Bicycle Pedestrian Master Plan

June 2011







Prepared for:

Bay County TPO

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RESOLUTION BAY 11-09

A RESOLUTION OF THE BAY COUNTY TRANSPORTATION PLANNING ORGANIZATION ADOPTING THE 2011 BICYCLE PEDESTRIAN MASTER PLAN UPDATE

WHEREAS, the Bay County Transportation Planning Organization (TPO) is the organization designated by the Governors of Florida as being responsible for carrying out the continuing, cooperative and comprehensive transportation planning process for the Bay County TPO Planning Area; and

WHEREAS, the Bay County TPO multi-modal transportation planning process supports all modes of travel including bicycle and pedestrian; and

WHEREAS, the current Bay County TPO Bicycle Pedestrian Master Plan was adopted in April 2006; and

WHEREAS, the Unified Planning Work Program includes the development of a Bicycle Pedestrian Master Plan update; and

WHEREAS, the Bicycle Pedestrian Master Plan update has occurred and encompasses all of the Bay County TPO Planning Area;

NOW, THEREFORE, BE IT RESOLVED BY THE BAY COUNTY TRANSPORTATION PLANNING ORGANIZATION THAT:

The TPO adopts the 2011 Bicycle Pedestrian Master Plan Update.

Passed and duly adopted by the Bay County Transportation Planning Organization on this 22nd day of June 2011.

BAY COUNTY TRANSPORTATION PLANNING ORGANIZATION

BY: _____
Mike Nelson, Chairman

BAY COUNTY TRANSPORTATION PLANNING ORGANIZATION STATE OF FLORIDA

ATTEST: Mary Bo Robinson

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Glossary of Terms

Benefit-Cost Index – An indicator of the benefits of providing a transportation facility improvement relative to the associated costs, used to prioritize candidate facilities relative to one another.

Bicycle Lane (Bike Lane) – A portion of a roadway which has been designated by striping, signing and pavement markings for the preferential or exclusive use of bicyclists.

Level of Service – A quantitative stratification of quality of service, which is a user based perception of how well a transportation service or facility operates.

Paved Shoulder – The portion of the shoulder that is paved.

Road Diet – The reduction of lanes within a roadway corridor to create additional space for other transportation facilities (in this context, to create space for bike lanes).

Roadway – That portion of the highway, including shoulders, for vehicular use.

Roadway Restriping – The reallocation of existing pavement surface (in this context, to create space for bike lanes).

Shared Use Path – A bikeway physically separated from motorized vehicular traffic by an open space or barrier and either within the highway right-of-way or within an independent right-of-way. Shared use paths may also be used by pedestrians, skaters, wheelchair users, joggers and other non-motorized users.

Shoulder – That portion of the roadway contiguous with the travelled way for accommodation of stopped vehicles, for emergency use, and for lateral support of the sub-base, base and surface courses of the pavement. Frequently, part of the shoulder is paved and can serve as a bicycle accommodation.

Sidewalk – The portion of a street or highway right-of-way developed for preferential or exclusive use by pedestrians

INTRODUCTION AND SUMMARY



Recognition of the numerous benefits of bicycling and walking, and of providing related transportation facilities, has been on the rise in recent years. Among these benefits are

- improved public health and the corresponding reductions in health care costs;
- reduced energy consumption and dependence on foreign energy sources;
- reduced greenhouse gas emissions and associated air quality improvements, perceived improvements in quality of life;
- increased disposable income and related regional economic stimulus; and
- greater transportation options for all residents.

Awareness of these issues has led to an increased desire for the transportation system to provide "complete streets" to its users, whereby all primary travel modes (auto, bicycle, pedestrian, and transit) are sufficiently planned for and accommodated within the roadway environment. Developing complete streets is the focus of this Bay County Transportation Planning Organization (TPO) *Bicycle Pedestrian Master Plan*.



The TPO, which has adopted two prior bicycle and pedestrian plans, has a history of planning for complete streets that dates back well before the creation and popularity of the term. The 2006 *Bicycle & Pedestrian Plan*, which is updated herein, was centered on creating goals, objectives, and policies that lead to a better environment for non-motorized transportation, as shown in Table 1 on the following page. This current update centers on identifying potential bicycle and pedestrian facility improvements and prioritizing them for future construction. As competition for space amongst the modes within the region's roadways continues to increase, identification of these opportunities to improve bicycling and walking conditions will help ensure that non-motorized transportation remains a viable transportation option and that the associated benefits are realized.

The identification and prioritization of potential bicycle and pedestrian facility improvements is based on several factors, including the existing bicycling and walking conditions provided by the region's arterial and collector roadways,[1] estimated demand (i.e. potential use), public input, past planning efforts, and facility construction costs, as described below:

- Existing conditions were evaluated using the Bicycle and Pedestrian Level of Service Models, which measure how safe or comfortable bicyclists and pedestrians feel based on roadway geometry and traffic characteristics.[2] The results indicate that the region's roadways provide relatively good bicycling conditions (level of service "C" on an A-F scale), while walking conditions are average (level of service "D"). 65% of the study network has existing bicycle facilities (defined for planning purposes as bicycle lanes or paved shoulders at least four feet wide), while only 13% of the study network has existing pedestrian facilities (full sidewalk coverage on both sides of the road).
- Potential demand was estimated based on projected population, employment, and school enrollment in within a short distance of the network roadway segments.
- Public input was received primarily through "votes" for locations of new bicycle and pedestrian facilities made by public workshop participants.
- Facility priorities in existing plans were identified, focusing on the 2006 *Bicycle & Pedestrian Plan*.
- Unit construction costs of the specific recommended facility improvements were developed. The recommended bicycle and pedestrian facility types, which include adding paved shoulders, adding sidewalks, and a limited number of road diet and roadway restriping projects, are based on the existing conditions and roadway cross-sections.

For the bicycle mode, one of six potential outcomes has been identified for each of the analyzed roadway segments. These outcomes include the following:

- No recommended improvement (existing or programmed bicycle facility);
- No recommended improvement (target bicycle level of service met);

[1] Streets functionally classified as "local" were not evaluated, in part because the low traffic volumes and speeds associated with local streets typically lead to good bicycling and walking conditions.
[2] These analysis techniques are described in detail in Appendices A and B.

TABLE 1 2006 Bay County TPO *Bicycle & Pedestrian Plan* Goals and Objectives[3]

GOAL 1: To create safe, convenient, and connected routes to all destinations and between land uses for bicyclists and walkers.

Objective 1.1 All jurisdictions within the Bay County TPO area should have incorporated the relevant policies and projects from the Bicycle and Pedestrian Plan into their Comprehensive Plan (including CIP/TIP) and land development regulations by October 2007.

Objective 1.2 To integrate bicycle/pedestrian facilities into design of all transportation projects.

Objective 1.3 To provide bicycle/pedestrian networks which safely serve major attractors such as schools, shopping malls, residential subdivisions, retirement areas, and recreational facilities.

Objective 1.4 To provide multi-modal linkages to increase the range and choice of trips. To provide bicyclists and pedestrians the support facilities necessary to connect with other modes of travel.

Objective 1.5 To provide safe and convenient bicycle parking at destinations.

Objective 1.6 To provide maintenance of bicycle and pedestrian facilities as part of the regular transportation maintenance program.

Objective 1.7 Regional roadway projects will support the creation of “complete streets.”

GOAL 2: To encourage bicycle and pedestrian travel as viable transportation modes.

Objective 2.1 To support the Bicycle/Pedestrian Advisory Committee to the TPO.

Objective 2.2 To support sponsorship of Bicycle and Pedestrian Public Service Announcements (PSAs) by local corporations, organizations, and governments.

Objective 2.3 To support employers who encourage/reward employees using alternate transportation.

Objective 2.4 To make information on local bicycling and walking facilities available to the public.

GOAL 3: To reduce bicycle/pedestrian crashes through education and enforcement.

Objective 3.1 To train bicyclists, pedestrians, and motorists to safely coexist.

Objective 3.2 To train law enforcement professionals in the specific bicycle and pedestrian related skills and knowledge required to perform their duties effectively and efficiently.

GOAL 4: To maintain a current Bicycle and Pedestrian Plan.

Objective 4.1 To have a data base available to transportation planners for evaluating the bicycle and pedestrian systems safely meeting the travel needs of the community.

GOAL 5: To reach a point with no increase in vehicle miles of travel (VMT) within the TPO area even with increasing population.

Objective 5.1 To support and encourage regional development and redevelopment using mixed land uses and traditional street patterns to maximize the number of trips that can be made by alternative modes such as walking and bicycling.

[3] While the current update of the Bicycle Pedestrian Plan does not have specific goals and objectives associated with it, these previously adopted goals and objectives should remain, with two minor changes noted: 1) the specific date associated with objective 1.1 is no longer appropriate, and 2) the Bicycle/Pedestrian Advisory Committee referenced in Objective 2.1 has been merged into the TPO’s Citizens Advisory Committee.

- Roadway restriping (reduction of existing lane widths to create space for bike lanes);
- Road diet (reduction of the number of lanes to create space for bike lanes);
- Add paved shoulder (subdivided into minor re-grading and major re-grading); and
- Detailed corridor study needed.

For the pedestrian mode, there are only three potential outcomes, as listed below:

- No recommended improvements (existing or programmed pedestrian facility);
- No recommended improvement (target pedestrian level of service met); and
- Add sidewalks (subdivided into minor re-grading, major re-grading, and more detailed study needed).

The recommended facility type processes for both modes are further illustrated on page 12. The prioritization of candidate projects is based on a Benefit-Cost Index that considers the benefits of providing new bicycle and pedestrian facilities (improvement in conditions, potential use, and public need), weighted as outlined on page 19, relative to their associated construction costs. The result is a ranked list for each mode that indicates where providing these facilities is most beneficial and economical.

The total costs of the recommended facility improvements, approximately $150 million, easily exceed existing funding levels. To help alleviate that discrepancy, a thorough list and description of potential funding sources has been identified. These funding sources include Federal, state, and private programs.

The final element of this *Plan* is a review of the local governments' land development codes (LDCs) as they relate to bicycling and walking, and a series of specific recommended additions to the LDCs that are designed to foster a more favorable environment for active transportation.

NETWORK EVALUATION AND PRIORITIZATION

The focus of this *Bicycle Pedestrian Master Plan* is an evaluation of the roadways in Bay County to determine bicycle and pedestrian facility needs and then prioritize the identified potential facility improvements. The study network largely coincides with the TPO's 2010 *Congestion Management Process (CMP) Plan* and consists of arterial and collector roadways. The prioritization of projects is based on numerous factors including existing conditions, potential demand, public input, prior studies, and facility construction costs, each of which is described in additional detail in this section.



Existing Bicycling and Walking Conditions

An analysis of existing bicycling and walking conditions was conducted using the Bicycle Level of Service Model and Pedestrian Level of Service Model, based on data collected in October 2010. These models, which have been applied on hundreds of thousands of miles of roads throughout Florida and the United States, are now included in the national *Highway Capacity Manual (HCM 2010).* The following sections provide background information, model structures, and data descriptions for these evaluation tools.

Bicycle Level of Service



The Bicycle Level of Service (Bicycle LOS) Model, a bicycling conditions performance measure, is a "supply-side" criterion. It is an objective measure of the bicycling conditions of a roadway which provides an evaluation of bicyclists' perceived safety and comfort with respect to motor vehicle traffic and roadway conditions. This widely used and Florida Department of Transportation-adopted criterion is classified as the quality or level of service (accommodation) for bicyclists that currently exists within the roadway environment. One of the greatest benefits of incorporating Bicycle LOS is the indication it provides regarding which network segments have the greatest needs. It uses the same measurable traffic and roadway factors that transportation planners and engineers use for other travel modes. With statistical precision, the Bicycle LOS Model clearly reflects the effect on bicycling suitability or "compatibility" due to variations in the following factors:

- bike lane or paved shoulder width;
- outside lane width;
- traffic volume, speed, and type;
- pavement surface condition; and
- presence of on-street parking.

This method is not limited to merely assessing conditions; it can also serve as an important and effective analytical tool in the identification of restriping candidates, development of street cross-section performance guidelines, and planning of bicycle routes.



The bicycle level of service analysis produces, for each study network segment, an objective score and "grade" which measures bicycle accommodation on that section of roadway, as shown in Table 2. For example, a particular segment without any type of bicycle facility (given other roadway characteristics detailed above) may provide a level of service "D." Using this tool, it is possible to determine how much accommodation benefit would be achieved as a result of improvements. In the above example, adding a designated bike lane might improve the segment's level of service to "B." Through this process, it is possible to simply and objectively determine which facilities have the greatest needs relative to the rest of the network.

Table 2 Bicycle Level of Service Grades and Scores

Level of Service	Numerical Range
A	≤ 1.5
B	>1.5 and ≤ 2.5
C	>2.5 and ≤ 3.5
D	>3.5 and ≤ 4.5
E	>4.5 and ≤ 5.5
F	> 5.5

More information about the Bicycle Level of Service Model, including the model form and the collected data items, is contained in Appendix A.

Pedestrian Level of Service

Similar to the evaluation procedure used for the bicycle mode, pedestrian level of service is an evaluation of pedestrians' perceived safety with respect to motor vehicle traffic. It identifies the quality of service for pedestrians that currently exists within the roadway environment and provides a measure of facility needs within the region's roadway network. The Pedestrian Level of Service (Pedestrian LOS) Model is used for the evaluation of walking conditions. This model is the most accurate method of evaluating the walking conditions within shared roadway environments. It uses the same measurable traffic and roadway factors that transportation planners and engineers use for other travel modes. As the Bicycle LOS Model does for the bicycle mode, the Pedestrian LOS Model reflects the effect on walking conditions due to variations the following roadway characteristics:



- presence of a sidewalk (if a shared use path is present within the right-of-way, it is also considered);
- lateral separation between pedestrians and motor vehicle traffic (including outside lane width, paved shoulder width, buffer area width, and sidewalk width);
- traffic volume and speed; and
- presence of on-street parking.

The Pedestrian LOS Model, which uses the same numerical scale as the Bicycle LOS Model, is used by planners and engineers throughout the United States in a variety of planning and design applications. The Pedestrian LOS Model can be used to conduct a benefits comparison among proposed sidewalk/roadway cross-sections, to identify roadways that are candidates for reconfiguration for sidewalk improvements, and to



prioritize and program roadways for sidewalk improvements. As with the Bicycle LOS Model, it clearly demonstrates the needs of pedestrian facilities among the TPO's network segments.

More information about the Pedestrian Level of Service Model, including the model form and the collected data items, is contained in Appendix B.

Existing Conditions Analysis Results

The collected data were used to perform these existing bicycling and walking conditions analyses for each of the more than 300 directional network segments. The distribution of bicycle level of service grades is shown in Figure 1. At a distance-weighted network-wide level, the Bay County TPO region was found to currently provide bicycling conditions that correspond to a bicycle level of service of 3.1 ("C"), which is relatively high compared to many other metropolitan areas in Florida. The distribution of pedestrian level of service grades is shown in Figure 2. The distance-weighted network-wide walking conditions correspond to a pedestrian level of service of 4.2 ("D"), which is generally typical compared to many other metropolitan areas in Florida. Network-wide maps of the existing bicycling and walking conditions are shown in Figures 3 and 4, respectively, for segments without existing or programmed facilities. In the limited cases where one direction of travel along a segment has a different level of service grade than the other direction of travel, these maps show the worse of the two grades. The full data collection sheets and the results of these analyses are included as Appendix C.

Where shared use paths exist, such as along portions of SR 79 and North Lagoon Drive, they have been included in the evaluation of walking conditions. They were not, however, taken into consideration regarding on-road bicycling conditions. Numerous other proposed trail facilities of various types have also been identified throughout Bay County. A map of all existing and proposed trail facilities is shown in Figure 5 for reference.

