

## Executive Summary

### 2019 Bicycle-Pedestrian Master Plan

*Approved by the Carroll County Planning & Zoning Commission*

*November 19, 2019*

---

## Introduction

This multimodal transportation plan focuses on the transportation aspect of bicycle and pedestrian movement, as well as recreational and tourism opportunities county-wide. Connectivity is critical, within and beyond jurisdictional borders. This plan examines the implications of creating a county-wide trail network that produces a multimodal transportation system, and how it can benefit the County economically and environmentally. By investing in opportunities for residents and tourists to engage in bicycle and pedestrian activities, the hope is that County revenues will increase, traffic congestion will decrease, and quality of life will improve for the County, as well as the region. This plan emphasizes the importance of designing with safety in mind, using best practices to create a network that will benefit all income levels, ages, races, and abilities. Through engagement with citizens and public officials, the goal is that community needs can be better assessed and funding can be appropriated most efficiently.

---

## Plan Vision and Goals

**Vision Statement:** “Carroll County is a diverse community made up of suburban centers, towns, rural areas, places of recreation and heritage destinations that are well connected in a safe and efficient manner to enable recreational choices and transportation options.”

**Goal 1:** Identify and assess existing bicycle and pedestrian facilities and networks.

**Goal 2:** Identify a hierarchy of key connections and destinations within Carroll County.

**Goal 3:** Support walkable and bikeable communities to achieve sustainability, livability, health and economic benefits, including tourism opportunities.

**Goal 4:** Place a greater emphasis on walking and bicycling in all planning and development processes.

**Goal 5:** Develop and construct bicycle and pedestrian facilities to effectively balance the needs of all transportation users to promote travel choices, ensuring that bicyclist and pedestrian needs are prioritized in appropriate locations and with safety in mind.

**Goal 6:** Leverage and utilize, to the greatest extent possible, state and federal funding for improvements to existing bicycle and pedestrian facilities as well as construction of new bicycle and pedestrian infrastructure in a way that will yield the greatest impact on the County as a whole.

**Goal 7:** Work with local elected officials, government agencies, and the community to promote and emphasize bicycle and pedestrian safety training and outreach.

## Existing Conditions

*Goal 1: Identify and assess existing bicycle and pedestrian facilities and networks.*

Development of bicycle and pedestrian infrastructure is led by Carroll County’s Department of Recreation and Parks and its eight municipalities. Most existing infrastructure is within or connects to County Designated Growth Areas (DGA) and Municipal Growth Areas (MGA). Chapter 3 highlights existing infrastructure, and what is currently being planned throughout the County.

Of the eight Carroll County Municipalities, most of their comprehensive/master plans include goals of providing more bicycle and pedestrian infrastructure. Municipalities want more transportation options for their residents and increased connections to other parts of Carroll County and the region.

For the purposes of this plan, bicycle and pedestrian routes have been divided into four statuses. Three of the four statuses are discussed in chapter 3 and are shown in the illustration to the right. The fourth status is discussed in chapter 4. Routes may have more than one status as they are often implemented in phases. Likewise, each route may have more than one of the following types of use: Bicycle, Bike-Ped and Pedestrian.

**Status**

**Existing:** a bicycle lane or route, sidewalk, shared use path, or off-road trail that is already in existence; full construction is complete.

**Under Construction:** construction on a bicycle lane or route, sidewalk, shared use path, or off-road trail that is set to begin within the year or construction is currently taking place. A facility under construction may or may not be in a master plan.

**Adopted/Planned:** a bicycle lane or route, sidewalk, shared use path, or off-road trail that is identified in a Town or County master plan or site plan but is not yet under construction.



Tables 3-1 – 3-27 of the Bicycle-Pedestrian Master Plan outline trail type, use, and a description of all Existing, Under Construction and Adopted/Planned routes.

All projects shown on the maps are Planning Level Alignments, approximations, of where the project is expected to take place. All bike-ped projects must go through the proper processes for development. Final engineering and construction plans could lead to alternate alignments.

Throughout the planning process, citizens shared many concerns related to walking and biking throughout the County; inadequate infrastructure and safety top the list of concerns. Citizens report that they would walk

## 2019 Bicycle-Pedestrian Master Plan

more in Carroll County if there were more walking trails and paths accessible to them and if sidewalks were improved. They also express desires for improved pedestrian crossings including signals, crosswalks and warning signs. Responses collected show that citizens are highly concerned with the lack of access to, and connectivity between important community destinations via biking and walking. Community destinations include schools, parks, employment and health care centers, and shopping and dining opportunities.

A full evaluation of existing Carroll County bike-ped infrastructure is needed to adequately determine what needs to be upgraded or replaced. This evaluation should include the best practices of design for Bicycle Level of Comfort (BLOC), Pedestrian Level of Service (PLOS), sidewalk conditions, sidewalk availability, ADA compliance, crossing distance, crossing infrastructure, signalization, intersection spacing, width of road shoulders, and lighting.

Most of the County maintained pedestrian infrastructure lie within the Westminster and Freedom Growth Areas; some infrastructure is within Rural Villages. A Carroll County Department of Public Works assessment found that only 28.4% of the County's curb ramps are ADA compliant. In addition, only 36.0% of the sidewalks are ADA compliant, which is below 61.7% for the Baltimore region and 67% for the State Roadways in the *2019 Maryland Twenty-Year Bicycle & Pedestrian Master Plan*.

### ***Findings***

Various projects have taken place around the County in a disjointed manner. The County, municipalities, state, and related agencies have each worked individually to complete projects. Thus creating an incomplete network with a lack of connectivity between projects. The development of more bike-ped infrastructure is needed to yield the greatest benefit to residents and visitors. When the County works with citizens and other entities a complete and safe transportation network can be realized.

Based on the data collected on bike-ped infrastructure and citizen input, more data is needed for further examination into existing structures:

- Consider taking an inventory of existing County roads with wide shoulders
- Consider conducting a Walk Audit to support the improvement of pedestrian facilities
  - This would include an inventory of pedestrian facilities such as crossing distance, signalization, intersection spacing, buffer from traffic, width and condition of sidewalk, gaps in sidewalk, and lighting
- Continue with the plan to get existing sidewalk and curb ramp infrastructure up to ADA compliance
- Consider best practices in design for developing the appropriate bicycle infrastructure (see Chapter 7)
- Consider the formation of a bike-ped citizen and/or stakeholder group to support these efforts and help identify specific locations for infrastructure improvement

## Future Connections

*Goal 2: Identify a hierarchy of key connections and destinations within Carroll County.*

Future Connections are connections that the County, municipalities and citizens have expressed a desire to see, but have not been adopted into a comprehensive or master plan. The purpose of these projects is to provide bike-ped connections to and from key destinations within the County and fill gaps in the network. Each municipality has given feedback as to what future routes they would like to see within their MGA. Trail uses are the same as those outlined in Chapter 3: Bicycle, Bike-Ped and Pedestrian.

**Status**  
**Future Connections:** bicycle lanes or routes, sidewalks, shared-use paths, or off-road trails that are not in an adopted comprehensive or master plan

Bicycle:	Bike-Ped:	Pedestrian:
bicycle use preferred	bicycle and pedestrian use	pedestrian use preferred
○ ○ ○	● ● ●	○ ○ ○

Tables 4-1 – 4-13 of the Bicycle-Pedestrian Master Plan outline trail type, use, and a description of all Future Connections.

All projects shown on the maps are Planning Level Alignments, approximations, of where the project is expected to take place. All bike-ped projects must go through the proper processes for development. Final engineering and construction plans could lead to alternate alignments.

### Recommendations

The connections identified provide an opportunity to enhance the County bike-ped network beyond what has been Adopted in comprehensive and master plans. When completed, these Future Connections will provide more opportunities to residents and visitors to bike and walk to various destinations across Carroll County. This does not limit the potential of other connections to important destinations not specifically identified in this chapter. The following are recommended for consideration:

- Consider trail connections from the *1994 Greenways, Bicycle, and Pedestrian Facilities Network Technical Report* (1994 Technical Report) proposed greenways (excluding the exceptions mentioned)
- Consider having a consultant study the County for bike-ped connectivity as part of a larger transportation study
- Consider completing a comprehensive study of:
  - A bike-ped connection on Old Westminster Pike, between Finksburg and Westminster, including solutions for crossing MD 97

