

The heart of the Northern Neck

THE TRIWAY TRAIL

Master Plan Report

June 10, 2022



A celebrated public/private partnership to improve the health and transform the economy of the most elderly rural region in the United States. This report summarizes the master planning efforts for The TriWay Trail. The report contains design guidance and is tailored to the needs of creating a multimodal path system.



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Introduction

Lancaster County, Virginia is a coastal community centrally located between Hampton Roads, Richmond, and Washington D.C. Anchored by a unique grouping of sophisticated amenities, it is eastern Virginia's quality-of-life leader, with a long history of attracting retirees. Out of more than 3,000 counties nationwide, Lancaster and adjoining Northumberland are the two most elderly contiguous rural counties in America.

This influx of retirees and exodus of working-aged adults in search of career opportunities has created a concerning population imbalance. Even with its Chesapeake Bay attractions, this community is not immune to problems of job creation that often plague rural areas that result in widening economic disparities and accelerating the departure of younger residents.

The TriWay Trail is designed to help bridge that gap. A County government initiative with near-universal support by citizens as well as federal, state, and local representatives, the Trail has been embraced as the "one big thing" to improve two major community focuses: the health needs of the elderly and the economic growth essential to the local workforce.

This proposed nine and a half mile trail will add a transformational amenity running through the middle of the county's designated growth zone, connecting the charming villages of Kilmarnock, Irvington, and White Stone. It also links together a major portion of the community's key service providers, including a regional hospital, YMCA, Free Health Clinic, and all public schools. The route is dotted by restaurants, ice cream and coffee shops, clothing boutiques, and an entertainment complex with batting cages, rock climbing walls, putt-putt golf, and an arcade.

Just as tourism built the local retirement market, the TriWay Trail can build a new millennial sensibility. In 2017, Time Magazine reported Hampton Roads and Richmond as the #1 and #2 fastest-growing cities in America. The third surrounding city, Washington, D.C., has always been seen as a thriving city and Amazon's HQ2 is fueling sector growth.



One of many destinations in the region at the Tides Inn, Irvington, VA

The TriWay Trail will attract surrounding millennials looking for meaningful experiences. In addition to tourism growth, this community is ideally suited for work-from-homers and small businesses seeking quality of life post-COVID.

Because of limited County staffing, this initiative is being facilitated by a highly qualified group of community volunteers under a public/private partnership memorandum of understanding (MOU) with Lancaster County. The Board of Supervisors approves all actions, has pledged financial support, and acts as the applicant for related grants.

Early in the planning process, public support was clearly demonstrated, with 95% of the needed property owners verbally committing to donate the rights-of-way from Kilmarnock to Irvington. Additionally, a survey open for three weeks garnered 700 enthusiastic responses— an impressive endorsement from a community of 5,287 households.

The TriWay Trail is that hard-to-find rural project that makes sense on all levels; It complements more than \$100M in investments underway through businesses, new schools, hospital renovations and community-wide broadband installation. It will also be a model for how trails can improve the health of aging Americans while revamping the local economy and attracting a more diverse and vibrant workforce.



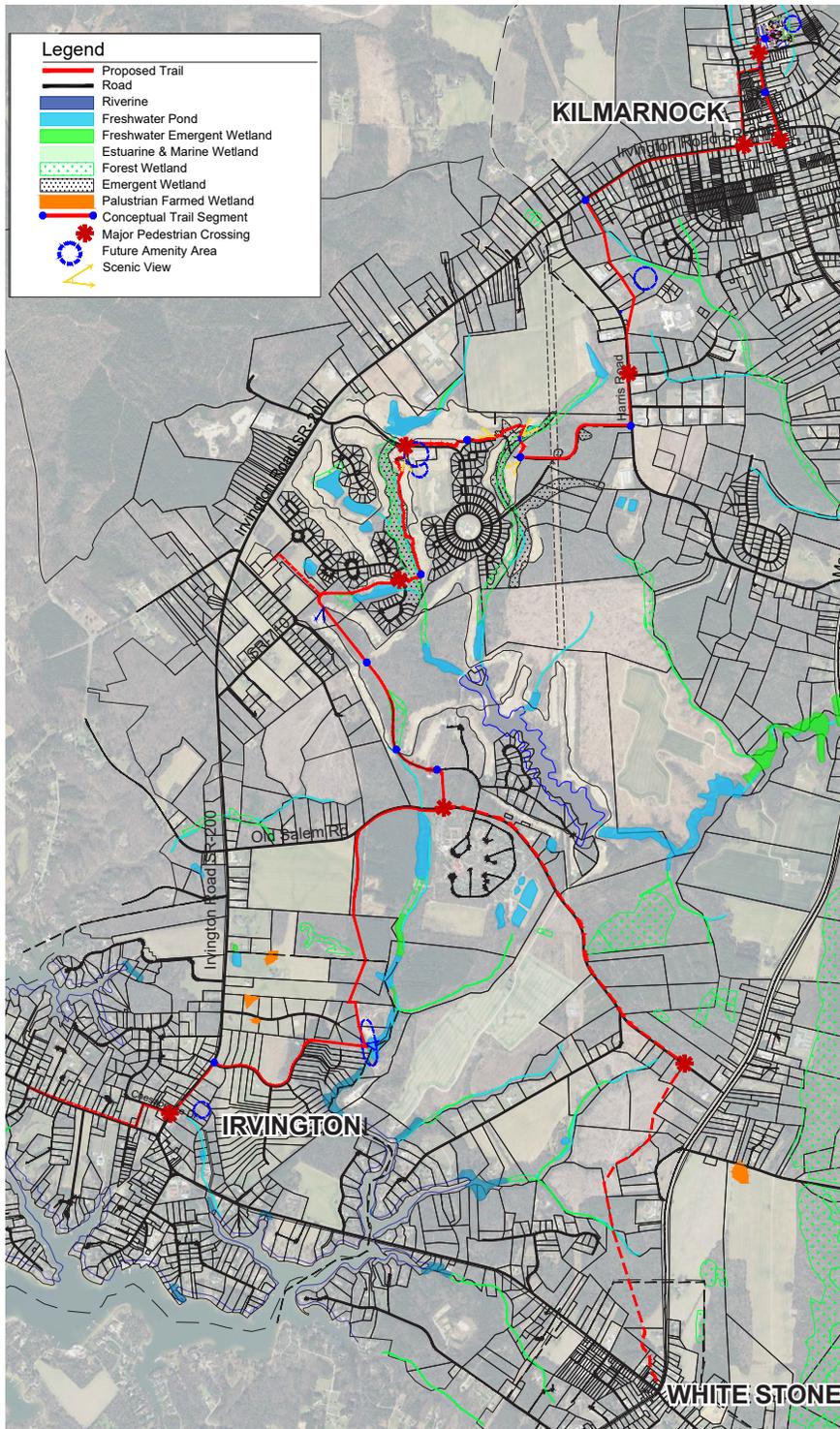
Regional Context



Lancaster County, Va. is a coastal community centrally located between Hampton Roads, Richmond, and Washington D.C. The proposed nine and a half-mile trail system will connect Kilmarnock, Irvington, and White Stone to each other and the communities in-between. The proximity to the Chesapeake Bay and Rappahannock River give this region a nautical feel. Lancaster County is connected to the land to the south via the Route 3 bridge over the Rappahannock River. At this time, the Route 3 bridge has no pedestrian or bicycle accommodations.



Opportunities and Constraints



In 2021, The TriWay Trail Board teamed with LPDA and their consultants to explore the feasibility of constructing a shared-use path to connect the three towns in Lancaster County, Virginia– Kilmarnock, Irvington, and White Stone. After reviewing the proposed route, LPDA and The TriWay Trail team conducted a two-day project kick-off workshop, which included meetings with stakeholders, trail route exploration and investigation, discussions about constraints and opportunities, and visits to the potential trailhead locations.

LPDA and Bay Design Group worked together to develop an Opportunities and Constraints package (overall map on this page) and researched alternative trail materials, construction techniques, and routes.

During this investigation and analysis process, the team identified the following opportunities for The TriWay Trail:

- Connect to Kilmarnock Town Centre Park, which will provide parking and trailhead amenities.
- Connect to the YMCA, Free Health Clinic and Rappahannock General Hospital (and potentially a fitness loop path).
- Utilize portions of paths of former golf course in Hills Quarter.
- Connect to the former Hills Quarter Golf Club House (potentially transformed into a Visitor Center and Regional Museum with trailhead amenities).
- Connect to Compass Entertainment Complex.
- Connect to the Golden Eagle Golf Course and Rappahannock Westminster Canterbury retirement community.
- Connect to Irvington Town Commons and shops.
- Connect to White Stone and restaurants.



Survey Results

The TriWay Trail Board asked the community for input via a public survey that asked a series of questions and requested comments. Close to 700 people responded to the survey, the majority of which live in Lancaster County. Over 50% of the respondents were over the age of 55 and over 90% said they regularly go walking or hiking for outdoor exercise.

When reviewing the results of the survey, the Team recognized the need to determine which user groups the trail should include. An additional study was conducted to determine the feasibility and implications of providing access to electric recreational vehicles. It was determined that The TriWay Trail would accommodate walkers, runners, cyclists, strollers, skaters, wheelchairs and other mobility devices, as well as e-bikes and trikes.

SURVEY RESULTS EXCERPTS:

What general features/ amenities do you believe a multi-use trail connecting the three villages should include?

Directional and way-finding marker	89.27%
Interpretive/historical signage at points of interest	71.15%
Water access	43.50%
Art program	17.07%
Nature Preserve	61.78%
Gardens	47.13%
Fitness/exercise stations	56.04%
Bicycle repair stations	26.28%
Frisbee golf	18.73%
Connector to COMPASS Entertainment Center	37.61%
Rest areas & seating	88.37%
Picnic Areas	65.71%
Access to drinking water	69.79%
Toilet facilities	76.59%
Parking	75.38%
Pet Areas	54.23%
Wheelchair accessibility	49.40%
Lighting	51.36%
WiFi	22.51%
Emergency phones	37.31%

The TriWay Trail Survey

-700 Responses

-60% of respondents in 55+ Age Group

-95% of respondents feel The TriWay Trail would be a great addition to the region

Survey comments:

"This would be a fantastic resource for both locals and tourists."

