BICYCLE AND PEDESTRIAN MASTER PLAN 2027

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1. Executive Summary

This document, Delaware's second bike network plan, has a 10 year planning horizon. The planning process included an assessment of existing conditions, a public engagement and visioning process, and recommendations to implement the vision.

This vision is that, by 2025, "Delaware [will be] a bike-friendly city, with a complete bike network which allows bicyclists of varying age, skill, and ability to safely travel across the city and beyond."

Existing Conditions

In communities across the country, bicycling for recreation, and increasingly for transportation, is desired. In Delaware, existing and prospective residents value the ability to bike across the city and to local destinations.

Most neighborhood streets in the City of Delaware are fairly bikeable for a range of users; however, many of these mostly residential areas are not connected to each other or area destinations. Barriers such as railroads, busy roadways, and disconnected and non-adjacent development impact connectivity.

The City and developers have made significant strides to construct multi-use paths to improve connectivity; however, the system is largely disconnected. More investment is needed to close gaps, improve crossing safety, and address some difficult and expensive corridors. At the same time, the City's existing paths are aging, and the budget to maintain its 15 miles of city-maintained paths is insufficient.

Residents seem to value the path network, particularly for recreation; however, there are few if any events to encourage biking or a local bike culture sought by millennials and others.

Public Engagement

Those who participated in this planning process said they want a safe network which allows trips across the city and to community amenities. While the existing network is mostly comprised of multi-use path, there is support for on-road bike facilities. Further, there is support for large, system expansion projects; however, most say the system has gaps and safety problems which also need to be addressed.

Recommendations

This plan outlines over $14 million in projects to be implemented over the next 10 years. Projects to be implemented in the short and medium term are generally safety and gap-closing projects, or about $4 million. These also include miles of on-road facilities such as bike boulevards, defining neighborhood streets as bikeways, and also road diet projects where wide or under-utilized travel lanes may be repurposed as bike lanes, a center turn lane, and/or on-street parking.

The remaining projects focus on better connections across the City such as along Delaware Run, the Springfield Branch rail spur, and along US-23, to be implemented as grants and roadway improvements allow.

Beyond infrastructure, the plan outlines program and policy changes to improve biking in the City of Delaware.

2. Introduction

Over the past decade, the creation of walkable and bikeable communities has become recognized as a key benchmark of community progress.

In the late 1990s, the City of Delaware saw this need and started requiring developers to construct multi-use paths in open-space dedication areas. Further, the City successfully sought grants for several rails-to-trails projects (Figure 2-1), and included side paths along new and reconstructed roadways.

Today, the network is comprised of nearly 24 miles—mostly paths but also some low volume streets and drives. These investments are predominantly in four areas of the city: near downtown and along US-23, as well as on the far west, far east, and far south sides of town.

While these multi-use paths are valued by local residents, they are also disconnected. Combined with railroads, busy streets, highways and rivers, cross-city travel is difficult for most people who ride bicycles. Becoming a place

Figure 2-1: *A bicyclist rides along Delaware's Springfield Branch rails to trails path.*

where bicycling is easier for adults, families, and children is an aspiration for the city. This planning document provides insight with respect to what has been accomplished and what still needs to be done to help Delaware become a more "bike friendly" community.

About this Plan

This plan follows a traditional planning process including an assessment of the existing condition, engagement of the public, development of a guiding vision, and the development of prioritized recommendations. Chapters of this plan follow this organization.

This document builds on and supersedes recommendations from previous planning efforts. These include: the City's most recent comprehensive plan (2003), which defined a vision for a more connected city; the City's first bike plan, published in 2006; a condition inventory and implementation report, published in 2008; and the City's most recent bike plan, published in 2010 and adopted by council.

Planning Perspective

While active transportation plans may follow a traditional planning process, those reading the plan should be aware of several nuances.

Traditionally such plans have focused exclusively on infrastructure—new paths and safer crossings. Today, it is recognized that non-infrastructure factors have an impact as well. This plan incorporates a ***Five E perspective***, considering infrastructure, generally Engineering matters, as well as non-infrastructure matters, specifically Education, Encouragement, Enforcement and Evaluation.

This more holistic approach places additional emphasis on the influence of policies and programming toward improving mobility. Examples may include educating bicyclists and motorists to safely share the road, encouraging more people to ride for recreation and transportation trips, enforcing safe riding through rules and law enforcement, as well as evaluating the effectiveness of policies and planning efforts.

Second, plan authors have been cognizant of the range of anticipated users, answering the question ***"who are we planning for?"*** This is a difficult question because those who ride bicycles range in skill, experience, and fitness. As such, what is sufficient for some users may not be for others. Also, people have different reasons for riding: some for recreation without concern for their destination, while others ride for transportation to specific destinations such as work or school. Finally, while many people ride their bikes alone, some ride with friends or family. The range of users helps to define the range of needs required to accommodate them.

Plan Lifespan and Updates

This plan sets a vision and provides recommendations to guide decision makers over the next 10 years of implementation. While the planning horizon is the year 2025, the plan should be updated if priorities or conditions significantly change, or by the year 2020.

3. Existing Conditions

The study of existing conditions provides insights into "how things are," providing an understanding of what is working well and where more progress is needed. The chapter is broken into two sections: *The Built Environment* – addressing the city's geography and infrastructure, and *Standards, Policies, and Programs* – addressing the non-infrastructure, "soft" factors which affect those who bike.

The Built Environment

While the City has nearly 24 miles of multi-use path, its most important type of infrastructure for bicycling is its ***city streets*** as most bike trips will start and stop on streets, not paths.

Bicycling is easiest in the historic core of the city, where its streets are laid out on a very walkable and bikeable grid. Its neighborhood streets are mostly quiet with less than 2,000 vehicles per day and a speed limit of 25 mph (Figure 3-2). Similarly, most of Delaware's local, neighborhood streets are conducive to bicycling. As such, trips within and to adjacent neighborhoods are relatively easy so long as those neighborhoods are connected to each other. Trips outside of one's neighborhood may require bicyclists to cross ***barriers*** such as railroads, limited-access highways, streams and rivers, and large developments without cross-access. Since these barriers often block automobile traffic, the few crossing points that exist are likely on arterial roadways which may be difficult to cross, let alone travel along for any length of time. Figure 3-4 illustrates such barriers in Delaware and the vicinity.

Arterial and Collector Streets

Delaware's arterial roadways are much less friendly to bicyclists, specifically William Street (US-36), Central Avenue (SR-37), and, to a lesser degree Sandusky Street and London Road. These roads handle high volumes of passenger car and truck traffic with posted speeds ranging from 25 to 45 mph. While there are some segments of multi-use paths, none provide dedicated space for those who want to ride in the road. Some trips are simply not possible, or at least direct, without riding on Central Avenue or William Street (Figure 3-3).

Figure 3-2: *W Winter Street, typical of a very bikeable neighborhood street.*

Figure 3-3: *William Street, typical of a busy and less bikeable arterial street.*

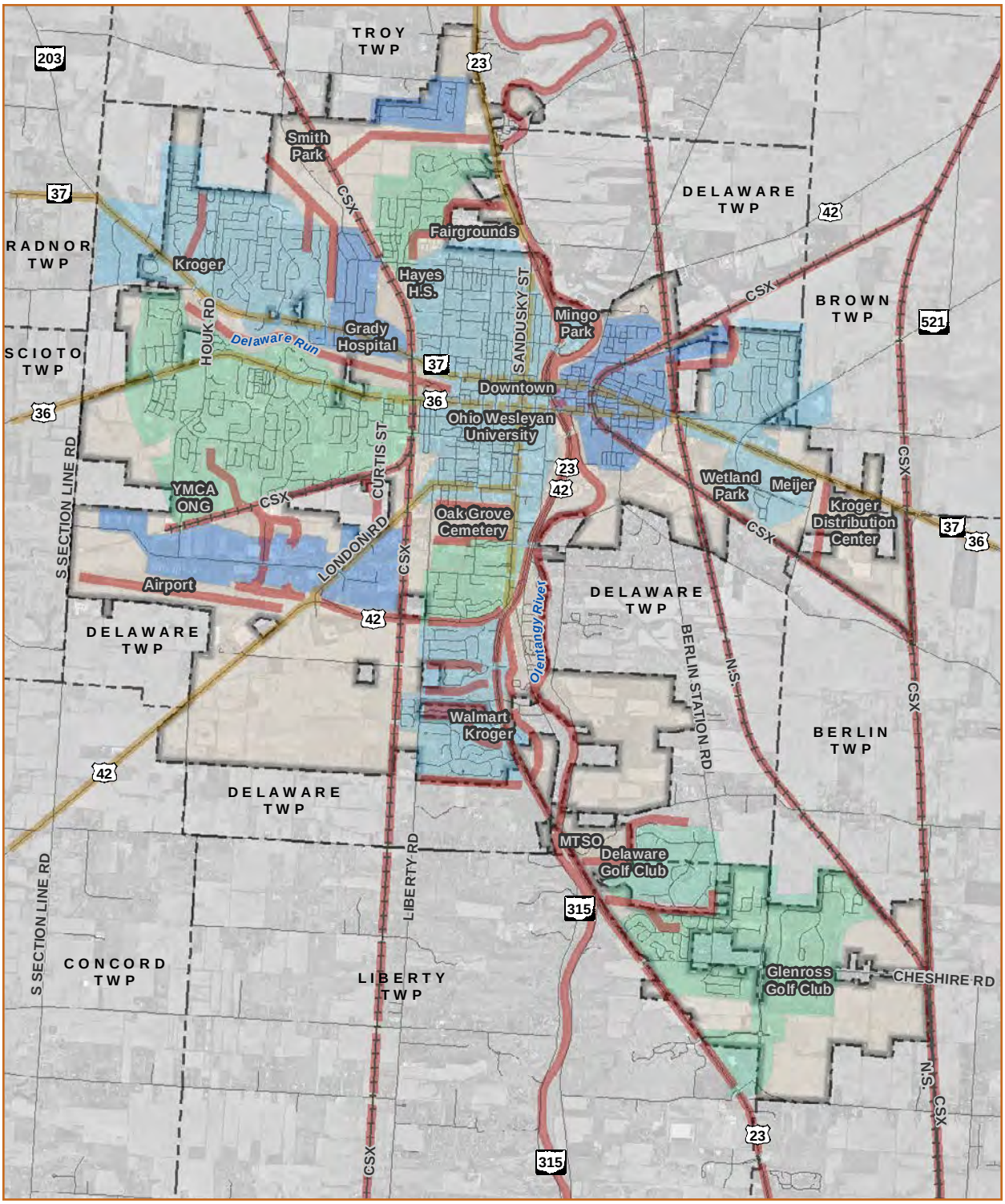


Figure 3-4: *Barriers shown with dark red lines, such as railroads, limited-access highways, streams and rivers, and large developments/subdivisions without cross-access, force people to ride out of their way to travel around the barrier. Busier arterial roadways, shown with orange lines, are easier to cross; trips along them are difficult and required to navigate around other barriers. Shaded areas, generally bound by barriers, are places where it is generally easy to bicycle.*

Other collector roads such as Troy Road and Pittsburgh Drive are not comfortable to use for their own reasons. While total traffic volumes are lower, they still have high speed limits (35 mph) and very narrow shoulders. As such, bicyclists must ride in vehicular travel lanes, contending with faster-moving vehicles and, on Pittsburgh Drive, delivery and semi-trucks.

