

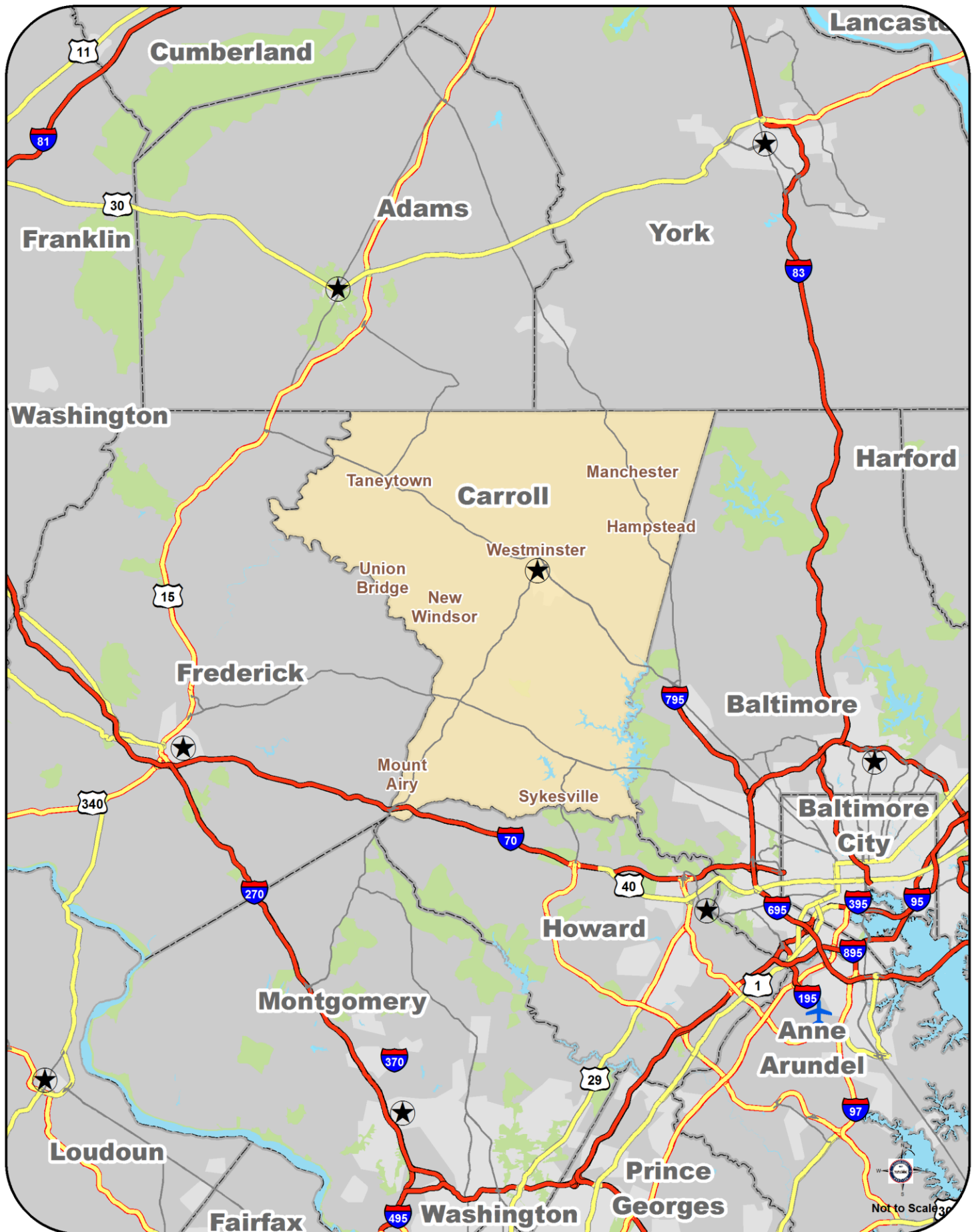
Bicycle-Pedestrian Master Plan *2019*



Planning Better Paths to Carroll's Future

Carroll County, Maryland

Approved by Carroll County Planning & Zoning Commission November 19, 2019



Hold for BCC Resolution

Hold for BCC Resolution

Resolution No. 2 - 19

**A RESOLUTION APPROVING THE CARROLL COUNTY BICYCLE-PEDESTRIAN
MASTER PLAN AND RECOMMENDING PLAN ADOPTION**

FOR THE PURPOSE, of Approving the *2019 Bicycle-Pedestrian Master Plan*

WHEREAS, Carroll County developed its first Bicycle-Pedestrian Master Plan; and

WHEREAS, the Planning & Zoning Commission and staff worked together to develop this Plan; and

WHEREAS, public input was used to guide, direct and, when necessary, modify the development of the Plan; and

WHEREAS, each of the eight municipal planning commissions certified that Chapter 3: Existing Conditions and Chapter 4: Future Connections, as it pertains to their municipality, is consistent with their municipal comprehensive plan; and

WHEREAS, the Planning & Zoning Commission formally “Accepted” the draft Plan by a unanimous vote at the May 29, 2019 Work Session Meeting; and

WHEREAS, the draft Plan was formally referred to the Maryland Department of Planning for an informal State Clearinghouse Review following Planning & Zoning Commission “Acceptance”; and

WHEREAS, the County provided extensive opportunities for public review, comment, question and interaction; and

WHEREAS, state and local resource and regulatory agencies, including: the Maryland Departments of Planning and Transportation, and the Maryland Historical Trust provided advisory comments; and

WHEREAS, the Planning & Zoning Commission held a public hearing on September 17, 2019 to formally solicit public comment; and

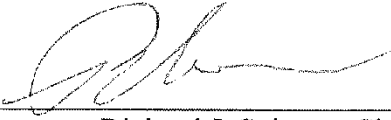
WHEREAS, comments were received, and certain modifications were made; and

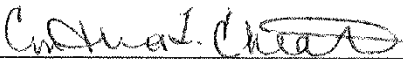
WHEREAS, the Planning & Zoning Commission is satisfied with the content and substance of the Accepted Plan as modified; and

NOW, THEREFORE, BE IT RESOLVED, this 19 day of November, 2019, that the Planning & Zoning Commission of Carroll County, does hereby Approve, certify, and recommend to the County Commissioners of Carroll County, Maryland the Adoption of this Plan contained in a document titled *2019 Bicycle-Pedestrian Master Plan* in the form attached hereto.

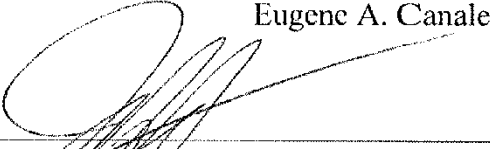
(signatures on following page)

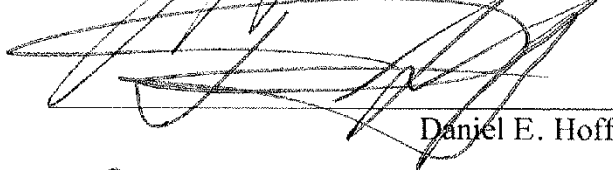
THE CARROLL COUNTY PLANNING &
ZONING COMMISSION


Richard J. Soisson, Chairman


Cynthia L. Cheatwood, Vice Chair

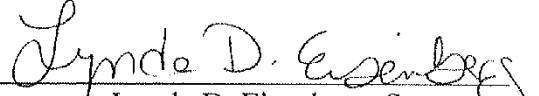

Eugene A. Canale


Jeffrey A. Wothers


Daniel E. Hoff, Vice Chair


Janice R. Kirkner


Edward C. Rothstein, Ex-officio


Lynda D. Eisenberg, Secretary

Approved for Legal Sufficiency


Gail Denise Kessler, Deputy County Attorney

Council Members:
Marlene Duff
Joseph Renehan
James Roark
Wayne H. Thomas
David Unglesbee

Christopher M. Nevin
Mayor



Town of Hampstead

Tammi Ledley
Town Manager

1034 S. Carroll Street
Hampstead, MD 21074
410-239-7408 Tel
410-239-6143 Fax
Hampstead@carr.org
www.hampsteadmd.gov

2019 CARROLL COUNTY BICYCLE & PEDESTRIAN MASTER PLAN

January 23, 2019

The Hampstead Planning and Zoning Commission hereby Certifies that **Chapter 3: Existing Conditions and Chapter 4: Future Connections**, of the 2019 Carroll County Bicycle-Pedestrian Master Plan as it pertains to the Town of Hampstead is consistent with the *2010 Hampstead Community Comprehensive Plan*.

A handwritten signature in black ink, appearing to read "K. Klawnski", is written over a horizontal line.

Chairperson
Hampstead Planning and Zoning Commission



TOWN OF MANCHESTER

(410) 239-3200

FAX (410) 239-6430

RYAN M. WARNER, MAYOR

2019 CARROLL COUNTY BICYCLE & PEDESTRIAN MASTER PLAN

February 19, 2019

The Manchester Planning and Zoning Commission hereby Certifies that **Chapter 3: Existing Conditions** and **Chapter 4: Future Connections**, of the 2019 Carroll County Bicycle-Pedestrian Master Plan as it pertains to the Town of Manchester is consistent with the *2018 Manchester Comprehensive Plan*.

Alexander J. Perricone, Chairperson

Manchester Planning and Zoning Commission

PATRICK T. ROCKINBERG
Mayor

PETER R. HELT
Council President



Council Members
JASON M. POIRIER
Secretary

ROBERT H. KING, JR
LARRY G. HUSHOUR
PATRICIA R. WASHABAUGH

2019 CARROLL COUNTY BICYCLE & PEDESTRIAN MASTER PLAN

January 28, 2019

The Mount Airy Planning Commission hereby Certifies that **Chapter 3: Existing Conditions and Chapter 4: Future Connections**, of the 2019 Carroll County Bicycle-Pedestrian Master Plan as it pertains to the Town of Mount Airy is consistent with the *2013 Town of Mount Airy Comprehensive Master Plan*.

A handwritten signature in blue ink, reading 'Audrey A. Cameron', is written over a horizontal line.

Chairwoman
Mount Airy Planning Commission

TOWN OF NEW WINDSOR
211 High Street, P.O. Box 609
New Windsor, MD 21776
info@NewWindsorMD.org



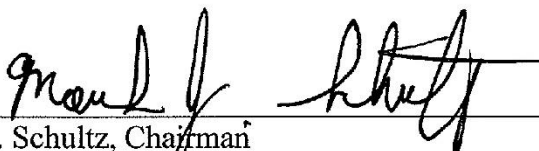
NEAL C. ROOP, MAYOR
NRoop@NewWindsorMD.org
Phone: 410-635-6575
Fax: 410-635-2995

February 25, 2019

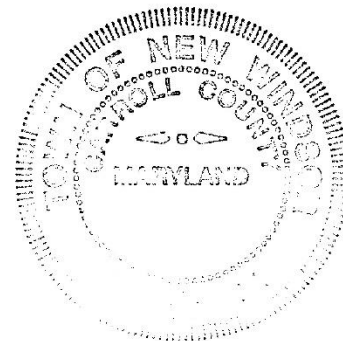
2019 CARROLL COUNTY BICYCLE & PEDESTRIAN MASTER PLAN

To Whom It May Concern:

The New Windsor Planning Commission hereby certifies that **Chapter 3: Existing Conditions and Chapter 4: Future Connections**, of the 2019 Carroll County Bicycle-Pedestrian Master Plan as it pertains to the Town of New Windsor is consistent with the *2007 New Windsor Community Comprehensive Plan*.



Mark J. Schultz, Chairman
Town of the New Windsor Planning Commission





Town of Sykesville

7547 Main Street, Sykesville, MD 21784
p: 410.795.8959 f: 410.795.3818
townofsykesville.org

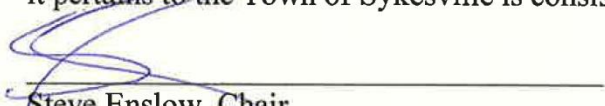
Town House

Ian Shaw, Mayor
Aretha Adams, Town Manager
Evelyn Sweet, Town Treasurer
Kerry G. Chaney, Town Clerk

2019 CARROLL COUNTY BICYCLE & PEDESTRIAN MASTER PLAN

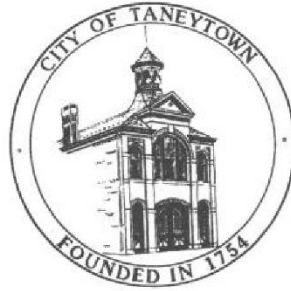
February 4, 2019

The Sykesville Planning Commission hereby Certifies that **Chapter 3: Existing Conditions and Chapter 4: Future Connections**, of the 2019 Carroll County Bicycle-Pedestrian Master Plan as it pertains to the Town of Sykesville is consistent with the *2010 Town of Sykesville Master Plan*.



Steve Enslow, Chair
Sykesville Planning and Zoning Commission

MAYOR AND CITY COUNCIL



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MAYOR

DIANE A. FOSTER
MAYOR PRO TEM

HENRY C. HEINE, JR.
CITY MANAGER

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CLARA KALMAN
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JOSEPH A. VIGLIOTTI

BRADLEY J. WANTZ

DONALD C. FRAZIER

JUDITH K. FULLER

2019 CARROLL COUNTY BICYCLE & PEDESTRIAN MASTER PLAN

January 28, 2019

The Taneytown Planning and Zoning Commission hereby Certifies that **Chapter 3: Existing Conditions** and **Chapter 4: Future Connections**, of the 2019 Carroll County Bicycle-Pedestrian Master Plan as it pertains to the City of Taneytown is consistent with the *2010 Taneytown Community Comprehensive Plan*.


Chairman James Parker
Taneytown Planning and Zoning Commission

THE TOWN OF UNION BRIDGE

104 WEST LOCUST STREET
UNION BRIDGE, MD 21791-0350

PHONE 410-775-2711
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PERRY L. JONES JR.
MAYOR

MEMBERS OF COUNCIL
DONALD D. WILSON, PRESIDENT
LAURA CONAWAY
L. ELLEN CUTSAIL
AMY K. KALIN
EDGAR WENTZ

2019 CARROLL COUNTY BICYCLE & PEDESTRIAN MASTER PLAN

January 17, 2019

The Union Bridge Planning and Zoning Commission hereby Certifies that **Chapter 3: Existing Conditions and Chapter 4: Future Connections**, of the 2019 Carroll County Bicycle-Pedestrian Master Plan as it pertains to the Town of Union Bridge is consistent with the 2008 Union Bridge Community Comprehensive Plan.

A handwritten signature in dark ink, appearing to be "R. Jones", is written over a horizontal line.

Chairperson
Union Bridge Planning and Zoning Commission

CITY OF WESTMINSTER
56 West Main Street, Suite 1
Westminster, Maryland 21157



Office: 410-848-9000
Fax: 410-857-7476
www.westminstermd.gov

March 14, 2019

Ms. Lynda Eisenberg, Director
Carroll County Department of Planning
225 North Center Street
Westminster, MD 21157

RE: Proposed Chapters 3 and 4 of the *Carroll County Bicycle and Pedestrian Master Plan*

Dear Mr. Eisenberg,

Over the past year, the Westminster Planning and Zoning Commission has reviewed and provided comments for Chapters 3 and 4 of the *Carroll County Bicycle and Pedestrian Master Plan*, as they pertain to the City of Westminster. City staff has also reviewed the proposed information regarding consistency with the *2007 Westminster Environs Community Comprehensive Plan* and the *2009 Comprehensive Plan*.

On March 14, 2019, the Westminster Planning and Zoning Commission voted to certify that proposed Chapter 3: Existing Conditions and proposed Chapter 4: Future Connections of the *2019 Carroll County Bicycle and Pedestrian Master Plan*, as it pertains to the City of Westminster, is consistent with the *2009 Comprehensive Plan*.

If you have any questions, please let me know.

Sincerely,

A handwritten signature in black ink that reads "Kevin W. Beaver". The signature is written in a cursive style with a large initial "K" and "B".

Kevin W. Beaver, Chair
Westminster Planning and Zoning Commission

- c: Barbara B. Matthews, City Administrator
Elissa D. Levan, City Attorney
Bill Mackey, Director of Planning
Andrew Gray, Comprehensive Planner
Bobbi Moser, Carroll County Department of Planning

Copies of the Carroll County Bicycle-Pedestrian Master Plan are available...

In hardcopy or on CD at:

Carroll County Department of Planning
225 North Center Street, Suite 106
Westminster, Maryland 21157

Online (text and maps) at:

<http://ccgovernment.carr.org/ccg/plan/w-splan/default.asp>

For additional information, contact the Carroll County Department of Planning:

By phone: 410-386-5145

By e-mail: ccplanning@carrollcountymd.gov

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Acknowledgements

The *2019 Bicycle-Pedestrian Master Plan* is the culmination of many months and years of hard work by County staff, Planning & Zoning Commission members, and the Board of County Commissioners. The result is this document. We would like to thank everyone involved for their efforts. This plan could not have been completed without their help.

Board of County Commissioners

Stephen A. Wantz, President
Edward C. Rothstein, Vice President
C. Richard Weaver, Secretary
C. Eric Bouchat
Dennis E. Frazier

Roberta Windham, County Administrator

Carroll County Planning and Zoning Commission Members

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Daniel E. Hoff, Vice Chair
Richard J. Soisson
Eugene A. Canale
Jeffrey A. Wothers
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Michael D. Gosnell, Alternate
Edward C. Rothstein, Ex-officio

Department of Planning

Lynda Eisenberg, Director
Mary Lane, Planning Manager
Bobbi Moser, Planner
Price Wagoner, Planner
Clare Stewart, Planner
Cody Spaid, Planner
Kathleen Comber, GIS/Planner
Laura Bavetta, Administrative Assistant
Kathy Joy, Office Assistant

GIS Staff

Sandy Baber, GIS Manager
Mike Roberts, GIS Analyst
Russell Stone, GIS Analyst

Other County Department Support

Christopher Swam, Digital Media Manager
Chris Winebrenner, Communication Manager
Greg Gottlieb, TV Production
Matthew Arnold, TV Production
Dorothy Kline, Production Distribution Services



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Chapter 1: Introduction, Summary and Highlights

The Carroll County Bicycle-Pedestrian Master Plan was developed with funding support provided by the Baltimore Regional Transportation Board's Unified Planning Work Program for Fiscal Year 2015.

Adoption of this plan will also adopt the Carroll County Planning and Zoning Commission Certified 2014 Freedom Bicycle-Pedestrian Master Plan & Assessment by reference.

Introduction

At Carroll County's 2015 Consolidated Transportation Plan Tour, the Secretary of the Maryland Department of Transportation (MDOT) expressed a desire to see all jurisdictions attaining bicycle-pedestrian funding to create and implement a bicycle-pedestrian plan. Of all the Baltimore Regional Transportation Board (BRTB) jurisdictions, Carroll County is the last to adopt a bicycle-pedestrian plan.

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. The plan examines the implications of creating a county-wide trail network that produces a multimodal transportation system, and how this 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.

Demographics

The U.S. Census Bureau collects a full population count every ten years. The last Census was conducted in 2010. The American Community Survey (ACS) data, also collected by the U.S. Census Bureau, are based upon a survey representative of a small percentage of the population, which is surveyed on a rotating basis. Data are collected annually and are a subset of the census data. It includes data on age, sex, race, family and relationships, income, benefits, health insurance, disability, place of work, veteran status, and percentage of income used to pay for essential living needs. American Community Survey data are designed to supplement decennial census data. Unless otherwise noted, it is presented in this chapter as a five-year average from 2013 through 2017.

While the overwhelming majority of residents live in unincorporated areas of the County, the remaining population (29 percent) lives in one of the eight municipalities where density is highest. An additional 35 percent of the population resides in one of the nine unincorporated growth areas. Municipal Growth Areas (MGA) are not typically as dense as incorporated areas, however, local jurisdictions should plan for future bicycle and pedestrian facilities in these areas as they are slated for municipal incorporation. Three-fourths of





that 35 percent live one of the County’s two Designated Growth Areas (DGA), Finksburg and Freedom. As the population in DGAs continues to grow, so must bicycle and pedestrian accessibility.

Table 1-1: Carroll County Population Estimates

Location	Unincorporated	Percent of Grand Total Unincorporated	DGA
Carroll County	74,578	44.4	-----
Finksburg	8,782	5.2	8,782
Freedom	35,487	21.1	35,487
Total	118,847	70.7	44,269
	Incorporated	Percent of Grand Total Incorporated	MGA
Hampstead	6,334	3.9	9,118
Manchester	4,916	2.9	5,759
Mount Airy	5,571	3.3	6,042
New Windsor	1,413	0.8	1,608
Sykesville	4,475	2.7	p/o Freedom DGA
Taneytown	6,769	4.0	7,522
Union Bridge	977	0.6	1,149
Westminster	18,697	11.1	31,764
Total	49,151	29.3	62,962
Grand Total	167,998	100.0	107,231

Note: Data for Carroll County Population Estimates from Carroll County Bureau of Permits and Inspections (2018 - February 2019), prepared by the Carroll County Department of Planning (March 2019). And from Carroll County Department of Economic Development. Demographics. <http://carrollbiz.org/demographics/>.

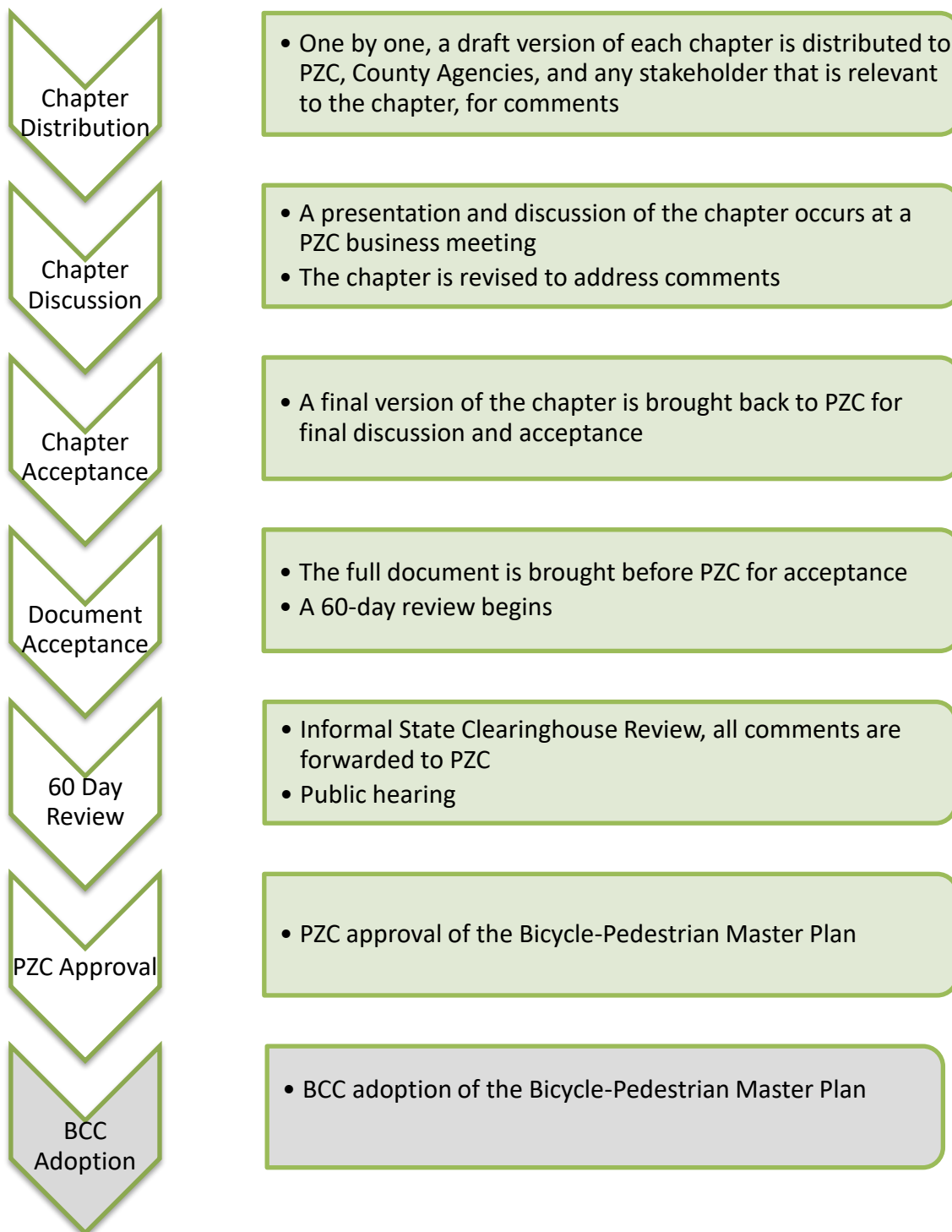
ACS data indicate Carroll County has a median household income of \$90,510, greater than both Maryland and the US.ⁱ Although this is a promising sign of wealth in our community, there are still over 9,000 residents living in poverty in the County according to the ASC survey.ⁱⁱ It is important that low-income and fixed-income populations such as veterans, senior citizens, minorities, the disabled, college students, and those who cannot access a car have access to sidewalks and bicycle facilities. Additionally, children (<18 years) and seniors (>65 years) account for 38 percent of County population, resulting in a large number of users who require additional safety and accessibility measures.ⁱⁱⁱ

According to the ACS, 4.3 percent of occupied housing units in the County have no access to a vehicle; many of these are low-income households.^{iv} Generally, transportation is the second highest household expense, next to housing. Transportation costs per household are higher in Carroll County (22 percent) compared to the region (16 percent).^v Of those over the age of 16 who commute to work in the County, 2 out of every 100 workers either walk or use another means of transportation besides a car, truck, van, or public transportation.^{vi} Adding attractive, affordable, accessible amenities to Carroll County living promotes a positive quality of life for citizens of all ages, income levels, and abilities.



Plan Process

Maryland Land Use Code § 3-105 – Transportation Element, states that “the transportation element shall provide for bicycle and pedestrian access and travelways.” Maryland law has no requirement for a bicycle and pedestrian plan and no clear process for Functional Plans. Therefore, the County has established the following process with the goal of adopting the Bike-Ped Master Plan as part of the *2014 Carroll County Master Plan* (2014 Master Plan).





Adoption of the Bicycle-Pedestrian Master Plan

Upon adoption by the Board of County Commissioners, the Bicycle-Pedestrian Master Plan will become an amendment to the 2014 Master Plan. While the Bicycle-Pedestrian Master Plan is not a regulatory instrument, the legislative or regulatory enactments necessary to implement the plan will come about as a result of the language within the plan after the adoption of the plan. The need for “regulatory-style” language within the Plan, is, therefore, eliminated. The most important portion of the Bicycle-Pedestrian Master Plan is the goals and recommendations.

Each Town/City in the County *may choose* to adopt this plan as an amendment to its Comprehensive Plan, in which case this plan will act in the same manner as its comprehensive plan does. If the Town/City chooses not to adopt this plan, then this plan has no legal standing over the Town/City.

Process for Input

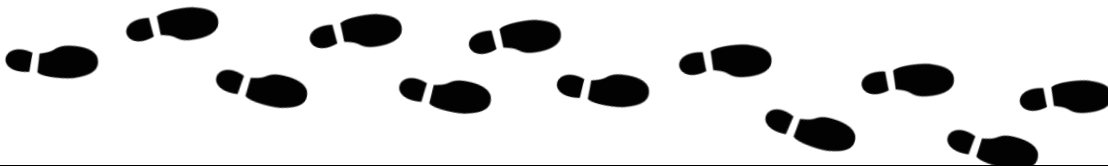
County Agencies

Significance: It is important to reach out to County agencies to gather their expert input into the plan, and address the needs of various diverse users of bike-ped facilities.

Input Process: Meetings with staff from County agencies to gather input before and during the process of drafting the plan, sent chapter drafts to agencies for comments, and incorporated relevant comments into the plan.

Table 1-2: County Agencies Input

County Agency	Input into the Plan
Board of County Commissioners	<ul style="list-style-type: none"> Plan direction and adoption
Board of Education	<ul style="list-style-type: none"> Children biking and walking to school Facilities Planner
Carroll County Public Schools	<ul style="list-style-type: none"> Transportation Handbook for Parents and Students
Department of Citizens Services (Bureau of Aging and Disabilities, Bureau of Housing and Community Development)	<ul style="list-style-type: none"> Access for Pedestrians who are aging or disabled Design guidelines Information on low-income, senior citizen, disabled, and ethnic minority populations
Department of Economic Development	<ul style="list-style-type: none"> Tourism
Department of Land and Resource Management (Bureau of Development Review, Bureau of Resource Management)	<ul style="list-style-type: none"> Floodplain Management Site plan and subdivision plan requirements Natural resources and environmental protection



Department of Public Safety (Emergency Management)	<ul style="list-style-type: none">• Responding to bike/ped collisions• Common types of injuries• Infrastructure improvements that are preventive
Department of Public Works (Bureau of Engineering, Bureau of Road Operations)	<ul style="list-style-type: none">• Engineering Challenges• TrailBlazer
Department of Recreation and Parks	<ul style="list-style-type: none">• Recreation Councils• Land Preservation, Parks, and Recreation Plan (LPPRP)• Inventory of recreational areas• Current trail projects and plans• Construction and maintenance funding• Land acquisition
Health Department	<ul style="list-style-type: none">• The Partnership for a Healthier Carroll County• Safety as a health and welfare issue• Safe Kids Carroll County
Planning & Zoning Commission	<ul style="list-style-type: none">• Plan direction, review, acceptance, and approval
Sheriff's Office	<ul style="list-style-type: none">• Crash data• Importance in enforcement of laws and safety guidelines• Recording and Collecting appropriate data• Trainings• Vision Zero
Transit Advisory Council (TAC)	<ul style="list-style-type: none">• Bike racks on buses





Municipalities

Significance: The County will work with the cities/towns to connect trail networks and destinations.

Input Process: Meetings with municipal staff to discuss their role/input into the plan, existing and planned routes were pulled from comprehensive plans, discussions were had with staff regarding future infrastructure, and municipal staff and planning commissions reviewed and provided comments on draft chapters and maps.

Table 1-3: Municipalities Input

Municipality	Input into the Plan
Hampstead	<ul style="list-style-type: none"> 2010 Hampstead Community Comprehensive Plan (2010 HCCP)
Manchester	<ul style="list-style-type: none"> 2018 Manchester Comprehensive Plan (2018 MCP)
Mount Airy	<ul style="list-style-type: none"> 2013 Town of Mount Airy Comprehensive Master Plan (2013 TMACMP)
New Windsor	<ul style="list-style-type: none"> 2007 New Windsor Community Comprehensive Plan (2007 NWCCP)
Sykesville	<ul style="list-style-type: none"> 2010 Town of Sykesville Master Plan (2010 TSMP)
Taneytown	<ul style="list-style-type: none"> 2010 Taneytown Community Comprehensive Plan (2010 TCCP)
Union Bridge	<ul style="list-style-type: none"> 2008 Union Bridge Community Comprehensive Plan (2008 UBCCP)
Westminster	<ul style="list-style-type: none"> 2009 City of Westminster Comprehensive Plan (2009 CWCP)

Other Government Agencies

Significance: It is important to reach out to state and regional agencies for technical assistance, review, and guidance of the process, and statutory and regulatory requirements.

Input Process: Coordinate with agencies for technical assistance and guidance, sent chapter drafts to agencies for comments, and incorporated relevant comments into the plan.

Table 1-4: Other Government Agencies Input

Organization	Input into the Plan
Baltimore Metropolitan Council (BMC): Bicycle and Pedestrian Advisory Group (BPAG), Baltimore Regional Transportation Board (BRTB)	<ul style="list-style-type: none"> Complete Streets Types of infrastructure Grant opportunities Advisory groups Patapsco Regional Greenway Funding support through UPWP
Maryland Department of Transportation (MDOT): State Highway Administration (SHA)	<ul style="list-style-type: none"> Complete Streets Grant opportunities Maryland SHA Bicycle and Pedestrian Design Guidelines 2040 Maryland Bicycle and Pedestrian Master Plan



Nonprofits

Significance: Engage low-income, minority, impoverished, and disability communities to meet the sixth “E” of planning, Equity.

Input Process: Meetings with organization leaders about their role/input into the plan.

Table 1-5: Nonprofits Input

Organization	Input into the Plan
BikeMD	<ul style="list-style-type: none"> • Legislation
The Partnership for a Healthier Carroll County	<ul style="list-style-type: none"> • Promote healthy lifestyles through biking and walking • Track emerging health issues • Oversee community health assessments • Educational programs related to health and wellness, and walking and biking
Historical Society	<ul style="list-style-type: none"> • Connections and Impact on historic structures
Heart of the Civil War Heritage Area (HCWHA)	<ul style="list-style-type: none"> • Connections and Impact on historic structures • Heritage tourism
Human Services Programs of Carroll County, Inc.	<ul style="list-style-type: none"> • Impact on low income and impoverished citizens

Public Participation/ Citizen Groups/ Businesses/ Colleges

Significance: Build a base of support and advocates for passage and implementation of the plan, understand and gauge citizens' concern, and identify specific problems to address.^{vii}

Input Process: Website – Carrollbikeped.org, emails, surveys, outreach meeting, pop-up event, comment cards, and one-on-one meetings with leaders from the organizations.

Table 1-6: Public Participation/Citizen Groups/Businesses/Colleges Input

Organization	Input into the Plan
Carroll Community College	<ul style="list-style-type: none"> • Host citizen outreach meeting
Carroll Hospital Center	<ul style="list-style-type: none"> • Common types of injuries • Infrastructure improvements that are preventive
McDaniel College	<ul style="list-style-type: none"> • Bike-Share
Race Pace Bicycles	<ul style="list-style-type: none"> • Partnered for outreach activities • Input from the cycling community



Community Engagement

Public engagement is critical to plan development and implementation. Because the County has not historically focused on walking and biking as a mode of transportation, it is especially important for public involvement and input when planning for these modes. Primary approaches to public outreach throughout this planning process include the following:

Carrollbikepedplan.org Website

Transparency throughout the planning process is vital to generate the most input from outside agencies, stakeholders, and the general community. This user-friendly site makes it easy to get the latest information about the draft plan and give input into the plan. Information provided on the site includes the following:

- Vision and Goals
- Maps of municipal and County bike-ped routes, ADA compliance, Bicycle Level of Comfort (BLOC), and bike-ped crash locations
- Events, outreach meetings, surveys, and past presentations
- Draft bicycle-pedestrian master plan chapters, and related County documents
- Contact information, subscription to mailing list, comment submission

Bicycle-Pedestrian Outreach Meeting

The Bicycle-Pedestrian Master Plan Citizen Outreach Meeting was held on Tuesday, March 21, 2017 at 6:00 PM at Carroll County Community College. Around 50 people attend from various parts of the County, including Westminster, Eldersburg, Finksburg, Hampstead, New Windsor, and Keymar. Stakeholders that attended include two representatives from The Partnership for a Healthier Carroll and one representative from the Carroll County Sheriff's Office. The event was mentioned in Positively Carroll by Commissioner Frazier. He said it was the first time he attended a public meeting where no one had a negative comment.

The comment card used at the outreach meeting was also available on the website via SurveyMonkey through mid-April, 2017. During which time, County staff continued to accept comments on town draft maps and vision & goals. The maps were posted on the website for review.

Why bike-ped outreach is important in the development of this plan:

- According to the 1994 Greenways, Bicycle, and Pedestrian Facilities Network Technical Report:
 - Public involvement and the open planning process foster grass-roots support (including law and policy advocacy and financial support)
 - Bicycle and Pedestrian planning cannot be successful without the support of advocates
- Goal 2 of the 2001 Baltimore Region Bicycle, Pedestrian and Greenway Transportation Plan includes a policy that encourages the development of a citizen's bicycle and pedestrian advisory group.

The National Center for Bicycling and Walking (bikewalk.org) stresses the importance of public support in order to implement a bike-ped plan.





Purpose of Outreach Meeting:

- Understand and gauge citizens' concerns: Pedestrians and bicyclists, including those who do not have access to a car, are equal users of the transportation system. The attitudes and opinions of these transportation network users may be different from those focused on driving on roadways.
- Identify specific problems to address: Data are lacking on non-motorized transportation; the public is one of the best resources for collecting and analyzing new data to inform the development of a bicycle-pedestrian plan.
- Build public support for plan development and sustain momentum for plan implementation: Citizen Participation increases the visibility of the plan and can generate champions for the plan's implementation by holding public stakeholders accountable.

Goal of Outreach Meeting: Provide citizens and stakeholders the opportunity to provide input that would inform the development of the draft Carroll County Bicycle-Pedestrian Master Plan.

Format of Outreach Meeting: The meeting format was a map gallery where citizens could take part in various activities to gather their input into the plan. Citizens were engaged through:

- Introduction by Commissioner Frazier and slideshow by staff
- Comment cards (Both a hardcopy and website versions were available)
- Viewing the vision and goals (and giving input through comment cards)
- Viewing draft County and Town maps – including Finksburg and Freedom/Eldersburg
- Placing dots on the countywide map where bicycle or pedestrian infrastructure, safety issues or wayfinding signage should be placed
- Responding to bike-ped questions in a dot question format
- Responding to survey #2 electronically



[Bicycle-Pedestrian Master Plan, Community Outreach Meeting. Carroll Community College, Westminster, MD. March 21, 2017.](#)





Race Pace Pop-up Event

The pop-up event was held at Race Pace Bicycles in Westminster on December 9, 2017, between 5pm and 7pm. Around 10 people attended from Westminster, New Windsor, Hampstead, and Finksburg.

What is a Pop-up Event?: Pop-up events are temporary, unexpected events that take place in unique spaces. A pop-up event can supplement the outreach effort by increasing awareness of a project and collecting input for the project.

Purpose of the Pop-up Event: Use one-on-one engagement with citizens to inform them about the planning process, and to gather their input into plan development; no bicycle-pedestrian topic was off limits at this event.

Generate interest for citizens to take the interest survey #2, which gathered input about preferences for the citizens outreach meeting.

Format of Pop-up Event: The format was a “one-on-one” where citizens could ask questions and give their input into the plan. Citizens were engaged through:

- Free raffle for a chance to win a \$50 Race Pace Bicycles Gift Card
- Participating in Survey #2 on a tablet
- Viewing “Existing” and “Under Construction” bike-ped routes on a laptop
- Communicating one-on-one with bike-ped planners

Interest Survey #1

The purpose of the 2016 Bicycle-Pedestrian Master Plan Interest Survey (2016 Interest Survey) was to determine the level of interest to use bicycle and pedestrian facilities. At the start of drafting this plan, a survey was released to the public to gather information on biking and walking activity in Carroll County. Forty-eight questions focused on how often and where people bike and walk in the County, and on obstacles to biking and walking throughout the County. Place of residence and demographics were also collected from respondents to help staff better analyze the results.

To ensure a large number of survey respondents, a press release was issued in the Carroll County Times on January 4, 2016. Business and note cards and posters were placed in common areas of senior centers, public libraries, town halls, bicycle shops, etc. GovDelivery emails were sent and a link to the survey was posted on Carrollbikepedplan.org.

Please leave us with your NAME, PHONE NUMBER, ADDRESS and EMAIL to receive updated information regarding the	
Carroll County Bicycle-Pedestrian Master Plan	
Name	_____
Phone	_____
Address	_____
Email	_____
<div style="border: 1px solid green; padding: 5px; display: inline-block;"> Enter for a chance to win a gift card to Race Pace Bicycles </div>	

Free Raffle Ticket. Bicycle-Pedestrian Master Plan, Pop-up Event. Race Pace Bicycles, Westminster, MD. December 9, 2017.





From January 4 through March 1, 2016, 822 survey responses were received. Survey results, which were presented to the Carroll County Planning Commission on March 13, 2016, and are as follows:

Ninety-three percent of survey respondents live in one of the following communities: Eldersburg, Finksburg, Hampstead, Manchester, Mount Airy, New Windsor, Sykesville, Taneytown and Westminster. Of this number, 38 percent are from Westminster alone. Over three-quarters (77 percent) of the participants were between the ages of 35 and 64, with the lowest age group of 18 and under at less than 1 percent, right behind 18-24-year-olds coming in at 2.7 percent. The sex of respondents came in close with 57 percent female and 43 percent male. Eighty percent of survey participants are married; 36 percent without children and 44 percent with children at home.

Ninety percent of respondents would like to see Carroll County plan for pedestrian trails as a mode of transportation, while 93 percent said the same for bicycle trails.

Nearly half of the respondents (45 percent) are comfortable walking more than two miles. Walking for leisure, fun, and exercise ranked highest for daily trips at 22 percent, while participants also walk at least once a week to shop and run errands (11 percent), and to visit family and friends (12 percent). The majority of respondents walks on paths and trails (71 percent), sidewalks (68 percent), and paved road with no shoulders (51 percent). When asked what keeps them from walking to destinations in the County more often, survey participants responded the highest at 66 percent with safety issues due to walking conditions and traffic, and at 61 percent with lack of trails and sidewalks and appropriately paved areas. Improved sidewalks (53 percent), more walking trails and paths (85 percent), and improved pedestrian road crossings (40 percent) would influence respondents to walk more often. Access to good pedestrian infrastructure, distance, respect from motorists, and ease and safety of crossing roadways ranked most important when considering walking.

Summary of Responses on Walking:

- Most walk for leisure, fun, and exercise
- For a typical walk, most walk for a distance of 1.5 miles or more
- Most walk on paths/trails, sidewalks, and paved roads with no shoulder
- Inhibitors: lack of feeling safe due to walking conditions or traffic, and lack of trails, sidewalks, and paved infrastructure
- Suggested Improvements: more trails and paths, improved sidewalks, improved roadway crossing facilities, and lighting and security measures
- Important factors: access and distance to good infrastructure, motorists respecting pedestrians, and safety and ease when crossing the road

According to the survey, 78 percent of people ride a bike in Carroll County. While 29 percent ride a bike in the County a few time a week for leisure, fun, and exercise, respondents rarely ride a bike to shop and run errands (36 percent), commute to work or school (23 percent), to get to TrailBlazer (15 percent), and to visit family and friends (23 percent). Survey participants typically ride a bike on paved roads with low traffic volumes and low speeds (83 percent), shoulders of paved roads (62 percent), and bicycle and walking paths and trails (60 percent). Respondents stated that they are comfortable riding a bike for 31-60 minutes (35 percent) and 61-120 minutes (33 percent). Access to good biking infrastructure, distance, and respect from motorists ranked most important when considering biking. Unsafe road conditions (66 percent) and a lack of bicycle facilities, including bike lanes, paths and wide shoulders (69 percent), are the top factors that keep people from biking



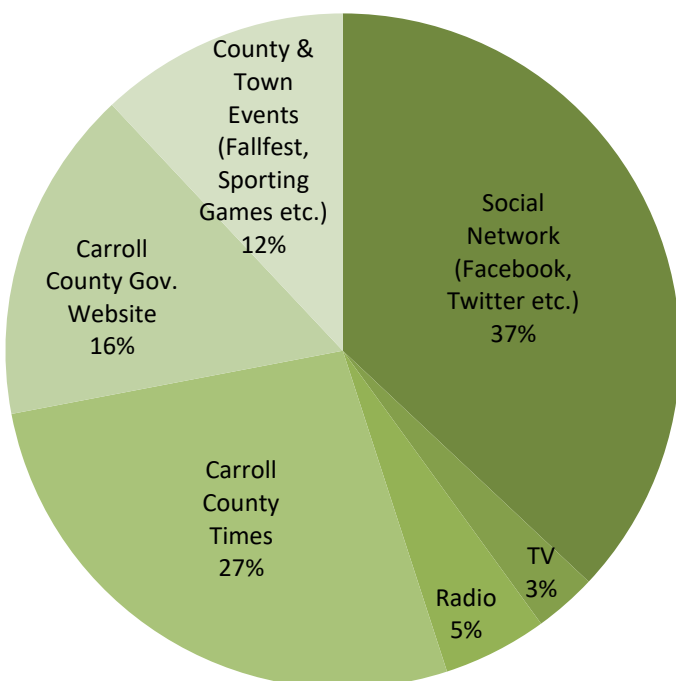
more often in the County. Additional bicycle lanes (62 percent), off-road paths (64 percent), and paved shoulders (50 percent) would influence survey users to bike more often.

Summary of Responses on Biking:

- Most bike a few times a week to a few times a year
- Most biking takes place on paved, low-speed and low-traffic-volume roads; also, shoulders of paved roads and bike paths/trails
- Most bike from over a half hour to 2 hours
- Important factors: infrastructure, motorists respecting bicyclists, safety and ease when crossing roads, weather, and distance
- Inhibitors: lack of bike facilities and unsafe road conditions
- Suggested Improvements: off-road paths, bike lanes, paved shoulders, bicycle wayfinding, and education of motorists

Interest Survey #2

A second interest survey was opened to the public from November 15 – December 16, 2016. This survey was a series of nine questions which gathered input about preferences for the citizens outreach meeting. Citizens responded to which days and times were preferred for an outreach meeting, and what topics should be addressed at the meeting. Additionally, citizens were asked to choose the best way to be contacted with information regarding this plan. Seventy-two responses were received and survey results were presented to the Carroll County Planning Commission on February 21, 2017. Survey results are as follows:



GovDelivery emails, a County email system where anyone can sign up to receive email notification about a specific top, were sent to those people who had signed up to receive bicycle-pedestrian related notifications, and a link to the survey was posted on Carrollbikepedplan.org. Using the survey's results, a date and time were proposed for an outreach meeting.

Plan Summary and Highlights

The Carroll County Bicycle-Pedestrian Master Plan seeks to bring together various bike-ped projects and programs that have been occurring in the County.

Thus far, bicycle and pedestrian projects have been occurring in a disjointed manner. County and state agencies and municipalities have operated independently in the planning and construction of sidewalks, shared-use paths, bicycle lanes, and trails. There



has been no unity or ultimate goal established within the County as a whole. It is an objective of this plan to incorporate into the plan the input of various interest groups and stakeholders that have been advocating for a safer and more bikeable and walkable Carroll County.

There are no County adopted plans that are strictly dedicated to bicycle and pedestrian planning. However, there have been two important documents that inventory the existing infrastructure (2012 LPPRP) and suggest possible connections (*1994 Greenways, Bicycle, and Pedestrian Facilities Network Technical Report* (1994 Technical Report)). While not specifically about bike-ped facilities, the LPPRP “has been prepared to inventory and assess Carroll County’s recreational, agricultural, and natural resources, and the programs and policies that affect them. The plan seeks to identify the extent to which these programs and policies are helping to reach state and local goals for preserving and enhancing the resources.” It describes several existing trails and their users. The 1994 Technical Report, and proposed greenway alignments derived from the Report, are discussed in Chapter 4: Future Connections.

In addition to the above County-wide planning documents, most of the County’s municipalities have included bicycle and pedestrian facilities in their comprehensive and master plans.

Beyond raw infrastructure, investments in bicycle and pedestrian facilities provide extensive benefits that meet several of the goals of the 2014 Master Plan, the State of Maryland, and the region. Investment can aid in improving the quality of life for Carroll County’s residents, as well as boost economic development through tourism and historic preservation. Vibrant communities with diverse amenities, such as trails and paths that connect to retail establishments, historic sites, and activity centers, help create places that retain current, and attract new, residents and businesses.

Endnotes

ⁱ U.S. Census Bureau (2017). *Selected economic characteristics, 2013-2017 American Community Survey 5-year estimates*. Retrieved from https://planning.maryland.gov/MSDC/Documents/American_Community_Survey/2013-2017/CNTY_24013_ACS_2013-2017.pdf.

ⁱⁱ U.S. Census Bureau (2017). *Selected income characteristics, 2013-2017 American Community Survey 5-year estimates*. Retrieved from https://planning.maryland.gov/MSDC/Documents/American_Community_Survey/2013-2017/CNTY_24013_ACS_2013-2017.pdf.

ⁱⁱⁱ U.S. Census Bureau (2017). *Demographic and housing estimates, 2013-2017 American Community Survey 5-year estimates*. Retrieved from https://planning.maryland.gov/MSDC/Documents/American_Community_Survey/2013-2017/CNTY_24013_ACS_2013-2017.pdf.

^{iv} U.S. Census Bureau (2017). *Selected housing characteristics, 2013-2017 American Community Survey 5-year estimates*. Retrieved from https://planning.maryland.gov/MSDC/Documents/American_Community_Survey/2013-2017/CNTY_24013_ACS_2013-2017.pdf.

^v Center for Neighborhood Technology (CNT). H+T Index. <https://htaindex.cnt.org/fact-sheets/>.

^{vi} U.S. Census Bureau (2017). *Selected economic characteristics, 2013-2017 American Community Survey 5-year estimates*. Retrieved from https://planning.maryland.gov/MSDC/Documents/American_Community_Survey/2013-2017/CNTY_24013_ACS_2013-2017.pdf.

^{vii} U.S. Department of Transportation. *Statewide Pedestrian and Bicycle Planning Handbook*. 2014. https://www.planning.dot.gov/documents/Ped-Bike_State_Planning_Handbook.pdf





Chapter 2: Plan Vision and Goals

This chapter discusses how the Carroll County Bicycle-Pedestrian Master Plan brings all jurisdictions within the County together to share a common vision for bicycling and walking in the County.

Bicycle-Pedestrian Master Plan Vision and Goals

This plan's vision and goals were shaped throughout a series of work sessions with the Carroll County Planning and Zoning Commission using the *2014 Freedom Bicycle-Pedestrian Master Plan & Assessment* (Freedom Bike-Ped Plan) vision and goals, and community input. The Bicycle-Pedestrian Master Plan vision and goals support the Carroll County Master Plan, Finksburg Corridor Plan, Freedom Community Comprehensive Plan, and municipal comprehensive/master plans.

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.”

A “Vision Statement” defines a community’s preferred future in a broad and somewhat idealistic, but attainable vision.





The Goals

The goals in this plan are generalized statements established to support the community’s vision statement. Goals provide guidance for local government officials and staff to develop policies that advance the achievement of a community’s vision.

The Findings

Findings are data and research driven conclusions of current and past planning practices of various entities. Findings may assist the County in recognizing the appropriate way to advance forward to meet the goals of this plan.

The Recommendations

This plan contains recommendations to facilitate implementing the plan’s goals. Recommendations are planning, implementation, and general government-related activities that if realized, may facilitate the achievement of Carroll County’s goals. The presence of a recommendation shall in no way be construed as a mandate, requirement, or otherwise be considered an indicator that action to the contrary of any recommendation is prohibited.

A “recommendation” is an optional course of action which assists in the achievement of a goal.

The Plan Layout

The remainder of the Bicycle and Pedestrian Master Plan is divided into chapters based on a topic. Each chapter identifies goals and describes the issues and challenges to achieving the identified goal(s). Recommendations to implement and achieve the identified goal(s) are outlined at the end of each chapter.

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.





Carroll County Master Plan Vision and Goals

The 2014 Carroll County Master Plan (2014 Master Plan) takes a comprehensive look at individual parts of the community and integrates them in a way that helps to achieve the community's vision for the future. Maryland's Twelve Visions are reflected in the 2014 Master Plan throughout each chapter.

Bicycle and pedestrian planning can help the County meet its goals that pertain to land use and growth management, employment and economic development, transportation, parks, and heritage, to name a few. Bicycle and pedestrian investments help meet five 2014 Master Plan goals listed below.



Vision Statement

“Carroll County is a great place to live, work, and play. The County conserves and promotes its unique rural agricultural heritage, protects its environmental resources, and promotes a balanced approach to new development and economic opportunities consistent with the fabric of its communities. Carroll County values, and citizens' unalienable rights of life, liberty, and property, are respected, protected, and sustained.”

Goal 5:

Provide a safe and functional intra-County transportation system that promotes access and mobility for people and goods through a variety of transportation modes.

Goal 9:

Provide an affordable, coordinated and comprehensive system of public and private parks, recreational facilities and programs, and open space that will enhance our communities.

Goal 10:

Preserve the county's historic, cultural, scenic, and architectural heritage.

Goal 13:

Promote a healthy economy and additional employment opportunities by: (a) supporting the retention and expansion of existing businesses including agribusiness through sensible land use policies; (b) focusing on development and redevelopment of existing vacant and underutilized commercial and industrial properties; (c) providing land appropriately located and zoned for a variety of types and intensities of new economic development activities; and (d) maintaining a desirable balance between economic development and residential development.

Goal 14:

Facilitate a development pattern that remains consistent with the fabric of our communities, is in harmony with the surrounding built and natural environments, encourages community interaction and, in rural areas, preserves the County's rural character.





County Community Comprehensive Plan Goals

Additional plans encompass particular growth areas within the County: the Finksburg Designated Growth Area (DGA), the Freedom DGA, and the Westminster Environs DGA. Each of these plans were Adopted by the County Commissioners, excluding the Certified Freedom Bike-Ped Plan.

Table 2-1: Community Comprehensive Plan Goals

County Community Comprehensive Plan	Goal(s)
<p>Finksburg Corridor</p> <p><i>2013 Finksburg Corridor Plan (2013 FCP)</i></p>	<ul style="list-style-type: none"> To create opportunities for non-motorized travel in the community and to provide additional recreational opportunities for all age levels.^{viii}
<p>Freedom</p> <p><i>2014 Freedom Bicycle-Pedestrian Master Plan & Assessment (Freedom Bike-Ped Plan)</i></p> <p><i>2018 Freedom Community Comprehensive Plan (Freedom Plan)</i></p>	<ul style="list-style-type: none"> Identify a hierarchy of key connections and destinations within the Freedom Community and target funding to projects that will yield the greatest impact on the community as a whole.^{ix} 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.^x Work with local elected officials, government agencies, and community leaders to promote and emphasize bicycle and pedestrian safety training and outreach. Develop and construct pedestrian and bicycle facilities with safety in mind.^{xi} Place a greater emphasis on walking and bicycling in transportation planning and the development process.^{xii} Focus on enhancing existing motor vehicle roads and routes, while augmenting traditional motor vehicle routes with safe, well-connected transportation system alternatives, including sidewalks, bicycle routes, trails, and transportation services where appropriate within the Freedom Community Planning Area (CPA) and Carroll County.^{xiii}
<p>Westminster Environs</p> <p><i>2007 Westminster Environs Community Comprehensive Plan (2007 WECCP)</i></p>	<ul style="list-style-type: none"> Transportation <ul style="list-style-type: none"> Provide a variety of transportation options for travel within the County and outside the County for business, employment, shopping, medical, and other purposes.^{xiv}





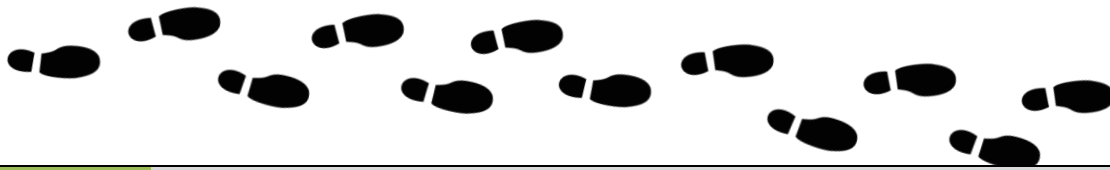
Municipal Comprehensive/Master Plan Goals

Many of the municipalities in the County (towns and cities) have Adopted comprehensive/master plans that include the goal of providing more bicycle and pedestrian infrastructure, for both recreation and transportation. The overall trend in municipal goals is to promote alternative modes of transportation including biking and walking between neighborhoods, as well as to downtown, schools, community facilities, and commercial and employment hubs.

Table 2-2: Municipal Comprehensive/Master Plan Goals

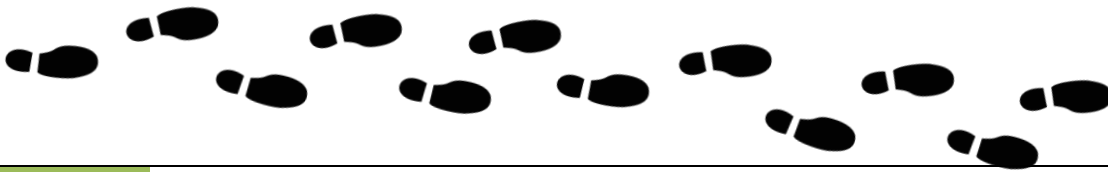
Municipal Comprehensive/Master Plan	Goals
<p>Town of Hampstead</p> <p><i>2010 Hampstead Community Comprehensive Plan (2010 HCCP)</i></p>	<ul style="list-style-type: none"> • Transportation <ul style="list-style-type: none"> ○ Encourage new developments that accommodate alternative means of transportation.^{xv} ○ Encourage the development of sidewalks and pedestrian paths, particularly in developed residential areas outside of the Town limits where no such connections exist, and to encourage Carroll County to fund construction of these badly needed sidewalks.^{xvi} • Community Facilities <ul style="list-style-type: none"> ○ Ensure Planned Unit Developments have sidewalks on both sides of the street and street lights.^{xvii} • Housing and Community Design <ul style="list-style-type: none"> ○ Create pedestrian links that connect neighborhoods with each other, the downtown, and other major features.^{xviii}
<p>Town of Manchester</p> <p><i>2018 Manchester Comprehensive Plan (2018 MCP)</i></p>	<ul style="list-style-type: none"> • Transportation <ul style="list-style-type: none"> ○ Improve driving, walking, biking, and hiking options, to and from Main Street, including ancillary upgrades to signage, lighting, parking, and customer zones for quick pick-up service. Coordinate design and planning issues, on and near state roads, with the MDOT SHA Bicycle Pedestrian Coordinator.^{xix} • Public Facilities <ul style="list-style-type: none"> ○ Objective – Public School Sites: Connect future hiking/biking trails, greenway systems, and open spaces with public school sites to meet the open space and recreational needs of the Manchester community.^{xx}





<p>Town of Mount Airy</p> <p><i>2013 Town of Mount Airy Master Plan (2013 TMACMP)</i></p>	<ul style="list-style-type: none"> • Quality of Life <ul style="list-style-type: none"> ○ Provide a quality living environment in the Town of Mount Airy.” The relevant implementation strategy for this goal is to, “Encourage neighborhood and community connections by integrating pedestrian/bicycling networks throughout the Town.^{xxi} • Transportation <p>Expand and integrate pedestrian pathways (walking, jogging, and cycling) and networks throughout the Town.^{xxii}</p>
<p>Town of New Windsor</p> <p><i>2007 New Windsor Community Comprehensive Plan (2007 NWCCP)</i></p>	<ul style="list-style-type: none"> • Transportation <ul style="list-style-type: none"> ○ Address intersection safety improvements. ○ Promote sidewalk connections to improve pedestrian access.^{xxiii} • Community Facilities <ul style="list-style-type: none"> ○ Enhance the feeling of public and personal safety.^{xxiv} • Housing and Community Design • Provide connected paths/trails/greenways throughout the community which offer recreational opportunities.^{xxv}
<p>Town of Sykesville</p> <p><i>2010 Town of Sykesville Master Plan (2010 TSMP)</i></p>	<ul style="list-style-type: none"> • Land Use <ul style="list-style-type: none"> ○ Promoting a pedestrian friendly environment.^{xxvi} ○ Fostering “walkability for students to school, home and other community facilities.^{xxvii} ○ Connecting to Main Street through more bike-ped infrastructure and Streetscape enhancements.^{xxviii} • Transportation <ul style="list-style-type: none"> ○ Promoting pedestrian mobility and connectivity <ul style="list-style-type: none"> ▪ Walking as a means of transportation, providing safe pedestrian facilities, and eliminating any obstacles that discourage people from walking for short trips.^{xxix} • A Town-wide trail system and transportation network.^{xxx}
<p>City of Taneytown</p> <p><i>2010 Taneytown Community Comprehensive Plan (2010 TCCP)</i></p>	<ul style="list-style-type: none"> • Land Use and Growth Management <ul style="list-style-type: none"> ○ Future development will be designed to complement the built environment with both traffic and pedestrian connectivity in mind.^{xxxi} ○ Provide for walkability between residential areas and local business areas and employment centers.^{xxxii} • Transportation <ul style="list-style-type: none"> ○ The free movement of all types of traffic, including pedestrian, wheelchair, bicycle, train, automobile, bus, and truck, will be achieved for the safe and efficient transfer of people, goods, and services.^{xxxiii} ○ Provide a well maintained, safe and efficient transportation network that encourages the separation of local residential vehicular traffic from all other traffic; provides direct major highway access to industrial areas; and provides pathways for bicycle and pedestrian use.^{xxxiv}





	<ul style="list-style-type: none">○ Enhance the overall functionality and multi-modal connectivity within neighborhoods and between neighborhoods, civic hubs, and commercial centers.^{xxxv}● Encourage pedestrian access to local commercial businesses and employment centers from all residential neighborhoods.^{xxxvi}
<p>Town of Union Bridge</p> <p><i>2008 Union Bridge Community Comprehensive Plan (2008 UBCCP)</i></p>	<ul style="list-style-type: none">● Transportation<ul style="list-style-type: none">○ To provide bicycle/pedestrian links between neighborhoods and destinations within the community.^{xxxvii}○ To promote alternative transportation options within the existing and future transportation network to the maximum extent feasible and safe.^{xxxviii}● Housing and Community Design<ul style="list-style-type: none">○ To incorporate traditional, walkable, friendly design into new residential neighborhoods.^{xxxix}● On-Going Main Street Revitalization<ul style="list-style-type: none">○ To provide amenities that are pedestrian and user-friendly and that promote community interaction.^{xl}
<p>City of Westminster</p> <p><i>2009 City of Westminster Comprehensive Plan (2009 CWCP)</i></p>	<ul style="list-style-type: none">● Community Character & Design<ul style="list-style-type: none">○ Goal D2: Maintain the image and identity of a visually cohesive community to residents and visitors.<ul style="list-style-type: none">▪ Objective 2: Develop pedestrian-friendly environments in Westminster that interconnect neighborhoods to community facilities while creating a pleasant walking experience.^{xi}● Tourism & Culture<ul style="list-style-type: none">○ Goal C4: Create an environment for tourists that is welcoming, friendly, and easy to navigate for visitors and new residents.<ul style="list-style-type: none">▪ Objective 2: Ensure easy access to a traveler’s destination, including vehicular and pedestrian access and the availability of parking and transit.^{xii}● Transportation<ul style="list-style-type: none">○ Provide a continuous and seamless pedestrian and bicycle system, and enhance the pedestrian environment to create a more walkable community.^{xiii}





Maryland Bicycle and Pedestrian Master Plan Vision and Goals

In 2019, the Maryland Department of Transportation (MDOT) updated its Bicycle and Pedestrian Master Plan with a 20-year vision to support biking and walking in Maryland, both recreationally and as transportation. This 5-year update is in coordination with the Maryland Transportation Plan, and includes new legislation and current bicycle and pedestrian planning practices. The document provides solutions to Maryland’s current challenges, while highlighting the benefits of active transportation. Input from this plan was derived from citizens and state and local government agencies.