"What a terrific addition to our terrific community!"

"I would love to use it, and it will be a great tourist draw for the area."

"This would be wonderful! I am a huge fan of the idea and would use it a ton with friends and family."

What safety or maintenance concerns do you have about a new trail?

Safety	50.69%
Trash/Litter/Graffiti	77.25%
Uneven/rough surface	30.23%
Unclear trail signage	25.50%
Parking	30.38%
Other Trail Users	11.60%
Dogs off leash	51.45%
Other (please specify)	13.44%

Which access point to the trail (trailhead/kiosks) would you use most often?

Irvington	29.46%
Kilmarnock	49.09%
White Stone	25.83%
Hills Quarter	26.59%
Other	2.11%



Regional Character

The TriWay Trail will add a transformational amenity running through the middle of the County's designated growth zone, connecting the charming villages of Kilmarnock, Irvington, and White Stone. It also links together a major portion of the community's key service providers, including a regional hospital, YMCA, Free Health Clinic, and all public schools. The route is dotted by restaurants, ice cream and coffee shops, lodging options, boutiques, and an entertainment complex.



The Tides Inn, in Irvington, is a four-star waterfront resort that was established in 1947. It will be accessed by a spur trail through Irvington.



Dream Fields Sports Complex is located on Irvington Road, between Kilmarnock and Irvington. It will be accessed by The Trail.



Compass Entertainment Complex is located on Irvington Road, between Kilmarnock and Irvington. It will be accessed by The Trail.



Main Street in Downtown Kilmarnock is composed of cafes, restaurants, ice cream shops, art galleries and clothing boutiques.



Irvington is a town steeped in history with two nationally recognized inns, a farmer's market as well as numerous restaurants which offer locally sourced foods.



White Stone is a charming small town which offers a surprising number of restaurants as well as an art gallery.



Trail Benefits



NORTHERN VIRGINIA POTOMAC HERITAGE NATIONAL SCENIC TRAIL:
Benefits of the Existing Trail
January 2022

\$404 million in health benefits
\$86 million of direct economic impacts
\$4 million in avoided transportation costs

Health Benefits

REDUCED MORTALITY BENEFITS

9 million miles walked annually → 13 deaths prevented \$139 million
30 million miles biked annually → 19 deaths prevented \$210 million

AVOIDED HEALTH CARE COSTS

2.7 million walking trips lasting at least 30 minutes → \$23 million avoided health care costs
3.8 million biking trips lasting at least 30 minutes → \$32.3 million avoided health care costs

Economic Benefits

TRAIL-FACING BUSINESSES

\$86.8 million in total annual outdoor retail and restaurant revenue generated by 254 trail-facing businesses

Transportation Benefits

COMMUTING

Based on data from StreetLight, commuting on the PHNST accounts for:

1.9 million miles of walking annually
4.6 million miles of biking annually
45,000 miles of commuting each year per average mile of trail

AVOIDED TRANSPORTATION COSTS

\$3.7 million personal vehicle costs avoided
\$480,000 environmental costs avoided

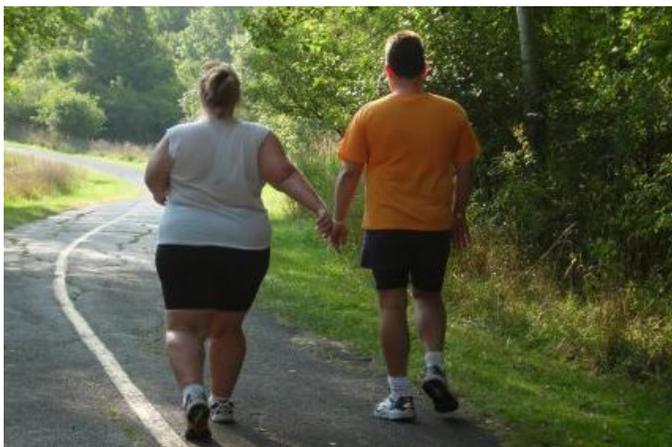
Reductions in environmental pollutants:
27 metric tons of CO
1.2 metric tons of NOx
2,500 metric tons of CO2e




<https://www.novaregion.org/1533/Equity-and-Economic-Study>



Info graphic from the Northern Virginia Potomac Heritage National Scenic Trail. Shows the health, economic, and environmental benefits of the existing urban/suburban trail in the Washington DC area.



Regular physical activity, accessible to all members of the community, leads to improved physical and mental health.

The TriWay Trail will provide health, economic, and social benefits for the residents and businesses in the region. The Virginia Department of Health ranks Lancaster County with a low overall health opportunity index: 96 out of 134 localities. Improving and creating new access to trails will equate to health care cost benefits and will directly contribute to improving the health of the most elderly rural region in the United States and reducing health care costs. The Trail, once established, will have immediate impacts:

- The TriWay Trail will offer a nine and half-mile surface which will have thousands of cumulative bicycle and walking miles annually.
- Bicycling and walking along The TriWay Trail is expected to keep residents active and decrease the prevalence of adverse health conditions such as heart disease, diabetes, and other chronic health conditions.
- According to the U.S. Department of Health and Human Services, 150 minutes a week of regular, moderately intense physical activity provides health protection from many chronic health conditions, including heart disease, stroke, diabetes, and others.
- By improving the health of senior citizens, there will be regional benefits with decreased mortality and substantially reduced healthcare costs.
- The Social Vulnerability Index developed by the Virginia Institute of Marine Science classifies the project area as High Social Vulnerability and the rest of Lancaster County as Moderate Social Vulnerability, therefore creating a free and accessible trail for all, increases opportunities for social interactions and social equity.
- The Trail system will enable a healthier community by incorporating healthy spaces, access to health care, and active living.

Health cost savings of similar trails projects have been quantified and present significant annual benefits. A study by BBC consulting conducted on The Potomac Heritage National Scenic Trail (PHNST) found residents in the Northern Virginia study area might see \$55 million in annual benefits from avoided health care expenses. This annual savings represents more than \$390,000 in annual avoided health care benefits per mile of trail each year. The study also found reduced mortality benefits. It is estimated that the PHNST currently helps prevent about 32 deaths per year by providing protection from deaths associated with



Trail Benefits

sedentary living (e.g., heart disease and diabetes). Using an economic benchmark of \$11 million per avoided fatality, the value of which is calculated regularly by the USDOT, models suggests that there are \$349 million in annual reduced mortality benefits.

In addition to the health benefits, trails can be associated with higher property value. Trails create an amenity that commands a higher price for nearby homes. Trails are valued by those who live nearby as places to recreate, provide convenient opportunities for physical activity and improving health, and offer safe corridors for walking or cycling to work or school. Legal, well-marked access eliminates problems with trail users trespassing. When trails increase property value, local governments receive more property tax revenue. Depending on the trail, this revenue boost can help to partially offset the trail's construction and maintenance costs. Depending upon the proximity of the trail to a property, trails can increase property values anywhere from 2-14%.



The Hope and Glory Inn in Irvington.



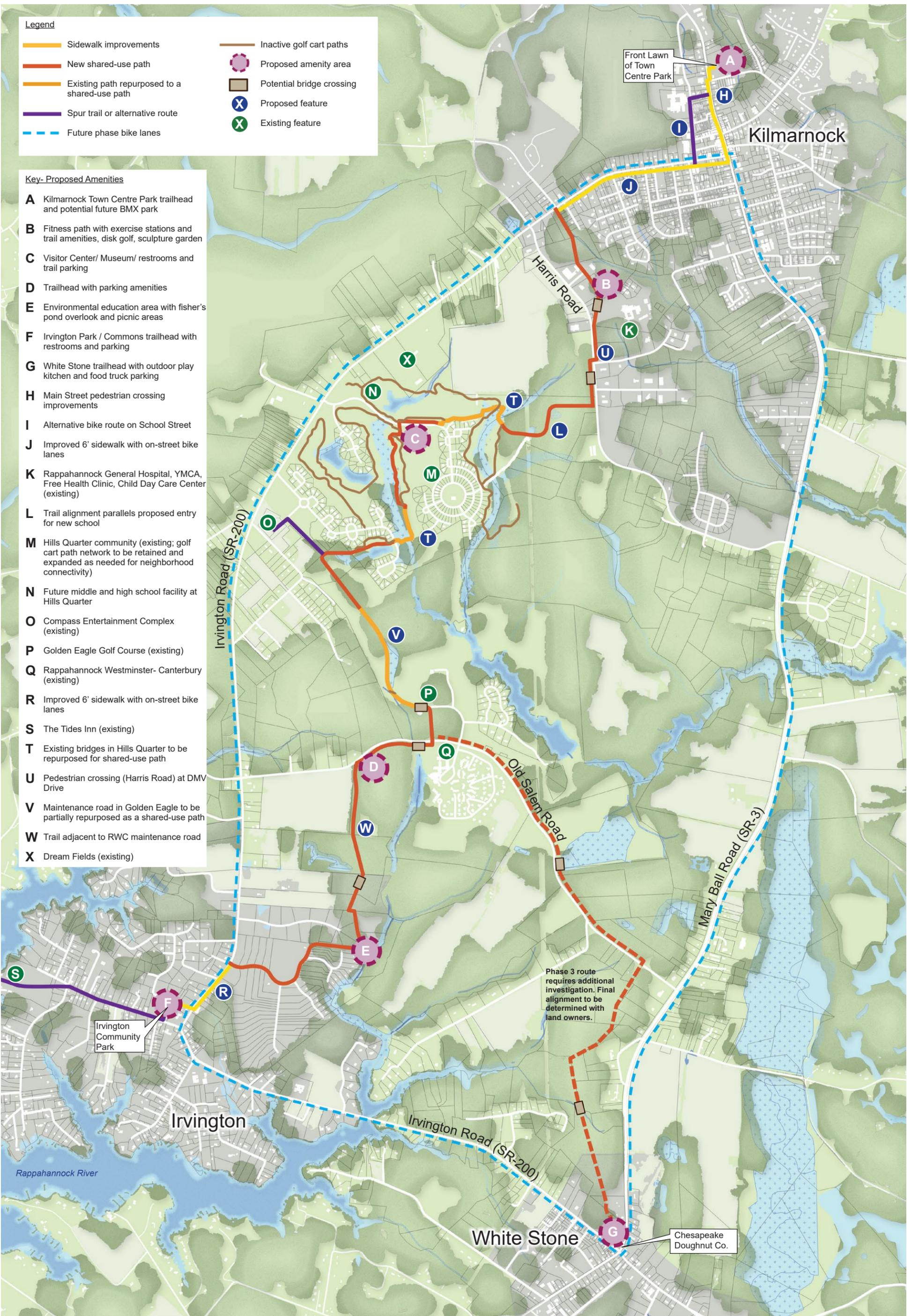
Concert at Kilmarnock Town Centre Park in Kilmarnock

Design Concept

In late 2021, LPDA and The TriWay Trail team reviewed the survey results, Opportunities and Constraints exercises, stakeholder input, environmental information, user group study, VDOT (Virginia Department of Transportation) and DCR (Department of Conservation and Recreation) requirements, and the Economic Impact study to determine the program for The TriWay Trail. The 9.5-mile trail corridor was divided into three phases (see phasing on page 29), connecting the three towns, schools, health care facilities, public amenities, and retail locations. Refer to the Conceptual Master Plan on the following page. Trailheads, trail facilities, signage and amenities, and technical trail details are explored on subsequent pages.



