



December 2020

Eastern Shore Rail to Trail Feasibility Study

Northampton and Accomack Counties, VA



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1. Introduction, Background, and Purpose

Introduction

A rail to trail system is universally defined as the conversion of an inactive rail line into a recreational trail or shared use path. These paths are often paved and designed for non-motorized use. The purpose of the Eastern Shore Rail to Trail Study is to analyze the feasibility of converting 49 miles of abandoned rail line into a rails to trails corridor. The study area, shown in **Figure 1**, extends from the southern rail terminus in the Town of Cape Charles to approximately 0.6-miles south of the Town of Hallwood. Because the existing terrain within the railroad right of way was observed to be relatively flat, the shared use path alignment is proposed either on or adjacent to the existing rail line and entirely within the railroad corridor right of way.

The addition of a shared use path on Virginia's Eastern Shore peninsula will provide a needed multimodal transportation option, promote healthy mobility, and increase transportation safety measures.

As proven by other shared use paths, it will also be an economic driver by providing opportunities to expand tourism and attraction to the local and regional areas.

This study is a partnership with VDOT, Accomack County, Northampton County, and the Accomack-Northampton Planning District Commission (A-NPDC) among numerous other organizations referred to as the Study Work Group. Prior to the start of the study, these parties gathered to listen, discuss, and come to an agreement on the goals and completion of the study. Each party signed a *Framework Document*, which outlined the study in terms of scope, tasks, and



Figure 1. Study Area

study work group roles and responsibilities. With the *Framework Document* signed, indicating agreement and support, the study commenced.

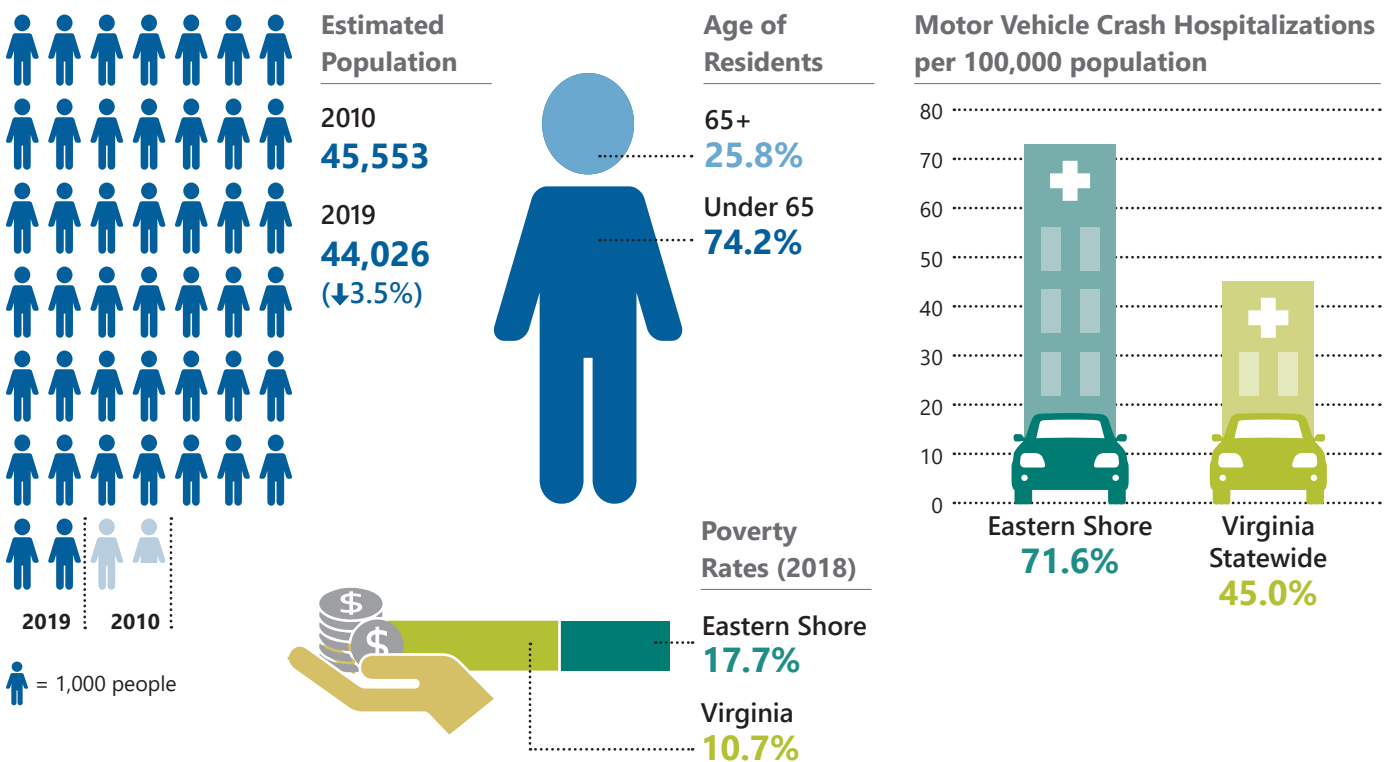
Background

Completed in 1884, the Bay Coast Railroad (BCR), owned by Canonic Atlantic Company, ran from the Town of Cape Charles, Virginia to Pocomoke City, Maryland. The rail contributed to the economic boom of the Eastern Shore peninsula and was used for freight and passenger transportation. It brought job opportunity to the Eastern Shore, caused an expansion and shift in what was grown on the region’s farmland, and spurred the development and success of new communities. However, due to inactivity on the southern portion of the rail line, the BCR ran its last operation in May 2018, and the southern Eastern Shore section was abandoned.

Virginia’s Eastern Shore is part of the Delmarva Peninsula, situated between the Chesapeake Bay and the Atlantic Ocean and is accessible via the Chesapeake Bay Bridge-Tunnel. Virginia’s Eastern Shore is rural and is made up of two counties: Accomack County and Northampton County. The estimated population of the Eastern Shore in 2019 was 44,026 people, which is 1,527 (3.5 percent) less than the 2010 population estimation. The percentage of persons 65 years and over is 25.8

percent and the two most prominent races on the Eastern Shore are Caucasians and African American with 65.25 percent of the population being Caucasian and 31.25 percent being African American. In 2018, the Virginia Department of Health, released a study comparing the health of the Eastern Shore residents to the average health of all Virginians. The data showed that the Eastern Shore residents were mostly average health in terms of chronic disease (asthma, diabetes, and ischemic heart disease) hospitalization rates. The percent of population living in poverty in 2018 was 17.7 percent, which is seven percent higher than the state’s 10.7 percent. One large difference between the Eastern Shore and entire state of Virginia is the motor vehicle crash hospitalizations, where the Eastern Shore in 2017 had 71.6 per 100,000 population, compared to Virginia’s 45.0 per 100,000 population. These statistics provide a general understanding of who is living on the Eastern Shore and what to expect in the future in terms of population changes and needs of the residents.

The Eastern Shore is known for its oysters, farmland, shoreline, islands, and historic small towns. Route 13 is the primary road that is centrally located and travels the entire length of the peninsula, connecting travelers and



residents to many of the Eastern Shore attractions. In general, the BCR followed the alignment of Route 13 and other roadways; as such, the shared use path will be located along Route 13, Route 316 and Route 779, with some segments being adjacent and visible to the road and some segments being separated, yet still near Route 13 or Route 316. This proximity to the main road indicates the innate demand to provide a multimodal connection to multiple towns, tourist locations, and points of interest in both Accomack County and Northampton County. Points of interest include the Eastern Shore Community College in Melfa, multiple museums and educational centers, various retail stores, restaurants and other points of interest in and outside of downtown districts. The shared use path will offer a multimodal connection for the numerous towns the corridor passes through, including the Towns of Cape Charles, Nassawadox, Exmore, Onley, Parksley, and Bloxom.