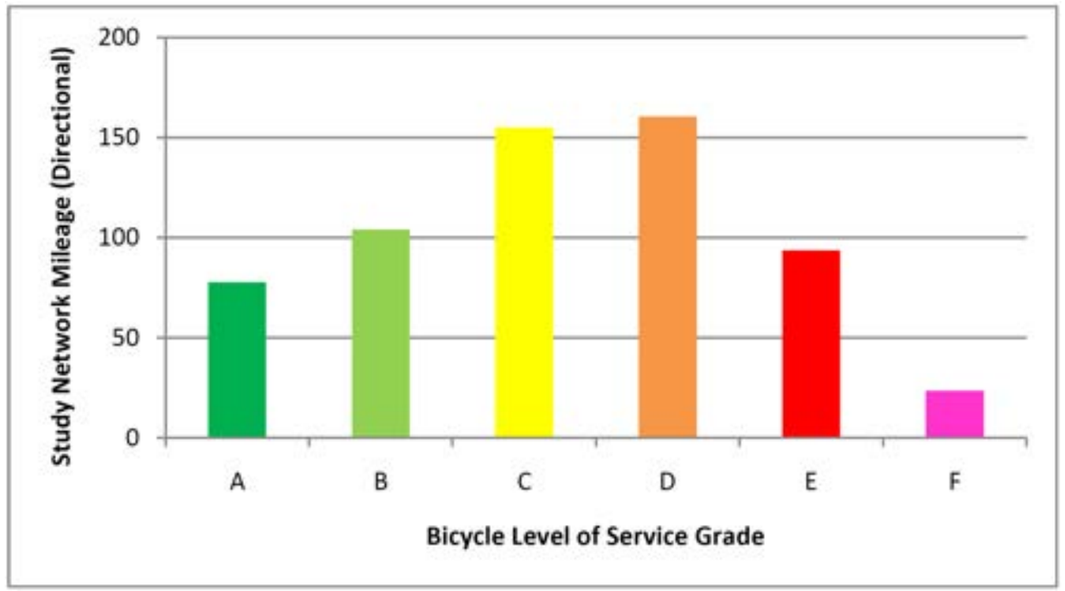


Figure 1 Network-Wide Bicycle Level of Service Results

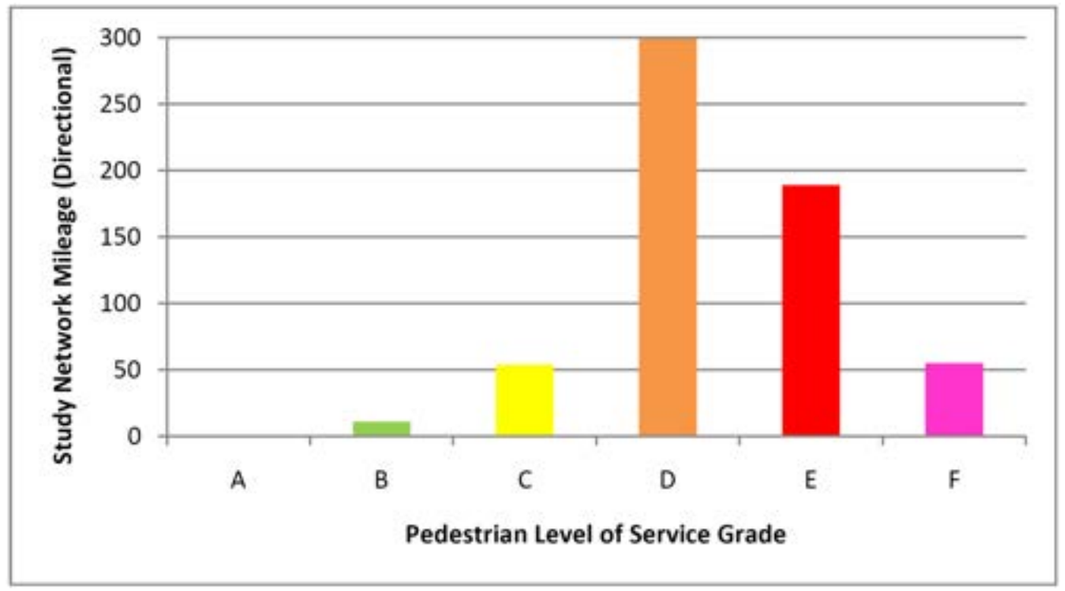


Figure 2 Network-Wide Pedestrian Level of Service Results

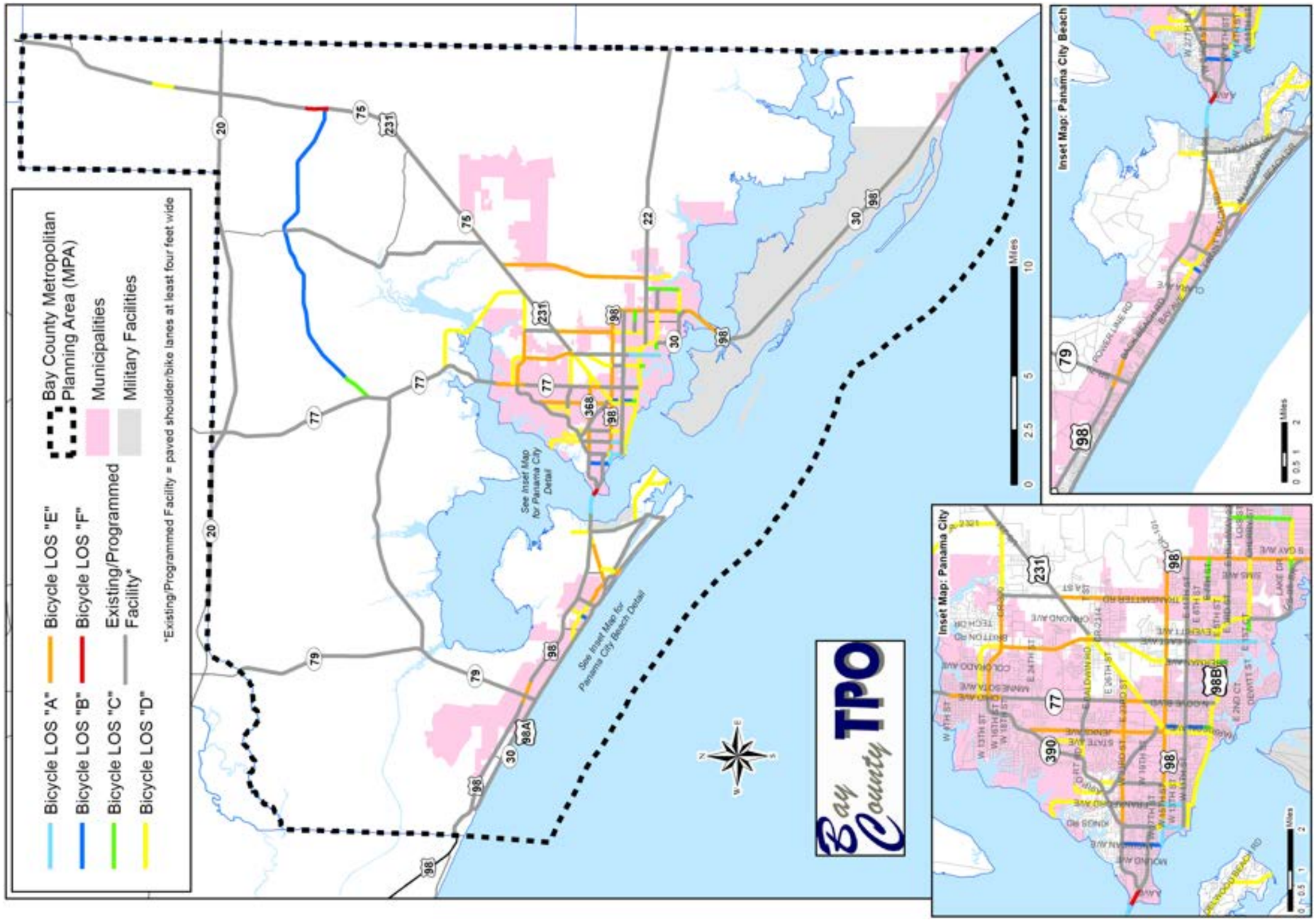


Figure 3 Bicycle Level of Service Map

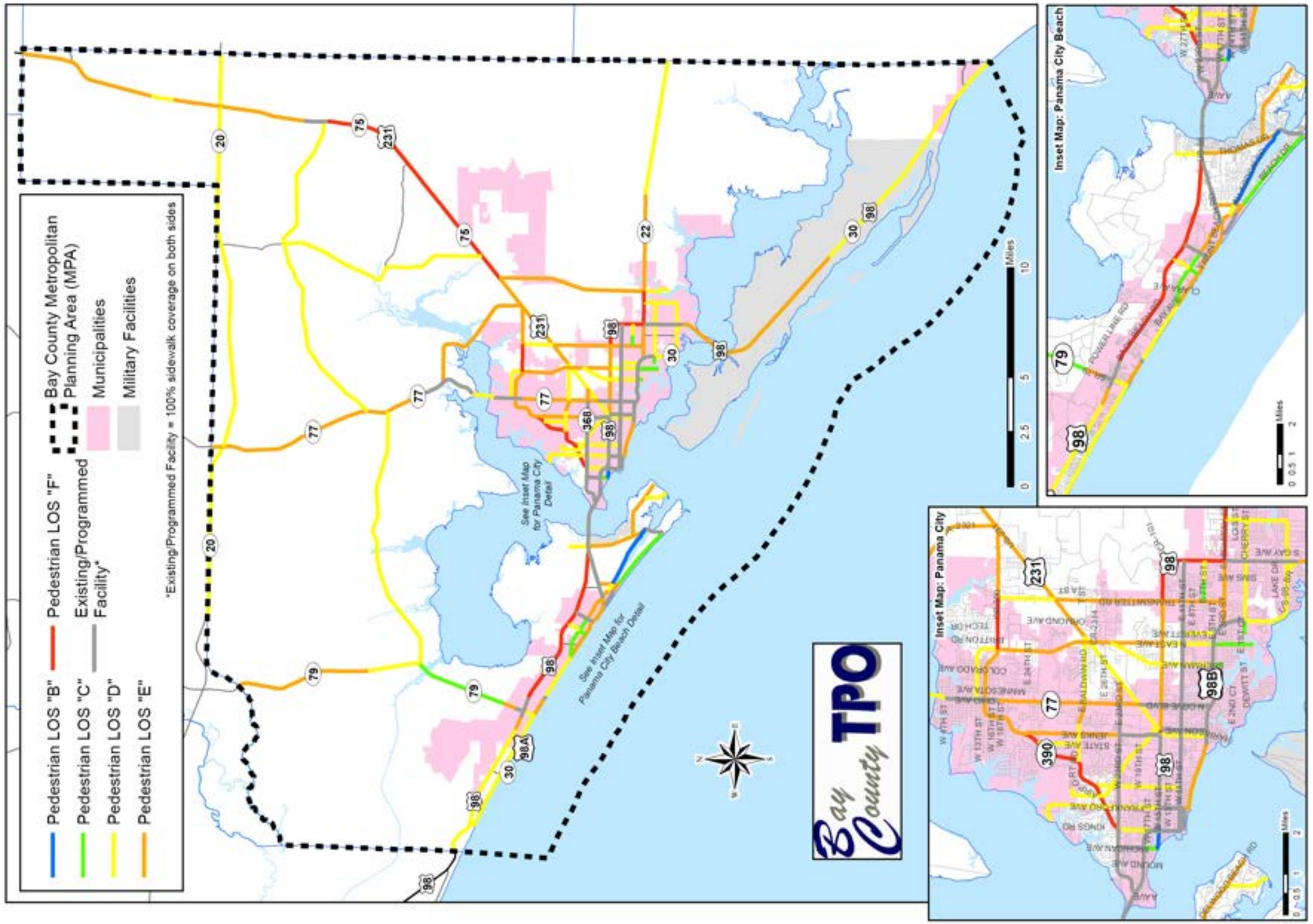


Figure 4 Pedestrian Level of Service Map

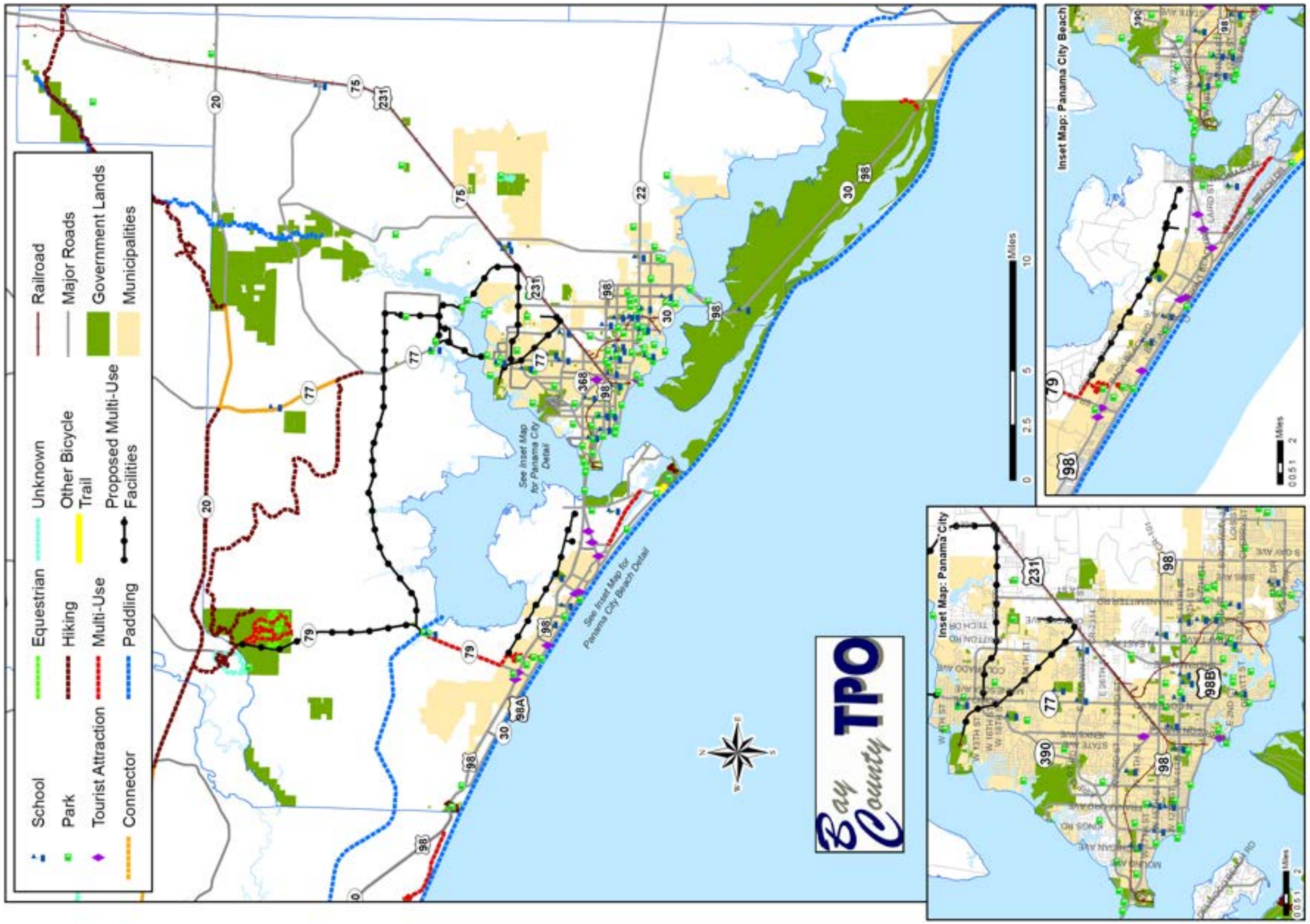


Figure 5 Existing and Proposed Paved Off-road Shared Use Paths

Potential Bicycling and Walking Demand

The level of service results described above address the "supply" issue of non-motorized transportation. An additional measure is needed to examine the "demand" of bicycle and walking facilities and thereby evaluate the relative amount of potential bicycle and pedestrian travel along a roadway corridor. In other words, such a measure estimates the relative amount of bicycle and pedestrian activity that would occur along a corridor if facilities were constructed and conditions were excellent. The demand criterion and the level of service criterion are complementary. When coupled, they provide a balanced picture of user need and perceived safety. For example, a particular corridor segment may have relatively poor walking conditions but relatively high pedestrian activity potential, perhaps because it is adjacent to an elementary school. Conversely, another segment may have relatively good cycling conditions but relatively low potential bicyclist activity levels because it is in an isolated location.



The process of identifying and quantifying potential bicycle and pedestrian trip activity is known as a travel demand analysis. To perform a travel demand analysis for the bicycle and pedestrian modes, a methodology must be employed that recognizes the unique impediments to that mode. Unlike automobile travel, bicycle and pedestrian travel often does not occur due to a number of impediments, one of which is the frequently poor accommodation of bicyclists and pedestrians within the existing transportation network. Consequently, existing bicycle and pedestrian counts generally do not indicate the level of potential bicycle trip activity within a roadway network. Therefore, alternative or surrogate measures of assessing bicycle and pedestrian trip activity are needed.

The specific demand analysis technique incorporated for this *Plan* is a variation on the widely used Latent Demand Score method. The concept of latent demand analysis is to evaluate demand based on the proximity of study network segments to key trip attractors and generators. For this study, the potential for trip activity was evaluated based on the characteristics within the surrounding area (at the Traffic Analysis Zone, or TAZ, geographic level) of each segment for three trip attraction/generation variables: projected future population, projected future employment, and projected future school enrollment. The specific methodology steps, carried out using GIS software for each study network segment, are listed below:

- create a 0.75-mile buffer around the segment to represent the bicycle and pedestrian travel shed (the propensity of non-motorized trips typically begins to decline dramatically as distances increase beyond this distance);
- intersect the segment travel shed buffer with the TAZs from *Direction 2035 Shaping Our Future*, the TPO's long range transportation plan
- calculate the proportion of the travel shed buffer that intersects the various TAZs;
- multiply the intersect area proportions for each TAZ by the projected population, employment, and school enrollment for those TAZs (this effectively calculates the TAZ data for the portion of the TAZ that coincides with the travel shed); and
- sum the data for each of the TAZs that intersects any portion of the travel shed buffer to estimate the total population, employment, and school enrollment for the segment.

Those segments with the highest level of projected population, employment, and school enrollment within 0.75 miles are those with the highest latent demand for bicycle and pedestrian activity. The results are shown in Figure 6. It is worth noting that these results are influenced by segment length to some degree, but this benefit to longer segments is counter-balanced when facility costs are considered in the prioritization calculations described later in the *Plan* (see page 18).



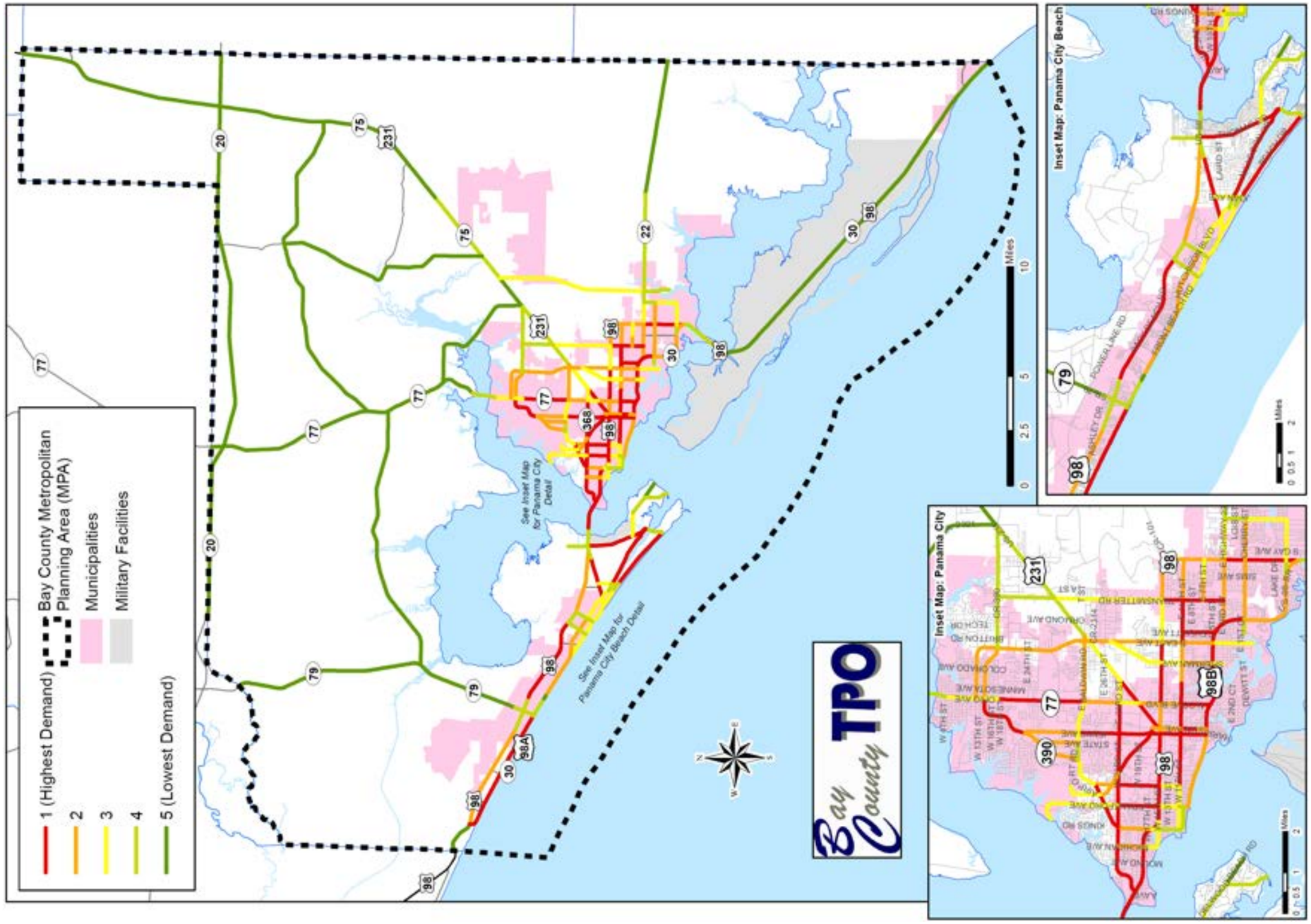


Figure 6 Demand Analysis Map

Public Input

As with all Bay County TPO planning projects, this *Bicycle Pedestrian Master Plan* includes a significant public involvement component. Public input was received and taken into consideration throughout the duration of the project, but was focused on public workshops conducted in November 2010 and February 2011. The first workshop included several interactive stations related to the *Bicycle Pedestrian Master Plan*. Participants viewed materials highlighting the benefits (both personal and community-wide) of bicycling and walking, provided feedback on the draft existing conditions results, helped establish the regional target level of accommodation for bicycling and walking, and were given the opportunity to "vote" for locations on the study network where new bicycle and pedestrian facilities would be most beneficial from their perspectives. This final element of participation, which included votes for bike lanes, sidewalks, and shared use paths, plays a direct role in the prioritization of facility improvements described later in the *Plan*. Participants at the second workshop reviewed and provided feedback on draft facility recommendations and prioritization, and were given a chance to see how their input from the first workshop was incorporated into the planning process.



Review of Existing Plans

To help inform the development of this *Bicycle Pedestrian Master Plan*, many existing related planning documents were reviewed, most notably the TPO's 2006 *Bicycle & Pedestrian Plan*. The 2006 *Plan* is a self-described policy-driven document with a focus on developing and implementing goals, objectives, policies, and design standards (and their associated implementation) that help encourage bicycling and walking within the region. While the focus on this 2011 update is the identification of bicycle and pedestrian facilities to help achieve more complete streets, these prior policy-related recommendations remain in place. The 2006 *Plan* does also include a facility prioritization component, wherein potential projects were identified and ranked based on factors including connectivity to schools, transit routes, trails, and activity centers. As described in the prioritization element, this prior work has now been included as an element of the new study network facility evaluation.

Numerous other planning documents from the region's local governments were reviewed to determine the extent to which bicycle and pedestrian facility needs have already been identified. The findings suggest that while much work has been done to promote the need for increased non-motorized transportation, the identification of specific facility needs is limited, particularly on the collector and arterial roads that form the project study network. The few cases where such needs have been identified, notably through the TPO's *Congestion Management Process Plan*, the City of Panama City's *Forest Park District Mobility Plan*, and the City of Panama City Beach's *Front Beach Road Community Redevelopment Plan*, have been used alongside the 2006 *Plan* findings to help inform the prioritized needs rankings.

Local government land development codes were also researched. These codes do not have a direct bearing on segment-specific recommendations. However, the findings and some potential modifications are included in a later section of this *Plan* (see page 39).

Recommended Facility Types and Associated Costs

To develop project cost estimates for use in prioritizing candidate projects, it is first necessary to identify specific bicycle and pedestrian facility improvement costs for the study network segments. Some segments, specifically those with existing facilities and those that provide good existing conditions, do not have an associated facility need. For all others, a recommended facility type has been identified, ranging from relatively inexpensive projects to those that involve more significant financial and time commitments.

For the bicycle mode, one of six potential outcomes has been identified for each of the analyzed roadway segments. These outcomes include the following:

- No recommended improvement (existing or programmed bicycle facility);
- No recommended improvement (target bicycle level of service met);
- Roadway restriping (reduction of existing lane widths to create space for bike lanes);
- Road diet (reduction of the number of lanes to create space for bike lanes);
- Add paved shoulder (subdivided into minor re-grading and major re-grading); and
- Detailed corridor study needed.

The decision tree shown in Figure 7 illustrates the steps involved in making the facility recommendation outcomes, each of which is discussed in more detail within this section.

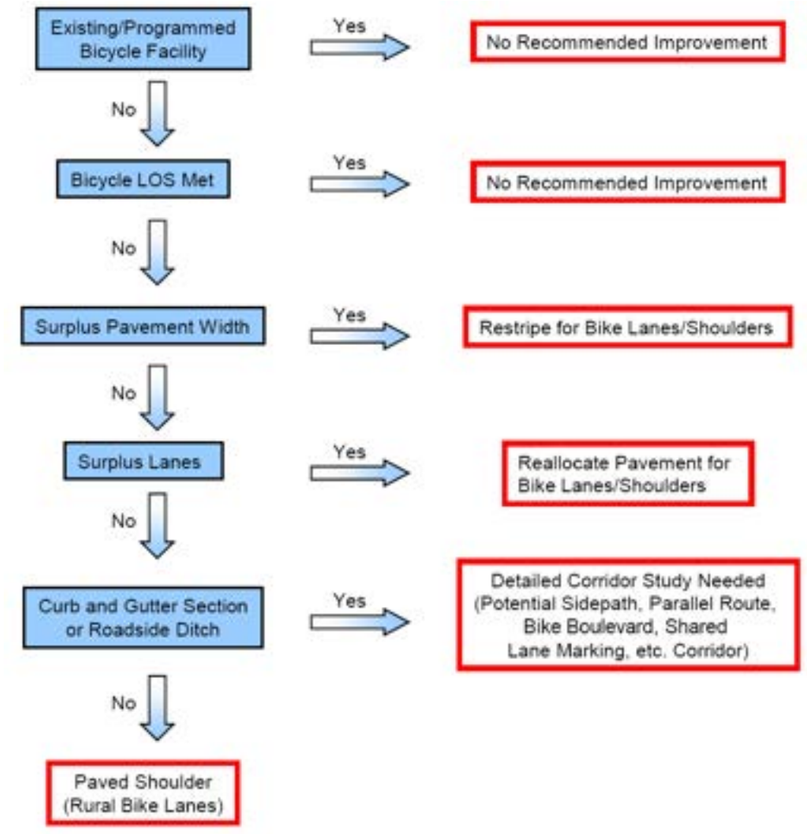


Figure 7 Bicycle Facility Decision Tree

For the pedestrian mode, there are only three potential outcomes, as listed below and shown in Figure 8:

- No recommended improvements (existing or programmed pedestrian facility);
- No recommended improvement (target pedestrian level of service met); and
- Add sidewalks (subdivided into minor re-grading, major re-grading, and more detailed study needed).