These oversized, fiberglass Watermen's boots are iconic symbols honoring the Watermen and Waterwomen who make their living on the Chesapeake Bay and its tributaries.



Legend

- Sidewalk improvements
- New shared-use path
- Existing path repurposed to a shared-use path
- Spur trail or alternative route
- Future phase bike lanes
- Inactive golf cart paths
- Proposed amenity area
- Potential bridge crossing
- X Proposed feature
- X Existing feature

- Key- Proposed Amenities**
- A** Kilmarnock Town Centre Park trailhead and potential future BMX park
 - B** Fitness path with exercise stations and trail amenities, disk golf, sculpture garden
 - C** Visitor Center/ Museum/ restrooms and trail parking
 - D** Trailhead with parking amenities
 - E** Environmental education area with fisher's pond overlook and picnic areas
 - F** Irvington Park / Commons trailhead with restrooms and parking
 - G** White Stone trailhead with outdoor play kitchen and food truck parking
 - H** Main Street pedestrian crossing improvements
 - I** Alternative bike route on School Street
 - J** Improved 6' sidewalk with on-street bike lanes
 - K** Rappahannock General Hospital, YMCA, Free Health Clinic, Child Day Care Center (existing)
 - L** Trail alignment parallels proposed entry for new school
 - M** Hills Quarter community (existing; golf cart path network to be retained and expanded as needed for neighborhood connectivity)
 - N** Future middle and high school facility at Hills Quarter
 - O** Compass Entertainment Complex (existing)
 - P** Golden Eagle Golf Course (existing)
 - Q** Rappahannock Westminster- Canterbury (existing)
 - R** Improved 6' sidewalk with on-street bike lanes
 - S** The Tides Inn (existing)
 - T** Existing bridges in Hills Quarter to be repurposed for shared-use path
 - U** Pedestrian crossing (Harris Road) at DMV Drive
 - V** Maintenance road in Golden Eagle to be partially repurposed as a shared-use path
 - W** Trail adjacent to RWC maintenance road
 - X** Dream Fields (existing)

Phase 3 route requires additional investigation. Final alignment to be determined with land owners.

Trail Amenities



Restroom facility



Custom bench

A trailhead is technically where a trail begins. The term Trailhead is also used to describe a location along a trail where there is access to the Trail from a parking area, park, or another trail or pathway. In the case of The TriWay Trail, there are four types of trailheads:

- **Primary Trailhead-** located in Kilmarnock, Irvington, and White Stone. These trailheads will include parking, e-bike charging stations, bike repair station, seating options, restroom facilities, water bottle station, and trail signage and information.
- **Secondary Trailhead-** located adjacent to Westminster Canterbury along Old Salem Road, and near the Northern Neck Family YMCA and Rappahannock General Hospital. These trailheads will have limited amenities, but will both include parking, seating, and trail signage and information.
- **Spur Trailhead-** located at Compass Entertainment Complex, Dream Field sports complex, Golden Eagle Golf Course, and eventually the new school complex. These trailheads will include directional signage to the Trail and trail information.
- **Visitor Center Trailhead-** located in the Hills Quarter Community, utilizing the former golf club house and adjacent buildings. This trailhead will include parking, restroom facilities, a visitor center, seating options, e-bike charging and bike repair stations, trailhead signage, and trail and community information. There may be additional amenities included as the visitor center is developed.



Trailhead signage kiosk



Trailhead signage kiosk with shelter



Bike repair station



Drinking fountain/ bottle filling station

Additional amenities will be located strategically along the Trail. These can include seating options (benches or picnic tables, which could be donor-funded as commemorative features), mile markers and other trail signage, and informational or interpretive signs.



E-bike charging station



Commemorative benches and tables

The Trail will be operated as a linear park and will be open from dawn to dusk. Restroom facilities can be locked via a timer from dusk to dawn. The need for site lighting is minimal.



Trail Signage



Signage will be required in many forms and locations along The TriWay Trail. It will be used to identify the Trail system, instruct trail users of trail rules, provide information and directions, warn of potential hazards, and to create brand recognition. A signage plan will need to be created to support trail use. One of the fundamental objectives of the signage plan is to clearly convey the identity and whereabouts of the attractions within The TriWay Trail corridor. Signage should be used in a consistent manner throughout the Trail in order to guide visitors in a systematic fashion. This has the dual advantage of promoting the Trail and the diverse attractions within it. An effective signage/wayfinding system functions not as a separate entity but as an integral part of its environment. Carefully planned signs communicate essential information while also enhancing the urban environment. As the visual introduction to the community, signs play a prominent role in defining the Trail's identity and boundaries. Sign typologies which need to be considered as part of the system include:



Gateway signage

These signs will identify major visible access points, starting points, and are often used to alert potential users of the amenity in a visual manner which also builds brand recognition through consistent color, text, and logo design. These signs typographic sizing is required on all community roadways with vehicle speeds more than 45 miles per hour. These signs should be located at both ends of the Trail in areas that are main vehicular roadways closest to the trailheads. The format includes reflective graphics.

Trail head signage

Trail head signs identify key access points with permanent facilities while also identifying geographic place. They also may indicate essential amenities and enforce branding. These signs should be used on trailheads or main points of access to the Trail, in parks where it is necessary to orient visitors to access to the Trail and parking areas. This sign will include the name of the trailhead or access point, parking information and symbols displaying amenities available at the segment of the Trail.



Vehicular directional

These signs are placed along major approach corridors and roadways leading to trailheads to help drivers find the facilities. These signs should be used to convey directional information to the trailheads and along the Trail. They should be located in advance of decision points and convey the access points and whereabouts of neighboring trail segments, parks, and tourist destinations within a reasonable distance from the Trail.

Parking identification

These signs should be used to convey parking information at the trailheads and main access points for which public parking is available. They should be located in advance of the entrances to the parking and display the trailhead or access point name.

Pedestrian/bike directional (confirmation, turn, decision)

These signs should be used to convey directional and time or distance information along the Trail. They may be located at or slightly in advance of decision points and convey the whereabouts of neighboring trail segments, parks, municipalities, and tourist destinations within a reasonable distance from the Trail.

Potential wayfinding concept for installation on the Trail. Signage like example above could offer a way of connecting the region to other destinations around the globe.



Trail Signage



Potential interpretive and informational concept for installation on the Trail. Sign panels could be dual- or single-sided, depending on location.

Pedestrian Informational kiosks

This sign type should be used on trails, in parks or other attractions where it is necessary to orient visitors and provide trail identification and “You are Here” information. The map section of the sign may include the full trail or a trail segment map with graphics & legend of destinations information pertaining to that trail segment.

Mile markers

This sign type or marker should be a series of numbered markers placed along the Trail at intervals of one mile or occasionally, parts of a mile. They are typically located at the side of the Trail. Mileage will be measured as the distance along the Trail from a fixed commencement point. The commencement point does not have to necessarily be the beginning of the 23-mile trail. The commencement can be the access point of a particular trail segment so that parallel segment will not have conflicting mile markers.

Rules and regulatory

These signs can be used to provide special regulatory information for the Trail. The content for these signs will include the Trail identification (logo) and regulatory content by each locality. The format includes reflective graphics. Signs can be one or two sided.

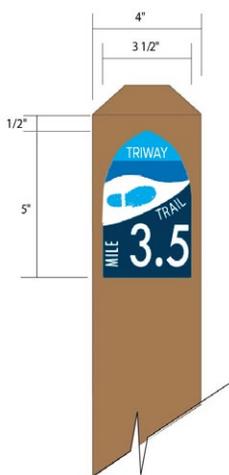
Informational/interpretive

These signs can be used for free-standing interpretive signage in the vicinity of the Trail. The content for these signs will include the Trail identification (logo) and may include heading copy, text, graphic illustrations, and photographs. Sizing of copy and graphics will be determined based on the contents selected.

Interpretive signage and interpretive elements should be used to tell the story of the unique history, culture, and environment of The TriWay Trail regions. This content also helps to build and support the brand identity of the region and trail. It also helps to present the information that, for better or worse, has influenced the region’s past and present socio-economics, industry, and environment. Subject matter may include but is not limited to the following.

