AGENDA
BPAC
Bicycle Pedestrian Advisory Committee
Collier County Growth Management Department
Conference Rooms 609/610
2800 North Horseshoe Drive
Naples, FL 34104
November 20, 2018
9:00 a.m.

1. **Call to Order**
2. **Roll Call**
3. **Approval of Agenda**
4. **Approval of the October 16. 2018 Meeting Minutes**
5. **Open to the Public for Comment on Items not on the Agenda**
6. **Agency Updates**
   A. FDOT
   B. MPO
   C. Collier County
   D. City of Naples
   E. City of Marco Island
7. **Committee Action**

   None
8. **Reports & Presentations (May Require Committee Action)**
   A. Update and Discussion on Draft Bicycle and Pedestrian Master Plan
9. **Member Comments**
10. **Distribution Items**

    None

Next Meeting Date

January 15, 2019 – 9:00 a.m. – Collier County Growth Management Department Conference Rooms 609/610

11. **Adjournment**

PLEASE NOTE:
This meeting of the Bicycle & Pathways Advisory Committee (BPAC) to the Collier Metropolitan Planning Organization (MPO) is open to the public and citizen input is encouraged. Any person wishing to speak on any scheduled item may do so upon recognition by the Chairperson. Any person desiring to have an item placed on the agenda shall make a request in writing, with a description and summary of the item, to the MPO Executive Director 14 days prior to the date of the next scheduled meeting of the BPAC. Any person who decides to appeal a decision of this Committee will need a record of the proceedings pertaining thereto, and therefore may need to ensure that a verbatim record of the proceeding is made, which record includes the testimony and evidence upon which the appeal is to be based. In accordance with the Americans with Disabilities Act, any person requiring special accommodations to participate in this meeting should contact the Collier Metropolitan Planning Organization 72 hours prior to the meeting by calling (239) 252-5814.The MPO's planning process is conducted in accordance with Title VI of the Civil Rights Act of 1964 and Related Statutes. Any person or beneficiary who believes that within the MPO's planning process they have been discriminated against because of race, color, religion, sex, age, national origin, disability, or familial status may file a complaint with the Collier MPO by calling Ms. Anne McLaughlin at (239) 252-5884 or by writing to her at 2885 South Horseshoe Dr., Naples, FL 34104.

BICYCLE & PEDESTRIAN ADVISORY COMMITTEE
of the
COLLIER METROPOLITAN PLANNING ORGANIZATION
Collier County Growth Management Division
Conference Rooms 609 & 610
2800 North Horseshoe Drive
Naples, FL 34104
9:00 a.m.

October 16, 2018 Meeting Minutes

1. Call to Order

Mr. Bonness called the meeting to order at approximately 9:00 a.m.

2. Roll Call

Mr. Ortman called the roll and confirmed that a quorum was present.

Members Present
Joe Bonness, At-Large
Alan Musico, At-Large
Dayna Fendrick, At-Large
Andrea Halman, At-Large
Reginald Wilson, At-Large
Dr. Mort Friedman, At-Large
Anthony Matoni, At-Large

Members Absent
Jane Cheffy, At-Large
Victor Ordija, At-Large
Joe Admas, At-Large

MPO Staff
Anne McLaughlin, MPO Executive Director
Eric Ortman, MPO Senior Planner
Karen Intriago, MPO Admin. Assistant

Others Present
David Agacinski, FDOT
Lorraine Lantz, CC Transportation Planning
Patty Huff, Citizen
Michelle Avola, Naples Pathways Coalition

3. Approval of Agenda

Ms. Halman: **I move to approve the agenda.**

Dr. Friedman: **I second the motion.**

THE MOTION CARRIED UNANIMOUSLY.

4. Approval of the August 21, 2018 Meeting Minutes

Ms. Fendrick stated that her reference to integrating smart growth principles into the master plan had not been included in the minutes. Mr. Matonti stated that he had been late to the last meeting but had attended. Mr. Ortman stated that these changes would be made to the August 21 minutes.

Ms. Fendrick moved to approve the August 21, 2018 minutes with these two changes. Second by Mr. Matonti. Carried unanimously.

5. Open to the Public for Comment on Items not on the Agenda

Ms. Huff stated that the Florida Bicycle Association recently held their quarterly board and annual membership meetings. The Association's Executive Director travels the state including visiting MPOs; the Association is active in promoting bicycle pedestrian topics and potential legislation including laws on texting while driving and the move over (for bikes) law. Ms. Huff mentioned that the number of bike-oriented trail towns is growing throughout Florida.

6. Agency Updates

A. FDOT

Mr. Agacinski stated that the week of October 27 was FDOT Mobility Week and that other mobility events could be forwarded to him for inclusion on the FDOT website. Other events noticed during FDOT's update included a NPC Heart Walk on November 3rd and a 5-k run on November 2nd. Ms. Lantz noted that the BCC calendar on the Collier County website listed BCC sanctioned events and that separate agencies within the County kept their own calendars. Ms. Huff stated that the Florida Bicycle Association lists all bike events on its calendar.

B. MPO

Ms. McLaughlin stated that all MPO items would be covered in the agenda.

C. Collier County

Ms. Lantz stated that the County was not awarded a Safe Routes to School grant for Shadowlawn Elementary and that the County would resubmit an application next year.

D. City of Naples

E. City of Marco Island

No updates were provided from the City of Naples or the City of Marco Island.

7. Committee Action

None.

8. Reports and Presentations (May Require Committee Action)

A. Draft Bicycle & Pedestrian Master Plan

Ms. McLaughlin stated that the many comments received on the draft Bicycle & Pedestrian Master Plan were leading the MPO to seek additional input, clarification and sense of direction, and would also require additional analysis, GIS work, rewriting, and revisiting policies contained in the draft plan.

Ms. McLaughlin stated that the Environmental Justice methodology used relied on Census Block Group data which resulted in multiple anomalies. As a first step to reduce the number of anomalies, conservation areas and areas of primarily non-residential use would be deleted. Areas of high-end residential development would also be considered for potential removal. The MPO has not been able to acquire data at a smaller geographic level than block group and will use local knowledge, which is permitted by federal guidance, in further refinement of the EJ areas.

Ms. McLaughlin stated the existing conditions and other maps had raised questions about map accuracy and legibility. The initial existing conditions map had mistakenly crossed the data with the legends. There were also differences in interpretations of the inventory data. Ms. McLaughlin noted that work on an existing conditions map is never finished and the map is never completely correct. Many judgement calls were required, and many hours were spent with Google Earth. One example of a judgement call is on East US 41 where there appears to be a bike lane with dashed lines through intersections but no pavement markings elsewhere denoting it as a bike lane. Another example is a five-foot facility that she would consider a sidewalk while others call it a shared use path. Staff is continuing to work on the map and will bring drafts back to the committees.

There was a brief discussion on what the county has mapped with respect to physical assets and bicycle and pedestrian facilities. Currently, the MPO must map the bicycle and pedestrian facilities that it feels are most critical.

Ms. McLaughlin noted that it was not the MPO's intention to exclude existing facility conditions on East US 41. The MPO Board has requested that Ms. McLaughlin develop draft policy language for any MPO proposed changes to the East US 41 roadway to explicitly include consultation with the Miccosukee tribe.

Ms. McLaughlin noted that the Florida Department of Health has suggested that an additional health goal be added to the plan's goals and objectives and has offered a draft policy for inclusion in the plan. Mr. Wilson reads excerpts from the draft policy. Committee members expressed a consensus that such a goal be added to the plan.

Ms. McLaughlin noted that the interactive Wiki map had generated more than 300 comments but that they had come from 25 unique user IDs with 250 coming from one person. Mr. Musico stated that the 250 comments were comments gathered from Marco Island residents and that he had done the data entry. Ms. McLaughlin noted that comments addressing other areas had been offered by about 20 people and that most of the Wiki map comments were clustered on the coast and US 41 near Everglades City. There were very few comments from areas such as Immokalee and other areas where there are known to be bike/ped crash clusters. Ms. McLaughlin noted that crash clusters serve as a proxy for usage as it is both difficult and expensive to get input from Environmental Justice communities. Mr. Musico disagreed stating that crash clusters were more a reflection of the posted speed limit than of usage.

Ms. McLaughlin stated that GIS overlays would be used to further analyze the data and expand the needs categories beyond just safety and Environmental Justice to include recreational and transportation needs for bicyclists and pedestrians. Ms. McLaughlin noted that there seemed to be committee support for facilities that are appropriate for all ages and all abilities.

Discussion followed on the needs and differences of recreational and transportation riders, whether pathway facilities should be classified as recreational or transportation, and the maintenance responsibilities resulting from the classification. Ms. McLaughlin stated that bike/ped facilities located in urbanized areas should all be

considered transportation facilities. Committee members suggested other criteria, such as the number of destinations and population density.

Ms. Avola stated that while using an urbanized density as a criterion may be valuable, it does not include those who depend on walking and biking as their only means of transportation who may be coming from rural areas. She noted that the NPC Lights for Bikes program was serving people who lived in rural areas but who commuted to urban areas. Roads are not classified as transportation or recreational facilities so why should bike facilities be classified in this manner. Mr. Musico stated that the only facilities that should be classified as recreational are those facilities that people drive to use. Mr. Bonness stated that separation of bike facilities was needed on roads with higher posted speed limits.

Ms. McLaughlin presented a table that blended together design guidelines from NACTO, AASHTO and the FDOT Green Book. The table shows that the AADT for many Collier County arterials far exceed those considered in the design guidelines, which requires adjusting the guidelines to be applicable to Collier County. Ms. McLaughlin referred to a preferred cross-section in the draft plan which showed a shared-use path on one side and a sidewalk on the other side. Crossing these high traffic arterials is very difficult. Shared use paths on both sides of the street and bike lanes for those comfortable riding in the road are needed. There are few opportunities for parallel routes for most of the arterials in the county.

Ms. McLaughlin began a discussion on the role of the MPO and local jurisdictions in policy making. Collier County Transportation Planning wants the MPO to provide clear design guidance but is that what the BCC wants. There seems to be support from Transportation Planning for shared use paths and shoulders, but a Complete Streets policy remains to be discussed. Ms. McLaughlin stated that she would like to have County input on guidelines and policies before another draft is issued. Ms. Lantz stated that Transportation Planning is looking for recommendations and policies that the MPO thinks the County should institute as well as potential changes in the Land Development Code. Transportation Planning is looking to the MPO for design standards which the 2012 Plan fell short on.

Ms. McLaughlin stated that if any Complete Streets policy is adopted, the County wants it to include freight, and that to understand FDOT's Complete Streets policy, one has to fully understand the FDOT Context Classification System and design recommendations. Ms. McLaughlin raised a question of whether the policy should be that the MPO would only fund Complete Streets approaches; or should the MPO only encourage local entities to adopt a Complete Streets policy.

Discussion continued over how Complete Streets and Context Sensitive design policies could or should be implemented; and how geographical restrictions and right-of-way issues influence design. Mr. Bonness suggested that perhaps the plan should suggest a preferred cross-section. Ms. Fendrick said that if federal dollars are being used, the MPO should have input on design guidelines. Ms. Fendrick stated that the MPO should take more of a leadership role and that she would like to see more design guidelines in the plan that should also be applied to lower functionally classified roads. Dr. Friedman agreed with Ms. Fendrick, stating that the MPO should be a leader and an advocate for change. Mr. Bonness was in favor of design standards and policies that were as complete as possible. Ms. Lantz noted that the definition of Complete Streets may vary between jurisdictions.

Ms. Huff stated that two-lane roads such as US41 and SR29 were not included in the design matrix; they are 45 mph roads but are only 2-lanes. Ms. McLaughlin stated that these road types need to be added to the matrix.

Mr. Matonti asked if after the Board adopted the plan would it then go to BCC or City Councils for further adoption? Ms. McLaughlin noted that since all BCC members are also on the MPO Board she believed that, for all practical purposes, she was speaking to the BBC as well as to the Cities of Everglades City, Marco Island and Naples when she addressed the MPO Board. Ms. McLaughlin stated that she tries to keep the MPO out of

decisions that should be made internally by the County. After the BCC adopts a policy, it could be brought to the MPO Board as adopted County policy. The MPO's role would then be to ensure a level playing field between the county and cities. The MPO does not want to get ahead of BCC policy if county staff will not support the MPO. Ms. McLaughlin has urged the head of the Growth Management Department to have County staff speak with one voice when it comes to MPO policy considerations.

Discussion turned to design standards. Mr. Matonti asked if the MPO was in support of Complete Streets and federal guidelines for major arterials, or if there was a question of support from the County. Ms. Lantz stated that the County uses this and other plans by incorporating them by reference. After the MPO develops the policies in the plan, the County, after understanding and being on-board with these policies, includes them in County documents and projects, and in working with developers. Ms. Lantz stated that the previous pathways plans had not gone far enough to recommend specific policies.

Ms. Halman asked if design standards would result in certain places not getting bicycle and pedestrian facilities due to inadequate space. Mr. Bonness stated that any design standards need to be context sensitive and flexible to accommodate various topographical and other impediments. Mr. Musico sees the role of the MPO in the plan as integrating the policies of each jurisdiction. Some towns such as Marco Island have mature plans whereas the County has a less mature plan and that the MPO plan may be used to assist the County. Mr. Musico stated that the MPO role is to develop standards that can be adapted to the local environment but that final decisions rest with the BCC or other local jurisdiction.

Ms. McLaughlin spoke of how design guidelines are pivotal to any policy discussion, stating that Chapter 7 of the draft plan would be converted into design guidelines adjusted for Collier County and be moved in front of a combined policy and implementation chapter so that it may be sued to inform policy discussions. Ms. McLaughlin noted that any standards recommended by the plan needed to be flexible enough to meet the different circumstances throughout the county. Ms. McLaughlin suggested that the plan might be best served by having a few distinct clear policies that stated what the MPO's role is. These policies should also align with FDOT policies because FDOT is the major source of funding for bike/ped projects..

Mr. Wilson stated that collectively, the advisory committees provided a wealth of expertise to the MPO Board and asked how this expertise was reflected in MPO recommendations. Ms. McLaughlin stated that the advisory committees have considerable credibility with the Board, and that it is important for the Board to hear what the committees think, but that the Board is the ultimate decision maker for the MPO. It is incumbent on staff to provide the best possible information to the advisory committees to aid them in their decision-making process.

There were no more comments or questions from Committee members. Ms. McLaughlin stated that she had sufficient input to begin redrafting the plan which would be brought back to the committees.

9. Member Comments

Mr. Bonness stated that the Iron Joe Turkey Ride would be held on November 25. Mr. Matonti stated that a "tactical urbanism" demonstration project might be valuable and can be done at low cost, for example, using paint to temporarily delineate one travel lane as a bicycle lane. Ms. Halman informed the committee that Immokalee held a Ciclovia on the first Saturday of each month. Ms. Huff stated that maps being used in the Bike Ped Master Plan should contain an insert for Chokoloskee.

10. Distribution Items

A. 2019 MPO Meeting Calendar.

11. Next Meeting Date

November 20, 2018 at 9:00 a.m.

12. Adjournment

With no further comments or items to attend to, Mr. Bonness adjourned the meeting at approximately 11:00 a.m.

REPORTS AND PRESENTATIONS
ITEM 8A

Update and Discussion on Draft Bicycle and Pedestrian Master Plan

OBJECTIVE: For the committee to receive an update and discuss the Draft Bicycle and Pedestrian Master Plan.

CONSIDERATIONS: MPO staff has been working with our consultant, Tindale Oliver, to address comments received on the draft Bicycle and Pedestrian Master Plan. We are following-up on making the revisions we discussed at last month's committee meeting. We have focused on design guidelines and policy which were discussed at length last month. The attached drafts of Chapter 6 Design Guidelines (**Attachment 1**) and Chapter 7 Policies and Implementation (**Attachment 2**) are provided to generate comments and further the discussion. Staff is not seeking final approval of the attached drafts at this time.

A revised draft of Chapter 4 Vision, Goals and Objectives (**Attachment 3)** is provided to demonstrate the inclusion of new material provided by the Department of Health representative on the Bicycle and Pedestrian Advisory Committee (BPAC), Reginald Wilson.

We are continuing to work on the base existing conditions map, safety analysis, gap analysis and needs analysis. Staff will describe the work-in-progress in relation to the attached series of maps on bicycle and pedestrian crashes (**Attachment 4).**

Due to transit's relationship to Complete Streets and the draft Complete Streets policy in Chapter 7, staff has included **Attachment 5** showing Collier Area Transit bus routes 11 and 15 to augment the discussion.

Attachment 6 is the updated Existing Facilities map, still in draft form.

STAFF RECOMMENDATION: That the committee receive an update and discuss the Draft Bicycle and Pedestrian Master Plan.

ATTACHMENTS:

1. Draft Chapter 6 Design Guidelines – Marked Up and Clean Versions
2. Draft Chapter 7 Policies and Implementation -Marked Up and Clean Versions
3. Draft Chapter 4 Vision, goals and Objectives – Marked Up and Clean Versions
4. Bicycle and Pedestrian Crash Map Series – Severe & Fatal Injuries, Crash Clusters and FDOT's Top 5 High Crash Corridors for Collier County
5. CAT Bus Routes 11 and 15
6. Revised Draft Existing Facilities map

Prepared By: Anne McLaughlin, MPO Director

CHAPTER 6 – BICYCLE AND PEDESTRIAN FACILITY DESIGN GUIDELINES

Bicycle and pedestrian facility design is constantly evolving and the guidance provided by organizations such as The American Association of State Highway and Transportation Officials (AASHTO) and the National Association of City Transportation Officials (NACTO) focused on providing on-street bicycle facilities for experienced and confident riders, rather than off-street Shared Use Paths (SUPs) that less-accomplished cyclists preferred. Bicycle lanes have been included in the design and construction of roadways for more than two decades. In the last 10 years, however, an increasing number of people have begun riding, and research indicates that most people need more than standard 4' bike lane to feel comfortable riding.

Level of Comfort and Facility Type – Designing for All Ages & Abilities

Due to the strong correlation between comfort and facility type, communities around the US are developing bicycle networks that support more casual cyclists who may be interested in riding but are intimidated by sharing the road with vehicles.. Building facilities that are more protected will expand the number and types of users to include those who are less expert and feel less safe riding in or adjacent to vehicular travel lanes.

The National Association of City Transportation Officials (NACTO) publication, "*Designing for All Ages & Abilities-Contextual guidance for High-Comfort Bicycle Facilities*" (December 2017) builds on NACTO's *Urban Bikeway Design Guide* and establishes an All Ages & Abilities criteria for selecting and implementing bike facilities. According to NACTO, "Building bicycle infrastructure that meets this criteria is an essential strategy for cities seeking to improve traffic safety, reduce congestion, improve air quality and public health, provide better and more equitable access to jobs and opportunities, and bolster local economies."

The All Ages & Abilities facility selection guidance is focused on urban street types. It considers factors such as vehicular speeds and volumes, operational uses and what NACTO terms "bicycling stress" – the level of comfort or discomfort cyclists of all ages and abilities feel riding alongside vehicular traffic. The guidance indicates when traffic calming tools, like speed reduction and volume management may be

needed in addition to roadway design changes, like full lane separation, to reduce traffic fatalities and increase cycling rates and rider comfort.

All Ages & Abilities Bike Facilities are ...

Safe

More people will bicycle when they have safe places to ride, and more riders mean safer streets. Among seven NACTO cities that grew the lane mileage of their bikeway networks 50% between 2007–2014, ridership more than doubled while risk of death and serious injury to people biking was halved.[6] Better bicycle facilities are directly correlated with increased safety for people walking and driving as well. Data from New York City showed that adding protected bike lanes to streets reduced injury crashes for all road users by 40% over four years.[7]

Comfortable

Bikeways that provide comfortable, low-stress bicycling conditions can achieve widespread growth in mode share. Among adults in the US, only 6–10% of people generally feel comfortable riding in mixed traffic or painted bike lanes.[8] However, nearly two-thirds of the adult population may be interested in riding more often, given better places to ride, and as many as 81% of those would ride in protected bike lanes.[9] Bikeways that eliminate stress will attract traditionally under-represented bicyclists, including women, children, and seniors.

Equitable

High-quality bikeways expand opportunities to ride and encourage safe riding. Poor or inadequate infrastructure—which has disproportionately impacted low-income communities and communities of color—forces people bicycling to choose between feeling safe and following the rules of the road, and induces wrong-way and sidewalk riding. Where street design provides safe places to ride and manages motor vehicle driver behavior, unsafe bicycling decisions disappear,[11] making ordinary riding safe and legal and reaching more riders.

Contextual Guidance for Selecting All Ages & Abilities Bikeways

Roadway Context				All Ages & Abilities Bicycle Facility
Target Motor Vehicle Speed*	Target Max. Motor Vehicle Volume (ADT)	Motor Vehicle Lanes	Key Operational Considerations	
Any		*Any*	*Any of the following:* high curbside activity, frequent buses, motor vehicle congestion, or turning conflicts‡	**Protected Bicycle Lane**
< 10 mph	Less relevant	No centerline, or single lane one-way	Pedestrians share the roadway	**Shared Street**
≤ 20 mph	≤ 1,000 – 2,000		< 50 motor vehicles per hour in the peak direction at peak hour	**Bicycle Boulevard**
≤ 25 mph	≤ 500 – 1,500			
	≤ 1,500 – 3,000	Single lane each direction, or single lane one-way	Low curbside activity, or low congestion pressure	**Conventional or Buffered Bicycle Lane, or Protected Bicycle Lane**
	≤ 3,000 – 6,000			**Buffered or Protected Bicycle Lane**
	Greater than 6,000			**Protected Bicycle Lane**
	Any	Multiple lanes per direction		
Greater than 26 mph†	≤ 6,000	Single lane each direction	Low curbside activity, or low congestion pressure	**Protected Bicycle Lane, or Reduce Speed**
		Multiple lanes per direction		**Protected Bicycle Lane, or Reduce to Single Lane & Reduce Speed**
	Greater than 6,000	*Any*	*Any*	**Protected Bicycle Lane, or Bicycle Path**
High-speed limited access roadways, natural corridors, or geographic edge conditions with limited conflicts		*Any*	High pedestrian volume	**Bike Path with Separate Walkway or Protected Bicycle Lane**
			Low pedestrian volume	**Shared-Use Path or Protected Bicycle Lane**

* While posted or 85th percentile motor vehicle speed are commonly used design speed targets, 95th percentile speed captures high-end speeding, which causes greater stress to bicyclists and more frequent passing events. Setting target speed based on this threshold results in a higher level of bicycling comfort for the full range of riders.

† Setting 25 mph as a motor vehicle speed threshold for providing protected bikeways is consistent with many cities' traffic safety and Vision Zero policies. However, some cities use a 30 mph posted speed as a threshold for protected bikeways, consistent with providing Level of Traffic Stress level 2 (LTS 2) that can effectively reduce stress and accommodate more types of riders.[18]

‡ Operational factors that lead to bikeway conflicts are reasons to provide protected bike lanes regardless of motor vehicle speed and volume.

Figure 1: NACTO Guidance for Selecting Appropriate Bicycle Facilities

In keeping with the general trends reported around the country, the online survey developed to capture input for this Master Plan found that although many people ride and walk, feeling unsafe is the primary reason reported by those who do not ride often. In total, 88% of survey respondents said there are places they want to ride in Collier County but do not because they feel unsafe. Comfort and safety are the primary motivators for people who ride by choice. The analysis of safety crash data (Chapter

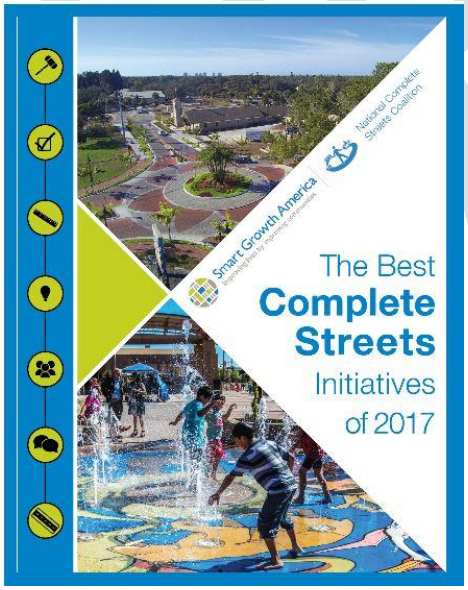
88%

of survey respondents said there are places they want to ride in Collier County but do not because they feel unsafe.

2) shows that areas of high use for walking and cycling coincide with a high number of vehicular crashes. Residents who rely on these modes to meet daily transportation needs are particularly at-risk.

FDOT Guidance

Two FDOT publications, the "*Florida Greenbook*" and the "*Florida Design Manual*" provide essential design guidelines to follow when seeking the State and Federal transportation funding for local projects. The MPO values FDOT's design guidance for reasons that go beyond funding considerations – FDOT has nationally recognized expertise in integrating the concept of Complete Streets into State DOT practices. Smart Growth America identified the *Florida Design Manual* as one of 12 best Complete Streets Initiatives of 2017. Furthermore, FDOT design guidance takes into consideration the 2010 Americans with Disabilities Act (ADA) Standards for Accessible Design and the US Department of Transportation 2006 ADA Standards for Transportation Facilities.



The *Manual of Uniform Minimum Standards for Design, Construction and Maintenance (Florida Greenbook*) provides criteria for public streets, roads, highways, bridges, sidewalks, curbs and curb ramps, crosswalks, bicycle facilities, underpasses and overpasses used by the public for vehicular and pedestrian travel. The current version, *2016 Florida Greenbook* became effective on June 19, 2017.

The current version of the *Florida Design Manual* (FDM) became effective January 2018. Design Criteria for pedestrian and bicycle facilities are linked to the Context Classification System FDOT developed.

Florida Design Manual, Context Classification and Complete Streets[2]

FDOT adopted a Complete Streets Policy in 2014 that accommodates all users along the State roadway system. In August 2017, FDOT published guidance on *Context Classification* which states, "FDOT will routinely plan, design, construct, reconstruct and operate a context-sensitive system of Complete Streets. To this end, a context classification system comprising eight context classifications has been adopted. The context classification of a roadway, together with its transportation characteristics, will provide information about who the users are along the roadway, the regional and local travel demand of the roadway, and the challenges and opportunities of each roadway user. The context classification and transportation characteristics of a roadway will determine key design criteria for all non-limited-access state roadways."

Although counties typically follow the *Florida Green Book*, it has not yet been updated to match the

Figure 2: Illustration of FDOT Context Classification System

Florida Design Manual (FDM). State roads are designed according to the *Florida Design Manual*. The two resources, while separate, are coordinated in their approach to developing a transportation system that serves all users. To better serve the different users of the system, FDOT developed a Context Classification methodology that, according to infrastructure and land use, assigns a context that reflects where the roadway is in the land development continuum, as shown in Figure 28.

This continuum ranges from undeveloped conservation land to the most urban downtowns. By analyzing land use, FDOT determined the facilities that are most appropriate for where they are located. It is FDOT policy that roadways in all counties be classified before or when work is anticipated to assist in the determination of what facilities to include.

FDOT Guidance on Pedestrian Facilities

Table 6 identifies sidewalk facilities by FDOT Context Classification. The highlighted rows and contexts are most relevant to Collier County.

[2] Additional information may be found at http://flcompletestreets.com or at http://fdot.gov/roadway/fdm/.

Table 1: FDOT Context Classification Guidance for Sidewalks

Context	Allowable Range (mph)	SIS Minimum (mph)	Sidewalk
C1 Natural	55-70	65	5' Sidewalk if demand warrants
C2 Rural	55-70	65	5' Sidewalk if demand warrants
C2T Rural Town	25-45	40 (35 with design elements)	6' Sidewalk
C3R Suburban Residential	35-55	50 (45 with curb)	6' Sidewalk
C3C Suburban Commercial			6' Sidewalk if demand warrants
C4 Urban General	30-45	45	6' Sidewalk
C5 Urban Center	25-35	35	10' Sidewalk
C6 Urban Core	25-30	30	12' Sidewalk

Notes: 1) C2T, C3, C4 sidewalk may be increased to 8' with demand; 2) C5 and C6 should be maximum width possible, not less than 6'; 3) For RRR projects, 4' sidewalk may be retained.

Crosswalks

According to the FDM, Special Emphasis crosswalk markings should be used at signalized intersections, roundabouts and midblock crosswalks. Midblock crosswalks should be illuminated, marked and signed in accordance with the *Manual of Uniform Traffic Control Devices* (MUTCD), *Traffic Engineering Manual* (TEM) and FDM. N engineering study supporting the need for the installation is required before a midblock crosswalk can be placed on a State roadway.

Standard crosswalk markings should be used for stop or yield-controlled intersections. When separated right-turn lanes are used, crosswalks should be placed so that an approaching motorist has a clear view of the pedestrian, and the crossing distance is minimized. School Zone crosswalks have additional criteria for signing and pavement markings. See *The Manual on Speed Zoning for Highways, Roads and Streets in Florida*, Chapter 15.

The FDM advises that, as roadway volumes, speeds, and number of travel lanes increase, marked crosswalks are best used in conjunction with other treatments; e.g., signals, signs, beacons, curb extensions, raised medians, refuge islands, and enhanced overhead lighting.

Bicycle Facilities

Table 7 identifies bicycle facilities by FDOT Context classification. It is important to note that the vision or community intent for a corridor is a factor that FDOT takes into account when it designs a facility and coordination between agencies is critical to the end result. Bicycle lanes are a portion of a roadway designated for the preferential or exclusive use of bicyclists. Bike lanes are designated by a bicycle symbol pavement marking and signage in accordance with *Standard Plans* and MUTCD.

According to the FDM, bicycle lanes are the preferred bicycle facility type on curbed roadways with a design speed of ≤ 45 mph. For new construction projects, a 7' buffered bicycle lane is the standard. A buffered bicycle lane has a double 6" white edge line separating the bike lane and the adjacent travel lane. For projects where a bike lane is needed and it is not practical to move the existing curb, the width

of the bicycle lane depends on the width of available roadway pavement. The options in the order of priority are:

- **7- buffered bicycle lane**
- **6- buffered bicycle lane**
- **5- bicycle lane**
- **4- bicycle lane**

Do not provide a bike lane when available roadway pavement is less than 4 feet.

Table 2: FDOT Context Classification Design Guidance for Bicycle Facilities

Context	Allowable Range (mph)	SIS Minimum (mph)	Bicycle Facility
C1 Natural	55-70	65	Unmarked paved shoulder or shared use path
C2 Rural	55-70	65	Unmarked paved shoulder or shared use path
C2T Rural Town	25-45	40 (35 with design elements)	Marked bicycle lane
C3R Suburban Residential	35-55	50 (45 with curb)	Marked bicycle lane when speed is ≤ 45pmh and shared use path is not present or shared use path
C3C Suburban Commercial	35-55	50 (45 with curb)	Marked bicycle lane hen speed is ≤ 45pmh and shared use path is not present or shared use path
C4 Urban General	30-45	45	When speed is ≤ 45pmh and shared use path is not present
C5 Urban Center	25-35	35	When speed is ≤ 45pmh and shared use path is not present
C6 Urban Core	25-30	30	When speed is ≤ 45pmh and shared use path is not present

Illustrated Guide to Bicycle & Pedestrian Facilities

On-Road Bicycle Facilities

Several different on-road bicycle facility types make use of the current roadway network by working between existing curbs; they can enhance the trail network by connecting parks and trails and creating transportation opportunities and accommodating different categories of users. They also tend to be less expensive to build and may be able to be implemented with a resurfacing project. Increasingly, as noted, research is showing that the more protection bicyclists have from vehicles, the more comfortable they feel and the more people ride. Following are facility types, from least to most protected or comfortable, and a discussion of where they should be considered for construction.

