Winkler Avenue



Potential Candidates for Green Paint

Green paint in a bicycle lanes make cyclists more visible to drivers. Coordinating with local residents, District One identified candidates for green paint markings through a prioritization analysis. Known issues flagged potential green paint locations.

District One has examined opportunities to introduce green paint markings on projects. Some possible locations include

- U.S. 41 (S. Tamiami Trail) and Terry Street, Bonita Springs, Lee County
- Winkler Avenue and Metro Parkway, Fort Myers, Lee County
- S.R. 82 (Dr. Martin Luther King Jr. Boulevard) and Colonial Boulevard, Fort Myers, Lee County
- Daniels Parkway and Treeline Avenue, Fort Myers, Lee County
- U.S. 41 (S. Tamiami Trail) from Gladiolus Drive to Daniels Parkway, Fort Myers, Lee County
- U.S. 41 (N. Cleveland Avenue) and S.R. 78 (N. Pine Island Road), North Fort Myers, Lee County
- S.R. 789 (Gulf Drive N.) and Avenue C, Bradenton Beach, Manatee County
- S.R. 70 (53rd Avenue E.) from U.S. 301 to 63rd Street East, Bradenton, Manatee County
- Bartow Road from Lake Wire Drive to Florida Avenue, Lakeland, Polk County

District One will continue to identify opportunities to introduce green paint through projects.

Cady Way, Winter Park, Florida

07

INTRODUCTION TO THE BICYCLE AND PEDESTRIAN FACILITIES TOOLKIT

PREFERRED BICYCLE AND PEDESTRIAN FACILITIES

Users and designers share responsibility for traffic safety. This plan uses the safe systems approach identified in the FDOT Strategic Highway Safety Plan (SHSP) to determine the best design facility improvements for District One. A safe system approach acknowledges that roadway users will make mistakes and aims to create a protective, redundant system that minimizes impact energy when crashes do occur.

This section of the of the Active Transportation Plan recommends bicycle and pedestrian infrastructure for state highway facilities in District One. These recommendations align with Section 223.2.3 of the FDOT Design Manual (FDM), which recommends planning ahead for shared use paths and separated bicycle lanes in a district bicycle facility plan.

The Bicycle and Pedestrian Decision Tree for District One Projects (figure 12) recommends bicycle and pedestrian facilities by context. Figure 12 depicts the bicycle facilities system that would be implemented after following this decision tree. The decision tree begins by defining the information needed to identify existing conditions. It provides crucial context for bicycle and pedestrian infrastructure needs as well as some of the constraints in implementing recommendations.

The Bicycle and Pedestrian Facility Decision Tree for District One Projects summarizes recommendations based on:

- Local plans
- Context classification
- Curb vs. flushed shoulder
- Design speed
- Number of lanes

Recommendations for C1 and C2 facilities also account for:

- Annual Average Daily Traffic (AADT)
- Truck percentages
- Crash history

The accompanying document, the Bicycle and Pedestrian Facilities Toolkit, expands on the Bicycle and Pedestrian Decision Tree to identify facilities that promote walking and biking along and across SHS facilities and that could help provide a safe, comfortable, permeable, and multimodal system for its communities.

Each project will present opportunities and constraints toward implementing the decision tree's recommendations. The recommendations may not be achievable in all projects.

When determining feasibility, consider:

- Accommodating the facility with minor modifications to the drainage facility
- Accommodating the facility without major impacts to utilities
- Maintaining separation between a bicycle and motorized traffic through intersections for shared use paths and separated bicycle lanes
- Reallocating roadway space to accommodate the preferred bicycle facility

If the preferred bicycle facility is infeasible, select the next best facility as a short-term measure and coordinate with the District Bicycle and Pedestrian Coordinator to identify future opportunities.

Options for Reallocating Roadway Space

- Narrow travel lanes
- Consider removing auxiliary lanes and/or turn pockets
- Reorganize street space
- Change street parking
- Consider lane repurposing

TYPES OF BICYCLE FACILITIES THAT SERVE TRAVEL ALONG A ROADWAY

Shared Use Path

A 10- to 14-foot paved facility physically separated from motor vehicle traffic by an open space or barrier and is either within the facility right of way or an independent right of way.

Separated Bicycle Lane

A one- or two-way bicycle facility that is adjacent to and physically separated from the vehicular travel lanes, at grade or raised to the sidewalk level for additional safety and comfort.

