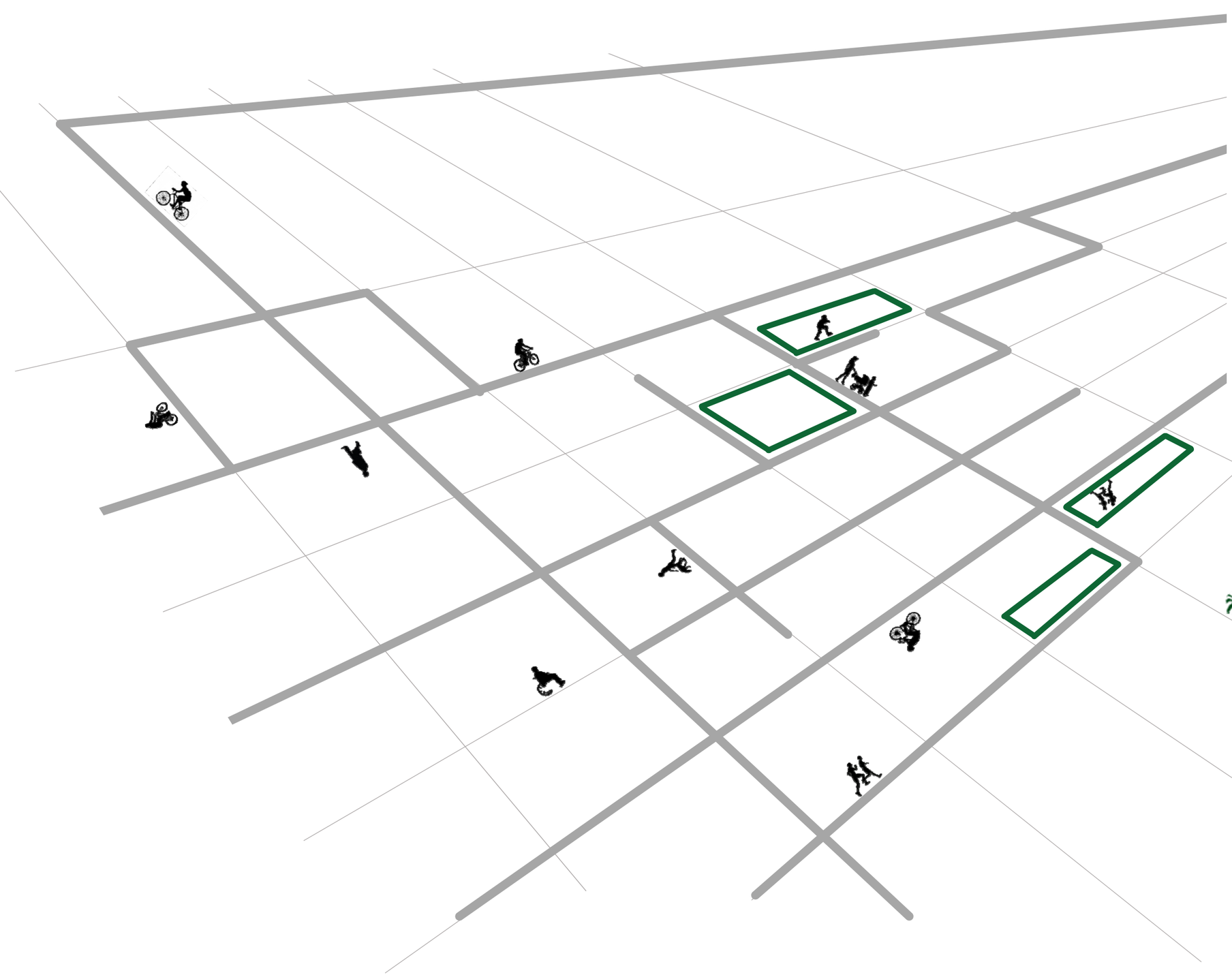

Bonita Springs PATH

A Bicycle & Pedestrian Master Plan

Prepared For

City of Bonita Springs Florida

Prepared By

McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

February 2017

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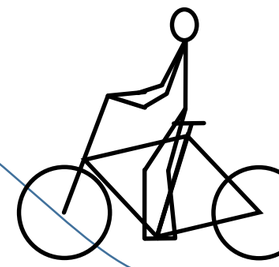


1.0 Introduction

This Bicycle and Pedestrian Master Plan is the first created for the City of Bonita Springs and represents the vision for a multimodal transportation network within the City. The plan is divided into five (5) sections:

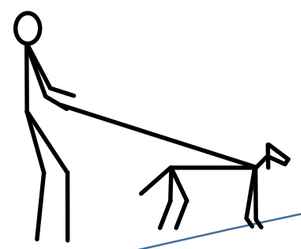
1. Introduction/Overview Provides the project background, purpose, benefits of the plan, community information, the planning process and the Vision/Goals of the plan

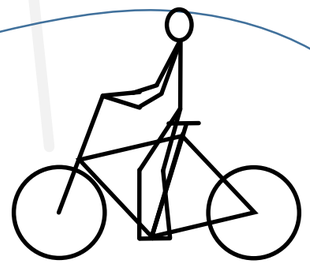
2. Needs Assessment Provides an inventory of existing bicycle and pedestrian facilities, as well as a summary of the public involvement process and results

3. Multimodal Transportation Toolbox Provides a menu of bicycle and pedestrian facilities including amenities, wayfinding and intersection treatments, as well as a description of system users

4. Recommendations Provides a plan of recommendations for all existing and proposed facility types, and potential alignments for increased local and regional connectivity

5. Implementation Strategies Provides prioritization factors, sample unit costs and funding sources





1.1 Project Background

In recent years, the City of Bonita Springs has incorporated new efforts to transform the City into a more bicycle and pedestrian friendly community.

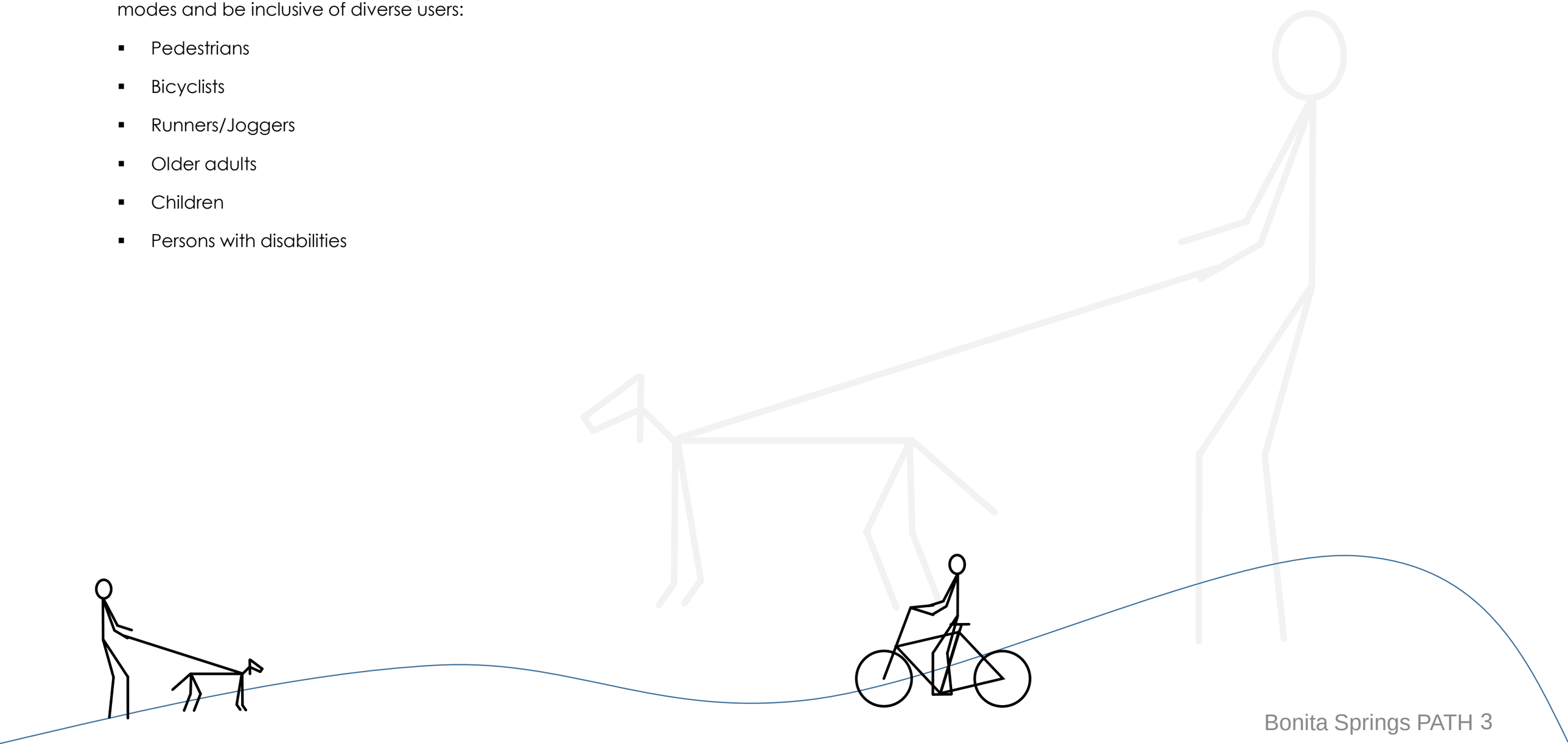
- In October of 2014, a Complete Streets Resolution No. 14-43 was adopted by the City Council.
- In December of 2015, McMahon Associates, Inc. completed a Key Corridor/Network Transportation Evaluation of the existing assets and constraints on key corridors that affect bicycle, pedestrian, and public transit infrastructure. Two (2) important elements of the study were enhanced transportation connectivity around the US 41/Bonita Beach Road intersection, and recommendations for the implementation of Complete Streets, where appropriate.
- A Visioning Study was developed for Bonita Beach Road in the Spring of 2016, which enhanced Complete Streets concepts for the Bonita Beach Road corridor.

This plan will provide a framework for the implementation of Complete Streets strategies along key corridors.

1.2 Purpose of Master Plan

The purpose of this master plan is to guide the creation of an efficient multimodal transportation system for the City of Bonita Springs. This system should enhance connectivity for different travel modes and be inclusive of diverse users:

- Pedestrians
- Bicyclists
- Runners/Joggers
- Older adults
- Children
- Persons with disabilities

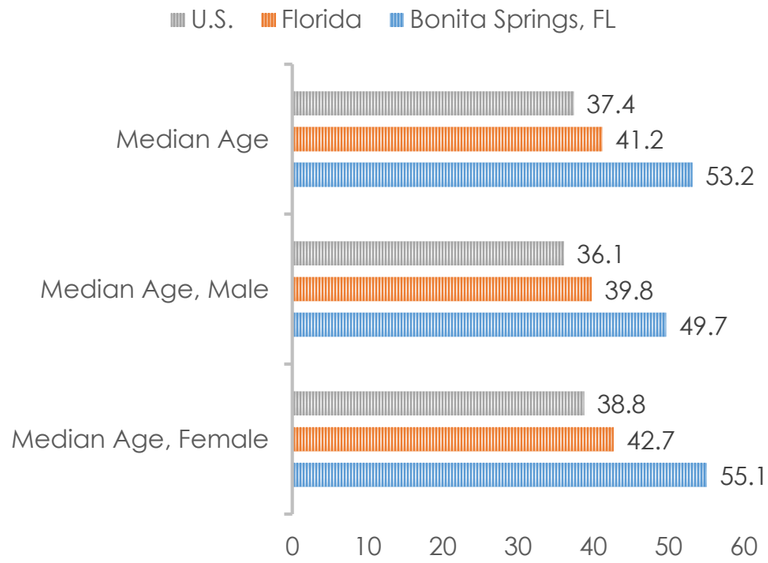


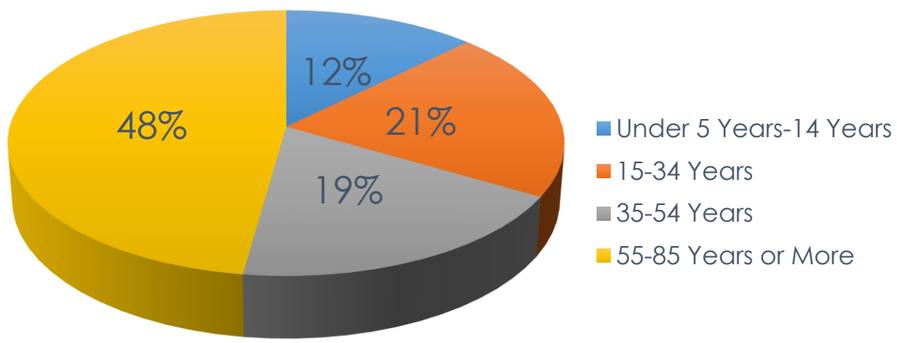
1.3 Community Profile

The City of Bonita Springs is located in Lee County, Florida. The City holds about 7.2 percent of the population of Lee county. According to the 2010 Census, the population density of Bonita Springs is approximately 1.5 times greater than that of Lee County. Since the year 2000, the population of Bonita Springs has grown approximately 41 percent.

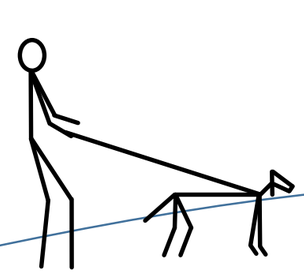
Community	Land Area (Square mile)	2010-2014 Population	Population Density (Per Square Mile)	Population Growth (%) (Since 2000)
Bonita Springs	38.60	46,384	1137.7	41.13
Fort Myers	39.96	66,167	1559.1	37.25
Lee County	784.51	647,554	788.7	46.87
Florida	53,625	19,361,792	350.6	21.14
USA	3,531,905.43	308,745,538	87.4	11.61

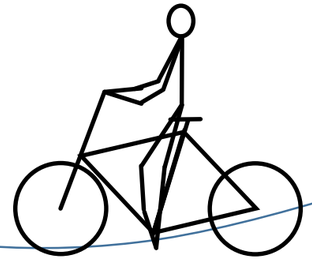
Source: http://www.usa.com; http://www.census.gov





About half of the population **(48%) is over 55 years of age**. The **Median Age is 53**, compared to 37 for the U.S. Therefore, the multimodal network should accommodate for the needs of older adults.



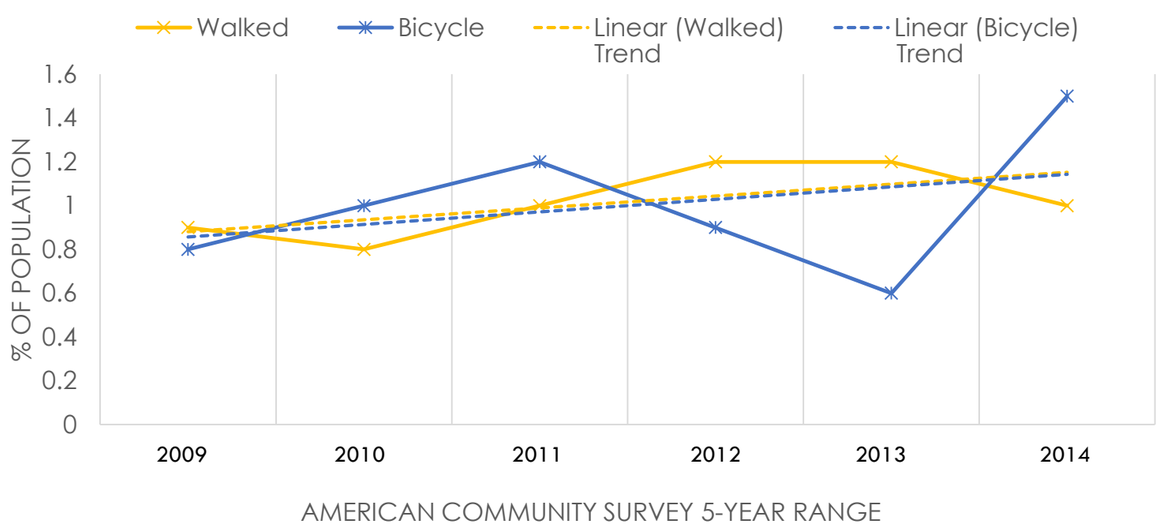


According to the 2014 American Community Survey, 2.6 percent of the population (16 years of age or over) commutes to work by public transit, 1 percent walks to work, and 1.5 percent bikes to work. Additionally 7.6 percent works from home.