Paved Shoulders

Shoulders are commonly used on rural roads that provide a separated space for bicyclists but are not marked as a bicycle facility. The minimum shoulder width is 4', but on high-speed roadways or roadways with many bicycle users, wider shoulders are recommended (Figure 11). REPLACE PHOTO WITH LOCAL–

SR29 POSSIBLE EXAMPLE

Figure 3: Paved Shoulder

Rumble-Buffer Bike Lane[3]

This is an enhanced paved shoulder, primarily used along rural roads. Many cyclists report feeling unsafe on a standard paved shoulder, especially when adjacent to high-speed traffic or high volumes of trucks. Maryland DOT has been working to develop a rumble-buffer option for high-speed rural roads; by adding rumble strips and additional paint, the rumble-buffer bike lane adds additional separation between vehicles, continues to function as an emergency travel or stopping space, actively discourages either mode from entering the travel lane, and requires only a modest increase in shoulder width (Figure 12).

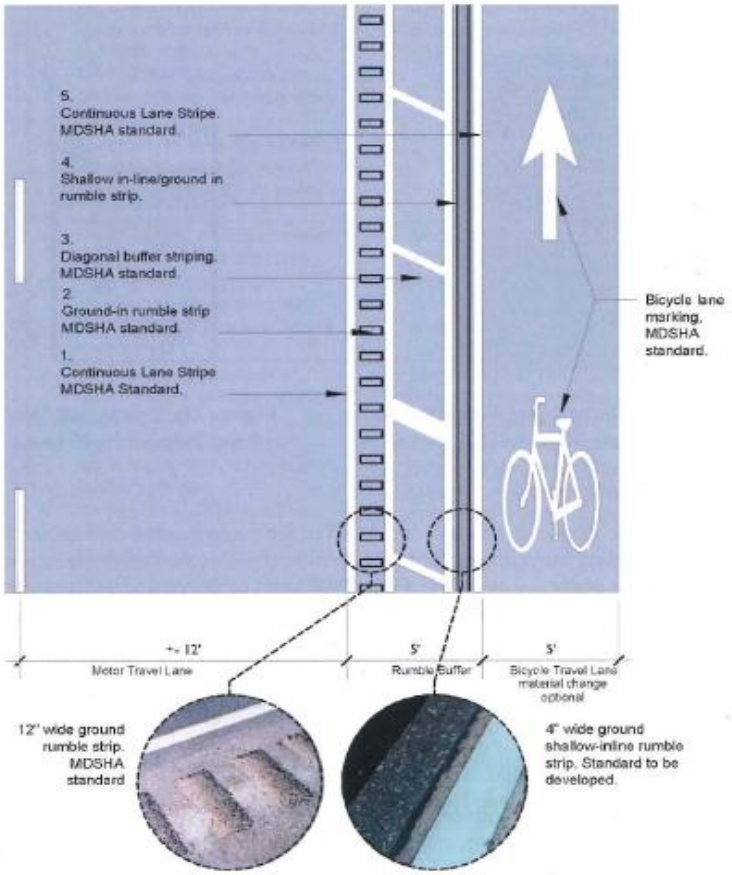


Figure 4: Rumble-Buffer Bike Lane

Bike Lanes

Bike lanes are spaces dedicated to bicycle travel on roadways. They are a minimum of 4-ft-wide if no curb and gutter, and 5-ft wide if included. Typical users are those who are comfortable riding with traffic; they represent a fairly small segment of the bicycle-riding community. This facility type should be considered during roadway resurfacing projects and can be used to make connections between Shared Use Paths. Bike lanes are not considered a preferred facility type for developing a community-friendly Shared Use Path system.

Figure 5: Marked Bike Lane

(Figure 13).

[3] Safe Accommodation of Bicyclists on High Speed Roadways in Maryland, http://www.roads.maryland.gov/OPR_Research/ MD-16-SHA-UM-4-06_Bicycles-on-High-Speed-Roadways_report.pdf.

Buffered Bike Lanes

Buffered bike lanes are spaces dedicated to bicycle travel on roadways and are 7-ft wide with a painted buffer to provide extra space between bicyclists and adjacent vehicles. These facilities provide an additional degree of comfort to bicyclists and should be considered for all new roads being constructed in Hernando and Citrus counties, particularly where higher volumes of bicycle traffic are anticipated (Figure 14).

Figure 6: Buffered Bicycle Lane

Separated Bicycle Lanes

Separated bicycle lanes are on-road facilities that include a traffic separator and dedicated space for bicyclists. They can be one- or two-way depending on the need or the roadway condition and often can be constructed between existing curbs if the roadway has excess capacity. In urban areas, this type of facility can provide a high level of comfort for bicyclists, similar to that of a shared-use path. Design care must be taken at intersections and driveways. Adding this type of facility has been associated with an increase in bicycle usage (Figure 15).

Figure 7: Separated Bicycle Lane

Green Bike Lanes

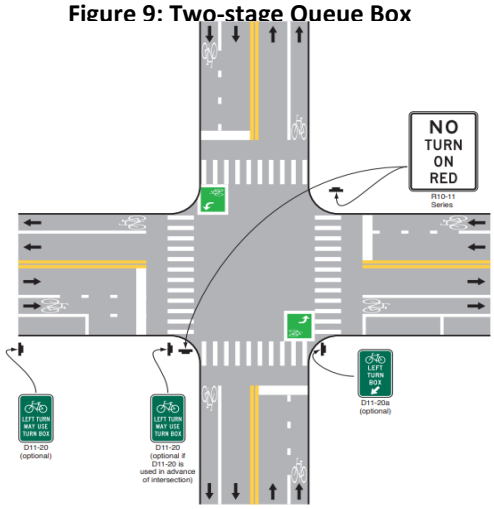
Green paint can be applied to bike lanes in areas of potential conflict where motorists must cross the bike lane to turn or to exit a parking area. Green paint is considered a traffic control device and is subject to guidance in the *Manual on Uniform Traffic Control Devices* (MUTCD), subject to Interim Approval 14 (Figure 16).

Green Bike Lane on Central Ave in Naples

Two-Stage Queue Box

A two-stage queue box allows bicyclists to more easily make a left turn. Rather than having to move into a turn lane to make a left turn, the turn box allows bicyclists to proceed across the intersection and position themselves to cross the intersection with the signal. It received FHWA Interim Approval IA-20 in 2017 (Figure 17).

Figure 9: Two-stage Queue Box



Advisory Bike Lane

An advisory bike lane is used on low-speed roadways where there is not enough room for both bike lanes and travel lanes. These markings communicate to both bicyclists and motorists where to ride while also communicating to motorists that they can pass when there is room (Figure 18).

Figure 10: Advisory Bike Lane

Advisory Shoulder

Advisory shoulders may be used on roads where it is not possible to construct a traditional shoulder. Using paint, space is designated for pedestrians within the travel lane; a dashed line is used to delineate the space may be crossed by motorists if the way is clear. Considered an innovative facility type by FHWA, an approved Request to Experiment is required to implement this facility on federally-funded projects. Additional information can be found it the FHWA's *Small Town and Rural Multimodal Networks.*

Bicycle Boulevard

A bicycle boulevard is a low-volume, low-speed street designed to give bicycles priority, typically achieved by a combination of signage and infrastructure. Also called neighborhood greenways, bicycle boulevards generally provide convenient access to local destinations and often connect or go through neighborhoods (Figure 19).

Off-Road Bicycle & Shared-Use Facilities

Shared Use Paths on Independent Rights-of-Way

The American Association of State Highway and Transportation Officials (AASHTO) defines a Shared use Path (SUP) on independent ROW as a facility that provides a separated path for nonmotorized users to supplement the on-road network. It may be used for recreation or transportation purposes and falls under the accessibility requirements of the Americans with Disabilities Act (ADA) (Figure 20).

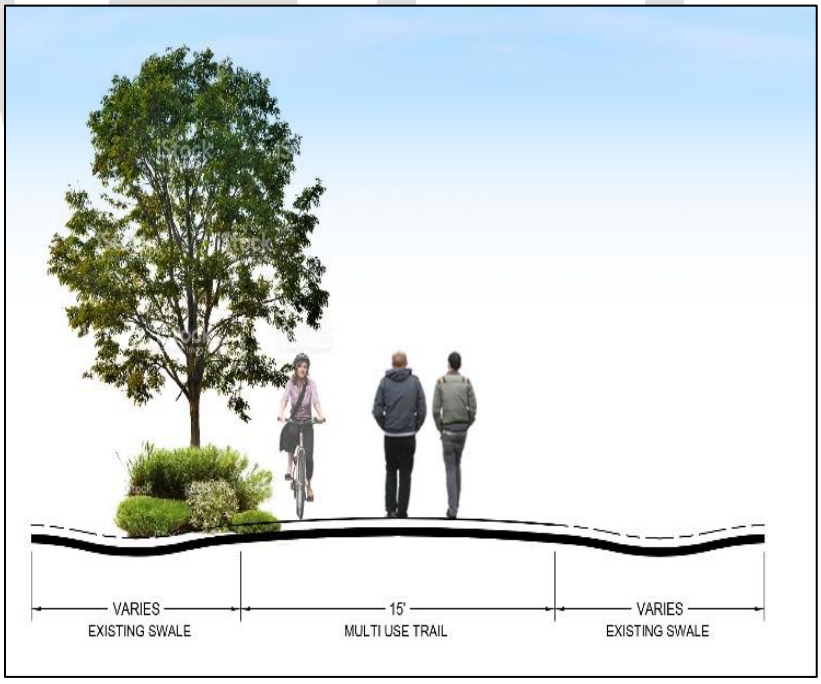


Figure 11: Shared Use Path Section

Sidepaths

AASHTO defines a Sidepath as an SUP immediately adjacent or parallel to a roadway and lists 10 reasons why using a sidewalk as a SUP or providing a sidepath is undesirable:

Sidewalks on US41 between 5th Ave/9th St Intersection and Airport Rd are heavily used by cyclists, often riding against traffic. They are a good example of a situation to be strenuously avoided in new and retrofit designs

- Conflicts at intersections and driveways; motorists often do not notice bicyclists approaching from right because they do not expect wheeled traffic from this direction
- Bicyclists are apt to cross intersections and driveways at unexpected speeds which are significantly faster than pedestrian speeds
- Drivers often pull forward to get an unobstructed view of traffic, in doing so they block the sidepath crossing
- Attempts to require bicyclists to yield or stop at each cross-street or driveway are inappropriate and ineffective
- When a sidepath is provided on just one side of the road, it tends to produce wrong-way travel by bicyclists where the sidepath ends and in order to access the path. Wrong-way travel by cyclists is a common factor in bicycle-automobile crashes; a two-way sidepath on one side of the road may need additional road crossings to provide safe access
- Signs and traffic signals posted for roadway users are backwards for contra-flow riders
- Because of proximity of roadway traffic to opposing path traffic, barriers or railings are sometimes needed.
- Sidepath width may be constrained by fixed objects such as utility poles, mailboxes, etc.
- Due to operational issues, some bicyclists will use the roadway instead of the sidepath; when this occurs, drivers may harass the cyclists, even though Florida does not have a law requiring cyclists to use a path if one is provided.
- Bicyclists using a sidepath can only make a pedestrian-style left turn, yielding to cross traffic twice instead of once, introducing unnecessary delay

Sidepaths may be considered where one or more of the following conditions exist:

- if bicyclists cannot be accommodated on nearby parallel streets and a sidepath is the only practical alternative
- the sidepath is used for a short distance to provide continuity between sections of path in independent rights-of-way, or to connect to local streets
- the sidepath can be built with few roadway and driveway crossings

- the sidepath can be terminated at each end onto streets that accommodate cyclists, onto another path, or in a location that is bicycle compatible.

Sidepath on Airport Road adjacent to Naples Municipal Airport is a good example of a sidepath application that works due to the edge condition – the absence of multiple driveways and curb cuts. The Airport funded the bus. This short segment of Airport Rd is a good example of a Complete Street.

Bicycle and Pedestrian Counters

Understanding bicycle and pedestrian usage is critical to properly plan and design bicycle and pedestrian facilities. Information on usage can help make the case to expand the system or improve facilities

Collier MPO recently submitted a proposal, and was accepted, as a participant in FDOT's Statewide Non-motorized Traffic Monitoring Program. FDOT has looked at two candidate sites for installing permanent bicycle and pedestrian counters, and it's possible that both sites will be approved. They are:

Figure 14: Bicycle Barometer in Boulder, CO *(Source: PeopleForBikes)*

- The County owned and maintained bicycle/pedestrian bridge over the Gordon River on the Gordon River Greenway
- The City of Naples owned and maintained bicycle/pedestrian bridge connecting Baker Park to the west side of the Gordon River/Naples Bay.

FDOT will share the count data gathered at these sites with participating agencies and use the data to calibrate bicycle and pedestrian trip data assumptions statewide.

SUP Crossings on Major Roadways

Walkers and bicycle riders are especially vulnerable as they cross a roadway, whether at an intersection or at a SUP/road crossing. A number of engineering design techniques are available to help minimize the risks. Crossing features for both pedestrian and SUP infrastructure are discussed below.

Two of the primary challenges for SUP and road users are the speed difference between vehicles and the sight distance. Designing intersections that give bicyclists and vehicle operators enough time to react to each other is crucial to minimizing the opportunities for crashes. Several design tools are available to help all users navigate intersections, as described below.

Because each crossing is unique, the specific geometry and location will factor into the design of each intersection. It is important to note that circumstances of use may change over time; this should trigger a review and modification as needed of certain intersections. If, for example, an SUP has a higher volume of users than might have been anticipated, it is recommended that the road crossings be reviewed. It is also important to consider changes to surrounding land use. A crash trend or higher-than-projected volumes for either vehicles or bicyclists may require the need to redesign the crossing to address the challenges.

Pedestrian Safety Counter Measures

FHWA is promoting a number of pedestrian safety countermeasures through their Every Day Counts (EDC-4) program:[4]

- **Road diets** can reduce vehicle speeds and the number of lanes pedestrians cross and can create space to add new pedestrian facilities.
- **Pedestrian hybrid beacons** (PHBs) are a beneficial intermediate option between Rectangular Rapid Flashing Beacons (RRFBs) and a full pedestrian signal. They provide positive stop control in areas without the high pedestrian traffic volumes that typically warrant signal installation.
- **Pedestrian refuge islands** allow pedestrians a safe place to stop at the midpoint of the roadway before crossing the remaining distance. This is particularly helpful for older pedestrians or others with limited mobility.
- **Raised crosswalks** can reduce vehicle speeds.
- **Crosswalk visibility enhancements**, such as crosswalk lighting and enhanced signing and marking, help drivers detect pedestrians—particularly at night.

[4] https://www.fhwa.dot.gov/innovation/everydaycounts/edc_4/step.cfm.

Enhanced At-Grade Crossing or Signalized Crossing

A Pedestrian Hybrid Beacon is a pedestrian-activated traffic control device that is dark to motorists until activated by a pedestrian, at which time a flashing yellow light followed by a solid red light is provided to motorists to direct them to stop (Figure 24). The solid red advances to a flashing red that allows motorists to proceed with caution once the pedestrian has cleared the crossing).

Figure 15: Pedestrian Hybrid Beacon

RRFB

An RRFB (Figure 25) is a traffic control device consisting of two rapidly and alternately flashing rectangular yellow indications with an LED array that functions as a warning beacon. This device has Interim Approval through FHWA for use at unmarked crosswalks.

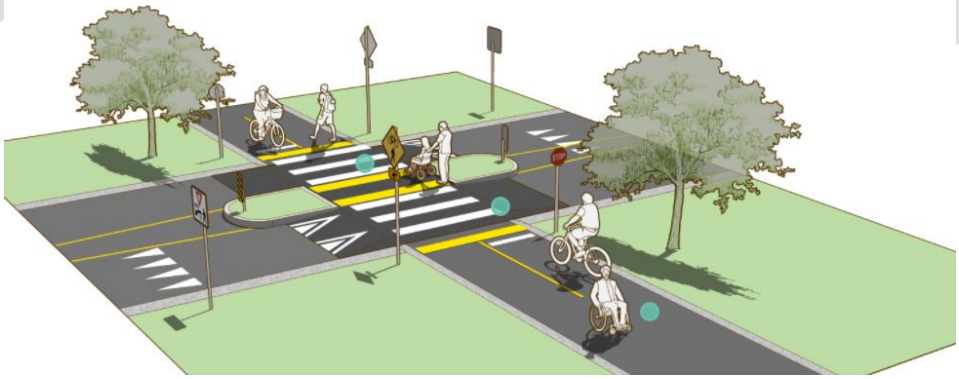
Figure 16: RRFB

Crosswalks

Crosswalks provide critical clarification at intersections, identifying a safe space for bicyclists and pedestrians to cross and heightening the visibility of users of the crossing. The design of a crosswalk should depend on the facility type, adjacent street function, surrounding land use, and level of potential conflict.

The Small Town and Rural Design Guide has identified several factors that can be included to make a crossing safer, including median islands, raised crossings, and crosswalk markings (Figure 26). NACTO's *Bikeway Design Guide* has also identified a number of crosswalk designs that can be implemented depending on context. Features highlighted in the guide include green paint in the intersection and "elephant tracks" or wider white striping along the outside of the intersection.

It is recommended that each intersection or crossing be designed for the context, including the features



that would provide the most clarity for all users of the crossing.

Figure 17: Shared Use Path Crossing

(Source: FHWA Small Town and Rural Design Guide)

Overpasses and Underpasses

Overpasses and underpasses could be considered in locations where traffic volumes and speeds are too high to manage with an at-grade crossing, such as multi-lane highway crossings. In some instances, based on usage volume, it may be appropriate to consider the construction of an overpass as part of a long-term

plan for the bicycle and pedestrian network. Overpasses and underpasses present their own design challenges, however, and require a great deal of study prior to making the determination that they are the preferred roadway crossing solution.

Wayfinding

Wayfinding is an important component of a bicycle network and can be defined as:

> … a system [that consists] of comprehensive signing and/or pavement markings to guide bicyclists to their destinations along preferred bicycle routes. Signs are typically placed at decision points along bicycle routes – typically at the intersection of two or more bikeways and at other key locations leading to and along bicycle routes. (*NACTO Urban Bikeway Design Guide*)

Collier MPO has areas that would benefit from signage that informs bicycle riders in the same way roadway signage informs motorists. Although cell phones have put maps and information at rider fingertips, signage creates confidence in the route being traveled and can quickly and conveniently convey directions and distance. Established local signage plans are helpful when riding in defined areas. Signage can also be used to help 'bridge the gap' between SUPs and on-street facilities, telling users how to get to a SUP or a destination.

Summary Chart and Recommended Cross Sections

The design guide lines summarized in Chart XXXX are customized to fit the characteristics of the Collier MPO's road network and take into account established land uses, development patterns and form-giving environmental conditions such as canals, drainageways and protected, conservation lands. The MPO Design Guidelines take into account the factor that major arterials located in high growth areas in Collier County exhibit current Average Daily Traffic (ADT) that far exceeds the levels envisioned in the source manuals referenced at the beginning of this chapter. The following Chapter on Policy and Implementation provides additional guidance.

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Recommended High Speed Roadway Cross-Sections

The following illustrations of roadway cross-sections show MPO-recommended bicycle and pedestrian facilities on roadways having posted or target speeds of 40 mph and higher.

Figure 19: High Speed Two-lane Rural Roadway

Buffered Bike Lanes on both sides of road; option to add rumble strip and green surface

Figure 2: High Speed Multi-lane Urban Roadway

SUP and Protected Bike Lane on Both Sides

Figure 3: High Speed Multi-lane Urban Roadway

SUP and Buffered Bike Lane on Both Sides

Figure 4: High Speed Multi-Lane Urban Roadway - Limited ROW

Shared Use Path on One Side, 8' Sidewalk/Sidepath on the other, and standard bike lanes both sides

Figure 5: High Speed Multi-Lane Urban Roadway - Retrofit

8' Sidewalk/Sidepaths and standard bike lanes on Both Sides

CHAPTER 6~~7~~ – BICYCLE AND PEDESTRIAN FACILITY ~~TOOLBOX~~DESIGN GUIDELINES

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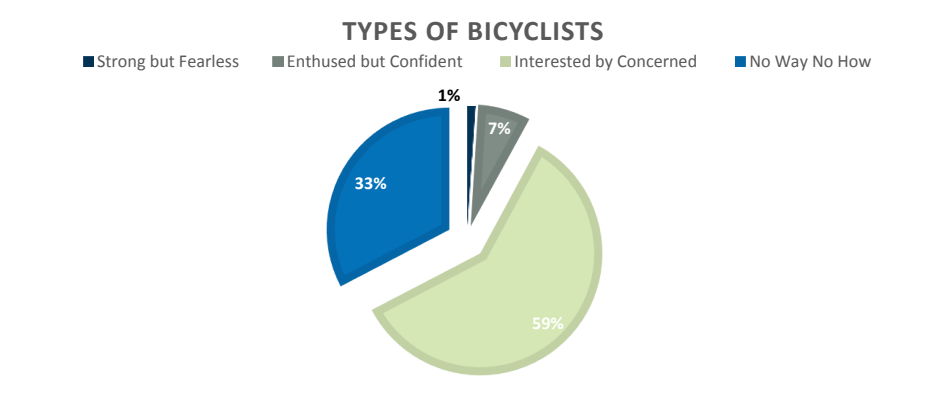
Bicycle and pedestrian facility design is constantly evolving and~~, for many departments, including FDOT and Public Works,~~ the guidance provided by organizations such as The American Association of State Highway and Transportation Officials (AASHTO) and the National Association of City Transportation Officials (NACTO) focused on providing on-street bicycle facilities for experienced and confident riders, rather than off-street Shared Use Paths (SUPs) that less-accomplished cyclists preferred. B~~b~~icycle lanes have been included in the design and construction of roadways for more than two decades. In the last 10 years, however, an increasing number of people have begun riding, and research indicates that most people need more than standard 4' bike lane~~s~~ to feel comfortable riding.

~~In 2004, a paper by Roger Geller of the Portland Office (now Bureau) of Transportation suggested general categories and percentages of the types of bicycle users, as shown in Figure 9. The "no way no how" contingent of potential users is strong at 33%, but the "interested but concerned" group (59%) has shown that, with the construction of more protected, safer-feeling facilities, they are willing to ride a bicycle. In an increasing number of cities in which investments have been made in separated facilities such as side paths and in-road separated bike lanes, the percentages of bicyclists has increased.[1]~~



~~*Source: Geller, Portland Office of Transportation, 2004*~~

~~**Figure 81: Bicyclist Rider Types**~~

Commented [M2]: Can TOA replace this section with language from NACTO on All Ages and Abilities? If not, MPO staff will do so. Examples from other cities have not proven to be compelling to County staff, so let's drop them .Also, 2004 is somewhat dated at this point.

Level of Comfort and Facility Type – Designing for All Ages & Abilities

Due to ~~Because of~~ the strong correlation between comfort and facility type, communities around the US are developing bicycle networks that support more casual cyclists who may be interested in riding but are

[1] ~~https://nacto.org/2016/07/20/high-quality-bike-facilities-increase-ridership-make-biking-safer/.~~

intimidated by sharing the road with vehicles. ~~The City of Vancouver, for example, has developed an "All Ages and Abilities" (AAA) approach to some of its bicycling facilities to develop a network that targets the "interested by concerned" user group and begins to target the "no way no how" group. This approach is being applied to cities across North America. **Figure 10** illustrates facility types and places them on the level of comfort spectrum~~. ~~Whether or not an "all ages and abilities" approach is adopted,~~ Bbuilding facilities that are more ~~less~~ protected ~~(and, therefore, less comfortable) will limit~~ will expand the number and types of users to include those who are less expert and feel less safe riding in or adjacent to vehicular travel lanes.~~more comfortable on less protected bicycle facilities.~~

The National Association of City Transportation Officials (NACTO) publication, "*Designing for All Ages & Abilities-Contextual guidance for High-Comfort Bicycle Facilities*"

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(December 2017) builds on NACTO's *Urban Bikeway Design Guide* and establishes an All Ages & Abilities criteria for selecting and implementing bike facilities. According to NACTO, "Building bicycle infrastructure that meets this criteria is an essential strategy for cities seeking to improve traffic safety, reduce congestion, improve air quality and public health, provide better and more equitable access to jobs and opportunities, and bolster local economies."

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The All Ages & Abilities facility selection guidance is focused on urban street types. It considers factors such as vehicular speeds and volumes, operational uses and what NACTO terms "bicycling stress" – the level of comfort or discomfort cyclists of all ages and abilities feel riding alongside vehicular traffic. The guidance indicates when traffic calming tools, like speed reduction and volume management may be

needed in addition to roadway design changes, like full lane separation, to reduce traffic fatalities and increase cycling rates and rider comfort.

All Ages & Abilities Bike Facilities are ...

Safe	Comfortable	Equitable
More people will bicycle when they have safe places to ride, and more riders mean safer streets. Among seven NACTO cities that grew the lane mileage of their bikeway networks 50% between 2007–2014, ridership more than doubled while risk of death and serious injury to people biking was halved.[6] Better bicycle facilities are directly correlated with increased safety for people walking and driving as well. Data from New York City showed that adding protected bike lanes to streets reduced injury crashes for all road users by 40% over four years.[7]	Bikeways that provide comfortable, low-stress bicycling conditions can achieve widespread growth in mode share. Among adults in the US, only 6–10% of people generally feel comfortable riding in mixed traffic or painted bike lanes.[8] However, nearly two-thirds of the adult population may be interested in riding more often, given better places to ride, and as many as 81% of those would ride in protected bike lanes.[9] Bikeways that eliminate stress will attract traditionally under-represented bicyclists, including women, children, and seniors.	High-quality bikeways expand opportunities to ride and encourage safe riding. Poor or inadequate infrastructure—which has disproportionately impacted low-income communities and communities of color—forces people bicycling to choose between feeling safe and following the rules of the road, and induces wrong-way and sidewalk riding. Where street design provides safe places to ride and manages motor vehicle driver behavior, unsafe bicycling decisions disappear,[11] making ordinary riding safe and legal and reaching more riders.

Contextual Guidance for Selecting All Ages & Abilities Bikeways

Roadway Context				All Ages & Abilities Bicycle Facility
Target Motor Vehicle Speed*	Target Max. Motor Vehicle Volume (ADT)	Motor Vehicle Lanes	Key Operational Considerations	
Any		*Any*	*Any of the following:* high curbside activity, frequent buses, motor vehicle congestion, or turning conflicts‡	**Protected Bicycle Lane**
< 10 mph	Less relevant	No centerline, or single lane one-way	Pedestrians share the roadway	**Shared Street**
≤ 20 mph	≤ 1,000 – 2,000		< 50 motor vehicles per hour in the peak direction at peak hour	**Bicycle Boulevard**
≤ 25 mph	≤ 500 – 1,500			
	≤ 1,500 – 3,000	Single lane each direction, or single lane one-way	Low curbside activity, or low congestion pressure	**Conventional or Buffered Bicycle Lane, or Protected Bicycle Lane**
	≤ 3,000 – 6,000			**Buffered or Protected Bicycle Lane**
	Greater than 6,000			**Protected Bicycle Lane**
	Any	Multiple lanes per direction		
Greater than 26 mph†	≤ 6,000	Single lane each direction	Low curbside activity, or low congestion pressure	**Protected Bicycle Lane, or Reduce Speed**
		Multiple lanes per direction		**Protected Bicycle Lane, or Reduce to Single Lane & Reduce Speed**
	Greater than 6,000	*Any*	*Any*	**Protected Bicycle Lane, or Bicycle Path**
High-speed limited access roadways, natural corridors, or geographic edge conditions with limited conflicts		*Any*	High pedestrian volume	**Bike Path with Separate Walkway or Protected Bicycle Lane**
			Low pedestrian volume	**Shared-Use Path or Protected Bicycle Lane**

* While posted or 85th percentile motor vehicle speed are commonly used design speed targets, 95th percentile speed captures high-end speeding, which causes greater stress to bicyclists and more frequent passing events. Setting target speed based on this threshold results in a higher level of bicycling comfort for the full range of riders.

† Setting 25 mph as a motor vehicle speed threshold for providing protected bikeways is consistent with many cities' traffic safety and Vision Zero policies. However, some cities use a 30 mph posted speed as a threshold for protected bikeways, consistent with providing Level of Traffic Stress level 2 (LTS 2) that can effectively reduce stress and accommodate more types of riders.[38]

‡ Operational factors that lead to bikeway conflicts are reasons to provide protected bike lanes regardless of motor vehicle speed and volume.

Figure 1: NACTO Guidance for Selecting Appropriate Bicycle Facilities

~~*Sources: City of Vancouver, Transportation Design Guidelines, All Ages and Abilities Cycling Routes*~~

~~**Figure 92: All Ages and Abilities Facility Types by Comfort Level**~~

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~~Much like~~In keeping with the genera~~a~~l trends ~~seen~~ reported around the country, ~~Collier County,~~ the online survey developed to capture input for this Master Plan found that although many people ride and walk, feeling unsafe is the primary reason reported by ~~impediment for~~ those who do not ride often. ~~is feeling unsafe; i~~In total, 88% of survey respondents said there are places they want to ride in Collier County but do not because they feel unsafe. ~~As noted, C~~comfort and safety are the primary motivators for people who ride by choice. The analysis of safety crash data (Chapter 2) shows that areas of high use for walking and cycling coincide with a high number of vehicular crashes. Residents ~~Although those~~ who rely on these modes to meet daily transportation needs are particularly at-risk. ~~are bicycle-dependent rarely attend meetings or sit on committees related to bicycle safety, it is important to remember that the routes they take should also be the safest and most comfortable available.~~

> **88%**
> *of survey respondents said there are places they want to ride in Collier County but do not because they feel unsafe.*

FDOT Guidance

~~The following is a discussion of potential on-road and separated facilities as well as supporting elements that should be considered as appropriate.~~

Two FDOT ~~FDOT~~publications, the "*Florida Greenbook*" and the "*Florida Design Manual*" provide essential design guidelines to follow when seeking the S~~s~~tate and Federal transportation funding for local projects. The MPO values FDOT's design guidance for reasons that go beyond funding considerations – FDOT has nationally recognized expertise in integrating the concept of Complete Streets into State DOT practices. Smart Growth America identified the *Florida Design Manual* as one of 12 best Complete Streets Initiatives of 2017. Furthermore, FDOT design guidance takes into consideration the 2010 Americans with Disabilities Act (ADA) Standards for Accessible Design and the US Department of Transportation 2006 ADA Standards for Transportation Facilities.