Bicycle Lanes

A portion of a curbed roadway designated for the exclusive use of cyclists by a bicycle symbol pavement marking in accordance with Standard Plans Index 711-002 and the MUTCD, and illustrated in Exhibits 223-1 through 223-3 of the FDM.

Paved Shoulder

The portion of the roadway contiguous with vehicle travel lanes that accommodates errant vehicles, stopped vehicles, bicycle traffic, and emergency use.

Sharrows

Optional shared-lane pavement markings that indicate a shared environment for bicycles and motor vehicles and used where it is not practical to provide a bicycle facility.

Figure 12. Bicycle and Pedestrian Facility Decision Tree for District One Projects

STEP 1 IDENTIFY EXISTING CONDITIONS

Existing bicycle facility type: ☐ Sharrow ☐ Paved Shoulder ☐ Shared Use Path ☐ Bicycle Lane ☐ Buffered Bicycle Lane ☐ Separated Bicycle Facility

FPID # _____

Roadway ID _____

Begin MP = End MP _____

Functional Classification: _____

SIS Facility: Yes ☐ No ☐

Preliminary Existing Context Classification _____

Preliminary Future Context Classification _____

Rail Crossings: Yes ☐ No ☐

Right of Way: _____

Existing Sidewalk: Both Sides ☐ One Side ☐ None ☐ **Width:** _____

Posted Speed: _____

Number of Lanes: _____ **Vehicle Lane Widths:** _____

Is there On-street Parking?: Yes ☐ No ☐

Paved Shoulder Width: _____ **Percent Heavy Vehicles:** _____

Average Annual Daily Traffic (AADT): _____

Number of Crashes Involving People Walking or Bicycling in Past 5 Years				
User	Fatal Crashes	Serious Injury Crashes	Injury Crashes	All Crashes
Pedestrians				
Bicyclists				

StreetLight Index Percentile for District One: _____

Advanced Safety Tool Score:(box High/Medium/Low for each)

Demand:	☐ High	☐ Medium	☐ Low
Connectivity:	☐ High	☐ Medium	☐ Low
Comfort:	☐ High	☐ Medium	☐ Low
Safety:	☐ High	☐ Medium	☐ Low
Equity:	☐ High	☐ Medium	☐ Low

What projects are (align) in work program or within local vision plans that overlap within this study area?

_____

Transit service: ☐ Yes ☐ No

Does the roadway connect to SunTrail, a regional trail system, or is it part of the U.S. Bicycle Route System or other bicycle route?: ☐ Yes ☐ No

Map bicycle/pedestrian crashes, including severity of crash, location of existing traffic signals, transit stops, community destinations, and other protected/enhanced crossing opportunities.

STEP 3 FOR QUALIFYING PROJECTS, INCORPORATE THE PREFERRED BICYCLE FACILITY INTO THE PROJECT RECOMMENDATIONS. FOR NON-QUALIFYING PROJECTS,DETERMINE FACILITY TO INCLUDE IN PROJECT BY FOLLOWING THE PROCESS IDENTIFIED BELOW. DO THE PREFERRED FACILITY AND EXISTING FACILITY MATCH?[6]

YES

Reconstruct/maintain existing facility, Incorporate ADA requirements, Consider location-specific safety countermeasures

NO

Is preferred facility feasible? (Refer to back page)