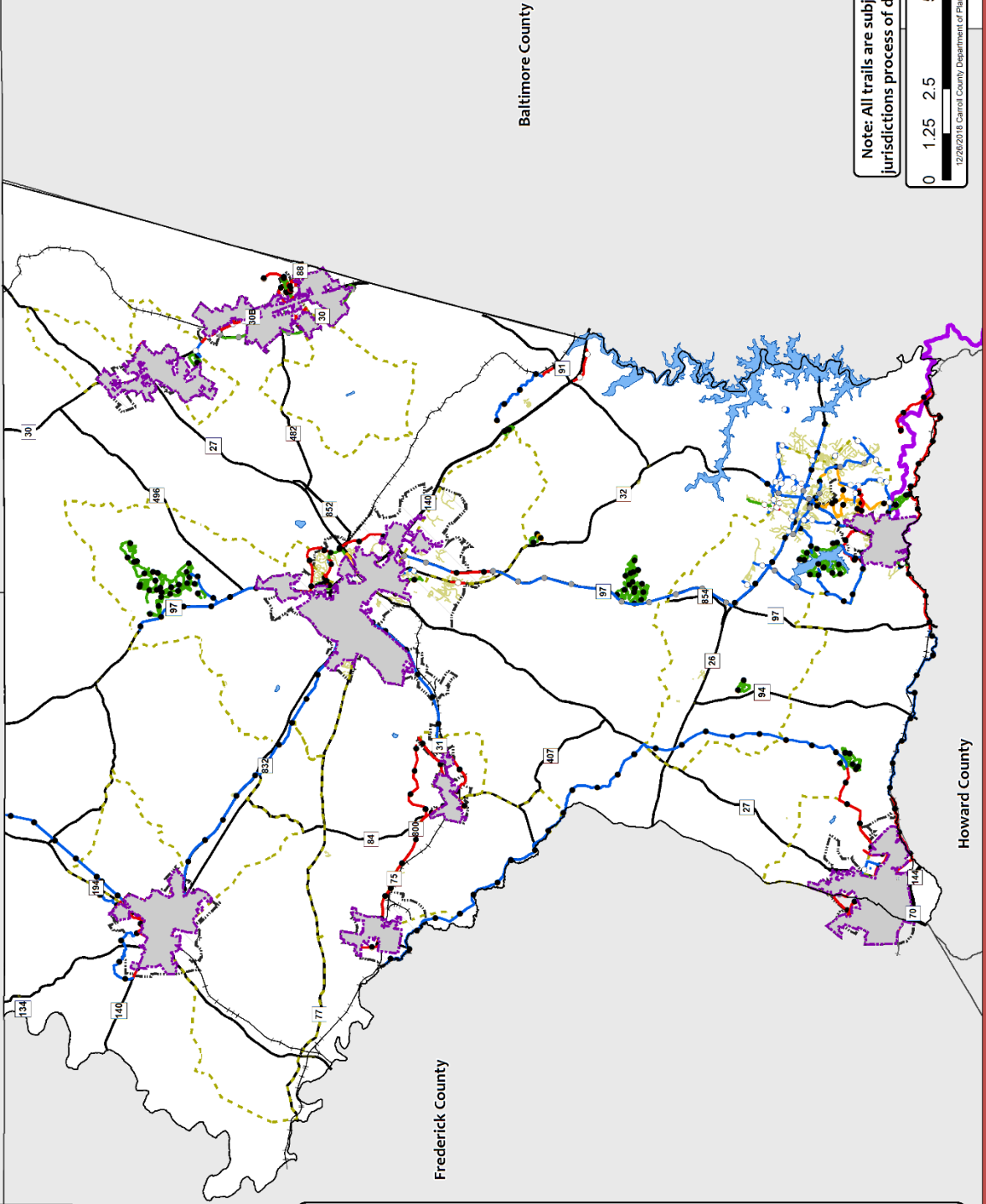
## 2019 Bicycle-Pedestrian Master Plan

- Consider marking existing routes with wayfinding signage directing pedestrians and bicyclists to historical sites such as main streets, buildings and other historic and cultural amenities, and viewsheds and roads
- Consider linking surrounding neighborhoods to community and recreation centers
- Consider linking communities with large senior populations to nearby senior centers
- Consider filling sidewalk gaps
- Consider installing sidewalk on both sides of the street
- Consider working with a citizen and/or stakeholder group to identify additional connections that will further enhance the bike-ped network
- Work with municipalities to ensure alignments for Future Connections create a countywide interconnected network
- Consider adding safe bike-ped crossings to state highway intersections to access popular destinations
- Work with the state to ensure policies and designated bikeways and bike networks are consistent with County plans

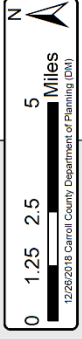
# Carroll County Bike-Ped Routes

## Legend

- Major Roads
- Railroad
- Sidewalk
- Corporate Limits
- Municipal Growth Area
- Boundary
- County Border
- Ponds and Reservoirs
- County Tourism Routes
- Patapsco Regional Greenway
- Bike-Ped**
  - Adopted/Planned
  - Existing
  - Future Connection
  - Under Construction
- Bicycle**
  - Adopted/Planned
  - Existing
  - Future Connection
- Pedestrian**
  - Adopted/Planned
  - Existing
  - Future Connection



Note: All trails are subject to the jurisdictions process of development



# Finksburg Bike-Ped Routes

**Legend**

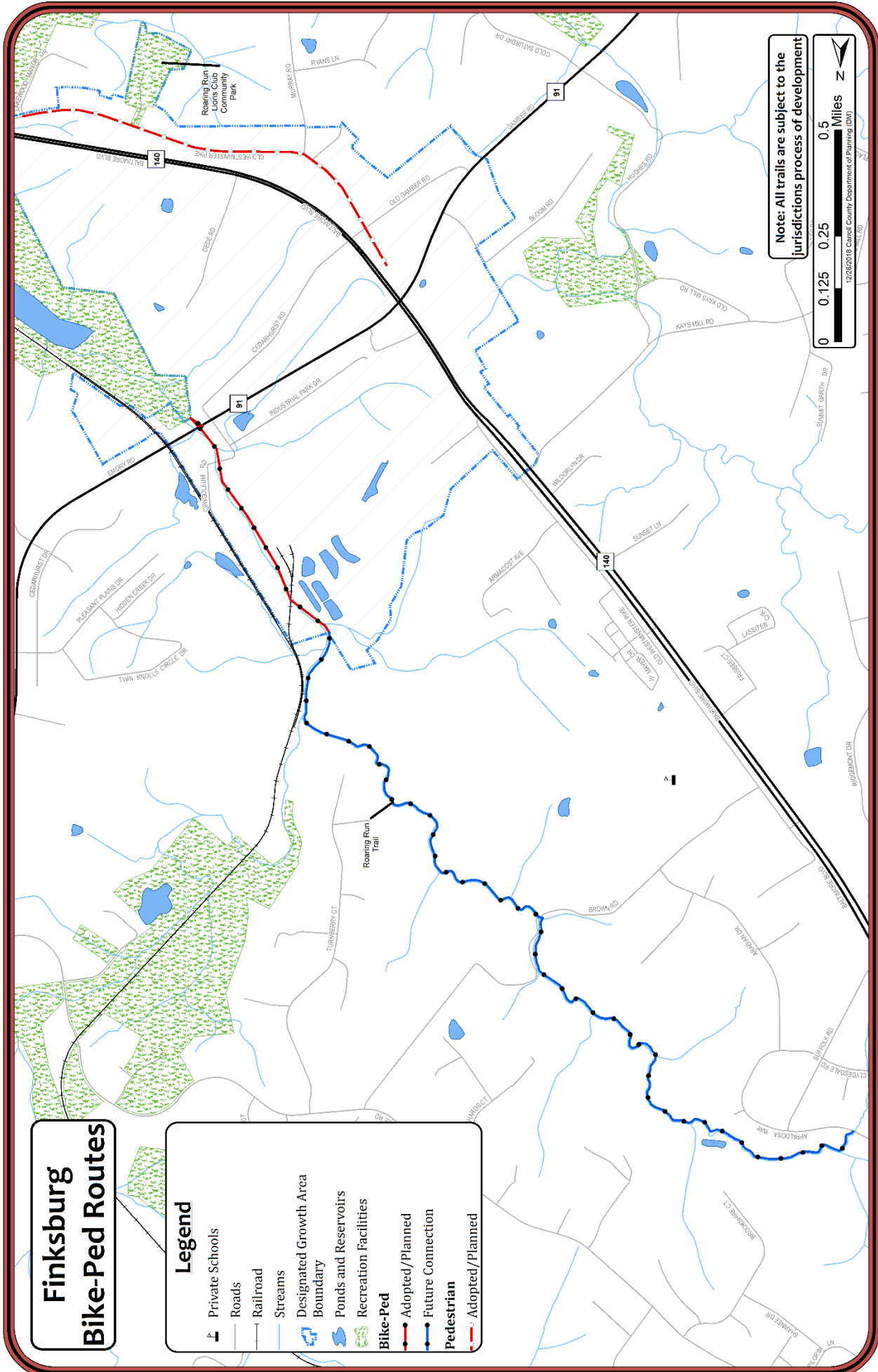
- Private Schools
- Roads
- Railroad
- Streams
- Designated Growth Area Boundary
- Ponds and Reservoirs
- Recreation Facilities

**Bike-Ped**

- Adopted/Planned
- Future Connection

**Pedestrian**

- Adopted/Planned



Note: All trails are subject to the jurisdictions process of development

0 0.125 0.25 0.5 Miles

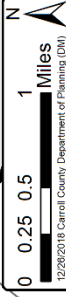
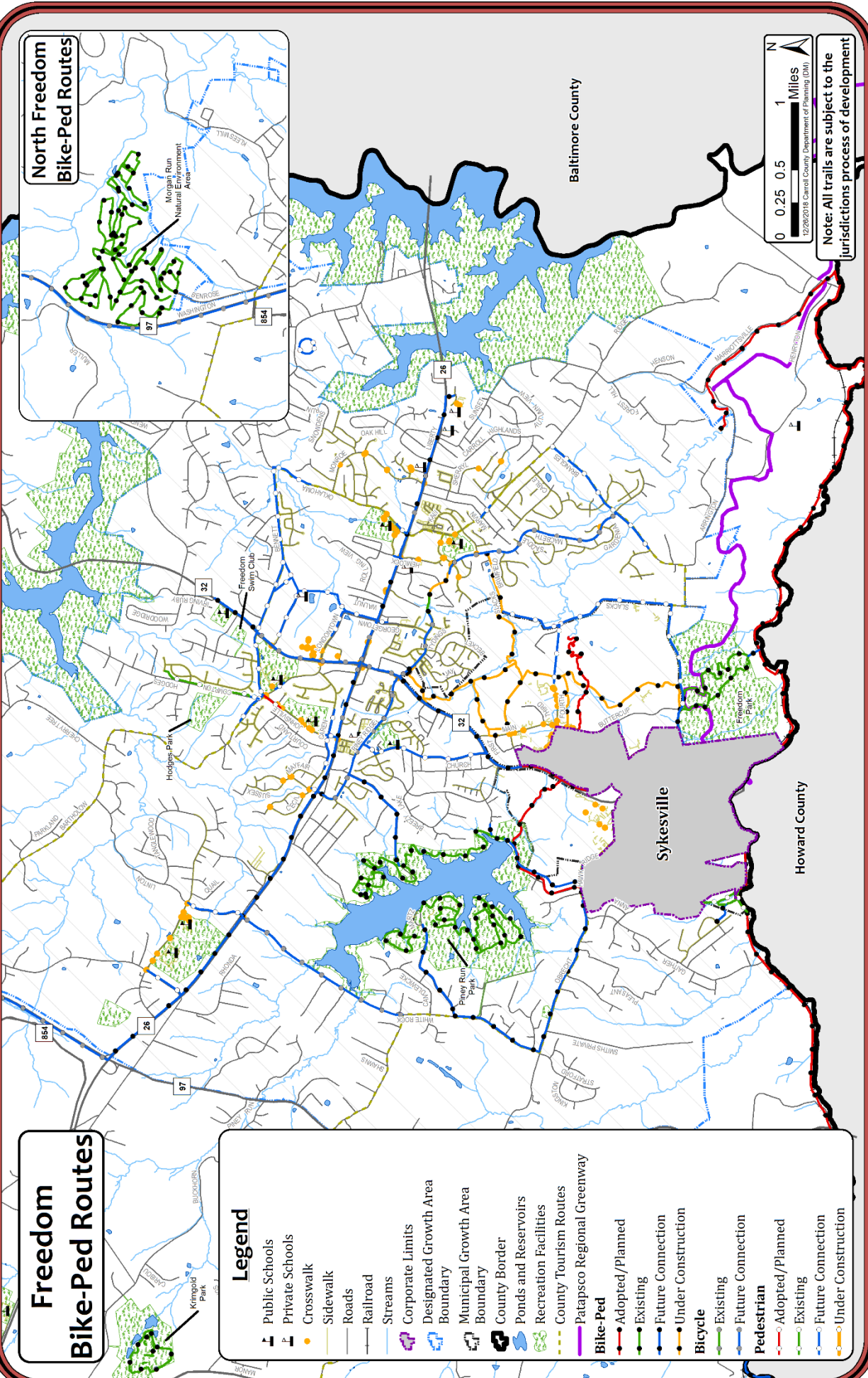
12/28/2018 Carroll County Department of Planning (DAP)