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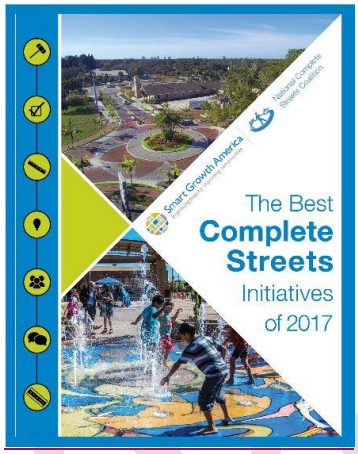

The *Manual of Uniform Minimum Standards for Design, Construction and Maintenance (Florida Greenbook)* provides criteria for public streets, roads, highways, bridges, sidewalks, curbs and curb ramps, crosswalks, bicycle facilities, underpasses and overpasses used by the public for vehicular and pedestrian travel. The current version, *2016 Florida Greenbook* became effective on June 19, 2017.

The current version of the *Florida Design Manual* (FDM) became effective January 2018. Design Criteria for pedestrian and bicycle facilities are linked to the Context Classification System FDOT developed.

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Florida Design Manual, Context Classification and Complete Streets[2]

FDOT adopted a Complete Streets Policy in 2014 that accommodates all users along the State roadway system. In August 2017, FDOT published guidance on *Context Classification* which states, "FDOT will routinely plan, design, construct, reconstruct and operate a context-sensitive system of Complete Streets. To this end, a context classification system comprising eight context classifications has been adopted. The context classification of a roadway, together with its transportation characteristics, will provide information about who the users are along the roadway, the regional and local travel demand of the roadway, and the challenges and opportunities of each roadway user. The context classification and transportation characteristics of a roadway will determine key design criteria for all non-limited-access state roadways."

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Although counties typically follow the *Florida Green Book*, it has not yet been updated to match the *Florida Design Manual* (FDM). State roads are designed according to the *Florida Design Manual*. The two

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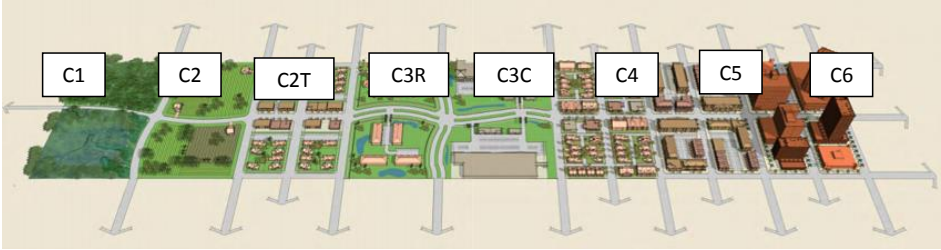
[2] Additional information may be found at http://flcompletestreets.com or at http://fdot.gov/roadway/fdm/.

resources, while separate, are coordinated in their approach to developing a transportation system that serves all users. To better serve the different users of the system, FDOT developed a Context Classification

Figure 2~~27~~: Illustration of FDOT Context Classification System



methodology that, according to infrastructure and land use, assigns a context that reflects where the roadway is in the land development continuum, as shown in Figure 28.

This continuum ranges from undeveloped conservation land to the most urban downtowns. By analyzing land use, FDOT determined the facilities that are most appropriate for where they are located. It is FDOT policy that roadways in all counties be classified before or when work is anticipated to assist in the determination of what facilities to include.

FDOT Guidance on Pedestrian Facilities

Table 6 identifies sidewalk facilities by FDOT Context Classification. The highlighted rows and contexts are most relevant to Collier County.

Table 1: FDOT Context Classification Guidance for Sidewalks

Context	Allowable Range (mph)	SIS Minimum (mph)	Sidewalk
C1 Natural	55-70	65	5' Sidewalk if demand warrants
C2 Rural	55-70	65	5' Sidewalk if demand warrants
C2T Rural Town	25-45	40 (35 with design elements)	6' Sidewalk
C3R Suburban Residential	35-55	50 (45 with curb)	6' Sidewalk
C3C Suburban Commercial			6' Sidewalk if demand warrants
C4 Urban General	30-45	45	6' Sidewalk
C5 Urban Center	25-35	35	10' Sidewalk
C6 Urban Core	25-30	30	12' Sidewalk

Notes: 1) C2T, C3, C4 sidewalk may be increased to 8' with demand; 2) C5 and C6 should be maximum width possible, not less than 6'; 3) For RRR projects, 4' sidewalk may be retained.

Crosswalks

According to the FDM, Special Emphasis crosswalk markings should be used at signalized intersections, roundabouts and midblock crosswalks. Midblock crosswalks should be illuminated, marked and signed in accordance with the *Manual of Uniform Traffic Control Devices* (MUTCD), *Traffic Engineering Manual*

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(TEM) and FDM. N engineering study supporting the need for the installation is required before a midblock crosswalk can be placed on a State roadway.

Standard crosswalk markings should be used for stop or yield-controlled intersections. When separated right-turn lanes are used, crosswalks should be placed so that an approaching motorist has a clear view of the pedestrian, and the crossing distance is minimized. School Zone crosswalks have additional criteria for signing and pavement markings. See *The Manual on Speed Zoning for Highways, Roads and Streets in Florida*, Chapter 15.

The FDM advises that, as roadway volumes, speeds, and number of travel lanes increase, marked crosswalks are best used in conjunction with other treatments; e.g., signals, signs, beacons, curb extensions, raised medians, refuge islands, and enhanced overhead lighting.

Bicycle Facilities

Table 7 identifies bicycle facilities by FDOT Context classification. It is important to note that the vision or community intent for a corridor is a factor that FDOT takes into account when it designs a facility and coordination between agencies is critical to the end result. Bicycle lanes are a portion of a roadway designated for the preferential or exclusive use of bicyclists. Bike lanes are designated by a bicycle symbol pavement marking and signage in accordance with *Standard Plans* and MUTCD.

According to the FDM, bicycle lanes are the preferred bicycle facility type on curbed roadways with a design speed of ≤ 45 mph. For new construction projects, a 7' buffered bicycle lane is the standard. A buffered bicycle lane has a double 6" white edge line separating the bike lane and the adjacent travel lane. For projects where a bike lane is needed and it is not practical to move the existing curb, the width of the bicycle lane depends on the width of available roadway pavement. The options in the order of priority are:

- **7- buffered bicycle lane**
- **6- buffered bicycle lane**
- **5- bicycle lane**
- **4- bicycle lane**

Do not provide a bike lane when available roadway pavement is less than 4 feet.

Table 2: FDOT Context Classification Design Guidance for Bicycle Facilities

Context	Allowable Range (mph)	SIS Minimum (mph)	Bicycle Facility
C1 Natural	55-70	65	Unmarked paved shoulder or shared use path
C2 Rural	55-70	65	Unmarked paved shoulder or shared use path
C2T Rural Town	25-45	40 (35 with design elements)	Marked bicycle lane
C3R Suburban Residential	35-55	50 (45 with curb)	Marked bicycle lane when speed is ≤ 45pmh and shared use path is not present or shared use path

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C3C Suburban Commercial	35-55	50 (45 with curb)	Marked bicycle lane hen speed is ≤ 45pmh and shared use path is not present or shared use path
C4 Urban General	30-45	45	When speed is ≤ 45pmh and shared use path is not present
C5 Urban Center	25-35	35	When speed is ≤ 45pmh and shared use path is not present
C6 Urban Core	25-30	30	When speed is ≤ 45pmh and shared use path is not present

Illustrated Guide to Bicycle & Pedestrian Facilities

On-Road Bicycle Facilities

~~has included guidance in the *Florida Design Manual* as well as the *Florida Greenbook*. Additional resources such as the American Association of State Highway and Transportation Officials (AASHTO) *Guide for the Development of Bicycle Facilities* (2012), the National Association of City Transportation Officials *(NACTO) Urban Bikeway Design Guide,* the FHWA *Small Town and Rural Multimodal Networks Guide* (2016), and the FHWA *Separated Bike Lane Planning and Design Guide* (2015) should be consulted for the latest design guidance.~~

~~On-Road Facilities~~

Several different on-road bicycle facility types make use of the current roadway network by working between existing curbs; they can enhance the trail network by connecting parks and trails and creating transportation opportunities and accommodating different categories of users. They also tend to be less expensive to build and may be able to be implemented with a resurfacing project. Increasingly, as noted, research is showing that the more protection bicyclists have from vehicles, the more comfortable they feel and the more people ride. Following are facility types, from least to most protected or comfortable, and a discussion of where they should be considered for construction.

Paved Shoulders

Shoulders are commonly used on rural roads that provide a separated space for bicyclists but are not marked as a bicycle facility. The minimum shoulder width is 4', but on high-speed roadways or roadways with many bicycle users, wider shoulders are recommended (Figure 11). REPLACE PHOTO WITH LOCAL–

SR29 POSSIBLE EXAMPLE

Figure ~~3103~~: Paved Shoulder

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Rumble-Buffer Bike Lane[3]

This is an enhanced paved shoulder, primarily used along rural roads. Many cyclists report feeling unsafe on a standard paved shoulder, especially when adjacent to high-speed traffic or high volumes of trucks. Maryland DOT has been working to develop a rumble-buffer option for high-speed rural roads; by adding rumble strips and additional paint, the rumble-buffer bike lane adds additional separation between vehicles, continues to function as an emergency travel or stopping space, actively discourages either mode from entering the travel lane, and requires only a modest increase in shoulder width (Figure 12).

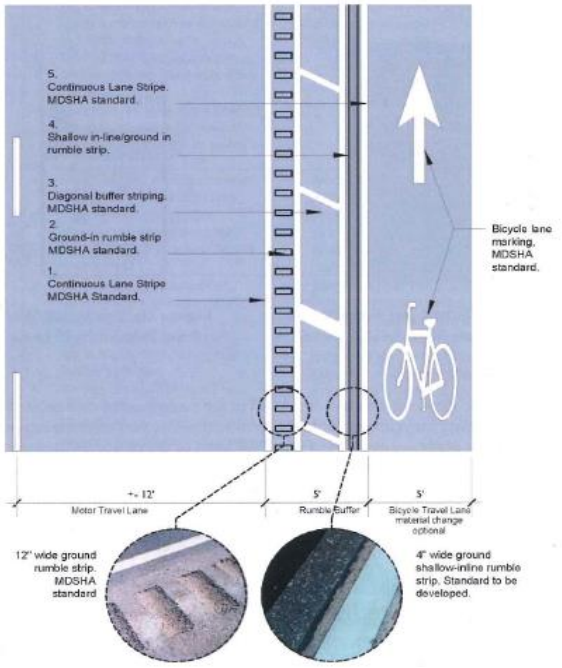

Figure ~~4114~~: Rumble-Buffer Bike Lane

Bike Lanes

Bike lanes are spaces dedicated to bicycle travel on roadways. They are a minimum of 4-ft-wide if no curb and gutter, and 5-ft wide if included. Typical users are those who are comfortable riding with traffic; they represent a fairly small segment of the bicycle-riding community. This facility type should be considered during roadway resurfacing projects and can be used to make connections between ~~trails~~Shared Use Paths. Bike lanes are not considered a preferred facility type for developing a community-friendly Shared Use Path ~~trail~~ system.

Figure ~~5125~~: Marked Bike Lane

(Figure 13).

[3] Safe Accommodation of Bicyclists on High Speed Roadways in Maryland, http://www.roads.maryland.gov/OPR_Research/ MD-16-SHA-UM-4-06_Bicycles-on-High-Speed-Roadways_report.pdf.

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Buffered Bike Lanes

Buffered bike lanes are spaces dedicated to bicycle travel on roadways and are 7-ft wide with a painted buffer to provide extra space between bicyclists and adjacent vehicles. These facilities provide an additional degree of comfort to bicyclists and should be considered for all new roads being constructed in Hernando and Citrus counties, particularly where higher volumes of bicycle traffic are anticipated (Figure 14).

Figure ~~6~~136: Buffered Bicycle Lane

Separated Bicycle Lanes

Separated bicycle lanes are on-road facilities that include a traffic separator and dedicated space for bicyclists. They can be one- or two-way depending on the need or the roadway condition and often can be constructed between existing curbs if the roadway has excess capacity. In urban areas, this type of facility can provide a high level of comfort for bicyclists, similar to that of a shared-use path. Design care must be taken at intersections and driveways. Adding this type of facility has been associated with an increase in bicycle usage (Figure 15).

Figure 7~~14~~7: Separated Bicycle Lane

Green Bike Lanes

Green paint can be applied to bike lanes in areas of potential conflict where motorists must cross the bike lane to turn or to exit a parking area. Green paint is considered a traffic control device and is subject to guidance in the *Manual on Uniform Traffic Control Devices* (MUTCD), subject to Interim Approval 14 (Figure 16).

Green Bike Lane on Central Ave in Naples

Figure 8158: Green Bike Lane

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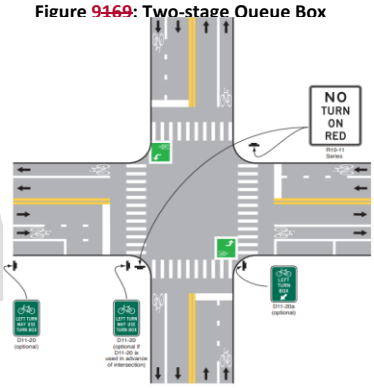
Two-Stage Queue Box

A two-stage queue box allows bicyclists to more easily make a left turn. Rather than having to move into a turn lane to make a left turn, the turn box allows bicyclists to proceed across the intersection and position themselves to cross the intersection with the signal. It received FHWA Interim Approval IA-20 in 2017 (Figure 17).

Figure 9169: Two-stage Queue Box



Advisory Bike Lane

An advisory bike lane is used on low-speed roadways where there is not enough room for both bike lanes and travel lanes. These markings communicate to both bicyclists and motorists where to ride while also communicating to motorists that they can pass when there is room (Figure 18).

Advisory Shoulder

Advisory shoulders may be used on roads where it is not possible to construct a traditional shoulder. Using paint, space is designated for pedestrians within the travel lane; a dashed line is used to delineate the space may be crossed by motorists if the way is clear. Considered an innovative facility type by FHWA, an approved Request to Experiment is required to implement this facility on federally-funded projects. Additional information can be found it the FHWA's *Small Town and Rural Multimodal Networks.*

Figure 101710: Advisory Bike Lane

Bicycle Boulevard

A bicycle boulevard is a low-volume, low-speed street designed to give bicycles priority, typically achieved by a combination of signage and infrastructure. Also called neighborhood greenways, bicycle boulevards generally provide convenient access to local destinations and often connect or go through neighborhoods (Figure 19).

~~**Figure 1811: Bike Boulevard**~~

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Off-Rroad Bicycle & Shared-Use Facilities

~~Multi-use Trails~~Shared Use Paths on Independent Rights-of-Way

The American Association of State Highway and Transportation Officials (AASHTO) defines a ~~multi-use trai~~Shared use Path (SUP) on independent ROW as a facility that provides a separated path for nonmotorized users to supplement the on-road network. ~~I as a bikeway that is typically in an independent right of way and separated from motorized traffic by open space or a buffer.~~ It may be used for recreation or transportation purposes and falls under the accessibility requirements of the Americans with Disabilities Act (ADA) (Figure 20).

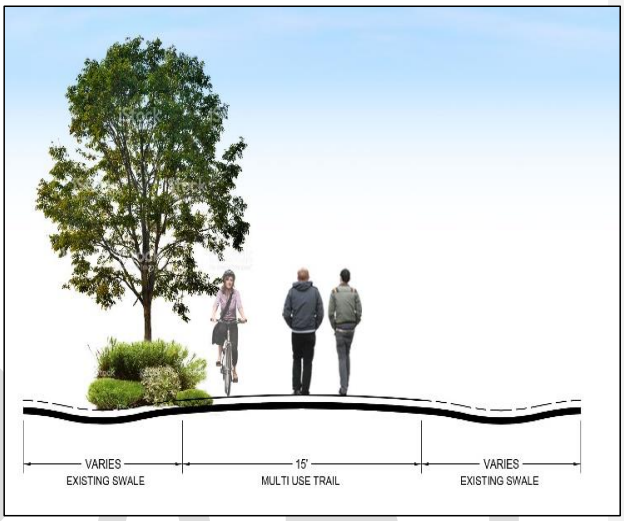

Figure 11~~912~~: ~~Multi-use Trail~~Shared Use Path Section

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Add a cross section showing a sidepath condition

Sidepaths

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AASHTO defines a Sidepath as an SUP immediately adjacent or parallel to a roadway and lists 10 reasons why using a sidewalk as a SUP or providing a sidepath is undesirable:

Sidewalks on US41 between 5th Ave/9th St Intersection and Airport Rd are heavily used by cyclists, often riding against traffic. They are a good example of a situation to be strenuously avoided in new and retrofit designs.

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- Conflicts at intersections and driveways; motorists often do not notice bicyclists approaching from right because they do not expect wheeled traffic from this direction
- Bicyclists are apt to cross intersections and driveways at unexpected speeds which are significantly faster than pedestrian speeds

- Drivers often pull forward to get an unobstructed view of traffic, in doing so they block the sidepath crossing
- Attempts to require bicyclists to yield or stop at each cross-street or driveway are inappropriate and ineffective
- When a sidepath is provided on just one side of the road, it tends to produce wrong-way travel by bicyclists where the sidepath ends and in order to access the path. Wrong-way travel by cyclists is a common factor in bicycle-automobile crashes; a two-way sidepath on one side of the road may need additional road crossings to provide safe access
- Signs and traffic signals posted for roadway users are backwards for contra-flow riders
- Because of proximity of roadway traffic to opposing path traffic, barriers or railings are sometimes needed.
- Sidepath width may be constrained by fixed objects such as utility poles, mailboxes, etc.
- Due to operational issues, some bicyclists will use the roadway instead of the sidepath; when this occurs, drivers may harass the cyclists, even though Florida does not have a law requiring cyclists to use a path if one is provided.
- Bicyclists using a sidepath can only make a pedestrian-style left turn, yielding to cross traffic twice instead of once, introducing unnecessary delay

Sidepaths may be considered where one or more of the following conditions exist:

- if bicyclists cannot be accommodated on nearby parallel streets and a sidepath is the only practical alternative
- the sidepath is used for a short distance to provide continuity between sections of path in independent rights-of-way, or to connect to local streets
- the sidepath can be built with few roadway and driveway crossings
- the sidepath can be terminated at each end onto streets that accommodate cyclists, onto another path, or in a location that is bicycle compatible.

Sidepath on Airport Road adjacent to Naples Municipal Airport is a good example of a sidepath application that works due to the edge condition – the absence of multiple driveways and curb cuts. The Airport funded the bus. This short segment of Airport Rd is a good example of a Complete Street.

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Trailheads and Rest Areas

Rest areas and trailheads can take many forms, from the most basic parking lot with trail access to a major trailhead that includes parking, restrooms, water fountains, trail signage, and bike racks (Figure 21). Although the elements of each trailhead may be unique to its location and subject to available space and projected demand, generally, they can be separated into three categories. The provision of areas and elements, even if they do not fully conform to the category, is encouraged.

- *Major trailheads include parking, restrooms, water fountains, bike racks, and a bike repair station. Parking at a major trailhead should be designed to accommodate trailers for recumbent bikes.*
- *Minor trailheads include parking, seating, and bike racks.*
- *Rest areas may be a shelter adjacent to the trail; there may or may not be trail information and a trash can.*

911 Emergency Response System Markers (ERSM)

Feeling safe on a trail is critical to its use. Installing location decals on trails such as that shown in Figure 26 is an increasingly common practice to both enhance the feeling of safety and allow emergency responders to locate trail users. Exercise distance monitors could also be considered so users can track distance according to the markers. In Orange County, a process has been developed between the Parks & Recreation Trails Division and fire, EMS, and law enforcement agencies in which 911 operators use GPS to mark coordinates every 1/10 mile. An Excel spreadsheet was created and provided to 911 dispatchers and EMS that also notes the best entry point for each location and whether an ambulance or fire truck could fit. It is increasingly common to install and maintain these markers for the life of a trail. Maintenance must include replacement of decals (Figure 22).

Figure 122114: Embedded Pavement Decal

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Bicycle and Pedestrian ~~Trail~~ Counters

Understanding ~~trail~~ bicycle and pedestrian usage is critical to properly plan and design bicycle and pedestrian facilities. ~~staff and maintain trails.~~ Information on usage can help make the case to expand the system or improve facilities~~. Cities across the US such as Boulder, San Francisco, and Seattle are installing trail counters (Figure 23). According to the Portland Bureau of Transportation, "… counting bicycles informs [us] about progress toward making bicycling a fundamental part of life in Portland and gives feedback about the usefulness of investments in bicycle infrastructure and city streets" (Brooks, 2014). As the trail system grows, locations for trail counters should be considered in the long term system planning~~

Figure ~~14~~22~~15~~: Bicycle Barometer in Boulder, CO
(Source: PeopleForBikes)

Collier MPO recently submitted a proposal, and was accepted, as a participant in FDOT's Statewide Non-motorized Traffic Monitoring Program~~.~~. FDOT has looked at two candidate sites for installing permanent bicycle and pedestrian counters, and it's possible that both sites will be approved. They are:

- The County owned and maintained bicycle/pedestrian bridge over the Gordon River on the Gordon River Greenway
- The City of Naples owned and maintained bicycle/pedestrian bridge connecting Baker Park to the west side of the Gordon River/Naples Bay.

FDOT will share the count data gathered at these sites with participating agencies and use the data to calibrate bicycle and pedestrian trip data assumptions statewide.

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SUP Crossings on Major Roadways

Walkers and bicycle riders are especially vulnerable as they cross a roadway, whether at an intersection or at a ~~trail~~SUP/road crossing. A number of engineering design techniques are available to help minimize the risks. Crossing features for both pedestrian and ~~trail~~ SUP infrastructure ~~is~~ are discussed below.

Two of the primary challenges for ~~trail~~SUP and road users are the speed difference between vehicles and the sight distance. Designing intersections that give bicyclists and vehicle operators enough time to react to each other is crucial to minimizing the opportunities for crashes. Several design tools are available to help all users navigate intersections, as described below.

Because each crossing is unique, the specific geometry and location will factor into the design of each intersection. It is important to note that circumstances of use may change over time; this should trigger a review and modification as needed of certain intersections. If, for example, an SUP ~~trail~~ has a higher

volume of users than might have been anticipated, it is recommended that the ~~trail~~ road crossings be reviewed. It is also important to consider changes to surrounding land use. A crash trend or higher-than-projected volumes for either vehicles or bicyclists may require the need to redesign the crossing to address the challenges.

Pedestrian Safety Counter Measures

FHWA is promoting a number of pedestrian safety countermeasures through their Every Day Counts (EDC-4) program:[4]

- **Road diets** can reduce vehicle speeds and the number of lanes pedestrians cross and can create space to add new pedestrian facilities.
- **Pedestrian hybrid beacons** (PHBs) are a beneficial intermediate option between Rectangular Rapid Flashing Beacons (RRFBs) and a full pedestrian signal. They provide positive stop control in areas without the high pedestrian traffic volumes that typically warrant signal installation.
- **Pedestrian refuge islands** allow pedestrians a safe place to stop at the midpoint of the roadway before crossing the remaining distance. This is particularly helpful for older pedestrians or others with limited mobility.
- **Raised crosswalks** can reduce vehicle speeds.
- **Crosswalk visibility enhancements**, such as crosswalk lighting and enhanced signing and marking, help drivers detect pedestrians—particularly at night.

Enhanced At-Grade Crossing or Signalized Crossing

A Pedestrian Hybrid Beacon is a pedestrian-activated traffic control device that is dark to motorists until activated by a pedestrian, at which time a flashing yellow light followed by a solid red light is provided to motorists to direct them to stop (Figure 24). The solid red advances to a flashing red that allows motorists to proceed with caution once the pedestrian has cleared the crossing).

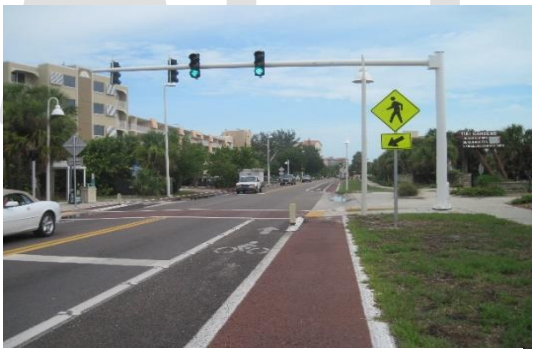


Figure 15~~2316~~: Pedestrian Hybrid Beacon

[4] https://www.fhwa.dot.gov/innovation/everydaycounts/edc_4/step.cfm.

RRFB

An RRFB (Figure 25) is a traffic control device consisting of two rapidly and alternately flashing rectangular yellow indications with an LED array that functions as a warning beacon. This device has Interim Approval through FHWA for use at unmarked crosswalks.

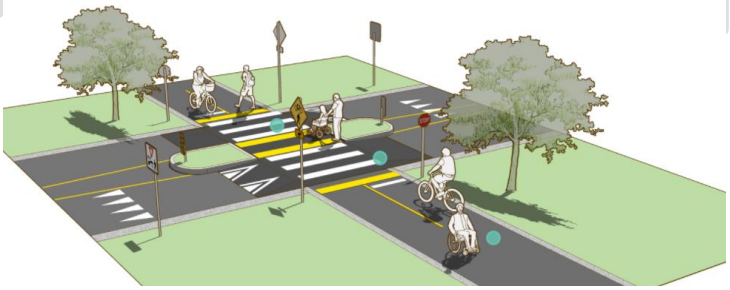
Figure 162~~17~~: RRFB

Crosswalks

Crosswalks provide critical clarification at intersections, identifying a safe space for bicyclists and pedestrians to cross and heightening the visibility of users of the crossing. The design of a crosswalk should depend on the facility type, adjacent street function, surrounding land use, and level of potential conflict.

The Small Town and Rural Design Guide has identified several factors that can be included to make a crossing safer, including median islands, raised crossings, and crosswalk markings (Figure 26). NACTO's *Bikeway Design Guide* has also identified a number of crosswalk designs that can be implemented depending on context. Features highlighted in the guide include green paint in the intersection and "elephant tracks" or wider white striping along the outside of the intersection.

It is recommended that each intersection or crossing be designed for the context, including the features



that would provide the most clarity for all users of the crossing.

Figure 172~~518~~: Shared Use ~~use~~ Path Crossing
(Source: FHWA Small Town and Rural Design Guide)

Overpasses and Underpasses

Overpasses and underpasses could be considered in locations where traffic volumes and speeds are too high to manage with an at-grade crossing, such as multi-lane highway crossings. In some instances, based on usage volume, it may be appropriate to consider the construction of an overpass as part of a long-term

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plan for the ~~trail.~~ bicycle and pedestrian network. Overpasses and underpasses present their own design challenges, however, and require a great deal of study prior to making the determination that they are the preferred roadway crossing solution.

~~***Geometric** Trail **Design Criteria***~~

~~***Basic trail design criteria are provided below. More detail can be found in the AASHTO Guide for the Development of Bicycle Facilities and the AASHTO Guide for the Development of Bicycle Facilities.***~~

- ~~*Lateral clearance* — **The minimum lateral clearance distance is 2 ft MUTCD requires 3 ft clearance between trail and signage.***~~
- ~~*Overhead clearance* — **The recommended overhead clearance for structures is 1 ft, with a minimum of 8 ft Trees should be limbed up 13 ft above the trail surface.***~~
- ~~*Striping* — **Striping may be installed where passing is inadvisable, including at the approach and departure of intersections. Striping may also be advisable where trail user volume is high, sight distance is restricted, or design speed is low.***~~
- ~~*Cross slope* — **Shared use paths adjacent to roadways function as sidewalks according to Public Rights-of-Way (PROWAG) and, therefore, cannot have a cross slope greater than 2%. A 1% cross-slope is recommended for ease of use by people with disabilities.***~~
- ~~*Grade* — **The maximum grade of a shared use path adjacent to a roadway is 5%. Grades for paths in an independent right-of-way should not exceed 5%. Switchbacks and pull-outs can be provided to mitigate excessive grade changes. Signage also should be provided to warn users of grade changes.***~~

Wayfinding

Wayfinding is an important component of a bicycle network and can be defined as:

> … a system [that consists] of comprehensive signing and/or pavement markings to guide bicyclists to their destinations along preferred bicycle routes. Signs are typically placed at decision points along bicycle routes – typically at the intersection of two or more bikeways and at other key locations leading to and along bicycle routes. (*NACTO Urban Bikeway Design Guide*)

Collier MPO~~County~~ has areas that would benefit from signage that informs bicycle riders in the same way roadway signage informs motorists. Although cell phones have put maps and information at rider fingertips, signage creates confidence in the route being traveled and can quickly and conveniently convey directions and distance. Established local signage plans are helpful when riding in defined areas. Signage can also be used to help 'bridge the gap' between ~~trails~~ SUPs and on-street~~or~~ facilities, telling users how to get to a ~~trail~~ SUP or a destination.

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NACTO's *Urban Bikeway Design Guide* has been endorsed by FHWA for reference in designing urban bicycle infrastructure. The goal of the guide is to provide cities with state-of-the-art practice solutions that can help create complete streets that are safe and enjoyable for cyclists. The guide's chapter on "Bike Route Wayfinding Signage and Markings System" describes a wayfinding system as comprehensive signing and/or pavement markings and identifies three types of signs that should be used when developing a bicycle wayfinding signage system:

- **Confirmation signs** help bicyclists know they are on a bike route and also let motorists know they are on a road that may have higher bicycle traffic. Placement should be every 2–3 blocks and used in conjunction with turn or decision signs. Pavement markings also can be used as confirmation.
- **Turn signs** indicate when the bikeway/bike boulevard is shifting to another street. It is recommended that destination and distance be listed on the sign. Pavement signage can be used.
- **Decision signs** mark the intersection of routes and access to destinations and typically include arrows, named destinations, and distances. Pavement signage can be used.

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Bicycle Facilities for Comfort and Safety

Generally, the preferred roadway combination is a trail on one side and a sidewalk on the other. In urban locations, low-speed, low-volume roadways with signage may be appropriate bicycle facilities, or a separated bike lane may be considered. In rural areas, if a separated multi-use trail cannot be achieved, a rumble shoulder or buffered shoulder may be an appropriate facility.

Cost is often the primary determinant in the selection of bicycle facility type. This can lead to the construction of a facility that does not truly meet the needs of bicycle riders. An example of this is a bike lane on a high-speed, high-volume road; a primary reason for this is cost, as building within the curbs is much less expensive than reconstructing a curb. Another reason for adding a bicycle lane might be to help manage speed on the roadway, but this approach, although providing a facility, does not provide one that is comfortable for a majority of bicycle riders.

This Plan proposes that during all roadway reconstruction projects, a separated trail facility be added during design. This resolves the discomfort and danger people feel when sharing the roadway with trucks or fast-moving cars and also helps to build a bicycle network that serves everyone. Excess pavement should still be set aside for bicycle lanes for riders who prefer them. The table shown in Figure 27 was developed by NACTO to provide guidance on the circumstances for including particular facility types; importantly, it offers options that allow designers to include the facility that fits the space based on cost and engineering judgment.

Summary Chart and Recommended Cross Sections

The design guide lines summarized in Chart XXXX are customized to fit the characteristics of the Collier MPO's road network and take into account established land uses, development patterns and form-giving environmental conditions such as canals, drainageways and protected, conservation lands. The MPO Design Guidelines take into account the factor that major arterials located in high growth areas in Collier County exhibit current Average Daily Traffic (ADT) that far exceeds the levels envisioned in the source manuals referenced at the beginning of this chapter. The following Chapter on Policy and Implementation provides additional guidance.