YES

Build preferred facility

NO

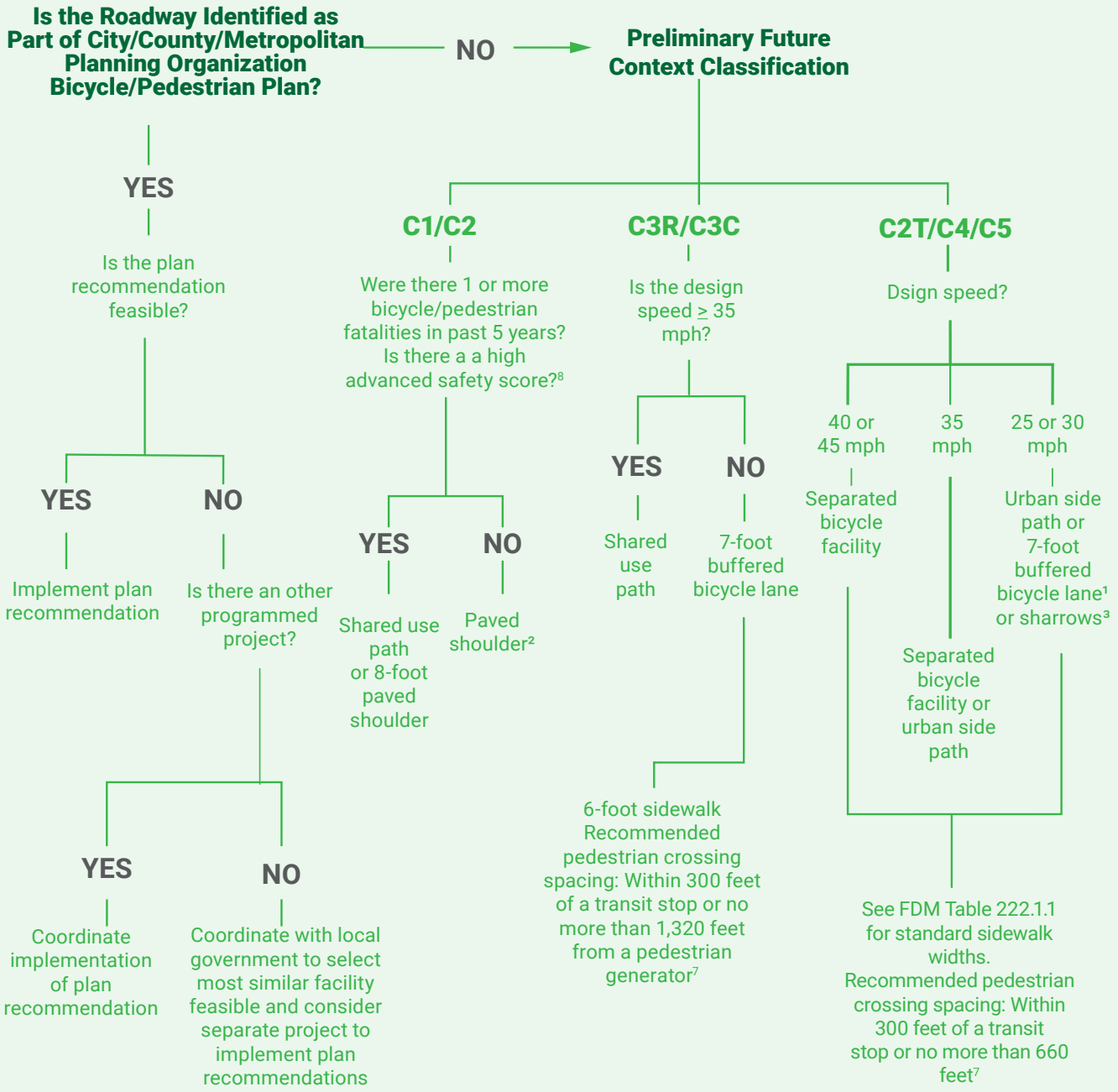
Coordinate with Bicycle and Pedestrian Coordinator to determine best facility to incorporate as a short term measure[4]

STEP 4 IDENTIFY LOCATION-SPECIFIC SAFETY COUNTERMEASURES TO INCLUDE IN PROJECT [5]

Reference the following Toolboxes in the Bicycle and Pedestrian Facilities Toolkit:

- ☐ Speed Management
- ☐ Pedestrian Treatments at Midblock and Marked Unsignalized Intersections
- ☐ Intersection and Driveway Design
- ☐ Bicycle- and Pedestrian-Friendly Signal Timing

STEP 2 IDENTIFY PREFERRED FACILITY



1 Options in the order of priority are: (1) 7-foot buffered bicycle lane (2) 6-foot buffered bicycle lane (3) 5-foot bicycle lane. The use of minimum bicycle lane widths bikeways should be limited to constrained roadways where desirable or preferred bicycle lane widths cannot be achieved after all other travel lanes have been narrowed to minimum widths appropriate for the context of the roadway (source: *FHWA Bikeway Selection Guide*). Do not place a 4-foot bicycle lane adjacent to 10-foot travel lanes.

2 Options in the order of priority are: (1) 7-foot paved shoulder, (2) 5-foot paved shoulder. Mark bicycle facility on a shoulder for design speed ≤ 45 mph and ≥ 5-foot paved shoulder.