In recent years, the Eastern Shore region has recognized the importance of safe, connected bicycle and pedestrian infrastructure and began investing in and planning for active transportation infrastructure growth. The following plans provide a foundation for this effort and many of the recommendations and concepts are reflected below.

The Eastern Shore Healthy Communities Strategic Plan

This plan, adopted in 2013, indicated a series of goals to be accomplished between the years of 2014-2016. The plan developed a policy, system, and environmental change model, which identified a series of goals and action items to meet the goals. These objectives were to strengthen and vitalize the partnership, improve nutrition environments, increase opportunities for active living, expand tobacco-free environments, encourage and support business and faith communities' wellness efforts, and encourage and support school wellness efforts. Some of the action items linked to the goal "increasing opportunities for active living" are: Create two new walking trails, conduct an annual fitness challenge, and Chincoteague, Onley, Onancock, Wachapreague, Exmore, Cape Charles will adopt "Livable Communities" concepts. Although the plan was developed for years 2014-2016, the recommendations and ideas can still be executed and encouraged in

current times. A goal of the Livable Communities concept is to create communities where roads and sidewalks safely support walking and bicycling to make active living possible for users of all ages and abilities. The Livable Communities concept values can be revisited and reworked to match the current times and encourage new towns and communities to participate.

Eastern Shore Bike Plan: Update 2014

Since the original publishing of this document in 2000, the Eastern Shore Bike Plan has stated in its vision that "if the Eastern Shore Railroad right of way ever becomes available, there will be a rail trail from Maryland to Cape Charles." The Eastern Shore Bike Plan¹ identifies current bicycle facilities and specifies the location of bicycle infrastructure needs. It also outlines the benefits of bicycling; such benefits range from economic, to social, health, and environmental aspects. The region adopted a goal of increasing bicycling access, safety, and facilities to attract more citizens and tourists to the area. The plan sets a framework of goals and targets, inventory existing facilities, determine priorities, and improve conditions that support multimodal transportation. Both Northampton and Accomack Counties adopted this plan in 2004.

2035 Rural Long-Range Transportation Plan

The plan² addresses the need to construct or build upon pedestrian and bicycle facilities, transit operations, intermodal connectors, and park and ride lots to create a comprehensive transportation network within the entire region. When reviewing the bike improvements in the region, the plan refers to the Eastern Shore Bike Plan recommendations, recommends to increase active transportation in the entire region, and sets the goal to improve the Eastern Shore's multimodal transportation system by coordinating funding for various facilities, including bicycle and pedestrian facilities. The plan also identifies corridors that could be multimodal connections for long-distance travel.

1 [Eastern Shore Bike plan Update 2014 \(a-npdc.org\)](#)

2 [Accomack draft plan web.pdf \(viriniadot.org\)](#)

Eastern Shore of Virginia Regional Economic Development Plan

This plan¹ addresses two goals specific to construct new pedestrian and bicycle facilities. One goal, within the “Arts, Entertainment, Recreation, and Visitor Industries Action Plan” aims to construct local trails, promote new and existing trails, and pursue funding for economic impact analyses for trails. The “Foundational and Entrepreneurship Development” sub-plan includes construction and promotion of a regional bicycle trail. The Accomack-Northampton Planning District Commission (A-NPDC) is currently updating the plan and including additional transportation-related priorities.

These plans have served as guiding documents to increase the active transportation infrastructure and interest, as well as tools of education on the impacts of investing in active transportation. In recent years, one standout project was the Southern Tip Hike and Bike Trail in southern Northampton County, which is currently on phase three of four in construction. The Southern Tip Trail connects southern towns, parks, historic tourist locations, and already has a positive economic impact on the communities the trail passes through. The intent is to have the Eastern Shore Rail to Trail connect to the Southern Tip Hike and Bike Trail and develop a cohesive trail system along the Eastern Shore that links and showcases the cultural and historic heritage of the Eastern Shore.

1 Currently undergoing update by A-NPDC. The most recent published version of the plan is available here: [ESVA-Regional-Economic-Development-Plan_final-November-2017.pdf](https://www.a-npdc.org/ESVA-Regional-Economic-Development-Plan-final-November-2017.pdf) ([a-npdc.org](https://www.a-npdc.org))



2. Stakeholder Coordination

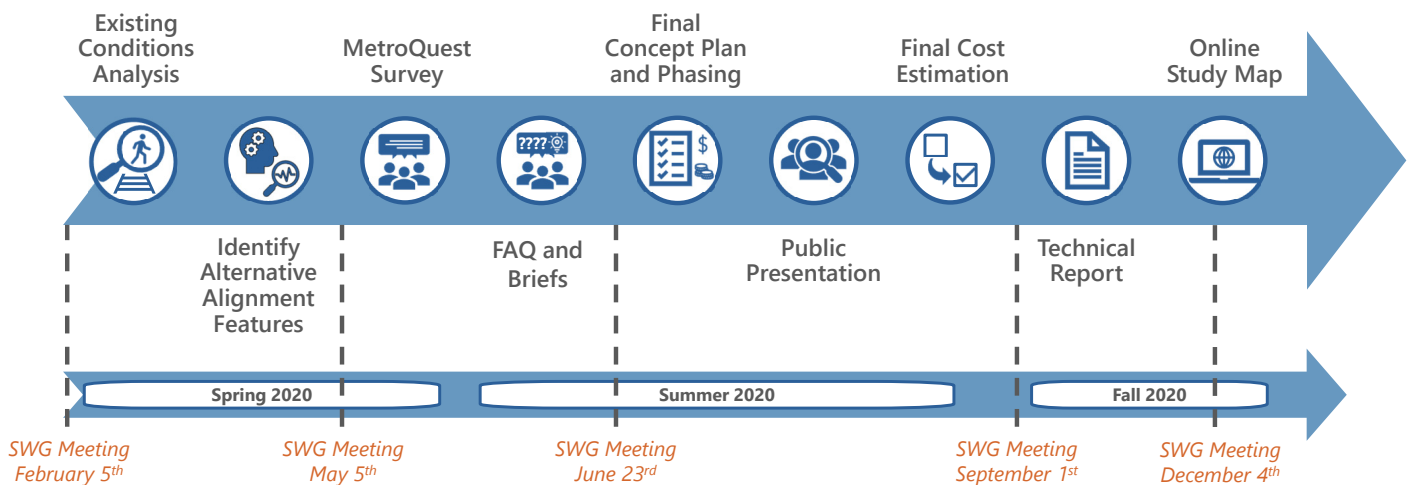
Building on the *Framework Document* and to help confirm that the study recommendations support the vision established in the *Framework Document*, a Study Work Group (SWG) was established. The SWG included members beyond the signatories of the framework document. Figure 2 shows the members of the SWG, with the *Framework Document* signatories indicated. The group met five times during the study process, at key milestones to help make decisions and advance the overall study. The SWG provided valuable insight into the local planning context, related projects that might affect the corridor, and lessons learned from other trail projects. They also helped analyze public input and provided guidance for concept plan details and priorities

The following organizations comprised the SWG:

- » Northampton County
- » Accomack County
- » Accomack-Northampton Planning District Commission
- » Accomack-Northampton Transportation District Commission
- » Town of Cape Charles
- » Virginia Commonwealth Transportation Board, At-Large Rural
- » Canonie Atlantic Company
- » Virginia Bicycling Federation
- » Virginia Department of Conservation and Recreation
- » Virginia Department of Transportation
- » Hampton Roads Sanitation District
- » Virginia Department of Rail and Public Transportation
- » Dahlgren Railroad Heritage Trail Alliance

The SWG consisted of local, regional, and state agencies, advocacy groups, and not-for-profit organizations.