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Contextual Guidance for Selecting All Ages & Abilities Bikeways

Roadway Context				All Ages & Abilities Bicycle Facility
Target Motor Vehicle Speed*	Target Max. Motor Vehicle Volume (ADT)	Motor Vehicle Lanes	Key Operational Considerations	
Any		*Any*	*Any of the following:* high curbside activity, frequent buses, motor vehicle congestion, or turning conflicts‡	**Protected Bicycle Lane**
< 10 mph	Less relevant	No centerline, or single lane one-way	Pedestrians share the roadway	**Shared Street**
≤ 20 mph	≤ 1,000 – 2,000		< 50 motor vehicles per hour in the peak direction at peak hour	**Bicycle Boulevard**
≤ 25 mph	≤ 500 – 1,500			
	≤ 1,500 – 3,000	Single lane each direction, or single lane one-way	Low curbside activity, or low congestion pressure	**Conventional or Buffered Bicycle Lane, or Protected Bicycle Lane**
	≤ 3,000 – 6,000			**Buffered or Protected Bicycle Lane**
	Greater than 6,000			**Protected Bicycle Lane**
	Any	Multiple lanes per direction		
Greater than 26 mph†	≤ 6,000	Single lane each direction	Low curbside activity, or low congestion pressure	**Protected Bicycle Lane, or Reduce Speed**
		Multiple lanes per direction		**Protected Bicycle Lane, or Reduce to Single Lane & Reduce Speed**
	Greater than 6,000	*Any*	*Any*	**Protected Bicycle Lane, or Bicycle Path**
High-speed limited access roadways, natural corridors, or geographic edge conditions with limited conflicts		*Any*	High pedestrian volume	**Bike Path with Separate Walkway or Protected Bicycle Lane**
			Low pedestrian volume	**Shared-Use Path or Protected Bicycle Lane**

* While posted or 85th percentile motor vehicle speed are commonly used design speed targets, 95th percentile speed captures high-end speeding, which causes greater stress to bicyclists and more frequent passing events. Setting target speed based on this threshold results in a higher level of bicycling comfort for the full range of riders.

† Setting 25 mph as a motor vehicle speed threshold for providing protected bikeways is consistent with many cities' traffic safety and Vision Zero policies. However, some cities use a 30 mph posted speed as a threshold for protected bikeways, consistent with providing Level of Traffic Stress level 2 (LTS 2) that can effectively reduce stress and accommodate more types of riders.[38]

‡ Operational factors that lead to bikeway conflicts are reasons to provide protected bike lanes regardless of motor vehicle speed and volume.

~~**Figure 2619: NACTO Guidance for Selecting Appropriate Bicycle Facilities**~~

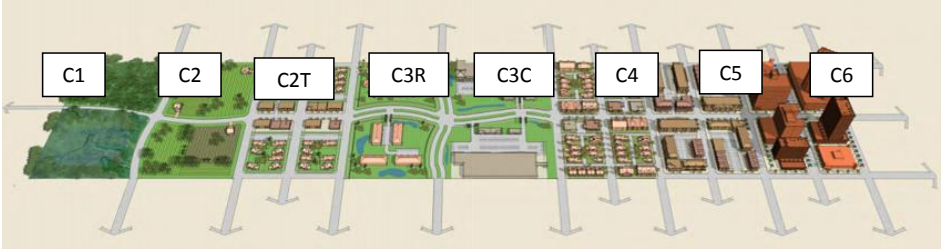
~~Facilities on State Roads~~[5]

~~FDOT adopted a Complete Streets Policy in 2014 that accommodates all users along the State roadway system. Although counties typically follow the *Manual of Uniform Minimum Standards for Design*,~~

[5] ~~Additional information may be found at http://flcompletestreets.com or at http://fdot.gov/roadway/fdm/.~~

Construction, and Maintenance for Streets and Highways or the *Florida Green Book*, State roads are designed according to the *Florida Design Manual*. The two resources, while separate are coordinated in

Figure 18~~2720~~: Illustration of FDOT Context Classification System



their approach to developing a transportation system that serves all users. To better serve the different users of the system, FDOT developed a Context Classification methodology that, according to infrastructure and land use, assigns a context that reflects where the road way is in the land development continuum, as shown in Figure 28.

This continuum ranges from undeveloped conservation land to the most urban downtowns. By analyzing land use, FDOT determined the facilities that are most appropriate for where they are located. It is FDOT policy that roadways in all counties be classified before or when work is anticipated to assist in the determination of what facilities to include. Table 6 identifies sidewalk facilities by FDOT Context Classification. The highlighted rows and contexts are most relevant to Collier County.

Table 126: FDOT Context Classification Guidance for Sidewalks

Context	Allowable Range (mph)	SIS Minimum (mph)	Sidewalk
C1 Natural	55-70	65	5' Sidewalk if demand warrants
C2 Rural	55-70	65	5' Sidewalk if demand warrants
C2T Rural Town	25-45	40 (35 with design elements)	6' Sidewalk
C3R Suburban Residential	35-55	50 (45 with curb)	6' Sidewalk
C3C Suburban Commercial			6' Sidewalk if demand warrants
C4 Urban General	30-45	45	6' Sidewalk
C5 Urban Center	25-35	35	10' Sidewalk
C6 Urban Core	25-30	30	12' Sidewalk

Notes: 1) C2T, C3, C4 sidewalk may be increased to 8' with demand; 2) C5 and C6 should be maximum width possible, not less than 6'; 3) For RRR projects, 4' sidewalk may be retained.

Table 7 identifies bicycle facilities by FDOT Context classification. It is important to note that the vision or community intent for a corridor is a factor that FDOT takes into account when it designs a facility and coordination between agencies is critical to the end result.

~~Table 137: FDOT Context Classification Design Guidance for Bicycle Facilities~~

~~Context~~	~~Allowable Range (mph)~~	~~SIS Minimum (mph)~~	~~Bicycle Facility~~
~~C1 Natural~~	~~55-70~~	~~65~~	~~Unmarked paved shoulder or shared use path~~
~~C2 Rural~~	~~55-70~~	~~65~~	~~Unmarked paved shoulder or shared use path~~
~~C2T Rural Town~~	~~25-45~~	~~40 (35 with design elements)~~	~~Marked bicycle lane~~
~~C3R Suburban Residential~~	~~35-55~~	~~50 (45 with curb)~~	~~Marked bicycle lane when speed is ≤ 45pmh and shared use path is not present or shared use path~~
~~C3C Suburban Commercial~~	~~35-55~~	~~50 (45 with curb)~~	~~Marked bicycle lane hen speed is ≤ 45pmh and shared use path is not present or shared use path~~
~~C4 Urban General~~	~~30-45~~	~~45~~	~~When speed is ≤ 45pmh and shared use path is not present~~
~~C5 Urban Center~~	~~25-35~~	~~35~~	~~When speed is ≤ 45pmh and shared use path is not present~~
~~C6 Urban Core~~	~~25-30~~	~~30~~	~~When speed is ≤ 45pmh and shared use path is not present~~

Recommended High Speed Roadway Cross-Sections

The following illustrations of roadway cross-sections ~~represent proposed~~show MPO-recommended bicycle and pedestrian facilities~~roadway cross-sections that incorporate the preferred widths for trails and sidewalks~~ on roadways having posted or target speeds of 40 mph and higher~~.~~.

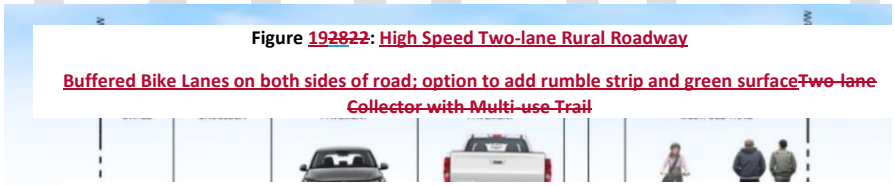


Figure 19~~2822~~: High Speed Two-lane Rural Roadway

Buffered Bike Lanes on both sides of road; option to add rumble strip and green surface~~Two-lane Collector with Multi-use Trail~~

Figure 2~~2822~~: High Speed Multi-lane Urban Roadway

SUP and Protected Bike Lane on Both Sides~~Two-lane Collector with Multi-use Trail~~

Figure 3: High Speed Multi-lane Urban Roadway

SUP and Buffered Bike Lane on Both Sides

~~Figure 2822: Two-lane Collector with Multi-use Trail~~

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Commented [M10]: BPAC suggested showing cross sections that are illustrative of typical Collier conditions; specifically mentioned showing major multi-lane arterial with a canal on one side. Possibly a wall on the other.

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Commented [M11]: Change "multi-use trail" to SUP in all illustrations Also 12-15- wide SUPs are too wide. Reduce to guideliens provided by MPo staff

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Figure XX~~30~~24: ~~Four-lane~~ High Speed Multi-Lane Roadway - Limited ROW

~~Collector with Multi-use~~Shared Use Path on One Side, 8' ~~Trail and~~ Sidewalk on the Other, and Standard

Figure 5~~3~~024: ~~Four-lane~~ High Speed Multi-Lane Urban Roadway - Retrofit

~~Collector with Multi-use 8' Trail and~~ Sidewalk/Sidepaths and standard bike lanes on Both Sides

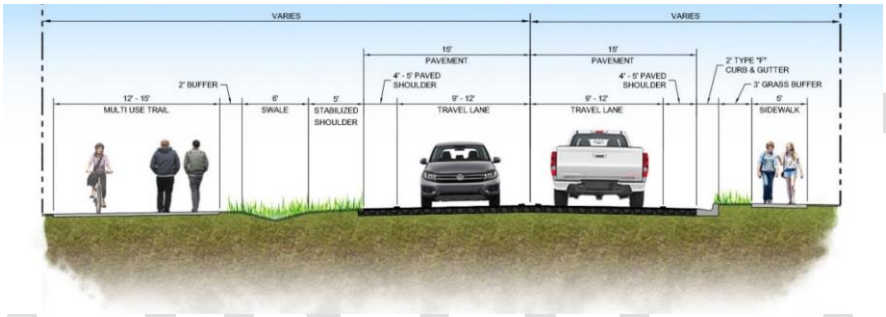
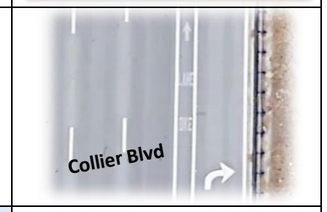
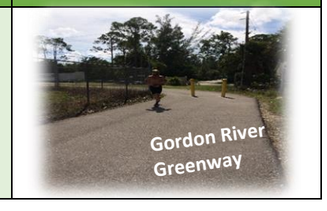


Figure 20~~29~~23: Four-lane Collector or Arterial Road with Shared Use Path~~Trail~~ and Sidewalk

Collier MPO Planning and Design Guidelines for All Ages & Abilities

Federal/FDOT Roadway Functional Classification	Roadway Description	Motor Vehicle Posted Speed	Target Maximum Motor Vehicle Volume in (ADT)	Number of Vehicular Lanes	Type of Bikeway	Minimum Bikeway Width	Minimum Sidewalk Width	Photos
unclassified (i.e. residential or "local" roads) - urban and rural settings	Minor, low volume roads	up to 25 mph	up to 1,000	2-lanes (1 in each direction)	Shared lanes, marked (sharrows) or unmarked	N/A	5' in residential areas	
unclassified (i.e. residential or "local" roads) - urban and rural settings	Local, low volume, low speed roads	up to 25 mph	over 1,000 up to 3,000	2-lanes (1 in each direction)	Bicycle Boulevards	N/A	5' in residential areas	
Collectors and Arterials with Severely Constrained ROW	Lower volume, moderate speed, major roads with space constraints	26 to 35 mph	over 3,000 up to 6,000	2-4 lanes (1-2 in each direction)	on roads serving residential land uses, reducing road pavement width may be a traffic calming measure: 10' lanes with 2' shoulder fits context; in mixed-use or commercial areas, a wide, shared-use outside lane marked with "sharrows" fits context	10' lane + 2' shoulder; or 14' outside lane	6'	
Collectors and Arterials with Moderately Constrained ROW	Moderate volume and speed, major roads with space constraints	26 to 35 mph	over 3,000 up to 6,000	2-4 lanes (1-2 in each direction)	Conventional, Marked Bike Lanes in urban setting; Paved Shoulders in rural settings	minimum 4' bike lane width; 5' adjacent to curbs, walls, guardrails, other fixed verticle objects)	6'	
Rural Highways (State Roads - US41 & SR29 are prime examples)	Low to Moderate volume, high speed and high commercial or RV traffic	45 to 60 mph	under 6,000	2-lanes (1 in each direction)	Wide, paved shoulders, Buffered bike lanes or Shared Use Paths	min. 5'-wide paved shoulders, preferred 7' with 2' buffer or 11' SUP on one side; 7' shoulder width required if marked as a bike lane (FDM)	pedestrians use shoulders or SUP; if marked bike lanes, include signage - cyclists yield to peds	
Collectors and Arterials with higher speeds, higher volumes	Higher volume, higher speed, limited access, urban and rural highways	36 to 45 mph	over 6,000	2-4 lanes (1-2 in each direction)	Buffered Bike Lanes or Shared Use Paths (AASHTO & FDOT Greenbook)	5' bike lane and 2' painted buffer (may include a rumble strip)	6' with minimum 5' wide planting strip; if adjacent to protected bike lane, can eliminate planting strip	

High volume, High speed Arterials with greater than 20% Commercial or Recreational Vehicular Traffic (only truck count data (not RV) available; RV use based on observation, not %)	High volume, high speed urban and rural highways	45 mph and greater	over 6,000	4-6 lanes (2-3 in each direction)	Protected Bike Lanes or Shared Use Paths (NACTO- All Ages & Abilities 26 mph and greater) - ***in places with low curbside activity***	5' bike lane and sufficient width to provide curbed or other verticle separation	6' with minimum 5' wide planting strip; if adjacent to protected bike sidewalks on flush shoulder roadways should not be constructed directly adjacent to the roadway or shoulder pavement.	
Collectors and Arterials with limited access and sufficient ROW	Adjacent to roadways with no or very few intersections or driveways	45 mph and greater	over 6,000	4-6 lanes (2-3 in each direction)	Sidepath defined by AASHTO as a two-way Shared Use Path adjacent to roadways - ***in places with low curbside activity per NACTO***	11' -AASHTO 12' - FDOT	N/A	
OFF ROAD FACILITIES	**Location**							
N/A - Facilities constructed outside of road ROW	Linear greenways typically within or adjacent to drainage and utility ROW	N/A	N/A	N/A	a two-way Shared Use Path in independent ROW	12'	N/A	

CHAPTER 7 – POLICIES AND IMPLEMENTATION

THE MPO'S ROLE IN SETTING POLICIES

Locally adopted plans and policies relating to biking and walking provide a key part of the framework for building a safe, convenient multimodal network for users of all ages and all abilities. According to FHWA's *Noteworthy Local Policies that Support Safe and Complete Pedestrian and Bicycle Networks*,

Effective policy shapes long-term planning efforts, as well as more immediate decision making. It informs infrastructure planning, design, construction and maintenance and shapes decision making related to investments in infrastructure and capital improvements. Policy informs and shapes an agency's work in engineering, education, enforcement, emergency response, encouragement, and evaluation efforts. This multidisciplinary approach, embodied in both required Federal safety planning and best practices in bicycle and pedestrian planning and design, is important in establishing a safe and complete pedestrian and bicycle network.[1]

Unlike its member entities, the Collier MPO does not build projects and is not an implementing agency. The MPO does, however, play a unique role in providing a forum for regional coordination and a collaborative process for establishing funding priorities.

RESOLUTION 2010-5 REAFFIRMED

The MPO adopted a Policy Statement by Resolution 2010-05 endorsing the US Department of Transportation's Policy Statement on bicycle and Pedestrian accommodation. Resolution 2010-5 is as relevant today as it was in 2010.

RESOLUTION –2019-01

RESOLUTION OF THE COLLIER METROPOLITAN PLANNING ORGANIZATION REAFFIRMING RESOLUTION 2010-05 SUPPORTING THE UNITED STATES DEPARTMENT OF TRANSPORTATION POLICY STATEMENT ON BICYCLE AND PEDESTRIAN ACCOMMODATION REGULATIONS AND RECOMMENDATIONS AND ENCOURAGING THE COLLIER METROPOLITAN PLANNING ORGANIZATION'S MEMBER JURISDICTIONS TO ADOPT SIMILAR POLICY STATEMENTS AS AN INDICATION OF THEIR COMMITMENT TO ACCOMMODATING PEDESTRIANS AND BICYCLISTS AS AN INTEGRAL ELEMENT OF THE TRANSPORTATION SYSTEM.

WHEREAS, the United States Secretary of Transportation signed on March 11, 2010 and announced on March 15, 2010 a Policy Statement (hereinafter referred to as "the Policy Statement") to reflect the United States Department of Transportation's support for the development of fully integrated transportation networks that include well-connected walking and bicycling facilities with linkages to public transit as important components thereof with equal priority to other transportation modes; and

WHEREAS, the Policy Statement encourages States, local governments, professional associations, community organizations, public transportation agencies and other government agencies to adopt similar

policy statements on pedestrian and bicycle accommodation as an indication of their commitment to accommodating pedestrians and bicyclists as an integral element of the transportation system; and

WHEREAS, the Policy Statement further elaborates that every transportation agency has the responsibility to improve conditions and opportunities for walking and bicycling and to integrate walking and bicycling into their transportation systems, and are encouraged to go beyond minimum standards to provide safe and convenient facilities for non-motorized transportation; and

WHEREAS, incorporating pedestrian and bicycle accommodations as a routine part of the Collier Metropolitan Planning Area's road and street network is a cost-effective way to create opportunities for safe walking and bicycling available to all residents and visitors and to enable those who walk and bicycle to safely reach all needed destinations; and

WHEREAS, walking and bicycling improve public health and reduce treatment costs for conditions associated with reduced physical activity, including obesity, heart disease, lung disease and diabetes; and

WHEREAS, promoting walking and bicycling for transportation improves the natural environment, reduces congestion, reduces the need for costly expansion of the road and highway systems and reduces our nation's dependence on foreign energy sources; and

WHEREAS, public transit users depend on walking or bicycling to safely reach their bus stops; and

WHEREAS, an integrated, well-connected network of pedestrian and bicycle facilities encourages more children to safely walk and bike to school, and will make streets, sidewalks and communities safer and more inviting to children and families to walk and bicycle to their desired destinations; and

WHEREAS, the aforementioned Policy Statement encourages transportation agencies and local communities to go beyond minimum design standards and requirements to create safe, attractive, sustainable, accessible and convenient walking and bicycling networks, and recommends that such actions should include:

(1) Giving walking and bicycling the same priority as is given to other modes of transportation;

(2) Ensuring that there are transportation choices for people of all ages and abilities;

(3) Avoiding the design of pedestrian and bicycle facilities to the minimum standards; achieving this end by planning projects with consideration of likely future demand for walking and bicycling and by incorporating design features, where practical, that accommodate future pedestrian and bicycle-related improvements;

(4) Integrating bicycle and pedestrian accommodation on new, rehabilitated and limited access bridges;

(5) Collecting data on walking and biking trips in order to track trends and prioritize investments;

(6) Setting mode share targets for walking and bicycling and tracking them over time with the aim of increasing the percentage of trips made by walking and bicycling;

(7) Maintaining pedestrian facilities built with Federal funds in the same manner as other roadway assets;

(8) Improving non-motorized facilities during resurfacing and other maintenance projects; and

WHEREAS, the Collier MPO's member jurisdictions could achieve the stated purpose of the Policy Statement by supporting routine and appropriate accommodation for pedestrians, bicyclists, disabled persons and transit users on all transportation projects, as appropriate to the context, community and project use, except:

a. Where walking and bicycling are not allowed;

b. Where the scarcity of population or other factors indicate an absence of any need for such accommodations now or in the future;

c. Where the cost of establishing such accommodations would be excessively disproportionate to the need or probable use; and

WHEREAS, the MPO has reviewed the Policy Statement and concurs with the purpose and recommended actions contained therein.

NOW, THEREFORE, BE IT RESOLVED BY THE COLLIER METROPOLITAN PLANNING ORGANIZATION THAT:

1. The Collier Metropolitan Planning Organization endorses and reaffirms its support of the United States Department of Transportation Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations, signed by the United States Secretary of Transportation on March 11, 2010.

2. The member jurisdictions of the Collier MPO, i.e., Collier County and the Cities of Naples, Marco Island and Everglades City, are hereby encouraged to adopt similar policy statements on pedestrian and bicycle accommodation as an indication of their commitment to the support of pedestrian and bicycle facilities as integral elements of the Collier Metropolitan Planning Area's transportation system.

PLANNING POLICIES

1) The MPO supports FDOT's ***Statewide Complete Streets Policy*** (Topic No. 000-625-017-a). The key components are:
   a) It is the policy of the MPO to serve the transportation needs of transportation system users of all ages and abilities, including pedestrians, bicyclists, transit riders, motorists, and freight handlers.
   b) The MPO recognizes Complete Streets are context-sensitive and require transportation system design that considers local land development patterns and built form
   c) The MPO encourages its member entities to incorporate a Complete Streets approach in all projects submitted for funding consideration and for inclusion in the LRTP.

2) The MPO's **High Priority Complete Streets Corridors** coincide with the Collier Area Transit (CAT) System bus routes.

3) Bicycle facilities should be designed for **All Ages and Abilities** (AAA), a principal developed by the National Association of City Transportation Officials (NACTO.)[1] Lesser accommodation requires additional justification as projects are brought forward for prioritization.

4) The MPO encourages its member entities and FDOT to Include bike lane improvements as part of resurfacing, reconstruction and routine maintenance.

5) The MPO encourages its member entities to require new development to connect on-site bicycle and pedestrian infrastructure to adjacent public bicycle and pedestrian infrastructure.

6) US 41/Tamiami Trail east of San Marco Road and SR 29 from US41 north to Oil Well Road. These two state roads are fronted on both sides by a continuum of tribally-owned lands, State and National Parks, Preserves, Forests, Wildlife Refuges, and Everglades National Park. Efforts along US41 will promote a safe, well planned transportation system; including all modal choices to promote Safety, Mobility of Goods, Economic Prosperity and preserve the quality of our environment and communities. Any proposed improvements will utilize existing policies and take into account participation from concerned parties.

FUNDING PRIORITIES AND EVALUATION CRITERIA

1. Map(s) XX and Table(s) XX establish the MPO's priorities for funding projects based on safety, equity, and connectivity.

2. The MPO's priority projects include conducting **Bicycle and Pedestrian Road Safety Audits** for high crash locations identified on Map XX **and implementing RSA recommendations endorsed by the Board.**

3. The MPO's priority projects include planning, designing and constructing **Complete Streets retrofits** to coincide with a) the top 5 High Crash Corridors, b) High-use CAT routes, and c) Environmental Justice needs. [Note that FDOT has completed a bike/ped retrofit project for SR 29/Main St in Immokalee between 9th and 1st ST; and US 41 from Royal Cove Drive north to Sunrise Blvd (in the vicinity of Wiggins Pass Road) is located outside of the CAT bus route service, but is a candidate for a BP RSA. The two highest priority Complete Streets retrofit projects are:
   I. **US 41 between 5th Ave/9th St intersection and Airport Rd**
   II. **Airport Road from US 41 north to Radio Road**

4. MPO staff will issue a Call for Nonmotorized Transportation Projects on an as-needed basis, based on the MPO's current adopted TMA SU "Box" allocation/programming policy. **MPO staff may submit projects for consideration as well as the MPO member entities.** The Board has sole discretion to set this policy and may change it at any time pursuant to the MPO Bylaws and Public Participation Plan.

5. Member entities are free to choose which projects to submit as long as they are identified in Maps XX and Table(s) XX) . **Member entities may submit up to one project for each jurisdictional area represented by voting membership on the Board, and MPO staff may submit 1 project of regional significance, for a total of 10 projects in response to any Call for**

[1] Designing for All ages & Abilities – Contextual Guidance for High-Comfort Bicycle Facilities, December 2017, NACTO

Projects:

- 1 project located in each County Commissioner District (total 5)
- 2 projects located within City of Naples
- 1 project located within City of Marco Island
- 1 Project located within City of Everglades City (inclusive of Chokoloskee and Plantation Island)
- **1 project submitted by MPO staff to implement this Plan**

6. **Staff shall conduct a preliminary assessment** of submitted projects **for eligibility according** to the following criteria**. Incomplete project submittals will not be considered for funding.**
   - **Timeliness** – The submitting agency verifies that the project can and should be designed and constructed within the time period selected for funding.
   - **Constructability** – The submitting agency verifies that the project is fully scoped, the right-of-way is available, cost estimates are complete and accurate.
   - **Funding Availability** – the submitting agency has identified funding that is currently available for programming by the MPO and any that has been programmed by the local entity; all costs are addressed in terms of meeting funding eligibility requirements accurate.

7. **Staff shall conduct a preliminary prioritized ranking of projects** based on the following scoring criteria. The **BPAC, CAC and TAC** will all have the opportunity to **review and comment** on the ranking and endorse with adjustments as deemed warranted. **Projects will be scored and ranked according to the following method:**

   - **Project Addresses Multiple Objectives:** the submitting agency has demonstrated that the project addresses multiple objectives in a substantial manner. The score is cumulative depending on the number of factors addressed:
     - <u>Safety</u>
       - Implements a recommended action in a Bicycle/Pedestrian Safety Audit – 5 points
       - Addresses a safety concern involving a number of serious injuries and fatalities as identified in this Plan, absent a Safety Audit to verify the proposed mitigation measure – 3 points
       - Addresses a safety concern involving a number of crashes of less severity, absent a Safety Audit to verify the proposed mitigation measure – 2 points
       - Addresses a safety concern expressed by members of the public in the absence of crash records – 1 point
     - <u>Equity</u>
       - Fills a need associated with Environmental Justice community or use identified in this Plan – 5 points
       - Fills a need associated with an area that meets some, but not all of the EJ criteria used in identifying EJ communities for this Plan – 3 points
       - Fills a need associated with an area that does not have adequate access to nonmotorized transportation facilities based upon public input received in the development of this Plan – 1 point
     - <u>Connectivity</u>
       - Fills a prioritized infrastructure gap identified in this Plan – 5 points
       - Fills a need for improved connectivity based upon public input received in the

development of this Plan – 2 points

8. **MPO staff will present the complete record of staff and advisory committee rankings to the MPO Board.** The Board has sole and final decision-making authority in determining the final list of priorities in ranked order. MPO staff shall submit the Board's adopted project priorities to FDOT on or before June 30th.

DESIGN POLICIES

1. **MPO member entities are encouraged to follow the MPO Design Guidelines** in Chapter V, particularly on projects submitted for MPO funding.

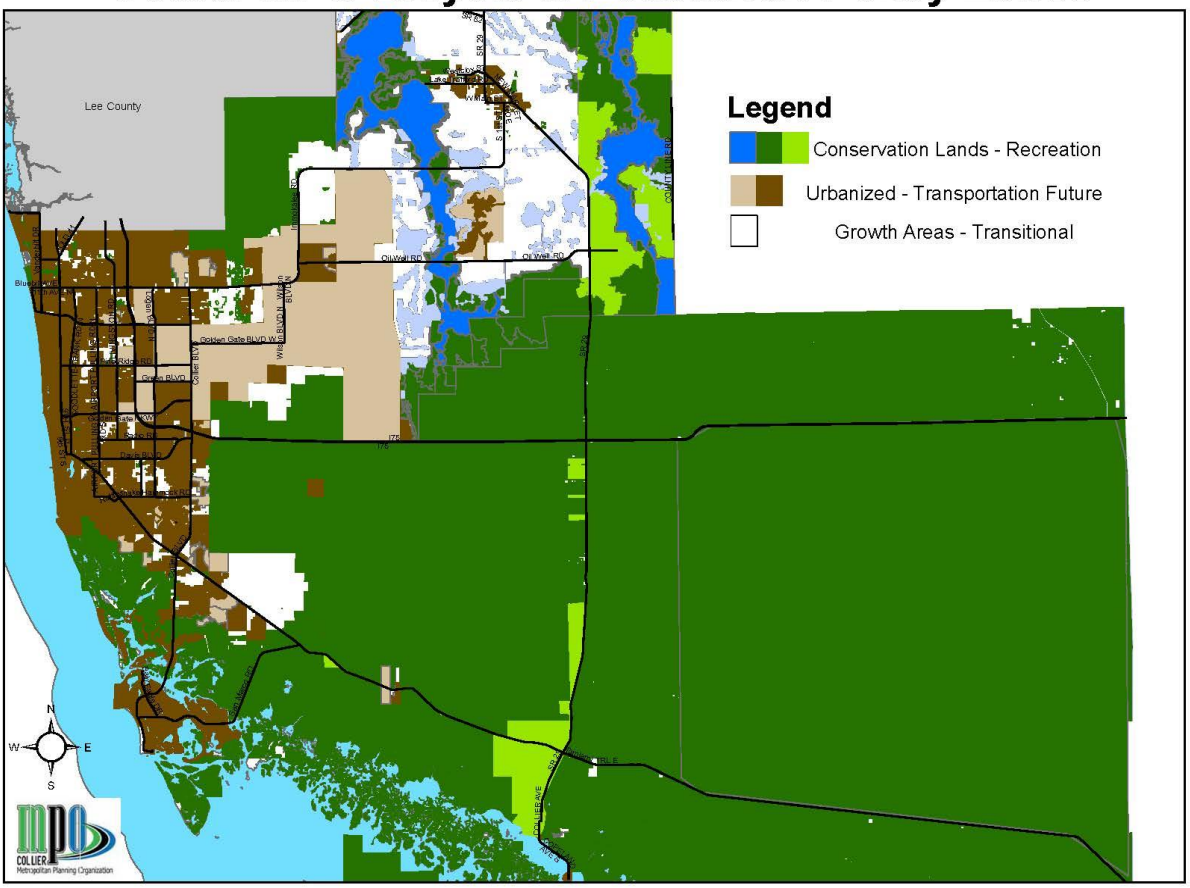
2. **Map xx on the following page identifies which facilities the MPO views as filling a recreational function and which fill a transportation function.** The distinction is made based upon existing and future urbanized areas in contrast with conservation lands. Existing and proposed bicycle and pedestrian facilities located within urbanized areas clearly serve a transportation function for MPO residents and tourists. Facilities surrounded by large areas of conservation lands serve a recreational function.

3. Where bicycle and pedestrian facilities are identified along roadways and greenways that, based on local land use policies, will eventually **transition** from undeveloped to developed conditions – the areas identified as Transitional on the following map - the MPO recommends a phased approach to planning, design and construction. MPO member entities are encouraged to plan for and obtain sufficient ROW to accommodate anticipated developed conditions, while phasing actual construction of facilities to match the current roadway context.

4. **Designing for Safety -**The MPO recommends that member entities incorporate the following principles when planning transportation improvements in **areas this Plan has identified as having high pedestrian and bicycle use (coinciding with high crash concentrations).** These recommendations are based on the BP Road Safety Audit referenced in the Chapter on Safeety**:**

    a. **Limit unsignalized right turns**
    b. Target and posted **speeds should not exceed 35 mph**

Collier MPO Bicycle & Pedestrian Policy Zones



MPO PROGRAMS AND SPECIAL EVENTS

1. MPO staff will follow up on the BP Safety Audit by incorporating bi-lingual educational material from NHTSA, such as flyers, brochures, posters and Public Service Announcements, and working with the Community Traffic Safety Team to distribute them. Staff will also work with the CTST and FDOT to use changeable message signs on both Airport and US41 to display to motorists the need to follow the 3-foot rule, and to watch for cyclists at driveway crossings.