3 Consider sharrows when no other option is feasible.

4 Consider parallel bicycle infrastructure investments on parallel network.

5 Refer to *Florida Traffic Engineering Manual* for guidance on required studies to support modifications

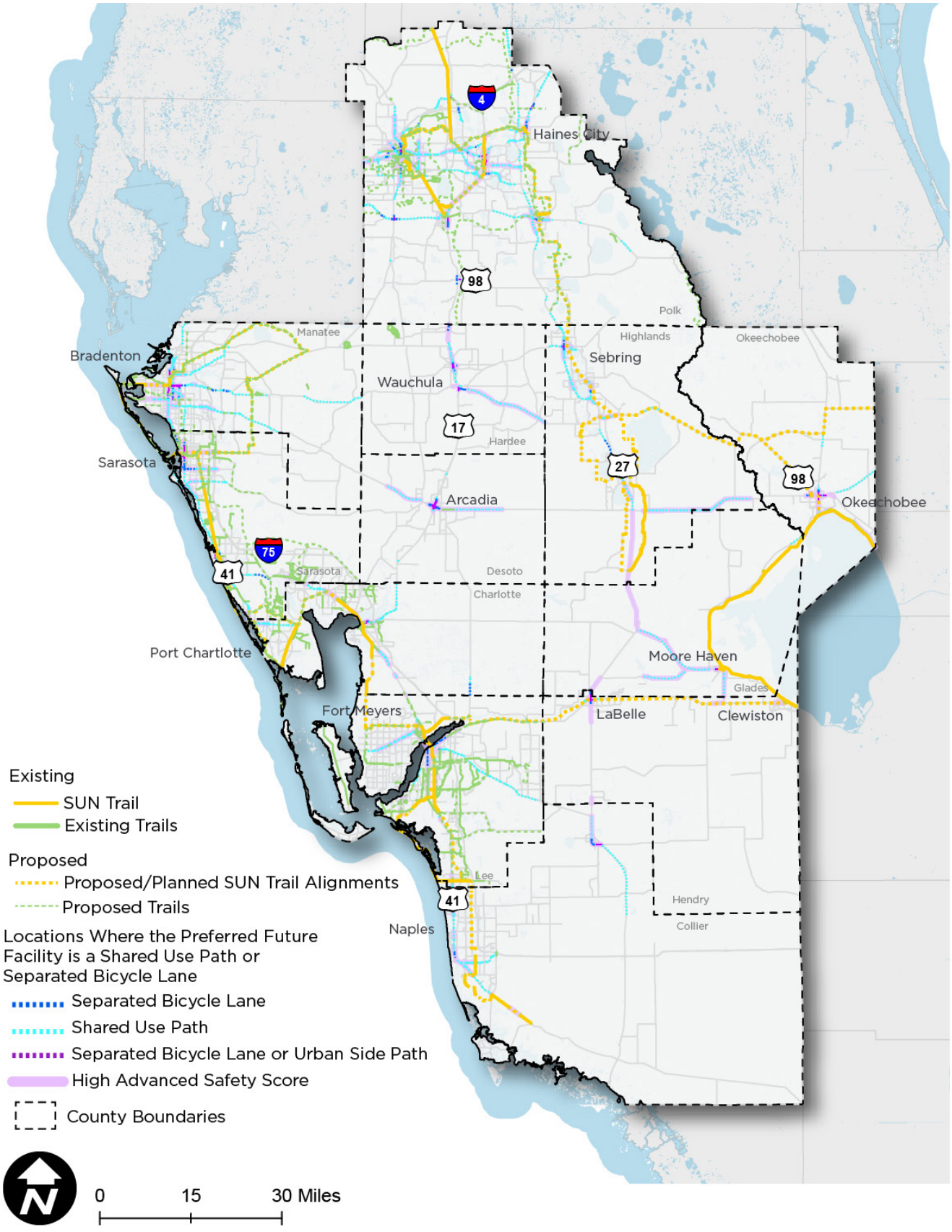
6 Qualifying projects are roadway project types that qualify for ETDM screening, per the PD&E Manual Section 2.3.1, including additional through lanes that add capacity to an existing road, new or reconstructed arterial highway (e.g., realignment), and bridge replacements. Non-qualifying projects do not go through ETDM screening.

7 Reference the *FDOT Design Manual (FDM)*, the *Florida Traffic Engineering Manual*, and the *Manual on Uniform Traffic Control Devices (MUTCD)* for more guidance.