Bike-Specific Improvements

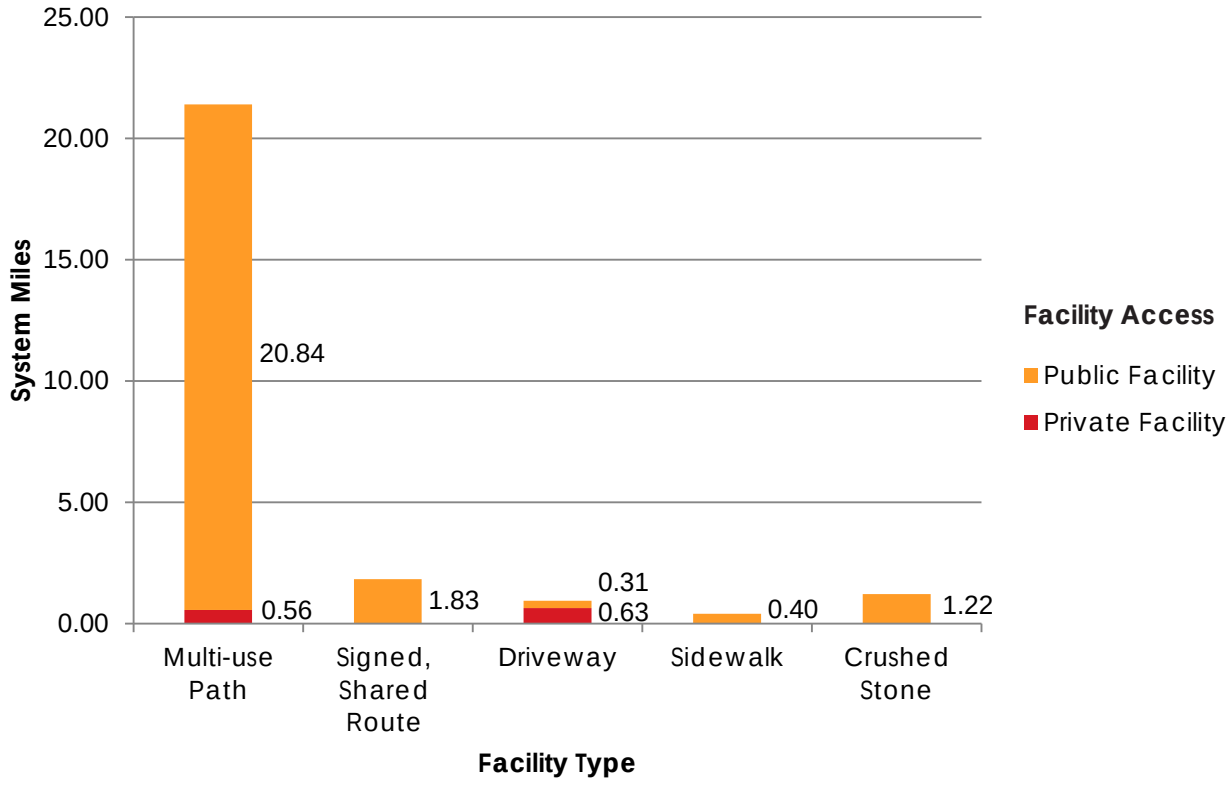
Delaware's bike network is roughly 24 miles in length, 21 miles of which are multi-use paths and the remainder comprised of low volume, low speed driveways and streets which link segments of path. The vast majority of the network is public and available for use 24-hours a day. Some portions are private, either signed "no trespassing" or gated and, therefore, restricting use 24-hours a day. Table 3-1 provides a breakdown of the network by type of facility and type of access.

Multi-use Paths

The majority of multi-use paths were built and contributed since 2001 by housing developers, predominantly on the west side near Houk Road, on the east side near Kilbourne Road and Mill Run Crossing, and on the far south side near Glenn Parkway and Cheshire Road. The City and various project partners have contributed paths along US-23 and the Olentangy River, as well as along the abandoned Springfield Branch rail spur.

A condition inventory of the city's multi-use paths was completed in 2008, and then again in 2015 as part of this planning effort. The inventory provides a broad representation of the condition of each path in the system. Paths in "good" condition have few if any pavement defects and are generally accessible. Paths in "fair" condition are deteriorating and have some pavement defects which

Table 3-1: Existing Bicycle Network by facility type and access



impact path accessibility. Paths in "poor" condition have significant pavement defects and/or accessibility problems and need significant maintenance activities such as an asphalt overlay or full-depth reconstruction.

Table 3-2 shows the change in condition for paths in 2008 and 2015. During this time period, 7.6 miles of path was added to the network. Paths rated as "fair" jumped from 1.77 miles (11%) in 2008 to 4.70 miles (20%) in 2015. Similarly, paths rated at "poor" jumped from 0.12 miles (1%) to 1.09 miles (5%). Exhibits 3-3 and 3-4, provided in Appendix A, symbolize the condition of paths throughout the city in 2008 and 2015 respectively.

This represents a significant backlog in maintenance as "poor" paths will need to be resurfaced within the next few years (if not sooner), and "fair" paths will likely need to be resurfaced in five to eight years. Table 3-2 shows the condition of paths throughout the city in 2008 and 2015. These data include the roughly 15 miles of path which is City maintained, as well as the balance which are maintained by Homeowners' Associations and other entities. Private paths were not inspected and are not included in these statistics. Most paths rated in "poor" condition are City maintained.

For the first time, the condition inventory also included a detailed list of locations where spot maintenance activities are needed. Exhibit 3-5, provided in the appendix, illustrates the locations of various deficiencies requiring maintenance. Specific examples include: places where vegetation needs to be trimmed to improve visibility around curves and at intersections, and pavement joints and cracks (Figure 3-5).

The condition inventory showed that preventative maintenance activities, such as seal

Table 3-2: Multi-use Path Condition by Year of Condition Inventory

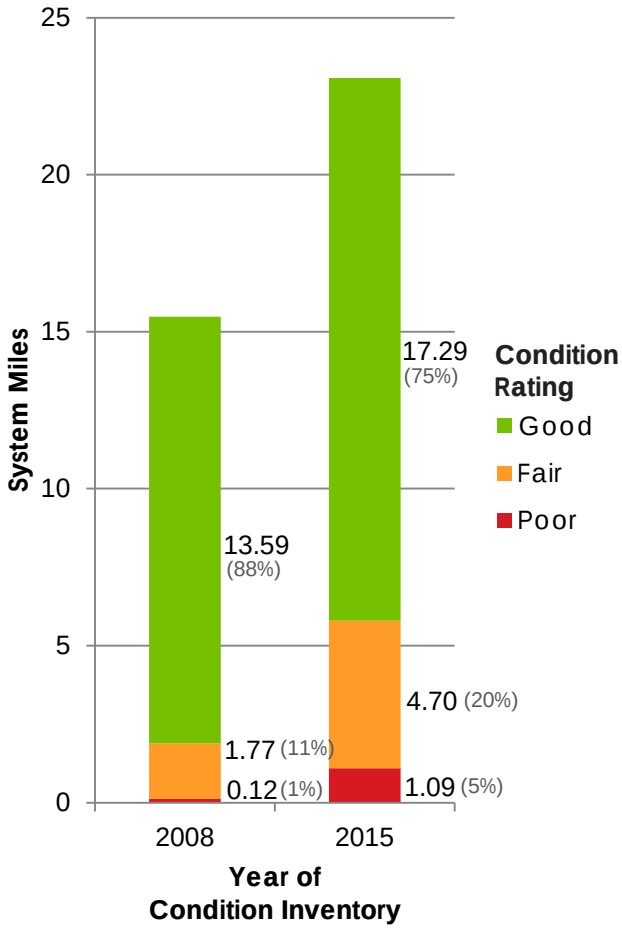


Figure 3-5: *Here, the asphalt trail and curb ramp no longer meet.*

coating, are being performed along some paths but not all. Seal coating is an activity which, if performed consistently and early in a path's lifespan, can extend the life of the surface course of asphalt from about 15 years to about 20 years. The City has a defined preventative maintenance plan for the pathway network; however, only $20,000 is allocated annually to implement it. While it had been estimated that $40,000 is a more reasonable estimate, the anticipated backlog of resurfacing and repairs may require upwards of $80,000 annually to address these needs over the next five years.

Crossing Locations

During the condition inventory, plan authors made observations at numerous multi-use path crossings throughout the city. Most path crossings of streets have a direct and accessible route, a striped crosswalk, and advanced warning signage—typically a bicyclist (W11-1) or pedestrian (W11-2) in the vicinity warning sign. A few crossings have additional treatments such as a median island and/or a continuously flashing yellow beacon or flashing LED edge-lit accompanying a W11-1 or W11-2 sign. A few locations have significant sight-distance issues, or are particularly difficult for users to cross.

Plan authors have idenfied a number of crossings where enhancements should be evaluated. In short, all path crossings must be continuous and ADA accessible. Crossing locations should also have good visiblity to ensure motorists and path users can see each other on approach to each crossing. With respect to signage, current guidance suggests using signage to show the location of the crossing using W11-15 with supplemental plaque W16-7P (instead of the W11-1 or W11-2), and to place the signs on both sides of the road for added emphasis (see examples on page 24).

The city uses a number of continuously-flashing beacons with W11-1 signs at crossing locations with multi-lane approaches (e.g. E Central Avenue at Mingo Trail (Figure 3-6). Such locations should be evaluated for the installation of a median refuge island which allow users to cross one approach at a time, greatly improving safety while having a minimum impact on traffic. In addition, pedestrian-activated rapid-flash (RRFB) beacons should be considered to further improve safety and reduce delay. These devices are shown to be much more effective at encouraging motorists to yield than the continuously-flashing beacons used in the city.

Figure 3-6: *Mingo Multi-use Path at its crossing of SR-37 looking south. While the crossing has continuously-flashing beacons and is striped, a median island, pedestrian-activated push button, and a wider and more direct north approach would improve accessibility and safety for all users.*

Beyond roadway crossings, there are many locations where side paths cross driveways and intersecting streets. Plan authors noted that during the condition inventory, most crossings had no signage and other crossings had either yield or stop signage. With respect to "side paths" traveling along roadways, bicyclists generally have the same right-of-way as those traveling on a roadway, and turning/approaching vehicles must yield to path users. "Attempts to require bicyclists to yield or stop at each cross-street or driveway are inappropriate and are typically not effective" per AASHTO, p5-8, Guide for the Development of Bicycle Facilities, 4th Ed. As such, stop and yield signs and flexible delineators with the word "stop" should be removed from the system except where necessary and warranted. Where paths follow independent alignments, path users should be instructed to yield (or, if necessary, stop) based on anticipated volumes on the trail and intersecting road. The assignment of right-of-way should follow warranting criteria for stop-controlled intersections.

Finally, plan authors found numerous locations where wood, metal, or plastic bollards or delineators were used to discourage motorists from driving on paths. While motorists could drive on paths, the risk is minimal compared to a bicyclist hitting the vertical obstructions. Such obstructions are a serious-injury hazard to bicyclists and can require bicyclists and wheelchair-users to leave the trail in order to get around them (Figure 3-7). All bollards should be removed from the system. where there may be confusion, "No Motor Vehicle" signs (R5-3) can be erected. Where access must be restricted, path geometry can be designed to more strongly discourage motor vehicle access (Figure 3-8), or bollards can be placed in a landscaped median where they are less likely to be struck by bicyclists.