Figure 2. Study Work Group Meeting Schedule





Northampton County*



Accomack County*



Accomack-Northampton Planning District Commission*



Accomack-Northampton Transportation District Commission*



Town of Cape Charles



Virginia Commonwealth Transportation Board, At-Large Rural



Canonie Atlantic Company*



Virginia Department of Conservation and Recreation*



Virginia Department of Transportation*



Virginia Department of Environmental Quality*



Hampton Roads Sanitation District*



Virginia Department of Rail and Public Transportation*



Dahlgren Railroad Heritage Trail Alliance*



Virginia Bicycling Federation*

Table 1 highlights the timing and focus of the SWG meetings, which were scheduled at important stages of the study and resulted in guiding input to help develop the Feasibility Study.

The initial SWG meeting was conducted on February 5, 2020, at the Eastern Shore of Virginia Chamber of Commerce. The discussion began with a review of the study goals and purpose, confirmation of the study area, and overview of existing conditions. This meeting helped establish the role of the SWG, discuss timeframes and methods of civic engagement, and identify data and informational needs along with follow-up actions.

On May 5th, the SWG met for a second time, to review the results of the initial field work conducted by the study team, discuss opportunities and challenges associated with shared use path development and related amenities, and consider alternative cross section details. Given the in-person meeting restrictions of the COVID-19 pandemic, this meeting was conducted virtually. Stakeholders also discussed the draft *MetroQuest* survey developed to solicit public input. The overall civic engagement strategy was discussed in the context of pandemic conditions, with the decision made to initiate the *MetroQuest* survey during the “Alternatives Evaluation” stage along with project website updates and posting of frequently asked questions. The SWG decided to post a virtual meeting presentation after development of the Final Plan.

Table 1. Study Work Group Meeting Summary

SWG Meeting Date	Study Phase	Focused Input
February 5, 2020	Kickoff and Initiation	Project goals, schedule, and outcomes
May 5, 2020	Alternatives Evaluation	Project opportunities and priorities; civic engagement strategy
June 23, 2020	Concept Plan Development	Draft concept plans and civic engagement results
September 1, 2020	Final Plan	Study results, products, and next steps
December 4, 2020	Final Report	Final updates, comments on draft report, and next steps

The third SWG meeting (virtual) was held on June 23rd. This meeting provided an opportunity to review the draft shared use path alignment concept plans and preliminary construction cost estimates. The study team also presented the results of the *MetroQuest* survey (discussed in more detail in the Civic Engagement section below).

The fourth SWG meeting, conducted virtually on September 1st, provided an opportunity to review the final concept plans for the shared use path alignment, cross sections, trailheads, and amenities. During the meeting, the study team also presented an updated constructed cost estimate. Additional discussion topics included construction phasing and path ownership and maintenance options.

The final virtual SWG meeting on December 4, 2020 provided an opportunity for the study team to share final updates that occurred since the September SWG meeting as well as receive and discuss final comments that the SWG had on the draft report. The updates included feedback from the public presentation, refinements to the cost estimate, a segmentation strategy and materials, and information revealed through the study team's maintenance investigation. The SWG provided final comments on the report and discussed next steps for the Eastern Shore Rail to Trail.



3. Civic Engagement

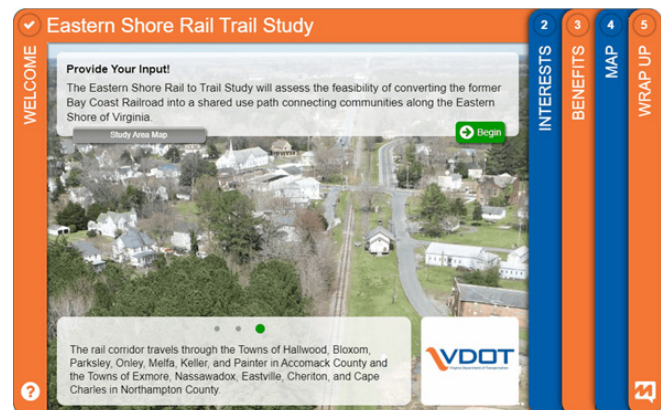
In addition to the stakeholder and agency coordination described in the previous chapter, civic engagement played an important role and was conducted in accordance with the *VDOT Public Involvement Manual*. Given the timing of the study during the COVID-19 pandemic, the study team could not rely on traditional public meeting formats. Therefore, engagement consisted of web-based outreach and feedback in the form of a project website, a *MetroQuest* survey, and a recorded public information presentation with a comment form. Additionally, the study team advertised the study and comment opportunities in the local newspapers and received public feedback via email. The public outreach advertised the free wifi sets provided by the Broadband Authority along the Eastern Shore for residents to access the project website and related online public outreach materials.

Project Website

Throughout the course and following completion of the study, VDOT maintained a website¹ to provide general information, interim products, schedule status, and public comment opportunities.

MetroQuest Survey

To solicit public comment on the project, VDOT hosted an online survey from May 15 to June 5, 2020. Mailed and email statements were also received during the same period. Over 3,400 individuals responded to the survey, 90% of whom indicated that they would visit the shared use path if it were constructed. 88% of Eastern Shore Resident participants indicated they would visit



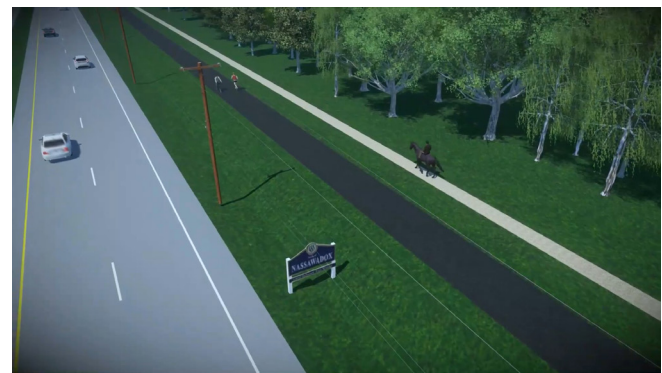
the shared use path. The survey included background information on the study and asked respondents about their interests in and anticipated benefits of the shared use path. The survey also included a mapping tool that allowed participants to suggest locations for parking, destinations, and amenities. Survey respondents identified safer places to walk and bike as the most popular benefit of the shared use path. Finally, the survey included open-ended questions that allowed participants to provide additional information. 81% of the comments from residents that lived within 1/4 mile of the rail responded with positive support of the shared use path. Following review of the survey results, the study team developed a list of frequently asked questions and posted responses on the project website. The results of the survey were presented to the Study Work Group and were used by the study team to inform recommendations on shared use path alignment, cross sections, trailheads, and connections. Summary charts and survey output can be found in **Appendix A**.