8 High advanced safety score is defined as the top third score for each county (page 45 and appendix A)

Context Classifications: C1-Natural, C2-Rural, C2T-Rural Town, C3R-Suburban Residential, C3C-Suburban Commercial, C4-Urban General, C5-Urban Center, C6-Urban Core

Figure 13. Preferred Location for Shared Use Paths and Separated Bicycle Facilities



08

MEASURING PROGRESS

DISTRICT ONE PERFORMANCE MEASURES

Performance measures help track goals and progress toward systemic safety by assessing the system's current state, setting improvement targets, and evaluating effectiveness. To be successful, performance measures must be tracked and reviewed regularly. Regular review also helps establish a benefit/cost ratio (BCR), which is used to determine federal grant funding.

District One MPOs are vital in promoting and implementing safe infrastructure for people who walk and bike. (For MPO-adopted performance measures, see appendix G.) MPOs have set aside funds to implement bicycle and pedestrian improvements.

Sarasota/Manatee MPO, Heartland Regional TPO, Collier MPO

To further support active transportation infrastructure, the Sarasota Manatee MPO, Heartland Regional Transportation Planning Organization (TPO), and Collier MPO developed plans to support future investments in pedestrian, bicycle, and transit facilities. The Sarasota/Manatee MPO has boxed funds for Multimodal Emphasis Corridors that allocate $15 million in annual funds for U.S. 41, S.R. 64, S.R. 789, and other critical corridors. Boxed funds also include $25 million for bicycle, pedestrian, trail, and transit projects and $75 million for safety projects.

Lee County MPO

The Lee County MPO Complete Streets Initiative helps to remedy gaps in the Lee County active transportation network with projects targeting 11 segments and 11 transit spots critical to the health and safety of visitors, residents, and businesses. Supported through TIGER Grant funding, these projects aim to complete the existing multimodal Tour de Parks Loop, University Loop, and Bi-County Connector. The Lee County MPO Bicycle Pedestrian Master Plan has also identified priority spot improvements and proposed annually reserving additional funding for multimodal improvements.

Polk TPO

The Polk TPO sets performance targets for safety, mobility, sustainable resources, livability, and economy. To reach these targets, the TPO, through their Momentum 2045 Plan, annually targets $1.5 million for bicycle/pedestrian improvements, $1.25 million for trails, and $1.25 million for safety projects. They have also established a performance target of 100% sidewalk coverage within one mile of elementary, middle, and high schools as well as prepared Bicycle and Pedestrian Safety Action Plans and worked with FDOT to implement Complete Streets Action Plans on eight high-crash corridors.

SAFETY

Improve safety for pedestrians and cyclists.

Table 8. Safety Performance Measures

PERFORMANCE MEASURE	BASELINE (2015-2019)	TARGET
Total Bicycle and Pedestrian Serious Injuries	1322	Zero
Total Bicycle and Pedestrian Fatalities	469	Zero
Bicycle and Pedestrian Serious Injuries at Intersections	295	Zero
Bicycle and Pedestrian Fatalities at Intersections	69	Zero