Figure 3-7: *At this location off Timbersmith Drive, bollards nearly prevent bikes from entering/leaving the roadway, forcing bicyclists (and those using a wheelchair or stroller) to leave the path.*

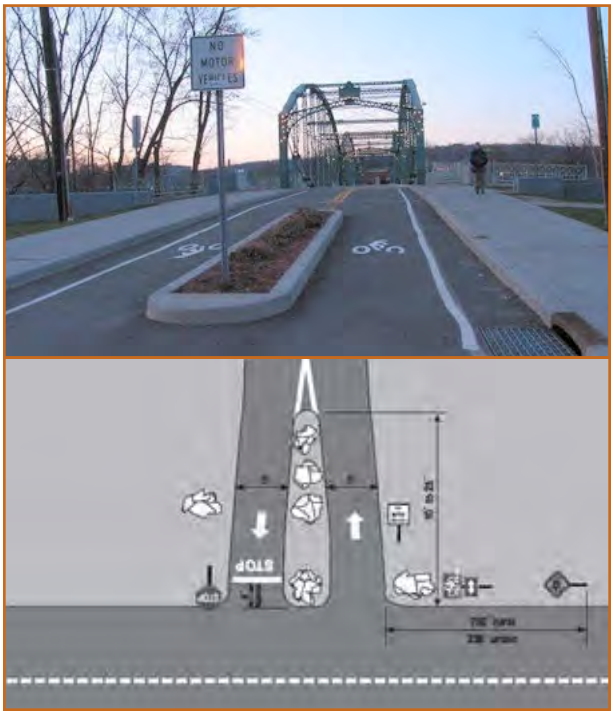


Figure 3-8: *Alternative treatments to using bollards may include a vegetated median island in a path, either curbed (top) or uncurbed (bottom) to further discourage motor vehicles. If still needed, bollards may be placed in the islands and within the path shoulder.*

If bollards are used, illumination is recommended, as well as using a bright color of paint and reflective tape on the bollard to ensure they are visible day and night.

Bike Parking

Knowing there will be a secure and safe place to park one's bike is an important consideration for those who travel for transportation. A brief inventory of major destinations such as the downtown (Sandusky Street: Spring Street to Central Avenue) and some area retail centers showed that most locations lacked bike parking in visible and prominent locations—important for theft deterrence and to help bicyclists easily find the parking area.

The City has a program to install bike parking downtown; however, there are only 10 parking spaces on the three-block stretch of Sandusky Street between Spring Street and Central Avenue. These included three "U" racks and one "wave " rack—a type of rack more likely to allow bikes to be damaged when used as designed[1]. While it's unclear how frequently these are used, they are not conveniently located throughout the downtown area.

If a family of four wanted to ride to Whit's Ice Cream on the west side of Sandusky Street, the closest racks are on the east side of the street. After parking their bikes, the family would need to walk a half block to the nearest crosswalk, cross, and then walk back a half block to reach their destination. Their bikes would occupy all of the spaces on the block, and 40 percent of what's available on Sandusky Street downtown. More likely, the family would park them in front of the business, locking them up to trees, sign posts, or benches—or choose to drive an automobile.

1: The Association of Pedestrian and Bike Professionals (APBP) has produced guidelines for bike racks to reduce the risk of damage to parked bikes. Racks should provide at least two points of contact with a bike's frame and have the ability to attach a cable or U-lock through part of the rack to secure the bike. "Wave" racks, as well as "ladder" and "wheel-slot" racks do not meet these guidelines and bikes parked at these racks are more prone to being damaged from tipping over and/or sliding down the rack.

Standards, Policies, and Programs

The following categories address the "soft" factors which affect bicycling in Delaware such as standards, policies, and programming.

Engineering

1. ***Complete Streets Policy*** – The City plans to adopt a policy in 2017. Even so, accommodation is addressed in nearly every project.

2. ***Engineering Training or Resources*** — The City does not have its own bike-specific design manual, or copies of the most recent AASHTO or NACTO design manuals. No staff members have participated in continuing education specific to on- or off-road bike facilities.

3. ***Bike Parking Requirements and Standards*** — City code and development standards do not require bike parking. There are no standards with respect to where parking should be located, the type of racks provided, or the size and layout of such parking spacces.

4. ***High-capacity Bike Parking at Community Destinations and Facilities*** — Downtown and large retail destinations lack high-capacity bike racks needed to accommodate groups of bicyclists.

5. *Path Maintenance Plan or Program*—The City has a preventative maintenance plan in place; however, only $20,000 is budgeted to maintain 15 miles of trail. An annual budget of $80,000 or more is needed over the next five years to address deferred maintenance and other needs. Requests for maintenance can be made with the "My Delaware" smartphone app, as well as reports made via email, website, telephone, or to staff, including police dispatch.

6. *Path Standard Drawings and Details*—City standard drawings "RDWD 25-28" specify how paths are to be constructed and signed. The drawings allow for paths as narrow as six feet; require installation of bollards which may prevent wheelchair access on six- and eight-foot paths, and include a message to stop at every crossing; and call out use of traffic control signing which is not compliant with the Manual of Uniform Traffic Control Devices (MUTCD). Per American Association of State Highway and Transportation Officials (AASHTO), the recommended width of a multi-use path is 10 feet or wider, else eight feet at absolute minimum where space is constrained. As noted earlier, bollards are a serious-injury hazard to bicyclists. They can also prevent access by those using wheelchairs when there is not sufficient width to navigate around them. The intersection right-of-way of side paths should generally match that of adjacent traffic. Yield or stop signs should be used only as warranted. All path signing should be in compliance with the MUTCD.

Education

1. *Safe Biking Education Programming for Students*—The Delaware City School District has a Safe Routes to School plan, approved in January of 2015. This plan calls for bike rodeo events and some education events outside of the class, possibly aimed at family participation. It's unclear if these countermeasures will be provided to all students, and if they will help students learn how to ride their bikes safely with an opportunity to learn the rules of the road.

2. *Safe Biking Education Programming for Young Children*—The City and YMCA sponsor an annual Safety Town program targeted to young children.

3. *Safe Biking Education Programming for Adults*—There is no specific program aimed at teaching skills to adult bicyclists.

4. *Share the Road Campaign*—A program aimed to help motorists and bicyclists learn how to safely share the road. While such a campaign occurred in Columbus, including media spots which would have been seen and heard in Delaware, no specific effort has been made to reach local residents.

Encouragement

1. *Bike Network Map*—There is no specific map of the City's multi-use paths or bike network. Multi-use paths are shown on the City's roadway map; however, the map is not easy to use.

2. *Bike Network Wayfinding Signage System*—Delaware's bike network does not have a wayfinding signage system. Such a system would be most beneficial in locations where out-of-town or visiting bicyclists are expected.

3. *National Bike Month Events*—The City does not sponsor events or publicize National Bike Month.

4. *Signature Bike Events*—The city does not host a signature bike event; however, some organizations sponsor rides or events with a cycling component such as the annual Mingo Man triathlon. Of note, the City hosts an annual, week-long "Bike Patrol School" for police officers across Ohio.

5. *Bike Accommodation at Festivals and Large Events*—The City (or partners) do not provide valet or monitored bike parking at events.

6. *Bike Tourism Promotion*—To date, bike riding in or near Delaware is not specifically promoted, other than by groups sponsoring events within the city.

7. *Bike Co-Op and Maintenance Training*—Delaware does not have a bike co-op; however, retailer Breakaway Cycling hosts an annual Park Tool School training course on bike maintenance, offered at cost.

Enforcement

1. *City Ordinances*—Various ordinances in Chapter 373 require bicyclists to have a license from the police department (373.13-14), as well as register their bicycles (373.15) and report changes in the appearance of their bicycles (373.19).

2. *Sidewalk Riding*— People are permitted to ride bikes on sidewalks, except in the downtown area (373.12) even though bike racks are located on the sidewalk.

3. *Law Enforcement Training*—The City has several officers attend regularly-offered legal training and this information is disseminated to officers as needed.

4. *Helmet or Lights Give-Away Programs*—Helmets are given away through the Safety Town and Bike Rodeo education programs.

Evaluation and Policy

1. *Bike Program Manager*—No one person has been identified as the program manager, responsible for the bike network.

2. *Bike Advisory Committee*—Tentatively, the Park and Recreation Advisory Board has purview over bicycling in the city.

3. *Dedicated Funding Source for Plan Implementation*—The City has not yet created a dedicated funding source for implementation of plan recommendations.

4. *Crash Reporting and Tracking*—The Mid-Ohio Regional Planning Commission tracks all reported crashes and provides those to member agencies upon request. Delaware uses this data on an aggregate level; however, does not regularly analyze crashes on an individual basis.

4. Public Engagement and Vision

Public engagement is an important component of any planning process for the purposes of increasing knowledge and understanding of the issues in question. Plan authors combine this input with research, professional judgment, and best practices to derive plan findings and recommendations. In short, public input helps to inform the planning process and the resulting plan document.

A multi-pronged approach was used to engage the public. These included an internet-based survey, a public meeting, mobile input stations, and two periods for the public to provide comments.

Input Methods

Survey

A voluntary, 33 question internet-based survey focusing on bicycling in Delaware was prepared and made available for three and a half weeks. One-hundred-seventy-one respondents completed the survey, advertised via the City's website and Facebook page, and mentioned in a newspaper article. The survey and a summary of the responses is provided in Appendix B.

Public Meeting

A public meeting was held on Tuesday, May 12th, 2015 from 7 to 8pm in Council Chambers. Approximately 30 people attended the meeting, including City staff and leaders. Participants sat through a brief presentation followed by opportunities to provide input on Vision and Value Statements; Policy and Programming; Priority Corridors; and Locations for more bike racks, safer crossings, and destinations to connect to the network.

Figure 4-1: *Attendees of the public meeting review interactive exhibits before providing their input. Participants were provided stickers to append to exhibits and a tally sheet, indicating the projects they support.*

Mobile Input Stations

Priority Corridor Exhibits were placed at the YMCA and the Library. The exhibits consist of a map of highlighted, numbered corridors and a separate tally sheet where participants could place stickers to vote for their favorite corridors (Figure 4-2). These stations also included a flyer providing information on how to submit public comment.

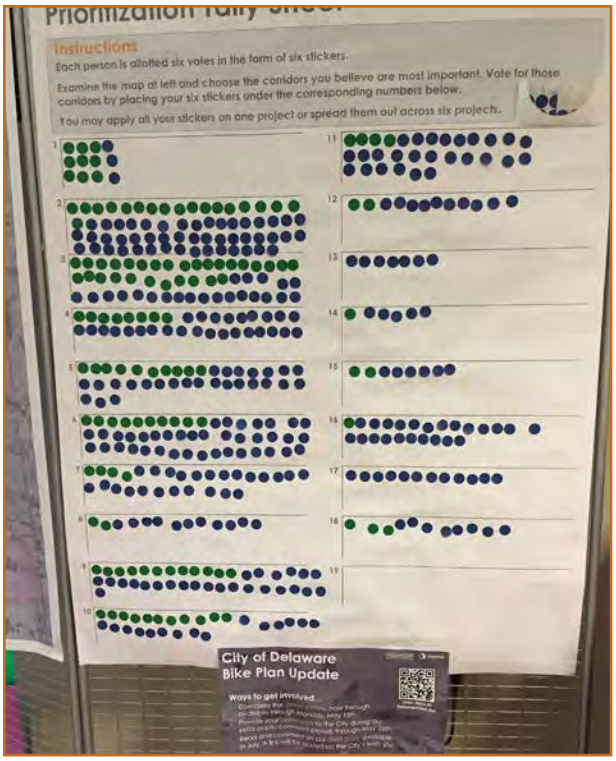


Figure 4-2: *The Library Mobile Input Station, consisting of an exhibit of possible corridors (to the left, out of frame) and a tally sheet, where participants would apply stickers under the number(s) corresponding to the projects they most support.*

Public Comment Periods

A general public comment period was advertised in May, resulting in eight comments emailed to City staff. A second public comment period occured during the adoption process, allowing the public an opportunity to read the draft plan and provide input.