2. MPO staff will help promote outreach and education opportunities offered throughout Collier County on the MPO website and social media. Example programs include Walk/Bike to School Day, Bike to Work Day/Week, Safe Kids SWFL, bike helmet fittings and giveaways, car seat fitting and giveaways, *Ciclovía**, bike rodeos, and programs such as Summer Nights, Winter Nights, and Fridays Nights, which are safety programs targeting school age kids and their parents.

   (**Ciclovía*, also spelled *ciclovia* or *cyclovia*, is a Spanish term that means "cycleway," either a permanent bike path or the closing of certain streets to automobiles for cyclists and pedestrians. *Ciclovia Immokalee!* Has hosted events in May and August of 2017 and 2018, closing WHICH STREET? near Immokalee High School. See:

http://www.cicloviaimmokalee.org/august-4-2018-ciclovia-immokalee-joins-lipman-family-farms-at-their-backpack-giveaway/

IMPLEMENTATION

Implementation, or action, is what moves projects from plan to reality. This section describes ways to get projects built – in addition to the Board's ability to prioritize projects for SU funding.

The projects identified in Map(s) XXXX and Table(s)XXX are in locations throughout unincorporated Collier County and its member entities – the cities of Naples, City of Marco Island and Everglades City. Projects range from locations on local, collector, and arterial roads to greenway connections, Road Safety Audits, and special studies. Bicycle and pedestrian improvements can be incorporated into roadway construction projects or funded independently. As is always the case, the needs far outstrip the funds available. There are other Federal funds available. They are identified in the next section. Local funding, State funding, grants and the potential to form partnerships with other agencies can help make up for the ongoing funding shortfall.

MPO member entities have the jurisdictional authority over land use and zoning to work with developers to address gaps in bicycle and pedestrian infrastructure and make connections as new homes, communities, and shopping areas are constructed. MPO member entities have many opportunities to submit projects in response to Calls for Projects related to other funding opportunities such as State and Federal grant programs, SRTS and NHTSA funding. In addition, MPO member entities have their own plans, policies and funding sources to address project priorities that are independent of MPO funding sources**. Collier County, for example, typically funds transportation improvements that incorporate bicycle and pedestrian facilities using local funds on County-owned roads.**

PLAN CONSISTENCY

The MPO Board establishes policy by which it allocates Surface Transportation-Urban (SU) funds for 1) congestion management, 2) new bridge construction, and 3) bicycle and pedestrian projects. MPO staff issue a Call for Projects based on the Board's established allocation policy and schedule, which is currently on a 5-year rotation among the three categories. MPO member entities submit bicycle and pedestrian infrastructure projects that implement the current, adopted Bicycle and Pedestrian Master Plan, which is, or will be, incorporated by reference into the current, adopted Long Range Transportation Plan (LRTP).

FEDERAL AND STATE FUNDING SOURCES & TECHNICAL ASSISTANCE

The MPO collaborates with FDOT on the allocation of a variety of State and Federal funds, which are one component of a complex funding puzzle in which the competition for limited resources statewide is fierce.. The primary funding sources available to the MPO are discussed below.

FEDERAL PROGRAMS

- **National Highway Performance Program (NHPP)**

NHPP funds may be obligated only for a project on an "eligible facility" – a project, part of a program of projects, or an eligible activity supporting progress toward the achievement of national performance goals for improving infrastructure condition, safety, congestion reduction, system reliability, or freight movement on the National Highway System (NHS). Projects must be identified in the Statewide Transportation Improvement Program (STIP)/Transportation Improvement Program (TIP) and be consistent with the Long-Range Statewide Transportation Plan and the MPO's Long Range Transportation

Plan (LRTP) . Bicycle transportation and pedestrian improvements associated with an NHS facility are eligible. Shared-use paths along interstate corridors, but outside the main travel way, are eligible for the use of NHPP funds. Bicycle lanes, paved shoulders and sidewalk improvements on major arterial roads that are part of the NHS, and bicycle and/or pedestrian bridges and tunnels that cross NHS facilities are eligible for funding.

Surface Transportation Block Grant Program (STBG)

The FAST Act converts the long-standing Surface Transportation Program into the Surface Transportation block Grant Program (STBG) . this program has the most flexible eligibilities among all Federal-aid highway programs. Funding for Transportation Alternatives is set aside from a State's STBG apportionment, as is funding for bridges not on Federal-aid highways (aka "off-system bridges.") Lee County MPO and Collier MPO jointly prioritize Regional Transportation Alternative Program funds on an annual basis.

A percentage of a State's STBG apportionment (after set-asides) is to be obligated to areas in proportion to their relative shares of the State's population. Urbanized areas with population greater than 200,000, such as Collier MPO represents, are apportioned an annual amount of SU funds to program projects eligible for STBG funding. The MPO Board prioritizes projects for programming for the new 5th year of the new TIP. FDOT covers the 20% match requirement.

STBG projects may not be on local (i.e. residential) roads or rural minor collectors, with the exception of recreational trails, pedestrian and bicycle projects and safe routes to school projects. (SRTS). SRTS projects require a 50% local match.

Highway Safety Improvement Program (HSIP)[4]

FDOT determines the use of HSIP funds on a statewide basis. HSIP funds can be used for pedestrian and bicycle safety improvements but this is subject to meeting FDOT's strict criteria and statewide prioritization. States may obligate funds under HSIP to carry out any highway safety improvement project on any public road or publicly-owned bicycle or pedestrian pathway or trail, or as provided under Flexible Funding for States with a Strategic Highway Safety Plan, and other safety projects. The HSIP requires a data-driven, strategic approach to improving highway safety on all public roads that focuses on performance. The FAST Act added the following items to the list of approved uses:

- Pedestrian hybrid beacons – roadway improvements that provide separation between pedestrians and motor vehicles, including medians and pedestrian crossing islands
- Road Safety Audits (RSAs), a category that include Bicycle and Pedestrian Safety Audits

Recreational Trails Program (RTP)[5]

The RTP is a federally-funded competitive grant program that provides financial assistance to agencies of city, county, state, or federal governments and organizations approved by the State, or State- and federally-recognized Indian tribal governments, for the development of recreational trails, trailheads, and trailside facilities. The Florida Department of Environmental Protection (DEP) – Division of Greenways and Trails, manages the State's RTP. The DEP periodically issues a Call for Projects. The most recent Call for Projects identified the maximum grants funds an applicant could request for Fiscal Year 2018: Mixed Use and Nonmotorized Projects $200,000; Motorized Projects $500,000.Additional information including the application form, Fact Sheet and other tools are available on their website at: http://www.dep.state.fl.us/gwt/grants/

FTA Funds

A variety of FTA funding is available that may be used to fund the design, construction, and maintenance of pedestrian and bicycle projects that enhance or are related to public transportation facilities.

[4] https://safety.fhwa.dot.gov/legislationandpolicy/fast/guidance.cfm.

[5] https://floridadep.gov/ooo/land-and-recreation-grants/content/recreational-trails-program.

Improvements made expressly eligible by statute include capital projects such as pedestrian and bicycle access to a public transportation facility and transit enhancements such as pedestrian access, walkways, and bicycle access, including bicycle storage facilities and equipment for transporting bicycles on public transportation vehicles.

NHTSA Funds

The National Highway Traffic Safety Administration (NHTSA) provides funding to State DOT's to address the behavioral side of traffic safety through education and enforcement.

Technical Assistance

The Florida Traffic and Bicycle Safety Education Program (FTBSEP) is a statewide comprehensive training program funded by the FDOT Safety Office, which teaches individuals how to be more competent and safer pedestrians and bicyclists. In addition to training individuals, the FTBSEP uses a train-the-trainer model to teach training workshop participants (e.g., district, county, city staff, law enforcement, fire rescue, EMS, municipal parks and recreation staff, senior center staff, community professions, etc.) how to teach pedestrian and bicycle safety education to others (e.g., children, adults, and seniors). Training is provided at no cost to district, county, city staff and other organizations. Collier County is identified as one of the Top 25 Priority Counties of the Pedestrian and Bicycle Focused Initiative, and is eligible for assistance in coordinating a training workshop in the area. For more information see the following websites:

http://hhp.ufl.edu/safety
https://alerttodayflorida.com/resources/Top25Countiesmap_dark.pdf

Shared-Use Non-motorized (SUN) Trail Network

Managed by the Department of Environmental Protection – Office of Greenways and Trails, the SUNTrail program funds non-motorized, paved, shared-use trails that are part of the Florida Greenways and Trails System Priority Trail Map. The Southwest Coast Connector Trail alignment (see map x) is eligible to receive SUNTrail funds IF local entities agree in advance to assume maintenance responsibilities.

USDOT BUILD Program (formerly TIGER Grant Program)

The USDOT manages the Better Utilizing Investments to Leverage Development, or BUILD Transportation Discretionary Grant program. (See https://www.transportation.gov/BUILDgrants/about).

The BUILD Program replaces the TIGER program. The eligibility requirements allow for multi-modal, multi-jurisdictional projects that are more difficult to support through traditional DOT programs.

When the USDOT publishes a Notice of Funding Opportunity (NOFO), MPO member entities may submit project applications to the USDOT. The most recent NOFO was issued on April 27, 2018 with a submittal deadline of July 18, 2018. This is a highly competitive, national program. Instructions for completing a Project Information Form are posted at: http://www.transportation.gov/buildgrants/build-info .

PLAN AMENDMENTS

Member entities and MPO staff may propose major revisions to the plan in the form of amendments for the MPO Board to consider on an as-needed basis to address unforeseen opportunities or resolve issues that are preventing or delaying plan implementation. Major revisions are changes that would alter plan policies or project priorities. The procedures for amending the BPMP will follow MPO's adopted Public Participation Plan.

MPO staff may make minor revisions to correct typographical errors, mapping errors or to update references and pertinent data. Such minor revisions will be distributed to the Board and to advisory committees and the MPO's email listserv(s) indicating track changes and the resulting clean version of any altered text, spreadsheet or map, following the procedures in the MPO's adopted Public Participation Plan.

PLAN MONITORING AND REPORTING

This plan update is a living document and reflects the vision of the MPO and stakeholders and analysis done at the time the plan was developed. revision Yet, developing a plan is only the first step in the process to creating a robust and successful active transportation network. After plan adoption, collaboration and action are what make the plan successful. Monitoring and reporting on performance measures and targets is necessary to assess the strengths and weaknesses of the plan in light of actual performance. The following measures and targets will be incorporated into the MPO Director's Annual Report to the MPO Board:

- **Safety:** In February 2018, the Collier MPO Board voted to support FDOT's goal of zero serious auto-related injuries and deaths. In support of the MPO commitment to Vision Zero, one of the primary goals of this Bicycle and Pedestrian Plan update is to reduce the number of bicycle and pedestrian injuries and fatalities by funding projects that will support this goal. The MPO Director's Annual Report to the MPO Board already reports on the Number of Non-motorized Fatalities and Serious Injuries on an annual basis and tracks trends over a five year period. The significance of tracking trends involving safety crash statistics must be understood in the context of several important caveats:
    - The MPO Board prioritizes projects for the new 5th year of the following year's TIP. Projects are therefore 6 years out at the earliest, yet this plan will be updated every 5-years.
    - Project phases usually, but not always, start with preliminary design, followed by obtaining environmental clearances, ROW acquisition, final design, and at the earliest, after a 2-year hiatus following completion of final designs, construction. So the actual opening day for a new construction project coming on-line is about 9 years out.
    - If the projects selected for funding are widely scattered geographically and/or not specifically geared towards addressing safety per se, but address other issues as well, such as network connectivity, recreational and other local agency needs and priorities, there will be little to show from a safety statistical perspective.

  The MPO Director's Annual Report to the MPO Board includes a listing of currently programmed projects that address problem areas in the bicycle and pedestrian network identified in safety studies, Community Walkability Studies and bicycle and pedestrian Safety Audits. This reporting is mandated by the MPO Congestion Management Process.

Safety Performance Targets

Safety is the first national goal identified in the Fixing America's Surface Transportation (FAST) Act and is of critical importance to the MPO. As part of the FAST Act, the Federal Highway Administration (FHWA) required all state departments of transportation (DOTs) and MPOs to adopt five safety performance targets by the end of February 2018. MPOs could adopt their own targets or those of the State DOT. The **MPO and FDOT-adopted safety performance measures for non-motorized fatalities and serious injuries is 0.** However, FDOT has issued a clarification that the forecast on **interim performance measure** of **3,447 nonmotorized fatalities and serious injuries statewide in 2018** in order to satisfy federal requirements. The MPO Director's Annual Report will address performance according to the 0 target and the interim performance measure.

- **Network expansion**: The Director's Annual Report to the MPO Board already tracks the following measures, which are in the MPO's 2017 Congestion Management Process:
    - Centerline miles of paved shoulders
    - Centerline miles of bike lanes
    - Linear miles of Shared Use Paths (SUPs) adjacent to roadways
    - Linear miles of SUPs located within greenways
    - Linear miles of connector sidewalks on arterial roadways. Connector sidewalks are defined in the Bicycle and Pedestrian Facilities inventory database as "a sidewalk that provides cyclists the option of a connection that is separated from motorized vehicle traffic, identified only where there are gaps in the cycling network between stretches of bike lanes, paved shoulders and/or shared use paths." The MPO established this data by updating the 2007 sidewalk inventory conducted by Collier County against satellite imagery available via the free website platform: Google Earth. The MPO does not attempt to inventory or report on linear miles of all sidewalks located within the MPO jurisdictional area; however, the MPO's member entities are encouraged to begin doing so as part of their asset management programs.

- **BPMP Priority Project Implementation:** The MPO Director's Annual Report to the MPO Board will be expanded to include a status report on BPMP Project Priorities that are making their way through the following project development steps:
    - MPO Project Priority Listing for:
        - SU box funding
        - RTAP funding
        - Incorporated in Roadway projects for TRIP or CIGP funding
        - Other funding applications submitted
    - Project programmed in the MPO TIP/FDOT STIP (further broken down into projects funded for design/funded for construction
    - Project programmed in a member entity's CIP or identified for local funding in the County's Annual Update & Inventory Report (AUIR) / Capital Improvement Element Schedule (CIE)

- Project received funding through notice of a grant award
- Projects in the design phase

PLAN UPDATES

The MPO will update this plan every 5 years to match the cycle for updating the MPO's LRTP. The BPMP will be incorporated for reference in the LRTP.

CHAPTER 7 – POLICIES AND IMPLEMENTATION

THE MPO'S ROLE IN SETTING POLICIES

Locally adopted plans and policies relating to biking and walking provide a key part of the framework for building a safe, convenient multimodal network for users of all ages and all abilities. According to FHWA's *Noteworthy Local Policies that Support Safe and Complete Pedestrian and Bicycle Networks*,

Effective policy shapes long-term planning efforts, as well as more immediate decision making. It informs infrastructure planning, design, construction and maintenance and shapes decision making related to investments in infrastructure and capital improvements. Policy informs and shapes an agency's work in engineering, education, enforcement, emergency response, encouragement, and evaluation efforts. This multidisciplinary approach, embodied in both required Federal safety planning and best practices in bicycle and pedestrian planning and design, is important in establishing a safe and complete pedestrian and bicycle network.[1]

Unlike its member entities, the Collier MPO does not build projects and is not an implementing agency. The MPO does, however, play a unique role in providing a forum for regional coordination and a collaborative process for establishing funding priorities.

RESOLUTION 2010-5 REAFFIRMED

The MPO adopted a Policy Statement by Resolution 2010-05 endorsing the US Department of Transportation's Policy Statement on bicycle and Pedestrian accommodation. Resolution 2010-5 is as relevant today as it was in 2010.

RESOLUTION –2019-01

RESOLUTION OF THE COLLIER METROPOLITAN PLANNING ORGANIZATION REAFFIRMING RESOLUTION 2010-05 SUPPORTING THE UNITED STATES DEPARTMENT OF TRANSPORTATION POLICY STATEMENT ON BICYCLE AND PEDESTRIAN ACCOMMODATION REGULATIONS AND RECOMMENDATIONS AND ENCOURAGING THE COLLIER METROPOLITAN PLANNING ORGANIZATION'S MEMBER JURISDICTIONS TO ADOPT SIMILAR POLICY STATEMENTS AS AN INDICATION OF THEIR COMMITMENT TO ACCOMMODATING PEDESTRIANS AND BICYCLISTS AS AN INTEGRAL ELEMENT OF THE TRANSPORTATION SYSTEM.

WHEREAS, the United States Secretary of Transportation signed on March 11, 2010 and announced on March 15, 2010 a Policy Statement (hereinafter referred to as "the Policy Statement") to reflect the United States Department of Transportation's support for the development of fully integrated transportation networks that include well-connected walking and bicycling facilities with linkages to public transit as important components thereof with equal priority to other transportation modes; and

WHEREAS, the Policy Statement encourages States, local governments, professional associations, community organizations, public transportation agencies and other government agencies to adopt similar

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policy statements on pedestrian and bicycle accommodation as an indication of their commitment to accommodating pedestrians and bicyclists as an integral element of the transportation system; and

WHEREAS, the Policy Statement further elaborates that every transportation agency has the responsibility to improve conditions and opportunities for walking and bicycling and to integrate walking and bicycling into their transportation systems, and are encouraged to go beyond minimum standards to provide safe and convenient facilities for non-motorized transportation; and

WHEREAS, incorporating pedestrian and bicycle accommodations as a routine part of the Collier Metropolitan Planning Area's road and street network is a cost-effective way to create opportunities for safe walking and bicycling available to all residents and visitors and to enable those who walk and bicycle to safely reach all needed destinations; and

WHEREAS, walking and bicycling improve public health and reduce treatment costs for conditions associated with reduced physical activity, including obesity, heart disease, lung disease and diabetes; and

WHEREAS, promoting walking and bicycling for transportation improves the natural environment, reduces congestion, reduces the need for costly expansion of the road and highway systems and reduces our nation's dependence on foreign energy sources; and

WHEREAS, public transit users depend on walking or bicycling to safely reach their bus stops; and

WHEREAS, an integrated, well-connected network of pedestrian and bicycle facilities encourages more children to safely walk and bike to school, and will make streets, sidewalks and communities safer and more inviting to children and families to walk and bicycle to their desired destinations; and

WHEREAS, the aforementioned Policy Statement encourages transportation agencies and local communities to go beyond minimum design standards and requirements to create safe, attractive, sustainable, accessible and convenient walking and bicycling networks, and recommends that such actions should include:

(1) Giving walking and bicycling the same priority as is given to other modes of transportation;

(2) Ensuring that there are transportation choices for people of all ages and abilities;

(3) Avoiding the design of pedestrian and bicycle facilities to the minimum standards; achieving this end by planning projects with consideration of likely future demand for walking and bicycling and by incorporating design features, where practical, that accommodate future pedestrian and bicycle-related improvements;

(4) Integrating bicycle and pedestrian accommodation on new, rehabilitated and limited access bridges;

(5) Collecting data on walking and biking trips in order to track trends and prioritize investments;

(6) Setting mode share targets for walking and bicycling and tracking them over time with the aim of increasing the percentage of trips made by walking and bicycling;

(7) Maintaining pedestrian facilities built with Federal funds in the same manner as other roadway assets;

(8) Improving non-motorized facilities during resurfacing and other maintenance projects; and

WHEREAS, the Collier MPO's member jurisdictions could achieve the stated purpose of the Policy Statement by supporting routine and appropriate accommodation for pedestrians, bicyclists, disabled persons and transit users on all transportation projects, as appropriate to the context, community and project use, except:

a. Where walking and bicycling are not allowed;

b. Where the scarcity of population or other factors indicate an absence of any need for such accommodations now or in the future;

c. Where the cost of establishing such accommodations would be excessively disproportionate to the need or probable use; and

WHEREAS, the MPO has reviewed the Policy Statement and concurs with the purpose and recommended actions contained therein.

NOW, THEREFORE, BE IT RESOLVED BY THE COLLIER METROPOLITAN PLANNING ORGANIZATION THAT:

1. The Collier Metropolitan Planning Organization endorses and reaffirms its support of the United States Department of Transportation Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations, signed by the United States Secretary of Transportation on March 11, 2010.

2. The member jurisdictions of the Collier MPO, i.e., Collier County and the Cities of Naples, Marco Island and Everglades City, are hereby encouraged to adopt similar policy statements on pedestrian and bicycle accommodation as an indication of their commitment to the support of pedestrian and bicycle facilities as integral elements of the Collier Metropolitan Planning Area's transportation system.

PLANNING POLICIES

1) The MPO supports FDOT's ***Statewide Complete Streets Policy*** (Topic No. 000-625-017-a). The key components are:
   a) It is the policy of the MPO to serve the transportation needs of transportation system users of all ages and abilities, including pedestrians, bicyclists, transit riders, motorists, and freight handlers.
   b) The MPO recognizes Complete Streets are context-sensitive and require transportation system design that considers local land development patterns and built form
   c) The MPO encourages its member entities to incorporate a Complete Streets approach in all projects submitted for funding consideration and for inclusion in the LRTP.

2) The MPO's **High Priority Complete Streets Corridors** coincide with the Collier Area Transit (CAT) System bus routes.

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3) Bicycle facilities should be designed for **All Ages and Abilities** (AAA), a principal developed by the National Association of City Transportation Officials (NACTO.)[1] Lesser accommodation requires additional justification as projects are brought forward for prioritization.

4) The MPO encourages its member entities and FDOT to Include bike lane improvements as part of resurfacing, reconstruction and routine maintenance.

5) The MPO encourages its member entities to require new development to connect on-site bicycle and pedestrian infrastructure to adjacent public bicycle and pedestrian infrastructure.

6) US 41/Tamiami Trail east of San Marco Road and SR 29 from US41 north to Oil Well Road. These two state roads are fronted on both sides by a continuum of tribally-owned lands, State and National Parks, Preserves, Forests, Wildlife Refuges, and Everglades National Park. Efforts along US41 will promote a safe, well planned transportation system; including all modal choices to promote Safety, Mobility of Goods, Economic Prosperity and preserve the quality of our environment and communities. Any proposed improvements will utilize existing policies and take into account participation from concerned parties.

FUNDING PRIORITIES AND EVALUATION CRITERIA

1. Map(s) XX and Table(s) XX establish the MPO's priorities for funding projects based on safety, equity, and connectivity.

2. The MPO's priority projects include conducting **Bicycle and Pedestrian Road Safety Audits** for high crash locations identified on Map XX **and implementing RSA recommendations endorsed by the Board.**

3. The MPO's priority projects include planning, designing and constructing **Complete Streets retrofits** to coincide with a) the top 5 High Crash Corridors, b) High-use CAT routes, and c) Environmental Justice needs. [Note that FDOT has completed a bike/ped retrofit project for SR 29/Main St in Immokalee between 9th and 1st ST; and US 41 from Royal Cove Drive north to Sunrise Blvd (in the vicinity of Wiggins Pass Road) is located outside of the CAT bus route service, but is a candidate for a BP RSA. The two highest priority Complete Streets retrofit projects are:
   I. **US 41 between 5th Ave/9th St intersection and Airport Rd**
   II. **Airport Road from US 41 north to Radio Road**

4. MPO staff will issue a Call for Nonmotorized Transportation Projects on an as-needed basis, based on the MPO's current adopted TMA SU "Box" allocation/programming policy. **MPO staff may submit projects for consideration as well as the MPO member entities.** The Board has sole discretion to set this policy and may change it at any time pursuant to the MPO Bylaws and Public Participation Plan.

5. Member entities are free to choose which projects to submit as long as they are identified in Maps XX and Table(s) XX) . **Member entities may submit up to one project for each jurisdictional area represented by voting membership on the Board, and MPO staff may submit 1 project of regional significance, for a total of 10 projects in response to any Call for**

[1] Designing for All ages & Abilities – Contextual Guidance for High-Comfort Bicycle Facilities, December 2017, NACTO

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Projects:

- 1 project located in each County Commissioner District (total 5)
- 2 projects located within City of Naples
- 1 project located within City of Marco Island
- 1 Project located within City of Everglades City (inclusive of Chokoloskee and Plantation Island)
- **1 project submitted by MPO staff to implement this Plan**

6. **Staff shall conduct a preliminary assessment** of submitted projects **for eligibility according** to the following criteria**. Incomplete project submittals will not be considered for funding.**
   - **Timeliness** – The submitting agency verifies that the project can and should be designed and constructed within the time period selected for funding.
   - **Constructability** – The submitting agency verifies that the project is fully scoped, the right-of-way is available, cost estimates are complete and accurate.
   - **Funding Availability** – the submitting agency has identified funding that is currently available for programming by the MPO and any that has been programmed by the local entity; all costs are addressed in terms of meeting funding eligibility requirements accurate.

7. **Staff shall conduct a preliminary prioritized ranking of projects** based on the following scoring criteria. The **BPAC, CAC and TAC** will all have the opportunity to **review and comment** on the ranking and endorse with adjustments as deemed warranted. **Projects will be scored and ranked according to the following method:**

   - **Project Addresses Multiple Objectives:** the submitting agency has demonstrated that the project addresses multiple objectives in a substantial manner. The score is cumulative depending on the number of factors addressed:
     - Safety
       - Implements a recommended action in a Bicycle/Pedestrian Safety Audit – 5 points
       - Addresses a safety concern involving a number of serious injuries and fatalities as identified in this Plan, absent a Safety Audit to verify the proposed mitigation measure – 3 points
       - Addresses a safety concern involving a number of crashes of less severity, absent a Safety Audit to verify the proposed mitigation measure – 2 points
       - Addresses a safety concern expressed by members of the public in the absence of crash records – 1 point
     - Equity
       - Fills a need associated with Environmental Justice community or use identified in this Plan – 5 points
       - Fills a need associated with an area that meets some, but not all of the EJ criteria used in identifying EJ communities for this Plan – 3 points
       - Fills a need associated with an area that does not have adequate access to nonmotorized transportation facilities based upon public input received in the development of this Plan – 1 point
     - Connectivity
       - Fills a prioritized infrastructure gap identified in this Plan – 5 points
       - Fills a need for improved connectivity based upon public input received in the

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development of this Plan – 2 points

8. **MPO staff will present the complete record of staff and advisory committee rankings to the MPO Board.** The Board has sole and final decision-making authority in determining the final list of priorities in ranked order. MPO staff shall submit the Board's adopted project priorities to FDOT on or before June 30th.

DESIGN POLICIES

1. **MPO member entities are encouraged to follow the MPO Design Guidelines** in Chapter V, particularly on projects submitted for MPO funding.

2. **Map xx on the following page identifies which facilities the MPO views as filling a recreational function and which fill a transportation function.** The distinction is made based upon existing and future urbanized areas in contrast with conservation lands. Existing and proposed bicycle and pedestrian facilities located within urbanized areas clearly serve a transportation function for MPO residents and tourists. Facilities surrounded by large areas of conservation lands serve a recreational function.

3. Where bicycle and pedestrian facilities are identified along roadways and greenways that, based on local land use policies, will eventually **transition** from undeveloped to developed conditions – the areas identified as Transitional on the following map - the MPO recommends a phased approach to planning, design and construction. MPO member entities are encouraged to plan for and obtain sufficient ROW to accommodate anticipated developed conditions, while phasing actual construction of facilities to match the current roadway context.

4. **Designing for Safety -**The MPO recommends that member entities incorporate the following principles when planning transportation improvements in **areas this Plan has identified as having high pedestrian and bicycle use (coinciding with high crash concentrations).** These recommendations are based on the BP Road Safety Audit referenced in the Chapter on Safeety:

   a. **Limit unsignalized right turns**
   b. Target and posted **speeds should not exceed 35 mph**

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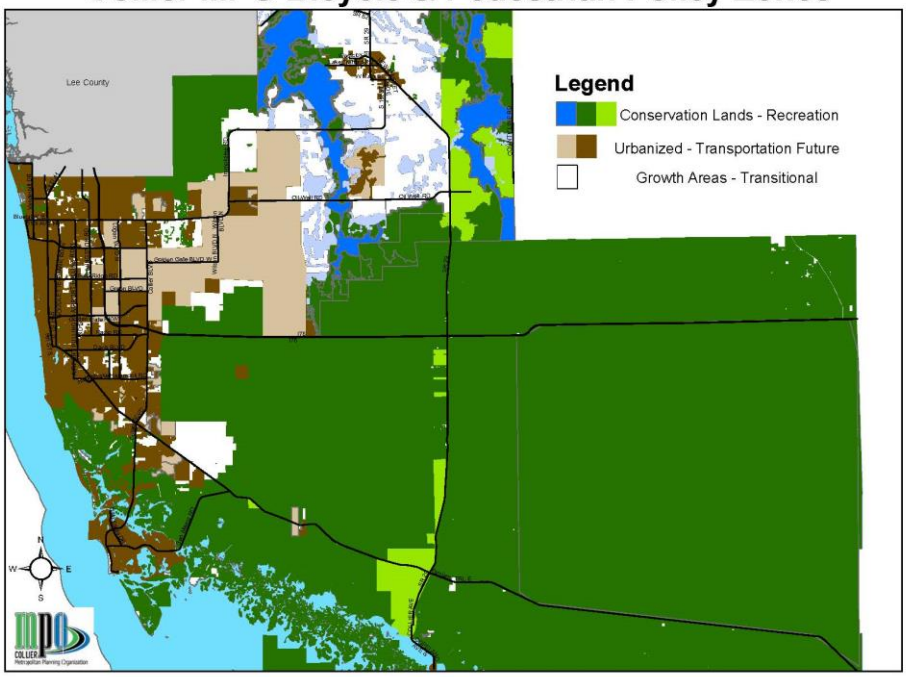
Collier MPO Bicycle & Pedestrian Policy Zones



MPO PROGRAMS AND SPECIAL EVENTS

1. MPO staff will follow up on the BP Safety Audit by incorporating bi-lingual educational material from NHTSA, such as flyers, brochures, posters and Public Service Announcements, and working with the Community Traffic Safety Team to distribute them. Staff will also work with the CTST and FDOT to use changeable message signs on both Airport and US41 to display to motorists the need to follow the 3-foot rule, and to watch for cyclists at driveway crossings.

2. MPO staff will help promote outreach and education opportunities offered throughout Collier County on the MPO website and social media. Example programs include Walk/Bike to School Day, Bike to Work Day/Week, Safe Kids SWFL, bike helmet fittings and giveaways, car seat fitting and giveaways, *Ciclovía**, bike rodeos, and programs such as Summer Nights, Winter Nights, and Fridays Nights, which are safety programs targeting school age kids and their parents.

   (**Ciclovía*, also spelled *ciclovia* or *cyclovia*, is a Spanish term that means "cycleway," either a permanent bike path or the closing of certain streets to automobiles for cyclists and pedestrians. *Ciclovia Immokalee!* Has hosted events in May and August of 2017 and 2018, closing WHICH STREET? near Immokalee High School. See:

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http://www.cicloviaimmokalee.org/august-4-2018-ciclovia-immokalee-joins-lipman-family-farms-at-their-backpack-giveaway/

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~~CHAPTER 6 –~~ IMPLEMENTATION

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Implementation, or action, is what moves projects from plan to reality. This section~~chapter~~ describes ~~projects identified during the planning process and~~ ways to get projects ~~them~~ built – in addition to the Board's ability to prioritize projects for SU funding.