Vision Statement

“Maryland will be a great place for biking and walking that safely connects people of all ages and abilities to life’s opportunities.”^{xliv}

Goals

Goal 1: Safety

Improve the Safety of Bicycle and Pedestrian Travel through Education, Enforcement, and Infrastructure Solutions.

Goal 2: Connected Networks

Enhance Transportation Choice and Multimodal Connectivity through Linked Networks.

Goal 3: Analysis and Planning

Support Efficient and Equitable Planning and Project Development with Data-driven Tools and Innovative Techniques.

Goal 4: Partnerships

Build Partnerships to Promote Active Transportation and Strengthen the Health of our Communities.

Goal 5: Economic Development

Advance Biking and Walking as an Economic Development Strategy.^{xlv}





Endnotes

- ^{viii} Carroll County Department of Land Use, Planning and Development. *2013 Finksburg Corridor Plan*. Finksburg, MD. August 29, 2013. Page 15.
- ^{ix} Carroll County Department of Land Use, Planning and Development. *2014 Freedom Bicycle & Pedestrian Master Plan & Assessment*. Freedom, MD. February 18, 2014. Page 23.
- ^x Carroll County Department of Land Use, Planning and Development. *2014 Freedom Bicycle & Pedestrian Master Plan & Assessment*. Freedom, MD. February 18, 2014. Page 25.
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- ^{xii} Carroll County Department of Land Use, Planning and Development. *2014 Freedom Bicycle & Pedestrian Master Plan & Assessment*. Freedom, MD. February 18, 2014. Page 26.
- ^{xiii} Carroll County Department of Planning. *2018 Freedom Community Comprehensive Plan*. Freedom, MD. October 10, 2018.
- ^{xiv} Carroll County Department of Land Use, Planning and Development. *2007 Westminster Environs Community Comprehensive Plan*. November 29, 2007. Page 17.
- ^{xv} Town of Hampstead, MD. *2010 Hampstead Community Comprehensive Plan*. Hampstead, MD. July 13, 2010, Amended October 10, 2017. Page 15.
- ^{xvi} Town of Hampstead, MD. *2010 Hampstead Community Comprehensive Plan*. Hampstead, MD. July 13, 2010, Amended October 10, 2017. Page 15.
- ^{xvii} Town of Hampstead, MD. *2010 Hampstead Community Comprehensive Plan*. Hampstead, MD. July 13, 2010, Amended October 10, 2017. Page 15.
- ^{xviii} Town of Hampstead, MD. *2010 Hampstead Community Comprehensive Plan*. Hampstead, MD. July 13, 2010, Amended October 10, 2017. Page 17.
- ^{xix} Town of Manchester, MD. *2018 Manchester Comprehensive Plan*. Manchester, MD. June 19, 2018. Page 82.
- ^{xx} Town of Manchester, MD. *2018 Manchester Comprehensive Plan*. Manchester, MD. June 19, 2018. Page 73
- ^{xxi} Town of Mount Airy, MD. *2013 Town of Mount Airy Master Plan*. Mount Airy, MD. November 3, 2014. Page 24.
- ^{xxii} Town of Mount Airy, MD. *2013 Town of Mount Airy Master Plan*. Mount Airy, MD. November 3, 2014. Page 128.
- ^{xxiii} New Windsor, MD. *2007 New Windsor Community Comprehensive Plan*. New Windsor, MD. July 5, 2007, Amended December 20, 2010. Page 14.
- ^{xxiv} New Windsor, MD. *2007 New Windsor Community Comprehensive Plan*. New Windsor, MD. July 5, 2007, Amended December 20, 2010. Page 14.
- ^{xxv} New Windsor, MD. *2007 New Windsor Community Comprehensive Plan*. New Windsor, MD. July 5, 2007, Amended December 20, 2010. Page 15.
- ^{xxvi} Town of Sykesville, MD. *2010 Town of Sykesville Master Plan*. Sykesville, MD. January 24, 2011, Amended November 24, 2014. Page 3-9.
- ^{xxvii} Town of Sykesville, MD. *2010 Town of Sykesville Master Plan*. Sykesville, MD. January 24, 2011, Amended November 24, 2014. Page 3-26.
- ^{xxviii} Town of Sykesville, MD. *2010 Town of Sykesville Master Plan*. Sykesville, MD. January 24, 2011, Amended November 24, 2014. Pages 3-12 - 3-14.
- ^{xxix} Town of Sykesville, MD. *2010 Town of Sykesville Master Plan*. Sykesville, MD. January 24, 2011, Amended November 24, 2014. Page 9-5
- ^{xxx} Town of Sykesville, MD. *2010 Town of Sykesville Master Plan*. Sykesville, MD. January 24, 2011, Amended November 24, 2014. Pages 3-9, 3-21, 3-26, 3-27, 9-2, 9-7.
- ^{xxxi} City of Taneytown, MD. *2010 Taneytown Community Comprehensive Plan*. Taneytown, MD. March 8, 2010. Page 10.
- ^{xxxii} City of Taneytown, MD. *2010 Taneytown Community Comprehensive Plan*. Taneytown, MD. March 8, 2010. Page 11.
- ^{xxxiii} City of Taneytown, MD. *2010 Taneytown Community Comprehensive Plan*. Taneytown, MD. March 8, 2010. Page 11.
- ^{xxxiv} City of Taneytown, MD. *2010 Taneytown Community Comprehensive Plan*. Taneytown, MD. March 8, 2010. Page 11.
- ^{xxxv} City of Taneytown, MD. *2010 Taneytown Community Comprehensive Plan*. Taneytown, MD. March 8, 2010. Page 11.
- ^{xxxvi} City of Taneytown, MD. *2010 Taneytown Community Comprehensive Plan*. Taneytown, MD. March 8, 2010. Page 11.



- ^{xxxvii} Town of Union Bridge, MD. *2008 Union Bridge Community Comprehensive Plan*. Union Bridge, MD. April 17, 2008, Amended August 21, 2014. Page 13.
- ^{xxxviii} Town of Union Bridge, MD. *2008 Union Bridge Community Comprehensive Plan*. Union Bridge, MD. April 17, 2008, Amended August 21, 2014. Page 13.
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- ^{xl} Town of Union Bridge, MD. *2008 Union Bridge Community Comprehensive Plan*. Union Bridge, MD. April 17, 2008, Amended August 21, 2014. Page 14.
- ^{xli} City of Westminster, MD. *2009 City of Westminster Comprehensive Plan*. Westminster, MD. September 28, 2009. Page 156.
- ^{xlii} City of Westminster, MD. *2009 City of Westminster Comprehensive Plan*. Westminster, MD. September 28, 2009. Page 205.
- ^{xliii} City of Westminster, MD. *2009 City of Westminster Comprehensive Plan*. Westminster, MD. September 28, 2009. Page 263.
- ^{xliv} Maryland Department of Transportation. *2040 Maryland Bicycle and Pedestrian Master Plan 2019 Update*. January 2019. Page 3.
- ^{xlv} Maryland Department of Transportation. *2040 Maryland Bicycle and Pedestrian Master Plan 2019 Update*. January 2019. Page 6.





Chapter 3: Existing Conditions

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

The municipalities and Carroll County Department of Recreation and Parks have led the County in building bicycle and pedestrian infrastructure. There are approximately 134 miles (76 Existing/Under Construction miles, 58 Adopted/Planned miles) of bike-ped projects, not including sidewalk) identified within County or town comprehensive/master plans. Most of these projects are within or connected to County Designated Growth Areas (DGA) and Municipal Growth Areas (MGA). This chapter seeks to highlight existing infrastructure and show what is currently being planned around the County

Many of the municipalities (towns) have Adopted comprehensive/master plans that include the goal of providing more bike-ped infrastructure. Many of the municipalities would like to see more transportation options for their residents and even connections to other parts of Carroll County and the region. Some of these plans reference the County's 2008 survey that found many Carroll County and town residents want to see more connections to accommodate walking and biking. While the 2008 survey will not be discussed its results justify the conclusions of some municipalities to build more bike-ped infrastructure. The results of the 2016 Bicycle-Pedestrian Master Plan Interest Survey (2016 Interest Survey) will be discussed to show the importance to Carroll County residents and visitors of these existing facilities, improvements, and additional connections.

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.

Town and County Status

76 Miles

Existing

Under Construction

Countywide bike facilities and trails




Inventory was taken of all existing, planned, and upcoming projects in each of the eight municipalities and the County, including Finksburg and Freedom. Types of infrastructure found were bicycle lanes, paths and designated routes, shared-use-paths and pathways, sidewalks, and crosswalks. Features noted about each trail have been included in the collected data.





Existing, Under Construction, Adopted/Planned

For the purposes of this plan bicycle and pedestrian routes/trails have been divided into four statuses. The statuses Existing, Under Construction and Adopted/Planned will be discussed in this chapter. The fourth category, Future Connections, will be discussed in Chapter 4. A few trails may have more than one status as they are often implemented in phases. The three statuses discussed in this chapter are seen to the right. Likewise, the type of use falls under the following categories:

Bicycle: bicycle use preferred 	Bike-Ped: bicycle and pedestrian use 	Pedestrian: pedestrian use preferred 
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The tables shown throughout this section will contain bike-ped project details. Some of the projects may fall within both the County and municipal limits as indicated in the maps at the end of the chapter. Except for existing infrastructure, the mileage is only an estimate and subject to change.

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



County

Finksburg Corridor

The Finksburg Corridor is a smaller area within the greater Finksburg community that has an Adopted plan. The relevant bike-ped goal of the *2013 Finksburg Corridor Plan (2013 FCP)* is:

- To create opportunities for non-motorized travel in the community and to provide additional recreational opportunities for all age levels

According to the 2013 FCP, the area has a severely underdeveloped pedestrian and trail network, leading to a lack of bicycle and pedestrian travel opportunities along the commercial corridor. The 2013 FCP also states that during the drafting of the updated plan a survey was given to the community. Results from the survey showed that participants felt the most needed recreational facility was bicycle and pedestrian pathways. Due to the high travel speeds along MD 140 and MD 91, sidewalks and pathways should be encouraged within neighborhood areas and secondary roadways where lower vehicles speeds and volumes provide for safer travel.





A few projects in the Finksburg Corridor area that were noted in the 2013 FCP include:

- **Roaring Run Trail.** A 0.6 mile trail (approximately 0.6 miles within the Corridor and 3 miles beyond). This trail will serve the neighborhoods located north of MD 140 and east of MD 91.
- **Old Westminster Pike Sidewalk.** The portion of Old Westminster Pike (OWP) which lies within the Secondary residential Neighborhood should be accessible for residents to move safely throughout the network on bicycle and by foot. According to the 2013 FCP, improvements to Old Westminster Pike will include lighting and possible paving for pedestrians. This will serve as a valuable connection between residences and commercial properties within the historic core of the Finksburg Community.^{xlvi}

These projects can be viewed in Table 3-2 and Table 3-5.

A Sustainable Communities^{xlvii} designation for Finksburg was received in March 2019. This designation will assist in the revitalization of the area through financial incentives, including bike-ped facilities (discussed more in the Implementation Chapter). In conjunction with the preparation for filling for a Sustainable Communities designation a sidewalk assessment was conducted on OWP in 2016. It found that land acquisition and relocation of utility infrastructure would be needed. Some possible destinations within the Corridor that front OWP include Dunkin Donuts, Jiffy Mart convenience store, and Roaring Run Park, owned by the Lions Club. This pedestrian connection is indicated in the 2013 FCP and the Finksburg Sustainable Community 5-Year Action Plan.^{xlviii}

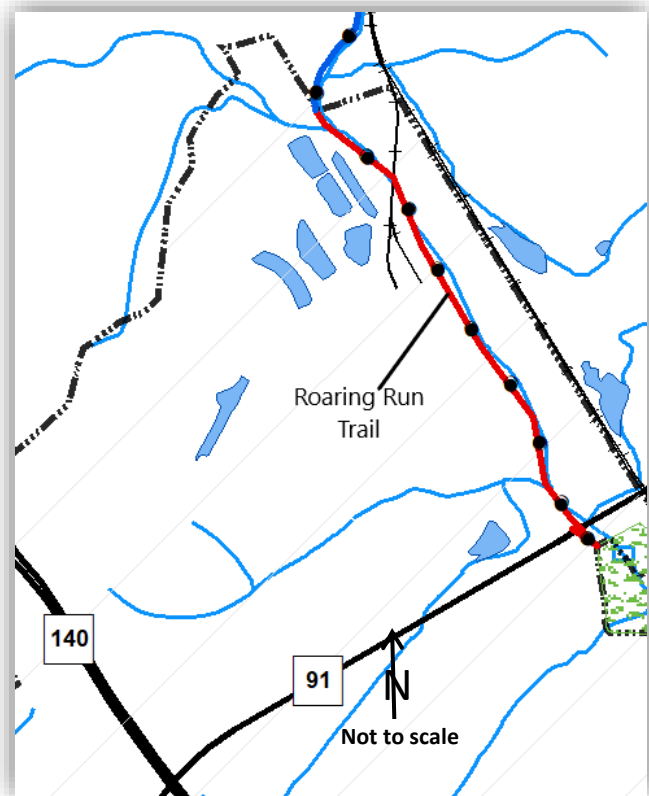


Figure 3-1: Finksburg's Adopted/Planned Roaring Run Trail



Freedom

The *2018 Freedom Community Comprehensive Plan* (Freedom Plan) outlines priorities for the Freedom DGA in its transportation element. Its bike-ped related goal is:

- Provide a safe, well-connected transportation system, including sidewalks and trails, enabling all community members to efficiently travel by any mode appropriate, including by automobile, foot, bicycle, and shared transportation service, to reach their desired destinations inside and beyond the Freedom Community Planning Area (CPA).

The transportation element recommends that “All Planned Major Streets noted in this Element should be designed and constructed to improve connectivity, reduce conflicts between short distance and longer distance travel on major roadways, accommodate all users of the right-of-way (motorists, bicyclists, pedestrians), and comply with the county’s road standards, with designs consistent with adjacent land use.” It also calls for the *2014 Freedom Bicycle-Pedestrian Master Plan & Assessment* (Freedom Bike-Ped Plan) to be adopted by reference, and to continue to program and fund projects ranked in the plan.^{xlix}

The Freedom Bike-Ped Plan was Certified by the Planning and Zoning Commission on February 18, 2014 and will be Adopted in this plan by reference. It identifies and prioritizes several connections needed in the Freedom area, which is made up of Eldersburg and unincorporated Sykesville. The plan also identifies maintenance needs, missing facilities, and origination and destination points.¹ Since the Freedom Bike-Ped Plan was not Adopted by the Board of County Commissioners (BCC), all proposed projects, apart from the Governor Frank Brown Trail, are considered Future Connections in this plan. The projects identified within this plan will be discussed in the next chapter, Future Connections.

The goals identified in the Freedom Bike-Ped Plan are:

- Identify a hierarchy of key connections and destinations within the Freedom Community and target funding to projects that will yield the greatest impact on the community as a whole
- 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
- Work with local elected officials, government agencies, and community leaders to promote and emphasize bicycle and pedestrian safety training and outreach. Develop and construct pedestrian and bicycle facilities with safety in mind
- Place a greater emphasis on walking and bicycling in transportation planning and the development process

In addition to those connections in the Freedom Bike-Ped Plan, a few other projects are occurring in the Freedom Area:

- **The Governor Frank Brown Trail.** The Department of Recreation and Parks (Rec & Parks) is working on the Governor Frank Brown Trail. The trail, named for the only former Governor of Maryland from Carroll County, will extend from Piney Ridge Parkway/MacBeth Way to Freedom Park, branching off at various points along the way, including a connection to Sykesville that would utilize the existing trail tunnel under MD Route 32. A pedestrian portion along MacBeth Way has already been completed. The trail is fully funded but its construction is currently being held up by the National Guard Readiness Center.



- **Patapsco Regional Greenway.** The Patapsco Regional Greenway (PRG) is a multi-use path that will roughly follow the Patapsco River and connect the Town of Sykesville to the Baltimore City Harbor. This project was led by Baltimore Metropolitan Council and the Baltimore Regional Transportation Board’s Bicycle Pedestrian Advisory Group. The Concept Plan for this project was Accepted by the Baltimore Regional Transportation Board (BRTB) on November 28, 2017. Now the implementation matrix can be utilized by BRTB partners to build segments of the plan.ⁱⁱ
- **Johnsville Road Sidewalk.** Safe Routes to School (SRTS) funds have been granted to complete sidewalk on the southeast side of Johnsville Road from Liberty High School to the sidewalk network gap at Eldersburg Elementary. The hope is for construction to begin on this project next year.

Recreation and Parks

Carroll County’s Rec & Parks Department has led the County in implementing bicycle and pedestrian trails outside of the eight municipalities; including Finksburg and Freedom. Rec & Parks has outlined its current projects in the *2017 Land Preservation, Parks, and Recreation Plan* (LPPRP). Rec & Parks goals and projects come from the County’s various jurisdictional plans, including the *2014 Carroll County Master Plan* (2014 Master Plan), *2007 Westminster Environs Community Comprehensive Plan* (2007 WECCP), the *2006 Mount Airy Environs Community Comprehensive Plan* (2006 MAECCP), the *1994 Greenways, Bicycle, and Pedestrian Facilities Network Technical Report* (1994 Technical Report), and municipal plans. The department receives a lot of support from its volunteer recreation councils which help raise money for its projects.

The LPPRP contains many of the existing park and recreation facilities, including trails. The purpose of this plan is to “assess Carroll County’s recreational, agricultural, and natural resources, and the programs and policies that affect them.”ⁱⁱⁱ The plan supports Goal 9 of the 2014 Master Plan is to, “Provide an affordable, coordinated and comprehensive system of public and private parks, recreational facilities and programs, and open space that will enhance our communities.” Most of the resources used to meet this goal are focused in areas of the greatest population concentration, the County’s growth areas.ⁱⁱⁱⁱ

While Rec & Parks does focus on recreation, some popular recreational bike-ped projects that also connect to destinations include:

- **Westminster Community Pond Trail.** In 2015 the Department of Recreation and Parks completed the Westminster Community Pond revitalization project. Walking trail spurs were added in 2016 and 2017 connecting to the adjacent Commerce Center business park and the subdivision at Sunshine Way. This is all a part of the department’s planned Westminster Loop, which will loop around the City of Westminster.
- **Wakefield Valley Trail.** Located in Westminster this trail allows the residents of neighborhoods to the South of these locations to connect to popular destinations, Baugher's Restaurant, College Square Shopping Center, and McDaniel College.
- **Governor Frank Brown Trail.** Located in Sykesville, a portion of MacBeth Way was completed in late 2017. Upon completion of both sections of MacBeth Way, a pedestrian gap will be filled that allows residents to walk to the Freedom Village Shopping Center, Walmart shopping center and Eldersburg branch of Carroll County Public Library. (The full project is expected to extend from Second Street to Freedom Park.)





Rec & Parks bike-ped related programs and initiatives include:

- **Westminster Loop.** The loop will accommodate pedestrians throughout its entirety; however off street biking will only be available along certain stretches, as some of the loop will consist of sidewalk only. Some of the infrastructure for the loop already exists and the remainder will close the gaps between that existing infrastructure.
 - It will include the following (details in Table 3-3 and Table 3-5):
 - Westminster Community Pond
 - Sunshine Way existing sidewalks
 - Bennett Cerf Park Trail
 - SHA shared-use path and sidewalk along MD 27
 - Main Street sidewalk
 - WMC Drive
 - Meadow Creek Drive
 - Wyndtryst Drive
 - MD 97
 - Airport Drive
 - Commerce Center Drive
- **Bike to Work Day (B2WD).** This annual event encourages people to take a bicycle to their jobs. An initiative of BRTB, Rec & Parks coordinates registration and events for the County. Between 2012 and 2016 the trend has been an increasing amount of registrants.
- **Town Partnerships.** In addition to Westminster, Rec & Parks has partnered with many towns on trail and park projects such as Cape Horn Park outside Manchester and Leister Park outside Hampstead.

The County's Needs Analysis Table ranked equestrian/multi-use (natural surface) trails as priority number eight. Similar trails to Gillis Falls include Hashawha Environmental Center, and Union Mills Homestead Trails located in northern Carroll; and Morgan Run Natural Environmental Area in southern Carroll. These parks each contain a network of bicycle, pedestrian and equestrian trails in a heavily wooded environment. To identify and rank priorities, data from Supply and Demand Reports is used to calculate current and projected demand for facilities.





Westminster Environs

The 2007 WECCP is a County plan that contains input from the City of Westminster. The following goal addresses bicycle and pedestrian planning in the CPA; the CPA is the geographical area covered by the plan, just outside of the City of Westminster, which is the city's MGA:

- Transportation
 - Provide a variety of transportation options for travel within the County and outside the County for business, employment, shopping, medical, and other purposes

There are several potential bike-ped projects located within the 2007 WECCP CPA. Many of these bike-ped projects are being implemented by the County Department of Recreation and Parks.

The 2007 WECCP addresses the need for bicycle and pedestrian trails along Malcom Drive extended and Bennett Cerf Road extended. The purpose of these trails is to navigate bike-ped origins and destinations that are of noticeable distance, providing access to employment and shopping opportunities and school facilities. According to the Recreation and Parks Needs Analysis Table, the County's top recreational priority is Hiker/Biker Trails. Additionally, Landon C. Burns Park houses a paved trail to the Carroll County Farm Museum ultimately connecting to the sidewalks along South Center Street.

Safe Routes to School (SRTS) has provided the County with grant money to construct a sidewalk along Washington Road (MD 32). This sidewalk project will provide a connection from residential neighborhoods south of Westminster to Robert Moton Elementary School and Westminster High School and the above previously mentioned community facilities. The County is reviewing the final design drawings and cost estimates for construction. The SHA has issued an access permit for the project.

The Westminster Loop is a collaboration between the Carroll County Department of Recreation and Parks, the City of Westminster and State Highway Administration (SHA). Made up of existing, and future infrastructure, the Loop will create a walkable, and in parts bike-able, network among businesses, employment and schools in central Westminster. A trail along MD 97 North will create a spoke from Wyndtryst Drive and Airport Drive, ultimately presenting businesses near the airport with a tie to the Loop.^{liv iv}

The descriptions of many of the 2007 WECCP trails were either vague or not mentioned in text. This plan has more specifics in Table 3-5 based on how projects are moving forward. These are the changes from the 2007 WECCP:

- **Airport Loop.** The airport loop in the 2007 WECCP was not brought forward to this plan. This is due to there being no entity that plans to support its implementation. The latest Airport Master Plan makes no mention of trails or paths on airport property. There was also no supporting text in the 2007 WECCP.
- **Maryland Midland Railway Train Tracks/Little Pipe Creek Trail.** This trail that was mostly within the Westminster corporate limits but was set to extend outside of the city to the South. This trail was removed due to public opposition.
- **MD 97 North of Westminster Community Pond Trail.** The plan originally had an arrow on the map indicating some sort of bike-ped accommodation from the Westminster Community Pond area along MD 97 headed north. There was no text associated with this proposed trail. Therefore, a connection





on either the westside or the eastside of MD 97 could also be considered the connection. This plan leaves both as an option for implementation and recognizes what is in the works by the Department of Recreation and Parks for the Westminster loop along the westside of MD 97 between Wyndtryst and Airport Drive as this Adopted/Planned connection. A bike-ped connection continues as a Future Connection.

In addition to what is mentioned above, the 2007 WECCP mentions a trail between Hook Road and the YMCA off of MD 97. The purpose of this trail is to provide additional means of access and travel between many public facilities on land under public ownership. Connections include the Westminster High School, the Carroll County Career and Technology Center, the Carroll County Training Facility, Carroll Community College, Robert Moton Elementary School, the Gateway School, and the YMCA.

Tourism Bike Tours

The Carroll County Office of Tourism has 10 different bicycle tours. Each of these tours traverse through municipalities, growth areas, and historic and scenic sites along Carroll County roads. There are over 150 miles of biking that have varying degrees of difficulty.^{lvi} A few of the tours go past town Main Streets including restaurants and ice cream shops. CarrollBiking.org works with the Google Maps App and allows bicyclists to follow these tours turn by turn planning for slope route length and difficulty.

These tours are mainly for recreation and leisure but there are various destinations along the routes. There is no infrastructure or wayfinding signage associated with the tours. The list of tours and a description are found in Table 3-1. More about bike-ped planning and what it can do to boost Carroll County's tourism industry and economic benefits are discussed in Chapter 5.





Table 3-1: Tourism Bike Tours

Trail Name	Trail Type	Trail Use	Paved or Unpaved	Sites Description	Location	Length (miles)
Hampstead	n/a	bicycle	paved	Crosses meadows and pastures, an old fashioned country store with homemade ice cream cones; Hampstead Main Street	Hampstead	13.9
Manchester	n/a	bicycle	paved	A blend of small towns and farms complete with the natural scenic beauty of streams, woods, and wildlife; Christmas Tree Park	Manchester	27.3
Mount Airy	n/a	bicycle	paved	refreshing pastoral valleys, panoramic ridges, lush farmland, B&O Railroad and the Patapsco River	Mount Airy	11.1
New Windsor	n/a	bicycle	paved	Wakefield Valley , Robert Strawbridge Home (Strawbridge Shrine), 18 th &19 th Century homes	New Windsor	7.6
Sykesville	n/a	bicycle	paved	Freedom Park, Morgan Run, Piney Run Park	Sykesville	33.6
Taneytown #1	n/a	bicycle	paved	Taneytown Memorial Park, Taneytown Main Street, Big Pipe Creek	Taneytown	13.8
Taneytown #2	n/a	bicycle	paved	Taneytown Memorial Park (public pool and picnic grounds); Uniontown Historic District; Fish and Game Club	Taneytown	30.5
Union Bridge	n/a	bicycle	paved	Hilly terrain, Little Pipe Creek; Union Bridge; New Windsor	Union Bridge	15.9
Westminster North	n/a	bicycle	paved	McDaniel College; Union Mills Homestead; suburban and rural views	Westminster	30.2
Westminster South	n/a	bicycle	paved	Carroll County Farm Museum; Westminster Main Street	Westminster	15.
					Total	198.9



Table 3-2: Planned County Sidewalks

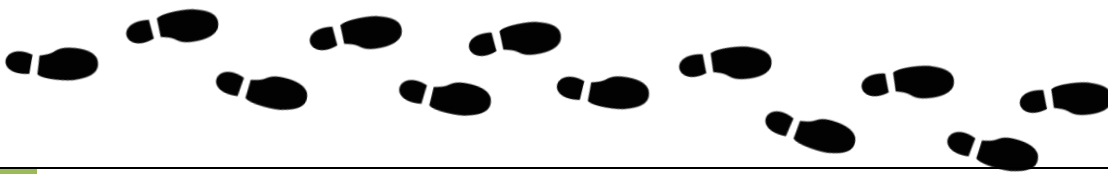
Location	Description
Old Westminster Pike	Within the Finksburg Corridor
MD 32 Sidewalk	Washington Lane to Kate Wagner Road; a Safe Routes to School project for Robert Moton Elementary School; funded through design
Johnsville Road	Bartholow Road to the existing sidewalk on the school grounds; a Safe Routes to School project for Eldersburg Elementary School





Table 3-3: County Existing Trails and Bicycle Infrastructure

Trail Name	Trail Type	Trail Use	Paved or Unpaved	Trail Description	Location	Length (miles)
Bennett Cerf Trail	shared-use-path	bike-ped	paved	Sunshine Way to MD 27/Hahn Road	Westminster	0.8
Cape Horn Park Trail	shared-use-path	bike-ped	paved	Park trail	Manchester	1.1
Cape Horn Park – to Silva Court	shared-use-path	bike-ped	paved	Silva Court to Cape Horn Park	Manchester	0.2
Carroll County Equestrian Center	shared-use-path	bike-ped, equestrian	unpaved	Nature trails	Mt Airy	4.0
Carroll County Sports Complex	shared-use-path	bike-ped	unpaved		Westminster	0.6
Commerce Center Pond	shared-use-path	bike-ped	paved	Commerce Center Pond Trail	Westminster	0.2
Commerce Center to Snowfall Way	shared-use-path	bike-ped	paved	Commerce Center to Snowfall Way	Westminster	0.2
Deer Park Trail	shared-use-path	bike-ped	paved	Park trail	Westminster	0.7
Freedom Park Trail	shared-use-path	bike-ped	paved	Park trail	Sykesville	2.0
Gillis Falls Trails	shared-use-path	bike-ped, equestrian	unpaved	Park trail	Mt Airy	4.2
Governor Frank Brown Trail – MacBeth Way	shared-use-path	bike-ped	paved	MacBeth Way dead end to dead end	Freedom	0.2



Hashawha Environmental Center/Bear Branch Trails	shared-use-path	bike-ped, equestrian	unpaved	Nature trails	Westminster	13.5
Krimgold Park Trail	shared-use-path	bike-ped	paved	Park trail	Woodbine	1.3
Landon C. Burns	shared-use-path	bike-ped	paved	Gist Road to Farm Museum Road	Westminster	0.6
Leister Park Trail (see Table 3-8)					Hampstead	
Morgan Run Trails	shared-use-path	bike-ped, equestrian	unpaved	Nature trails	Westminster	
Piney Run Park Trail	shared-use-path	bike-ped	unpaved	Park trail	Sykesville	7.8
Sandymount Park Trail	shared-use-path	bike-ped	paved	Park trail	Finksburg	1.4
Skyline Court to Sullivan Road	shared-use-path	bike-ped	paved	Skyline Court to Sullivan Road	Westminster	0.1
Stone Manor Walking Path	path	pedestrian	paved	Along Hodges Road at the Stone Manor Subdivision	Freedom	0.7
Union Mills Homestead	shared-use-path	bike-ped, equestrian	unpaved	Nature trails	Westminster	7.5
Westminster Community Pond	shared-use-path	bike-ped	paved	Westminster Community Pond Trail	Westminster	0.8
					Total	47.9





Table 3-4: County Under Construction Trails and Bicycle Infrastructure

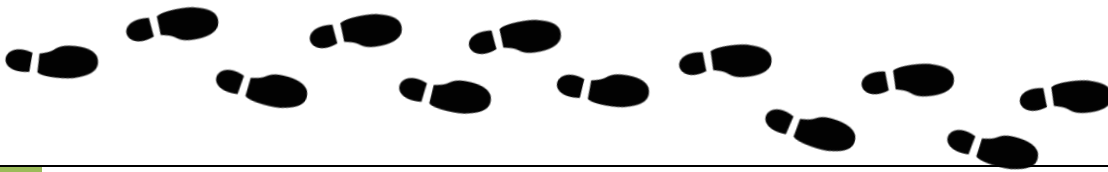
Trail Name	Trail Type	Trail Use	Paved or Unpaved	Trail Description	Location	Length (miles)
Deer Park Trail - expansion	shared-use-path	bike-ped	paved	18 acre expansion of Deer Park includes an expansion of the park's trail with a connection to the residential community at Karen Way	Westminster	0.4
Governor Frank Brown Trail	shared-use-path	bike-ped	paved	Connects various points between Macbeth Way, MD 32, and Freedom Park	Sykesville	5.4
Washington Road Sidewalk (MD 32)	sidewalk	pedestrian	paved	Kate Wagner Road to Washington Lane; SRTS	Westminster	0.4
Total						6.2





Table 3-5: County Adopted/Planned Trails and Bicycle Infrastructure

Trail Name*	Trail Type	Trail Use	Paved or Unpaved	Trail Description	Location	Length (miles)*
Bennett Cerf Drive Extended Trail	shared-use-path	bike-ped	paved	Parallel to the planned extension of Bennett Cerf Drive, Meadow Branch Road to MD 97	Westminster	1.8
Commerce Center Pond to Bennett Cerf Drive Extended Trail	shared-use-path	bike-ped	paved	Commerce Center Pond to Bennett Cerf Drive Extended Trail	Westminster	0.3
*Genesee & Wyoming - Trail North	shared-use-path	bike-ped, equestrian	unpaved	Angell Road to the MD/PA line	Taneytown	4.0
Leister Park Trail – expansion 2 (see Table 3-9)	shared-use-path	bike-ped	paved	Leister Park to Black Rock Road and Ridgely House senior apartments	Hampstead	0.8
Malcom Drive Extended Trail	shared-use-path	bike-ped	paved	Parallel to planned extension of Malcolm Drive, Market Street to MD 27, through the intersection of North Cranberry Road and Old Manchester Road	Westminster	1.6
MD 31	TBD	bike-ped	paved	WMC Drive towards New Windsor	Westminster	TBD
MD 97 North	TBD	bike-ped	paved	Wyndtryst Drive to Airport Drive	Westminster	1.1
MD 97 North	TBD	bike-ped	paved	Wyndtryst Drive to Airport Drive	Westminster	1.1
MD 97 South	TBD	bike-ped	paved	Hook Road to YMCA	Westminster	1.1



Mount Airy to Gillis Falls	shared-use-path	bike-ped, equestrian	unpaved	Gillis Falls Trail to Mount Airy, following Watersville Road & Middle Run	Mt Airy	3.6
Roaring Run Trail	shared-use-path	bike-ped, equestrian	TBD	MD 91 to Finksburg Growth Area Boundary, following Roaring Run	Finksburg	0.6
Robert Moton Drive to Landon C Burns Trail	shared-use-path	bike-ped	paved	Landon C Burns trail to government facilities around Robert Moton Drive	Westminster	0.8
Willow Pond	shared-use-path	bike-ped	paved	WCP to Sullivan Road & Bennett Cerf Trail (south of willow pond); in conjunction with a stormwater management project	Westminster	0.8
					Total	15.7





State

State bike-ped planning is based on the *2040 Maryland Twenty-Year Bicycle & Pedestrian Master Plan*. The 2019 update succeeds the 2014 plan; however, both contain relevant information. This plan highlights the vision and goals for Maryland and initiatives that will assist in moving forward local projects. Data and methodology are also available to assist Maryland jurisdictions in evaluating their bike-ped facilities.

State Infrastructure

The *Maryland Twenty-Year Bicycle & Pedestrian Master Plan* mentions BLOC as one key way of evaluating comfort when using bicycle facilities. The tool is useful in that it can help target funds and resources to the areas that need the most improvement. However, it should be noted that it does not consider cyclist experience level or off-street and separated facilities. The state is reevaluating the use of BLOC data in its update to the state bike-ped plan.

The BLOC scores for Carroll County's state roads can be seen in the maps at the end of the chapter.^{lvii} Carroll County's state roadways average rank is a C^{lviii}, which exceeds the state goal, Figure 3-1. Portions of state roads within the County have bicycle infrastructure; this includes MD 26, MD 27, MD 30, MD 31, MD 140, and MD 851.

Countywide, according to the Freedom Bike-Ped Plan, 18.4 miles of state road corridors provided pedestrian facilities. However, only 42 percent met needed ADA compliance standards. This is especially relevant since many state road corridors functions as main routes to and through Carroll's growth areas and municipalities.^{lix} These same state roads are also considered state bikeways.

State Projects

There are several state-implemented and state-funded projects around the County that are expected to be implemented in the coming years. Many of these projects are along state highways and within municipalities. These projects can be viewed in Table 3-6.

BLOC: Bicycle Level of Comfort

BLOC methodology allows the state to assess perceived safety and comfort of bicyclists statewide using constant factors. BLOC is nationally-recognized and assesses road conditions by assigning each segment a letter of A, B, C, D, E, or F. A rating of "A" indicates most comfortable while "F" indicates the least comfortable. The state goal is to have all roads at a grade of D or better. The assessment is based on:

- 1) outside travel lane width
- 2) shoulder or bike lane width
- 3) speed limit
- 4) traffic volume
- 5) truck volume
- 6) pavement condition
- 7) presence of on-street parking

By measuring different characteristics of a roadway, this model provides results on the level of service and compatibility of that particular roadway.

Maryland Department of Transportation. *Maryland Twenty-Year Bicycle & Pedestrian Master Plan*. January 2014. P. 13, 43.

Figure 3-2: Bicycle Level of Comfort



Table 3-6: State Highway Planned Trails and Bicycle Infrastructure

Project Name	Location	State Program	Trail Type	Trail Use	Description	Length (miles)
MD 27	Westminster	Bicycle Retrofit	shared-use-path	bike-ped	A new 10-ft-wide asphalt and/or boardwalk shared use path along the northern side of MD 27 from the southbound MD 140 ramp tying into the existing shared-use-path on Hahn Road	0.7
	Hampstead	Urban Reconstruction	sidewalk	pedestrian	MD 30 from North Woods Trail to CSX RR	1.5
MD 31	New Windsor	Urban Reconstruction	sidewalk	pedestrian	Along MD 31 / Main Street / High Street from Lambert Avenue to Church Street	0.4
MD 851	Sykesville	Urban Reconstruction	sidewalk	pedestrian	MD 851/Main Street from the Howard County line to Springfield Avenue; includes improving pedestrian access and appearance along Main Street and through the bridge over the South Branch of the Patapsco River	0.3
Springfield Ave to Sykesville Middle School	Sykesville	SRTS	sidewalk	pedestrian	Fills gap in sidewalk between Cooper Drive and Central Avenue	0.1
Total						3.0



Municipalities

Many of the bike-ped projects mentioned are projects that may require collaboration between the County and the towns because they are outside of the municipal limits into the MGA and even outside the CPA. The MGA is the area around a municipality where expansion of the corporate limits is expected. The CPA is the area that encompasses the corporate limits and MGA. However, Town-County agreements require collaboration between Carroll County and the municipalities within one mile of the corporate limits.

All of the towns have existing pedestrian infrastructure in sidewalks. These are not outlined in the tables of this chapter but can be seen in the town maps. However, any planned infrastructure or improvements to existing sidewalks will be shown in this section.

Town of Hampstead

The *2010 Hampstead Community Comprehensive Plan* (2010 HCCP) has notable goals to consider. The Town seeks to enhance bicycle and pedestrian options in the following ways:

- Transportation
 - “Encourage new developments [to] accommodate alternative means of transportation.”^{lx}
- Community Facilities
 - “Ensure Planned Unit Developments have sidewalks on both sides of the street and street lights.”^{lxi}
- Housing and Community Design
 - “To create pedestrian links that connect neighborhoods with each other, the downtown, and other major features.”^{lxii}

Pedestrian accessibility is a key issue for the town and was identified in its comprehensive plan. When the public was asked, “In addition to what is already planned or recommended in the adopted plan, what other community facilities do you feel need to be upgraded or provided?”^{lxiii} Responses included:

- **A pedestrian friendly network to satisfy recreation and transportation needs.** Many of the side streets lack sidewalks completely, and developments only provide sidewalks on one side of the road, forcing pedestrian crossings at unmarked crosswalks.
- **Create connections from all neighborhoods to Main Street and community parks.** This includes both inside and outside the Town limits.^{lxiv}



Figure 3-3: Leister Park Trail, Carroll County Department of Recreation and Parks



The Town of Hampstead is challenged with a very small number of roadways in town with shoulders wide enough for bicycle routes or lanes to build bike-ped infrastructure. However, missing and poor pedestrian and bicycle connections were highlighted using 2007 and 2008 data. The 2010 HCCP:

- Recommended that consideration be given to revising subdivision regulations to require sidewalks on both sides of the roadway and/or pedestrian amenities be constructed during the first phase of development.
- Discussed the SHA Hampstead Streetscape Project and the expectation that it will address pedestrian facilities along the commercial corridor. Sidewalks would be constructed along Hanover Pike, from North Woods Trail to the CSX RR crossing.
- When the Bypass Bridge was constructed an accommodation was made so that Shiloh Road could have a 10 foot wide bike-ped trail. ^{lxv}
- A pedestrian bridge over the CSX RR is planned to connect Hampstead Panther Park (formerly known as the Hampstead Municipal Park) to the Main Street Revitalization. ^{lxvi}
- An important project within the town is the designated bike lane on MD 30 that was installed in 2009 when SHA built the Hampstead Bypass. The bike lane stretches from the Bypass's northern roundabout to the southern roundabout. Markings have been placed on the asphalt and rumble strips separate vehicle from bicycle. Additionally, there is a bike lane on Hampstead Mexico Road that runs east from the MD482/MD30 circle to just before Hanover Pike. Hampstead existing bike-ped facilities are listed in, Table 3-8, and Table 3-9.

Privately owned parks and trails located throughout the Town and surrounding area provide for recreational benefit to the community.

- North Carroll Farms Park and Roberts Field Park. This location includes a short walking trail (from Boxwood Drive to North Woods Trail) and is provided by two different homeowners associations. ^{lxvii}





Table 3-7: Planned Hampstead Sidewalks

Location	Description
Main Street/MD 30	Hampstead Streetscape; North Woods Trail to CSX RR, with a bridge over the RR to connect to Hampstead Panther Park (formerly known as the Hampstead Municipal Park)
MD 30	Upper Forde Lane to Basler Road
Hill Crest Avenue	Hanover Pike to the Northern end of Hill Crest Avenue
Black Rock Road	Hanover Pike to the traffic circle on Black Rock Road
Highfield Drive	North Houcksville Road to Shiloh Avenue
Shiloh Avenue	South Carroll Street to Willow Street
Ralph Avenue	Hanover Pike to Sycamore Drive
Greenmount Church Road	Hanover Pike to Utz Road

Table 3-8: Hampstead Existing Trails and Bicycle Infrastructure

Trail Name	Trail Type	Trail Use	Paved or Unpaved	Trail Description	Length (miles)
Hampstead Panther Park Trail	shared-use-path	pedestrian	paved	Hampstead Panther Park to the sidewalks serving the adjoining residential areas	0.5
Hampstead Bypass (MD 30)	bike lane	bicycle	paved	Northern Circle of Hanover Pike/ Hampstead Bypass to the Southern Circle of Hanover Pike/Hampstead Bypass; rumble strips buffer	5.0
Hampstead Mexico Road (MD 482)	bike lane	bicycle	paved	From the MD 482 and MD 30 Circle, east to just before Hanover Pike	0.2
Leister Park Trail	shared-use-path	bike-ped	pavement	Trail system within Leister Park	1.6
Total					7.3



Table 3-9: Hampstead Adopted/Planned Trails and Bicycle Infrastructure

Trail Name	Trail Type	Trail Use	Paved or Unpaved	Trail Description	Length (miles)*
Shiloh Road/Panther Drive Trail	TBD	bike-ped	paved	Trail along Shiloh Road & Panther Drive connecting west side of Westwood Park to elementary school and former high school	0.8
Leister Park Trail – expansion 1	shared-use-path	bike-ped	paved	Leister Park to Boxwood Drive	0.4
Leister Park Trail – expansion 2	shared-use-path	bike-ped	paved	Leister Park to Black Rock Road and Ridgely House senior apartments	0.8
Leister Park Trail – expansion 3	shared-use-path	bike-ped	paved	Leister Park to Hill Crest Avenue	0.3
Leister Park Trail – expansion 4	shared-use-path	bike-ped	paved	Leister Park to Upper Beckleysville Road	0.2
Old Field Lane to Roberts Shopping Center Trail	shared-use-path	bike-ped	paved	Roberts Field Shopping Center to Spring Garden Elementary School	0.1
Pedestrian Bridge	bridge	pedestrian	paved	A bridge over the CSX RR to connect Hampstead Panther Park to Main Street	0.1
				Total	2.7





Town of Manchester

At the time of adoption of the *2018 Manchester Comprehensive Plan (2018 MCP)* there were no Existing projects for bicycle and pedestrian connectivity in the Town of Manchester. The 2018 MCP has goals and objectives that address bike-ped infrastructure needs.

- Transportation
 - Goal #2 – Local Modes: “Improve driving, walking, biking, and hiking options, to and from Main Street, including ancillary upgrades to signage, lighting, parking, and customer zones for quick pick-up service. Coordinate design and planning issues, on and near state roads, with the MDOT SHA Bicycle Pedestrian Coordinator.”^{lxviii}
- Planning Nodes
 - Node#2 – York Street Connections: Christmas Tree Park, Manchester's new town office building, Manchester Police Department, Fire Company carnival grounds, Lineboro/Manchester Lion's Club community swimming pool, Charlotte's Quest Nature Center and hiking trails, Historic Trinity United Church of Christ and Immanuel Evangelical Lutheran Church, Manchester's Museum of Heritage and Education, Manchester Elementary School
 - “Encourage walking and biking in this area, by reconstructing sidewalks and pathways that interconnect the above landmarks with each other, and with Main Street.”^{lxix}
- Public Facilities
 - Objective – Public School Sites: “Connect future hiking/biking trails, greenway systems, and open spaces with public school sites to meet the open space and recreational needs of the Manchester community.”^{lxx}

Manchester has made clear in its comprehensive plan that its transportation focus is on small-town living in its downtown area. “This includes planning for local streets, sidewalks, walking/biking trails, and convenient downtown parking.”^{lxxi} The Town recognizes that biking and walking is a benefit of living in a small town, and the 2018 MCP addresses the need for safe and convenient pathways to do so.

Pine Valley Park, in Manchester, is home to 4.5 miles of trails and Charlotte’s Quest Nature Center. These trails were not included as Existing Connections because they have altering alignments that are washed away by nature and rerouted as needed. They are cared for by a town citizen group and will accommodate hiking, walking, jogging and mountain biking. The Community Facilities Element of the 2018 MCP gives consideration to “enlarging and improving the nature center to accommodate more town residents, students, and visitors.”^{lxxii}

The only existing trail frequented by Manchester residents is outside of its corporate limits. Cape Horn Park is maintained by the Carroll County Department of Recreation and Parks (see Table 3-3). The six foot wide trail follows a one mile perimeter of the park to connect the amenities within; both pedestrians and bicyclists are permitted to use this trail. The trail also features a recently improved spur to the adjacent residential community at Silva Court.

The Manchester Farms subdivision is currently under construction, sidewalks are being added to the houses located on Starlight Court. It is expected that as houses are being built, the developer will add sidewalks for pedestrian access to the athletic field. In the Manchester Farms subdivision plan there is a planned path to



create the connection to Southwestern Avenue (see Table 3-10). Ultimately, the pedestrian connection will be extended through the field to Southwestern Avenue.^{lxviii}

Table 3-10: Planned Manchester Sidewalks

Location	Description
Starlight Court to Southwestern Avenue Athletic Field	As houses are built on Starlight Court the developer will build sidewalks to connect to the field off of Southwestern Avenue; connects to planned pedestrian path

Table 3-11: Manchester Adopted/Planned Trails and Bicycle Infrastructure

Trail Name	Trail Type	Trail Use	Paved or Unpaved	Trail Description	Length (miles)
Christmas Tree Park Loop	shared-use-path	bike-ped	paved	Six-foot wide walking/biking trail around Christmas Tree Park to ultimately connect to York Street, Charlotte’s Quest Nature Center, Swiper Road, and Manchester Valley HS	1.3
Christmas Tree Park Loop to Pine Valley Park (Charlotte’s Quest)	shared-use-path	bike-ped	TBD	Eight-foot wide walking/biking trail from Christmas Tree Park Loop to Pine Valley Park (Charlotte’s Quest)	TBD
Christmas Tree Park Loop to Manchester Valley HS	shared-use-path	bike-ped	TBD	Walking/biking trail from Christmas Tree Park Loop to Manchester Valley HS	TBD
Total					TBD



Town of Mount Airy

Improving multi-modal transportation opportunities for pedestrians and bicyclists is a focus of the Transportation chapter of the *2013 Town of Mount Airy Comprehensive Master Plan (2013 TMACMP)*. A 2008 survey conducted by the Town confirms that residents would like to see additional hiking/biking opportunities within the Town's open-space.^{lxxiv}

The following goals taken from the 2013 TMACMP address bicycle and pedestrian needs:

- Quality of Life
 - "Provide a quality living environment in the Town of Mount Airy." The relevant implementation strategy for this goal is to, "Encourage neighborhood and community connections by integrating pedestrian/bicycling networks throughout the Town."^{lxxv}
- Transportation
 - "Expand and integrate pedestrian pathways (walking, jogging, and cycling) and networks throughout the Town."^{lxxvi}

The Town of Mount Airy falls within both Frederick and Carroll County. This plan will mainly focus on the portion of the town that lies within Carroll County.

- Mount Airy has several projects that will not only create destination to destination connectivity but will also help to identify and address safety concerns. In the past, the Town has worked with SHA to address sidewalk needs along North and South Main Street. The result is dramatically more pedestrian friendly streetscape. The widening of sidewalks, and narrowing of the roadways, has caused drivers to slow down and become more conscious of their surroundings.^{lxxvii} Mount Airy's existing and planned projects can be viewed in Table 3-12 and Table 3-13. Below are three of the town's priority projects that support the goals of 2013 TMACMP:

- **Rails to Trails Network**

The Mount Airy Rails to Trails project is an orchestration of many individuals, organizations, businesses and government entities resulting in a walking/biking path traversing Mount Airy along the old B&O abandoned right of way.

This greenways corridor will be completed in three phases. The first phase, which is complete, connects the historic downtown area to Watkins Park. A subsequent phase will extend from Watkins Park, over MD 27 to the east and continue for one mile to the main line rail line traveling east and west. This will be a collaboration between the Town, and County Recreation and Parks Departments. The Carroll County Comprehensive Plan shows this greenway path to continue to Sykesville. The final phase of the rails to trails will connect with the railway to points west.^{lxxviii}



Figure 3-4: Mount Airy Rails to Trails



- **Bikeway and Pedestrian Path – South Main Street to East Ridgeville Boulevard**

During the 2013 Comprehensive Master Plan Update, the roadway connection proposed to provide for future vehicular access from East Ridgeville Boulevard to Twin Arch Road was eliminated. In order to meet the needs of the surrounding residential community and address the lack of pedestrian connectivity to the existing and planned commercial centers to the north, a bikeway was proposed and subsequently adopted. The construction of this bikeway is anticipated to coincide with the future development of the “Pank” property consisting of 50 acres of industrially zoned land. The bikeway will utilize parts of the Rails-to-Trails and will directly connect Watkins Park, Prospect Park, East-West Park, Village Gate tennis and soccer courts, the Summit Ridge Ball Fields and the town-owned open space to the northwest.

- **Connection across MD 27**

Providing a safe and strategic connection for residents on both the west and east portions of the town has been identified as a priority. The town is bisected by MD 27 necessitating the reliance on vehicular modes of transportation to reach destinations such as Watkins Park, Historic Downtown Mount Airy, and the Frederick County portion of the rails to trails pathway. The Town is currently evaluating suitable options that will facilitate connectivity for pedestrians and cyclists across MD 27.

Additional connections within the town’s MGA and beyond include:

- Create pedestrian and bicycle-friendly paths on the “Knill” Property (east of MD 27 and south of Watersville Road). Mention of this connection is Adopted into the 2013 TMACMP, but there is no alignment on the Parks and Recreation Map.
- Connect the Town to the existing County trails at Gillis Falls Regional Park. The *2006 Mount Airy Environs Community Comprehensive Plan* (2006 MAECCP) calls for a bicycle and pedestrian greenway to this location.^{lxxix}
- There is a desire to connect the rail trail east to Baltimore County. There is an opportunity to connect with the planned Patapsco Regional Greenway.



Figure 3-5: Mount Airy Rail Trail, from <https://www.facebook.com/mountairyrailstotrails/>





Table 3-12: Mount Airy Existing Trails and Bicycle Infrastructure

Trail Name	Trail Type	Trail Use	Paved or Unpaved	Trail Description	Length (miles)*
Wildwood Park Trail	path	pedestrian	paved	A trail following the perimeter of the park	0.4
Watkins Park Walking Trail	path	pedestrian	paved	A path within Watkins Park	1.0
Rails to Trails- Phase 1	shared-use-path	bike-ped	unpaved	Starting where the County border meets station circle, follow Station Circle East, hop onto Prospect Road, to Watkins Park	0.5
Terra Oaks Trail	shared-use-path	bike-ped	paved	Connection from Terra Oaks Court to Bridlewreath Way	0.2
Total					2.1





Table 3-13: Mount Airy Adopted/Planned Trails and Bicycle Infrastructure

Trail Name	Trail Type	Trail Use	Paved or Unpaved	Trail Description	Length (miles)*
Rails to Trails – Extension East	shared-use-path	bike-ped	unpaved	Watkins Park to County border, SW to Twin Arch Road	2.0
Mount Airy Designated Bikeway – Carroll Co.	TBD	bicycle	TBD	S Main Street to Twin Arch Road to Rails to Trails-Extension East, and N Main Street/Prospect Road to Summit Ridge Soccer Field	3.7
Mount Airy Designated Bikeway – Frederick Co.	TBD	bicycle	TBD	S Main Street to Leafy Hollow Circle/Rambling Sunset Circle, and Rising Ridge Road/Prospect Road to County border	1.6
Mount Airy Designated Bikeway and Trail– Frederick Co.	TBD	Bike-ped	TBD	Leafy Hollow Circle/Rambling Sunset Circle to Prospect Road to Summit Ridge Soccer Field, and Rambling Sunset Circle to Rails to Trails-Extension West/Prospect Road	2.3
Park Avenue/Twin Arch Road	TBD	bike-ped	TBD	Wildwood Park to Rails to Trails-Extension East	1.2
Town-owned Space to MD 27	TBD	bike-ped	TBD	Town-owned Space to MD 27	1.9
Park Avenue	TBD	bike-ped	TBD	Rails to Trails-Phase 1 to Wildwood Park	0.4
Twin Ridge ES to Wildwood Park – Carroll & Frederick Co.	TBD	Bike-ped	TBD	Twin Ridge Elementary School to Wildwood Park	1.6
W Watersville Road Ballfields Trail	TBD	bike-ped	TBD	Rails to Trails-Extension East to W Watersville Road Ballfields	0.7
				Total	15.4





Town of New Windsor

In accordance with the *2007 New Windsor Community Comprehensive Plan (2007 NWCCP)*, as amended, the goals relevant to bicycle and pedestrian planning are:

- Transportation
 - “Address intersection safety improvements;”
 - “Promote sidewalk connections to improve pedestrian access.”^{lxxx}
- Community Facilities
 - “Enhance the feeling of public and personal safety.”^{lxxxi}
- Housing and Community Design
 - “Provide connected paths/trails/greenways throughout the community which offer recreational opportunities.”^{lxxxii}

A notable existing bike-ped project within the town is the Atlee Ridge Trail (ART). It currently connects to the Atlee Ridge subdivision from Atlee Ridge Road and the Dickenson Run. The town plans to extend this trail to provide bicycle and pedestrian facilities between residences, employment and the downtown.

As an extension off of the southern end of the ART, the Atlee Ridge Linear Park Trail (ARLPT) will be formed. The trail will extend outside the corporate limits into the MGA and ultimately exceed the CPA. This portion of the ARLPT will connect the Village Center to Tibbetts Industrial Area. The trail will serve as an incentive for businesses to settle in this area and will aid in traffic volume control throughout the Town. The town desire is for it to move citizens between employment and residences.^{lxxxiii}

The majority of this land falls within the New Windsor MGA and is not slated for development as most of the proposed ARLPT falls within the 100-year flood plain.^{lxxxiv} This paved trail will be eight to ten feet wide and accessible to non-motorized transportation.^{lxxxv}

The proposed trails within the 2007 NWCCP will need special crossings with bike-ped accommodations at the following locations:

- **Railroad Crossing** – Planned Atlee Ridge Linear Trail near Dickenson Run and Sulphur Spring Park
- **Railroad Crossing** – Church and Main Street and Old New Windsor
- **Bridge** – Old New Windsor Road @ the Dickenson Run
- **Bridge** – Existing Atlee Ridge Linear Trail @ the Dickenson Run
- **Bridge** – Planned Atlee Ridge Linear Trail @ Meadow Lane and the Five Daughters Run
- **Bridge** – Planned Atlee Ridge Linear Trail @ Coe Drive dead end and the Dickenson Run





SHA and the Town of New Windsor worked together, over a decade ago, to develop a streetscape plan for MD 31, Main Street and High Street, SHA’s Urban Streetscape. The relocation of High Street is the only portion that has been completed, as much of the plan was halted from reduction in program funding. As funding has now become available, preliminary engineering is expected to be completed in 2019, according to the Carroll County Annual Priority Letter. A construction date has not yet been set. lxxxvi

In addition to infrastructure, the town hosts Walk with the Mayor to support Partnership for a Healthier Carroll’s Walk Carroll program. This is a biweekly opportunity for citizens of the County to reach the CDC-recommended goal of 150 minutes of physical activity each week. lxxxvii

Table 3-14: Planned New Windsor Sidewalks

Location	Description
Old New Windsor Road	Westside - From RR tracks at Church Street to existing sidewalk at Atlee Ridge Road; Eastside – RR tracks at Church Street to Meadow Lane; 0.1 miles on both sides
MD 31/Main Street/High Street Urban Reconstruct	From Lambert Ave to east of Church Street; includes replacing and adding sidewalks; improving bicycle compatibility & Along Main Street, from MD 31 (New Windsor Road) to High Street

Table 3-15: New Windsor Existing Trails and Bicycle Infrastructure

Trail Name	Trail Type	Trail Use	Paved or Unpaved	Trail Description	Length (miles)*
Atlee Ridge Linear Park Trail	shared-use-path	bike-ped	paved	Begins at Atlee Ridge Road (East), runs behind the properties and then cul-de-sacs right before the stream	0.3





Table 3-16: New Windsor Adopted/Planned Trails and Bicycle Infrastructure

Trail Name	Trail Type	Trail Use	Paved or Unpaved	Trail Description	Length (miles)*
Atlee Ridge Linear Park Trail	shared-use-path	bike-ped	paved	Connect the cul-de-sac at the northern end of Atlee Ridge Trail to Water Street through Sulphur Springs Park to the dead end of Water Street	0.2
Atlee Ridge Linear Park Trail	shared-use-path	bike-ped	paved	Along Old New Windsor from the sidewalk along Atlee Ridge Road to Meadow Lane; through Siebel's Field, over Five Daughters Run, over Dickenson Run to Coe Drive, to High Street	0.4
Atlee Ridge Linear Park Trail	TBD	bike-ped	paved	Along High Street from Coe Drive to Lambert Avenue; less than 0.1 mi	0.1
Atlee Ridge Linear Park Trail	TBD	bike-ped	paved	Along Lambert Avenue from High Street to Hillside Drive	0.3
Atlee Ridge Linear Park Trail	TBD	bike-ped	paved	Along Hillside Drive to the dead end	0.1
Atlee Ridge Linear Park Trail	shared-use-path	bike-ped	paved	From Hillside Drive south to parallel Dickenson Run and RR tracks until reaching Tibbetts Lane	1.4
Atlee Ridge Linear Park Trail	shared-use-path	bike-ped	paved	Tibbetts Lane from RR tracks to MD 31	0.2
Little Pipe Creek Trail	shared-use-path	bike-ped	paved	New Windsor to Union Bridge	0.5
				Total	3.2





Town of Sykesville

The Town of Sykesville’s vision for its bicycle and pedestrian facilities are reflected in the Land Use and Transportation chapters of the *2010 Town of Sykesville Master Plan (2010 TSMP)*, amended in 2014. Its existing infrastructure includes various sidewalks and trails with plans to expand and connect into a multimodal, Town-wide transportation network. The projects in this system include what is mentioned in Table 3-18 and Table 3-19. Some focal points that the town has set forth in its master plan include:

- Land Use
 - Promoting a pedestrian friendly environment^{lxxxviii}
 - Fostering “walkability for students to school, home and other community facilities”^{lxxxix}
 - Connecting to Main Street through more bike-ped infrastructure and streetscape enhancements^{xc}
- Transportation
 - Promoting pedestrian mobility and connectivity
 - walking as a means of transportation, providing safe pedestrian facilities, and eliminating any obstacles that discourage people from walking for short trips^{xc}
 - A Town-wide trail system and transportation network^{xcii}

The town wants to create a more pedestrian friendly environment that appeals to its Main Street. This includes:

- On-street parking should be used to moderate vehicular speed and provide separation for pedestrian safety^{xciii}
- A buffer along MD-32 as a means to connect various trails within the Town^{xciv}

Notable existing bike-ped projects within the town and its MGA include

- The Sykesville Linear Trail
- The Warfield Park Trail
- The tunnel underneath MD-32/Sykesville Road
- The Governor Frank Brown Trail

The Town plans to expand the Sykesville Linear Trail, which follows the Shannon Run on the westside of town, into a loop inside and outside of the town incorporated area. This would connect south and north of town to the Warfield trails and Piney Run Park. The tunnel is an important connection linking Millard Cooper Park to the Warfield area. It was installed when SHA made upgrades to MD 32. It allows bicyclists and pedestrians to traverse a highway, what would have been a major divide, in the Sykesville community. The trail that goes through this tunnel partially follows the abandoned rail, the Dinky Short Line, which is a trail the town also plans to expand to Oklahoma Avenue.

The Governor Frank Brown Trail will connect to the town of Sykesville by Buttercup Road and to Freedom Park, a park frequented by Sykesville residents. The trail will not be within the town limits; rather, it is mostly located within the town’s MGA.

Notable projects expected to be constructed within the year show the town is continuing to move forward with its goals. This includes:

- Safe Routes to School (SRTS) Project and
- SHA’s Urban Reconstruction/Streetscape Project.





The SRTS Project to be constructed on Springfield Avenue, fills a gap in the sidewalk improving the connection to Sykesville Middle School. In addition, Sykesville's Urban Reconstruction/Streetscape Project along MD 851/Main Street from the Howard County line to Springfield Avenue is currently under design.^{xcv} The project will include improving pedestrian access and appearance along Main Street and through the bridge over the South Branch of the Patapsco River. These projects are mentioned in Table 3-6.