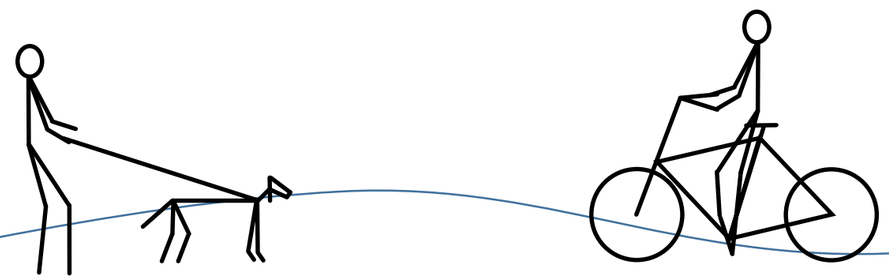
Travel Mode	2009	2010	2011	2012	2013	2014
Drove Alone	76.5	74.7	73.6	72	75.3	71
Carpooled	12.6	11.6	12.1	11.2		11.3
Public Transportation (excluding taxicab)	0.6	1.6	1.8	3	2.1	2.6
Walked	0.9	0.8	1	1.2	1.2	1
Bicycle	0.8	1	1.2	0.9	0.6	1.5
Taxicab, motorcycle or other means	0.9	2.2	2.6	2.6	4	5.1
Worked at home	7.8	8.1	7.7	9.1	7.3	7.6

Source: http://www.census.gov

LINEAR INCREASING TREND OF WALKING AND BIKING



The data shows that the mode share for walk to work rates and bike to work rates has an increasing trend. Similarly, the amount of people **driving to work alone has diminished from 76.5 percent in 2009 to 71 percent in 2014.**



1.4 Benefits of Walking and Biking

Non-motorized forms of transportation have many benefits that can impact a community's quality of life.

Source: http://la.streetsblog.org

Source: http://bloximages.chicago2.vip.townnews.com

Source: http://www.vivacity-peterborough.com

Source: https://upload.wikimedia.org

Improved mobility

Building a multimodal transportation network provides alternative modes of transport that are accessible to a wide range of users, including older adults and children who may not have access to a vehicle. Additionally, encouraging walking and biking has the potential to reduce motorized vehicle trips and increase capacity on the road.

Health

Increased walking and biking can impact physical activity levels and in turn, physical and mental health.

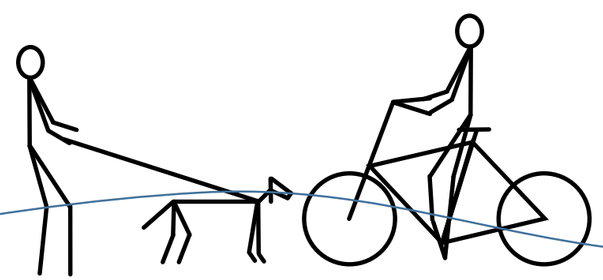
Environmental

The use of motorized vehicles is a major contributor to greenhouse gas emissions and environmental pollution. The use of non-motorized modes of transportation can reduce environmental pollution and strengthen the connection with nature.

Economic

Pedestrian and bicycle friendly places benefit from increased activity on the roadway, which may generate revenue for local businesses. Additionally, streetscape improvements and other amenities help to create a sense of place, which increases property values and attracts visitors and can increase revenue.

All of these benefits can enhance the character of Bonita Springs and help to make it a top destination.



1.5 Vision and Goals

VISION

The vision of this masterplan is to create a PATH for all forms of mobility.

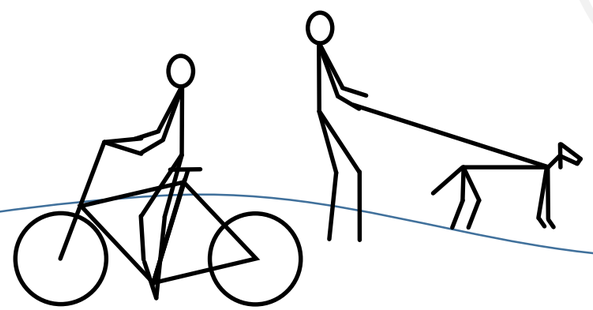
GOALS

Place: create a sense of **Place**, emphasizing the City of Bonita Springs as a livable, walkable community, with consideration to the aesthetic quality of transportation facilities

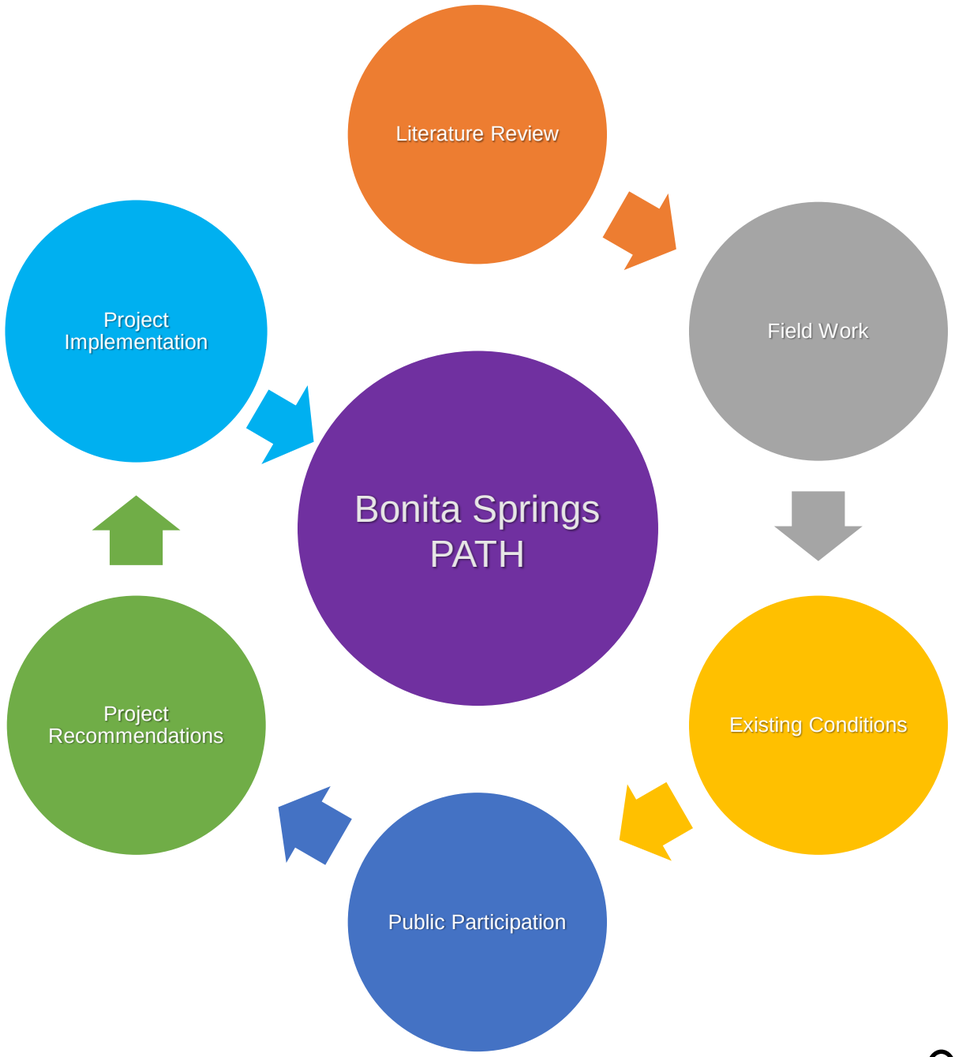
Access: provide **Access** to points of interest within the City and across City boundaries

Travelways: build and enhance **Travelways** that are safe and efficient for users of all modes of transportation, including bicyclists and pedestrians

Harmony: foster **Harmony** among users with different trip purposes and tolerances of traffic stress



1.6 Planning Process



Literature Review: The first step of the master planning process involved a literature review of existing plans, including the Key Corridor Evaluation, the Visioning Study for Bonita Beach Road and other relevant plans and data from Lee County and the Lee County Metropolitan Planning Organization (MPO). Additionally, demographic information was gathered from the US. Census.

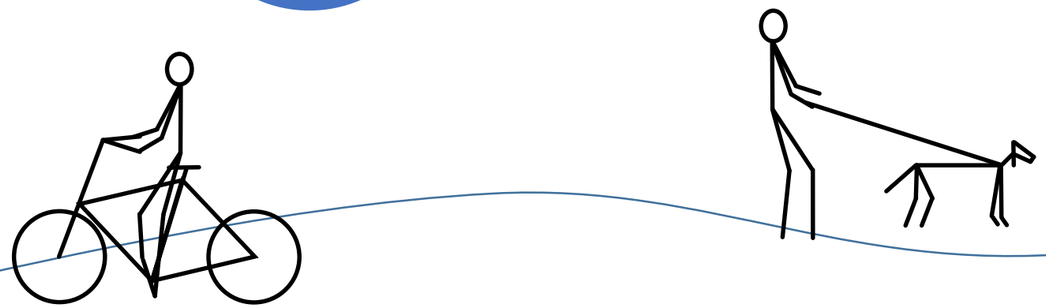
Field Work: The project team performed field visits to gather information on existing pedestrian, bicycle, and transit facilities along the subject corridors. Key points of interest within the city were also identified.

Existing Conditions: An inventory of existing facilities was created and analyzed to identify gaps in the network.

Public Participation: The existing conditions were used as the framework for the public involvement process. A public workshop was held at the City of Bonita Springs Recreation Center, where stakeholders were invited to attend and provide input on existing and potential future bicycle and pedestrian facilities. Questionnaires were also distributed through the Café of Life organization for public input.

Project Recommendations: The information gathered during the literature review, field visits, existing inventory, and public involvement process were utilized to create a master plan vision for the City of Bonita Springs. This was composed of separate plans for each facility type and graphical representation of existing, enhanced, and proposed facilities.

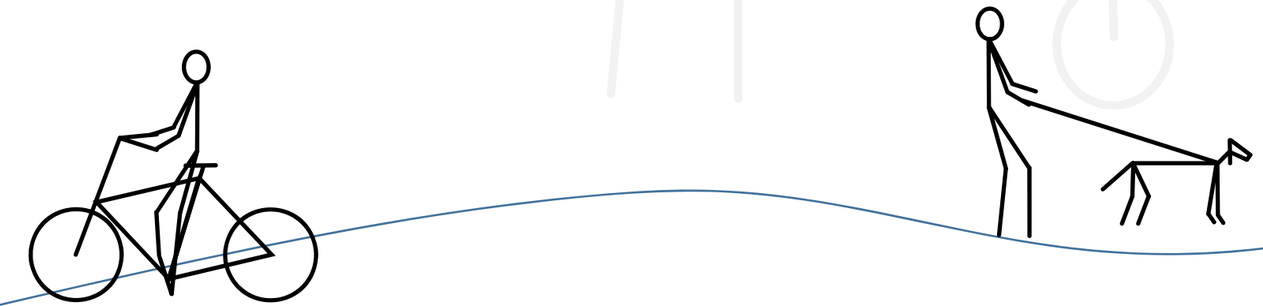
Project Implementation: Finally, priority factors, sample unit costs, and possible funding sources were identified to assist in the implementation of the Bonita Springs PATH.



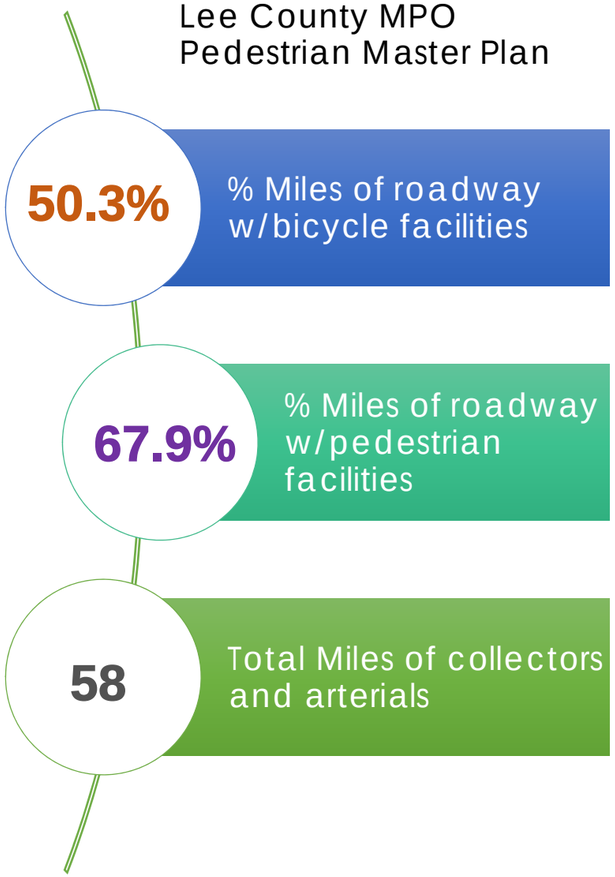
2.0 Needs Assessment

This chapter depicts the **existing conditions** for a variety of pedestrian and bicycle facilities including sidewalks, multi-use trails (shared-use paths), bike lanes and paved shoulders. It also portrays transit routes and points of interest that are important nodes in the Bonita Springs PATH network.

The existing inventory was used to analyze and identify gaps in the multimodal network. This inventory, and the data gathered during the public involvement process, were used to determine needs and opportunities, and form the master plan for the City.



2.1 Subject Corridors



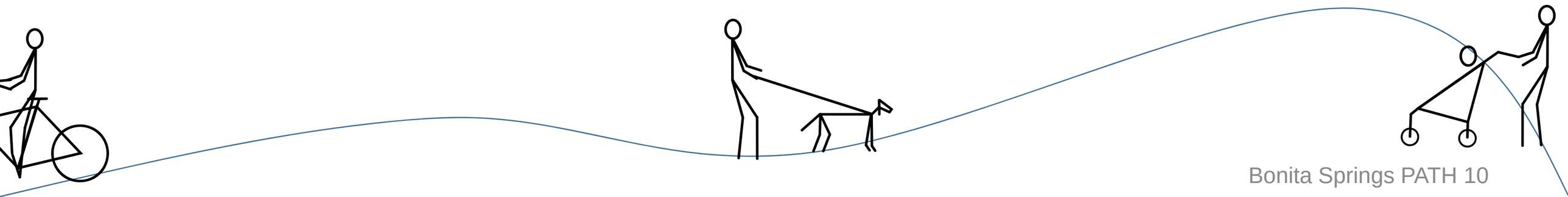
Subject corridors are comprised of arterials, collectors and strategically important local City streets. A list of subject corridors was developed by City staff. The following corridors were evaluated:

North/South Corridors

- Hickory Boulevard
- Vanderbilt Drive
- Windsor Road
- US-41/Tamiami Trail
- Arroyal Road
- Wisconsin Street
- Michigan Street
- Pine Avenue
- Old 41 Road
- Paradise Road
- Matheson Avenue
- Imperial Parkway
- Southern Pines Drive
- Kent Road
- Bonita Grande Drive
- Logan Boulevard

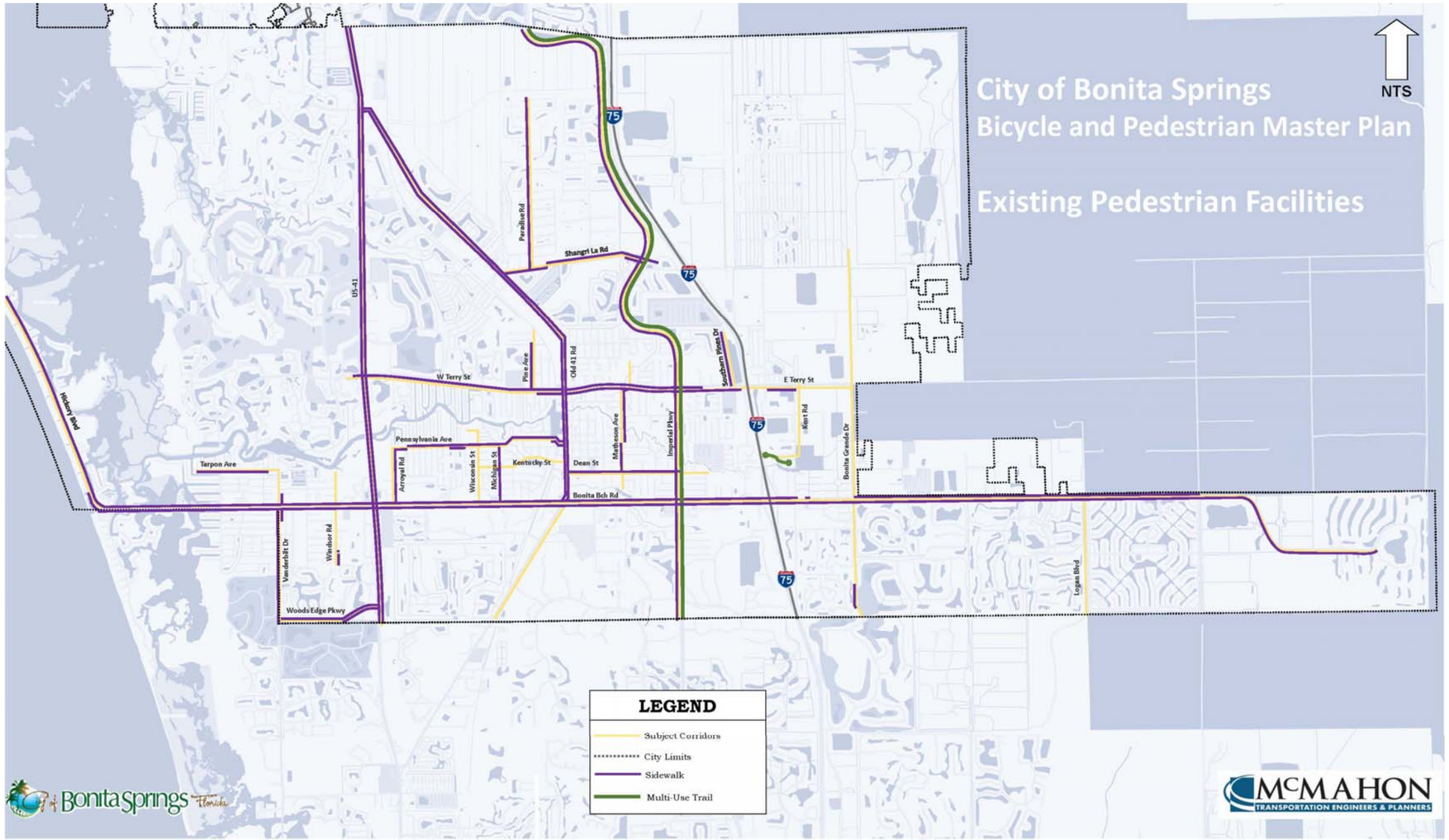
East/West Corridors

- Woods Edge Parkway
- Bonita Beach Road
- Tarpon Avenue
- Dean Street
- Kentucky Street
- Pennsylvania Avenue
- Terry Street
- Shangri-La Road

