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Chapter 6 : Transportation Alternative^[FN1]

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, 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."ⁱ Complete Streets for Carroll County, means a change in approach to the conventional way of looking at roads for primarily vehicle use; rather, 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 to enable safe access for all users, regardless of age, income, ability, or mode of transportation. A Complete Streets Policy can make the roads 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 – 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'sⁱⁱ, 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 roadways.ⁱⁱⁱ The primary mode of transportation in Carroll County is the vehicle. While this has been the most accepted use of the roadway, there are people who are 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 vehicle traffic and cannot be prohibited from *all* roads.

For some households, non-motorized travel is their only mode of transportation. Other times, 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 sidewalk with accessible curb cuts lining one side of the street.

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 traffic by reducing vehicle travel for short trips.** This could include, but not limited to, trips to parks, retail, schools, businesses, historic sites, and restaurants.
- **Work with the state's newly established Complete Streets Program^{iv}.** If Carroll County establishes its own policy and has it approved by MDOT, then there is matching funding available through this grant program. This program was just signed into law and is expected to go in May 2018. However, money must be appropriated for it to go into effect July 1, 2018.
- **Improve public health.** Obesity rates are highest in rural areas compared to urban. A Complete Streets roadway design will provide physically active transportation which can combat obesity related disease.
- **Facilitate communities with improving 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 the state; this can be a challenge when it comes to building roadways that meet community needs.^v

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.^{vi} 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
 - Reduction in crashes and making roads safer
 - Assistance in keeping kids safe
 - Safety improvements for those walking or biking to destinations
 - Addition of lasting value to transportation infrastructure



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



- Providing the opportunity to improve coordination with the state to address safety issues
- Creation of policies necessary to safely accommodate existing road users
- Economics and Costs
 - Creation of little to no additional transportation budget expense
 - Reducing 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
 - Providing additional transportation funding opportunities^{vii viii ix}



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 policy would be focused in key areas as opposed to the entire County. A greater return on investment into 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 to emergency services
- Carroll County's Emergency Communications responded to over 100 bike-ped related incidents between January 2016 and May 2018^x
- 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^{xi}
- At least 400 people are biking on roads with no shoulder in Carroll County^{xii}
- Walking and biking for short trips to parks, restaurants, historic sites or stores is something that is desired by Carroll residents^{xiii}





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 that are a result of limited financial resources and lay of the land.

- **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 the smallest population. 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 maintenance of infrastructure. Obtaining a grant to assist with design and construction helps with costs, but the vast majority of the overall costs come from maintenance.
- **Many County roads do not have the necessary right-of-way (ROW) to install bike lanes or off-road paths.** Right-of-way and easements can be expensive to acquire. Landowners must be compensated for the land obtained. It is also encouraged for the County to work with property owners for them 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 town. 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 existing transportation, utility, and development projects that will include road maintenance and construction is a great opportunity to incorporate Complete Streets. For example, install bike lanes when the road is being repaved. Utilizing existing projects to implement Complete Streets initiatives can greatly decrease the time and expense of two separate projects. The following are low-cost Complete Street initiatives:

- **Mark the shoulder as a bike lane**, if you have a minimum of 4 feet in width (or 5 feet if adjacent to parking), then 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 add a strip of that same color to the sign post. Clear brush, tree limbs and any other objects that may obscure sign (see Figure 6-2).



Figure 6-2: Pennsylvania and Hersh Avenue at McDaniel College



- **Provide marked crosswalks**, the block pattern has the highest visibility. A 40% reduction in pedestrian crashes is observed when crosswalks are in place.
- **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 are very effective at grabbing the driver's attention. Add pedestrian refuge signs at multi-lane crossings and excessively long crossings; this can lead to near 50 percent reduction in crashes. A bulbout (or curb extensions) 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 at crossings with known compliance problems.
- **Provide sidewalks** where there are missing gaps in the sidewalk network. A *goat trail* is 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.
- **Improve transit facilities** by adding shelter from weather, bike racks on and off of transit, and sidewalks to and from the facilities.^{xiv}



Figure 6-3: Block pattern crosswalk





Important Elements of a Complete Streets Policy

An ideal Complete Streets policy includes 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 complete, connected, network and specifies at least four modes, two of which must be biking or walking.
2. **Diverse users:** Benefits all users equitably, particularly vulnerable users and the most underinvested and underserved communities.
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 time frame 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.^{xv}

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.