Some of the town's projects present some land acquisition challenges, such as the buffer along MD-32 and the Dinky Short Line trail, an abandoned railroad line. There are several properties along those routes that would require various land changes and acquisitions to move forward with trail projects. This may include but is not limited to purchasing easements or right of way, moving utility poles, and building retaining walls.^{xcvi}





Table 3-17: Planned Sykesville Sidewalks

Location	Description
Springfield Avenue	0.1 miles of SRTS sidewalk to Sykesville Middle School; fills a sidewalk gap at Central Avenue
Main Street	Urban Reconstruction Project on MD 851/Main Street from the Howard County line to Springfield Avenue

Table 3-18: Sykesville Existing Trails and Bicycle Infrastructure

Trail Name	Trail Type	Trail Use	Paved or Unpaved	Trail Description	Length (miles)
Bloomfield Park Path	pedestrian path	pedestrian	paved	Loop around Bloomfield Park	0.4
Carroll Fields Subdivision Trail	shared-use-path	bike-ped	paved	Connects Autumn Sky Court to Windswept Court	0.2
Harold Burkett Park	pedestrian path	pedestrian	paved	Loop around Burkett Park	0.4
Millard Cooper Park to Warfield Avenue	shared-use-path	bike-ped	paved	Connects Miller Cooper Park to Warfield Avenue (through a tunnel underneath MD 32)	0.3
Shannon Run Park Trails	TBD	pedestrian	TBD	Park trails	0.2
Springfield Avenue (MD 851)	bike lane	bicycle	paved	Bike lane shoulder marked from MD 32 to Vantage Point Drive (shoulder ends)	0.5
Sykesville Linear Park Trail	pedestrian path	pedestrian	paved	Two trails; follows the Shannon Run south between Obrecht Road and Kalorama Road; keep South toward Shannon Run Park, then outside corporate limits to the Patapsco River	1.8
Warfield Park Trails	shared-use-path	bike-ped	paved	Begins at Warfield Avenue and loops around the pond	0.8
Total					4.6



Table 3-19: Sykesville Adopted/Planned Trails and Bicycle Infrastructure

Trail Name	Trail Type	Trail Use	Paved or Unpaved	Trail Description	Length (miles)*
Southern Border Trail - Sykesville	TBD	bike-ped	TBD	east-west trail along southern border of the county; connects to other town paths	1.5
Eastward Extension of Warfield Park Trail	TBD	bike-ped	paved	Trail from Warfield Park trails to the east into the MGA along Piney Run	1.2
MD 32 Trail	shared-use-path	bike-ped	TBD	buffer along MD-32 from Second Street to the Howard County Line	1.9
Trail connecting Piney Run Park and Warfield Park trails	shared-use-path	bike-ped	TBD	From Obrecht Road along Hollenberry Road to Piney Run Park to Warfield Park trails	1.5
Warfield Park Trails	shared-use-path	bike-ped	paved	Will complete the two unfinished loops on the existing Warfield park Trails	0.3
Kalorama Road & Spout Hill Road	TBD	bike-ped	paved	To connect the western most residential neighborhoods with the downtown, a combination bike trail/sidewalk system is planned along Kalorama Road and Spout Hill Road	1.0
Autumn Sky Court	TBD	bike-ped	TBD	Connection along Second Avenue, Autumn Sky Court, to Dinky Short Line Trail	0.3
Millard Cooper Park to Springfield Avenue	TBD	bike-ped	TBD	Connect the existing Cooper Trail to Springfield Avenue	0.1
Dinky Short Line Trail	TBD	Bike-ped	TBD	Follow the abandoned rail line from Springfield Avenue to Oklahoma Avenue	0.7
Total					8.5



City of Taneytown

The City of Taneytown seeks to address bike-ped infrastructure according to the *2010 Taneytown Community Comprehensive Plan* (2010 TCCP) goals:

- Land Use and Growth Management
 - Future development will be designed to complement the built environment with both traffic and pedestrian connectivity in mind
 - Provide for walkability between residential areas and local business areas and employment centers
- Transportation
 - The free movement of all types of traffic, including pedestrian, wheelchair, bicycle, train, automobile, bus, and truck, will be achieved for the safe and efficient transfer of people, goods, and services
 - Provide a well maintained, safe and efficient transportation network that encourages the separation of local residential vehicular traffic from all other traffic; provides direct major highway access to industrial areas; and provides pathways for bicycle and pedestrian use
 - Enhance the overall functionality and multi-modal connectivity within neighborhoods and between neighborhoods, civic hubs, and commercial centers.
 - Encourage pedestrian access to local commercial businesses and employment centers from all residential neighborhoods

These goals show that the city wants to allow transportation options for its residents.

The City hopes to promote walking by providing sidewalk linkages between the neighborhoods and historic sections of the City. Through the Community Comprehensive Plan the City expresses its hope that the sidewalks and planned trails, system can incorporate secondary streets and alleyways to create a multi-modal transportation network.^{xcvii} One of the recommendations that has been implemented from the *1997 Taneytown and Environs Comprehensive Plan* (1997 TECP) is that “The City should modify its subdivision regulations to require the developer to dedicate any areas needed for the greenways/bicycle/pedestrian trails as shown on the plan.”

A few notable projects within and connecting to the city include:

- **Piney Creek Trail.** The city recommends that a Linear Trail System be developed within the 100-year floodplain, as a way to use non-developable land.^{xcviii} In 2016 the Bollinger Property, situated to the north of the city was annexed. This land is planned to be Bollinger Park, which will include fitness stations, parking, a bicycle trail system, and other amenities. Ultimately, Bollinger Park will connect to Taneytown Memorial Park, and will be noted as the first adequate trail system within the MGA. Portions of this property lie within the 100-year flood plain.
- **Bicycle Trail.** This trail would connect the southern portion of Taneytown. It connects to the Piney Creek Trail to create an extensive network to the west and south of the City. The trail system was originally in the 2010 TCCP as a bicycle trail but is actually preferred by the city to also allow pedestrian access. Portions of this trail also fall within the 100-year flood plain.
- **Sidewalk Capital Improvement Program.** This regular CIP item for the city “promotes periodic repairs and upgrades to the existing sidewalk system.” Taneytown utilized County data to create an inventory of its own sidewalks to show its missing sidewalk connections. The majority of missing links are along



roads in residential areas, or roads that lead to residential areas. The 2010 TCCP addresses the sections of the city that need to be connected or repaired. This will improve the linkages between the new and old sections of the City, including the various neighborhoods and the historic section.^{xcix} See Table 3-20.

- **Genesee & Wyoming Trail.** This is a County planned (Recreation and Parks) trail outside of the municipal limits that is desired to connect into Pennsylvania. The 2010 TCCP depicts this on its adopted map showing the city's desire to connect beyond the city MGA. From the municipal limits, it will follow the old abandoned rail line to the Mason Dixon Line, about four miles. This trail would also ultimately feature a connection into the City along the MD Route 194 ROW.

All bike-ped projects within the city can be viewed in Table 3-20, Table 3-21 and Table 3-22.





Table 3-20: Planned Taneytown Sidewalks

Location	Description
Antrim Boulevard, both sides	Trevanion Road to the circle; into the entrance of Lorien Nursing and Rehabilitation Center
Antrim Street	East Baltimore Street to Roberts Mill Road
Baumgardner Avenue, east side sidewalk	East Baltimore Street to Roberts Mill Road
Blueridge Avenue	York Street to Middle Street
Broad Street	East Baltimore Street to Roberts Mill Road
Carroll Heights Road	Roberts Mill Road to George Street
Clubside Drive, east side	Trevanion Road to Houses
Commerce Street	York Street to Ridge Avenue
Courtland Street	George Street to Roberts Mill Road
Divern Street, west side	East Baltimore Street to Monocacy Circle
East Baltimore Street	From the circle to 513 East Baltimore
Fairground Avenue, the west side	East Baltimore Street to 4th Street ; also on 1st, 2nd, 3rd and the north side of 4th street
Franklin Street	East Baltimore Street to Roberts Mill Road
Frederick Street / Francis Scott Key Highway	Saint Joseph Catholic Church to the Municipal Border
Genevieve Drive	Fill gaps between, Grand Dr and Antrim Blvd
George Street	Roberts Mill Road to Darby Drive
Harney Road	West Baltimore Street to 3344 Harney Road
Middle Street	Ally M to Blueridge Avenue
O'Brien Avenue	Fills missing gap at Crimson Avenue
Old Taneytown Road, south side	From the circle, East to the municipal boundary
Reaverton Avenue	Maryland Ave to the West end of Reaverton Ave
Roberts Mill Road	Divern Street to Wantz Drive
Sidewalk needed on both sides of Roberts Mill Road	Sidewalk needed on both sides of Roberts Mill Road
Roth Avenue	East Baltimore Street to Roberts Mill Road
Sidewalks needed on both sides of Zephyr Court	Starboard Drive to Zephyr Court
Starboard Drive, south side and on both sides of the road at the northern tip of Starboard Drive	Trevanion Road to Starboard Drive
Stumptown Road, west side	Divern Street to Kenan Street
Taney Drive	Fill in gaps in network
Taney Heights Drive	Fill in gaps in network
Trevanion Road, west side	Antrim Boulevard to Trevanion-Terrace
Trevanion Road, east side	Clubside Drive to Trevanion-Terrace
Wantz Drive	East Baltimore Street to Roberts Mill Road
Westview Drive	Harney Road to Church Street
Windy Hills Drive, east side	Trevanion Road to Starboard Drive
York Street / Francis Scott Key Highway	Blueridge Avenue to the Hitchman Inc



Table 3-21: Taneytown Existing Trails and Bicycle Infrastructure

Trail Name	Trail Type	Trail Use	Paved or Unpaved	Trail Description	Length (miles)*
Memorial Park Path	shared-use-path	bike-ped	paved	U-shape, unmarked path on Park & Playground Roads	0.6
Roberts Mill Park	shared-use-path	pedestrian	paved	The path circles Roberts Mill Pond	0.3
				Total	0.9





Table 3-22: Taneytown Adopted/Planned Trails and Bicycle Infrastructure

Trail Name	Trail Type	Trail Use	Paved or Unpaved	Trail Description	Length (miles)*
Bicycle Trail	shared-use-path	bike-ped	paved	Starts at Intersection of Pumphouse Road and Piney Creek through Memorial Park, crossing MD 194, to Taneytown ES, to Northwest MS, Merwyn Drive and Oak Drive	3.3
Bicycle Trail	shared-use-path	bike-ped	paved	Follows Second St, Village Drive, Grand Drive, & Chevro Drive to Roberts Mill Park	0.6
Bollinger Park Trail System***	shared-use-path	bike-ped	TBD	Bollinger Park will provide an onsite trail system/fitness stations, a parking facility, and other amenities; between MD 194, Fringer Road & Angell Road	0
Francis Scott Key Highway Trail - North	shared-use-path	bike-ped	paved	Connect 140 at the City square to Angell Road	1.4
Francis Scott Key Highway Trail - South	shared-use-path	bike-ped	paved	Connect 140 at the City square to the City border	0.6
Piney Creek Trail	shared-use-path	bike-ped	TBD	A trail following Piney Creek near Pump House Road	1.2
Meade's Crossing Paths**	shared-use-path	bike-ped	paved	paths within the Meade's Crossing subdivision	1.0
West Baltimore Street (MD 140)	shared-use-path	bike-ped	paved	Connect Church Street to the Piney Creek (Monocacy River)	1.2
East Baltimore Street (MD 140)	shared-use-path	bike-ped	paved	Connect York Street / Frederick Street to the Circle	1.4
Total					10.7

combination of several trails within the subdivision; *Bollinger Park trail system TBD



Town of Union Bridge

The 2008 *Union Bridge Community Comprehensive Plan* (2008 UBCCP), as amended, contains the following goals relevant to bicycle and pedestrian planning:

- Transportation
 - “To provide bicycle/pedestrian links between neighborhoods and destinations within the community
 - To promote alternative transportation options within the existing and future transportation network to the maximum extent feasible and safe”^c
- Housing and Community Design
 - “To incorporate traditional, walkable, friendly design into new residential neighborhoods”^{ci}
- On-Going Main Street Revitalization
 - “To provide amenities that are pedestrian and user-friendly and that promote community interaction”^{cii}

The results of a County survey discussed in the 2008 UBCCP show that bicycle and pedestrian facilities were identified as one of the greatest recreational facility needs. In the 2008 UBCCP plan, the town mentioned revising its site plan and subdivision regulations to include an emphasis on bicycle and pedestrian facilities in new development. The goal is to create open spaces, and links between them, to provide residents with an opportunity for recreation and travel outside of the automobile.^{ciii}

A couple of trails from Table 3-23 and Table 3-24 that should be highlighted include:

- **Little Pipe Creek Park Trail (LPCPT).** Currently, it is the town’s longest trail winding alongside of Little Pipe Creek. The trail is used primarily for walking and jogging; biking is not prohibited, but the trail is narrow (five feet) and functions best as a single use.
 - Phase One of the five-foot-wide, 2,500-foot LPCPT begins at North Main Street and heads east following Little Pipe Creek and ending near the railroad tracks. Phase Two of the trail consisted of an additional 1,000 feet of paved path which completes the Wetland Park Loop. Phase Three of this trail will connect Locust Street to MD 75, following between Little Pipe Creek and Downtown, and will accommodate both bicycles and pedestrians.
- **Green Valley Road Trail.** County-Town coordination will provide a 3.5-mile paved path between Union Bridge’s Wetlands Park and New Windsor. This eight to ten foot wide trail will accommodate biking, walking and jogging.
- **Cherry Branch Trail.** Union Bridge plans for this to be a developer-built trail at such time as subdivision development of the Wormold Company Property is approved. The trail runs north and south and would connect the subdivision on the westside of town. It is also expected to connect to Phase Three of the LPCPT.

In addition to the trails listed there are existing sidewalks around the town center and on Main Street. Currently, there are no facilities that promote bicycle travel across town. However, the hope is for these trails to aid in creating alternate transportation options.





Table 3-23: Union Bridge Existing Trails and Bicycle Infrastructure

Trail Name	Trail Type	Trail Use	Paved or Unpaved	Trail Description	Length (miles)*
Community Center and Park Trail	shared-use-path	bike-ped	paved	Trail within Union Bridge Community Center Park	0.3
Little Pipe Creek Park Trail (LPCPT) (Phases 1 &2)	shared-use-path	bike-ped	paved	Begins at North Main Street (MD 75) and follows Little Pipe Creek to the railroad tracks and loops back around; connection to MD 75	1.9
Total					2.2

Table 3-24: Union Bridge Adopted/Planned Trails and Bicycle Infrastructure

Trail Name	Trail Type	Trail Use	Paved or Unpaved	Trail Description	Length (miles)*
Little Pipe Creek Park Trail (LPCPT) (Phase 3)	shared-use-path	bike-ped	paved	MD 75 to George Street and Locust Street	0.5
Green Valley Road Trail	shared-use-path	bike-ped	paved	Coordinate with the County to connect Union Bridge’s Wetlands Park to New Windsor, paralleling MD 75	1.0
Cherry Branch Trail	TBD	bike-ped	TBD	North to south trail to be developer built; connects to LPCPT	0.6
Total					2.1



City of Westminster

The City of Westminster is the largest municipality in Carroll County; largest by land area and population. Therefore, the greatest amount of people in Carroll County can benefit from Westminster bike-ped infrastructure investments. The city addresses goals and objectives in the *2009 City of Westminster Comprehensive Plan* (2009 CWCP) that encourage additional infrastructure to create a city wide bicycle and pedestrian network. The City Planning Commission and City Planning Staff have expressed interest in creating needed Bike-Ped trails that will link communities and determine what easements may be required to make these connections a reality.

The 2009 CWCP lists transportation-related visions and goals that pertain to bicycle and pedestrian planning that will help the city achieve its vision.

- Transportation
 - “Providing better pedestrian access, thus making residents less dependent on motor vehicles;”
 - “Providing an adequate transportation system that also addresses alternative means of travel”^{civ}
 - “Provide a continuous and seamless pedestrian and bicycle system, and enhance the pedestrian environment to create a more walkable community”^{cv}

The objectives to reach these transportation-related visions and goals include:

- Creating a Westminster Complete Streets policy
- Creating a pedestrian master plan
- Incorporating a Bicycle Accessibility Strategy into the Pedestrian Master Plan^{cvi}

The goal of the pedestrian master plan would be to identify and prioritize sidewalk infrastructure and pedestrian needs. The city hopes to tie together existing trails to create a large network of pedestrian access to neighborhoods, public spaces and retail areas.

In the 2009 CWCP the City cites data from its 2008 Community Survey noting that Westminster residents showed concern regarding the ease of walking and biking throughout the City. “About 14% of residents are dissatisfied with the ease of pedestrian travel, and almost 17% are dissatisfied with the ease of traveling by bicycle.” What residents would most like to see include sidewalk improvements, additional pedestrian and bike trails, and the enforcement of pedestrian crosswalk safety laws.^{cvi} This reemphasizes the importance of bike-ped infrastructure to city residents.

A popular trail that should be highlighted is the Wakefield Valley Community Trail. It is approximately three miles long and parallels MD 31 from WMC Drive to Long Valley Road. The paved trail is suitable for walking and biking, and serves as a connection between surrounding residential developments, Avondale Run Ball Fields, Fenby Farm Quarry, Lime Kiln Park, a bird and wildlife observation area and a basketball court. A trail extension is planned from Long Valley Road to Congressional Drive.





There are many additional projects that will partially take place within city limits connecting the City of Westminster through its MGA to the surrounding area and other parts of Carroll. Many of these projects are led by the Carroll County Department of Recreation and Parks. Most are discussed or shown in the 2007 WECCP and the 2009 CWCP. They include:

- **Pedestrian and bicycle accommodation along Airport Drive.** This will fill in the missing sidewalk links from the airport to MD 97. The type of bike-ped accommodations were not specified in the 2007 WECCP but this plan is recommending sidewalk along Airport Drive leading to the airport.
- **Pedestrian and bicycle accommodations parallel to MD 97, from Westminster Community Pond area headed north.**
- **A trail parallel to the planned extension of Malcolm Drive.** From Market/Center Streets to MD 27 and connecting to Bennett Cerf Park and the planned trail along the planned extension of Bennet Cerf Drive.
- **A trail connecting the Westminster Community Pond and Commerce Center trail system to the planned trail that runs parallel to the extension of Bennet Cerf Drive.**
- **A connection to Union Mills Homestead and Hashawha.** This is discussed more in Chapter 4 as a Future Connection.
- **A trail connecting the existing Landon C. Burns Trail to the government facilities around Robert Moton Drive.**
- **A Westminster loop.** The City of Westminster and the Carroll County Department of Recreation and Parks, along with SHA, are working together to create a loop that will connect key locations throughout Westminster.

For projects that fall along a state highway the County will work with the SHA toward implementation. County and state led projects are listed in, Table 3-3, Table 3-5, and Table 3-6.

Table 3-25: Planned Westminster Sidewalks

Location	Description
Airport Drive	Sidewalk along Airport Drive between MD 97 and the airport
Washington Road (MD 32)	East of MD 32; Washington Lane to Kate Wagner Road; a Safe Routes to School project for Robert Moton Elementary School





Table 3-26: Westminster Existing Trails and Bicycle Infrastructure

Trail Name	Trail Type	Trail Use	Paved or Unpaved	Trail Description	Length (miles)
Dutterer Family Park Trail	shared-use-path	bike-ped	paved	Connects to West Middle School	0.5
Wakefield Valley Community Trail-Phase 2	shared-use-path	bike-ped	paved	Long Valley Drive to Windsor Drive	1.6
Wakefield Valley Community Trail-Phase 3	shared-use-path	bike-ped	paved	Windsor Drive to Uniontown Road Athletic Field	0.6
Wakefield Valley Community Trail-Extension	shared-use-path	bike-ped	paved	Uniontown Road to WMC Drive/West Main Street	0.1
Wakefield Valley Golf Trails	shared-use path	bike-ped	paved	City owned paths on the old golf course property	3.6
				Total	6.4

Table 3-27: Westminster Adopted/Planned Trails and Bicycle Infrastructure

Trail Name	Trail Type	Trail Use	Paved or Unpaved	Trail Description	Length (miles)
Wakefield Valley Community Trail-Phase 1	shared-use-path	bike-ped	paved	Long Valley Road to Congressional Drive	0.4
Longwell Run Trail	shared-use-path	bike-ped	paved	Following Longwell Run, from Railroad Avenue (MD 27) to the intersection of North Court Street and North Center Street	0.5
				Total	0.9



Citizen Concerns

The basis for citizen comments is the condition of the existing infrastructure listed in the tables of this chapter and existing sidewalks. Input from the community has been gathered for this plan through interest surveys, outreach events, and CarrollBikePedPlan.org comments. Throughout the process citizens have shared many concerns related to walking and biking throughout the County. Inadequate infrastructure and safety top the

What keeps you from walking in Carroll County more often?

60.7% I don't have trails, sidewalks or appropriately paved areas.

66.1% I don't feel safe due to walking conditions/traffic

list of concerns, in addition to accessibility, connectivity and convenience, and time and distance to trails in the County. In the 2016 Interest Survey, insufficient infrastructure received the greatest comments when addressing both walking and biking in the County. People would walk more in Carroll County if there were more walking trails and paths (85.3%) and if sidewalks were improved (52.6%). In addition, improved pedestrian crossing including signals, crosswalks, and warning signs were also desired (39.5%).

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.

What improvements would influence you to walk in Carroll County more often?

85.3% More walking trails or paths

52.6% Improved sidewalks (fill in missing pieces, wider, etc..)

Walking Respondent Summary

- Most walk on path/trails, sidewalks, and paved roads with no shoulder
- **Inhibitors:** feeling safe and inappropriate infrastructure
- **Suggested Improvements:** trails and paths, sidewalks, crossing infrastructure, and lighting and security measures
- **Important factors:** infrastructure, distance, motorist respecting pedestrians, and safety and ease when crossing the road





Biking Respondent Summary

- Most biking takes place on paved, low speed and low traffic roads; also, shoulders of paved roads and bike paths/trails
- **Inhibitors:** bike facilities and unsafe road conditions
- **Suggested Improvements:** off-road paths, bike lanes, paved shoulders and bicycle wayfinding and education of motorists
- **Important factors:** infrastructure, motorist respecting bicyclists, safety and ease when crossing roads, weather and distance

What keeps you from riding a bike to a Carroll County destination more often?

68.7% There is a lack of bicycle facilities (bike lanes, paths, wide shoulders, etc.)

65.8% I don't feel safe due to road conditions/traffic.

The concern of many is that biking and walking to destinations is not frequent in the County because the appropriate infrastructure is not in place. Bicycle and pedestrian infrastructure that citizens are requesting include sidewalks, crosswalks, wide shoulders, paths, trails and lighting. Citizens have shared that this lack of

infrastructure inhibits walking and biking to community destinations and often causes them to travel to surrounding Counties to fulfill these opportunities.

"The overwhelming lack of sidewalks in Eldersburg & Sykesville has prevented me from utilizing walking as a form of transportation."

"Walking should be a free, easy, and safe way for people of all ages to be active!"

"I think many people would utilize trails and sidewalks if they were available, they would provide economic benefits and improve quality of life for Carroll County Residents."

"...a lot of sidewalks need repair and crosswalk signage could be more visible to traffic."

"There should be better ways to cross 140 in multiple locations as there are destinations, on both sides, that walkers should have easy access to."

"I feel more connected to the community and its place when I walk."



Figure 3-6: Comments from 2016 Bicycle-Pedestrian Master Plan Interest Survey



ADA Compliance and Other Existing Conditions

A full evaluation of existing Carroll County bike-ped facilities is needed to adequately determine what needs to be upgraded or replaced. When evaluating additional bike-ped conditions the best practice factors that should be considered include but are not limited to:

- 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
- Lighting

Pedestrian Level of Services (PLOS) “provides a fine grained assessment of a person’s experience walking along the roadway.”^{cvi} PLOS primarily uses ADA compliance factors to assess pedestrian needs. However, it does not assess pedestrian level of comfort. Factors that contribute to the comfort of pedestrians include pedestrian crossing distance and signalization, intersection spacing, buffer from traffic, width and condition of sidewalk, lighting and the availability of curb cuts. Carroll County would need to conduct its own Walk Audit to assess these pedestrian conditions. A Walk Audit is an unbiased examination/evaluation of the walking environment that identifies concerns for pedestrians related to safety, access, comfort, and convenience.^{cix}

The vast majority of the County maintained pedestrian facilities lie within the Westminster and Freedom Growth Areas. Some infrastructure also lies within certain 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 in the *2014 Maryland Twenty-Year Bicycle & Pedestrian Master Plan*, and below 67% for the State Roadways in the *2019 Maryland Twenty-Year Bicycle & Pedestrian Master Plan*.

There is a funding project/plan for upgrading noncompliant locations of sidewalks. Reasonable gaps are expected to be constructed. This may be affected available right-of-way or reaching an agreement with the property owner.

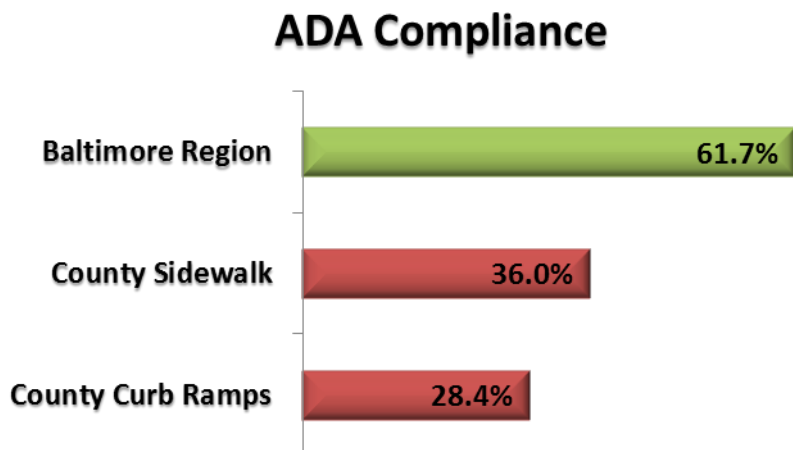


Figure 3-7: ADA Compliance; County and Maryland State Data



Likewise, for cyclists, taking an inventory of existing conditions that affect bicycle travel should be considered. This may include shoulder width, lighting, crossings, grading, etc. This can assist in creating, improving, and filling gaps in these facilities. Crosswalks, crossing signals and other crossing infrastructure assist those walking and biking through dangerous and busy intersections. This includes state highways and railroad crossings. It is important to work with citizens and the state to identify and prioritize specific areas that need the most enhancements.

Findings

Various projects have taken place around the County in a disjointed manor. Each entity (the County, municipalities, the state, and related agencies) have worked individually to complete projects. This has created an incomplete network with gaps and a lack of connectivity. 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

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Chapter 4: Future Connections

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

This chapter will address possible Future Connections within the County. Future Connections are those desired bicycle lanes or routes, sidewalks, shared-use paths, or off-road trails that are not in an adopted comprehensive or master plan. Future Connections are connections that the County, municipalities or citizens have expressed a desire to see.

A past report, the *1994 Greenways, Bicycle, and Pedestrian Facilities Network Technical Report* (1994 Technical Report), is referenced several times in this chapter. It was prepared in 1994 by consultant, John E. Harms, Jr. and Associates, Inc. The report inventoried and proposed several greenways within the County. Although it was never Adopted, some of the report's routes or similar alignments have been useful in deciding where to propose trail projects. Therefore, the Carroll County Bicycle-Pedestrian Master Plan is recommending bringing these proposed routes forward as Future Connections.

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

300 + Miles

Future Connections
Countywide bike facilities and trails

Future Connections were also determined based on input received from citizens, municipalities, and County agencies through outreach activities. In addition to Adopted/Planned infrastructure, these projects provide important bike-ped connections to important destinations within the County. Each municipality gave feedback as to what future alignments they would like to see within their municipal boundary. These future trails serve a variety of purposes including: travel, recreation and connectivity of key locations. Trail uses are the same as those in Chapter 3: bicycle, pedestrian and bike-ped.





County

The 1994 Technical Report was never Adopted by the County, but municipalities and County agencies have used these proposed projects to develop trail projects. These planning level alignments are included in the maps and text below. Class 1 greenways are considered areas where environmental conservation is prioritized, so they are not shown in the map. Table 4-1 shows the number of miles and projects recommended in the report.

Some of what was proposed in the 1994 Technical Report is not being brought forward:

- **Monocacy River Trail.** This was proposed to be an environmental appreciation trail following the Monocacy River and Little Pipe Creek from the Pennsylvania border to Union Bridge. The portion along the Monocacy River is not being recommended in this plan. The decision not to bring it forward is due to public opposition and no recommendation for a trail within the *2017 Monocacy Scenic River Management Plan* (2017 MSRMP).
- **Portions of the trails through municipalities.** The County cannot propose projects within municipal limits, where it does not have jurisdiction. Therefore, unless it is already Adopted in a town/city plan, those portions of the proposed trails that traverse into municipal territory do not apply to this plan.
- **Trails along the Liberty Reservoir.** Baltimore City owns the reservoir and much of the immediately surrounding land. The preferred use of this land is to serve as a buffer to the reservoir.

The Future Connections from the 1994 Technical Report are long term projects. Short term projects to consider include easy linkages and short distance trips that currently prevent walking or biking to a destination. Connections to neighborhoods and places such as schools could be improved by:

- Filling gaps in the sidewalk
- Repairing and fixing broken and missing portions of the sidewalk
- Improving road crossings





Table 4-1: 1994 Technical Report Proposed Projects*

Classification	Class Description	# of Proposed Trails	Miles of Proposed Trails*
Class 1 - Environmental Area**	Emphasizes the protection and preservation of stream valleys, wildlife corridors, and natural areas	0	0
Class 2 - Environmental Appreciation	Emphasizes the appreciation of the preserved natural environment while allowing limited activities and facilities such as nature study, hiking, and horseback riding	15	100.2
Class 3 - Environmental Recreation	Emphasizes a balance between environmental preservation and minimal recreational use	25	110.6
Class 4 – Medium Use Recreation	Emphasizes medium use of recreational facilities; but may not be wheelchair and stroller accessible	26	109.8
Class 5 – High Use Recreation	Emphasizes high recreational use with limited environmental preservation; horseback and nature studies may not be possible	13	32.4
	Total	79	353

1994 Greenways, Bicycle, and Pedestrian Facilities Network Technical Report; *Includes all proposed trails in the report;**Class 1 = environmental conservation focuses on protection

Table 4-2: County Future Sidewalks

Location	Description
Monroe Street	Sidewalk along Monroe Street from Father Joe’s Way to Englar Road; provides connection to West Middle School
Gist Road & Washington Road	Fill gaps between Stoner Avenue and the hospital entrance
Stoner Avenue	Fill gaps between the Senior Center, Advanced Radiology, and the hospital



Table 4-3: County Future Connections

Trail Name	Trail Type	Trail Use	Paved or Unpaved	Trail Description	Length (miles)*
Taneytown Pike (MD 140) & Old Taneytown Road (MD 852) – Westminster to Taneytown	TBD	bike-ped	paved	Connection from WMC Drive to Meadow Branch Road to MD 832 to Tyron Road to MD 140 to MD 140/Antrim Boulevard intersection (connection between Westminster & Taneytown)	9.0
Cape Horn Road/MD 30	TBD	Pedestrian	paved	Cape Horn Park to North Carroll Middle School	TBD





Finksburg Corridor

Finksburg has Future Connections that include suggestions from the 1994 Technical Report. A connection along Old Westminster Pike (OWP), just outside the Finksburg Corridor at Green Hill Road, to MD 97, to Main Street in the City of Westminster, should be explored. This connection was recommended to the state as an alternate route to biking along MD 140. A major barrier to completing this route is the crossing at OWP/Main Street and MD 97.

Other places to consider improving access are:

- **Sidewalks and crosswalks leading to Sandymount Park and the Finksburg Library.** Neighborhood connections to these popular Finksburg area destinations would reduce vehicle trips. The sidewalk network of surrounding neighborhoods leading up to these places should be examined to fill gaps.
- **Determine the feasibility of sidewalks along Cedarhurst Road and Old Gamber Road.** This has been requested by residents as should also be considered.

Freedom

The *2014 Freedom Bicycle-Pedestrian Master Plan & Assessment* (Freedom Bike-Ped Plan) outlines priority projects for the area. Since the plan was not Adopted, all of these projects, except the Governor Frank Brown Trail, are being incorporated as Future Connections., see Table 4-4 and Table 4-5.

There are 39 mapped bike-ped project segments identified in the Freedom Bike-Ped Plan; however, the top 10 ranked projects in the plan are all pedestrian focused:

1. Sidewalk Connection on Johnsville Road between Liberty High School & Eldersburg Elementary School
2. Sidewalk Connection on Georgetown Boulevard to MD 26
3. Sidewalk Connection on Piney Ridge Parkway/Macbeth Way between Meadowcroft Road & Jay Court
4. Sidewalk Connection between Oklahoma Road & Ridge Road at MD 26
5. Sidewalk Connection on Bartholow Road from Johnsville Road to former Johnsville Senior Center
6. Sidewalk Connection on Freedom Avenue from SW of Johnsville Road to MD 32
7. Sidewalk Connection along Hodges Road to existing trail/path
8. Sidewalk Linkage on Johnsville Road with MD 26
9. Sidewalk Connection on Bennett Road from MD 32 to Oklahoma Road
10. Sidewalk Connection on Londontown Boulevard to MD 32

Some of the recommended projects in the Freedom Bike-Ped Plan have already been completed. They include:

- A sidewalk connecting Swallow Road with the Sykesville Linear Trail
- A sidewalk connecting MD 32 to the Sykesville corporate limits from MD 32 to Slacks Road
- Sidewalk along Piney Ridge Parkway (sidewalk gaps still exist)

An additional connection not mentioned in the Freedom Bike-Ped Plan is a connection to Patapsco Valley State Park. This is desired by the Department of Recreation and Parks through Freedom Park and could also include sidewalk along Raincliffe Road from Willow Bottom Road to Buttercup Road. The Town of Sykesville



has requested a bicycle connection to Freedom Park along Sandosky and Raincliffe from Main Street. This will allow trail users to connect to the planned Patapsco Regional Greenway (PRG).

Table 4-4: Freedom Future Sidewalks

Location	Description
Bartholow Road	Hiltonhead Way to Johnsville Road; Liberty High School to MD 32
Bennett Road	MD 32 to Oklahoma Road
Brangels Road	Sidewalk along road
Calvert Way	MD 26 to Caren Drive
Caren Drive	Mayfair Way to Ryon Court
Freedom Avenue	Johnsville Road to MD 32
Georgetown Boulevard	Londontown Boulevard to Luers Lane
Georgetown Boulevard - Extended	Georgetwon Boulevard to Progress Way/Bennett Road
Hodges Road	Bartholow Road to the existing Stone Manor path
Johnsville Road	Bartholow Road to MD 32; MD 26 to north of Caren Drive; Freedom Avenue to Piney Ridge Parkway
Klees Mill Road	Ronsdale Road to MD 26
Linton Road	Ronsdale Road to MD 26
Londontown Boulevard	Bevard Road to Georgetown Boulevard
Macbeth Way	West of Glass Glow Circle to east of Bonnie Brae Road; MD 32 to Jay Road
Oklahoma Road	Just north of Dickinson Road to MD 26; Bennett Road to just north of Monroe Avenue
Progress Way	Pedestrian facilities
Raincliffe Road	Sykesville's corporate limits to Slacks Road
Ridge Road	Stafford Court to Monroe Avenue
Slacks Road	Raincliffe Road to Macbeth Way
South Carroll Senior Center	Loop around the Senior Center
Springfield	Springfield Hospital to Slacks Road





Table 4-5: Freedom Future Trails and Bicycle Infrastructure

Trail Name	Trail Type	Trail Use	Paved or Unpaved	Trail Description	Length (miles)*
Hollenberry Road	TBD	bike-ped	paved	Obrecht Road to Piney Run Park Trail	0.8
Macbeth Way	bike lane	bicycle	paved	MD 32 to Brangels Road	2.3
Martz Road	TBD	bike-ped	paved	East of Piney Run Reservoir	0.9
				West of Piney Run Reservoir	0.8
MD 26	TBD	bike-ped	paved	Klees Mill Road to just east of Monarch Drive	5.0
				Freedom Elementary School to the Howard County line	2.1
Obrecht Road	TBD	bike-ped	paved	White Rock Road to Hollenberry Road	1.2
Piney Ridge Parkway	bike lane	bicycle	paved	MD 32 to MD 26	1.2
Swallow Road	TBD	Bike-ped	TBD	Swallow Road to Sykesville Linear Park Trail	0.2
Whispering Falls Drive	TBD	Bike-ped	TBD	Whispering Falls Drive to Piney Run Park Trail	0.1
White Rock Road	bike lane	bicycle	paved	Consistent shoulders, MD 26 to Streaker Road to create safer conditions for cyclists	1.4
				Martz Road to Obrecht Road	0.5
Total					16.5





Recreation and Parks

When determining its future projects the Carroll County Department of Recreation and Parks (Rec & Parks) looks at the following factors:

1. Key destination connections
2. Recreation council input
3. Existing or achievable ownership or use of corridor
4. Existing or eligible funding

At the Baltimore Regional Trails Workshop in April 2016 key players in the region came together to discuss trail priorities. The Department of Recreation and Parks highlighted its priority projects. These are included in Table 4-6. Some of these proposed projects have similar alignments to those in the 1994 Technical Report.

- **Union Bridge to Gillis Falls.** This would connect the town along the County's western border to the existing Gillis Falls Park trails.
- **Taneytown to Littlestown, PA.** Follows the old abandoned rail line to Littlestown, Pennsylvania. This is a rail-to-trail conversion project along the former Genesee Wyoming Railroad line. The rail trail is to begin at Angell Road and run north across the Mason Dixon Line into southern Pennsylvania, paralleling MD 194. The trail will be a natural surface and the design will be user friendly for bicycles, pedestrians and horses. In addition, new trail or sidewalk would be planned to connect to the City of Taneytown.
- **Westminster to New Windsor to Union Bridge.** The towns of Union Bridge and New Windsor also have similar connection proposals in their comprehensive plans connecting along MD 75. The 2007 *Westminster Environs Community Comprehensive Plan* (2007 WECCP) map suggests a continued connection from MD 31 but contains no text explaining the connection. The portions within the County are considered Future Connections.
- **Westminster to Hashawha Environmental Center and Bear Branch Nature Center.** The 2007 WECCP map indicates a need to connect north of the Community Planning Area (CPA) but contains no supporting text. The City of Westminster also desires to see this connection.

Rec & Parks also wants to work with the state to prioritize connections along these highways:

1. MD 31 from Westminster to New Windsor
2. MD 75 from New Windsor to Union Bridge
3. MD 97 from MD 26 to Pennsylvania Line
4. MD 27 from Manchester to Westminster
5. MD 32 from MD 26 to Sykesville
6. MD 194 from Frederick County line to Pennsylvania line
7. MD 30 from Hampstead to the Pennsylvania line
8. MD 27 from Westminster to Mt. Airy





Table 4-6: Recreation & Parks Future Trails and Bicycle Infrastructure

Trail Name	Trail Type	Trail Use	Paved or Unpaved	Trail Description	Length (miles)
Commerce Center	sidewalk	pedestrian	paved	MD 97 to Commerce Center Pond	TBD
Freedom Park to Patapsco Regional Greenway (PRG)	shared-use-path	bike-ped	paved	Through Patapsco Valley State Park to the PRG	TBD
Hashawha Environmental Center and Bear Branch Nature Center to Westminster	TBD	bike-ped	TBD	Connects the City of Westminster to these recreational areas	TBD
MD 31 - Westminster to New Windsor	TBD	bike-ped	TBD	Connections on or near state highway MD 31	TBD
MD 26	TBD	bike-ped	paved	Connects MD 97 to MD 32	TBD
MD 75 - New Windsor to Union Bridge	TBD	bike-ped	TBD	Connections on or near state highway MD 75	TBD
MD 97 - North	TBD	bike-ped	TBD	Use MD 97 to connect commerce center trail network to Union Mills	TBD
MD 97 – South (Washington Road)	TBD	bicycle	paved	Connects Main Street in Westminster to MD 26 using MD 97	TBD
Roaring Run Trail - Extension	shared-use-path	bike-ped, equestrian	TBD	Roaring Run from the Finksburg Growth Area Boundary to Appaloosa Way	3.0
Taneytown to Littlestown, PA	TBD	bike-ped	TBD	Follows the abandoned rail line to Pennsylvania from Angell Road to the County/state boundary	TBD
Union Bridge to Gillis Falls	TBD	bike-ped, equestrian	TBD	A connection from Union Bridge to Gillis Falls Park (following Sams Creek & Gillis Falls)	TBD
Watkins Park to Watersville Road	shared-use-path	bike-ped	TBD	Watkins Park, cross over MD 27, go east on Waste Water Treatment Road to old rail line, then northeast to Watersville Road	TBD
Wyndtryst Drive to MD 97	TBD	bike-ped	paved	See Table 4-13	TBD



State and Regional Projects

One of the biggest challenges for bike-ped planning in the County is the crossing of state roads. There are locations where a bike-ped connection is needed, but a busy or dangerous intersection would pose a safety risk to cyclists and pedestrians.

At the 2017 Bicycle-Pedestrian Master Plan Citizen Outreach Meeting, participants were asked about major state highways.

- **Biking across state highways**
 - “If safe crossings were available would you be willing to use bicycle infrastructure to go across State Highways in Carroll County?”
 - 100% of respondents answered, “Yes.”
 - “Choose the top three State Highways you would feel most comfortable crossing if proper BICYCLE infrastructure were in place.”
 1. MD 30B in Hampstead/Manchester
 2. MD 32 in Eldersburg/Sykesville
 3. MD 140 in Westminster
- **Walking across state highways**
 - “If safe crossings were available would you be willing to use pedestrian infrastructure to go across State Highways in Carroll County?”
 - 100% of respondents answered, “Yes.”
 - Choose the top three State Highways you would feel most comfortable crossing if proper PEDESTRIAN infrastructure were in place.
 1. MD 30B in Hampstead/Manchester
 2. MD 140 in Westminster
 3. MD 32 in Eldersburg/Sykesville *and* MD 26 in Eldersburg

Further analysis is needed to determine the safest way to cross intersections along these highways. Based on citizen comments the County is suggesting working with the state, and municipalities when appropriate, to achieve the following improvements:

- A safe way to cross:
 - Appropriate locations along MD 30B in Hampstead and Manchester
 - The intersection at MD 26 and MD 97
 - The intersection at MD 32 and MD 97
 - MD 140 at MD 97
 - MD 140 at Meadow Branch Road

These suggestions do not limit the possibility of crosswalks needed to connect other popular destinations around the County.





Bike Spine Network

The Maryland Department of Transportation (MDOT) State Highway Administration (SHA) created a new network of bicycle routes throughout the state called the Bike Spine Network. “The purpose of the spine network is not to be inclusive of all local bike routes but to provide the best connection between Counties and provide connections to and between local existing and planned bike routes.”^{cx} The state coordinated with local tourism directors and planning offices to produce the safest and most functional routes. Carroll County’s portion of the Bike Spine Network can be seen on Map 3&4-4.

Patapsco Regional Greenway

The PRG is a 58-mile system using existing trails, roads and utility corridors to connect neighborhoods and destinations in Baltimore City and Baltimore, Anne Arundel, Howard and Carroll Counties. The PRG Concept Plan and Implementation Matrix identifies and prioritizes a shared-use path system along the Patapsco Valley between Sykesville and the Inner Harbor of Baltimore. A completed greenway system will improve opportunities for transportation, recreation and economic development for communities along the route.

In Carroll County, the desire is for this regional system to connect to Sykesville’s Main Street. While most of the PRG corridor will be a greenway and linear trail within Patapsco Valley State Park (PVSP) there is potential for additional economic activity around the areas outside of the park^{cx}, such as Sykesville’s Historic Main Street. Neighborhood connections within Sykesville to the PRG are also examined to increase activity along the proposed greenway. The PRG Concept Plan calls for additional studies to determine the potential for connections into Mount Airy. It recommends evaluating unused rail corridor.

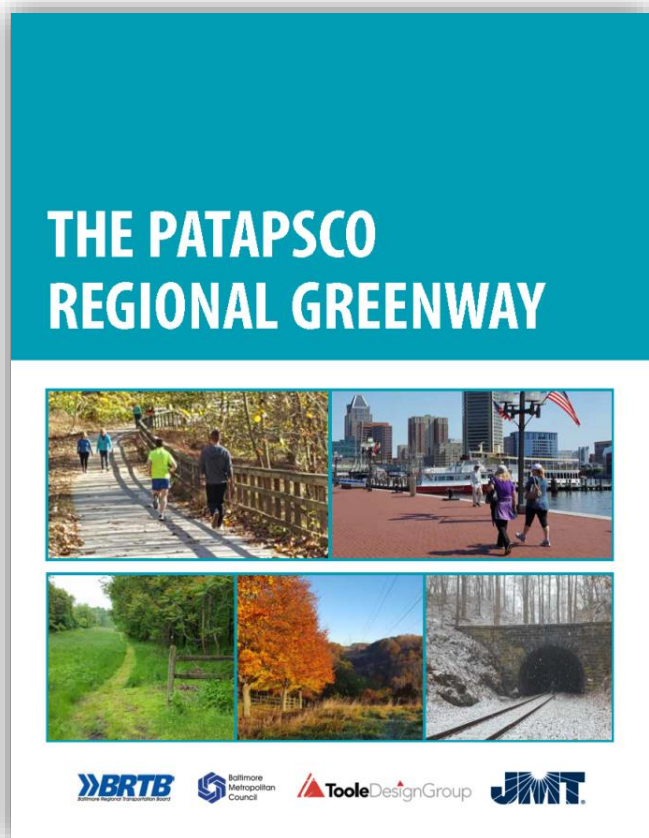


Figure 4-1: The Patapsco Regional Greenway Document Cover





Towns

Town of Hampstead

Continuing with its goal to encourage alternative means of travel the Town of Hampstead desires a Future Connection that seeks to close a gap in bicycle infrastructure on Panther Drive. Pedestrian accommodations already exist at this location. Additionally, the Town wishes to connect the end of Upper Forde Lane to Greenmount Church Road with bicycle infrastructure. These proposed connections are shown in Table 4-7.

Table 4-7: Hampstead Future Trails and Bicycle Infrastructure

Trail Name	Trail Type	Trail Use	Paved or Unpaved	Trail Description	Length (miles)
Panther Drive to MD 482 bike lane	TBD	bicycle	paved	from the current adopted/planned facilities on Panther Drive to the bike lane on MD 482; around former North Carroll HS property	0.2
Bicycle Lane - Extension of Upper Forde Lane	TBD	bicycle	paved	from the end of Upper Forde Lane to Greenmount Church Road	

Town of Manchester

The town of Manchester has completed updating its *2018 Manchester Comprehensive Plan* (2018 MCP) to include bike-ped accommodations. At this time, Manchester’s Future Connections only include a pedestrian accommodation, outlined in Table 4-8. A future pedestrian connection will extend York Street sidewalk to the Skate Park and Christmas Tree Park, and will allow access to the Lions Club recreation area and the Manchester Carnival Grounds.

Table 4-8: Manchester Future Sidewalks

Location	Description
York Street	Extension of sidewalk by 0.1 miles along York Street, between Locust Street and Victory Street; to connect to the adopted/planned Christmas Tree Park Loop



Town of Mount Airy

The Town of Mount Airy has placed emphasis on safe, alternative transportation connections throughout the community prioritizing downtown connections. Key connections in the Mount Airy network include connections:

- To downtown
- To residential developments
- To parks and other community amenities
- Between Frederick and Carroll Counties
- Across MD 27

This will aid in making Mount Airy the interconnected walking/biking community it desires to be.^{cxii}

Proposed Future Connections for the Town are mention below in Table 4-9.

Table 4-9: Mount Airy Future Trails and Bicycle Infrastructure

Trail Name	Trail Type	Trail Use	Paved or Unpaved	Trail Description	Length (miles)
Beck Drive	TBD	Bike-ped	TBD	Park Avenue to dead end	0.2
Rails to Trails – Extension West	shared-use-path	bike-ped	unpaved	Main Street/Rails to Trails-Phase 1 to Prospect Road/Hill Street	0.2
W Watersville Road to Century Drive	TBD	Pedestrian	TBD	W Watersville Road to Century Drive	1.0
Total					1.4



Town of New Windsor

No future connections have been designated by the Town of New Windsor within its corporate limits. However, the *1994 Greenways, Bicycle and Pedestrian Facilities Network Technical Report* proposes connections between New Windsor and other parts of the County. There are three of these connections mentioned in the *2007 New Windsor Community Comprehensive Plan (2007 NWCCP)*:

- **The Little Pipe Creek Trail along MD 75.** The Town of Union Bridge and the Town of New Windsor desire to see a connection between the two towns along MD 75, as stated in both of their comprehensive plans.^{cxiii} The Little Pipe Creek Trail is mentioned in the 2007 NWCCP and proposed to be a 3.5 mile trail that would follow the MD 75 existing road right of way, with a width of eight to ten feet. The desire is for it to accommodate bicyclists and pedestrians. The 2007 NWCCP map shows this trail connecting to the Atlee Ridge Linear Park Trail.^{cxiv}
- **Trail to Springdale Road parallel to Little Pipe Creek.** This is indicated on the comprehensive plan map but not in the text.
- **Trail to Westminster along Old New Windsor Pike.** This is indicated on the comprehensive plan map but not in the text.

These trails create a network of accessibility for pedestrians and bicyclists from New Windsor to other parts of the County.

Town of Sykesville

The *2010 Town of Sykesville Master Plan (2010 TSMP)* refers to improving connections across town. However, some projects that would fill important gaps in the bike-ped network were not mentioned. The town recognizes how residents desire to access other areas in or outside of town and has indicated the desire to:

- **Improve access from the Westside of the Town to the downtown.**
- **Improve access to the Obrecht Road ball fields.** These ball fields frequently used by residents. A resident currently mows a path of grass for people to walk to these fields. This connection is from the northern point of the existing Linear Trail to Wimmer Lane.
- **Improve bicycle accommodations along Sandosky and Raincliffe Roads.** Sidewalk currently exists on Sandosky Road, and the developer included sidewalk on Raincliffe Road when the Raincliffe development was constructed. Bicycle accommodations are still needed.
- **Improve Raincliffe Road access to Freedom Park.** There is a gap in the pedestrian network at the Town boundary and there is no bicycle connection. Both residents and Town representatives have expressed a desire to see this gap filled. The new connection would add sidewalk and bicycle accommodations from the town limits to Buttercup Road and Freedom Park where there is an existing park trail.
- **Creating connections from Warfield to Downtown and Freedom Park.** The Warfield project is moving forward, with an initial component consisting of residential development. As a result, the Town has come to an agreement with developers to create various connections across MD32 to sidewalks that would allow continuity to the Downtown area of the community.





Table 4-10 and Table 4-11 lay out these connections desired by the town.

There are additional future projects in the area that will provide bike-ped connection opportunity to Sykesville:

- Patapsco Regional Greenway
- A connection to the Town of Mount Airy

The Patapsco Regional Greenway would continue from Sykesville’s Main Street parallel to the Patapsco River and to Baltimore City. The Town of Mount Airy and Sykesville both have plans for trails along the Patapsco River. These projects coincide with one of the County’s desired Future Connections from the 1994 Greenways, Bicycle and Pedestrian Facilities Network Technical Report (1994 Technical Report).

Table 4-10: Sykesville Future Sidewalks

Location	Description
Raincliffe to Freedom Park	Sidewalk connection from town limits to Freedom Park
Main Street Urban Reconstruct	Includes constructing a sidewalk along both sides of MD 851 from River Road to Third Avenue

Table 4-11: Sykesville Future Trails and Bicycle Infrastructure

Trail Name	Trail Type	Trail Use	Paved or Unpaved	Trail Description	Length (miles)
Carroll Fields Subdivision to Downtown	TBD	bike-ped	paved	Connects Carroll Fields Subdivision to Royal electric, then to Church Street	0.4
Obrecht Road Ball Fields	TBD	bike-ped	paved	Connection to the ball fields on Obrecht Road, using the Northern point of the Linear Trail and Connecting that to Wimmer Lane	0.4
Raincliffe/Sandosky Bike Facility	TBD	bicycle	paved	bike facility along Sandosky Road from Main Street to Raincliffe Road connecting to Freedom Park	0.6
Raincliffe to Freedom Park	TBD	bike-ped	paved	Sidewalk and bike facility connection from town limits to Freedom Park	0.1
Total					1.5



City of Taneytown

To better connect downtown, residential, and recreation areas, Future Connections are desired throughout the City. These connections, viewable in Table 4-12, would improve the recreational appeal to the North and West of the City.

Notable planned facilities include:

- **Piney Creek Trail Extension.** This is an addition of the Adopted/Planned trail mentioned Chapter 3. It will extend 1.1 miles outside of the Municipal Growth Area (MGA). This portion is not reflected in Table 4-12. This Future Connection trail would be a total of 2.4 miles.
- **Table 4-12.** This Future Connection trail would be a total of 2.4 miles.
- **Playground Road to Frederick Street.** This is a trail that will connect to MD 194 from the Memorial Park, running parallel to the Adopted/Planned bike trail. A portion of this trail goes through the Piney Creek 100-year floodplain.

Table 4-12: Taneytown Future Trails and Bicycle Infrastructure

Trail Name	Trail Type	Trail Use	Paved or Unpaved	Trail Description	Length (miles)*
Piney Creek Trail - Extension	shared-use-path	bike-ped	TBD	Follows entirety of Piney Creek until it meets MD 140 outside of MGA	1.3
Flickinger Park Loop	pedestrian path	pedestrian	paved	Trail loop around Flickinger Park	0.3
Roberts Mills Pond to Amicus Street	pedestrian path	pedestrian	unpaved	Connects pond to neighborhood off Amicus Street	0.1
Roberts Mill Park to Amicus Street	pedestrian path	pedestrian	unpaved	Connects park to neighborhood off Amicus Street; less than 0.1 mi	0.1
Playground Road to Frederick Street	TBD	bike-ped	TBD	Path from Playground Road at Memorial Park to Frederick Street	0.5
Bollinger Park Extension - North	TBD	bike-ped	TBD	Extend the Bollinger park trail system to the north following Piney Creek and then to the east to connect to Francis Scott Key Highway	0.8
Total					3.1



Town of Union Bridge

There are no Future Connections in the Town of Union Bridge. However, the goals of the 2008 *Union Bridge Community Comprehensive Plan* (2008 UBCCP), as amended, address the importance of connecting neighborhoods and creating opportunities for community interaction. This allows for the placement of bike-ped trails and paths into any new developments in town.

The connection from the 1994 Technical Report that the town incorporated into its plans is the bike-ped connection between the towns of Union Bridge and New Windsor.





City of Westminster

Many of the projects within and around the city limits will be led by the County Department of Recreation and Parks. Connections are desired from the City of Westminster to other parts of the County. In planning future facilities, the City would like to focus on:

1. Creating linkages for bicycle and pedestrian trails.
2. Investigating the feasibility of creating those bicycle and pedestrian linkages while taking into account the required easements.

At the time of the development of this plan both New Windsor Road (MD 31) and Baltimore Boulevard (MD 140) are state designated bike routes. However, the state is in the process of updating these routes. The current connection at MD 31 and MD 140 does not allow bikes to make a left turn. A future bike lane on WMC Drive would allow bicycles to turn both left and right.

A greenway is mentioned in the 2009 CWCP that would connect the city to the northern part of the County and help to conserve natural resources, protect habitats, and offer opportunities for linear recreation, alternative transportation, and nature study.^{cxv} The idea for this greenway is taken from the 1994 Technical Report. It is considered a Future Connection because the specifics such as the beginning and end of the greenway are not determined in the 2009 CWCP; rather, only key connections are identified. The city would like to see the Union Mills to Westminster Greenway as a potential greenway corridor that could:

- Connect the City of Westminster to the proposed reservoir site at Union Mills Homestead
- Be designated along stream valleys
- Provide connections to:
 - Hashawha Environmental Center
 - The Carroll County Sports Complex
 - Local parks in Westminster

The 1994 Technical Report and the *2010 Taneytown Community Comprehensive Plan (2010 TCCP)* map address the desire for a trail connection between Taneytown and Westminster, along Old Taneytown Road (MD 832) and Taneytown Pike (MD 140).

The City also desires to connect McDaniel College and Carroll Community College as there is often a need to travel between these two campuses. It is not yet determined what the route for this will be; however, since McDaniel College has an expanding bike-share program for its students, called McCycles, Figure 4-2, a bicycle connection may be something to consider. The distance between the two campuses is about four to five and a half miles, and approximately a 25 to 35 minute bicycle ride, according to Google Maps. All proposed Future Connections may be seen in Table 4-13.



Figure 4-2: A McCycles station at McDaniel College



Table 4-13: Westminster Future Trails and Bicycle Infrastructure

Trail Name	Trail Type	Trail Use	Paved or Unpaved	Trail Description	Length (miles)*
Airport Drive	bike lane	bicycle	paved	A small section of sidewalk exists. Bike infrastructure is still needed here parallel to existing sidewalk. Bike-Ped facilities are planned along all of Airport Drive	0.1
Main St/WMC Drive to MD 140	TBD	bicycle	paved	Along WMC Drive from MD 31 to MD 140,	0.3
McDaniel College to Carroll Community College	TBD	TBD	TBD	A connection between McDaniel College and Carroll Community College	TBD
MD 97 – to Union Mills	TBD	bike-ped	TBD	Connect City to Union Mills and Hashawha; Use MD 97 to connect Commerce Center trail network to Union Mills	TBD
Wyndtryst Drive to MD 97	sidewalk and TBD	bike-ped	paved	Complete sidewalk connection from MD 97 to near Upper Field Circle; possible combination of sidewalk and a trail	0.3





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, including towns. 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 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
- 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

Endnotes

^{cx} Sotherland, Peter. Bike Spine Comment Extension and Tourism Coordination. Message to Nokomis Ford, June 28, 2017 - sha.state.md.us.

^{cx}ⁱ Baltimore Regional Transportation Board, Baltimore, Metropolitan Council, and Toole Design Group. *The Patapsco Regional Greenway*. 2017. Page 15.

^{cx}ⁱⁱ Town of Mount Airy, MD. *2013 Town of Mount Airy Master Plan*. Mount Airy, November 3, 2014. Page 105.

^{cx}ⁱⁱⁱ New Windsor, MD. *2007 New Windsor Community Comprehensive Plan*. New Windsor, July 5, 2007, Amended December 20, 2020. Page 103.

^{cx}^{iv} New Windsor, MD. *2007 New Windsor Community Comprehensive Plan*. New Windsor, July 5, 2007, Amended December 20, 2020. Page 103.

^{cx}^v City of Westminster, MD. *2009 City of Westminster Comprehensive Plan*. Westminster, September 28, 2009. Page 24.