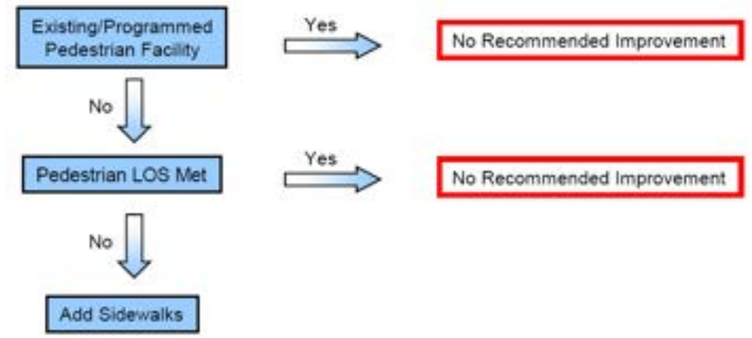


Figure 8 Pedestrian Facility Decision Tree

Bicycle Facility Recommendation Types

Existing Bicycle Facilities One of the primary purposes of this *Plan* is to identify locations for new on-road bicycle facilities. Accordingly, the first step in the facility recommendation process is to identify and filter out those study network segments where a bicycle facility already exists (or is programmed for construction). For the purposes of this analysis, an existing bicycle facility is constituted by any designated bike lane or a paved shoulder at least four feet wide. Segments meeting one of these criteria have been identified as having an existing bicycle facility; the analysis of all other segments continued into the next step. An exceptionally high percentage of the study network (208 miles, or approximately 65%) has existing bicycle facilities. While much of this mileage consists of paved shoulders in rural areas, there are also many designated bike lanes inside the urbanized areas. While there are still many opportunities to create new bicycle facilities, the preponderance of existing facilities indicates that the region has a substantial network in place for bicycling.



Target Bicycle Level of Service Met As described in the Existing Conditions section of the *Plan*, an analysis of existing bicycling conditions was performed for the study network. A bicycle level of service score, ranging from “A” (best) to “F” (worst), was calculated. There are many cases where a relatively high level of accommodation can be achieved even in the absence of a striped

shoulder or bike lane. This situation frequently occurs on low-volume (including low-truck volume) minor collector streets with typical or greater than typical lane widths. Members of the public and the TPO advisory committees provided input that led to the establishment of a target bicycle level of service of "C" for the TPO study area. All segments without an existing bicycle facility where the target level of service is nonetheless met (26 miles, or approximately 8% of the study network) are included in this category.

Roadway Restripe Candidates Among strategies commonly used to improve bicycling conditions, roadway restriping is frequently considered the most desirable solution. This is because of the very low (or effectively non-existent, if performed in concert with scheduled resurfacing) associated cost and the existence of excess lane width on many streets. For this reason, roadway restriping was the first option analyzed for the study network after those segments with existing bicycle facilities and those where the target accommodation level has been met were filtered out of the process.

For the purposes of this *Plan*, the TPO has identified a minimum lane width of 11 feet. The analysis spreadsheet was programmed accordingly to determine whether the total pavement width (TPW) of each roadway segment is sufficient to leave space for four feet of bicycle facility in each direction of travel while preserving the minimum lane width for all other travel lanes. Several other specifications were considered in this portion of the analysis:

- The TPW is typically the width from one edge of the roadway to the other edge, but for divided roadways is only from one edge of the roadway to the raised median. This is done because roadway restriping assumes that no median reconstruction will occur.
- For segments that include a two-way left turn lane, a minimum width of 12 feet was designated to maintain the two-way left turn lane.
- For segments with existing striped on-street parking, a minimum width of eight feet in each direction was designated to maintain the parking lanes.

All segments that were shown to have space for bicycle facilities while meeting the above requirements have been designated roadway restripe candidates. The analysis shows that bike lanes and paved shoulders already exist in most locations where there is adequate space within the existing pavement width. Eight miles (2% of the study network) were identified as restripe candidates.[4]

Road Diet Candidates While the removal of travel lanes to create bicycle facilities (i.e., a road diet) is also relatively inexpensive to implement, restriping is typically a less noticeable change to a roadway and should generally be considered first. Road diets are frequently considered when a preliminary analysis indicates that sufficient capacity exists to effectively accommodate motor vehicle traffic for the foreseeable future with the reduced number of lanes. Such preliminary planning-level analyses have been performed for this project to identify road diet candidates. Significantly more detailed operational analyses should be carried out for individual sections before moving forward with any of the identified projects.

The motor vehicle capacity analyses used the projected 2035 model year volume for each segment, as developed for *Direction 2035 Shaping Our Future*, the TPO's long range transportation plan. Planning-level estimates of future year motor vehicle capacity are feasible through the use of generalized level of service tables, which are based upon default values using the *Highway Capacity Manual*. The Florida Department of Transportation has developed a set of generalized motor vehicle level of service tables[5] that are widely utilized throughout the state. The tables use default values for different area types for many traffic variables such as K-factor (planning analysis hour factor), D-factor (directional distribution factor), peak hour factor, and g/C (green time to cycle length) ratio. The lookup tables produce a level of service result based on roadway class (determined through average signal spacing, which was field-collected), traffic volume, and number of lanes. These lookup tables were programmed into the analysis database.

For segments that do not fall into one of the first three analysis categories (existing facilities, target level of service met, and roadway restripe candidates), the number of lanes was hypothetically reduced (*e.g.*, 4-lane to 2-lane) to determine the resulting future year motor vehicle level of service. The results were compared against the identified motor vehicle level of service standard

[4] An additional nine miles of segments represent restripe candidates where the bicycle level of service threshold is already met. These roadways could be restriped, but the benefit would not be as great because of the relatively good existing bicycling conditions on those roadways.
[5] *2009 Quality/Level of Service Handbook*, Florida Department of Transportation.

of “C” to see where excess capacity exists. As with roadway restripe candidates, the opportunity for road diets in the region is limited. In fact, only two segments totaling approximately three miles fall into this category, indicating that a widespread road diet program is likely infeasible.

Add Paved Shoulders Candidates At this point in the analysis process, remaining roadway segments were examined to determine the feasibility of adding paved shoulders, which could be designated as bike lanes, at the edge of the existing pavement. While more expensive than roadway restriping and road diet projects, constructing paved shoulders on the outside of the existing edge of pavement is still much less expensive than projects that involve reconstruction of the roadway. For a network segment to be considered a candidate for adding paved shoulders, it must meet two criteria: 1) have an open shoulder cross-section, and 2) have a roadside profile value of 1 or 2 on the 1-3 scale described in the existing conditions methodology. Such segments have been further subdivided into those with minor re-grading necessary (roadside profile of 1) and those with major re-grading necessary (roadside profile of 2). Of the remaining unclassified segments, 33 miles (10% of the study network) meet these criteria.

Detailed Corridor Study Needed (DCSN) Many study segments present minimal opportunity for improving bicycling conditions through any of the identified roadway retrofit strategies discussed above. Specific bicycling-related improvements to these segments (the 44 miles representing the remaining 14% of the study network) will require extensive and detailed operational-level investigations of the constraints and opportunities along these corridors. Several specific opportunity options, which are briefly discussed below, can and should be investigated by the implementing jurisdictions to better accommodate bicycling on the DCSN-designated corridors. Closing these challenging gaps can greatly increase connectivity of the bicycling network and improve neighborhood linkages, thereby promoting increased bicycling activity and leading to associated public health, environmental, and energy savings benefits.

Some DCSN corridors may be potential “sidepath” candidates. Sidepaths are shared use paths adjacent to the roadway (*i.e.*, in the same right-of-way). Individual corridor studies would be needed to verify the extent of available rights-of-way as well as the design options and feasibility of developing a sidepath[6] along any given segment.

Also, in a limited number of cases, jurisdictions should consider the use of alternative parallel routes for DCSN corridors. Provision of a bicycle facility on a built-out urban arterial may be financially or otherwise infeasible. However, there may be a parallel lower-volume local street, perhaps offset by only a block (“one-off”), that could sufficiently accommodate bicycle travel while still providing reasonable access to commercial destinations along the arterial roadway. A parallel street might be made to better accommodate bicyclists through geometric or operational improvements, such has implementation of a bicycle boulevard design to enhance conditions for the bicycle mode while discouraging use of the street by through motor vehicle traffic. Potential treatments for such parallel corridors can begin with the inclusion of enhanced signage (including wayfinding signage) and pavement markings (including Shared Lane Markings), and then progress to bicycle-friendly traffic calming treatments such as speed pillows, chicanes, and even traffic diverters. In locations where a sufficient grid network exists, it is possible to create a “one-off” network that allows bicyclists and pedestrians to travel greater distances more comfortably. Again, a detailed operational analysis would be required to confirm whether the potential implementation of the improved parallel routes could be applied along a particular corridor.

The network-wide bicycle facility recommendations are shown in Figure 9.

[6] While sidepaths appear to many to be appropriate bicycle facility alternatives, crash statistics and operational challenges from across the United States and around the world provide ample warning that in many settings, they are not (see AASHTO *Guide for the Development of Bicycle Facilities,* pp.33-35). Preliminary corridor-specific design is needed for each to determine their feasibility from an operational/safety standpoint. For more information on the design requirements of sidepaths see Petritsch, T.A., B.W. Landis, H.F. Huang, and S. Challa, “Sidepath Safety Model: Bicycle Sidepath Design Factors Affecting Crash Rates” *Transportation Research Record 1982,* Transportation Research Board, Washington, DC, 2007.

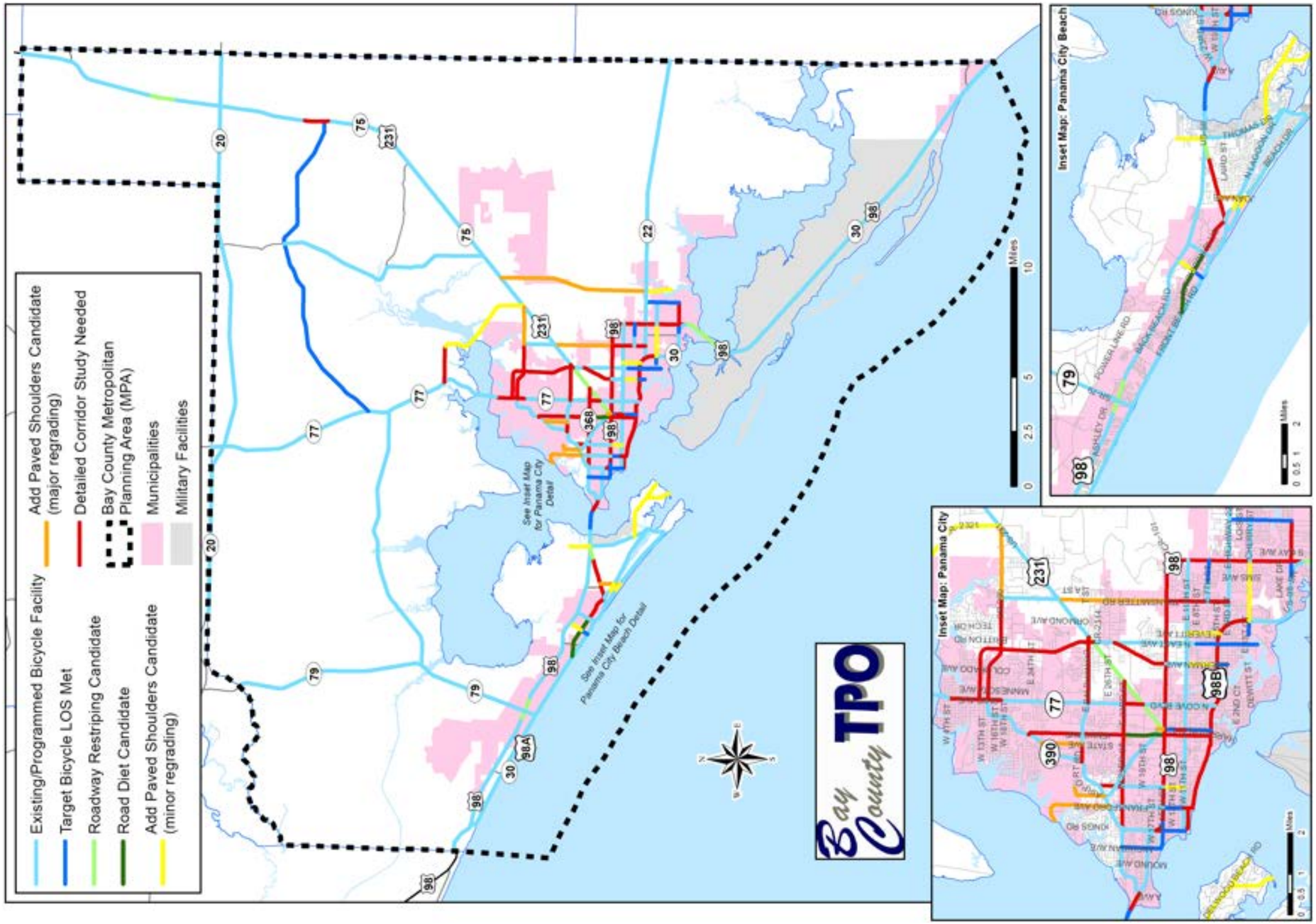


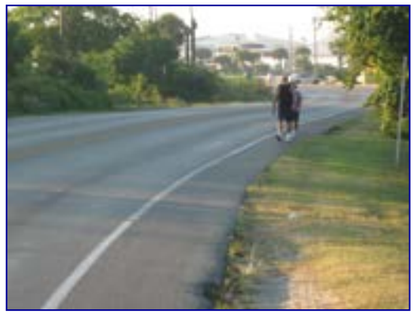
Figure 9 Bicycle Facility Recommendations Map

Pedestrian Facility Recommendation Types



Existing Pedestrian Facilities One of the primary purposes of this *Plan* is to identify locations for new pedestrian facilities. Accordingly, the first step in the facility recommendation process is to identify and filter out those study network segments where a pedestrian facility already exists (or is programmed for construction. For the purposes of this analysis, a segment is considered to have an existing pedestrian facility if 100% of the segment has sidewalks (or a shared use path) on both sides of the roadway. This category includes 41 miles, or approximately 13% of the study network, almost exclusively inside the urbanized area.

Target Pedestrian Level of Service Met As described in the Existing Conditions section of the *Plan*, an analysis of existing walking conditions was performed for the study network. A pedestrian level of service score, ranging from “A” (best) to “F” (worst), was calculated. There are many cases where a relatively high level of accommodation can be achieved even in the absence of a sidewalk. This situation frequently occurs on low-volume, low-speed minor collector streets. Members of the public and the TPO advisory committees provided input that led to the establishment of a target pedestrian level of service of “C” for the TPO study area. All segments without an existing pedestrian facility where the target level of service is nonetheless met (nine miles, or approximately 3% of the study network) are included in this category.



Add Sidewalks For all remaining segments, which represent 84% of the mileage on the study network, the addition of sidewalks (or filling any sidewalk gaps) is recommended. Within this category of recommended sidewalks, three separate unit costs have been developed based on the roadside profile: one for minor re-grading (roadside profile of 1, with 18% of the network mileage), one for major re-grading (roadside profile of 2, with 46% of the network mileage), and one for more detailed study needed (roadside profile of 3, with 20% of the network mileage).

The network-wide pedestrian facility recommendations are shown in Figure 10 on the following page.

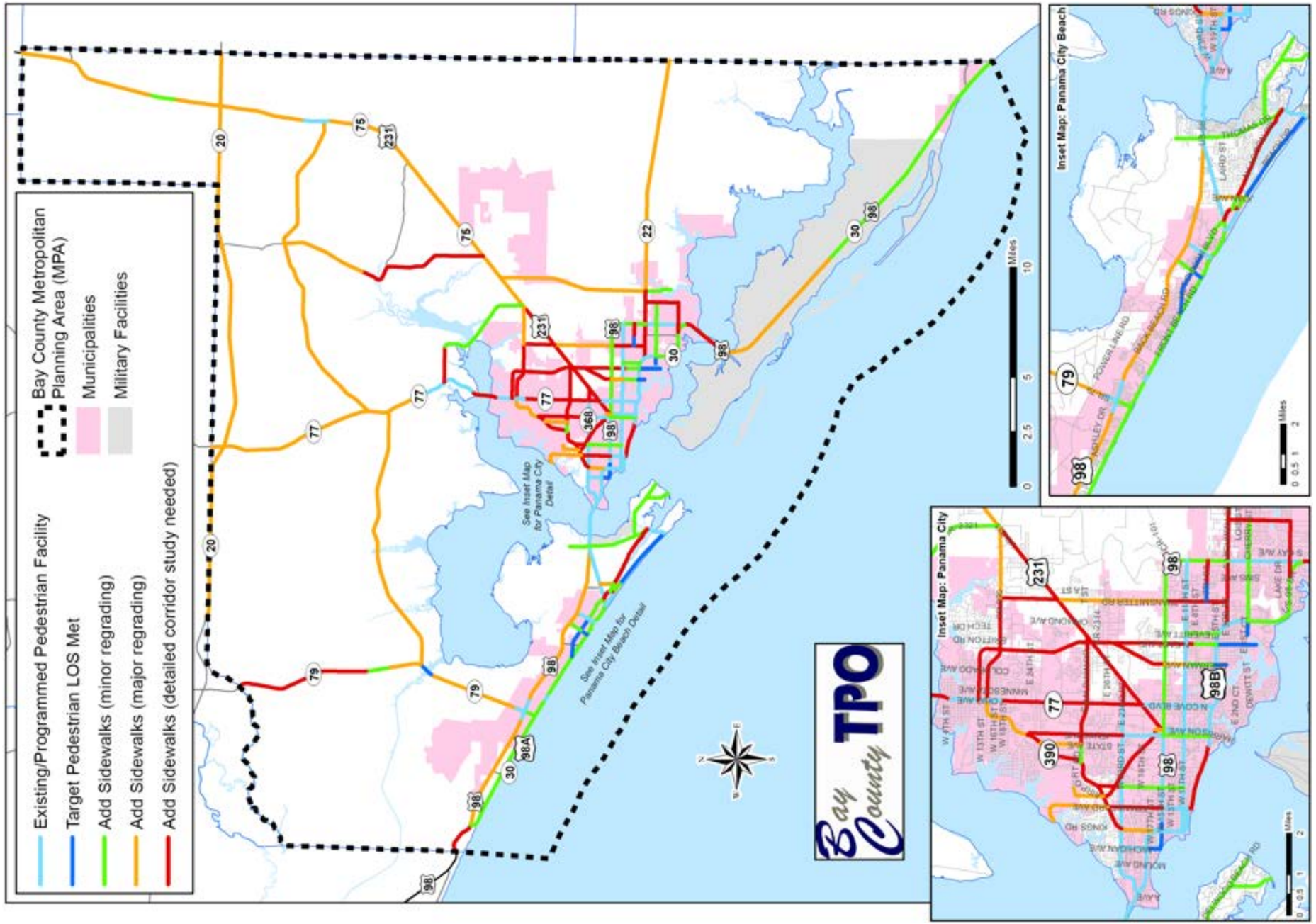


Figure 10 Pedestrian Facility Recommendations Map

Development of Unit Costs for Proposed Facility Types

The final input for the Benefit-Cost Index is the cost per mile of construction of an identified potential improvement. For each of the above improvement types, costs were estimated using FDOT District 3 historical costs.[7] Unit costs ($/mile) for each facility type identified above were estimated. These per mile costs were then multiplied by the overall length of the study segment to determine project costs. Because of the uncertainty of potential findings associated with the Detailed Corridor Study Needed project type, a relatively high estimated cost (that for a sidepath with significant grading required) was selected to represent these projects. The estimated per mile costs are provided in Tables 3 and 4, along with the associated total network cost for each project type based on the identified improvements.

Table 3 Estimated per Mile Costs for Bicycle Facility Improvements

Bicycle Facility Type	Cost per Mile	Network Cost (millions)
Restripe road to add bike lane/shoulder	$19,352	$0.1
Road diet (4-lane w/ twltl* to 2 lanes and bike lane/shoulder)	$40,143	$0.1
Add paved shoulders/bike lane (minimal re-grading)	$158,544	$2.8
Add paved shoulders/bike lane (significant re-grading)	$198,986	$7.2
Detailed corridor study needed (assumed sidepath w/ significant grading)	$472,882	$20.9
* two-way left turn lane		

Table 4 Estimated per Mile Costs for Pedestrian Facility Improvements

Pedestrian Facility Type	Cost per Mile	Network Cost (millions)
Add sidewalk (minor re-grading)	$143,411	$54.4
Add sidewalk (significant re-grading)	$174,164	$50.3
Add sidewalk (detailed corridor study needed)	$472,882	$14.9

[7] Pavement Marking Removal was based upon statewide 12-month average because of small sample size.

Prioritization Procedure

In order to prioritize the community's non-motorized transportation facility needs, an objective prioritization methodology is necessary. The methodology selected for prioritizing the candidate facilities is a Benefit-Cost Index. The Benefit-Cost Index is based upon traditional benefit-cost ratios used in infrastructure investment planning and programming. It provides an indication of the relative value of improving a transportation facility with respect to other (candidate) transportation facilities. The benefit side (numerator) of the Benefit-Cost Index includes three factors: existing conditions, potential demand, and combined public input/identification in prior plans. These are combined, weighted, and then compared against the identified construction cost (denominator). Those segments with the highest resulting Benefit-Cost Index are those that are expected to yield the greatest benefit to the region's bicyclists and pedestrians relative to the cost required to improve them. The previous section of this *Plan* describes the evaluations of the various benefits; the methodology for quantifying, normalizing, and weighting them is described below.