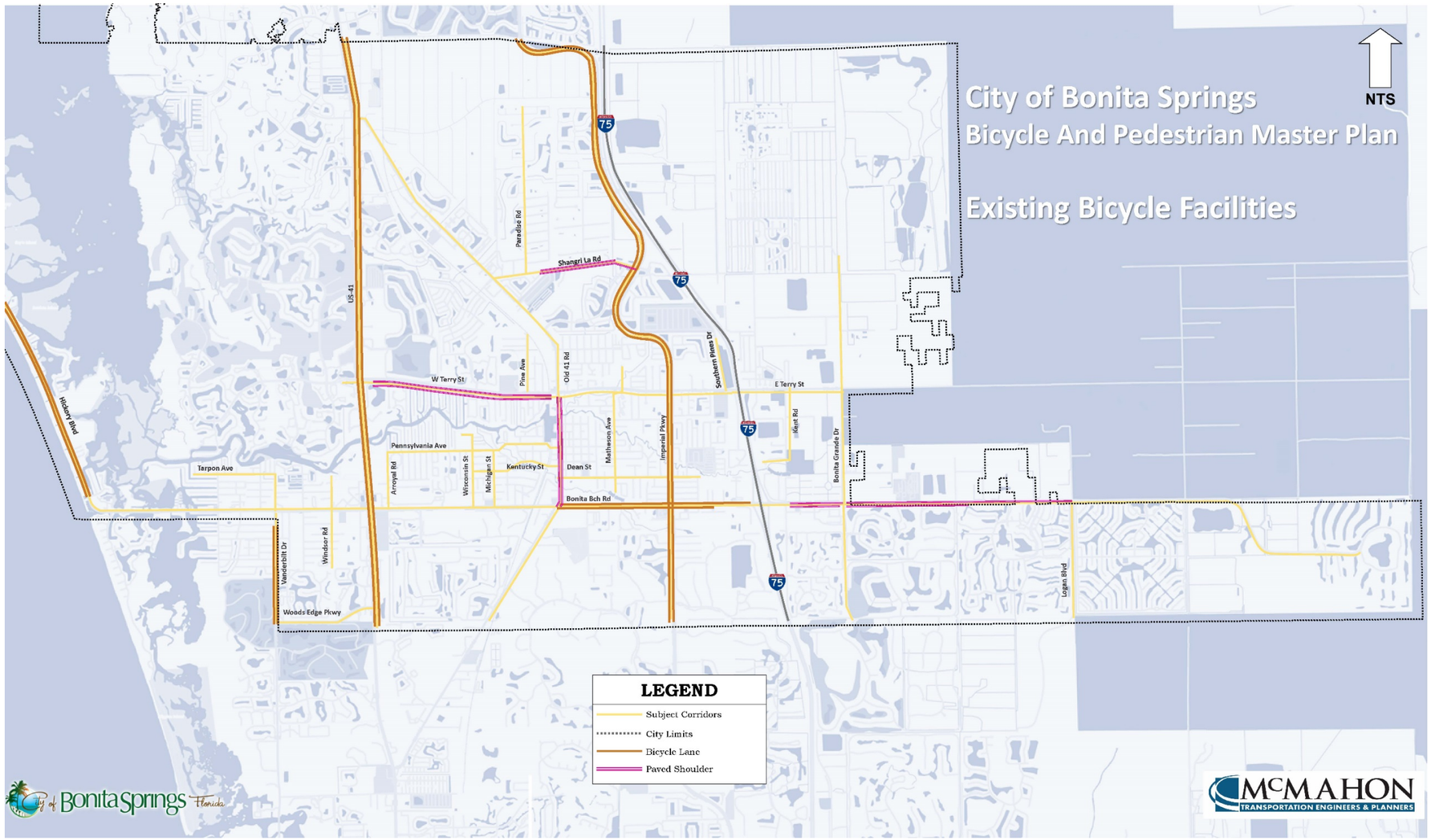


2.2 Existing Pedestrian Facilities

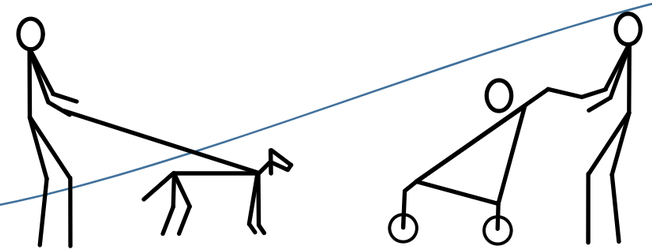
This map shows the existing sidewalk and multi-use trail routes in the City. Most of the subject corridors have sidewalks along at least one (1) side.



2.3 Existing Bicycle Facilities



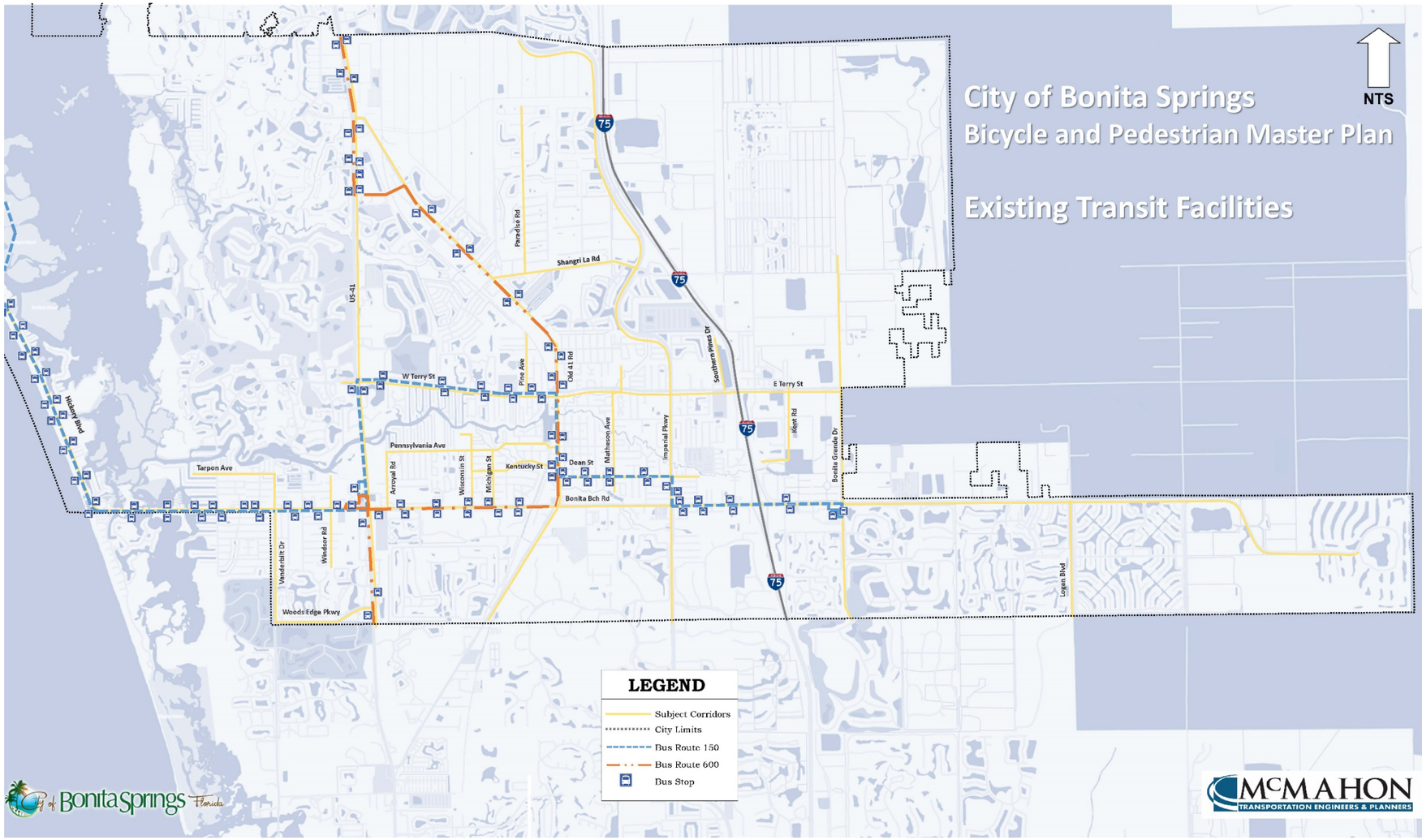
This map shows the existing bicycle lanes and paved shoulder routes in the City. Bicycle lanes currently exist along Imperial Parkway, US-41, Vanderbilt Drive, Hickory Boulevard, and portions of Bonita Beach Road. Segments of Terry Street, Old 41 Road, Shangri-La Road, and Bonita Beach Road have paved shoulders.

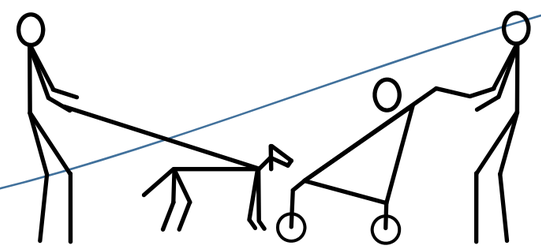


2.4 Existing Transit Facilities

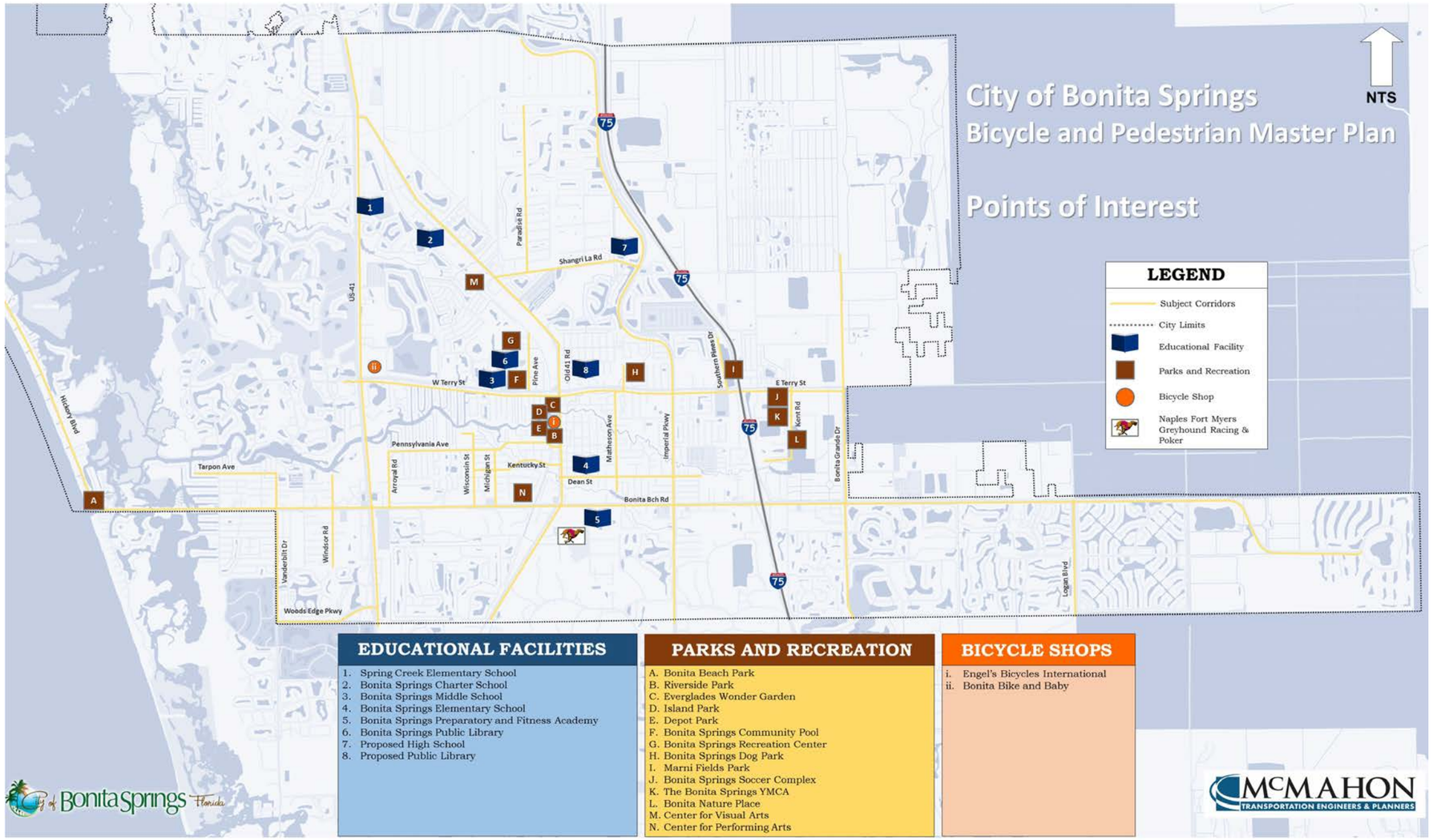
Currently, two (2) Lee Tran bus routes serve the City of Bonita Springs, these include 150 Summer and 600. Route 150 Summer operates between April 28th and January 4th. It generally runs east/west through the City along Bonita Beach Road, Dean Street, and West Terry Road, as well as parts of Imperial Parkway, Old 41 Road and US 41, and continues north along Hickory Boulevard. Route 600 runs north/south along US 41 and Old 41 with a connection along Bonita Beach Road.

These routes connect to most of the major interest points within downtown and provide access to beach areas, parks and schools. They also have connecting transfer points, which facilitate the use of both routes for residents and visitors.





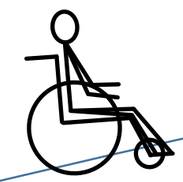
2.5 Points of Interest

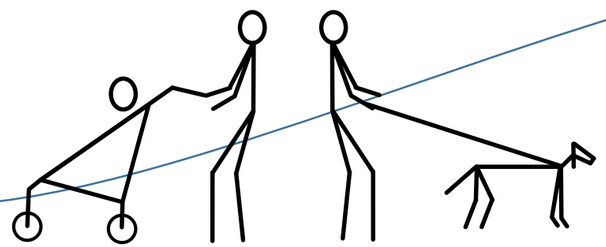


This map shows the major points of interest in Bonita Springs, including educational facilities, parks and recreational facilities, and bicycle shops that are available to the community.

A significant number of points of interests are concentrated along Old 41 Road and Terry Street. Therefore, these corridors are essential in the master planning process.

In addition to existing points of interest, a proposed high school was approved by the school board in June 2016 to be located on the northwest corner of Shangri-La Road and Imperial Parkway.