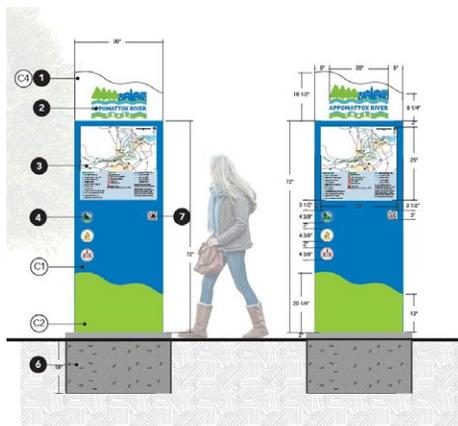
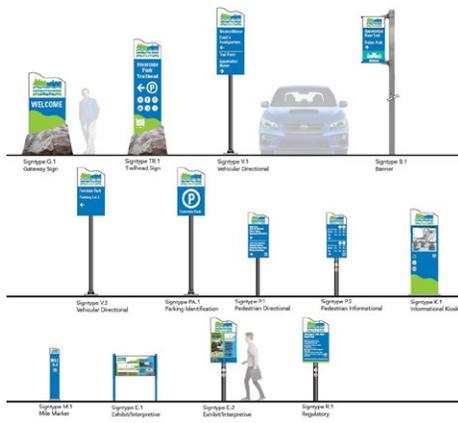
- Discovery and settlement
- Local endeavors, business, and Industry
- People
- Architectural and landscape features
- Environmental systems
- Plants and ecology
- Socio economic and political factors

Other identification and interpretive elements can and should be included along the Trail to indicate and celebrate the area’s culture, history, and environment. This may include public art, landscape features, landscaping, etc. These elements may also serve as waypoints. For example, The watermen’s boots offer a branding opportunity for the Trail. The Trail marked with groupings of boot prints near trailheads and strategic locations would be a great way to connect The TriWay with the many businesses along Watermen’s Way.



Watermen’s boots can be translated into trail branding and signage as can be seen on the above concept for mile marker post.

Trail Signage



Signage will need to be compliant with several criteria, including but not limited to, the following:

- Ensure that standard signage and logos for The TriWay are utilized for all new sections to be associated with The TriWay Trail.
- Follow MUTCD standards (Section 9B.01 – Application and Placement of Signs), including mounting height and lateral placement from edge of path or roadway. Additional standards and guidance are found in Section 9B.20 – Bicycle Guide Signs.
- Compliance with NACTO (National Association of City Transportation Officials) guidelines for bike route wayfinding signage and marking systems.
- Consider guidance for bicycle wayfinding signage is found in Chapter 9 of the Manual on Uniform Traffic Control Devices.
- Use durable, vandal-resistant materials that are easy to maintain and replace

A branding guide, standards and design guidelines should be prepared for the trail signage system, by a signage design specialist familiar with shared-use paths, branding and the state and national regulatory requirements and guidelines that govern them. This information may be included in a “signage master plan” and, or design guide. This document should comprehensively detail the correct use of the typography, colors and the family of signs that comprise the wayfinding system. Sign materials and finishes should be selected for their longevity. A color family should be selected to provide a comprehensive graphic visual language for The TriWay Trail brand. The wayfinding system should be designed to help first time and infrequent visitors with wayfinding and to define the Trail’s boundaries. Arrival or gateway signage is important to establish a “Sense of Place”. Signage and wayfinding will reinforce the link between the Trail, the community, and the region. A Signage Master Plan document will outline the standards and guidelines for the project.

These standards and guidelines should meet the following goals and objectives:

1. To develop an effective wayfinding system for pedestrians, vehicles, and short-term parking users that functions as an integral part of the Trail environment.
2. To use wayfinding to express The TriWay Trail region’s unique culture, philosophy, and image as it guides visitors to key destinations.

Examples of Signage Master Plan elements. These excerpts and descriptions taken from the Appomattox River Trail Signage Master Plan by AB Designs, January 2017.



Trail User Groups

The TriWay Trail will bridge gaps between communities and facilitate access to open space, restaurants, schools and town centers and promote a greater sense of regional connectedness and cohesion. With more people biking and walking to these destinations in Lancaster County, we will also see The TriWay contributing to a healthier population in the Northern Neck, encouraging free and accessible recreation and exercise opportunities.

The Trail will strive to be inclusive of all individuals and user groups. As noted in the project survey, many respondents commented on the lack of safe routes to walk and bike. The TriWay Trail will help to create greater connectivity between communities and offer amenities to areas that have been under-served by parks and trails. The Trail will be accessible to walkers, joggers, cyclists (e-bikes and trikes included), dog walkers, skaters, scooters, and all mobility assistance devices.



Multi-Use Trail Types

The TriWay Trail traverses varied conditions along its nine and a half-mile route as it crosses through urban, suburban, rural, wooded and natural lands. The Trail will require thoughtful design transitions from one condition to the next. In the urban areas through Kilmarnock and

Irvington, where the standard 12' path section is not a viable option, sidewalk and adjacent bike path will be a necessary trail condition. Below are examples of different trail types The TriWay Trail may assume as it traverses the full distance.



Paved trail with soft side path



Center stripe for safety (high-traffic areas)



Wide sidewalk and dual-direction bike lanes



Trail bridge



Pavement markings for safety (high-traffic areas)



Boardwalk trail through environmentally sensitive areas

Road Crossings



Road crossing on the Lewes-to-Georgetown Trail.

