

Snow Hill Bikeway Feasibility Study

May 2022 | FINAL REPORT



Introduction and background





In 2021, The Town of Snow Hill, MD was awarded a \$60,000 grant from the Maryland Department of Transportation Kim Lamphier Bikeways Network Program to explore the feasibility of a proposed bikeway in the Town. The goal of the bikeway is to connect several key destinations in the Town for residents and visitors, including schools, recreation areas, downtown, and residential areas with a safe, convenient, and comfortable facility for people on bikes. Toole Design was selected in the fall of 2021 to carry out the feasibility study.

The consultant team carried out an initial site visit in the town in December 2021 and organized a multi-day planning charrette in late January 2022 to explore different options for the bike route, and met with residents, business owners, non-profit organizations, city staff, agency partners, council members, and other stakeholders to get their input and suggestions into the different options for the bike route. In response to the COVID-19 pandemic, an online survey and interactive map was created for people to use to submit comments and provide input. Initial concepts were presented at the end of the charrette and feedback was incorporated into the final feasibility study.

The proposed bikeway is focused on increasing safety and encouraging people of all ages and abilities to use a bike as a way of making short, local trips around town. The town has many residents who are unable to drive and for whom owning and operating a car is a significant economic burden. The bikeways are meant to increase everyday routes to key services across Snow Hill – from shopping and education to parks and community gathering places. Biking is a healthy, sustainable, and efficient means of everyday travel that can reduce the current and future cost of motor vehicle use and parking.

The bikeway also serves as a way to access longer distance bikeways and recreational activities further afield for more confident riders in the region, as well as enabling visitors to the town – including those staying at nearby Shad Landing – to get around without having to drive. Nearby routes include off-road facilities to key tourist destinations surrounding Snow Hill -- including key destinations such as the Furnace Town historic site and the Pocomoke State Forest lands.

Context



About the Town

Snow Hill, MD is the county seat of Worcester County on the lower eastern shore of Maryland. Centrally located in the County, the town is an historic and charming town on the Pocomoke River that is surrounded by rural, flat landscapes and forest. Snow Hill is less than 10 miles away from Chincoteague Bay, 15 miles from Salisbury, and 20 miles from Ocean City and Assateague Island. State Park and Forest lands connect for several miles along the Pocomoke River immediately to the South of the town, attracting thousands of visitors every year. Snow Hill is on the 79-mile Cape to Cape Maryland Scenic Byway and Route 12 is a “Bike Spine”, both programs administered by the Maryland Department of Transportation’s State Highway Administration (SHA). Snow Hill is a designated Sustainable Community with the Maryland Department of Housing and Community Development (DHCD).

The location and characteristics of the Town give Snow Hill the potential to flourish as a regional bicycling hub. The quiet country roads in the area already draw thousands of road cyclists annually for organized and self-paced rides, mountain bikers have been ripping down trails built in surrounding state-owned lands, and the town’s small-town character makes almost all in-town trips possible with a 5 to 10-minute bike ride. The Snow Hill Bikeway will enable people of all ages and abilities to ride bikes to their favorite in-town destinations, support sensible new development, and draw existing and new bicyclists to visit the region and spend time in the town.

Regional Bicycling Connections

Snow Hill’s central location means it is well connected to nearby regional destinations by road. Maryland Route 12, which is also a state bicycle route, connects Snow Hill to Salisbury to its northwest and to the Virginia border to the south. Maryland Route 365 connects the town to Public Landing on Chincoteague Bay, and US 113 is a major north-south highway by-pass that connects the town to Berlin and Ocean City to the north and Pocomoke City and Virginia to the south. US 113 (Business) passes directly through the heart of the town.

While none of the roads mentioned are limited-access highways, their vehicle volumes and high speeds make them uncomfortable for most people to consider bicycling on and they are difficult to cross. Instead, most people riding for recreation make use of the many miles of quiet paved country roads in Worcester County. Some of those routes have been advertised by Worcester County Tourism as a network of scenic bike routes called the ViewTrail 100. These country roads are also used as routes for popular bike rides in the region, such as the Iron Furnace Fifty and the Sea Gull Century. The former ride starts and ends at Furnace Town Historic Site, about 5 miles from Snow Hill, while the latter ride starts and ends in Salisbury and brings more than 7,000 cyclists every year through Snow Hill and includes a rest stop located in one of the town’s parks. The Sea Gull Century draws recreational cyclists looking to train for the ride to Snow Hill throughout the year.



View Trail 100

- VIEW TRAIL 100 Full Loop
- Assateague Island – 32 miles round trip
- Berlin-Newark Forest and Field Loop – 25.5 miles
- Mount Olive Church – Furnacettown Forest and Creek Loop – 28 miles
- Pocomoke City – George Island Landing Field and Bay Loop – 41 miles



When bicycling through Worcester, we want to have fun and be safe, so please be aware of your skill levels, make sure your equipment is in good working order, always wear a helmet and obey the following rules:

- On all public roads, where bicycling is allowed, the operator must:**
- Wear a bicycle helmet if they are under 16 years old
 - Obey all traffic signs, signals and other traffic devices
 - Ride in the same direction as motor vehicles, as near to the right side of the roadway as possible
 - Use standard arm signals to alert other drivers of lane changes and turns
 - Stop for school buses when they are loading or unloading children
 - Yield to pedestrians
 - Refrain from wearing a headset that covers both ears
 - Legally, the bicycle must be equipped with:
 - Front and rear lamps and reflectors if the bicycle is used on a public road at any time when there is insufficient light or inclement weather
 - A bell or horn (sirens and whistles are not acceptable)
 - Brakes

Restrooms & Refreshments

All the towns have public restroom facilities and plenty of options for eating.

- Assateague Barrier Island Visitor Center (no food or beverage)
- Assateague State Park (see in summer season)
- Town of Berlin
- Pocomoke City
- Town of Snow Hill
- Nassawango Country Club
- Furnace Town Living Heritage Museum

Libraries also make great rest stops and a great way to learn more about the area. All public boat ramps have port-a-johns from April 1st through November 30th (with the exception of Cedar Hall Wharf).

ViewTrail 100 Brochure, Visit Worcester County.

There is also a growing network of trails in the broader region. Former rail corridors are being converted to trails across the eastern shore of Maryland, including projects in Snow Hill itself and Salisbury. The potential exists to connect to proposed trails throughout the Eastern Shore including to Pocomoke City and south as far as Cape Charles, VA and to communities in Delaware to the north.

Closer to the town, a growing network of mountain bike trails currently totaling 8.5 miles has been built in the Pocomoke State Forest's Hudson-Tarr Tracts. The trails, which are immediately adjacent to Pocomoke River State Park's Shad Landing area, have been built with the support of the Eastern Shore chapter of the International Mountain Bicycling Association. There are currently plans to connect the two state-owned lands together with a bridge over Corker Creek, and connect Shad Landing to Snow Hill by creating a 5-mile off-road trail that parallels the Pocomoke River and brings bicyclists into town and out onto the trails. Shad Landing is a popular camping destination, and the several hundred camping sites/pads are regularly filled by visitors who are looking for local attractions to sample.

The bikeway could also be at the heart of a potentially more expansive Pocomoke River Regional Greenway, a potential corridor referenced by the now-defunct Maryland Greenways Commission but kept alive in more recent local plans, such as the 2010 Snow Hill Comprehensive Plan, the 2017 Natural & Heritage Tourism Assessment (as a trail from Shad Landing to Snow Hill) and the 2018 Sturgis Memorial Park Master

Plan (as the Pocomoke River Promenade and Greenway).

By improving connections to nearby destinations and surrounding bike trails, Snow Hill could capitalize on its central location in Worcester County and become a regional trail town that brings bicycling and outdoor recreation enthusiasts together, a vision already expressed in the town's recent Tourism Assessment. The town's bikeway network will serve recreational cyclists by connecting these regional routes as they all converge into Snow Hill.

Local Initiatives & Future Development

The people of Snow Hill understand the benefits bicycling can bring to the town. Steps have been taken to develop new tourist attractions that take advantage of its scenery and unique riverbank location, such as the Black-Eyed Susan Riverboat. Past plans to improve access to and along the Pocomoke River are being implemented. Local residents and businesses stand to benefit greatly from a more connected bikeway network as it makes possible another option for in-town transportation and builds on existing projects and opportunities to attract visitors to the town.

The Town of Snow Hill has been focused on improving the attractiveness and connectivity of the downtown and natural areas within its jurisdiction, particularly its riverfront parks: Byrd, Sturgis, and Gateway Parks. Byrd Park's 2005 Master Plan led to new amenities that protected

and improved its function as a county fair site, while the 2018 Sturgis Memorial Park Master Plan provided a slate of recommendations that home in on the park's role as a central gathering place next to downtown. To better connect Sturgis Park to downtown Snow Hill and Gateway Park, the Town constructed Phase 1 of the Riverwalk brick-lined path in 2020. The town would like to extend the Riverwalk in the future to Byrd Park via Bank and Market Streets, and a bikeway could work in concert with the Riverwalk to make it a complete active transportation corridor. Extending a trail to Byrd Park and beyond would also serve as the in-town portion of a trail to Shad Landing.

The Town of Snow Hill was one of the first jurisdictions within the State of Maryland to become a Main Street Maryland Affiliate under the DHCD in 2016. Snow Hill also has a very active group of main street businesses that have worked with the Town to close streets for people, install pedestrian safety improvements, as well as having built parklets to make for a more inviting space on parts of West Green Street and Bank Street. One of the largest festivals in Snow Hill is the Blessing of the Combines hosted downtown in August annually.

In 2007, the Town of Snow Hill acquired use of an abandoned railway corridor that traverses the southeast quadrant of the community between South Church Street to Belt Street, running behind the High School between Washington and Church Streets. The trail is suitable for walking and off-road bike use, but it is currently unpaved. Improvements have included adding a gravel surface and bollards to make the corridor more accessible to people on foot. The old train station

building at Belt and Collins Streets has been converted to a community event space. In 2021, the community hosted its first active transportation event during National Bike Month which included riding on this section of the rail-trail .

The Snow Hill 2010 Comprehensive Plan and 2025 Strategic Revitalization Plan currently guide the Town’s visions, goals, resources, growth, and development. Chapter 8 on Transportation of the 2010 Snow Hill Comprehensive Plan sets clear goals for improving active transportation options in Snow Hill and even identifies “adding new services that facilitate safe streets for driving and alternate travel modes for walking, boating and biking; thereby, developing a coordinated transportation system that enables the safe and efficient movement of people and goods.”¹

The 2025 Strategic Revitalization Plan calls for an intensification of institutional development on West Market Street, commercial and retail on East Market Street, and mixed-use and adaptive redevelopment of downtown Snow Hill, with all three areas connected to each other via a re-designed Market Street “Complete Street”. It also calls for the improvement of walking and biking connections between the town and the John Walter Smith Memorial Park, preferably by avoiding truck traffic on Bay Street; identifies areas for new commercial development next to US 113 along the South Church Street and East Market Street entrances; and endorses the annexation of land north of Pocomoke River on MD 12 to more clearly tie that entryway to downtown. The bikeway plan will be consistent with the Town’s goals established in the 2010 and 2025 Plans, while also making use of opportunities for connections made available by new developments, such as the Huntingfields subdivision.

¹ https://planning.maryland.gov/Documents/OurWork/complans/10_CMP_SnowHill.pdf



Parklet on Green Street

Developing the Snow Hill Bike Loop Concept

The original concept for the Snow Hill Bikeway was to use the proposed Waterfront Trail as the starting point for a bikeway that would connect to Byrd Park, the schools on Coulbourne Lane and Church Street, and the County recreation Center and sports fields on Bay Street. An initial field visit reviewed this potential route and began to explore possible alternatives to the original concept.

Identifying key destinations in the town was an important first step. Among those identified by Town staff, residents, outreach participants, and other stakeholders were:

- Sturgis Memorial Park
- Gateway Park
- Black Eyed Susan
- Riverfront Park
- County offices
- Library
- Downtown shops and services
- Municipal Center
- Purnell Museum
- Historic homes
- Hotels/accommodation
- Byrd Park
- Schools
- Commercial centers along Market Street
- Nearby recreational sites e.g., Shad Landing
- County Recreational Center
- John Walter Smith Park
- Old Train Station/ event center
- Business Center (Collins & Belt Street)
- Longer distance bicycle riding routes



During the discovery and outreach phase, the consultant team learned about numerous ongoing and proposed initiatives that affected the feasibility of the proposed route, and thus the eventual recommendation for the bikeway. These included:

Waterfront Trail: The proposed Waterfront Trail is an exciting project to enhance access to the stunning riverfront views and amenities along the Pocomoke River, including the Black Eyed Susan riverboat, Sturgis Memorial Park, and Gateway Park. However, it is primarily a walking trail and has been planned and developed as a 6-foot-wide path. Its location in the Maryland Critical Area means that it cannot easily be expanded as a shared-use path for both pedestrians and people on bikes.



Construction of the Waterfront Trail, April 2022

The consultant team then looked at the adjacent River Street as a potential alternative on-street route to use for the bikeway. The drawbacks of this approach included limited right-of-way within which to implement an on-street separated bikeway as well as the proliferation of on-street parking, including angled parking along River Street and nearby Willow, Bank, Commerce, and Church Streets. It is not best practice to have angled parking on streets signed and marked as bikeways, so this potential route was also set aside.

Downtown Traffic Study: The consultant team reviewed initial recommendations of an ongoing study to changes to the operation of the downtown streets and on-street parking. The study is focused on assessing the operation of one-way streets and potential changes to traffic flow on the streets between River Street and Market Street. Eventually the consultant team determined that routing the proposed bikeway along Green Street achieved multiple objectives, such as avoiding Market Street; encouraging visitors to the main shopping street; using a low volume, low speed street; avoiding the need to route cyclists through the municipal parking lot to get to Gateway Park; and avoiding multiple turns that would be required if the bikeway were closer to the river. They also determined that careful wayfinding and route design could encourage people on bikes to walking to reach the waterfront and to visit the shops and services between Green Street and the river.

Similarly, the team determined that rather than route the bikeway around the internal roads in Byrd Park the route should remain on West Market Street and Dighton Avenue; users would still be encouraged to visit Byrd Park through wayfinding and informational signage – the park facilities are easily accessible from the bikeway and the roads in the park have low speeds and volumes of motor vehicle traffic that make it a pleasant place to ride.

Huntingfields: The opportunity to create a direct connection between the Huntingfields development and John Walter Smith Park was recognized during the project approval process and an easement was set aside for a short section of trail between the two properties. The Huntingfields development (Parcel 182) within the corporate limits of the Town of Snow Hill is directly adjacent to the Worcester County Recreational Center and John Walter Smith Memorial Park (Parcel 140) located in the County. Completion of this connection is important to the overall bikeway project because it provides an alternative to using Bay Street – which has no bicycle or pedestrian infrastructure today, and residents noted various safety concerns and there are identified right-of-way limits that would prevent Bay Street from being a part of the bikeway.

Design Principles

The consultant team also developed the bikeway with a number of key design principles in mind. Goals for the project were to:

- Recommend designs that meet current best practices for bikeways, to ensure quality, usability, and safety for users of the route.
- Maintain consistency in the design and continuity of the bikeway -- i.e., minimize the number of times a facility changes from one type of bikeway to another, or the number of times a two-way facility has to switch sides of the road
- Minimize the number of driveways, cross streets, and intersections encountered along the route
- Plan for people of all ages and abilities to use the route
- Embrace the opportunity for a wide variety of trips and trip purposes to be made along the route – bikeways are important for both transportation and recreation activities.

The application of these principles significantly affected the eventual choice of routes and proposed bikeway types along the Snow Hill Bike Loop. For example, the original concept for the bikeway assumed that access to the Worcester County Recreation Center and John Walter Smith Park would be on Bay Street (MD Route 365), and that Bay Street would be the route between the end of the rail-trail corridor and downtown.

However, Bay Street is a narrow two-way road with fast traffic, a high percentage of truck traffic, limited pedestrian and no bicycle infrastructure, and very

limited right-of-way in which to make any potential changes. Part of the route is outside the town limits in the County, and the road is managed by MDOT. The options for adding a shared use path, sidewalks, separated bike lanes, or paved shoulders are limited by right-of-way and cost issues.

There are alternative routes for bringing people on bikes between downtown and the old train station, including a direct route along Collins Street or a combination of Purnell, Federal, and Collins Streets that encompass a greater percentage of the community. These are all quiet residential roads with few of the issues found on Bay Street. There is also an alternative way to access John Walter Smith Park, if a proposed connection is made between the Huntingfields development and the park. As a



Truck traffic on Bay Street

result, the recommended route avoids Bay Street and takes advantage of the local road grid.

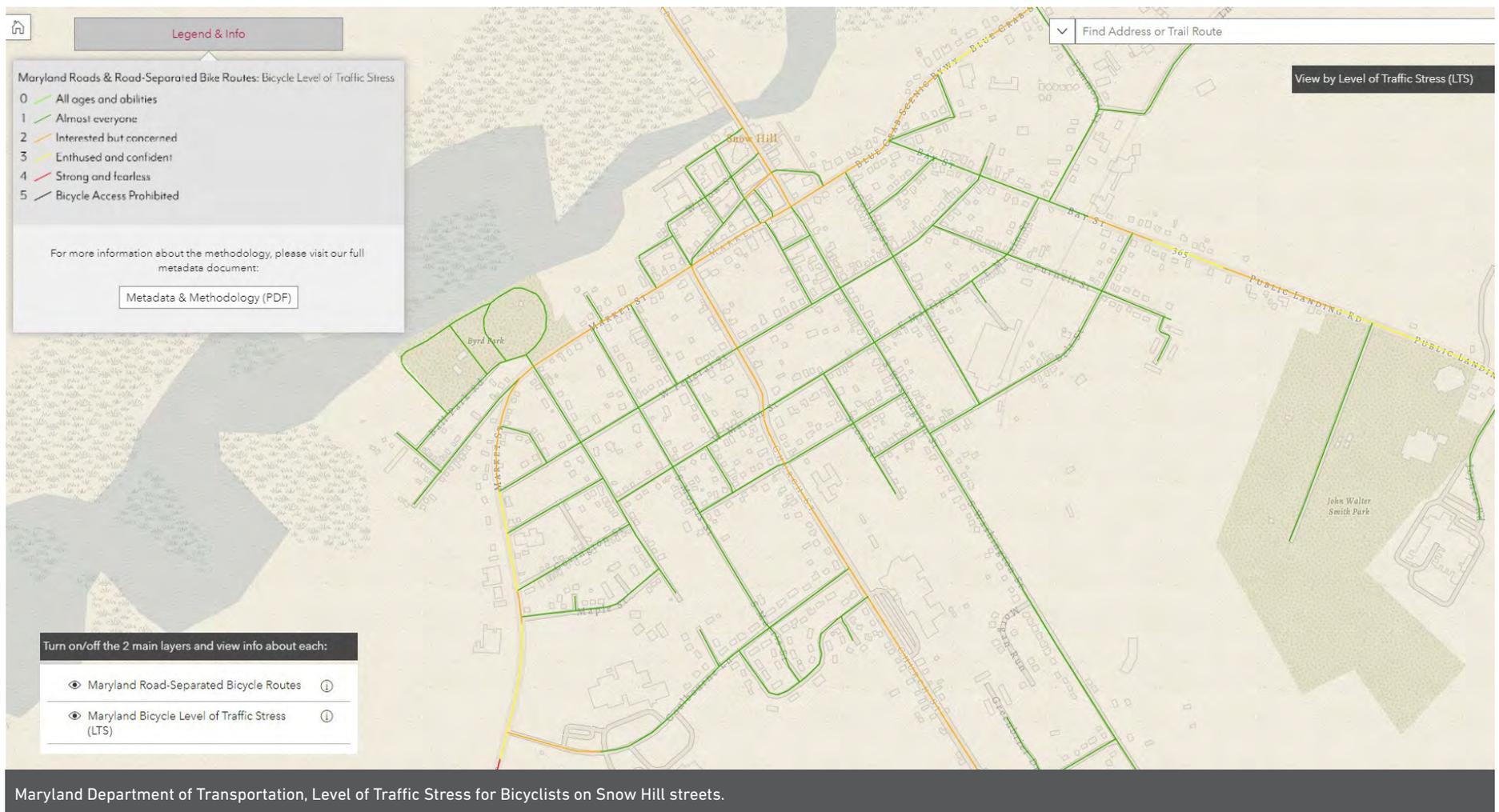
This is also a situation where future development may provide new opportunities to connect people to the park. Bay Street is maintained by the Maryland Department of Transportation and is eligible for funding programs such as Fund 88, a program that supports retrofitting state roadways with bicycle infrastructure. Any future project to reconstruct Bay Street for motor vehicle traffic would also be an opportune moment to add a shared use path, sidewalks, or bike infrastructure as part of the larger project. Similarly, future development between the town and the park might provide an opportunity to extend Purnell Street to the park – or at least provide a trail connection between the two.