Public comments were received at City Council meetings in April of 2017. The focus of many comments was the proposed path along Delaware Run, a segment that has support as well as opposition. Further, there was support for a path connection between Bruce Road and Pennsylvania Avenue. Public Comments are provided verbatim in an appendix to this plan.

Five Key Findings

The multi-pronged public engagement approach produced a significant amount of feedback. Here are five key findings derived from public input:

1. About 83% of survey respondents use the path network. Nearly all who indicated they use the path network "agree" or "strongly agree" that the multi-use path network is a desirable amenity.

2. When asked about their vision of biking in Delaware in 2025, the following themes were heard over and over again: safe cross-city bike routes; connectivity to all neighborhoods, community facilities, retail centers, and downtown; and connectivity to nearby cities and parks.

3. When asked about their top priorities, respondents indicated that expanding the path network across the city, and closing gaps in the network were the first and second most important priorities. Many stated they think the path network is disconnected, and that they lacked access to desired destinations.

4. There is support for on-road cycling if improvements are made. About 87 percent of respondents indicated they would feel comfortable if they had dedicated space for biking (e.g. bike lanes). Just 57 percent indi-

Figure 4-3: *Meeting participants read vision and value statements, preparing to place stickers under the statements they most agree with.*

cated they would feel comfortable sharing an automobile travel lane on streets where shared-lane signs and markings were installed.

5. The most popular path/project corridors, in order of popularity: Delaware Run/ US-36/SR-37 Corridor, YMCA/Rail Trail Extension, Liberty Street Bike Boulevard, Winter Street Bike Boulevard, Bowtown Road/SR-37/Winter Street Connection, and Troy Road/Merrick Blvd/Smith Park. Connector.

Vision

A vision statement is a picture of what one wants to be true at some point in the future. Plan authors formulated a vision statement based on the following input, collected during the public engagement process.

Vision and Value Statements

With respect to vision, attendees at the public meeting were asked a simple question: ***"what do you want to say is true about bicycling in Delaware in 2025?"*** Some sample statements were provided and participants placed dots under the statements they agree with most (Figure 4-3). Statements receiving the most votes include:

1. *"One can safely ride their bike across the city."*
2. *"I can ride from Delaware to nearby cities and parks."*
3. *"All neighborhoods are connected to the network."*

In other words, participants valued *cross-city access/mobility* and, to a lesser extent, *equity of access*.

Priorities

While the internet-based survey did not specifically address the "vision," participants were asked about priorities. At least 150 respondents (of 171) indicated the following five priorities were "important" or "very important," in descending order of priority:

1. *Expanding the system across the city,*
2. *Closing short gaps in the system,*

3. *Connecting the system to downtown,*

4. *(Increasing) path maintenance, and*

5. *Connecting neighborhoods to the network.*

When respondents were asked to provide their top three priorities, two objectives stood out overwhelmingly: *"Expanding the system across the City,"* and *"Closing short gaps in the system."*

From these priorities, the predominant themes are *cross-city access/mobility*, and to a lesser extent *destinations*, *level of service*, and *equity of access*.

Vision Statement

The following vision statement is a summary of the sentiment and themes heard during the planning process:

> "Delaware is ***a bike-friendly city***, with ***a complete bike network*** which allows bicyclists of ***varying age, skill, and ability*** to ***safely travel across the city and beyond***."

1. ***A Bike-Friendly City***
   A place where bike riding is easy and people enjoy riding bikes.

2. ***A Complete Bike Network***
   A continuous and connected network of paths and streets.

3. ***Varying Age, Skill, and Ability***
   Infrastructure which is bikeable for a range of users, age 8 to 80; cyclists both new and experienced; and those with a range of physical abilities.

4. ***Safely Travel . . .***
   Facilities, programming, and policies with a clear emphasis of maximizing the safety of vulnerable users.

5. ***. . . Across the City and Beyond***
   Early efforts should focus on connecting the existing, fragmented system; and neighborhoods and key destinations. Later efforts should focus on long-term aspirations to connect Delaware to nearby places such as cities and parks.

5. Recommendations and Implementation

This chapter provides an implementation strategy to guide the City in implementing the plan. Following the strategy, recommendations are organized into *infrastructure* and *non-infrastructure* items.

Implementation Strategy

The City of Delaware has significant infrastructure needs and the first and foremost priority of this plan is to provide a connected network. This being said, other elements of this plan are critical for increasing system usage, and improving both community health and quality of life; helping to keep users safe; and even finding ways to leverage investments in terms of economic development. To this end, successful implementation will require the assistance of multiple City departments, as well as other partners in the public and private sectors.

Infrastructure

Recommendations to improve infrastructure are shown on the Bike Network Plan, Exhibit 6-1 (page 27), and provided in detail in Table 6-1 (pages 29-34). In the interest of providing context for these recommendations, a review of ***"who are we planning to accommodate"*** and ***"bike-infrastructure facilities"*** is recommended by this planning effort.

"Who Are We Planning to Accommodate?"

The recommendations of this plan are offered assuming the "design user" is represented by the images in Figure 5-1 and the following characteristics:

- ***Groups of 1 to 5 bicyclists***, which affects queuing space at curb ramps and median islands, as well as bike parking.
- ***Users with limited physical ability***, who may travel at 5-15 mph and much slower when riding up hill. Significant grade changes may require an asymmetric, uphill bike lane on busier roadways. Also, all facilities must comply with applicable accessibility standards.
- ***Users with limited skill riding with motorists***, who presumably can ride safely and comfortably with traffic where the posted speed limit is 25 mph (or less), and vehicular volumes are less than approximately 4,000 vehicles per day. Beyond route wayfinding signs, "Share the Road" signage and "sharrow" markings, placed at regular intervals, are helpful for streets with more than 2,000 vehicles per day.
- ***Users who know the rules of the road*** — People who bicycle on streets are assumed to know the *rules of the road* as taught by parents or learned at school or in a driver's education course. *Note: Bicyclists who do not drive, have not participated in Safety Town, or have not otherwise been taught how to safely ride a bicycle may lack this knowledge.*

The design user is not an advanced and athletic cyclist, adept at riding with traffic in challenging conditions and, therefore, needs more accommodation.

Figure 5-1: *Photo example images of the "design user." Varying in number, purpose of trip, as well as age, skill, and ability.*

Bike Infrastructure Toolbox of Treatments

The following pages, 21-24, provide a "toolbox" of infrastructure solutions for the City of Delaware, including: multi-use paths, bicycle boulevards, signed-shared roadways (with and without pavement markings), and bike lanes (resulting from road diets, as well as shoulder widening). Further, three types of crossings are highlighted, as well as recommended practices for bike parking.

Sidewalk Riding

Previous plans have also included sidewalks as an acceptable accommodation; however, this plan does not. Studies have now shown that those who ride on the sidewalk have a greater risk for crashes than those who ride in the street. There are several reasons: crossing motorists, by in large, do not expect fast-moving bicyclists on the sidewalk; and bicyclists, often traveling at a fast pace, sometimes fail to avoid pedestrians and other unexpected hazards while riding on a sidewalk. Even so, sidewalk riding may still be appropriate for slow-moving children or adults and, therefore, it is not recommended to make sidewalk riding illegal.

Given this understanding, the City should accommodate bicyclists within the street where eight- to 10-foot wide sidepaths are

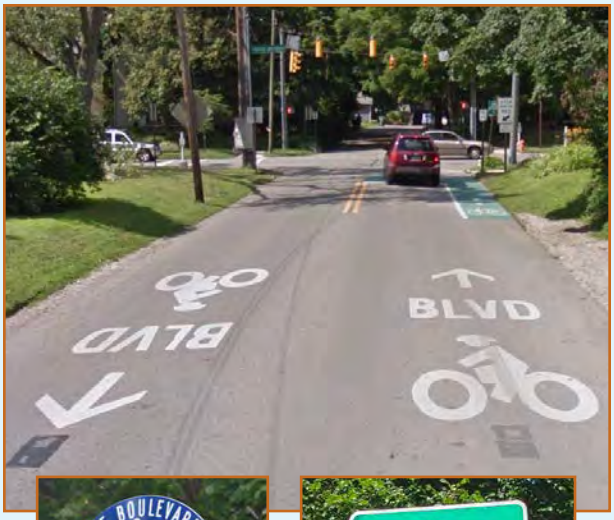
This section continues on page 25 . . .

Bike Infrastructure Toolbox of Treatments

Multi-use Paths

Multi-use Paths are typically 10-foot wide paths, with an asphalt or concrete surface, to accommodate bicyclists as well as those walking, running, or rolling. Paths may be as narrow as eight feet where few users are anticipated, and may be upwards of 16 to 20 feet wide in areas with lots of users. Paths should have a minimum design speed, and include traffic control signs and a marked centerline where user volumes or path geometry (e.g. width and curvature) warrant. Cost per mile for independent alignments: varies from $800,000 a mile to over $3M+ per mile where bridges and right-of-way may be required. Sidepaths built adjacent to and with new roadways may be substantially less expensive due to economies of scale.

Bicycle Boulevards/Neighborhood Greenways



On these routes, bicyclists share the roadway with motorists on streets and driveways. Streets with an average daily traffic of 4,000 vehicles or less and traffic speeds of 25 mph or less may be suitable candidates. Specialized signage and pavement markings are used to define the bike boulevard for bicyclists as well as motorists. These routes often connect multi-use paths or parallel busy arterial streets in order to provide a continuous network in areas where the construction of multi-use paths are impracticable. As needed, these routes can include traffic calming elements to slow automobile traffic, and traffic diversion treatments to restrict through automobile traffic while accommodating through bike traffic. Cost: varies, $35,000 per mile (basic) to $80,000 per mile.

Shared Lane Markings

These markings provide an indication to bicyclists where they should ride within a travel lane, and remind drivers that the travel lane is shared with bicyclists. "Sharrow" pavement markings as seen at right define the condition. If desired, signage (W11-1 with a W16-1P plaque) can accompany the treatment to instruct motorists to "share the road." These facilities are appropriate on streets with posted speeds of 35 mph or less, and traffic volumes of 5,000 vehicles per day, per travel lane. They are not a replacement for bike lanes but may provide benefit on streets where bike lanes are infeasible. They Cost: Approximately $25,000 to $50,000 per mile depending upon the complexity of the project and the density of markings and signs, and other features.

www.pedbikeimages.org / Lyubov Zuyeva

Bike Lanes

Bike lanes are preferential travel lanes, typically five feet wide, which provide dedicated space for bicyclists allowing them to move at their own speed independent of adjacent traffic. Bike lanes are often created by *road diet* projects, where travel lanes are narrowed to their minimum width, and under-utilized parking or travel lanes may be eliminated. The space created can be used for bike lanes, a center turn lane, and even on-street parking. Projects which remove travel lanes can reduce average vehicle speeds, and provide space for median refuge islands. Bike lanes can also be provided on uncurbed roads by paving a four-foot paved shoulder, which will also improve pavement life. Even where two bike lanes are not feasible, an asymmetric configuration providing an uphill bike lane can benefit users. Bike lanes are most appropriate on roads up to 35 mph. Cost: road diet and bike lane projects may cost up to $200,000 per mile, or much less if implemented with a resurfacing projects.

www.pedbikeimages.org / Dan Burden

Divisadero Street, www.fresno.gov

Bike Infrastructure Toolbox of Treatments

Basic Crossing

Basic marked crosswalks consist of pavement markings or striping, as well as signage. Markings can consist of two bars, or more intense treatments such as the ladder whose "rungs" make the crossing more visible to motorists. Signage should be placed at the crosswalk, consisting of (W11-15) and a downward pointing arrow (W16-7P) at minimum, showing drivers where the crossing is. Advanced crossing signage, and advanced yield signage (R1-5, and yield bar markings) may also be used, particularly if the crosswalk signage is obscured from approaching motorists. Costs range from $5,000 to $15,000.