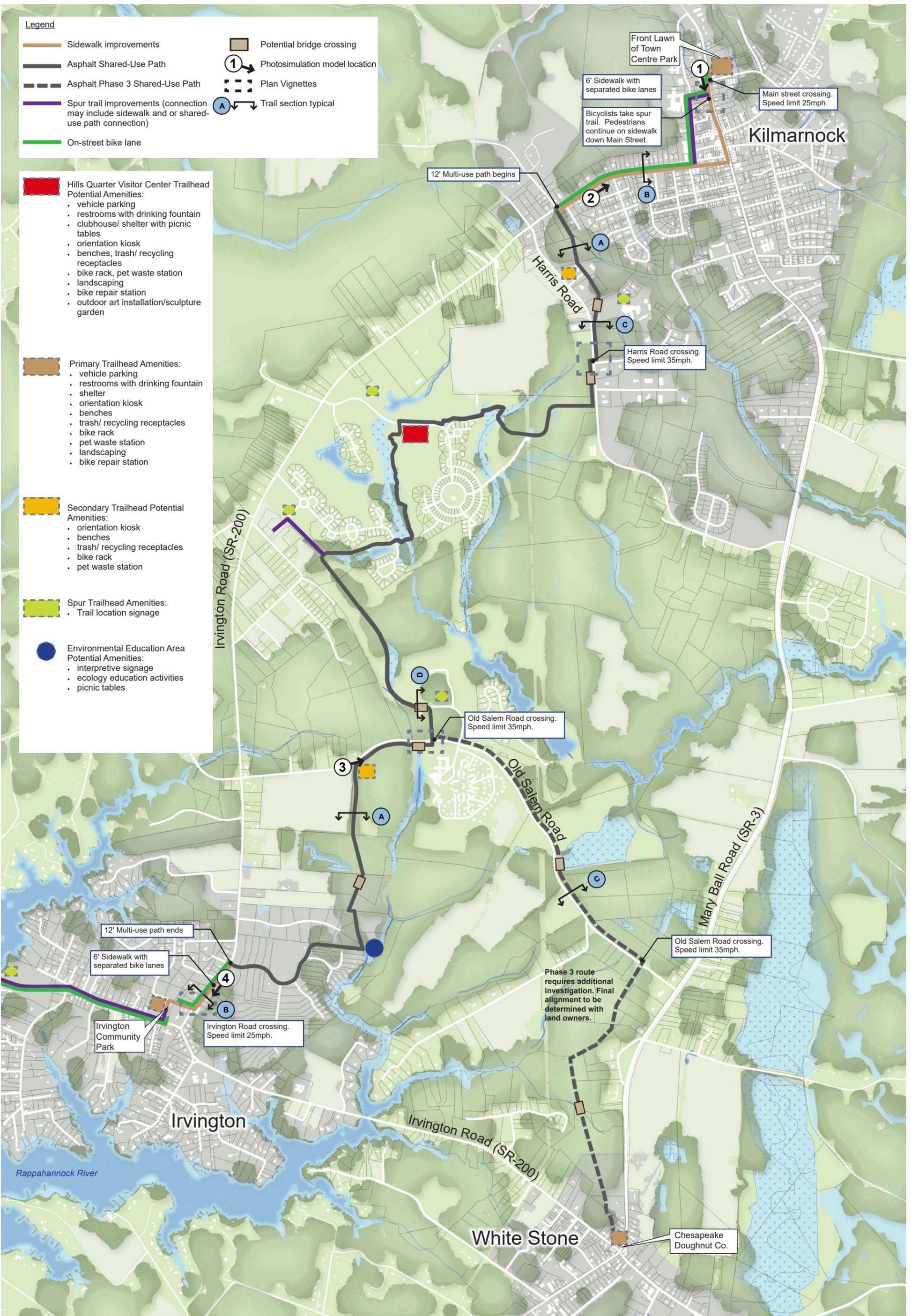


Signaled shared-use path crosswalk



Raised crosswalk in Milwaukee





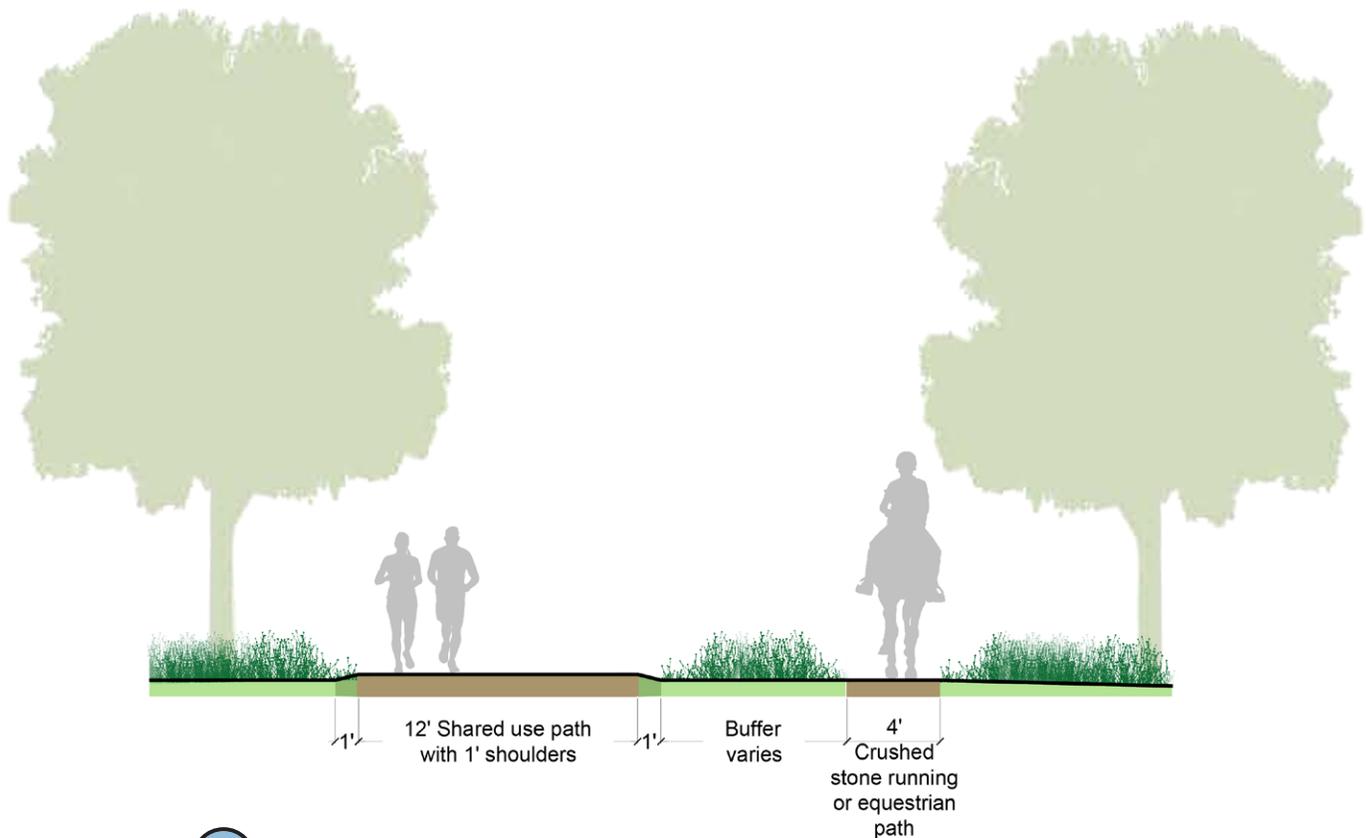
- Legend**
- Sidewalk improvements
 - Asphalt Shared-Use Path
 - - - Asphalt Phase 3 Shared-Use Path
 - Spur trail improvements (connection may include sidewalk and or shared-use path connection)
 - On-street bike lane
 - Potential bridge crossing
 - 1 Photosimulation model location
 - Plan Vignettes
 - A Trail section typical

- Hills Quarter Visitor Center Trailhead Potential Amenities:
 - vehicle parking
 - restrooms with drinking fountain
 - clubhouse/ shelter with picnic tables
 - orientation kiosk
 - benches, trash/ recycling receptacles
 - bike rack, pet waste station
 - landscaping
 - bike repair station
 - outdoor art installation/sculpture garden
- Primary Trailhead Amenities:
 - vehicle parking
 - restrooms with drinking fountain
 - shelter
 - orientation kiosk
 - benches
 - trash/ recycling receptacles
 - bike rack
 - pet waste station
 - landscaping
 - bike repair station
- Secondary Trailhead Potential Amenities:
 - orientation kiosk
 - benches
 - trash/ recycling receptacles
 - bike rack
 - pet waste station
- Spur Trailhead Amenities:
 - Trail location signage
- Environmental Education Area Potential Amenities:
 - interpretive signage
 - ecology education activities
 - picnic tables

Trail Sections

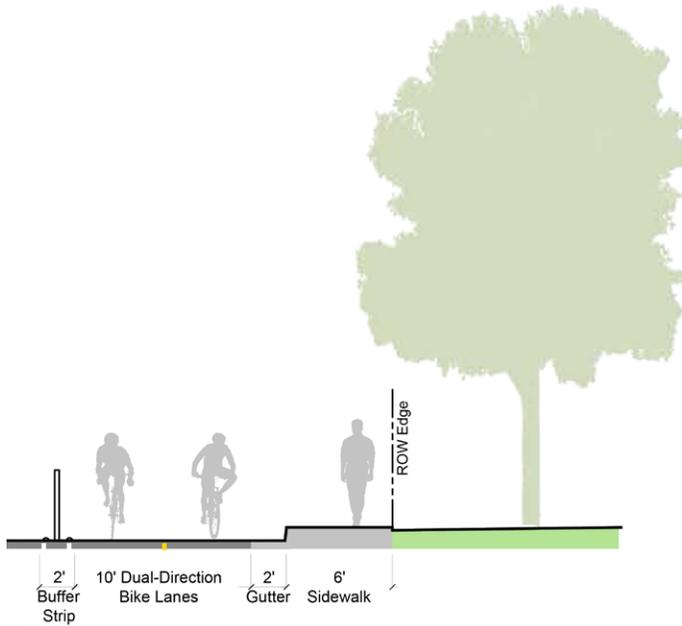
The TriWay Trail will primarily be a 12-foot wide shared-use path with a 4-foot wide crushed stone side path within a 30-to-40-foot wide trail corridor. This standard trail section will safely accommodate the various user groups and allow for dual-directional travel of small groups without conflict. The side path can be used by walkers or runners who prefer a softer surface, and perhaps for equestrian use in some locations. The buffer on the edges of the Trail corridor will act to define the public trail area when adjacent to private property. Some visual screening will be provided and all CPTED (Crime Prevention Through Environmental Design) principles will be followed to provide a safe experience for trail users and adjacent property owners.

In certain locations, the Trail will deviate from the standard section and transition to one of the other multi-use trail types shown on page 16. The sections on the following pages correlate to the blue circles on the map on page 17.

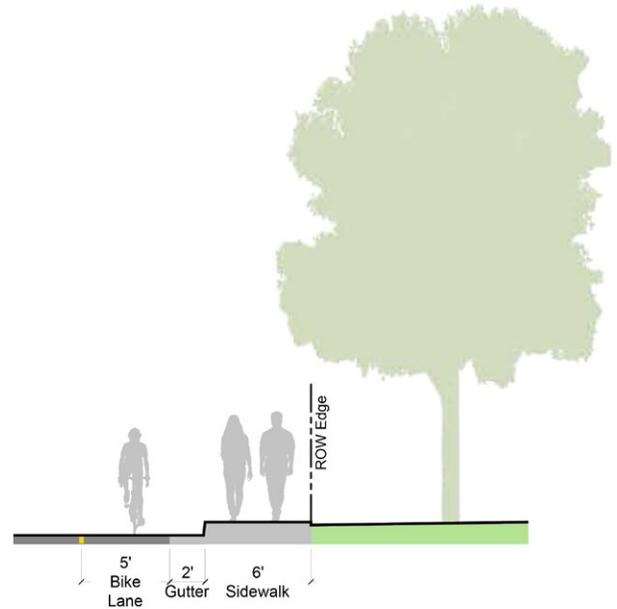


A Trail Section A: Standard 12' shared-use path with shoulders and separated stone trail

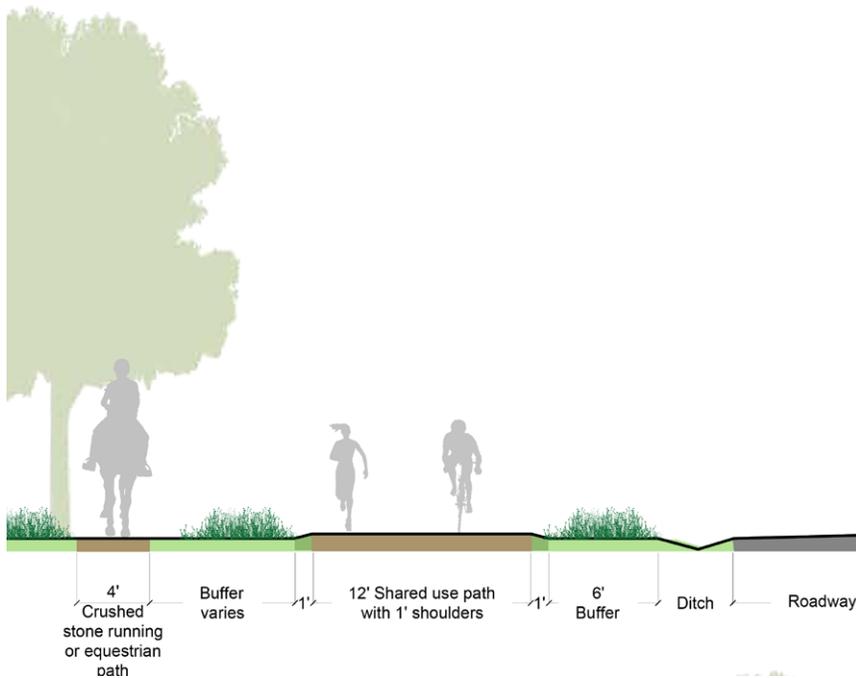
Trail Sections



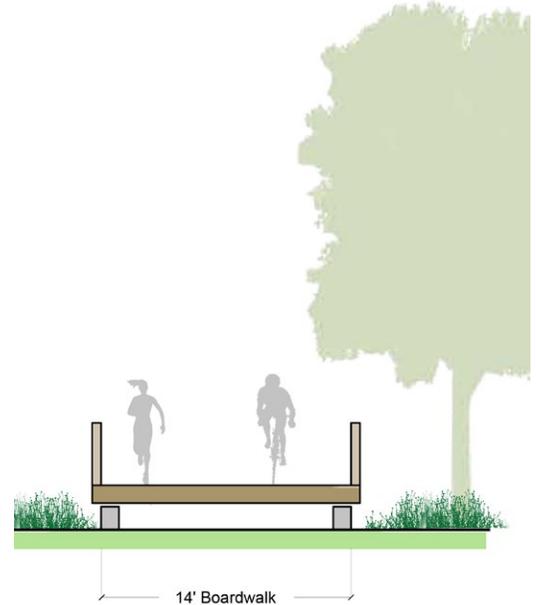
B Trail Section B Option 1: Separated Dual-Direction Bike Lanes and Sidewalk



B Trail Section B Option 2: Standard bike lanes and sidewalk



C Trail Section C: 12' SUP offset from roadway (14' wide)



D Trail Section D: Bridge or boardwalk (14' wide)

Photo-simulation: N. Main Street Bike Lanes



Located on Main Street Kilmarnock north of School Street this road section has a 40' width curb-to-curb. The width offers flexibility in how bike lanes can be included in the route. Photo-simulations below show both dual direction and single bike lane options.