# Freedom Bike-Ped Routes

# North Freedom Bike-Ped Routes

## Legend

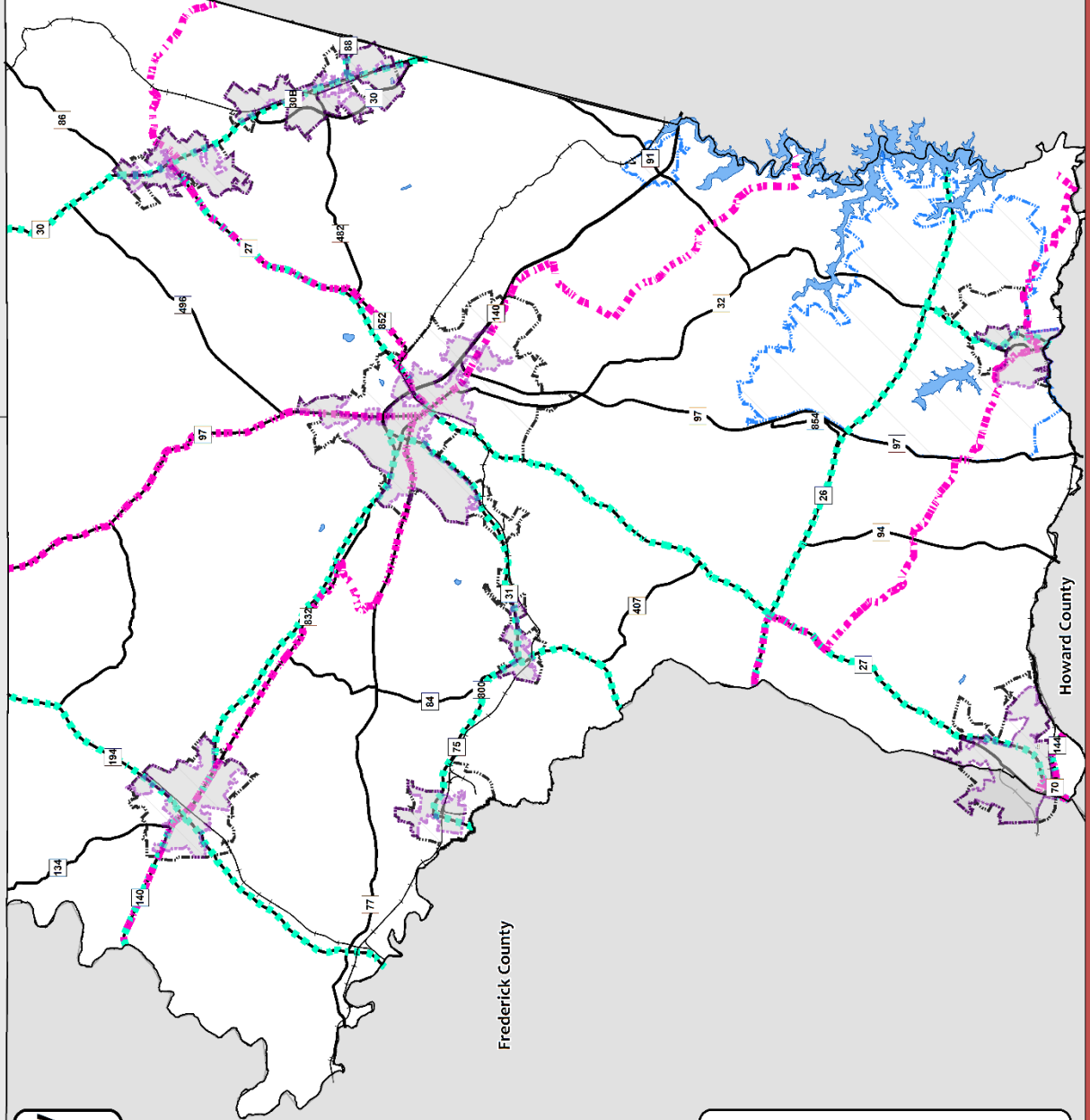
- Public Schools
- Private Schools
- Crosswalk
- Sidewalk
- Roads
- Railroad
- Streams
- Corporate Limits
- Designated Growth Area
- Boundary
- Municipal Growth Area
- Boundary
- County Border
- Ponds and Reservoirs
- Recreation Facilities
- County Tourism Routes
- Patapsco Regional Greenway
- Bike-Ped**
- Adopted/Planned
- Existing
- Future Connection
- Under Construction
- Bicycle**
- Existing
- Future Connection
- Pedestrian**
- Adopted/Planned
- Existing
- Future Connection
- Under Construction



Note: All trails are subject to the jurisdictions process of development



# Carroll County State Routes



## Legend

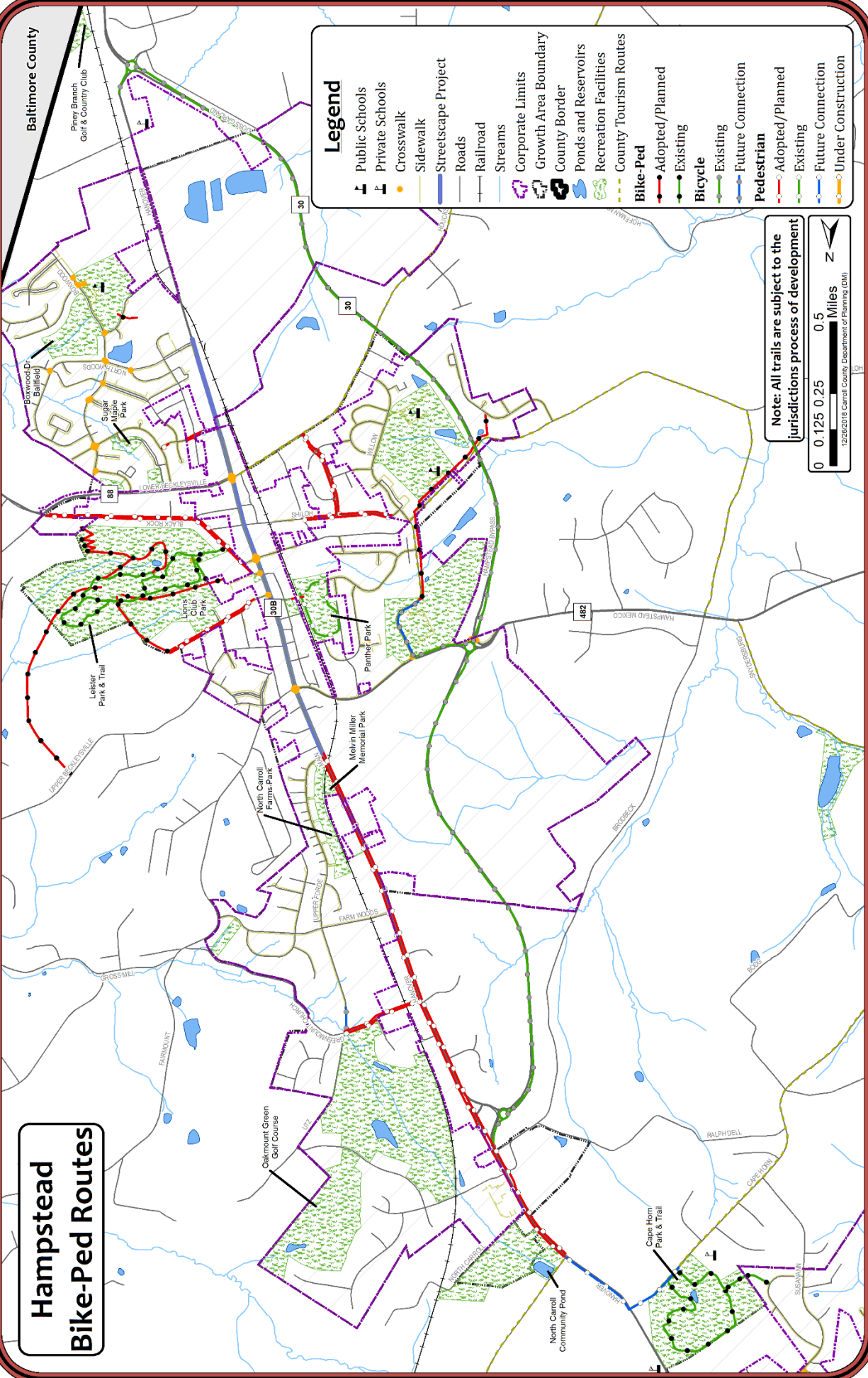
- Major Roads
- Railroad
- Corporate Limits
- Designated Growth Area
- Boundary
- Municipal Growth Area
- Boundary
- County Border
- Ponds and Reservoirs
- Bike Spine Network
- MDOT Designated State Bikeways