Rectangular Rapid Flashing Beacons

Rectangular rapid-flashing beacons (RRFBs) are a very effective and low-cost countermeasure to reduce delay and improve safety at a crosswalk. The beacons are activated by push buttons or passive detection and are most effective over short crossing distances (e.g. two to three lane roads, or up to two-lane approaches if used with a median island). Signs and beacons should be placed on both sides of each approach; left side signs should be mounted in a median if present or constructible. Cost: to add a beacon to an existing or new crosswalk may cost $25,000 to $35,000.

Median Refuge Island

Traditional crossings require pedestrians and bicyclists to wait for motorists to yield, or a gap sufficient to cross both directions of traffic. Median refuge islands (shown at right with an optional RRFB beacon) allow users to cross just one direction of traffic at a time. This simplifies the complexity of the crossing, allowing users to focus on threats approaching from one direction instead of two. Further, they shorten the crossing distance—reducing the amount of time users are in the road, and reducing delay on motorists when compared to a signal or pedestrian hybrid beacon. Cost: May range from $25,000 to $60,000 (with RRFB beacon) on a road with a center turn lane, to upwards of $200,000 when roadway widening is required for implementation.

Pedestrian Hybrid and Signalized Crossings

Where there are higher volumes of motorists or pedestrians, or where motorists travel at a high rate of speed, Pedestrian Hybrid Beacons (or HAWK beacon) or Signalized Pedestrian Crossing intersection may be more appropriate. Both treatments legally control the movements of motorists and pedestrians, improving safety and minimizing delay for both users. Both treatments also have specific warrant criteria based on significant vehicular and pedestrian volumes, as well as crossing distances and vehicle speeds. Costs will range from $75,000 to $150,000.

Bike Parking

Encouraging people to bike to destinations requires the provision of secure and attractive parking options. In terms of security, bike parking should be theft deterrent, allowing bikes to be locked up. Secondly, proper racks will support the frame of a bike in two places—reducing the risk of the bike wheel being bent when falling over, or sliding down the rack and being stepped on. The Association of Pedestrian and Bike Professionals (APBP) has guidelines which may be helpful in this regard. Racks provided to the public should meet these standards.

Bike Corrals

Large capacity bike parking can be provided by constructing bike corrals—the placement of large bike racks on curb extensions or on the street in a parking spot or in areas where sight-distance restrictions prevent automobile parking. Bike corrals can accommodate upwards of 12 bikes in the space of just one automobile parking spot!

Infrastructure (continued)

not feasible, as well as where the number of intersecting driveways would make such sidepaths difficult to safely use.

Bike Network Plan

The Bike Network Plan (Exhibit 6-1, page 27) illustrates a network of on- and off-road facilities which, when completed, will comprise a connected, secondary network allowing bicyclists to travel safely around the city.

Each project is presented with a project number which can be cross-referenced with the projects listed in the Infrastructure Recommendation tables on pages 29 through 39. Each project includes a name which describes the project's limits and the intended facility, as well as the project's rank, potential sponsors or partners, its approximate cost, and potential sources of grant funding. Projects "committed" for construction in the short term are not included.

Two projects address short-term ***Safety*** needs on the existing network. Given their importance and relatively small cost, these projects are presented separately in Table 6-1s, and have yellow colored labels on Exhibit 6-1. These projects should be addressed over the next five years.

The remaining infrastructure projects are ***Corridor Projects*** which create cross-city connectivity, exceptional recreational opportunities, as well as contribute to economic development by providing new or improved connectivity along independent alignments and roadways. These projects may include off-road multi-use paths, on-road treatments[1] such as bike lanes and bicycle boulevards, or some combination of the two in the same project. Given their comparably higher cost, the corridor projects are ranked based on the sum of weighted scores applied under 12 factors. In Table 6-1a, the projects are presented in order of project rank. Table 6-1b presents the same projects ordered by their project number.

Over time, opportunities to fund and implement projects may change and, as such, the City may make revisions to the priority of projects in this plan. Similarly, new corridors and projects may present themselves as viable. City staff will consider these opportunities with respect to the intent of the plan and pursue a vetting process for individual projects.

Non Infrastructure

Non-infrastructure recommendations, addressing the City's standards, policies, and programs, are provided in Table 6-2, on pages 40 through 46. These are organized by their respective Five E categories: Engineering, Education, Encouragement, Enforcement, and Evaluation. Recommendations include a project number, name and description, priority, implementation time frame, listed sponsor or partners, approximate cost, and potential funding sources.

1: On-road bicycle facilities can be implemented as stand-alone projects but are most cost-effectively completed in conjunction with resurfacing projects. Implementation several years in advance also allows agencies to "try it before you buy it." On-road bike facility recommendations are offered at a planning level. Often on-road facilities can be provided by narrowing lanes or better defining the traveled way; however, a capacity analysis should be completed when travel lanes are removed to ensure impacts to motor vehicle traffic is acceptable with respect to reasonable Level of Service (LOS) standards.

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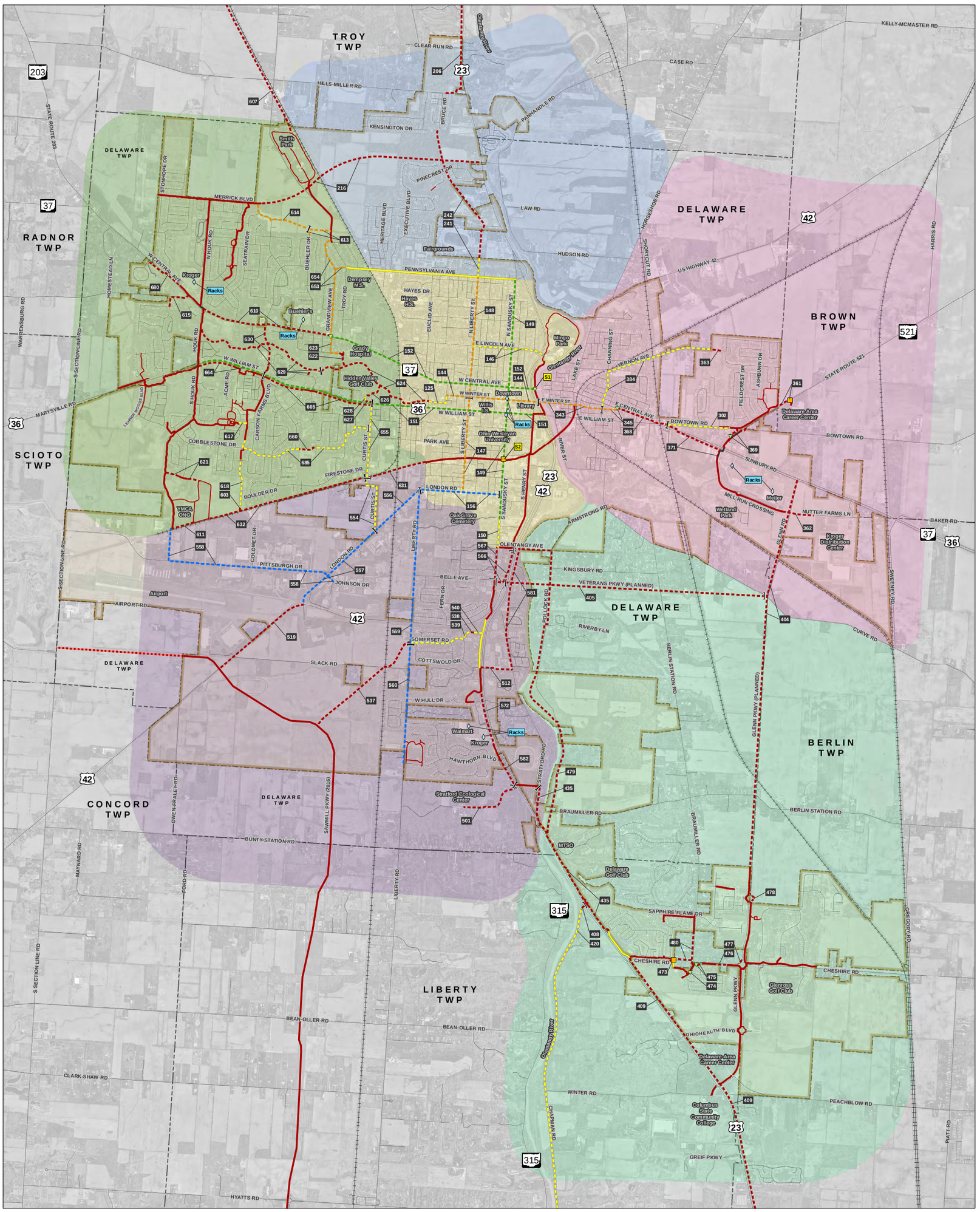
Exhibit 6-1

Bike Network Plan



Legend

Type of Facility

Existing	Committed	Proposed	By Others	
				Multi-use Path
				Bike Boulevard
				Signed, Shared Route
				Bike Lanes, Paved Shoulder
				Road Diet with Bike Lanes

Spot Improvements

- Basic Crossing
- Enhanced Crossing
- Median Crossing
- Parking Corrals

Project Identification

- 101 Project Number

Functional Classification

- Route*
- Local*
- Private**

*Route and Local improvements vary in color and dash pattern based on type of facility.

**Private paths are signed as no trespassing, or are not open 24-hours a day.

Other Modes

- Roadways
- Railroad

Jurisdiction

- City of Delaware
- Township Boundary

Proj. No. Zones

- 100
- 200
- 300
- 400
- 500
- 600

Project Ranking

- 1-5
- 6-10
- 11-15
- 16-20
- 21-25
- 26-30

N

0 0.5 1 Mile

Full size: 34" x 22" — 1 inch = 1/3 miles
Half size: 17" x 11" — 1 inch = 2/3 miles

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Infrastructure Recommendations: Tables 6-1s, 6-1a, and 6-1b

The following tables detail recommended infrastructure projects. Table 6-1s details safety projects. Table 6-1a presents projects ordered by their ranking. Table 6-1b presents the same projects as 6-1a but orders them by the project number. Please refer to Appendix D for Recommendation Methodology.

Grant Funding programs recommended for projects are abreviated as follows: STP - Surface Transportation Program (federal funds, MORPC), SRTS - Safe Routes to School (federal funds, ODOT), RTP - Recreational Trails Program (federal funds, ODNR), COTF - Clean Ohio Trail Fund (state funds, ODNR), Safety - Highway Safety or other discretionary safety funding (ODOT or MORPC), ODOT Urban Paving. Projects designated with "ATP" are located along a MORPC Active Transportation Corridor. Projects designated with "SBR" are on ODOT's draft State Bike Route system.

Detailed Descriptions are provided in appendix C2 for safety projects, projects ranked 1 to 20.