¹ Project Website: http://www.virginiadot.org/projects/hampton-roads/eastern_shore_rail_to_trail_study.asp

Virtual Public Meeting

In September 2020, following completion of the final concept plans, the study team developed a recorded presentation that was posted to the project website. The presentation provided project background and schedule, summarized the results of the *MetroQuest* survey, included sample sheets of the final concept plans along with construction cost estimates, and described next steps. Citizens could provide input and feedback on the virtual public presentation via a survey questionnaire included on the project website. The official public comment period ran from October 27, 2020 to November 11, 2020; however, the public presentation was posted before the start date and maintained on the project webpage after the end date.

The study work group received 70 written comments on the virtual public presentation comment form. 89% of these comments represented positive responses in support of the shared use path, 8% were positive responses but still had lingering questions, and the remaining 3% were comments from citizens opposing the shared use path. Many comments expressed a strong desire for equestrian facilities along the shared use path. Other comments expressed interest in campsites along the shared use path. Reservations with the shared use path included the responsibility for maintaining the shared use path and its cleanliness; pesticide use and noise pollution; and impacts that the shared use path may have on adjacent properties. The comments expressed enthusiasm for the potential tourism boost that the shared use path could offer the Eastern Shore.





4. Evaluation of Existing Conditions

The study team first performed an existing conditions analysis to establish environmental, topographical, and sociological conditions along the 49-mile railroad corridor. The “Existing Conditions” analysis included extensive field work and an in-office review to establish these conditions. During multiple field visits, field analysts took photos (a sampling pictured below), videos, and detailed field notes while traversing the entire 49-mile corridor. The in-office review included an assessment of environmental conditions, socioeconomic demographics, previous project studies in the vicinity, traffic characteristics (e.g., traffic volume, road speed limits, existing signal phasing), and available right of way.



Existing Conditions Overview

The findings from this field work, as well as the in-office review work, allowed the study team to identify the major constraints and opportunities along the corridor. The identified constraints, opportunities, and features were consolidated into a graphic representation for the full 49-mile corridor and is shown in **Appendix B**. The constraints and opportunities identified include:



Available Right of Way

The shared use path is to be constructed completely within the abandoned Bay Coast Railroad right of way and existing VDOT right of way, as shown on the alignment concept graphics. In lieu of a complete survey, the study team relied on available GIS parcel information to identify existing Bay Coast Railroad and VDOT right of way. While a good indicator of the available area, the GIS information may not be completely accurate throughout the corridor. The full



survey will inform the final design to ensure that the shared use path and accompanying amenities stay within the available right of way.



Major Destinations and Attractions

In coordination with the Study Work Group and local knowledge of the Eastern Shore, the study team identified major destinations and attractions along the project corridor. The most prevalent destinations and attractions include retail stores, restaurants, residential communities, farmers markets, cultural and historic centers and museums, marinas, recreational centers, and educational centers. The attractions and destinations served as a basis for possible shared use path connections and trailhead locations. While identifying potential trailhead locations, the study team also considered the available right of way and existing connections to the attractions and destinations.



Topography

The existing railbed is relatively flat throughout the length of the corridor, but the elevation within the entire railroad right of way varies. In many cases, the railroad corridor is roughly the same elevation across the entire cross section, with the existing railbed elevated slightly above the ground; however, many locations, particularly in the north have a moderate slope and drop off immediately to one side or the other of the existing railbed. This may be due to a drainage feature, such as a ditch, or it may be attributed to the elevation difference to the adjacent roadway. The steep changes in topography typically occurred on the west side of the existing railbed because the railroad right of way once housed two separate railroad tracks: the existing railbed and an additional railbed to the east. The eastern railroad track has been decommissioned and is in varying states of disrepair along the corridor. The existing topography along the corridor was equally considered when laying out the shared use path as well as the need for additional physical barriers.



Drainage and Wetlands

In many locations, the railroad corridor was adjacent to a drainage feature, such as a ditch, a drainage pipe traveling under the rail tracks, or a wetland area. Minimizing the drainage and wetland impacts was a priority when determining the placement of the shared use path.



Existing Vegetation

The existing vegetation was primarily identified through field work and available aerial imagery. The vegetation along the corridor included single trees acting as a buffer between the railroad and the adjacent roadway as well as dense vegetation on one or both sides of the existing railbed. The removal and addition of vegetation was considered in the overall layout of the shared use path for aesthetics and safety purposes. The existing vegetation should also be examined during final design to accommodate for stopping sight distance at all shared use crossings and intersections.



Road Crossings and Driveways

In total, the railroad corridor crosses 56 paved roads and an additional 23 unpaved roads or private driveways. In some locations, private driveways run directly parallel to the existing railbed in easements located within the railroad right of way. The road crossings are typically perpendicular to low volume, two-lane roadways. Existing intersection and roadway characteristics were used to

determine the typical appropriate shared use path and roadway geometry for each crossing location.



Existing Traffic Control

Field work and in-office reviews allowed the study team to determine the existing traffic control at each of the road crossings. Typically, the railroad corridor crosses the roadway on stop-controlled approaches, though some crossings are mid-block and across uncontrolled approaches. Five road crossings occur at an existing signalized intersection. Utilizing the gathered traffic control data, typical shared use path and roadway warning systems were accounted for at each crossing. A previous safety study, performed in 2016, of Route 13 identified one location, Phillips Drive, where a northbound right-turn lane was recommended, but was determined infeasible due to the proximity of the railroad corridor. VDOT Hampton Roads District has identified numerous other locations that may benefit from a right-turn lane. These are identified in Chapter 5. With the conversion of the railroad corridor to a shared use path, these right-turns lane may now be feasible.



Existing Utilities

The field work identified above-ground utilities such as utility poles and lines. Underground utilities identified were limited to visible drainage features. The rail corridor includes segments of broadband utilities, and a possible future installation of additional broadband utilities. During preliminary engineering, a survey showing the existing utilities will be available to inform the final design of the shared use path. At this time, not significant impact to the existing underground utilities is anticipated. A separate plan for this railroad corridor is installing a sewer line for much of the 49 miles, though that is still in the planning-level stage, as well. The study process maintained continuous coordination with Hampton Roads Sanitation District (HRSD). Coordination with HRSD and the future broadband line must be continued through preliminary engineering and construction to ensure that the shared use path and future utilities will cohabitate in the railroad right of way.

Overview of Environmental Impact

Rare, Threatened, and Endangered Species

VHB conducted a desktop review in August 2020 to identify possible threatened and endangered (T & E) species on the federal and/or state level that may occur within the vicinity of the proposed alignment. VHB searched the Virginia Department of Wildlife Resources (DWR), Virginia Fish and Wildlife Information Service (VAFWIS) database and considered T & E species with confirmed or potential occurrences within Accomack and Northampton Counties for which potential habitat may occur within the vicinity of the proposed rail to trail project area. The DWR VAFWIS search results identified 9 species of threatened or endangered status. **Appendix C** summarizes these DWR VAFWIS search results for the full alignment as well as the three SMART SCALE application alignments. Additional review of the project area should be conducted during preliminary engineering to determine the potential for any effects to occur on these T & E species.