~~–~~The projects identified in Map(s) XXXX and Table(s)XXX are in locations throughout~~from across~~ unincorporated Collier County and its member entities – the cities of Naples, City of Marco Island and Everglades City. Projects range ~~the county and range~~ from locations on local, collector, and arterial roads to ~~needs to~~ greenway connections, Road Safety Audits,~~SAs,~~ and special studies. ~~planning opportunities.~~ Bicycle and pedestrian improvements ~~They~~ can be incorporated into roadway construction projects or funded independently. As is always the case, ~~, and~~ the needs far outstrip the funds available. There are other Federal funds available. They are identified in the next section. ~~Partnership with L~~local funding, State funding, grants and the potential to form partnerships with other agencies can help ~~agencies and FDOT to use local and State funds and grants can help~~ make up for the ongoing funding shortfall.

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MPO member entities have the jurisdictional authority over land use and zoning to work with developers to address gaps in bicycle and pedestrian infrastructure and make connections as new homes, communities, and shopping areas are constructed. MPO member entities have many opportunities to submit projects in response to Calls for Projects related to other funding opportunities such as State and Federal grant programs, SRTS and NHTSA funding. In addition, MPO member entities have their own plans, policies and funding sources to address project priorities that are independent of MPO funding sources. **Collier County, for example, typically funds transportation improvements that incorporate bicycle and pedestrian facilities using local funds on County-owned roads.**

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~~Funding sources are discussed later in the chapter, but it should be noted that funding sources often are limited by project type. For example, Highway Safety Improvement Program (HSIP) funds can be used only for specific safety projects. Generally, the most cost effective way to implement bicycle facilities and sidewalks is to include them in roadway construction, drainage improvement, or resurfacing projects. In coordination with FDOT, different funding types may be applied to different aspects of a project. The MPO will continue to coordinate with State and local agencies to ensure the incorporation of bicycle and pedestrian facilities whenever possible.~~

~~MPO and County staff have made great progress implementing previously identified projects, with the majority constructed or funded for construction. This plan's updated, focused approach on **safety and equity** facilitates the application of funds across the county to the areas of greatest need. In addition to the opportunities noted below, work should continue with developers to complete gaps and make connections as new homes, communities, and shopping areas are constructed. Local agencies also often have their own plans and funding sources such as local tax revenue that are independent of MPO/FDOT sources. In many cases, matching funds or funding an early phase of a project can expedite its construction.~~ ~~The Collier County road network is made up of local, County, and State roads, and walkers and bicyclists use all of these except I-75. The approach to implementation has to be creative and highly collaborative because of the mentioned limitations on funding sources. FDOT and federal funds are available for use on County or State arterial and collector roads. Funding for off-system (local roads) also~~

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~~is available through a variety of sources including FDOT. A discussion of projects, planning costs, and potential funding sources follows.~~

PLAN CONSISTENCY

~~Currently, T~~the MPO Board establishes policy by which it allocates~~manages the allocation of~~ Surface Transportation-Urban (SU) funds for 1) congestion management, 2) new bridge construction, and 3) bicycle and pedestrian projects. MPO staff issue a Call for Projects based on the Board's established allocation policy and schedule, which is currently on a 5-year rotation among the three categories. MPO member entities submit bicycle and pedestrian infrastructure projects that implement the current, adopted Bicycle and Pedestrian Master Plan, which is, or will be, incorporated by reference into the current, adopted Long Range Transportation Plan (LRTP).

~~that are submitted for by application, evaluation, and selection based on a five-year funding cycle. In previous years, bicycle and pedestrian projects have been submitted by jurisdictions for prioritization by the Bicycle and Pedestrian Advisory Committee. Future years may involve a similar call for projects, with an increased focus on safety, equity, and constructability.~~

Types of Roadways

Arterial road: A roadway that serves primarily through traffic and secondarily provides access to abutting properties.

Collector road: A roadway providing access and traffic circulation service to a residential, commercial, or industrial area and secondarily provides for local through traffic.

Local road or street: A route providing service which is of relatively low traffic volume, serving short trip length, or minimal through-traffic movements, and a high degree of access for abutting properties. Local roads may be privately owned or governed by Collier County or the incorporated municipalities in the county.

~~Staff coordinate with FDOT on Surface Transportation Block Grant program projects (formally Transportation Alternative projects), collaborate with FDOT to identify and fund safety projects, and coordinate with agencies to take advantage of roadway resurfacing and infrastructure projects. This approach has proven successful for construction of sidewalks and bike lanes throughout the county and for the funding of RSAs.~~

~~Because of the nature of infrastructure projects and funding cycles, coordination and communication with FDOT are critical to maximizing the funding available. It is recommended that staff have projects ready to move into the design phase to take advantage of fiscal year-end funds that might be available and other opportunities.~~

~~Much of what has been discussed above is relatively short-term. To take advantage of the long-range planning horizon, roadways identified in the LRTP for widening as well as new roads should incorporate bike and walk infrastructure that meets or exceed bicycle and pedestrian facility standards as determined by feedback or need.~~

~~As projects identified in the last plan had been substantially funded, staff took the opportunity to look critically at the previous approach and propose improvements to it where possible. Review of current planning best practices and community input identified an approach to developing this plan that would continue to help fill infrastructure gaps and would also direct the resources to the primary areas of need, **safety** and **equity**. Whereas safety always has been a consideration, its importance has increased as the~~

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crash rates continue to trend upward. It is also worth noting that although spikes in crashes get attention, ongoing crash occurrences are reason enough to redouble the efforts and focus on safety for the most vulnerable road users, people walking and bicycling. The additional focus on equity reflects the MPO's efforts to support the wide range of needs of the county, with an emphasis on areas that are impacted the most and where many community members rely on walking and bicycling as their primary mode of transportation.

The Collier County road network is made up of local, County, and State roads, and walkers and bicyclists use all of these except I-75. The approach to implementation has to be creative and highly collaborative because of the mentioned limitations on funding sources. FDOT and federal funds are available for use on County or State arterial and collector roads. Funding for off-system (local roads) also is available through a variety of sources including FDOT. A discussion of projects, planning costs, and potential funding sources follows.

Identification of Gaps and Needs on Collectors and Arterials

After review of plans and documents that addressed bicycle and pedestrian issues and opportunities, the next step was to review the GIS inventory of these facilities developed by the MPO. These data were mapped and edited after feedback from local agencies, stakeholders, and the community through an extensive public outreach effort, resulting in a current view of the conditions on the ground. Issues with the data were addressed within the scope of this planning effort, but inconsistencies may exist. Field review is recommended for all projects being advanced through the funding application process. Describe how concentration of b/p crashes is indicative of high use areas and when adjoining land uses are considered, often find EJ residential areas and/or services in close proximity. The combination of these two factors has to be considered because it is so difficult to engage disenfranchised, impoverished, minority and immigrant populations through public involvement techniques. NOTE TO TEAM – BUT THIS DOES NOT RULE OUT THE SIGNIFICANCE OF THE PUBLIC COMMENTS WE DID RECEIVE – BOTH ARE FACTORED INTO THE FINAL NEEDS ANALYSIS AND PRIORITY PROJECTS WE RECOMMEND.

1. To identify the focus areas for the collector and arterial roads, maps overlaying crash data and EJ areas were created. The methodology for identifying EJ areas can be found in appendix. Map 1 at the end of this chapter illustrates the areas in the county were crashes occur most often and where EJ or equity areas occur.

Once the high crash and EJ areas were identified, the next step was to identify the needs or gaps in the walk and bike networks. Many of these gaps, which were identified in previous work undertaken by the MPO to develop a facility inventory, were further refined during the pubic engagement process. Maps of facility gaps or needs were then overlaid on the high crash and EJ areas maps. Although screening criteria were subsequently applied to develop a list of the highest priority gaps, the complete list of gaps in infrastructure is the plan's foundation and will be used to provide input to the County about the need for bicycle and pedestrian facilities during resurfacing or reconstruction projects in and adjacent to roads. It should be noted that effort to identify multi-use path opportunities adjacent to County roads was by feedback and desktop review. There is strong community support for separated trails, which should be considered the preferred facility and constructed whenever right-of-way allows.

Analysis identified a total of 171 miles of bicycle needs and 185 miles of pedestrian needs on County arterials and collectors. The MPO will continue to work with the County to fund the construction of bicycle and pedestrian facility gaps to complete the networks. These miles are irrespective of features such as drainage or right-of-way that might make completion of facilities challenging. During project development, the unique challenges and opportunities will be identified.

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Roadway reconstruction, rehabilitation, and resurfacing—whether to add capacity or to update infrastructure—generally provides the most cost-effective best opportunity to add a bike lane, sidewalk, or, depending on the extent of reconstruction, an adjacent trail. The MPO will continue to work with County staff to coordinate projects and funding for bike and pedestrian needs through the County capital improvement planning process.

Maps 2 and 3 showing the bicycle and pedestrian needs along collectors and arterials can be found at the end of the chapter.

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Bicycle/Pedestrian Safety Assessments along High Crash Corridors

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As noted in Chapter 2, an RSA is an invaluable tool to analyze and identify improvements on high-crash corridors or areas with above-average safety concerns. The in-depth multi-disciplinary analysis conducted during an RSA develops recommendations to reduce crashes and improve safety. The plan strongly recommends that RSAs—more specifically, Bicycle RSAs—be conducted and their recommendations be implemented. The successful implementation of an RSA will require close coordination among the MPO, FDOT, and the County. Based on the crash analysis done for this plan, several areas for potential Bicycle RSAs are listed below. A more in-depth analysis of potential RSA locations was beyond the scope of this plan but should be undertaken prior to final selection RSAs are eligible for HSIP funds.

Table 51: Potential Bicycle and Pedestrian RSA Corridors

Road Name
US 41
Airport Pulling Rd
Collier Blvd
Immokalee Rd
Davis Blvd
North 15th St (SR 29)
Pine Ridge Rd
Golden Gate Pkwy
Radio Rd
Vanderbilt Beach Rd

Collector and Arterial Roads Gaps

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Although the complete list of gaps or needs is useful in defining the scale of the challenge, limited funds make filling the gaps a lengthy process. Given this constraint, the decision was made to apply the focus-area criteria of crash occurrence and EJ areas to the needs map to identify the projects that best satisfy the identified criteria. Map 4, founded at the end of this chapter, shows the bicycle facility needs found in areas where there are both a high number of crashes and EJ factors. Map 5, also at the end of this chapter, shows the pedestrian facility needs found in areas where there are both a high number of crashes and EJ factors. *Table 1* shows the miles of facilities needed in high-crash and EJ areas. Table 2 shows miles of roads without bike lane or sidewalks that fall within EJ areas. Maps 6 and 7 at the end of this chapter illustrates the needs with only EJ criteria applied. The complete list of needs can be found in the appendix.

Table 62: Miles of Facilities Needed in Areas of High Crash and EJ Areas

Type	Criteria/Crash and Equity (Tier 1)	Miles
Bike Lane	3+ crashes and EJ criteria	7 miles (no bike lane)

Sidewalk	3+ crashes and EJ criteria	0.2 miles (no sidewalk) 1 miles (sidewalk only on one side)

Table 73: Miles of Facilities Needed in EJ Areas

Type	Criteria/Equity (Tier 2)	Miles
Bike Lane	EJ criteria	60 mi (no bike lane)
Sidewalk	EJ criteria	77 mi (no sidewalk) 12 mi (sidewalk only on one side)

Local Needs

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The MPO completed three Walkability studies that focused on pedestrian needs in a number of areas of the county with concentrated populations and, therefore, more walking and biking. A fourth study will be completed in Fall 2018.The goal of each study was to identify infrastructure needs and then prioritize them into tiers. Tier 1 identified the greatest needs as segments with no sidewalks, Tier 2 was sidewalks on only one side of the street, and Tier 3 included lighting and additional amenities. These studies generated a large number of projects, and considerable progress has been made building the Tier 1 projects. This plan recommends continuing to coordinate with the County to fund the recommended remaining Tier 1 facilities, including the Tier 1 priorities from the fourth Walkability study. Tiers 2 and 3 in high need areas should be considered and may present opportunities to partner with local groups or agencies.

The segments remaining from the first three studies plus those identified during the recent Golden Gate Walkability Study will be on the list of local road projects and will be prioritized according to the methodology that was developed based on the plan goals. The criteria shown in Table 3 were applied to prioritize walkability study projects. Points were assigned to each criterion and each project scored. The list of projects and their relative priority can be found in the Appendix.

Table 84: Prioritization Criteria for Use on Local Road or Local Agency Bicycle and Pedestrian Needs

Criterion	Intention	Points
Safety	Increase safety for people who walk and ride in Collier County.	25
Connectivity	Enhance the network of efficient, convenient bicycle and pedestrian facilities in Collier County.	20
Equity/Livability	Increase transportation choice and community livability through the development of an integrated multimodal system.	10
Economic Development	Promote tourism and economic opportunities by developing a safe, connected network of biking and walking facilities.	15
Community Support	Agency or local group.	10
Readiness	Has any work been done?	5
Major Road – Bike or Pedestrian Access	Provides bike or pedestrian access to major roads.	5

Because many local road projects identified in previous Walkability studies have been constructed, the need for more projects was identified. Discussion with the County led to the development of a list of transit related needs focusing on gaps in sidewalks within one mile of transit stops. This analysis yielded 368 miles of sidewalk needs where there are no sidewalks on either side of the street. An EJ area screen, similar to what was applied to collector and arterial bike and pedestrian needs, was applied to the list of transit related sidewalks on local roads. Map 8 at the end of this chapter illustrates the 160 miles of

sidewalk segments within one mile of transit stops that satisfy medium, high, or very high EJ criteria. The list of sidewalk segments can be found in the Appendix.

Local sidewalk needs within one mile of schools also were analyzed. As was done for the transit-related gaps, an EJ screen was applied to the school-related local road gaps. Map 9 at the end of the chapter illustrates the 146 miles of sidewalk segments within one mile of a school that satisfy medium, high, or very high EJ criteria. The list of sidewalk segments can be found in the Appendix.

Review of these needs identified a lot of overlap between sidewalk gaps around schools and near transit stops. Map 10 at the end of the chapter shows the sidewalk gaps that satisfy both criteria. There are 127 miles of sidewalks that could be constructed that would facilitate safer access to schools and to transit stops.

Local Agency Projects

Each city in the county, through its own public engagement process and Council input, identified its top priorities for bicycle and pedestrian projects on local roads, as noted below. These projects were also included on the local projects lists.

Everglades City

1. Copeland Ave: City Hall to Chokoloskee Causeway – sidewalk on east side of road
2. Datura St: E School Dr to Collier Ave (SR 29) – no sidewalks either side, either direction
3. Broadway: Riverside Dr to Copeland Ave – no sidewalks either side, either direction
4. Collier Ave (SR 29): Begonia to bridge – no sidewalks either side, either direction

Marco Island

1. Collier Ave – alternate bike lanes (Landmark extension)
2. Bald Eagle – bike lanes (Collier to San Marco)
3. N Barfield – pathway (Bald Eagle to Collier)
4. Sandhill – pathway (Leland to Winterberry)

Immokalee

The preliminary list of local bicycle and pedestrian projects was developed from a planning analysis or by reviewing crash data, EJ, and existing gaps. Constructability reviews for each potential project will need to be completed prior to any of these being funded for design or construction.

Naples

The following projects were identified in the 2013 Pedestrian and Bicycle Master Plan. They are not prioritized, but the City selects locations to install sidewalks from this list. These segments have been added to the list of local projects that can be found in the Appendix.

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~~Table 95: Naples priority projects~~

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Sidewalk On Residential Streets with support to include in Master Plan Update		
SEGMENT (Side)	**FROM**	**TO**
Old Trail Drive (North)	Park Shore Dr	Belair Lane
FPL Easement Pathway Trail	6th Avenue North	7th Avenue North
6th Avenue North (North)	10th Street North	FPL Easement Pathway
South Golf Drive (North)	Gulf Shore Blvd	US41
1st Avenue South (Both)	10th Street South	Goodlette
13th Avenue South (South)	3rd Street South	Gordon Drive
2nd Avenue South (North)	Gulf Shore Blvd	3rd Street South
4th Avenue South (North)	5th Street South	6th Street South
4th Avenue South (North)	Gulf Shore Blvd	2nd Street South
7th Street North (East)	4th Avenue North	South Golf Drive
4th Street South (West)	Central Avenue	1st Avenue South
5th Street South (East)	1st Avenue South	4th Avenue South
6th Avenue South (North)	GSBS	West Lake Drive
7th Avenue South (North)	GSBS	West Lake Drive
8th Avenue South (North)	GSBS	3rd Street South
9th Avenue South (South)	GSBS	3rd Street South
10th Avenue South (North)	GSBS	3rd Street South
11th Avenue South (North)	GSBS	3rd Street South
13th Avenue South (North)	3rd Street South	Gordon Drive
14th Avenue South (South)	3rd Street South	Gordon Drive
15th Avenue South (North)	3rd Avenue South	GSBS
East Gordon Dr.(Riley Park Path)	18th Avenue South	21st Avenue South
12th Avenue North (South)	Goodlette Frank Rd.	US 41
12th Street North (Easement Reg	3rd Avenue North	12th Street North
3rd Avenue North (Easement Reg	12th Street North	Goodlette Frank Rd.
12th Street South (East)	Central Avenue	1st Avenue South
Riverside Circle (South)	Goodlette-Frank Rd	Dog Park & Future Greenway
Mandarin Drive (West)	Banyan Blvd.	Orchid Drive
Pine Street (North)	Mandarin Drive	Banyan Blvd.
11th Avenue South (North)	5th Street South	6th Street South
4th St South (Both)	8th Avenue South	10th Avenue South
5th St South (Both)	9th Avenue South	11th Avenue South
6th St South (Both)	9th Avenue South	10th Avenue South
West Lake Drive (East)	7th Avenue South	8th Avenue South
East Lake Drive (Both)	5th Avenue South	8th Avenue South

~~Greenways and Trail Connections~~

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~~Previous plans noted the importance of, and interest in, greenways. Feedback received during plan development affirmed the continued interest in developing a connected greenway network. The success of the Gordon River Greenway and Rich King Greenway are proof of the demand and success for this type of facility in Collier County.~~

~~Greenways offer users a different experience than roadside trails. Their locations might tend more toward recreational use, but all trails can be used for transportation. Opportunities for greenways are defined in the AASHTO *Guide for the Development of Bicycle Facilities* (2012, 4th ed.) as:~~

> ~~A linear open space established along either a natural corridor such as a riverfront, stream valley, or ridgeline or over land along a railroad right-of-way converted to recreational~~

use, a canal, a scenic road, or other route; any natural or landscaped course for pedestrian or bicycle passage; an open space connector linking parks, nature reserves, cultural features, or historic sites with each other and populated areas; or a local strip or linear park designated as a parkway or greenbelt.

Greenway opportunities may be limited in Collier County, but selected utility corridors and canals Although much of the canal system through the county is under private ownership, there may be areas that remain available and could be considered for non-motorized transportation and recreation. Further study of this opportunity is recommended.

should be considered for further study, both for intercounty and regional connectivity. The extension of the Rich King Greenway along the Florida Power and Light corridor to Bonita Springs in Lee County is one that has regional implications. It is on the FDOT SUNTrail network and so is eligible for State funding. This alignment also was mentioned in each of the previous bicycle and pedestrian master plans. Although much of the canal system through the county is under private ownership, there may be areas that remain available and could be considered for non-motorized transportation and recreation. Further study of this opportunity is recommended.

In addition to the interest in more (new) trails and greenways, much of the input received was about connecting existing trails. Doing so makes the trail system more useful by extending its reach and appeal for both recreational and transportation use. Greenways often use utility corridors and other unique land opportunities. Making connections to the rest of the network via a greenway can be difficult to accomplish, so roadway adjacent trails or separated bike lanes might have to be considered. In the case of connections between the Gordon River Trail, the Rich King Trail Greenway, and the road network, possible infrastructure options may be to widen the sidewalk or add a buffered bike lake to the roadway. Proposed project opportunities include the following:

- *Purpose and Need: Greenway Connectivity* – This study would identify selected opportunities for greenways and inter-connecting with the rest of the transportation network to increase overall access.
- *Purpose and Need: Canal Trail Feasibility Study* – This study would identify opportunities for greenways along the canals in Collier County. This study is needed to find ways to expand the greenway network to accommodate increasing demand.

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Commented [M24]: I don't see this as a high priority. So difficult to accomplish, so time- and resource-intensive to attempt. If any local agency has said it's a priority for them to take it on and ask for funding to do a study, I need to know, but I don't want the MPO to be in charge of a study of this nature for a local agency.

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Special Projects

Throughout the public engagement process, input was received about challenging locations, problem spots, and additional opportunities for connections or facilities. During the planning process, because MPO and County staff understand that improving the bicycle and pedestrian environment in Collier County takes a multi-faceted approach, a decision was made to identify a range of projects and needs that go beyond adding bicycle lanes or filling sidewalk gaps on collector and arterial roadways. Generally, corridors with a high number of bicycle or pedestrian crashes, challenging intersections, and trail crossings were identified as opportunities for additional study. Recommendations from the studies would then be considered for feasibility and addition to the appropriate list for prioritization and funding. Examples of spot projects and studies that may be funded include the following projects. Preliminary purpose and need statements have been drafted to explain the need and justify funding. These statements may be revised as projects evolve.

- *Trail Crossing at Davis Blvd and Rich King Greenway* – This study would identify possible trail crossing infrastructure or other solutions at this location that have been recognized as having a safety issue because the trail crosses a major high-speed four-lane road. Extensive public feedback

also identified this crossing as having a safety issue. FDOT has begun an initial review of this location.

- *Multimodal Corridor Study – Wiggins Pass Rd* – This study would identify safety improvements for multimodal users of this roadway. The study is needed because Wiggins Pass Rd is one of the few east-west access ways to the beach and is used extensively by pedestrians, bicyclists, and cars. West of US 41, Wiggins Pass Road has a four-foot sidewalk but no shoulders, which requires cars to either enter the oncoming lane of traffic or follow behind cyclists.
- *Multimodal Needs Study – Beach Access Roads* – This study would review all bicycle and pedestrian access ways to the beach. This study is needed because there is an increasing need for access to the counties greatest amenities by other modes.
- *Bicycle/Pedestrian Access to Transit Facility Assessment* – This study would identify bicycle and pedestrian needs as they access transit. Items to study include access to bus stops and sidewalk gaps within ¾ mile of bus stops and bike facilities within 3 miles of transit stops as well as to identify possible mid-block crossing locations.

Commented [M25]: Whose idea is this? If any local agency wants to do this, same comment applies as with studying canals, above.

Commented [M26]: Not convinced this needs to be a special study either, but if PTNE wants to do it, we could include it. I don't want the MPOs time taken up with this level of detail when local agencies or FDOT control the streets and ROW.

Project Costs

Routine resurfacing and infrastructure projects represent some of the best and least expensive opportunities to add bicycle lanes and other facilities. Roads are restriped after being resurfaced, so the additional cost to include bike lanes when restriping is minimal. A paved bike lane may be added or a paved shoulder converted to a bike lane as part of a roadway reconstruction project. Costs for construction will be impacted by the unique circumstances of each site, but generalized costs can be helpful when considering projects. Details such as drainage issues and right-of-way availability have not been confirmed as part of this study and would be identified during feasibility. Project costs have been estimated at a planning level. A more detailed engineer's estimate would be required for submission of a project for prioritization consideration.

There are a number of ways to get sidewalk gaps filled. Depending on the agency, sidewalk gaps may be filled during a resurfacing project or they may be filled when a parcel is developed. Another option is to group a number of proximate sidewalk gaps into a "bundle" of projects to gain some efficiencies of scale. The rebuilding of infrastructure, whether it be sub-surface utility work or adding lanes, also provides an opportunity to add both bicycle and pedestrian facilities. Safe Routes to School funding is limited to gaps in walking infrastructure within two miles middle schools, and applications for those projects are independent of roadway reconstruction.

The unit cost assumptions shown in Table 5 are based the adopted 2040 LRTP and generalized FDOT costs. More detail can be found in the Collier MPO Financial Resources Technical Memorandum on the MPO website.[2] Table 6 shows the total mileage cost to construct the projects identified in high crash, EJ areas along collector and arterial roads and local roads.

Table 106: Component Costs for Bicycle and Pedestrians Projects – (UPDATE TO CURRENT if avail)

Component	Cost
Bicycle Facilities Unit Cost	
Bike lane per mile (4' width - 2 sides) when widening road, urban [1]	$345,000
Bike lane per mile (5' width - 2 sides) [2]	$178,000
Pedestrian Facilities Unit Costs [3]	

[2] http://www.colliermpo.com/modules/showdocument.aspx?documentid=8614.

Sidewalks per mile (5' width - 1 side)	$174,000
Sidewalks per mile (6' width - 1 side)	$209,000
Paved Shoulders Unit Costs	
Paved shoulder per mile (4' width - 2 sides) [4]	$293,000
Multi-Use Trail Facilities Unit Cost	
Multi-use trail per mile cost (12' – 1 side) [5]	$333,000
Trail Crossing Unit Cost	
Signalized trail crossing	$120,000 [6]

[1] FDOT 2004 Transportation Costs. Costs inflated to 2014 dollars using recent FDOT roadway inflation factors (68% increase).
[2] FDOT District 3 LRE Roadway Costs, December 2013. Costs inflated to 2014 dollars using recent FDOT roadway inflation factors (3.1% increase).
[3] FDOT District 7 LRE Roadway Costs, June 2014.
[4] Based on discussions with FDOT staff, paved shoulders assumed to cost 85% of bike lane per mile (4' width) costs.
[5] FDOT District 7 LRE Roadway Costs, June 2017.
[6] FDOT District 7 LRE Roadway Costs, June 2017.

Table 117: Cost of Facilities by Mileage Totals (confirm)

Component	Mileage/number	Cost
Bicycle lanes – collector and arterial roads	171	$30,438,000
Sidewalks- collector and arterial roads – no sidewalks	185	$38,664,000
Sidewalks – local roads - schools + EJ areas	Medium – 61 mi High – 46 mi Very High – 39 mi	$12,749,000 $9,614,000 $8,151,000
Sidewalks- local roads- transit + EJ areas	Medium – 68 mi High – 50 mi Very High – 42 mi	$11,832,000 $8,700,000 $8,778,000
Trail	Study required	$333,000/mi
Trail crossing	1	$120,000

FEDERAL AND STATE FUNDING SOURCES & TECHNICAL ASSISTANCEunding Sources

The MPO collaborates with FDOT on the allocation of a variety of State and Ffederal funds, which are one component of a complex funding puzzle in which the competition for limited resources statewide is fierce. Cooperation with partners is critical to implementing other funding mechanisms available for the design and construction of bicycle and pedestrian facilities and programs. The primaryA number of these funding sources available to the MPO and opportunities are discussed below. , and a list of U.S. Department of Transportation sources and applicable activities or project types can be found in the Appendix.

FEDERAL PROGRAMS

Local and County Projects

Local community plans are a critical component of county networks, providing the nodes or hubs to which County and State projects can connect and support. Although local and county projects may be implemented by the jurisdiction in which they are located, coordination with the MPO for federal funds may result in significant cost savings by the municipality.

New Development

Review and coordination with plans for new development is an important way to make connections to the planned networks. In every case, plans are subject to review by County staff, and every effort should be made to require connections be made and facilities built to standards identified in this plan.

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~~**Shared-Use Non-motorized (SUN) Trail Network**~~

~~Managed by FDOT, the SUNTrail program funds non-motorized, paved, shared-use trails that are part of the Florida Greenways and Trails System Priority Trail Map. This effort is coordinated by the Office of Greenways and Trails.~~

~~**Doppelt Family Trail Development Fund**~~[3]

~~The Rails-to-Trails Conservancy awards about $85,000 per year to support organizations and local governments that implement projects to build and improve multi-use trails. Applications for funding typically open in December.~~

~~**Non-Profit Grants**~~

- ~~**Robert Wood Johnson Foundation, Built Environment and Health** – At the national and local levels, the Robert Wood Johnson Foundation is working with a wide array of partners to help ensure that investments in housing, transportation, parks and open space, and other critical aspects of the built environment in communities foster equity and create healthy opportunities for everyone (https://www.rwjf.org/en/how-we-work/grants-explorer/featured-programs/build-healthy-places-network.html).~~
- ~~**Kodak** American **Greenways Program** – A partnership project of the Eastman Kodak Company, the Conservation Fund, and the National Geographic Society, this program provides small grants to stimulate the planning and design of greenways in communities throughout America (http://www.rlch.org/funding/kodak-american-greenways-grants).~~
- ~~N~~Na~~a~~tional Highway Performance Program (NHPP)

NHPP funds may be obligated only for a project on an "eligible facility" – a project, part of a program of projects, or an eligible activity supporting progress toward the achievement of national performance goals for improving infrastructure condition, safety, congestion reduction, system reliability, or freight movement on the National Highway System (NHS). Projects must be identified in the Statewide Transportation Improvement Program (STIP)/Transportation Improvement Program (TIP) and be consistent with the Long-Range Statewide Transportation Plan and the MPO's Long Range Transportation Plan (LRTP) ~~Metropolitan Transportation Plan(s)~~. Bicycle transportation and pedestrian improvements~~walkways~~ associated with an NHS facility ~~such as improvements to facilities or new design features at overpasses and onramps~~ are eligible. Shared-use paths along interstate corridors, but outside the main travel way, are eligible for the use of NHPP funds. ~~, as are B~~bicycle lanes, paved shoulders and sidewalk improvements on major arterial roads that are part of the NHS, and bicycle and/or pedestrian bridges and tunnels that cross NHS facilities are eligible for funding.

Surface Transportation Block Grant Program (STBG)

The FAST Act converts the long-standing Surface Transportation Program into the Surface Transportation block Grant Program (STBG) . this program has the most flexible eligibilities among all Federal-aid highway programs. Funding for Transportation Alternatives is set aside from a State's STBG apportionment, as is

RWJ Foundation Grant Funds Plainsboro Preserve Trail Improvements

The Robert Wood Johnson Foundation awarded a $94,000 grant to pay for the improvement of nature trails at the Plainsboro Preserve in Plainsboro Township, NJ. Additional funds by the town will allow the Preserve to be more pedestrian-friendly, provide ample seating, and give better access to individuals with disabilities.

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[3] ~~https://www.railstotrails.org/our-work/doppelt-family-trail-development-fund/.~~

funding for bridges not on Federal-aid highways (aka "off-system bridges.") Lee County MPO and Collier MPO jointly prioritize Regional Transportation Alternative Program funds on an annual basis.

A percentage of a State's STBG apportionment (after set-asides) is to be obligated to areas in proportion to their relative shares of the State's population. Urbanized areas with population greater than 200,000, such as Collier MPO represents, are apportioned an annual amount of SU funds to program projects eligible for STBG funding. The MPO Board prioritizes projects for programming for the new 5th year of the new TIP. FDOT covers the 20% match requirement.

STBG projects may not be on local (i.e. residential) roads or rural minor collectors, with the exception of recreational trails, pedestrian and bicycle projects and safe routes to school projects. (SRTS). SRTS projects require a 50% local match.