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

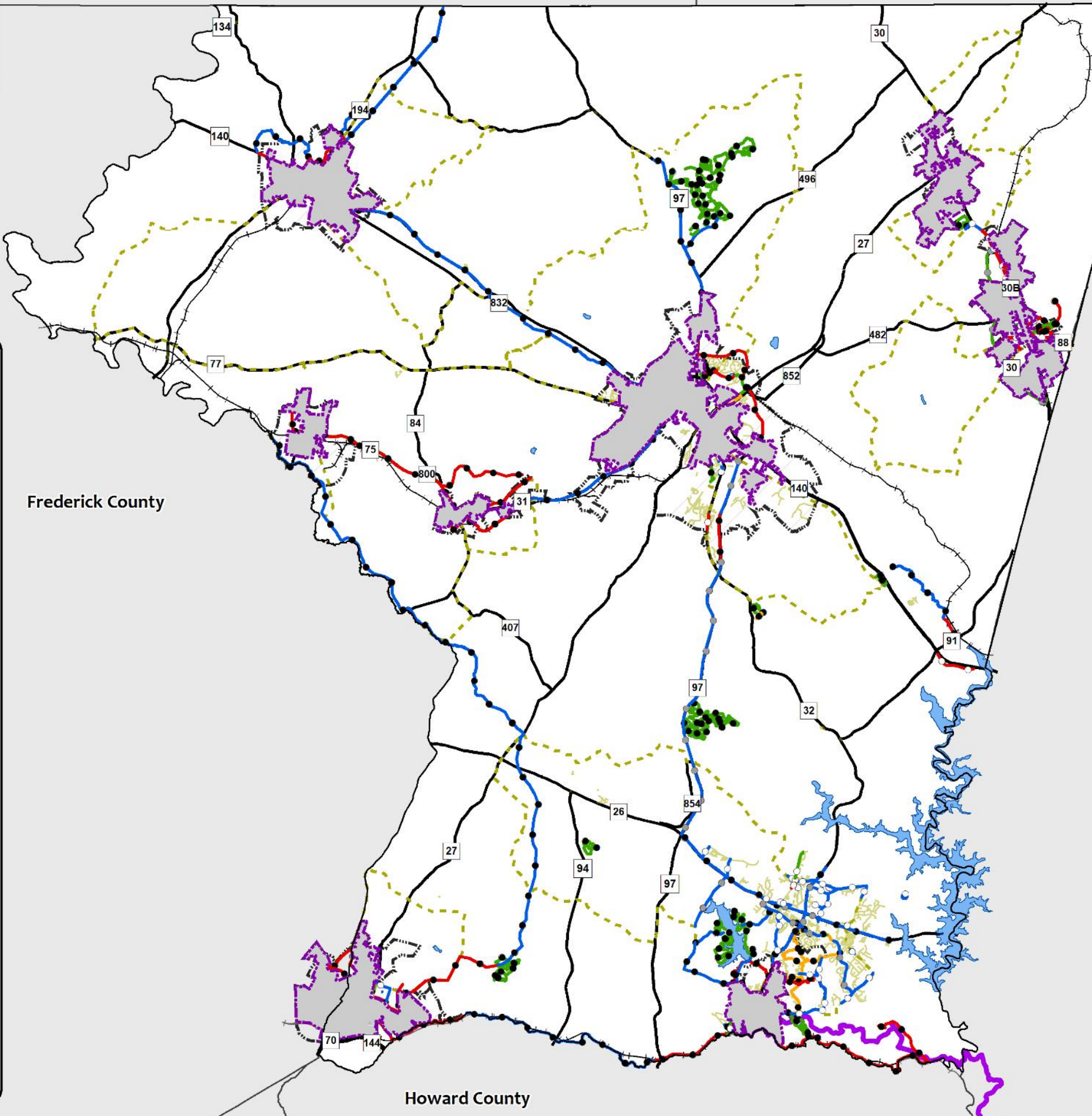
- Adopted/Planned
- Existing
- Future Connection
- Under Construction

Bicycle

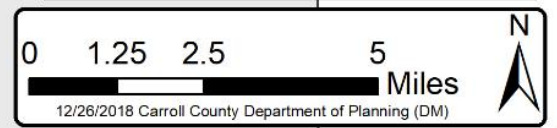
- Adopted/Planned
- Existing
- Future Connection

Pedestrian

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



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

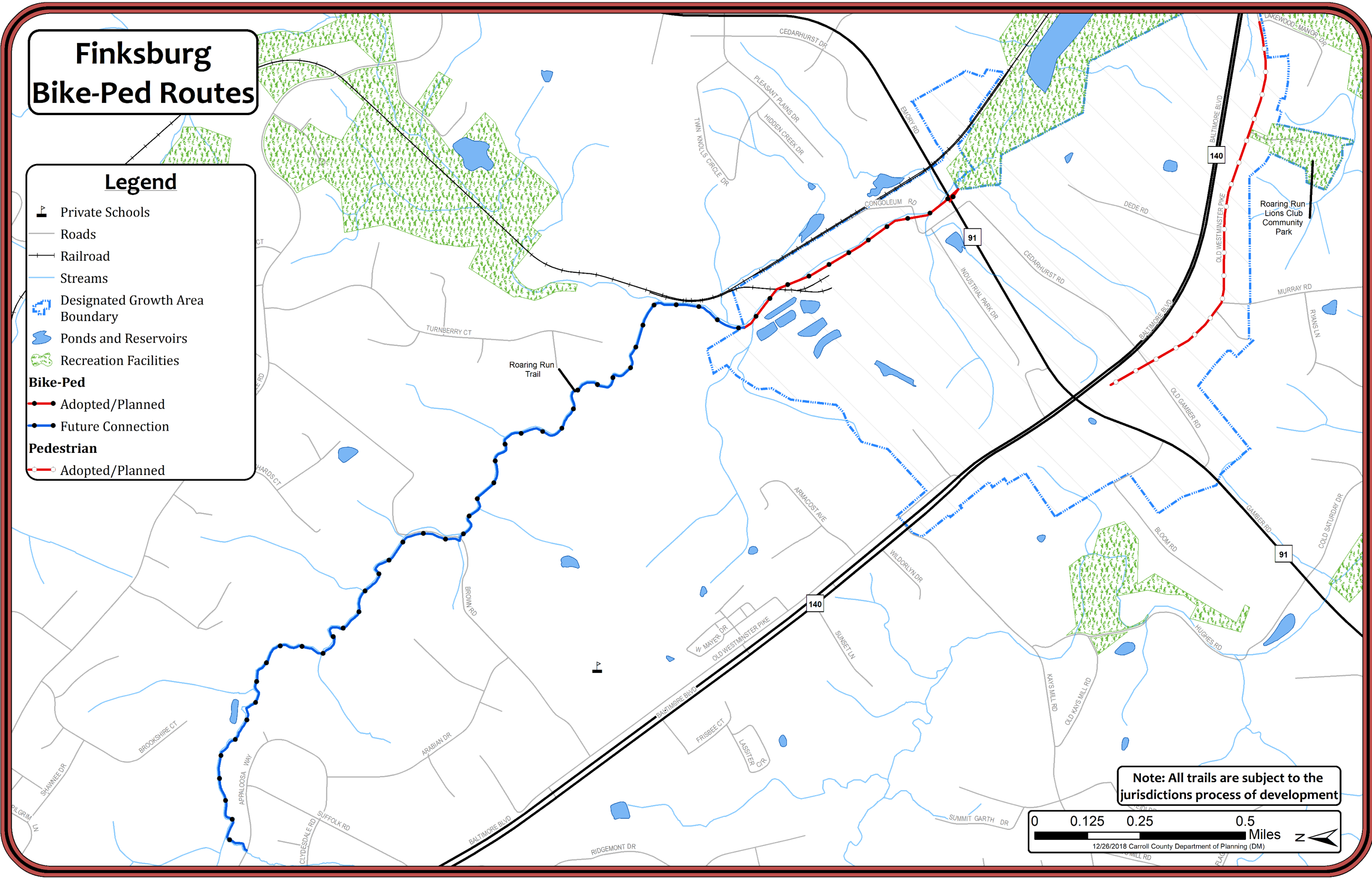


Map 3&4-1: Carroll County Bike-Ped Routes

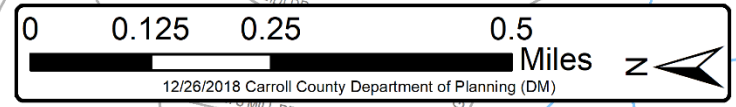
Finksburg Bike-Ped Routes

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



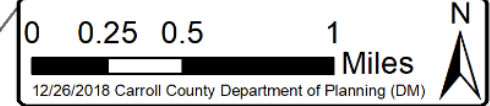
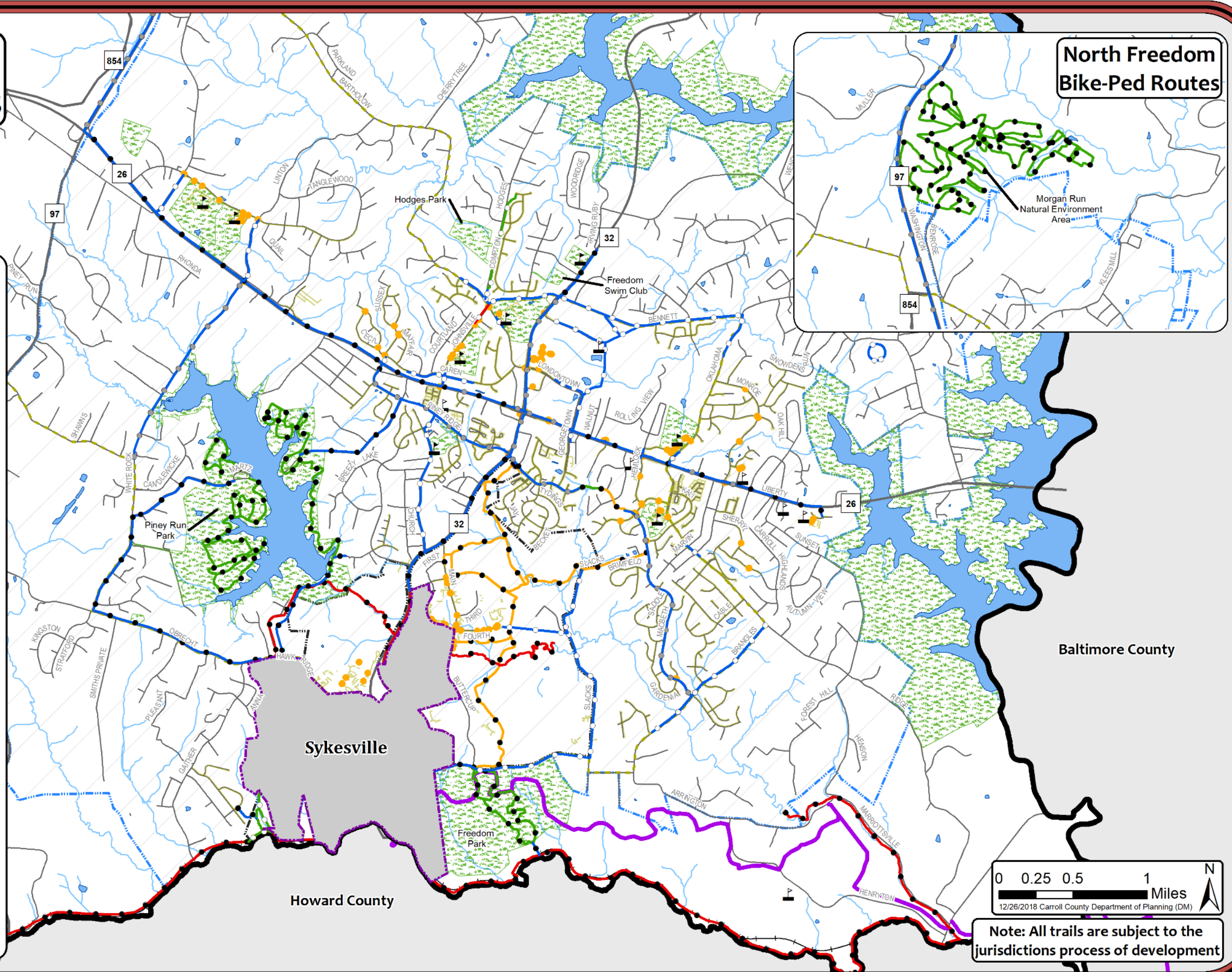
Map 3&4-2: Finksburg Bike-Ped Routes

Freedom Bike-Ped Routes

North Freedom Bike-Ped Routes

Legend

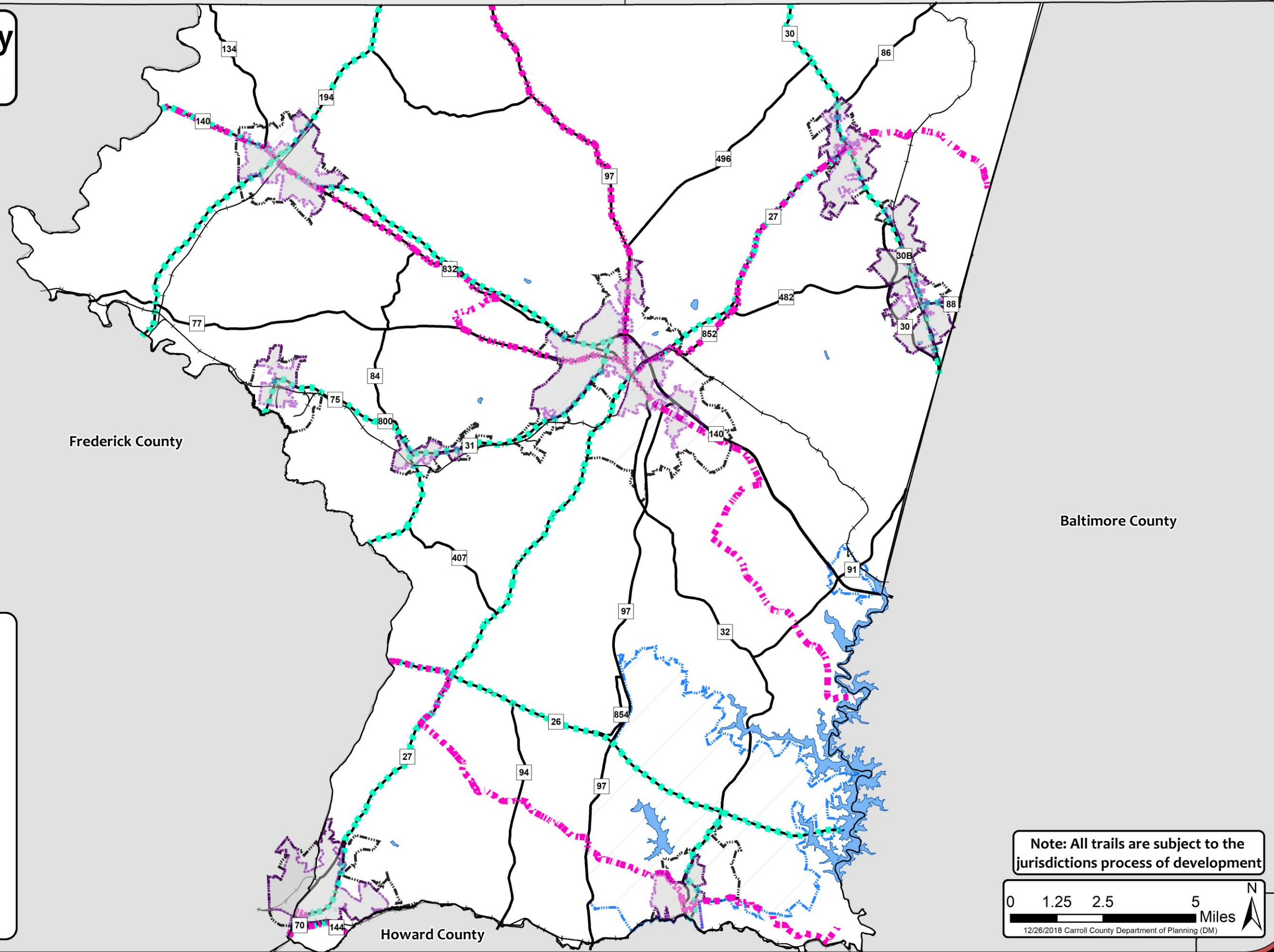
- Public Schools
- Private Schools
- Crosswalk
- Sidewalk
- Roads
- Railroad
- Streams
- Corporate Limits
- Designated Growth Area Boundary
- Municipal Growth Area Boundary
- County Border
- Ponds and Reservoirs
- Recreation Facilities
- County Tourism Routes
- Patapsco Regional Greenway
- Bike-Ped**
- 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

Map 3&4-3: Freedom Bike-Ped Routes

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

0 1.25 2.5 5 Miles

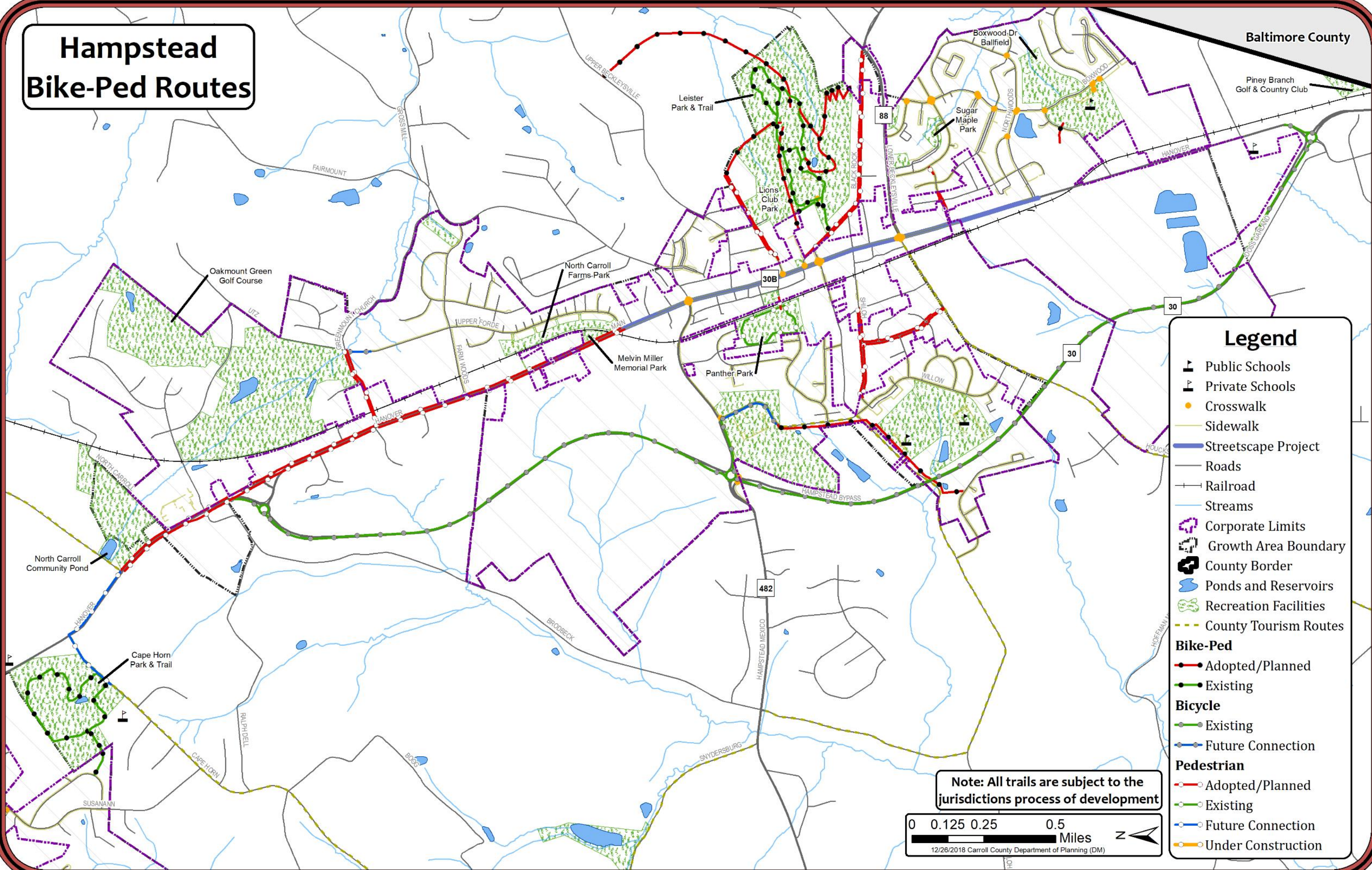
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Map 3&4-4: Carroll County State Routes

Hampstead Bike-Ped Routes

Baltimore County

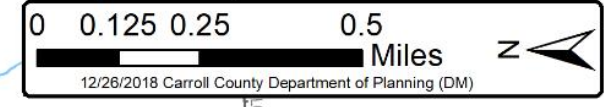
Piney Branch
Golf & Country Club



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

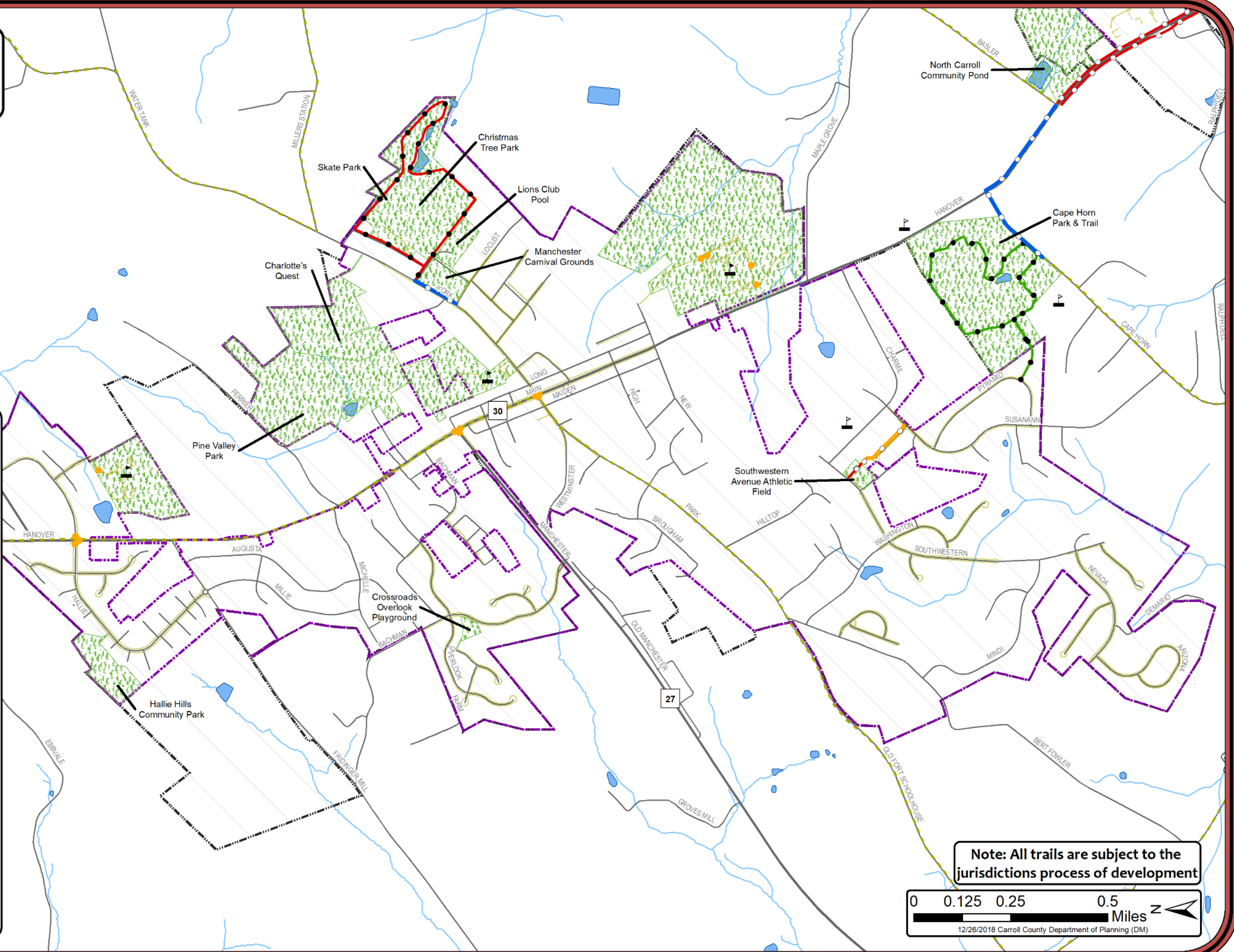


Map 3&4-5: Hampstead Bike-Ped Routes

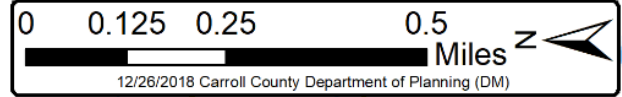
Manchester Bike-Ped Routes

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



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



Map 3&4-6: Manchester Bike-Ped Routes

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

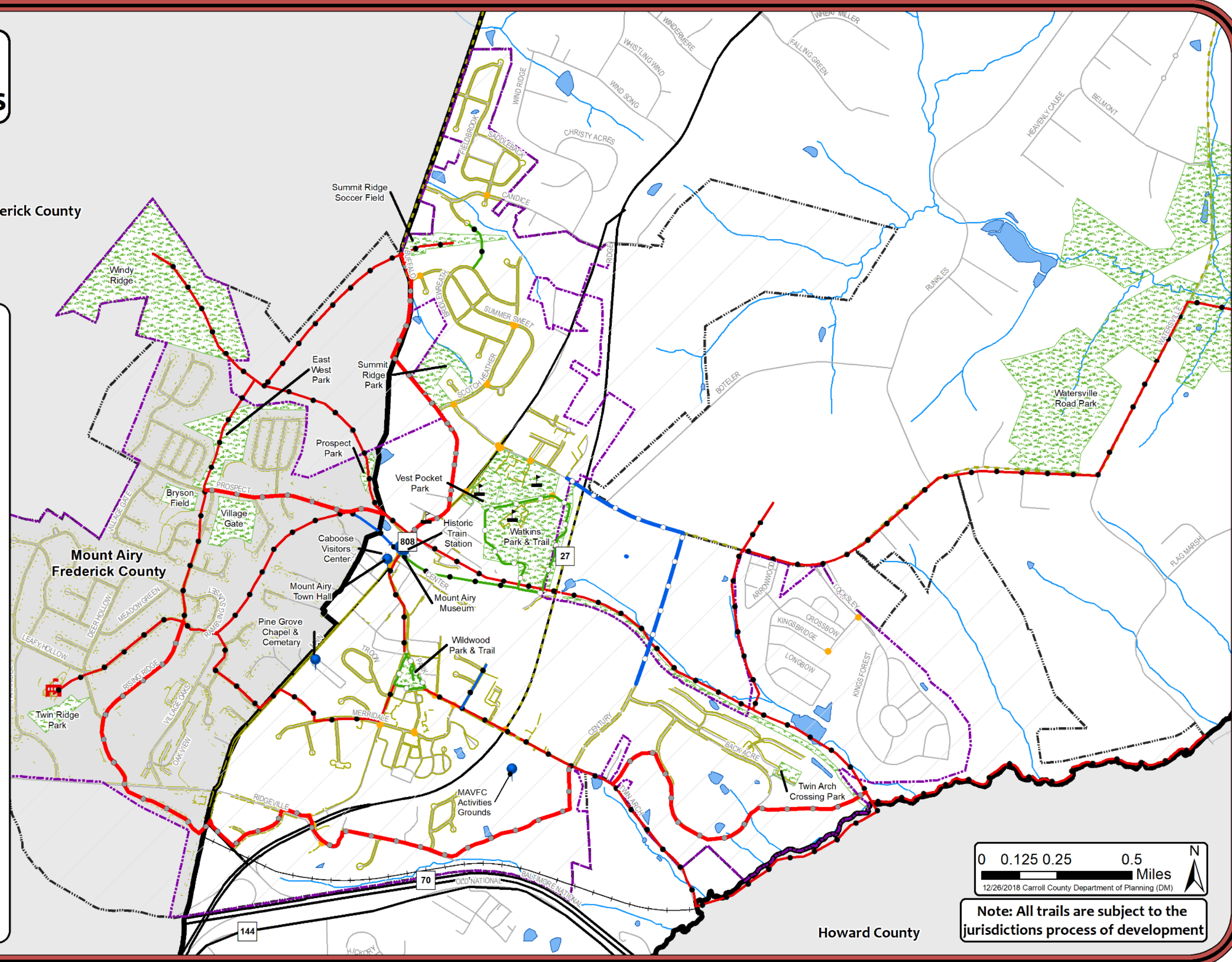
- Adopted/Planned
- Existing
- Future Connection

Bicycle

- Adopted/Planned

Pedestrian

- Existing
- Future Connection



0 0.125 0.25 0.5 Miles

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

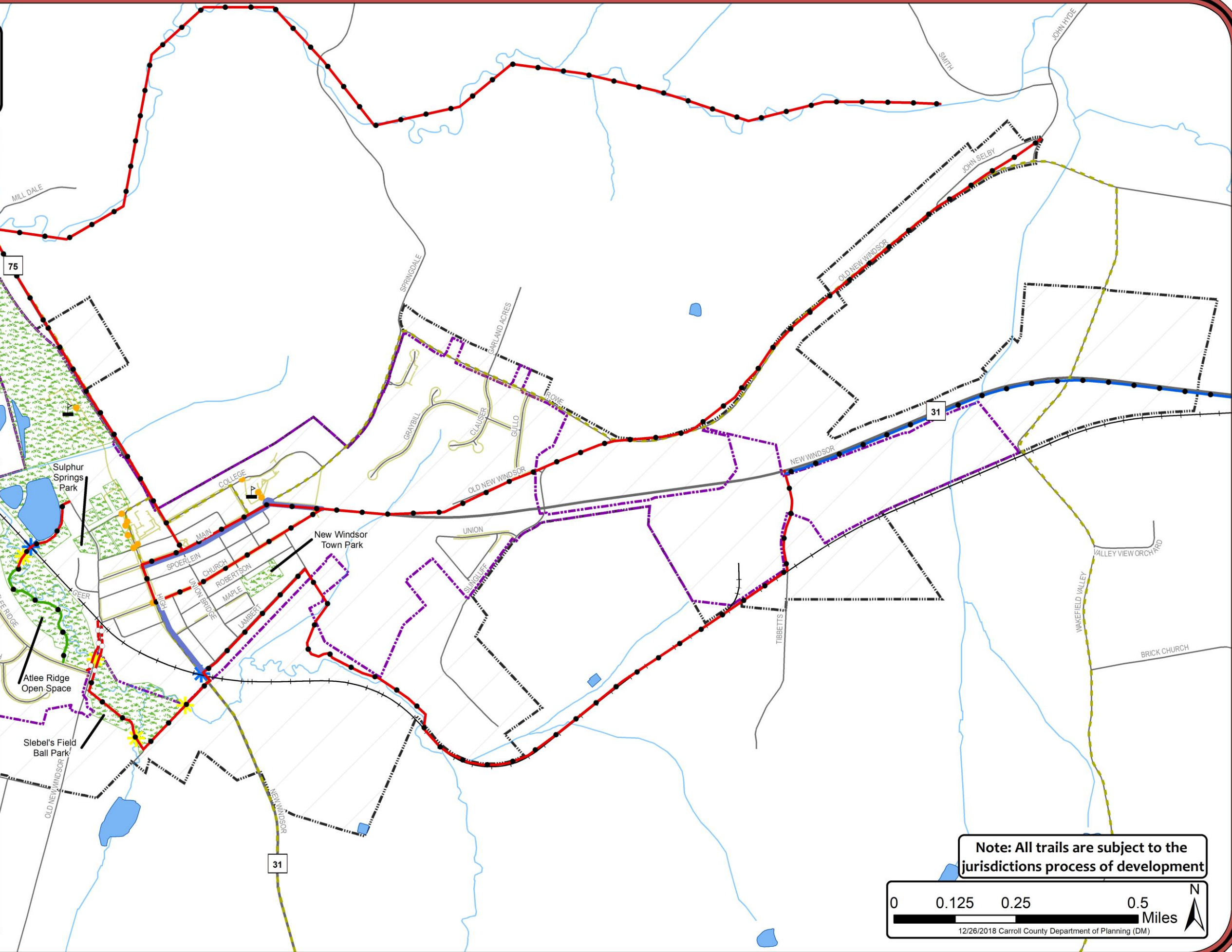
Note: All trails are subject to the jurisdictions process of development

Map 3&4-7: Mount Airy Bike-Ped Routes

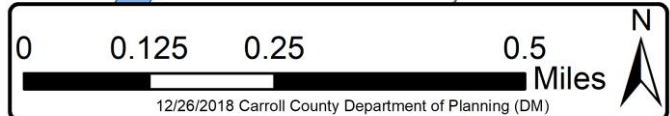
New Windsor Bike-Ped Routes

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



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



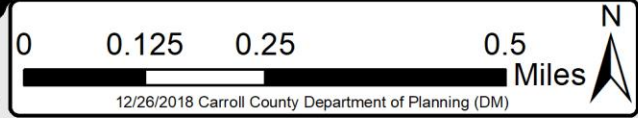
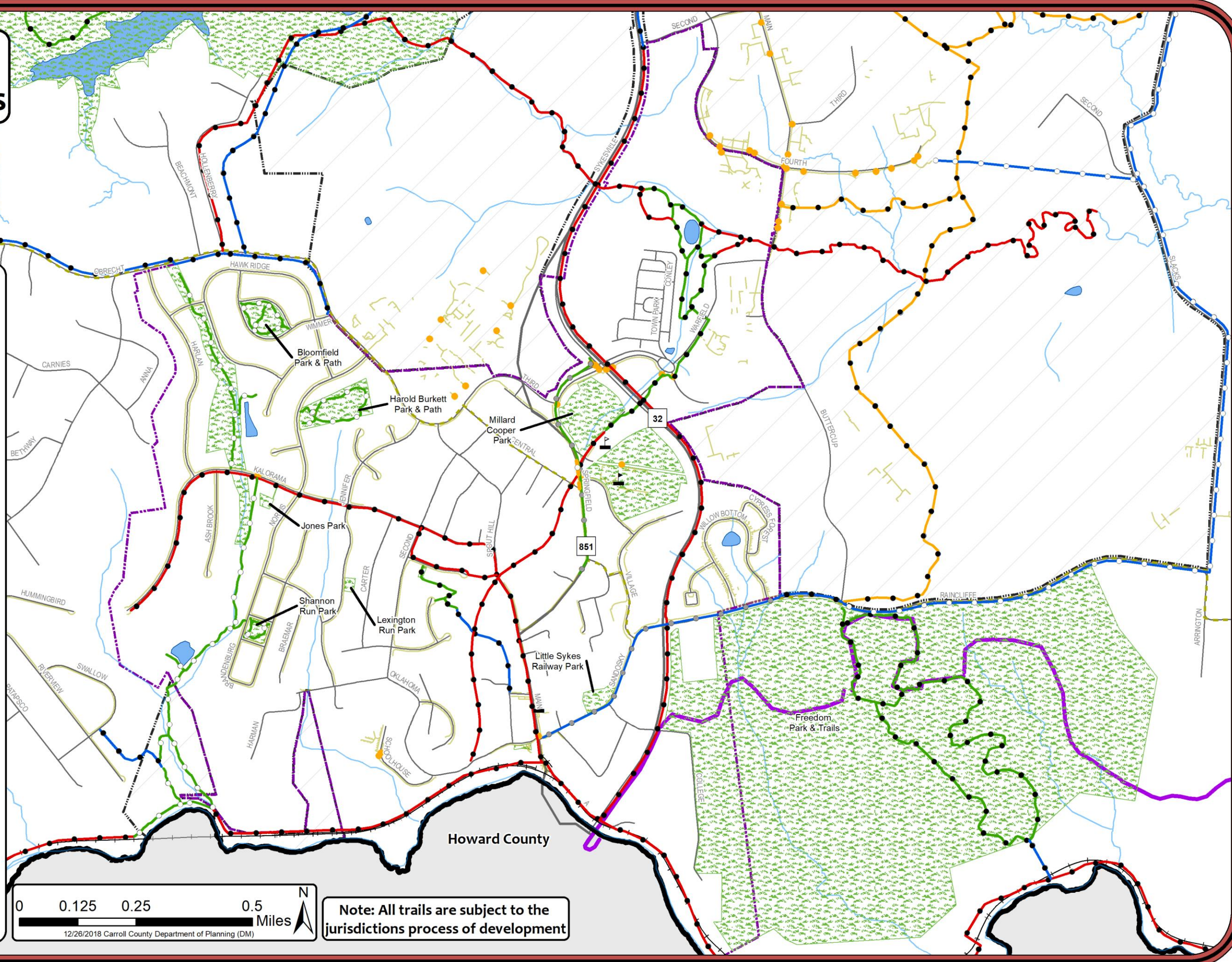
12/26/2018 Carroll County Department of Planning (DM)

Map 3&4-8: New Windsor Bike-Ped Routes

Sykesville Bike-Ped Routes

Legend

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




















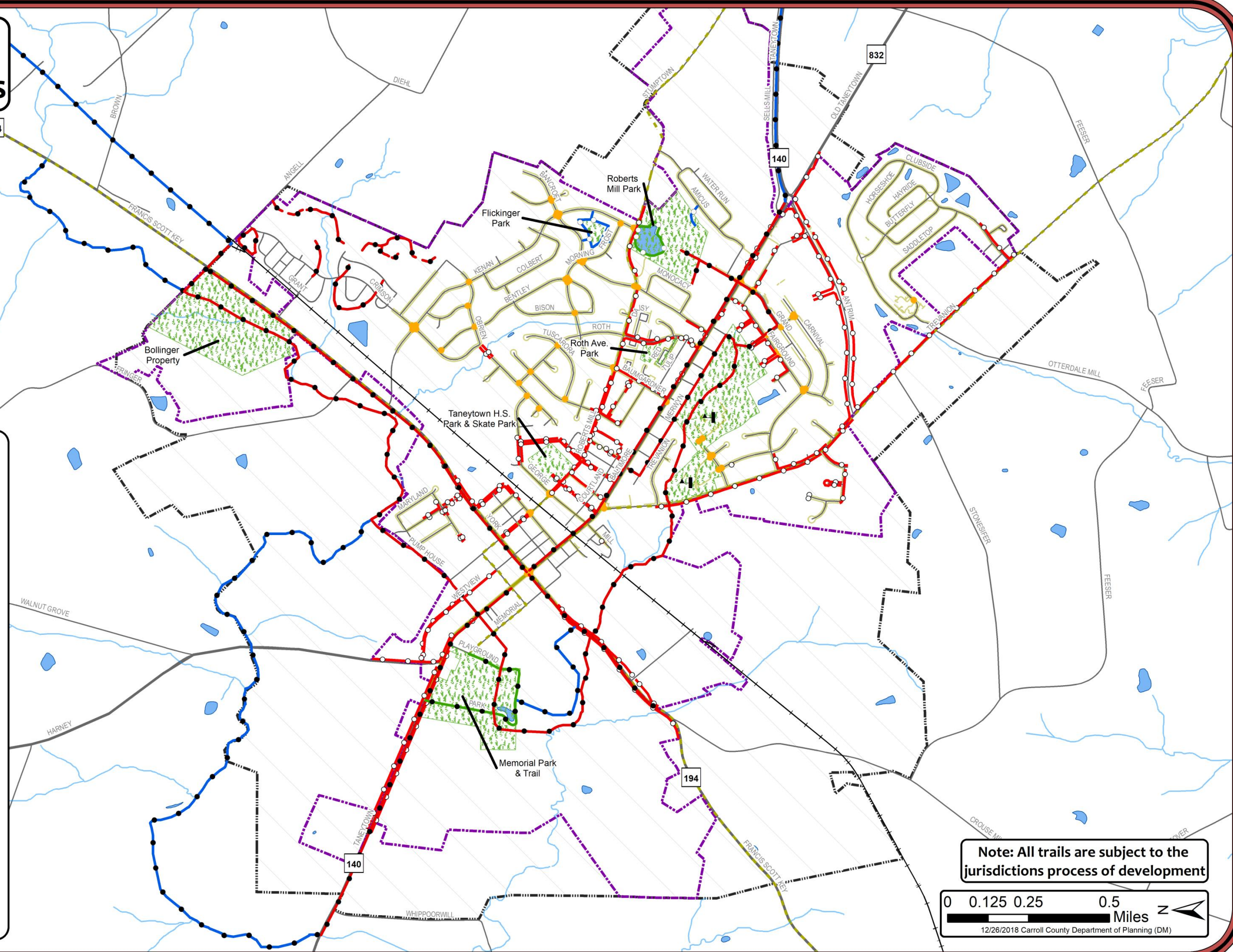
Note: All trails are subject to the jurisdictions process of development

Map 3&4-9: Sykesville Bike-Ped Routes

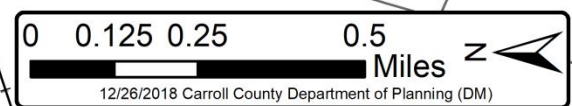
Taneytown Bike-Ped Routes

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



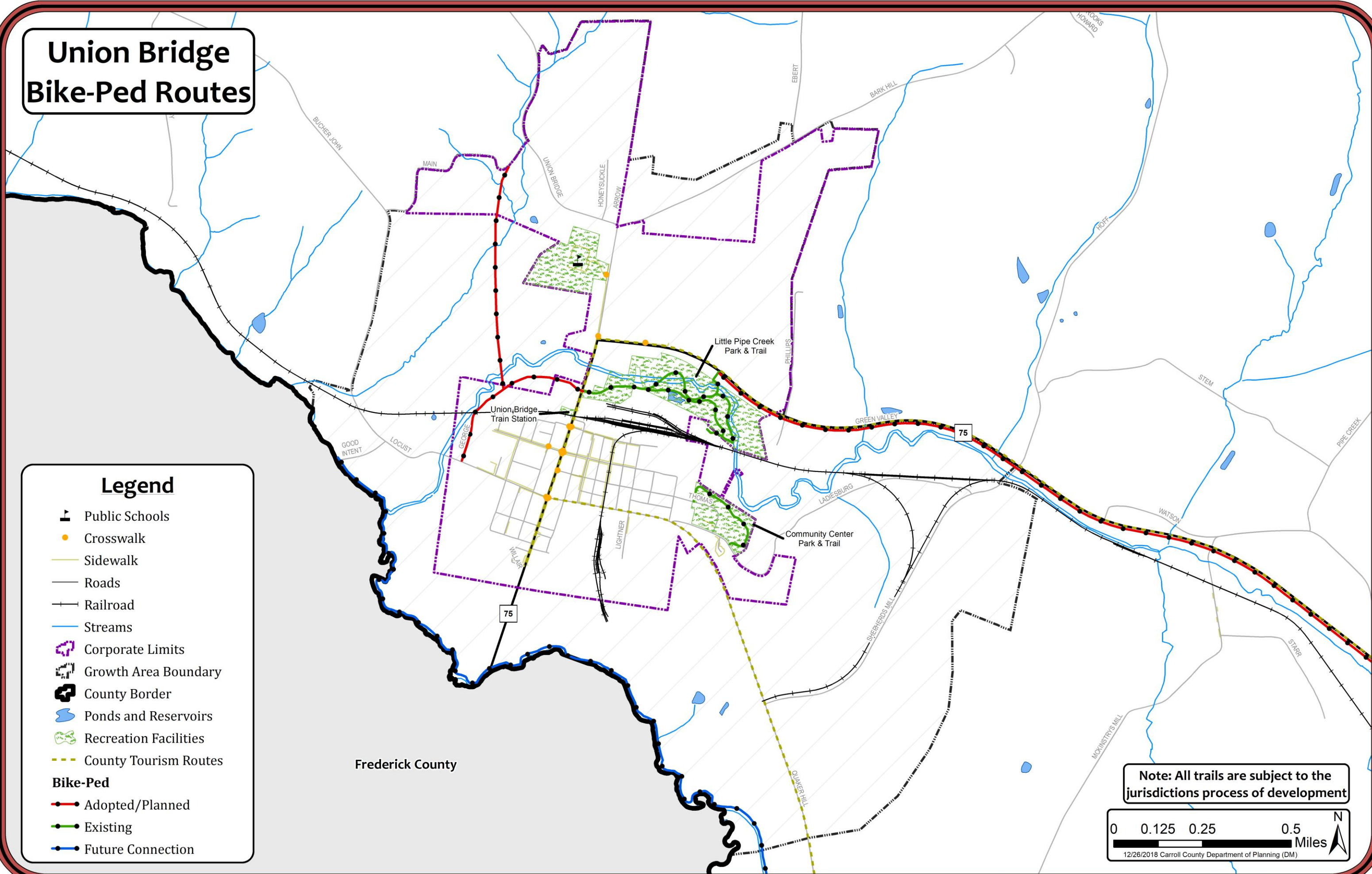
Note: All trails are subject to the jurisdictions process of development



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Map 3&4-10: Taneytown Bike-Ped Routes

Union Bridge Bike-Ped Routes



Legend

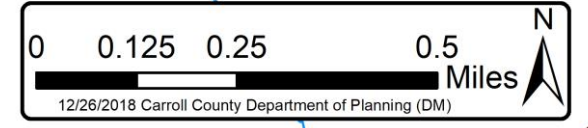
- Public Schools
- Crosswalk
- Sidewalk
- Roads
- Railroad
- Streams
- Corporate Limits
- Growth Area Boundary
- County Border
- Ponds and Reservoirs
- Recreation Facilities
- County Tourism Routes

Bike-Ped

- Adopted/Planned
- Existing
- Future Connection

Frederick County

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

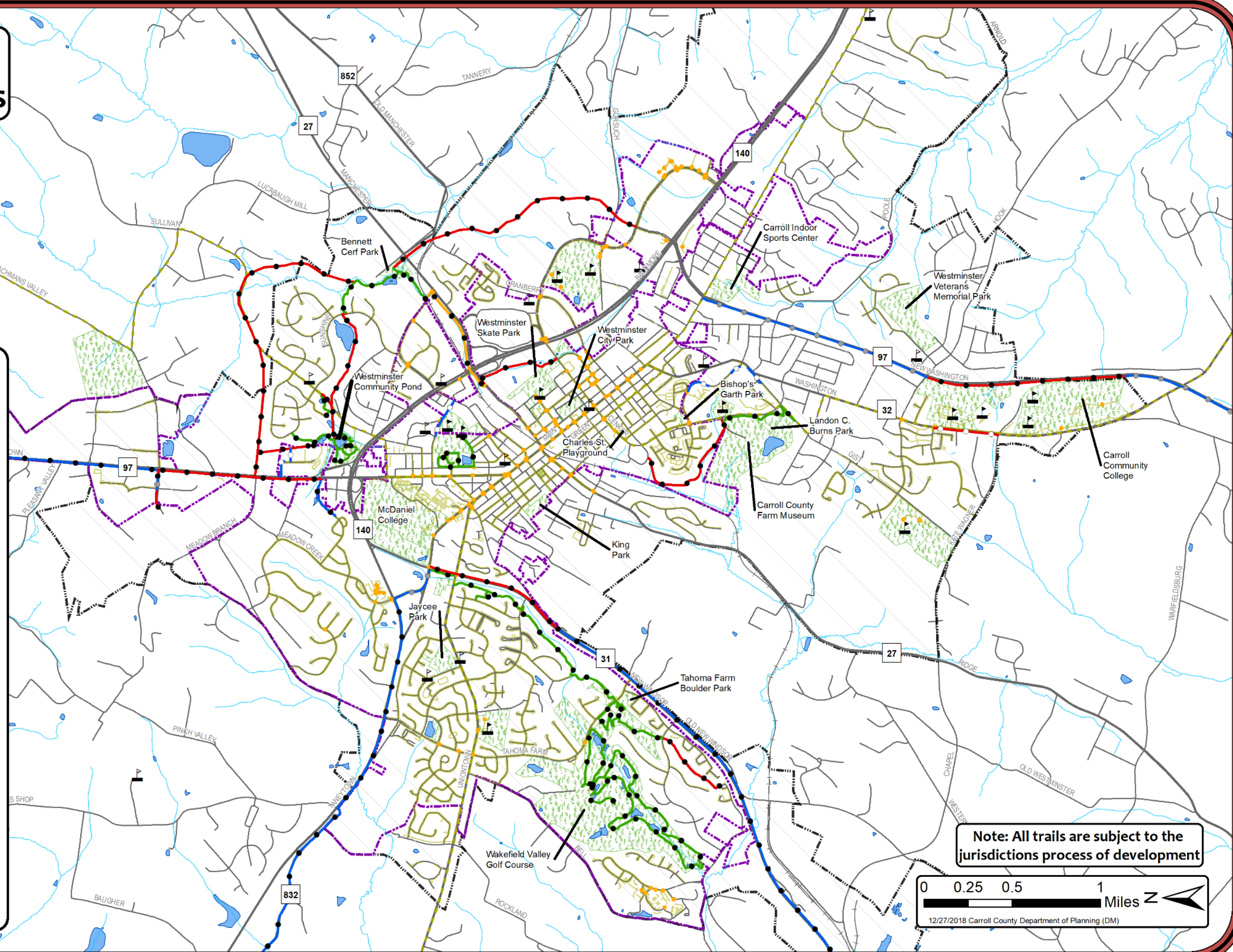


Map 3&4-11: Union Bridge Bike-Ped Routes

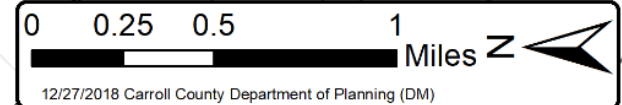
Westminster Bike-Ped Routes

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



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Chapter 5: Making Connections-Beyond the Path

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

Bicycle-Pedestrian (bike-ped) infrastructure is more than just a transportation investment. Bike-ped infrastructure replaces cars on the road and connects to various places of business, retail, recreation, and leisure. It also results in more people walking and biking to their destinations. The infrastructure becomes a healthy life investment. In addition, connecting bike-ped infrastructure to existing places of attraction enables more tourists to visit these locations. Capitalizing on the desire of people to frequent places of cultural and historic significance can lead to substantial economic growth. For Carroll County, this adds value to its unique assets.

Quality of Life

As the County grows and roads become more heavily used as a transportation option Carroll residents' quality of life becomes adversely affected. Adding pedestrian and bicycle opportunities within the transportation system is one way to prevent and improve heavy traffic conditions. The Centers for Disease Control (CDC) defines quality of life as "a broad multidimensional concept that usually includes subjective evaluations of both positive and negative aspects of life."^{cxvi} An article by the CDC discusses that there are various domains of quality of life including, but not limited to, health, culture, values, spirituality, jobs, housing, schools, and neighborhood.^{cxvii} One domain not specifically mentioned in the article is transportation. Adding attractive, affordable, accessible amenities to Carroll County living promotes a positive quality of life for citizens of all ages, income levels, and abilities.

Health and Welfare

A vital way of improving the health and welfare of Carroll County residents is increasing their physical activity. Sedentary lifestyles add to the challenges faced when combating obesity. According to the CDC, obesity is linked to heart disease, diabetes, and other chronic health conditions.^{cxviii} The CDC also finds that the cost of chronic diseases such as heart disease and diabetes is extremely high.^{cxix} Increasing physical activity is a major way of combating these health challenges. Solutions to this include more healthy community design and marketing the benefits of a more active lifestyle. Infrastructure improvements that support walking and biking lifestyles will encourage more physical activity. Even the 2016 Bicycle-Pedestrian Master Plan Interest Survey (2016 Interest Survey) found that people would bike and walk more if the appropriate infrastructure were in place. Educating about the benefits of physical activity also helps people make their own healthier choices.





Walking and biking are transportation choices that give community members an alternative to the automobile. Promoting these options could decrease the amount of cars on the street and have positive environmental impacts. This leads to less traffic congestion and decreases the amount of air pollution. Maryland's death rate from air pollution is 113 per 100,000 people per year, the highest in the Country.^{cxx} Less traffic congestion means residents are able to spend less time on the road and more time taking part in activities that will improve their quality of life.



The Partnership for a Healthier Carroll County, Inc. (The Partnership) is a nonprofit affiliated with the Carroll County Health Department (CCHD) and Carroll Hospital. The Partnership is responsible for the Carroll County Community Health Needs Assessment (CHNA) for the purpose of assessing and gathering "current statistics and qualitative feedback on the key health issues facing county residents."^{cxxi} Following the publication of the CHNA report, The Partnership, its members and community leaders identify priority community health needs. The priorities identified through the most recent Carroll County CHNA process are:

- Diabetes
- Heart Health
- Obesity
- Cancer

The Partnership's Healthy Carroll Vital Signs tracks health indicators for the Carroll County community. According to a June 2017 data report, 2 out of 3 key health indicators are trending in the wrong direction, see Table 5-1.^{cxxii} About half of all Carroll residents exercise at the rate recommended by the CDC for physical activity. However, Carroll's rates of obesity and heart disease make supporting regular physical activity a very important public health goal. Encouraging bicycling and walking as a mode of transportation will aid Carroll County in meeting its health goals.

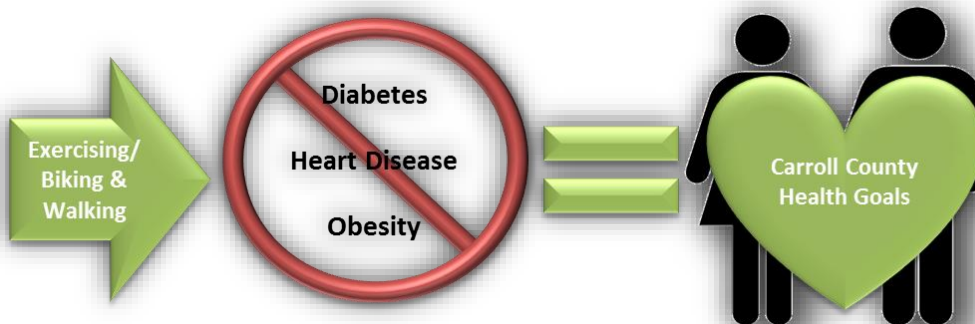




Table 5-1: Health & Wellness Indicators and Goals

INDICATOR + GOAL	PREVIOUS Data*	CURRENT Data**	Goal Status	Trend Status
% of adults in Carroll County who engage in regular physical activity (150 minute moderate or 75 minutes vigorous per week) GOAL: 47.9% or more	48% (2011)	48.7% (2013)	Goal met	Trending better than goal
% of adults who are obese or overweight GOAL: 64% or less	66.3% (2008)	68.3% (2015)	Goal not met	Trending away from goal
% of adults who have ever been told they have diabetes by a physician (excluding told during pregnancy) GOAL: 10.4% or less	4.8% (2011)	8.9% (2015)	Goal met	Trending away from goal

The Partnership for a Healthier Carroll County - September 2017; *PREVIOUS Data is earliest available, Up to 10 years old; **CURRENT Data is most recent available

The Partnership’s public health goals of physical activity can be encouraged through convenient access to facilities. Carroll County’s parks are recreational destinations and are frequented by residents. Carroll County’s Department of Recreation and Parks have over 48 miles of paved and natural surface trails.^{cxxiii} Some of the trails in its parks are mentioned in Table 5-2. Additional paths and trails should be built to connect neighborhoods to these community assets. As an alternative to driving, neighborhood residents should have the opportunity to walk or bike to the parks and other County recreational facilities near them.





Table 5-2: Carroll County Parks with Trails

	Total Length of Trail (miles)	Surfacing	Allowed Activities	Link to Map
Cape Horn Park	1.2	paved	Hike, Bike, Skate, Ski	Map
Bennett Cerf/Hahn Rd	0.3	paved		
Carroll County Equestrian Center	4.06	compacted earth	Hike, Horse Riding	
Deer Park	0.7	paved	Hike, Bike, Skate, Ski	Map
Farm Museum/Landon C. Burns	0.75	paved	Hike, bike	
Freedom Park	2.0	Paved	Hike, Bike, Skate, Ski	Map
Gillis Falls Area	4.2	compacted earth	Hike, Bike, Ski, Horse Riding	Map
Hashawha and Bear Branch	13.5	compacted earth	Hike, Bike	Map
Krimgold Park	1.3	paved	Hike, Bike, Ski	Map
Leisters Park	1.6	paved		Map
Morgan Run	11	compacted earth	Hike, Bike, Horse Riding	Map
Piney Run Park	7.75	compacted earth	Hike, Bike, Ski, Horse Riding	Map
Sandymount Park	1.3	paved	Hike, Bike, Skate, Ski	Map
Sports Complex	0.6	compacted earth		
Union Mills	8.0	compacted earth	Hike, Bike, Ski, Horse Riding	Map
Westminster Community Pond and Trail	1.2	paved	Hike	

The Carroll County Health Department also has programs that address safety as a health and welfare issue. Safety in planning bicycle and pedestrian facilities will further be discussed in chapters seven and eight, Design Alternatives and Safety, and Implementation Strategies. There are various existing initiatives in place to keep residents safe and healthy in Carroll County. Table 5-3 contains some health and welfare programs that are already in place and can be used in implementing a safety plan for the County.



Table 5-3: Existing Safety and Health Programs

Program	Description
<p>Walk Carroll (The Partnership for a Healthier Carroll County)</p>	<p>Walk Carroll is a long-term walking and exercise program that provides regular, accessible physical activity opportunities for anyone who lives, works, or plays in Carroll County.”^{cxxiv}</p> 
<p>Walkable Carroll (The Partnership for a Healthier Carroll County)</p>	<p>This program promotes downtown walking by posting signs that highlight the distance in minutes to downtown destinations.</p> 
<p>TryVent (The Partnership for a Healthier Carroll County)</p>	<p>This program, encourages those community members age 60 and above to walk and exercise.</p> 
<p>Stay Strong (The Partnership for a Healthier Carroll County)</p>	<p>A video series that highlights exercise and nutrition for specific populations.</p> 
<p>Safe Kids Carroll County (Carroll County Health Department)</p>	<p>Safe Kids Worldwide is a nonprofit organization working to help families and communities keep kids safe from injuries. The initiatives in Carroll include Bike Rodeos, Health Fairs/Outreach, Bike Helmets, and School Bus Safety Day (includes bike-ped).</p> 





Access

While pedestrian 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. It should be clear what types of users can or cannot use a trail or path and what users can or cannot do while on the path. Planning and designing for everyone who will potentially use trails and paths will help to avoid user conflicts. Various types of users such as equestrians, off highway vehicles (OHV), skateboarders, joggers, motorized wheelchairs, and people with dogs will also want to participate. Within these groups there are varying degrees of expectations, experiences, and intensities of use. Conflicts arise when users' behaviors interfere with the experiences of others.^{cxxv} The Federal Highway Administration addresses where conflicts will arise in its publication *Designing Sidewalks and Trails for Access*. Some of the issues and solutions are discussed in this subsection.



Users have different expectations, experience levels and abilities. Some move faster and have the ability to maneuver quickly while others move at a slower pace. Some will need more path width and height while others need minimal space. This may vary based on whether the user is on a motorized vehicle, wheelchair or a horse. An example of this is an elderly couple out for a stroll versus the experienced cyclist approaching at a rapid, startling pace. Those who move slower can be frightened by those able to move and maneuver quickly. Anticipating each user's preference will help prepare spaces for those who may want a more relaxing and tranquil environment and those who will be noisier and more energetic.^{cxxvi}

People with disabilities will use trails and the Americans with Disabilities Act (ADA) requires this group to have the same access rights as other members of the community. It is important to consider the needs of this population, which may include veterans and seniors, when anticipating user conflicts. Steep slopes and gravel paving could create major difficulties or even accidents for those who are novices at riding a bike or have a disability. When reasonably possible, additional accommodations must be made for people with disabilities.

Sub-communities and neighborhoods with large low-income, senior, and minority populations should be able to access bike-ped facilities. The low-income population often cross high speed highways on foot to access jobs and services because they have no other transportation options. This is a dangerous situation and access to bike-ped facilities could help deter accidents and crashes.



Trail design and trends can also cause conflict with the type of user. The width of a trail or path limits the amount of users at one time. In addition, if the path leads to popular destinations or has a high use frequency the limited space could create conflict among all types of users. New technologies and newly popularized sports may unexpectedly change the way a particular path is used. Many trendy sports may include younger users who have the ability to move with speed and maneuver quickly. Groups that participate in trendy sports and activities that arise may need more space on the path and may create more noise. Policies and rules that regulate users may need to be considered on a trail-by-trail basis.

Changes in technology have led to the increasing popularity of electric-bicycles (e-bike) and electric-scooters (e-scooter). E-bikes and e-scooters are expected to continue to become more popular. E-bikes are bicycles with electric-powered pedaling assistance.^{cxxvii} In Maryland, e-bikes meet the legal definition of a bicycle because they are still human powered (see full legal definition of bicycles in Appendix). Many people use e-bikes for errands and commuting^{cxxviii}. A 2019 bill passed by the Maryland General Assembly, established that “an electric low speed scooter is considered to be a bicycle for the purposes of the Maryland Vehicle Law”.^{cxxix} A potential conflict may arise with increasing popularity as e-bikes and e-scooters have the ability to move faster than bicycles, up to the speed of cars. Policies regulating the use of paths, lanes and trails would need to be considered.

Solutions

Educating cyclists and pedestrians about healthy lifestyles and safe practices will aid in improving quality of life and minimize accidents and incidents. This includes how to behave and what to consider when using bike-ped facilities. The programs listed in Table 1 are good examples of existing programs that can be used to educate people about biking and walking as healthy lifestyle choices.

Law enforcement officials and emergency management personnel will play a key role in education and enforcement policies. Therefore, their input is needed when creating and implementing policy. They should also take part in educating the community about common causes of accidents and prevention. For example, the benefits of wearing helmets when biking and educating pedestrians and cyclists about light colored or reflective clothing when traveling at night. More about safety and education is discussed in Chapter 8, Implementation.

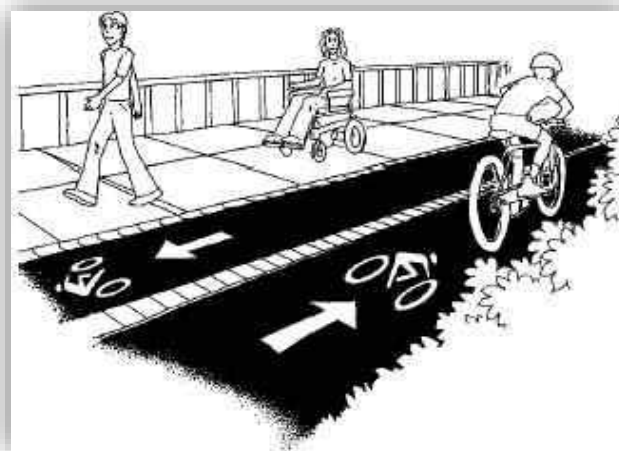


Figure 5-1: Separate paths for users; source - FHWA, *Designing Sidewalks and Trails for Access*

Communication and education about trail etiquette are major ways of combatting conflicts that may arise. The simplest solutions to user conflicts mostly involve communication with the public. Trail etiquette is a set of common courtesies that users convey on each other with the goal of sharing the trail without conflict. An example of educating through signage is shown in Figure 5-2 where users are given simple instructions on yielding. Another sign may also contain a list of rules and restrictions for each path. When people are taught how to behave they are equipped to make better trail use decisions in respect to one another. Helping people



make behavioral choices allows everyone to enjoy the space. If the rules are displayed and it is known that they will be enforced people are more likely to follow them.





The following are potential solutions to user conflicts. Some of the solutions involve trail design which is discussed in more detail in a Chapter 7, Design Alternatives:

- Trail restrictions
- Separating user types
- Speed Limits
- Wider trails/paths
 - Accommodate higher volumes
 - Accommodate multiple user types
- Clear, easy to understand signage (Figure 5-2) that displays:
 - Trail etiquette
 - Trail rules
 - Trail terrain
- Education
- Trail managers meeting with user groups, clubs, communities, etc.



Figure 5-2: Trail Etiquette Signs, www.sandiegotrailalliance.com, www.townofbethlehem.org

Heritage and Economic Development

Carroll County's unique character gives it opportunities to capitalize on its rural assets. There are heritage preservation and economic development opportunities that will help meet the *2014 Carroll County Master Plan* goals.

- Goal 10: "Preserve the County's historic, cultural, scenic, and architectural heritage."
- Goal 13: "To encourage land use practices that promote a healthy economy and develop employment opportunities."

Connections in the form of sidewalks, paths, bike lanes, and bridges should be available to sites that have tourist appeal. Tourism is a major part of the county's economic development; prioritizing connections will help to maximize bike-ped investments.



Tourism and Scenic Paths

Maintaining its rural character allows Carroll County to have many scenic areas. Scenic paths are designated routes that allow travel and observance of beautiful natural, cultural, historic and modern landscapes. Many visitors will seek out the scenic country for recreational purposes or to escape the hustle and bustle of urban life. Guided and strategic leveraging of the bike-ped consumers of this market will help the County and its towns utilize these assets.

Making routes bicycle and pedestrian friendly will help attract those who may be planning hiking or biking trips in neighboring counties or states. Support for these tourists should include anything cyclists may need for long trips such as maps with locations of bed & breakfasts and hotels, public restrooms, restaurants, wineries, and other rural attractions that are near the routes. Restrooms could be provided through the development of County partnerships with public or private locations such as businesses, churches, or schools.

Carroll County Office of Tourism, within the Department of Economic Development, has put together 10 bike tours for the eight municipalities. These tours are comprised of over 150 miles of scenic stops, historic attractions and rural beauty. There are two trails within both Westminster and Taneytown, and one in each of the remaining six municipalities. These maps are available at www.CarrollBiking.com. The site works with the Google Maps app to allow you to follow along turn by turn.