The Maryland Department of Transportation published a statewide bicyclist “level of traffic stress” map in March 2022. The interactive map, which shows the relative level of stress for bicyclists on all roads in Maryland, confirms the initial assessment of roads in the Town. Most local residential roads are very low stress streets for biking. However, Market Street, Church Street, Bay Street, and North Washington Street are all roads with higher levels of stress – and outside the town limits several of these roads are rated only suitable for “strong and fearless” riders. These roads with higher levels of stress are barriers to bicycle use and limit the accessibility of key destinations to people on bikes. The proposed bikeway seeks to lower the level of stress on critical segments and crossings of these roads.

The goal of providing a consistent and predictable experience for the path user influenced recommended facility selection along the route. One example is the proposed bikeway along Coulbourne Road serving the Elementary, Middle, and High Schools. The default standard for bikeways along a collector street or minor arterial is to provide one-way protected or buffered bike lanes consistent with the direction of travel of motor vehicles, i.e.,

having people on bikes riding in the same direction as traffic. However, at each end of Coulbourne Lane, the bikeway is proposed as a two-way shared use path, and it can be problematic to transition from two-way operation to one-way on each side of the street and back again. Thus, the recommended bikeway selection for Coulbourne Lane is a continuation of two-way operation on one side of the street.

Within the loop, quiet residential roads such as Federal Street, Morris Street, Willow Street and Washington Street provide internal connections for people on foot and bike. These small streets have very limited traffic volumes and slow speeds that make them safe and accessible for people of all ages and abilities to bike on without any additional changes; every effort should be made, and opportunity taken to maintain these characteristics.



Maryland Department of Transportation, Level of Traffic Stress for Bicyclists on Snow Hill streets.

Design Resources

The study considered a variety of Federal and state design resources to develop specific facility recommendations. These included:

Maryland State Highway Standards

- ***Bicycle Policy and Guidelines*** provides design guidance for on-road bike facilities, shared use paths, and work zone traffic control for bike facilities.
- ***Maryland Manual for Uniformed Traffic Control Devices*** (MDMUTCD) provides design guidance for all roadway and trail pavement markings and signs (supersedes FHWA MUTCD).
- SHA's ***Accessibility Policy and Guidelines for Pedestrian Facilities along State Highways*** provides design guidance on ADA compliance (more stringent than U.S. Access Board).

National Resources

- American Association of State Highway Transportation Officials (AASHTO) ***Guide for the Development of Bicycle Facilities***
- Federal Highway Administration (FHWA) ***Separated Bike Lane Planning and Design Guide*** provides information on design best practices for physically separated bike facilities.
- FHWA ***Achieving Multimodal Networks*** provides information on design best practices to reduce multimodal conflicts and applying flexibility in multimodal design.
- FHWA ***Incorporating On-road Bicycle Networks into Resurfacing Projects*** provides information methods for incorporating bicycle facilities during annual repaving activities via lane diets, road diets, and parking removal.
- FHWA ***Bikeway Selection Guide*** assists practitioners in making the appropriate facility selection based on a wide variety of planning factors.
- FHWA ***Small Town and Rural Multimodal Networks*** provides a bridge between existing design guidance and practices relevant to small town and rural communities
- U.S. Access Board ***Streets & Sidewalk Standards*** provides design guidance on ADA compliance.
- National Association of City Transportation Officials (NACTO) ***Urban Bikeway Design Guide*** is a design resource for more innovative bicycle infrastructure such as separated bike lanes, bicycle boxes and bicycle boulevards.
- Massachusetts Department of Transportation ***Separated Bike Lane Planning & Design Guide*** provides information on design best practices for physically separated bike facilities, and describes additional treatments not included in the FHWA guide.

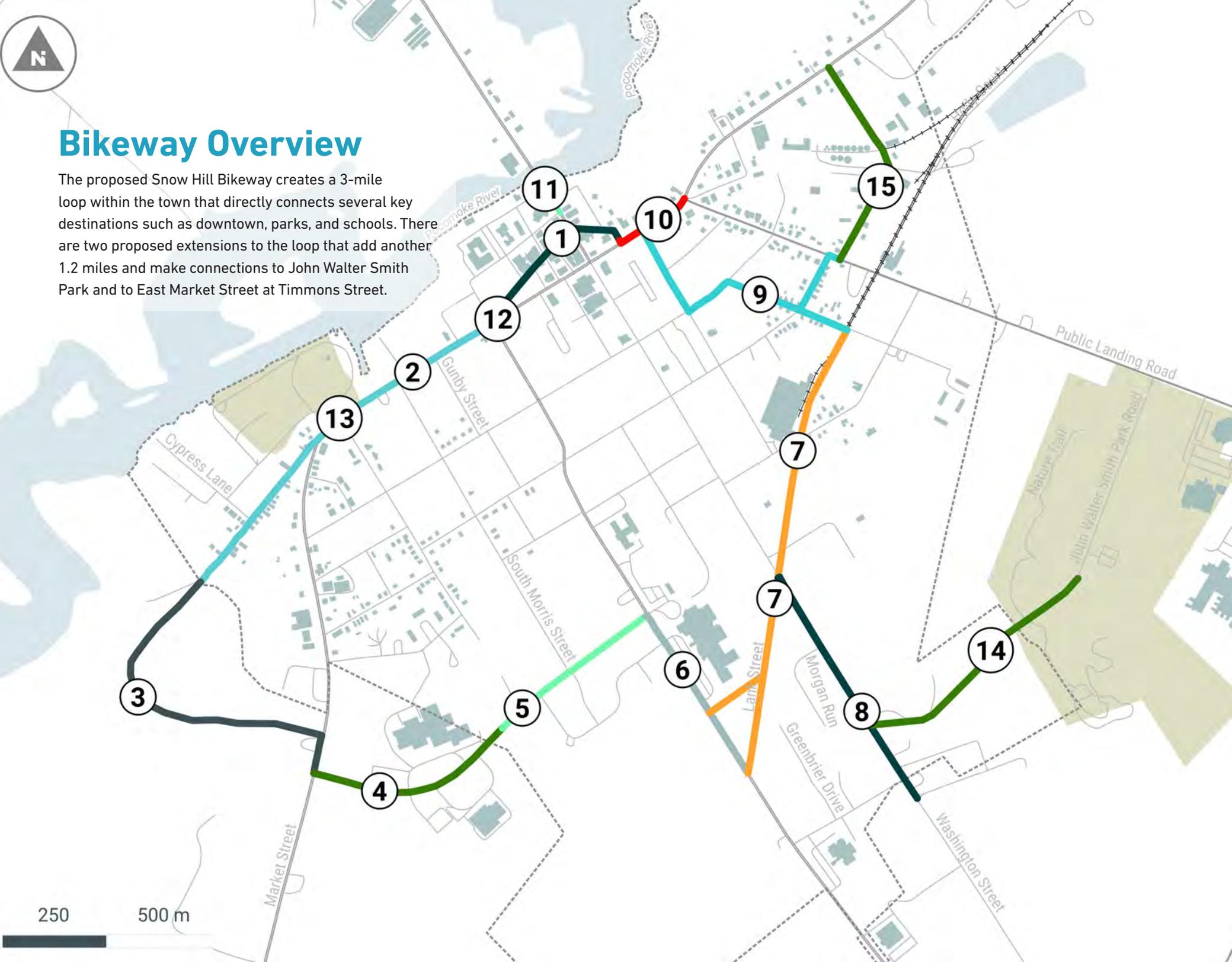
Recommended Bikeway Widths

The recommended width for two-way bikeways – sometimes referred to as cycle tracks, bike paths, or protected bike lanes – is between 10 and 12 feet depending on anticipated volumes and the presence of a curb or vertical design feature. Widths below this are typically recommended only for constrained locations (e.g., short distances where there is an immovable object such as a bridge support or retaining wall). However, there are several segments along the Snow Hill Bikeway where proposed widths for two-way cycle tracks are 8 feet, notably along sections of Market Street. The segments are generally short and there are [more expensive] options to choose a sidepath or raised pavement-level cycle track in several places. There is also an option to remove the physical separation between the cycle track and motor vehicle travel lane to add additional effective width to the bicyclist operating space – but given the relatively low volume of people on bikes, the availability of a sidewalk for people on foot, and the need to provide a high degree of physical separation for interested but concerned users, proposed bikeway widths of 8 feet in places is presented as an acceptable trade-off. Every effort should be made to gain additional width for the cycle track, for example by reducing travel lane widths further, and any opportunity should be taken to move the roadway curbs or create a raised path as part of other larger projects or if additional funding becomes available.



Bikeway Overview

The proposed Snow Hill Bikeway creates a 3-mile loop within the town that directly connects several key destinations such as downtown, parks, and schools. There are two proposed extensions to the loop that add another 1.2 miles and make connections to John Walter Smith Park and to East Market Street at Timmons Street.

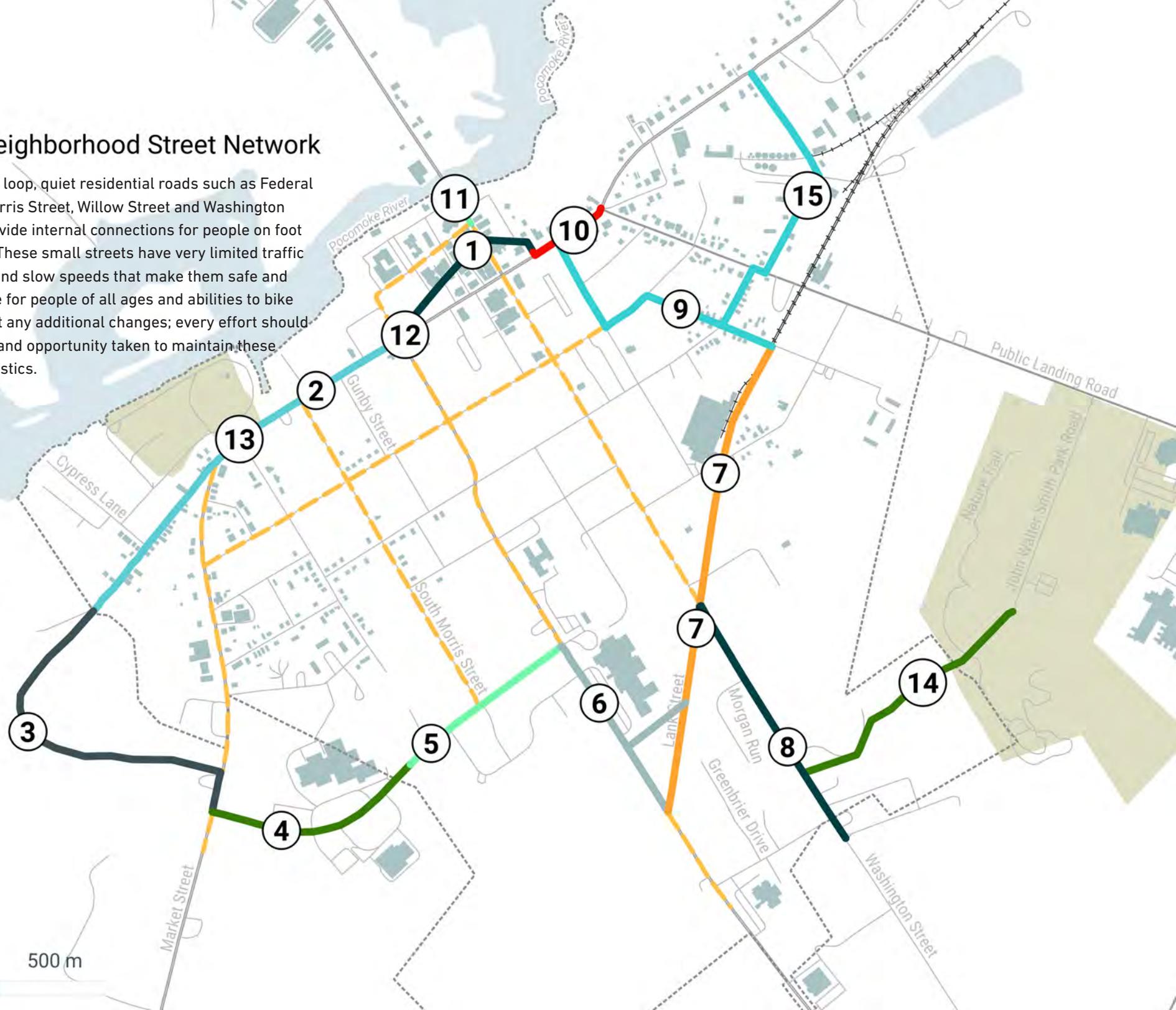


250 500 m



--- Neighborhood Street Network

Within the loop, quiet residential roads such as Federal Street, Morris Street, Willow Street and Washington Street provide internal connections for people on foot and bike. These small streets have very limited traffic volumes and slow speeds that make them safe and accessible for people of all ages and abilities to bike on without any additional changes; every effort should be made, and opportunity taken to maintain these characteristics.



250 500 m

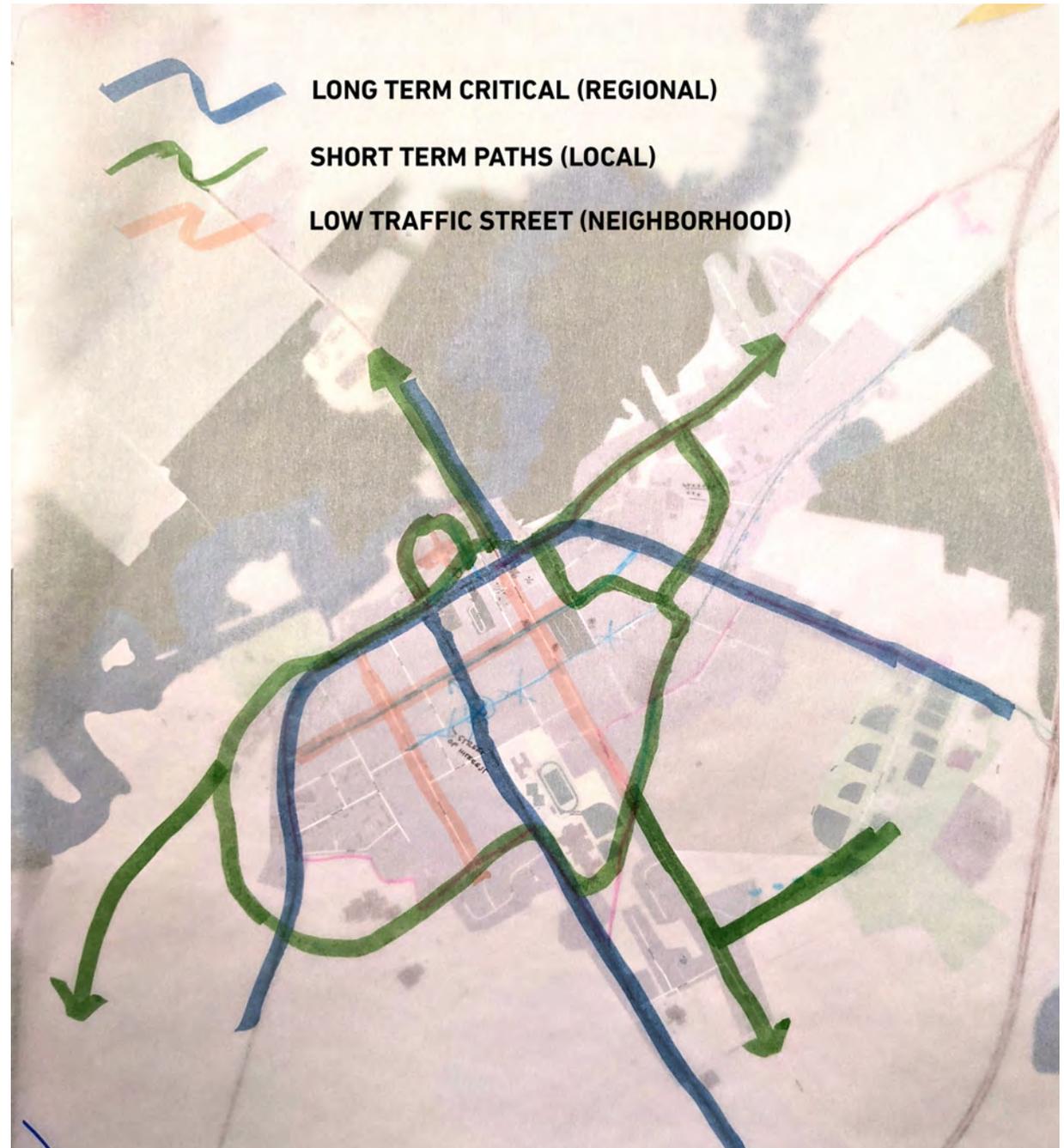
Outside the loop, there are connections to longer distance biking routes in all directions. However, routes such as MD 12 (North Washington Street and Church Street), Business 113 (Market Street), and MD 365 (Bay Street) are busier roads with high volumes of truck traffic. Future MDOT projects may change these roads with the Town limit. The Town is encouraged to coordinate with MDOT SHA to ensure future projects follow Context Driven guidance, based on projected use, to create safer and more comfortable conditions for walking and biking.



Snow Hill is on several state tourism routes.



Residents participate in the bikeway charrette.



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Segment by Segment Description

The following pages provide information on each segment of the proposed bikeway. The segments were delineated based on the type of bike facility being proposed, natural intersections or turns, and/or sections that should be developed as one project at the same time.

The first 10 numbered items are segments along the core bikeway loop. Numbered items 11-15 are important additional intersections and extensions that are important to making the loop work most effectively.

1a East Green Street

Context

East Green Street is a narrow, low-speed, low-volume, two-way street that provides access to the River House Inn and the large municipal parking lot. It is sometimes used as a cut-through by car drivers to avoid the traffic lights at the intersection of Washington and Market Streets.

Critical features

- 400 feet long
- 24 feet wide from Market Street to the John Blair House
- 18 feet wide from John Blair House to Washington Street
- Continuous sidewalk on north side; sidewalk on both sides for 60 feet from Market Street
- No bicycle facilities
- No on-street parking
- Posted speed limit: 15mph

Advantages

Using this quiet street enables people on bicycles to avoid the busy intersection of Washington and Market Streets where there is heavy truck traffic and a significant number of turning movements. Green Street connects across Washington Street to the main downtown shopping street and provides direct access to car parking for visitors.

Issues

Traffic turning in and out of the town parking lot.

Recommended bikeway treatments

- Shared Lane Arrows
- Maintain slow speeds and discourage through traffic
- Warning signs for motorists leaving the parking lot
- Wayfinding to highlight proximity to the riverfront, post office, bike shop and canoe company



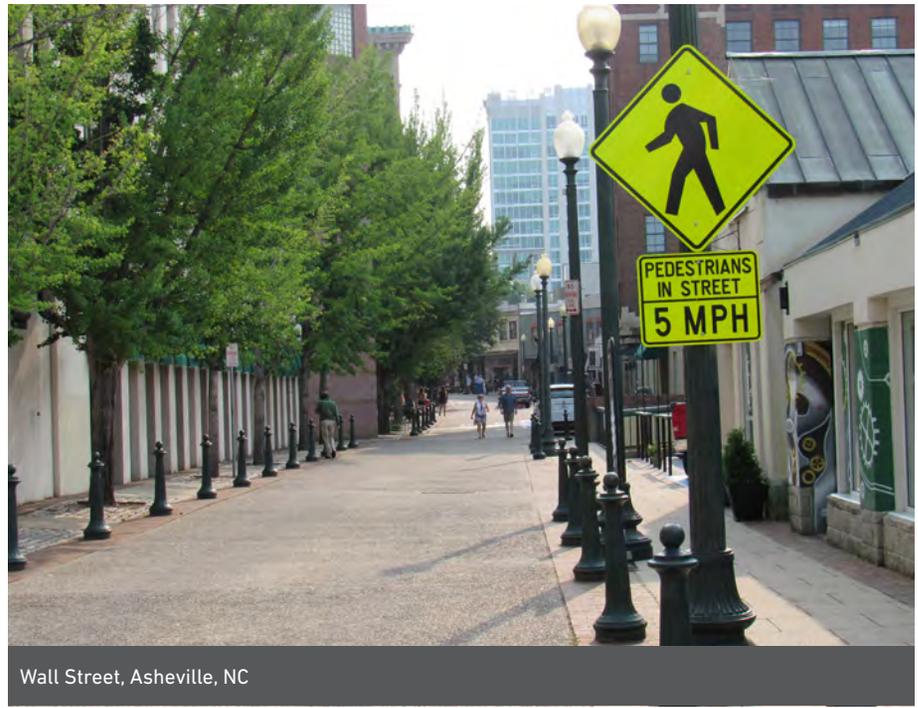
Cost estimate

Signs and markings: \$2,700

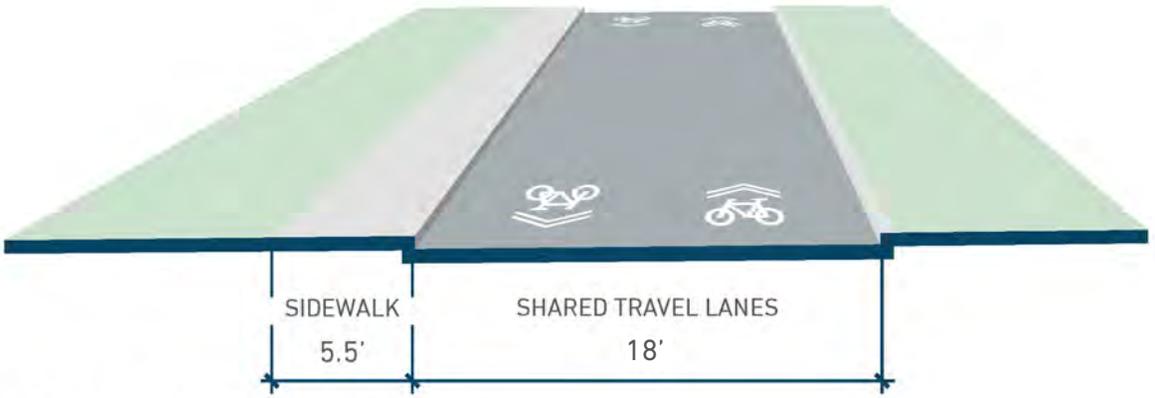
Sequencing

Should be implemented simultaneously with West Green Street (Segment #1b) and with changes to intersection of Green and Washington Street (Segment 11).