Cultural Resources

VHB conducted a desktop review in August 2020 to identify possible historic or archeological resources within the vicinity of the proposed alignment. VHB searched the Virginia Department of Historic Resources (DHR) archives database, Virginia Cultural Resource Information System (VCRIS) to identify potential resources within 50' of the proposed new shared use path alignment. In the VCRIS search results, VHB identified eight resources that have been previously surveyed and were determined to be listed in the National Register of Historic Places (NRHP) or eligible for listing in the NRHP, and another 19 that have not yet been evaluated for eligibility by DHR. Properties in the VCRIS database that are determined to be not eligible for listing in the NRHP are not considered historic and were therefore excluded from this survey. Individual resources contributing to a historic district were considered as part of the overall historic district. No archeological resources were identified through the VCRIS archives search. **Appendix C** summarizes the VCRIS archives search results for the full alignment as well as the three SMART SCALE application alignments.

Wetlands and Streams

VHB conducted a desktop review in September 2020 to identify possible wetlands and streams that may occur within the vicinity of the proposed Eastern Shore rails to trails project alignment. VHB used the National Wetlands Inventory (NWI) Geographic Information System (GIS) data to identify potential wetlands and streams that may occur within a 30' corridor of the proposed shared use path alignment (15' on each side of the proposed shared use path centerline).

Appendix C summarizes the results of this analysis for the full alignment as well as the three SMART SCALE application alignments. Approximately 5 acres of wetlands and 4,316' of stream occur within the 30' corridor buffer. Additional review of the project area should be conducted during preliminary engineering to determine the potential for any impacts to occur.



5. Final Alignment and Concept

Shared Use Path Alignment

The constraints and opportunities identified during the field work were supplemented with existing mapping and data to identify typical cross sections, path alignment, roadway crossing details, trailhead opportunities, potential shared use path spurs and connections, and potential environmental constraints. The full shared use path alignment is 49 miles in length. It extends from the Town of Cape Charles to Taylor Street, approximately 0.6 miles south of the Town of Hallwood.

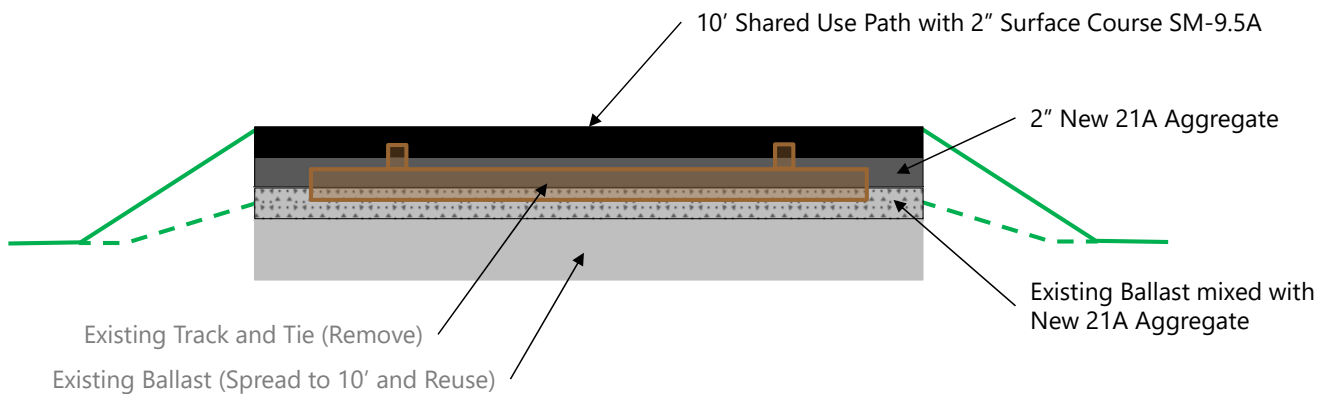
The shared use path corridor travels through the towns of Cape Charles, Cheriton, Eastville, Nassawadox, and Exmore in Northampton County and Painter, Keller, Melfa, Onley, Parksley, and Bloxom in Accomack County.

Appendix D displays the final planning-level alignment represented on 109 individual sheets. This alignment takes into consideration the constraints identified through the existing conditions analysis, but the final design may be tweaked during preliminary engineering and as the project progresses. The alignment shown in **Appendix D** stays within the rail corridor with only minor connections to immediately adjacent parcels included and does not include significant off-rail improvements. While some amenities are depicted on the graphics, specifically at the trailhead locations, other amenities may be added during the design stage in accordance with the Design Criteria Guide shown in **Appendix E**. Amenities include benches, bicycle racks, wayfinding/informational signs, trash cans, and other similar items.

Whereas rail service has been discontinued within the 49-mile study corridor, some degree of active rail service is planned to remain north of Taylor Street and Hallwood. Nevertheless, the potential exists to develop a rail with trail to connect to Hallwood. Furthermore, the opportunity exists to connect the shared use path to planned trail facilities in Maryland, outside of the rail corridor. Evaluation and feasibility assessment of this option is outside the scope of the current study, but it is important to mention here as a possibility warranting further analysis, because it would help complete a primary regional connection. This would require coordination with the rail operator and other Virginia stakeholders as well as trail proponents in Maryland.

Construction Process and Assumptions

The construction of the shared use path relies on spreading out and reusing much of the existing ballast as the subbase for the shared use path. This planning study and cost estimate assumed that existing ballast could be reused; however, the ability to reuse the ballast material is dependent upon the degradation of the ballast between now and construction, particularly after the removal of the railroad track and ties. Overtime, the ballast of an abandoned railroad tends to degrade as the structure loosens and biomass material becomes embedded. For planning purposes, it was assumed that the contamination levels within the ballast will be low enough that the ballast is able to be reused on-site and does not need to be hauled off or otherwise treated. If contamination levels are higher than federal and state thresholds, additional treatment,

Figure 3. Typical Detail for the Shared Use Path Construction

such as hauling away the existing ballast, may be required.

The rail to trail conversion begins with removing all existing railroad tracks, ties, and associated traffic control devices. Next, the existing ballast is spread out to achieve a 10' width. New No. 21 A/B aggregate is placed on top of the existing ballast and is compacted to create the base of the shared use path. The amount of new No. 21A/B aggregate required to create a sufficient base structure depends on the condition and composition of the existing ballast at the time of construction and must account for some settling of the new aggregate into the existing ballast. A 2" paved asphalt surface is laid on top of the newly formed base to complete the shared use path surface. **Figure 3** depicts the aggregate layers required for the 10' shared use path. For the alternative soft surface path, the existing ground area is excavated, the soil is redistributed, and the new surface is installed. Lastly, fill material is used to create the shoulders of the shared use path as the shared use path surface will sit slightly above the existing grade.

Typical Roadway Crossings

The shared use path corridor primarily runs adjacent to Route 13, Route 316, and Route 779 and crosses many of the side roads. The shared use path corridor includes 56 paved, public roadway crossings and an additional 23 unpaved or private driveway crossings. Five crossings are at existing signalized intersections, and the remaining are at unsignalized intersections. The crossings typically cross low volume (less than

2,500 vehicles per day), two-lane roadways and many occur at a stop-controlled intersection. The only crossing of Route 13, a high-volume four lane roadway, will be accommodated by a future signalized intersection at Country Place, outside the Town of Cape Charles. Where the railroad corridor deviates from Route 13 and Route 13 business, the shared use path crosses roadways at a midblock location.

The study team developed multiple typical roadway crossings, presented as part of **Appendix D**, to be applied to each of the roadway crossing locations. The typical crossings follow state and federal guidance for roadway crossing treatments at controlled and uncontrolled approaches. The typical crossing graphics presented are intended as illustrations of roadway crossing treatments and are subject to change during the design process. Design of the typical crossings considered many characteristics such as existing intersection control, distance from adjacent roadways, relative volume of conflicting movements, available sight distance, and existing surface type. Because turning movement counts were not available, the study used the presence of a southbound left-turn lane as a proxy for the relative left-turning volume.