Existing Conditions

As noted previously, a bicycle level of service score and a pedestrian level of service score were calculated for each study network segment. To determine the degree of facility need from an existing conditions perspective, the scores were compared against the identified target level of accommodation of bicycle/pedestrian LOS "C," which equates to better than 3.5 on the numerical scale. Therefore, a segment with a bicycle LOS of 6.3 ("F") has a significantly greater need for bicycle facility improvements than a segment with a bicycle LOS of 4.8 ("D"). As with the other benefits components, the difference between the actual and target level of service has been normalized a 1-100 scale in order to make comparisons between the benefits meaningful. In this case, the segment that comes closest to already meeting the level of service target without actually doing so (and without an existing facility for the mode in question) has a value of one, the segment with the worst level of service score has a value of 100, and all other scores are scaled in between.

Potential Demand

The demand score for each segment is effectively the projected future year population, employment, and school enrollment within the segment's bicycle and pedestrian travel shed. As

with the existing conditions (level of service) scores, these values have been normalized on a 1-100 scale for prioritization purposes with the highest demand score equating to a value of 100 and the lowest equating to a value of one.

Public Input and Prior Plans



The public input/prior plans benefit component consists of three elements: public votes, priorities from the 2006 *Bicycle & Pedestrian Plan*, and identification in other plans.

Public votes for bike lanes and shared use paths were both counted as bicycle facility votes. Public votes for sidewalks and shared use paths were both counted as pedestrian facility votes. For each mode, the number of votes for each study network segment ranged from zero to four.

For the 2006 *Plan*, bike lane and shared use path priority scores were used to develop a bicycle score while sidewalk and shared use path priority scores were used to develop a pedestrian score (again, counting shared use paths as both bicycle and pedestrian facilities). These 2006 priority scores range from 60 at the low end to 400 at the high end.

The methodology for combining these two elements, along with identification in other plans, is as follows:

- Public votes, ranging from zero to four, are counted as points as they are;
- The maximum 2006 priority score (400) is set to equal a value of four points, a 2006 priority score of zero (i.e., the segment was not identified as a priority) is set to equal zero points, and all other 2006 priority scores scaled accordingly (e.g., a 2006 priority of 200 (half of the highest 2006 score) equates to two points (half of the potential maximum score of four)); and
- Identification in an adopted plan other than the 2006 *Plan* counts as two points.

Benefit-Cost Index and Prioritization Results

A Benefit-Cost Index was calculated for all segments except those identified either as having an existing facility or as meeting the target level of service; such segments were filtered out of the prioritization process to help focus improvements where they are most needed, leaving 117 prioritized pedestrian projects and 72 prioritized bicycle projects. TPO staff, with input from the TPO advisory committees and the consulting team, established a benefit weighting system of 50% for existing conditions, 25% for potential demand, and 25% for public input/prior plans. Accordingly, the Benefit-Cost Index equation is **(0.5*LOS + 0.25*Demand + 0.25*Input/Plans) / Cost per Mile**. These results were then multiplied by 1,000 to convert them to a more reasonable scale.

Segments with the highest Benefit-Cost Index are those with the highest priority relative to other segments.[8] For display purposes, all prioritized projects were grouped into five priority tiers with Tier I representing the highest priorities and Tier V representing the lowest priorities. The results are shown by mode in Figures 11 and 12 and by tier in Figures 13-17 and Tables 5-9. The detailed benefit-cost analysis can be seen in Appendices D and E for the bicycle and pedestrian modes, respectively. **The cumulative cost for all candidate construction projects is approximately $31 million for the bicycle mode and approximately $115 million for the pedestrian mode.** Appendix F shows a combined ranked listing of bicycle and pedestrian projects, which is simply a joining of the two mode-specific priority lists.

[8] This, of course, does not suggest that segments that rank lower on the priority list should not receive bicycle or pedestrian facility improvements, especially if a location-specific funding opportunity presents itself.

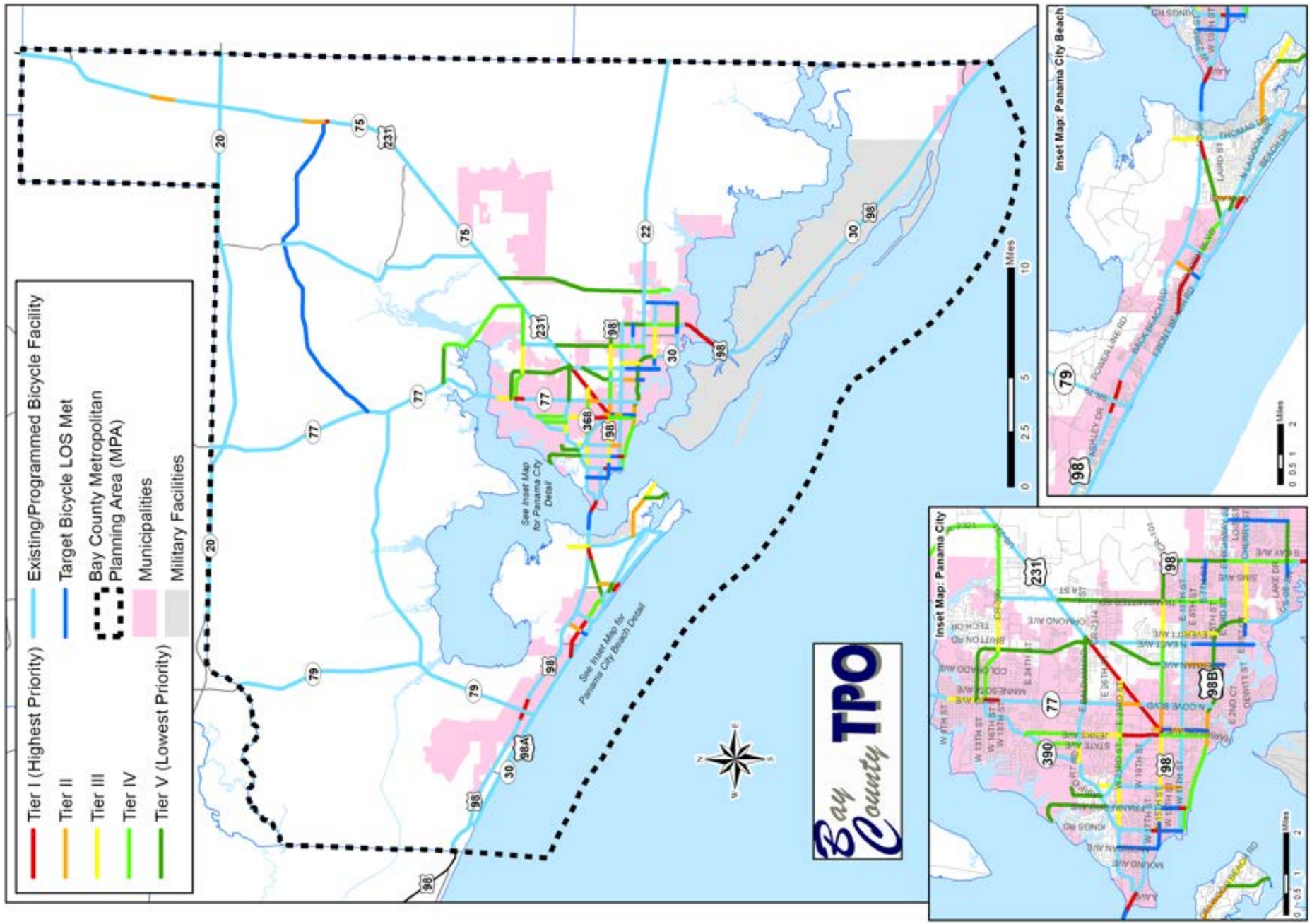


Figure 11 Bicycle Priorities Map

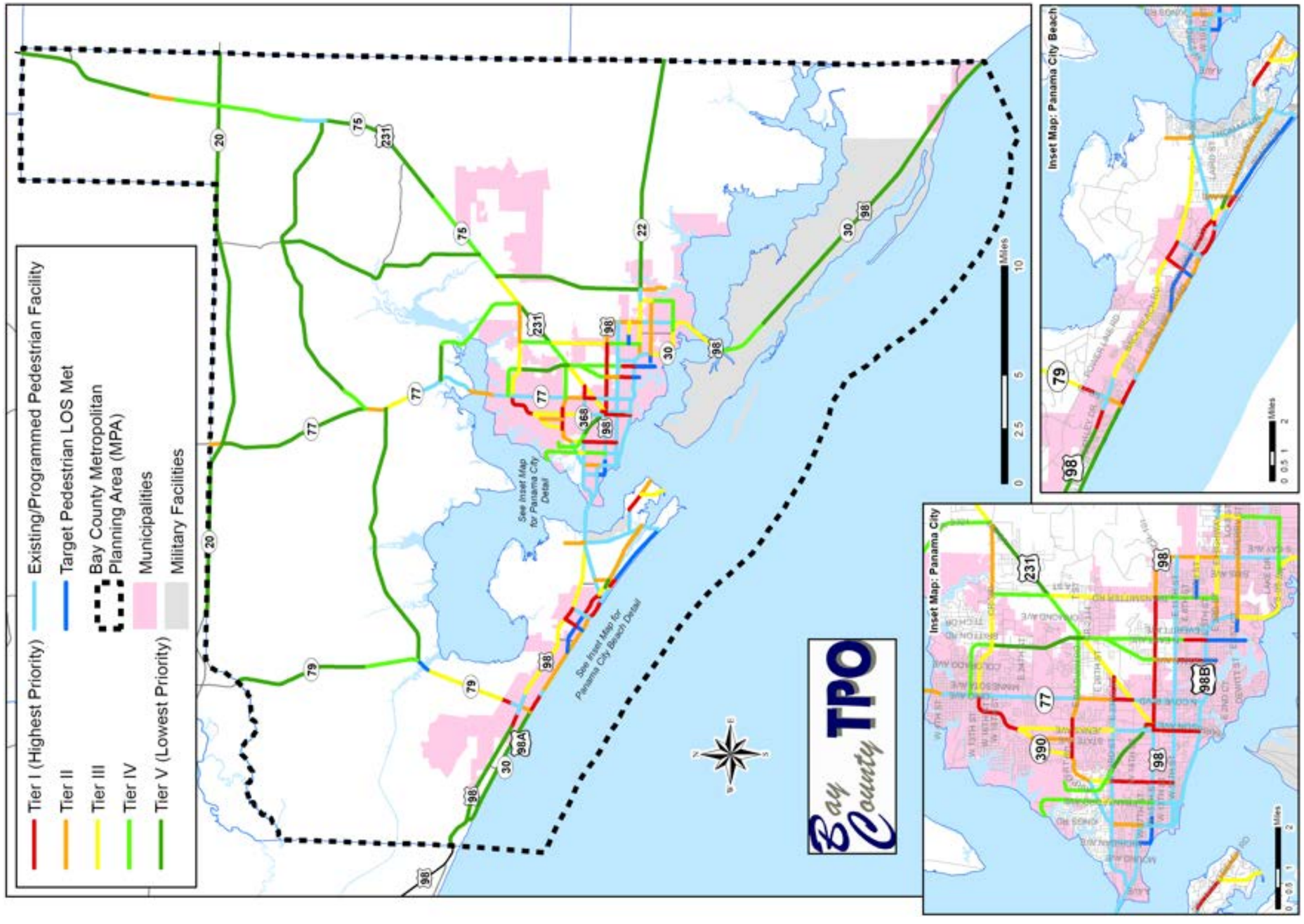


Figure 12 Pedestrian Priorities Map

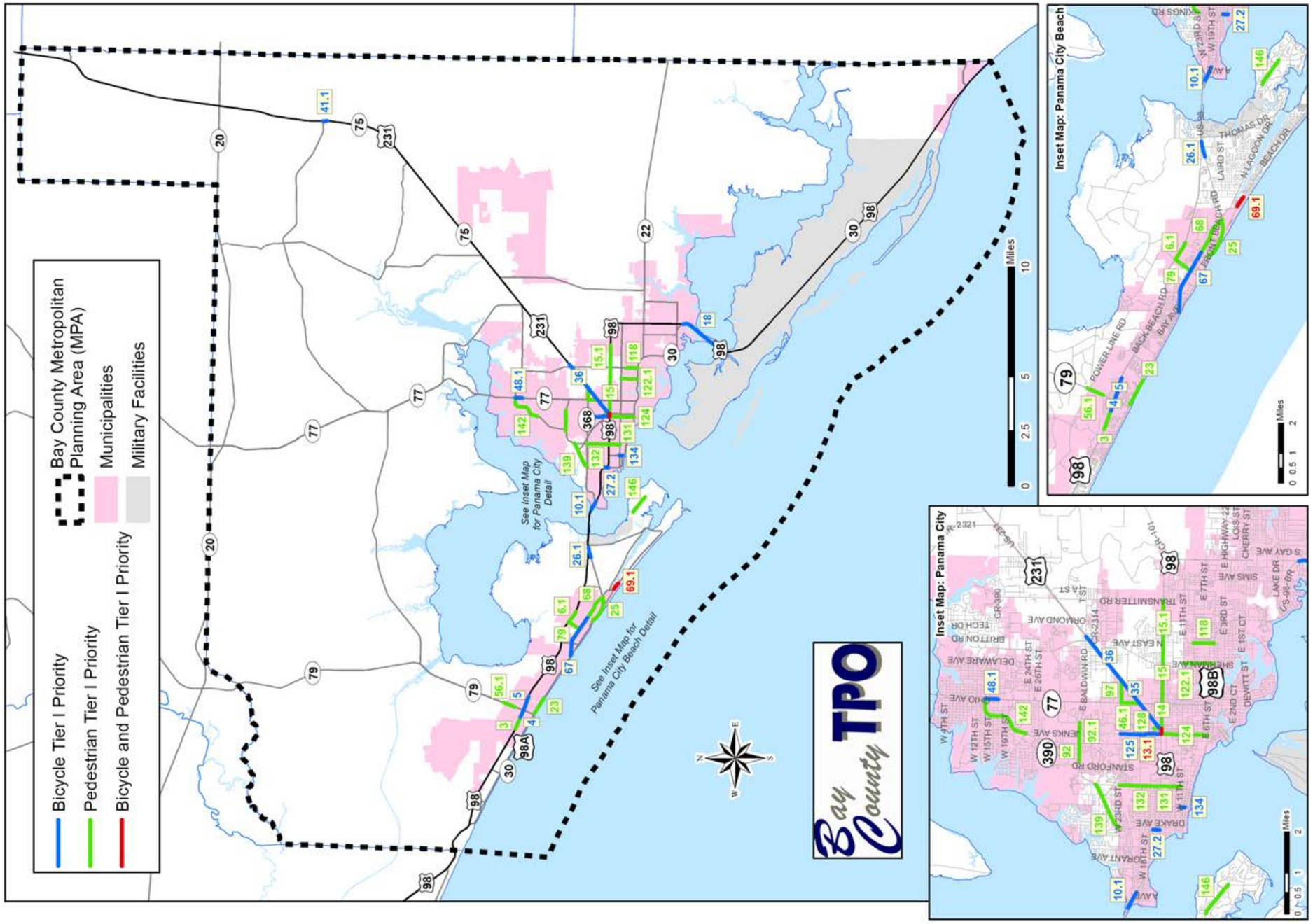


Figure 13 Tier I Priorities Map

Table 5 Tier I Priorities

Segment ID	Road Name	From	To	Mode	Existing Modal LOS	Recommended Facility Type	Total Cost	Benefit-Cost Index	Rank
3.0	SR 30A/US 98 (Panama City Beach Parkway)	Cobb Road	The beginning of the six-lane section	Pedestrian	E	Add Sidewalks (major re-grading)	$202,030	0.21	9P
4.0	SR 30A/US 98 (Panama City Beach Parkway)	The beginning of the six-lane section	SR 79	Bicycle	E	Restripe Candidate	$6,386	3.67	1B
5.0	SR 30A/US 98 (Panama City Beach Parkway)	SR 79	Mandy Lane	Bicycle	E	Restripe Candidate	$12,966	1.86	2B
6.1	SR 30A/US 98 (Panama City Beach Parkway)	CR 30H (Alf Coleman Rd)	Beckrich Road/ CR 3033	Pedestrian	F	Add Sidewalks (major re-grading)	$99,273	0.43	3P
10.1	SR 30A/US 98 (Panama City Beach Parkway)	Hathaway Bridge (east approach)	23rd Street	Bicycle	F	Detailed Corridor Study Needed	$198,610	0.29	12B
13.1	SR 30A/US 98 (15th Street)	Jenks Avenue/ North Shore Road	US231/ SR 75/ Harrison Avenue	Bicycle	E	Detailed Corridor Study Needed	$61,475	0.70	8B
13.1	SR 30A/US 98 (15th Street)	Jenks Avenue/ North Shore Road	US231/ SR 75/ Harrison Avenue	Pedestrian	F	Add Sidewalks (minor re-grading)	$18,643	3.19	1P
14.0	SR 30A/US 98 (15th Street)	US231/ SR 75/ Harrison Avenue	SR 77/ MLK Boulevard	Pedestrian	E	Add Sidewalks (minor re-grading)	$172,093	0.29	6P
15.0	SR 30A/US 98 (15th Street)	SR 77/ MLK Boulevard	East Avenue	Pedestrian	E	Add Sidewalks (minor re-grading)	$216,551	0.24	8P
15.1	SR 30A/US 98 (15th Street)	East Avenue	CR 2327/ Transmitter Road	Pedestrian	E	Add Sidewalks (minor re-grading)	$206,799	0.20	13P
18.0	SR 30A (US 98)	Business 98	Tyndall Bridge (south end)	Bicycle	E	Restripe Candidate	$40,833	0.90	7B
23.0	SR 30 A/US 98 (Front Beach Road)	SR 79	West Park Dr	Pedestrian	E	Add Sidewalks (minor re-grading)	$235,194	0.14	22P
25.0	SR 30 A/US 98 (Front Beach Road)	Beckrich Road/ CR 30D	SR 392/Hutchinson Blvd E/Mid Beach Rd/N Thomas Dr	Pedestrian	E	Add Sidewalks (minor re-grading)	$358,528	0.14	23P
26.1	SR 30A/US 98 (Panama City Beach Parkway)	Ramp from EB Back Beach Road	Thomas Drive/ CR 3031	Bicycle	D	Restripe Candidate	$8,902	1.42	3B
27.2	SR 30 (Business 98) Beck Ave	15th St	US 98	Bicycle	D	Detailed Corridor Study Needed	$75,661	0.26	13B
35.0	SR 75 (US 231)	US 98/ SR 30A/ 15th Street	CR 368/ 23rd Street	Bicycle	D	Restripe Candidate	$29,802	1.22	4B
36.0	SR 75 (US 231)	CR 368/ 23rd Street	SR 2312/ Baldwin Road	Bicycle	D	Restripe Candidate	$26,706	1.14	5B
41.1	SR 75 (US 231)	Jadewood Circle	CR 388	Bicycle	F	Detailed Corridor Study Needed	$80,390	0.65	9B
46.1	SR 77	US 231	SR 368/ 23rd Street	Pedestrian	E	Detailed Corridor Study Needed	$435,051	0.12	25P
48.1	SR 77	17th St	SR 390/ W. 14th Street	Bicycle	E	Detailed Corridor Study Needed	$151,322	0.23	15B
56.1	SR 79	PCB City Limits	Bay Urbanized Boundary (north of Power Line Road)	Pedestrian	E	Add Sidewalks (major re-grading)	$195,064	0.15	20P
67.0	SR 392 (Hutchison Boulevard)	SR 30/ US 98A/ Front Beach Road	Richard Jackson Blvd	Bicycle	D	Road Diet Candidate	$77,476	0.32	11B
68.0	SR 392 (Hutchison Boulevard)	Richard Jackson Blvd	SR 30/ US 98A/ Front Beach Road	Pedestrian	E	Add Sidewalks (minor re-grading)	$170,659	0.26	7P
69.1	CR 392 (North Thomas Dr)	S Thomas Dr	Joan Ave	Pedestrian	E	Add Sidewalks (minor re-grading)	$94,651	0.40	5P
69.1	CR 392 (North Thomas Dr)	S Thomas Dr	Joan Ave	Bicycle	E	Add Paved Shoulders (minor re-grading)	$52,320	0.51	10B
79.0	CR 30H (Alf Coleman Rd)	Hutchison Blvd	US 98 (Panama City Beach Pkwy)	Pedestrian	D	Add Sidewalks (minor re-grading)	$129,070	0.20	12P
92.0	CR 2312 (Baldwin Rd)	St. Andrews Blvd	State Ave	Pedestrian	D	Add Sidewalks (minor re-grading)	$75,291	0.48	2P
92.1	CR 2312 (Baldwin Rd)	State Ave	Harrison Avenue	Pedestrian	D	Detailed Corridor Study Needed	$236,441	0.13	24P
97.0	SR 368 (23rd Street)	SR 77/ MLK Boulevard	US 231/ SR 75	Pedestrian	E	Detailed Corridor Study Needed	$208,068	0.14	21P
118.0	SR 389 (East Avenue)	SR 30/ Business 98/ 5th Street	9th Street	Pedestrian	D	Add Sidewalks (minor re-grading)	$146,279	0.16	17P
122.1	CR 22/ 2337 (Sherman Ave)	5th	11th St	Pedestrian	D	Add Sidewalks (minor re-grading)	$106,124	0.21	11P
124.0	CR 2341 (Jenks Avenue)	6th St	US 98	Pedestrian	D	Add Sidewalks (minor re-grading)	$192,744	0.15	19P
125.0	CR 2341 (Jenks Avenue)	US 98	23rd St	Bicycle	E	Road Diet Candidate	$40,143	0.95	6B
128.0	SR 391 (Harrison Ave)	SR 75/ US 231	Airport Rd	Pedestrian	D	Add Sidewalks (major re-grading)	$52,249	0.42	4P
131.0	CR 327 (Lisenby Avenue)	11th St.	US 98	Pedestrian	D	Add Sidewalks (minor re-grading)	$143,411	0.17	16P
132.0	CR 327 (Lisenby Avenue)	US98	23rd St.	Pedestrian	D	Add Sidewalks (minor re-grading)	$179,264	0.21	10P
134.0	CR 385 (Frankford Avenue)	Bus 98	11th St	Bicycle	D	Detailed Corridor Study Needed	$52,017	0.25	14B
139.0	SR 390 (Beck Avenue/ St. Andrews Boulevard)	SR 368/ 23rd Street	SR 327/ Lisenby Avenue	Pedestrian	F	Detailed Corridor Study Needed	$424,960	0.16	18P
142.0	SR 390 (Beck Avenue/ St. Andrews Boulevard)	Maine Ave	SR 77/ Ohio Avenue	Pedestrian	E	Add Sidewalks (major re-grading)	$359,736	0.17	15P
146.0	Delwood Beach Rd	Magnolia Beach Rd	Jan Cooley Dr	Pedestrian	E	Add Sidewalks (minor re-grading)	$127,636	0.19	14P
Total Cost							$5,700,818		