Wall Street, Asheville, NC



VIEW LOOKING WEST

1b West Green Street

Context

West Green Street is a lively and historic downtown street with on-street parking on one side and two-way traffic between Washington Street and Commerce Street providing access to the main shopping area in the town. Residents and visitors are using this street to access the Town Hall, police station, banks, shops, and restaurants. There is a lot of pedestrian activity along and across Green Street, and it is the focal point for major community events, festivals, and civic activities. The street is one-way westbound between Commerce and W Market Street.

Critical features

Between Washington and Commerce Street (two way)

- 530 feet
- 28 feet wide
- Sidewalk on both sides
- No bike infrastructure
- On street parking (north side)
- Posted speed: 15mph

Between Commerce and West Market Street (one way westbound)

- 370 feet
- 18 feet wide
- Sidewalk on the north side
- No bike infrastructure
- On street parking (north side)
- Posted speed limit: 15mph

Advantages

Provides direct access and maximum visibility to main shopping street and municipal services. Avoids the busy traffic on West Market Street while still bringing cyclists to within two blocks of the riverfront, Sturgis Park and Black-Eyed Susan. Avoids streets with heavy on-street parking on Willow, Commerce, River, and Bank Streets.

Issues

High turnover of on-street parking;. The existing intersection with Church and Market Streets is confusing. The biggest challenge is the short one-way stretch of West Green Street between Commerce and West Market Street that currently requires people traveling eastbound to ride on Church Street to Willow Street and onto Commerce to rejoin West Green Street.

Recommended bikeway treatment

- Shared lane arrows.
- Counterflow striped bike lane between Commerce and West Market to allow two-way bike traffic; will require removal of on-street parking between Commerce and West Market Street.
- Reconstruct intersection at West Market Street to eliminate direct connection from Green Street to Church Street (Segment 12). There is also an alternative option to connect West Green Street



to Church Street and close direct access from West Market Street onto West Green Street.

- Maintain low vehicle speeds by installing a raised intersection at Bank Street and West Green Street, adding a center stripe.
- Wayfinding to highlight access to Sturgis Park, Riverfront Park, Black Eyed Susan, County offices, Waterfront Trail.

Cost Estimate

Markings, striping and signs: \$21,200

Sequencing

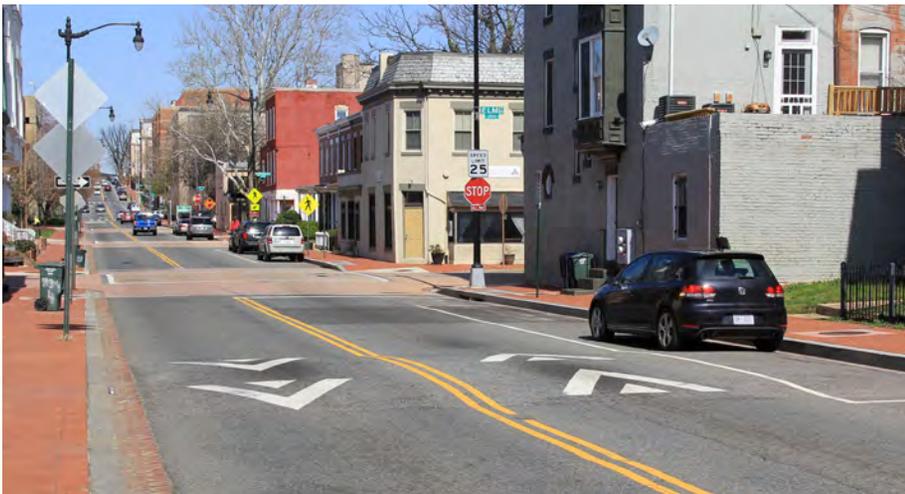
Should be implemented simultaneously with East Green Street (Segment #1a), changes to intersections of Washington and Green Street (Segment 11), and reconfiguration of Church, Green and Market intersection (Segment 12).

Connection to Ongoing Projects

These recommendations are consistent with proposed changes to downtown traffic flow and parking including the proposed raised intersection at Pearl and Green. It will also complement improvements being proposed by the town's Main Street group that includes parklets, traffic calming, festival streets, and public art on Bank Street and other downtown streets.



Hayward Street, downtown Asheville, NC



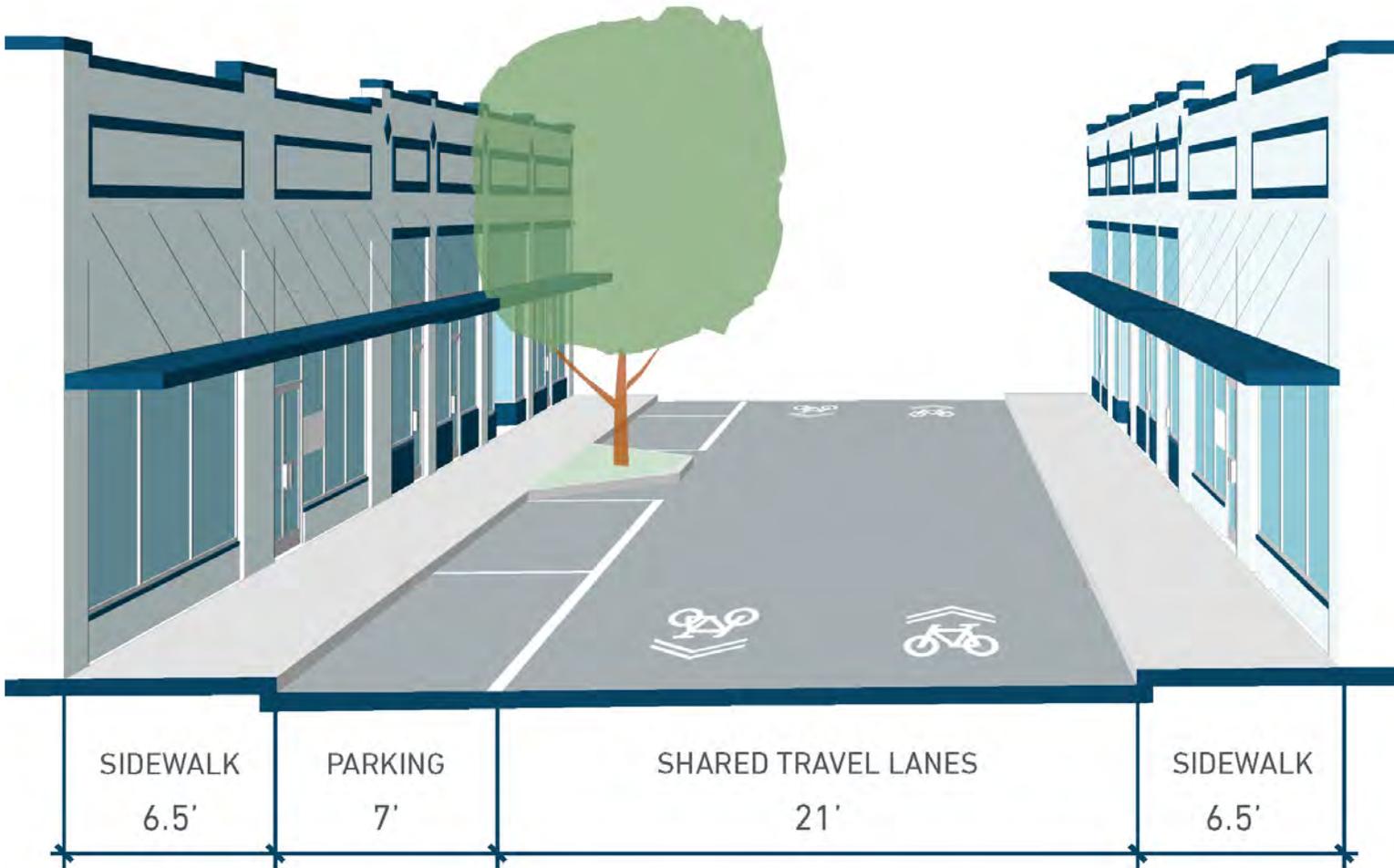
Traffic-calmed neighborhood shopping street, Washington DC



Downtown street, Asheville, NC



VIEW LOOKING EAST





Green Street between Commerce and Church



Green Street between Commerce and Church



Counterflow bike lane in downtown Madison, WI



Counterflow lane, Durham NC

2a West Market Street

Context

West Market Street between Green Street and Dighton Avenue is an important western gateway to the civic and commercial heart of the town; it also is an important connection between downtown and Byrd Park. West Market Street is lined by mature trees and has numerous historic homes on both sides of the road; the Julia A. Purnell museum is on the corner of West Market Street and Pettit Street. Completion of the Worcester Highway/Snow Hill bypass (MD113) has removed a lot of through traffic from West Market Street, although numerous trucks still use this stretch of road.

Critical features

- 1660 ft
- 30 feet wide
- Sidewalk on both sides between Green Street and Gunby Street. Sidewalk on the north side between Gunby and Dighton
- No bicycle infrastructure; shared lane arrows
- On street parking is allowed on the South side; low volume of parking observed.
- Posted speed limit: 25mph

Advantages

West Market Street is the only direct connection

between downtown Snow Hill, Sturgis Park, and Byrd Park; Byrd Park is a popular community resource, especially for residents on the West side of town. There is an important regional transit stop on the corner of Market and Ross St. The 30 ft curb to curb width is just sufficient to be able to reallocate road space without moving curbs and affecting drainage.

Issues

Replacing parking on the southside of West Market with a separated two-way bikepath on the northside of the road is a significant change. Parking volumes appears to be low and the homes on that stretch of West Market all appear to have off-street parking available to them.

Recommended bikeway treatment

- Two-way separated bike lanes on the north side of West Market between Green Street and Dighton Ave. There is an option to transition the on-street bike lanes to a 10ft shared use path in place of the sidewalk from west of 302 West Market Street to Dighton Ave (once inside the park boundary).
- Restripe the intersection of Ross Street and West Market Street at the entrance road to Byrd Park to provide more visible crossing opportunities and enhance access to the transit stops and park



(Segment 13).

- Reconfigure the intersection of Dighton Ave and West Market to transition the bike path onto Dighton Ave (Segment 2b) and reduce vehicle speeds.
- Wayfinding to highlight Byrd Park and the waterfront.

Cost estimate

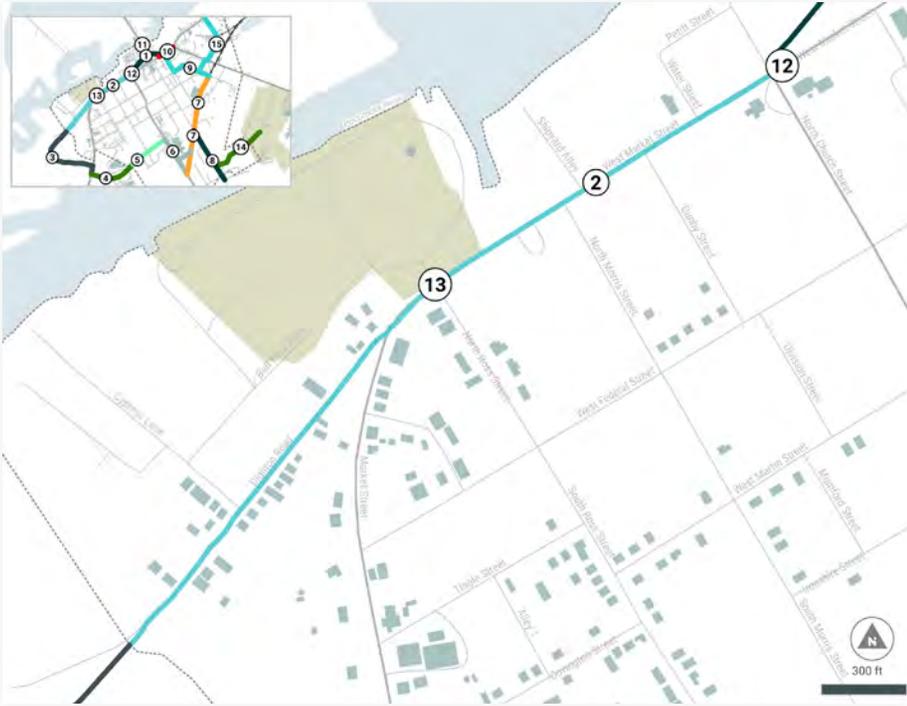
Separated bike lane: \$81,100

Shared use path option: \$266,636 (does not include cost of right-of-way acquisition)

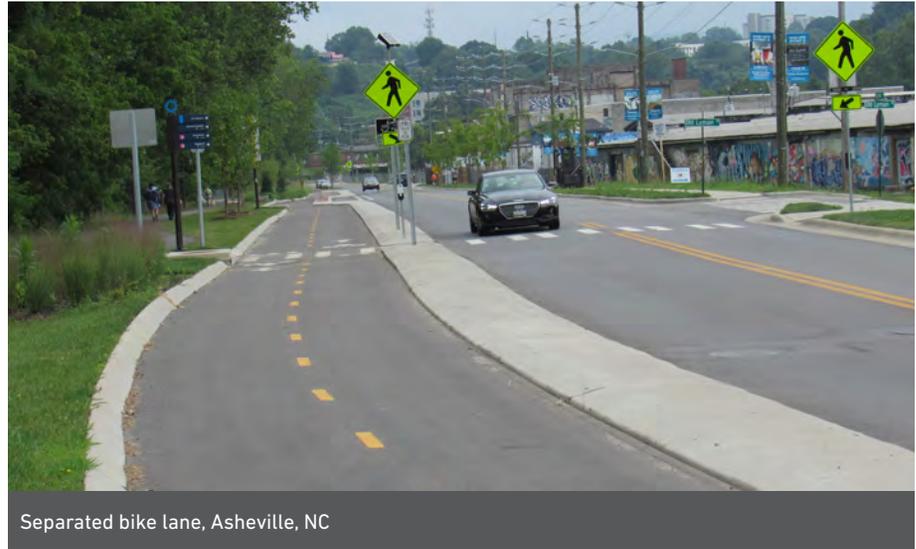
Sequencing

Coordination with MDOT/SHA will be essential to make changes to Market Street as they manage this roadway. There will be no loss of capacity; changes would support the existing 25mph speed limit. The Town is encouraged to coordinate with the MDOT SHA District 1 office.

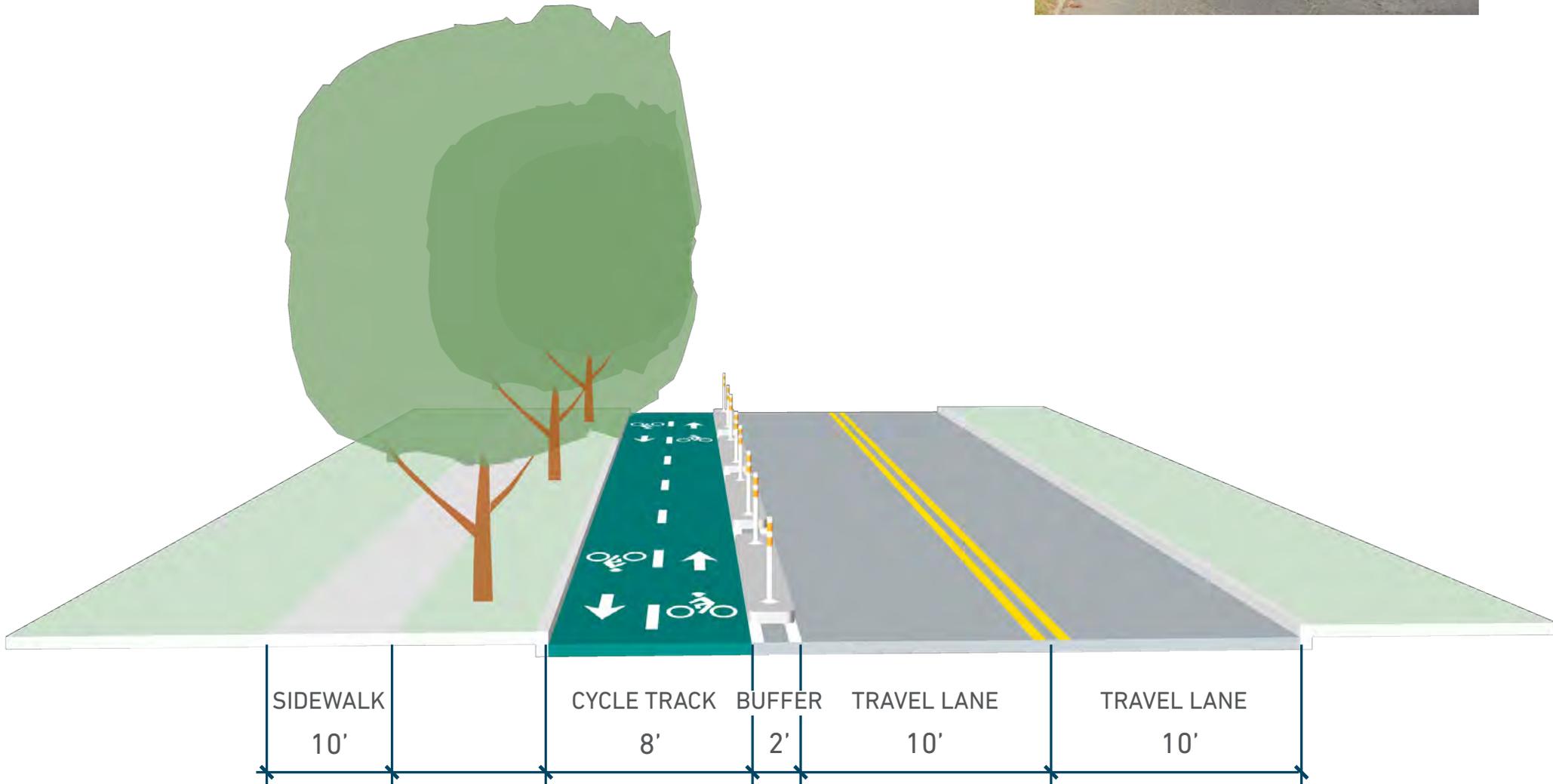
Changes to intersections at Ross Street (Segment 13) and Dighton Avenue should be included as one project.



Sidewalk, Fayetteville, AR



Separated bike lane, Asheville, NC





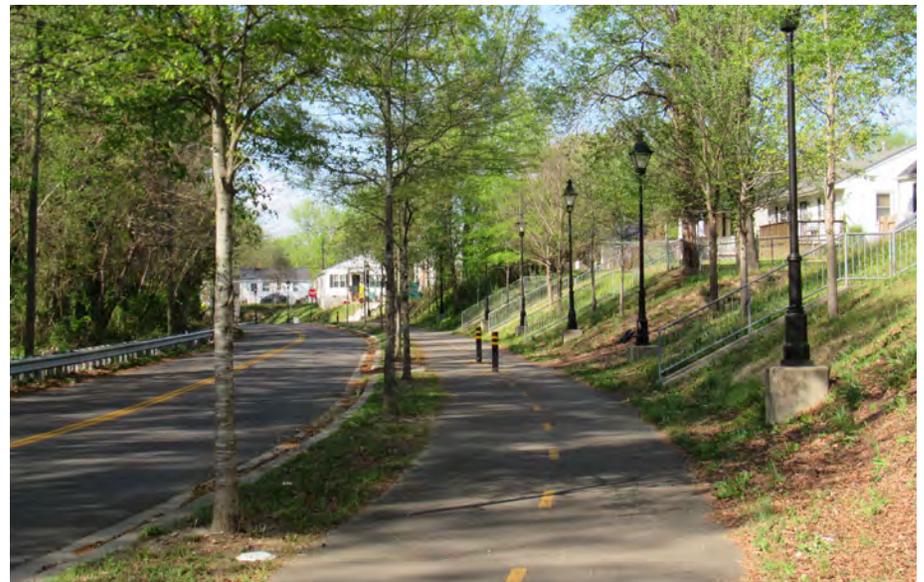
West Market Street heading east



Protected bike lane, Washington DC



West Market Street heading west



Cannon Creek Greenway, sidepath in Richmond, VA

2b Dighton Ave

Context

Dighton Avenue is a residential road with low traffic speeds and volumes and a notable presence of people on foot and bicycles.