Separated Dual Direction Bike Lane: Separated bike lanes provide increased safety and comfort for bicyclists beyond more traditional facilities like bicycle routes or bicycle lanes. This option keeps all Trail traffic on the western side of the street which is advantageous for bicyclists turning onto School Street. By separating bicyclists from motor traffic, “protected” or physically separated bike lanes can offer a higher level of comfort than conventional bike lanes and are attractive to a wider spectrum of the public.

Single Bike Lane: This is a conventional option and more easy to implement. A disadvantage of this configuration is that a pedestrian crossing would be required at School Street and it does not provide the level of comfort offered by separated lanes.

Existing Condition: Kilmarnock Main Street. 40' curb-to-curb width 4' sidewalks



Proposed Condition: Kilmarnock Main Street with dual direction separated bike lanes. 6' sidewalk, 10' bike lane corridor, 2' striped buffer.



Proposed Condition: Kilmarnock Main Street with single lanes on both sides. 6' sidewalk, two 5' bike lanes on both sides of street.



Photo-simulation: Irvington Road Bike Lanes

2



Existing Condition: Irvington Road. 40' curb-to-curb width, 4' sidewalks.

Located on Irvington Road west of Downtown Kilmarnock this road section has a 40' width curb-to-curb. Photo-simulations below show both dual direction and single bike lane options.

Separated Dual Direction Bike Lane: Comfortable protected route on the south side of the Irvington Road. Some private driveways and relocation of mailboxes will need to be accommodated with this option

Single Bike Lane: This is a conventional option and more easily to implement. A disadvantage of this configuration is that a pedestrian crossing would be required to connect the bike route with the shared-use path south of Irvington Road.



Proposed Condition: Irvington Road with dual direction separated bike lanes. 6' sidewalk, 10' bike lane corridor, 2' striped buffer.



Proposed Condition: Irvington Road with single lanes on both sides 6' sidewalk, two 5' bike lanes on both sides of street.

Photo-simulation: Old Salem Road Standard Trail



Located on Old Salem Road at the Rappahannock Westminster Canterbury maintenance drive access. This image shows the relationship of the standard shared-use path section to the road. The Trail may need to meander along the road to negotiate drainage culverts, utility poles and guy wires along this stretch. The photo-simulation shows the guy wires have been moved.

Existing Condition: Power line easement adjacent Old Salem Road



Standard 12' shared-use path and separated 4' stone trail



Photo-simulation: Downtown Irvington Bike Lanes



Existing Condition: Downtown Irvington. 40' curb-to-curb width, 4' sidewalks.

Located in Downtown Irvington, this road section has a 40' width curb-to-curb. Photo-simulations below show both dual direction and single bike lane options.

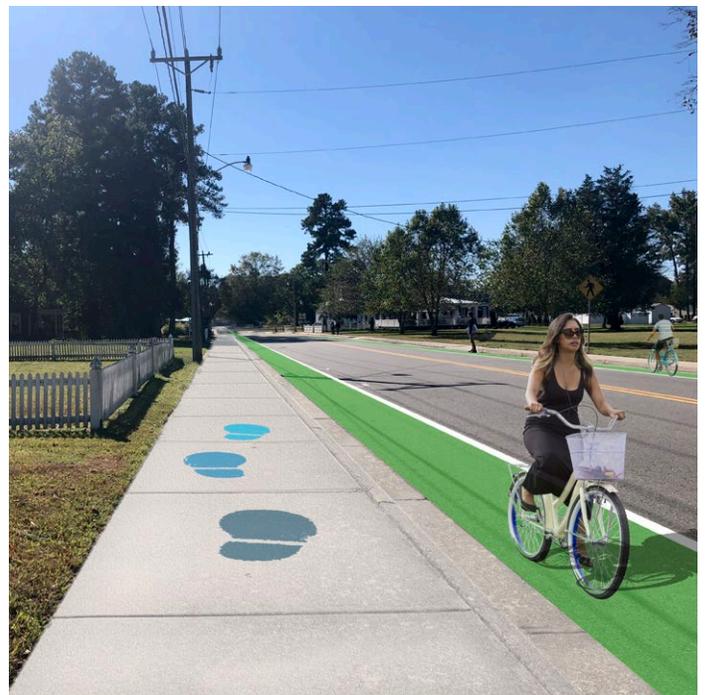
Separated Dual Direction Bike Lane: Comfortable protected route on east side of the Irvington Road. Some private driveways and relocation of mailboxes may need to be accommodated with this option

Single Bike Lane: This is a conventional option and more easily to implement. A disadvantage of this configuration is that an additional pedestrian crossing would be required.

Note: The photo-simulation shows proposed bike lanes on existing parallel parking spaces on Irvington Road and may require the removal and replacement of up to 13 parking spaces. The photo-simulation and associated plans are conceptual and will require additional future study and discussion with Council.

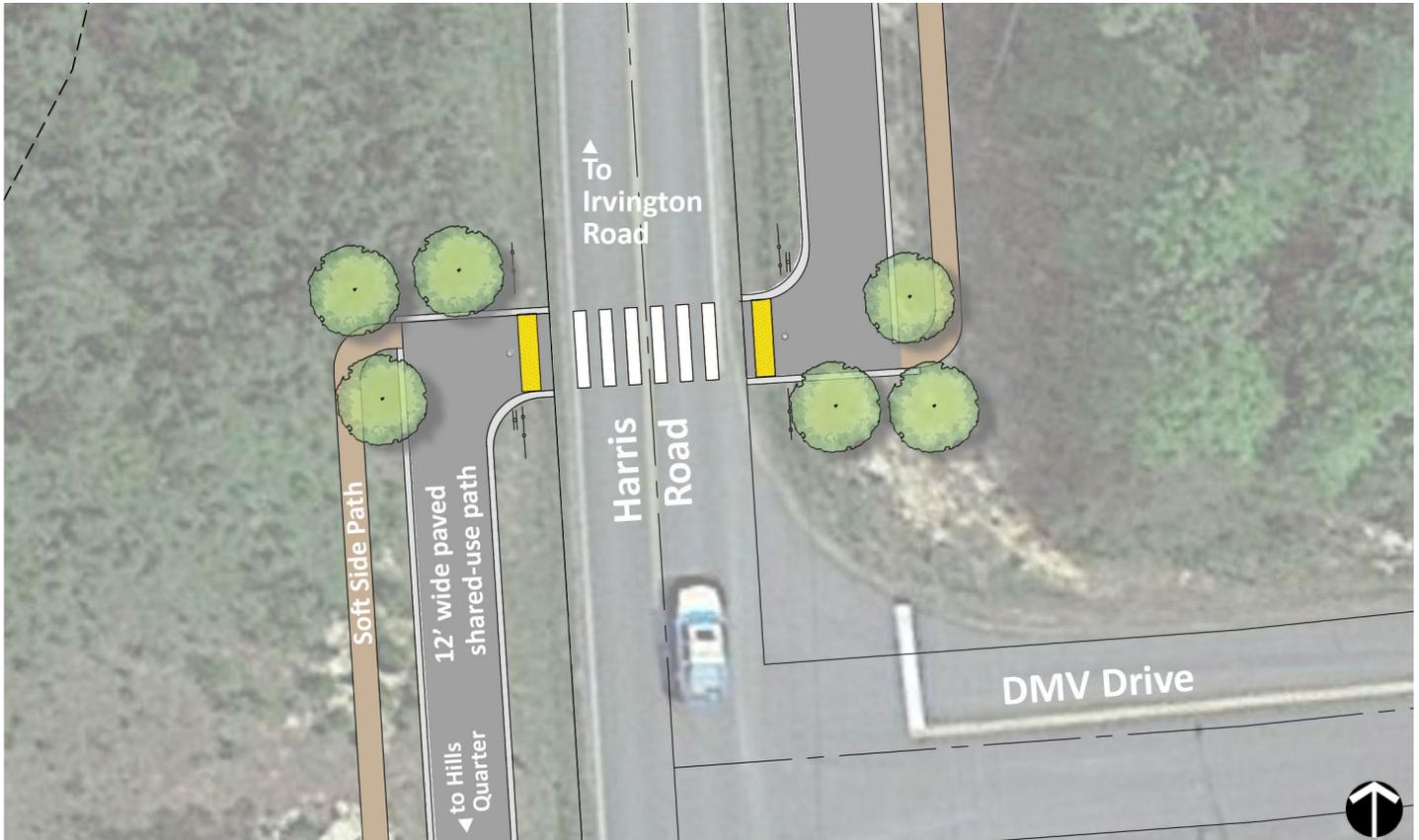


Proposed Condition: Downtown Irvington with dual direction separated bike lanes. 6' sidewalk, 10' bike lane corridor, 2' striped buffer.



Proposed Condition: Downtown Irvington with single lanes on both sides. 6' sidewalk, two 5' bike lanes on both sides of street.

Plan Vignettes- Road Crossings



Harris Road Crossing Concept at DMV Drive



Old Salem Road Crossing Concept at the Rappahannock Westminster-Canterbury Maintenance Drive



Old Salem Road Crossing Concept that leads to White Stone

Plan Vignettes- Main Street Kilmarnock



Crossing Concept at Town Centre Drive and N. Main Street Kilmarnock



Plan Vignettes- Downtown Irvington



Optional Crossing Concept at Chesapeake Drive and Irvington Road in Downtown Irvington. Concept will require additional future study and discussion with Council.