~~replaced the Transportation Alternative (TA) Program with set-aside funds under the Surface Transportation Block Grant Program. Eligible activities include on- and off-road pedestrian and bicycle facilities, infrastructure projects for improving non-driver access to public transportation and enhanced mobility, community improvement activities such as historic preservation and vegetation management, environmental mitigation related to storm water and habitat connectivity, recreational trail projects, and Safe Routes to School projects. A 20% local match is required. Typically, right-of-way issues and environmental concerns must have been addressed prior to the submission of the application.~~

~~The MPO manages a competitive review and prioritization process for projects that are considered eligible for STBG funds.~~

Highway Safety Improvement Program (HSIP)[4]

FDOT determines the use of HSIP funds on a statewide basis. HSIP funds can be used for pedestrian and bicycle safety improvements but this is subject to meeting FDOT's strict criteria and statewide prioritization. ~~-~~ States may obligate funds under HSIP to carry out any highway safety improvement project on any public road or publicly-owned bicycle or pedestrian pathway or trail, or as provided under Flexible Funding for States with a Strategic Highway Safety Plan, and other safety projects. The HSIP requires a data-driven, strategic approach to improving highway safety on all public roads that focuses on performance. The FAST Act added the following items to the list of approved uses:

- Pedestrian hybrid beacons – roadway improvements that provide separation between pedestrians and motor vehicles, including medians and pedestrian crossing islands
- Road Safety Audits (RSAs), a category that include Bicycle and Pedestrian Safety Audits~~SAs~~

Recreational Trails Program (RTP)[5]

The RTP is a federally-funded competitive grant program that provides financial assistance to agencies of city, county, state, or federal governments and organizations approved by the State, or State- and federally-recognized Indian tribal governments, for the development of recreational trails, trailheads, and trailside facilities. The Florida Department of Environmental Protection (DEP) – Division of Greenways and Trails, manages the State's RTP. The DEP periodically issues a Call for Projects. The most recent Call for Projects identified the maximum grants funds an applicant could request for Fiscal Year 2018: Mixed Use and Nonmotorized Projects $200,000; Motorized Projects $500,000. Additional information including the application form, Fact Sheet and other tools are available on their website at: http://www.dep.state.fl.us/gwt/grants/

[4] https://safety.fhwa.dot.gov/legislationandpolicy/fast/guidance.cfm.
[5] https://floridadep.gov/ooo/land-and-recreation-grants/content/recreational-trails-program.

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~~For more information on Florida's RTP, see Chapter 62S-2, F.A.C., the rule governing the program in Florida.~~

~~**AARP Community Challenge Grants**[6]~~

~~The AARP Community Challenge funds projects that build momentum for local change to improve livability for all residents. The AARP Community Challenge grant program is part of the nationwide AARP Livable Communities initiative that helps communities become great places to live for residents of all ages. Applications are due in the spring.~~

FTA Funds

A variety of FTA funding is available that may be used to fund the design, construction, and maintenance of pedestrian and bicycle projects that enhance or are related to public transportation facilities. Improvements made expressly eligible by statute include capital projects such as pedestrian and bicycle access to a public transportation facility and transit enhancements such as pedestrian access, walkways, and bicycle access, including bicycle storage facilities and equipment for transporting bicycles on public transportation vehicles.

NHTSA Funds

The National Highway Traffic Safety Administration (NHTSA) provides funding to State DOT's to address the behavioral side of traffic safety through education and enforcement.

Technical Assistance

The Florida Traffic and Bicycle Safety Education Program (FTBSEP) is a statewide comprehensive training program funded by the FDOT Safety Office, which teaches individuals how to be more competent and safer pedestrians and bicyclists. In addition to training individuals, the FTBSEP uses a train-the-trainer model to teach training workshop participants (e.g., district, county, city staff, law enforcement, fire rescue, EMS, municipal parks and recreation staff, senior center staff, community professions, etc.) how to teach pedestrian and bicycle safety education to others (e.g., children, adults, and seniors). Training is provided at no cost to district, county, city staff and other organizations. Collier County is identified as one of the Top 25 Priority Counties of the Pedestrian and Bicycle Focused Initiative, and is eligible for assistance in coordinating a training workshop in the area. For more information see the following websites:

http://hhp.ufl.edu/safety

https://alerttodayflorida.com/resources/Top25Countiesmap_dark.pdf

Shared-Use Non-motorized (SUN) Trail Network

Managed by the Department of Environmental Protection – Office of Greenways and Trails, the SUNTrail program funds non-motorized, paved, shared-use trails that are part of the Florida Greenways and Trails System Priority Trail Map. The Southwest Coast Connector Trail alignment (see map x) is eligible to receive SUNTrail funds IF local entities agree in advance to assume maintenance responsibilities.

USDOT BUILD Program (formerly TIGER Grant Program)

The USDOT manages the Better Utilizing Investments to Leverage Development, or BUILD Transportation Discretionary Grant program. (See https://www.transportation.gov/BUILDgrants/about).

The BUILD Program replaces the TIGER program. The eligibility requirements allow for multi-modal, multi-jurisdictional projects that are more difficult to support through traditional DOT programs.

When the USDOT publishes a Notice of Funding Opportunity (NOFO), MPO member entities may submit project applications to the USDOT. The most recent NOFO was issued on April 27, 2018 with a submittal

[6] ~~https://www.aarp.org/livable-communities/about/info-2017/aarp-community-challenge.html.~~

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deadline of July 18, 2018. This is a highly competitive, national program. Instructions for completing a Project Information Form are posted at: http://www.transportation.gov/buildgrants/build-info .

~~Action items~~PLAN AMENDMENTS

Member entities and MPO staff may propose major r~~Review and revise this plan as needed at least every five years. Interim updates to the map or plan may be required to take advantage of opportunities with developers or local and County agencies.~~evisions to the plan in the form of amendments for the MPO Board to consider on an as-needed basis to address unforeseen opportunities or resolve issues that are preventing or delaying plan implementation. Major revisions are changes that would alter plan policies or project priorities. The procedures for amending the BPMP will follow MPO's adopted Public Participation Plan.

MPO staff may make minor revisions to correct typographical errors, mapping errors or to update references and pertinent data. Such minor revisions will be distributed to the Board and to advisory committees and the MPO's email listserv(s) indicating track changes and the resulting clean version of any altered text, spreadsheet or map, following the procedures in the MPO's adopted Public Participation Plan.

PLAN MONITORING AND REPORTING

This plan update is a living document and reflects the vision of the MPO and stakeholders and analysis done at the time the plan was developed. ~~of its~~ revision~~. The priority projects identified according to the evaluation process shall not preclude the addition or upgrade of bicycle and/or pedestrian facilities on County roads~~ Yet, d~~D~~eveloping a plan is only the first step in the process to creating a robust and successful active transportation network. After plan adoption, collaboration and action are what make the plan successful. Monitoring and reporting on performance measures and targets is necessary to assess the strengths and weaknesses of the plan in light of actual performance. The following measures and targets will be incorporated into the MPO Director's Annual Report to the MPO Board:
~~implementation actions have been developed to ensure the success of this Plan and should be reviewed on an annual basis:~~

- **~~Safety~~:** In February 2018, the Collier MPO Board voted to support FDOT's goal of zero serious auto-related injuries and deaths. In support of the MPO commitment to Vision Zero, one of the primary goals of this Bicycle and Pedestrian Plan update is to reduce the number of bicycle and pedestrian injuries and fatalities by funding projects that will support this goal. The MPO Director's Annual Report to the MPO Board already reports on the Number of Non-motorized Fatalities and Serious Injuries on an annual basis and tracks trends over a five year period. The significance of tracking trends involving safety crash statistics must be understood in the context of several important caveats:
    - The MPO Board prioritizes projects for the new 5th year of the following year's TIP. Projects are therefore 6 years out at the earliest, yet this plan will be updated every 5-years.
    - Project phases usually, but not always, start with preliminary design, followed by obtaining environmental clearances, ROW acquisition, final design, and at the earliest, after a 2-year hiatus following completion of final designs, construction. So the actual opening day for a new construction project coming on-line is about 9 years out.
    - If the projects selected for funding are widely scattered geographically and/or not specifically geared towards addressing safety per se, but address other issues as well, such

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as network connectivity, recreational and other local agency needs and priorities, there will be little to show from a safety statistical perspective.

The MPO Director's Annual Report to the MPO Board includes a listing of currently programmed projects that address problem areas in the bicycle and pedestrian network identified in safety studies, Community Walkability Studies and bicycle and pedestrian Safety Audits. This reporting is mandated by the MPO Congestion Management Process.

Safety Performance Targets

Safety is the first national goal identified in the Fixing America's Surface Transportation (FAST) Act and is of critical importance to the MPO. As part of the FAST Act, the Federal Highway Administration (FHWA) required all state departments of transportation (DOTs) and MPOs to adopt five safety performance targets by the end of February 2018. MPOs could adopt their own targets or those of the State DOT. The **MPO and FDOT-adopted safety performance measures for non-motorized fatalities and serious injuries is 0.** However, FDOT has issued a clarification that the forecast on **interim performance measure** of **3,447 nonmotorized fatalities and serious injuries statewide in 2018** in order to satisfy federal requirements. The MPO Director's Annual Report will address performance according to the 0 target and the interim performance measure.

- **Network expansion**: The Director's Annual Report to the MPO Board already tracks the following measures, which are in the MPO's 2017 Congestion Management Process:
  - Centerline miles of paved shoulders
  - Centerline miles of bike lanes
  - Linear miles of Shared Use Paths (SUPs) adjacent to roadways
  - Linear miles of SUPs located within greenways
  - Linear miles of connector sidewalks on arterial roadways. Connector sidewalks are defined in the Bicycle and Pedestrian Facilities inventory database as "a sidewalk that provides cyclists the option of a connection that is separated from motorized vehicle traffic, identified only where there are gaps in the cycling network between stretches of bike lanes, paved shoulders and/or shared use paths." The MPO established this data by updating the 2007 sidewalk inventory conducted by Collier County against satellite imagery available via the free website platform: Google Earth. The MPO does not attempt to inventory or report on linear miles of all sidewalks located within the MPO jurisdictional area; however, the MPO's member entities are encouraged to begin doing so as part of their asset management programs.

- ~~**BPMP Priority Project Implementation:Adopt a Complete Streets Policy and support the adoption of such a policy by local governments.**~~
- ~~**Recognizing that it takes more than engineering solutions to resolve the safety issues in Collier County, the MPO will collaborate with the County, FDOT, and other agencies to identify and fund enforcement and education programs throughout Collier County.**~~

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- ~~Continue to work with FDOT to add bicycle and pedestrian facilities to state roads as they are resurfaced or expanded. Wherever possible, separated trails should be included in PD&E and design phases.~~
- ~~This plan update is a living document and reflects the vision of the MPO and stakeholders and analysis done at the time of its revision. The priority projects identified according to the evaluation process shall not preclude the addition or upgrade of bicycle and/or pedestrian facilities on County roads.~~ The MPO Director's Annual Report to the MPO Board will be expanded to include a status report on BPMP Project Priorities that are making their way through the following project development steps:
    - MPO Project Priority Listing for:
        - SU box funding
        - RTAP funding
        - Incorporated in Roadway projects for TRIP or CIGP funding
        - Other funding applications submitted
    - Project programmed in the MPO TIP/FDOT STIP (further broken down into projects funded for design/funded for construction
    - Project programmed in a member entity's CIP or identified for local funding in the County's Annual Update & Inventory Report (AUIR) / Capital Improvement Element Schedule (CIE)
    - Project received funding through notice of a grant award
    - Projects in the design phase

PLAN UPDATES

The MPO will update this plan every 5 years to match the cycle for updating the MPO's LRTP. The BPMP will be incorporated for reference in the LRTP.

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- ~~MPO staff will collaborate with other County staff to ensure that the best possible bicycle and pedestrian facilities are incorporated into all upcoming county resurfacing and reconstruction projects.~~
- ~~Continue to coordinate with the Collier County Public Works Department to include trails and wider sidewalks on new roadways and roadway expansion plans.~~
- ~~Continue to coordinate with the City of Marco Island, the City of Naples, Immokalee, other local agencies, and Collier County on submissions of projects to a list of projects that will be prioritized.~~
- ~~Coordinate with local governments for adoption of the Collier MPO Bicycle and Trail Master Plan into local Comprehensive Plans, the Land Development Code, and City master plans and work to identify and protect trail corridors.~~
- ~~Continue to coordinate with other government and non-government entities on regional planning issues related to the trail system.~~
- ~~Work with the Florida Department of Environmental Protection (DEP), the Office of Greenways and Trails (OGT), the Florida Department of Community Affairs, and others to pursue grant opportunities to develop the regional trail network in Collier County.~~
- ~~Continue to coordinate with staff in adjacent counties, MPOs, OGT, and FDOT to plan for and construct trails and other bicycle infrastructure across county lines to help create a seamless and connected regional trail network.~~
- ~~Coordinate training on latest bicycle and pedestrian best practices and design manuals for MPO committees and implementing agencies.~~

~~Review and revise this plan as needed at least every five years. Interim updates to the map or plan may be required to take advantage of opportunities with developers or local and County agencies.~~

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CHAPTER 4 – VISION, GOALS AND OBJECTIVES

Defining a vision, goals, and objectives creates the structure for a plan. To develop the vision for this plan, the team reviewed the 2012 MPO Comprehensive Pathways Plan and other plans and considered public, Board, committee, and stakeholder group input. The following vision statement was used to guide the development of the plan's goals, objectives and strategies.

Vision

To provide a safe and comprehensive bicycle and pedestrian network that promotes and encourages community use and enjoyment.

Safety and a comprehensive or connected network are the two cornerstones of the plan. Public feedback indicated that safety and making biking and walking more accessible should be primary emphasis points. This interest is supported by travel trends and by current research showing that if there are safe and accessible facilities, whether for walking or for biking, people will use them. With this and the future in mind, the vision for this plan was developed. The vision and the goals and objectives are consistent with the priorities identified in the 2040 Long Range Transportation Plan (LRTP) and will be considered in the development of the 2045 LRTP.

Goals

The goals were developed by reviewing local, state and national Best Practices and goals in similar plans, including the 2012 MPO Comprehensive Pathways Plan, and with consideration of public and committee input. Although similar to the previous plan, the importance of safety and community health have been increased in this plan. The goals became the basis for the development of strategies, policies and project prioritization criteria which are discussed later in Chapter X.

Goal	Strategy
Safety	Increase safety for people who walk and bicycle in Collier County.
Connectivity	Create a network of efficient, convenient bicycle and pedestrian facilities in Collier County.
Health	Increase total miles of bicycle and pedestrian facilities and encourage local governments to incorporate Complete Streets principals in road planning, design and operations
Environment	Protect the environment by supporting mode choice.
Equity/Livability	Increase transportation choice and community livability through the development of an integrated multimodal system.
Economy	Promote tourism and economic opportunities by developing a safe, connected network of biking and walking facilities.

Table 1: Goals and Strategies

Objectives and Strategies

Goals can be general and lofty, but objectives and strategies need to specific enough to help make measurable progress towards meeting the goals. The following objectives and strategies were identified to help achieve the goals developed for this plan and to provide sufficient flexibility in the implementation of the plan.

1. Safety *Increase safety for people who walk and bicycle in Collier County.*

Objectives:

- Reduce the number and severity of bicycle crashes.
- Reduce the number and severity of pedestrian crashes.

Strategies:

- Identify high-crash locations for RSAs. Projects identified in RSAs will be a high priority for funding.
- Collaborate with law enforcement to develop and deploy enforcement/education campaigns.
- Work with FDOT and law enforcement agencies to seek funding for High Visibility Enforcement (HVE) for Pedestrian and Bicycle Safety.
- Adopt a Complete Streets Policy (see page XX for a description of Complete Streets) and work with local governments and the County to develop and adopt their own complete streets policies.
- Work with FDOT, MPO member entities and other transportation agencies to reduce the number of crashes, particularly those with severe or fatal injuries.

2. Connectivity *Create a network of efficient, interconnected and convenient bicycle and pedestrian facilities in Collier County.*

Objectives:

- Fill in gaps in the existing bicycle and pedestrian network.
- Provide a variety of bikeways and pedestrian facilities connected to transit stops and along transit routes.
- Provide a variety of bikeways and pedestrian facilities connected to parks, schools, downtowns, and employment centers.

Strategies:

- Actively pursue multiple sources of funding to implement plan.
- Use Transportation Management Area (TMA) funds to fill in small gaps in existing facilities.
- Coordinate with MPO member entities and FDOT to complete network gaps that may be completed during roadway widening or reconstruction, or infrastructure projects.
- Coordinate with MPO member entities and FDOT to complete gaps during resurfacing projects.

TMA funds are distributed from State DOTs to MPOs with populations over 200,000. TMA funds are prioritized by the MPO in conjunction with the State DOT.

- Prioritize bicycle and pedestrian projects in areas that will impact the greatest number of people.

3. Equity/livability *Increase transportation choice and community livability through the development of an integrated multimodal system.*

Objectives:

- Provide safe biking and walking conditions in areas of Collier County that are underserved or transit-dependent.
- Provide a variety of bikeways and pedestrian facilities connected to destinations.
- Provide a variety of bikeways and pedestrian facilities connected to transit.

Strategies:

- Support Collier Area Transit (CAT) by coordinating bicycle and pedestrian facilities and ADA improvements with bus routes and transfer centers
- Identify and select projects that support the safe, convenient and accessible use of transit.
- Prioritize bicycle and pedestrian projects in areas that will impact the greatest number of people.
- Identify and select projects that allow safe, convenient access to areas of high employment.
- Identify and select a proportion of projects that address the needs in EJ communities/areas.
- Adopt a Complete Streets policy.

4. Health *Encourage health and fitness by providing a safe, convenient network of facilities for walking and biking.*

Being either obese or overweight increases the risk for many chronic diseases (e.g., heart disease, type 2 diabetes, certain cancers, and stroke). Reversing the Collier County obesity epidemic requires a comprehensive approach that uses policy and environmental change to transform communities into places that support and promote healthy lifestyle choices for all Collier County residents. Lack of access to safe places to play and exercise contribute to the increase in obesity rates by inhibiting or preventing healthy active living behaviors.

Objectives:

- Increase physical activity or limit sedentary activity among children and youth
- Create safe communities that support physical activity

Strategies:

- Increase total miles of designated shared-use paths and bike lanes relative to the total street miles (excluding limited access highways) maintained by a local jurisdiction.
- Increase total miles of paved sidewalks relative to the total street miles (excluding limited access highways) maintained by a local jurisdiction.

- Local government has a policy for designing and operating streets with safe access for all users which includes at least one element suggested by the National Complete Streets Coalition (http://www.completestreets.org).

In all-user street design policies, such as the Complete Streets program, local governments incorporating at least one of the following elements in a policy will enhance traffic safety and promote healthy lifestyle choices:

- specifies that "all users" includes pedestrians, bicyclists, transit vehicles and users, and motorists of all ages and abilities;
- aims to create a comprehensive, integrated, connected network;
- recognizes the need for flexibility: that all streets are different and user needs will be balanced;
- is adoptable by all agencies to cover all roads;
- applies to both new and retrofit projects, including design, planning, maintenance, and operations, for the entire right of way;
- makes any exceptions specific and sets a clear procedure that requires high-level approval of exceptions;
- directs the use of the latest and best design standards;
- directs that Complete Streets solutions fit within the context of the community; and
- establishes performance standards with measurable outcomes.

Reference:

Centers for Disease Control and Prevention. *Recommended Community Strategies and Measurements to Prevent Obesity in the United States.* Suggested measurements #17, #18, #23 https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5807a1.htm (Accessed Oct. 3, 2018)

5. Economy *Promote tourism and economic opportunities by developing a safe, connected network of biking and walking facilities.*

Objectives:

- Improve bikeability to destinations.
- Support bicycle and pedestrian access to jobs.
- Improve connections to lively pedestrian environments.

Strategies:

- Coordinate with local agencies to develop a wayfinding and directional signage program.
- Identify and select projects that allow safe, convenient access to areas of high employment.
- Work with local agencies to identify projects that facilitate pedestrian access to areas of employment and recreation.
- Collaborate with local agencies to identify opportunities for amenities (e.g., bike parking, benches, street trees).

6. Environment *Protect the environment by promoting walking and bicycling for transportation to reduce congestion, reduce the need for costly expansion of road and highway systems and reduce our nation's dependence on foreign energy sources*

Objectives:

- Provide an accessible, connected network.
- Connect to destinations such as retail or service, making short distance trips on foot or by bike appealing.
- Plan, design and construct bicycle and pedestrian facilities in a manner that minimizes any negative environmental impacts and maximizes positive impacts

Strategies:

- Fill gaps in the network to create better connections and to minimize the disruption in travel.
- Work with agencies to improve intersections and create safe crossing opportunities.

CHAPTER 4 – VISION, GOALS AND~~,~~ OBJECTIVES~~, AND PERFORMANCE MEASURES~~

Defining a vision, goals, and objectives creates the structure for a plan. To develop the vision for this plan, the team reviewed the ~~previous~~2012 MPO Comprehensive Pathways Plan and other plans and considered public, Board, committee, and stakeholder group input. The following vision statement was used to guide the development of the plan's goals, objectives~~.~~ and strategies.

Vision

To provide a safe and comprehensive bicycle and pedestrian network that promotes and encourages community use and enjoyment.

Safety and a comprehensive or connected network are the two cornerstones of the plan. Public feedback indicated that safety and making biking and walking more accessible should be primary emphasis points. This interest is supported by travel trends and by current research showing that if there are safe and accessible facilities, whether for walking or for biking, people will use them. With this and the future in mind, the vision for this plan was developed. The vision and the goals and objectives are consistent with the priorities identified in the 2040 Long Range Transportation Plan (LRTP) and will be considered in the development of the 2045 LRTP.

Goals

The goals were developed by reviewing local, state and national B~~b~~est ~~p~~Practices and goals in similar plans, including the 2012 MPO Comprehensive Pathways Plan, and with consideration of public and committee input. Although similar to the previous plan, the importance of safety and community health ha~~s~~ves been increased in this plan. The goals became the basis for the development of strategies, policies and project prioritization criteria which are discussed later in Chapter X~~the plan~~.

Goal	Strategy
Safety	Increase safety for people who walk and bicycle in Collier County.
Connectivity	Create a network of efficient, convenient bicycle and pedestrian facilities in Collier County.
Health	~~Encourage health and fitness by providing a safe, convenient network of facilities for walking and biking.~~Increase total miles of bicycle and pedestrian facilities and encourage local governments to incorporate Complete Streets principals in road planning, design and operations
Environment	Protect the environment by supporting mode choice.
Equity/Livability	Increase transportation choice and community livability through the development of an integrated multimodal system.
Economy	Promote tourism and economic opportunities by developing a safe, connected network of biking and walking facilities.

Table 14~~1~~: Goals and S~~s~~trategies

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Objectives and Strategies

Goals can be general and lofty, but objectives and strategies need to specific enough to help make measurable progress towards meeting the goals. The following objectives and strategies were identified to help achieve the goals developed for this plan and to provide sufficient flexibility in the implementation of the plan.

1. Safety *Increase safety for people who walk and bicycle in Collier County.*

Objectives:

- Reduce the number and severity of bicycle crashes.
- Reduce the number and severity of pedestrian crashes.

Strategies:

- Identify high-crash locations for RSAs. Projects identified in RSAs will be a high priority for funding.
- Collaborate with law enforcement to develop and deploy enforcement/education campaigns.
- Work with FDOT and law enforcement agencies to seek funding for High Visibility Enforcement (HVE) for Pedestrian and Bicycle Safety.
- Adopt a ~~c~~Complete ~~s~~Streets P~~p~~olicy (see page XX for a description of ~~c~~Complete S~~s~~treets) and work with local governments and the County to develop and adopt their own complete streets policies. ~~(Note: The MPO has no implementation ability; therefore, any policy needs to be acceptable to and help local governments work towards their own goals.)\~~
- Work with FDOT, MPO member entities and other transportation agencies to reduce the number of crashes, particularly those with severe ~~injury and~~or fatal ~~crashes~~injuries.

2. Connectivity *Create a network of efficient, interconnected and convenient bicycle and pedestrian facilities in Collier County.*

Objectives:

- Fill in gaps in the existing bicycle and pedestrian network.
- Provide a variety of bikeways and pedestrian facilities connected to transit stops and along transit routes.
- Provide a variety of bikeways and pedestrian facilities connected to parks, schools, downtowns, and employment centers.

Strategies:

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- Actively pursue multiple sources of funding to implement plan.
- Use Transportation Management Area (TMA) funds to fill in small gaps in existing facilities.
- ~~Partner with MPO member entities local agencies and the County to use SU box funds to construct Walkability Study Tier One recommendations on local roads.~~
- Coordinate with MPO member entities ~~the County~~ and FDOT to complete network gaps that may be completed during roadway widening or reconstruction, or infrastructure projects.
- Coordinate with MPO member entities ~~the County~~ and FDOT to complete gaps during resurfacing projects.
- Prioritize ~~Locate~~ bicycle and pedestrian projects in areas that will impact the greatest number of people.

TMA funds are distributed from State DOTs to MPOs with populations over 200,000. TMA funds are prioritized by the MPO in conjunction with the State DOT.

3. Equity/livability -*Increase transportation choice and community livability through the development of an integrated multimodal system.*

Objectives:

- Provide safe biking and walking conditions in areas of Collier County that are underserved or transit-dependent.
- Provide a variety of bikeways and pedestrian facilities connected to destinations.
- Provide a variety of bikeways and pedestrian facilities connected to transit.

Strategies:

- ~~Work with~~Support Collier Area Transit (CAT) by coordinating bicycle and pedestrian facilities and ADA improvements with bus routes and transfer centers ~~to provide bike parking facilities at bus stops.~~
- Identify and select projects that support the safe, convenient and accessible use of transit.
- Prioritize ~~Locate~~ bicycle and pedestrian projects in areas that will impact the greatest number of people.
- Identify and select a proportion of projects that address the needs in EJ communities/areas.
- Adopt a Complete Streets policy.

4. Health -*Encourage health and fitness by providing a safe, convenient network of facilities for walking and biking.*

Being either obese or overweight increases the risk for many chronic diseases (e.g., heart disease, type 2 diabetes, certain cancers, and stroke). Reversing the Collier County obesity epidemic requires a comprehensive approach that uses policy and environmental change to transform communities into places that support and promote healthy lifestyle choices for all Collier County residents. Lack of access

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Commented [O4]: Shouldn't this include the "other" local roads?
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to safe places to play and exercise contribute to the increase in obesity rates by inhibiting or preventing healthy active living behaviors.

Objectives:

- Increase physical activity or limit sedentary activity among children and youth
- Create safe communities that support physical activity

Strategies:

- Increase total miles of designated shared-use paths and bike lanes relative to the total street miles (excluding limited access highways) maintained by a local jurisdiction.
- Increase total miles of paved sidewalks relative to the total street miles (excluding limited access highways) maintained by a local jurisdiction.
- Local government has a policy for designing and operating streets with safe access for all users which includes at least one element suggested by the National Complete Streets Coalition (http://www.completestreets.org).

In all-user street design policies, such as the Complete Streets program, local governments incorporating at least one of the following elements in a policy will enhance traffic safety and promote healthy lifestyle choices:

- specifies that "all users" includes pedestrians, bicyclists, transit vehicles and users, and motorists of all ages and abilities;
- aims to create a comprehensive, integrated, connected network;
- recognizes the need for flexibility: that all streets are different and user needs will be balanced;
- is adoptable by all agencies to cover all roads;
- applies to both new and retrofit projects, including design, planning, maintenance, and operations, for the entire right of way;
- makes any exceptions specific and sets a clear procedure that requires high-level approval of exceptions;
- directs the use of the latest and best design standards;
- directs that Complete Streets solutions fit within the context of the community; and
- establishes performance standards with measurable outcomes.

Reference:

Centers for Disease Control and Prevention. *Recommended Community Strategies and Measurements to Prevent Obesity in the United States.* Suggested measurements #17, #18, #23 https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5807a1.htm (Accessed Oct. 3, 2018)

~~**Objectives:**~~

- ~~Partner with the Collier County Health Department of Health, the Florida Department of Health and local community organizations to identify areas of concern.~~

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~~**Strategy:**~~

- ~~Continue with process to add projects to the needs list and collaborate on funding.~~

5. Economy -*Promote tourism and economic opportunities by developing a safe, connected network of biking and walking facilities.*

Objectives:

- Improve bikeability to destinations.
- Support bicycle and pedestrian access to jobs.
- Improve connections to lively pedestrian environments.

Strategies:

- Coordinate with local agencies to d~~D~~evelop a wayfinding and directional signage program.
- Identify and select projects that allow safe, convenient access to areas of high employment.
- Work with local agencies to identify projects that facilitate pedestrian access to areas of employment and recreation.
- Collaborate with local agencies to identify opportunities for amenities (e.g., bike parking, benches, street trees).

6. Environment -*Protect the environment by promoting walking and bicycling for transportation to reduce congestion, reduce the need for costly expansion of road and highway systems and reduce our nation's dependence on foreign energy sources ~~supporting mode choice.~~*

Objectives:

- Provide an accessible, connected network.
- Connect to destinations such as retail or service, making short distance trips on foot or by bike appealing.
- Plan, design and construct bicycle and pedestrian facilities in a manner that minimizes any negative environmental impacts and maximizes positive impacts

Strategies:

- Fill gaps in the network to create better connections and to minimize the disruption in travel.
- Work with agencies to improve intersections and create safe crossing opportunities.

~~Success of the Plan~~Performance Measures

~~Safety is the first national goal identified in the FAST Act. Under the Highway Safety Improvement Program and Safety Performance Management Measures Rule (March 2016), all MPOs are required to adopt safety performance targets by the end of February 2018. The rule requires MPOs to set safety-related performance measure targets and report progress to the State DOT. MPOs may adopt the State DOT targets or they may adopt their own targets. The Collier MPO has adopted FDOT's Safety~~

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Performance Targets. FDOT has adopted "Vision Zero" as its safety performance measure target with the goal of zero fatalities or serious injuries.

The five FHWA safety performance measures are the following; the fifth measure is directly applicable to bicyclists and pedestrians, and the strategies in this plan will aid in the MPO's pursuit of Vision Zero:

1. Number of fatalities
1. Rate of fatalities per 100 million Vehicle Miles Traveled (VMT)
2. Number of serious injuries
3. Rate of serious injuries per 100 million VMT
4. Number of non-motorized fatalities and serious injuries

The MPO has also developed several other performance measures to track progress in the implementation of this plan. These performance measures, listed below and discussed more fully in Chapter 6 – Implementation, include: an increased focus on safety by tracking studies, strategy implementations, and construction of projects recommended by this plan. Subsequent work can be done on the objectives to create targets that can be useful in measuring progress.

- Reduction in number of bicycle/pedestrian crashes, injuries, fatalities.
- Number of shared-use paths studied/funded for construction or built.
- Number of greenways studied/funded for construction or built.
- Miles of bike lanes built.
- Miles of sidewalks planned, programmed, and built.
- Number of RSAs completed and implemented/funded.