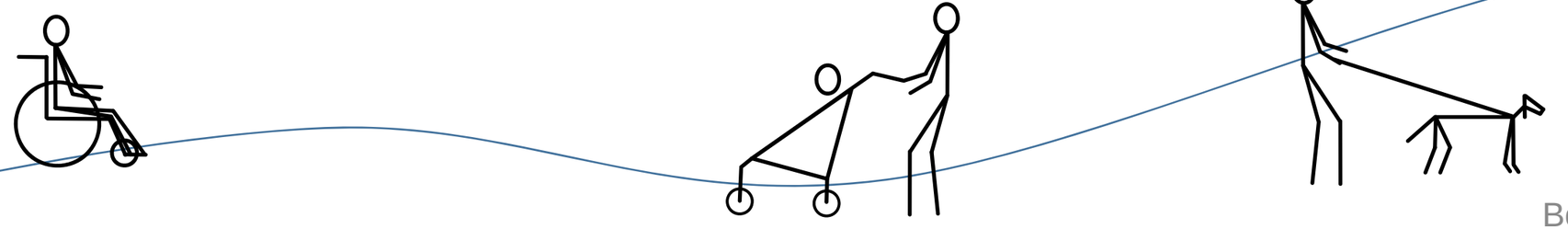
2.6 Public Involvement

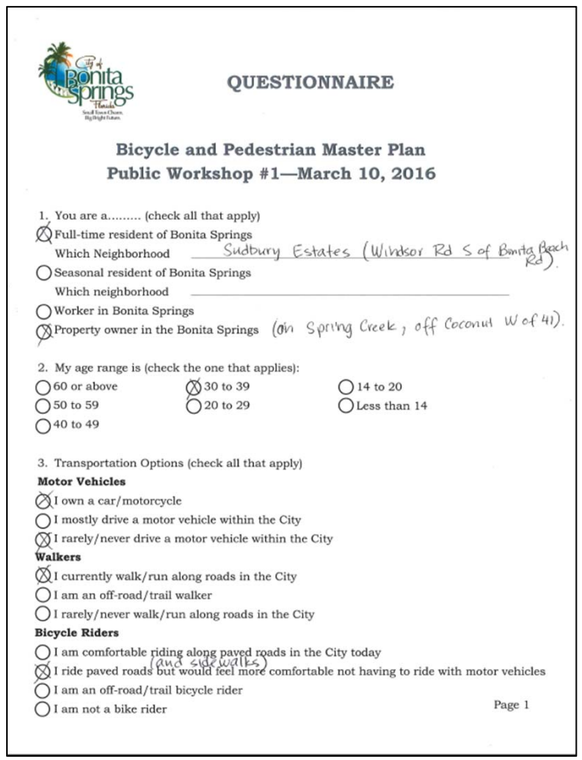
A public workshop was held on March 10, 2016 at the City of Bonita Springs Recreation Center. Community residents, relevant organizations and City officials were invited to attend. The public was provided with maps of the existing network and was asked to provide input on:

- Specific routes utilized
- Major points of interest frequented
- Existing conflict points
- Desired routes and facilities

The primary goal of the workshop was to gain a deeper understanding of the collective community vision, including existing constraints, corridors that are considered priorities, and desired outcomes or preferred facilities. The attendees were asked to complete a questionnaire regarding how to improve bicycle and pedestrian facilities in the City. They were also provided with blank maps of the City roadway network where they could graphically depict their concerns on the existing network and/or ideas on improvements and desired routes. Questionnaires and blank City roadway network maps were also sent to the Café of Life organization to assist in obtaining feedback from groups unlikely to attend the public workshop. The questionnaires were prepared in English and Spanish.

The collective thoughts and ideas gathered during the public participation process are incorporated into the master plan and were used to develop proposed routes and facility types.





QUESTIONNAIRE

Bicycle and Pedestrian Master Plan
Public Workshop #1—March 10, 2016

1. You are a..... (check all that apply)
- [X] Full-time resident of Bonita Springs
  Which Neighborhood Sudbury Estates (Windsor Rd S of Bonita Beach Rd).
- [ ] Seasonal resident of Bonita Springs
  Which neighborhood
- [ ] Worker in Bonita Springs
- [X] Property owner in the Bonita Springs (on Spring Creek, off Coconut W of 41).

2. My age range is (check the one that applies):
- [ ] 60 or above
- [X] 30 to 39
- [ ] 14 to 20
- [ ] 50 to 59
- [ ] 20 to 29
- [ ] Less than 14
- [ ] 40 to 49

3. Transportation Options (check all that apply)

Motor Vehicles
- [X] I own a car/motorcycle
- [ ] I mostly drive a motor vehicle within the City
- [X] I rarely/never drive a motor vehicle within the City

Walkers
- [X] I currently walk/run along roads in the City (and sidewalks)
- [ ] I am an off-road/trail walker
- [ ] I rarely/never walk/run along roads in the City

Bicycle Riders
- [ ] I am comfortable riding along paved roads in the City today
- [X] I ride paved roads but would feel more comfortable not having to ride with motor vehicles
- [ ] I am an off-road/trail bicycle rider
- [ ] I am not a bike rider

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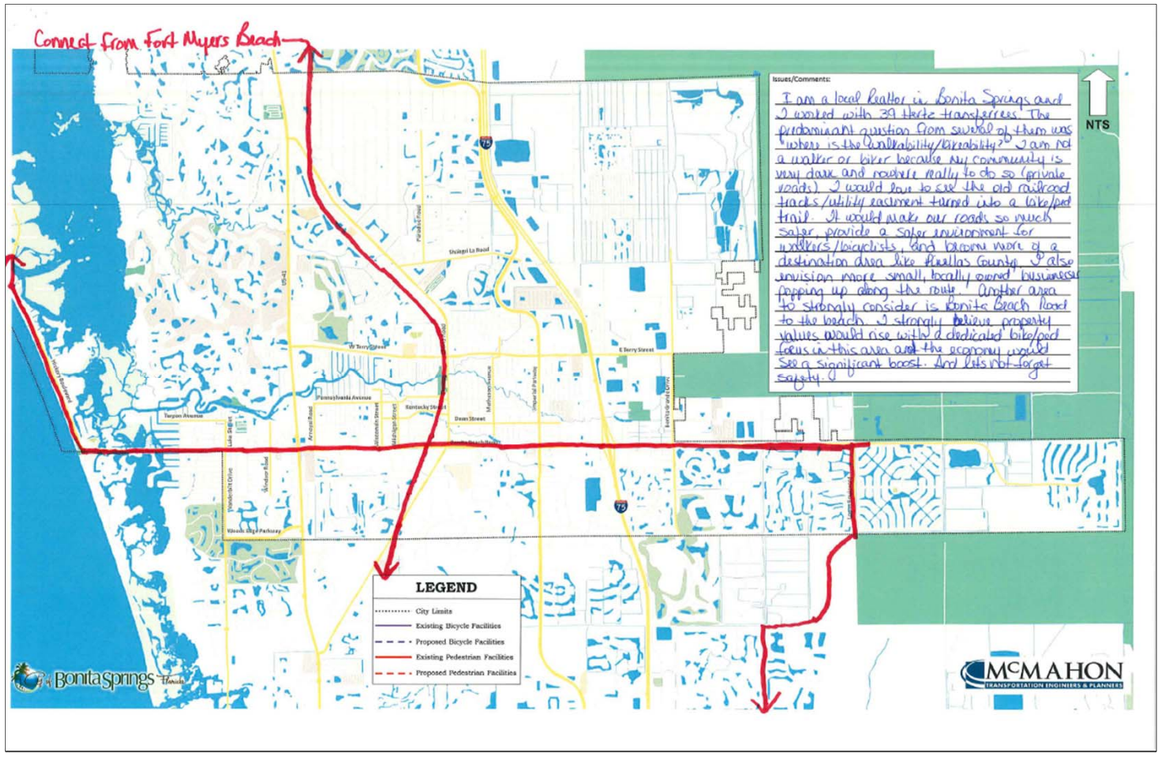
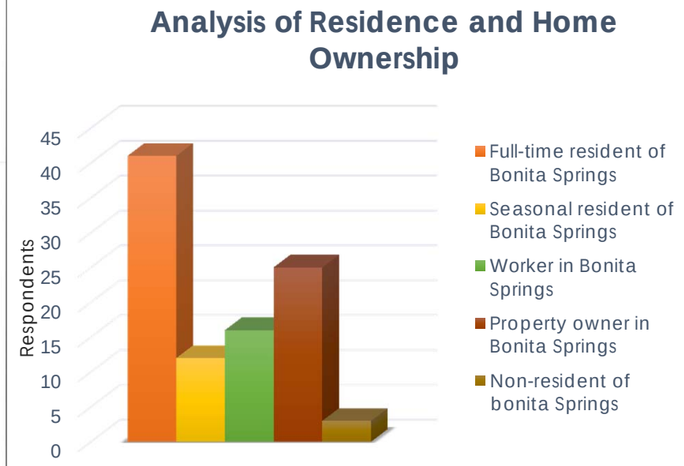
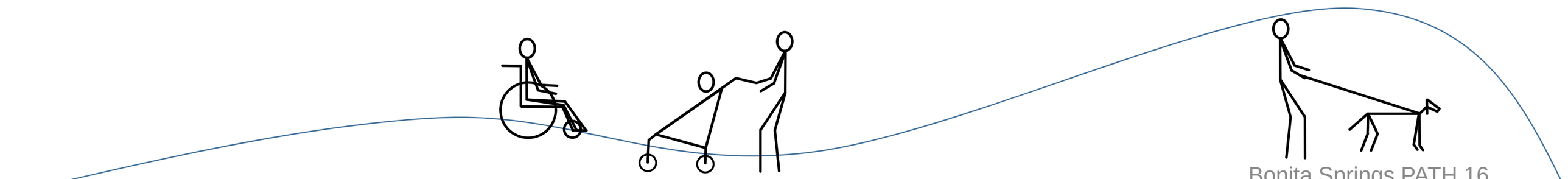


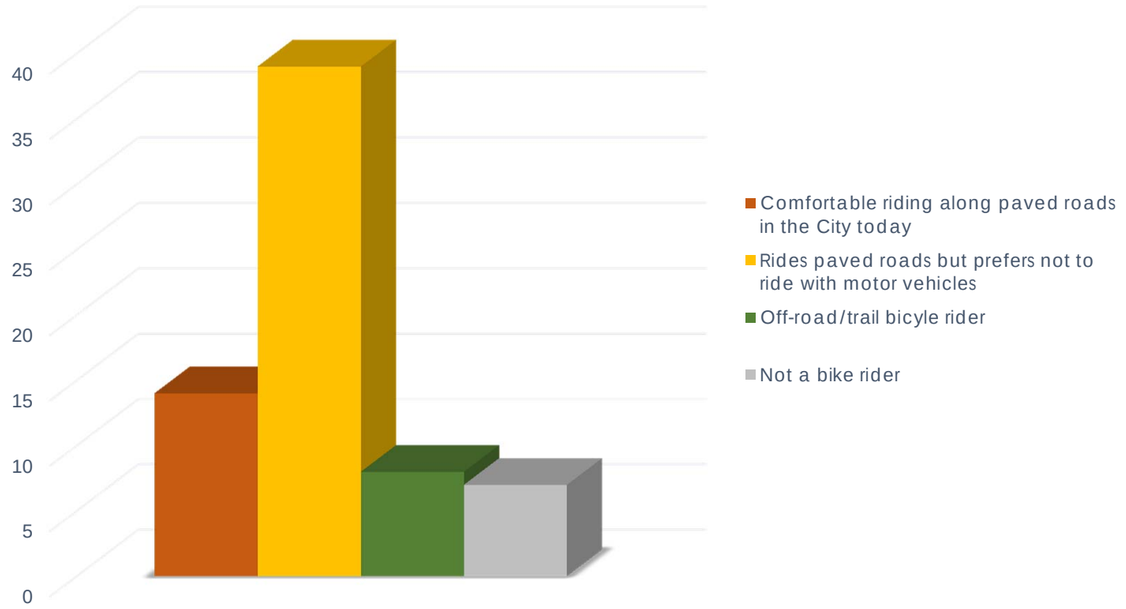


A total of 61 questionnaires were submitted through the public participation process. The majority of the respondents, approximately 67 percent, indicated that they were full-time residents of the City of Bonita Springs.

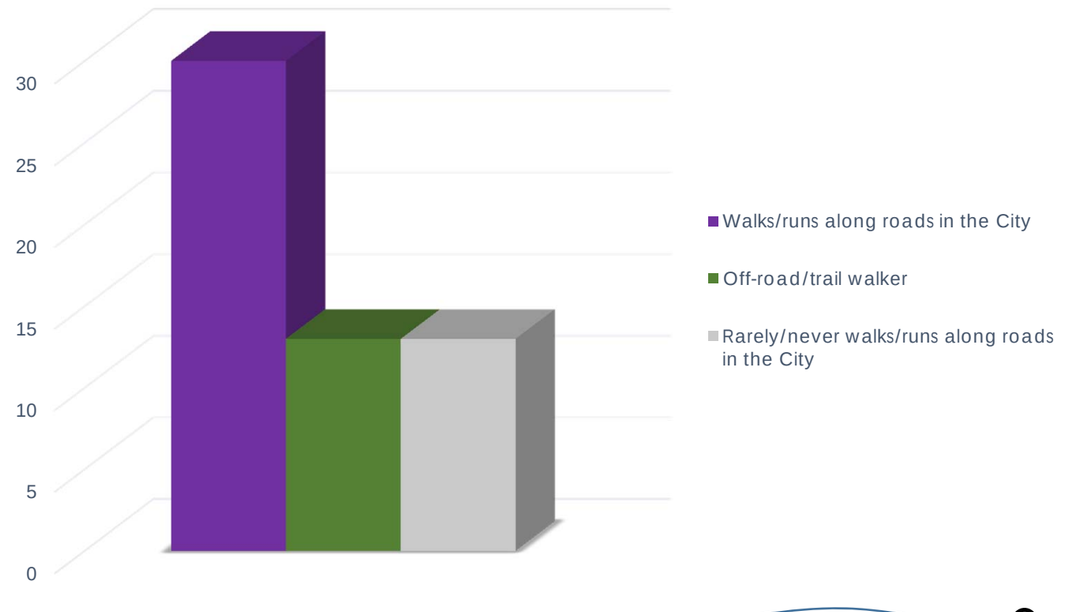


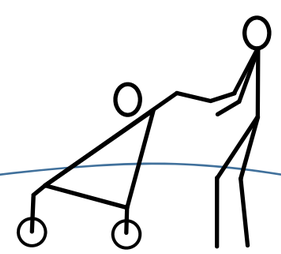
The results of the public involvement process indicate that a majority of residents own a car and driving a motor vehicle is their primary mode of transportation. Almost 90 percent of respondents ride a bicycle in some manner. Responses show a preference for bicycle facilities that limit exposure to motor vehicles. This may include separated bike paths or multi-use trails that allow users to ride their bikes away from paved roads. Some attendees, however, specifically indicated that they would only ride their bicycle on the roadway. A high percentage of respondents also walk or run along City roads. Therefore, closing key gaps in the pedestrian network is of great importance.

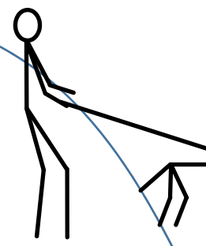
Analysis of Bike Ridership



Analysis of Walkers/Runners







Using the provided maps, workshop attendees identified key routes and gaps in the existing pedestrian and bicycle network. Participants indicated that they would like to see additional bicycle facilities along the following roadways:

- Terry Street
- Shangri-La Road
- Bonita Beach Road
- Old 41 Road

Some additional comments included:

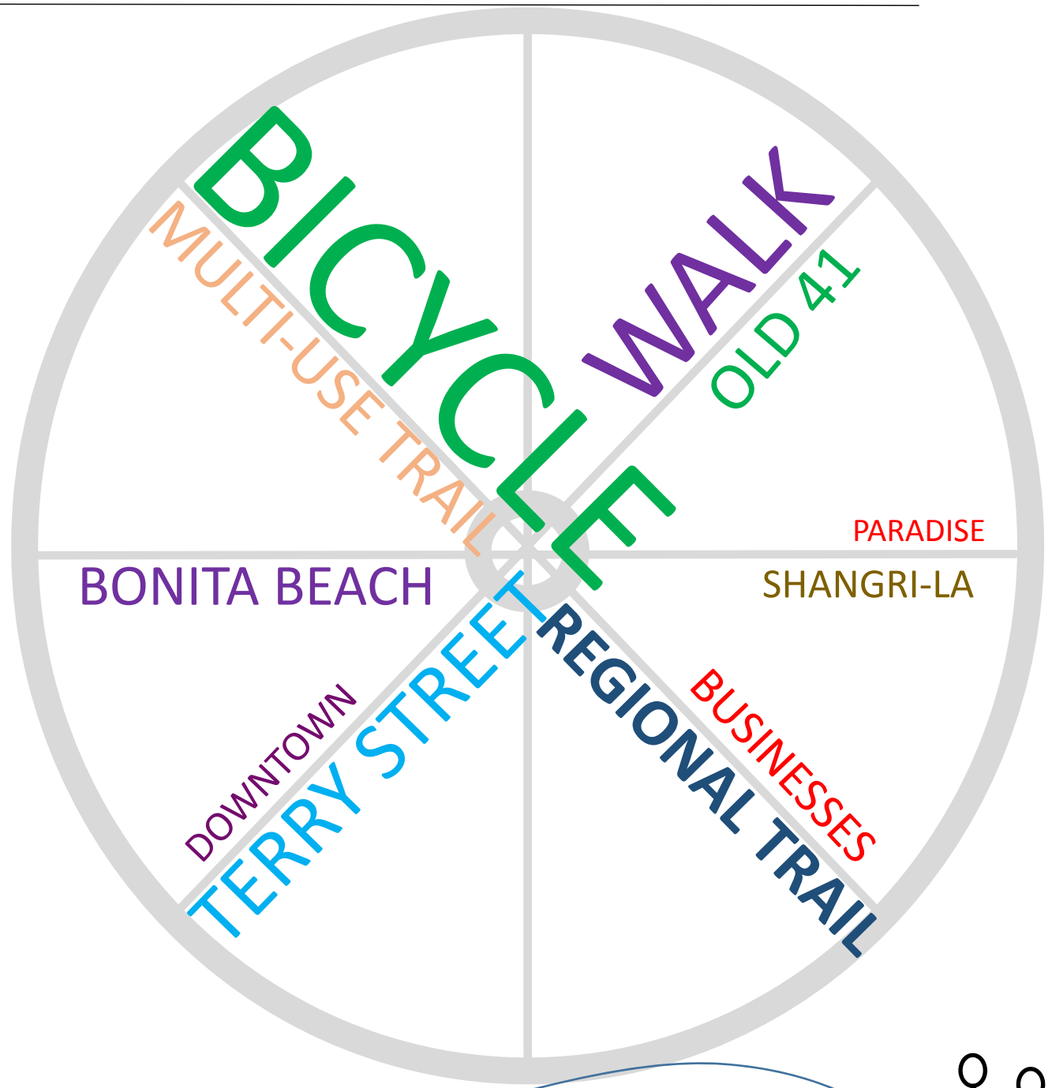
- Hickory Boulevard was mentioned as a common bicycle route.
- The community desires continued bicycle facilities south of the City limit.
- Several people supported the addition of a regional trail along the existing railroad.