Appendix D includes the typical crossing graphics, and the list below provides a brief description of each typical crossing.

Typical Crossing A

This crossing is to be applied at a signalized crossing location and includes pedestrian push buttons and

pedestrian signals. The marked crosswalk should be positioned as close to the adjacent roadway as practical while avoiding major modifications to signal equipment (i.e., relocation of existing signal pole or equipment); however, according to the VDOT RDM, “in no case shall the crossing be closer than 5 feet from the edge of the parallel roadway.” A R10-15R or equivalent MUTCD-compliant sign should be installed on the mast arm for the northbound right-turn, but placement is subject to a loading analysis. At the time of this study, all signalized southbound left-turn movements operated as protected-only movements. If a left-turn movement is permissive and may conflict with the shared use path crossings at the time of design or construction, additional warning, such as an R10-15R sign, is advised.

Typical Crossing B

This crossing is to be applied across a stop-controlled intersection approach with low conflicting turning volumes. For the purposes of this study, locations without southbound turn-lanes were assumed to have relatively low conflicting turning movements. In this typical crossing, the shared use path is brought close, but no closer than 5', to the adjacent roadway to maximize visibility to shared use path users and is given the same control (i.e., free flow) as the adjacent roadway. Vehicles on the side approach must come to a complete stop before the shared use path. This typical mimics a traditional stop-controlled intersection crossing.

Typical Crossing C

This crossing represents a typical crossing at a two-way stop-controlled intersection, but across the uncontrolled approach. These locations are low-speed, low-volume crossings where the shared use path is given a stop condition.

Typical Crossing D

This crossing represents one alternative midblock crossing and is to be applied at locations on a curve with limited sight distance. This alternative provides advance trail crossing assemblies in both directions to alert motorists to the shared use path users.

Typical Crossing E

Typical crossing E illustrates an approach on a straight approach with limited sight distance to the shared use path crossing. On the approach with limited sight distance, an advance trail crossing assembly and advance pavement markings are provided. While this typical crossing shows the advance warning on only one approach, it may be applied to both approaches if limited sight distance is available. Along the shared use path corridor, sight distance may be limited by items such as buildings or vegetation.

Typical Crossing F

This crossing is to be applied across unpaved private driveways or roads adjacent to the roadway. Per VDOT's *Road Design Manual* (RDM), unpaved surfaces should be paved at shared use path crossings to avoid excess dirt and gravel getting in the travel way. For this reason, the distance between the shared use path and the adjacent roadway should be paved, and an additional distance of 20' beyond the shared use path crossing should be paved as well. While trail crossing signs and crosswalk pavement markings are shown in this graphic, these items are optional based on the volume of the driveway crossing. The decision to exclude or include signs and markings should be made during preliminary engineering in coordination with VDOT Hampton Roads District Traffic Engineering Division.

Typical Crossing G

This crossing is to be applied across unpaved private driveways not adjacent to the roadway at midblock locations. Per VDOT's *Road Design Manual* (RDM), unpaved surfaces should be paved at shared use path crossings to avoid excess dirt and gravel getting in the travel way. For this reason, 20' beyond the shared use path crossing on either side should be paved. While trail crossing signs and crosswalk pavement markings are shown in this graphic, these items are optional based on the volume of the driveway crossing. The decision to exclude or include signs and markings should be made during preliminary engineering in coordination with VDOT Hampton Roads District Traffic Engineering Division.

Typical Crossing H

This typical crossing is to be applied across a stop-controlled intersection approach with higher conflicting turning volumes. For the purposes of this study, locations with southbound turn-lanes were assumed to have relatively high conflicting turning movements. In this typical crossing, the shared use path is set back from the adjacent roadway to allow for vehicles to complete the turning movement and then stop for users in the shared use path crossing without interrupting the traffic flow on the mainline. The minimum set back distance between the adjacent roadway and the shared use path crossing should be determined during preliminary engineering. This distance should be based on many factors such as distance needed for vehicle storage, driver perception reaction time, and common engineering practices. This distance should be based on many factors such as distance needed for vehicle storage, driver perception reaction time, and common engineering practices.

Typical Crossing I

Typical crossing I illustrates a midblock crossing on a straight approach with no sight distance limitations. Careful consideration should be given to locations with vegetation in the vicinity. The vegetation needs to be carefully maintained to ensure adequate sight distance. If this is not feasible, typical crossing E should be applied instead.

Future Right-Turn Lanes

Various safety studies and VDOT personnel have identified multiple intersections along Route 13 and Route 316 where a northbound right-turn lane could be beneficial; however, these locations have been constrained by the previously active railroad. The railroad abandonment presents an opportunity to construct right-turn lanes at these locations. At these locations, the typical crossings above must take into consideration the potential for a future right-turn lane. It is unclear at this time which may be constructed first, the right-turn lanes or the shared use path, but it is imperative to ensure that neither construction effort preclude the other from occurring in the future. **Figure 4** shows, **Table 2** lists the potential right-turn lanes and the corresponding typical crossing.