Critical features

- 1200 feet
- 20 feet wide
- No sidewalks
- No bicycle infrastructure
- Posted speed limit: 15mph

Advantages

Dighton Avenue provides a direct link from West Market Street to the potential trail at the western end of the road. Requires minimal changes to incorporate in the bikeway.

Issues

On street parking may create some visibility issues for people on foot and bicycle; but it also helps keep vehicle speeds low. The intersection of Dighton and West Market needs attention to ensure low speed traffic and a smooth transition from a two-way path on Market Street to a shared street environment.

Recommended Bikeway Treatment

- Shared lane arrows
- Reconfigure intersection of Dighton Avenue and West Market Street to ensure smooth transition from two-way bike path to shared street and to encourage slow speed turns (see diagram on following page).
- Wayfinding to highlight access to Byrd Park



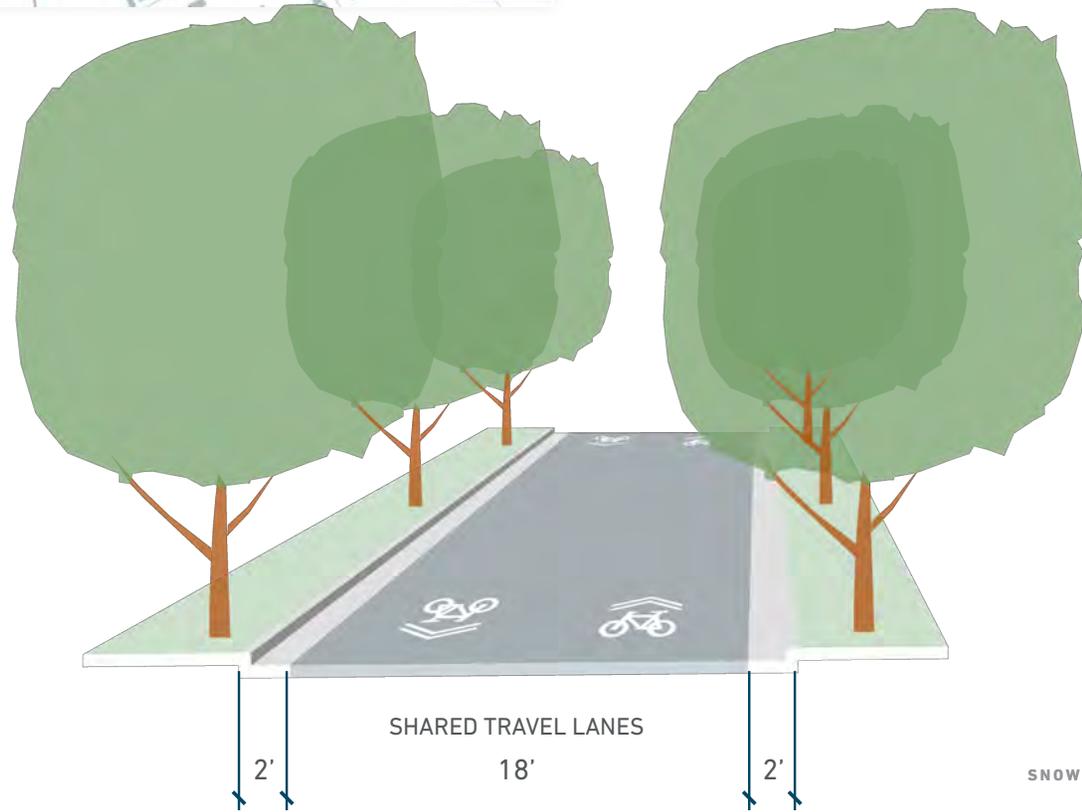
Cost Estimate

Signs and markings: \$4,760

Dighton Ave intersection reconfiguration: \$67,600

Sequencing

Although changes are minimal, it would be appropriate to wait until segments at either end Dighton Ave are completed before implementation. Shared Lane Arrows are a useful device to support wayfinding between sections of dedicated bicycle infrastructure. Intersection reconfiguration should occur with implementation of Segment 2a.





Intersection of Dighton Ave and West Market Street

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3 Dighton Ave to Coulbourne Lane

Context

The proposed bikeway follows a potential trail alignment from the end of the paved portion of Dighton Avenue that continues southwest into an area that is currently wooded. One leg of the trail would continue straight and connect to approved trails to State Forest lands and Shad Landing State Park. The other leg would curve around to the south and east to connect with West Market Street near the intersection with Coulbourne Lane, opposite the school playing fields.

Critical features

- Approximately 2400 feet
- Currently undeveloped wooded land.

Advantages

The proposed trail would provide a traffic-free alternative to traveling on West Market Street, which has heavy traffic, limited right of way, and no bike or pedestrian facilities. It also provides a direct connection to public lands to the southwest of the town.

Issues

The proposed trail depends upon granting of an easement across private land for the final portion of the trail connecting to West Market Street. The proposed trail alignment may fall within the Pocomoke River floodplain. If this is the case, a revised cost estimate should include appropriate sections of boardwalk trail.

The trail would bypass businesses on West Market Street. The crossing of West Market Street will require attention.

Recommended Bikeway treatment

- Shared use path, minimum 11 foot wide, concrete or asphalt surface. Consider adding low level lighting for security and crime prevention.
- Wayfinding to highlight access to Shad Landing, State Forest, schools, and Byrd Park



Cost Estimate

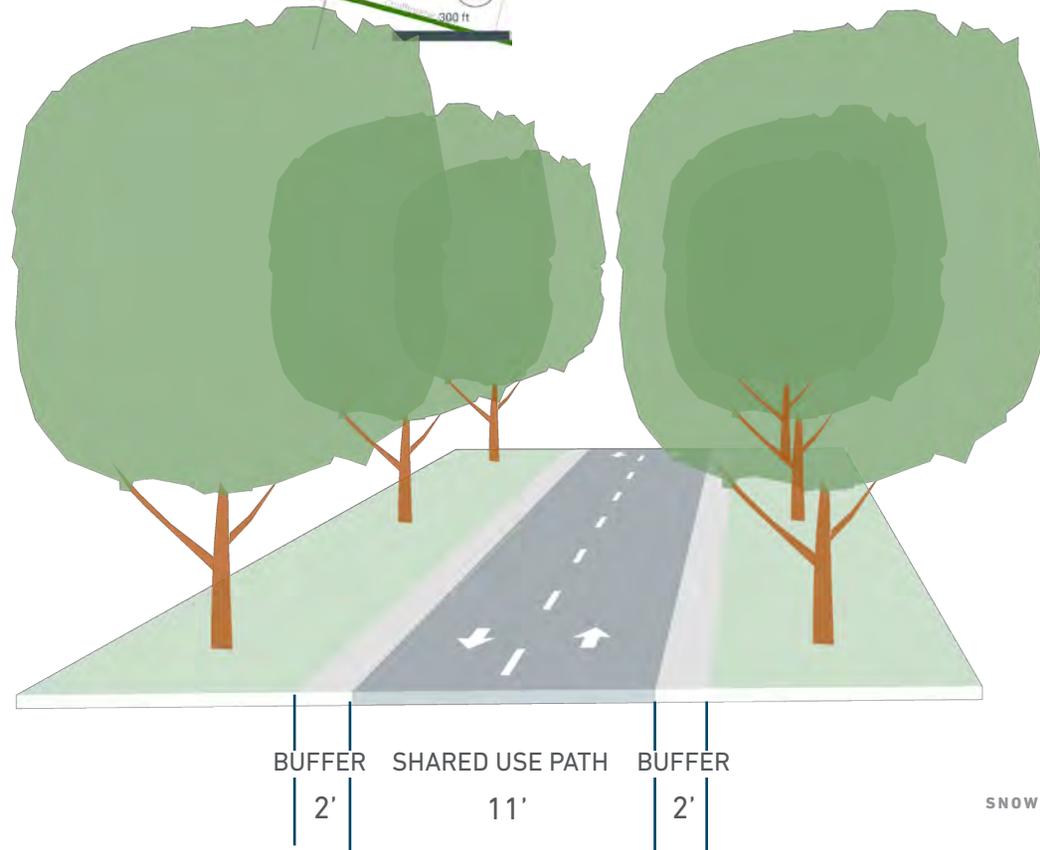
Trail construction: \$924,372 (does not include cost of right-of-way acquisition)

Sequencing

The opportunity to develop this segment depends on negotiations with the landowner and availability of funds. An interim solution would be to use Ross Street as a route to take people on bikes towards Coulbourne Lane and the schools. This would require construction of a short section of pathway between the south end of Ross Street and end of Woodland Court, including a short section of bridge across the stream that separates them (see pictures on following page).

Connection to Ongoing Projects

This is an important connection to link trails in State Forest and Shad Landing State Park to the Town of Snow Hill.

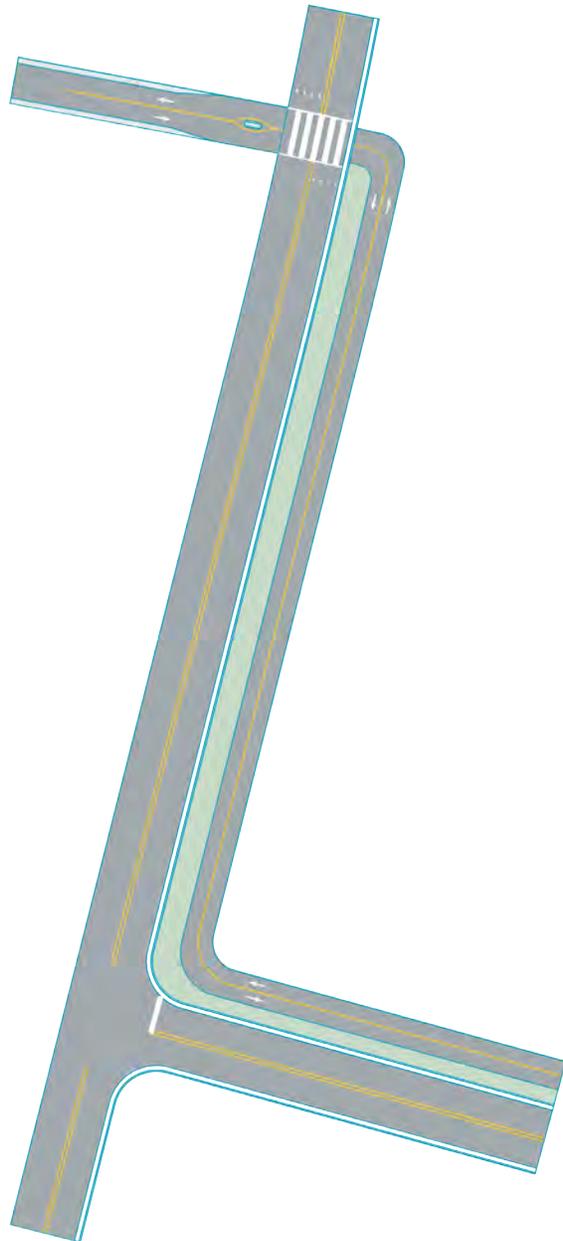


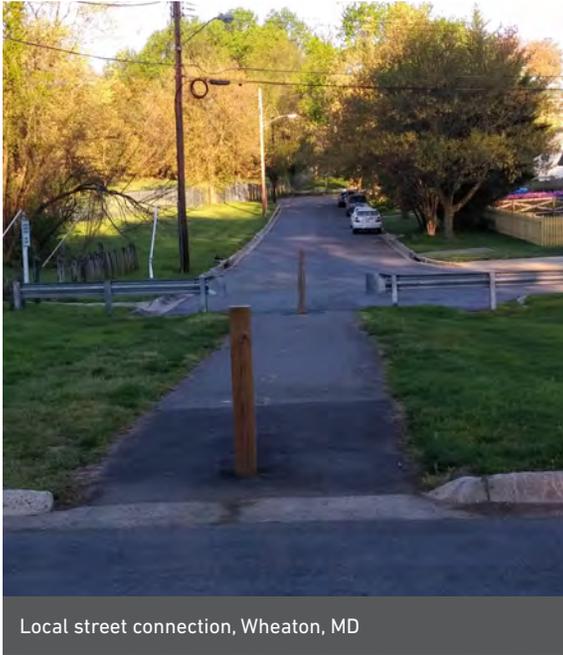


West Market Street approximate trail crossing location



Hawk crossing of busy road. Trail of Two Cities, Bentonville, AR.





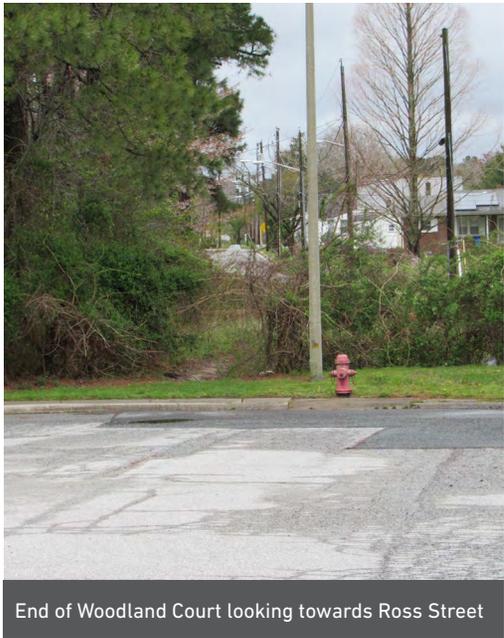
Local street connection, Wheaton, MD



Trail connecting neighborhood streets, Scottsdale, AZ



End of Ross Street looking towards Woodland Court



End of Woodland Court looking towards Ross Street

4 Coulbourn Lane to Town Line

Context

Coulbourn Lane is the main access road to the Snow Hill Elementary and Middle Schools and the Cedar Chapel Special School. There is considerable school bus traffic during pick-up and drop-off times, as well as traffic generated by parents, teachers, and staff. Outside of school hours, the street has low volumes of traffic. The road is in the County from West Market Street to the town line just to the east of the two schools.

Critical features

- 1500 feet
- 28 feet wide for 700 feet from West Market Street
- 44 feet wide for 800 feet to the town line
- Narrow sidewalks present on both sides of the street for approximately 200 feet to the town line
- No bicycle infrastructure
- On street parking is allowed on the wider section; heavily used during school hours.
- Posted speed limit: 25mph (15mph during school pick-up and drop-off)

Advantages

This is the main access road to the Elementary and Middle Schools and would enable children to bike to school either alone, in groups, or with their parents. It is currently the last east-west connection around the town before the bypass to the south.

Issues

Potential conflict between trail users and school bus traffic during pick-up and drop-off times. This may affect whether the trail should be on the north or south side of the street.

Recommended Bikeway Treatment

Two-way bike path on the north side of Coulbourn.

Narrow cross section:

- Option A: on-street separated path; narrow travel lanes to 10 feet; barrier between bicycle lane and travel lane
- Option B: off-street path; move fence line; curb and buffer separating the path from travel lane



Wide cross section:

- Option A: on-street separated path; narrow travel lanes to 10 feet; barrier between bicycle lane and travel lane; plus parking
- Option B: off-street path; move fence line; curb and buffer separating the path from travel lane; plus parking

Wayfinding to highlight High School, Byrd Park, State recreation areas

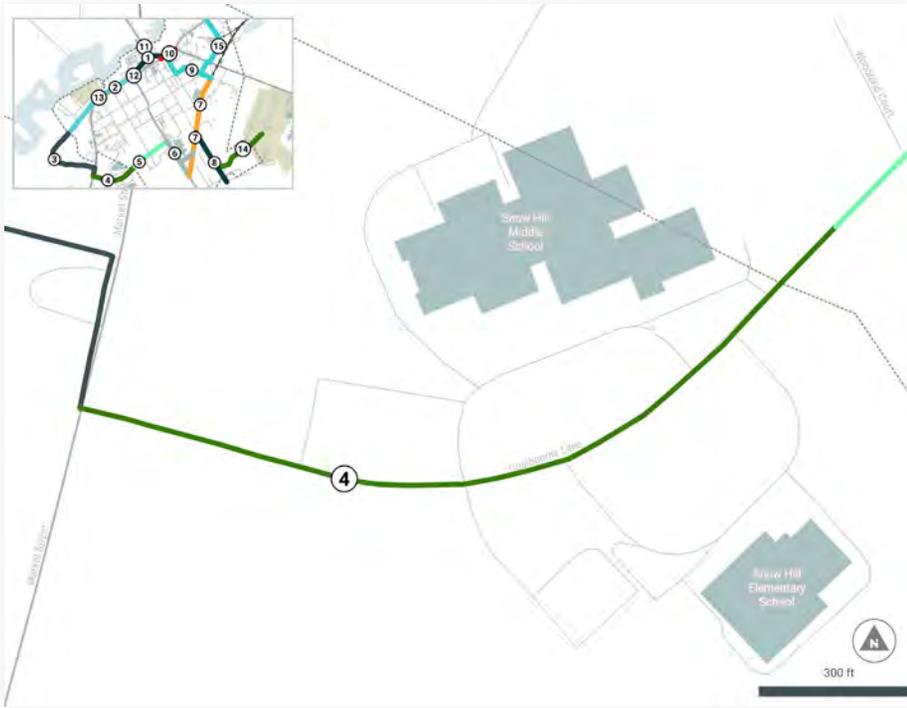
Cost estimate

Option A separated bike lane: \$243,911

Option B sidepath: \$579,150

Sequencing

Coulbourn Lane segments (4, 5) and the Church Street segment (6) should be implemented simultaneously as one project, if possible. This would minimize issues arising from the need for smooth transitions between wider and narrower sections of the road, as well as at the intersection of Coulbourn and Church Streets.