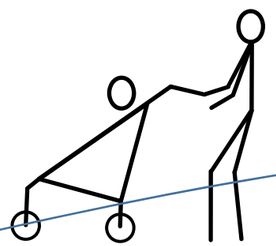
Several workshop participants mentioned the desire for pedestrian facilities along:

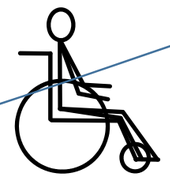
- Terry Street
- Bonita Beach Road
- Old 41 Road

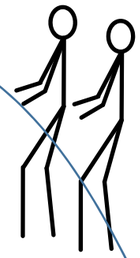
Several people mentioned the desire for more multi-use trails and larger sidewalks.

Stakeholder input also included conversations with Lee County MPO staff. The MPO is interested in a regional trail that connects the City of Tarpon Springs with Naples and runs through the City of Bonita Springs. Their preferred alignment would include portions of the railroad right-of-way and Florida Power and Light easements.







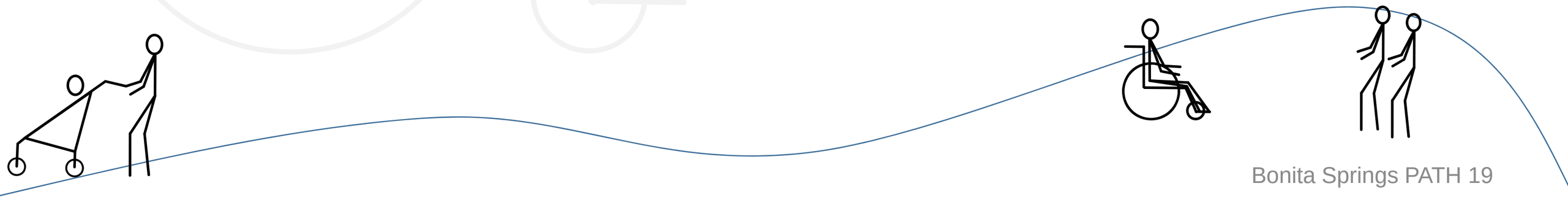


3.0 Multimodal Transportation Toolbox

Complete Streets provide safe facilities for all users including pedestrians, bicyclists, public transit riders, and motorists. This plan enhances walking and biking as viable modes of travel through the implementation of Complete Streets concepts.

Planning, designing, constructing, and maintaining the City streets with these concepts in mind will ensure safe and efficient mobility for those seeking to walk and/or bike to points of interest such as the recreation center, the library, or surrounding parks and schools, as well as transit stops.

The following collection of tools can be used in a context sensitive manner to implement complete streets as it best pertains to the City of Bonita Springs.

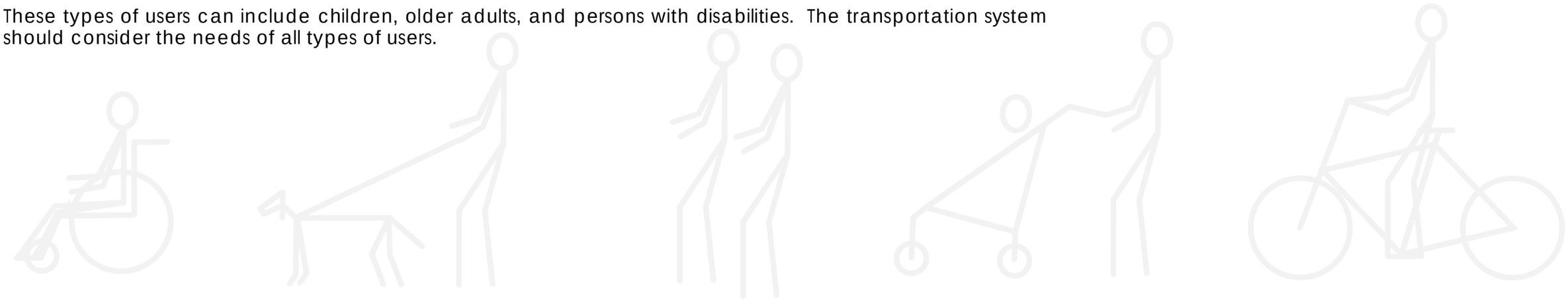


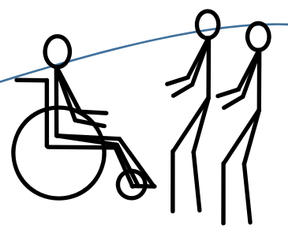
3.1 System Users

When creating a multimodal transportation system, it is important to consider the diversity of users and the varying levels of comfort using certain facilities.

- **Pedestrians:** This group may include people walking to their destinations, running/jogging, or accessing transit.
- **Advanced Bicyclists:** This group usually bikes on a regular basis for commuting, fitness and recreational purposes. Bikers in this group prefer the fastest, most direct route and often prefer on-street facilities, such as bicycle lanes, paved shoulders, and shared lanes (signage and/or sharrows).
- **Occasional Bicyclists:** This group includes less experienced bikers, who prefer off-road facilities or low speed, low volume routes that minimize conflict with vehicles. Off-road facilities include multi-use trails, paths and separated bike paths.

These types of users can include children, older adults, and persons with disabilities. The transportation system should consider the needs of all types of users.





3.2 Pedestrian Facilities

Sidewalk

A paved pathway parallel to a roadway and physically separated from vehicular traffic that is intended for use of pedestrians. Sidewalks must typically be at least five feet (5ft) wide to comply with ADA, but are often wider with spaces for landscaping, street lighting and other street furniture. However, a reduced four-foot width can be provided under certain conditions

Path

A side path (or an off-road path) can be paved or unpaved and is often an appropriate facility to accommodate pedestrians in rural and low-density suburban areas. Typically, paths are not placed adjacent to a roadway, but rather offset by a natural buffer area or swale. In many cases, paths can deviate from their proximity to the roadway particularly in order to provide a more direct pedestrian route.

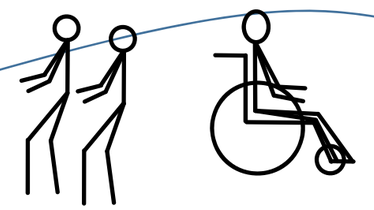
Crosswalk

A designated pedestrian area for crossing a roadway. At an intersection, crosswalks serve as an extension of the sidewalk or connection of pedestrian facilities. At signalized intersections, accommodations such as pedestrian signal heads and phasing, pedestrian actuated push buttons, and ADA handicap ramps may be installed to enhance safety and comfort. At mid-block crossings, safety enhancements such as raised surfaces and signalized features can be implemented. Some such features are Rectangular Rapid Flashing Beacons (RRFB), and Pedestrian Hybrid Beacons (HAWK).

Multi-Use Trail

A multi-use trail or shared-use path is a facility that is physically separated from the roadway and typically accommodates bi-directional travel by both bicyclists and pedestrians. The path can be situated within publicly owned right-of-way, an exclusive right-of-way, or an easement. Shared use paths typically have hard surfaces and a recommended width per AASHTO of 10 feet or wider for high-use facilities (a minimum eight-foot [8ft] width can be used where space is constrained). Some off-road trails do, however, restrict certain user types due to trail width, surface, topography, condition and potential user conflicts.

Source: http://www.bikeflorida.net



Source: http://www.pedbikesafe.org

Rectangular Rapid Flashing Beacons (RRFB)

These are warning beacons that supplement standard pedestrian crossing warning signs at school or pedestrian crossings. They use a rapid flashing frequency of about 190 times per minute. The flashing pattern may be activated using push buttons or it can be automated. The device may be constructed using solar power.

Source: http://www.pedbikesafe.org

Source: http://www.pedbikesafe.org

Pedestrian Hybrid Beacon

This is also known as a High intensity Activated crossWalK (HAWK). It is a pedestrian activated warning beacon generally located on mast arms and best suited for use at uncontrolled crossings in multi-lane, high speed/volume roadways. The volume thresholds for this type of device are much lower than for a traffic signal. Therefore, this treatment may be used in locations where traffic signals are not warranted by MUTCD standards.

Source: http://www.pedbikesafe.org

Raised Intersection

This is a type of vertical speed control element where the intersection is flush with the sidewalk. This element reinforces slow speeds and encourages drivers to travel slowly through pedestrian crosswalks. The crosswalks are also elevated to the same level and do not need to be marked. The treatment for these areas may include asphalt concrete or pavers.

Source: http://nacto.org

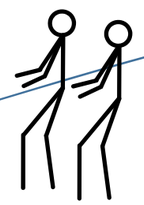
Source: http://nacto.org

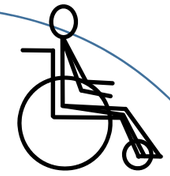
In-Pavement Lighting

This type of lighting is installed in the pavement surface. It increases the visibility and safety of pedestrians at night time. According to MUTCD guidelines, In-Pavement lighting should be installed only at marked crosswalks with applicable warning signs and they shall not be used at crosswalks controlled by yield signs, stop signs, or traffic control signs.

Source: http://mutcd.fhwa.dot.gov

Source: http://www.27east.com





3.3 Bicycle Facilities

Shared lane (Sharrow) and Signage

A roadway with travel lanes that are shared by both vehicles and bicycles. **The roadway can include signage "Share the Road" or "Bicycle May Use Full Lane," and pavement markings to indicate shared bicycle traffic**. Sharrow pavement markings is a type of Shared Lane Marking (SLM) indicating that cyclists can use the travel lane. It helps to position bicyclists within the shared lane and ensures safe passing.

Source: http://www.frombarbsbars.com

Paved Shoulder

Paved shoulders provide accommodations for bicyclists adjacent to the travel lanes. They can vary in width depending on the available pavement.

Bike Lane

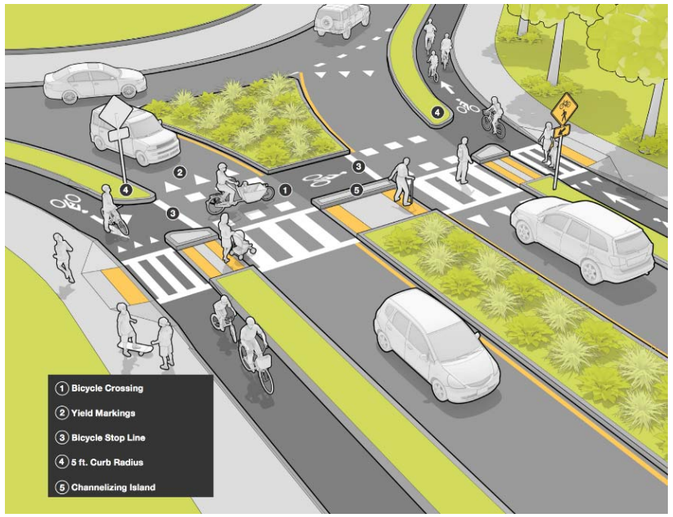
Bike lanes are designated travel lanes for exclusive use by bicyclists. Specific pavement markings and signage are required to identify the bike lane.

Source: http://www.bikeflorida.net

Separated Bike Path

Separated bike path refers to bicycle lanes that are completely separated from motor vehicles by a buffer. They usually include pavement markings or designation for bicycle travel in both directions.

3.4 Intersection Treatments



Source: https://en.wikipedia.org

Roundabouts

Circular intersection in which traffic flows continuously in one (1) direction around a central island. They are often used for traffic calming as they reduce speeding, crash rates, and crash severity. They can be designed to be inclusive of pedestrians and cyclists with dedicated crossing paths for each user.

Pedestrian Features

Pedestrian crosswalks with Special Emphasis markings, pedestrian signal heads with countdowns, push buttons, ADA ramps, and associated signage.

Source: https://bikeeastbay.org

Source: http://b.3cdn.net

Bicycle Crossing

A designated area for bicycles to cross the roadway. These are usually located next to the crosswalk and may be applied at mid-block crossings, driveways or even signalized intersections.

Bike Box

A designated area for bicyclists in front of vehicular travel lanes at signalized intersections to increase visibility, reduce delay, and help prevent accidents with right turning vehicles.

Source: http://nacto.org

3.5 Amenities

Source: https://shutterstock.com

Lighting

Pedestrian scale lighting improves visibility, enhances aesthetics of the roadway, and provides safety and security for pedestrians and bicyclists.

Street Vegetation

Street vegetation may include street trees, shrubs, grass, or flowers. The vegetation can be in the median or along the roadside and can provide a buffer between transportation elements such as motorized vehicular traffic and a multi-use trail. These could be planted at ground level or in planters. Vegetation can be used not only as a buffer, but also for shade and to enhance aesthetics.

Source: https://commons.wikimedia.org; http://www.geograph.org.uk

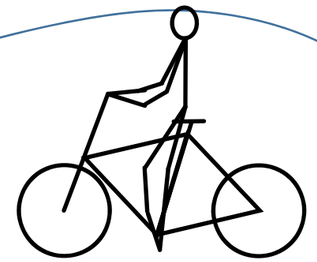
Street Furniture

Benches, trash cans, and bus shelters are examples of street furniture that can enhance the pedestrian experience. These components may be designed with a consistent theme that reflects the character of the roadway.

Source: https://commons.wikimedia.org

Bike Parking

Bike parking includes stand-alone bike racks, bike racks with shelters, or indoor secure facilities. It is a key component of bicycle infrastructure, as it encourages the use of biking as a mode of transportation for short trips to the grocery store, city parks and other local points of interest. Bike parking may be placed outside businesses or civic buildings near entry points.



3.6 Wayfinding

Source: http://www.cityofrockledge.org

Gateway

Gateway signage is meant to give a sense of welcoming and is typically placed near the entrance of a City. These signs create the initial impression visitors experience as they are generally the first ones visitors see when they approach City limits. As such, these signs have an ingrained meaning for residents, visitors, and investors alike.

Source: http://provomayor.com; http://www.beavertonoregon.gov

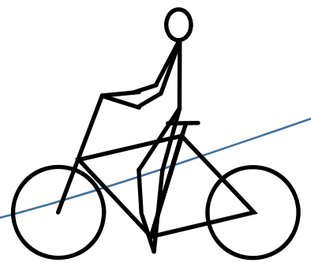
Directional

Directional signs lead street users to nearby points of interest, including cultural and historical landmarks. These types of signs are particularly beneficial to those who are unfamiliar with their destination or the surrounding area. Directional signs can be used to guide users to other facilities such as parking and public restrooms.

Source: http://provomayor.com; https://dennismaplanningdept.wordpress.com

Landmark Identification

Landmark identification signs are located at parks, museums, and other places of significance in order to clearly establish their location.



Source: https://dennismaplanningdept.wordpress.com; http://true-north-usa.com; http://provomayor.com; http://www.lhsigns.com; https://commons.wikimedia.org

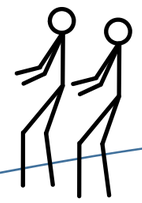
District

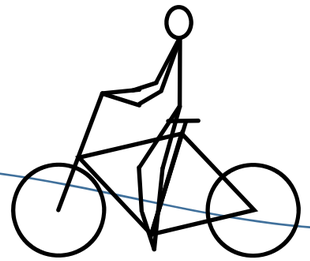
District signs designate an area of the City such as the historic district or downtown area. As a result, residents and visitors alike are encouraged to further explore nearby areas. Labeling the respective districts also provides valuable branding for businesses and various programming that takes place. Signage should also blend in with the surrounding streetscape.

Bicycle/Trail Routes

Source: http://altaplanning.com; http://pixodesigncanada.files.wordpress.com

Clear bicycle and trail signage make routes easily available and encourages people to use non-motorized means of transportation. These types of signs can include bicycle route designations, mile markers, directional signs/maps to points of interest.