Note: All trails are subject to the jurisdictions process of development



# Hampstead Bike-Ped Routes

Baltimore County



### Legend

- Public Schools
- Private Schools
- Crosswalk
- Sidewalk
- Streetscape Project
- Roads
- Railroad
- Streams
- Corporate Limits
- Growth Area Boundary
- County Border
- Ponds and Reservoirs
- Recreation Facilities
- County Tourism Routes

**Bike-Ped**

- Adopted/Planned
- Existing

**Bicycle**

- Existing
- Future Connection

**Pedestrian**

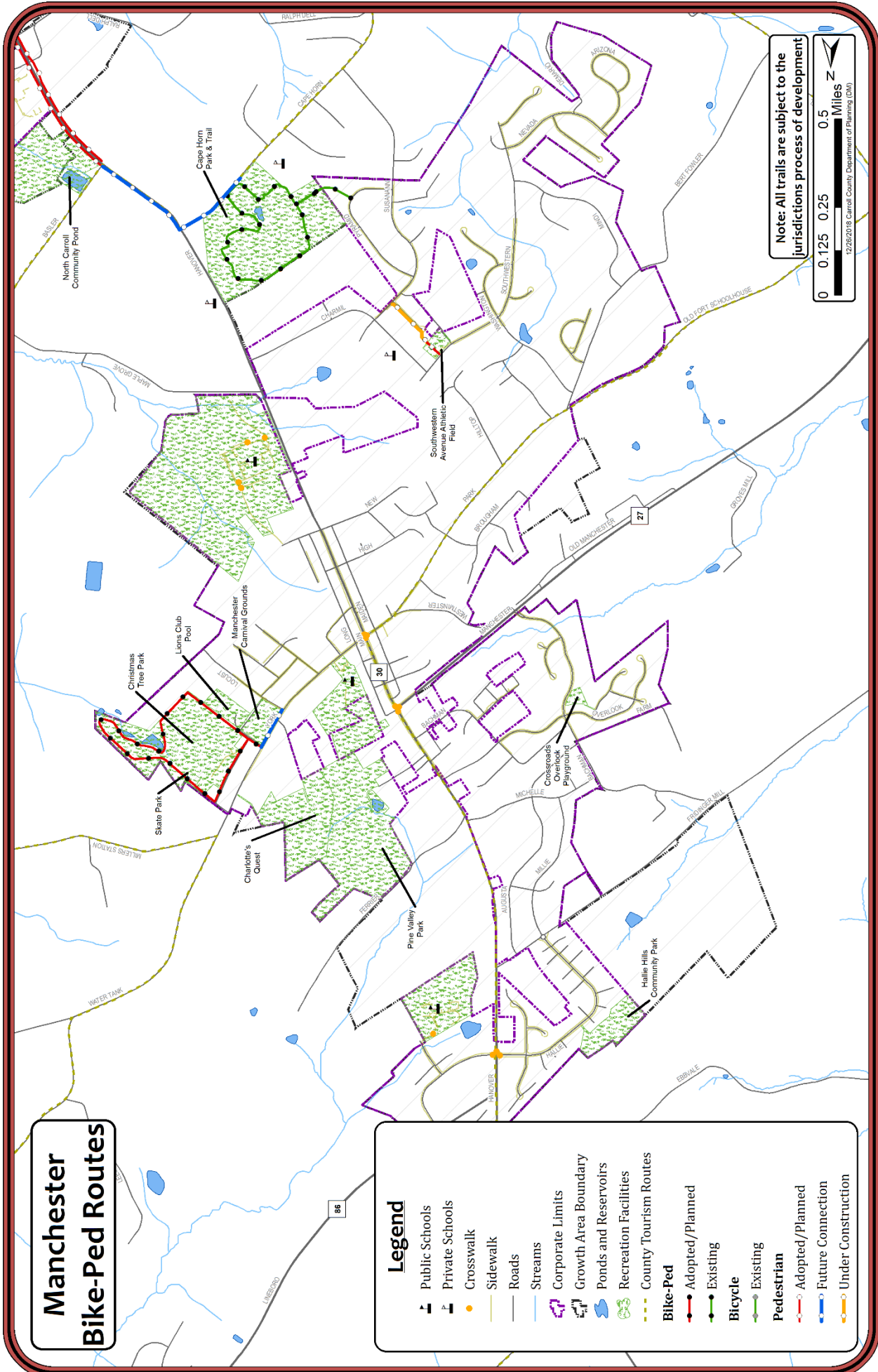
- Adopted/Planned
- Existing
- Future Connection
- Under Construction

**Note: All trails are subject to the jurisdictions process of development**

0 0.125 0.25 0.5 Miles

© 2018 Carroll County Department of Planning (DPI)

# Manchester Bike-Ped Routes



Note: All trails are subject to the jurisdictions process of development

0 0.125 0.25 0.5 Miles

12/28/2018 Carroll County Department of Planning (DDP)

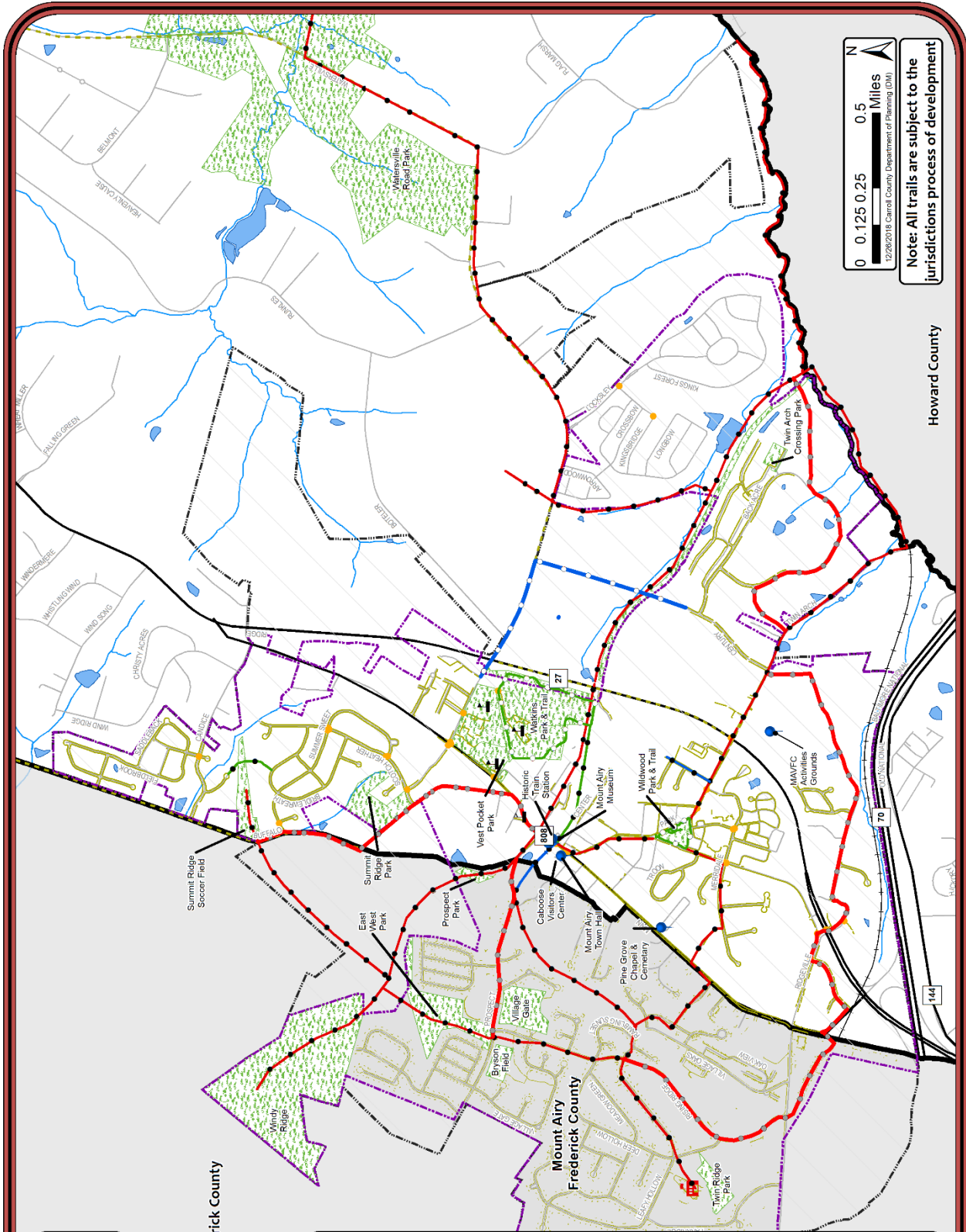
**Legend**

- Public Schools
- Private Schools
- Crosswalk
- Sidewalk
- Roads
- Streams
- Corporate Limits
- Growth Area Boundary
- Ponds and Reservoirs
- Recreation Facilities
- County Tourism Routes
- Bike-Ped**
  - Adopted/Planned
  - Existing
- Bicycle**
  - Existing
- Pedestrian**
  - Adopted/Planned
  - Future Connection
  - Under Construction

# Mount Airy Bike-Ped Routes

**Legend**

- Public Schools
- Private Schools
- Frederick County School
- Mount Airy Landmarks
- Crosswalk
- Sidewalk
- Roads
- Railroad
- Streams
- Corporate Limits
- Growth Area Boundary
- County Border
- Ponds and Reservoirs
- Recreation Facilities
- County Tourism Routes
- Bike-Ped**
  - Adopted/Planned
  - Existing
  - Future Connection
- Bicycle**
  - Adopted/Planned
- Pedestrian**
  - Existing
  - Future Connection