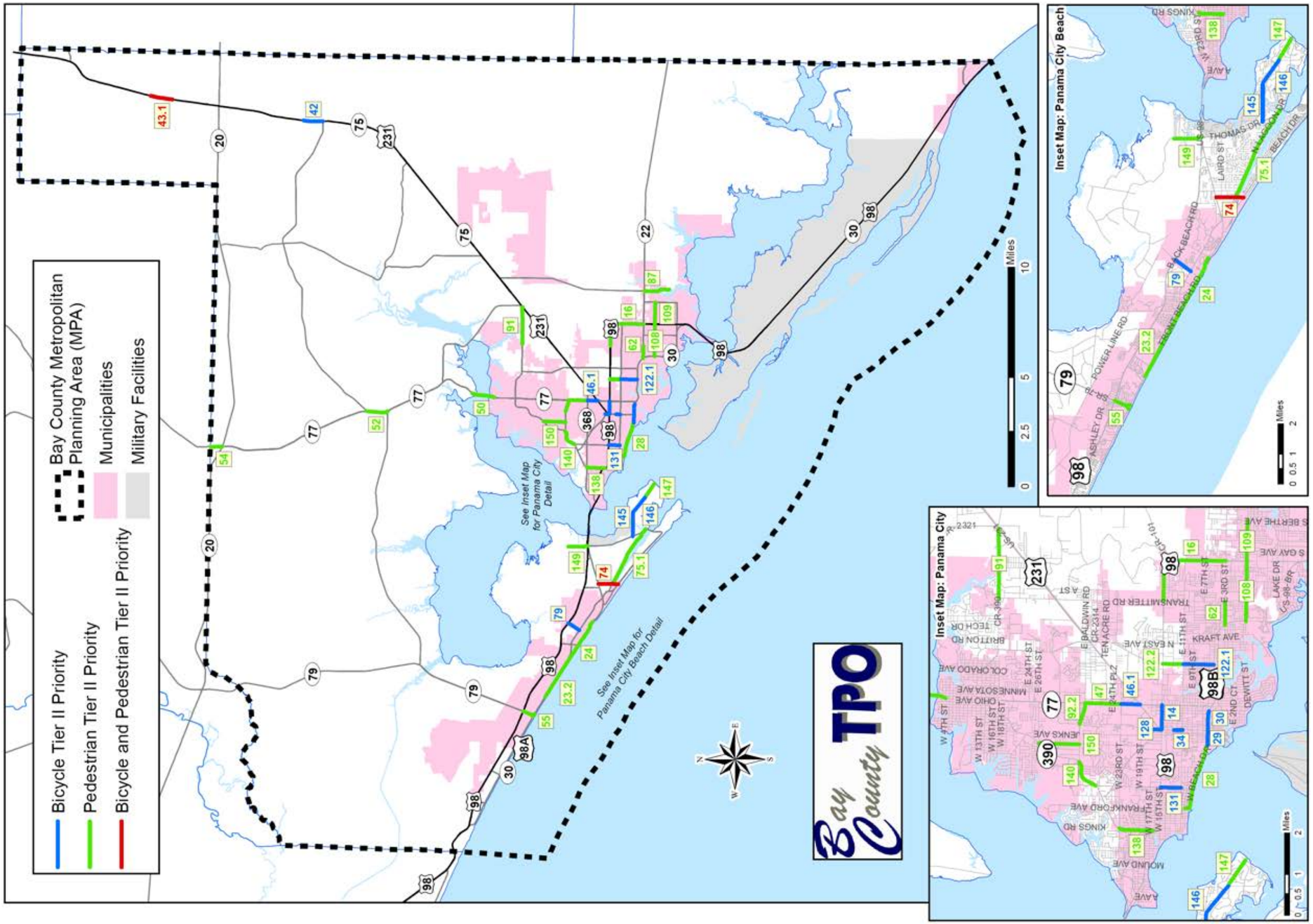


Figure 14 Tier II Priorities Map

Table 6 Tier II Priorities

Segment ID	Road Name	From	To	Mode	Existing Modal LOS	Recommended Facility Type	Total Cost	Benefit-Cost Index	Rank
14.0	SR 30A/US 98 (15th Street)	US231/ SR 75/ Harrison Avenue	SR 77/ MLK Boulevard	Bicycle	E	Detailed Corridor Study Needed	$283,729	0.15	23B
16.0	SR 30A/US 98 (15th Street)	CR 2327/ Transmitter Road	SR 22/ Wewa Highway	Pedestrian	F	Add Sidewalks (minor re-grading)	$671,163	0.09	34P
23.2	SR 30 A/US 98 (Front Beach Road)	750 Ft east of Pier Park Dr	SR 329/ Hutchinson Blvd West/ Middle Beach Road	Pedestrian	D	Add Sidewalks (minor re-grading)	$464,652	0.07	41P
24.0	SR 30 A/US 98 (Front Beach Road)	SR 329/ Hutchinson Blvd West/ Middle Beach Road	Beckrich Road/ CR 30D	Pedestrian	E	Add Sidewalks (minor re-grading)	$542,094	0.09	37P
28.0	SR 30 (Business 98)	CR 385/ Frankfod Avenue	6th Street	Pedestrian	E	Detailed Corridor Study Needed	$595,641	0.07	43P
29.0	SR 30 (Business 98)	Beach Dr	US 231/ SR 75/ Harrison Avenue	Bicycle	D	Detailed Corridor Study Needed	$170,238	0.18	22B
30.0	SR 30 (Business 98)	US 231/ SR 75/ Harrison Avenue	Hamilton Avenue	Bicycle	D	Detailed Corridor Study Needed	$226,983	0.14	25B
34.0	SR 75 (US 231)	CR 28/ 11th Street	Midblock between 12th/13th	Bicycle	D	Detailed Corridor Study Needed	$89,848	0.18	21B
42.0	SR 75 (US 231)	CR 388	Pamela Ln	Bicycle	F	Detailed Corridor Study Needed	$420,865	0.12	27B
43.1	SR 75 (US 231)	Camelia St	Jackson Road	Bicycle	D	Restripe Candidate	$19,739	0.23	16B
43.1	SR 75 (US 231)	Camelia St	Jackson Road	Pedestrian	D	Add Sidewalks (minor re-grading)	$146,279	0.11	27P
46.1	SR 77	US 231	SR 368/ 23rd Street	Bicycle	E	Detailed Corridor Study Needed	$217,526	0.19	20B
47.0	SR 77	SR 368/ 23rd Street	CR 2312/ Baldwin Road	Pedestrian	D	Detailed Corridor Study Needed	$832,272	0.06	47P
50.0	SR 77	4th Street	Thorton Rd	Pedestrian	D	Detailed Corridor Study Needed	$477,611	0.07	46P
52.0	SR 77	CR 388 W	CR 388 E	Pedestrian	E	Add Sidewalks (major re-grading)	$334,395	0.08	39P
54.0	SR 77	SR 20	Washington County Line	Pedestrian	E	Add Sidewalks (major re-grading)	$181,131	0.12	26P
55.0	SR 79	SR 30/ US 98A/ Front Beach Road	SR 30A/ US 98/ Panama City Beach Parkway	Pedestrian	D	Add Sidewalks (minor re-grading)	$183,566	0.10	30P
62.0	SR 22 (Wewa Highway)	SR 30/ Business 98	CR 2327/ Transmitter Road	Pedestrian	E	Detailed Corridor Study Needed	$529,628	0.07	45P
74.0	CR 30B (Joan Avenue)	Thomas Drive	Front Beach Road	Bicycle	D	Add Paved Shoulders (major re-grading)	$179,067	0.13	26B
74.0	CR 30B (Joan Avenue)	Thomas Drive	Front Beach Road	Pedestrian	E	Add Sidewalks (major re-grading)	$313,495	0.11	28P
75.1	CR 3030 (North Lagoon Dr)	Joan Ave	Thomas Dr (CR 3031)	Pedestrian	D	Detailed Corridor Study Needed	$170,238	0.10	31P
79.0	CR 30H (Alf Coleman Rd)	Hutchison Blvd	US 98 (Panama City Beach Pkwy)	Bicycle	D	Add Paved Shoulders (minor re-grading)	$95,126	0.22	18B
87.0	CR 2315 (Star Ave)	Cole Ridge Road	Wewa Highway	Pedestrian	D	Add Sidewalks (minor re-grading)	$332,714	0.06	49P
91.0	CR 390	CR 2327	US 231	Pedestrian	E	Add Sidewalks (major re-grading)	$588,674	0.07	42P
92.2	CR 2312 (Baldwin Rd)	Harrison Avenue	SR 77	Pedestrian	E	Detailed Corridor Study Needed	$501,255	0.09	35P
108.0	CR 3026 (Cherry St)	Business 98	US 98	Pedestrian	D	Add Sidewalks (minor re-grading)	$421,628	0.07	44P
109.0	CR 3026 (Cherry St)	US 98	Berthe Ave (CR 2323)	Pedestrian	D	Add Sidewalks (minor re-grading)	$289,690	0.08	38P
122.1	CR 22/ 2337 (Sherman Ave)	5th	11th St	Bicycle	D	Add Paved Shoulders (minor re-grading)	$117,323	0.12	28B
122.2	CR 22/ 2337 (Sherman Ave)	11th	15th	Pedestrian	D	Add Sidewalks (major re-grading)	$130,623	0.10	32P
128.0	SR 391 (Harrison Ave)	SR 75/ US 231	Airport Rd	Bicycle	D	Add Paved Shoulders (major re-grading)	$70,932	0.20	19B
131.0	CR 327 (Lisenby Avenue)	11th St.	US 98	Bicycle	D	Add Paved Shoulders - Minor	$79,272	0.22	17B
138.0	SR 390 (Beck Avenue/ St. Andrews Boulevard)	SR 30/ US 98	SR 368/ 23rd Street	Pedestrian	D	Add Sidewalks (major re-grading)	$285,629	0.10	33P
140.0	SR 390 (Beck Avenue/ St. Andrews Boulevard)	SR 327/ Lisenby Avenue	CR 2312/ Baldwin Road	Pedestrian	F	Detailed Corridor Study Needed	$737,696	0.09	36P
145.0	Magnolia Beach Rd	Thomas Dr	Delwood Beach Rd	Bicycle	D	Add Paved Shoulders (minor re-grading)	$168,057	0.15	24B
146.0	Delwood Beach Rd	Magnolia Beach Rd	Jan Cooley Dr	Bicycle	D	Add Paved Shoulders (minor re-grading)	$141,104	0.11	29B
147.0	Delwood Beach Rd	Jan Cooley Dr	Delwood Dr	Pedestrian	E	Add Sidewalks (minor re-grading)	$220,853	0.11	29P
149.0	Wildwood Rd	US 98	Big Daddy Dr	Pedestrian	D	Detailed Corridor Study Needed	$232,326	0.06	48P
150.0	State Ave	Baldwin Rd	SR 390	Pedestrian	D	Add Sidewalks (major re-grading)	$344,845	0.07	40P
Total Cost							$11,807,926		

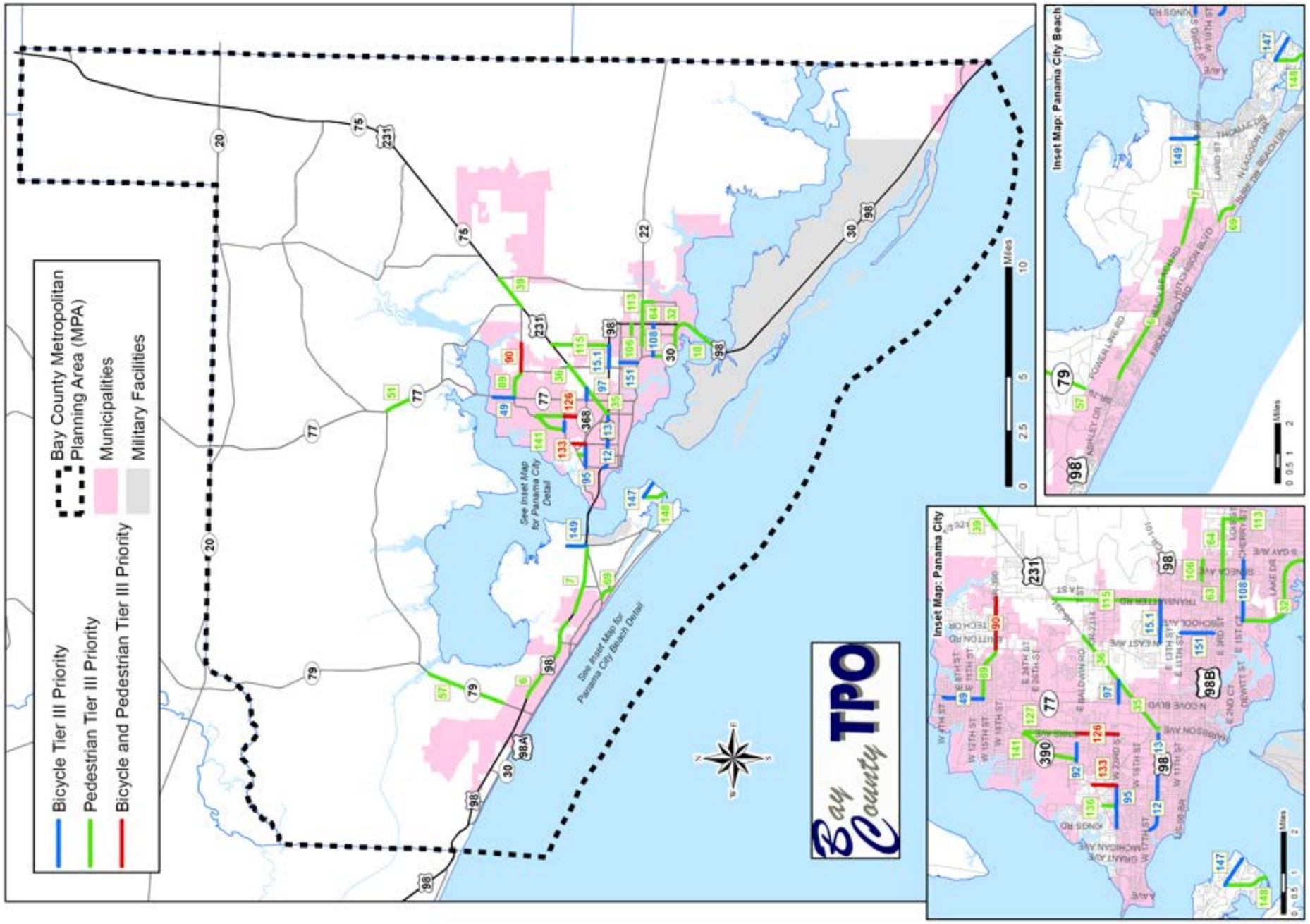


Figure 15 Tier III Priorities Map

Table 7 Tier III Priorities

Segment ID	Road Name	From	To	Mode	Existing Modal LOS	Recommended Facility Type	Total Cost	Benefit-Cost Index	Rank
6.0	SR 30A/US 98 (Panama City Beach Parkway)	Mandy Lane	CR 30H (Alf Coleman Rd)	Pedestrian	F	Add Sidewalks (major re-grading)	$1,382,862	0.05	61P
7.0	SR 30A/US 98 (Panama City Beach Parkway)	Beckrich Road/ CR 3033	SR 30/ US 98A/ Front Beach Road	Pedestrian	F	Add Sidewalks (major re-grading)	$1,048,467	0.05	57P
12.0	SR 30A/US 98 (15th Street)	SR 390/ Beck Avenue	CR 327/ Lisenby Avenue	Bicycle	E	Detailed Corridor Study Needed	$534,357	0.08	39B
13.0	SR 30A/US 98 (15th Street)	CR 327/ Lisenby Avenue	Jenks Avenue/ North Shore Road	Bicycle	E	Detailed Corridor Study Needed	$605,289	0.07	40B
15.1	SR 30A/US 98 (15th Street)	East Avenue	CR 2327/ Transmitter Road	Bicycle	E	Detailed Corridor Study Needed	$487,068	0.07	42B
18.0	SR 30A (US 98)	Business 98	Tyndall Bridge (south end)	Pedestrian	E	Detailed Corridor Study Needed	$1,097,559	0.04	69P
64.0	SR 22 (Wewa Highway)	SR 30A/US 98/ Tyndall Parkway	Berthe Ave	Pedestrian	F	Detailed Corridor Study Needed	$955,222	0.05	55P
32.0	SR 30 (Business 98)	CR 3026/ Cherry Street	US 98/ SR 30A/ Tyndall Parkway	Pedestrian	D	Add Sidewalks (minor re-grading)	$699,846	0.04	66P
35.0	SR 75 (US 231)	US 98/ SR 30A/ 15th Street	CR 368/ 23rd Street	Pedestrian	D	Detailed Corridor Study Needed	$728,238	0.04	67P
36.0	SR 75 (US 231)	CR 368/ 23rd Street	SR 2312/ Baldwin Road	Pedestrian	D	Detailed Corridor Study Needed	$652,577	0.04	69P
39.0	SR 75 (US 231)	CR 390	CR 2293/ Star Avenue	Pedestrian	E	Add Sidewalks (major re-grading)	$585,191	0.06	51P
49.0	SR 77	SR 390/ W. 14th Street	4th Street	Bicycle	E	Detailed Corridor Study Needed	$458,696	0.08	36B
51.0	SR 77	CR 2300	CR 388 W	Pedestrian	E	Add Sidewalks (major re-grading)	$529,459	0.06	50P
57.0	SR 79	Bay Urbanized Boundary (north of Power Line Road)	South End of Bridge	Pedestrian	E	Add Sidewalks (major re-grading)	$630,474	0.05	62P
63.0	SR 22 (Wewa Highway)	CR 2327/ Transmitter Road	SR 30A/ US 98/ Tyndall Parkway	Pedestrian	E	Detailed Corridor Study Needed	$945,764	0.04	72P
69.0	CR 392 (North Thomas Dr)	Front Beach Rd	S Thomas Dr	Pedestrian	E	Detailed Corridor Study Needed	$652,577	0.05	58P
89.0	CR 390	SR 77	CR 389	Pedestrian	E	Detailed Corridor Study Needed	$1,108,908	0.05	63P
90.0	CR 390	CR 389	CR 2327	Bicycle	E	Detailed Corridor Study Needed	$595,831	0.07	43B
90.0	CR 390	CR 389	CR 2327	Pedestrian	F	Detailed Corridor Study Needed	$1,191,663	0.04	64P
92.0	CR 2312 (Baldwin Rd)	St. Andrews Blvd	State Ave	Bicycle	D	Detailed Corridor Study Needed	$198,610	0.11	30B
95.0	SR 368 (23rd Street)	SR 390/ Beck Avenue/ St. Andrews Boulevard	CR 327/ Lisenby Avenue	Bicycle	E	Detailed Corridor Study Needed	$487,068	0.07	41B
97.0	SR 368 (23rd Street)	SR 77/ MLK Boulevard	US 231/ SR 75	Bicycle	D	Detailed Corridor Study Needed	$260,085	0.10	31B
106.0	CR 2322 (7th St)	Bob Little Rd	US 98 (Tyndall Pkwy)	Pedestrian	D	Detailed Corridor Study Needed	$472,882	0.04	65P
108.0	CR 3026 (Cherry St)	Business 98	US 98	Bicycle	D	Add Paved Shoulders (minor re-grading)	$233,060	0.08	37B
113.0	CR 2323 (Berthe Ave/ Boat Race Rd)	Cherry Street	SR 22 (Wewa Hwy)	Pedestrian	D	Detailed Corridor Study Needed	$245,899	0.05	56P
115.0	CR 2327 (Transmitter Rd)	US 98	US 231	Pedestrian	E	Add Sidewalks (major re-grading)	$916,103	0.06	52P
126.0	CR 2341 (Jenks Avenue)	23rd St	Baldwin Road	Bicycle	E	Detailed Corridor Study Needed	$472,882	0.09	34B
126.0	CR 2341 (Jenks Avenue)	23rd St	Baldwin Road	Pedestrian	E	Detailed Corridor Study Needed	$945,764	0.05	54P
127.0	CR 2341 (Jenks Avenue)	Baldwin Road	SR 390	Pedestrian	E	Detailed Corridor Study Needed	$1,248,408	0.04	71P
133.0	SR 327 (Lisenby Avenue)	SR 368/ 23rd Street	SR 390/ St. Andrews Boulevard	Bicycle	D	Detailed Corridor Study Needed	$279,000	0.08	38B
133.0	SR 327 (Lisenby Avenue)	SR 368/ 23rd Street	SR 390/ St. Andrews Boulevard	Pedestrian	D	Detailed Corridor Study Needed	$558,001	0.05	53P
136.0	CR 385 (Frankford Avenue)	23rd St.	St. Andrews Blvd	Pedestrian	D	Detailed Corridor Study Needed	$302,644	0.05	59P
141.0	SR 390 (Beck Avenue/ St. Andrews Boulevard)	CR 2312/ Baldwin Road	Jenks Avenue/ North Shore Road	Pedestrian	F	Detailed Corridor Study Needed	$1,428,104	0.05	60P
147.0	Delwood Beach Rd	Jan Cooley Dr	Delwood Dr	Bicycle	D	Add Paved Shoulders (minor re-grading)	$122,079	0.10	32B
148.0	Jan Cooley Dr	Delwood Beach Dr	End	Pedestrian	D	Add Sidewalks (minor re-grading)	$304,031	0.04	68P
149.0	Wildwood Rd	US 98	Big Daddy Dr	Bicycle	D	Add Paved Shoulders (minor re-grading)	$142,690	0.09	35B
151.0	Everitt Ave	US 98	11th St	Bicycle	D	Add Paved Shoulders (minor re-grading)	$126,835	0.10	33B
Total Cost							$23,634,194		