Path to School, Springdale, AR

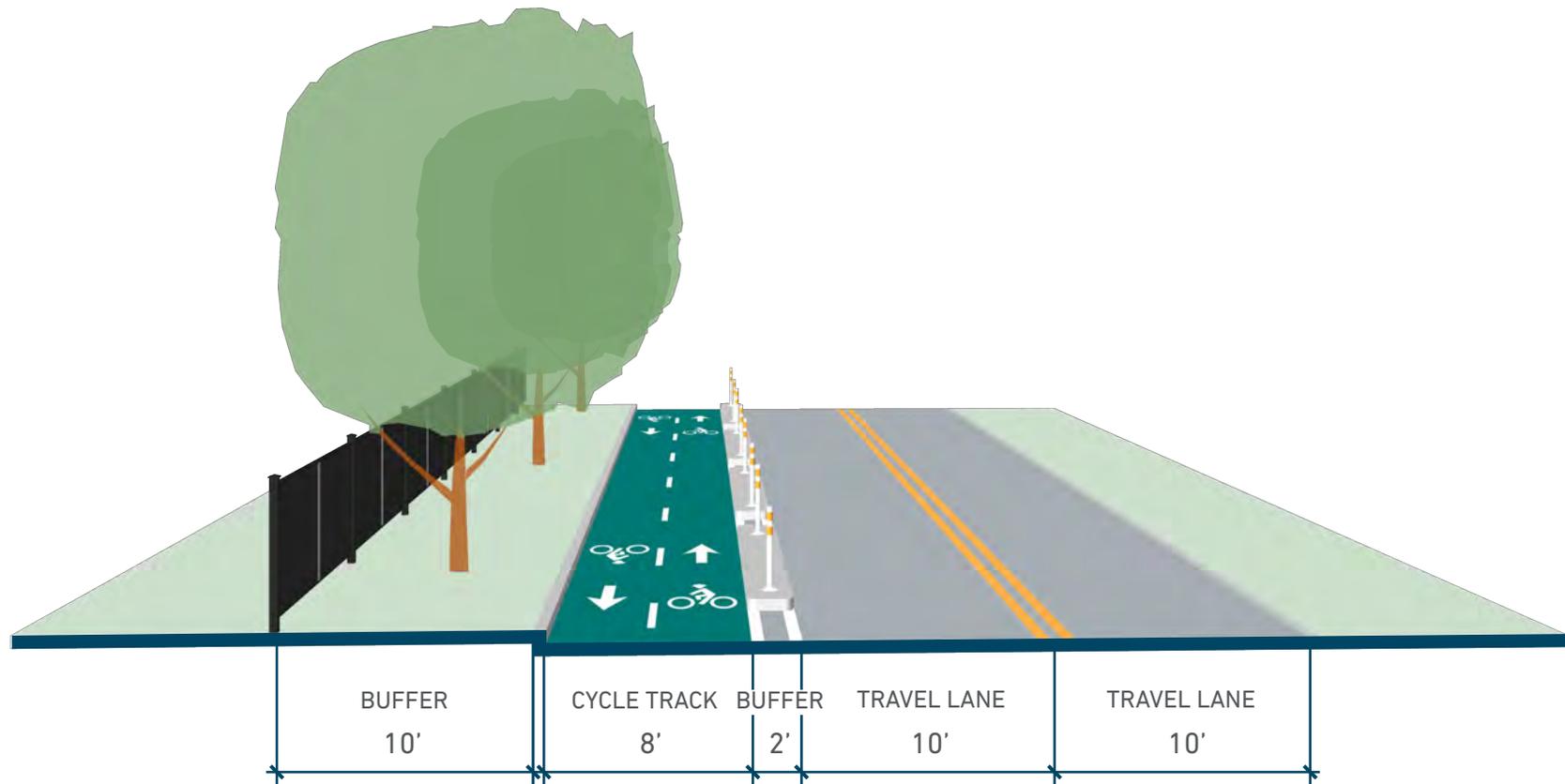


Sidepath by local road, Springdale, AR



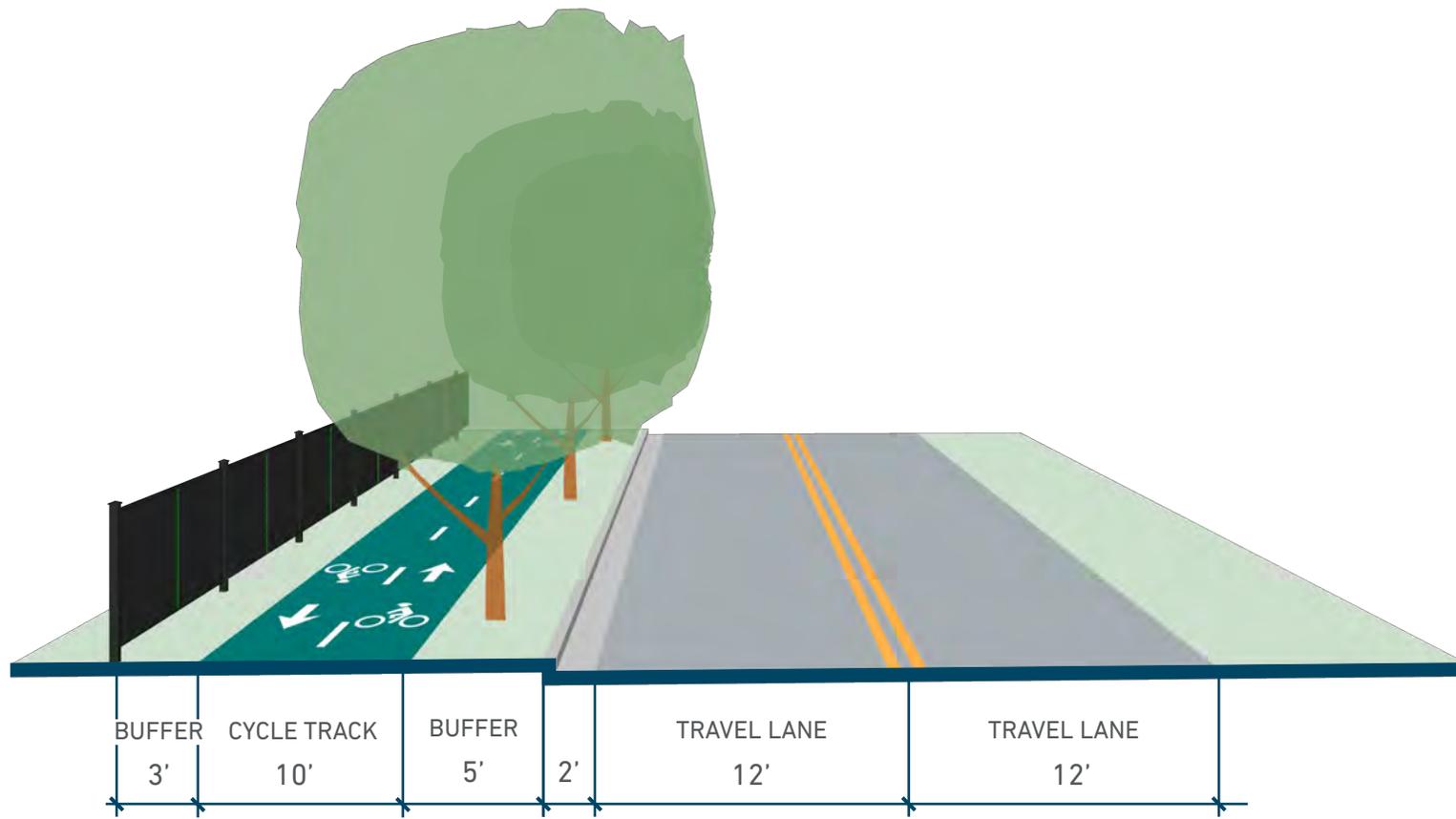
Separated bike lane, Springdale, AR

Coulbourne Lane Narrow Option A



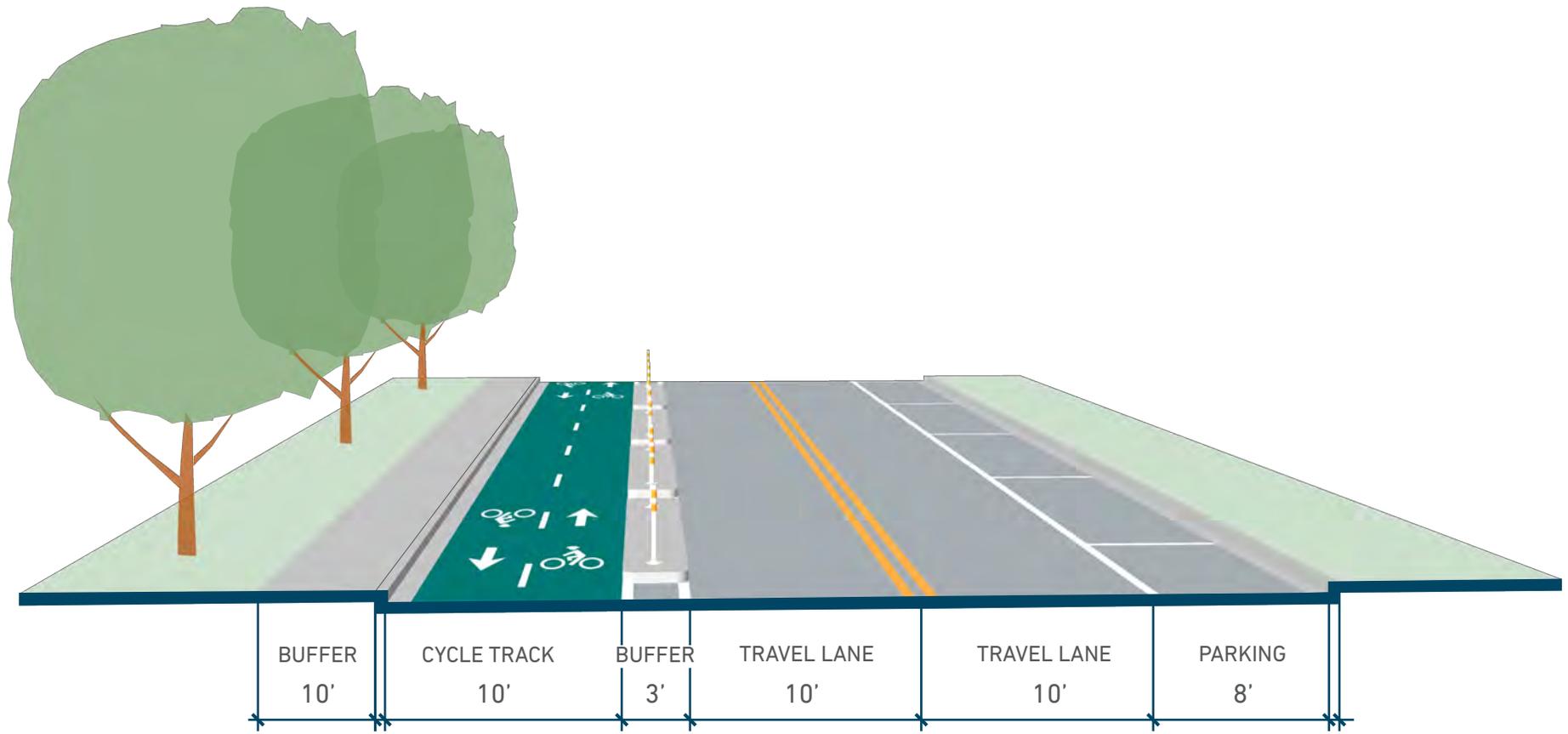
VIEW LOOKING EAST

Coulbourne Lane Narrow Option B



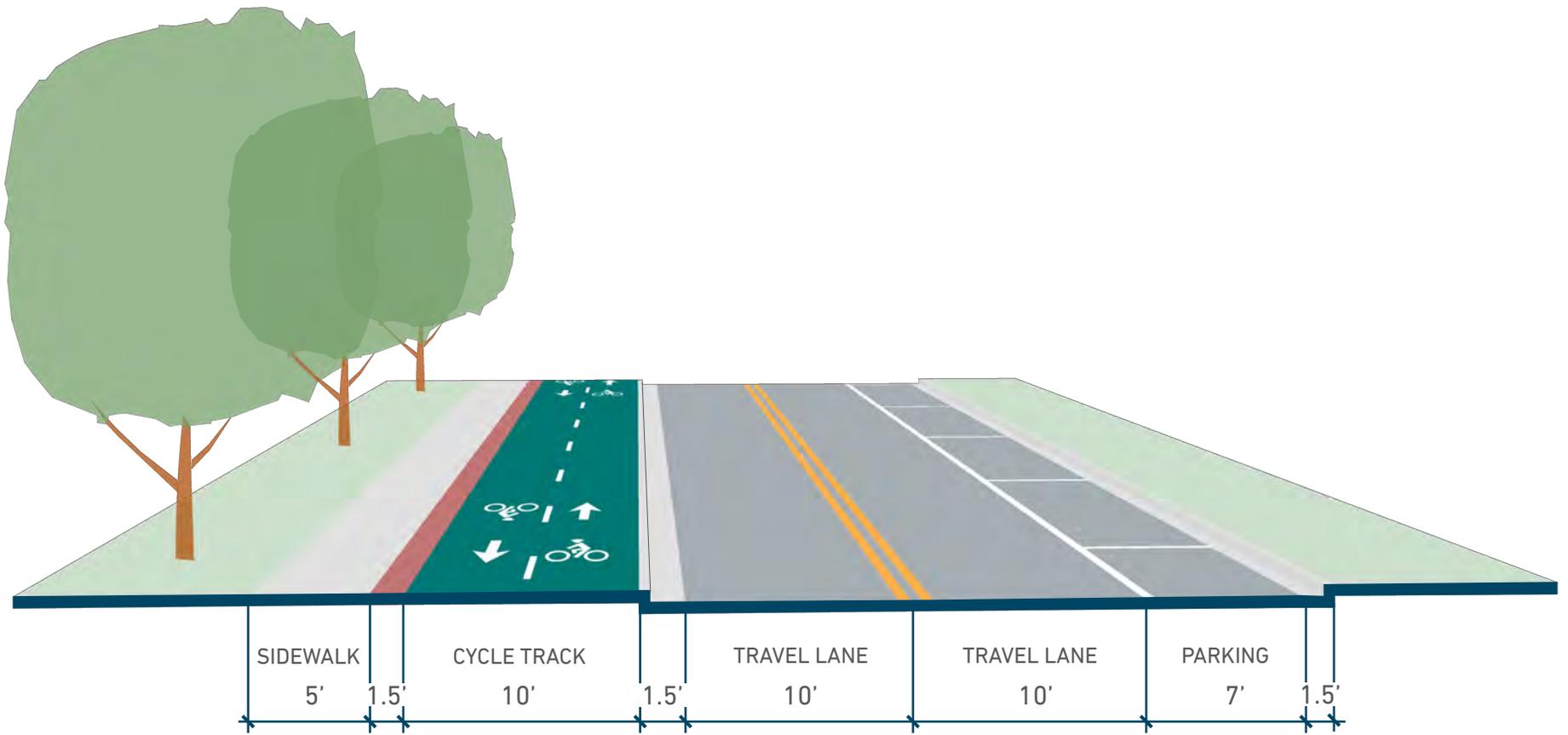
VIEW LOOKING EAST

Coulbourne Lane Wide Option A



VIEW LOOKING EAST

Coulbourne Lane Wide Option B



VIEW LOOKING EAST

5 Coulbourne Lane from Town Line to Church Street

Context

This section of Coulbourne Lane is a local residential street with low traffic volumes and speed, particularly outside of school hours; it is the main connection between the High School and the Middle and Elementary schools.

Critical features

- 1600 feet
- 28 feet wide
- Continuous sidewalk on the south side; missing section of sidewalk between Morris and Church Street on the north side.
- No bicycle infrastructure
- No on street parking allowed at any time on the north side; school buses allowed to park on the south side during limited hours
- Posted speed limit: 25 mph

Advantages

Critical route between schools, busy pedestrian and bicycle corridor during school opening and closing

Issues

Cross section is the minimum width necessary to restripe with separated bike lane without moving the curbs. Maintaining a two-way on-street bike path with a narrow painted buffer would leave 18 feet in remaining roadway width, which is similar to many existing residential roads in town. There may be a conflict with on-street parking during major school events; this does not happen frequently compared to the 24/7 access provided by the bikeway.

Recommended Bikeway Treatment

- Two-way separated bike path on north side; remove center stripe; reduce speed limit to 20mph.
- Wayfinding to highlight Schools, destinations on Church Street



Cost estimate

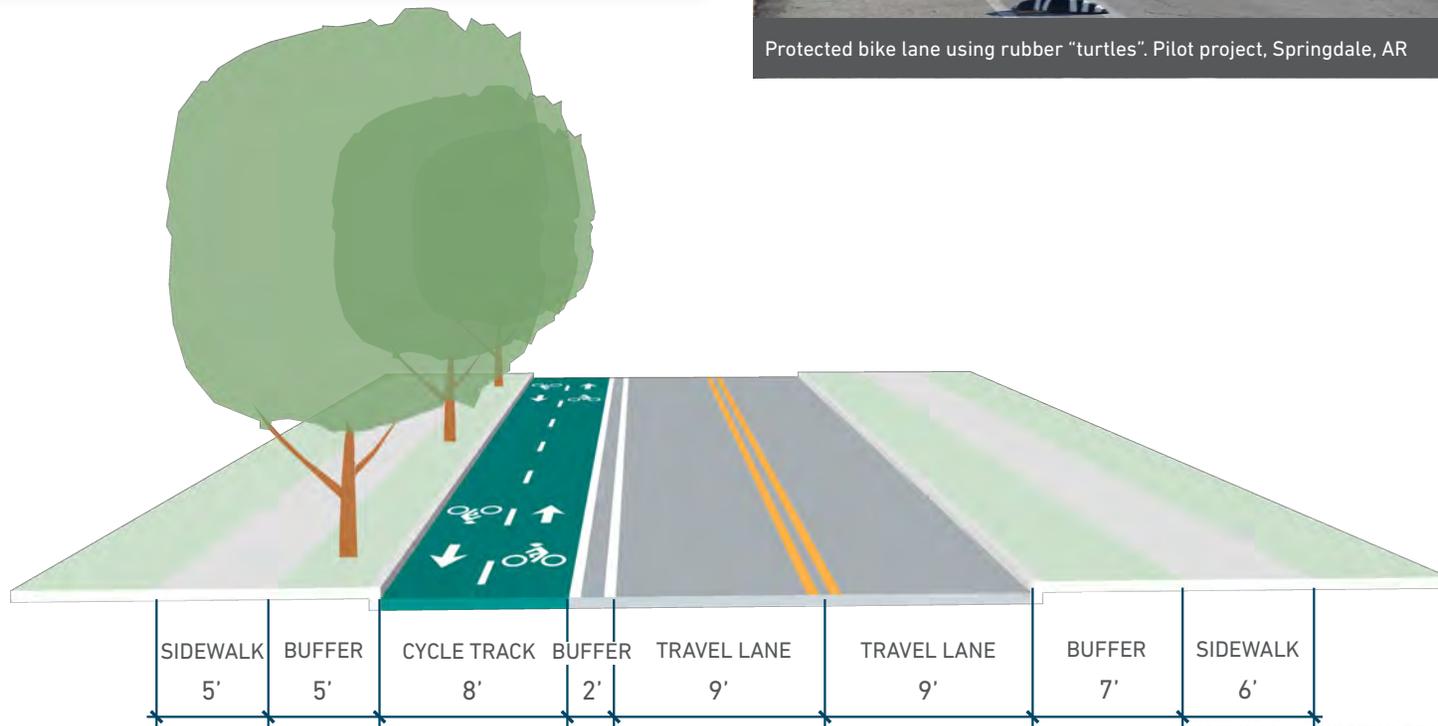
Separated bike lane: \$254,813

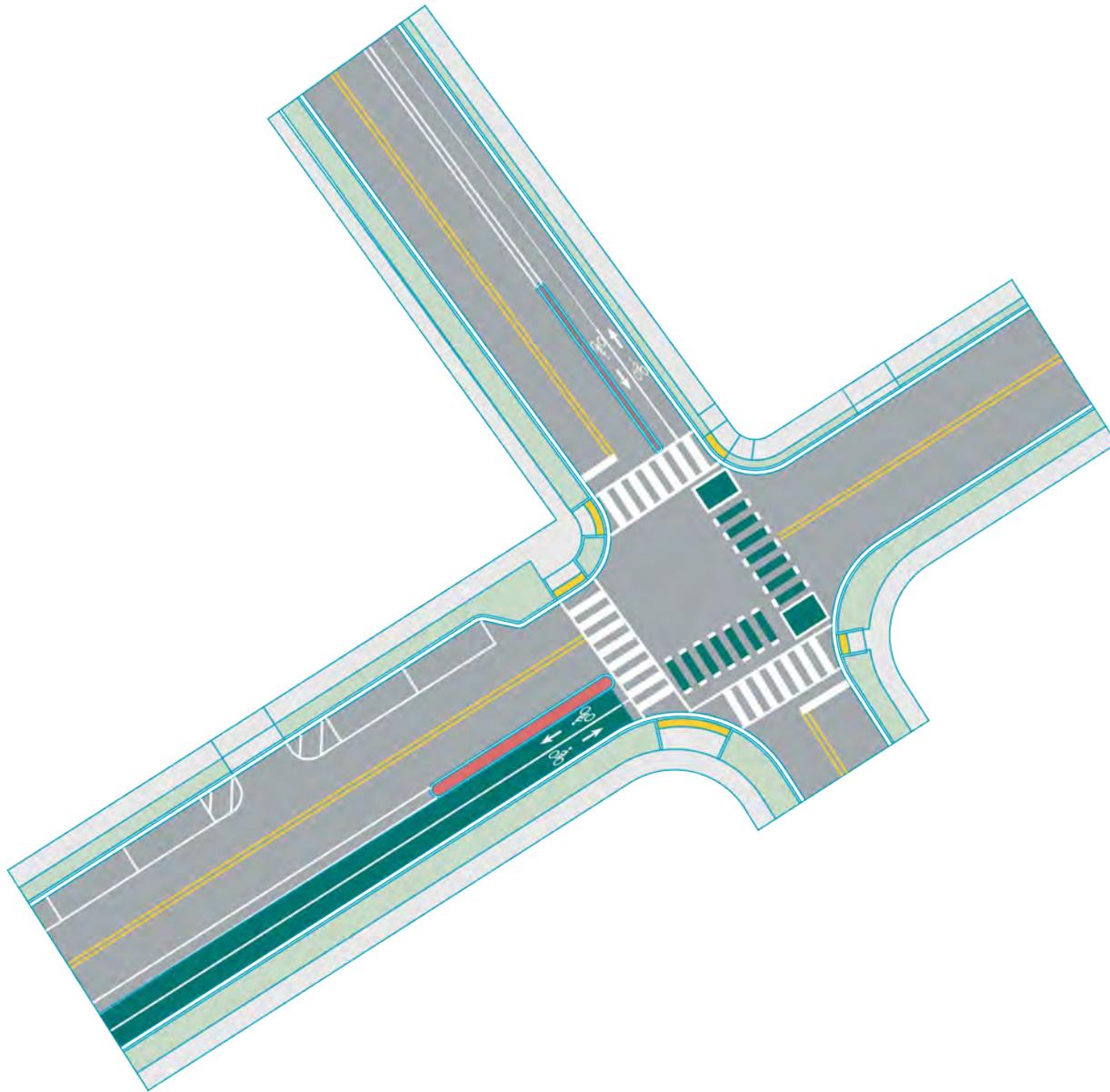
Sequencing

Coulbourne Lane segments (4, 5) and the Church Street segment (6) should be implemented simultaneously as one project, if possible. This would minimize issues arising from the need for smooth transitions between wider and narrower sections of the road, as well as at the intersection of Coulbourne and Church Streets.