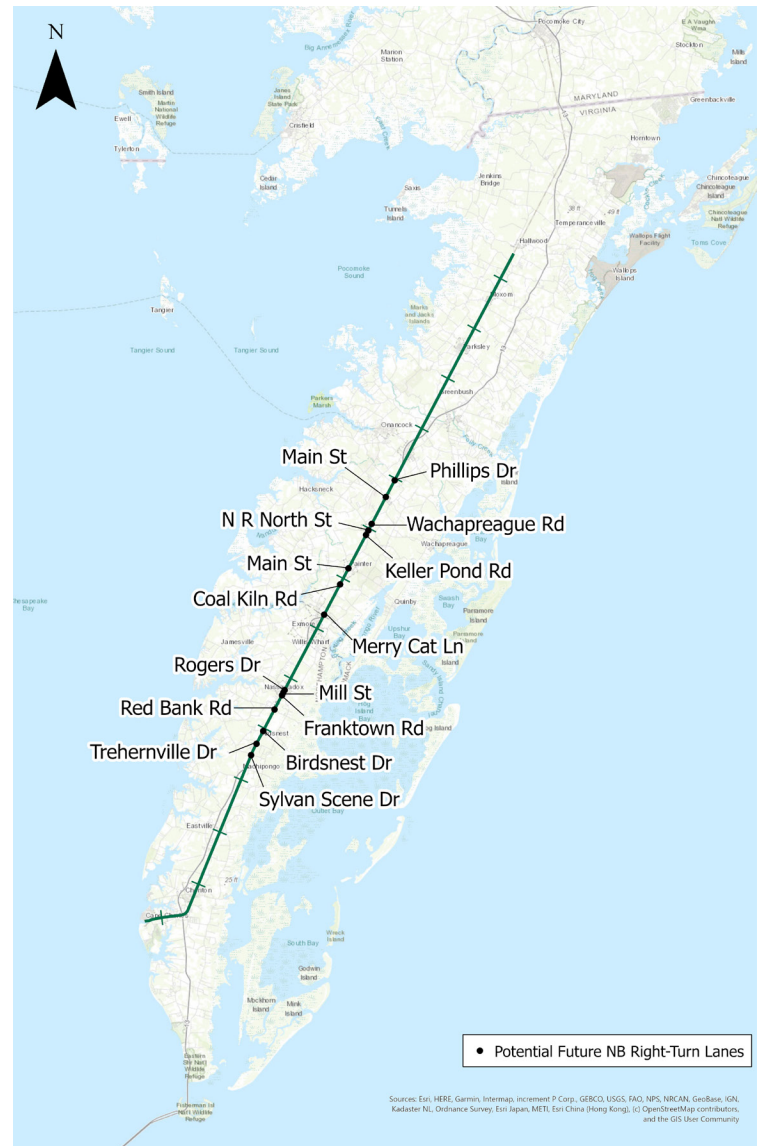


Figure 4. Potential NB Right-Turn Lane Locations

Typical Sections

Like the typical crossings, the study team developed multiple typical sections, presented as part of **Appendix D**, to illustrate cross sections throughout the 49-mile alignment. The typical sections are intended to cover a majority of the corridor's length, but some locations within the corridor may vary from the typical sections. For example, based on the survey performed during preliminary engineering, the alternative soft surface path may be closer to the 10' shared use path than shown due to right of way constraints. The cross sections take into consideration guidance from VDOT's *Road Design Manual* (RDM) on

Table 2. Potential Future NB Right-Turn Lane Locations

County	Route #	Road Name	Signal Present?	Paved Shoulder Present?	VDOT Priority	Typical Crossing
<i>Northampton</i>	625	Sylvan Scene Dr.	No	Yes	3	H
	622	Trehernville Dr.	No	Yes	3	H
	620	Birdsnest Dr.	No	Yes	3	H
	617	Red Bank Rd.	No	Yes	3	H
	609	Franktown Rd.	No	Yes	3	H
	712	Mill St.	No	Yes	3	H
	606	Rogers Dr.	Yes	Yes	2	A
<i>Accomack</i>	601	Merry Cat Ln.	Yes	Yes	2	A
	607	Coal Kiln Rd.	No	No	1	H
	1203	Main St.	Yes	Yes	2	A
	620	Keller Pond Rd.	No	Yes	3	H
	696	N R North St.	No	No	1	B
	180	Wachapreague Rd.	Yes	Yes	2	A
	626	Main St.	Yes	No	1	A
	639	Phillips Dr.	No	No	1	H

shared use paths as well as common engineering practices for shared use paths and rail to trail projects. The typical sections include the following features:

Shared Use Path

Each typical section includes a 10' shared use path with a minimum 2' graded shoulder on both sides. As described in the construction process above, the shared use path is built up of the existing ballast, new base aggregate, and asphalt material, and its ultimate grade will be slightly higher than the existing railroad ballast grade. The typical sections show where the future shared use path will be compared to the existing railbed. The shared use path is either centered on the existing railbed, extended to one side or the other of the existing railbed, or is completely off the railbed. The location of the shared use path was

carefully determined based on identified constraints. The distance from the roadway to the adjacent shared use path varies depending on the location along the corridor.

Alternative Soft Surface/Grass Path

Most typical sections also include an optional alternative soft surface / grass path. This path can range in width between 4' – 8' depending on the anticipated mode at each location. Anticipated modes may include equestrians, ATVs, or joggers as examples. Additionally, this alternative path may be a soft surface material, such as gravel, or may be a traversable and graded width of grass. The inclusion of the optional alternative soft surface path is the decision of the ultimate shared use path owner, and the design will be determined during preliminary engineering. The

inclusion and design of the optional alternative soft surface / grass path will be largely dependent on the available right of way, available funding, constraints such as topography or excessive vegetation, and the ultimate anticipated user volume and mode. If the optional alternative soft surface path is not constructed with the 10' shared use path, it may be added later if user volumes increase, conflicts occur between various mode types, or as additional funding becomes available. The typical sections show a minimum 10' buffer between the shared use path and the alternative soft surface / grass path. This distance varies at intersection locations where the alternative path meets with the shared use path and may vary at other locations throughout the corridor based on the constraints mentioned above. During the planning study, interest for the optional alternative soft surface/ grass path centered on the north-south alignment of the railroad corridor. A similar separated soft-surface path could be applied on the east-west alignment near Cape Charles to address the use of golf carts in a predominately pedestrian/bicycling zone; however, stakeholders may choose to encourage golf carts to use Stone Drive through posted signs, outreach, and patrolling.

Landscaping

Each typical section includes existing vegetation as well as proposed vegetation. Typically, trees are proposed between the shared use path and adjacent roadway to serve as a buffer between the two and create a sense of separation. Trees may also be proposed to create a visual and physical buffer between the shared use path and private property along the corridor. It is vital to consider sight distance lines at intersections when determining tree type and placement during preliminary engineering. Any trees within the clear zone of the adjacent roadway must be considered crashworthy. VDOT provides crashworthy trees in their *Guidelines for Planting Along Virginia's Roadways* guidance document. Such trees include Japanese Maple, Flowering Dogwood, Crape Myrtle, and Tea Crabapple.

Physical Barriers

In locations with steep slopes on either side of the shared use path, the typical sections include a physical

barrier. The final design of these barriers will be determined during preliminary engineering, but the physical barrier must meet RDM standards and be a minimum of 42-inches in height. In one location, in the Town of Cape Charles, flex posts are depicted in the typical section to separate the side path from the travel lanes on Mason Avenue. Physical barriers, such as bollards, should not be routinely used at intersection crossing locations. Bollards are often ineffective, present a hazard to bicyclists and other path users, and should not be used unless there is a documented history of unauthorized vehicles entering the shared use path. The American Association of State Highway and Transportation Officials' *Guide for the Development of Bicycle Facilities* provides guidance on restricting unauthorized motor vehicle traffic on the shared use path.

Trailheads and Connections

The study identified multiple trailhead locations and potential connections along the 49-mile corridor as well as a design guide specifying the placement of additional shared use path amenities.

Trailhead locations were determined based on multiple factors such as adjacent land uses and destinations, existing connections and accommodations, available right of way, and physical environmental constraints.

The study identified trailhead locations in Cape Charles, Machipongo, Nassawadox, Painter, Onley, and at the northern shared use path terminus south of Hallwood.

The concept graphics show potential trailhead layouts and amenities; however, final design of the trailheads and accompanying amenities will be determined during the preliminary engineering stage. Amenities at the trailhead locations may include parking, information kiosks, benches, and bicycle racks. The Town of Exmore presents the opportunity to extend the concept of a typical trailhead and create a Town Event Center in the railroad right of way at the Exmore Railroad Station. The proposed Town Event Center could include many amenities of a traditional trailhead but could also include amenities for town gatherings such as a small stage or performance area.

Additional amenities along the shared use path and within the trailhead locations, while not shown on the concept graphics, can be incorporated during the preliminary engineering design phase. **Appendix E** presents the design guidelines for the shared use path, but also include potential amenities (e.g., restroom facilities, wayfinding signs, mile marker signs, information kiosks, bicycle repair stations, and benches).