Complete Streets Policy Approach Options^{xvi}

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

Table 6-1: Complete Streets Policy Options from the National Complete Streets Coalition

Alternatives for Low- and Fixed-Income Populations

[FN2] 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

4.4%
of Carroll County
households have NO
access to a vehicle





to the region (18 percent).^{xvii} 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.

[FN3] In Carroll County, 4.4 percent of households do not have access to a vehicle. That is 2,687 households, approximately 7,000+ people. ACS data in Table 6-2 shows the percentage of households without access to vehicles. There is even less access in Westminster.

15.5%

**of Westminster
households have NO
access to a vehicle**

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

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%

Table 6-2: ACS Vehicle by Household, 5-year Estimates 2012-2016

On three different days, at four separate one hour times frames, Carroll County Planning staff observed those walking and biking along MD 140 within the Westminster MGA, between WMC Drive and Hemlock [FN4] Lane. A total of 44 people were observed at intersection and non-intersection locations 86.4% were pedestrians; 13.6% were bicyclists; 75.0% were male; 20.5% were of minority races; one person was disabled; 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, 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. This observation of pedestrian and bicycle activity should be





conducted regularly at specific locations within the County's growth areas to determine use of bike-ped facilities.



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 presentation to the Carroll County Board of Commissioners the total 2017 ridership is 15,976. Westminster has the highest ridership, 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 could allow people to travel more quickly to or from a transit stop, to a destination, assisting with the first and last mile connection. 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 are, generally, the least efficient parts of



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

traveling to a destination.^{xxi} [FNS] This has the potential to increase access to various destinations that meet every day needs for the a household, e.g., medical offices, grocery stores, pharmacies, employment centers.

Alternatives for Students

The 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 students have cars on campus^{xxii}. 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 into improvements on roads and crossing that would improve 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^{xxiii} bus or bicycle train is something that interests this group policy can be put in place to encourage and not hinder these programs. For example, signs and reduced 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:

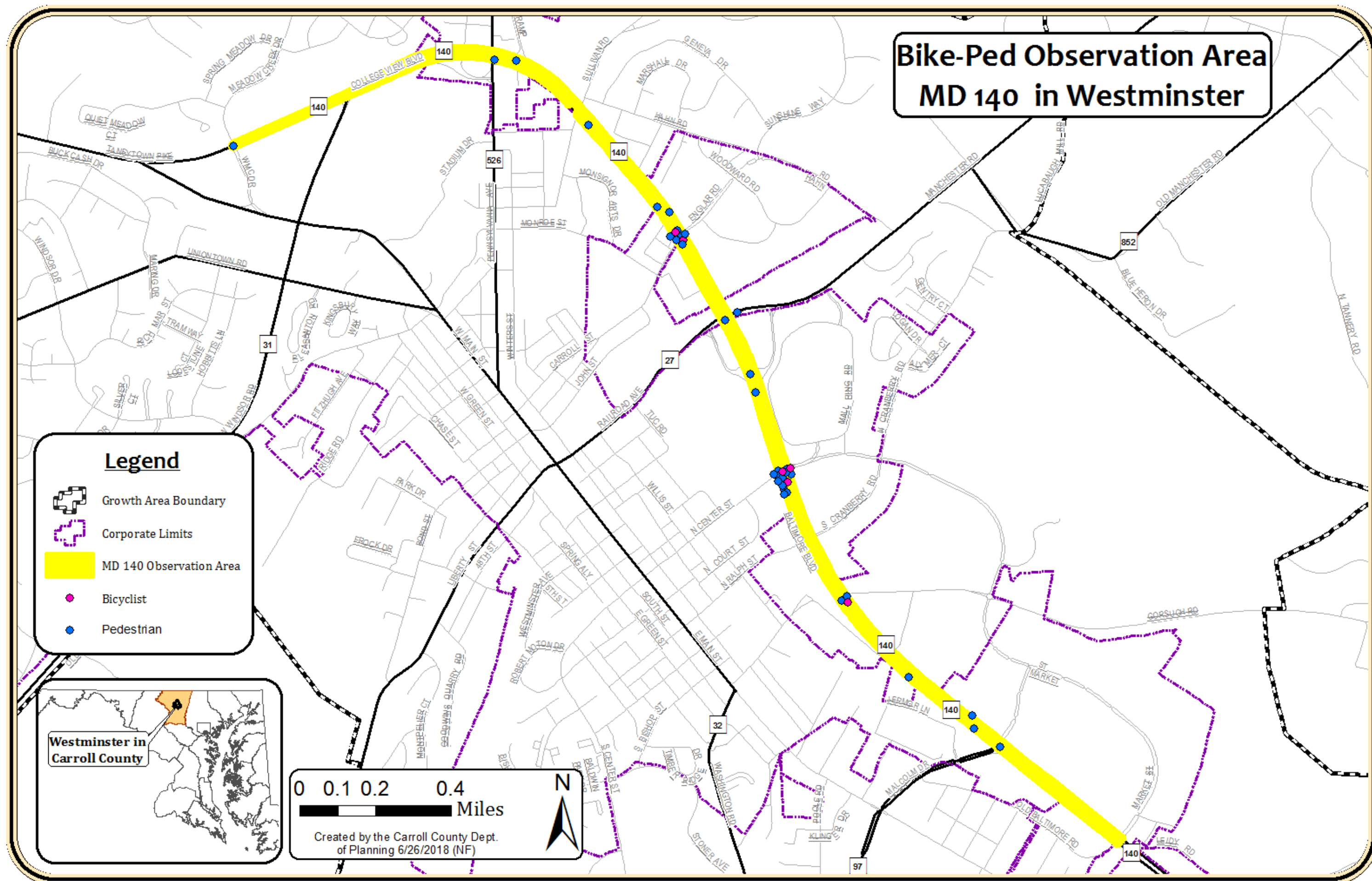
- Work with other County departments and municipalities to explore developing a countywide Complete Streets Policy where applicable within Designated Growth Areas as design, construction, and maintenance funding are available
 - The policy should include but is not limited to transit, students, those who are economically disadvantaged, and minority populations
- Build collaborative groups ~~to~~ [to](#):
 - 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 installations of state road crossings accommodates 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 that accommodate alternate transportation to schools
- Consider studying the need for bike-ped accommodations that lead 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, recreation facilities, libraries, senior centers, shopping centers, and employment centers
- Consider studying the need for bike-ped connections to [Park and Ride lots](#)^[FN6]
- 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 on both sides of the street in 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





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

County Park and Ride and TrailBlazer Routes

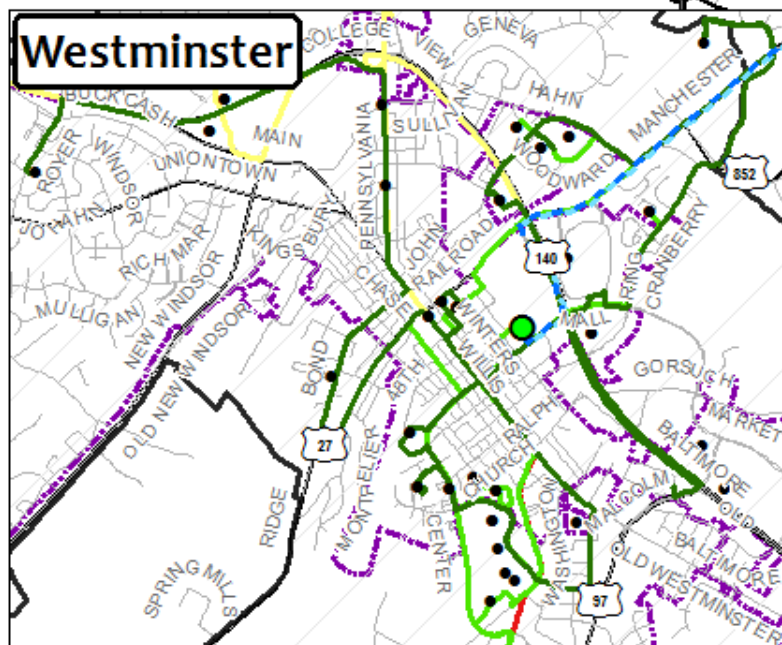
Legend

-  Growth Area Boundary
-  Corporate Limits
-  County Border
-  Park and Ride
-  BERC (Hub)
-  TrailBlazer Stops