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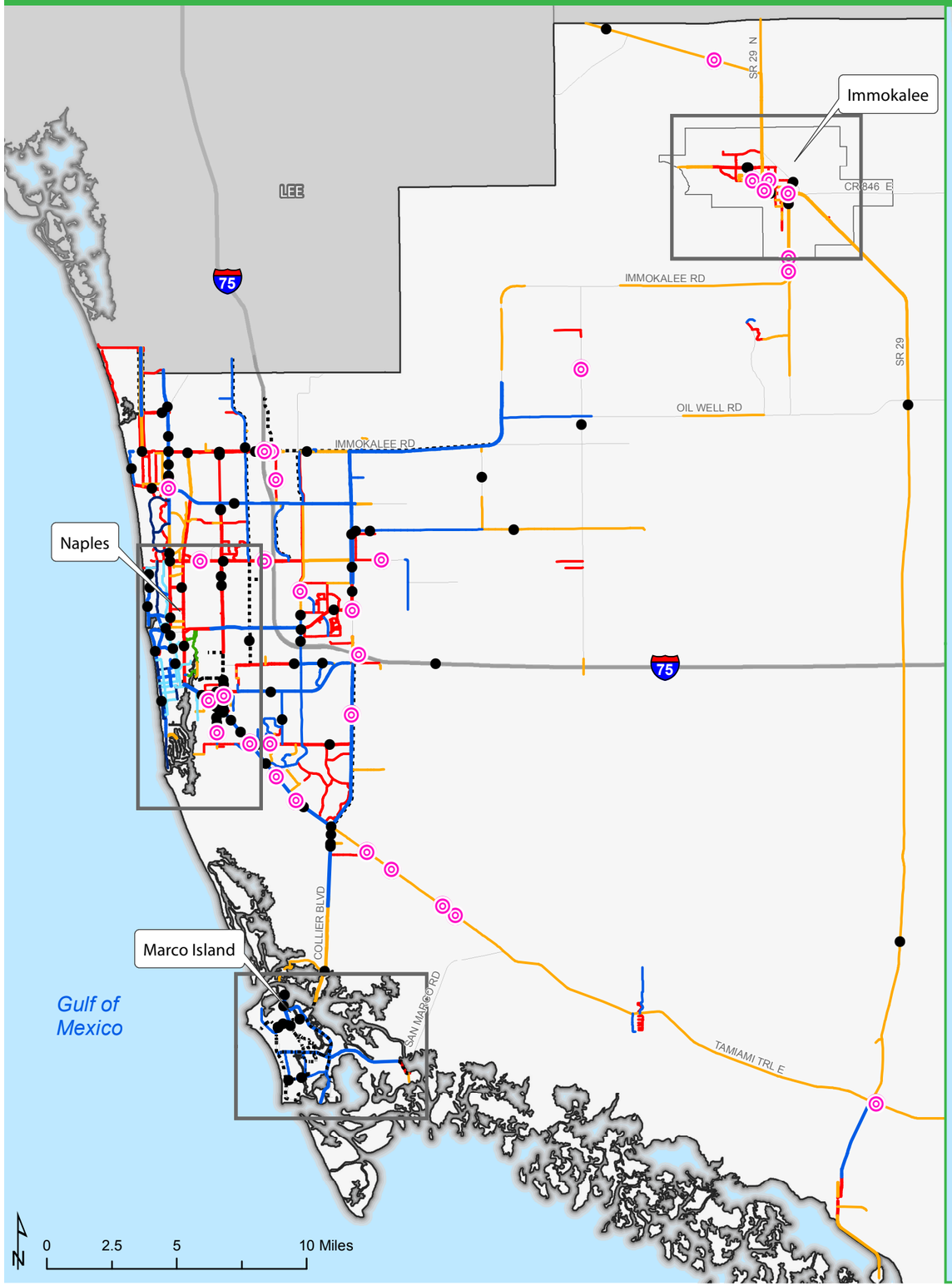
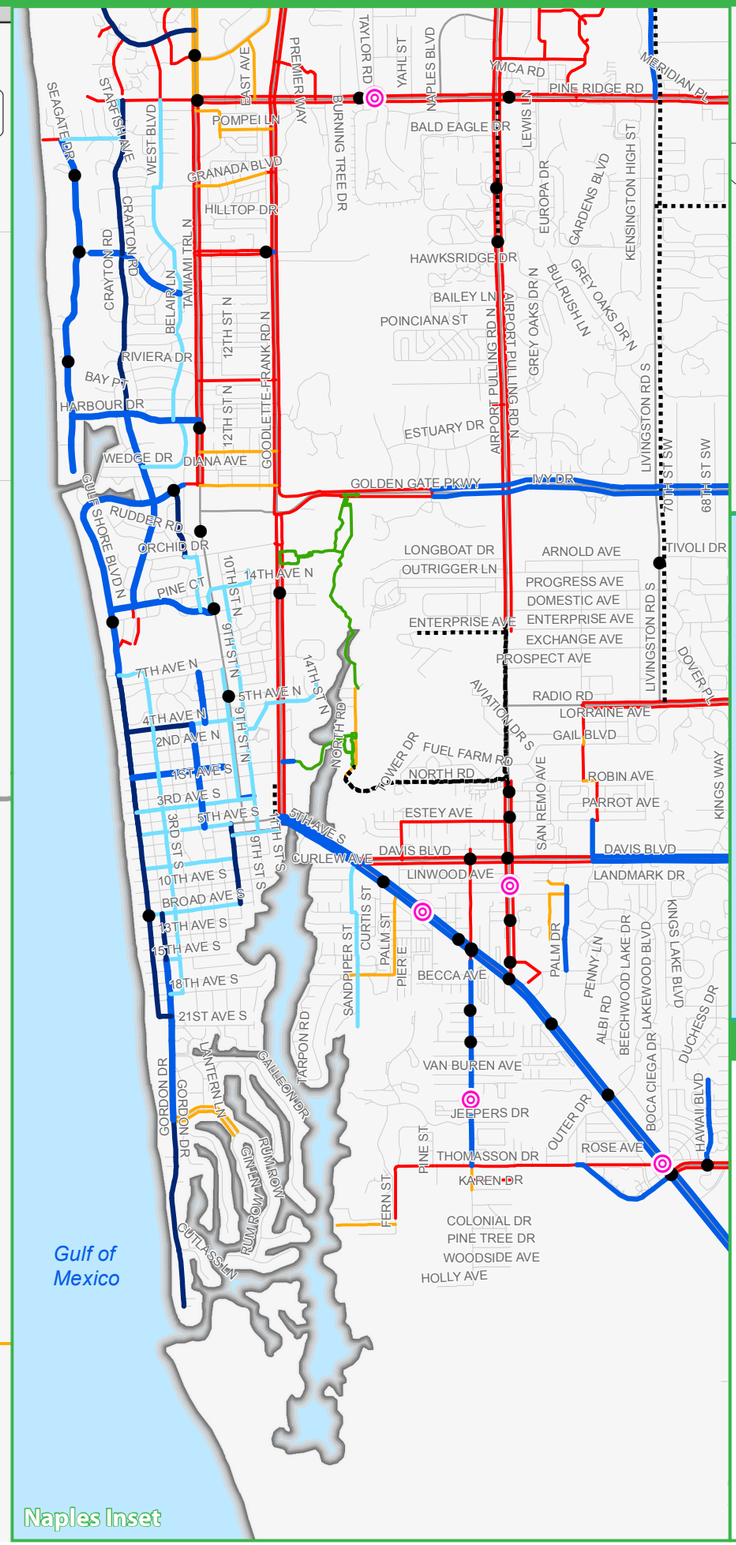
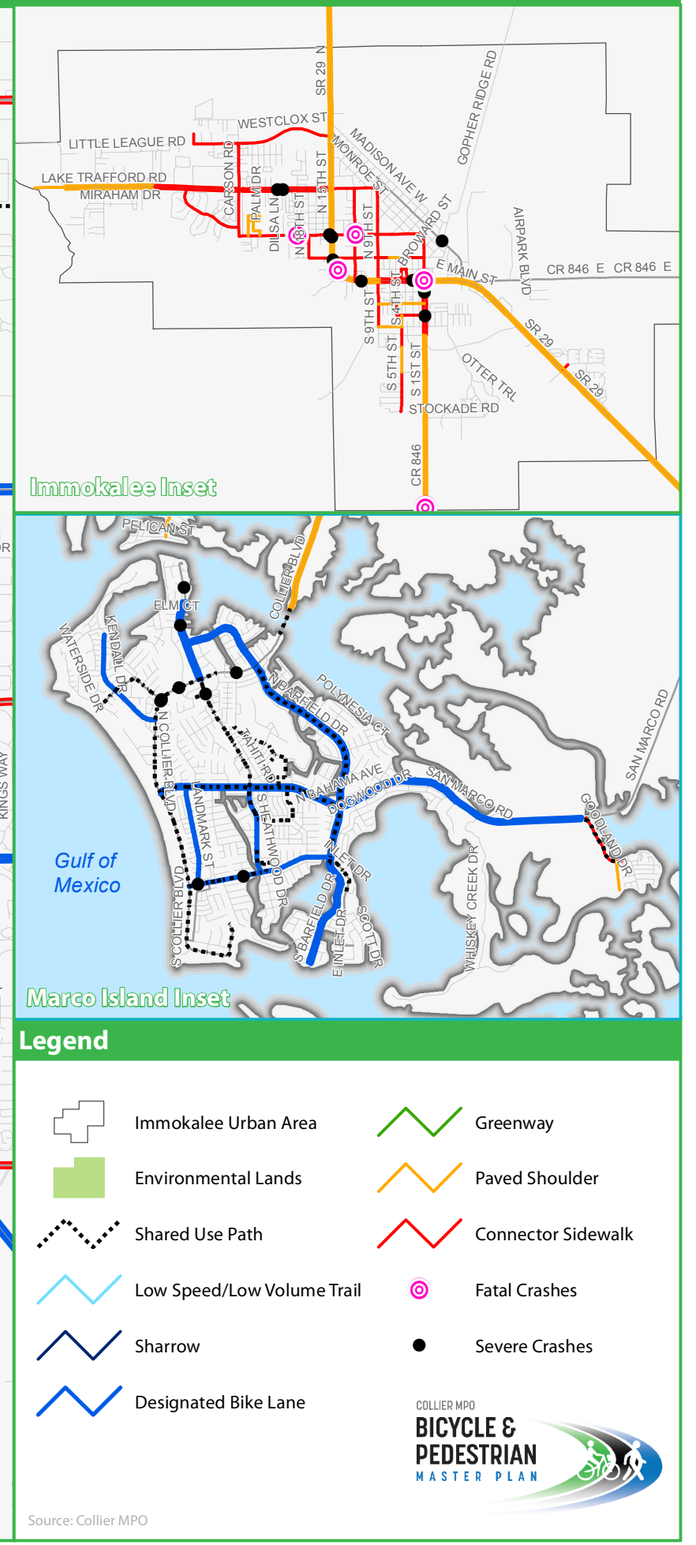
Existing Inventory + Severe and Fatal Crashes (2011-2016)

Bicycle & Pedestrian Master Plan







Legend

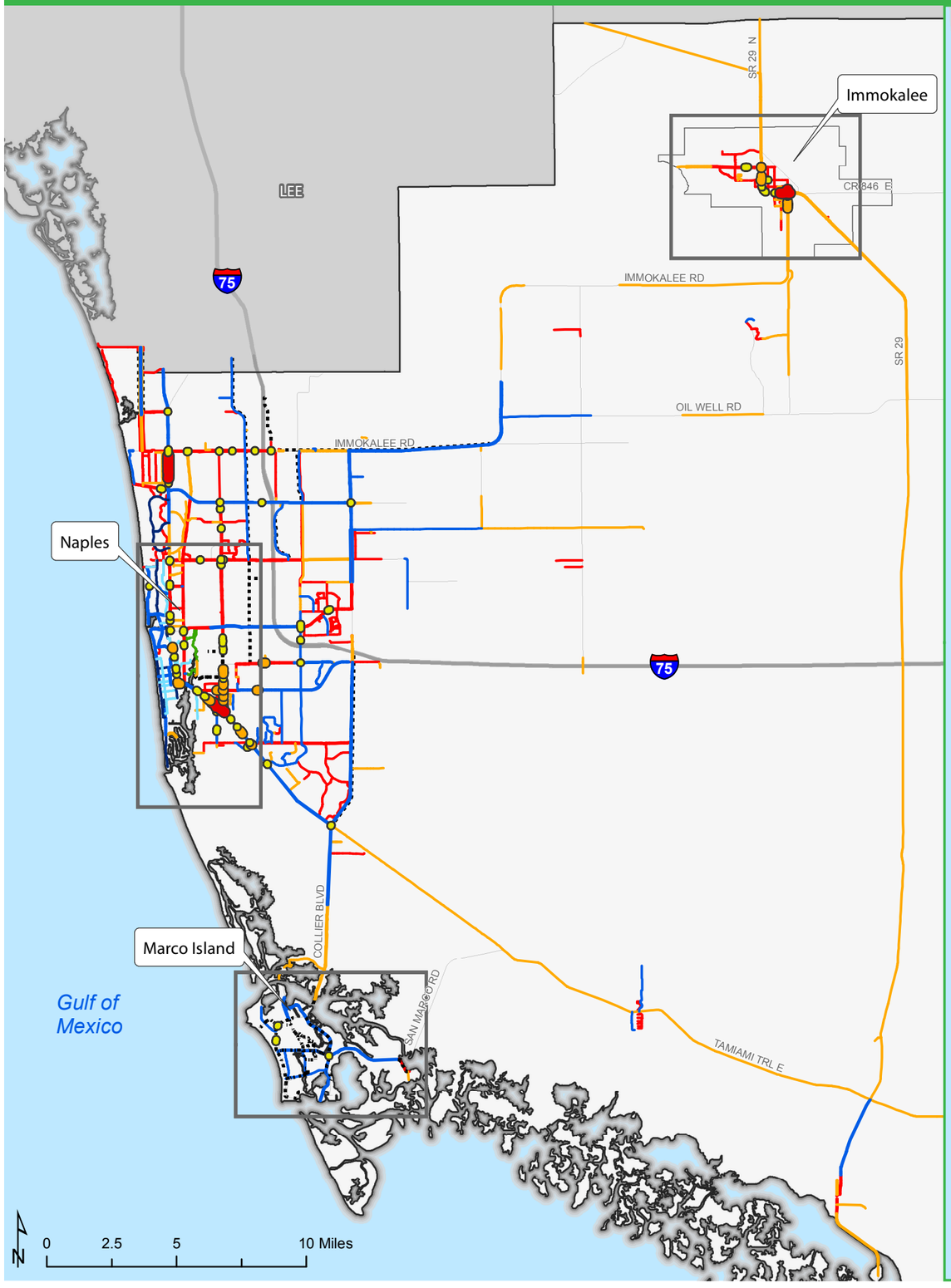
- Immokalee Urban Area
- Environmental Lands
- Shared Use Path
- Low Speed/Low Volume Trail
- Sharrow
- Designated Bike Lane
- Greenway
- Paved Shoulder
- Connector Sidewalk
- Fatal Crashes
- Severe Crashes

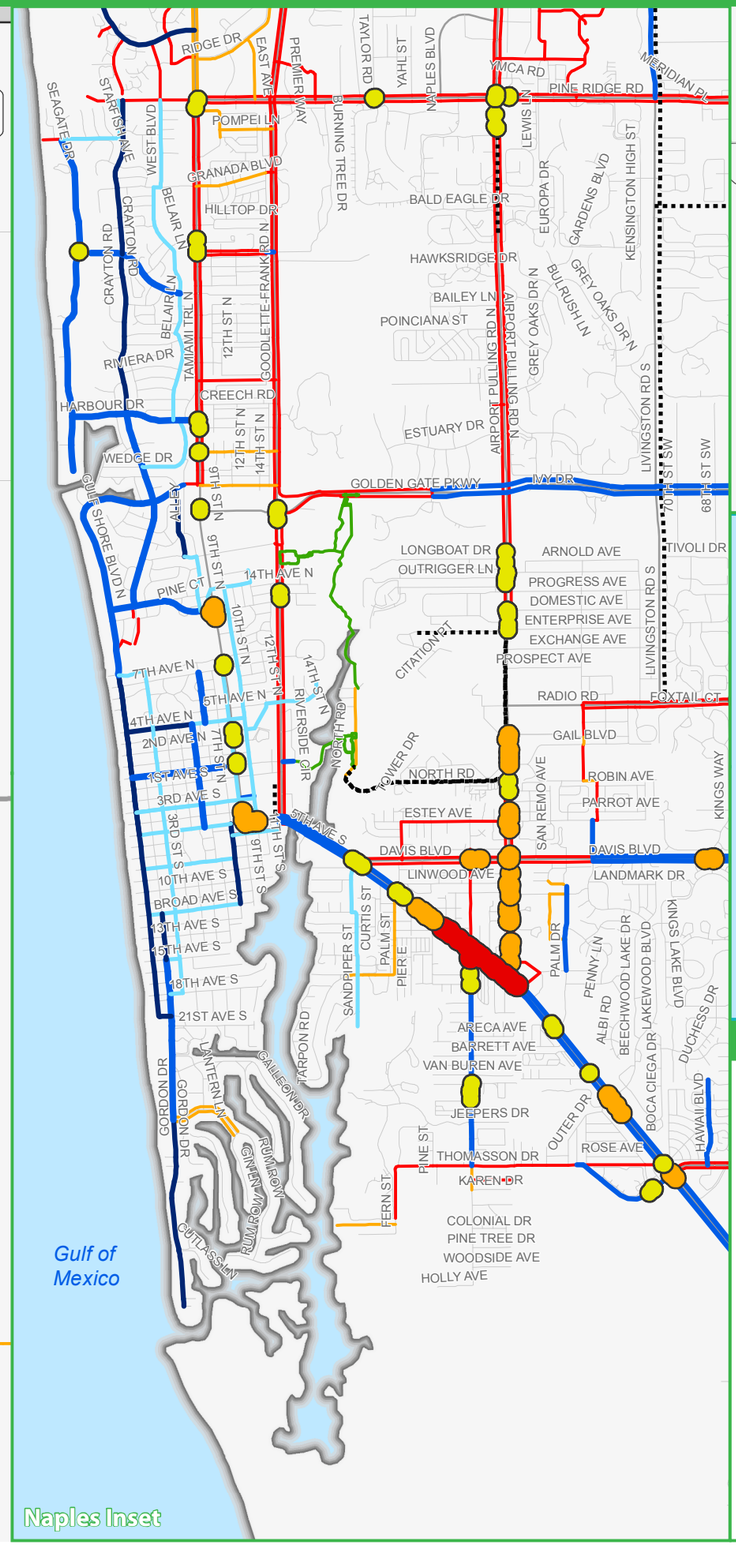
COLLIER MPO
BICYCLE & PEDESTRIAN MASTER PLAN

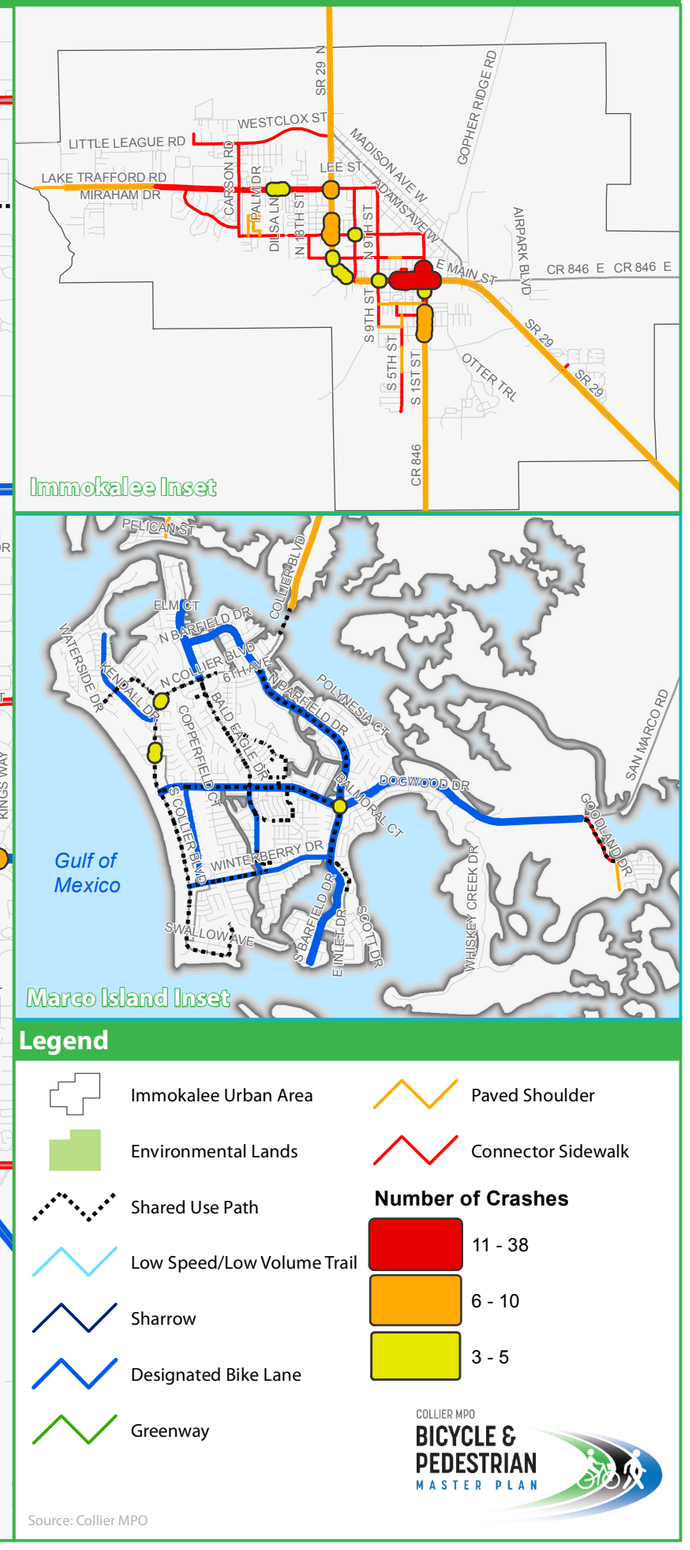
Source: Collier MPO

Existing Inventory + Pedestrian and Bicycle Crashes (2011-2016)

Bicycle & Pedestrian Master Plan







Legend

- Immokalee Urban Area
- Environmental Lands
- Shared Use Path
- Low Speed/Low Volume Trail
- Sharrow
- Designated Bike Lane
- Greenway
- Paved Shoulder
- Connector Sidewalk

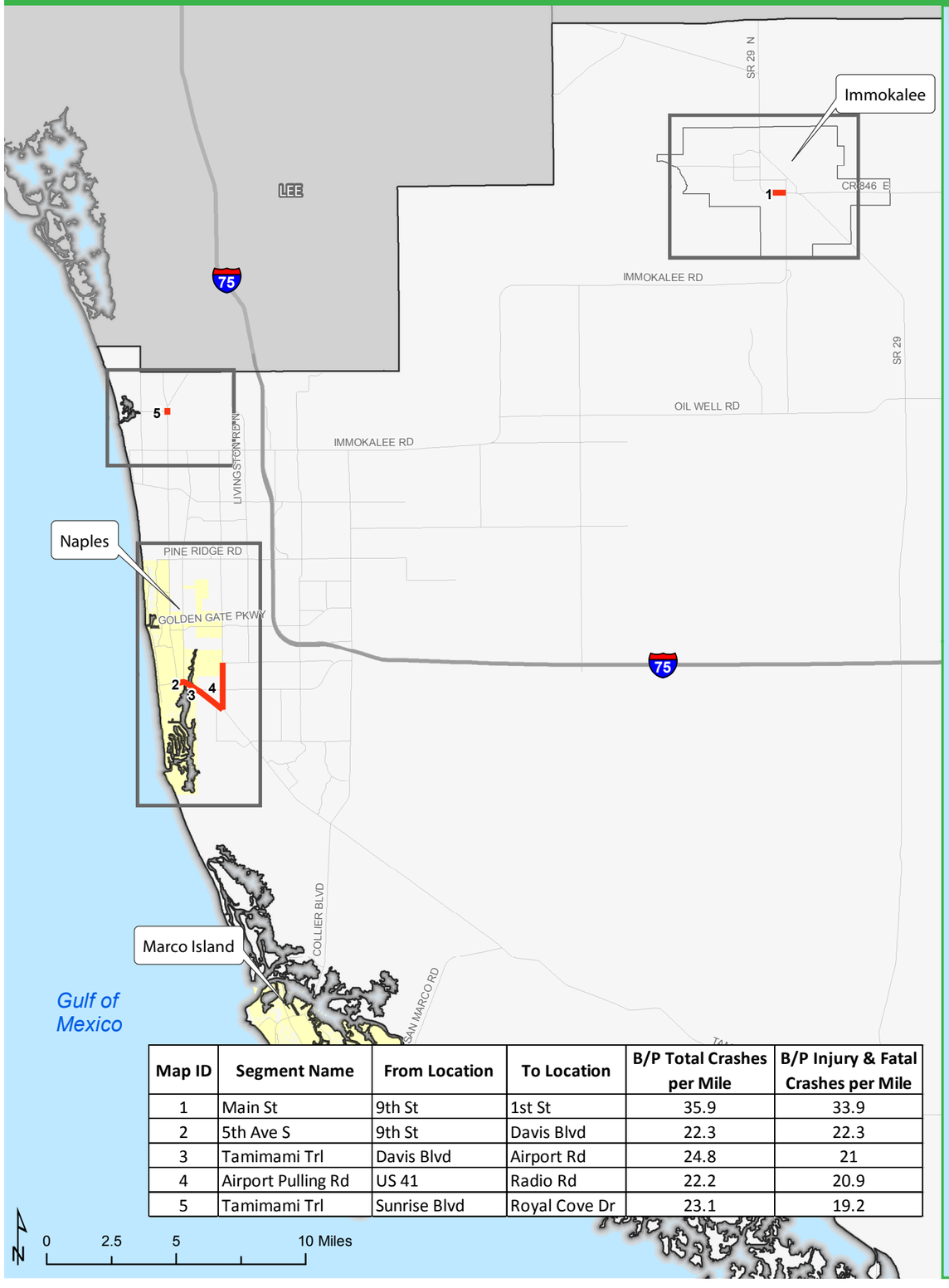
Number of Crashes

- 11 - 38
- 6 - 10
- 3 - 5

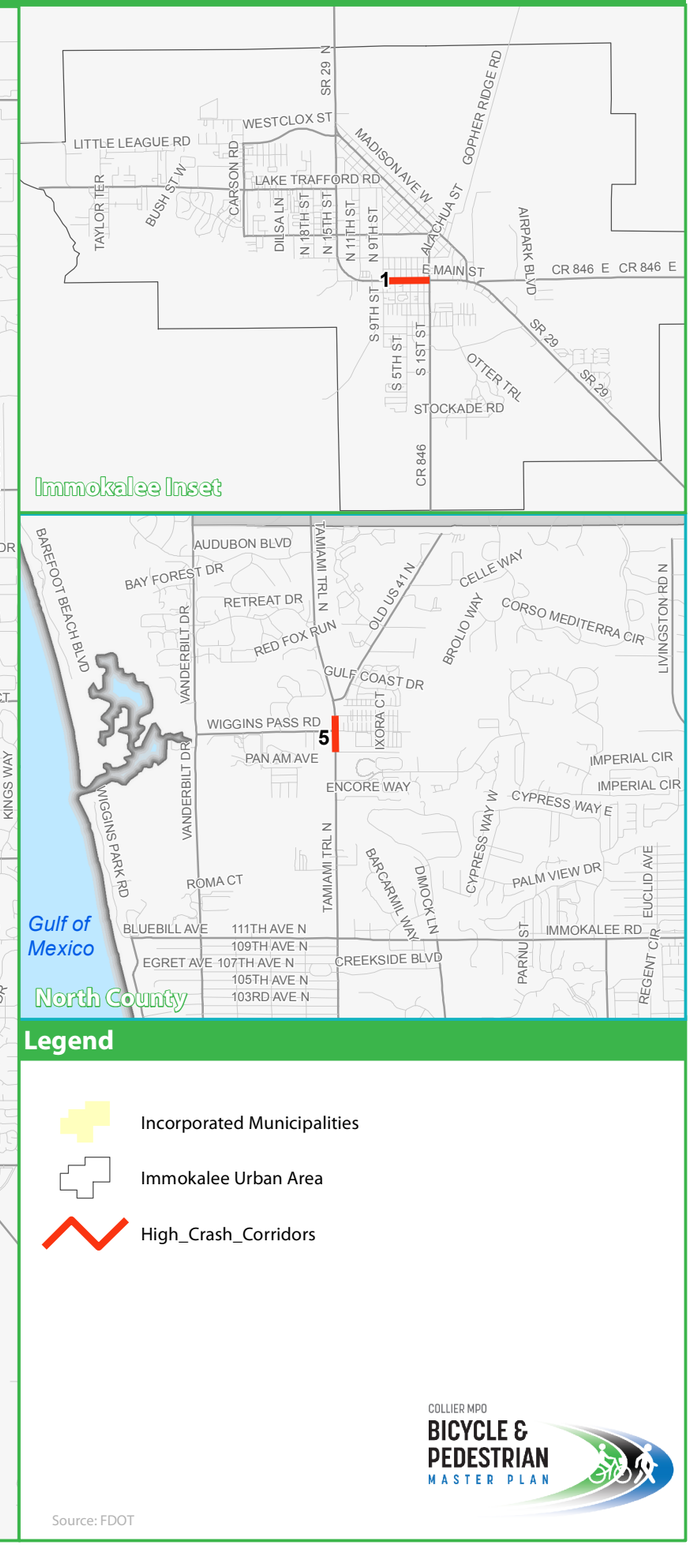
COLLIER MPO BICYCLE & PEDESTRIAN MASTER PLAN

Source: Collier MPO

Top 5 Bicycle and Pedestrian High Crash Corridors



Map ID	Segment Name	From Location	To Location	B/P Total Crashes per Mile	B/P Injury & Fatal Crashes per Mile
1	Main St	9th St	1st St	35.9	33.9
2	5th Ave S	9th St	Davis Blvd	22.3	22.3
3	Tamimami Trl	Davis Blvd	Airport Rd	24.8	21
4	Airport Pulling Rd	US 41	Radio Rd	22.2	20.9
5	Tamimami Trl	Sunrise Blvd	Royal Cove Dr	23.1	19.2



Legend

- Incorporated Municipalities
- Immokalee Urban Area
- High_Crash_Corridors

COLLIER MPO BICYCLE & PEDESTRIAN MASTER PLAN

Source: FDOT


cat
111th Avenue
Immokalee Rd
Gulf Shore Drive
Vanderbilt Dr
Creekside
Livingston Road
Vanderbilt Beach Road
Orange Blossom Drive
Goodlette-Frank Road
Cougar Drive
Pine Ridge Rd
Old Trail Dr
Solana Road
North Tamiami Trail(US41)
Airport-pulling Road
Golden Gate Parkway
MALL
ZOO
5th Ave N
4th Ave N
3rd Ave S
NAPLES AIRPORT
Radio Road
Estey Ave
Lakewood Boulevard
Davis Boulevard
East Tamiami Trail(US41)
COLLIER COUNTY GOVERNMENT CENTER
Gulf of Mexico

CAT Route 11

CAT Route 15 – Highest Ridership