Table 5-4: Carroll County Tourism Bike Tours

	Municipality	Miles	Difficulty	Historic Sites/Stops
Tour #1	Taneytown	13.8	Medium/hard	Taneytown Memorial Park, Littlestown
Tour #2	Taneytown	30.5	Medium/hard	Taneytown Memorial Park
Tour #3	Westminster North	28.9	Medium/hard	Union Mills Homestead
Tour #4a	Manchester	9.11	Very hard	
Tour #4b	Manchester	18.23	Very hard	One of the highest points in Carroll County
Tour #5	Hampstead	13.9	Very hard	Small shops
Tour #6	Westminster South	15.1	Medium/hard	Carroll County Farm Museum
Tour #7	Union Bridge	15.8	Medium/hard	Western Maryland Railway Museum
Tour #8	New Windsor	8	Recreational	Robert Strawbridge’s Home, Serrv
Tour #9	Sykesville	33.6	Very hard	Piney Run Park & Reservoir
Tour #10	Mt. Airy	11.1	Medium/hard	B&O Railroad & the Patapsco River

carrollcountytourism.org

These bicycle tours are an example of how bike-ped planning can benefit the County’s agritourism. Agritourism is the practice of attracting tourists and visitors to rural areas for economic benefit. The Governor’s Intergovernmental Commission on Agriculture (GICA) has suggested a definition of agritourism (or agrotourism) for zoning and permitting purposes,

“Agritourism is a series of activities conducted on a farm and offered to the public or to invited groups for the purpose of education, recreation, or active involvement in the farm operation. These activities may include, but are not limited to, farm tours, hayrides, corn mazes, seasonal petting farms, farm museums, guest farm, pumpkin patches, “pick your own” or “cut your own” produce, classes related to agricultural products or skills, and picnic and party facilities offered in conjunction with the above.”^{cxxx}

Carroll County has various agritourism opportunities, e.g. wineries, corn mazes, pick-your-own produce. It may be beneficial to the County to consider marking tourist sights and landmarks with uniform signage to assist tourist, particularly those on bikes (see Figure 5-3), with finding their way to and identifying these routes and landmarks. Mapping these sights and routes and making them easily accessible to the public will also help attract tourists and assist in navigation.



Figure 5-3: Bike-friendly sign from industry.traveloregon.com





Tourism and Historic Connections

Historic 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 Master Plan recognized the value of these sites and the high rate of consumer spending compared to the amount invested.^{cxxxix} Strengthening bike-ped facilities in these areas gives opportunity to further increase the return on investment.

Main Streets

Main Street Maryland is a comprehensive downtown revitalization program that was created in 1998 by the Maryland Department of Housing and Community Development, in partnership with the National Trust for Historic Preservation (NTHP).^{cxxxii} As of 2015 the new program brand for the nation's collection of Main Streets is Main Street America^{cxxxiii}. Main Streets have vibrant shopping districts with bike-ped facilities. Well planned targeted approaches that meet the safety and mobility needs of residents and visitors will maximize the economic benefits of these areas.

The state is seeking to support bike-ped initiatives in Main Street areas. This is due to input from stakeholders, a high opportunity for bike-ped travel, and the high concentration of bike-ped crashes.^{cxxxiv} "Longer distance road cycling and walking within historic town centers are the primary walking and biking activities in rural areas."^{cxxxv} It is important to connect to and improve bike-ped facilities near Carroll's Main Streets, museums, historic sites, and other related places to further stimulate the County's economy.





Historic Sites

Carroll County has a rich heritage with many opportunities to connect to historic sites. There are 60 sites that are on the National Register of Historic Places (see **Error! Reference source not found.**). There are also areas that are important to not just Carroll County but also American history.

The Heart of the Civil War Heritage Area (HCWHA) and Journey Through Hallowed Ground (JTHG) also should be considered when planning bike-ped facilities in Carroll County. The HCWHA is a region encompassing Carroll, Frederick and Washington Counties, with a concentration of important historic, cultural, natural, and recreational Civil War resources. HCWHA combines resource conservation and education with economic development in the form of heritage tourism.^{cxxxvi}

Journey Through Hallowed Ground (JTHG) is a scenic historic corridor encompassing sites of national significance associated with the Revolutionary War, the War of 1812, presidential history, the Civil War, as well as Native-American and African-American heritage. JTHG is made up of a 180-mile long, 75-mile wide area stretching into four states, Pennsylvania, Maryland, West Virginia and Virginia. The JTHG Partnership is a non-profit dedicated to raising awareness of American heritage in a region of high historical significance.

“The Journey is a unique historic, natural and scenic region, with farms and orchards; woodlands and forests; rivers and streams; rolling hills and mountain views; and unspoiled landscapes that can be explored by car, bike, canoe or Kayak, on foot or on horseback. The region is alive with vibrant historic downtowns, rich agriculture and an abundant bounty of wineries, inns and unique cultural events.”^{cxxxvii}

A large part of Carroll County is covered by JTHG. In Carroll, HCWHA includes areas of routes that were taken by troops (see Map 5-2). Programs and funding opportunities associated with HCWHA and JTHG have sought to preserve the heritage of these areas. One way Carroll County could benefit is by connecting a bike-ped trail or route or a Civil War bike tour to Gettysburg that considers the County’s attractions, scenic views, and businesses. An example of the benefits can be seen in Figure 3-2.

Additionally, the Maryland State Highway Administration (SHA) has published a brochure highlighting African American Heritage Sites in Carroll County. The Carroll County African American Heritage Guide contains 20 sites that are rich in African American history (see Map 5-1 and Table 5-5. Four of these sites are on the NRHP. All but one of the sites are on the Maryland Inventory of Historic Properties (MIHP). According to SHA, most of the cemetery sites have “at least one headstone belonging to a soldier who fought in the United States Colored Troops during the Civil War”.^{cxxxviii}

SNAPSHOT: Economic Benefits of Civil War History

A major tourist destination is just 20 miles north of Westminster in Gettysburg. In 2013, one out of every 260 United States citizens visited Gettysburg National Military Park. According to the National Park Service Report, in 2013, these 1.2 million tourists spent over 73 million dollars in surrounding communities including lodging 30.3%; food and beverages 27.3%; gas and oil 12.1%; admissions and fees 10.3%; souvenirs and other expenses 10.0%.

Lawhorn, Katie. *Tourism to Gettysburg National Military Park creates \$73 million in Economic Benefit.* National Park Service. July 18, 2014

Figure 5-4: Economic Benefits of Civil War History



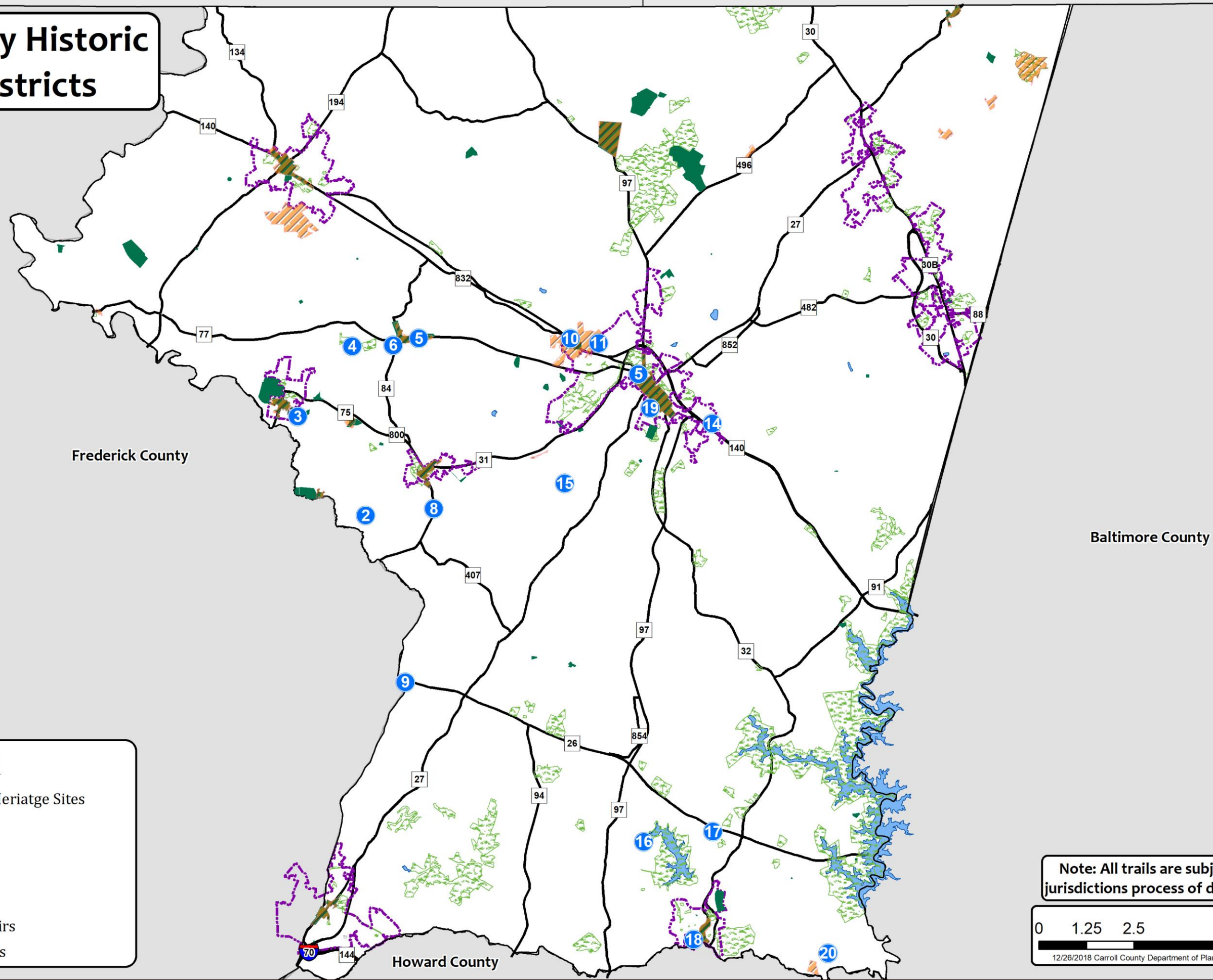


Table 5-5: African American Historic Sites

Label#	CARR#	Site	Location
1	CARR-92	St. Luke's (Winters) Lutheran Church Gravestones	New Windsor
2	CARR-1390	Yost Greenwood Farm	New Windsor
3	CARR-14	*Pipe Creek Friends Meeting House	Union Bridge
4	CARR-1092	Bowen Chapel	Union Bridge
5	CARR-221 and CARR-226 thru 230	*East Uniontown	Uniontown
6	CARR-352	*Mt. Joy Methodist Episcopal Church and Cemetery	Uniontown
7	CARR-1716	Simon Murdock House	New Windsor
8	CARR-1020	Strawbridge United Methodist Church	New Windsor
9	CARR-57	Fairview Methodist Episcopal Church and Cemetery	Taylorville
10	CARR-656	Elizabeth Lowry House	Westminster
11	CARR-393	Thomas Jones Log House	Westminster
12	CARR-501, -502, and -506	*Union Street District	Westminster
13	CARR-503	* Union Street Methodist Episcopal Church	Westminster
14	CARR-767	Ellsworth Cemetery	Westminster
15	CARR-516	Western Chapel and Cemetery	New Windsor
16	CARR-1011	White Rock Church and Cemetery	Eldersburg
17	CARR-616	Reuben and Laura Thomas House	Eldersburg
18	CARR-1487	Sykesville Colored Schoolhouse	Sykesville
19	n/a	Robert Moton School	Westminster
20	CARR-1616	Henryton State Hospital (demolished)	Marriottsville
	<i>*on the National Register of Historic Places</i>		
	Map 5-1: Carroll County Historic Sites and Districts		

From SHA's Carroll County African American Heritage Guide

Carroll County Historic Sites & Districts



Legend

- African American Heriatge Sites
- Major Roads
- Historic Districts
- Corporate Limits
- County Border
- Ponds and Reservoirs
- Recreation Facilities

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

0 1.25 2.5 5 Miles

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

Map 5-1: Carroll County Historic Sites and Districts











Carroll County Heritage & Tourism

Frederick County

Baltimore County

Howard County


Legend

-  Farm Alcohol Producers
-  Major Roads
-  Gettysburg Civil War Trails
-  County Tourism Routes
-  Journey Through Hallowed Ground Heritage Area
-  Heart of the Civil War Heritage Area
-  Corporate Limits
-  County Border
-  Ponds and Reservoirs
-  Recreation Facilities

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

0 1.25 2.5 5 Miles

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



Map 5-2: Carroll County Heritage and Tourism



Economic Development

Bicycle and pedestrian investments can improve economic development and benefit the County and businesses if the proper connections are made. Bike-ped planning will aid in expanding existing businesses and promote new development opportunities. The less money is spent on automotive travel the more money can be spent toward other areas that will stimulate the economy.

Connecting to Businesses

Businesses play an important role in planning for bicyclists and pedestrians. The investments made are not just good for the County but also for businesses. 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. Bikers and walkers need services and goods, including food, lodging and supplies while traveling. This includes hard and soft goods. Soft goods encompass textiles, clothing and bedding, and hard goods cover just about all other retail items, e.g. tools, sporting equipment, electronics. For a bicyclist, hard goods could include a watch, any kind of bike equipment, a water bottle etc. Soft goods purchases would consist of hats, shoes, clothing etc.^{cxxxix}

Paths can be used to connect residential developments to employment campuses and business centers, such as main streets, grocery stores, and business parks (see Map 5-3). It is important to make adequate bike and pedestrian accommodations to encourage transportation alternatives; for example, encouraging business owners to install bike racks at retail destinations. By working with the existing market to support the existing demand for bike-ped facilities the County can enhance its economic development activities. This enhancement would mean developing transportation connection solutions that promote environmental conservation and environmental quality.

Connections to businesses could also be made through incentive programs and on site bike-ped facilities. This would encourage people to walk or bike to a business destination rather than drive. Business owners could be linked to financial resources that help them make improvements where necessary. These updates could include bike racks, curb cuts or paving.

SNAPSHOT: Economic Benefits of Biking and Walking

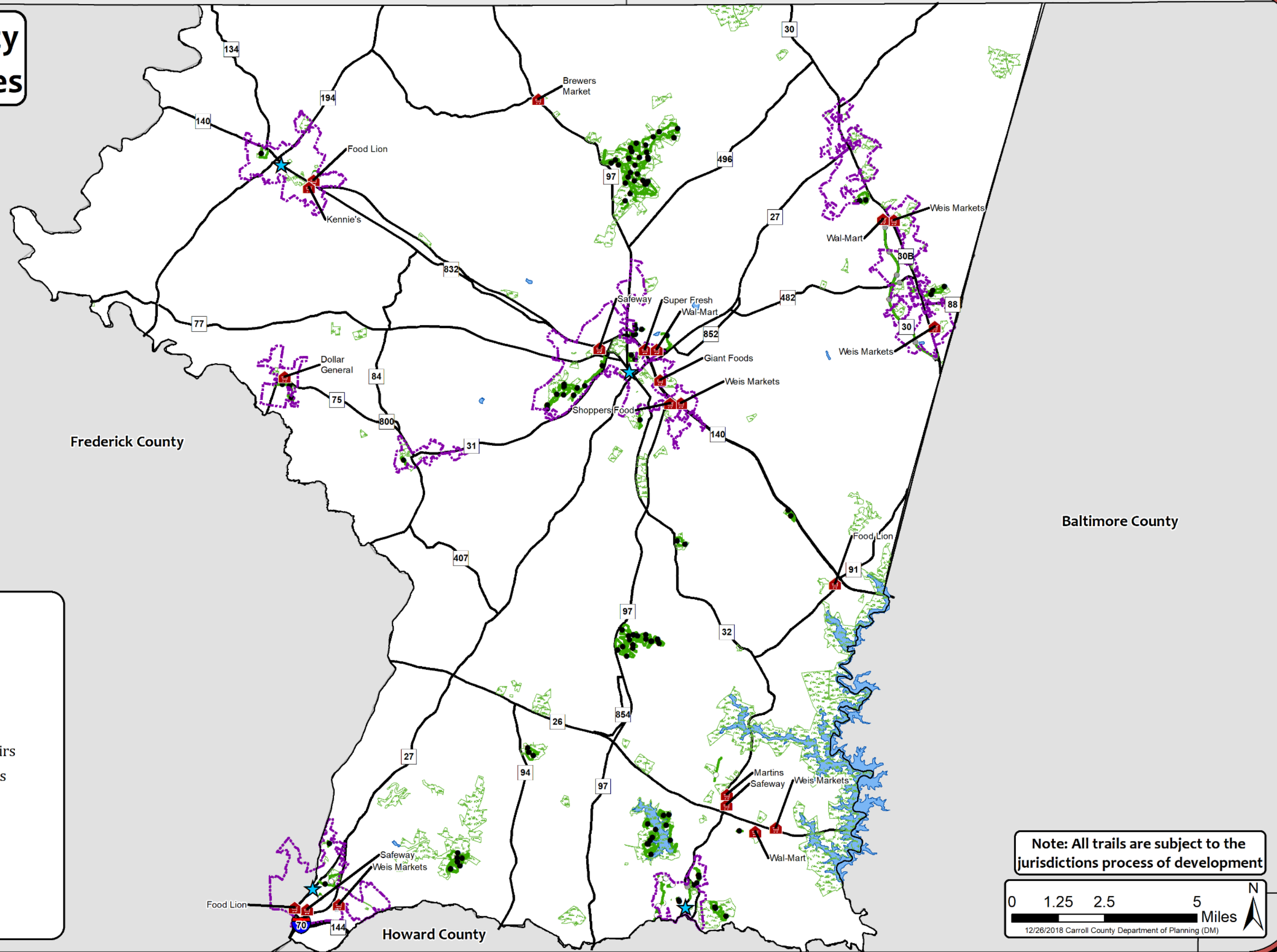
A bicycle trail economic impact analysis was performed in North Carolina on the Northern Outer Banks. The findings showed that \$60 million in tourist spending (on food, entertainment and lodging) supported 1,400 jobs. The annual approximation of tourists that traveled to this area for the sole and part reasoning of cycling was 68,000.

Garrett-Peltier, Heidi. Political Economy Research Institute. *Pedestrian and Bicycle Infrastructure: A National Study of Employment Impacts*. June 2011. P.2.

Figure 5-5: Economic Benefits of Biking and Walking



Carroll County Grocery Stores



Map 5-3: Carroll County Grocery Stores



Educating businesses on the bike-ped market can assist them in making these connections so that each business can benefit individually and capitalize on this market. A bottom-up approach to working with businesses would allow each owner to make the best decision about what specific investments need to be made.

Job Creation

According to the Maryland Twenty-Year Bicycle & Pedestrian Master Plan, the cost of bicycle and pedestrian infrastructure is fairly low compared to the estimated return of “higher job creation per dollar spent when compared to traditional highway projects.”^{cxl} There is an opportunity to partner with businesses to further increase the benefits.

In 2011, the Political Economy Research Institute performed a National Study of Employment Impacts derived from Pedestrian and Bicycle Infrastructure. For this report, data was collected from 58 projects in 11 cities across the United States. The purpose of this study was to “estimate the employment impacts of building and refurbishing transportation and infrastructure for cyclists and pedestrians.”^{cxli} This included jobs created from the construction of walking and cycling infrastructure. Types of jobs include manufacturing, design, construction and installation. This study did not evaluate the economic impact relating to the use of walking and cycling infrastructure, rather the impact of construction.

The overall findings concluded that construction of bicycle specific or pedestrian specific infrastructure created the greatest amount of jobs; while construction of road-only infrastructure supported the lowest amount of job creation. The table below shows the type of infrastructure constructed and the number of jobs created from one million dollars of spending.^{cxlii}





Table 5-6: National Average Employment Impacts by Project Type

Infrastructure	Money Spent	Total Jobs Created
Bicycling-only	\$1 million of spending	11.41
Pedestrian-only	\$1 million of spending	9.91
Multi-use Trails	\$1 million of spending	9.57
Road Construction & Bike-Ped Facilities	\$1 million of spending	8.53
Road-only	\$1 million of spending	7.75
Average	\$1 million of spending	8.96

PERI study July 2011 Pedestrian and Bicycle Infrastructure: A National Study of Employment Impacts. ** "Total jobs created" include direct, indirect and induced jobs, and are within the State where the project is located. **

Real Estate

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. A grant supporting the Indianapolis Cultural Trail, an eight-mile bicycle and pedestrian trail, has led to a \$140 million increase in adjacent property value says the U.S Department of Transportation.^{cxliii}

This shows that an increased economic wealth in bike-ped communities is aided not only through business transactions of goods, but also through real-estate transactions. Additionally, Darren Flusche, Policy Director of the league of American Bicyclists, found that in Delaware, properties within 50 miles of a bicycle path sell for \$8,800 more compared to other similar homes.^{cxliiv}



New research performed by the University of Cincinnati finds a large benefit to homeowners located close to nature trails. The Little Miami Scenic Trail stretches across 12 miles of urban and suburban Cincinnati. "The scenic, multipurpose trail beckons walkers, hikers, skaters and bicycle enthusiasts and also has horseback riding paths." Research concluded that housing prices rose nine dollars for every foot closer to the trail and homeowners were willing to pay an extra \$9,000 premium in return for 1,000 feet closer to the trail.^{cxlv}

Partnerships

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. Two of these examples are the Canal Towns Partnership for the Great Allegheny Passage (GAP) and the C&O Canal Towns Partnership.

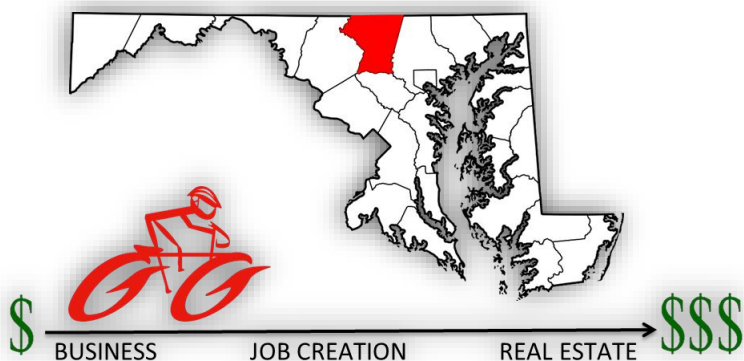
The Canal Towns Partnership for the Great Allegheny Passage is an example of a partnership with the community stakeholders to best leverage resources for businesses and provide a bike-ped friendly environment, see Figure 5-6. The towns coincide through the program to focus on "community and economic





development around trail tourism and outdoor recreation.”^{cxlvi} Economic opportunities are viable through this program as town businesses are encouraged to contact the program for resources on trail tips, marketing and financing. The program has learning opportunities through webinars, pamphlets/brochures and maps that shine light on regional events in the towns.

The historic Chesapeake and Ohio Canal (C&O Canal) is followed by 184 miles of scenic towpath, creating one of the largest bikeways in the U.S. The path winds its way from Washington D.C. to Cumberland, MD. The Canal Towns Partnership was created to heighten those opportunities and to generate more wealth for the towns and communities. The partnership, managed by the partner program C&O Canal Trust, is made up of nine towns, “who generate mutually beneficial economic activities by providing amenities and services to visitors.”^{cxlvii} These towns work together through the partnership to build awareness of amenities that are available for tourists.



As with these partnership examples there is the potential to capitalize on bicyclists and hikers who venture out these multiple mile trails. There will be a need for restaurants, lodging and camping accommodations, visitor services, and businesses that sell hard and soft goods. 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.





SNAPSHOT: Canal Towns and Trail Towns Partnerships

Towns along the C&O Canal and the Great Allegheny Passage (GAP) have joined the Canal Towns and Trail Towns partnerships. These partnerships provide tools to help towns along the trails leverage their proximity to the trail to realize economic development and community revitalization benefits associated with trail-based tourism.

The Trail Towns Program® is a project of The Progress Fund developed in conjunction with the Allegheny Trail Alliance (ATA). Participating towns, including Cumberland and Frostburg, have pages on the ATA website, www.ATATrail.org, featuring easily accessible maps, directions, and lists of lodging, restaurants, and other amenities. The Trail Towns Program advertises the following key actions for becoming a successful Trail Town:

- **Enticing trail users to get off the trail and into your town.**
- **Welcoming trail users to your town by making**
- **Information about the community readily available at the trail.**
- **Making a strong and safe connection between your town and the trail.**
- **Educating local businesses on the economic benefits of meeting trail tourists' needs.**
- **Recruiting new businesses or expanding existing ones to**
- **fill gaps in the goods or services that trail users need.**
- **Promoting the “trail-friendly” character of the town.**
- **Working with neighboring communities to promote the entire trail corridor as a tourist destination.**

In addition, another website, trailtowns.org, has information for business owners and entrepreneurs along the GAP Trail. Targeted uses include restaurants, hostels, campgrounds, outfitters, and bike shops.

The site has information about business planning, available properties, market, and socio-demographic data about trail users, and information about financing opportunities through the program. Since the program's beginning in 2007, The Progress Fund has made 23 loans to Trail Town businesses, leveraging \$6.7 million in total investment.

The Canal Towns Partnership (CTP) was formed by a group of volunteers in 2009 with similar goals. The CTP seeks to assist the communities along the C&O Canal towpath in reaping the multiple benefits of trail-based tourism and recreation. The CTP focuses on economic development strategies and supporting communities that connect to the C&O Canal in becoming more bikeable and walkable. Representatives of the eight participating towns meet monthly to discuss visitor attraction strategies and collaborative marketing efforts and to explore ways to improve visitor services and amenities in their communities.

Accomplishments of CTP to date include:

- **A successful application for assistance from the**
- **National Park Service through the Rivers, Trails, and**
- **Conservation Association.**
- **Design and development of business directories**
- **in each community at the trail access point with**
- **business listings of services, a town map and historical information. Bike lanes developed, directional signage and bike racks installed in the towns. Coordinated wayfinding signage with the C & O Canal**
- **National Historical Park.**
- **Successful funding of a Canal Towns web site and**
- **Canal Towns brochures offering visitor services.**

Figure 5-6: Canal Towns and Trail Towns Partnerships, *Maryland 20-Year Bicycle Pedestrian Master Plan*



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

Endnotes

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Chapter 6: Transportation Alternative

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

The 2014 Carroll County Master Plan identified Carroll County’s transportation system as declining in its level of service (LOS) and in need of attention. State investment in roads has not kept pace with the County’s development. Goal 5 of the master plan is to “provide a safe and functional intra-County transportation system that promotes access and mobility for people and goods through a variety of transportation modes.” Multi-modal connections are essential for a strong transportation network. These connections should benefit all income levels, ages, races, and abilities.

The utilization of alternative transportation modes is becoming more prevalent. Carroll County does offer some alternatives to the single-occupancy vehicle (SOV), such as Park-and-Ride lots, Rideshare, and TrailBlazer. These options are accessible in certain parts of the County (see Map 6-2). Thinking beyond cars as the only mode of transport by giving Carroll residents more transportation options, and developing policies that keep the safety and wellbeing of all users in mind, supports the creation of a Complete Streets Policy. A complete transportation network will reduce short-trip vehicle traffic, allow residents to have more vibrant and healthy lives and communities, and generate more economic activity for Carroll County.

Carroll County Complete Streets

According to the National Complete Streets Coalition, complete streets are “designed and operated to enable safe access for all users...Complete Streets make it easy to cross the street, walk to shops, and bicycle to work.”^{cxlviii} 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. Creating Complete Streets also means design and operation of the right-of-way (ROW) to enable safe access for all users, regardless of age, income, ability, or mode of transportation. A Complete Streets Policy can make the streets in your community more connected, resulting in better access for all.

The creation of Complete Streets does not mean that Carroll County will begin to look like other, more urbanized counties in Maryland. A good policy will complement and be well integrated with surrounding land uses. A policy can be designed according to Carroll County’s character, minimizing impacts on – and possibly enhancing – cultural resources, and meeting 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^{cxlix}, and within a rural context, each community has its distinct characteristics. There is an opportunity to create a policy that is unique to Carroll and works with its cultural identity and the diverse users of the County’s transportation network.





Why Have Complete Streets in Carroll County?

Complete Streets are necessary to accommodate the existing users of Carroll County's transportation network.^{cl} The primary mode of transportation in Carroll County is by vehicle. While this has been the most accepted use of the roadway, there are people biking and walking on state, County, and municipal roads. By state law, bicycles are also vehicles; therefore, they have a right to be on the road riding with vehicular traffic and cannot be prohibited from any roads.

For some households, non-motorized travel is their only mode of transportation. Other times, like when the only household vehicle breaks down, there is no choice but to use other modes of travel, including walking. The vast majority of bicyclists and pedestrians who utilize Carroll's transportation system do not feel safe due to a lack of bike-ped facilities and traffic conditions. 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. A rural, residential street may have the following complete street characteristics: low-speed roads with on-street parking, well-marked crossings, and sidewalks with accessible curb cuts.

Complete Streets provides an opportunity to:

- **Address the safety issues that are common on Carroll's rural roads.** The top rural pedestrian crash type is walking along the roadway. Sample crash data from the County sheriff and police reports find this happens nearly 50 percent of the time (see Chapter 7).
- **Address the safety issues that are common to walking and biking to school.** This includes improving traffic safety for public school and college students. Safety while boarding and exiting school buses should also be considered.
- **Reduce vehicular traffic by reducing travel by vehicle for short trips.** This could include, but is not be limited to, trips to parks, retail establishments, schools, businesses, historic sites, and restaurants.
- **Work with the state's newly established Complete Streets Program.**^{cli} If Carroll County establishes its own policy and it is approved by the Maryland Department of Transportation (MDOT), then there is matching funding available through this program. This program was just signed into law in May 2018; however, money must be appropriated for it to go into effect.
- **Improve public health.** Obesity rates are higher in rural areas compared to urban. A Complete Streets roadway design will provide physically active transportation options which can combat obesity-related disease.
- **Facilitate community improvements in their equity and economy.** Seniors, people with disabilities, children, and economically-disadvantage families often rely on traveling by foot, bike, and public transportation to access community resources and jobs. Alternative transportation options allow individuals to save money on transportation, and potentially spend that saved money in other areas of the local economy.
- **Create safe connections between and within rural towns.** Many small towns are surrounded by agricultural land and may consist of a walkable downtown; however, bigger stores are often pushed to the outskirts of town and can be dangerous to travel to by foot or bike. Complete Streets can provide safer access to commercial areas and a variety of transportation modes to use when traveling in between towns. There is also an opportunity to provide connectivity between new developments. Safe, alternate connections between developments will encourage biking and walking.



- **Empower local communities to work with larger transportation departments.** Major roads that run through a rural town are often not controlled by the local community, but by the state; this can be a challenge when it comes to building state roadways that meet community needs.^{clii}

Benefits

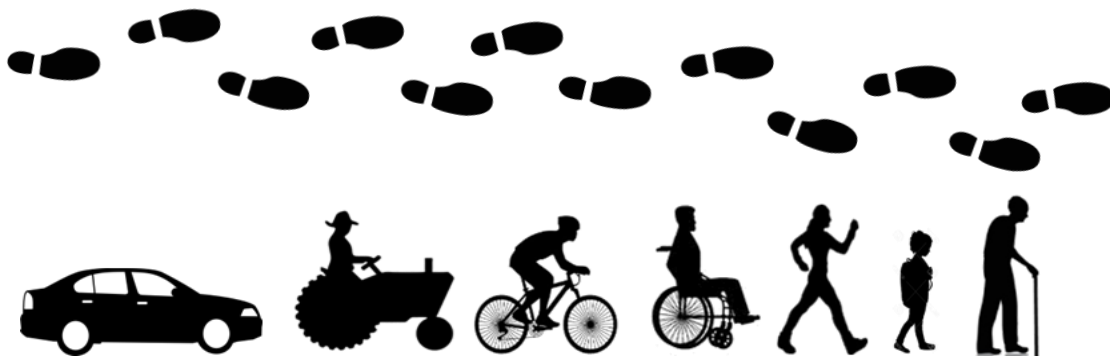
The Small Town and Rural Multimodal Networks Guide (STRMNG) is a design resource full of ideas to help small towns and rural communities support safe multimodal travel for people of all ages and abilities.^{cliii} While it does not specifically address Complete Streets, it does point out common issues in rural areas and small towns that can be addressed through a Complete Streets Policy.

The benefits of Complete Streets include:

- Health and Quality of Life
 - Improvement to community health
 - Assistance to people with disabilities
 - Improvement to mobility for seniors and assistance with aging in place
 - Assistance in combating childhood obesity
- Infrastructure and Safety
 - Reduction in traffic congestion
 - Improved road safety and reduced crashes
 - Assistance in keeping kids safe
 - Safety improvements for those walking or biking to destinations
 - Addition of lasting value to transportation infrastructure
 - Opportunity to improve coordination with the state to address safety issues
 - Creation of policies necessary to safely accommodate existing road users
- Economics and Costs
 - Often created with little to no additional transportation budget expense
 - Reduced household transportation costs
 - Stimulation of the local economy including:
 - Boosting sales,
 - Bringing in new businesses,
 - Improving employment levels,
 - Increasing property values,
 - Growing private sector investment
 - Provision for additional transportation funding opportunities^{cliv clv clvi}



Figure 6-1: Creating Value: Assessing the Return on Investment in Complete Streets, webinar March 29, 2017



The process for creating Complete Streets brings residents, businesses, and government together to determine how to address the challenges of improving the multi-modal transportation network. In Carroll County, a Complete Streets policy would be focused on specific, key areas as opposed to the entire County. A greater return on investment from implementation of a Complete Streets policy would be better served in areas with frequented destinations, such as the County’s Designated Growth Areas (DGAs) and municipalities.

Supportive Data

Various data collected from outreach events and County, state, and federal data sources support the need for alternative transportation accommodations in Carroll County:

- County Sheriff and Municipal Police Crash Data found that nearly half of all County collisions occurred along the roadway, on the shoulder, or mid-road (see Chapter 7)
- Bike-Ped crashes often end in the pedestrian or bicyclist being transported from the scene for emergency services
- Carroll County’s Emergency Communications responded to over 100 bike-ped related incidents between January 2016 and May 2018^{clvii}
- Children are more likely to be involved in a collision on a bicycle than as a pedestrian
- At least 400 people are walking along roads within Carroll County that have no shoulder^{clviii}
- At least 400 people are biking on roads with no shoulder in Carroll County^{clix}
- Walking and biking for short trips to parks, restaurants, historic sites, or stores is something that is desired by Carroll residents^{clx}

It is important to further engage residents on the solutions to the issues surrounding these findings and the perceptions of safety while walking and biking in Carroll.

Carroll’s Challenges to Creating Complete Streets

While there is a desire for improved infrastructure in the County, there are constraints resulting from limited financial resources and topography.

- **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 (ROW) 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.

A shortage of funding and staff often hinder the creation and implementation of a Complete Streets policy in a rural area. A solution to this may be to look into grant funding and technical support opportunities that arise through regional planning authorities and advisory groups.

Utilizing transportation, utility, and development projects that will include road maintenance and construction is a great opportunity to incorporate Complete Streets strategies. For example, to install bike lanes when the road is being repaved. Combining projects to implement Complete Streets initiatives can greatly decrease the time and expense of separate projects. The following are low-cost Complete Street initiatives:

- **Mark the shoulder as a bike lane** where there is a minimum of 4 feet in width (or 5 feet, if adjacent to parking); these bike lanes may produce a 35% reduction in crashes.
- **Sweep shoulders** so they are usable.
- **Enhance sign visibility** by using a florescent background such as yellow or green, and adding a strip of that same color to the sign post in accordance with the Maryland Manual on Uniform Traffic Control Devices (MD MUTCD). Clear brush, tree limbs, and any other objects that may obscure the sign (see Figure 6-2).
- **Provide marked crosswalks**; the block pattern has the highest visibility. A 40% reduction in pedestrian crashes is observed when crosswalks are in place (see Figure 6-3: Block pattern crosswalk).
- **Make crosswalks visible** by locating parking relative to crosswalks, driveways, and intersections to provide clear sight lines.
- **Enhance crosswalks** by adding in-street pedestrian signs at existing crosswalks; these signs are very effective at grabbing the driver's attention. Add pedestrian refuge signs and islands at multi-lane crossings and excessively long crossings; this can lead to nearly a 50 percent reduction in crashes. A bulbout (or curb extension) can be added to existing crosswalks to create better sight lines for both pedestrians and drivers. It will also shorten the amount of time a pedestrian is exposed to vehicles while crossing the street. Bulbouts are a method of traffic calming, and a trial can be done using cones to see how drivers will react. Rectangular rapid flashing beacons (RRFB) can be installed at crossings where there is a vulnerable pedestrian population, high pedestrian volume, or known compliance problems.
- **Provide sidewalks** where there are gaps in the sidewalk network. A *goat trail* is where pedestrians are already



Figure 6-2: Enhanced Sign Visibility



Figure 6-3: Block pattern crosswalk





walking but there is no facility; usually indicated by visible signs such as a dirt path through grass. A goat trail is a big indication of where a sidewalk is needed.

- **Improve transit facilities** by adding shelters at transit stops for protection from weather, providing bike racks on transit vehicles and at transit stops, and extending sidewalks to and from the facilities.^{clxi}

Important Elements of a Complete Streets Policy

An ideal Complete Streets policy would include the following:

1. **Vision and intent:** Includes an equitable vision for how and why the community wants to complete its streets. Specifies need to create a complete and connected transportation network, and specifies at least four travel modes, two of which must be biking and walking.
2. **Diverse users:** Benefits all users equally, particularly vulnerable users and the most underinvested and underserved communities with high needs.
3. **Commitment in all projects and phases:** Applies to new, retrofit/reconstruction, maintenance, and ongoing projects.
4. **Clear, accountable expectations:** Makes any exceptions specific and sets a clear procedure that requires high-level approval and public notice prior to exceptions being granted.
5. **Jurisdiction:** Requires interagency coordination between government departments and partner agencies on Complete Streets.
6. **Design:** Directs the use of the latest and best design criteria and guidelines, and sets a timeframe for their implementation.
7. **Land use and context sensitivity:** Considers the surrounding community's current and expected land use and transportation needs.
8. **Performance measures:** Establishes performance standards that are specific, equitable, and available to the public.
9. **Project selection criteria:** Provides specific criteria to encourage funding prioritization for Complete Streets implementation.
10. **Implementation steps:** Includes specific next steps for implementation of the policy.^{clxii}

When choosing which Complete Streets policy approach to pursue, reflect on existing policy and practices in and around the County. Also, identify from the approaches in Table 6-1 which would be most effective at creating change in the community, and which would have the greatest odds of being implemented.





Table 6-1: Complete Streets Policy Approach Options^{clxiii}

Approach	Description	Important Considerations
Commissioner Driven Ordinance	Legally changes the County Code to require the needs of all users be addressed through transportation projects	Is legally binding
Commissioner Driven Resolution	An official statement of support for addressing community transportation needs	Is not legally binding
Commissioner Approved Plan	May contain a Complete Streets policy; often these policies are found in community comprehensive plans or transportation plans	Creates the vision for Complete Streets, but is not regulatory in the County Code
Commissioner Approved County Policy	Adopted as an official County policy and cites detailed ways of building partnerships between County agencies, the community, and decision makers	Requires a strong commitment from County leadership
Commissioner Approved Design Guidelines	An integration of Complete Streets in planning and design	Requires the creation of a Design Guide that must be incorporated in all projects; often does not require public input
Department Policy	When a county agency/department creates an “in house” policy that must be followed on all its projects	Requires a strong commitment from department/agency leadership
Executive Order	The chief executive, often the mayor, defines the problems and directs agencies to make necessary corrections	Requires a strong commitment from city/town leadership

Alternatives for Low- and Fixed-Income Populations

Having a policy that addresses infrastructure improvements for alternative modes of transportation, such as Complete Streets, will benefit low- and fixed-income populations. Many of the low-income households in Carroll do not have access to a vehicle. This may often be due to affordability. Generally, transportation is the second highest household expense, next to housing. Transportation costs per household are higher in Carroll County (22 percent) compared to the region (18 percent).^{clxiv} This puts a greater financial strain on low-income households. This burden can be relieved by improved access to safe and more affordable transportation options.

2,687
Carroll County
households do NOT
have an available
vehicle





In Carroll County, 4.4 percent of households do not have access to a vehicle. That is 2,687 households, with approximately 7,000+ people. American Community Survey (ACS) data in Table 6-2 show the percentage of households without access to vehicles. There is even less access in Westminster, the Counties largest municipality, and County seat.

1,133

Westminster

**households do not
have an available
vehicle**

- In the City of Westminster alone, 15.5 percent of households don't have access to a vehicle (about 1,133 households, with approximately 2,500+ people); this percentage is higher than the state of Maryland and the entire United States^{clxv}
- 1,130 people walk to work in Carroll County^{clxvi}
- 174 people bike to work in Carroll County^{clxvii}

Table 6-2: Vehicles by Household

	Occupied housing units with no vehicles available	Occupied housing units with one vehicle available	Occupied housing units with two vehicles available
Westminster, MD	15.5%	34.4%	32.8%
Carroll County, MD	4.4%	22.6%	38.6%
Maryland	9.2%	32.7%	36.8%
United States	9.0%	33.6%	37.3%

ACS Vehicle by Household, 5-year Estimates 2012-2016

On three different days, at four separate one-hour timeframes, Carroll County Planning staff observed people walking and biking along MD 140 within the Westminster Municipal Growth Area (MGA), between WMC Drive and Market Street. Of the 44 people observed at intersection and non-intersection locations: 86.4% were pedestrians and 13.6% were bicyclists, 75.0% were male, 20.5% were of minority races, one person was disabled, and one person was a child. These observations can be viewed in Map 6-1.

75.0%

were male



20.5%

were of minority races



86.4%

were pedestrians



13.6%

were bicyclists

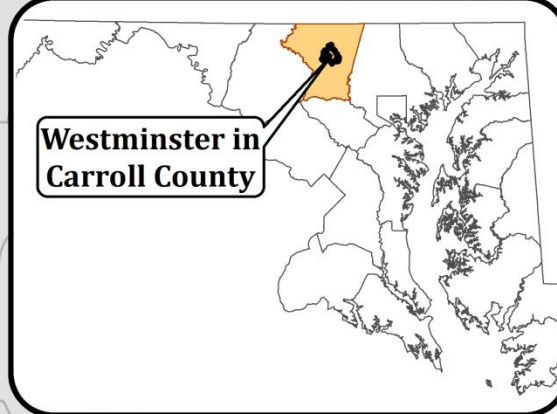


Some of those walking were trying to make it to and from destinations such as Walmart, work, 7-11 store, and bank/money cashing. This shows people are willing to walk or bike in the right-of-way of a dangerous road, with little to no protective infrastructure, because it is the best way to get to their destination. Observing pedestrian and bicycle activity should be regularly conducted at specific locations within the County's growth areas to determine the use of transportation facilities by bicyclists and pedestrians. This information will help inform the County on where bike-ped facilities are most needed.

Bike-Ped Observation Area, MD 140 in Westminster

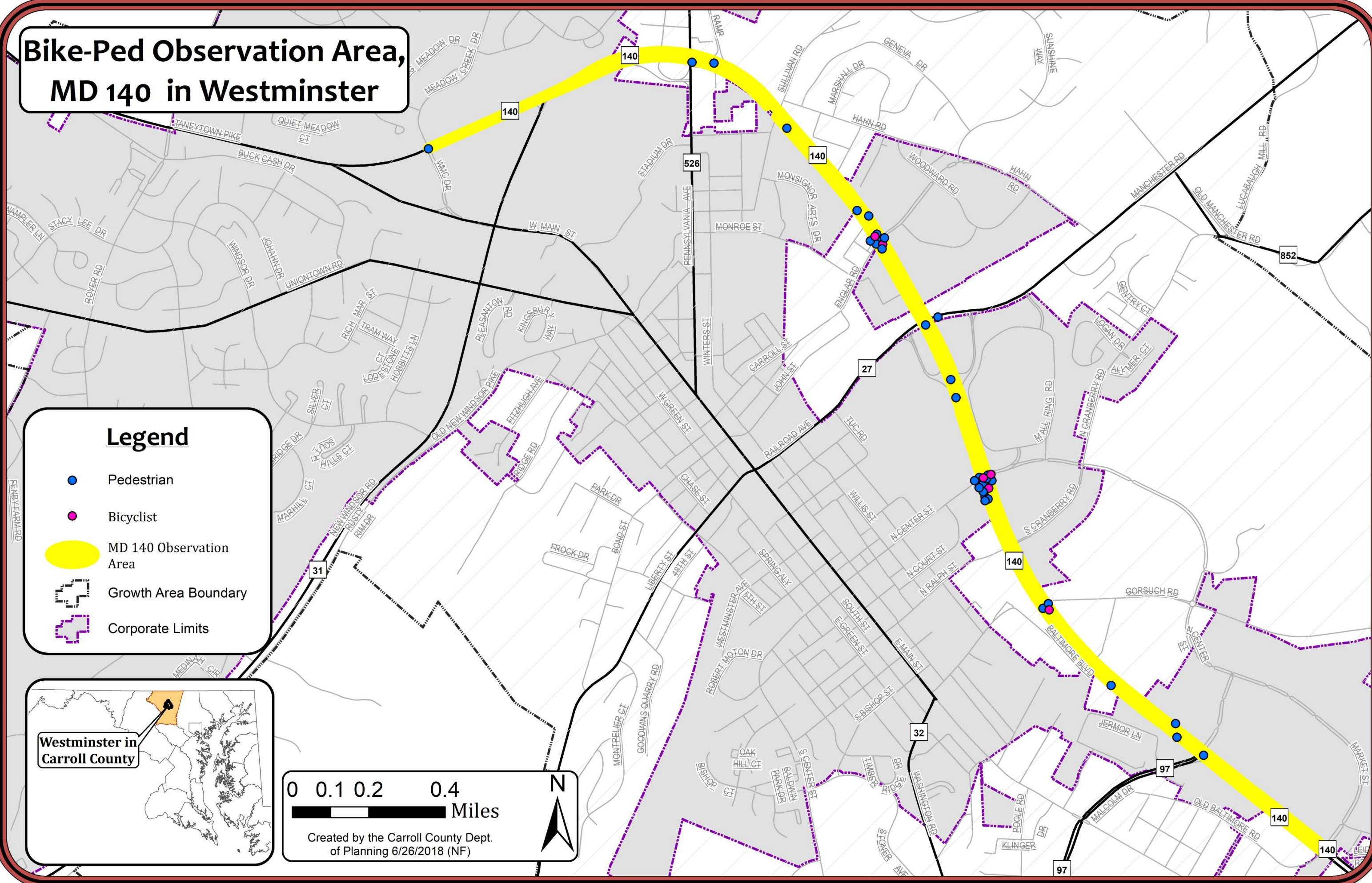
Legend

- Pedestrian
- Bicyclist
- MD 140 Observation Area
- Growth Area Boundary
- Corporate Limits



0 0.1 0.2 0.4 Miles

Created by the Carroll County Dept. of Planning 6/26/2018 (NF)



Map 6-1: Bike-Ped Observation Area, MD 140 in Westminster



TrailBlazer

TrailBlazer is Carroll County's transit system that connects Taneytown, Westminster, and Eldersburg/Sykesville through deviated fixed routes. In August of 2018, a new route to Hampstead and Manchester will be provided. The TrailBlazer receives MTA funding and provides transportation services to low-income and fixed-income populations such as veterans, senior citizens, the disabled, college students, and those who cannot access a car.



According to a June 5, 2018 presentation to the Carroll County Board of Commissioners, total ridership in 2017 was 15,976 passengers. Westminster has the highest ridership at 9,285 in 2017. In 2018, the ridership is projected to be about the same or even greater.

An accommodation that could provide additional access to some of those who ride TrailBlazer would be including bike racks on the buses. This benefit would allow people to travel more quickly to and from a transit stop, assisting with the first and last mile connection in their route to a destination. First and last mile connections are often needed because transit normally does not take the user directly to his destination. The first and last mile, generally, are the least efficient parts of traveling to a destination.^{clxviii} Providing bike racks has the potential to increase access to various destinations that meet everyday needs for a household, e.g., medical offices, grocery stores, pharmacies, and employment centers.








Figure 6-4: From The Chronicle Herald, Nova Scotia, and Roscommon County Transportation Authority in Michigan












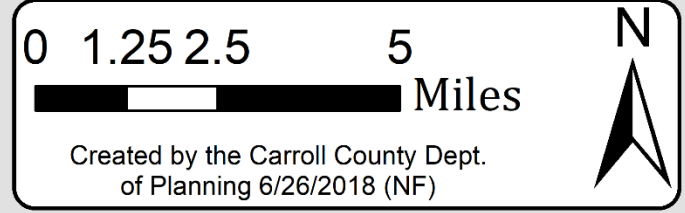
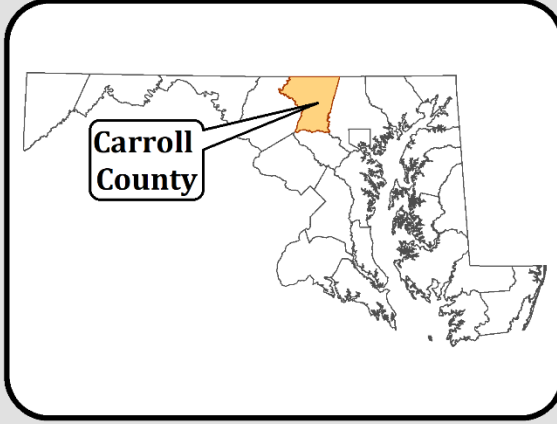
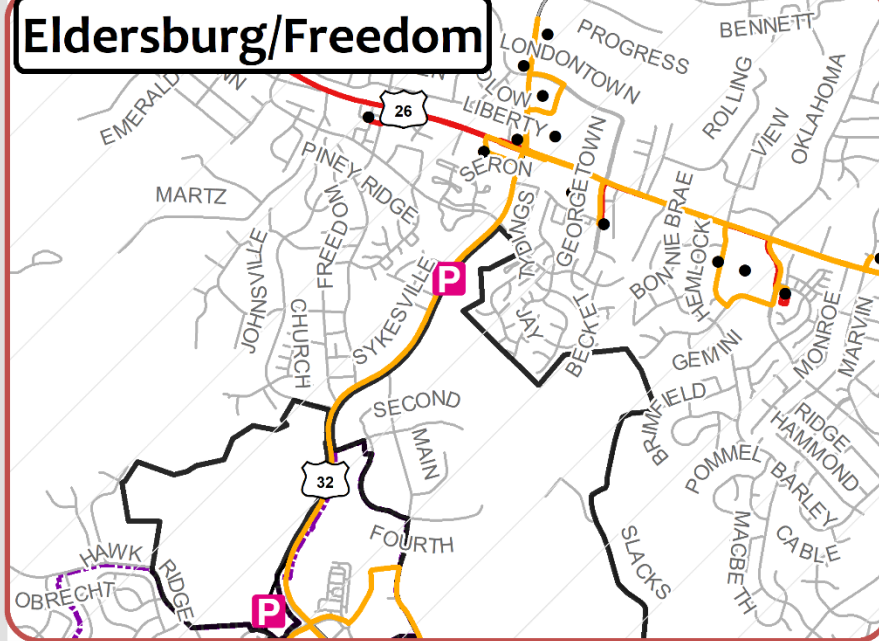
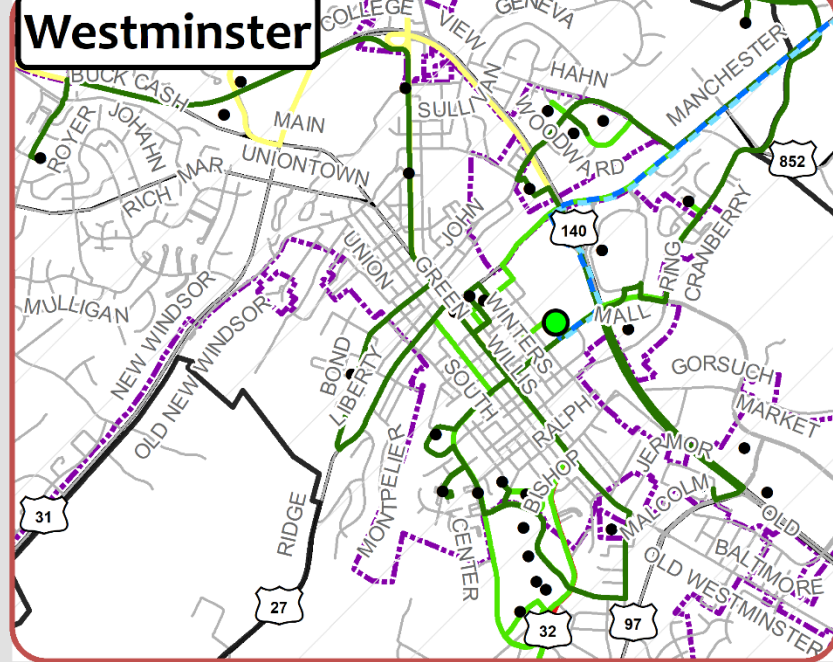
County Park and Ride Lots and TrailBlazer Routes

Legend

-  Corporate Limits
-  County Border
-  Park and Ride Lots
-  BERC (Hub)
-  TrailBlazer Stops

TrailBlazer Routes

-  Hampstead Manchester Original*
-  Hampstead Manchester Alt Rte*
-  Westminster #1**
-  Westminster #2**
-  Taneytown
-  South Carroll
-  Eldersburg/Westminster



Frederick County

Baltimore County

Map 6-2: County Park and Ride Lots and TrailBlazer Routes



Alternatives for Students

The County's student population is made up of those in grade school and college, in both public and private institutions. For students, access to vehicles often involves relying on someone else. Access to alternate transportation would give this population more freedom and independence. For college students, if they do not also have to worry about the expenses of a vehicle, then their often-limited budget can be freed up for other necessities.

Education Links and Safe Routes to Schools

Engaging the student population of colleges and universities will help to further enhance a Complete Streets policy. According to USNews.com, 50 percent of McDaniel College students have cars on campus^{clix}. This leaves the remaining students to utilize other options. At McDaniel College, there is a bikesharing program called McCycles that allows students to use bicycles to travel around Westminster. Some students have gone as far as crossing MD 140/Baltimore Boulevard on bicycle. This student population can give great input for improvements on roads and crossings that would enhance their transportation experience.

Parent and student groups in public schools can be engaged about improving the experience of children walking or biking to school. If a walking school bus^{clxx} or bicycle train is something that interests this group, policy can be put in place to encourage, rather than hinder, these programs. For example, signs and reduced posted speeds can be put in place during certain times of the day to draw attention to students who may be biking and walking to school. More about this is mentioned in Chapter 7.

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 BERC Transportation Hub
- 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

Endnotes

^{cxlviii} Smart Growth America. What are Complete Streets? Accessed May 2, 2018.

<https://smartgrowthamerica.org/program/national-complete-streets-coalition/what-are-complete-streets/>

^{cxlix} Smart Growth America. What does a Complete Street look like? Accessed May 2, 2018.

<https://smartgrowthamerica.org/program/national-complete-streets-coalition/what-are-complete-streets/>

^{ci} Snyder, Tanya. "Combating the Myth That Complete Streets Are Too Expensive." *StreetsBlog USA*. December 8, 2011. Accessed May 18, 2018. <https://usa.streetsblog.org/2011/12/08/combating-the-myth-that-complete-streets-are-too-expensive/>

^{cii} In 2018, the Maryland General Assembly passed a Complete Streets bill establishing a Complete Streets Program with a competitive grant program (HB 535). Local governments that develop complete streets policies certified by MDOT may apply for grants. Local governments that develop complete streets policies certified by MDOT may apply for the grants. It will take effect July 1, 2018.

^{ciii} Active Transportation Alliance and We Choose Health. *Complete Streets Complete Networks Rural Contexts*. September 2014.

Accessed June 19, 2018. <https://atpolicy.org/resources/design-guides/complete-streets-rural-contexts/>

^{ciiii} Federal Highway Administration. Small Town and Rural Multimodal Networks. December 2016. Page 1-4.

^{clv} Smart Growth America. *The Elements of a Complete Streets Policy*.

https://smartgrowthamerica.org/resources?resource_type=fact-sheet&authors=&category_name=complete-streets&s=

^{clvi} Smart Growth America and National Complete Streets Coalition. *Costs of Complete Streets*.

<https://www.smartgrowthamerica.org/app/legacy/documents/cs/factsheets/cs-costs-2.pdf>

^{clvii} Smart Growth America and National Complete Streets Coalition. *Complete Streets: Guide to Answering the Costs Question*.

<https://www.smartgrowthamerica.org/app/legacy/documents/cs/resources/cs-answering-the-costs-question.pdf>

^{clviii} Carroll County Emergency Communications data January 1, 2016 to May 17, 2018.

^{clxiii} 2016 Carroll County Bicycle-Pedestrian Master Plan Interest Survey.

^{clix} 2016 Carroll County Bicycle-Pedestrian Master Plan Interest Survey.

^{clx} A dot-survey taken at the Bicycle-Pedestrian Master Plan Citizen Outreach on March 21, 2017.

^{clxi} Smart Growth America, National Complete Streets Coalition, and AARP. Webinar: Implementing Complete Streets in Small

Towns and Rural Communities in Vermont. November 6, 2017. <https://www.youtube.com/watch?v=ZBQxWQgElj8>

^{clxii} <https://smartgrowthamerica.org/resources/elements-complete-streets-policy/?download=yes&key=42632969>

^{clxiii} National Complete Streets Coalition. Local Policy Workbook. <https://www.smartgrowthamerica.org/app/legacy/documents/cs-local-policy-workbook.pdf>

^{clxiv} Center for Neighborhood Technology (CNT). H+T Index. <https://htindex.cnt.org/fact-sheets/>

^{clxv} 2012-2016 American Community Survey 5-Year

^{clxvi} 2012-2016 American Community Survey 5-Year, Commuting Characteristics

^{clxvii} 2012-2016 American Community Survey 5-Year, Commuting Characteristics



^{clxviii} Stigo: Urban Travel Blog. “The Last Mile — the term, the problem and the odd solutions.” October 4, 2017. Accessed August 8, 2018. <https://medium.com/the-stigo-blog/the-last-mile-the-term-the-problem-and-the-odd-solutions-28b6969d5af8>

^{clxix} U.S. News Education. McDaniel College. <https://www.usnews.com/best-colleges/mcdaniel-college-2109>

^{clxx} Walking School Bus – a group of children walking to school with one or more adults







Chapter 7: 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.

To effectively implement a useable bike-ped network, infrastructure must be designed in a manner that gives all users safe transportation options. The County's 2016 Bicycle-Pedestrian Master Plan Interest Survey (2016 Interest Survey) clearly shows there is a desire to see more bike-ped infrastructure. Designing rural roads to be more bike-friendly can be challenging. The best bike-ped facility options may be examined through national and statewide trends; however, these trends often focus on urban areas. 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. As new facilities are constructed to higher standards and existing facilities are improved, user safety conditions improve and user confidence increases. This chapter will examine safety concerns and crash data and offer best practice design alternatives to consider.

Safety and Collisions

One of the main ways to encourage walking and biking is to ensure that all participants feel safe and secure. High vehicular speeds and heavily congested areas can create unsafe conditions for bicyclists and pedestrians. A countywide bicycle and pedestrian network will be more efficient than a vehicle-focused network with the appropriate, safe infrastructure in place. The 2016 Interest Survey found that people are interested in walking and biking to destinations in Carroll County, but do not feel safe due to a lack of bike-ped infrastructure and vehicular traffic conditions. Some key responses are outlined in Table 7-1. It is important to examine the common causes of crashes in order to determine potential countermeasures. It is also important to determine those problems unique to Carroll County and its rural environment. This includes analyzing collision data and gathering input from those who are biking and walking in the County. A community-based approach is the best way to educate and ensure user safety concerns are addressed.





Safety Concerns from the Public

Maintaining a safe transportation network for drivers, bicyclists, and pedestrians is a top concern of citizens. Proper and safe infrastructure needs to be put in place to accommodate those who bike and walk in the County. There also needs to be education on bicycle and pedestrian law and safety. Citizens have expressed concerns about the disrespect between motorists, bicyclists, and pedestrians. The 2016 Interest Survey found top safety concerns include:

- More and improved bike-ped infrastructure
- Respect from motorists
- Motorist education
- More signage
- More safe crossings

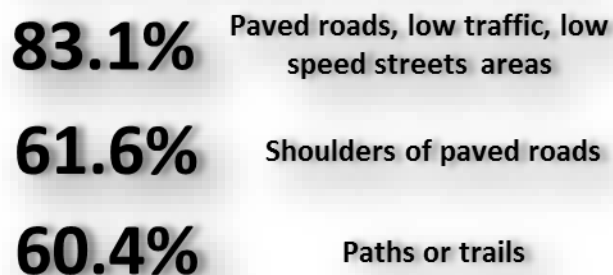
Table 7-1 shows what was determined from responses in the 2016 Interest Survey in terms of infrastructure, safety, and other notable characteristics.

Crossing roads and intersections on bicycle and by foot is another extensive safety concern of citizens. Throughout the outreach process of this plan, citizens have stated that they are fearful of biking and walking certain roads and of crossing roads and intersections. Citizens have also mentioned how cyclists are sometimes treated by motorists, including spitting on cyclists, speeding up when approaching cyclists, and yelling at cyclists. Pedestrians can experience similar behavior, as motorists are used to being the preeminent occupants of roadways.

Where do you walk in Carroll County?



Where do you bike in Carroll County?



If the people of Carroll County are not comfortable walking and biking because of a lack of safe infrastructure, then appropriate actions should be determined to improve the walking and biking experience. This includes, but is not limited to, examining why crashes or collisions occur so that appropriate infrastructure and safety measures can be put in place.