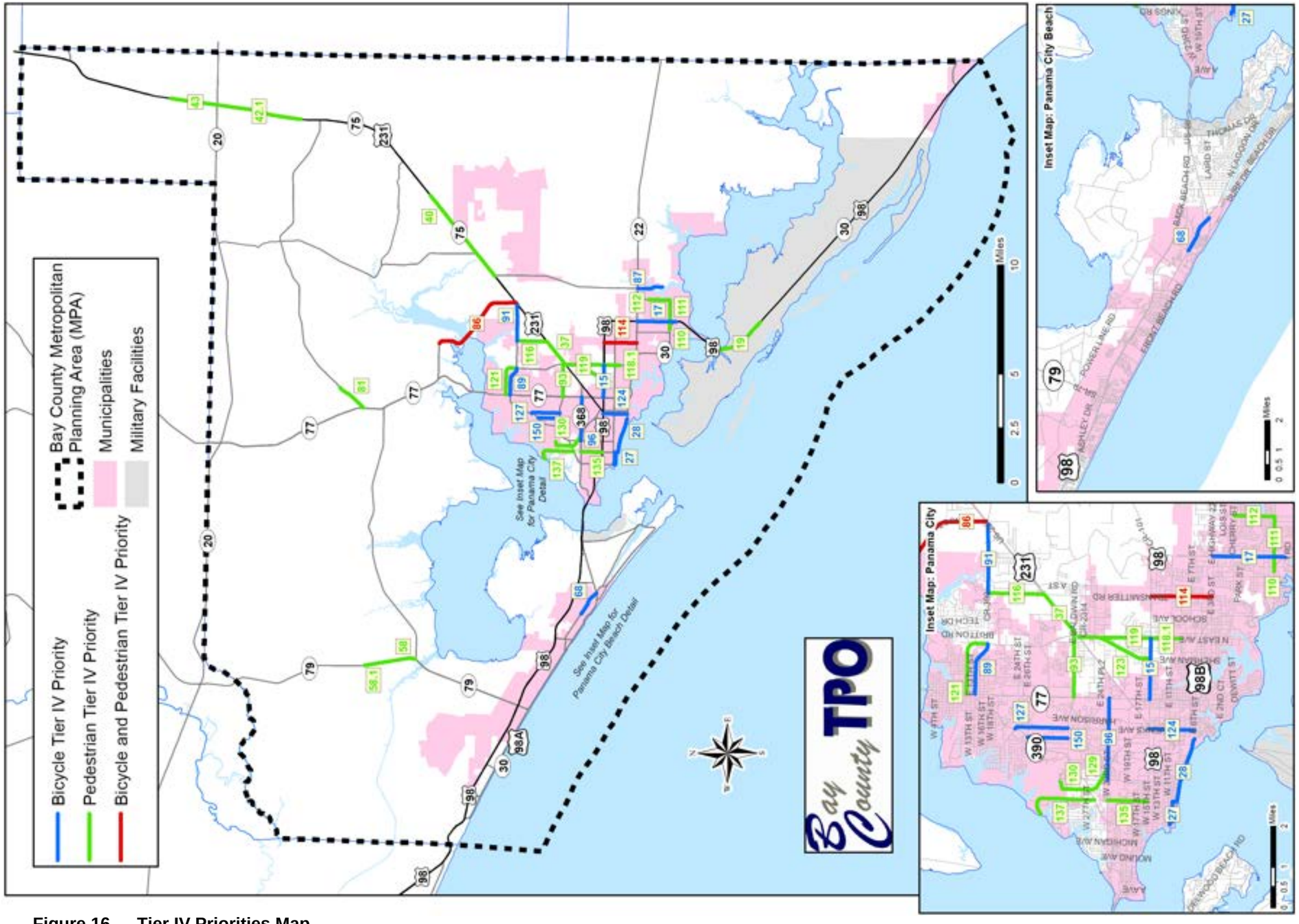


Figure 16 Tier IV Priorities Map

Table 8 Tier IV Priorities

Segment ID	Road Name	From	To	Mode	Existing Modal LOS	Recommended Facility Type	Total Cost	Benefit-Cost Index	Rank
15.0	SR 30A/US 98 (15th Street)	SR 77/ MLK Boulevard	East Avenue	Bicycle	E	Detailed Corridor Study Needed	$714,052	0.06	48B
17.0	SR 30A/US 98 (Tyndall Parkway)	SR 22/ Wewa Highway	Business 98	Bicycle	E	Detailed Corridor Study Needed	$846,459	0.05	50B
19.0	SR 30A (US 98)	Tyndall Bridge (south end)	Tyndall Drive	Pedestrian	E	Add Sidewalks (major re-grading)	$947,452	0.03	82P
27.0	SR 30 (Business 98) 9th/Chestnut/10th	CR 385/ Frankford Avenue	Beck Ave	Bicycle	D	Detailed Corridor Study Needed	$288,458	0.05	52B
28.0	SR 30 (Business 98)	CR 385/ Frankford Avenue	6th Street	Bicycle	D	Detailed Corridor Study Needed	$808,628	0.04	56B
37.0	SR 75 (US 231)	SR 2312/ Baldwin Road	CR 2327/ Transmitter Road	Pedestrian	E	Detailed Corridor Study Needed	$1,116,002	0.04	74P
40.0	SR 75 (US 231)	CR 2293/ Star Avenue	Jonny Lane	Pedestrian	F	Add Sidewalks (major re-grading)	$1,654,558	0.03	85P
42.1	SR 75 (US 231)	Pamela Ln	SR 20	Pedestrian	E	Add Sidewalks (major re-grading)	$1,361,962	0.02	91P
43.0	SR 75 (US 231)	SR 20	Camelia St	Pedestrian	E	Add Sidewalks (major re-grading)	$745,422	0.04	75P
58.0	SR 79	CR 388	Marilyn Rd	Pedestrian	D	Add Sidewalks (major re-grading)	$532,942	0.03	79P
58.1	SR 79	Marilyn Rd	Steelfield Rd	Pedestrian	D	Add Sidewalks (minor re-grading)	$238,062	0.04	73P
68.0	SR 392 (Hutchison Boulevard)	Richard Jackson Blvd	SR 30/ US 98A/ Front Beach Road	Bicycle	E	Detailed Corridor Study Needed	$562,730	0.06	46B
81.0	CR 388	SR 77	Bay Urban Boundary	Pedestrian	D	Add Sidewalks (major re-grading)	$498,109	0.02	94P
86.0	CR 2321	CR 2302	US 231	Bicycle	D	Add Paved Shoulders (minor re-grading)	$711,863	0.04	57B
86.0	CR 2321	CR 2302	US 231	Pedestrian	E	Add Sidewalks (minor re-grading)	$1,287,831	0.02	92P
87.0	CR 2315 (Star Ave)	Cole Ridge Road	Wewa Highway	Bicycle	D	Add Paved Shoulders (minor re-grading)	$183,911	0.07	45B
89.0	CR 390	SR 77	CR 389	Bicycle	E	Detailed Corridor Study Needed	$633,662	0.07	44B
91.0	CR 390	CR 2327	US 231	Bicycle	D	Add Paved Shoulders (major re-grading)	$799,171	0.04	55B
93.0	CR 2312 (Baldwin Rd)	SR 77	US 231	Pedestrian	D	Detailed Corridor Study Needed	$1,180,077	0.03	81P
96.0	SR 368 (23rd Street)	Lisenby Avenue	SR 77/ MLK Boulevard	Bicycle	E	Detailed Corridor Study Needed	$950,493	0.04	53B
110.0	CR 2323 (Berthe Ave/ Boat Race Rd)	Business 98	US 98	Pedestrian	D	Detailed Corridor Study Needed	$331,017	0.03	86P
111.0	CR 2323 (Berthe Ave/ Boat Race Rd)	US 98	Berthe Ave	Pedestrian	D	Detailed Corridor Study Needed	$936,306	0.02	90P
112.0	CR 2323 (Berthe Ave/ Boat Race Rd)	Boat Race Rd	Cherry Street	Pedestrian	D	Detailed Corridor Study Needed	$468,153	0.03	84P
114.0	CR 2327 (Transmitter Rd)	Wewa Hwy	US 98	Bicycle	D	Detailed Corridor Study Needed	$714,052	0.04	54B
114.0	CR 2327 (Transmitter Rd)	Wewa Hwy	US 98	Pedestrian	E	Detailed Corridor Study Needed	$1,428,104	0.03	88P
116.0	CR 2327 (Transmitter Rd)	US 231	CR 390	Pedestrian	D	Detailed Corridor Study Needed	$1,216,016	0.02	89P
118.1	SR 389 (East Avenue)	9th Street	SR 30A/ US 98/ 15th Street	Pedestrian	D	Detailed Corridor Study Needed	$699,865	0.04	76P
119.0	SR 389 (East Avenue)	SR 30A/ US 98/ 15th Street	US 231/ SR 75	Pedestrian	E	Detailed Corridor Study Needed	$1,683,460	0.03	87P
121.0	CR 389 (12th St)	CR 390	SR 77	Pedestrian	D	Detailed Corridor Study Needed	$1,569,968	0.02	93P
123.0	CR 22/ 2337 (Sherman Ave)	15th St	East Ave	Pedestrian	D	Detailed Corridor Study Needed	$1,295,697	0.02	95P
124.0	CR 2341 (Jenks Avenue)	6th St	US 98	Bicycle	D	Detailed Corridor Study Needed	$529,628	0.06	49B
127.0	CR 2341 (Jenks Avenue)	Baldwin Road	SR 390	Bicycle	E	Detailed Corridor Study Needed	$624,204	0.06	47B
129.0	SR 391 (Airport Road)	23rd Street	SR 390/ St. Andrews Boulevard	Pedestrian	D	Detailed Corridor Study Needed	$671,492	0.03	80P
130.0	CR 391 (Airport Rd)	St. Andrews Blvd	Panama City/ Bay County Airport	Pedestrian	D	Add Sidewalks (major re-grading)	$296,079	0.03	77P
135.0	CR 385 (Frankford Avenue)	US 98	23rd St.	Pedestrian	D	Detailed Corridor Study Needed	$945,764	0.03	83P
137.0	CR 385 (Frankford Avenue)	St. Andrews Blvd	Roadway Terminus	Pedestrian	D	Add Sidewalks (major re-grading)	$613,057	0.03	78P
150.0	State Ave	Baldwin Rd	SR 390	Bicycle	D	Add Paved Shoulders (major re-grading)	$468,153	0.05	51B
Total Cost							$30,552,859		

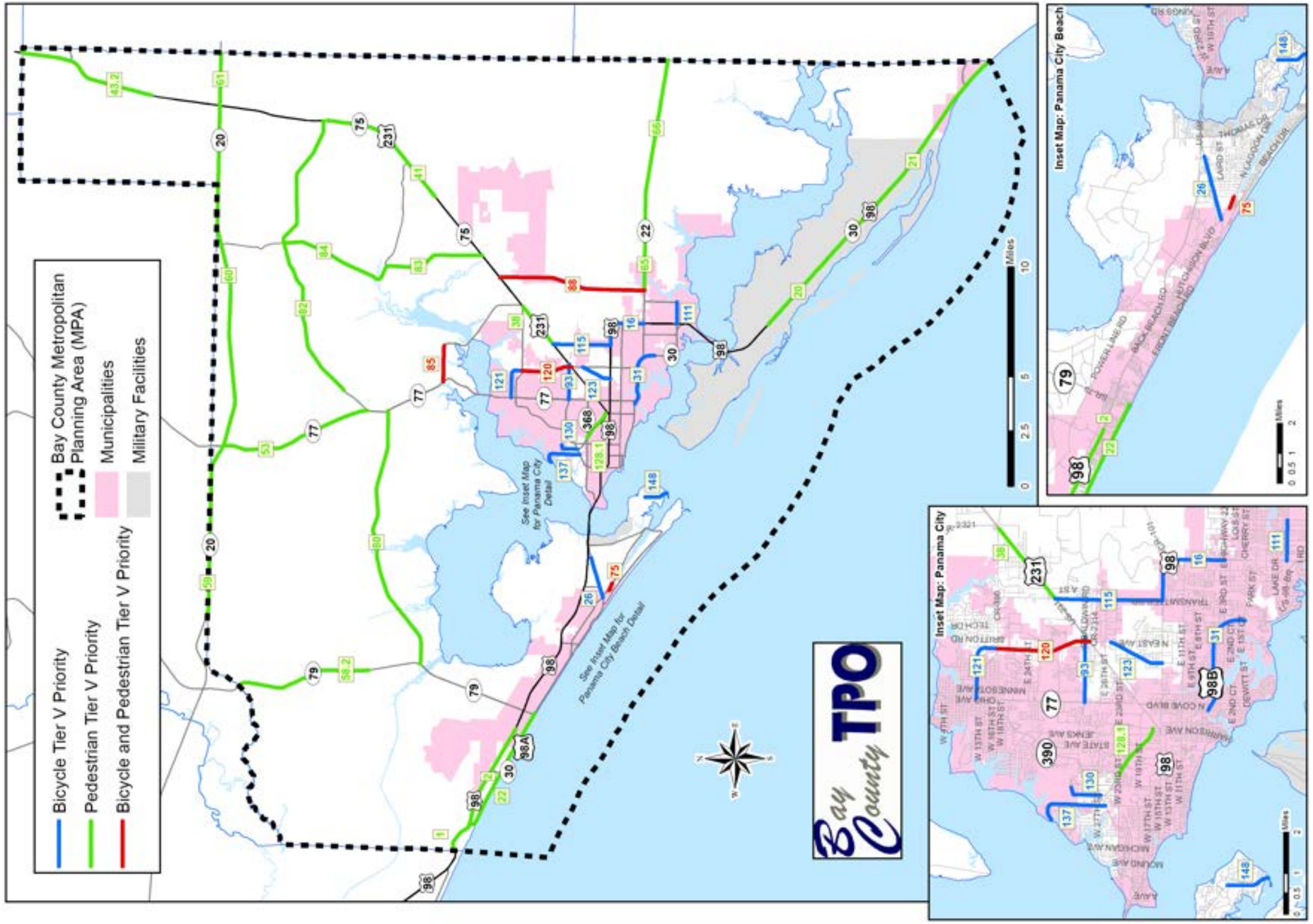


Figure 17 Tier V Priorities Map

Table 9 Tier V Priorities

Segment ID	Road Name	From	To	Mode	Existing Modal LOS	Recommended Facility Type	Total Cost	Benefit-Cost Index	Rank
1.0	SR 30A (US 98)	Walton County Line	Front Beach Road	Pedestrian	D	Detailed Corridor Study Needed	$1,465,934	0.02	101P
2.0	SR 30A/US 98 (Panama City Beach Parkway)	Front Beach Road	Cobb Road	Pedestrian	D	Add Sidewalks (major re-grading)	$1,699,841	0.01	107P
16.0	SR 30A/US 98 (15th Street)	CR 2327/ Transmitter Road	SR 22/ Wewa Highway	Bicycle	E	Detailed Corridor Study Needed	$1,106,544	0.04	58B
20.0	SR 30A (US 98)	Tyndall Drive	Bay Urbanized Boundary (2.5 mi E of Ammo Road)	Pedestrian	E	Add Sidewalks (major re-grading)	$1,459,494	0.02	103P
21.0	SR 30A (US 98)	Canal Parkway	Gulf County Line/ Bay MPA Boundary	Pedestrian	D	Add Sidewalks (minor re-grading)	$2,488,898	0.01	113P
22.0	SR 30 A/US 98 (Front Beach Road)	US 98	SR 79	Pedestrian	D	Add Sidewalks (minor re-grading)	$1,709,459	0.01	109P
26.0	SR 30 A/US 98 (Front Beach Road)	SR 392/Hutchinson Blvd E/Mid Beach Rd/N Thomas Dr	Ramp from EB Back Beach Road	Bicycle	E	Detailed Corridor Study Needed	$903,205	0.04	59B
31.0	SR 30 (Business 98)	Hamilton Avenue	CR 3026/ Cherry Street	Bicycle	D	Detailed Corridor Study Needed	$1,314,612	0.03	62B
38.0	SR 75 (US 231)	CR 2327/ Transmitter Road	CR 390	Pedestrian	E	Detailed Corridor Study Needed	$2,090,138	0.02	96P
41.0	SR 75 (US 231)	Jonny Lane	Jadewood Circle	Pedestrian	F	Add Sidewalks (major re-grading)	$2,222,333	0.02	99P
43.2	SR 75 (US 231)	Jackson Road	Jackson County Line	Pedestrian	E	Add Sidewalks (major re-grading)	$2,218,849	0.01	108P
53.0	SR 77	CR 388 E	SR 20	Pedestrian	E	Add Sidewalks (major re-grading)	$2,441,779	0.01	110P
58.2	SR 79	Steelfield Rd	Washington County Line/ Bay County MPA Boundary	Pedestrian	E	Detailed Corridor Study Needed	$5,844,822	0.00	115P
59.0	SR 20	Washington County	SR 77	Pedestrian	D	Add Sidewalks (major re-grading)	$2,769,208	0.01	114P
60.0	SR 20	SR 77	SR 75/ US 231	Pedestrian	D	Add Sidewalks (major re-grading)	$5,475,716	0.00	117P
61.0	SR 20	SR 75/ US 231	Calhoun County Line	Pedestrian	D	Add Sidewalks (major re-grading)	$842,954	0.02	105P
65.0	SR 22	CR 2315/ Star Avenue	Bay County Urbanized Boundary (w of Callaway Road)	Pedestrian	E	Add Sidewalks (major re-grading)	$1,539,610	0.02	106P
66.0	SR 22	Bay County Urbanized Boundary (W of Callaway Road)	Gulf County Line	Pedestrian	D	Add Sidewalks (major re-grading)	$2,156,150	0.01	111P
75.0	CR 3030 (North Lagoon Dr)	North Thomas Drive	Joan Ave	Bicycle	D	Add Paved Shoulders (minor re-grading)	$470,876	0.02	71B
75.0	CR 3030 (North Lagoon Dr)	North Thomas Drive	Joan Ave	Pedestrian	D	Add Sidewalks (minor re-grading)	$851,861	0.02	104P
80.0	CR 388	SR79	SR 77	Pedestrian	D	Add Sidewalks (major re-grading)	$4,287,918	0.00	116P
82.0	CR 388	Bay Urban Boundary	US 231	Pedestrian	D	Add Sidewalks (major re-grading)	$4,792,993	0.00	119P
83.0	CR 2301	US 231	Bay Urban Boundary	Pedestrian	D	Detailed Corridor Study Needed	$5,825,906	0.00	118P
84.0	CR 2301	Bay Urban Boundary	CR 388	Pedestrian	D	Add Sidewalks (major re-grading)	$1,334,096	0.01	112P
85.0	CR 2321	SR 77	CR 2302	Bicycle	D	Detailed Corridor Study Needed	$780,255	0.03	66B
85.0	CR 2321	SR 77	CR 2302	Pedestrian	E	Detailed Corridor Study Needed	$1,560,511	0.02	102P
88.0	CR 2315 (Star Ave)	Wewa Highway	US 231	Pedestrian	E	Add Sidewalks (major re-grading)	$2,213,799	0.02	100P
88.0	CR 2315 (Star Ave)	Wewa Highway	US 231	Bicycle	E	Add Paved Shoulders (major re-grading)	$3,163,581	0.01	72B
93.0	CR 2312 (Baldwin Rd)	SR 77	US 231	Bicycle	D	Detailed Corridor Study Needed	$761,340	0.03	68B
111.0	CR 2323 (Berthe Ave/ Boat Race Rd)	US 98	Berthe Ave	Bicycle	D	Detailed Corridor Study Needed	$468,153	0.03	65B
115.0	CR 2327 (Transmitter Rd)	US 98	US 231	Bicycle	E	Add Paved Shoulders (major re-grading)	$1,243,680	0.04	61B
120.0	CR 389 (12th St)	US 231	CR 390	Bicycle	E	Detailed Corridor Study Needed	$1,082,900	0.03	63B
120.0	CR 389 (12th St)	US 231	CR 390	Pedestrian	E	Detailed Corridor Study Needed	$2,165,800	0.02	97P
121.0	CR 389 (12th St)	CR 390	SR 77	Bicycle	D	Detailed Corridor Study Needed	$784,984	0.03	64B
123.0	CR 22/ 2337 (Sherman Ave)	15th St	East Ave	Bicycle	D	Detailed Corridor Study Needed	$647,848	0.03	67B
128.1	SR 391 (Airport Road)	Harrison Avenue	23rd Street	Pedestrian	D	Detailed Corridor Study Needed	$1,333,527	0.02	98P
130.0	CR 391 (Airport Rd)	St. Andrews Blvd	Panama City/ Bay County Airport	Bicycle	D	Add Paved Shoulders (major re-grading)	$401,950	0.02	70B
137.0	CR 385 (Frankford Avenue)	St. Andrews Blvd	Roadway Terminus	Bicycle	D	Add Paved Shoulders (major re-grading)	$832,272	0.02	69B
148.0	Jan Cooley Dr	Delwood Beach Dr	End	Bicycle	D	Add Paved Shoulders (minor re-grading)	$168,057	0.04	60B
Total Cost							$74,921,852		

IDENTIFICATION OF POTENTIAL FUNDING SOURCES

Costs associated with constructing the bicycle and pedestrian facilities recommended in this *Plan*, as outlined above, far exceed available resources. To help alleviate this deficiency, this section identifies and discusses the numerous sources which can be used to provide monetary assistance for bicycle facilities and programs. Many of these funding sources are available on the federal level, as dictated in the current transportation legislation. Most of these federal programs are administered by the Florida Department of Transportation (FDOT). Additionally, there are other state and local funding sources which can be used to help achieve the goals and objectives of this Plan. Finally, a myriad of private funding sources exist which can be used by local governments to implement bicycle- and pedestrian-related programs. The following quick-reference table (Table 10) includes all of the funding sources that are described subsequently in greater detail. It should be noted that the Bay County TPO requests $800,000 annually for bicycle and pedestrian projects through the Setaside funding list. This monetary request is funded to FDOT's ability based on FDOT's annual budget.