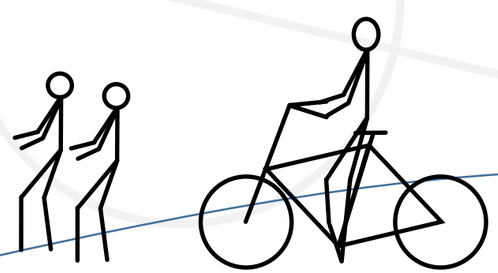


4.0 Recommendations

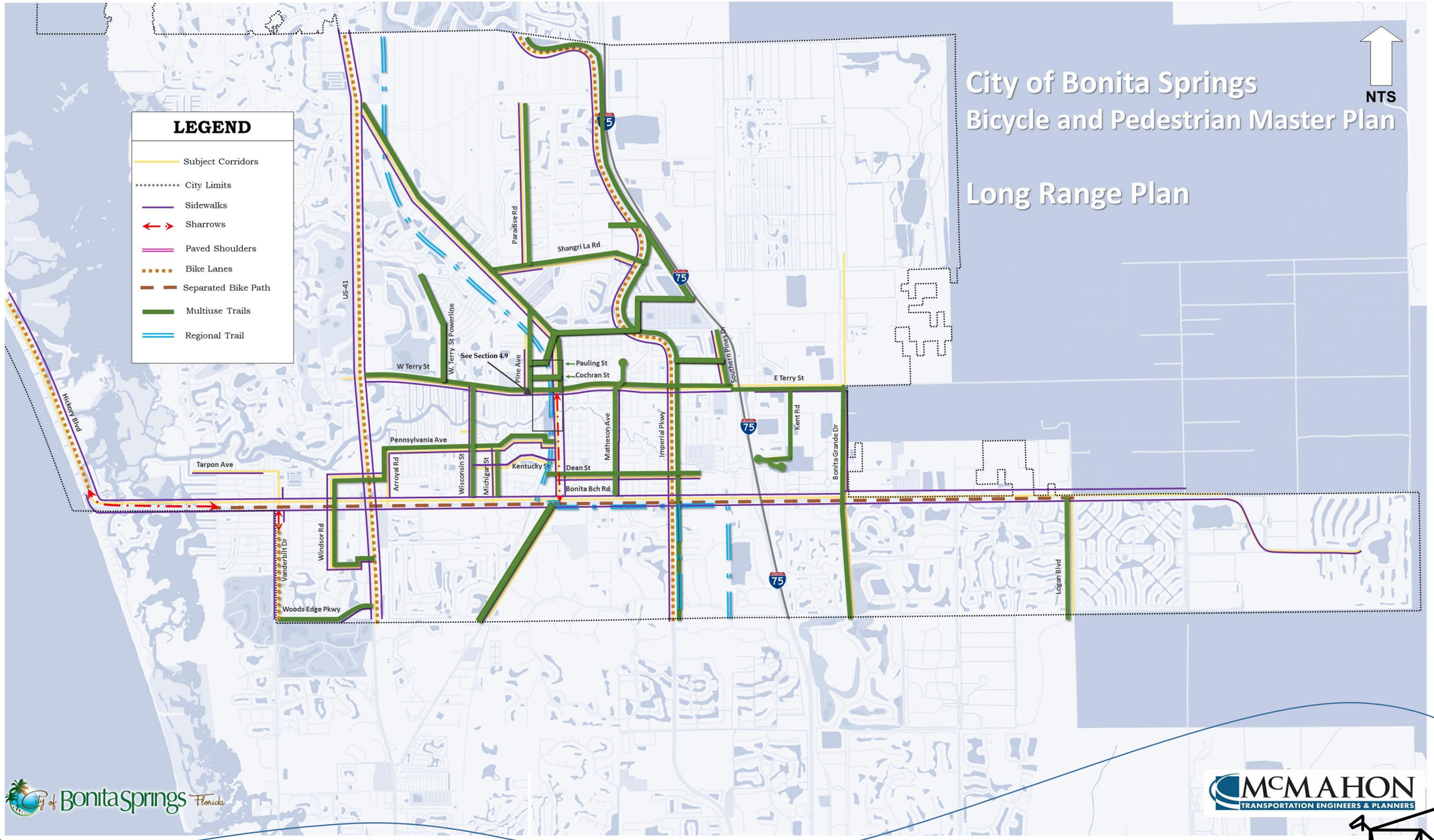
This chapter contains the culmination of the **needs assessment** and **public involvement** process. The information gathered during these phases were used to develop the Master Plan for the City of Bonita Springs. A comprehensive set of facility plans were created for each facility type:

- Muti-Use Trail
- Sidewalk
- Bicycle
- Separated Bicycle Path
- Paved Shoulder
- Sharrows

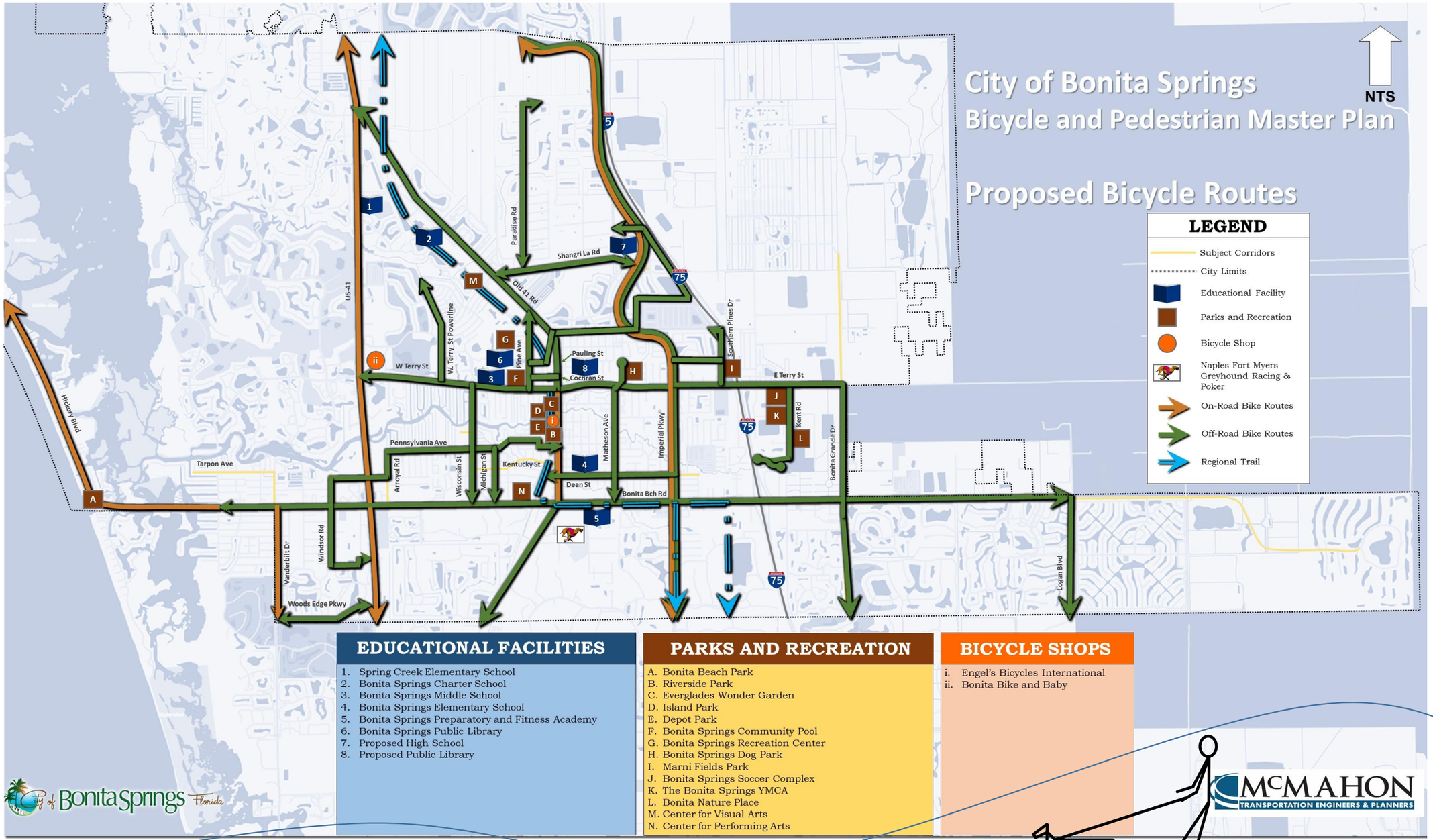
These individual facility plans were combined to create the long range plan shown in section 4.1. Recommendations for local and regional connectivity are proposed. It is also recommended that implementation of the facility plans include features from the toolboxes that will enhance the pedestrian and bicycle experience.