Plan Vignettes-Primary Trailheads

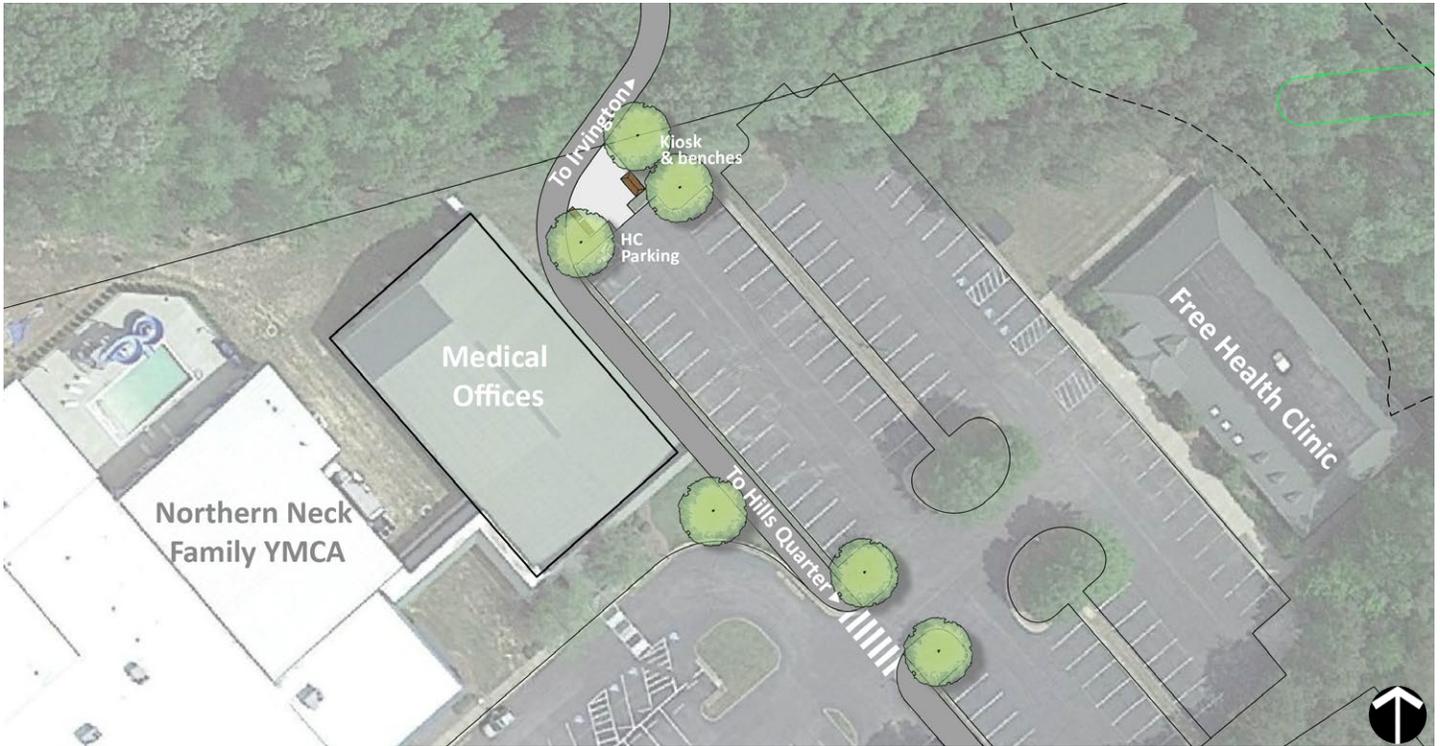


Trailhead in Kilmarnock Town Centre Park; shares some amenities with park, such as restrooms, water, and parking



Trailhead in Irvington Community Park; includes restrooms, picnic shelter, and trail signage kiosk

Plan Vignettes-Secondary Trailheads



Trailhead near YMCA and the Free Health Clinic; includes trail signage and benches



Trailhead on Old Salem Road near RWC; includes parking, benches, restroom, and trailhead signage

Phasing and Next Steps

The overall phasing plan for The TriWay Trail is based on the results of the community survey, readily available trail corridors, logistical sequencing, and expressed demand. Overall phasing of the Trail corridor was determined early in the design process, while more detailed project phasing will be determined as funds become available, user groups get involved, and easements are acquired.

Phase 1 includes the Trail segment within the Hills Quarter community and will connect to Harris Road on the east and the Golden Eagle Golf Club on the west. This phase of trail construction will include establishing new 12'-wide trail in areas where there is no current infrastructure, as well as converting some sections of existing golf cart path to 12'-wide trail. Within the Phase 1 Hills Quarter zone, there are additional trail projects that will be phased as well. These include parking lot improvements, transition of club house to a visitor center, restroom facility renovation, disc golf course and/or sculpture garden installation, regional museum displays, spur trails to adjacent amenities (school complex and Dream Fields), additional golf cart paths for community residents, and pedestrian bridge widening as needed. Phase 1 is also considered the demonstration project to “kick-off” the Master Plan implementation. While this section of trail and related amenities may not connect to Kilmarnock or Irvington, it has the potential to address the expressed immediate demand of several different groups by connecting to Harris Road, The Golden Eagle, Compass Entertainment Complex, Dream Fields, the school complex, and amenities within Hills Quarter.

Phase 2 will include the Trail between Kilmarnock Town Centre Park and Hills Quarter, and between Hills Quarter and downtown Irvington. This phase will include several trail types and will facilitate numerous connection points to the Trail. The pedestrian route from Kilmarnock Town Centre Park to Irvington Road will utilize existing sidewalk infrastructure as well as widened sidewalks (6' minimum) and some relocated utility poles. Pedestrians will enjoy the quaint downtown of Kilmarnock before turning west on Irvington Road. Cyclists will use Brent Street to access School Street, where there is sufficient width to accommodate bike lanes without impacting the on-street parking on Main Street. At the southern terminus of School Street, cyclists will turn west along Irvington Road on bike lanes adjacent to the pedestrian sidewalk system. Across from Yorkshire Street, to avoid the stoplight intersection at Harris Road, the Trail will turn south through a wooded corridor and will transition to the 12-foot wide standard trail section. The Trail will pass the YMCA complex, the hospital, and the DMV before it crosses Harris Road to connect to the Phase 1 section. From the southern end, the Trail will include sidewalk widening and bike lane infrastructure along Irvington Road north to White Fences Drive (commonly referred to as “the corkscrews”). The Trail will then transition to the standard 12-foot wide section as it parallels White Fences Drive and connects to the pond at Eastern Branch Carter Creek. This tranquil location is ideally suited for an interpretive wayside focused on ecology, habitats, and the relationship of small water bodies to the ocean. The Trail will head north through woodland and farm roads to intersect Old Salem Road and a Secondary Trailhead with restroom facilities and a small parking lot. The Trail will cross Old Salem Road and traverse the Golden Eagle Golf Club via a maintenance road that avoids direct contact with the golf course while still allowing some visual interaction with the Club.

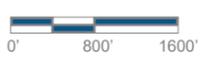
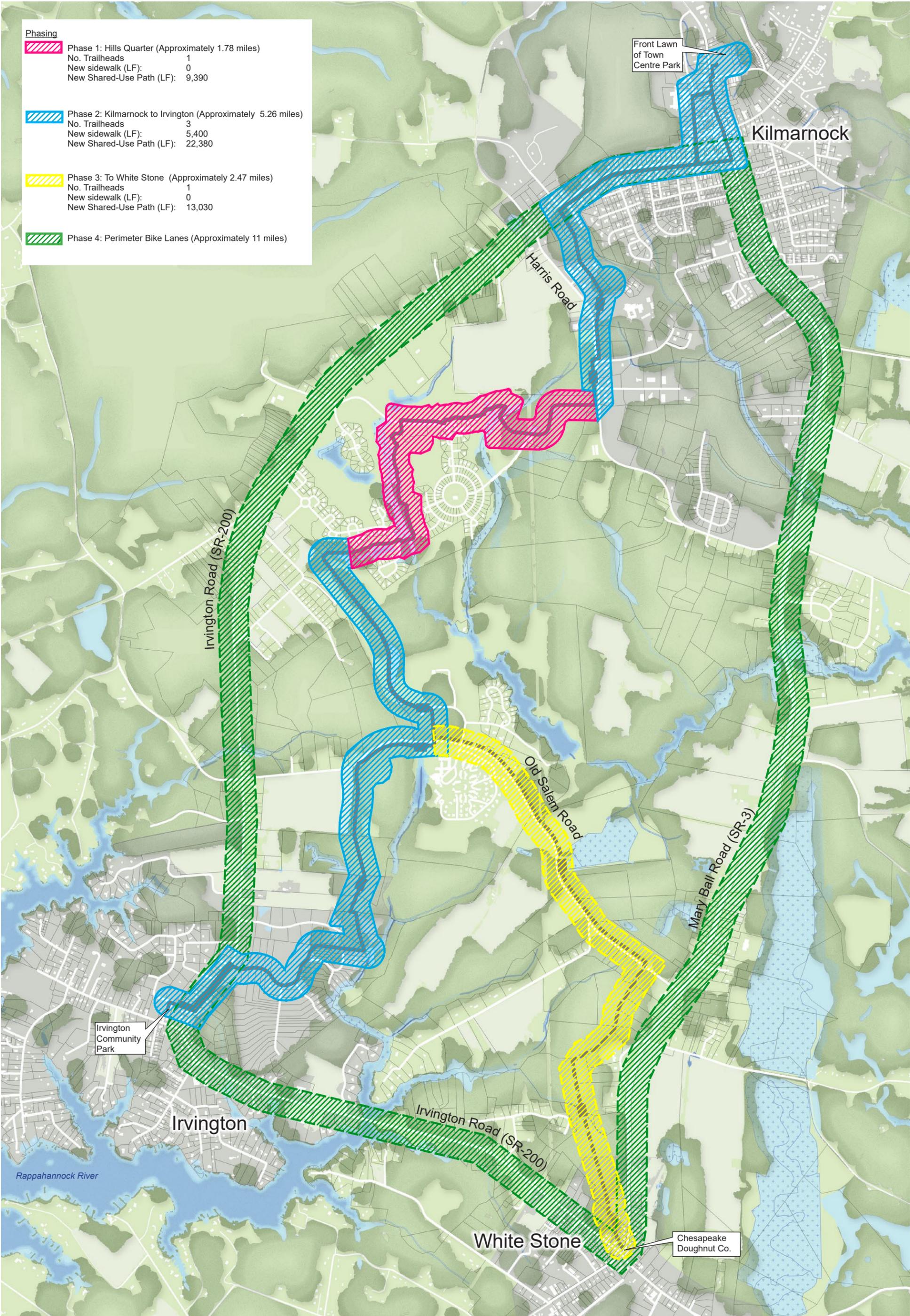
Phase 3 is the connection to White Stone, which is shown on the map as a conceptual route and requires further investigation in order to determine the route. The White Stone connection will allow trail users to access numerous restaurants and, hopefully, in the future, to cross the Rappahannock River towards Gloucester and West Point.