Protected bike lane using rubber "turtles". Pilot project, Springdale, AR





Intersection of Coulbourne Lane and S. Church Street.

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6 Church Street (High School)

Context

Church Street is the main road in front of the High School. It is a new section of roadway that is wide and is signed as if it has a bike lane, although there is no bike lane stripe present. Church Street is a major north-south route from the Worcester Highway to downtown Snow Hill and provides vital access to the volunteer fire station to the south. Church Street connects to the Lank Street trail (former rail line) 650 feet south of the High School; the road narrows immediately south of the school and has no pedestrian or bicycle infrastructure from that point. A simple footpath was recently constructed from the side of the High School building to the trail behind the school.

Critical features

- 800 feet from Coulbourne Lane to High School driveway
- 40 feet wide
- Sidewalks both sides
- Signed bike lanes (but not present)
- No parking on east side; bus parking on west side
- Posted speed limit: 25 mph
- 650 feet from High School Driveway to Lank Street (trail)

- 28 feet wide
- No sidewalks
- No bicycle infrastructure (share the road signs)
- No on-street parking either side
- Posted speed limit: 25 mph

Advantages

Church Street provides direct access to the main entrance of the High School. The street is very wide and has a good surface.

Issues

There is a need to maintain a school bus waiting area. The path must cross at least two access roads to school parking areas; these both have wide curb radii which encourages traffic to go faster. The section south of the High School is narrow and has constrained right of way.

Recommended Bikeway Treatment

- Two-way separated bike path on the east side of Church Street.
- Connect bike path to Lank Street Trail immediately south of High School buildings.
- Reconfigure intersection with entrance road to school parking.



- Continue to sign Share the Road for section of Church Street between High School and Lank Street Trail.
- Wayfinding to highlight Lank Street Trail, Washington Street, Recreation Center.

Cost Estimates

Separated bike lane and intersection: \$112,500

Sequencing

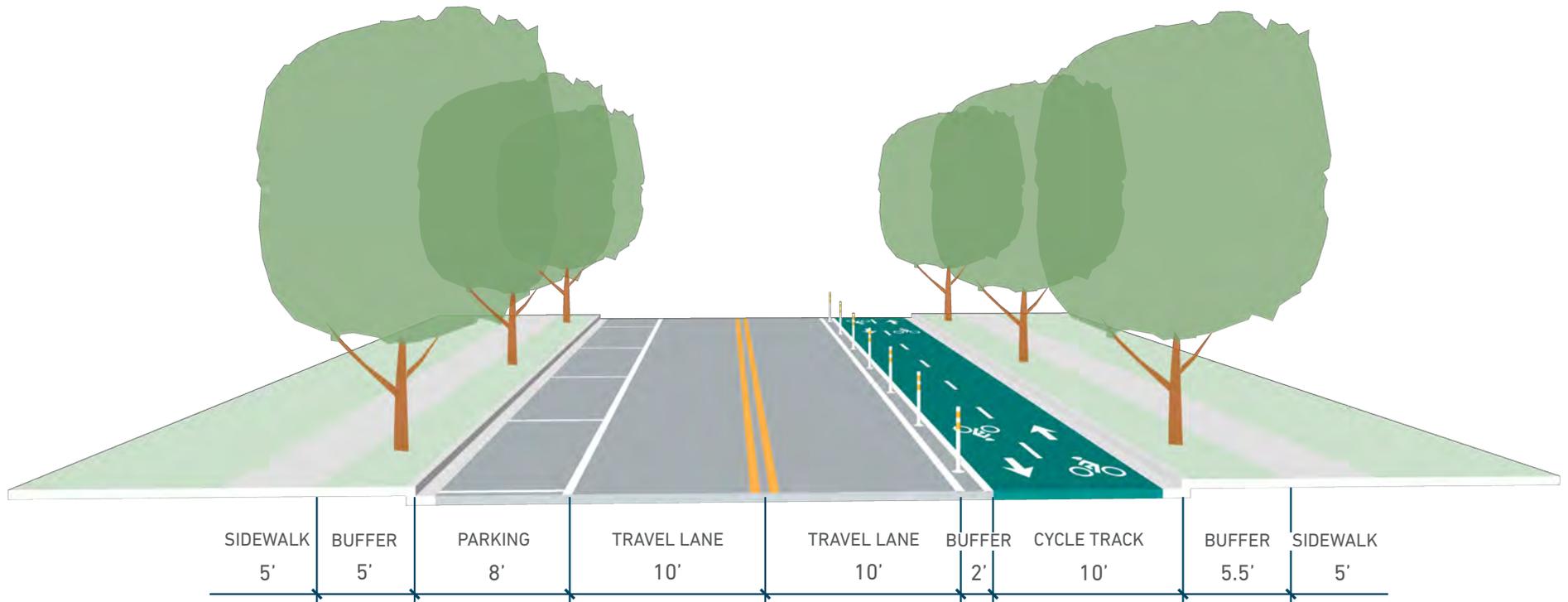
Coulbourne Lane segments (4, 5) and the Church Street segment (6) should be implemented simultaneously as one project, if possible. This would minimize issues arising from the need for smooth transitions between wider and narrower sections of the road, as well as at the intersection of Coulbourne and Church Streets.



Razorback Greenway approaching school zone, Springdale, AR



Separated bike lane, Silver Spring, MD





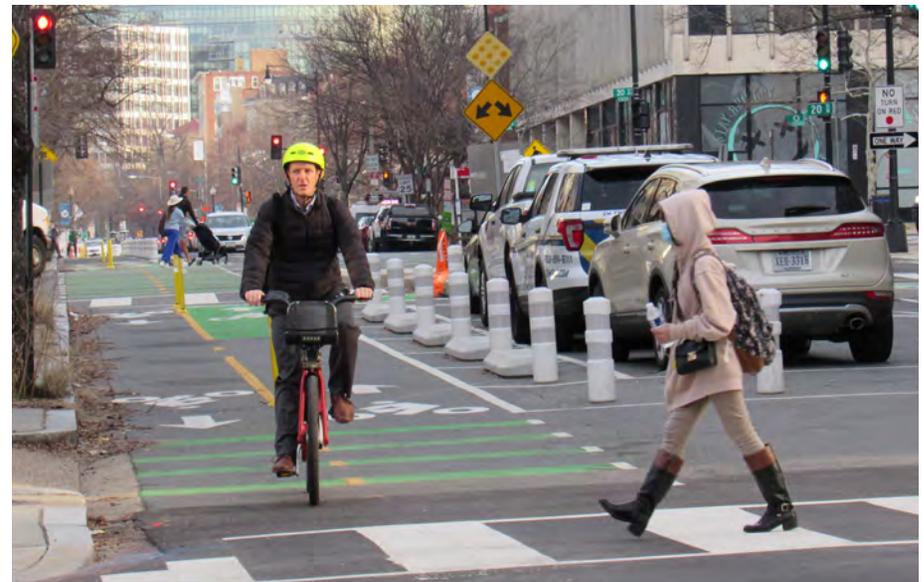
View from High School entrance road to trail corridor



Trail beside Middle School, Richmond, VA



Church Street looking South



Separated bike lane, Washington DC

7 Trail from Church Street to Purnell Street

Context

There is a former railroad line running behind the High School from Church Street to the old train station at Belt Street that is currently being used as a trail. The Town has a 2007 use agreement in place for the rail trail and it has been cleared for walking on a gravel surface and barriers preventing cars have been installed. People are using the path to access the school, walk their dogs, etc. The corridor crosses Washington Street and continues to the old train station building. The section from South Church to South Washington Streets is platted as a paper street called Lank Street. Tracks and ties are still in place starting at the old train station and extending past Belt Street to Purnell Street, but the line has not been used for many years.

Critical features

- 3500 feet (2400 with the track removed)
- Minimum of 25 foot right of way throughout
- The path has been cleared so it is walkable; it can be ridden on a bike with wider tires (e.g hybrid, touring, gravel, or mountain bike).
- No parking

Advantages

The corridor provides a traffic-free connection to the High School, old train station and businesses on Belt and Collins Streets; it is also a recreational resource for nearby residents on Morgan Run and in the Greenbriar Apartments. Most of the corridor is graded and can be turned into a shared use path relatively simply.

Issues

The section between the station and Purnell Street requires additional work to prepare it for conversion to a shared use path, including the removal of the track and ties; this section would also require a safe crossing of Belt Street.

The intersection of the trail with Washington Street should be made a formal crossing with a design that minimizes the impact on adjacent residents.

Recommended Bikeway Treatment

- Two-way shared use path, 11 feet wide with two feet of shoulder/shy space either side
- Establish a formal crossing of Washington Street with high visibility markings, advance signing



- Establish a formal Trailhead at the old train station with an information kiosk, bike parking, and bike repair station
- Wayfinding to highlight access to the High School, Train Station, downtown

Cost Estimate

Path, removal of tracks, intersection at Washington and Belt: \$1,693,278 (does not include cost of right-of-way acquisition)

Sequencing

The section of trail between the old train station and Church Street requires the least amount of preparation to convert to a paved trail. As an interim route, the bikeway could be signed from the old train station onto Collins Street all the way to East Market Street (Segment 10).

The Town is encouraged to coordinate with the Maryland Department of Transportation Office of Planning and Capital Programming to explore railbanking options to create a more permanent shared-use path along the whole corridor.



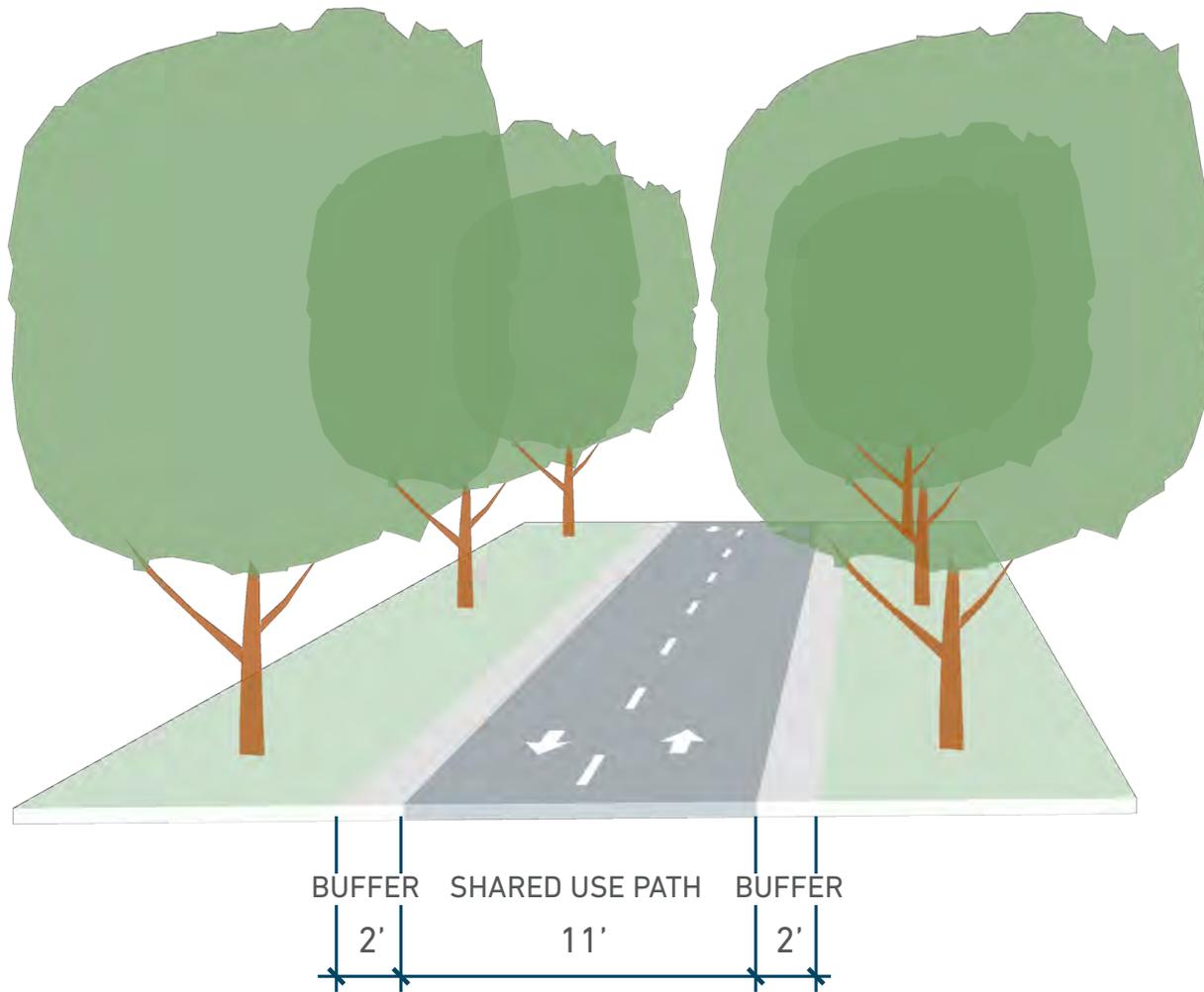
W&OD Trail, Arlington, VA



Trail design to discourage car entry



Kitty Hawk, NC





Trail looking across Washington Street to the High School



Trail crossing local road, Port Townsend, WA



Proposed trail looking from Purnell Street to Belt Street



Atlanta Beltline Trail

8 South Washington Extension

Context

South Washington Street is quiet residential road with low speeds and volumes of traffic, even though it provides access to the Worcester Highway. Washington Street is significantly wider south of the trail crossing (28 feet) than it is north of the crossing (20 feet). There may be an increase in traffic due to the Huntingfields housing development. Most significantly, however, there is an important proposed connection between the housing development and John Walter Smith Park that would provide a short-cut and much more comfortable route to walk and bike to the ball fields and recreation center than using Bay Street.

Critical features

- 1900 feet from the trail crossing to the Town line
- 28 feet wide
- Sidewalk on the west side from Morgan Run to the Senior Center
- No bicycle infrastructure
- On-street parking is allowed
- Posted speed limit: 25mph

Advantages

South Washington Street provides a direct connection from the proposed trail to residential areas on the edge of the town as well as the Senior Apartments. The new Huntingfields project is under construction just off Washington Street, and that neighborhood can be connected to John Walter Smith Park by a short section of shared use path or trail. This will be a practical way to access the park and county recreation center without having to drive.

Issues

Speeding is a potential issue on this stretch of South Washington; it is wider than closer in towards town, and the posted speed limit increases to 40mph outside the town.

Recommended Bikeway Treatment

- Shared roadway for people on bikes. It may be necessary to manage traffic speeds more deliberately if speed and/or volumes start to rise.
- Wayfinding to highlight John Walter Smith Park, the trail, downtown, and destinations on the Worcester Highway and beyond.

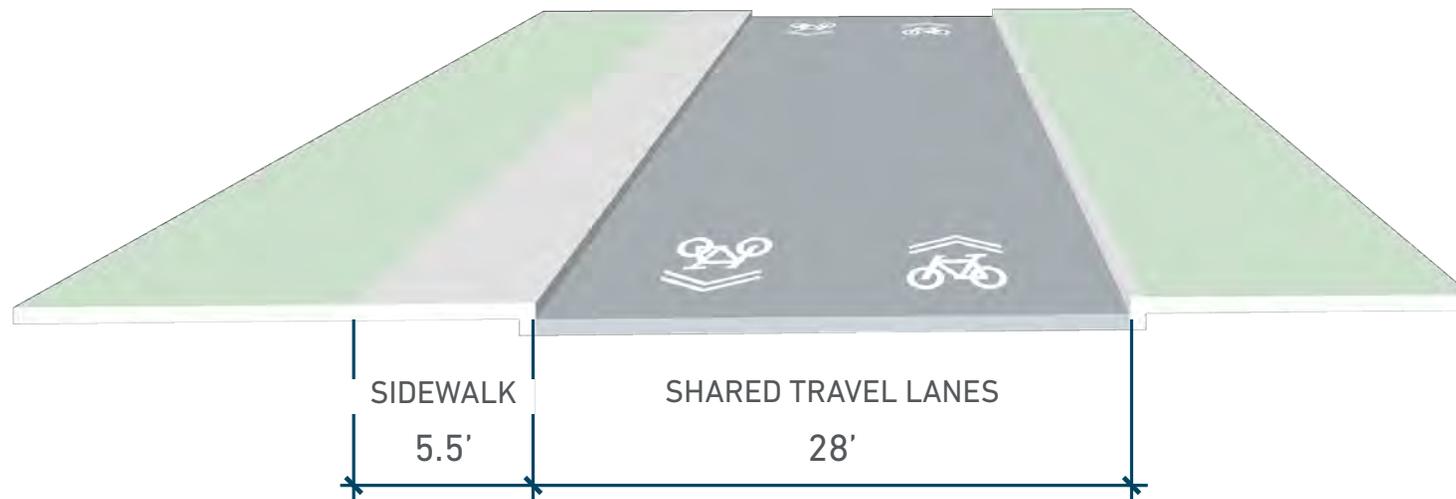


Cost Estimate

Signs and markings: \$3,400

Sequencing

Should coincide with (and hasten) the building of a direct trail connection between John Walter Smith Park and the Huntingfields development (Segment 14).



9 Collins or Purnell, Federal, and Collins

Context

Collins, Purnell, Martin, and Federal Streets form a grid network of quiet residential streets that are convenient to major employment centers and downtown. This grid of streets provides a more comfortable alternative for people on bikes to using Bay and Market Streets, which both have heavy truck traffic and limited space (especially on Bay Street). The streets are narrow and encourage slow speeds and limited traffic.

Nearby Timmons Street provides a quiet and comfortable route for people on bikes to access East Market Street heading out of town; East Market Street has a shoulder bikeway going out to the Worcester Highway (see segment 15).

Critical features

- Approximately 5000 feet plus 1700 feet on Timmons (see segment 15)
- 18-20 feet wide
- Limited sidewalks. Federal Street has sidewalks on both sides (except for a section between Purnell and Collins); others have no continuous sidewalks on either side.
- No bike infrastructure
- Parking is limited to one side, if allowed at all
- Posted speed limit: 25 mph

Advantages

Using a network of quiet residential roads to enable people on bikes to get from the old train station to downtown is preferable to directing people onto Bay Street and/or Market Street in this area. Bay Street has very heavy truck traffic, narrow lanes, and limited space for expansion. Little needs to be done to make these streets comfortable for people of all ages and abilities and the presence of a grid of streets means that there are several potential routes to take.

Issues

Intersections of the trail with major roads (Bay and Market Streets) and railroad crossings need particular attention. Maintaining low traffic volumes and speeds is essential to preserving this area as a safe network of street for people biking.



Recommended Bikeway Treatment

- Neighborhood Shared Street. Use traffic calming to maintain low volumes and speeds
- Intersection treatments to ensure safe transitions and crossings at Martin/Bay Street and Collins/East Market Street.
- Wayfinding to highlight access to downtown, train station, High School

Cost Estimate

Signs, markings, intersection striping: \$22,140

Sequencing

Take advantage of reconstruction of Purnell Street to preserve and enhance low speed, low volume roadway design

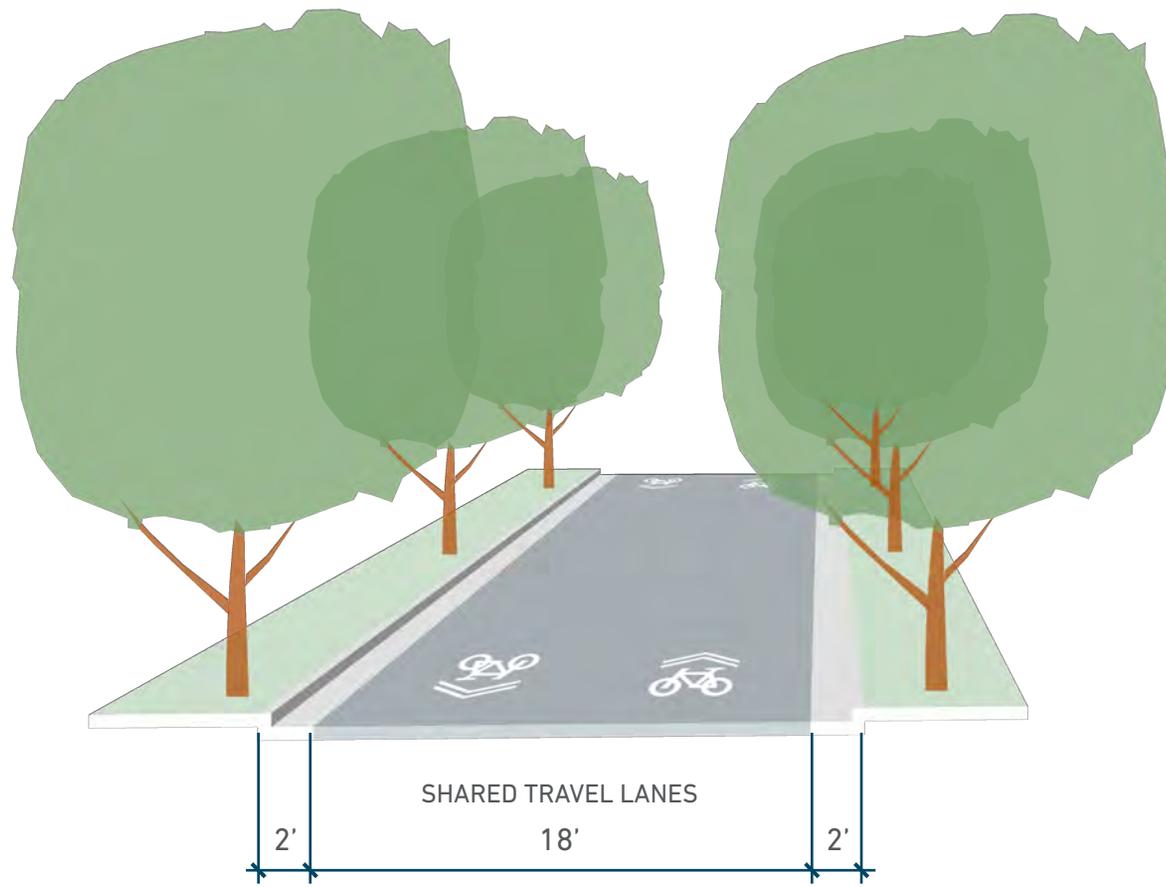
Use Collins as the interim route to East Market Street until the trail is built to Purnell Street



Traffic calming on residential roads



Traffic calming on residential roads





Collins Street at Federal Street



Pedestrian lane in Silver Spring, MD



East Martin Street towards Collins Street



Speed humps and bump outs to calm traffic

10 East Market Street

Context

East Market Street from Bay Street to Washington Street is the primary gateway to downtown from the east. It is a primarily residential and includes several notable historic homes from the 1830s and 1840s. It is also a busy, signed truck route with heavy volumes of trucks accessing the Tysons feed plant on Bay Street. There is a small grocery store and other services east of the intersection with Bay Street that are popular destinations. There is no direct street crossing of Market Street east of Washington Street, so the proposed bikeway is routed on a small section (less than 200 feet) of East Market Street between North Collins Street and East Green Street.