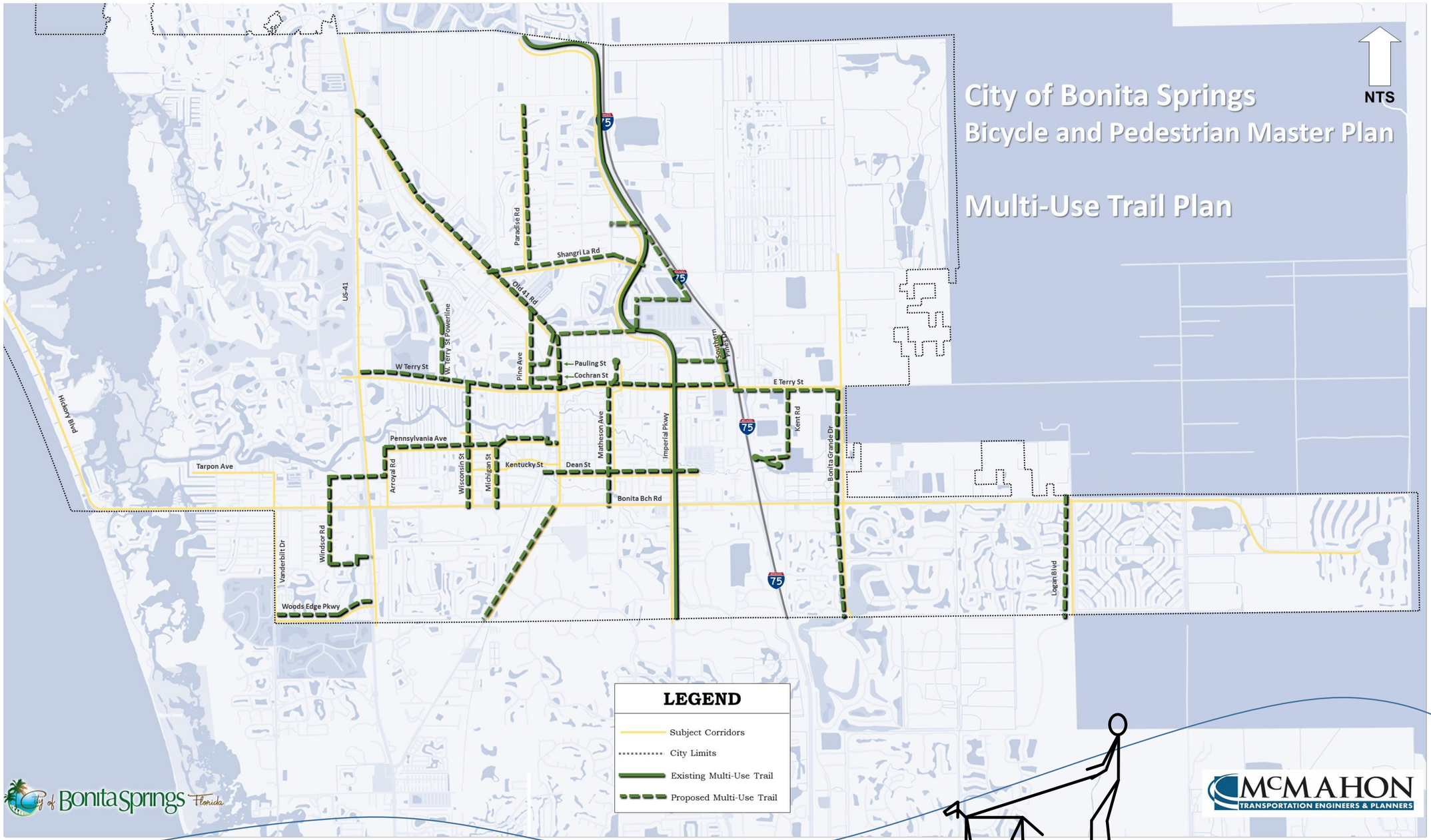
4.1 The Long Range Plan



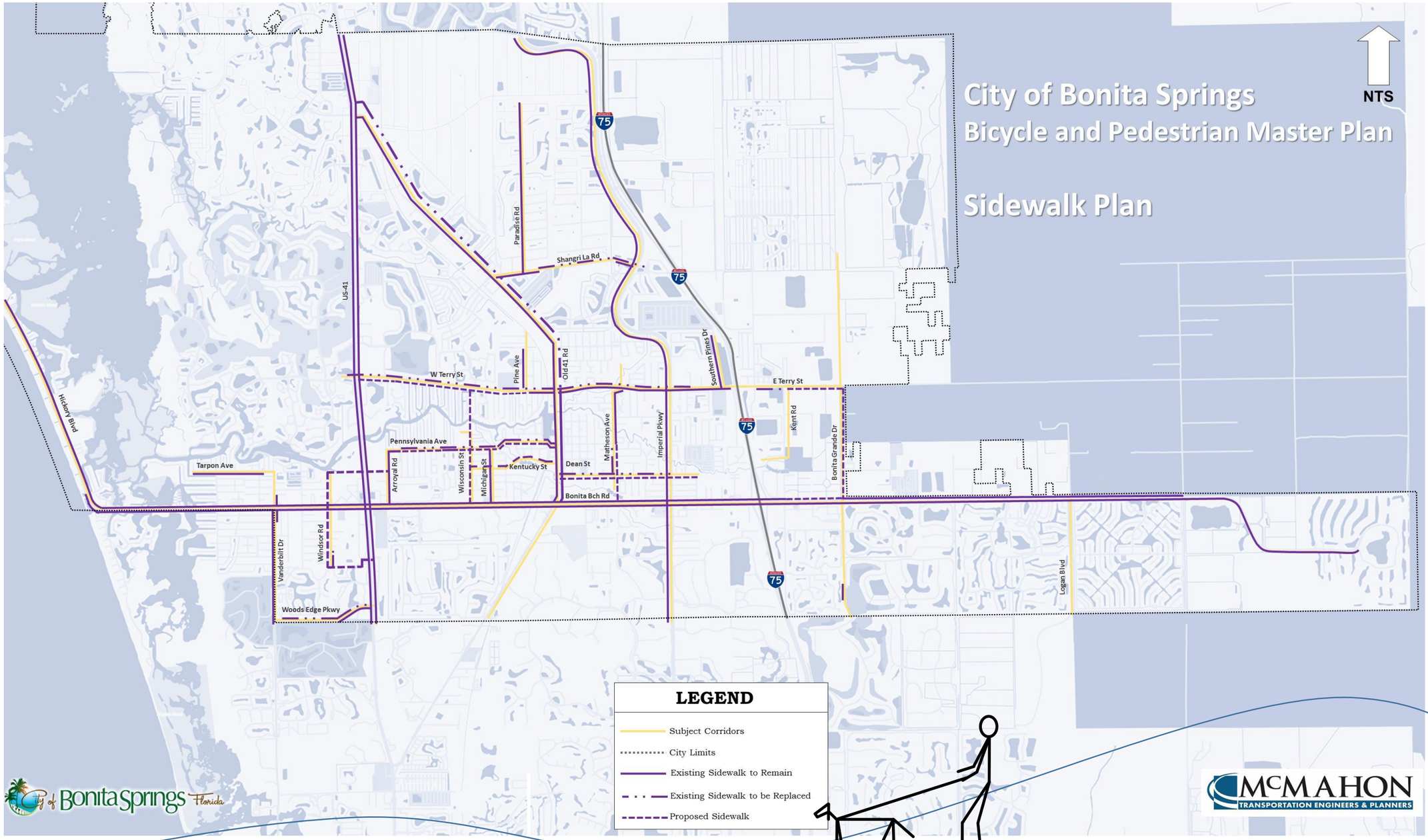
4.2 Bicycle Routes



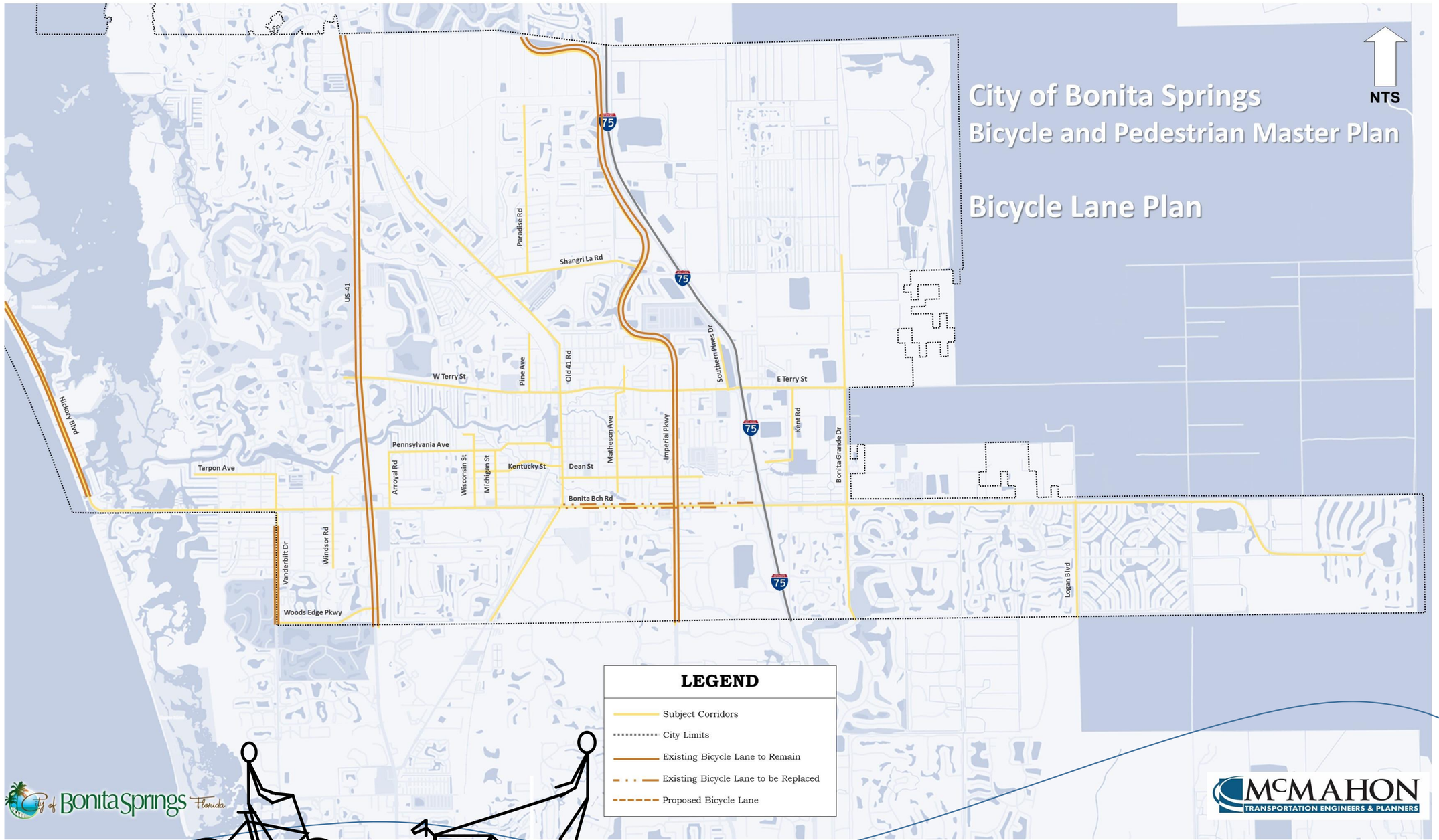
4.3 Multi-use Trail Plan



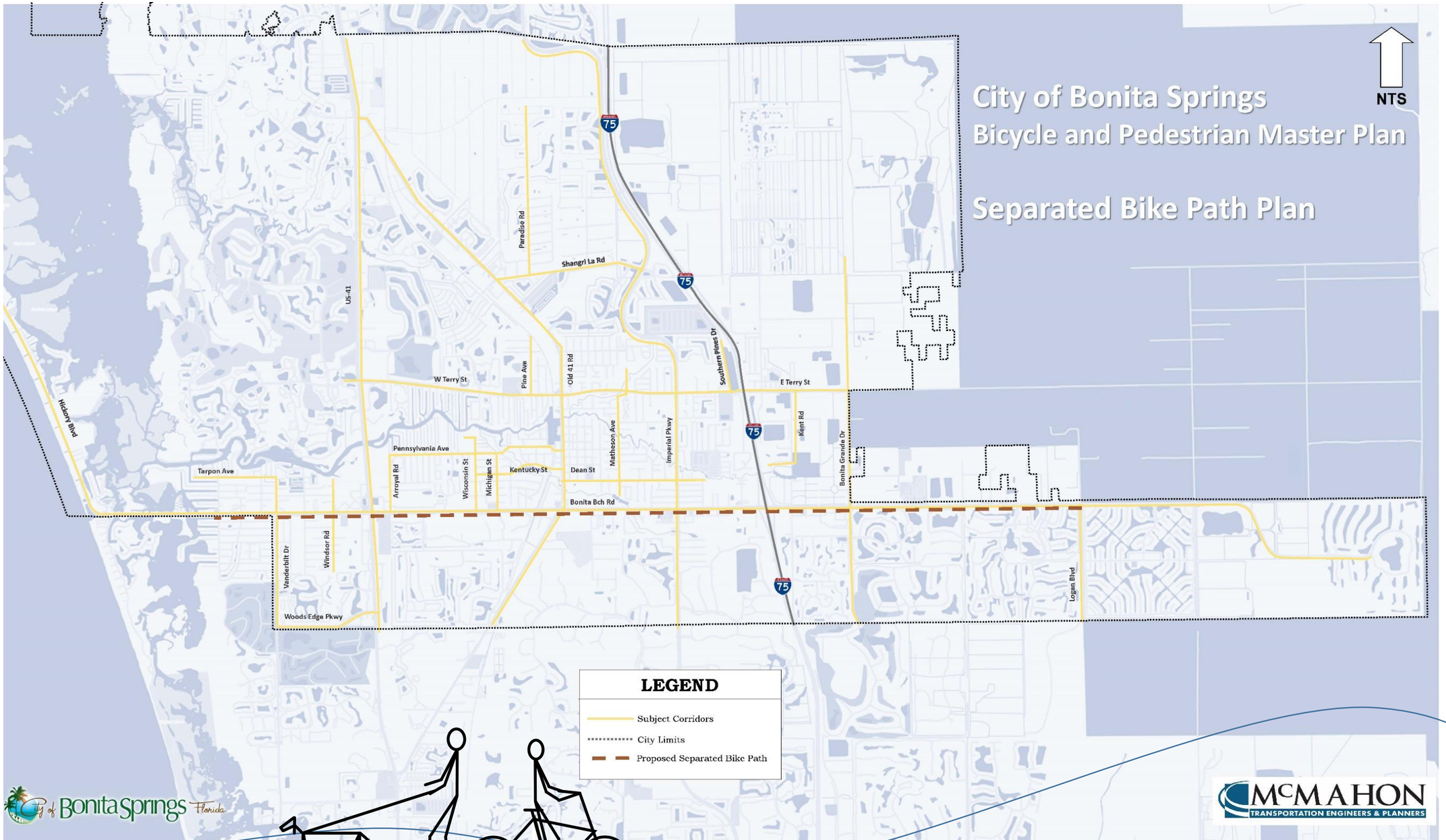
4.4 Sidewalk Plan



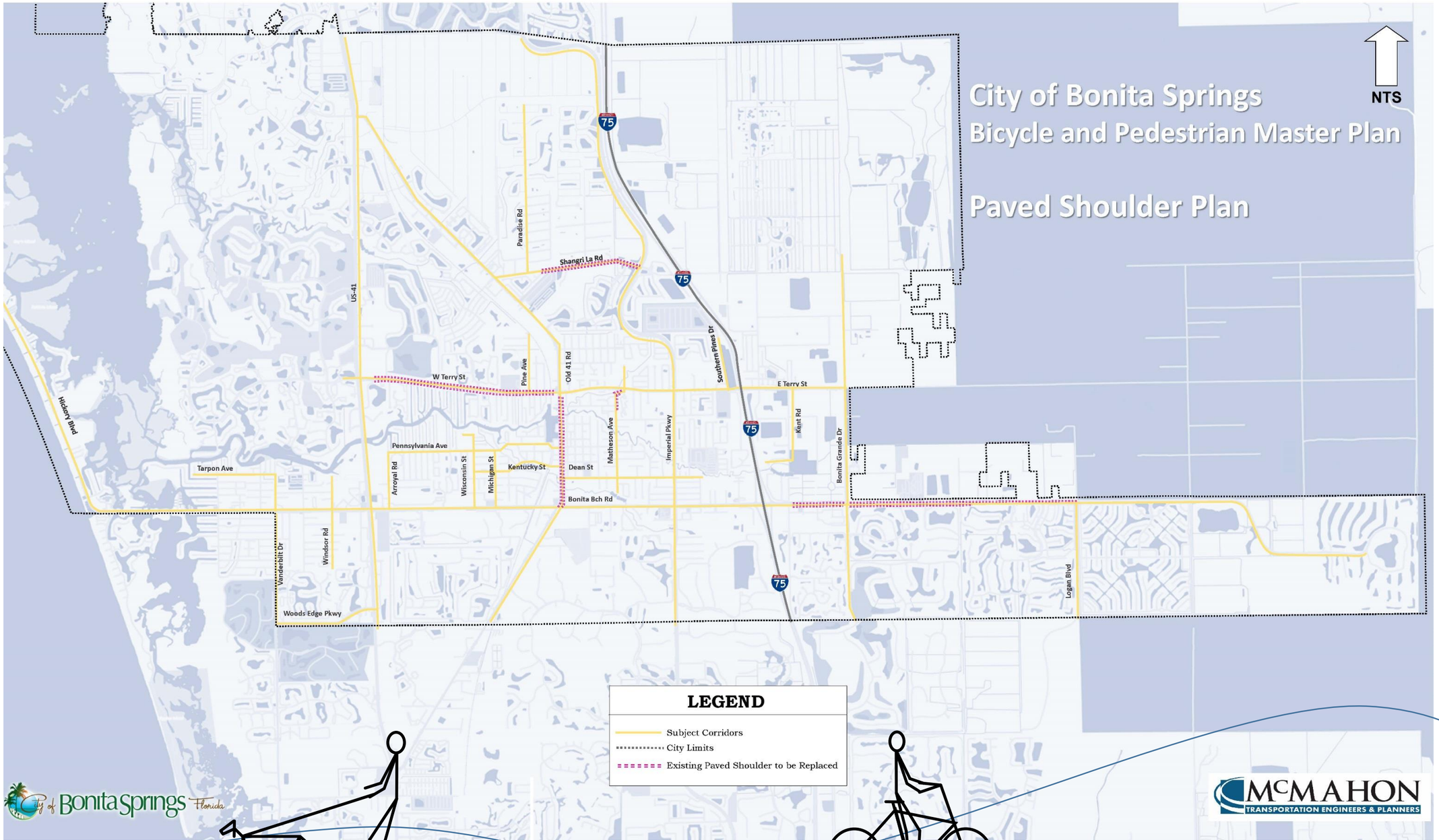
4.5 Bicycle Lane Plan



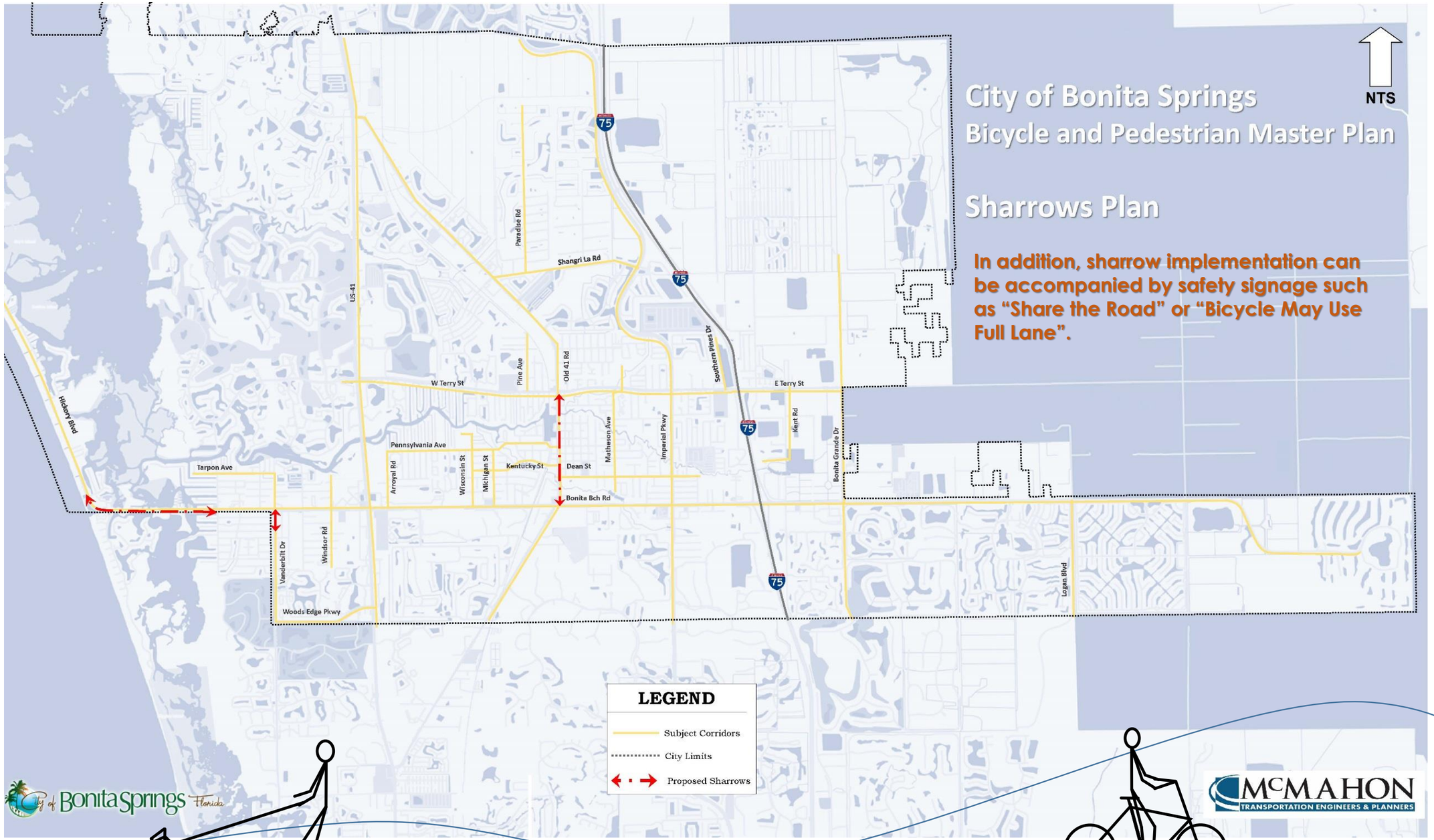
4.6 Separated Bicycle Path Plan



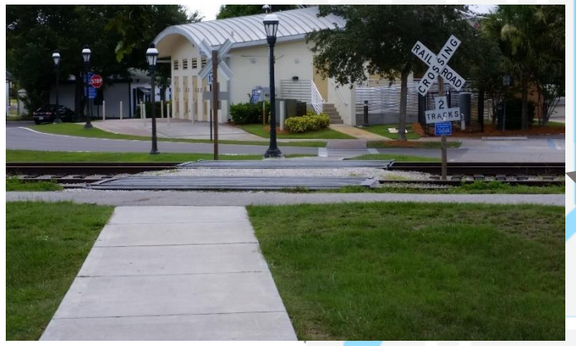
4.7 Paved Shoulder Plan

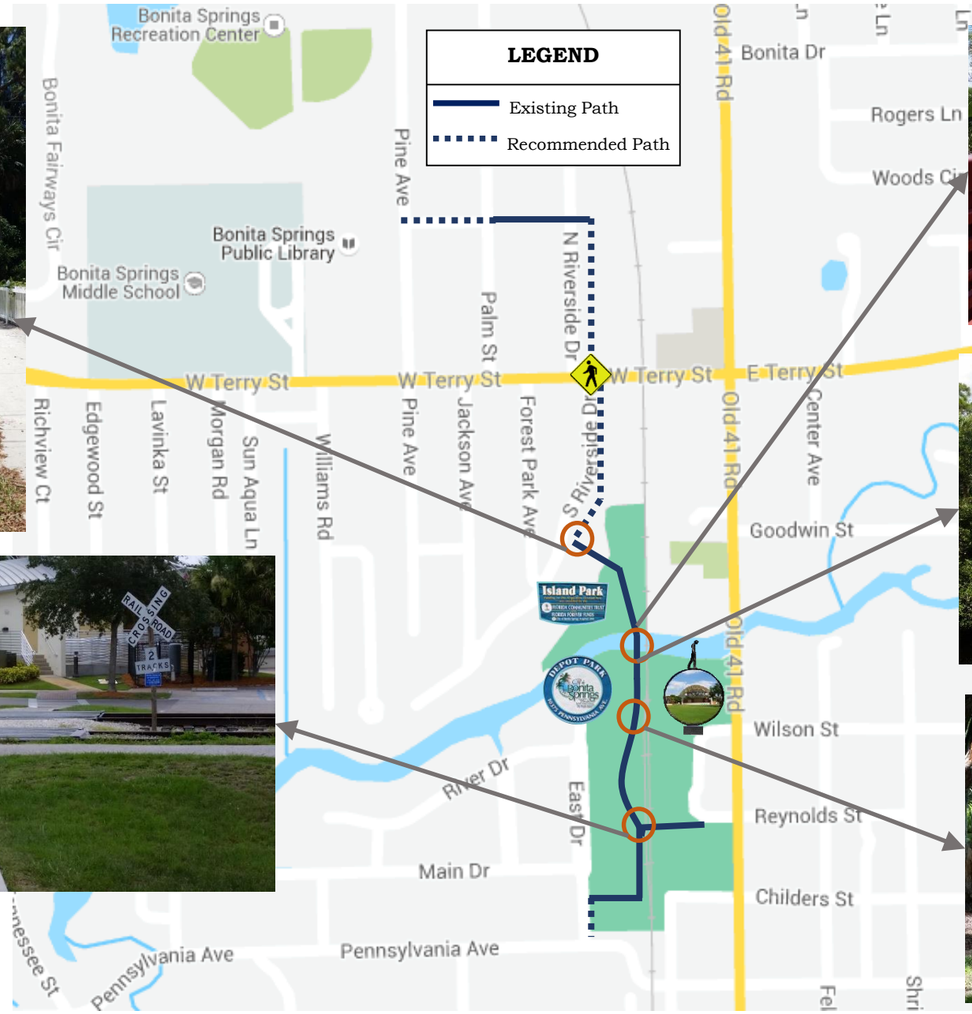


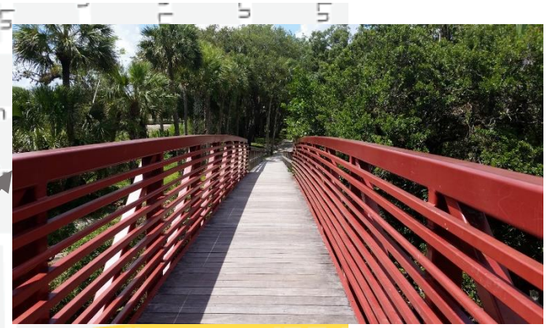
4.8 Sharrows Plan



4.9 Local Pathway



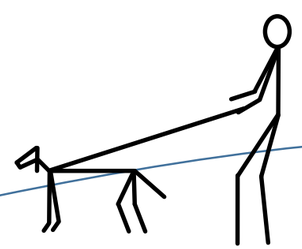




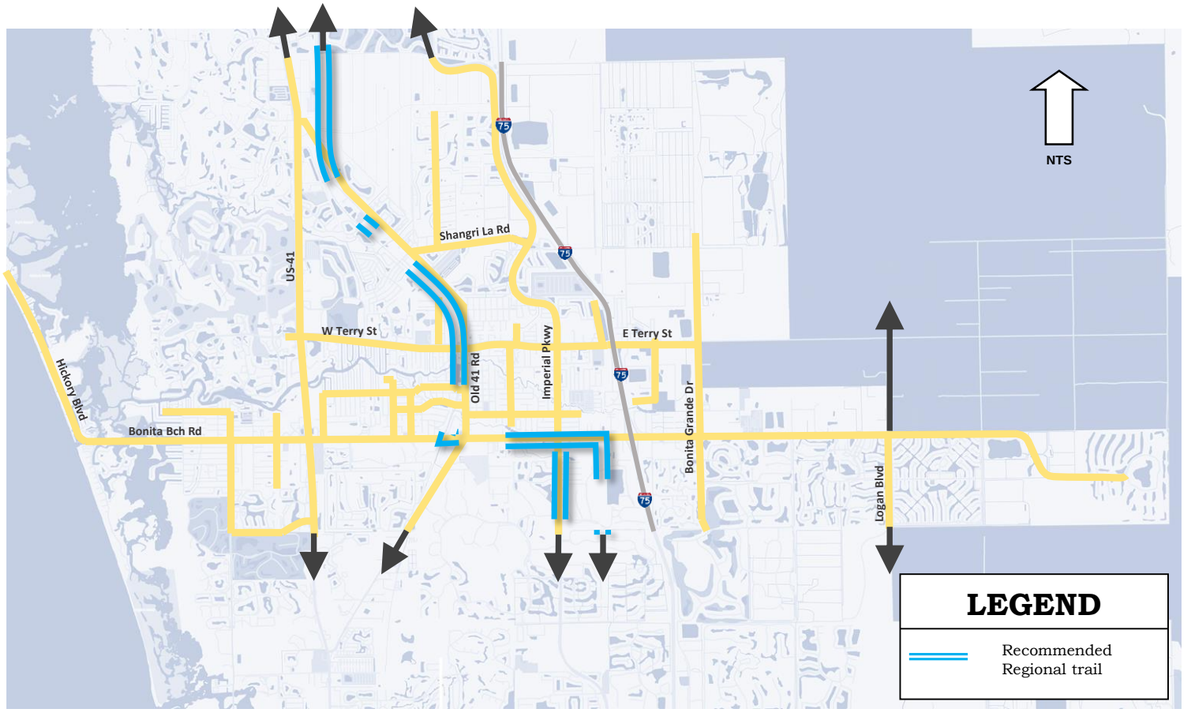
There is a paved path that connects Palm Street and N. Riverside Drive, aligned with Cochran Street. There is a system of paths comprised of unpaved trails, pedestrian bridges and sidewalks that traverse through Island Park, Depot Park, and Riverside Park. The paths include a crossing of the railroad, providing a key east/west link in the system.

These paths, in conjunction with roadway segments of N. Riverside Drive, S. Riverside Drive, and Cochran Street connect residential areas and points of interest from north of Terry Street to points of interest as far south as Pennsylvania Avenue. To complete the system of paths, multi-use trails along Riverside Drive and Cochran Street are recommended.

An enhanced crossing of Terry Street is recommended at Riverside Drive. This could include elements such as a raised crosswalk, Rectangular Rapid Flashing Beacons (RRFB), and/or in-pavement lighting.



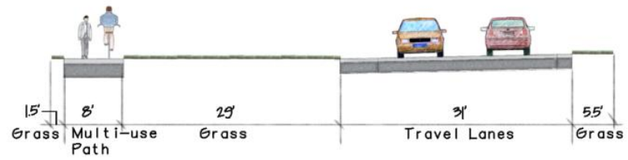
4.10 Regional Connectivity



Connections of the bicycle and pedestrian system north and south of the City is a key component of the master plan. In addition to facilities along the existing roadways that traverse the City boundaries, new facilities along proposed Logan Boulevard and a planned regional trail will enhance the regional connectivity.

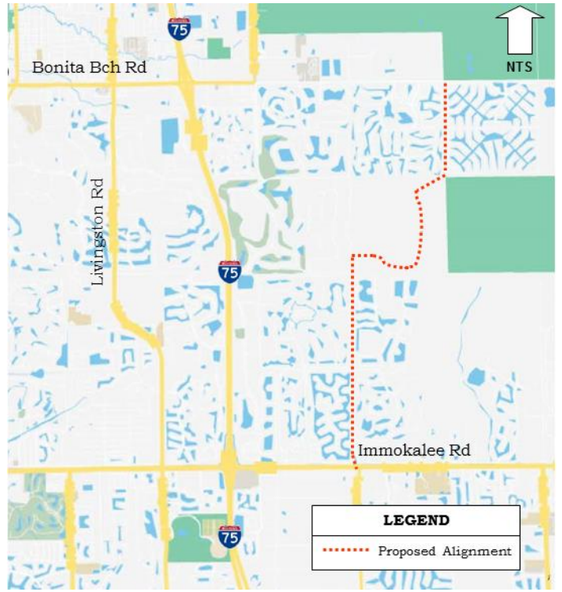
This Master Plan recommends a regional trail alignment crossing the north City boundary along the railroad right-of-way to Bonita Beach Road, a segment of Bonita Beach Road and connecting Bonita Beach Road to the south City boundary via Imperial Parkway and/or Florida Power and Light (FPL) easements.

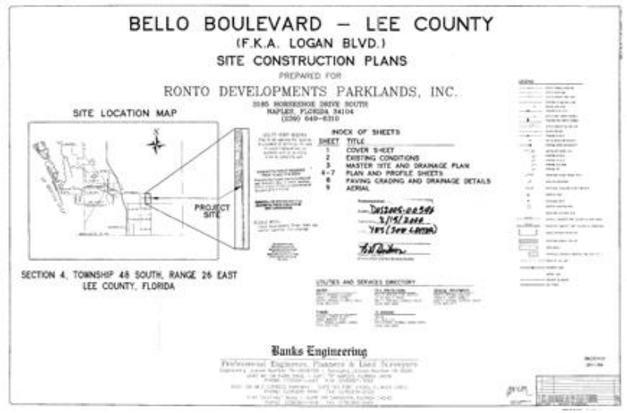
Logan Boulevard



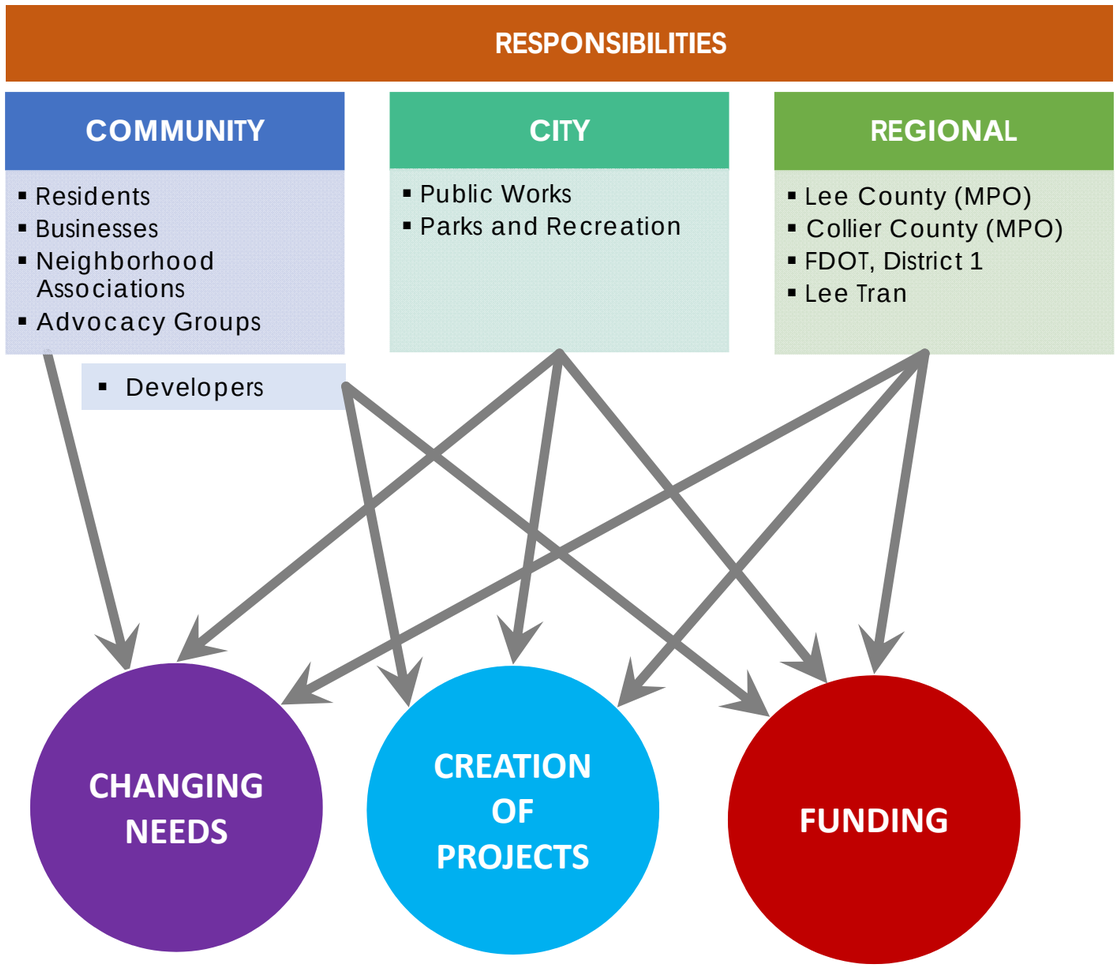
Logan Boulevard

Extension of this roadway is planned south in Collier County with a terminus at Immokalee Road. This includes a multi-use trail.



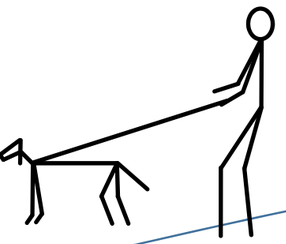


5.0 Implementation Strategies



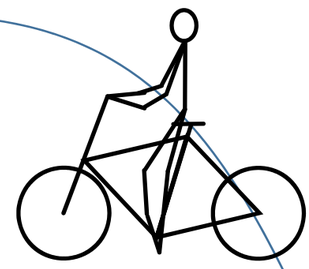
The Bonita Springs vision for a walkable, livable community begins on this PATH. As with most journeys, there are decisions to make along the way, some of which will alter the PATH. The next step on the PATH will be to identify specific projects to implement the elements of the Long Range Pedestrian and Bicycle Plan that do not currently exist. A collaborative effort is required for implementation.

Priority projects will be designed and constructed as funding is available. Implementation will also result from the appropriate planning of multi-faceted projects, such as roadway and park projects. Still, other projects will come from partnering as properties adjacent to the planned facilities are developed.



5.1 Prioritization Factors

The two (2) general considerations for prioritization are importance of the project and the cost. High importance and low cost constitute the highest priority. Importance is qualitative by nature. The City will rank importance favoring facilities that are characterized by higher activity, larger concentrations of relevant activity centers, and proximity to areas that are identified to have users who rely on non-motorized or public transportation. Prioritization by cost will tend to favor projects that cover a shorter distance. Also, projects that add elements to existing facilities, such as adding a sidewalk to an existing road, will score higher than projects requiring construction along a new alignment.



5.2 Sample Unit Costs

As projects are created and designed to implement the master plan, construction costs will be developed. Preliminary planning level cost estimates will be important for budgeting and seeking funding sources. Preliminary costs can be estimated based on the quantity or length of recommended improvements and unit costs that are current at the time of estimation. Sample unit costs for potential elements of projects are provided below.