Project Costs were developed to a planning level. Costs for projects ranked 21 and lower were not estimated. The scale of cost anticipated for projects ranked 21 and higher is as follows:
$ ≈ $25k-50k, $ $ ≈ $50k-100k, $ $ $ ≈ $100k-250k, $ $ $ $ ≈ $250k-750k, $ $ $ $ $ ≈ $750-1M+

Table 6-1s: Safety Projects

Proj. No.	Project Name	Rank	Sponsors, Partners	Cost (2016-$)	Grant Funding
S1	Mingo Path / SR-37 Crossing	1	CIP, ODOT	$80,000	STP, Safety
S2	Sandusky Street / Springfield Branch Crossing Upgrades	2	CIP	$70,000	Safety

Table 6-1a: Infrastructure Improvements, Ordered by Rank

Proj. No.	Project Name	Rank	Sponsors, Partners	Cost (2016-$)	Grant Funding
665	W William Street (Carson Farms Boulevard to Curtis Street): Bike Lanes with Multi-Use Path.	1	City, ODOT, Developer Fees	$1.43M	n/a
664	W William Street (Houk to Carson) Road Diet w/ Bike Lanes & Parallel Multi-Use Path	2	City, ODOT, Developer Fees	$550,000	n/a
680	W Central Avenue (Kroger to City Limits) Multi-Use Path	3	City, ODOT	$470,000	STP, COTF
371	Sunbury Road (The Point to Mill Run Crossing) Multi-Use Path	4	City, ODOT	$1.07M	STP, TA, COTF, Safety, ATP
125	Blue Limestone to Winter Street Shared Roadway	5	City	$23,000	n/a

Table 6-1a: Infrastructure Improvements, Ordered by Rank

Proj. No.	Project Name	Rank	Sponsors, Partners	Cost (2016-$)	Grant Funding
343	E Winter Street (Library to Channing) Bike Boulevard	6	City, ODOT	$54,000	STP, TA, SBR, ATP
151	W William Street (Curtis to Downtown) Road Diet with Bike Lanes	7	City, ODOT	$515,600	ODOT Urban Paving
368	E Central Avenue (E Winter Street to the Point) Multi-Use Path	8	City, ODOT	$736,500	STP, TA, COTF, Safety, SBR, ATP
144	Winter Street (Elizabeth St to Library) Bike Boulevard	9	City, ODOT	$47,000	STP, TA, SBR
242	N Liberty Street to Bruce Road (Through Fairgrounds) Multi-Use Path	10	City, County, Developer	$ $ $	n/a
345	E Winter Street (Channing to E Central) Bike Boulevard and Enhanced Crossing.	11	City, ODOT	$45,000	STP, TA, Safety, SBR, ATP
572	US-23 (Kroger to North of Hull Drive) Multi-Use Path	12	City, ODOT	$1.35M	STP, TA, COTF, Safety, ATP
559	Liberty Road (London to Somerset) Bike Lanes / Paved Shoulder	13	City, ODOT	$407,000	STP, TA, SBR
149	Sandusky Street (Oak Grove Cemetery to Pennsylvania Avenue) Road Diet w/ Bike Lanes	14	City	$403,000	n/a
566	S Henry Street to S Sandusky Street Connector along US-23 Multi-Use Path	15	City, ODOT	$710,700	STP, TA, COTF, ATP
629	Delaware Run (Houk Road to West of Hidden Valley Golf Club) Multi-Use Path	16	City	$1.67M	COTF, RTP
435	US-23 (Crystal Petal Drive to Stratford Road) and Stratford Road (US-23 to Meeker Way) Multi-Use Path	17	City, County, ODOT	$3.03M	STP, TA, COTF, Safety
582	US-23 (Meeker Way to Hawthorne Boulevard) Multi-Use Path	18	City, ODOT, Developer	$654,000	STP, TA, COTF, ATP
624	Delaware Run (West of Hidden Valley Golf Club to Blue Limestone Park) Multi-Use Path	19	City	$1.88M	COTF, RTP
567	S Sandusky Street (Belle Avenue to Olentangy Avenue) Multi-Use Path	20	City, ODOT	$828,750	STP, TA, COTF, ATP
610	W Central Avenue (Houk Road to Grandview Avenue) Multi-Use Path	21	City	$2.08M	STP, TA, COTF, Safety, SBR, ATP
362	Nutter Farms Lane Extension (Glenn Road to Kroger D.C.) Multi-Use Path	22	City	$ $	n/a
631	Springfield Branch Extension (Curtis Street to David Street) Multi-Use Path	23	City	$ $ $ $ $	COTF, RTP

Table 6-1a: Infrastructure Improvements, Ordered by Rank

Proj. No.	Project Name	Rank	Sponsors, Partners	Cost (2016-$)	Grant Funding
152	Central Avenue (Grandview Avenue to Mingo Trail) Road Diet w/ Bike Lanes	24	City, ODOT	$ $ $	STP, ODOT Urban Paving
473	Cheshire Road (Watertower Access Road) Enhanced Road Crossing	25	City	$	n/a
369	SR-521 (Biltmore Drive to Bowtown Road) Multi-Use Path and Median Crossing.	26	City, ODOT	$ $	STP, TA, Safety
626	Delaware Run Connection to W William Street (access from Golf Parking Lot) Multi-Use Path	27	City	$ $	COTF, RTP
632	Springfield Branch Extension (YMCA/ONG to Curtis Street) Multi-Use Path	28	City	$ $ $	COTF, RTP
408	US-23 to Chapman Multi-Use Path Connector	29	City, County, Liberty Twp, ODOT	$ $ $	STP, TA, Safety
623	Grandview Avenue to Delaware Run Connector Bike Boulevard	30	City	$	COTF, RTP
302	Bowtown Road Shared Street	31	City, ODOT	$	STP, TA, SBR
474	Cheshire Road and Indigo Blue Street Median Crossing	32	City	$	n/a
475	Cheshire Road and Braumiller Road Median Crossing	33	City	$	n/a
653	Grandview Avenue (W Central Avenue to Pennsylvania Avenue) Bike Boulevard	34	City	$	n/a
622	Grandview Ave to Delaware Run Connector Multi-Use Path	35	City	$ $ $	COTF, RTP
628	Delaware Run Connection to W William Street Shared Roadway	36	City	$	COTF, RTP
627	Delaware Run Connection to W William Street Multi-Use Path and Crossing	37	City	$	COTF, RTP
539	Liberty to US-23 Connector: Somerset Road Shared Roadway	38	City	$	n/a
540	Liberty to US-23 Connector: Sulu Road Shared Roadway	39	City	$	n/a
150	S Sandusky Street (Olentangy Avenue to Oak Grove Cemetery Driveway) Shared Roadway	40	City	$	n/a
654	Hickory Lane (Grandview Avenue to Troy Road) Bike Boulevard	41	City	$	n/a
156	London Road (S Sandusky Street to Liberty Road) Bike Lanes / Paved Shoulders	42	City	$ $	STP, TA

Table 6-1a: Infrastructure Improvements, Ordered by Rank

Proj. No.	Project Name	Rank	Sponsors, Partners	Cost (2016-$)	Grant Funding
363	Vernon Avenue to Kensington Green Multi-Use Path	43	City, Developer	$	n/a
611	Springfield Branch (S Houk Road to YMCA/ONG Loop) Multi-Use Path	44	City	$ $	COTF, RTP
147	Liberty Street (London Road to W Winter Street) Bike Boulevard	45	City, ODOT	$	STP, TA, SBR
477	Cheshire Road and Glenn Parkway Roundabout Multi-Use Path Gap	46	City	$	n/a
537	Sawmill Road to Liberty Connector Multi-Use Path (Alignment TBD)	47	City, County, Developer	$ $ $	n/a
558	Pittsburgh Drive (Houk Road to London Road) Bike Lanes / Paved Shoulders	48	City	$ $	n/a
409	US-23 (South of Cheshire Road) Multi-Use Path	49	City, County, Liberty Twp, ODOT	$ $ $ $	STP, TA, Safety
476	Cheshire Road (Near Vet Clinic) Multi-Use Path	50	City	$	n/a
557	London Road (US 42 to Curtis Street) Bike Lanes / Paved Shoulders	51	City	$ $	n/a
556	London Road (Curtis Street to Liberty Road) Bike Lanes / Paved Shoulders	52	City	$ $	n/a
148	Liberty Street (Pennsylvania Avenue to W Winter Street) Bike Boulevard	53	City	$	n/a
420	Chapman Road Shared Roadway	54	County, Liberty Township	$	n/a
613	Buehler Drive to Troy Road Bike Boulevard	55	Developer, City	$	n/a
614	Buehler Drive to Merrick Boulevard Bike Boulevard	56	Developer, City	$	n/a
621	Boulder Drive (S Houk Road to YMCA/ONG Loop) Multi-Use Path	57	Developer, City	$ $	n/a
630	Valleyside Drive (Future Alignment: W William Street to W Central Avenue) Multi-Use Path	58	City	$ $ $	n/a
538	Liberty to US-23 Connector: Somerset Road Multi-Use Path	59	City	$ $	n/a
216	Merrick Boulevard (Future extension: Cambridge Road to US-23) Multi-Use Path	60	Developer, City	$ $ $ $ $	n/a
560	Liberty Road (Hawthorn Boulevard to Somerset Road) Bike Lanes / Paved Shoulders	61	City, ODOT	$ $	n/a

Table 6-1a: Infrastructure Improvements, Ordered by Rank

Proj. No.	Project Name	Rank	Sponsors, Partners	Cost (2016-$)	Grant Funding
478	Glenn Parkway and Tree Line Way Roundabout Multi-Use Path Gap	62	City	$	n/a
603	Carson Farms Connection to Springfield Branch Extension Multi-Use Path	63	Developer, City	$	n/a
241	Liberty Road (Pennsylvania Avenue to Fairgrounds Path) Shared Roadway	64	City	$	n/a
384	Channing Street and Vernon Avenue Shared Roadway	65	City	$	n/a
404	Glenn Parkway (Future Alignment: Tree Line Way to Sunbury Road) Multi-Use Path	66	City, ODOT, Development	$ $ $ $ $	n/a
405	Veterans Parkway (Future Alignment: US-23 to Glenn Parkway) Multi-Use Path	67	City, ODOT, Development	$ $ $ $ $	n/a
660	Cobblestone Drive to Penick Avenue Multi-Use Path	68	City	$ $	n/a
685	Cobblestone Drive and Penick Avenue (Carson Farms Boulevard to Curtis Street) Shared Roadway	69	City	$	n/a
581	Stratford Road (Olentangy Avenue to Cottswold Drive Extension) Multi-Use Path	70	City	$ $ $ $	n/a
480	Braumiller and Cheshire Roads Multi-Use Path	71	City, Developer Fees	$ $ $	n/a
519	London Road (US-42 to Sawmill Parkway) Multi-Use Path	72	City, ODOT, Developer	$ $ $	n/a
554	Curtis Street (London Road to Firestone Drive) Shared Roadway	73	City	$	n/a
655	Curtis Street (Firestone Drive to W William Street) Shared Roadway	74	City	$	n/a
146	Lincoln Avenue (Liberty Street to Mingo Park and Pool) Shared Roadway	75	City	$	n/a
617	Carson Farms Park to Carson Farms Boulevard Shared Roadway	76	City	$	n/a
618	Carson Farms Connection to Springfield Branch Extension Shared Roadway	77	City, Developer	$	n/a
479	Pollack Road Multi-Use Path	78	City, Developer	$ $ $ $ $	n/a
512	Cottswold Drive Extension (US-23 to Stratford Road) Multi-Use Path	79	City	$ $ $	n/a
501	Stratford Ecological Center Connection to US-23 Multi-Use Path	80	Stratford Ecological Center	$ $ $	n/a

Table 6-1a: Infrastructure Improvements, Ordered by Rank

Proj. No.	Project Name	Rank	Sponsors, Partners	Cost (2016-$)	Grant Funding
206	US-23 to Delaware Lake State Park Multi-Use Path	81	City, County, ODOT, ODNR	$ $ $ $ $	STP, TA, COTF, RTP
615	Warrensburg Road (Grand Circuit Boulevard to W Central Avenue) Multi-Use Path	82	City	$ $ $	n/a
361	Delaware Area Career Center Multi-Use Path / Enhanced Crossing	83	City	$ $	n/a
686	Smith Park to Galant Woods Rails to Trails Multi-Use Path	84	City, County	$ $ $ $ $	COTF, RTP

Grant Funding programs recommended for projects are abreviated as follows: STP - Surface Transportation Program (federal funds, MORPC), SRTS - Safe Routes to School (federal funds, ODOT), RTP - Recreational Trails Program (federal funds, ODNR), COTF - Clean Ohio Trail Fund (state funds, ODNR), Safety - Highway Safety or other discretionary safety funding (ODOT or MORPC), ODOT Urban Paving. Projects designated with "ATP" are located along a MORPC Active Transportation Corridor. Projects designated with "SBR" are on ODOT's draft State Bike Route system.