Table 10 Quick Reference Table of Potential Funding Sources

Funding Source	Category	Relevant Project Type(s)
National Highway System funds	Federal	Facilities (National Highway System only)
Surface Transportation Program funds	Federal	Facilities; Informational programs; ADA projects
Transportation Enhancement funds	Federal	Facilities; Educational activities; Rail-trails
Highway Bridge Replacement and Rehabilitation funds	Federal	Facilities (across bridges)
Recreational Trails Program funds	Federal	Trail facilities
Congestion Mitigation and Air Quality Improvement Program	Federal	Facilities; Safety projects
Federal Lands Highway Program funds	Federal	Facilities (primarily trails) near/inside Federal lands
Job Access and Reverse Commute Grants	Federal	Bicycle-related services
Federal Transit Program	Federal	Access to transit
State and Community Highway Safety Grants (Section 402)	Federal	Safety-related programs and projects
Safe Routes to School Program	Federal	School-based facility, education, and enforcement projects/campaigns
Land and Water Conservation Fund Grants	Federal	Trail and greenway facilities
HUD Community Development Block Grants	Federal	Facilities
Florida Division of Forestry Urban and Community Forestry	Federal	Education and Tree Planting Projects
Florida Department of Environmental Protection	State	Various Environmental Related Projects and Land Use
Bikes Belong Coalition	Private	Trail projects
National Civilian Community Corps	Private	Trail projects
American Greenways Awards	Private	Greenways
Fish America Foundation	Private	Greenways
National Trails Fund	Private	Hiking trails
Global ReLeaf Program	Private	Trail tree plantings
Robert Wood Johnson Foundation (general)	Private	Various
The Conservation Alliance Fund	Private	Land Use
Gannett Foundation Grant	Private	Education and neighborhood improvement, economic development, youth development, community problem-solving, assistance to disadvantaged people, environmental conservation and cultural enrichment.
Surdna Environment/Community Revitalization	Private	Community Revitalization and Environment

Federal Funding Sources

Non-motorized transportation facility projects are broadly eligible for funding from almost all the major Federal-aid highway, transit, safety, and other programs. Non-motorized projects must be "principally for transportation, rather than recreation, purposes" and must be designed and located pursuant to the transportation plans required of States and Metropolitan Planning Organizations. The exception to this rule is the Recreational Trails Program (RTP) under which projects may be used for recreational purposes.

Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFTEA-LU, Public Law 109-203) was signed into law August 10, 2005. SAFETEA-LU authorizes the Federal surface transportation programs for highways, highway safety, and transit for the 5-year period 2005-2009. It replaces TEA-21, its legislative predecessor.

Stay tuned to developments regarding the next surface transportation authorization bill to confirm continuations of many of these programs and potential new funding sources for bicycle and pedestrian projects. As of this writing, the bill is being worked on by the House Transportation and Infrastructure Committee. The Committee Print version of the legislation is available online at http://t4america.org/docs/062209_STAA_fulltext.pdf.

Federal-aid Highway Program

National Highway System funds may be used to construct bicycle transportation facilities and pedestrian walkways on land adjacent to any highway on the National Highway System, including Interstate highways.

Surface Transportation Program (STP) funds may be used for the construction of bicycle transportation facilities and pedestrian walkways, as well as many other related facilities (bicycle parking, bike-transit interface, etc.). Other non-construction projects related to safe bicycle use and walking such as maps, brochures, and public service announcements are eligible for STP funds. Modifications of public sidewalks to comply with the Americans with Disabilities Act are also covered.

Ten (10) percent of each State's annual STP funds are set aside for **Transportation Enhancements (TE)**. The law provides a specific list of activities (twelve) that are eligible for TE projects. This list includes "provision of facilities for pedestrians and bicycles, provision of safety and educational activities for pedestrians and bicyclists," and the "preservation of abandoned railway corridors (including the conversion and use thereof for pedestrian and bicycle trails)." The Bay County TPO has requested local governments submit bicycle and pedestrian projects for their TE applications. Applicants for TE projects must be Local Agency Program (LAP) certified, in the process of becoming LAP certified or have a sponsor that is LAP certified. The current list of TE project priorities is shown in Table 11 below.

Table 11 Current Transportation Enhancement Program Project Priorities

Priority	Project Sponsor	Project Name	From	To	Description
1	Callaway	SR 22 Sidewalks	Bob Little Rd	Star Ave	Sidewalk for 2 miles
2	Bay County	Magnolia Beach Road/Delwood Beach Road Path	Thomas Dr	End of road	8ft off-road path parallel to road for 2.6 miles
3	Callaway	US98/Tyndall Parkway Sidewalks	N Callaway City Limits	SR 22	Sidewalk for .85 miles
4	Panama City Beach	Hwy 79 Multi-Use/Shared Use Trail	Begins at Powerline Rd and continues approx. ½ mile south to where the urban typical section begins		10ft wide multi-use/shared use asphalt trail
5	Callaway	Star Avenue Sidewalks	Cherry St.	SR 22	Sidewalks for ½ mile
6	Callaway	Seventh Street Sidewalk/Bicycle Path	Bob Little Rd	Tyndall Pkwy	Sidewalks/bicycle path for 1.35 miles
7	Bay County	Wildwood Road Sidewalk (one side)	US 98	Big Daddy Dr	Sidewalk on one side of the road for ¾ mile
8	Callaway	Bob Little Road Sidewalk/Bicycle Path	SR 22	7th St	Sidewalk/bicycle lane for ½ mile
9	Mexico Beach	15th St. Sidewalk/Multi-Use Path	US 98	Hwy 386	8ft sidewalk/multi-use trail on the north side of the street

Another ten (10) percent of each State's STP funds are set aside for the **Highway Enhancement and Railway-Highway Crossing programs**, which can be used to address bicycle and pedestrian safety issues. Each state is required to implement a Hazard Elimination Program to identify and correct locations which may constitute a danger to motorists, bicyclists, and pedestrians. Funds may be used for activities including a survey of hazardous locations and for projects on any publicly owned bicycle or pedestrian pathway or trail, or any safety-related traffic calming measure. Improvements to railway-highway crossings "shall take into account bicycle safety."

Highway Bridge Replacement and Rehabilitation (HBRRP) funds are available for pedestrian walkways and bicycle transportation facilities on highway bridges. If a highway bridge deck is replaced or rehabilitated, and bicycles are permitted at each end, then the bridge project must include safe bicycle accommodations (within reasonable cost). Bridge projects must be incorporated into the Regional Transportation Improvement Program (RTIP). The selection process for these funds, which do not require a local match, is based partly on bridge deficiency ratings.

Recreational Trails Program (Section 1109) funds may be used for all kinds of trail projects. Of the funds apportioned to a state, 30 percent must be used for motorized trail uses, 30 percent for non-motorized trail uses, and 40 percent for diverse trail uses (any combination). Examples of trail uses include hiking, bicycling, in-line skating, equestrian use, cross-country skiing, snowmobiling, off-road motorcycling, all-terrain vehicle riding, four-wheel driving, or using other off-road motorized vehicles.

The **Congestion Mitigation and Air Quality (CMAQ) Improvement Program**, established in 1991 and reauthorized by SAFETEA-LU, is intended to realign the focus of transportation planning toward a more inclusive, environmentally-sensitive, and multimodal approach to addressing transportation problems. Currently the Bay County TPO has no bicycle pedestrian CMAQ projects in the TIP, due to the fact that the TPO is currently in attainment, but this could change with the new air quality standards that are currently being considered by the Environmental Protection Agency (EPA).

Federal Lands Highway Program (FLHP) funds may be used to construct roads and trails within or adjacent to (or, in some cases, providing access to) federal lands. FLHP funds, which are discretionary, generally total about $800 million per year. Recreation interests often benefit from FLHP funds.

Job Access and Reverse Commute Grants are available to support projects, including bicycle-related services, designed to transport welfare recipients and eligible low-income individuals to and from employment.

Federal Transit Program

Title 49 USC allows the **Urbanized Area Formula Grants, Capital Investment Grants and Loans,** and **Formula Program for Other than Urbanized Area** transit funds to be used for improving bicycle and pedestrian access to transit facilities and vehicles. Eligible activities include investments in "pedestrian and bicycle access to a mass transportation facility" that establishes or enhances coordination between mass transportation and other transportation.

The **Suburban Mobility Initiatives Program** was established in response to a need to develop solutions to suburban mobility challenges. The objective of the program is to provide assistance to suburban public agencies in their efforts to reduce dependence on the single occupant vehicle.

The **Regional Mobility Program** provides technical assistance, develops planning methods and conducts outreach, research, demonstration, and project evaluations that assist local communities in improving regional transportation mobility.

Highway Safety Programs

Pedestrian and bicyclist safety remain priority areas for **State and Community Highway Safety Grants** funded by the federal Section 402 formula grant program. A State is eligible for these grants by submitting a Performance Plan (establishing goals and performance measures for improving highway safety) and a Highway Safety Plan (describing activities to achieve those goals). Research, development, demonstrations, and training to improve highway safety (including

bicycle and pedestrian safety) are carried out under the Highway Safety Research and Development (Section 403) Program.

Safe Routes to School Program

The Safe Routes to Schools, which is included in the most recent Federal Reauthorization bill – Safe, Accountable, Flexible, Efficient Transportation Equity Act for the 21st Century – A Legacy for Users (SAFETEA-LU), is designed to enable and encourage children to walk and bicycle to school, and to "facilitate the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity of schools." Safe Routes to school projects include on-street bicycle facilities, off-street bicycle facilities, and secure bicycle parking facilities.

The funds are apportioned to each state based on their relative share of enrollment in primary and middle schools. Not less than 10% or more than 30% of the funds are for non-infrastructure related activities to encourage walking and bicycling to school. Not less than 70% or more than 90% are for infrastructure related projects that will substantially improve the ability to safely walk and bicycle to school.

Other Federal Sources

National Park Service Land and Water Conservation Fund (LWCF) Grants: This federal funding source was established in 1965 to provide "close-to-home" parks and recreation opportunities to residents throughout the United States. Money for the fund comes from the sale or lease of nonrenewable resources, primarily federal offshore oil and gas leases, and surplus federal land sales. LWCF grants can be used by communities to build a variety of parks and recreation facilities, including trails and greenways. LWCF funds are distributed by the National Park Service to the states annually. Communities must match LWCF grants with 50 percent of the local project costs through in-kind services or cash. All projects funded by LWCF grants must be used exclusively for recreation purposes, in perpetuity. Projects must be in accordance with each State's Comprehensive Outdoor Recreation Plan.

Community Development Block Grants (CDBG)

U.S. Department of Housing and Urban Development (HUD): CDBG provides eligible metropolitan cities and urban counties (called "entitlement communities") with annual direct grants that they can use to revitalize neighborhoods, expand affordable housing and economic opportunities, and/or improve community facilities and services, principally to benefit low- and moderate-income persons. Eligible activities include building public facilities and improvements, such as streets, sidewalks, sewers, water systems, community and senior citizen centers, and recreational facilities. Several communities have used HUD funds to develop greenways. http://www.hud.gov/offices/cpd/communitydevelopment/programs/

Florida Division of Forestry (Urban and Community Forestry Grant Program)

As part of the federal government's Urban and Community Forestry Matching Grant Program, funds will be available to organizations to develop or enhance their urban and community forestry programs. Awards are made as 50-50 matching grants (50 percent federal, 50 percent applicant) to local governments, educational institutions, Native-American tribal governments, and legally organized nonprofit (volunteer) organizations.
http://www.fl-dof.com/forest_management/cfa_urban_grants.html

National Park Service

Mission: The mission of the Rivers, Trails and Conservation Assistance program (RTCA) is to assist community-led natural resource conservation and outdoor recreation initiatives. RTCA staff provide guidance to communities so they can conserve waterways, preserve open space, and develop trails and greenways.

Who may apply: The project applicant may be a state or local agency, tribe, non-profit organization, or citizens' group. RTCA does not provide financial assistance to support project implementation.

How to Apply: Download the application. Applicants should discuss their project with RTCA staff before applying for assistance. It can be helpful to schedule an advance field visit with staff to best understand how RTCA can be of assistance.

Due date: Applications are due by August 1st for assistance beginning the following fiscal year (October 1st through September 30th).

http://www.nps.gov/ncrc/programs/rtca/contactus/cu_apply.html

State Funding Source

Florida Department of Environmental Protection

The Florida Coastal Management Program is based on a network of agencies implementing 24 statutes that protect and enhance the state's natural, cultural and economic coastal resources. The goal of the program is to coordinate local, state and federal agency activities using existing laws to ensure that Florida's coast is as valuable to future generations as it is today. Florida's Department of Environmental Protection is responsible for directing the implementation of the state-wide coastal management program.
http://www.dep.state.fl.us/cmp/default.htm

Private Funding Sources

Bikes Belong Coalition

“The Bikes Belong Grants Program strives to put more people on bicycles more often by funding important and influential projects that leverage federal funding and build momentum for bicycling in communities across the U.S.” Most of the Bikes Belong grants awarded to government agencies are for trail projects. The program encourages government agencies to team with a local bicycle advocacy group for the application. Bikes Belong Coalition seeks to assist local organizations, agencies, and citizens in developing bicycle facilities projects that will be funded by TEA-21 or its subsequent programs. Bikes Belong Coalition will accept applications for grants of up to $10,000 each (with potential local matches), and will consider successor grants for continuing projects. Grant applications are accepted quarterly.
http://www.bikesbelong.org/grants

AmeriCorps' National Civilian Community Corps (NCCC)

The AmeriCorps National Civilian Community Corps is a full-time residential program for men and women, ages 18-24, that strengthens communities while developing leaders through direct, team-based national and community service.” Local governments can apply to host an NCCC team. One project that NCCC members work on is the building or improving of trails. AmeriCorps' NCCC members have created or improved more than 200 miles of hiking trails in 25 states nationwide. Teams have cleared trees and brush, leveled trails to comply with federal guidelines on Americans with Disabilities Act (ADA) access, implemented erosion control techniques, and created and updated signs. These trails are located in rural, urban, and national parks from California to Maine, and are used by tens of thousands of Americans each year.
http://www.americorps.gov/for_organizations/apply/nccc.asp

Kodak American Greenways Awards Program

The American Greenways Awards program is a program started by the Conservation Fund. Among its activities, the program provides grants to organizations, including local governments, to create or enhance greenways in their communities. Beyond specific greenway facilities, goals of the program include assisting greenway organizations and encouraging the use and enjoyment of greenways. The maximum grant is $2,500 and applications are due on June 30 annually.
http://www.conservationfund.org/kodak_awards

Fish America Foundation

Fish America Foundation provides funding to public and private organizations for projects that enhance or conserve water and fisheries resources, including community efforts. In the last 18 years, the Foundation has provided 620 grants totaling more than $4.9 million to improve the fisheries resource in all 50 states and Canada. The Foundation grant system includes several changing grant categories, each with different application cycles and some of which can include greenways that enhance or conserve water resources.
http://www.fishamerica.org/grants/

American Hiking Society National Trails Fund

The American Hiking Society's National Trails Fund is the only privately funded national grants program dedicated solely to hiking trails. National Trails Fund grants have been used for land acquisition, constituency building campaigns and traditional trail work projects. Since the late 1990s, the American Hiking Society has granted nearly $200,000 to 42 different organizations across the US. Applications are accepted annually with a summer deadline.
http://www.americanhiking.org/NTF.aspx

The Global ReLeaf Program

The Global ReLeaf Forest Program is American Forests' education and action program that helps individuals, organizations, agencies, and corporations improve the local and global environment by planting and caring for trees. The program provides funding for planting tree seedlings on public lands, including trailsides. Emphasis is placed on diversifying species, regenerating the optimal ecosystem for the site and implementing the best forest management practices. This grant is for planting tree seedlings on public lands, including along trail rights-of-way. Proposals are due January 15 and July 1 annually.
http://www.americanforests.org/global_releaf/grants/

The Robert Wood Johnson Foundation

The Robert Wood Johnson Foundation seeks to improve the health and health care of all Americans. One of the primary goals of the Foundation is to "promote healthy communities and lifestyles." Specifically, the Foundation has an ongoing "Active Living by Design" grant program that promotes the principles of active living, including non-motorized transportation. Other related calls for grant proposals are issued as developed, and multiple communities nationwide have received grants related to promotion of trails and other non-motorized facilities.
http://www.rwjf.org/grants/

Conservation Alliance

The Conservation Alliance is a group of outdoor businesses that supports efforts to protect specific wild places for their habitat and recreation values. Before applying for funding, an organization must first be nominated by a member company. Members nominate organizations by completing and submitting a nomination form. Each nominated organization is then sent a request for proposal (RFP) instructing them how to submit a full request. Proposals from organizations that are not first nominated will not be accepted. The Conservation Alliance conducts two funding cycles annually. Grant requests should not exceed $35,000 annually.

Deadlines for those cycles are:

Summer Cycle: Nominations due May 1
Proposals due June 10
Grants announced early October

Winter Cycle: Nominations due November 1
Proposals due December 10
Grants announced early April

http://www.conservationalliance.com/

Gannett Foundation

The Gannett Foundation is a corporate foundation sponsored by Gannett Co., Inc. Through its Community Grant Program, Gannett Foundation supports non-profit activities in the communities in which Gannett does business. Through its other programs, the Foundation invests in the future of the media industry, encourages employee giving, reacts to natural and other disasters, and contributes to a variety of charitable causes.
http://www.gannettfoundation.org/index.htm

Surdna Foundation

The Surdna Foundation seeks to foster just and sustainable communities in the United States - communities guided by principles of social justice and distinguished by healthy environments, strong local economies and thriving cultures.
http://www.surdna.org/

REVIEW OF LAND DEVELOPMENT CODES AND RELATED RECOMMENDATIONS

A significant part of this planning effort is the review of local jurisdictions' land development codes (LDCs) and Land Development Regulations (LDRs) to identify how they address walking and bicycling conditions. To that end, land development requirements for the following jurisdictions were reviewed.

- Bay County
- City of Panama City
- City of Panama City Beach
- City of Callaway
- City of Springfield
- City of Lynn Haven
- City of Mexico Beach
- City of Parker

Specific observations on each of these codes are provided below and recommendations for amendments are made where appropriate. The comments with regards to bicycle parking and showers/changing facilities are relevant to all codes and regulations.

Bay County Land Development Regulations

Chapter 11 Planned Unit Developments

Section 3 of this chapter requires preliminary development plans to show the approximate locating of proposed and existing pedestrian and bicycle routes. However, there does not appear to be a requirement that Planned Unit Developments (PUDs) include pedestrian and bicycle access through the developments or to what level pedestrians and bicyclists should be accommodated. This section could reference this Bay County TPO Bicycle and Pedestrian Plan to set minimum level of accommodation within PUDs.

Chapter 25: Parking & On-site Circulation

Section 2508 of this chapter requires bicycle parking within the Urban Services Area of the Comprehensive Plan only. Table 25.3 specifies the number of bicycle parking spaces required by land use type. This section could be expanded to suggest parking levels for office buildings (Seattle, Washington specifies 1 bike parking space per 5,000 square feet of office space). Further, this section could be expanded to require combinations of long- and short-term parking. While the short-term user may be running an errand and need a convenient, safe place to leave his or her bike for up to a few hours, commuters need longer-term (all day or longer), more secure bicycle storage. Santa Cruz, CA has codified the differences in bicycle parking facility types, and defined them as follows:

> Class 1 bicycle facility means a locker, individually locked enclosure or supervised area within a building providing protection for each bicycle therein from theft, vandalism and weather.
>
> Class 2 bicycle facility means a stand or other device constructed so as to enable the user to secure by locking the frame and one wheel of each bicycle parked within. Racks must be easily usable with U- and cable locks and should support bikes in a stable, upright position.

Section 2511 requires on site circulation and the orientation of parking aisles to accommodate convenient pedestrian movements.