Unless otherwise noted, unit costs are based on the University of North Carolina (UNC) Highway Safety Research Center publication, *Costs for Pedestrian and Bicyclist Infrastructure Improvements: A Resource for Researchers, Engineers, Planners, and the General Public*, October 2013. The average costs include engineering, design, mobilization, construction/installation, and materials. Right-of-way, utilities, special structures, easements, permitting and legal fees are not included in the cost estimates.

Actual costs can vary significantly based on location, site conditions, project scale, funding sources, permitting requirements, and several other factors. The potential costs are provided for planning level purposes only.

Pedestrian Accommodations

High Visibility Crosswalk	$2,540 each
Striped Crosswalk	$770 each
Sidewalk (concrete)	$32 per linear foot
Sidewalk (asphalt)	$35 per linear foot
Truncated Dome	$42 per square foot
Wheelchair Ramp	$810 each

Bicycle Facilities

Bike Rack	$660 each
Bicycle Lane	$133,170 per mile
Shared Lane (Sharrow)	$180 each
Bicycle Box	$11.50 per square foot*

Shared Accommodations

Multi-use Path (paved)	$481,140 per mile
Multi-use Path (unpaved)	$121,390 per mile

*Source: http://www.pedbikesafe.org

Traffic Calming

Raised Crosswalk	$8,170 each
Raised Intersection	$50,540 each
Roundabout	$85,370 each

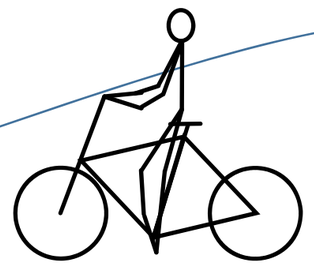
Signals/Signs

Pedestrian Signal	$1,480 each
Push Button	$350 each
Countdown Timer Module	$740 each
Rectangular Rapid Flashing beacon	$22,250 each

Streetscape Improvements

Street Trees	$430 each
Bench	$1,550 each
Trash/Recycling Receptacle	$1,420 each
Streetlight	$4,880 each
Wayfinding-Gateway sign	$340 each
Wayfinding-Bicycle Route sign	$160 each*
Wayfinding-Detailed sign	Over$500 each*

*Source: http://www.pedbikesafe.org



5.3 Funding Sources

There are many ways to fund the types of projects necessary to build the Bonita Springs PATH. Transportation projects are commonly funded as capital improvement projects approved as part of the City's annual budget. Many cities direct impact fees to fund the transportation projects. In some cases, overlay, improvement, or special taxing districts are developed to capture funding to shape the vision of a corridor, including the transportation facilities.

There are multiple sources for grants and cost reimbursement programs that can be sought specifically for non-motorized transportation projects.

- **TIGER Discretionary Grants:** This program from the U.S Department of Transportation provides funds for a variety of transportation projects including transit, port, rail, road, planning, and bicycle and pedestrian facilities.
- **Transportation Alternatives Program (TAP):** This is a cost-reimbursement program where projects are selected by the MPO but administered by the Florida Department of Transportation (FDOT). The program funds on and off-road pedestrian and bicycle facilities in order to provide enhanced mobility. In the State of Florida, the following programs are also covered under the TAP:
  - Recreational Trails Program (RTP)
  - Safe Routes to School Program (SRTP)
- **Shared Non-Motorized (SUN) Trail Network Program:** This program is administered by FDOT and provides funds for the development of a statewide, paved, multi-use trail network for non-motorized modes.
- **Congestion Mitigation and Air Quality Improvement Program (CMAQ):** This program is administered by the Florida Highway Administration and provides funds to transportation related environmental projects that have the potential to reduce harmful emissions and improve air quality.
- **Florida Forever:** This is a program administered by the Florida Department of Environmental Protection for the acquisition of conservation and recreation lands. Some of the funds are devoted to trails and greenways.
- **Impact Fees:** These are payments required from a new development for the purpose of providing new or expanded public facilities to serve that development.
  - Regional Park Impact Fees
  - Community Park Impact Fees
  - Transportation impact Fees

While the City actively budgets for prioritized projects and seeks funding available from the state and federal sources, the development community can also play an important role.