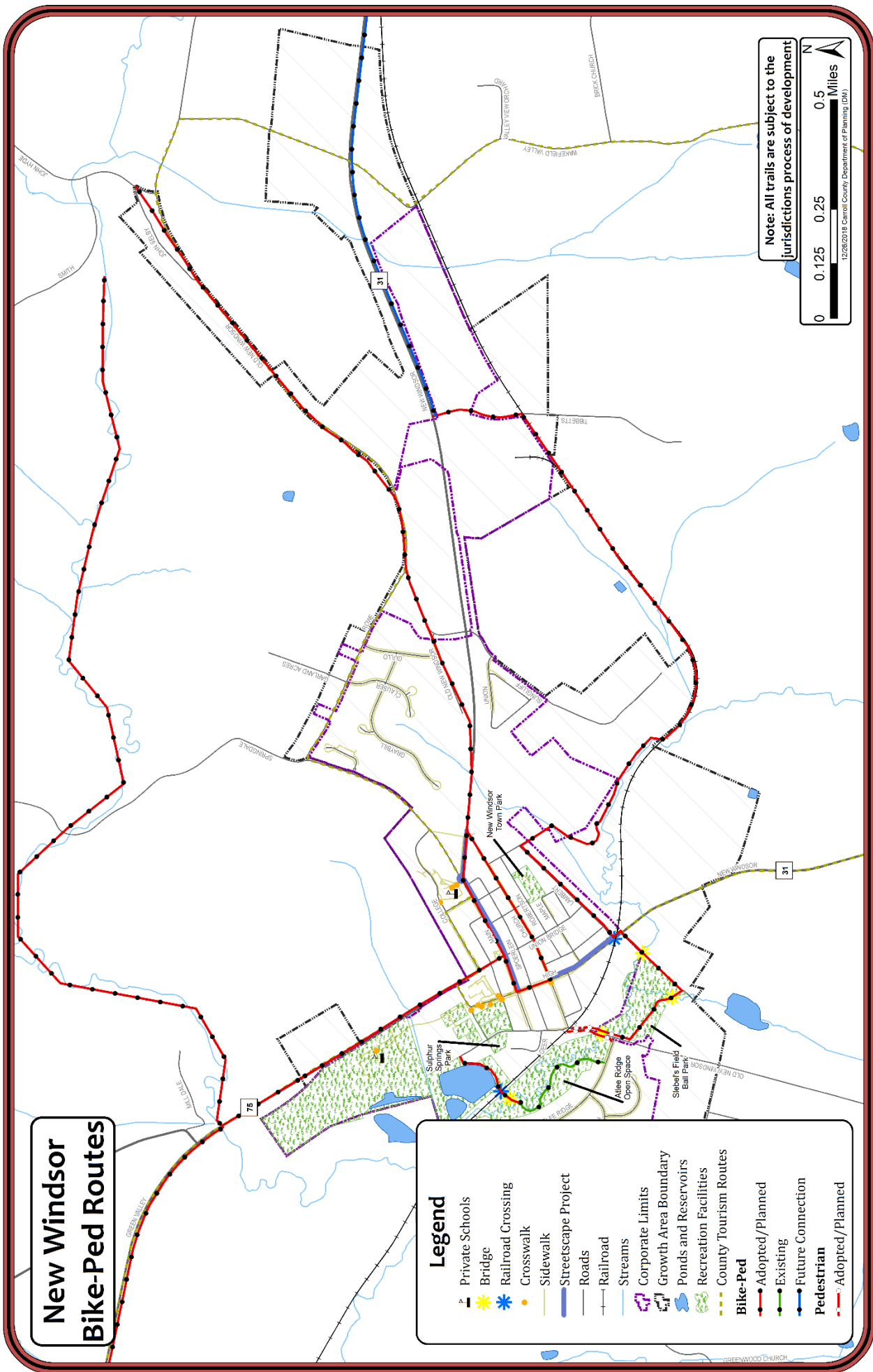
0 0.125 0.25 0.5 Miles

12/26/2018 Carroll County Department of Planning (DMP)

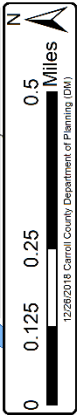
**Note: All trails are subject to the jurisdictions process of development**