Critical features

- 190 feet from East Green Street to North Collins Street; 600 feet from East Green Street to Park Row
- 34 feet wide
- Sidewalks on both sides
- No bicycle infrastructure; shared lane arrows on the east bound side
- No on-street parking on either side between N Collins St and East Green Street
- Posted speed limit: 25mph

Advantages

East Market Street is a wide street with spare capacity, even allowing for the large volume of trucks that use it to get to and from Bay Street. Implementing the bikeway on this section of roadway will help reinforce the 25mph speed limit and make it less of a barrier to walking and biking traffic.

Issues

It is a busy street with a lot of truck traffic; the trucks are usually turning at Bay and Washington Streets. The bikeway route is only proposed to use a short section of Market Street between Collins and Green. Reconfiguring the street for just that short section is not advisable; it would be preferable to extend the changed cross sections to at least the intersection of Bay and Market Streets.

Recommended Bikeway Treatment

- Two-way separated bike lane on the north side of East Market Street from East Green Street to beyond the intersection of Market and Bay Streets.
- Reconfigure intersection of East Market, Bay, and Park Row; options include a roundabout, shifting



Park Row to intersect with N Bay Street; limiting Park Row to one-way access at N Bay Street

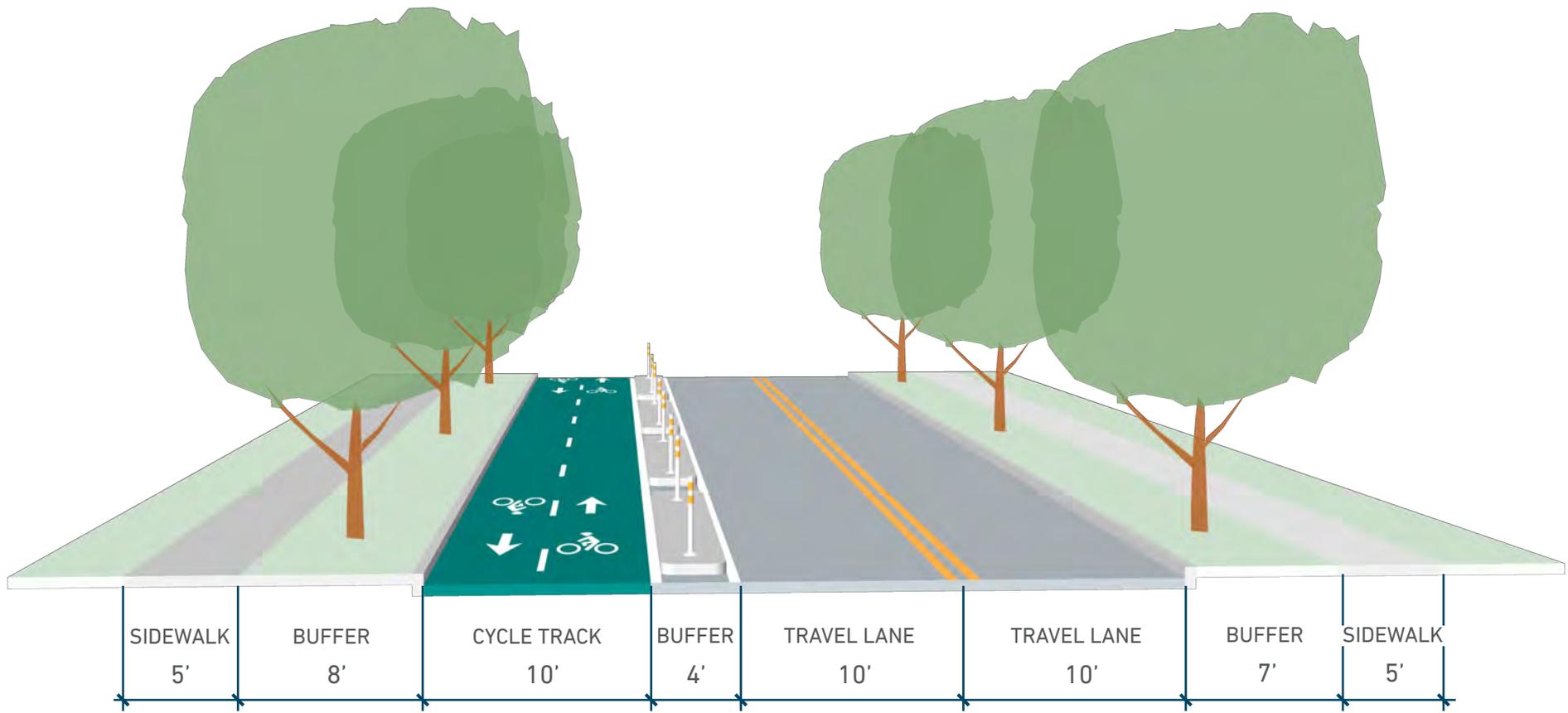
- Wayfinding to highlight Train Station, downtown, destinations on East Market

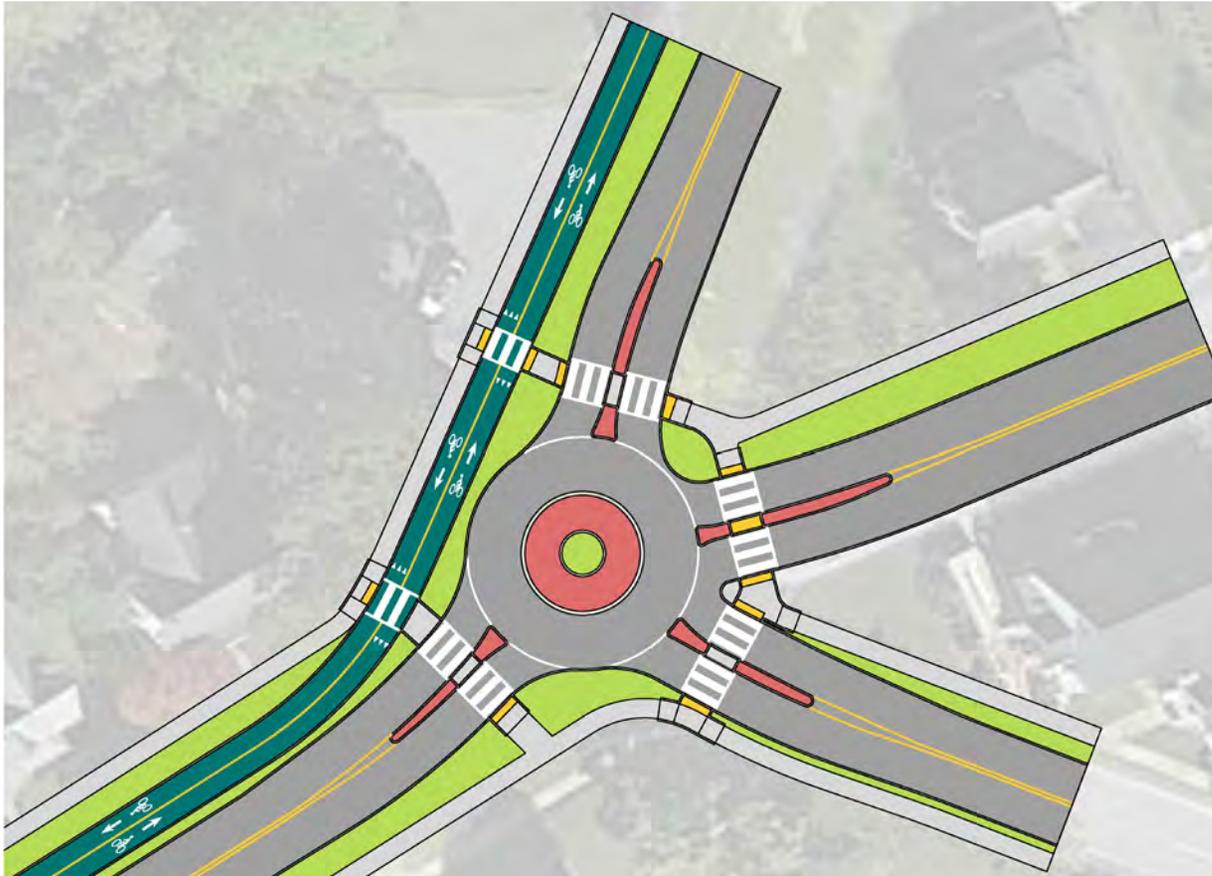
Cost Estimate

Separated bike lane: \$55,890

Sequencing

Implementing a two-way path on the north side of Market Street is a significant change that is essential to make the bikeway complete – Market Street is a significant barrier to pedestrian and bicycle traffic today and this project can help change that situation. This section of East Market Street is designated as US Business 113 and is managed by MDOT SHA. All recommendations for this segment must follow the Maryland Manual of Uniform Traffic Control Devices. Coordination with MDOT District 1 Office will be essential to confirm travel lane widths, vertical separation features and other design elements.





River Road arts district in Asheville, NC

11 Intersection of Green Street and Washington Street

Context

This intersection is in the heart of the shopping and dining district for the Town of Snow Hill. Green Street is proposed to be a major town bicycle route; there is already heavy pedestrian traffic in this area. Prior changes to the intersection have shortened pedestrian crossing distances, increased sidewalk space, and made the crosswalks more visible. However, the changes have not altered the yielding behavior of drivers on Washington Street, in part because they are still driving faster than the posted and/appropriate speed for the location. There is a considerable amount of heavy truck traffic on Washington Street.

Recommendation

Create a raised intersection. This would effectively create a speed reducing feature on each leg of the intersection and further elevate the visibility of people crossing the roadway. This will improve the comfort and safety of pedestrians at this intersection, as well as for people on bicycles crossing Washington Street. Another potential alternative would be to install raised crossings at some or all of the individual legs of the intersection; effectively extending the sidewalk across the street on top of the speed hump.

A similar treatment should be installed at the intersection of River Street and Washington Street to reinforce the need for drivers to travel slowly through the downtown area. This will improve the safety and comfort of people on foot using the Waterfront Trail and walking from the municipal parking lot to the Black Eyed Susan, Riverfront Park, County offices, Library and other downtown attractions.

This section of North Washington Street is designated as Maryland Route 12 and is managed by MDOT SHA. All recommendations for this segment must follow the Maryland Manual of Uniform Traffic Control Devices. Coordination with MDOT District 1 Office will be essential to confirm the raised intersection recommendation and other design elements.

Cost Estimate

Raised Intersection: \$448,740





Raised intersection, Stamford CT



Raised intersection, Cambridge, MA

12 Intersection of West Green Street, West Market Street, and Church Street

Context

This important intersection marks the edge of the historic commercial and civic center of the town; it is also the intersection of MD 12 and MD 113 Business and has a notable volume of turning traffic. The north side of the intersection has unclear markings, vehicle priority, and one-way operation and it creates a very long, exposed crossing for pedestrians walking along West Market Street of almost 90 feet. Traffic is generally traveling quite slowly, especially on Green and Church Streets in the downtown area. Segment 1b proposes to create a counterflow lane for cyclists to use so they can travel in both directions while motor vehicles can only go one way (westbound); this will be harder to implement with the current conditions.

Recommendation

The recommended change at this intersection is to close direct access between West Green Street and Church Street. The change would create a narrow, right-angled intersection at West Green Street and West Market Street, with as much distance between the new intersection and the existing intersection with Church Street as possible. The proposed change would replace the old, unused section of roadway with a small park and information kiosk and it would provide a continuous sidewalk along West Market Street. This is consistent with proposed changes in an ongoing study of downtown streets and parking.

There is an alternative option to continue West Green Street to North Church Street and close off the direct access from West Green Street to Market Street. A new sidewalk would connect from North Church Street to the existing sidewalk that currently ends at West Green Street.

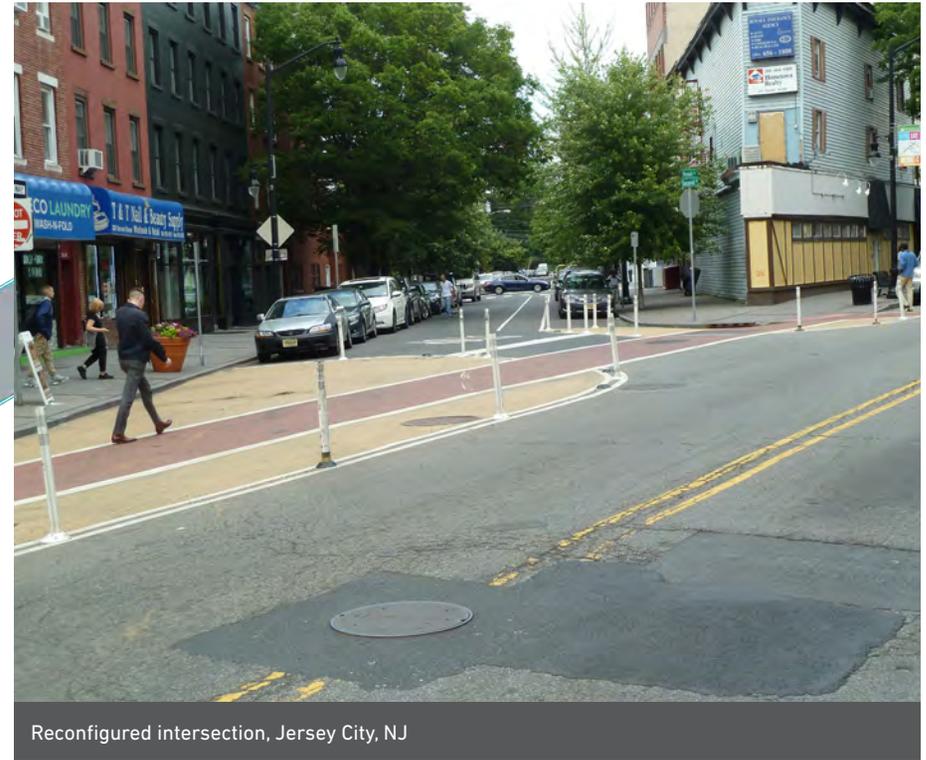
This intersection is managed by MDOT SHA. All recommendations for this segment must follow the Maryland Manual of Uniform Traffic Control Devices. Coordination with MDOT District 1



Office will be essential to confirm intersection realignment recommendations and other design elements.

Cost Estimate

Reconfigured intersection: \$189,486



Reconfigured intersection, Jersey City, NJ

Reconfigured intersection of Green, Church, and Market Streets

13 Intersection of West Market Street, Ross Street, and the Byrd Park Entrance Road

Context

Byrd Park is one of the most popular destinations in the Town of Snow Hill. However, the park can be difficult to access, in part because of the challenges of crossing the busy West Market Street. There are no marked crosswalks on West Market Street between Maple Street (at the edge of the school playing field) and Pearl Street in the heart of downtown Snow Hill, a distance of almost a mile. This intersection is also the location of a regional bus stop.

Recommendation

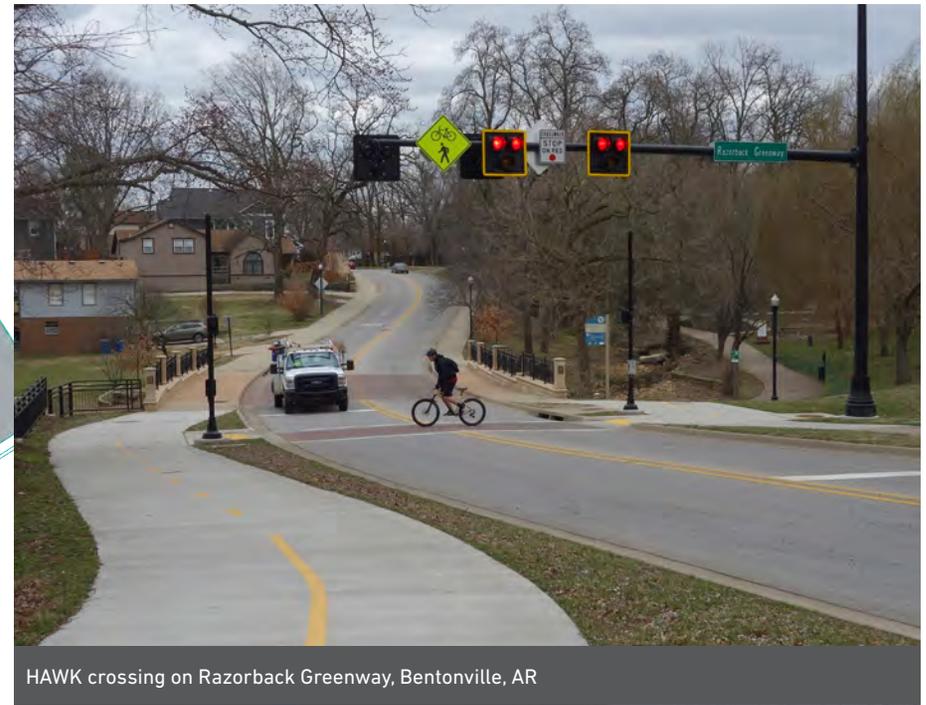
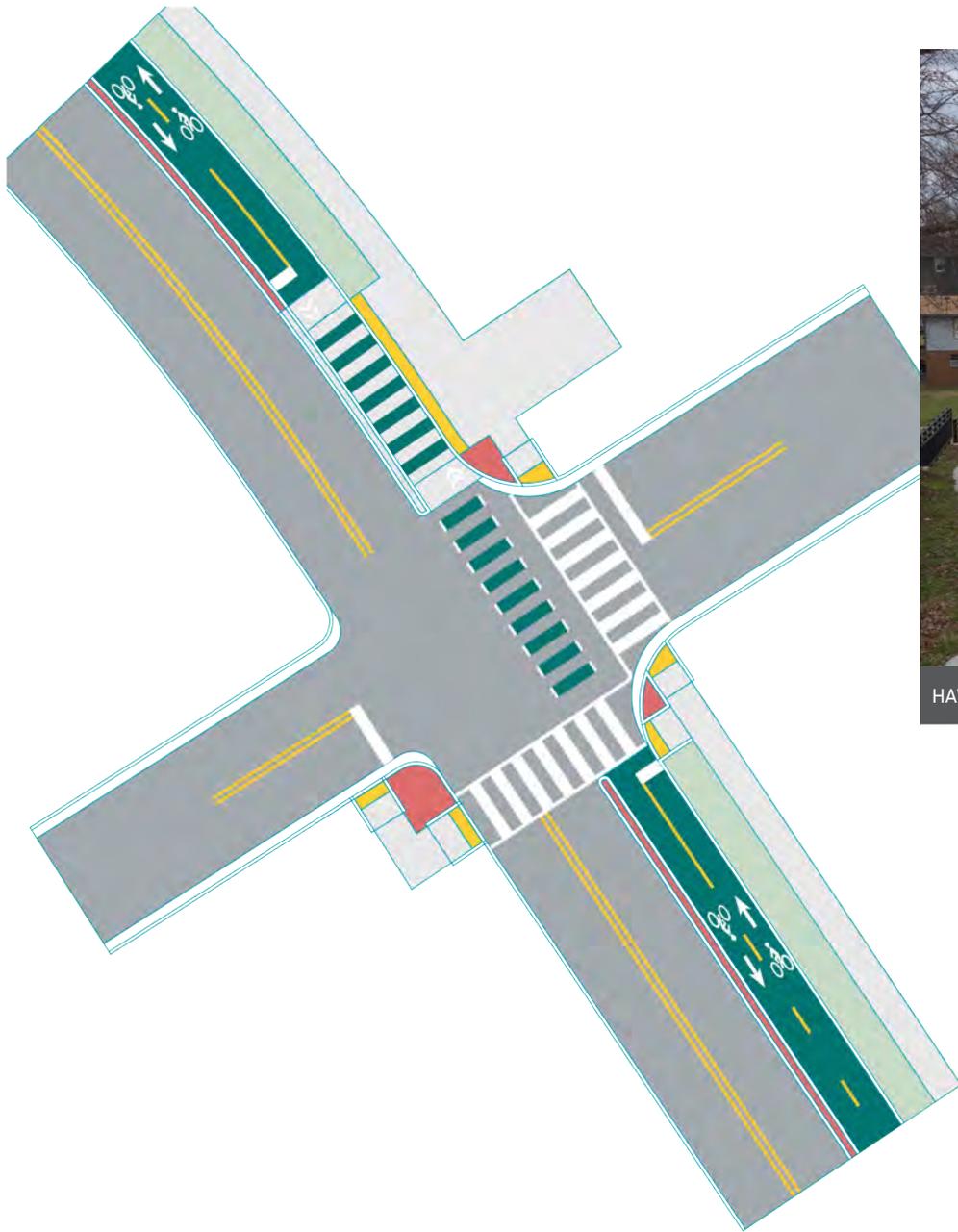
Add a high visibility crosswalk across West Market Street on the east side of the intersection; add appropriate ramps to meet ADA requirements. Tighten the corner radius at the park entrance road to lower turning speeds, shorten crossing distances, and to allow for appropriate accessibility ramps. This intersection would also be a potential location for a Rectangular Rapid Flashing Beacon (RRFB) or Pedestrian Hybrid Beacon to help people cross West Market Street more safely. An RRFB would increase the visibility of the crossing and increase the likelihood of traffic stopping or yielding to people in the crosswalk. The Pedestrian Hybrid Beacon would require traffic to stop when the signal is activated.