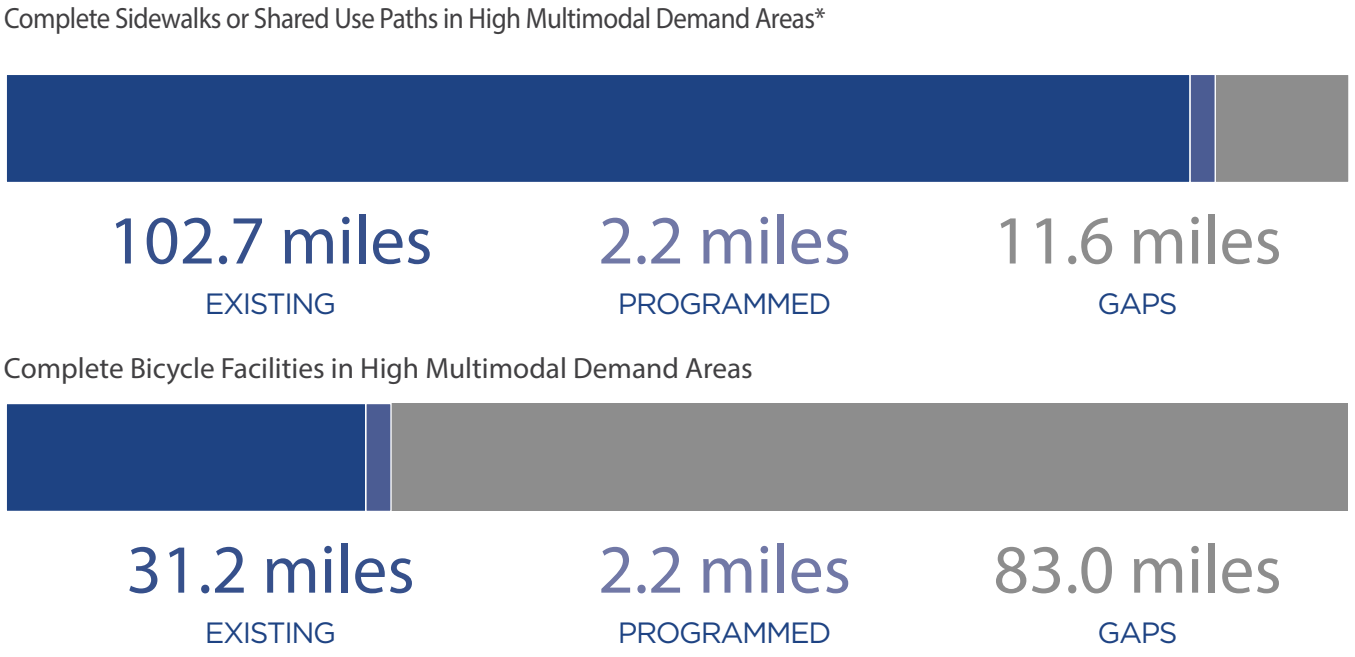
CONNECTIVITY

Create a continuous and connected network.

Table 9. Connectivity Performance Measures

NON-LIMITED ACCESS SHS PERFORMANCE MEASURE	BASELINE	TARGET
Miles of roadway with bicycle facilities on both sides	324.5 Miles	Increase
Miles of curbed roadway and flush shoulder roadway in C2T, C3, C4, and C5 with sidewalks or shared use paths on both sides	328.6 Miles	Increase
Percent of complete bicycle facilities along system segments in high multimodal demand areas	26.8%	100%
Percent of system with complete sidewalks or shared use paths along segments in high multimodal demand areas	88.2%	100%

Figure 14. Connected Network Performance Measure Progress



* High multimodal demand areas are presented in Figure 1, page 25.

COMFORT

Foster comfort and convenience for all types of users.

Table 10. Comfort Performance Measures

NON-LIMITED ACCESS SHS PERFORMANCE MEASURE	BASELINE	TARGET
Miles with bicycle LTS 1 or LTS 2 serving high-frequency transit corridors	17.5 Miles	Increase
Miles with sidewalk or shared use path serving high-frequency transit corridors	93.5 Miles	100%
Percent of complete bicycle facilities along system segments in High Multimodal Demand Areas	26.8%	100%

High-frequency transit corridors are those with headways of 30 minutes or less (appendix A)

Figure 15. Comfort Performance Measure Progress

Bicycle Facilities on Both Sides of the Roadway Meeting LTS 1 or LTS 2 Serving High-Frequency Transit Corridors

17.5 miles EXISTING

7.9 miles PROGRAMMED

113.0 miles GAPS

Sidewalks or Shared Use Paths (Pedestrian Facilities) on Both Sides of the Roadway Serving High-Frequency Transit Corridors