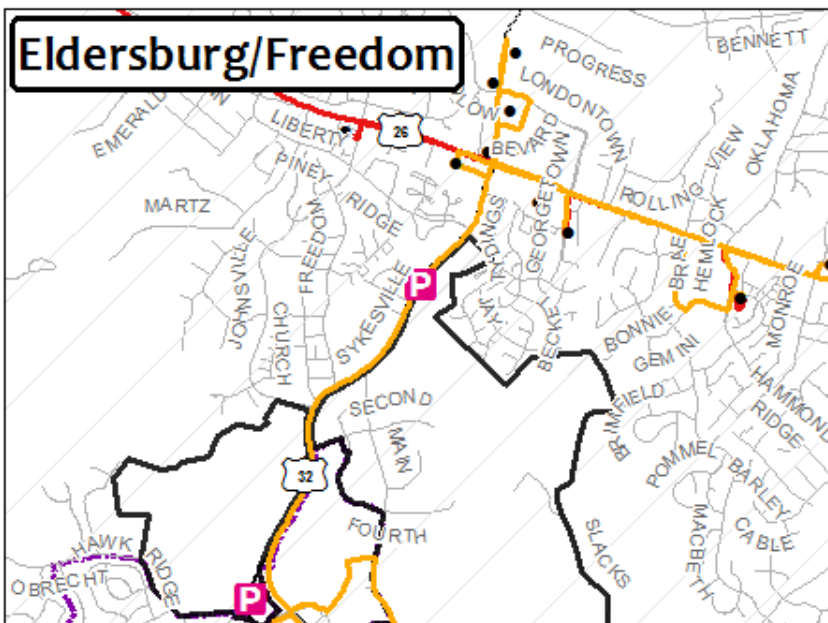
TrailBlazer Routes

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

Westminster

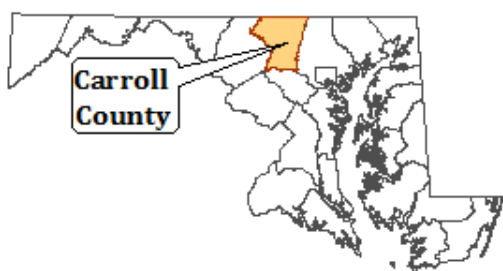


Eldersburg/Freedom



0 1.25 2.5 5
Miles

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



Frederick County

Baltimore County



Endnotes

ⁱ Smart Growth America. What are Complete Streets? <https://smartgrowthamerica.org/program/national-complete-streets-coalition/what-are-complete-streets/> Accessed May 2, 2018.

ⁱⁱ Smart Growth America. What does a Complete Street look like? <https://smartgrowthamerica.org/program/national-complete-streets-coalition/what-are-complete-streets/> Accessed May 2, 2018.

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

^{iv} 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 grants. It will take effect July 1, 2018.

^v Active Transportation Alliance and We Choose Health. *Complete Streets Complete Networks Rural Contexts*. September 2014. <https://atpolicy.org/resources/design-guides/complete-streets-rural-contexts/>. Accessed June 19, 2018.

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

^{vii} Smart Growth America. *The Elements of a Complete Streets Policy*. https://smartgrowthamerica.org/resources?resource_type=fact-sheet&authors=&category_name=complete-streets&s=

^{viii} 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>

^{ix} 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>

^x Carroll County Emergency Communications data January 1, 2016 to May 17, 2018

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

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

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

^{xiv} 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=ZBQxWQqElj8>

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

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

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

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

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

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

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

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

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