Detailed Descriptions are provided for safety projects, as well as those ranked 1 to 20 in the appendix C2.

Project Costs were developed to a planning level. Costs for projects ranked 21 and lower were not estimated. The scale of cost anticipated for projects ranked 21 and higher is as follows:
$ ≈ $25k-50k, $ $ ≈ $50k-100k, $ $ $ ≈ $100k-250k, $ $ $ $ ≈ $250k-750k, $ $ $ $ $ ≈ $750-1M+

Table 6-1b: Infrastructure Improvements, Ordered by Project Number

Proj. No.	Project Name	Rank	Sponsors, Partners	Cost (2016-$)	Grant Funding
125	Blue Limestone to Winter Street Shared Roadway	5	City	$23,000	n/a
144	Winter Street (Elizabeth St to Library) Bike Boulevard	9	City, ODOT	$47,000	STP, TA, SBR
146	Lincoln Avenue (Liberty Street to Mingo Park and Pool) Shared Roadway	75	City	$	n/a
147	Liberty Street (London Road to W Winter Street) Bike Boulevard	45	City, ODOT	$	STP, TA, SBR
148	Liberty Street (Pennsylvania Avenue to W Winter Street) Bike Boulevard	53	City	$	n/a
149	Sandusky Street (Oak Grove Cemetery to Pennsylvania Avenue) Road Diet w/ Bike Lanes	14	City	$403,000	n/a
150	S Sandusky Street (Olentangy Avenue to Oak Grove Cemetery Driveway) Shared Roadway	40	City	$	n/a
151	W William Street (Curtis to Downtown) Road Diet with Bike Lanes	7	City, ODOT	$515,600	ODOT Urban Paving
152	Central Avenue (Grandview Avenue to Mingo Trail) Road Diet w/ Bike Lanes	24	City, ODOT	$ $ $	STP, ODOT Urban Paving
156	London Road (S Sandusky Street to Liberty Road) Bike Lanes / Paved Shoulders	42	City	$ $	STP, TA
206	US-23 to Delaware Lake State Park Multi-Use Path	81	City, County, ODOT, ODNR	$ $ $ $ $	STP, TA, COTF, RTP
216	Merrick Boulevard (Future extension: Cambridge Road to US-23) Multi-Use Path	60	Developer, City	$ $ $ $ $	n/a
241	Liberty Road (Pennsylvania Avenue to Fairgrounds Path) Shared Roadway	64	City	$	n/a

Table 6-1b: Infrastructure Improvements, Ordered by Project Number

Proj. No.	Project Name	Rank	Sponsors, Partners	Cost (2016-$)	Grant Funding
242	N Liberty Street to Bruce Road (Through Fairgrounds) Multi-Use Path	10	City, County, Developer	$ $ $	n/a
302	Bowtown Road Shared Street	31	City, ODOT	$	STP, TA, SBR
343	E Winter Street (Library to Channing) Bike Boulevard	6	City, ODOT	$54,000	STP, TA, SBR, ATP
345	E Winter Street (Channing to E Central) Bike Boulevard and Enhanced Crossing.	11	City, ODOT	$45,000	STP, TA, Safety, SBR, ATP
361	Delaware Area Career Center Multi-Use Path / Enhanced Crossing	83	City	$ $	n/a
362	Nutter Farms Lane Extension (Glenn Road to Kroger D.C.) Multi-Use Path	22	City	$ $	n/a
363	Vernon Avenue to Kensington Green Multi-Use Path	43	City, Developer	$	n/a
368	E Central Avenue (E Winter Street to the Point) Multi-Use Path	8	City, ODOT	$736,500	STP, TA, COTF, Safety, SBR, ATP
369	SR-521 (Biltmore Drive to Bowtown Road) Multi-Use Path and Median Crossing.	26	City, ODOT	$ $	STP, TA, Safety
371	Sunbury Road (The Point to Mill Run Crossing) Multi-Use Path	4	City, ODOT	$1.07M	STP, TA, COTF, Safety, ATP
384	Channing Street and Vernon Avenue Shared Roadway	65	City	$	n/a
404	Glenn Parkway (Future Alignment: Tree Line Way to Sunbury Road) Multi-Use Path	66	City, ODOT, Development	$ $ $ $ $	n/a
405	Veterans Parkway (Future Alignment: US-23 to Glenn Parkway) Multi-Use Path	67	City, ODOT, Development	$ $ $ $ $	n/a
408	US-23 to Chapman Multi-Use Path Connector	29	City, County, Liberty Twp, ODOT	$ $ $	STP, TA, Safety
409	US-23 (South of Cheshire Road) Multi-Use Path	49	City, County, Liberty Twp, ODOT	$ $ $ $	STP, TA, Safety
420	Chapman Road Shared Roadway	54	County, Liberty Township	$	n/a
435	US-23 (Crystal Petal Drive to Stratford Road) and Stratford Road (US-23 to Meeker Way) Multi-Use Path	17	City, County, ODOT	$3.03M	STP, TA, COTF, Safety

Table 6-1b: Infrastructure Improvements, Ordered by Project Number

Proj. No.	Project Name	Rank	Sponsors, Partners	Cost (2016-$)	Grant Funding
473	Cheshire Road (Watertower Access Road) Enhanced Road Crossing	25	City	$	n/a
474	Cheshire Road and Indigo Blue Street Median Crossing	32	City	$	n/a
475	Cheshire Road and Braumiller Road Median Crossing	33	City	$	n/a
476	Cheshire Road (Near Vet Clinic) Multi-Use Path	50	City	$	n/a
477	Cheshire Road and Glenn Parkway Roundabout Multi-Use Path Gap	46	City	$	n/a
478	Glenn Parkway and Tree Line Way Roundabout Multi-Use Path Gap	62	City	$	n/a
479	Pollack Road Multi-Use Path	78	City, Developer	$ $ $ $ $	n/a
480	Braumiller and Cheshire Roads Multi-Use Path	71	City, Developer Fees	$ $ $	n/a
501	Stratford Ecological Center Connection to US-23 Multi-Use Path	80	Stratford Ecological Center	$ $ $	n/a
512	Cottswold Drive Extension (US-23 to Stratford Road) Multi-Use Path	79	City	$ $ $	n/a
519	London Road (US-42 to Sawmill Parkway) Multi-Use Path	72	City, ODOT, Developer	$ $ $	n/a
537	Sawmill Road to Liberty Connector Multi-Use Path (Alignment TBD)	47	City, County, Developer	$ $ $	n/a
538	Liberty to US-23 Connector: Somerset Road Multi-Use Path	59	City	$ $	n/a
539	Liberty to US-23 Connector: Somerset Road Shared Roadway	38	City	$	n/a
540	Liberty to US-23 Connector: Sulu Road Shared Roadway	39	City	$	n/a
554	Curtis Street (London Road to Firestone Drive) Shared Roadway	73	City	$	n/a
556	London Road (Curtis Street to Liberty Road) Bike Lanes / Paved Shoulders	52	City	$ $	n/a
557	London Road (US 42 to Curtis Street) Bike Lanes / Paved Shoulders	51	City	$ $	n/a
558	Pittsburgh Drive (Houk Road to London Road) Bike Lanes / Paved Shoulders	48	City	$ $	n/a

Table 6-1b: Infrastructure Improvements, Ordered by Project Number

Proj. No.	Project Name	Rank	Sponsors, Partners	Cost (2016-$)	Grant Funding
559	Liberty Road (London to Somerset) Bike Lanes / Paved Shoulder	13	City, ODOT	$407,000	STP, TA, SBR
560	Liberty Road (Hawthorn Boulevard to Somerset Road) Bike Lanes / Paved Shoulders	61	City, ODOT	$ $	n/a
566	S Henry Street to S Sandusky Street Connector along US-23 Multi-Use Path	15	City, ODOT	$710,700	STP, TA, COTF, ATP
567	S Sandusky Street (Belle Avenue to Olentangy Avenue) Multi-Use Path	20	City, ODOT	$828,750	STP, TA, COTF, ATP
572	US-23 (Kroger to North of Hull Drive) Multi-Use Path	12	City, ODOT	$1.35M	STP, TA, COTF, Safety, ATP
581	Stratford Road (Olentangy Avenue to Cottswold Drive Extension) Multi-Use Path	70	City	$ $ $ $	n/a
582	US-23 (Meeker Way to Hawthorne Boulevard) Multi-Use Path	18	City, ODOT, Developer	$654,000	STP, TA, COTF, ATP
603	Carson Farms Connection to Springfield Branch Extension Multi-Use Path	63	Developer, City	$	n/a
610	W Central Avenue (Houk Road to Grandview Avenue) Multi-Use Path	21	City	$2.08M	STP, TA, COTF, Safety, SBR, ATP
611	Springfield Branch (S Houk Road to YMCA/ONG Loop) Multi-Use Path	44	City	$ $	COTF, RTP
613	Buehler Drive to Troy Road Bike Boulevard	55	Developer, City	$	n/a
614	Buehler Drive to Merrick Boulevard Bike Boulevard	56	Developer, City	$	n/a
615	Warrensburg Road (Grand Circuit Boulevard to W Central Avenue) Multi-Use Path	82	City	$ $ $	n/a
617	Carson Farms Park to Carson Farms Boulevard Shared Roadway	76	City	$	n/a
618	Carson Farms Connection to Springfield Branch Extension Shared Roadway	77	City, Developer	$	n/a
621	Boulder Drive (S Houk Road to YMCA/ONG Loop) Multi-Use Path	57	Developer, City	$ $	n/a
622	Grandview Ave to Delaware Run Connector Multi-Use Path	35	City	$ $ $	COTF, RTP
623	Grandview Avenue to Delaware Run Connector Bike Boulevard	30	City	$	COTF, RTP
624	Delaware Run (West of Hidden Valley Golf Club to Blue Limestone Park) Multi-Use Path	19	City	$1.88M	COTF, RTP

Table 6-1b: Infrastructure Improvements, Ordered by Project Number

Proj. No.	Project Name	Rank	Sponsors, Partners	Cost (2016-$)	Grant Funding
626	Delaware Run Connection to W William Street (access from Golf Parking Lot) Multi-Use Path	27	City	$ $	COTF, RTP
627	Delaware Run Connection to W William Street Multi-Use Path and Crossing	37	City	$	COTF, RTP
628	Delaware Run Connection to W William Street Shared Roadway	36	City	$	COTF, RTP
629	Delaware Run (Houk Road to West of Hidden Valley Golf Club) Multi-Use Path	16	City	$1.67M	COTF, RTP
630	Valleyside Drive (Future Alignment: W William Street to W Central Avenue) Multi-Use Path	58	City	$ $ $	n/a
631	Springfield Branch Extension (Curtis Street to David Street) Multi-Use Path	23	City	$ $ $ $ $	COTF, RTP
632	Springfield Branch Extension (YMCA/ONG to Curtis Street) Multi-Use Path	28	City	$ $ $	COTF, RTP
653	Grandview Avenue (W Central Avenue to Pennsylvania Avenue) Bike Boulevard	34	City	$	n/a
654	Hickory Lane (Grandview Avenue to Troy Road) Bike Boulevard	41	City	$	n/a
655	Curtis Street (Firestone Drive to W William Street) Shared Roadway	74	City	$	n/a
660	Cobblestone Drive to Penick Avenue Multi-Use Path	68	City	$ $	n/a
664	W William Street (Houk to Carson) Road Diet w/ Bike Lanes & Parallel Multi-Use Path	2	City, ODOT, Developer Fees	$550,000	n/a
665	W William Street (Carson Farms Boulevard to Curtis Street): Bike Lanes with Multi-Use Path.	1	City, ODOT, Developer Fees	$1.43M	n/a
680	W Central Avenue (Kroger to City Limits) Multi-Use Path	3	City, ODOT	$470,000	STP, COTF
685	Cobblestone Drive and Penick Avenue (Carson Farms Boulevard to Curtis Street) Shared Roadway	69	City	$	n/a
686	Smith Park to Galant Woods Rails to Trails Multi-Use Path	84	City, County	$ $ $ $ $	COTF, RTP

Non-Infrastructure Recommendations: Table 6-2

The following table details recommended non-infrastructure projects, programs, and policies, categorized by the 5-Es: Engineering, Education, Encouragement, Enforcement, and Evaluation.