Table 7-1: 2016 Interest Survey Responses

	Walking	Biking
Infrastructure	<p>Survey participants are walking on the following Carroll County infrastructure:</p> <ul style="list-style-type: none"> • Paths or trails (including parks) 71.2% • Sidewalks 67.9% • Paved roads with no shoulders 51.2% <p>Participants would walk more if there were:</p> <ul style="list-style-type: none"> • More walking trails or paths 85.3% • Improved sidewalks 52.6% • Improved pedestrian crossings, signals, and signage 39.5% • Improved lighting and other security measures 31.5% 	<p>Survey participants are biking on the following Carroll County infrastructure:</p> <ul style="list-style-type: none"> • Paved roads, low traffic, low speed streets 83.1% • Shoulders of paved roads 61.6% • Paths or trails (including parks) 60.4% <p>Participants would bike more if there were:</p> <ul style="list-style-type: none"> • Off-road paths 63.7% • Bike lanes 61.7% • Paved shoulders 50.4% • Improved wayfinding signage 37.9% • In addition to infrastructure, education for motorists (37.7%) was the next most requested improvement
Safety	<p>On a scale of one to five (five being the most important):</p> <ul style="list-style-type: none"> • Rated as a four or five, motorists respecting pedestrians 69.2% • Rated as a four or five, safe and easy road crossings 64.6% <p>What keeps you from walking in Carroll County more often?</p> <ul style="list-style-type: none"> • I don't feel safe due to walking conditions/traffic 66.1% 	<p>On a scale of one to five (five being the most important):</p> <ul style="list-style-type: none"> • Rated as a four or five, motorists respecting cyclists 82.9% • Rated as a four or five, safe and easy road crossings 66.8% <p>What keeps you from biking in Carroll County more often?</p> <ul style="list-style-type: none"> • I don't feel safe due to road conditions/traffic 65.8%
Other	<p>Some other notable characteristics are:</p> <ul style="list-style-type: none"> • 70.3% walk at least a few times a week for leisure, fun, or exercise • 69.7% of respondents will walk up to two miles or more • Walking one-half mile or more is comfortable for 82.5% 	<p>Some other notable characteristics are:</p> <ul style="list-style-type: none"> • 75.5% ride a bike, but only 59.1% ride a bike within Carroll County (based on all respondents) • 45.8% of respondents ride their bike for leisure, fun, or exercise at least once a week, and 72.8% ride their bikes at least once a month • 68.6% of respondents are comfortable biking between 31 and 120 minutes^{clxxi}





Understanding Collisions

Bicyclists and Pedestrians are more vulnerable and may sustain more severe injuries in a collision compared to vehicular drivers. As the volume and speed of vehicles increase, there is an increased need for bicycle facilities (Figure 7-2); this is similarly true for pedestrians. It is important to recognize that bicycles are vehicles under Maryland law^{clxxii}. Therefore, cyclists have the right to be on the road, but also have responsibilities similar to drivers, as most traffic laws are also applicable to bicyclists. These factors play an important role in understanding how and why collisions occur. Failing to understand the laws, as they apply to pedestrians and bicyclists, and how to protect oneself, can lead to increased roadway incidents, including collisions and fatalities.

While pedestrian and bicycle accidents are more common in urban areas, the likelihood of a fatality increases in rural areas^{clxxiii}, according to the Federal Highway Administration (FHWA). The FHWA published a 2010 summary report titled *Factors Contributing to Pedestrian and Bicycle Crashes on Rural Highways*. The report is based on Highway Safety Information System (HSIS) data. The report includes these conclusions about 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
 - 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^{clxxiv}

FACT:
Bike-Ped Crashes

Compared to urban areas, rural areas are more likely to:

- Have higher bicycle and pedestrian fatality rates
- Have higher vehicle speeds
- Have crashes that occur at non-intersection locations

FHWA. Factors Contributing to Pedestrian and Bicycle Crashes on Rural Highways. 2010.
<https://www.fhwa.dot.gov/publications/research/safety/10052/10052.pdf>

Figure 7-1: Fact: Bike-Ped Crashes

**How Bicyclists are Affected by Traffic:
Vehicle Volume and Speed**

Speed

Volume

Shared Facilities (e.g. Shared Lane, Shared Roadway, Bicycle Boulevard)

Separated Bicycle Facilities (e.g. Bicycle Lane, Shared Use Path)

Bicycle Road Safety Audit Guidelines and Prompt Lists (2012),
Federal Highway Administration

U.S. Department of Transportation Federal Highway Administration

Pedestrian and Bicycle Information Center

www.pedbikesafe.org/PEDSAFE/

1-12

Figure 7-2: General Bicycle Facility Use Given the Context of Vehicular Traffic Volume & Speed, Pedbikesafe.org



County Data

To better understand collisions in Carroll County, data were collected from the County and municipal law enforcement offices^{clxxv} and Carroll County Emergency Communications. All data in this section describe bike-ped collisions with vehicles only. The County sheriff/police data represent collisions that occurred between 2012 and 2015^{clxxvi}. The Emergency Communications data represents response to calls between 2016 and 2018.

These data are only a sample size of all of the County's crashes and do not represent a complete picture of collisions.^{clxxvii} It is important to note that only 36 percent of the sheriff/police reported collision records were from denser areas of municipalities, while state and federal data, conversely, support crashes occurring more frequently in higher density areas.

Below are the main highlights of the sheriff/police data:

- 78 percent of all bike-ped collisions involved pedestrians
- 22 percent of all bike-ped collisions involved cyclists
- Age and Sex
 - Children (< 18) are more likely to be involved in a collision on a bicycle than as a pedestrian
 - Males are more likely to be involved in a pedestrian or bicycle collision than females
- Location
 - Nearly half of all collisions involving pedestrians or bicyclists occurred along the roadway, on the shoulder, or on the road (i.e., mid-road) (Figure 7-3)
- Injury, Fault, and Safety Practices
 - Over half of all collisions required the pedestrian/bicyclist to be transported from the scene to emergency services
 - While motorists are at fault most often, bicyclists are more likely to be at fault than pedestrians (as determined in the police/sheriff report)
 - Pedestrians are more likely to wear light colored or reflective clothing compared to bicyclists
 - Only 3 out of 17 nighttime collisions were known to have streetlights present
- Bicycle Collision Frequency (see Figure 7-4)
 - Peak collision months were the warmer months of May through June and September
 - Peak collision days were Thursday and Friday
 - Peak collision time was around 6:00 PM
- Pedestrian Collision Frequency (see Figure 7-4)
 - Peak collision hours were between 3:00 PM and 10:00 PM
 - Peak collision days for pedestrians were Friday, similar to the state of MD, but also Thursday
 - Peak collision months were April, May, and July through September
 - 50 percent of pedestrian collisions occurred along the roadway (32 percent) or on the shoulder (18 percent), compared to 9 percent at intersections; this data compares to the FHWA data on rural crashes showing that many collisions occur at non-intersection locations (see Figure 7-3)



There were various safety issues that were revealed in the County data. 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

The Emergency Communications bike-ped related calls showed the following:

- 83.8 percent were for a pedestrian-involved collision
- 16.2 percent were for a bicycle-involved collision
- The top 3 Fire Districts that responded to calls were:
 - 44.8 percent – District 3 (Westminster Fire Engine & Hose Company)
 - 11.4 percent – District 12 (Sykesville Freedom District Fire Company)
 - 8.6 percent – District 1 (Mount Airy Volunteer Fire Department)
- These districts fall within the Central and Southern EMS Districts

Carroll Bike-Ped Collisions: Location

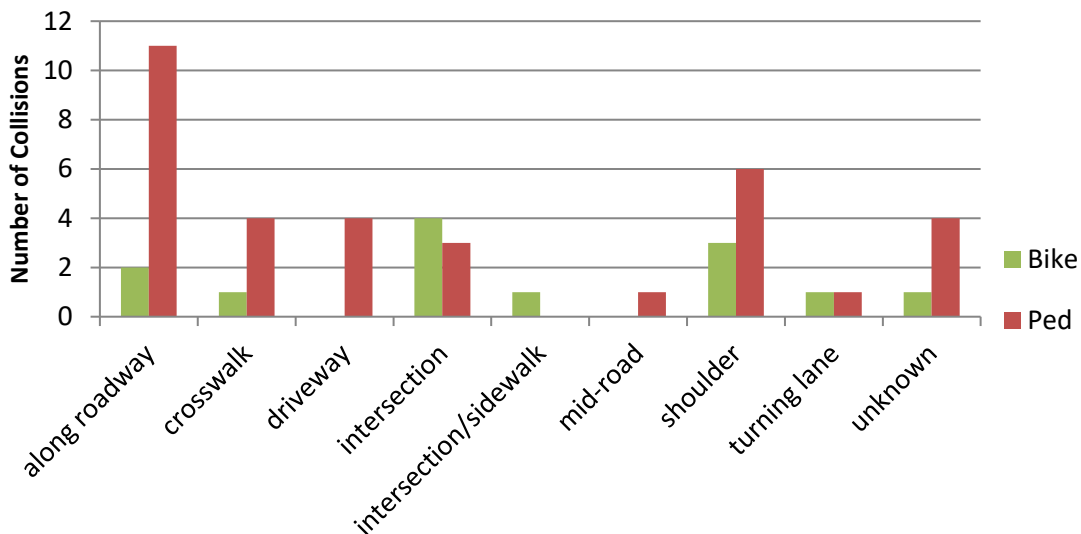
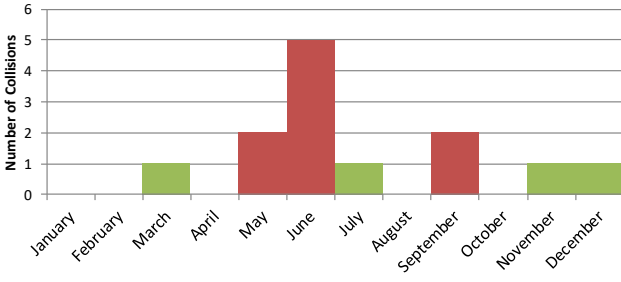


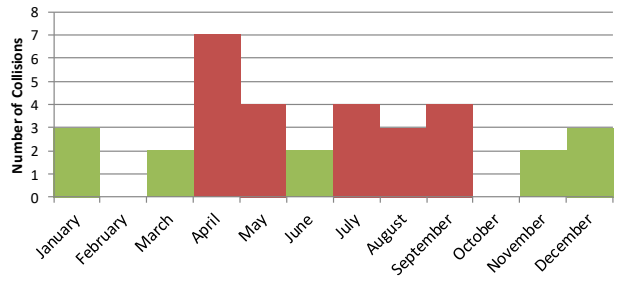
Figure 7-3: Carroll Bike-Ped Collisions: Location



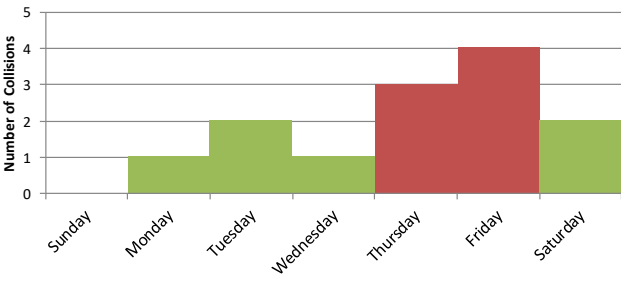
Bicycle Crash Frequency by Month



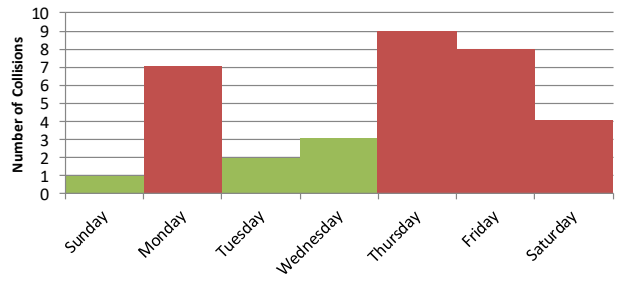
Pedestrian Crash Frequency by Month



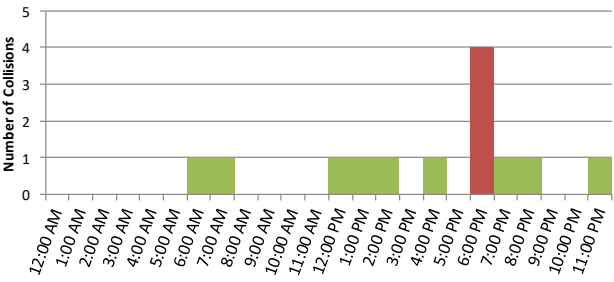
Bicycle Crash Frequency by Day



Pedestrian Crash Frequency by Day



Bicycle Crash Frequency by Hour



Pedestrian Crash Frequency by Hour

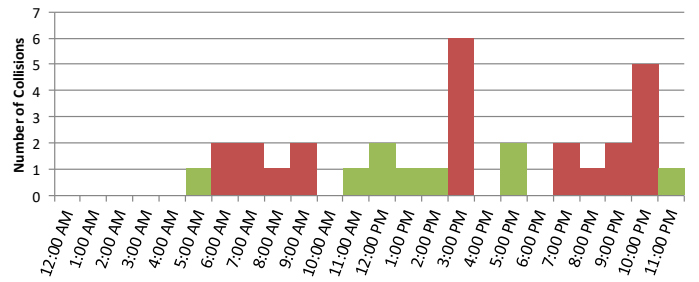


Figure 7-4: Carroll County Crash Frequency



State Data

In comparison to County data, the Maryland Motor Vehicle Association (MVA) found the following about bicycle/pedalcycle safety in Maryland:

- Between 2011 and 2015:
 - Crashes involving bicycles/ pedalcycles increased 20 percent, and 80 percent of those crashes resulted in death or injury
 - More than 60 percent of all bicycle/pedalcycle crashes occurred between May and October, with June to August having the highest number of injuries
- Between 2007–2011, on average:
 - 40 percent of all crashes and 35 percent of all fatal crashes involving bicycles/pedalcycles occurred between the hours of 4:00 PM and 8:00 PM
 - During those same years, on average, 52 percent of all bicycle/pedalcycle-involved crashes occurred between May and August. In these four warmer months, 49 percent of the crashes were fatal
 - 77 percent of all crashes involving bicycles/pedalcycles, and 71 percent of all fatal crashes involving bicycles/pedalcycles occurred in daylight
 - More than 63 percent of all bicyclist/pedalcyclists crashes occurred between the months of May and September
 - Bicyclist crashes overall were distributed almost equally across the days of the week; however, Tuesday was the peak day for bicyclist fatalities, accounting for 30 percent of all riders killed
 - Young bicyclists were the most likely to be involved in a bicycle crash; more than 40 percent of bicycle crashes involved a person under the age of 18
 - Approximately 84 percent of all bicyclists involved in a crash that were injured or killed while riding were male ^{clxxviii}

Below are important facts from the MVA about pedestrian safety in Maryland:

- Between 2011 and 2015:
 - Pedestrian-involved crashes in the state increased, including those resulting in injuries or fatalities
 - Pedestrian crashes were 3 percent of the state’s approximately 108,000 crashes, but 19 percent of all fatalities
 - Pedestrian-involved crashes were highest during the fall season
 - Fatal pedestrian crashes increased between October and December
 - Nearly half of all pedestrian crashes occurred between 3:00 PM and 10:00 PM
 - Fatal pedestrian crashes occurred more between 6:00 PM and midnight
 - Teens and young adults (age 34 and younger) were more likely to be the motorist in a pedestrian crash
 - Pedestrians were more likely to be between the ages of 10 and 29 (37 percent), and 45 and 59 (30 percent)
 - Males were more likely to be the pedestrian or motorist in a pedestrian-vehicle crash
- Between 2006 and 2010, on average:
 - 36 percent of motorists were impaired by alcohol, drugs, or both
 - More than 70 percent of all pedestrians killed were male





- 68 percent of pedestrians were on a road with no crosswalk
- Police indicated on the crash reports that the pedestrian was at fault in 67 percent of the crashes
- Pedestrian fatalities represented 19 percent of all traffic fatalities statewide
- A crash involving a pedestrian was nearly six times as likely to produce a fatality as all traffic crashes combined statewide
- Pedestrian crashes were similar in distribution across all the months of the year, compared to all crashes statewide (slight increases in pedestrian crashes occurred in the spring and late fall months)
- There was an increase in pedestrian fatalities in the months of October through December, compared to all crashes statewide; during these times there was less daylight, but weather was still moderate enough to accommodate most pedestrians
- Friday was the peak day for total pedestrian crashes, and Saturday was the peak day for crashes that resulted in a pedestrian fatality
- Early evening hours of 3:00 PM to 8:00 PM were the peak hours for total pedestrian crashes, and early morning hours were overrepresented in fatal pedestrian crashes
- Pedestrians aged 10 to 15 were overrepresented in total pedestrian crashes and pedestrian-injury crashes; older pedestrians aged 45-54 years were overrepresented in fatal pedestrian crashes

Most of these federal and state statistics are consistent with what was found in the County. This consistency strongly suggests that the sample data obtained from the Sheriff’s office are a general indicator of the occurrence of crashes in Carroll County.

Additional County crash data were obtained through the State Police.^{clxxxix} These data are reflected in Table 7-2, along with the County Sheriff/municipal crash data. Several attributes of these data are shown in Table 7-2 and Table 7-3. These tables point out that the bulk of the County’s crashes that were pedestrian-involved occurred in the Westminster Municipal Growth Area (MGA), and occurred on County roads; these specific characteristics are highlighted in Tables 7-2 and 7-3.

Table 7-2: State Police Vehicle Crash Data

State Police - County Total	134	100.0%
Pedestrian Crashes	109	81.3%
Pedalcycle Crashes	25	18.7%
County Growth Area Total	98	73.1%
County Total Outside Growth Area	36	26.9%
Crashes in Westminster MGA	60	44.8%
Baltimore Blvd (MD 140) in Westminster	13	9.7%
of MD 140 crashes within MGA	13	21.7%
Crashes in Freedom DGA	14	10.4%
Liberty Rd (MD 26)	4	3.0%





Table 7-3: State Police Vehicle Crash Data - County vs State Roads

	County%	State%	Other%	Total
Pedestrian	35.1%	24.6%	21.6%	81.3%
Pedalcycle	9.0%	9.0%	0.7%	18.7%
Total	44.0%	33.6%	22.4%	100.0%

Preventing Collisions

Some of the collision incidents listed in the previous section have the potential to be prevented with the appropriate countermeasures. Solutions must be found to eliminate collision-causing conditions and allow pedestrians and bicyclist to feel and be safer. Solutions should include a combination of engineering, education, and enforcement policies and strategies. The creation of a design guide will supplement this plan and will facilitate addressing specific engineering challenges at specific locations when designing bicycle and pedestrian facilities. In this section of the plan, a more general overview of collision prevention will be addressed.

The County collision data show there is a need to educate bicyclists and pedestrians about safe practices. These groups must be educated differently, as the factors that contribute to bicycle crashes are not the same as those factors that contribute to pedestrian crashes. Therefore, the solutions are not the same.

The FHWA report, *Factors Contributing to Pedestrian and Bicycle Crashes on Rural Highways*, noted “effective and feasible countermeasures” from BIKESAFE and PEDSAFE (United States Department of Transportation, US DOT). These findings are displayed in Table 7-4. As mentioned, 51.2 percent of 2016 Interest Survey respondents are walking on paved roads with no shoulders. This is common to rural roads because when no paths or sidewalks are available, the road is the best location to walk. This is a safety challenge as rural crashes occur often at midblock.

There are recommended safe practices that pedestrians and bicyclist may take to protect themselves. The National Center for Safe Routes to School (SRTS) states, “When one must walk on the road because the area lacks pedestrian facilities such as a sidewalk, one is advised to walk on the left-side, facing traffic, as this presents opportunities to establish eye-contact with approaching motorists and make quick judgments to protect oneself.”^{clxxx} The Pedestrian and Bicycle Information Center recommends wearing or carrying items at night that would make one noticeable to drivers.^{clxxxi} This includes light-colored clothing, reflectors, or lights. According to the Maryland Highway Safety Office’s Bicycle Safety Program, bicyclists fare best when they act like vehicles and are treated as vehicular drivers. Therefore, they should move in the same lane direction as cars, obeying signals and signs, and yielding to traffic when appropriate.





Table 7-4: Common Crash Types and Countermeasures^{clxxxii}

	Crash type	Solutions
Pedestrian:	Pedestrians walking along the roadway	Add sidewalks (targeted) Add paved shoulders Add roadway lighting (targeted)
	Pedestrians failing to yield midblock	Educate pedestrians
	Pedestrians darting/dashing midblock	Improve signage (targeted) Educate pedestrians Utilize traffic-calming measures (targeted)
	Disabled vehicle-related ^{clxxxiii}	Educate drivers
	Pedestrians failing to yield at the intersection	Educate pedestrians Install pedestrian signal (targeted) Improve roadway lighting (targeted)
	Pedestrians crossing the roadway	Improve roadway lighting (targeted) Install fence or barrier (targeted)
Bicyclist:	Bicyclists turning/merging into the path of the motorist midblock	Provide marked pavement space for bicyclists (locations with suitable pavement width) Add paved shoulder
	Motorists overtaking midblock	Provide marked pavement space for bicyclists (locations with suitable pavement width) Improve roadway lighting (targeted)
	Bicyclists failing to yield midblock	Reduce lane width to minimize crossing distance and slow vehicles (targeted)
	Bicyclists failing to yield at the intersection	Improve sight distance Improve school zones

The Maryland Strategic Highway Safety Plan (SHSP) is a statewide, coordinated, comprehensive, traffic safety plan that provides the framework for reducing highway fatalities and serious injuries on all public streets and highways. It establishes overall goals and objectives, as well as objectives and strategies within each of six key emphasis areas: Aggressive Driving, Distracted Driving, Highway Infrastructure, Impaired Driving, Occupant Protection, and Pedestrians & Bicyclists. The current document covers the years 2016 through 2020.

The fourth Emphasis Area of the 2016-2020 SHSP is:

“Create and improve pedestrian and bicycle safety culture in Maryland including the promotion and implementation of legislation and training of professionals and stakeholders about best safety practices. This includes the development of a training program for law enforcement on best practices in pedestrian and bicycle enforcement as well as the creation and passing of legislation for Complete Streets policies for the state.”

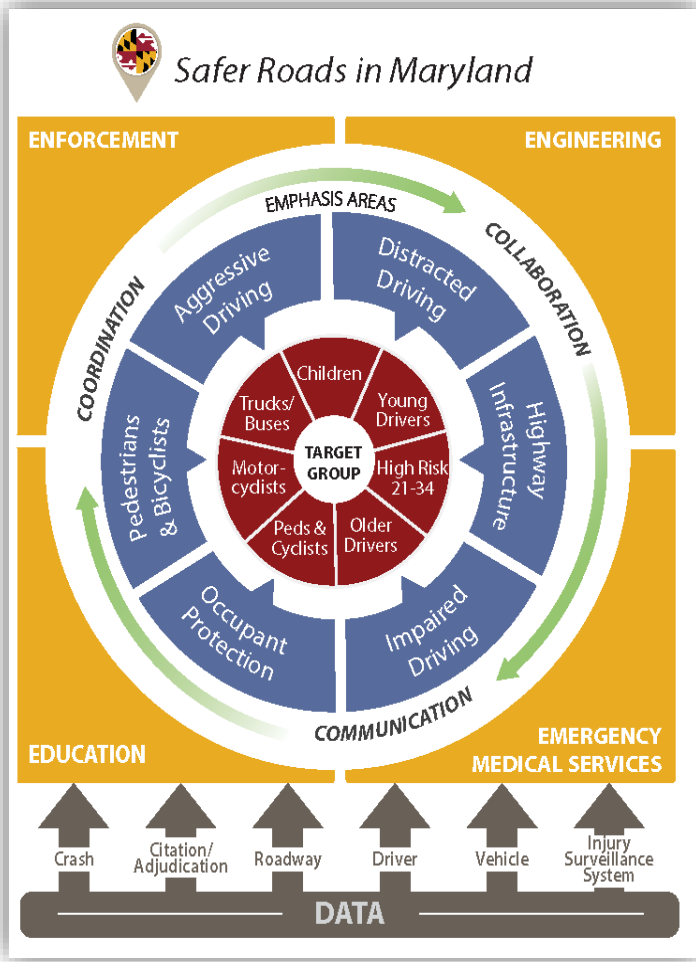
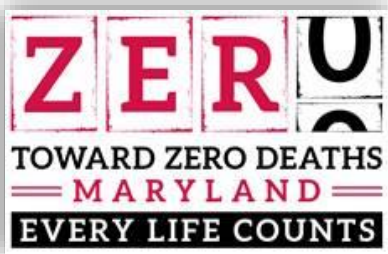


Figure 7-5: Diagram of Safer Roads in Maryland; from Maryland Strategic Highway Safety Plan 2016-2020

The recommendations and strategies suggested in this document should be used in Carroll County’s Strategic Highway Safety Plan (Carroll SHSP), which is in progress. The Maryland Highway Safety Office (MHSO) offers jurisdictions technical assistance with developing a safety plan. The state also has grants available to assist with the implementation of these plans. Funding and grants are discussed more in Chapter 8: Implementation. MHSO has access to grants and funding that have benefited other Carroll County programs, such as the Children’s Advocacy Center, Carroll County Health Department, the Bureau of Aging and Disabilities, and County and municipal law enforcement agencies^{clxxxiv}.

There is an opportunity to partner with existing campaigns and utilize existing resources to improve safety education and prevent bicycle-pedestrian incidents and collisions. One example is the Look Alive traffic safety campaign, through the Baltimore Metropolitan Council (BMC). Look Alive, the successor of the regional StreetSmart safety campaign, is a collaboration between state and local jurisdictions including Baltimore City and Baltimore, Anne Arundel, Howard, Harford, Carroll and Queen Anne’s counties. The campaign “works to raise awareness about pedestrian and bicycle

safety and highlight enforcement of the laws that protect people walking and biking.”^{clxxxv} Another example is Maryland Department of Transportation’s (MDOT) Toward Zero Deaths program. The program was established with the goal of moving toward the elimination of all roadway fatalities.





Safe Routes for Children

Children are a different type of pedestrian and bicyclist. Compared with adults, they are smaller, and do not have the full understanding and perception of road rules and dangers. Children tend to:

- React slowly
- Have a narrow field of vision
- Have challenges judging the speed and distance of approaching vehicles
- Find it difficult to focus on more than one thing at a time
- Find it difficult to determine the direction of auditory input^{clxxxvi}

The County Collision data previously shown finds that children (< age 18) are more likely to be involved in bicycle crashes compared to adults or seniors. Therefore, when traveling to destinations, such as school, child safety should receive focused attention.

Carroll County School System's Transportation Policy is to provide transportation to all elementary school students. Middle and high school students who are one mile or more from their district school will also be provided with transportation. Also, any children within a one-mile radius could be required to walk to an established bus stop. This distance policy is not used for students living on unimproved roads or for special-needs students. All eligible students shall be provided transportation to attend the school within their district^{clxxxvii}. There should be consideration for additional safety initiatives that are specifically dedicated to child safety when walking and biking to school, going to the bus stop, or crossing the road to board a bus. These safety initiatives would focus on a one-mile radius around middle and high schools. Any initiative would include safety considerations when entering and exiting the school bus.

There are some parents who may choose to let their children walk or bike to school. Some of the comments from this plan's outreach efforts found that this is a desire among parents, especially if gaps in sidewalk infrastructure are filled. Survey data^{clxxxviii} collected from some of the parents of Robert Moton Elementary School (RMES) for the Safe Routes to School (SRTS) sidewalk project found that:

- The vast majority of the respondents identified distance (85 percent), traffic (speed - 78 percent and volume - 74 percent), and infrastructure as having an effect on why their children do not walk or bike to school

Parent Comments

"We live very close to my children's elementary school (Robert Moton) and my car would not start one morning very recently. We decided to walk to school and the entire time I kept thinking 'we could do this every day if there was a sidewalk!'"

"We live on the other side of 97 which is a very busy road. I highly doubt my children will ever be able to walk/bike to elementary school""they possibly could walk to [Westminster High School] since it is a much quicker walk/bike...IF the intersection of Hook Rd and Crest Lane were made safer as well as Hook and 97."

SRTS. Parent Survey Report for Robert Moton Elementary School.
October 2016

Figure 7-6: Parent Comments



- Infrastructure – safety of intersections and crossings (63 percent) and a lack of sidewalks or paths (56 percent) – was ranked as the top issue affecting respondents’ decision to not have their children walk or bike to school
- Over one-third of all respondents lived within one mile of RMES

In addition to these results, when respondents chose to leave an additional comment, next to distance, the top concerns were infrastructure and safety.

With the appropriate infrastructure in place, there is the opportunity to create and utilize additional initiatives to promote safe walking and biking to school. The Walking School Bus is a program through National Safe Routes to School (NSRTS). A walking school bus is “a group of children walking to school with one or more adults.”^{clxxxix} Guidance to help form partnerships among neighbors and iron out safety concerns and other logistics can be found on the site WalkingSchoolBus.org.^{cxc} Another existing program is Safe Kids Worldwide. It is a global nonprofit organization that addresses child safety from a comprehensive standpoint. Its focal areas include kid safety while biking and walking. The Carroll County Health Department currently partners with them.

Creating Bicycle Trains are a way to encourage safe biking to school in groups. A Bicycle Train is similar to a Walking School Bus but, differs in that it is more suited for older elementary children, requires safety gear, and requires more adult supervision.^{cxc}

Some key points to consider when planning for bicycle-pedestrian facilities that promote child safety while walking or biking are:










- What to wear when walking so that children are visible from the street
- The importance of being alert when walking and not focused on any electronic device
- The importance of promoting safety gear such as helmets and bright/reflective clothing
- Helping children to understand traffic signals and signs
- Adults/Parents practicing the walking or biking route with children^{cxcii}
- The benefits of a Walking School Bus or Bicycle Train

A reduction in collisions may be accomplished by understanding why and how they occurred, putting appropriate safety and education measures in place, and by proper design, but also by public education. There are several education programs already in place that addresses bicycle and pedestrian safety, and can be expanded and brought into a unified County partnership for all of Carroll County’s transportation system users.



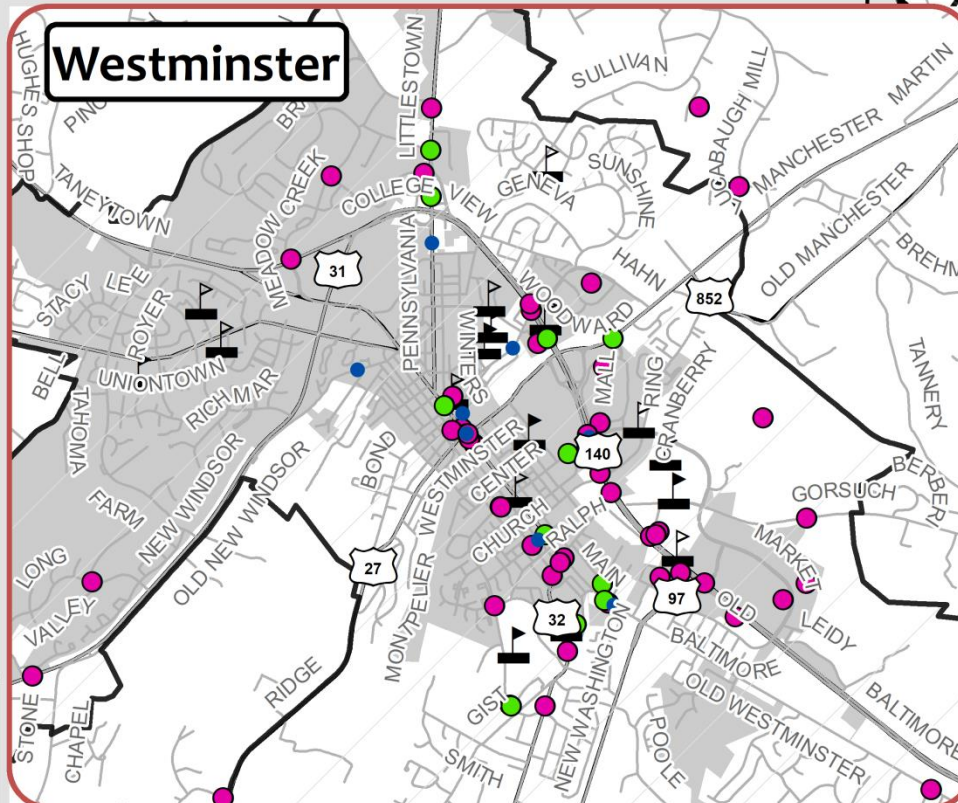
County Bicycle-Pedestrian Crashes

Legend

-  Rural Villages
-  Corporate Limits
-  Growth Area Boundary
-  County Border
-  Private Schools
-  Public Schools
-  County Crash Data
-  State Police Crash - Pedalcycle
-  State Police Crash - Pedestrian

Frederick County

Baltimore County



Pedestrian Crashes

Per Area

Growth Areas

Westminster	48
Freedom	13
Mt. Airy	6
Hampstead	4
Finksburg	3
Taneytown	2
New Windsor	1
Sykesville	1
Union Bridge	0
Manchester	0

Rural Villages - 6

County - 26

Pedalcycle Crashes

Per Area

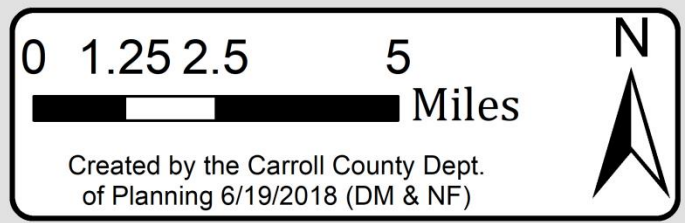
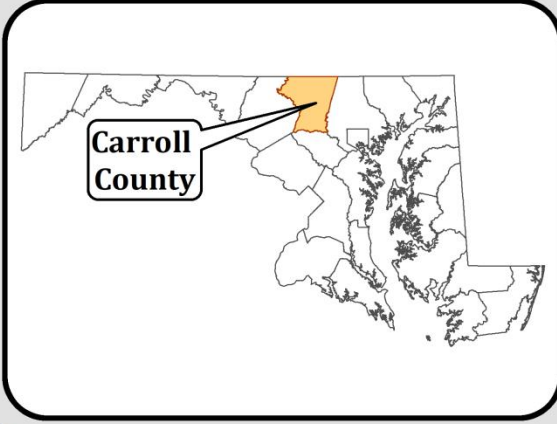
Growth Areas

Westminster	12
Hampstead	3
Mt. Airy	2
Freedom	1
Taneytown	1
Manchester	0
New Windsor	0
Sykesville	0
Union Bridge	0
Finksburg	0
Rural Villages	1

County - 5

Rural Villages - 1

County - 5



Map 7-1: County Bicycle-Pedestrian Crashes



Design Best Practices

There is a great opportunity to improve bicycle and pedestrian infrastructure and accommodation in Carroll County. Relevant safety considerations in infrastructure design would encourage more walking and biking to destinations. As mentioned earlier, addressing for bike-ped infrastructure in rural areas differs from that in urban areas. The County's rural roads are limited in their ability to support certain types of bike-ped facilities. Most of the County's roads are 20-feet wide or less, do not have paved shoulders, and are limited in right-of-way (ROW) dedication. This limits the types of infrastructure that can be added and requires more creative solutions. For example, a road diet or lane diet (a narrowing of the roadway for other uses) may not be feasible, according to MD MUTCD's lane width standards^{cxci}, on a road that is only 20-feet wide.

When traveling along state highways, there are serious concerns for safety from both public officials and citizens. These roads often carry high volumes of traffic at high speeds. However, state highways tend to be the quickest and most direct linkages within the County. In addition, many County destinations, including Main Streets, retail shopping centers, and grocery stores, are across state highways. In these areas, state highways are barriers to biking and walking to destinations.

The following bicycle and pedestrian infrastructure diagrams and information are solely for the discussion of best practices in bicycle and pedestrian infrastructure and are NOT complete solutions. To determine what is and is not appropriate, each individual project must go through the appropriate development review and approval process and be reviewed for compliance with County, municipal, and state regulations. The examples and information shown are from various sources that should be consulted for complete understanding and legal compliance. These sources include:

- **Maryland Manual on Uniform Traffic Control Devices** (MD MUTCD), 2011 Edition
 - The purpose of this guide is to define “the standards used by road managers...to install and maintain traffic control devices on all public streets, highways, bikeways, and private roads open to public travel.” It is in compliance with the Federal Highway Administration (FHWA) Manual on Uniform Traffic Control Devices.
- **SHA Bicycle Policy & Design Guidelines** (SHA BP&DG), Revised January 2015
 - The purpose of this guide is to provide transportation planners and engineers guidance for accommodations that improve bicycling in Maryland. It is consistent with the recommendations in the American Association of State Highway Transportation Officials (AASHTO) *Guide for the Development of Bicycle Facilities*. Carroll County agencies follow AASHTO guidelines.
- **NACTO Urban Bikeway Design Guide** (NACTO Guide), April 2011 Edition
 - The purpose of the National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide is to provide cities with state-of-the-practice solutions that can help create complete streets that are safe and enjoyable for bicyclists.
- **Small Town and Rural Multimodal Networks Guide** (STRMNG), December 2016
 - The purpose of this FHWA guide is to “provide a resource and idea book to help small towns and rural communities support safe, accessible, comfortable, and active travel for people of all ages and abilities.”^{cxci}



- **Small Town and Rural Design Guide: Facilities for Walking and Biking** (Alta Small Town Guide)
 - This guide is an “online design resource and idea book, intended to help small towns and rural communities support safe, comfortable, and active travel for people of all ages and abilities”^{cxcv} created by Alta Planning + Design that references a subset of the FHWA STRMNG.

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. This document could supplement the County’s Design Manual for Roads and Storm Drains, be included in the Manual, or be a separate document.

Equal access to public spaces should be considered in the design and use of bike-ped facilities. While this plan does not address ADA compliance in depth, it does recommend the inclusion of bicycle and pedestrian accommodations in the County ADA Self-Evaluation and ADA Transition Plan. A self-evaluation is a public entity’s assessment of its current policies and practices. An ADA Self-Evaluation “identifies and corrects those policies and practices that are inconsistent with Title II’s requirements.”^{cxcvi} An ADA Transition Plan is a public entity’s plan to remove the barriers to structural modifications in order to achieve program accessibility.^{cxcvii} Carroll County DPW is in the process of drafting the ADA Self-Evaluation and is near completion. The ADA Transition Plan will be initiated in the future. ADA compliance upgrades are continuously being made and will continue as CIP money is made available annually. The locations of these projects can be viewed in the maps titled ADA Compliance of Curb Ramps and Sidewalk. A County manual, recommended above, for bike-ped design guidelines should also incorporate ADA compliance standards. The purpose would be to address barriers to accessing bike-ped transportation facilities. Further, these accommodations should be considered in a Countywide Complete Streets Policy.





Bicycle Infrastructure

Bikeways

Bikeway – a generic term for any road, street, path, or way that in some manner is specifically designated for bicycle travel, regardless of whether such facilities are designated for the exclusive use of bicycles or are to be shared with other transportation modes ^{cxviii}

Bikeways may include shared roadways, bicycle lanes, buffer-separated lanes, barrier-separated lanes, bike lanes, bicycle path, shared-use path, or a cycle track. Bike routes are not a “bikeway type” ^{cxix} (rather, they are a shared roadway that has been designated by signage as a preferred route for bicycle use).

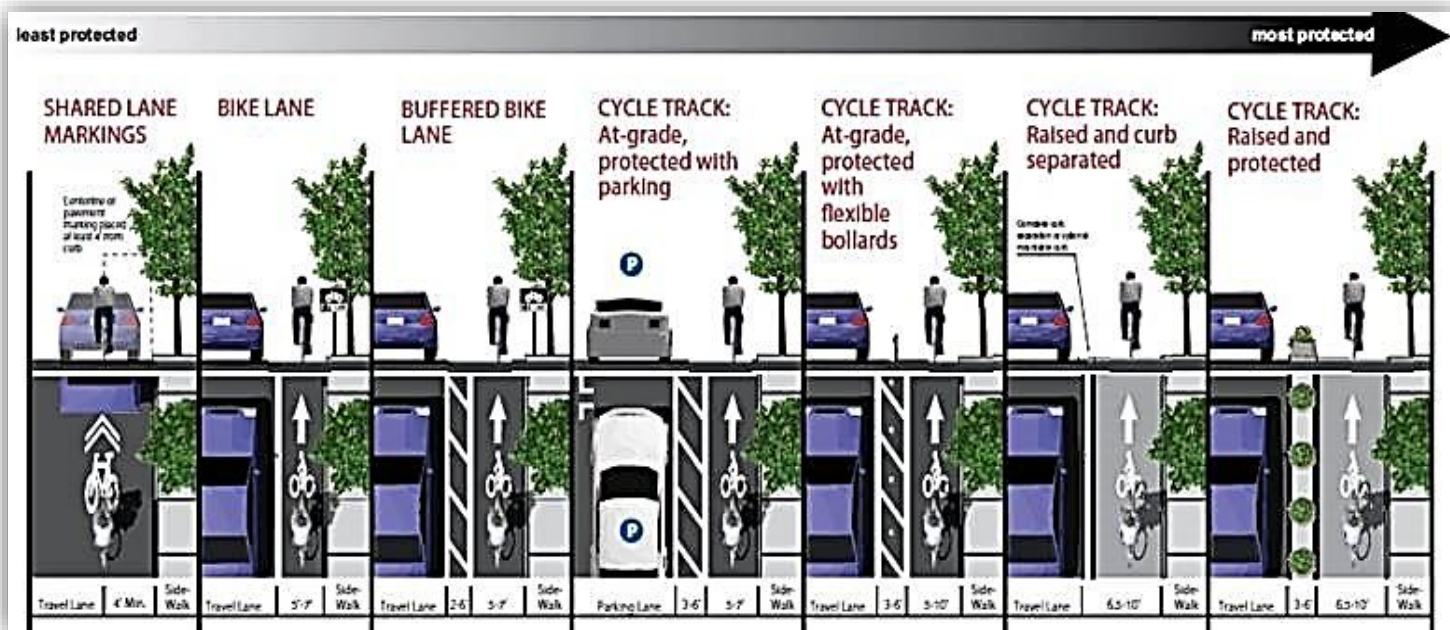


Figure 7-7: Various Examples of Bikeways based on Degree of Protective Infrastructure





Advisory Shoulders

Advisory Shoulders – also known as a “dashed bicycle lane” and “advisory bike lane,” advisory shoulders create usable shoulders for bicyclists on a roadway that is otherwise too narrow to accommodate shoulders. The shoulder is delineated by pavement marking and optional pavement color. Motorists may only enter the shoulder when no bicyclists are present and entering the advisory shoulder (with caution) is necessary to avoid oncoming traffic.^{cc}

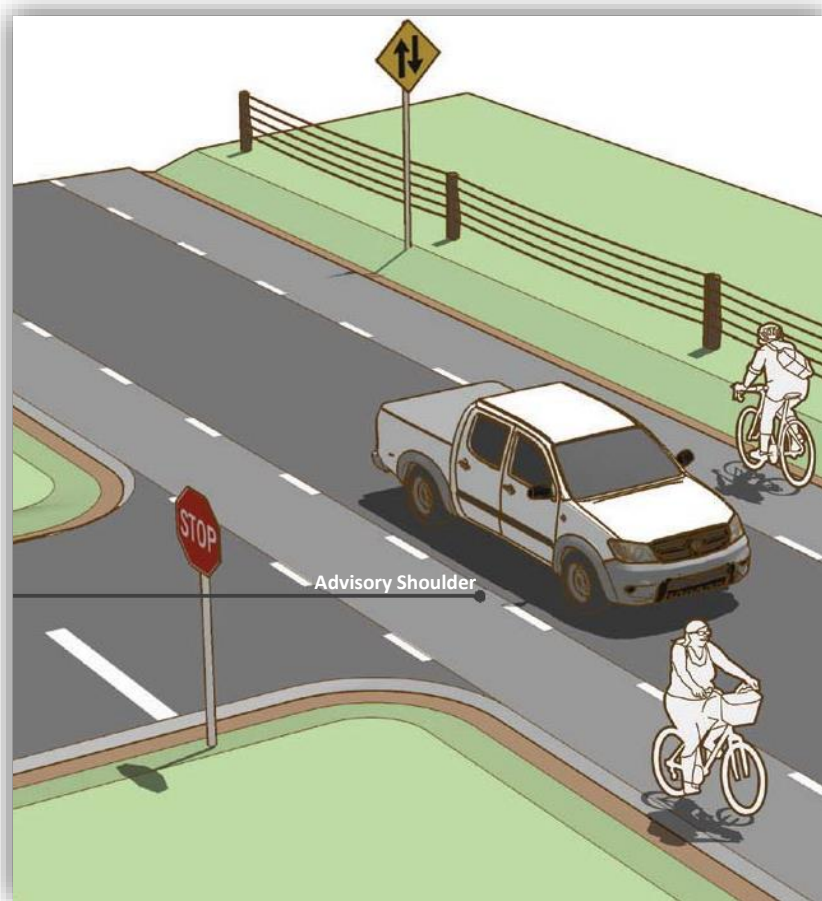


Figure 7-8: Advisory Shoulder, STRMNG p. 2-17





Table 7-5: Advantages of Advisory Shoulders

Advisory Shoulders can:
<ul style="list-style-type: none"> • Provide a delineated, but nonexclusive, space available for biking on a roadway otherwise too narrow for dedicated shoulders • Possibly reduce some types of crashes due to reduced motor vehicle travel speeds • Minimize potential impacts to visual or natural resources through efficient use of existing space • Function well within a rural and small-town traffic and land use context • Increase predictability and clarify desired lateral positioning between people bicycling or walking and people driving in a narrow roadway • Possibly function as an interim measure where plans include shoulder widening in the future • Reduce paved surface environmental requirements

Table 7-6: Best Practices for Advisory Shoulders^{cci}

Practical Locations:	When Not Practical:	Consider:
<ul style="list-style-type: none"> • Low speed roads • Low to medium traffic-volume roads • Rural roads 	<ul style="list-style-type: none"> • High speed roads • High vehicular-traffic-volume roads 	<ul style="list-style-type: none"> • Using contrasting materials to visually differentiate the shoulder from the roadway and discourage unnecessary encroachment • An approval from FHWA for a "Request to Experiment" is required as detailed in Section 1A.10 of the MUTCD





Bicycle Lanes

Bicycle Lane – a portion of a roadway that has been designated for preferential or exclusive use by bicyclists by pavement markings and, if used, signs. ^{ccii}

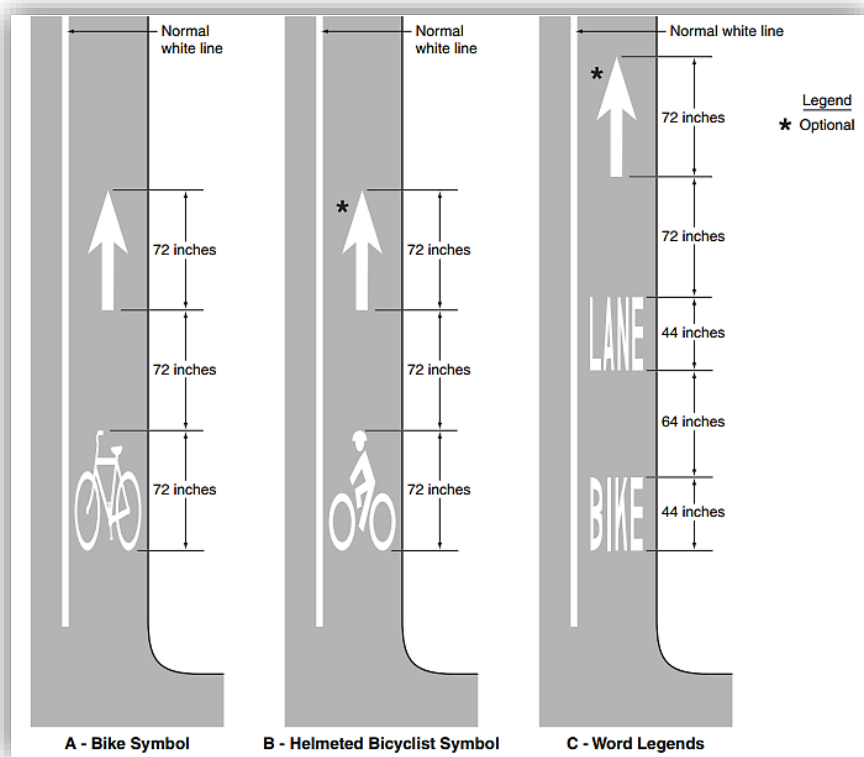


Figure 7-9: Examples of Bike Lanes, MD MUTCD p. 939

Table 7-7: Advantages of Bicycle Lanes

Bicycle lanes compared to paved shoulder and wide outside lanes:

Bicycle Lanes can:

- Provide dedicated space for bicyclists
- Reduce wrong-way bicycle riding
- Encourage increased bicycle use
- Increase motorist awareness of bicyclists
- Encourage bicyclists to ride farther away from parked vehicles
- Reduce motorist lane changes when passing bicyclists
- Provide visual guidance to bicyclists navigating intersections^{cciii}
- “Increase bicyclist comfort and confidence on busy streets
- Create separation between bicyclists and automobiles
- Increase the predictability of bicyclist and motorist positioning and interaction
- Increase total capacities of streets carrying mixed bicycle and motor vehicle traffic
- Visually remind motorists of bicyclists’ right to the street”^{cciv}



Table 7-8: Best Practices for Bicycle Lanes^{ccv}

Practical Locations:	When Not Practical:	Consider:
<ul style="list-style-type: none">• On roads with wide shoulders• On roads with motor vehicle average daily traffic (ADT) greater than or equal to 3,000• On roads with a posted speed greater than or equal to 25 mph• On fairly straight, two lane-roads	<ul style="list-style-type: none">• If the speed limit is greater than 35 mph, consider treatments that provide greater separation between bicycle and motor traffic, such as buffered bike lanes and cycle tracks• On roads with high traffic volume, regular truck traffic, and/or high parking turnover	<ul style="list-style-type: none">• Shoulder width• Traffic Speed• Average traffic volume• Size of vehicles• Proximity of parked vehicles• Age and condition of sewer/drainage grates• Debris management





Buffer-Separated Lanes

Buffer-Separated Lane – also known as a “buffered bike lane”, a buffer-separated lane is “a preferential lane or other special purpose lane that is separated from the adjacent general-purpose lane(s) by a pattern of standard longitudinal pavement markings that is wider than a normal or wide lane line marking. The buffer area might include rumble strips, textured pavement, or channelizing devices such as tubular markers or traversable curbs, but does not include a physical barrier.”^{ccvi}

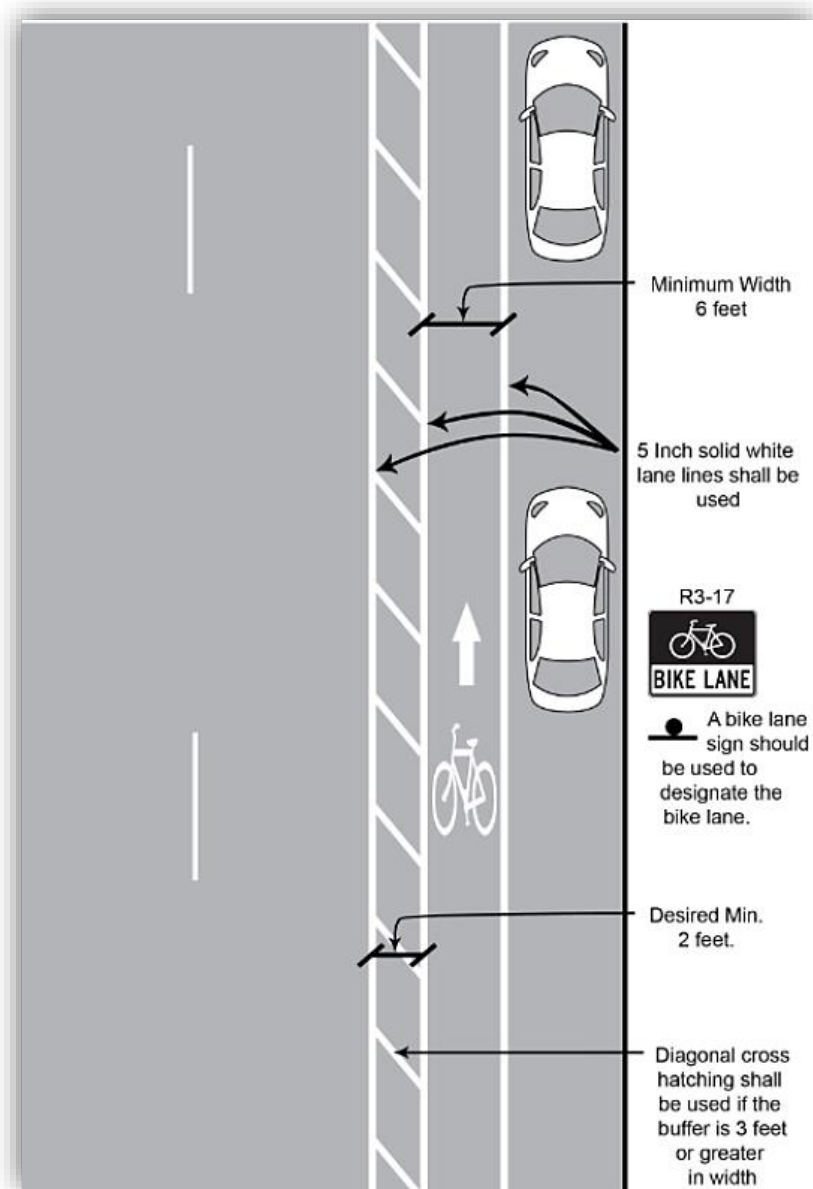


Figure 7-10: SHA Bicycle Policy & Design Guidelines, section 10.4





Table 7-9: Advantages of Buffer-Separated Lanes

Buffer-Separated Lanes compared to Bicycle Lanes:	Buffer-Separated Lanes can:
<ul style="list-style-type: none"> • “Provides greater site distance between motor vehicles and bicyclists • Provides space for bicyclists to pass another bicyclist without encroaching into the adjacent motor vehicle travel lane • Encourages bicyclists to ride outside of the door zone when buffer is between parked cars and bike lane • Provides a greater space for bicycling without making the bike lane appear so wide that it might be mistaken for a travel lane or a parking lane”^{ccvii} 	<ul style="list-style-type: none"> • Appeal to a wider cross-section of bicycle users • Encourage bicycling by contributing to the perception of safety among users of the bicycle network

Table 7-10: Best Practices for Buffer-Separated Lanes^{ccviii}

Practical Locations:	Consider:
<ul style="list-style-type: none"> • On roads where a standard bike lane is being considered • On roads with high travel speeds • On roads with high travel volumes • On roads with high amounts of truck traffic • On roads with extra lanes or extra lane width 	<ul style="list-style-type: none"> • Shoulder width • Traffic speed • Average traffic volume • Vehicle size • Road width • Parked cars/buffer • Maintenance challenges





Barrier-Separated Lanes

Barrier-Separated Lane — a preferential lane, or other special purpose lane, that is separated from the adjacent general-purpose lane(s) by a physical barrier.^{ccix} “Barriers can be constructed in a number of different ways, from different material and with different heights, depending upon the desired level of physical and visual separation.”^{ccx} Common protected bike-lane barriers include: jersey walls, parked cars, oblong low bumps, planters, delineated posts, raised curbs, bollards, vertical posts, fencing with gates, large rocks or boulders, and tree trunks.

- **Bicycle Path** – any travelway designed and designated by signing or signing and marking for bicycle use, located within its own right-of-way, or in a shared right-of-way, and physically separated from motor vehicle traffic by berm, shoulder, curb, or other similar device^{ccxi}
- **Cycle Track** – an exclusive bicycle facility that is physically separated from motorized vehicle traffic and pedestrians. A cycle track combines the user experience of a separated path with the on-street infrastructure of a bicycle lane^{ccxii}
- **Shared-Use Path** – a bikeway outside the traveled way and physically separated from motorized vehicular traffic by an open space or barrier and either within the highway right-of-way or within an independent alignment. Shared-use paths are also used by pedestrians (including skaters, users of manual and motorized wheelchairs, and joggers) and other authorized motorized and non-motorized users^{ccxiii}

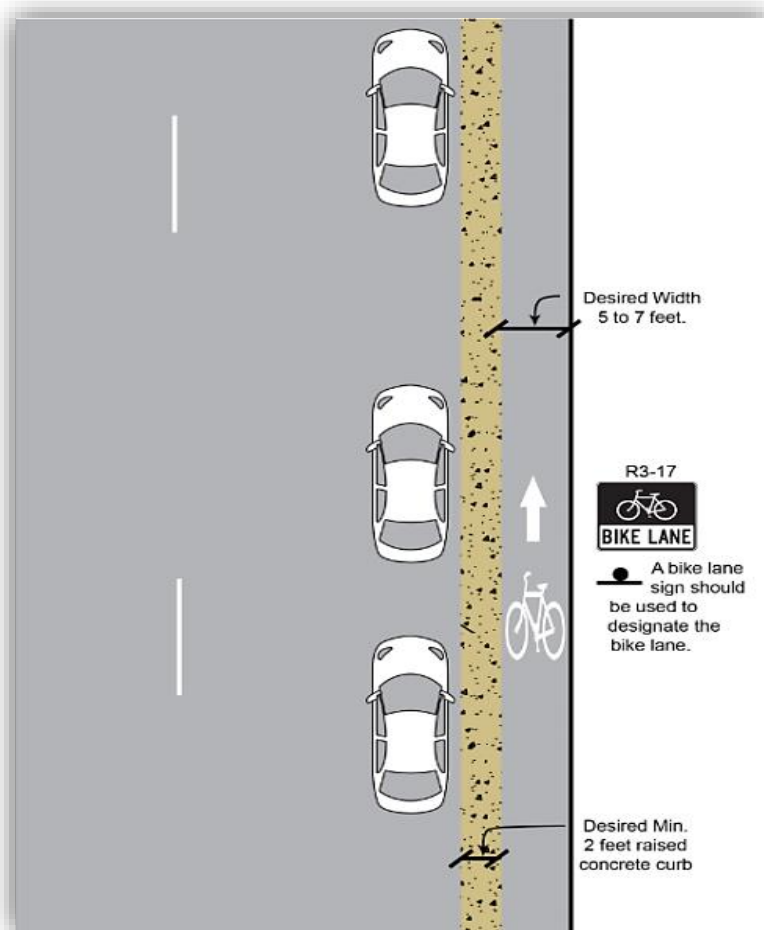


Figure 7-11: Barrier-Separated Bike Lane, SHA BP&DG, section 10.2



Table 7-11: Advantages of Barrier-Separated Lanes

Barrier-Separated Lanes compared to Buffer-Separated Lanes:	Barrier-Separated Lanes can:
<ul style="list-style-type: none"> • “Provides a more comfortable experience on high-speed and high-volume roadways than on-road shoulders • Offer bicyclists a similar riding experience to side paths but with fewer operational and safety concerns over bidirectional side-path facilities • Offers an increased level of service over side paths in areas with high volumes of pedestrians, when paired with sidewalks • Increases the degree of connectivity over a side path, when configured as a one-way directional facility on both sides of the street”^{ccxiv} 	<ul style="list-style-type: none"> • Appeal to a wider cross-section of bicycle users • Encourage bicycling by contributing to the perception of safety among users of the bicycle network • Reduce the incidence of sidewalk riding and potential user conflicts

Table 7-12: Best Practices for Barrier-Separated Lanes^{ccxv}

Practical Locations:	When Not Practical:	Consider:
<ul style="list-style-type: none"> • Roads where a buffer lane is being considered • Roads with high volumes of high speed motor vehicles • Roads with high volume of heavy vehicles (a concrete barrier is best) • Roads with extra lanes or extra lane width^{ccxvi} 	<ul style="list-style-type: none"> • Barriers should not be used when not needed because they tend to collect trash and debris, and are difficult to maintain 	<ul style="list-style-type: none"> • Shoulder width • Traffic speed • Average traffic volume • Vehicle size • Road width • Maintenance challenges • A concrete barrier is preferred in both of the following situations: high volume and high speed vehicles; high volume of heavy vehicles (regardless of speed)





Bicycle-Other

Bike-Share

Bike-Share – an innovative transportation program, ideal for short distance point-to-point trips, providing users the ability to pick up a bicycle at any self-serve bike station and return it to any other bike station located within the system's service area.^{ccxvii} A bike-share program can also be dock less. The purpose is to encourage the use of alternative transportation.



Figure 7-12: McCycles Bike-Share at McDaniel College in Westminster

Table 7-13: Best Practices for Bike-Share

Practical Locations:	When Not Practical:	Consider:
<ul style="list-style-type: none">• Proximate to business & shopping centers, employment campuses, schools, and universities• Densely populated areas with quick-trip needs	<ul style="list-style-type: none">• Low-density areas for population and destinations	<ul style="list-style-type: none">• Maps placed at bike-share stations to inform riders of where stations are located• A bikes-share app• Availability of helmets and locks• Well-lit and populated areas



Bike Racks

Bike Rack – a stationary fixture frame where a bicycle can be securely attached.



Figure 7-13: Bike Rack adjacent to 7606 Main St in Sykesville, from Sykesville Main Street



Figure 7-14: Bike Rack outside County Administration Building in Westminster

Table 7-14: Best Practices for Bike Racks

Practical Locations:	When Not Practical:	Consider:
<ul style="list-style-type: none"> • Outside of businesses (especially retail and restaurants), employment campuses, schools and universities, parks, and medical centers 	<ul style="list-style-type: none"> • Low-density areas for population and destinations 	<ul style="list-style-type: none"> • Frequent destinations



Median Refuge Islands (Bicycle)

Median Refuge Islands – “are protected spaces placed in the center of the street to facilitate bicycle and pedestrian crossings. On two-way streets, crossings are facilitated by splitting movements into two stages, separated by the direction of approaching vehicle traffic.”^{ccxviii}



Figure 7-15: Median Refuge Islands, NACTO pp. 163, 166, 167

Table 7-15: Advantages of Bicycle Median Refuge Islands^{ccxix}

Median Refuge Islands can:	When used with a Protected Cycle Track, Raised Medians:
<ul style="list-style-type: none"> • Allow bicyclists to cross streets more comfortably • Provide a protected space for bicyclists to wait for an acceptable gap in traffic • Allow bicyclists on two-way streets to take advantage of gaps in one direction of traffic at a time • Reduce the overall crossing length and exposure to vehicle traffic for a bicyclist or pedestrian • Decrease the amount of delay that a bicyclist will experience to cross a street • Calm traffic on a street by physically narrowing the roadway and potentially restrict motor vehicle left-turn movements 	<ul style="list-style-type: none"> • Can be installed at each side of the intersection block to give structure to an adjacent floating parking lane • Can provide pedestrians with a place to pause before crossing a protected cycle track • Where extended into the intersection, can provide a shelter for a bicyclist making a two-stage turn across traffic





Table 7-16: Best Practices for Bicycle Median Refuge Islands

Practical Locations:	When Not Practical:	Consider:
<ul style="list-style-type: none">• On streets with protected cycle tracks• For bicycle facility crossings at higher volume, or multi-lane, streets• Where a bikeway crosses a moderate to high volume, or high speed, street• Along streets with few acceptable gaps to cross both directions of traffic• Where it is desirable to restrict vehicle through movements, a median can double as a diverter to prevent cut-through traffic on a bicycle route	<ul style="list-style-type: none">• On one-way or single-lane roads, with low vehicle volume and speed	<ul style="list-style-type: none">• Number of vehicle lanes• Traffic speed• Average bicycle volume• Maintenance challenges





Two-Stage Turn Queue Boxes

Two-Stage Turn Queue Boxes – “offer bicyclists a safe way to make left turns at multi-lane, signalized intersections from a right side cycle track or bike lane, or right turns from a left side cycle track or bike lane”^{CCXX}, also referred to as a hook turn, box turn, or Copenhagen left.