93.5 miles EXISTING

28.8miles PROGRAMMED

16.1 miles GAPS

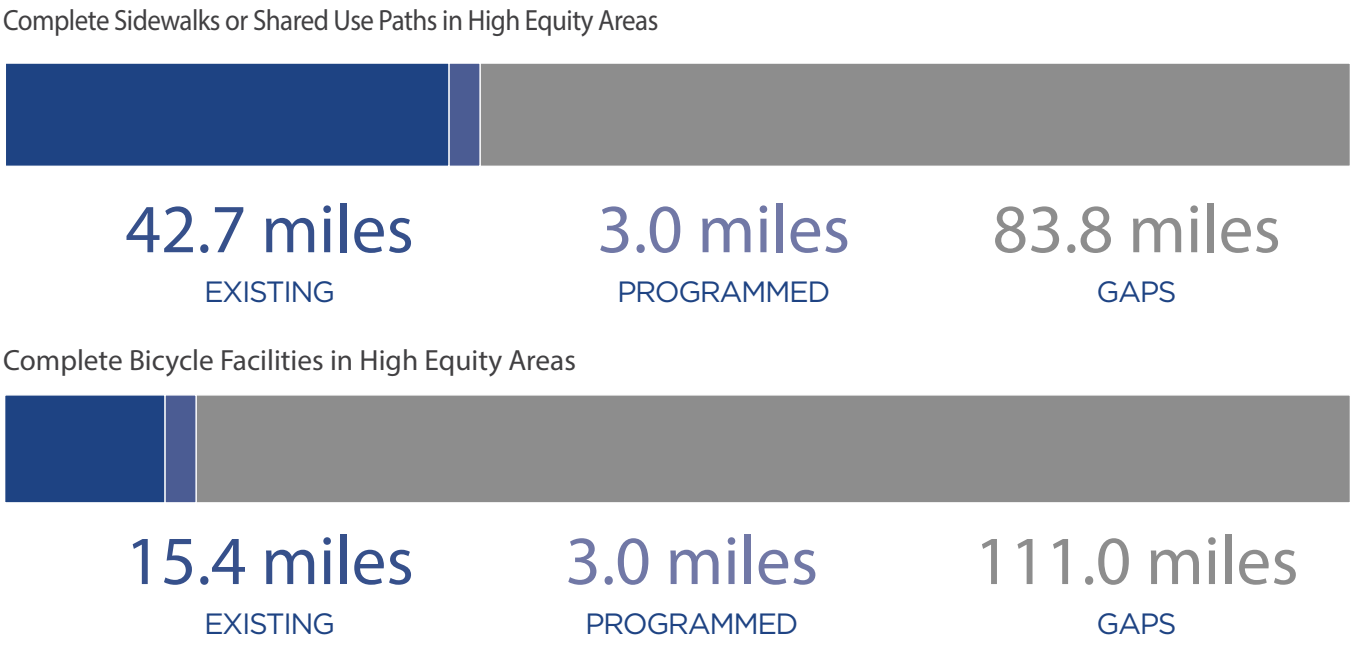
EQUITY

Increase access to employment, education, and civic resources for underserved communities.

Table 11. Equity Performance Measures

NON-LIMITED ACCESS SHS PERFORMANCE MEASURE	BASELINE	TARGET
Percent of system with bicycle facilities on both sides of the roadway in areas with high equity index scores	11.5%	100%
Percent of system with sidewalks or shared use paths on both sides of the roadway in areas with high equity index scores	34.0%	100%
Miles of sidewalks or shared use paths (pedestrian facilities) on both sides of the roadway serving high-frequency transit corridors	93.0 Miles	100%

Figure 16. Equity Performance Measure Progress



High equity areas were identified using census data from population below the poverty line, minority populations, zero-vehicle households, populations aged 65 or older and 18 or younger, percentage of means of transportation to work other than personal motor vehicle, and populations with limited English proficiency. High equity areas are those that are overrepresented in 4 or more of the socioeconomic indicators (page 18 and appendix A).

ECONOMIC VITALITY

Promote economic growth by connecting cultural facilities, schools, transit hubs, and employment centers.

Table 12. Economic Vitality Performance Measures

NON-LIMITED ACCESS SHS PERFORMANCE MEASURE	BASELINE	TARGET
Percent of system in areas of high job density with sidewalks or shared use paths on both sides of the roadway	50.7%	Increase
Percent of system in areas of high job density served by LTS 1 or LTS 2 bicycle facilities on both sides of the roadway	21.5%	100%
Percent of workers 16 years and older who commute using public transportation[1]	1.04%	Increase
Percent of workers 16 years and older who commute by walking	1.18%	Increase
Percent of workers 16 years and older who commute by biking	0.64%	Increase
Vehicle Miles Traveled Daily[2]	27.3 Million Vehicle Miles Per Day	Decrease

1 Mode-share data was obtained through the 2019 American Community Survey

2 The 2019 Vehicle Miles Traveled Daily baseline was obtained using the 2020 FDOT Sourcebook segment-level data. The FDOT Source Book and its segment-level vehicle miles traveled data are updated annually.

09

APPENDICES

A

EXISTING CONDITIONS REPORT

B

ADVANCED SAFETY TOOL MEMO

C

PERFORMANCE MEASURES MEMO

D

RECOMMENDATIONS MEMO

E

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