Howard County

# New Windsor Bike-Ped Routes

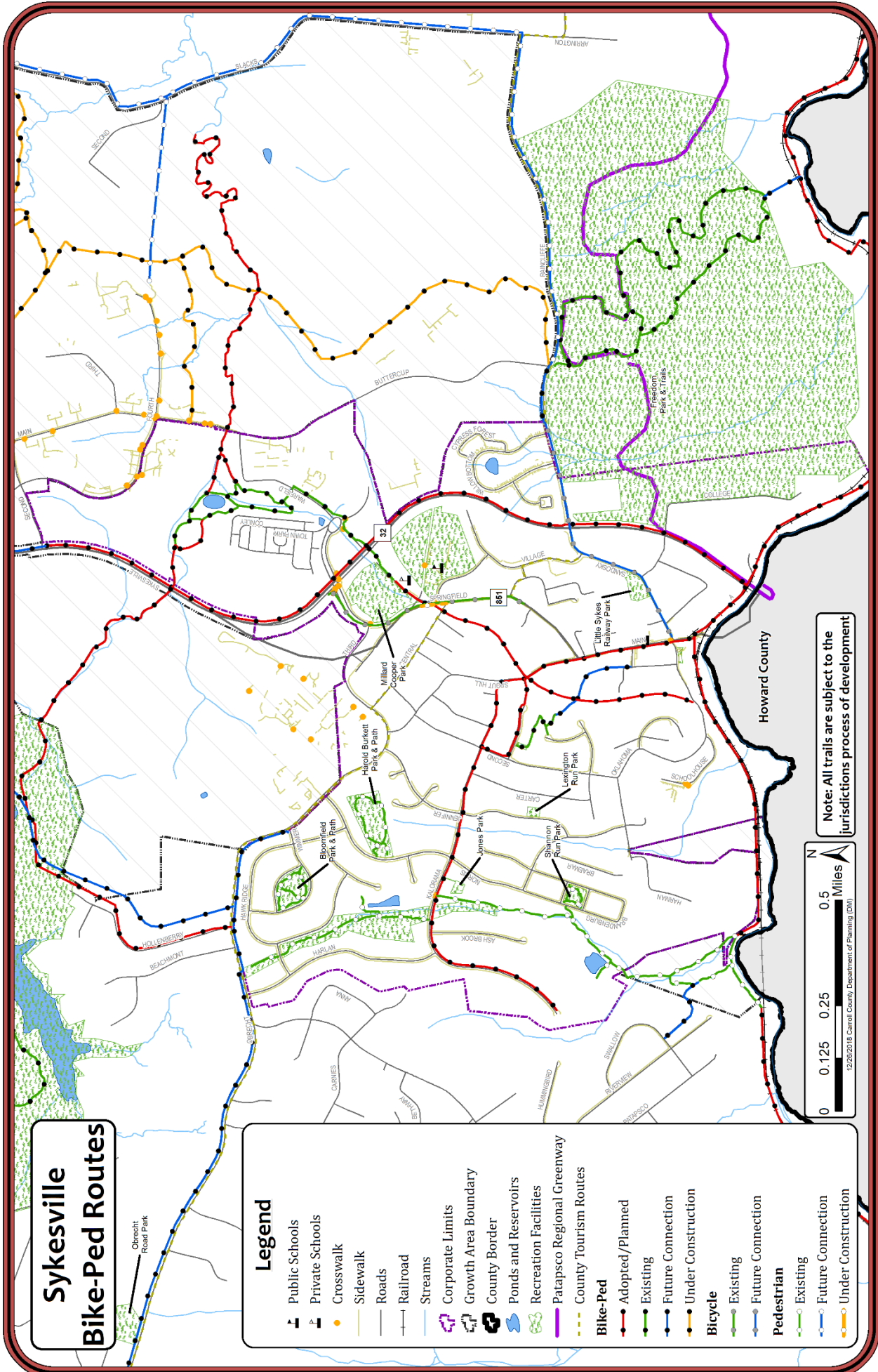


Note: All trails are subject to the jurisdictions process of development

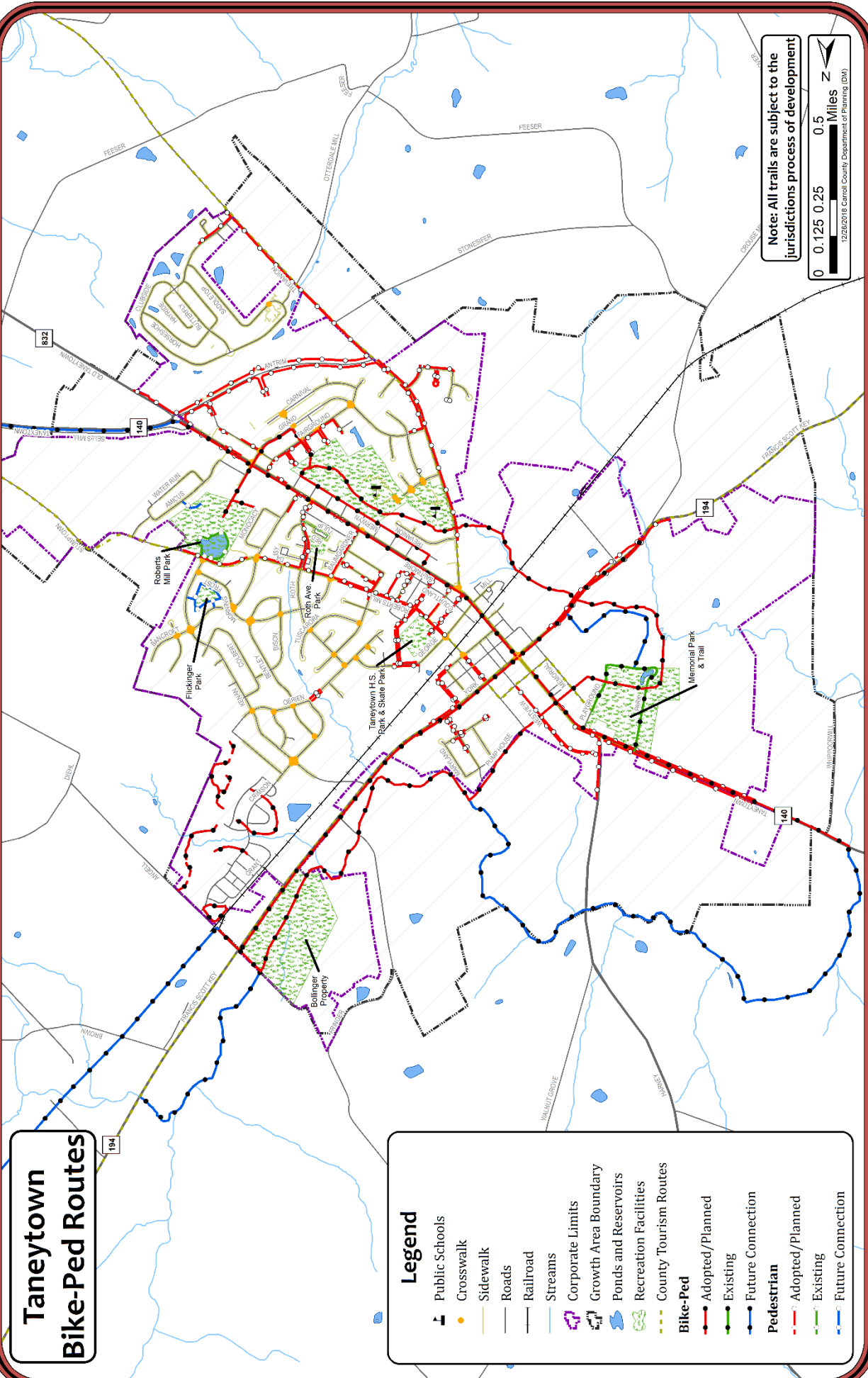


- Legend**
- ▲ Private Schools
  - ★ Bridge
  - ✦ Railroad Crossing
  - Crosswalk
  - Sidewalk
  - Streetscape Project
  - Roads
  - Railroad
  - Streams
  - Corporate Limits
  - Growth Area Boundary
  - Ponds and Reservoirs
  - Recreation Facilities
  - County Tourism Routes
  - Bike-Ped**
  - Adopted/Planned
  - Existing
  - Future Connection
  - Pedestrian**
  - Adopted/Planned

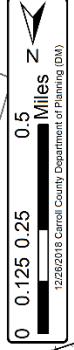
# Sykesville Bike-Ped Routes



# Taneytown Bike-Ped Routes



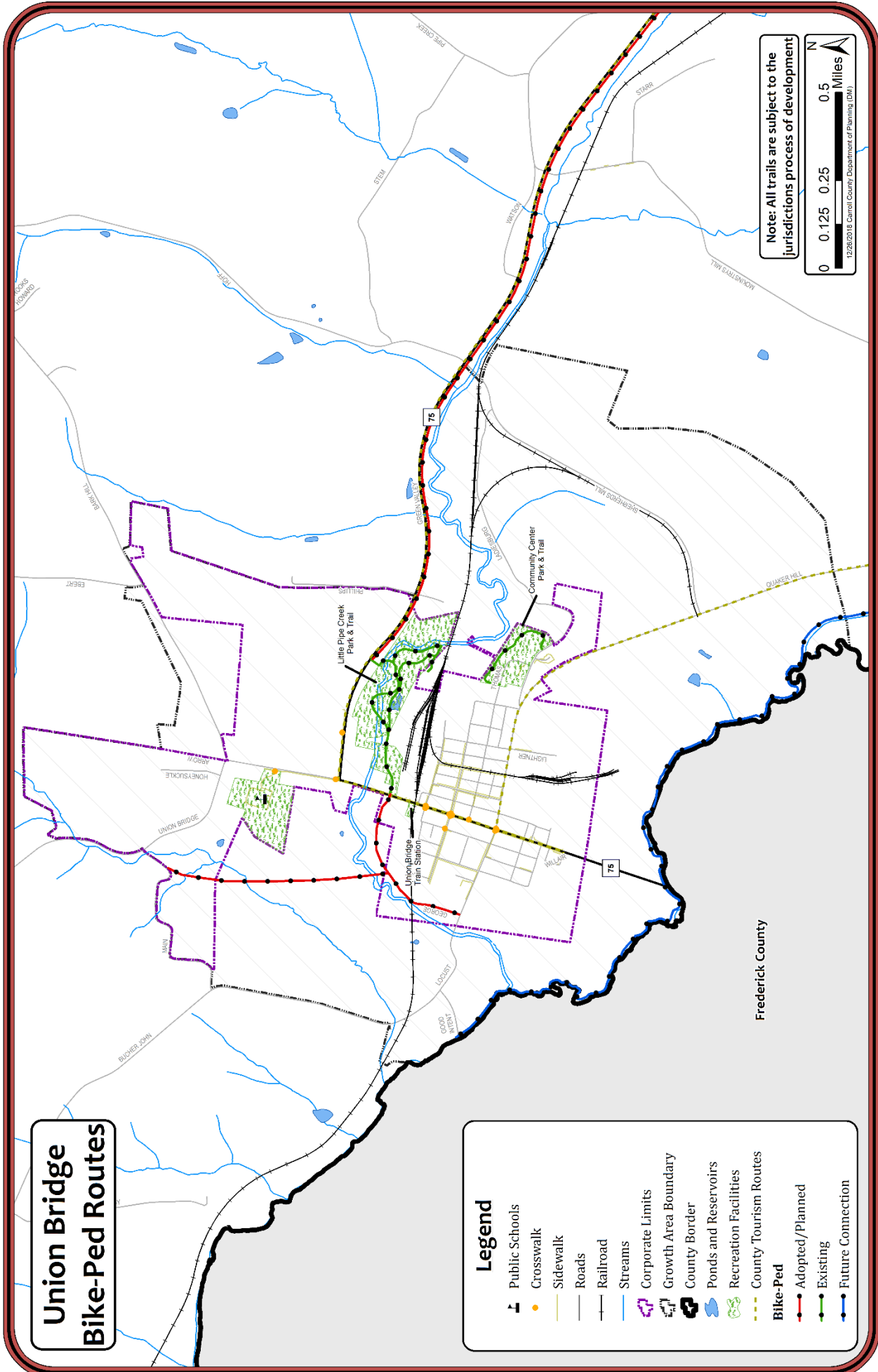
Note: All trails are subject to the jurisdictions process of development



### Legend

- Public Schools
- Crosswalk
- Sidewalk
- Roads
- Railroad
- Streams
- Corporate Limits
- Growth Area Boundary
- Ponds and Reservoirs
- Recreation Facilities
- County Tourism Routes
- Bike-Ped**
  - Adopted/Planned
  - Existing
  - Future Connection
- Pedestrian**
  - Adopted/Planned
  - Existing
  - Future Connection

# Union Bridge Bike-Ped Routes



Note: All trails are subject to the jurisdictions process of development



**Legend**

- Public Schools
- Crosswalk
- Sidewalk
- Roads
- Railroad
- Streams
- Corporate Limits
- Growth Area Boundary
- County Border
- Ponds and Reservoirs
- Recreation Facilities
- County Tourism Routes
- Bike-Ped**
  - Adopted/Planned
  - Existing
  - Future Connection