Figure 7-16: Two-Stage Turn Queue Boxes, NACTO p. 150

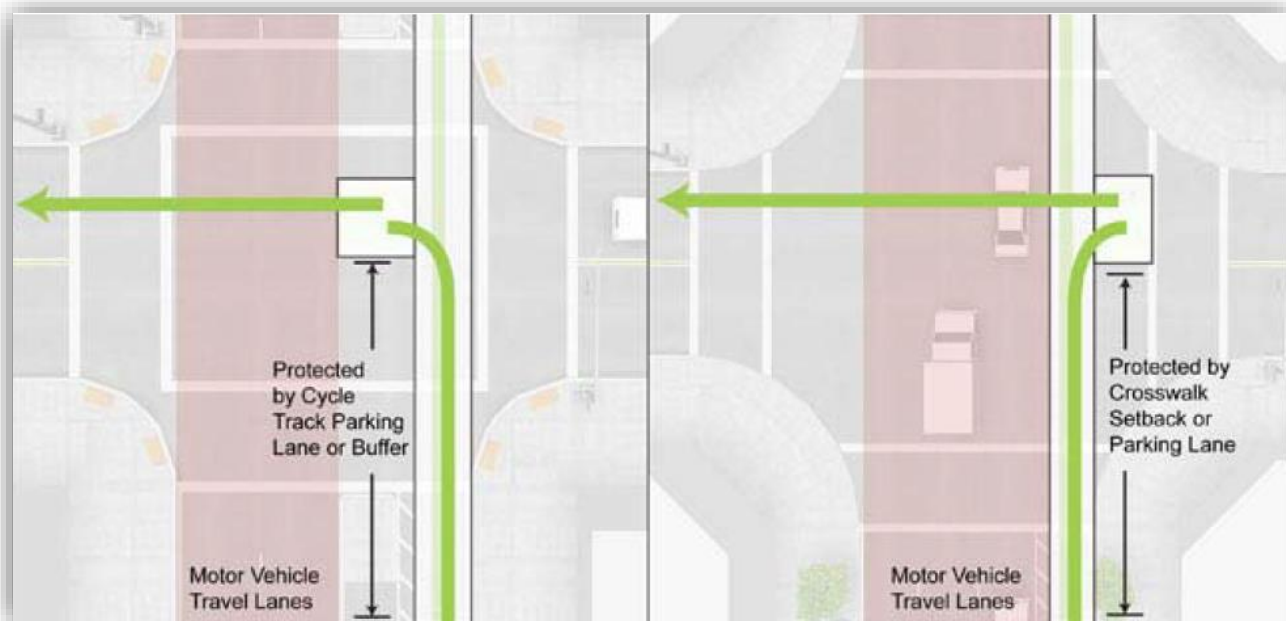


Figure 7-17: Two-Stage Turn Queue Boxes, NACTO p. 142





Table 7-17: Advantages of Two-Stage Turn Queue Boxes^{ccxxi}

Two-Stage Turn Queue Boxes can:	Other:
<ul style="list-style-type: none"> • Improve bicyclist’s ability to safely and comfortably make left turns • Provide a formal queuing space for bicyclists making a two-stage turn • Reduce turning conflicts between bicyclists and motor vehicles • Prevent conflicts arising from bicyclists queuing in a bike lane or crosswalk 	<ul style="list-style-type: none"> • This infrastructure will likely result in a higher average wait time for bicyclists at the signal, as they will need to receive two separate green signals to complete the crossing • The queuing area is often colored to further define the bicycle space

Table 7-18: Best Practices for Two-Stage Turn Queue Boxes^{ccxxii}

Practical Locations:	When Not Practical:	Consider:
<ul style="list-style-type: none"> • Along bike lanes and cycle tracks • At signalized intersections • Along multi-lane roadways • Along roadways with high traffic speeds and/or traffic volumes • Where a significant number of bicyclists turn left from a right side facility • Where bicyclists need to navigate safely across streetcar tracks 	<ul style="list-style-type: none"> • Where right turns on red is permitted 	<ul style="list-style-type: none"> • Number of vehicle lanes • Traffic speed • Average vehicle volume • Maintenance challenges





Intersection Crossing Markings

“Bicycle pavement markings through intersections indicate the intended path of bicyclists through an intersection or across a driveway or ramp.”^{ccxxiii} Figure 7-16 illustrates five types of markings for bicycle crossing lanes at intersections.

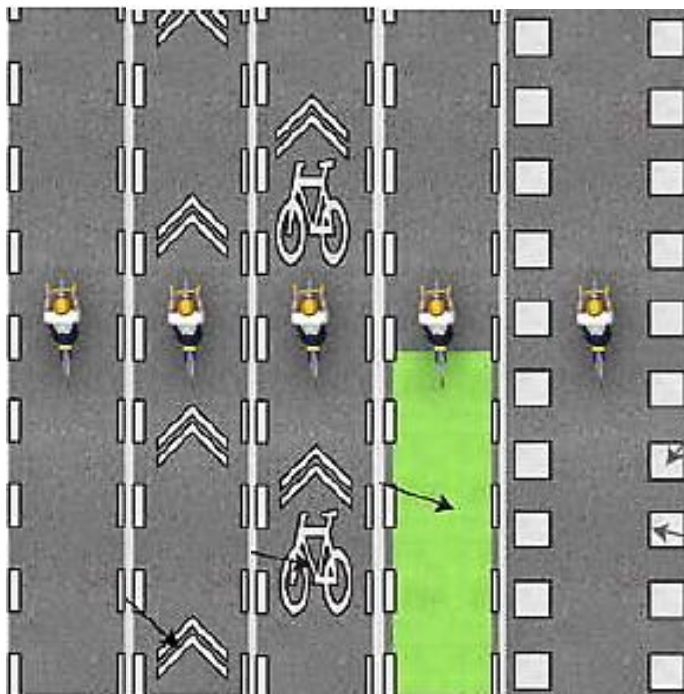


Figure 7-18: Intersection Crossing Markings, NACTO pp. 125-129



Figure 7-19: Intersection Crossing Markings, NACTO p. 137





Table 7-19: Advantages of Intersection Crossing Markings^{ccxxiv}

Intersection Crossing Markings can:	
<ul style="list-style-type: none"> • Raise awareness for both bicyclists and motorists to potential conflict areas • Reinforce that bicyclists travelling through the intersection have priority over turning vehicles or vehicles entering the roadway (from driveways or cross streets) • Guide bicyclists through the intersection in a straight and direct path 	<ul style="list-style-type: none"> • Reduce bicyclist stress by delineating the bicycling zone • Make bicycle movements more predictable • Increase the visibility of bicyclists • Reduce conflicts between bicyclists and turning motorists • Promote multi-modal nature of the corridor

Table 7-20: Best Practices for Intersection Crossing Markings^{ccxxv}

Practical Locations:	When Not Practical:	Consider:
<ul style="list-style-type: none"> • Across signalized intersections, particularly through wide or complex intersections where the bicycle path may be unclear • Along roadways with bike lanes or cycle tracks • Across driveways and Stop- or Yield-controlled cross streets • Where typical vehicle movements frequently encroach into bicycle space, such as across ramp-style exits and entries where the prevailing speed of ramp traffic at the conflict point is low enough that motorist-yielding behavior can be expected 	<ul style="list-style-type: none"> • May not be applicable for crossings in which bicycles are expected to yield priority, such as when the street with the bicycle route has Stop or Yield control at an intersection 	<ul style="list-style-type: none"> • Number of vehicle lanes • Complexity of intersection • Maintenance challenges





Pedestrian Infrastructure

Crosswalks

Crosswalk – that part of a roadway that is distinctly indicated for pedestrian crossing by lines or other markings.^{ccxxvi}

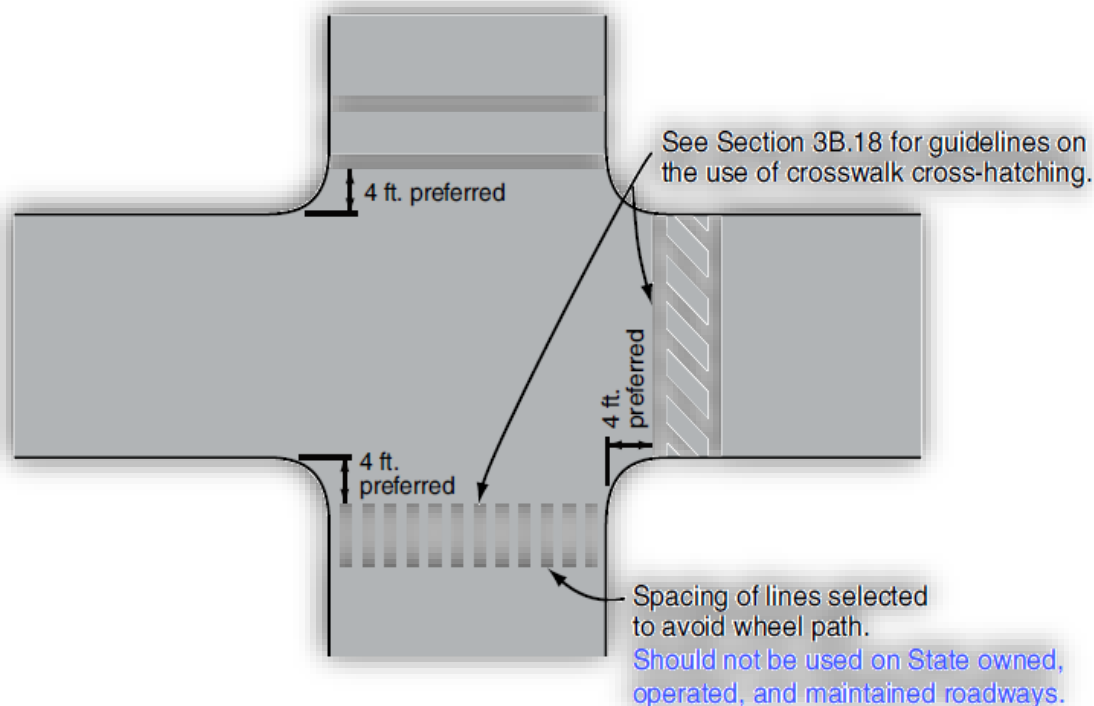


Figure 7-20: Crosswalk, MD MUTCD p. 487

Table 7-21: Advantages of Crosswalks

Crosswalks can:

- Encourage pedestrians to follow the law

Table 7-22: Best Practices for Crosswalks

Practical Locations:

- Where two or more roadways of any type meet or join, and sidewalks are present
- Where there is heavy pedestrian/foot traffic

Consider:

- Road width
- Number of vehicle lanes
- Maintenance challenges
- Utilizing the block pattern which has the highest level of visibility



Pedestrian Lanes

Pedestrian Lane – Pedestrian lanes provide interim or temporary pedestrian accommodation on roadways lacking sidewalks. They are not intended to be an alternative to sidewalks, and often will fill short gaps between other, higher quality facilities.^{ccxxvii}

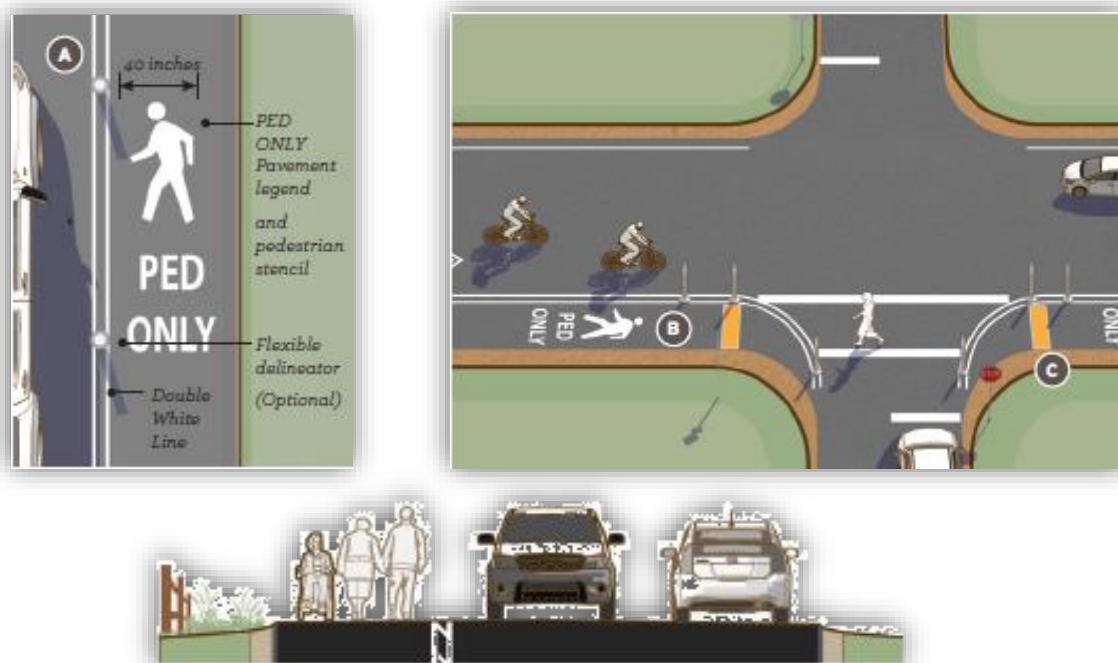


Figure 7-21: Pedestrian Lane, STRMNG pp. 5-7, 5-8

Table 7-23: Advantages of Pedestrian Lanes^{ccxxviii}

Pedestrian Lanes can:	Pedestrian ONLY:
<ul style="list-style-type: none"> • Fill gaps between important destinations in a community • Increase detectability by people with vision disabilities 	<ul style="list-style-type: none"> • Designated space on the roadway for exclusive use by pedestrians • Use a PED ONLY marking to designate exclusive pedestrian use of lane • Should have a buffer added for additional comfort

Table 7-24: Best Practices for Pedestrian Lanes^{ccxxix}

Practical Locations:	When Not Practical:	Consider:
<ul style="list-style-type: none"> • Road with low to moderate speeds and volumes • On one or both sides of the road 	<ul style="list-style-type: none"> • Pedestrian lanes are an interim facility, and a full sidewalk construction should be planned for future implementation 	<ul style="list-style-type: none"> • Traffic speed • Average traffic volume • Maintenance challenges



Median Refuge Islands (Pedestrian)

Median Refuge Islands – are protected space placed in the center of the street to facilitate bicycle and pedestrian crossings. On two-way streets, crossings are facilitated by splitting movements into two stages, separated by the direction of approaching vehicle traffic. ^{ccxxx}



Figure 7-22: Median Refuge Islands (pedestrian), NACTO p. 164

Table 7-25: Advantages of Pedestrian Median Refuge Islands^{ccxxxi}

Pedestrian Median Refuge Islands can:

- Allow pedestrians to cross streets more comfortably
- Provide a protected space for pedestrians to wait for an acceptable gap in traffic
- Reduce the overall crossing length and exposure to vehicle traffic for a pedestrian

Table 7-26: Best Practices for Pedestrian Median Refuge Islands^{ccxxxii}

Practical Locations:

- Along streets with high pedestrian volumes
- Along streets with few acceptable gaps to cross both directions of traffic
- At signalized or unsignalized intersections

When Not Practical:

- On one-way or single lane roads, with low vehicle volume and speed

Consider:

- Number of vehicle lanes
- Traffic speed
- Average pedestrian volume
- Maintenance challenges



Sidewalks

Sidewalk – That part of a highway that is intended for use by pedestrians; and that is between the lateral curb lines or, in the absence of curbs, the lateral boundary lines of a roadway and the adjacent property lines.^{ccxxxiii} Sidewalks provide dedicated space intended for use by pedestrians that is safe, comfortable, and accessible to all. Sidewalks are physically separated from the roadway by a curb or unpaved buffer space.^{ccxxxiv}

A crosswalk at an intersection is defined as the extension of the sidewalk across the intersection.^{ccxxxv}

Table 7-27: Advantages of Sidewalks^{ccxxxvi}

Sidewalks Can:

- Provide a dedicated place within the public right-of-way for pedestrians to safely travel and reduce pedestrian collisions in rural areas
- Reduce “walking along roadway” crashes
- Notably increase levels of walking in areas with high traffic speeds and/or volumes

Table 7-28: Best Practices for Sidewalks^{ccxxxvii}

Practical Locations:

- Where the roadway network has high traffic volumes or speeds
- Areas with a mix of land uses
- Along roads where there is heavy foot traffic

Consider:

- The amount of available dedicated right-of-way
- That it may notably increase levels of walking in areas with high traffic speeds and/or volumes
- That sidewalks require a moderate-width roadside environment to provide for separation and sidewalk area outside of the adjacent roadway



Shared Infrastructure

Shared-Use Paths

Shared-Use Path – also known as a sidepath “a bikeway outside the traveled way and physically separated from motorized vehicular traffic by an open space or barrier and either within the highway right-of-way or within an independent alignment. Shared-use paths are also used by pedestrians (including skaters, users of manual and motorized wheelchairs, and joggers) and other authorized motorized and non-motorized users.”^{ccxxxviii}

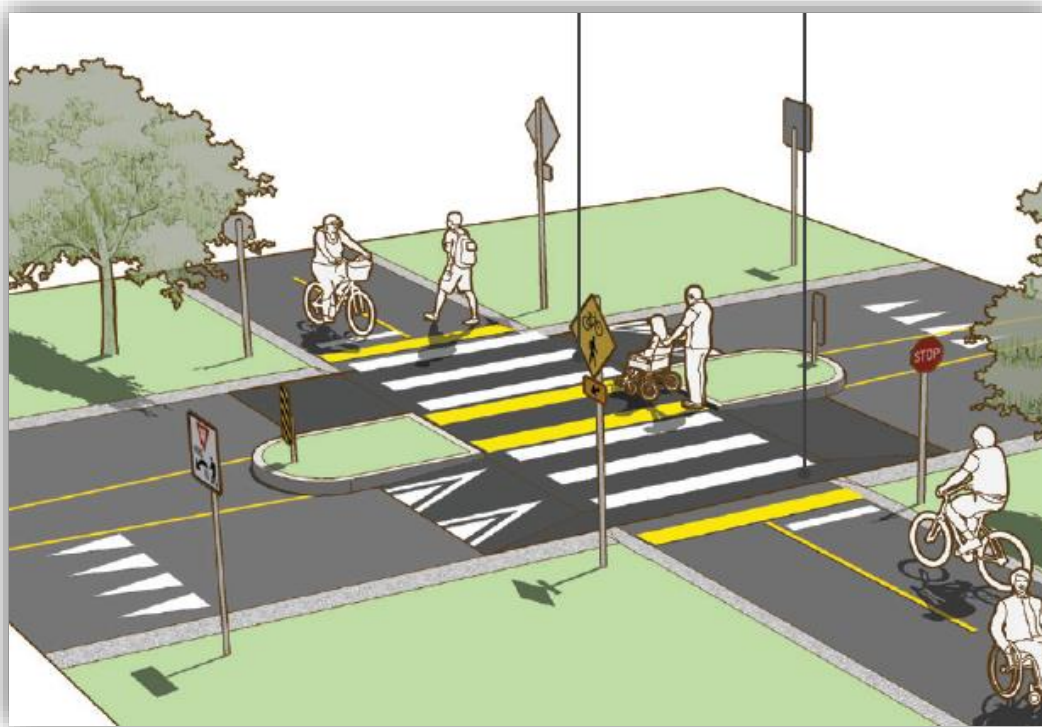


Figure 7-23: Shared-Use Path, STRMNG p. 4-10



Table 7-29: Advantages of Shared-Use Paths^{ccxxxix}

Shared-Use Paths Can:

- Provide a dedicated facility for users of all ages and abilities
- Provide, in some cases, access to areas that are otherwise served only by limited-access roadways
- Support tourism through convenient access to natural areas or as an enjoyable recreational opportunity itself
- Provide non-motorized transportation access to natural and recreational areas
- Allow for bidirectional travel
- Display a distinctly rural character when combined with vegetation to separate the path from the roadway

Table 7-30: Best Practices for Shared-Use Paths^{ccxl}

Practical Locations:

- Where there are few conflicts with motorized vehicles (e.g. parks, along rivers, in greenbelts or utility corridors)
- Adjacent to roadways

Consider:

- Shared-use paths should be wide enough for a comfortable two-way crossing between pedestrians, bicyclists, and other non-motorized traffic
- Trail-etiquette signs to manage multiple user types
- Increasing the width of the path based on a high concentration of users
- Crosswalk and crossing signage to slow traffic where the path intersects the road





Signage

Designated Bicycle Routes

Designated Bicycle Route – a system of bikeways designated by the jurisdiction having authority with appropriate directional and informational route signs, with or without specific bicycle route numbers. ^{ccxli}

The purpose of Designated Bicycle Routes is to inform bicyclists of bicycle route direction changes and to confirm route direction, distance, and destination. ^{ccxlii} The intent of a bicycle route is to guide bicyclists along the most favorable alignment between two or more points of interest. ^{ccxliii}

Shared Roadway/Shared Lane – “a roadway that is officially designated and marked as a bicycle route, but which is open to motor vehicle travel and upon which no bicycle lane is designated” ^{ccxliv}, see Figure 7-24.

Sharrows – shared lane markings ^{ccxlv}, see Figure 7-25. “Sharrows” are used to indicate a shared-lane environment for both bicyclists and motorists. These markings reinforce the legitimacy of bicycle traffic on the road and can facilitate proper bicycle positioning.

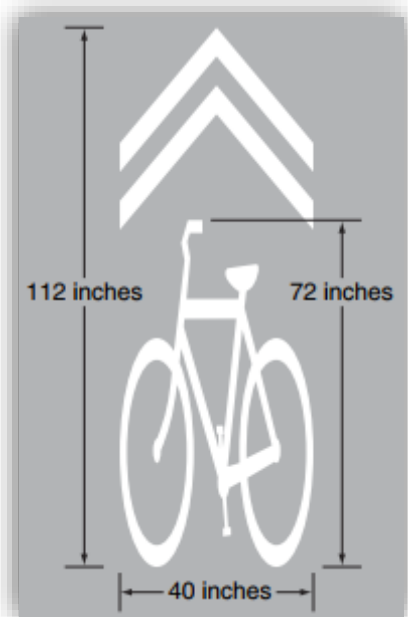


Figure 7-25: Shared Lane/Sharrows Marking, MD MUTCD p. 948

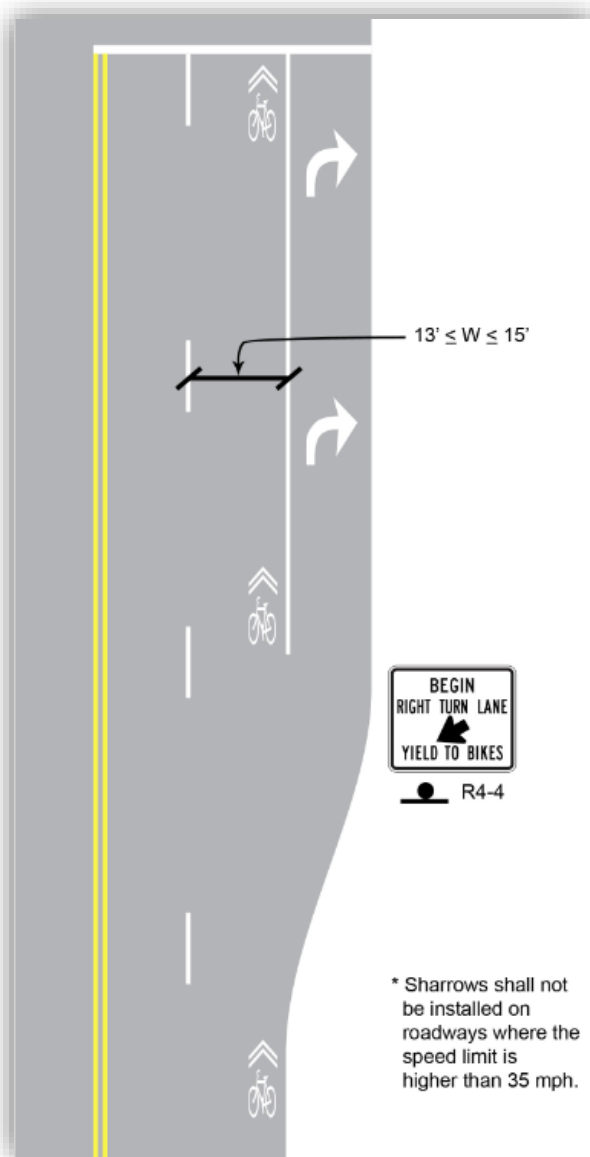


Figure 7-24: Shared Lane/Sharrows Markings, SHA BP&DG, section 3.3



Table 7-31: Best Practices for Shared Roads and Designated Routes^{ccxlvii}

Practical Locations:	Consider:
<ul style="list-style-type: none">• Roads where there is low motor vehicle volume and speed• Sharrows can be used on roads where a bicycle lane is not necessarily needed	<ul style="list-style-type: none">• The importance of signage and/or markings located along shared roadways so that both motorists and bicyclists know to keep an eye out for one another• Designated bicycle route markings/signs are vital to keeping bicyclists safe on shared roadways. These signs/markings are present to inform both drivers and bicyclists to be aware of others traveling on the road

Bike Lane Signs

The following are signs that are important to communicating bicycle infrastructure. These signs are not just for cyclists, but also motorists. When used appropriately, signs can aid in reducing roadway incidents between bicycles and vehicles.

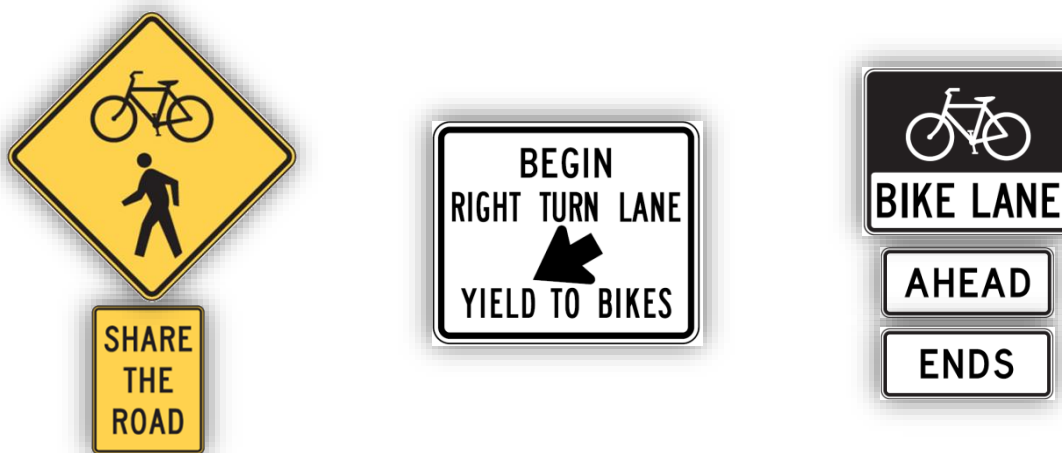


Figure 7-26: Bike Lane Signs, MD MUTCD





Pedestrian Signs

The purpose of pedestrian signage is to provide safety, guidance, and awareness to pedestrians, and to users of all other modes of transportation, as well. Signage can be located along sidewalks, shared-use-paths and pedestrian lanes, and at intersections and road crossings. These signs may be aluminum or digitized, or the signage may be markings along the route. For complete guidance on pedestrian signage and appropriate usage refer to the MD MUTCD, 2011 Edition.

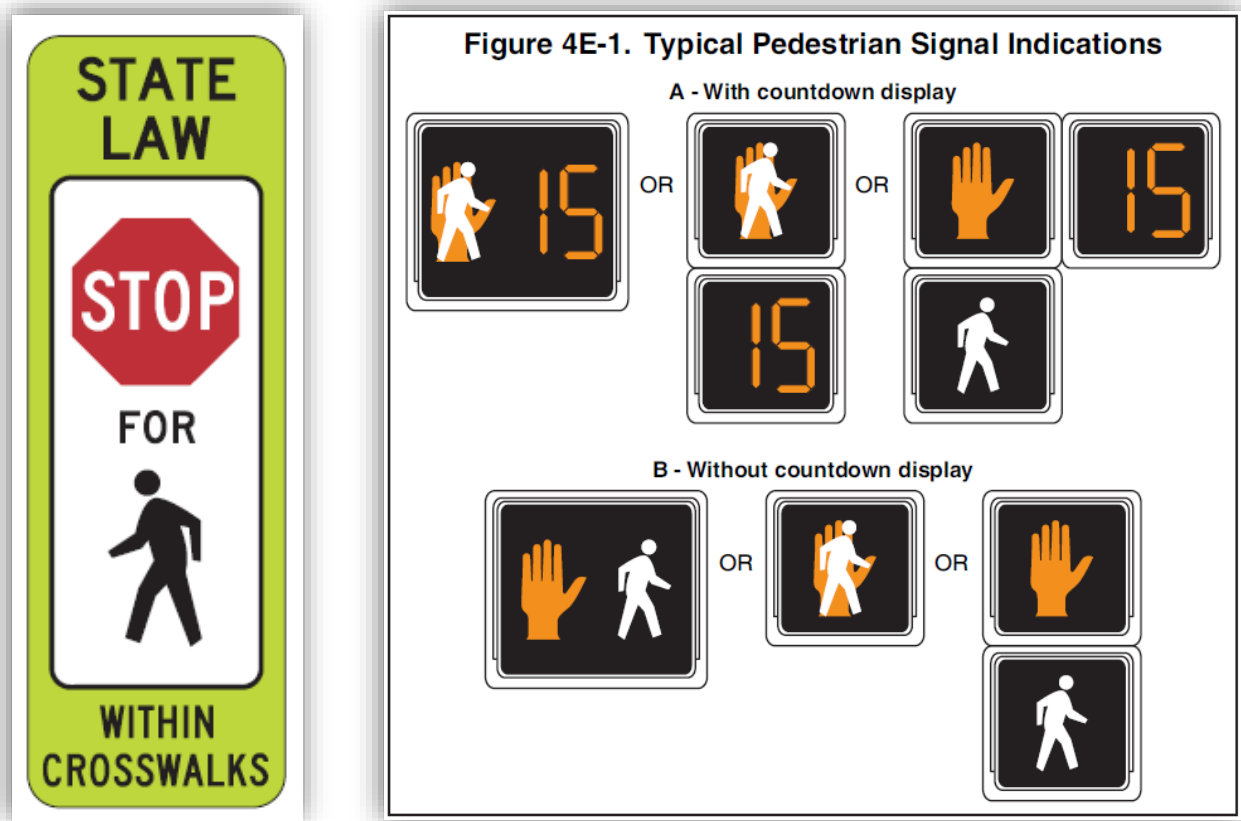


Figure 7-27: Pedestrian Signs, MD MUTCD



Traffic Calming Ideas

Traffic Calming - “Physical and other measures used on a [road] to reduce the dominance and speed of motor vehicles.”^{ccxlvii} By calming vehicle speeds, roads become safer and more conducive to walking and bicycling. The idea is to create “a kind of equilibrium among all of the uses of a street, so no one mode can dominate at the expense of another.”^{ccxlviii}

The following are traffic calming measures and devices, to be use individually or as a combination:

- Bumps, humps, and other raised pavements areas
- Reducing street area where motor vehicle traffic is given priority
- Street closures
- Traffic diversion
- Surface texture and visual devises^{ccxlix}

Creative Placemaking is “an evolving field of practice that intentionally leverages the power of the arts, culture, and creativity to serve a community's interest while driving a broader agenda for change, growth, and transformation in a way that also builds character and quality of place.”^{cci} Creative Placemaking can be utilized in the application of traffic calming. Road paint and pavement markings, art, and signage can be used to manipulate driver perception and mark a community; as a result, traffic slows down.

The following figures show examples of low-cost traffic calming and creative placemaking techniques that can be considered in rural areas. Consideration should be given to advantages and disadvantages of each measure along with design. As previously mentioned, all projects must go through the appropriate processes of County or municipal approval for development.



Figure 7-29: Community Gateway Signage, from www.ctre.iastate.edu



Figure 7-28: Changing driver perception, from Pollextime.com



Figure 7-31: BoulevART 2012 Project, Highland Park, NY, Michael Tomb, from www.nar.realtor



Figure 7-30: Pavement Markings, from www.ctre.iastate.edu

Table 7-32: Pavement Markings Considerations^{ccli}

Advantages to Consider:

- Low cost
- Low impact to emergency vehicles
- Low impact to drainage

Disadvantages to Consider:

- Less effective at reducing speeds in the winter due to visibility
- Maintenance is higher as a result of snow plowing





Design for Children – School Connections

Public Schools are principle destinations for education, recreation, and other activities. Their primary use results in high levels of child traffic. Good design practices in and around these areas will assist in keeping kids safe while they are biking and walking to and from school. Additional infrastructure design consideration should be given at and near school bus stops to support children walking to and from and getting on and off, the school bus.

Table 7-33: Best Practices for School Connections ^{cclii}

Essential components:	Consider:
<ul style="list-style-type: none">• As much separation as possible between children and motor vehicles• Exclusive pedestrian-use facilities• Sidewalks are preferred over roadway shoulders• Separate facilities are preferred near higher speed and higher volume streets• Clearly define facilities for walking and biking• Install controlled crossings near school• Include wayfinding signage all through the school campus	<ul style="list-style-type: none">• Designing satellite drop-off locations for children to walk a safe distance to the bus stop• Creating a bike-ped network around schools that connects neighborhoods• Siting new schools near walking and biking infrastructure that does not require crossing major highways or roads



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 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
 - 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 ^{ccliii}



Endnotes

clxxi According to Google Maps, approximately 5 to 20 miles at 10 mph (varies based on cyclist ability and terrain).

clxxii § 11-104. Bicycle.

http://www.relinedigital.com/M5144%20MDOT%20Bicycle%20and%20Pedestrian%20Master%20Plan/links/bike_ped_plan/Appendix%20A%202014-01-07.pdf.

clxxiii Injury and deaths on the transportation system are statistically higher in small towns. Data from 2006 show that “23 percent of the US population lived in rural areas, yet 56 percent of all traffic fatalities occurred in rural areas.”

<https://www.smartgrowthamerica.org/app/legacy/documents/cs/factsheets/cs-rural.pdf>.

clxxiv FHWA. June 2010. *Factors Contributing to Pedestrian and Bicycle Crashes on Rural Highways*. “The Highway Safety Information System (HSIS) is a multi-State safety database that contains crash, roadway inventory, and traffic volume data for a select group of States. The current participating States—California, Illinois, Maine, Minnesota, North Carolina, Ohio, and Washington—were selected based on the quality of their data, the range of data available, and their ability to merge the data from the various files. The HSIS is used by FHWA staff, contractors, university researchers, and others to study current highway safety issues, direct research efforts, and evaluate the effectiveness of accident countermeasures.”

<https://www.fhwa.dot.gov/publications/research/safety/10052/10052.pdf>.

clxxv County Sheriff and the police reports of Hampstead, Manchester, and Westminster, data from January 2012 to August 2015.

clxxvi Based on County Sheriff/Police Reports January 1, 2012 through August 7, 2015.

clxxvii Pedestrian and Bicycle Information Center. http://www.pedbikeinfo.org/planning/tools_crashdata.cfm.

clxxviii Motor Vehicle Administration. Bicycle Safety. <http://www.mva.maryland.gov/safety/mhso/program-bicycle-safety.htm>.

clxxix The original County collision data discussed were obtained through the County Sheriff’s Office and municipal police offices between January 2012 and August 2015. These data were calculated at the beginning of the bike-ped master plan planning process. Some data were manually mapped in ArcGIS for analysis. In 2015, the State Police began releasing quarterly vehicle crash data that became available through the [state’s open data portal](#). These data cover January 2015 to December 2017 and were analyzed through GIS mapping. These data will be used to examine bike-ped and vehicle collisions in the future. More data are available in the Appendix. State Police Maryland Statewide Vehicle Crashes from

<https://data.maryland.gov/browse?category=Public%20Safety&anonymous=true&q=vehicle%20crashes&sortBy=relevance>.

clxxx National Center for Safe Routes to School. *When walking on the road, do you walk against or with traffic?*

<http://www.saferoutesinfo.org/program-tools/when-walking-road-do-you-walk-against-or-traffic>.

clxxxi Pedestrian and Bicycle Information Center. <http://www.pedbikeinfo.org/community/tips.cfm>.

clxxxii Federal Highway Administration. June 2010. *Summary Report: Factors Contributing to Pedestrian and Bicycle Crashes on Rural Highways*. <http://www.fhwa.dot.gov/publications/research/safety/10052/index.cfm>.

clxxxiii Disabled vehicle related – relates to when a crash occurs due to a disabled vehicle (e.g., a driver is considered a pedestrian when exiting the car. If the car then hits the driver, it is considered a pedestrian crash.).

clxxxiv MHSO. 2016 Annual Report. Page 13. Accessed April 13, 2018.

http://www.mva.maryland.gov/safety/mhso/MHSO_AR_2016_final2.pdf.

clxxxv Baltimore Metropolitan Council. *Look Alive campaign*. Accessed June 4, 2019. <https://www.lookalivemd.org/>.

clxxxvi Federal Highway Administration. *Small Town and Rural Multimodal Networks*. December 2016. Pages. 5-9. Accessed May 11, 2018. https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/small_towns/.

clxxxvii Carroll County Public Schools Transportation Department. 2017- 2018 Transportation Handbook for Parents and Students. Page 7. <https://www.carrollk12.org/admin/transportation/Documents/PARENT%20STUDENT%20HANDBOOK%202017-2018.pdf>.

clxxxviii Standard data are collected from SRTS projects before and after the project is completed to examine how the project affected biking and walking to school. RMES data collected October 2016. <http://saferoutesdata.org/>.

clxxxix http://www.walkingschoolbus.org/WalkingSchoolBus_pdf.pdf.

cx c <http://www.walkingschoolbus.org/resources.html>.

cxci SRTS. Bicycle Train. http://guide.saferoutesinfo.org/walking_school_bus/bicycle_trains.cfm.

cxcii https://issuu.com/safekids/docs/wheels_safety_study_2017/17.

cxci MD MUTCD. Pages 737, 758, 798, 832.

cxci Federal Highway Administration. *Small Town and Rural Multimodal Networks (STRMNG)*. December 2016. Pages 1-4.

cxcv Accessed April 4, 2018. <http://ruraldesignguide.com/>.



- cx^{cvi} ADA National Network. What is a self-evaluation? <https://adata.org/faq/what-self-evaluation>.
- cx^{cvi} The Americans with Disabilities Act. Title II Technical Assistance Manual (II-8.3000 Transition plan) <https://www.ada.gov/taman2.html#II-8.3000>.
- cx^{cvi} MD MUTCD. Section 1A.13. Page 14.
- cx^{cix} Toole, Jennifer. The 2012 AASHTO Bike Guide: An Overview. Toole Design Group (presentation). August 10, 2012. Slide 16.
- cc STRMNG. Advisory Shoulder. Pages 2-17 – 2-24.
- cci STRMNG. Pages 2-17 to 2-24. https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/small_towns/fhwahep17024_lg.pdf.
- ccii MD MUTCD, Section 1A.13. Page 14.
- cciii SHA. Bicycle Policy & Design Guidelines (SHA BP&DG). Page 2.1.
- cciv NACTO. Conventional Bike Lane Benefits. April 2011. Page 5.
- ccv NACTO. Page 5.
- ccvi MD MUTCD, Section 1 A.13. Page 14.
- ccvii NACTO. Page 19.
- ccviii NACTO. Page 19.
- ccix MD MUTC, Section 1 A.13. Page 14.
- ccx SHA BP&DG, Section 8.2.
- ccxi MD Annotated Code §21-101.
- ccxii MD Department of Transportation. What is a Bikeway? Accessed April 4, 2018. http://www.mdot.maryland.gov/newMDOT/Planning/Bike_Walk/Bikeways_About.html.
- ccxiii (MD MUTCD).
- ccxiv Federal Highway Administration. *Small Town and Rural Multimodal Networks*. December 2016. Pages 4-26. Accessed: April 5, 2018. https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/small_towns/fhwahep17024_lg.pdf.
- ccxv SHA BPDG Section 8.3.
- ccxvi NACTO. Page 19.
- ccxvii Pedestrian and Bicycle Information Center. Bike Sharing. Accessed April 4, 2018. http://www.pedbikeinfo.org/programs/promote_bikeshare.cfm.
- ccxviii NACTO. Page 154.
- ccxix NACTO. Page 155.
- ccxx NACTO. Page 141.
- ccxxi NACTO. Page 142.
- ccxxii NACTO. Pages 142 and 146.
- ccxxiii NACTO. Page 122.
- ccxxiv NACTO. Page 123.
- ccxxv NACTO. Page 124.
- ccxxvi MD Annotated Code §21-101.
- ccxxvii STRMNG. Pages 5-7 and 5-8.
- ccxxviii STRMNG. Pages 5-7 and 5-8.
- ccxxix STRMNG. Pages 5-7 and 5-8.
- ccxxx NACTO. Page 154
- ccxxxi NACTO. Page 155
- ccxxxii NACTO. Page 155
- ccxxxiii MD Annotated Code §21-101.
- ccxxxiv STRMNG. Page 4-19.
- ccxxxv STRMNG. Page 4-22.
- ccxxxvi STRMNG. Page 4-20 to 4-22.
- ccxxxvii STRMNG. Page 4-20 to 4-22.
- ccxxxviii MD MUTCD, Section 1A.13. Page 23.
- ccxxxix STRMNG. Page 4-3 to 4-16.
- ccxl STRMNG. Page 4-3 to 4-16.
- ccxli MD MUTCD, Section 1A.13. Page 15.



ccxlii MD MUTCD, Section 9B.20. Page 928.

ccxliii SHA BP&DG. Page 6.1.

ccxliv MD MUTCD, Section 1A.13. Page 23.

ccxliv MD Department of Transportation. What is a Bikeway? Accessed April 4, 2018.

http://www.mdot.maryland.gov/newMDOT/Planning/Bike_Walk/Bikeways_About.html.

And SHA BP&DG.

ccxlvi SHA BP&DG. Pages 6.1 to 6.4.

ccxlvii SHA BP&DG. Appendix B: Definitions. <http://marylandroads.com/oos/Appendix%20B%20-%20Definitions.pdf>.

ccxlviii FHWA Course on Bicycle and Pedestrian Transportation. Traffic Calming. Page 11-1. Accessed May 15, 2018.

https://safety.fhwa.dot.gov/ped_bike/univcourse/pdf/swless11.pdf.

ccxlix FHWA Course on Bicycle and Pedestrian Transportation. Traffic Calming. Pages 11-4 to 11-22. Accessed: April 16, 2019.

https://safety.fhwa.dot.gov/ped_bike/univcourse/pdf/swless11.pdf.

cccl National Alliance of Community Economic development Associations. *Making Sense of Creative Placemaking*.

https://www.naceda.org/index.php?option=com_dailyplanetblog&view=entry&category=bright-ideas&id=18%3Amaking-sense-of-creative-placemaking&Itemid=171.

cccli Iowa State University Center for Transportation Research and Education. Rural Speed Management.

<http://www.ctre.iastate.edu/research-synthesis/rural-speed-management/>.

ccclii STRMNG. Pages 5-9 and 5-10.





Chapter 8: 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.

The purpose of this chapter is to establish criteria to consider when implementing bicycle and pedestrian infrastructure. This chapter will prioritize projects that are listed in Chapters 3 and 4 and prioritize destinations based on a ranking system. Implementation challenges will be discussed with possible solutions. Information will be provided on the use of various public and private funding sources. Finally, ideas will be put forth for engaging public officials and the public in alternative transportation and safety matters, as stated in Chapters 6 and 7.

It is important that this plan is consulted when reviewing proposed projects with any type of road construction or development component so that planned bicycle and pedestrian facilities can be incorporated into the project proposals.

County Priority Project Assessment

In order to optimize limited funding, it is important to prioritize projects that will strengthen the County's bike-ped network. For the purposes of prioritizing where to direct County resources bike-ped projects are ranked similar to the method utilized in the *2014 Freedom Bicycle-Pedestrian Master Plan and Assessment* (Freedom Bike-Ped Plan). The full tables and methodology for how projects are ranked can be seen in the Appendix.

Projects that have a status of "Under Construction" are usually funded through the planning and design/engineering phases of a project. Construction funding is either expected in the next year or has already been received. Therefore, these projects are automatically a top priority.

County Recreation and Parks 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 or not the project meets the *Carroll County Bicycle-Pedestrian Master Plan* goals
- Whether or not the project improves user safety or is associated with ADA compliant infrastructure (more safety elements = more points)
- Whether or not the project is concurrent with an existing or planned road-related project
- Whether or not the project will connect to an "Existing" or "Under Construction" bike-ped project





- Whether or not the project will connect to key destinations (more destinations = more points) (see Table 8-1)
- The number of miles of infrastructure needed to complete the project (fewer miles = more points)
- The number of miles to reach a destination (fewer miles = more points)
- The density at which the surrounding land was developed (more density = more points)
- Construction opportunity: land acquisition and environmental constraints are major hindrances; therefore, if these issues are identified in a project, it will receive less points
- Construction opportunity: public road right-of-way may enable a project; if identified the project will receive more points
- Construction opportunity: existing railroad and utility easements can serve to the advantage or disadvantage of a project, resulting in either more or less points

Table 8-1: Key Destinations in the County

	Places that fall within the top four categories mentioned by citizens at the Citizens Outreach Meeting ^{ccliv} as a place to which they would like to bike or walk.	Short trip destinations, where encouraging walking and biking will reduce vehicle trips.
Destinations	<ul style="list-style-type: none"> • Parks (as a top destination, this receives the most weight) • Historical sites • Restaurants • Grocery stores 	<ul style="list-style-type: none"> • Retail and shopping centers • Schools (from neighborhoods within a 1-mile radius, based on the school system’s transportation policy) • Frequented public destinations that include, but are not limited to, parks; senior and community centers; libraries; and County, federal, and state offices and facilities • Commercial and Employment centers

Note: Tourism trails are marketed for the purpose of generating economic tourism dollars and bringing in visitors to the County. There is no infrastructure or way-finding signage associated with the tours. These trails do not correspond to the “Adopted/Planned” or “Future Connection” trail status and therefore are not assessed for priority. More information on Carroll County Tourism Trails can be found in Chapter 3: Existing Conditions.

Table 8-2 shows the priority order in which the County pedestrian projects (listed in Chapters 3 and 4) should move forward. Sidewalk and trail/bicycle infrastructure projects have been separated to ensure that projects are prioritized on the basis of both trail type (bicycle lanes, paths and designated routes, shared-use-paths and pathways, sidewalks, and crosswalks) and trail use (bicycle, bicycle and pedestrian, and pedestrian). County trails and bicycle infrastructure projects are ranked in Table 8-3.

Twenty-two trail and bicycle projects totaling 12.8 miles were assessed based on how well each meets the vision and goals of the Bicycle-Pedestrian Master Plan. Table 8-4 prioritizes bike-ped projects located along state roads. State roads (identified in Chapters 3 and 4) are MD 97, MD 31, MD 75, MD 26, MD 32, MD 832,



and MD 140. Regional bike-ped projects are a product of collaboration between two or more jurisdictions and are ranked in the order in which they should move forward in Table 8-5.

Table 8-2: County Priority Pedestrian Projects










Trail Name	Trail Type	Trail Use	Trail Description	Location	Length (miles)	Ranking Priority
Monroe Street	sidewalk	pedestrian	Sidewalk along Monroe Street from Father Joe’s Way to Englar Road; provides connection to West Middle School	Westminster	0.2	1
Gist Road & Washington Road	sidewalk	pedestrian	Fill gaps between Stoner Avenue and the hospital entrance	Westminster	0.1	1
Stoner Avenue	sidewalk	pedestrian	Fill gaps between the Senior Center, Advanced Radiology, and the hospital	Westminster	0.2	1
MD 32 Sidewalk	sidewalk	pedestrian	MD 32 from Washington Lane to Kate Wagner Road; a Safe Routes to School project for Robert Moton Elementary School; funded through design	Westminster	0.4	2

Note: The full tables and methodology for how projects are ranked can be seen in Appendix B.





County Priority Pedestrian Projects

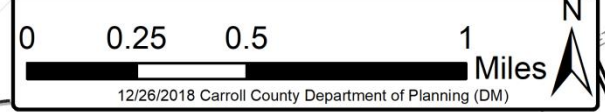
Legend

-  Public Schools
-  Private Schools
-  Roads
-  Railroads
-  Sidewalk
-  Ponds and Reservoirs
-  Recreation Facilities
-  Growth Area Boundary
-  Corporate Limits

Pedestrian

-  Adopted/Planned
-  Future Connection

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



MD 32 Sidewalk

Monroe Street

Stoner Avenue

Gist Road

Map 8-1: County Priority Pedestrian Projects



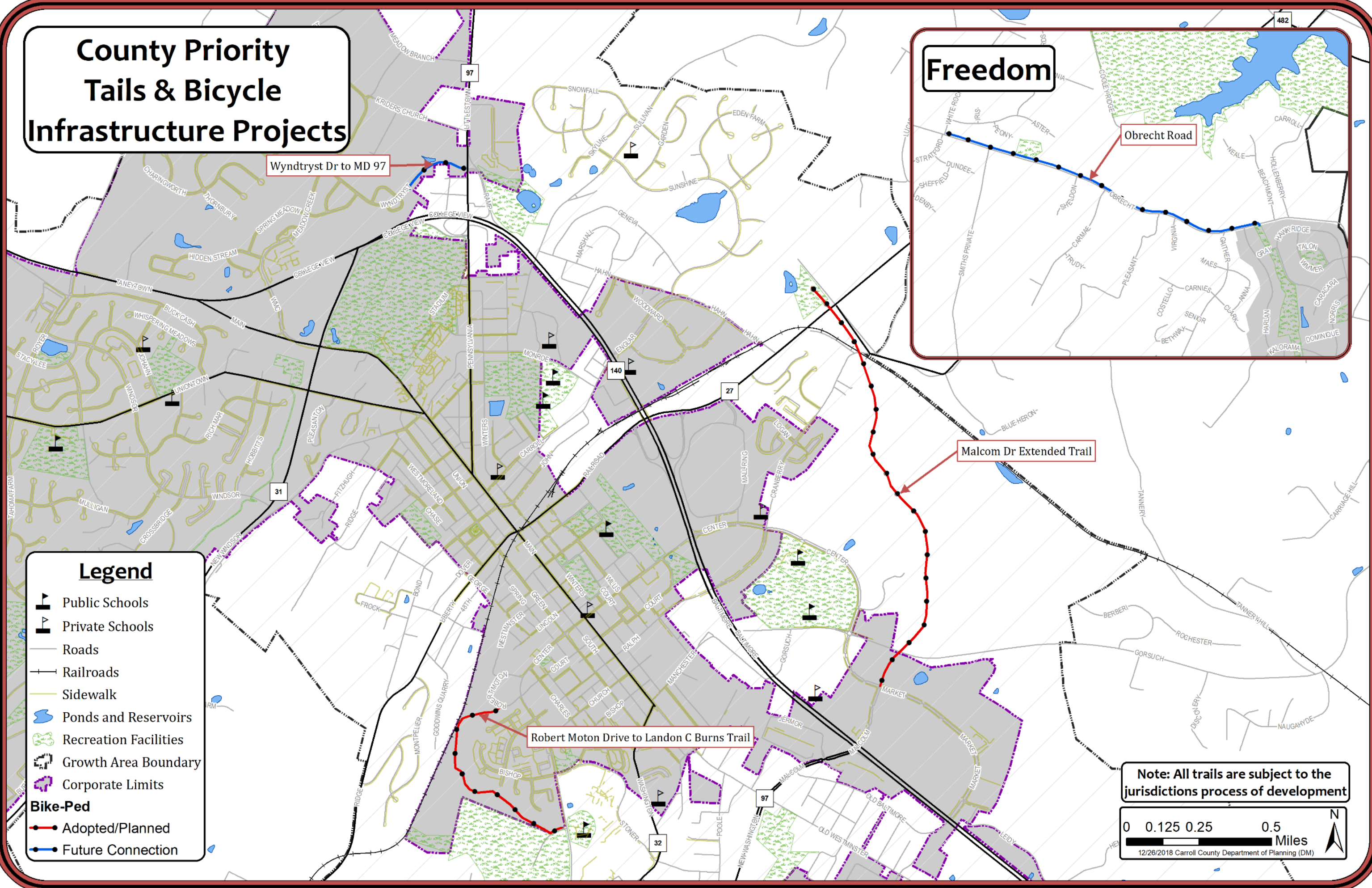
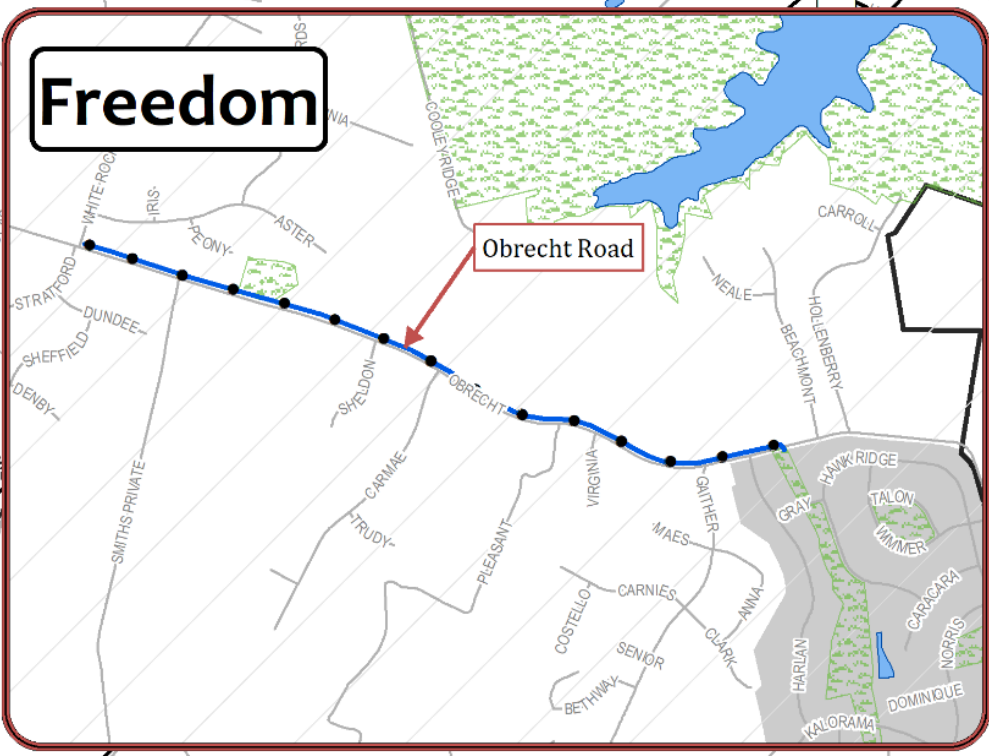
Table 8-3: County Priority Trails and Bicycle Infrastructure Projects

Trail Name	Trail Type	Trail Use	Trail Description	Location	Length (miles)	Ranking Priority
Malcom Drive Extended Trail	shared-use-path	bike-ped	Parallel to planned extension of Malcolm Drive, from Market Street to MD 27, through the intersection of North Cranberry Road and Old Manchester Road	Westminster	1.6	1
Robert Moton Drive to Landon C Burns Trail	shared-use-path	bike-ped	Connects existing Landon C Burns trail to government facilities around Robert Moton Drive	Westminster	0.8	1
Wyndtryst Drive to MD 97	TBD	bike-ped	Complete sidewalk connection from MD 97 to near Upper Field Circle; possible combination of sidewalk and a trail	Westminster	0.3	1
Obrecht Road	TBD	bike-ped	Between White Rock Road and Hollenberry Road	Sykesville	1.2	2

Note: The full tables and methodology for how projects are ranked can be seen in Appendix B.



County Priority Trails & Bicycle Infrastructure Projects



Legend

- Public Schools
- Private Schools
- Roads
- Railroads
- Sidewalk
- Ponds and Reservoirs
- Recreation Facilities
- Growth Area Boundary
- Corporate Limits

Bike-Ped

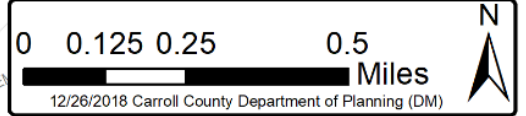
- Adopted/Planned
- Future Connection

Malcom Dr Extended Trail

Robert Moton Drive to Landon C Burns Trail

Wyndtryst Dr to MD 97

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



Map 8-2: County Priority Trails & Bicycle Infrastructure Projects



Table 8-4: County Priority State Road Bike-Ped Projects

Trail Name	Trail Type	Trail Use	Trail Description	Location	Length (miles)	Ranking Priority
MD 26	TBD	bike-ped	Pedestrian and bicycle facilities from Klees Mill road to just east of Monarch Drive	Eldersburg	5	1
MD 140 (Taneytown Pike) & MD 832 (Old Taneytown Road) – Westminster to Taneytown	TBD	bike-ped	Connection from WMC Drive to Meadow Branch Road to MD 832 to Tyron Road to MD 140 to MD 140/Antrim Boulevard intersection (connection between Westminster & Taneytown)	Westminster & Taneytown	9.0	2
MD 31 – Westminster to New Windsor	TBD	bike-ped	Connection from West Main Street to Tibbetts Lane	Westminster & New Windsor	5.2	3
MD 32	TBD	bike-ped	Pedestrian and bicycle facilities Freedom Elementary School to the Howard County line	Sykesville	2.1	4

Note: The full tables and methodology for how projects are ranked can be seen in Appendix B.



County Priority State Road Bike-Ped Projects

Legend

- Private Schools
- Public Schools
- Roads
- Railroads
- Sidewalk
- Ponds and Reservoirs
- Recreation Facilities
- Growth Area Boundary
- Corporate Limits

Bike-Ped

- Adopted/Planned
- Future Connection

Bicycle

- Future Connection

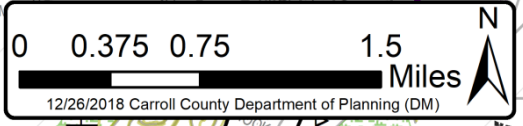
Freedom

This inset map shows the Freedom area with several bike-ped projects highlighted. MD 26 is shown as a red line (Adopted/Planned) and MD 32 as a blue line (Future Connection). MD 851 is also shown as a red line. The map includes various landmarks like ponds and recreation facilities.

MD 31 - Westminster to New Windsor

MD 140 & MD 832

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



Map 8-3: County Priority State Road Bike-Ped Project



Table 8-5: County Priority Regional Bike-Ped Projects

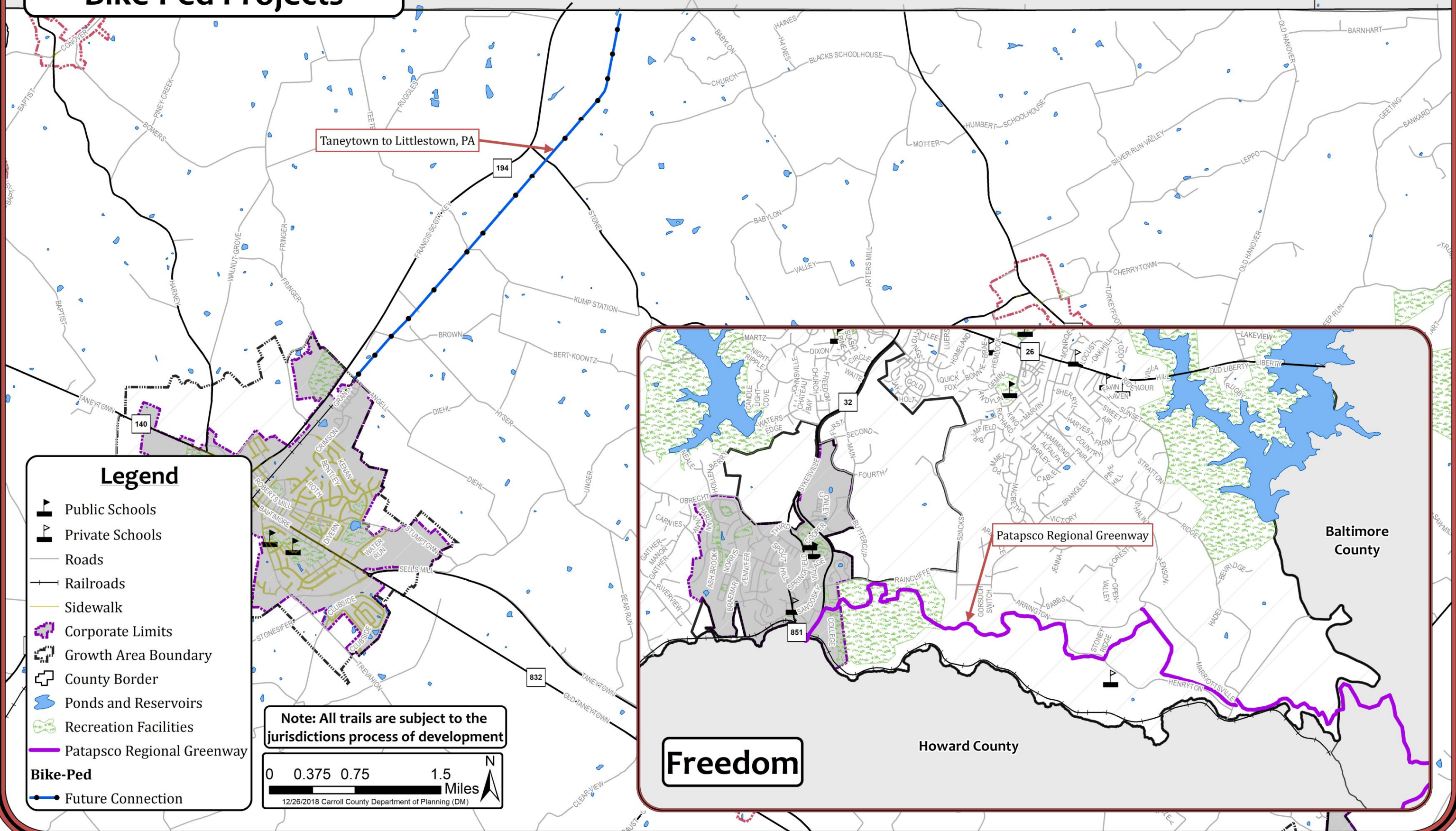
Trail Name	Trail Type	Trail Use	Trail Description	Location	Length (miles)	Ranking Priority
Patapsco Regional Greenway	TBD	bike-ped	Follows the Patapsco River from Sykesville into Howard County	TBD	TBD	1
Taneytown to Littlestown, PA	TBD	bike-ped	Follows the abandoned rail line to Pennsylvania from Angell Road to the County/state boundary	Taneytown to Littlestown, PA	4.0	2

Note: The full tables and methodology for how projects are ranked can be seen in Appendix B.