This section of Market Street is designated as US Business 113 and is managed by MDOT SHA. All recommendations for this segment must follow the Maryland Manual of Uniform Traffic Control Devices. Coordination with MDOT District 1 Office will be essential to confirm intersection changes.

Cost Estimate

Intersection striping, ramps: \$14,175



HAWK crossing on Razorback Greenway, Bentonville, AR

Reconfigured intersection of West Market and Ross Street at Byrd Park entrance.

14 Connection from Huntingfields subdivision to John Walter Smith Park

Context

The John Walter Smith Park and Worcester County Recreation Center is a major destination for Snow Hill residents and visitors. It is only accessible from South Bay Street (MD 365), a road that has no bicycle or pedestrian infrastructure and which is narrow, carries a considerable amount of heavy truck traffic, and has a posted speed of 40mph at the entrance to the park. This makes the Recreation Center effectively inaccessible to people without a car or is currently an unsafe route for walking and biking.

The new Huntingfield housing subdivision, accessible from South Washington Street, is 600 feet from the end of the paved roadway in John Walter Smith Park. When the development was approved, it was done so with the inclusion of an easement connecting the subdivision to the park – an easement that would allow for building a short stretch of trail between the two adjacent parcels. This would provide a safer and more direct connection

to the park and recreation center for a large section of town residents who could walk or bike from South Washington Street, through the subdivision and into the park without having to use Bay Street or other longer and more challenging routes.

Recommendation

Build a 10-foot wide paved pathway or trail connecting from the Huntingfields subdivision to the access road in John Walter Smith Park and on through the park to the Recreation Center.

Extend signage of the Snow Hill Bikeway south along South Washington Street from the trail crossing to the entrance to the Huntingfields estate.

Cost Estimate

Trail construction: \$230,668 (does not include cost of right-of-way acquisition)





Short connecting trail. Davis, CA



10'



Ball fields at John Walter Smith Park are close as the crow flies to Huntingfields development.

15 Extend the Snow Hill Bikeway Along Timmons Street

Context

East Market Street has a wide paved shoulder/ marked bike lane from the Foodrite grocery store heading east as far as the Worcester Highway (MD 113). However, it is not easy for people on bikes of all ages and abilities to access this bikeway. Bay Street and the section of East Market Street from Bay Street to the grocery store are not comfortable roads to ride on and they do not feel safe for people who are less confident riders.

East Martin Street and Timmons Street provide a direct connection from near the end of the proposed shared use path along the former rail line and the old train station at Belt and Collins Street to East Market Street without having to use Bay Street.

Recommendation

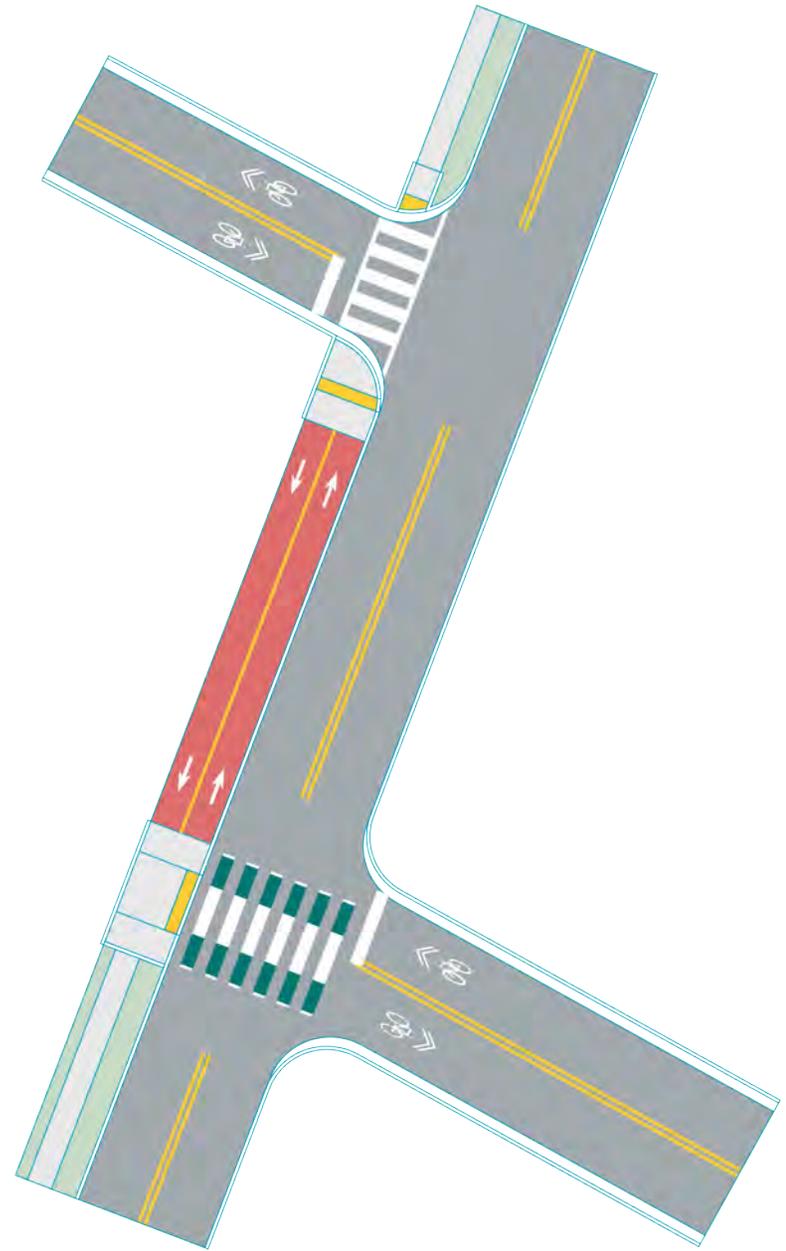
Extend the signed bikeway from Purnell/Collins Street along East Martin Street, across Bay Street, and along Timmons Street to East Market. The Town should work with [SHA] to make safety improvements at the Bay Street intersection that create a safe crossing for people walking and biking. Additionally, signing, markings, and traffic calming measures are needed to keep traffic speed and volume to a minimum on the local residential roads in this segment.

This intersection is managed by MDOT SHA. All recommendations for this segment must follow the Maryland Manual of Uniform Traffic Control Devices. Coordination with MDOT District 1 Office will be essential to confirm intersection changes.

Cost Estimate

Intersection change, markings: \$25,277





Offset intersection of Martin Street and Timmons Street at Bay Street.

Implementation and Next Steps

Prioritization

The segments of the proposed bikeway vary in complexity, ease and cost of implementation, and likely impact on encouraging more people in town to use a bike. The sections of paved trail (segments 4 and 7), for example, are relatively expensive but will make a visible and immediate impact on the perception of residents and visitors that there is a new place to ride; they will also connect to destinations and other longer-distance trails. The segments featuring local residential roads (e.g., segments 1 and 9) are quite inexpensive and require little construction work but are not going to make an immediately noticeable difference to the bikeability of the town. Changes to Market Street (segments 2 and 10) are in the middle of the cost range and require negotiations with MDOT but will make a dramatic impact by eliminating barriers to biking in key locations. Segments 4, 5, and 6, on Coulbourne Lane and Church Street, have great potential to transform the way local students get to and from school – shifting from a reliance of driving/being driven to independent, healthy, and sustainable travel habits that will last a lifetime.

The consultant team developed a simple prioritization matrix to help determine the relative costs and benefits involved in implementing each section. Ultimately, decisions about which project to pursue when and in which order are also heavily opportunistic and affected by other projects, grant timing and availability, and other unknowns.

Cost. Projects that require simple signing and road markings are scored the lowest. New sections of trail score the highest. Many of the projects in the mid-range for costs involve reallocating roadway space with paint, posts, and concrete dividers without requiring changes to the curb or drainage.

Complexity. This score relates to the relative ease of Implementation for each project. The simplest projects, with the lowest scores, are those that the Town could implement without the need to negotiate with other agencies, landowners etc., and which require no loss of parking or road space. The hardest projects to implement are those that require coordination with MDOT, acquiring easements, and construction involving changes to curbs and drainage.

Impact. In the absence of a formal demand analysis, the scores for impact relate to the likely change in the number of people biking in the town, as well as the visibility of the project when completed. Projects such as the bikeway segments by the schools have a high potential to increase bicycle use and will be very visible, so they have the lowest scores. Signing local residential roads as part of the bikeway will have little visible impact – those roads are already low stress for people on bikes – but are important for the continuity of the route.

Safety. Fortunately, fatal and serious traffic crashes are very rare in the town of Snow Hill. However, the perception of safety is an important

factor in determining whether people are willing to ride a bike or not. Low safety scores are given to projects that will do the most to raise the perception of safety on busier roads such as Market Street. High scores are given to projects that are unlikely to change perceptions.

Equity. In the absence of a formal equity analysis, the scores for equity relate to the degree to which the bikeway segment will serve areas of the town with low-income households and households without access to a motor vehicle. Sections of the bikeway that increase access to parts of the town that are typically underserved have an equity score of 1 or 2; higher values are given to those segments that do not reduce inequities in access to jobs, schools, recreational activities, shops, and services.

Connectivity. The bikeway helps connect destinations throughout the town. However, there are some sections that provide a unique or new level of access to people on bikes (for example, a new connection to J Walter Smith Park) that are given the lowest score of 1. These are also sections that typically offer the most benefit as stand-alone projects.

Priorization Matrix: Snow Hill Bikeway Segments

Segment#	1a	1b	2a	2b	3	4	5	6	7	8	9	10
Cost	1	2	3	2	5	3	3	3	4	1	1	4
Complexity	1	2	4	2	3	2	2	3	2	1	1	3
Impact	4	3	1	2	2	2	2	2	1	4	3	1
Safety	3	2	2	4	1	1	1	1	1	3	4	1
Equity	4	3	2	1	1	2	1	1	1	3	1	2
Connectivity	2	1	1	2	1	1	2	1	1	2	2	1
	15	13	13	13	13	11	11	11	10	14	12	12
Segment#	11	12	13	14	15							
Cost	4	3	2	2	3							
Complexity	3	3	2	2	3							
Impact	1	3	2	1	3							
Safety	1	2	1	1	1							
Equity	3	4	2	1	1							
Connectivity	2	1	2	1	1							
	14	16	11	8	12							

Based on this assessment, the highest priority projects are the connection between Huntingfields and J Walter Smith Park (segment 14), the rail-trail providing access to the High School (segment 7), and the on-road changes to

Coulbourne Lane and Church Street (segments 4-6) that increase bike access to the schools. The projects with lower values tend to be those that use local roads that are already low stress for people on bikes.

Partners

Implementation of the Snow Hill bikeway project will be a collaborative initiative involving a variety of government agency partners at the Town, County, and State level, as well as support from community-based organizations such as the Worcester County Bicycle and Pedestrian Coalition. Town departments involved in the development of the feasibility study included the Town Manager, Deputy Town Manager, Director of Economic Development, Grants Administrator, Supervisor of Public Works, and the Police and Fire Departments. Local groups, including Downtown Snow Hill Main Street and Backstreet Bikes, will also be instrumental in seeing the project to fruition, particularly as the bikeway complements other local initiatives so well.

At the County level, there is interest from the Office of Tourism and Economic Development as well as the Parks and Recreation Department; the County public works department is supportive of similar projects. Worcester County Public Schools was not part of the feasibility study but should be engaged as the projects on Coulbourne Lane and Church Street are developed. The Worcester County Bicycle and Pedestrian Coalition has already organized rides on sections of the proposed bikeway in Snow Hill and will provide critical input and support into implementation projects.

At the State level, participants from the Maryland Department of Natural Resources, Forest Service and staff from State Parks participated in discussions about the exciting connections to trails

and recreation facilities on public lands along the Pocomoke River to the west. The Maryland Department of Transportation has reviewed the feasibility study and provide initial funding for the report; their participation as projects move forward on State roads will be essential. There are also opportunities to tap into the support of regional organizations such as the Lower Shore Land Trust to coordinate with ongoing conservation and recreation projects in the area.

Each of these entities has a unique contribution to make to the implementation of the bikeway in the form of funding, staff capacity, land ownership and management, access to resources, public and political support, and local knowledge and contacts. It will take a concerted and coordinated effort on part of these organization to build the bikeway and the consultant team recommends the creation of a Bikeway Task Force to lead the initiative.

Summary of Cost Estimates

	Location	Subtotal	15 % Design and Construction Engineering	20% Contingency	Total Cost
1A	East Green Street	\$2,000	\$300	\$400	\$2,700
1B	West Green Street	\$433,395	\$65,009	\$86,679	\$585,083
2A	West Market Street	\$347,725	\$52,159	\$69,545	\$469,429
2B	Dighton Ave	\$53,600	\$8,040	\$10,720	\$72,360
3	Dighton Ave to Coulbourne Lane	\$684,720	\$102,708	\$136,944	\$924,372
4A	Coulbourne Lane to Town Line	\$180,675	\$27,101	\$36,135	\$243,911
4B	Coulbourne Lane to Town Line	\$429,000	\$64,350	\$85,800	\$579,150
5	Coulbourne Lane from Town Line to Church Street	\$188,750	\$28,313	\$37,750	\$254,813
6	Church Street (High School)	\$83,000	\$12,450	\$16,600	\$112,050
7	Trail From Church Street to Purnell Street	\$1,254,280	\$188,142	\$250,856	\$1,693,278
8	South Washington Extension	\$2,400	\$360	\$480	\$3,240
9	Purnell, Federal, Collins, and Martins Street	\$16,400	\$2,460	\$3,280	\$22,140
10	East Market Street	\$41,400	\$6,210	\$8,280	\$55,890
11	Intersection of Green Street and Washington Street	\$332,400	\$49,860	\$66,480	\$448,740
12	Intersectino of West Green Street, West Market Street, and Church Street	\$140,360	\$21,054	\$28,072	\$189,486
13	Intersection of West Market Street, Ross Street and the Byrd Park Entrance Road	\$10,500	\$1,575	\$2,100	\$14,175
14	Connection from Huntingfield subdivision to John Walter Smith Park	\$170,880	\$25,632	\$34,176	\$230,688
15	Extend the Snow Hill Bikeway Along Timmons Street	\$18,724	\$2,809	\$3,745	\$25,277
16	Wayfinding	\$22,000	\$3,300	\$4,400	\$29,700
TOTAL		\$4,412,209	\$661,831	\$882,442	\$5,956,482
			\$1,544,273		

*Information contained in this document is for planning purposes and should not be used for final design of any project. All results, recommendations, concept drawings, cost opinions, and commentary contained herein are based on limited data and information typically available during the project planning process. However, no project planning tool can account for all possible factors that can affect costs and modifications to this tool may be needed to reflect those factors. Further analysis and engineering design are necessary prior to implementing any of the recommendations contained herein.

Funding

The Town of Snow Hill should be creative and strategic in funding of implementation of the bikeways route. Town staff should work with key consultants and partners to further determine the feasibility of specific segments as well as develop construction documents. State agencies such as the State Highway Administration, Department of Natural Resources, and Department of Housing and Community Development will be critical to funding the projects. Key state funding sources for implementation of the bike route include:

Maryland Department of Housing and Community Development

- Community Development Block Grant
<https://dhcd.maryland.gov/Communities/Pages/programs/CDBG.aspx>
- Community Legacy Program
<https://dhcd.maryland.gov/Communities/Pages/programs/CL.aspx>
- State Revitalization Programs
<https://dhcd.maryland.gov/Communities/Pages/StateRevitalizationPrograms/default.aspx>
- Sustainable Communities Program
https://dhcd.maryland.gov/Communities/Approved%20Sustainable%20Communities/Snow%20Hill_app.pdf

Maryland Department of Natural Resources

- Community Parks and Playground Program
<https://dnr.maryland.gov/land/Pages/ProgramOpenSpace/cpp.aspx>
- Program Open Space
<https://dnr.maryland.gov/land/Pages/ProgramOpenSpace/Program-Open-Space-101.aspx>

Maryland Department of Transportation

- Fund 88 – Bicycle Retrofit Program
<https://www.roads.maryland.gov/mdotsha/pages/Index.aspx?PagelId=707>
- Highway Safety Improvement Program Grants
<https://roads.maryland.gov/mdotsha/pages/pressreleasedetails.aspx?newsId=4157&PagelId=818>
- MDOT Kim Lamphier Bikeways Network Program
<https://www.mdot.maryland.gov/tso/pages/Index.aspx?PagelId=28>
- Maryland Scenic Byways Program
<https://roads.maryland.gov/mdotsha/pages/Index.aspx?PagelId=97>
- Recreational Trails Program
<https://roads.maryland.gov/mdotsha/pages/Index.aspx?PagelId=98>
- Transportation Alternatives Program
<https://roads.maryland.gov/mdotsha/pages/Index.aspx?PagelId=144>

U.S. Department of Transportation

RAISE Grants

<https://www.transportation.gov/RAISEgrants>

Safe Streets for All

<https://www.transportation.gov/SS4A>

Rural Surface Transportation Grant Program

<https://www.transportation.gov/grants/rural-surface-transportation-grant>

Federal grant funds, such as the CMAQ-AA, RAISE and Safe Streets for All, may also be good opportunities to explore if state funds have been exhausted. Various grants and loans are available from state and Federal funding sources. Most grants are awarded on a reimbursement basis, which requires the Town to fund the projects upfront through local (or other) sources.

Seeking private funding and partnerships, such as the Chesapeake Bay Trust Green Streets, Green Jobs, and Green Towns (G3) grant, as well as philanthropic donations, such as from key companies in the region or through an adopt a trail segment, are also possible ways to fund the implementation of the bikeway. Creating development conditions developers providing for walking and biking improvements adjacent to developments can be another way to implement segments and future connections.

Funding Pitch

The Snow Hill Bikeway serves a wide variety of purposes and helps achieve numerous policy goals at the local, regional, and state level. The bikeway will promote bicycling for both transportation and recreation, offering a safe, convenient, and healthy means of travel for people of all ages and abilities in the town. The project helps to eliminate economic and social disparities by offering people without the means to own a car access to jobs, services, schools, shops, and recreational opportunities. At the same time, the bikeway is an attractive destination for vacationers and bike enthusiasts with disposable income. The project is quite unique in simultaneously helping to support goals related to economic development and tourism; health, sustainable growth; safety; equity; air quality; transportation, and energy efficiency. The bikeway perfectly complements ongoing community and economic development projects such as the Waterfront Trail, Main Street initiative, Byrd Park restoration, downtown traffic plan, and strategies to encourage housing, retail, and commercial development in the town.

Indeed, the bikeway can be a major selling point for future investors, prospective residents, and year-round visitors to the Eastern Shore looking for an active, fun destination to enjoy.