# Westminster Bike-Ped Routes

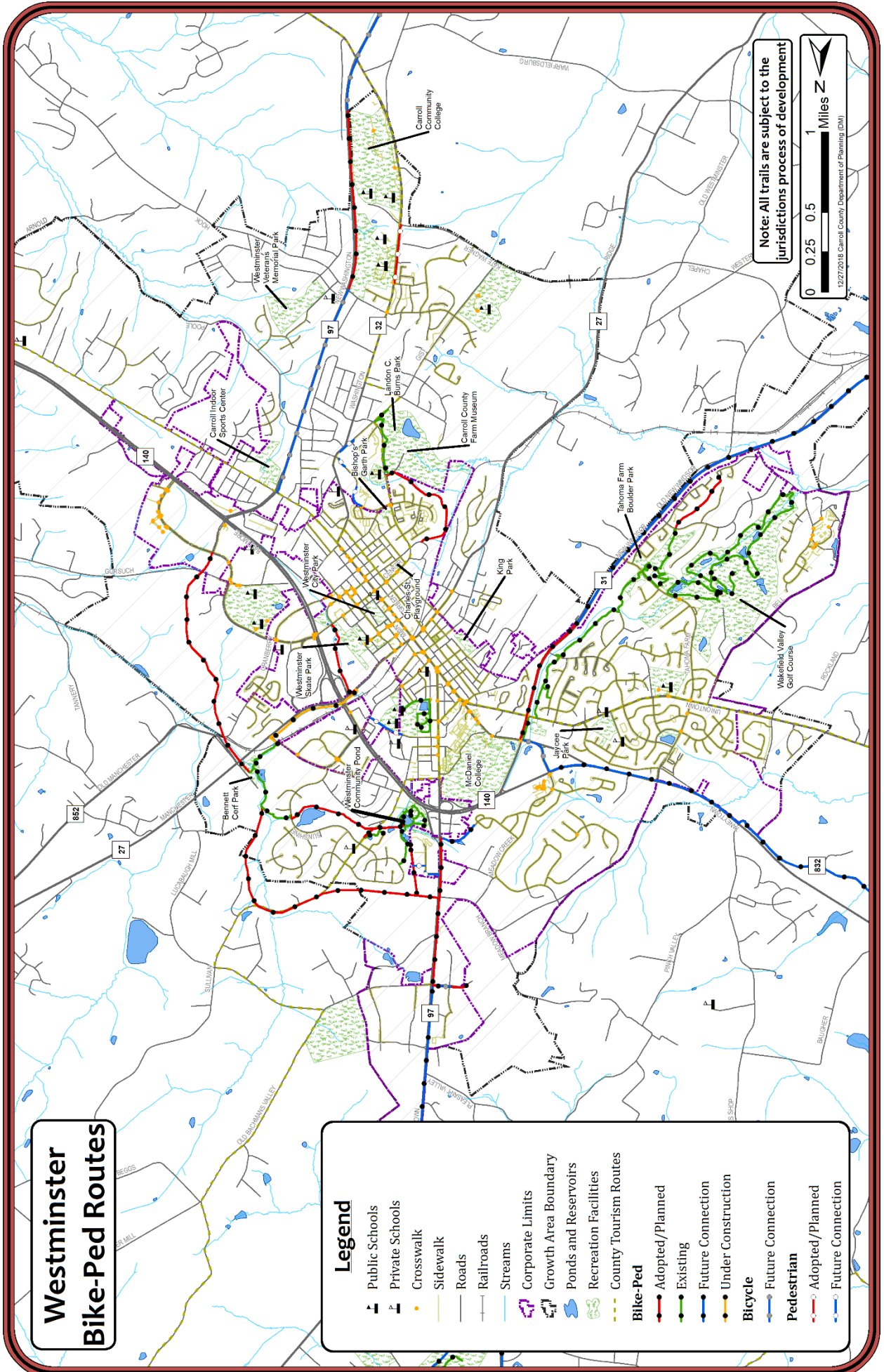
## Legend

- Public Schools
- Private Schools
- Crosswalk
- Sidewalk
- Roads
- Railroads
- Streams
- Corporate Limits
- Growth Area Boundary
- Ponds and Reservoirs
- Recreation Facilities
- County Tourism Routes
- Bike-Ped**
  - Adopted/Planned
  - Existing
  - Future Connection
  - Under Construction
- Bicycle**
  - Future Connection
- Pedestrian**
  - Adopted/Planned
  - Future Connection

Note: All trails are subject to the jurisdictions process of development

0 0.25 0.5 1 Miles

12/27/2018 Carroll County Department of Planning (DPI)



---

# Making Connections-Beyond the Path

*Goal 3: Support walkable and bikeable communities to achieve sustainability, livability, health and economic benefits, including tourism opportunities.*

While pedestrians and bicyclists are the focus of this plan, it is important to recognize they are diverse within themselves and may not be the only users of bicycle and pedestrian infrastructure. Planning and designing for various types of users with varying degrees of expectations, experiences, and intensities will aid in avoiding user conflicts. Conflicts arise when users' behaviors interfere with the experiences of others. Educating cyclists and pedestrians about trail etiquette and safe practices will minimize trail accidents and incidents. Trail conflict may also be minimized through design which is discussed in more detail in a Chapter 7, Design Alternatives.

Sub-communities and neighborhoods with large low-income, senior and minority populations should have access to bike-ped facilities. Additionally, the Americans with Disabilities Act (ADA) requires people with disabilities to have the same access rights as other members of the community.

Cultural resources and natural attractions give a community its identity. Preserving and protecting these buildings and landscapes creates places that are visually and aesthetically pleasing to observe and visit. Carroll County has several attractive historic sites and districts including main streets, rural villages, and Civil War trails. The 2014 Carroll County Master Plan recognizes the value of these sites and the high rate of consumer spending compared to the amount invested. Tourism is a major part of the County's economic development. Prioritizing connections in these areas and capitalizing on the desire of people to frequent places of cultural and historical significance will help to maximize bike-ped investments.

Bike-ped planning will aid in expanding existing businesses and promote new development opportunities. Businesses that are located within half a mile of a greenway are likely to see a 30-80% increase in commerce, according to the U.S. Department of Transportation. And, according to the Maryland Twenty-Year Bicycle & Pedestrian Master Plan, the cost of bicycle and pedestrian infrastructure is low compared to the estimated return of "higher job creation per dollar spent when compared to traditional highway projects." Bike-ped infrastructure is also beneficial to real estate. Property values increase as distance to sidewalks, bike paths, and walking trails decrease. Prospective homeowners are, in some cases, likely to increase their budget or reprioritize their home needs when recreation and transportation facilities are close.

There is an opportunity to partner with businesses to further increase the benefits of bike-ped infrastructure. Partnerships exist between public and private entities to promote economic development that will benefit multiple parties. Bike-ped activities support successful partnerships in rural areas. With strong partnerships and the proper plan for marketing, Carroll County could have significant economic growth from investments in a multi-mile trail that connect to tourist destinations.

### ***Recommendations***

- Quality of Life Initiatives
  - Partner with The Partnership for a Healthier Carroll County and the Health Department to incorporate existing relevant programs that help prevent injuries while biking and walking and promote a healthy, active lifestyle
  - Connect nearby neighborhoods to existing parks
  - Work toward senior, disabled, low-income, and minority populations having access to sidewalks, trails and paths that connect to jobs and services
  - Communicate with and educate users about trail etiquette with appropriate signage
- Tourism and Scenic Paths and Historic Connections
  - Consider uniform wayfinding and landmark signage where appropriate. This will assist tourists in navigating tourism and scenic routes
  - Consider creating additional connections to historic places that have significant tourist appeal such as NRHP sites, main streets, rural villages, and Civil War trails
  - Provide maps of trails with historic and archeological sites, cultural sites, wineries, bed and breakfast, campgrounds, and other amenities
  - Create a website of available resources including directions, lists of lodging, restaurants, outfitters, and bike shops and other amenities
  - Work with GIS data to create an app with bike routes and Carroll County cultural, heritage, and historic site locations
  - Consider a trail connection to Gettysburg National Military Park that will benefit Carroll County businesses
  - Consider establishing partnerships with businesses, churches, schools and other entities to provide restrooms for bicycle tourists
- Economic Development
  - Consider creating a Partnership for any greenway or trail that spans a significant portion of the County. The Partnership should include citizens, business owners, towns, and interest groups
  - Consider determining a location and connections for a multi-mile trail that highlights Carroll County's unique heritage that incorporates lodging, restaurants and other bicycle services

---

# Transportation Alternative

*Goal 4: Place a greater emphasis on walking and bicycling in all planning and development processes.*

Creation of a Complete Streets Policy demands thinking beyond cars as the only mode of transportation, thus giving residents more transportation options and developing policies that keep the safety and wellbeing of all users in mind. A complete transportation network will reduce short-trip vehicle traffic and stimulate the local economy while promoting vibrant communities and allowing residents to live healthy lives.

Complete Streets for Carroll County signify a change in approach to the conventional way of looking at roads for primarily vehicular use; rather, it means looking at roads as a part of a larger transportation network that is shared by multiple users, including pedestrians and bicyclists. A good policy will complement and be well integrated with surrounding land uses, and will benefit all income levels, ages, races, and abilities.

A policy can be designed to enhance the County's rural character, minimize impacts on – and possibly enhance – cultural resources, and meet budget constraints. There is no “one size fits all” design approach to Complete Streets. A rural area's approach will look much different from an urban area's, and within a rural context, each community has its distinct characteristics. If biking and walking are occurring on County roads, it is in the public's best interest to provide safe accommodations that minimize accidents and fatalities.

Carroll County has constraints resulting from topography and limited financial resources.

- **Much of Carroll's land is made up of large-lot subdivisions and low-volume traffic.** It would not be the best use of resources to concentrate transportation infrastructure in areas of the County with smaller populations. Complete Streets have a greater benefit in denser areas or areas with population clusters.
- **There are significant fiscal constraints when it comes to maintenance of new bike-ped infrastructure.** Carroll County is extremely limited in its transportation budget when it comes to the construction and maintenance of infrastructure. Obtaining a grant to assist with design and construction helps with costs, but the vast majority of the overall long-term costs come from maintenance.
- **Many County roads do not have the necessary right-of-ways (ROWs) to install bike lanes or off-road paths.** ROWs and easements can be expensive to acquire. Landowners must be compensated for land that is purchased. The County is encouraged to work with property owners to donate their land for the purposes of serving the County.

Utilizing transportation, utility and development projects that will include road maintenance and construction provides a great opportunity to incorporate Complete Streets strategies. The following are low-cost Complete Street initiatives and can be found on pages 151-152 of the plan: mark shoulders as a bike lane, sweep shoulders, enhance sign visibility, provide marked crosswalks, make crosswalks visible, enhance crosswalks, provide sidewalks, and improve transit facilities.

### ***Recommendations***

The following are recommended to improve and enhance transportation options in the County:

- Work with other County departments and municipalities to explore developing a countywide Complete Streets Policy where applicable within DGAs as design, construction, and maintenance funding becomes available
  - The policy should include, but not be limited to, students, economically disadvantaged, and minority populations
  - The policy should address bicycle, pedestrian, and transit options
- Build collaborative groups
  - Work with the state to accommodate Carroll County Complete Streets policy recommendations when making changes to state roads that connect municipalities and growth areas
  - Work with the state to ensure that installations of state road crossings accommodate best practices and Carroll County Complete Streets policies for all transportation users
  - When initiated by municipalities, work with municipalities to create and implement local Complete Streets policies
  - Work with parent and student groups to incorporate Complete Streets policies that accommodate alternate transportation to schools
- Consider studying the need for bike-ped accommodations that connect to TrailBlazer stops
- Consider studying the feasibility and demand for bicycle accommodations on the TrailBlazer shuttle and routes, including bike racks at stops and on buses
- Consider bicycle accommodations, such as bike racks, at the Business & Employment Resource Center (BERC) Transportation Hub in Westminster
- Consider alternate routes to roads that may include sidewalks, paths, and trails that connect people to frequented destinations such as parks, schools, recreational facilities, libraries, senior centers, shopping centers, and employment centers
- Consider studying the need for bike-ped connections to Park and Ride lots
- Consider completion of the pedestrian network by filling in sidewalk gaps and providing sidewalk on both sides of the street
- Consider requiring developers to incorporate Complete Streets concepts within the site design process
- Consider requiring sidewalk (when applicable on both sides of the street) in subdivision plan and site plan, development and design
- Consider a regularly planned Pedestrian and Bicycle Census at select locations within the County's growth areas to determine pedestrian and bicycle activity on County and state roads and infrastructure

---

# Design Alternatives and Safety

*Goal 5: Develop and construct bicycle and pedestrian facilities to effectively balance the needs of all transportation users to promote travel choices, ensuring that bicyclist and pedestrian needs are prioritized in appropriate locations and with safety in mind.*

Maintaining a safe transportation network for drivers, bicyclists, and pedestrians is a top concern of citizens. We should examine why crashes and collisions occur so that appropriate infrastructure and safety measures can be put in place.