Phase 4 includes the addition of bike lanes and bike facilities to the roads that form the perimeter of The TriWay area. Irvington Road between Kilmarnock and Irvington and continuing on the White Stone, and Route 3 (Rappahannock Drive/ Mary Ball Road/ South Main Street) between White Stone and Kilmarnock. This phase of the project will require extensive coordination and, likely, funding from VDOT.

Next Steps are primarily tied to funding sources and Design and Engineering drawing production for the phases.



Phasing	
	Phase 1: Hills Quarter (Approximately 1.78 miles)
	No. Trailheads: 1
	New sidewalk (LF): 0
	New Shared-Use Path (LF): 9,390
	Phase 2: Kilmarnock to Irvington (Approximately 5.26 miles)
	No. Trailheads: 3
	New sidewalk (LF): 5,400
	New Shared-Use Path (LF): 22,380
	Phase 3: To White Stone (Approximately 2.47 miles)
	No. Trailheads: 1
	New sidewalk (LF): 0
	New Shared-Use Path (LF): 13,030
	Phase 4: Perimeter Bike Lanes (Approximately 11 miles)



Funding Sources

The most frequently used funding sources for trail projects are the federal government, state government, local government, and the private sector programs. The following is a summary of several funding sources. Others may be available that are not outlined.

Federal Sources

Federal funding sources originate from empowerment by Congress that allows Federal agencies to apportion or allocate funds for specific programs. The Federal Highway Administration is the most common source of funds for alternative transportation focused projects. Detailed funding strategy and implementation guides can be found at the following web addresses:

<https://www.grants.gov/web/grants/learn-grants/grants-101.html>

https://www.fhwa.dot.gov/environment/bicycle_pedestrian/resources/

Federal funding sources include, but are not limited to, the following:

1. Transportation Alternatives Program (also known as TAP funds). To be eligible for this program the trail project must fall under one of the following categories:

- Bicycle or pedestrian facility.
- Scenic easement and scenic or historic sites/preservation.
- Landscaping or other scenic beautification.
- Preservation of abandoned railway corridor.
- Environmental mitigation for wildlife protection.

Contact: VDOT at 1-800-444-7832. A 20% match is required to receive funding. More information can be found at the following web address. <https://www.virginiadot.org/business/prehancegrants.asp>

2. Recreational Trails Program. To be eligible for this program the trail or related facility must be open to the public. If the trail is on private land it is not eligible.

Contact: the Virginia Department of Conservation and Recreation at 804-786-3218. A local funding match of 20% is required.

More information can be found at the following web address.

<https://www.dcr.virginia.gov/recreational-planning/trailfnd>

3. Congestion Mitigation and Air Quality (CMAQ) Program. To be eligible for this program the project must be in an area designated as non attainment for national ambient air quality standards. Projects may include:

- Bicycle and pedestrian facilities and programs.
- Shared micro-mobility, including bike sharing and shared scooter programs.

More information can be found at the following web address. <https://www.fhwa.dot.gov/bipartisan-infrastructure-law/cmaq.cfm>

4. Highway Safety Improvement Program (HSIP). This program helps to fund safety improvements related to all road users including interfaces between vehicular, bicycle, and pedestrian users. Eligible activities include:

- Intersection safety improvements that provide for the safety of all road users.
- Installation or upgrades of traffic control devices for pedestrians and bicyclists including pedestrian hybrid beacons and the addition of bicycle movement phases to traffic signals.
- Roadway improvements that provide separation between motor vehicles and bicyclists, including medians, pedestrian crossing islands, protected bike lanes, and protected intersection features.
- Pedestrian security features designed to slow or stop a motor vehicle.

More information can be found at the following web address. https://www.virginiadot.org/business/ted_app_pro.asp



Funding Sources

5. Surface Transportation Block Grant Program (also known as STBG). To be eligible for this program the project must provide pedestrian and bicycle transportation. Ten percent (10%) of STP funds are available only for transportation enhancement activities. Eligible activities include:

- Recreational trail projects, including maintenance and restoration of existing trails
- Pedestrian and bicycle projects in accordance with 23 U.S.C 217
- Projects to enhance travel and tourism.

Contact: National Transportation Enhancements Clearinghouse at 1-800-388-6832. The federal share is 80% (sometimes higher in states with large amounts of federal land). More information can be found at the following web address:

https://www.virginiadot.org/business/ted_app_pro.asp

6. Rebuilding American Infrastructure with Sustainability and Equity (RAISE) Grant Program. Eligible projects include non-motorized projects that are not eligible under title 23 of the U.S. Code. The eligibility requirements of RAISE allow project sponsors at the State and local levels to obtain funding for multi-modal, multi-jurisdictional projects that are more difficult to support through traditional DOT programs.

More information can be found at the following web address: <https://www.transportation.gov/RAISEgrants/about>

7. Carbon Reduction Program (CRP). Eligible activities include Transportation Alternatives projects, including the construction, planning, and design of on-road and off-road trail facilities for pedestrians, bicyclists, and other non-motorized forms of transportation.

More information can be found at the following web address:

https://www.fhwa.dot.gov/environment/sustainability/energy/policy/crp_guidance.pdf

8. Community Development Block Grant Program. To be eligible for this program the project must be located in a low or moderate-income area. The funds may be used for neighborhood revitalization, economic development, and improvements to community facilities.

Contact: The U.S. Department of Housing and Urban Development. More information can be found at the following web address: <https://www.hudexchange.info/programs/cdbg/>

9. Land and Water Conservation Fund (also known as LWCF). These funds are used to provide park and recreation facilities to communities throughout the U.S.

Contact: State Parks Department or Conservation Agency. Funds are distributed annually and a 50% match must come from the community. More information can be found at the following web address:

<https://www.dcr.virginia.gov/recreational-planning/lwcf>

State Sources

1. Smart Scale. The purpose of SMART SCALE is to fund the right transportation projects through a prioritization process that evaluates each project's merits using key factors, including improvements to safety, congestion reduction, accessibility, land use, economic development, and the environment. More information can be found at the following web address:

<http://www.smartscale.org/>

2. Trail Access Grants. The Trail Access Grants program is a 100% reimbursement program being offered in 2021 for trail projects that increase access to trail opportunities for people with disabilities. More information can be found at the following web address: <https://www.dcr.virginia.gov/recreational-planning/document/2021-Trail-Access-Grants-Manual.pdf>

3. Safe Routes to School (SRTS). The SRTS Program is federally funded, created under Section 1404 of the 2005 Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). SRTS programs are often



Funding Sources

implemented through VDOT Infrastructure grants

More information can be found at the following web address.

<https://www.dcr.virginia.gov/recreational-planning/document/2021-Trail-Access-Grants-Manual.pdf>

4. Urban and Community Forestry Assistance Grants. This program offers assistance for tree planting.

Contact: the Virginia Department of Forestry. This program requires a 100% match.

5. Recreational Access Program. The Recreational Access Program is a state-funded program intended to assist in providing adequate access to or within public recreational areas and historic sites operated by the Commonwealth of Virginia, or by a local government or authority. Federal sites are not eligible.

Contact: the Virginia Department of Transportation. This program offers 100% funding. More information can be found at the following web address.

https://www.virginiadot.org/business/resources/local_assistance/access_programs/RecrAccessGuide.pdf

6. Virginia Land Conservation Fund. This program is for land purchase assistance only. It is intended to fund the preservation and protection of at risk lands including:

- Open spaces and parklands
- Lands of historic or cultural significance
- Farmlands and forests
- Natural areas

Contact: the Virginia Department of Conservation and Recreation. This funding requires a 100% match. More information can be found at the following web address.

<https://www.dcr.virginia.gov/land-conservation/vlcf>

Local Sources

1. **Cities, towns, and counties** can be used to meet the local match requirements for some grant programs. Local funds are good to use for taxes, impact fees, bond referenda, local capital improvements programs, development proffers, and railroad franchise agreements.

Private Sector Sources

Private sector contributions can help develop trails in the following ways:

- Land trusts.
- Local and national foundations.
- Local businesses.
- Service clubs.
- Individual sponsors.
- Volunteer work.



References

National Guidance:

The following standards and guidelines were consulted during development of this guide:

The Federal Highway Administration's (FHWA) Manual on Uniform Traffic Control Devices (MUTCD) defines the standards used by road managers nationwide to install and maintain traffic control devices on all public streets, highways, bikeways, and private roads open to public traffic.

Small Town and Rural Multimodal Networks; US Department of Transportation Federal Highway Administration

American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities (2012) provides guidance on dimensions, use, and layout of multiuse paths and on-street bicycle facilities.

The International Crime Prevention Through Environmental Design Association (CPTED): www.cpted.net

United States Access Board; Americans with Disabilities Act Accessibility Standards (ADA): www.access-board.gov/ada/

State Guidance:

VDOT Complete Streets:

Bicycle and Pedestrian Facility Guidelines, Bus Stop Design and Parking Guidelines

<https://www.virginiadot.org/business/resources/locdes/rdm/AppendA1.pdf>

Additional References:

Impacts of the Potomac Heritage National Scenic Trail in Northern Virginia. <https://novaregion.org/DocumentCenter/View/13058/PHNST-Data-Subcommittee---June-14-2021>.