Chapter 26 - Roadways and Driveways

Section 2614 allows for the Development Services Department to require developers to pedestrian ways or crosswalks at midblock locations where blocks are more than 800 feet long. These would be required where appropriate to provide access to major pedestrian attractors. It would be advisable to amend the language to allow the Development Services Department to require developers to install *midblock crossings* where appropriate. These crossings could well include more than simply crosswalks and the pedestrian crossing sign assembly. On higher volume, or multi-lane roadways, supplemental traffic control devices would likely be advisable.

Chapter 30 - Signs

Section 3005 prohibits the installation of signs in such a way as to create a hazard along a bikeway.

Chapter 31 - Tourist Corridors

Section 3105 requires the installation of 6-foot sidewalks along tourist corridors and on collector roads intersecting tourist corridors.

City of Panama City Land Development Code

Section 101-3 Definitions

This section includes the following definition:

> *Bicycle and pedestrian ways.* Any road, path or way, which is open to bicycle travel and foot traffic and from which motor vehicles are excluded.

This definition essentially defines either a sidewalk (where bicycles are allowed on the sidewalk) or shared use path. It does not include within the definition of *bicycle way* an on-street bike lane, bike boulevards, or designated shared lanes (Share the Road signs and/or or Bike Routes). Consideration should be given to revising the bicycle way definition to be consistent with the American Association of State Highway and Transportation Officials (AASHTO) *Guide for the Development of Facilities* definition of *bikeway*:

> A generic term for any road, street, path or way which in some manner is specifically designated for bicycle travel, regardless of whether such facilities are designated for the exclusive use of bicycles or are to be shared with other transportation modes.

ARTICLE IIA. PLANNED UNIT DEVELOPMENT (PUD)
Sec. 104-41. Development standards.

Subsection 1 of this section requires that a PUD traffic network provide for the continuation of all existing highway, arterial, and [collector] roadway traffic. The transportation system shall connect to existing adjacent streets, pedestrian ways, and bicycle paths. This section should be revised to require the connection to existing bikeways as defined above. Subsection 5 of this section requires each PUD to include a unified pedestrian and bicycle circulation system.

CHAPTER 22. ARTICLE V. BICYCLES (from Code of Ordinances)

Sec. 22-197. Scope; parental responsibility.

This sections states that it is an offense for a parent or guardian to knowingly permit a child to disobey the City bicycle ordinances.

Sec. 22-198. Compliance by rental bicycle agencies required.

This section prohibits bicycle rental agencies from renting or offering any bicycle for rent unless the bicycle is licensed, a license plate is attached thereto, as provided in this article, and such bicycle is equipped with the lamps and other equipment required by law. The requirement for lights and other equipment should be supplemented with the requirement that those under 16 years of age must show that they have a helmet. It is worth noting that when conducting online research of this code requirement on the web, the researchers could not find a reference to licensing bicycles.

Sec. 22-199. Reports by bicycle dealers.

This section requires every person engaged in the business of buying or selling new or secondhand bicycles to make a report to the chief of police of every bicycle purchased or sold by such dealer, giving the name and address of the person from whom purchased or to whom sold, a description of such bicycle by name or make, the frame number thereof, and the number of license plate, if any, found thereon. This seems it would be an effective tool in combating bicycle theft and assisting in recovery.

Sec. 22-200. Manner of parking.

People are not allowed to park a bicycle upon a street other than upon the roadway against the curb, upon the sidewalk in a rack to support the bicycle, against a building, or at the curb, in such manner as to afford the least obstruction to pedestrian traffic.

Sec. 22-201. Riding on Sidewalks.

Within a business district, it is not permissible to ride bicycle upon a sidewalk. However, business district is not defined in the traffic and vehicles section of the code. This section also allows the Chief of Police to prohibit riding of bicycles on sidewalks or roadways by the use of signs. Additionally, this section requires that when a person is bicycling upon a sidewalk, such person shall yield the right-of-way to any pedestrian and shall give audible signal before overtaking and passing such pedestrian.

City of Panama City Beach Land Development Code

Chapter 4: Site Design and Development Standards, Section 4.04.03(1) Pedestrian and Bicycle Facilities requires that every new and reconstructed street segment within the City shall include adequate provision for bicycle and pedestrian facilities. Bike lanes, however, are not required to be designated. The section also specifies that in residential areas where speeds are less than 25 mph, bike lanes are not required.

Section 4.04.03(2) states that a pedestrian access plan or Site Plan is required for the issuance of a Development Permit or other Local Development Order. This plan must show the proposed vehicular Access and parking areas, garage, sidewalk, Crosswalk or Pedestrian Crossover required or permitted by this LDC and has to be drawn to scale and shall include dimensions and distances, clearly showing the proposed sidewalk, Crosswalk or Pedestrian Crossover by reference to existing Intersections.

Section 3 ties the New Development, Redevelopment or Change of Use of any Lot abutting the right-of-way of a Scenic Corridor to the concurrent provision of a sidewalk at private expense. A reference to design criteria, possibly the Florida Greenbook, should be provided.

Section 4 states that if a Development is required to provide sidewalks that those sidewalks connect all of the buildings internal to the Development and that they connect at minimum every ¼ mile to any adjacent public sidewalk. Sidewalks are only required on one side of the roadway. Consideration should be given to requiring sidewalks on both side of every street.

Section 5 states that developments located adjacent to a funded public greenway or bike trail shall provide a connection to said greenway or trail from all principal Buildings and Dwelling Units, built to standards equal or better than the greenway or trail unless an exception is granted by the City Engineer. Again, referencing a specific standard, the Florida Greenbook, should be considered.

A lot may be exempt from the above if construction of a sidewalk which meets these requirements is funded and scheduled for construction by a date certain through the TPO, FDOT, or other public entity.

Sidewalks must be 5 feet wide within city limits and 6 feet wide within Scenic Corridors.

Section 4.04.03A(5) requires that connections be provided to all buildings and dwelling units in all developments located adjacent to a funded public greenway or bike trail. Again, connections should be required to meet the criteria in the Florida Greenbook.

In the Street Specifications Summary, Table 4.04.04.A states that bike lanes are permitted on all streets and are required on streets with speed limits greater than 35 mph.

Section 4.04.04(e) Street Design Standards further states that bike lanes shall be located between the travel lane and the parking lane or between the travel lane and the curb or edge of pavement. Bike lanes shall have one-way movement and Section 4.04.04(f) states that sidewalks shall be provided along one side of roads and along the building side of parkways. Sidewalks shall be provided along both sides of all other street types.

Table 4.04.04D of the City's Code, shown below, details the dimensional requirements and locations for bike lanes.

Travel Lane Design Speed	Bike Lane	Bike Lane Width	Bike Lane Location
Not greater than 25 mph	Allowed	4 ft minimum 5 ft maximum	On both sides of two-way streets. On right side of one-way streets.
Greater than 25 mph; not greater than 35 mph	Allowed	4 ft minimum 5 ft maximum	
Greater than 35 mph	Required	4 ft minimum 6 ft maximum	

Any recitation of specification of requirements will necessarily have to be periodically updated to comply with standards as they change over time. To ensure consistency with standards, those writing the code should consider simply making reference to the Florida Greenbook and the MUTCD.

Section 4.05.03 addresses access to parking facilities containing 100 or more Parking Spaces. Pedestrian connections shall be not less than 6 feet wide and be lighted at night by minimum two (2) foot candles. A marked crosswalk is required if the principal use and parking lot are separated by any right-of-way. Placement of the crosswalk should be as directly between the Principal Use and Parking Lot as may be necessary to deter jaywalking. Simply marking a cross walk may not be enough to provide for safe crossings by pedestrians. Rather than a crosswalk a midblock crossing of a design approved by the city engineer should be required.

Special regulations exist for crossings of Front Beach Road and South Thomas Drive:
If the Principal Use and the Parking Lot are separated by Front Beach Road or South Thomas Drive, the sidewalk required by this section shall contain an at-grade signalized Crosswalk across the right-of-way meeting FDOT standards and lying as directly between the Principal Use and the Parking Lot as may be necessary to leave no incentive to jaywalk. Crosswalks shall be signalized with a minimum green time allocated for vehicular traffic and synchronized with other signalized Intersections or Crosswalks according to FDOT standards.

Section 4.05.05 addresses Pedestrian Crossovers stating requirements for type, materials, width and other design specifications.

Bike parking requirements are established in accordance with Table 4.05.06 of the Code, shown on the following page. Bike parking facilities, including racks or individual spaces, shall be designed and located to provide convenient access to users and include provisions for the storage and locking of bicycles.

Use	Bike Spaces per Required Parking Space
Assembly Places	.75
Libraries, Museums	.15
Shopping Centers	.10
Eating, drinking or entertainment establishments	.10
Commercial Activities	.10
Amusements and Amusement Parks	.10
Convenience Stores	.10
Hotels/Motels with restaurants, lounges, gift shops or convention or meeting rooms	.10
Multifamily and Public Lodgings (excluding Hotels and Motels)	.10
Offices, Personal or Professional Services	.10
Recreational Clubs	.05

There are a number of guides available for the provision of bicycle parking. The Association of Pedestrian and Bicycle Professionals has published a resource guide for practitioners that includes both practical and policy guidance.

Section 4.05.03 addresses Parking Design, Location and Access Requirements.
Chapter 5: Standards for Special Situations, requires that parks and recreation facilities in specified zones (R-1a, R-1b, R-1c, R-1c-T, RO, RTH, R-2, R-3, CL and CM) be interconnected with the surrounding residential areas by pedestrian paths, bicycle paths, sidewalks and/or trails.

The chapter also addresses the positioning of signage. Section L says: No Sign shall be Erected or displayed near a street, driveway or bicycle path intersection so as to obstruct the view of pedestrian or vehicular traffic and constitute a hazard.

City of Callaway Land Development Regulations

The City of Callaway also has a problematic bikeway definition.

> **BIKEWAY, BICYCLE AND PEDESTRIAN WAY:** Any road, path or way which in some manner is specifically designated as being open to bicycle travel, and travel by foot, and from which motor vehicles are excluded.

As stated above such a definition essentially defines either a sidewalk (where bicycles are allowed on the sidewalk) or shared use path. It does not include within the definition of *bicycle way* an on-street bike lane. Consideration should be given to revising the bicycle way definition to be consistent with the AASHTO *Guide for the Development of Facilities* definition provided above.

The Transit Friendly Development and Multimodal Facilities section of the code suggests that Transit Friendly Developments should have continuously linked walkways, pedestrian-oriented design, access to transit, be of a walkable scale, have bicycle lanes, and offer secure storage for bicycles. The terms *pedestrian-oriented* and *walkable* should be defined.

Consideration should be given to adopting bike parking requirements within the City of Callaway.

City of Springfield Land Development Regulations

The City of Springfield Land Development Regulations contain the following definition:

> **BICYCLE AND PEDESTRIAN WAYS.** Any road, path or way which is open to bicycle travel and traffic afoot and from which motor vehicles are excluded.

Once again, it is recommended this definition be revised.

The Parks and Recreation Systems or Facilities section of the City regulations requires the use of the following standards for evaluating potential impacts from proposed development and for issuing development permits.

Facility Unit Per Population
Basketball 1/5,000
Tennis Courts 1/5,000
Ballfields 1/5,000
Picnic Areas 1/4,000
Equipped Playground 1/3,000
Bicycle Paths 1 mile/5,000
Community Centers 1/10,000

The term *Bike Paths* should be replaced with *shared use paths.*

3-10.7 Bicycle and Pedestrian Ways

All new developments are required to install bicycle paths and/or sidewalks when the need for such facilities has been established as an integral part of the City's non-automotive traffic circulation system. Decisions by the City in applying the requirements for bicycle paths or sidewalks shall be based on the following criteria:

a. Application of this requirement is necessary to install or complete a portion of the bicycle path or sidewalk system;
b. Installation of bicycle path or sidewalks is not contrary to public safety;
c. The cost of providing bicycle paths or sidewalks in not excessively disproportionate to the need or probable area; and
d. Other available factors or means do not indicate an absence of need.

Exceptions *b, c,* and *d* are commonly cited across the country. Exception *b* should be reconsidered. If bicyclists and pedestrians are using a facility, then it is difficult to conceive of a condition in which providing a facility meeting the adopted standards (see below) would degrade safety. In exception *c*, guidance should be provided on what *disproportionate* means; FHWA defines *disproportionate* as more than 20% of the total project costs.

This section also requires that bicycle paths and sidewalks shall be designed and constructed in conformance with the standards set forth in the *Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways* (the *Florida Greenbook*) as published by the Florida Department of Transportation. *Bicycle paths* should be revised to read *bikeways.*

Consideration should be given to adopting bike parking requirements within the City of Springfield.

City of Lynn Haven Unified Land Development Code

4.05.07. Streets & Alleys.

A circulation system of streets, sidewalks, pedestrian easements, and pedestrian and bicycle trails must be designed for each neighborhood development. Consideration should be giving to revising the code to provide for *bikeways* instead of *bike trails.*

4.05.12. Parking Standards.

This section requires the following for bicycle parking:

1. Bicycle parking facilities shall be provided for all public, civic, commercial, office, other nonresidential, and mixed use buildings at 1 space per 10,000 square feet of building area.
2. Facilities shall be designed to allow each bicycle to be secured against theft.
3. Facilities shall be designed and installed to resist removal.
4. Facilities shall be designed installed to resist damage by rust, corrosion, or vandalism.
5. Facilities shall accommodate a range of bicycle shapes and sizes and allow easy locking without interfering with adjacent bicycles.
6. Facilities shall be located so as not to interfere with pedestrian or vehicular movement.
7. Bicycle parking may be shared by tenants occupying one building.

This section could be expanded to require combinations of long- and short-term parking. While the short-term user may be running an errand and need a convenient, safe place to leave his or her bike for up to a few hours, commuters need longer-term (all day or longer), more secure bicycle storage.

6.05.00. Transportation, Access and Parking Requirements

Subsection 6.05.01 of this section requires that bicycle and pedestrian ways be considered during the planning and development of transportation facilities, including the incorporation of such ways into State, regional, and local transportation plans and programs. It further requires that bicycle and pedestrian ways shall be established in conjunction with the construction, reconstruction, or other change of any state transportation facility.

As in Springfield, Lynn Haven has provided for several exceptions -

a. Their establishment would be contrary to public safety;
b. The cost would be excessively disproportionate to the need or probable use; or
c. Other available means or factors indicate an absence of need.

Again, the exception provided for in *a* should be reconsidered. If bicyclists and pedestrians are using a facility, then it is difficult to conceive of a condition in which providing a facility meeting the adopted standards would degrade safety. In exception *c*, guidance should be provided on what *disproportionate* means; FHWA defines *disproportionate* as more than 20% of the total project costs.

Subsection B, Bicycle way access and connectivity, provides the following guidance:

1. Facilities should connect traffic generators and should be located along a direct line, convenient for users.
2. Bicyclists should have equal access to all streets.
3. Within a neighborhood, links should be considered through cul-de-sacs, making use of greenways, utility rights-of-way, and other open ways.
4. Bicycle ways shall be designed as shown in Table 6.05.03(B) of the LDC.

Table 6.05.03(B). Bicycle Way Design Criteria.

Street Type	Bike Lane Width (ft)	Measurement
Without parking	Five (5)	Measured from the left side stripe to face of the curb
With parking	Four (4)	Measured from the edge of pavement to motor vehicle travel lane
Bicycle parking lane	Thirteen (13)	Combined bike lane & parking lane
One-way streets	The lane shall be placed on the right side of the street, except where a bicycle lane on the left will decrease the number of conflicts.	
Direction	Bicycle lanes are always one-way facilities, marked as such, & carry traffic in the same direction as adjacent motor vehicle traffic.	
Design Speeds	Where traffic speeds are 45 mph or greater, the minimum lateral separation from motor vehicles is 6 feet.	
Location	Bicycle lanes shall be placed between the parking lane and the motor vehicle traffic lane.	

With respect to the *Design Speeds* row, it is unclear what a minimum lateral separation of 6 feet from motor vehicle traffic is meant to require. The guidance provided in this table could be expanded upon. Interestingly, Section - 6.06.04. Streets Standards, gives the minimum width of a paved shoulder used to be used as a bikeway (5 feet). The City should consider simply referencing the *Florida Greenbook*. The *Greenbook* is updated yearly to stay consistent with best practices and national standards.

Subsection C, Sidewalks, provides the following standards:

1. Sidewalks shall be installed on both sides of all streets.
2. Sidewalks shall be installed in all subdivisions in all common areas.
3. Time for installation:
    a. Residential developments shall have up to 2 years to install all sidewalks.
    b. Commercial developments shall install all sidewalks immediately.
4. All sidewalks shall be installed in accordance with specifications set forth in Table 6.05.03(C) of the LDC and the requirements of the Technical Standards Manual.

Table 6.05.03(C). Sidewalk Design Criteria.

Criteria	Standard
Location	Both sides of all interior streets & along adjacent roadways.
Minimum width	5 feet.
Alternative	6 feet with heavy travel of pedestrian traffic.

The Technical Standards Manual shows how to construct a typical length of sidewalk.

6.05.11. Standards for Motorcycle and Bicycle Parking Spaces.

This section is fairly comprehensive in its treatment of bicycle parking. It requires the City to maintain a list of approved bicycle parking facilities. Other bicycle parking devices may be used if it is established to the satisfaction of the City Manager that the standards in Section 6.05.11(B)(2) below are met.

2. The rack or other facility shall be:

a. Designed to allow each bicycle to be supported by its frame;
b. Designed to allow the frame and wheels of each bicycle to be secured against theft;
c. Designed to avoid damage to the bicycles;
d. Anchored to resist removal and solidly constructed to resist damage by rust, corrosion, and vandalism;
e. Designed to accommodate a range of bicycle shapes and sizes and to facilitate easy locking without interfering with adjacent bicycles;
f. Located to prevent damage to bicycles by cars.
g. Consistent with the surroundings in color and design and be incorporated whenever possible into building or street furniture design;
h. Located in convenient, highly-visible, active, well-lighted areas;
i. Located so as not to interfere with pedestrian movements;
j. Located as near the principal entrance of the building as practicable; and
k. Located to provide safe access from the spaces to the right-of-way or bicycle lane.

City of Parker Land Development Code

The definition of *bicycle way* should be removed and replaced with the definition for *bikeway* as adopted by AASHTO (see page 40).

Section 5-9-7 requires bike paths and/or sidewalks. *Bike paths* should be changed to *bikeways.*

Consideration should be given to adopting bike parking requirements.

City of Mexico Beach Land Development Regulations

Consideration should be given to adopting bike parking requirements (see page 39).

3.02.00 SIDEWALKS: 3.02.01 Sidewalk Regulations.

Subsection *a* of these sidewalk regulations specifies where sidewalks are required to be built and whether they are required on one or both sides of the roadway. Section *b* provides for exemptions to the requirements to build sidewalks. The first of these exemptions reads

1. All currently platted lots are exempt from the above requirements to provide sidewalks.

The City should consider providing a sunset date on this exemption that would make this exemption expire just as other entitlements upon a property can expire if the planned developments do not occur in a timely fashion.

3.05.00 TRANSPORTATION SYSTEMS

This section states all streets must be designed in compliance with the Florida *Greenbook*. This means all pedestrian and bicycle facilities must comply as well. While bike lanes are not required by the Florida *Greenbook* they are an optional facility type. The pavement width requirements for collector roadway and arterial roadways do not provide for bike lanes. Consideration should be given to revising the required pavement widths and/or lane widths to allow for the inclusion of bike lanes.

CONCLUSIONS



The analysis of existing conditions shows that bicycle facilities (defined as paved shoulders or designated bike lanes at least four feet wide) are present on more than half of the collector and arterial roadways within the TPO's planning boundary, and that the network as a whole provides a level of accommodation (bicycle level of service "C") that meets the expectations of the public. Nonetheless, there are many opportunities for expanding the region's on-street bicycle network, primarily through the construction of new paved shoulders outside the existing pavement. For the pedestrian mode, average walking conditions in the region are not as good (pedestrian level of service "D"), and approximately two-thirds of the roadway segments analyzed do not have full sidewalk coverage. The prioritized lists of candidate projects indicate where new facilities would be most beneficial based on existing conditions, potential demand, and public input. The cost of constructing new facilities to complete the non-motorized transportation system on the study network is approximately $145 million, but some of this total includes locations that are indicated as having very low potential demand for bicycling and walking. Numerous potential sources, including many Federal and private programs, for funding facility improvements can be used by the region's implementing jurisdictions to leverage their own ongoing efforts.

Beyond the construction of new facilities, bicycling and walking can be encouraged through policies at the regional level identified in the predecessor to this *Plan* and through changes in municipal codes and ordinances, some of which are identified herein. Coordinated efforts amongst the TPO and its partner local agencies to create complete streets by expanding the non-motorized transportation network, and to continue to promote bicycle- and pedestrian-friendly policies, will lead to more bicycling and walking activity and, in so doing, will help the region reap the numerous benefits that active transportation offers.



The TPO will likely perform another update to this *Plan* in the near future. The 2006 *Plan* and this 2011 *Plan* lay a strong foundation for the region with regard to both policies and facility priorities. While it may be appropriate for the next update to revisit the prior policy recommendations and to perform updated facility-based data collection, there will also be opportunities for more focused studies related to other aspects of bicycle and pedestrian planning. With the prioritized list of projects available, the TPO may wish to perform more detailed corridor studies for some of the high priority locations that would go beyond general recommendations to determine the best way to get bicyclists and pedestrians from Point A to Point B. Additional potential components of future plans that have been performed by other metropolitan planning organizations throughout Florida include bicycle and pedestrian wayfinding/signage plans, detailed bicycle parking plans, and identification of safety countermeasures based on bicycle and pedestrian crash analysis.