County Priority Regional Bike-Ped Projects

Adams County, PA



Taneytown to Littlestown, PA

Patapsco Regional Greenway

Freedom

Legend

- Public Schools
- Private Schools
- Roads
- Railroads
- Sidewalk
- Corporate Limits
- Growth Area Boundary
- County Border
- Ponds and Reservoirs
- Recreation Facilities
- Patapsco Regional Greenway
- Bike-Ped**
- Future Connection

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

0 0.375 0.75 1.5 Miles

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

Map 8-4: County Priority Regional Bike-Ped Projects



The *1994 Greenways, Bicycle, and Pedestrian Facilities Network Technical Report* (1994 Technical Report) identifies most long-term projects. The top projects from the 1994 Technical Report that are identified in the priority project assessment of this plan are Old Taneytown Road/MD 832 - Extension into Westminster, MD 31 - Westminster to New Windsor, Old Taneytown Road/MD 832, Patapsco Regional Greenway, and Taneytown to Littlestown, PA. The 1994 Technical Report was not adopted; therefore, the trails are designated “Future Connections” from Chapter 4

It is important to note that economic conditions and project circumstances are constantly changing. Most of the projects mentioned in this plan have not gone through engineering and design. There may be additional components or realignments that could change the priority points it acquired when originally assessed. When deemed necessary by the Planning and Zoning Commission, project priorities may be reassessed to determine if changes to a project have improved the way it addresses the vision and goals in the Bicycle-Pedestrian Master Plan.

Funding

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. The Community Investment Plan (CIP) is a six-year timetable for the installation of permanent public structures, facilities, roads, and other public improvements based upon budget projections. 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. Moreover, grant programs are usually set up on a reimbursement basis. In such cases, the County CIP provides the initial grant funds, as well, that are later reimbursed to the County. There are limited funding opportunities on all government levels to address transportation needs.

Carroll County Recreation and Parks receives annual funding of \$50,000 per year provided by County Commissioners in 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.

Leveraging of funding opportunities is to use private or public funding to maximize gains. Goal two of the Freedom Bike-Ped Plan is to 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.^{cclv} Some options to consider that would allow the leveraging of funding opportunities:

- Market the benefits of a project to surrounding businesses and seek private investment for mutually beneficial projects
- Form friends groups that will assist with maintenance of a trail
- Work with developers to incorporate bike-ped transportation and safety improvements in site plans
- Increase the multiple functions of a bike-ped project, including:
 - Increase the amount of destinations along the alignment
 - Increase the historic and cultural attractions near and along the route
 - Improve user safety





A Countywide trail system, consisting of over 200 miles of trails, could cost nearly \$52 million to implement (based on an average cost of \$48 per linear foot supplied by the Carroll County Department of Recreation and Parks) if the County funded the complete proposed trail system. The cost to the residents of the County is expected to be much less because much of the money to provide the needed infrastructure comes from grant programs and developers.

Recreation and Parks primary funding sources:

- General fund (County)
- Park Restoration fund (County)
- Program Open Space (State)
- Other grants (more often than not the County must match the grant money; this can create a timing issue with providing matching funds)

The federal and state grant programs listed in Table 8-6 (Primary Grants) are the primary funding sources for bicycle and pedestrian projects. State staff can help local communities identify ways to combine the grants to successfully implement projects. All grant funding is provided on a reimbursement basis.

Table 8-6: Primary Grants

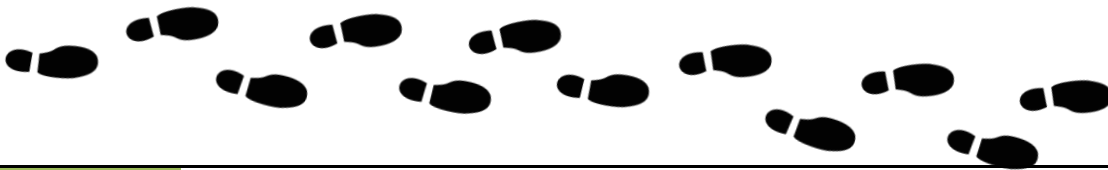
Program	Description
Transportation Alternatives Program (TAP) (SHA)	<p>The program provides federal funding for projects that enhance the cultural, aesthetic, historic, and environmental aspects of the intermodal transportation system.</p> <p><i>Eligible Grantees:</i></p> <ul style="list-style-type: none"> • Metropolitan Planning Organizations (select projects for 50% of available funding) • Local/County Jurisdictions • Transit Agencies • Federal Public Land Agencies • Local/County School Districts <p><i>Eligible Bike/Pedestrian Projects:</i></p> <ul style="list-style-type: none"> • Planning and Design of Bike/Pedestrian Facilities and Safe Routes for Non-Drivers • Construction of Bike/Pedestrian Facilities • Construction of Safe Routes for Non-Drivers • Conversion of Abandoned Rail to Bike/Pedestrian Trails
Maryland Bikeways Program (MDOT)	<p>The program provides state funding for projects that maximize bicycle access and fill missing links in the state’s bicycle system, focusing on connecting shared-use paths and roads and enhancing last-mile connections to work, school, shopping and transit.</p> <p><i>Eligible Grantees:</i></p> <ul style="list-style-type: none"> • State Agencies





	<ul style="list-style-type: none">• Metropolitan Planning Organizations• Local/County Jurisdictions• Transit Agencies• Federal Public Land Agencies <p><i>Eligible Bike/Pedestrian Projects:</i></p> <ul style="list-style-type: none">• Feasibility Assessments, Design and Engineering• Construction of Shared Use Paths, Cycletracks, and Bicycle Lanes• Shared Lane and other pavement markings• Bicycle Route Signage and Wayfinding• Bicycle Capital Equipment (e.g., parking)• Other Minor Retrofits to Support Bicycle Routes• Education Materials to Support Bikeway Projects
Recreational Trails Program (SHA)	<p>A federally-funded program assisting development and maintenance of smaller scale motorized and non-motorized trail, trailhead, and restoration projects. Examples of trail uses include hiking, bicycling, inline skating, equestrian use, canoeing, kayaking, cross-country skiing, snowmobiling, off-road motorcycling, all-terrain vehicle riding, four-wheel driving, or using other off-road motorized vehicles. Recreational Trails is now a part of the larger Transportation Alternatives Program due to the latest federal transportation law, MAP-21, but has retained dedicated funding.</p> <p><i>Eligible Grantees:</i></p> <ul style="list-style-type: none">• State Agencies (DNR projects receive 50% of funding)• Local/County Jurisdictions• Private Groups/Individuals (with government agency co-sponsor) <p><i>Eligible Bike/Pedestrian Projects:</i></p> <ul style="list-style-type: none">• Construction of New Trails• Maintenance and Restoration of Existing Trails• Development/Rehabilitation of Trailside Facilities and Linkages• Purchase/Lease of Trail Construction Equipment• Trail/Corridor Easement and Property Acquisition• Interpretive/Educational Programs, Signage, and Maps Related to Recreational Trails Use
Safe Routes to Schools (SRTS) (SHA)	<p>A program providing funding for educational and enforcement efforts (non-infrastructure) and engineering improvements (infrastructure) that benefit elementary and middle school children by enabling and encouraging students to walk and bicycle to school. Safe Routes to School projects must be requested through the larger Transportation Alternatives Program (TAP) due to the latest federal transportation law, MAP-21. The SRTS Program is a federal-funded, reimbursement program administered by the Maryland Department of Transportation State Highway Administration (MDOT SHA). Each State administers its own program and develops its own procedures to solicit and select projects for funding.</p>





	<p><i>Eligible Grantees:</i></p> <ul style="list-style-type: none">• Local/County Jurisdictions• Local/County School Districts <p><i>Eligible Bike/Pedestrian Projects:</i></p> <ul style="list-style-type: none">• Bike/Pedestrian safety classes for students• Traffic education and enforcement near schools• Public awareness campaigns for press and community leaders• Sidewalk Improvements (within 2 miles of school)• Traffic calming and speed reduction improvements• Bike/Pedestrian Crossing Improvements• On- and Off-Street Bike/Pedestrian Improvements• Bicycle Parking• Traffic diversion, education, and enforcement
<p>Maryland Highway Safety Office Grant (MVA)</p>	<p>This federally funded grant aims to reduce the number of motor vehicle-related crashes, deaths, and injuries on Maryland highways. The State’s Strategic Highway Safety Plan is a data-driven plan that identifies the top safety priorities that are eligible for funding. Since 2014, pedestrian safety is a top safety priority.</p> <p><i>Eligible Grantees:</i></p> <ul style="list-style-type: none">• State Agencies• Local/County Jurisdictions• Law Enforcement Agencies• Non-Profit Organizations• Higher Education Institutions <p><i>Eligible Bike/Pedestrian Projects:</i></p> <ul style="list-style-type: none">• Pedestrian Safety Projects Consistent with SHSP Strategies





The grants listed in Table 8-7 (State Funding Programs) are State Highway Administration (SHA) dedicated funding programs that support bicycle and pedestrian improvements on state roads. SHA internally identifies, designs, and constructs many of the projects. Local communities can identify and request projects for SHA evaluation.

Table 8-7: State Funding Programs

Program	Description
ADA Retrofit (SHA Fund 33)	A fund to upgrade existing sidewalks, curb ramps, intersections and driveway entrances along state roadways to be compliant with the Americans with Disabilities Act (ADA).
Sidewalk Retrofit (SHA Fund 79)	A fund to construct missing sidewalk segments along state roadways to fill gaps within the pedestrian network. The missing segment must be located in an Urban Area (as defined by the Census). Local matching fund contributions may be reduced or eliminated for projects located in Designated Sustainable Communities, in a Priority Funding Area, or where SHA determines that there is a substantial public safety risk or significant impediment to pedestrian access.
Community Safety and Enhancement Program (SHA Fund 84)	A fund for highway reconstruction and improvements along SHA roadways within urban centers that promote safety and economic development. Projects often include pedestrian and bicycle accommodations and are generally requested by local jurisdictions in the annual transportation priority letter sent to MDOT.
Bicycle Retrofit (SHA Fund 88)	This is a fund to provide bicycle improvements along state roadways.
Bicycle Pedestrian Planning Area	While not direct funding, this program provides technical assistance in planning for a specified small area where bicycle and pedestrian activities will be prioritized.



Table 8-8: Additional State Grant Opportunities

Program	Description
Community Legacy Program (DHCD)	<p>The program provides local governments and community development organizations with funding for essential projects aimed at strengthening communities through activities such as business retention and attraction, encouraging homeownership, and commercial revitalization. Projects must be located within an approved Sustainable Community to be eligible for funding. Bicycle and pedestrian improvements include, but are not limited to, streetscape improvements along streets that are generally not state highways; development of mixed-use projects that may combine housing, retail, office, and public and open space; and development of public infrastructure that is related to a Community Legacy project (such as parking, lighting, and improvements to pedestrian and bicycle circulation).</p>
Program Open Space (DNR)	<p>The program consists of two components, a local grant component often called Localside POS and a component that funds land acquisition and recreation facility development. The Localside component provides financial and technical assistance to local subdivisions for the planning, acquisition, and/or development of recreation land or open space areas.</p>
Community Parks and Playgrounds (DNR)	<p>The program provides funding to restore existing parks and create new park and green space systems in Maryland's cities and towns. Flexible grants are provided to local governments which help them rehabilitate, expand, or improve existing parks. Funding can help develop environmentally oriented parks and recreation projects, create new parks, or purchase and install playground equipment in older neighborhoods and intensely developed areas throughout the state. Projects are funded 100%; no matching funds are needed.</p> <p><i>Eligible Grantees:</i></p> <ul style="list-style-type: none"> • Municipalities
Maryland Heritage Areas Financial Assistance Programs (MHT)	<p>Designated Maryland Heritage Areas are eligible for various tax credits, grants, and loans. These financial assistance programs support a wide variety of historic preservation-related activities. Bicycle and pedestrian opportunities involve inclusion in heritage tourism development and educational programs.</p>
Complete Streets Program Funding (MDOT)	<p>The Complete Streets Program is a competitive grant program within the MDOT. Funds for the program must be as provided by the Governor in the State budget. Local governments that develop complete streets policies and are certified by MDOT may apply for grants from the program to finance the design and planning of eligible projects.</p>





Table 8-9: Additional Federal Grant Opportunities

Program	Description
Transportation Investment Generating Economic Recover (TIGER) Grants (USDOT)	The TIGER Discretionary Grant program provides a unique opportunity for the USDOT to invest in road, rail, transit, and port projects that promise to achieve critical national objectives. The TIGER program enables DOT to examine a broad array of projects on their merits to help ensure that taxpayers are getting the highest value for every dollar invested. In each round of TIGER, DOT receives many applications to build and repair critical pieces of our freight and passenger transportation networks. Applicants must detail the benefits their project would deliver for five long-term outcomes: safety, economic competitiveness, state of good repair, livability, and environmental sustainability.
Rivers, Trails, and Conservation Assistance Program (NPS)	The program extends and expands the benefits of the National Park Service by helping connect all Americans to their parks, trails, rivers, and other special places. When a community asks for assistance with a project, NPS staff provides free, on-location facilitation and planning expertise from conception to completion. Assistance can include visioning and planning; developing concept plans for trails, parks, and natural areas; setting priorities; and identifying funding sources.
Federal Lands Access Program (FHWA)	The program is intended to improve transportation facilities that provide access to, are adjacent to, or are located within, federal lands. The program supplements state and local resources for public roads, transit systems, and other transportation facilities, with an emphasis on high-use recreation sites and economic generators. Bicycle and pedestrian opportunities include planning, design and engineering, construction, rehabilitation, and preventative maintenance of facilities accessing public lands.





There are a variety of other public and private grant opportunities available to fund bicycle and pedestrian projects. Specifying project type is the first step to determining funding eligibility. Several examples are included below.

Table 8-10: Additional Private Grant Opportunities

Program	Description
Robert Wood Johnson Foundation	The Robert Wood Johnson Foundation invests in grantees (e.g., public agencies, universities, and public charities) that are working to improve the health of all Americans. Current or past projects in the topic area “walking and biking” include greenway plans, trail projects, advocacy initiatives, and policy development.
PeopleForBikes	The PeopleForBikes Community Grant Program provides funding for important and influential projects that leverage federal funding and build momentum for bicycling in communities across the U.S. These projects include bike paths and rail trails, as well as mountain bike trails, bike parks, BMX facilities, and large-scale bicycle advocacy initiatives.
National Center for Safe Routes to School	The National Center for Safe Routes to School (part of the UNC Highway Safety Research Center) identifies ways for communities to solicit non-government funding for Safe Routes to School activities. The multiple benefits of SRTS programs, including the safety, health, environment and community impacts, often align with the interests of the local community. The National Center develops resources, provides technical assistance, and conducts marketing and program evaluations for the federal Safe Routes to School program.
Rails-to-Trails Conservancy	Rails-to-Trails Conservancy does not directly fund the development of trails. However, they provide technical assistance on the various funding programs available, from federal, state, and local funding mechanisms, to grants, partnerships and creative funding methods.
Heart of the Civil War Heritage Area (HCWHA)	The Heart of the Civil War Heritage Area provides mini grants to assist heritage sites, non-profit organizations and government units to develop new and innovative programs, exhibits, tours, events and other initiatives, and to enhance existing heritage tourism products. The goal is to promote stewardship of our historic, cultural, and natural Civil War resources, and stimulate tourism, economic prosperity, and educational development.





Opportunity for Construction: Challenges and Solutions

It is important to address the challenges of building pedestrian and bicycle infrastructure in Carroll County. Challenges discussed in this section are acquiring land; liability; maintenance; natural obstacles, including floodplains, steep slopes and streams; NIMBYism (not in my back yard); policy; safety; roads; and railroad and utility corridors.

Land Acquisition

A majority (75%) of County public roads do not have a dedicated right-of-way.^{cclvi} This presents a challenge when implementing bicycle and pedestrian infrastructure along County public roads, as many infrastructure designs identified in Chapter 7 suggest using a road right-of-way, apart from the motorist lanes. Land acquisition can add additional cost to the project and can be very time intense as there is a need to negotiate with private property owners.

The Carroll County Department of Recreation and Parks has experience with acquiring land for park and trail projects. The majority of land acquired is from large properties. Small amounts of land can be acquired for short distance connections; however, they find that this rarely happens. Some past Recreation and Parks projects that have required land acquisition are:

- Leister Park, Hampstead – the farm was purchased by Recreation and Parks for a low rate with the family's condition that the property would be used as open space
- Krimgold Park, Woodbine – similar to Leister Park land acquisition
- Deer Park Rd Park Extension, Westminster – a parcel of land was purchased from the Archdiocese of Baltimore; the land is contiguous with the existing Deer Park Rd Park

Maintenance

Maintenance is an important discussion point for bike-ped implementation. It speaks to the efficacy of transportation infrastructure and could become a safety issue if not provided correctly. Maintenance is also a major cost concern for the County.

Generally, unpaved trails are maintained by the Department of Recreation and Parks. Paved trails are maintained by Carroll County Bureau of Facilities (under the Department of Public Works).

Bicycle lanes need to be kept free of debris. Debris could cause a cyclist to swerve in order to avoid it. Barrier-separated bike lanes, while safer for the cyclists, are more challenging to maintain, e.g., snow and debris removal, due to their separated nature. A separate sweep would be required in addition to a sweep of the road. If a solution cannot be found for cost-effective maintenance, at minimum, buffer-separated lanes should be required on high speed roads. Existing bike lanes in the County are maintained by the state as they only exist on state roads.

Carroll County has a Sidewalk Ordinance that places the maintenance of the sidewalk on to the property owner (including snow/ice removal); this applies when sidewalk is located within the public road right-of-way. This is something to bring to the attention of property owners should sidewalk be installed on their property.



All public trail maintenance is provided through the County, excluding trails in the municipalities. A trail generally needs to be maintained a certain way depending on whether it is paved or unpaved. Unpaved trails are maintained only when needed, such as a fallen tree, a wash out, etc. Paved trails are generally repaved or resurfaced every 15 years. In addition to scheduled maintenance, there are times when unexpected maintenance is necessary, such as after a washout from heavy rain or tree roots growing up through the pavement.

Volunteer maintenance is rare for trails in the County; however, it is something that needs to be explored more. When connecting to a neighborhood, members of that community and adjacent communities who seek to enjoy the trail should be consulted to assist in maintaining it. Trail Councils can also be formed for the sole purpose of finding creative ways to keep trails maintained; e.g., Boy Scout and Girl Scout troops, high school volunteer hours, neighborhood groups, etc.

It is important to have a plan to continue repair of existing trails in the County and then create a plan to repair any new trails. The County's Park Restoration fund provides ongoing funding for the renovation of County park sites due to age and deterioration. Typical projects include general building repairs, asphalt trail overlays, fence replacements, etc. A list of projects and the monetary amount requested is found in the annual CIP.

Floodplains

Ideally, floodplains would remain in a natural, vegetated condition. However, trails are often built along streams because of the attractive natural landscape enjoyed by pedestrians and bicyclists alike. If trails are to be constructed, it is best to build trails at grade in floodplains to maintain the natural drainage pattern, and limit erosion, surface saturation, and frequent inundation. However, the areas adjacent to streams are prone to unavoidable flooding, which can demand costly maintenance from fallen or hazardous trees, erosion, washed-out trails, etc.

The goal is to limit disturbance to vegetation when building in a floodplain. This can be accomplished by building as narrow and natural as possible, while still meeting the minimum grant funding and ADA requirements, and studying the corridor to identify and avoid sensitive areas. All trail development in floodplains must comply with the County Code. Carroll County has been consistent in limiting development in its 100-year flood areas.





Working Within Existing Right-of-Ways and Easements

Some of the trails mentioned in previous chapters include railroad crossings. These infrastructures will likely cross railroad tracks at grade. All but one of these trails is either listed as an “Adopted/Planned” or “Future Connection. The “Under Construction” SHA shared-use-path along MD 27 will cross over the Maryland Midland Railroad, at grade, using the existing Hahn Road right-of-way.

Trails may also be built along former rail lines. This is a way to make use of abandoned railroad right-of-ways to create safe connections and form continuous bicycle-pedestrian networks. The County’s only existing rail-trail is in Mount Airy. The Town was able to utilize the abandoned B&O right-of-way that traverses east to west through Town. Previous chapters mention some trails that may use portions of abandoned rail lines in the County.

An emerging concept to secure even more land for effective trail development is rails-with-trails, which are trails adjacent to, or within, an active railroad corridor. Often times in this case, a use easement is purchased from the railroad company. As of 2018, there are nearly 350 rails-with-trails within the US, totaling more than 930 miles.

Sometime railroads have established policies about bike-ped infrastructure within the railroad’s right-of-way. For example, CSX is not in favor of new bike-ped infrastructure crossing at locations outside of existing highway easements. Here are the key points of the CSX document, *Public Project Information for Construction and Improvement Projects That May Involve the Railroad*:

- “Private or public parallel bicycle/pedestrian pathways and trails are not permitted on CSXT property.
- CSXT prefers grade separated bicycle/pedestrian pathways and multi-use trails.
- Bicycle/pedestrian pathways and trails cannot cross tracks at grade outside of existing highway easements.
- Pedestrian safety is enhanced when pathways and sidewalks are designed such that they cross the tracks at as close to a right angle as practical.
- The highway agency’s design must include additional safety measures for at-grade pathways and trails within existing highway easements. These measures should include detectable warnings. Pathways and trails greater than 5’ in width require either physical requirements or traffic control devices.
- CSXT will oppose condemnation proceedings aimed at recreational use of trackside property.
- New crossings, if approved, shall be maintained at the appropriate agency’s expense.”^{cclvii}

While utility and railroad companies often place constraints on implementing bicycle and pedestrian projects there are strategies for success. Use an existing public road right-of-way or easement when crossing a utility or railroad line. For best chance of success it is important to communicate early and often with these companies.

It is important to consult each railroad right-of-way owner as early as possible in the project planning process to determine the constraints of the project. Involving the Rails-to-Trails Conservancy may be of benefit as they have experience with over 31,000 miles of trails, including railroad corridors.





There is also an opportunity to work with utility companies utilizing their existing easements. BGE and Pepco are aware of the desire of bike-ped advocates to utilize these spaces. Pepco/Exelon Corporation and Montgomery County have partnered to implement that County's first utility line corridor trail. The 6-mile trail, plus 13 additional miles to be built later, is a pilot project between the two partners.

Some "Adopted/Planned" and "Future Connection" trails mentioned in previous chapters will cross under utility lines using existing road right-of-ways, or an easement may need to be obtained from the utility company. No trails are planned to fully utilize a utility line corridor, however, the current mapped trails are planning-level alignments, which could be modified once more detailed planning and engineering are completed. In addition, there is potential to utilize these corridors through partnerships.

Using existing public road right-of-ways is another option for building bike-ped infrastructure. While much of the County's older roads do not have additional right-of-way outside of the road itself, state and newer County roads are constructed with right-of-way that extends past the paved road. Building bike-ped facilities within an existing right-of-way can create safety issues, which are addressed in Chapter 7: Design Alternatives. However, having an existing public right-of-way area to work in will eliminate the need and cost of acquiring privately owned land.

Legal Challenges

People without access to vehicular travel will often bike and walk along roads to reach destinations such as schools, jobs, shopping, transit, as well as for exercise and recreation. Quite often, these trips are made in the absence of bicycle and pedestrian facilities, as these infrastructure improvements are very limited throughout many parts of the County. Questions have been raised as to whether or not the County would expose itself to liability risks by encouraging bicycling and walking along and across roads.

Whether bike-ped facilities are provided, or not, liability cannot be avoided. However, not providing the infrastructure, including signage, places the County at greater risk. To minimize liability risk, infrastructure needs to be provided that is designed and constructed in accordance with federal and state design standards. Providing bike-ped infrastructure that complies with recognized standards protects the County from liability.

Another concern is notification of problems or concerns. If the County is notified of a problem or unsafe conditions, but does nothing to address the issue, it may have created greater exposure to liability. A better approach would be for the County to establish a policy or program to address issues and plan for needed bike-ped infrastructure and future maintenance. With such a policy or program in place, the courts tend to recognize in a lawsuit that the local jurisdiction is moving forward to address the problem, thereby providing a level of protection from potential legal issues.





Table 8-11: Carroll County Challenges to Implementation and Solutions

Challenge	Solution
Land Acquisition	<ul style="list-style-type: none"> • Negotiate with landowners to acquire property or establish easement/right-of-way • Grant opportunities are through Recreational Trails Program (SHA), Program Open Space (DNR)
Legal Issues	<ul style="list-style-type: none"> • Adhere to local, state, and federal laws and regulation • Establish a policy or program to address issues and plan for needed bike-ped infrastructure and future maintenance • Implement infrastructure in accordance with federal and state design standards • Building infrastructure won't increase the risk of liability
Maintenance	<ul style="list-style-type: none"> • Involve volunteers - friends groups and recreation councils • Clearly communicate a protocol between County roads maintenance officials and SHA officials • Identify dedicated funding for ongoing maintenance of pavement markings and signage, bike parking facilities, and County Trails
Natural Obstacles	<ul style="list-style-type: none"> • Conduct a thorough investigation of the proposed bike-ped corridor • Seek implementation of trails where there are existing bridges over rivers and streams • Provide a priority list of grade-separated crossing that can be pursued as major funding opportunities become available
Public Opposition	<ul style="list-style-type: none"> • Provide information and answer criticism • Be open and transparent • Seek out supporters and urge them to get involved in the project • Create a citizen's bicycle and pedestrian advisory group
Policy	<ul style="list-style-type: none"> • Development of a countywide Complete Streets Policy with design guidelines • Include elements related to bicycle and pedestrian movements and other relevant multi-modal topics in the scope of transportation studies and feasibility studies related to existing or new public transportation services or systems • Establish a policy or program to address issues and plan for needed bike-ped infrastructure and future maintenance
Railroads	<ul style="list-style-type: none"> • Coordinate with the Rails-to-Trails Conservancy to serve as a legal advocate for rail-trails • Collaborate with railroad companies to create a rail-trail pilot program • Communicate early and often • Use existing right-of-ways and easements to cross railroad corridors
Safety	<ul style="list-style-type: none"> • Complete the County Strategic Highway Safety Plan • Create a public outreach campaign • Education and enforcement
State Roads	<ul style="list-style-type: none"> • Work with MDOT SHA to identify gaps in the bike-ped network • Seek implementation of trails where there are existing grade separated crossings (bridges or underpasses) to avoid state roads





	<ul style="list-style-type: none"> • Provide a priority list of state road intersections that need bike-ped or other infrastructure for safe road crossings
Utility Corridors	<ul style="list-style-type: none"> • Collaborate with BGE/Exelon Corporation to create a utility-trail pilot program • Communicate early and often • Use existing rights-of- ways and easements to cross utility corridors

Engagement

The success of this plan depends on how well all essential parties are engaged in the issues. There should be opportunities for locally-based, community-driven solutions designed for the long-term. This effort would require the engagement of a core group of people to assist with advising on bike-ped projects.

The five E’s in all aspects of the planning process: Education, Encouragement, and Enforcement, along with Engineering and Evaluation. These areas have been identified by the federal government, the state of Maryland, and numerous cities as essential elements to a comprehensive approach to bike-ped planning. A sixth E has also been identified, Equity.

Table 8-12: The Six E’s of Planning

Six E’s	Description
Education	<ul style="list-style-type: none"> • Education should involve training bicyclists, pedestrians, and motorists of safe practices when encountering bike-ped and other transportation infrastructure.
Engineering	<ul style="list-style-type: none"> • Design and construction of a safe transportation network.
Encouragement	<ul style="list-style-type: none"> • Promotion of bicycling and walking as a mode of transportation.
Enforcement	<ul style="list-style-type: none"> • Enforcement is to take a balanced approach to improve the behaviors of bicyclists, pedestrians, and motorists.
Evaluation	<ul style="list-style-type: none"> • Evaluation involves analysis of existing conditions, progress, and success of initiatives.
Equity	<ul style="list-style-type: none"> • Ensure that bicycle and pedestrian initiatives benefit all demographics.

Public Participation

MDOT conducted a survey for its 20-year bike-ped plan to understand the demand for walking and biking in the state. Over 3,300 people participated in the survey. The results show there is a desire to walk and bike but there needed to be improvements. Some important findings are:

- People are walking (57% of respondents) and biking (40% of respondents) for everyday trips; would do so more if facilities and safety are improved.
- Top obstacle to walking is gaps, or missing sections, of sidewalks or paths (66% of respondents).
- Top obstacle to cycling is motorists do not exercise caution around cyclists (84% of respondents).
- Top improvement needed for both walking (ranked 4.4 out of 5.0) and cycling (ranked 4.5 out of 5.0) is more facilities that connect to major destinations.





- Improving safety for walking and biking is a top priority (ranked 4.4 out of 5.0).^{cclviii}

Updated in January 2019, the 2040 Bicycle and Pedestrian Master Plan surveyed the public for the most important initiatives and objects to move forward with this plan, and the results are as follows:

- Address key gaps and problems areas for bicycle and pedestrian connections (67% of respondents).
- Further develop multimodal transportation links and integration with transit (44% of respondents).
- Improve coordination between state agencies, MPOs, county and local jurisdictions, and advocates to support biking and walking (33% of respondents).^{cclix}

Goal 2 of the 2001 Baltimore Region Bicycle, Pedestrian and Greenway Transportation Plan includes a policy that encourages the development of a citizen's bicycle and pedestrian advisory group. Jurisdictions throughout the Baltimore Region are welcoming these advisory groups as a way for government and advocates to address their mutual interest in promoting a safe pedestrian and bicycle transportation system. Membership often consists of County/City employees and citizens of different educational and geographical backgrounds.

The Carroll County Bicycle-Pedestrian Master Plan Interest Surveys show that this is also true for those who bike and walk in Carroll County. Some results from the surveys are:

- 53% of survey respondents would walk more in Carroll County if sidewalk improvements were made such as widening and filling in missing gaps.
- Top improvement that would influence people to bike more often in Carroll include bicycle lanes, off-road paths, and paved shoulders (62%, 64%, and 50%).
- People would use bike-share if it were available at strategic locations around the County (46%).
- 65% of people said not feeling safe because of road conditions keeps them from riding a bike to destinations in the County more often.
- Respondents agreed that crossing roads safely and easily is most important when walking (37%)





Public Officials

The involvement of public officials in the bicycle and pedestrian planning process is essential to its success. Government executives and legislators play important roles in a plan's implementation. The more involved they are in the creation of the plan, the stronger the chances of implementation. An increased presence of people choosing to bike or walk to their destinations will require drivers to practice more awareness, and enforcement of a new road culture that respects infrastructure changes. Public officials have a major role in assisting in this process, as they are in positions of great influence. They are intricate in the process of shaping public perception, encouraging public participation, and assisting in public education.

Various tools may be used to engage public officials and the agencies they represent. This includes, but is not limited to, training videos, outreach, and safety assessments. Outreach is necessary to draw attention to the implications of officially creating new transportation alternatives. An increased presence of bicyclists and pedestrians will require a public consciousness of safety issues and behaviors. Outreach also encourages healthier lifestyle decisions as people become aware of reasonable options and alternatives. Additional training for law enforcement officers, who are in the field, will allow for a better understanding of bicycle and pedestrian needs. This can lead to better documentation of violations combined with improved reporting on bicycle and pedestrian accidents. Leadership from local elected officials is essential, as their support can ensure that activities are seen and understood by the public as "for the common good" of the community as a whole.

The Bicycle-Pedestrian Master Plan and municipal plans should be consulted during the review process for all of the types of projects listed below, to determine if bike-ped facilities are planned in the area and if they should be addressed. As early in the process as possible, the proposed project must be coordinated through the Department of Planning for consistency with the Bicycle-Pedestrian Master Plan. This will encourage communication between government agencies and entities, which has been deficient when it comes to bike-ped projects. Appropriate and efficient coordination will encourage more efficient use of funding for the following:

- State highway projects
- Projects that will be seeking transportation funding
- Site development or subdivision proposals
- Department of Recreation and Parks projects
- Bureau of Resource Management projects (e.g., stormwater management)
- Department of Public Works projects (e.g., local roadway improvement projects)
 - Road improvement projects (e.g., roadway repaving or restriping)
 - Utility-related projects that require road construction
 - Bridge replacement or reconstruction projects





Table 8-13: Public Agencies and Potential Input in the Planning Process

Agency	Input in the Planning Process
Board of County Commissioners	<ul style="list-style-type: none"> • County laws and policy that affect bicycle and pedestrian projects • Leadership
Carroll Hospital	<ul style="list-style-type: none"> • Common types of injuries • Infrastructure improvements that are preventive
Citizen Services	<ul style="list-style-type: none"> • Access for pedestrians who are aging or disabled • Design guidelines
Economic Development	<ul style="list-style-type: none"> • Tourism • Businesses
Emergency Services	<ul style="list-style-type: none"> • Encounters when responding to bike-ped collisions • Common types of injuries • Infrastructure improvements that are preventive
Health Department	<ul style="list-style-type: none"> • Education programs related to health and wellness
Historic Preservation Commission	<ul style="list-style-type: none"> • Connections and impact on historic structures
Public Works	<ul style="list-style-type: none"> • Engineering challenges • TrailBlazer connections
Recreation and Park	<ul style="list-style-type: none"> • Current trail projects
Sheriff/Law Enforcement	<ul style="list-style-type: none"> • Enforcement of laws and safety guidelines • Recording and collecting appropriate data • Trainings
Maryland Department of Transportation (MDOT)	<ul style="list-style-type: none"> • County should engage this state agency in the challenges of state roads as barriers to walking and biking to County destinations • SHA
State Legislature	<ul style="list-style-type: none"> • County/State laws that affect bicyclists and pedestrians • Clarifying terminology in laws





Strategies

Strategies may be used to engage stakeholders in the planning process. An objective in this plan is to encourage bicycling and walking to destinations in appropriate areas while improving conditions and infrastructure. However, preventive engineering measures do not necessarily increase biking and walking or preclude crashes which, as previously stated, result in higher fatalities in rural areas). If people habitually take cars and follow certain habits that don't consider bikers or pedestrians, then the transportation investments alone could be in vain. Therefore, it is important to combine implementation strategies and consider the 6 E's in those strategies.



Public Outreach Campaign

- Addresses 3 of the 6 E's – Encouragement, Education, and Enforcement
- Public outreach campaigns should focus on promoting public awareness, advertising safe practices and healthy lifestyles, and stress the importance of enforcement. There may be a larger campaign with multiple sub-campaigns that cater to various audiences. For example, an Enforcement Campaign may target law enforcement and assist in "identifying unsafe behaviors of drivers and pedestrians/bicyclists."^{cclx}
- The Pedestrian and Bicycle Information Center suggests including these campaign elements:
 - Defining Education-Related Problems and Goals
 - Targeting Specific Audiences
 - Relaying Important Messages
 - Measuring Program Effectiveness
 - Creating Viable Partnerships
 - Finding Program Support^{cclxi}
- Partner with government agencies, non-profits, and the public, and coordinate with existing community health improvement campaigns.
- Continuously evaluating the effectiveness of the education program will provide continued benefits from this investment.
- Education must be approached comprehensively. An effective education program would be supported by a partnership between government officials, county agencies, law enforcement, and community groups.



Bicycle and Pedestrian Safety Plan

- Addresses 3 of the 6 E's – Encouragement, Education, and Enforcement
- A Bicycle and Pedestrian Safety Plan is a strategy used by several U.S. jurisdictions to reduce fatalities and serious injuries. It is a more detailed analysis and examination of the safety issues surrounding biking and walking. It may include a detailed outreach strategy and details on how to engage citizens and other officials. The plan requires bringing together citizens, various public officials, and government employees from relevant agencies.
- How to Develop a Pedestrian Safety Action Plan (FHWA)^{cclxii}
 - Purpose: "A Pedestrian Safety Action Plan is a plan developed by community stakeholders that is intended to improve pedestrian safety in the community. An objective of the guide is to help state and local officials know where to begin to address pedestrian safety issues. It is also intended to assist agencies in further enhancing their existing pedestrian safety programs and activities, including identifying safety problems and selecting optimal solutions."^{cclxiii}
 - Emphasis areas:
 - This plan is primarily a reference for improving pedestrian safety through street redesign and the use of engineering countermeasures, as well as other safety-related treatments and programs that involve the whole community.
 - There should be separate pedestrian and bicycle advisory boards so that the pedestrian board can focus solely on pedestrian issues. If this is not feasible, measures need to be implemented to ensure that both pedestrian and bicycle modes get equal attention (FHWA, p. 22).
- Use the Florida Pedestrian and Bicycle Strategic Safety Plan as a model^{cclxiv}
 - To improve the overall safety of pedestrians and bicyclists by reducing pedestrian- and bicycle-related crashes, injuries, and fatalities while ensuring that all areas of Florida's transportation system provide safe and accessible travel options for pedestrians and bicyclists.
 - Emphasis areas:
 - Data, Analysis, and Evaluation
 - Driver Education and Licensing
 - Highway and Traffic Engineering
 - Law Enforcement and Emergency Services
 - Communication Program
 - Outreach Program
 - Legislation, Regulation, and Policy
 - Safe and Accessible Pedestrian Facilities Inventory Model (SAPFIM)
 - GIS-driven program to survey and document pedestrian facilities along roadways
 - Used to coordinate/support policies such as Complete Streets, etc.



Design Guidelines

- Addresses 1 out of 6 E's – Engineering
- The creation of design guidelines will lead to more properly designed complete streets that will allow participants of all abilities and ages to feel safer as they walk and bike. It is important to engage engineers, citizens, and officials in addressing design that includes ADA compliance, maintenance, and new bicycle and pedestrian facilities. Complete Streets design and engineering standards reduce collisions and truly promote transportation uses other than vehicles.

These strategies will assist in making bicycle and pedestrian planning more effective. However, it is also important to re-evaluate programs and policies on a regular basis to be certain of their continued effectiveness.

GIS App Utilizing Crowdsourcing

Addresses 3 of the 6 E's – Encouragement, Evaluation and Engineering

- Crowdsourcing is the process of obtaining information, insight, and knowledge from user-generated data provided through web and mobile applications, often to address a specific issue or solve a problem.
- Crowdsourcing is strategic use of data by active transportation planners not only to increase data availability, but also to better understand location and time-based travel patterns and personal experience.
- Engaging stakeholders in the planning process in this capacity has benefits, such as broad and diverse perspectives, local knowledge, data timelines, and direct dialogue between planners and those affected by planning decisions.

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
- 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

Endnotes

ccliv Bicycle-Pedestrian Master Plan Citizens Outreach Meeting on March 21, 2017.

cclv (Carroll County Government, 2014 Freedom Bicycle-Pedestrian Master Plan & Assessment 2014)

cclvi Carroll County Department of Public Works.

cclvii CSX. *Public Project Information for Construction and Improvement Projects That May Involve the Railroad.*

<https://www.csx.com/index.cfm/library/files/about-us/property/public-project-manual/>.

cclviii Maryland Department of Transportation. Maryland Twenty-Year Bicycle & Pedestrian Master Plan. January 2014.

http://www.relinedigital.com/M5144%20MDOT%20Bicycle%20and%20Pedestrian%20Master%20Plan/links/bike_ped_plan/BikePed%20Booklet%202014-01-14.pdf.

cclix Maryland Department of Transportation. 2040 Maryland Bicycle and Pedestrian Master Plan 2019 Update. January 2019.

http://www.mdot.maryland.gov/newMDOT/Planning/Bike_Walk/Documents/Bike_Ped_Plan_Update/2019_01_08%20MDOT_Final%20Version_High%20Res%20with%20Page%20Borders.pdf.

cclx Pedestrian and Bicycle Information Center. *Implementing Enforcement Campaigns.*

http://www.pedbikeinfo.org/programs/enforcement_campaigns.cfm.

cclxi Pedestrian and Bicycle Information Center. *Education Campaigns.*

http://www.pedbikeinfo.org/programs/education_campaigns.cfm.

cclxii Federal Highway Administration. *How to Develop a Pedestrian Safety Action Plan.* Pedestrian and Bicycle Information Center.

February 2006. http://safety.fhwa.dot.gov/ped_bike/ped_focus/docs/fhwasa0512.pdf.

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cclxiv Florida Department of Transportation. *Florida Pedestrian and Bicycle Strategic Safety Plan; Safety Doesn't Happen by Accident.*

The Center for Urban Transportation Research University of South Florida. February 2013. <http://www.dot.state.fl.us/safety/6-Resources/FloridaPedestrianandBicycleStrategicSafetyPlan.pdf>





Appendix A: Definitions

Barrier-Separated Lane – a preferential lane or other special purpose lane that is separated from the adjacent general-purpose lane(s) by a physical barrier.^{cclxv}

Bicycle – a pedal-powered vehicle upon which the human operator sits.^{cclxvi}

Bicycle Facilities – a general term denoting improvements and provisions that accommodate or encourage bicycling, including parking and storage facilities, and shared roadways not specifically defined for bicycle use.^{cclxvii}

Bicycle Lane – a portion of a roadway that has been designated for preferential or exclusive use by bicyclists by pavement markings and, if used, signs.^{cclxviii}

Bicycle Path – any travelway designed and designated by signing or signing and marking for bicycle use, located within its own right-of-way or in a shared right-of-way, and physically separated from motor vehicle traffic by berm, shoulder, curb, or other similar device.^{cclxix}

Bicycle Tour – Bicycle touring is a cycling trip for the sole purpose of adventure and pleasure, opposed to sport or exercise cycling. A tour can be as short as a single day to as long as years. For a multiple day tour, the average cyclist will travel between 35 and 65 miles a day. Distance is dependent on a number of variables including terrain, familiarity with route and wind. For the average cyclist who rides trails and paths for fun and leisure (with no training for touring), will typically ride no more than a couple miles in one outing. Day length races are typically between 30 and 100 miles, having a variety of options allows for cyclists of different abilities to participate in the event. Having ample amount of infrastructure located throughout the county will attract all types of cyclists, who will then divert money back into the County.

Bicycle Train – a safe, fun way to ride as a group to school.^{cclxx}

Bikeway – a generic term for any road, street, path, or way that in some manner is specifically designated for bicycle travel, regardless of whether such facilities are designated for the exclusive use of bicycles or are to be shared with other transportation modes.^{cclxxi}

Bicycle Level of Comfort (BLOC) –assesses the perceived safety and comfort of bicyclists traveling on state roadways by assigning each segment a letter of A, B, C, D, E, or F. A rating of “A” indicates most comfortable while “F” indicates least comfortable conditions.^{cclxxii}

Buffer-Separated Lane – a preferential lane or other special purpose lane that is separated from the adjacent general-purpose lane(s) by a pattern of standard longitudinal pavement markings that is wider than a normal or wide lane line marking. The buffer area might include rumble strips, textured pavement, or channelizing devices such as tubular markers or traversable curbs, but does not include a physical barrier.^{cclxxiii}

Bulbout – curb extensions.



Collision – a crash or incident that occurred between a bicycle and vehicle or a pedestrian and vehicle often resulting in injury.

Community Planning Area (CPA) – now referred to a municipal or designated growth area.

Complete Streets – streets designed and operated to enable safe access for all users, including pedestrians, bicyclists, motorists and transit riders of all ages and abilities.

Crosswalk – (a) that part of a roadway at an intersection included within the connections of the lateral lines of the sidewalks on opposite sides of the highway measured from the curbs or in the absence of curbs, from the edges of the traversable roadway, and in the absence of a sidewalk on one side of the roadway, the part of a roadway included within the extension of the lateral lines of the sidewalk at right angles to the center line; (b) any portion of a roadway at an intersection or elsewhere distinctly indicated as a pedestrian crossing by pavement marking lines on the surface, which might be supplemented by contrasting pavement texture, style, or color.^{cclxxiv}

Cycle Track – exclusive bikeways that are at street level and use a variety of methods for physical separation from motorized vehicle traffic and pedestrians. A one-way cycle track may be combined with a parking lane or other barrier between the cycle track and motor vehicle travel lane.^{cclxxv}

Designated Bicycle Route – a system of bikeways designated by the jurisdiction having authority with appropriate directional and informational route signs, with or without specific bicycle route numbers.^{cclxxvi}

Designated Growth Area (DGA) – the smaller geographic areas of the County where the majority of the County's growth is planned to occur.^{cclxxvii}

Deviated fixed route service – a hybrid of fixed-route and demand-response services. With this type of service, a bus or van stops at fixed points and keeps to a timetable but can deviate its course between two stops to go to a specific location for a pre-scheduled request. Deviated fix route service is often used to provide accessibility to people with disabilities.^{cclxxviii}

Electric Bicycle/E-bike – A vehicle that 1) is designated to be operated nu human power with the assistance of an electric motor; 2) is equipped with fully operable pedals; 3) has two or three wheels; 4) has a motor with a rating of 500 watts or less; and 5) is capable of a maximum speed of 20 miles per hour on a level surface when powered by the motor.^{cclxxix}

Electric Scooter/E-Scooter -

Goat trail – where pedestrians are already walking but there is no facility, there are usually visible signs such as a dirt path through grass. A goat trail is a big indication of where a sidewalk is needed.

Municipal Growth Area (MGA) – land surrounding the municipalities that are identified and planned for future annexation.^{cclxxx}

Pathway – a general term denoting a public way for purposes of travel by authorized users outside the traveled way and physically separated from the roadway by an open space or barrier and either within the



highway right-of-way or within an independent alignment. Pathways include shared-use paths, but do not include sidewalks.^{cclxxxix}

Pedalcycle – another word for bicycle.^{cclxxxii}

Pedestrian – a person on foot, in a wheelchair, on skates, or on a skateboard.^{cclxxxiii}

Pedestrian Facilities – a general term denoting improvements and provisions made to accommodate or encourage walking.^{cclxxxiv}

Public bicycle area – “Public bicycle area” means any highway, bicycle path, or other facility or area maintained by this State, a political subdivision of this State, or any of their agencies for the use of bicycles.^{cclxxxv}

Quality of Life – a broad multidimensional concept that usually includes subjective evaluations of both positive and negative aspects of life.” There are various domains of quality of life including, but not limited to, health, culture, values, spirituality, jobs, housing, schools, and neighborhood. (defined by Centers for Disease Control) Transportation should also be considered as domain.

Road Diet – The removal or narrowing of motor vehicle lanes and the utilization of the space for other uses.^{cclxxxvi}

Shared-Use Path – a bikeway outside the traveled way and physically separated from motorized vehicular traffic by an open space or barrier and either within the highway right-of-way or within an independent alignment. Shared-use paths are also used by pedestrians (including skaters, users of manual and motorized wheelchairs, and joggers) and other authorized motorized and non-motorized users.^{cclxxxvii}

Shared Lane—A shared travel lane where motorized vehicles can pass bicycles without changing lanes. The lane is the furthest right travel lane.^{cclxxxviii}

Shared Roadway – a roadway that is officially designated and marked as a bicycle route, but which is open to motor vehicle travel and upon which no bicycle lane is designated.^{cclxxxix}

Sidewalk – that portion of a street between the curb line, or the lateral line of a roadway, and the adjacent property line or on easements of private property that is paved or improved and intended for use by pedestrians.^{ccxc}

Wayfinding – signs, maps, and other graphic or audible methods used to convey location and directions to travelers (Dictionary.com).

Directions to help trail goers find their way, normally pictorial signs

Sharrows – shared lane marking; a street marking placed in the travel lane to indicate where people should preferably cycle.



Tour – a self-contained cycling trip for pleasure, adventure, and autonomy rather than sport, commuting, or exercise. Touring can range from single-to multi-day trips, even years. (Wikipedia.com) Tours can be self-guided or through a tour guide.

Trail Etiquette – a set of guidelines to be followed when various types of users are encountered on trails; rules that promote responsible trail behavior.^{ccxcii}

Walk Audit – a facilitated walk for an interdisciplinary group of community stakeholders, often led by a design expert.^{ccxcii}

Endnotes

- cclxv MD MUTCD. Sect. 1A.13
- cclxvi MD MUTCD. Sect. 1A.13
- cclxvii MD MUTCD. Sect. 1A.13
- cclxviii MD MUTCD. Sect. 1A.13
- cclxix MD Annotated Code §21-101
- cclxx SRTS. Bicycle Train. http://guide.saferoutesinfo.org/walking_school_bus/bicycle_trains.cfm
- cclxxi MD MUTCD. Sect. 1A.13
- cclxxii MDOT 2040 Maryland Bicycle and Pedestrian Master Plan 2019 Update. Page 11.
- cclxxiii MD MUTCD. Sect. 1A.13
- cclxxiv MD MUTCD. Sect. 1A.13
- ccbxv SHA Bicycle Policy & Design Guideline Sect. 10.1
- cclxxvi MD MUTCD. Sect. 1A.13
- cclxxvii cclxxvii Carroll County Board of Commissioners. *2014 Carroll County Master Plan*. Carroll County, MD. February 25, 2015.
- ccbxviii National Center for Mobility Management. Glossary of Transportation Related Terms. Page 5.
<https://nationalcenterformobilitymanagement.org/wp-content/uploads/2013/12/Glossary-of-Terms.pdf>
- ccbxix MD Annotated Code §11-117.1
- cclxxx Carroll County Board of Commissioners. *2018 Freedom Community Comprehensive Plan*. Freedom, MD. October 10, 2018.
- cclxxxi MD MUTCD. Sect. 1A.13
- ccbxixii "Pedal Cycle," Oxford Dictionary, accessed April 8, 2019, https://en.oxforddictionaries.com/definition/pedal_cycle.
- cclxxxiii MD MUTCD. Sect. 1A.13
- cclxxxiv MD MUTCD. Sect. 1A.13
- cclxxxv MD Annotated Code §21-101
- cclxxxvi FHWA. Road Diet – Free Workshop. https://safety.fhwa.dot.gov/road_diets/resources/fhwas16033-flyer.cfm Accessed
- cclxxxvii MD MUTCD. Sect. 1A.13
- cclxxxviii SHA Bicycle Policy & Design Guideline Sect. B.3
- cclxxxix MD MUTCD. Sect. 1A.13
- ccxc MD MUTCD. Sect. 1A.13
- ccxci FHWA. Conflicts on Multiple-Use Trails: Synthesis of the Literature and State of the Practice.
https://www.fhwa.dot.gov/environment/recreational_trails/publications/conflicts_on_multiple_use_trails/conflicts.pdf
- ccxcii Terry Serio, Email to author, May 8, 2018.



Appendix B: Priority Project Assessment Calculations





Carroll County Bicycle-Pedestrian Master Plan Project Priority Assessment

County Adopted/Planned & Future Trails and Bicycle Infrastructure; *outside MGA

Project Assessment Breakdown								Roaring Run Trail (Table 3-5)	Leister Park – walking trail expansion (Table 3-5)	Watkins Park to Watersville Road (Table 4-6)	Mount Airy to Gillis Falls (Table 3-5)	Hollenberry Road (Table 4-5)	Martz Road (Table 4-5)	Martz Road (Table 4-5)	Obrecht Road (Table 4-5)	White Rock Road (Table 4-5)	White Rock Road (Table 4-5)	Freedom Park to Patapsco Regional Greenway (PRG) (Table 4-6)	Union Bridge to Gillis Falls (Table 4-6)	Willow Pond (Table 3-5)	Commerce Center to Bennett Cerf Drive Extended Trail (Table 3-5)	Malcom Drive Extended Trail (Table 3-5)	Bennett Cerf Drive Extended Trail (Table 3-5)	Robert Moton Drive to Landon C Burns Trail (Table 3-5)	Hashawha Environmental Center and Bear Branch Nature Center to Westminster *County and State (Table 4-6)	Wyndtryst Drive to MD 97 (Table 4-6)	Piney Ridge Pkwy (Table 4-5)	Macbeth Way (Table 4-5)	
								#2	#3	#4	#5	#9	#10	#11	#14	#15	#16	#17	#18	#19	#22	#23	#24	#25	#26	#28	#29	#30	
Health and Economic Connections	Links to park/recreation area, 3 pts each / max 15 pts	Direct Neighborhood Connections, 2 pts each / max 10 pts	Links to historic or cultural site, 1 pt each / max 5 pts Creates or connects to a tourism trail, 2 pts each	Links to a public or community center, 1 pt each / max 5 pts	Links to a school, 1 pt each Within 1 mile, 2 pts each	Links to restaurant, retail or shopping center 1: 1 pt 2+: 2 pts	Link to other commercial/economic center 1: 1 pt 2+: 2 pts																						
Total Points for Goal:								6	7	41	27	6	6	11	41	6	6	6	10	23	18	51	23	51	30	46	29	29	
Transportation Options and Utilizing Transportation Resources, 1 pt each, unless otherwise indicated	Fills a gap in the network, 3 pts each	Concurrent with a road related project, 2 pts	Links to an Existing or Under Construction municipal or regional trail network	Parallel to an existing road	Links to Park & Ride or parking	Links to a TrailBlazer Stop																							
Number of structures within .25 mile radius	500 or less X 1 pt.	501 to 1,000 X 2 pts.	1,000 or more X 3 pts.																										
Distance to Destinations/ Origination points	.25 mile or less X 3 pts.	More than .25 to .5 mile X 2 pts.	More than .5 mile X 1 pt.																										
Total Points for Goal:								4	7	8	11	9	10	7	7	3	3	6	10	12	9	12	10	11	13	7	10	13	
Safety and Design, 2 pts each	Improves user safety	Improves child safety	Separates users from high speed traffic	Separates users from high volume traffic	Connects to an ADA Compliant Sidewalk																								
Total Points for Goal:								2	4	6	2	4	6	4	4	2	2	0	0	8	0	2	2	0	6	2	6	6	
Opportunity for Construction	Length <500 ft: 3 pts <1,000 ft: 2pts >=1,000 ft: 1 pt	Sensitive Area / Environmental Constraints None: +1 pt 1 or 2: -1 pt > 2: -2 pt	Steep Slope Grade Issues None: +1 pt 1 or 2: -1 pt > 2: -2 pt	Bridges and / or Stream Crossings None: +1 pt 1 or 2: -1 pt > 2: -2 pt	Utility Line and / or Railroad Line Easement Restrictions None: +1 pt 1 or 2: -1 pt > 2: -2 pt	Utilizes a Utility Line or Railroad Line Easement, 2pt each	ROW Restriction / Land Acquisition Required No: +1 pt Yes: -2 pts																						
Total Points for Goal:								-6	2	-2	-5	-1	0	3	4	1	4	4	-8	1	2	-4	1	-1	-5	6	-3	-1	
Total Points for Project:								6	20	53	35	18	22	25	56	12	15	16	12	44	29	61	36	61	44	61	42	47	

Carroll County Bicycle-Pedestrian Master Plan Project Priority Assessment

County Adopted/Planned & Future Trails and Bicycle Infrastructure; *outside MGA

Project Assessment Breakdown								MD 26 (Table 4-6)	MD 97 – South (Washington Road) (Table 4-6)	MD 31 - Westminister to New Windsor (Table 4-6)	MD 75-New Windsor to Union Bridge (Table 4-6)	MD 26 (Table 4-5)	MD 32 (Table 4-5)	MD 97 Trail - Wyndtryst Drive to Airport Drive (Table 3-5)	MD 97 Trail - Hook Road to YMCA (Table 3-5)	Hashawha Environmental Center and Bear Branch Nature Center to Westminister * County and State (Table 4-6)	MD 97 - North (Table 4-6)	MD 140 (Taneytown Pike) & MD 832 (Old Taneytown Road) – Westminister to Taneytown (Table 4-3)
								#1	#6	#7	#8	#12	#13	#20	#21	#26	#32	#31
Health and Economic Connections	Links to park/recreation area, 3 pts each / max 15 pts	Direct Neighborhood Connections, 2 pts each / max 10 pts	Links to historic or cultural site, 1 pt each / max 5 pts Creates or connects to a tourism trail, 2 pts each	Links to a public or community center, 1 pt each / max 5 pts	Links to a school, 1 pt each Within 1 mile, 2 pts each	Links to restaurant, retail or shopping center 1: 1 pt 2+: 2 pts	Link to other commercial/economic center 1: 1 pt 2+: 2 pts											
Total Points for Goal:								30	6	57	27	52	50	8	37	30	31	57
Transportation Options and Utilizing Transportation Resources, 1 pt each, unless otherwise indicated	Fills a gap in the network, 3 pts each	Concurrent with a road related project, 2 pts	Links to an Existing or Under Construction municipal or regional trail network	Parallel to an existing road	Links to Park & Ride or parking	Links to a TrailBlazer Stop												
Number of structures within .25 mile radius	500 or less X 1 pt.	501 to 1,000 X 2 pts.	1,000 or more X 3 pts.															
Distance to Destinations/ Origination points	.25 mile or less X 3 pts.	More than .25 to .5 mile X 2 pts.	More than .5 mile X 1 pt.															
Total Points for Goal:								15	11	10	7	15	15	11	12	13	13	15
Safety and Design, 2 pts each	Improves user safety	Improves child safety	Separates users from high speed traffic	Separates users from high volume traffic	Connects to an ADA Compliant Sidewalk													
Total Points for Goal:								10	8	6	6	10	10	6	8	6	6	8
Opportunity for Construction	Length <500 ft: 3 pts <1,000 ft: 2pts >=1,000 ft: 1 pt	Sensitive Area / Environmental Constraints None: +1 pt 1 or 2: -1 pt > 2: -2 pt	Steep Slope Grade Issues None: +1 pt 1 or 2: -1 pt > 2: -2 pt	Bridges and / or Stream Crossings None: +1 pt 1 or 2: -1 pt > 2: -2 pt	Utility Line and / or Railroad Line Easement Restrictions None: +1 pt 1 or 2: -1 pt > 2: -2 pt	Utilizes a Utility Line or Railroad Line Easement, 2pt each	ROW Restriction / Land Acquisition Required No: +1 pt Yes: -2 pts											
Total Points for Goal:								1	-2	-2	-3	4	-6	0	-1	-5	-3	-6
Total Points for Project:								56	23	71	37	81	69	25	56	44	47	74

Carroll County Bicycle-Pedestrian Master Plan Project Priority Assessment
 County Adopted/Planned & Future Trails and Bicycle Infrastructure; *outside MGA

Project Assessment Breakdown								Patapsco Regional Greenway (PRG) (Table n/a)	
								Genesee & Wyoming - Trail North (Table 3-5)	
								#1	#2
Health and Economic Connections	Links to park/recreation area, 3 pts each / max 15 pts	Direct Neighborhood Connections, 2 pts each / max 10 pts	Links to historic or cultural site, 1 pt each / max 5 pts Creates or connects to a tourism trail, 2 pts each	Links to a public or community center, 1 pt each / max 5 pts	Links to a school, 1 pt each Within 1 mile, 2 pts each	Links to restaurant, retail or shopping center 1: 1 pt 2+: 2 pts	Link to other commercial/economic center 1: 1 pt 2+: 2 pts		
Total Points for Goal:								14	6
Transportation Options and Utilizing Transportation Resources, 1 pt each, unless otherwise indicated	Fills a gap in the network, 3 pts each	Concurrent with a road related project, 2 pts	Links to an Existing or Under Construction municipal or regional trail network	Parallel to an existing road	Links to Park & Ride or parking	Links to a TrailBlazer Stop			
Number of structures within .25 mile radius	500 or less X 1 pt.	501 to 1,000 X 2 pts.	1,000 or more X 3 pts.						
Distance to Destinations/ Origination points	.25 mile or less X 3 pts.	More than .25 to .5 mile X 2 pts.	More than .5 mile X 1 pt.						
Total Points for Goal:								9	4
Safety and Design, 2 pts each	Improves user safety	Improves child safety	Separates users from high speed traffic	Separates users from high volume traffic	Connects to an ADA Compliant Sidewalk				
Total Points for Goal:								2	0
Opportunity for Construction	Length <500 ft: 3 pts <1,000 ft: 2pts >=1,000 ft: 1 pt	Sensitive Area / Environmental Constraints None: +1 pt 1 or 2: -1 pt > 2: -2 pt	Steep Slope Grade Issues None: +1 pt 1 or 2: -1 pt > 2: -2 pt	Bridges and / or Stream Crossings None: +1 pt 1 or 2: -1 pt > 2: -2 pt	Utility Line and / or Railroad Line Easement Restrictions None: +1 pt 1 or 2: -1 pt > 2: -2 pt	Utilizes a Utility Line or Railroad Line Easement, 2pt each	ROW Restriction / Land Acquisition Required No: +1 pt Yes: -2 pts		
Total Points for Goal:								-6	0
Total Points for Project:								19	10



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