Table 6-2: Non-Infrastructure Recommendations

Proj. No.	Recommendation Name and Description	Priority / Timeframe	Sponsors, Partners	Cost (2016-$)	Funding Sources
Engineering Recommendations					
ENG 1	**Adopt a Complete Streets Policy** Such a policy would require accommodation of all users anticipated within the street corridor.	High / Short-term	City	Staff Time	N/A
ENG 2	**Engineering Training or Resources** The City should purchase applicable design manuals, and have one or more engineering staff focus continuing education on bike infrastructure.	High / Short-term	City	$500, Staff time	N/A
ENG 3	**Create a Bike Parking Standard** Bike parking, provided to the public, should comply with a City standard drawing ensuring racks provided to the public comply with APBP criteria, minimizing the risk of damage to parked bikes. Racks should support the frame of parked bikes at two points of contact, allow the bike to be securely attached to the rack, and be sufficiently spaced from other racks, walls, and obstructions to allow their use.	High / Short-term	City	Staff Time	N/A
ENG 4	**Revise Bike Parking Requirements** Parking regulations should be revised to require high-capacity bike racks at all new and existing retail centers, as well as other areas and uses anticipated to generate demand for bicyclist trips. Efforts should be made to improve access at existing developments and destinations.	High / Short-term	City	Staff Time	N/A

Table 6-2: Non-Infrastructure Recommendations

Proj. No.	Recommendation Name and Description	Priority / Timeframe	Sponsors, Partners	Cost (2016-$)	Funding Sources
ENG 5	**Revise Standard Drawings for Multi-use Paths** Revise City standard drawings. Remove all reference to bollards in the standard drawings. Increase the intermediate course of asphalt from 1-1/2 inches to 2-1/2 inches, and add a note to apply a herbicide and compact the sub-base prior to constructing the path. Additional standard drawings should be provided to show concrete walk paths, detailing path thickness and the use of saw-cut joints (instead of tooled joints). Should existing sidewalks in good repair be widened, an additional detail may be provided for this activity, showing how the path is to be constructed.	High / Short-term	City	Staff Time	N/A
ENG 6	**Place High-Capacity Bike Parking in Downtown and at Retail Centers** Work with key stakeholders to allow for the installation of high-capacity bike racks at retail centers, public facilities, and throughout downtown. Racks at retail centers may be placed on concrete walk, or occupy one to two parking spaces near store entrances. Racks downtown may be placed in the parking lane in areas where sight-distance prohibit automobile parking. Pylons and markings should be used to reduce the risk of racks being hit by motorists or snow plow operators.	High / Medium-term	City	$4,000 per location	N/A
ENG 7	**Develop a Path Maintenance Plan and Program** The City should develop a Path Maintenance Plan, addressing preventative maintenance such as seal coating, mitigation of standing water on paths, spot repairs due to root intrusion; regular maintenance such as vegetation clearance, snow plowing; and larger maintenance activities such as resurfacing and path reconstruction.	High / Short-term	City	Staff Time	N/A

Table 6-2: Non-Infrastructure Recommendations

Proj. No.	Recommendation Name and Description	Priority / Timeframe	Sponsors, Partners	Cost (2016-$)	Funding Sources
ENG 8	**Establish a Path Maintenance Budget** A larger amount of funding should be set aside for path maintenance activities, and private path owners should be notified of path deficiencies and their responsibility to correct them. Annual maintenance needs estimated at $80,000 per year to implement a preventative maintenance program (general fund), and address deffered maintenance needs (capital improvement plan). As a greater share of paths reach an age where resurfacing is needed, this budget may need to increase to $100,000 to $120,000 per year by 2020.	High / Short-term	City, HOAs (where appli-cable)	$80,000 to $120,000 per year	CIP and/or General Fund
Education Recommendations					
EDU 1	**Safe Biking Education Program for Adults, Children, and Families** Work with the YMCA to offer 2 hour introductory bike skills and safe riding courses for adults, children, and families. The internet-based survey indicated there was some demand for such a program. Yay Bikes!, a Columbus-based organization, has experience leading similar events in the region and would be a good resource to learn more.	High / Medium-term	City, YMCA	$100 to $200 per course	User Fees
EDU 2	**Safe Biking Education Program for Students** Encourage Delaware City Schools to incorporate bike safety and skills curriculum into PE courses so all students learn how to ride a bike safely as well as the rules of the road. This may be most appropriate for students grade 5 through 12.	High / Medium-term	City, Delaware City Schools	Staff Time	N/A

Table 6-2: Non-Infrastructure Recommendations

Proj. No.	Recommendation Name and Description	Priority / Timeframe	Sponsors, Partners	Cost (2016-$)	Funding Sources
EDU 3	**Share the Road Campaign** In conjunction with the metropolitan region, participate in the next "Share the Road" campaign. These programs typically consist of radio and TV spots, social media, and hand-outs aimed at encouraging motorists and bicyclists to safely share the road. Delaware may supplement this outreach with, for example, portable changeable message signs and distribution of informational materials at community events and facilities, as well as with utility bills. Contact MORPC for more information.	Medium / Medium-term	City, MORPC	$5,000 to $8,000	N/A
Encouragement Recommendations					
ENC 1	**Bike Network map** Revise the City's street map to include bike facilities and make this available to the public via a PDF on the website, and through printing the map. If desired, work with businesses to place advertising on the maps to help offset the cost of printing them.	High / Medium-term	City, Local Businesses	Staff Time, $3,000 to $5,000.	N/A
ENC 2	**Bike Network Wayfinding** Name key routes, and then post signage at cross streets and path intersections, as well as wayfinding signage help bicyclists get around the City.	High / Medium-term	City	$25,000	N/A

Table 6-2: Non-Infrastructure Recommendations

Proj. No.	Recommendation Name and Description	Priority / Timeframe	Sponsors, Partners	Cost (2016-$)	Funding Sources
ENC 3	**Celebrate Bike Month by Working with Partners to Host a Bike Event** Host a bike-specific event on at least an annual basis in celebration of National Bike Month (May). The City may seek to partner with organizations to host the event. Such events may be helpful from a economic development and branding perspective. Example events include: - An *Open Streets* event where a main street is blocked to traffic so bicyclists (and pedestrians) can have the street to themselves. Such events usually include street vendors or food trucks and are popular with both families and young adults. Downtown Delaware would be a good place for such an event. - A *bike race* where individuals ride their bikes on a street course, competing against other cyclists. Such events are popular and draw cyclists from around the region. - A *group ride* where individuals and families may ride together around town, to downtown, or to another city. Such events are popular and draw cyclists from around the region.	High / Short-term and then annually	City, and possibly: Sustain-able Delaware, Friends of the Trails, etc.	Staff Time, $15,000 to $25,000 per event.	N/A
ENC 4	**Bike Accommodation at Festivals and Large Events** The City or private partners may provide a bike valet for large events. Several volunteers will take your bike and store it on portable racks in a monitored bike corral, reducing risk of theft or damage. Pedal Instead is a comparable service in Columbus and provides its service for a very modest charge (if not free), generating income with advertising banners around their bike corrals. Event permits may require sponsors to work with organizations to provide a valet, or at least portable racks.	High / Short-term and then annually	City, Pedal Instead	Little to no cost	N/A

Table 6-2: Non-Infrastructure Recommendations

Proj. No.	Recommendation Name and Description	Priority / Timeframe	Sponsors, Partners	Cost (2016-$)	Funding Sources
ENC 5	**Bike Tourism and Promotion** The City should work with the Chamber of Commerce to think of ways investments in the bike network can leverage economic development in terms of tourism, a more attractive place to operate a business, and the like. Support from the chamber may help encourage area businesses to consider purchasing and constructing bike racks.	Medium / Medium- to Long-term	City, Chamber of Commerce	Staff Time	N/A
Enforcement Recommendations					
ENF 1	**Repeal Obsolete Bike Ordinances** The City should pass an ordinance to repeal the following ordinances requirements for bicyclists to be licensed by the police department (373.13-14), register their bicycles (373.15) and report changes in appearance of their bicycles (373.19).	High / Short-term	City	Staff Time	N/A
ENF 2	**Implement a Bicycle Ticket Diversion Program** - Bicyclists who are riding at night without head- or tail-lights may be provided a set of lights for their bicycle by law enforcement. - Bicyclists who ride against traffic or ride erratically may be instructed to take a bike skills and safety training course. - Motorists who give insufficient passing room or fail to yield at crossings may be required to take a similar course instead or in addition to paying a fine.	Medium / Medium- to Long-term	City	Staff Time, Up to $2,000 annually	N/A
ENF 3	**Sponsor Helmet and Lights Programs to Encourage Safe Riding** The City may choose to give bike helmets and head- and tail-lights to low-income bicyclists, and make similar equipment available at cost to higher income bicyclists. Police and others may help young and old bicyclists with helmet-fitting events, or in installing lights on bicycles. These events can also be sponsored or run by local bike shops or bike organizations. They may also occur during bike events or other community events.	Medium / Medium- to Long-term	City	Staff Time, Up to $2,000 annually	N/A

Table 6-2: Non-Infrastructure Recommendations

Proj. No.	Recommendation Name and Description	Priority / Timeframe	Sponsors, Partners	Cost (2016-$)	Funding Sources
ENF 4	**Bike Crash Report Tracking and Reviews** Area law enforcement groups, including City policy, State Highway Patrol, and Sheriff's Office are encouraged to submit crash reports for bike crashes occurring in the City to the Engineering Department. The engineering department should track these report locations, identifying high-crash locations and develop countermeasures aimed at improving safety for applicable crashes.	Medium / Medium- to Long-term	City	Staff Time	N/A
Evaluation and Program Management Recommendations					
EVA 1	**Establish a Bike Program Manager** Identify a City staff person who will serve as the City's Bike Program Manager. This individual will be responsible for coordinating the bike program, and potentially be responsible for maintenance requests, engineering design review, and advancing non-infrastructure elements of the plan.	High / Short-term	City	Staff Time	N/A
EVA 2	**Establish a bike subcommittee of the Parks and Recreation Advisory Board** The City should establish a subcommittee on biking issues as part of the Parks and Recreation Advisory Board. This group would help guide implementation of the plan and may meet quarterly or as needed.	High / Short-term	City	No Cost	N/A
EVA 3	**Establish Dedicated Funding to Implement the Plan** The City is encouraged to identify a specific funding source for maintenance, programs, and capital improvements regarding the bike network. The capital improvement budget may not need to be targeted to specific projects, providing funding to be used as a local match on any awarded grant projects, or to be used as needs arise.	High / Short-term	City	Staff Time	N/A