Rural vehicle-bicycle and vehicle-pedestrian crashes:

- Compared to urban areas, rural crashes have higher bicycle and pedestrian fatality rates, higher reported vehicle speeds, less roadway lighting, more incidents on unpaved shoulders and more incidents at non-intersection locations
- The top rural pedestrian crash type is walking along the roadway
- The top rural bicycle crash type is turning/merging into the path of a motorist and motorists overtaking the bicyclist
- Rural crashes are more likely to occur at midblock, compared to urban crashes, which generally occur at intersections
- Targeting funding to rural two-lane roads at specific roadway segments offers the best return on safety improvements

County Collision data revealed various safety issues. The data showed:

- Safety equipment and light colors were seldom used by pedestrians or bicyclists; however, pedestrians were more likely to wear light or reflective clothing compared to bicyclists (32 percent of all pedestrian collisions versus 23 percent of all bicyclists)
- At night, only 9 percent of both bicyclists and pedestrians wore the proper clothing
- Only 1 out of 13 bicyclists were wearing a helmet when the collision occurred; Maryland law requires that everyone under 16 wear a helmet, yet there was no record of children wearing helmets
- Pedestrians were more likely to walk in an unsafe direction – with the flow of traffic
- Bicyclists were more likely to ride in a safe direction – with the flow of traffic

Solutions to eliminate collision-causing conditions and allow pedestrians and bicyclist to feel and be safer should include a combination of engineering, education, and enforcement policies and strategies. Factors Contributing to Pedestrian and Bicycle Crashes on Rural Highways, and effective and feasible countermeasures are displayed in Table 7-4 of the Bicycle-Pedestrian Master Plan.

To effectively implement a useable bike-ped network, infrastructure must be designed in a manner that gives all users safe transportation options. Rural and urban areas have design and safety challenges that differ. Based on the characteristics of rural crashes, there are design options and safety measures that can be put in place to reduce collisions and harmful incidents. Design diagrams and information for bicycle, pedestrian, and shared infrastructure, in addition to signage and traffic calming, can be found on pages 183-211. This information is solely for the discussion of best practices and is NOT a complete solution. To determine what

## 2019 Bicycle-Pedestrian Master Plan

designs are most suitable, each individual project must go through the appropriate development review and approval process and be reviewed for compliance with County, municipal, and state regulations.

When going through the engineering design process, consideration should be given to what best applies to rural, suburban, and urban settings. To better guide the bike-ped infrastructure development process, a design manual that addresses Carroll County's bike-ped infrastructure needs should be created.

### ***Recommendations***

Consider the following recommendations to improve safety and design of bicycle and pedestrian facilities in the County:

- Safety
  - Continue creating a County Strategic Highway Safety Plan, incorporating the strategies and recommendations in this plan and the 2016 - 2020 Maryland Strategic Highway Safety Plan. The County SHSP should include a Safety Awareness Campaign that targets driver awareness of bicyclists and pedestrians, safety education, and encourages the appropriate safety practices when biking and walking
  - Continue to work with Carroll County Emergency Communications to obtain data on bicycle- and pedestrian-related crashes
  - Work with the Carroll County Health Department to expand the Safe Kids Program, targeting child safety while biking and walking
  - Utilize existing state safety resources and programs such as Maryland Highway Safety Office (MHSO) technical assistance, Look Alive campaign, and the Toward Zero Deaths program
  - Create public-private partnerships to provide free safety gear to families with children, fixed-income households, low-income households, and seniors
  - Create public-private partnerships to provide street lights
  - Create a way to gather input from users that identifies hazards or facility repair needs (e.g., a crowdsourcing app)
  - Include safety guidelines as a part of a countywide Complete Streets policy
  - Partner with existing County, state, national, and global programs, such as Safe Kids, to promote safe walking and biking for children
  - Partner with the public school system to promote safe walking and biking to and from schools and school bus stops located within a one-mile radius, as is consistent with the Carroll County Public Schools Transportation Policy
- Design
  - Utilize best practices for safe crossings of state highways to destinations frequented by cyclists and pedestrians
  - Utilize best practices for bike-ped infrastructure along high-speed roads (45+ mph)
  - Incorporate bicycle and pedestrian accommodations into the County ADA Self-Evaluation and/or ADA Transition Plan
  - Update the *Design Manual for Roads and Storm Drains*, and any other County transportation or road policy, to include bike-ped accommodations and ADA compliance standards; or, create a separate bicycle- and pedestrian-focused design manual
  - Incorporate best practices in the development of all bicycle and pedestrian infrastructure

## 2019 Bicycle-Pedestrian Master Plan

- Include design guidelines as a part of a countywide Complete Streets policy
- Utilize best practices when designing for walking and biking to and from schools and school bus stops located within a one-mile radius of middle and high schools



# Implementation Strategies

*Goal 2: Identify a hierarchy of key connections and destinations within Carroll County.*

*Goal 6: Leverage and utilize, to the greatest extent possible, state and federal funding for improvements to existing bicycle and pedestrian facilities as well as construction of new bicycle and pedestrian infrastructure in a way that will yield the greatest impact on the County as a whole.*

*Goal 7: Work with local elected officials, government agencies, and the community to promote and emphasize bicycle and pedestrian safety training and outreach.*

County projects that have a status of “Adopted/Planned” or “Future Connection” were assessed based on a ranking system to determine priority. The ranking system is based on the following criteria:

- Whether the project meets the *Carroll County Bicycle-Pedestrian Master Plan* goals
- Whether the project improves user safety
- Whether the project is associated with ADA compliant infrastructure
- Whether the project is concurrent with an existing or planned road-related project
- Whether the project connects to an “Existing” or “Under Construction” bike-ped project
- Whether the project connects to key destinations and distance to key destinations
- Miles of infrastructure needed to complete the project
- Density at which the surrounding land was developed
- Whether land acquisition is needed
- Whether environmental constraints are present
- Whether there is public road right-of-way
- Whether there is existing railroad and utility easements

The County’s top priority pedestrian, bike-ped, state road bike-ped, and regional bike-ped projects are listed in the table below. Additional information for these projects can be found on pages 219-233 of the plan.

Ranking	County Priority Pedestrian Projects	County Priority Bike-Ped Projects	County Priority State Road Bike-Ped Projects	County Priority Regional Bike-Ped Projects
1	Monroe Street	Malcom Drive Extended Trail	MD 26	Patapsco Regional Greenway
2	Gist Road & Washington Road	Robert Moton Drive to Landon C Burns Trail	MD 140 (Taneytown Pike) & MD 832 (Old Taneytown Road) – Westminster to Taneytown	Taneytown to Littlestown
3	Stoner Avenue	Wyndtryst Drive to MD 97	MD 31 – Westminster to New Windsor	-
4	Md 32	Obrecht Road	MD 32	-

## 2019 Bicycle-Pedestrian Master Plan

County bike-ped projects have a history of being funded through the County's Community Investment Plan (CIP) process and through various government grant-funding sources. In today's competitive funding climate, federal and state grant programs typically require a local match. The CIP, which is the source of funds for the County's local match, is a requirement to move County-led development projects forward.

Carroll County Recreation and Parks receives annual funding of \$50,000 per year provided by County Commissioners in an approved six-year capital budget for Trail Development. These funds are intended to support new and expanded trails for residents and may be used as a local match for grant funding or to help complete smaller projects. State, federal, and private grant opportunities are listed in Tables 8-6 – 8-10 of the Bicycle-Pedestrian Master Plan.

Challenges of building pedestrian and bicycle infrastructure in Carroll County include acquiring land, liability, maintenance; natural obstacles, NIMBYism (not in my back yard), policy, safety, state roads, and railroad and utility corridors. Solutions to these challenges can be found in Table 8-11 of the Bicycle-Pedestrian Master Plan.

The success of this plan depends on how well all essential parties are engaged on the issues. There should be opportunities for locally-based, community-driven solutions designed for the long-term, and opportunities for engaging public officials and the public in alternative transportation and safety matters. Consider the six E's (education, engineering, encouragement, enforcement, evaluation, and equity) when engaging stakeholders in the planning process.

### ***Recommendations***

- To coordinate planned bike-ped accommodations facilities with other projects, the Bicycle-Pedestrian Master Plan and municipal plans should be consulted during the review process for all projects that may require road-related construction, road-related improvements, or will be seeking transportation funds
- Create a Bicycle-Pedestrian Advisory Committee
  - Membership should include County officials, nonprofits, citizen representatives, and an even representation of bicyclists and pedestrians living in Carroll County
  - This advisory committee will give recommendations on development plans in relation to bicycle-pedestrian facilities
- Form friends groups and recreation councils to defer the costs of maintaining paved trails
- Consider utilizing Florida Department of Transportation's SAPFIM as a tool to inventory pedestrian infrastructure
- Consider a 10-year pedestrian census and bicycle census that runs with the federal Census and targets certain areas of high pedestrian and bicycle use
- Public awareness should be a high priority when any new bicycle infrastructure/markings are constructed near vehicular access points. The public should be notified in multiple ways, including the County website, the newspaper, temporary signage at the site, etc.
- Create a Bicycle-Pedestrian Design Guidelines document to aid in the development of bike-ped infrastructure

## 2019 Bicycle-Pedestrian Master Plan

- Work with the municipalities to create a Complete Streets Policy that addresses bicycle and pedestrian transportation within growth areas
- Implement a Safety Campaign from partnerships between government agencies, health organizations, and citizens that addresses driver, bicycle, and pedestrian awareness
- Create a Road Safety Plan to guide the implementation of safe bike-ped infrastructure before and after it is built
- Determine, as early in the planning process as possible, how any existing private owner policies on right-of-ways (e.g., railroad policies) could affect the project
- Create an app that allows the public to see existing and under construction bike-ped facilities and routes
- Create an app that allows the public to alert users as to hazards and conditions of existing bike-ped infrastructure