One benefit that the shared use path can provide is an alternative connection to various destinations throughout the Eastern Shore. The concept graphics show small shared use path spurs to destinations in adjacent parcels such as the Cape Charles Brewing Company and Quail Cove Farms. The concept graphics do not show improvements beyond the railroad corridor; however, the shared use path design could incorporate longer connections to destinations throughout the Eastern Shore that are not immediately adjacent to the railroad corridor. One example of a more robust connection opportunity is represented in the *SMART SCALE: Town of Onley* application. The *SMART SCALE: Town of Onley* application included sidewalk installation along Coastal Boulevard to connect to the existing traffic signal at Route 13/Coastal Boulevard as well as a shared use path extension connecting to the existing traffic signal at Route 13/Main Street/Market Street. The *SMART SCALE* improvements are included in **Appendix F**. Other connections to this level can be evaluated during the preliminary engineering stage based on land uses and surrounding destinations.

Materials

For planning purposes in this study, a paved asphalt surface is proposed for the shared use path. The planning study considered many alternative surfaces to a paved asphalt surface, including paved concrete, crushed stone, rubber, and an organic lock pervious surface, as shown in **Figure 4**. Trails and shared use paths throughout Virginia and elsewhere have had success with each of these materials, and each offer their own benefits and drawbacks. The study team, with input from the study work group, determined that a paved asphalt surface could be advantageous as long-distance bicycling is one of the intended uses of

the shared use path. The paved asphalt, although it incurs a higher construction cost than a crushed stone surface, offers lower maintenance and more longevity throughout the life of the shared use path. A different material may be considered during the preliminary engineering phase; however, it is important to maintain some level of consistency in the material along the alignment and avoid short, alternating sections of varying materials.



Figure 5. Alternative Shared Use Path Materials



6. Likely Project Costs

Methodology

The study developed planning-level cost estimates for the full 49-mile corridor. The cost estimate relied on VDOT averages for unit bid item costs. The planning-level costs presented are an opinion of probable cost using the information available. The actual design and construction costs are subject to change as the project progresses. Major factors that may affect the costs include the presence and location of underground utilities as well as the ability to reuse the existing railroad ballast material as a subbase for the shared use path. The planning-level cost estimates were developed using the following assumptions:

- » The cost estimate includes the removal of the existing railroad track and ties along the mainline as well as associated signal equipment (i.e., controllers, overhead structures, signals, and gates). The cost estimate does not reflect any potential salvage value of these items. All other existing traffic control devices (i.e., signs and pavement markings) will be removed prior to the start of construction through general repaving and maintenance activities. Removal of these items was not included in the planning-level costs. The removal of track and tie for rail spurs on private property outside of the railroad right of way are not included in the cost estimate. The cost estimate does include quantities to remove and rebuild the roadway at any roadway crossing locations.
- » After removal of the rail track and ties, the existing railroad ballast can be spread out to a 10' width and reused, with additional new aggregate, as the shared use path subbase as described in Chapter 5. The planning-level cost estimate does not account for costs associated with hauling the ballast to an off-site facility.
- » A 15 percent nonstandard item factor was applied to the unit items to account for items that are not yet determined or designed. For example, this 15 percent may include items such as miscellaneous amenities (e.g., benches, trash cans, bicycle racks), art installations, or historic/wayside stations along the shared use path.
- » The planning-level cost includes an additional 40 percent contingency to account for changes in the design between this high-level planning stage and a design phase. These items may include, for example, a change in the amount of existing ballast material that can be reused on site or a change in the width or surface material of the paths. The contingency also accounts for the typically higher construction costs on the Eastern Shore compared to other areas in Hampton Roads.
- » For purposes of the planning-level cost estimate, the 10' shared use path was assumed to have an asphalt concrete surface, and the alternative soft surface path was assumed as a 4' wide gravel surface.
- » All work will be completed within the dedicated Canonie Atlantic Company right of way, so the planning-level costs do not include right of way costs.
- » The planning-level costs do not include any improvements outside of the railbed such as the sidewalk connections proposed in the SMART SCALE: Town of Onley application.
- » Assumptions for lump-sum and percentage-based items (e.g., preliminary engineering, maintenance of traffic, or landscaping) are consistent with recent VDOT projects and engineering judgement.

Planning-Level Cost Estimate

The total per-mile planning-level cost estimate is approximately \$700,000/mile, excluding cost for removal of the railroad track, ties, and signal equipment. This cost is consistent with recent rail to trail projects in Virginia. All costs stated below represent 2020 dollars. **Appendix D** provides more details on the planning-level cost estimate.

Preliminary Engineering

The preliminary engineering costs include survey, environmental coordination/reporting, design of the shared use path and alternative soft surface path, and project administration and oversight.

The planning-level cost estimate assumed the preliminary engineering costs at \$90,000/mile. An additional 12 percent contingency is applied to the preliminary engineering subtotal to account for any increases in scope that may arise before or during preliminary engineering. Such items may include additional environmental coordination/reporting, additional geotechnical testing/design, or increased landscape architecture design. The total planning-level cost estimate for preliminary engineering is approximately \$4,943,000.

Construction

Construction costs include mobilization, maintenance of traffic, material and labor for the shared use path and alternative soft surface path as well as project administration, oversight, and inspection. The construction costs were developed using quantity take-offs and VDOT Hampton Roads District and Statewide unit costs. The planning-level construction cost estimate totals \$26,922,000 for the 10' paved asphalt path and an additional \$2,991,000 for the adjacent alternative soft surface path.

Maintenance

The Rails to Trails Conservancy (RTC) in 2015 conducted a survey of rail to trail managers' average costs for annual maintenance of these types of facilities. The survey covered items such as maintenance of trail surfaces, trailheads, signs, support

facilities, grass mowing, and other activities. The results suggested that the average annual maintenance cost for an asphalt rail to trail corridor was roughly \$2,000 per mile. **Table 3**, courtesy of the RTC *Maintenance Practices and Costs of Rail-Trails*¹ document, presents the typical breakdown of the yearly maintenance costs.

The study team had multiple discussions with VDOT and the Department of Conservation and Recreation (DCR) to determine costs specific to the future Eastern Shore shared use path. Although the future owner of the shared use path has not been determined at this point, VDOT's maintenance contract unit prices can be used as a proxy to determine the maintenance costs for the shared use path. The estimated costs are as follows, in 2020 dollars:

Activity	Cost
<i>Tractor Mowing</i>	\$75 / Acre
<i>Hand Mowing</i>	\$250 / Acre
<i>Litter Pickup</i>	\$30 / Acre

Additional maintenance information is provided in Chapter 8.

Removal Costs

The planning-level cost to remove the existing railroad tracks, ties, and signal equipment is approximately \$16,144,000 for the 49-mile corridor (\$329,000/mile). This planning-level cost estimate does not include cost to remove any pavement markings or signs on the intersecting roadways. The cost also does not take into consideration the potential for salvage value. The salvage value of these materials is heavily dependent on the timing of the track and tie removal, which remains an unknown at the time of this study.

VDOT unit items for removal of traffic signal structures were used as a proxy for removing the existing railroad signal equipment (i.e., controller cabinet, signal, and gate). VDOT unit item costs were not available for the removal of the railroad track and ties. Instead, the planning-level cost estimate relied on available cost information for removal of track and ties for other rail to trail projects on the east coast.

1 [resourcehandler.ashx \(railstotrails.org\)](https://resourcehandler.ashx(railstotrails.org))

Table 3. Typical Breakdown of Maintenance Costs

Maintenance Activity	% of Budget
Surface Clearing of Trail	10.8%
Mowing	12.0%
Vegetation management (leaf clearing, pruning, etc.)	11.2%
Keep trail-side land clear of trash and debris	11.5%
Whole tree removal	5.4%
Application of herbicides or pesticides	2.3%
Clearing of drainage channels and culverts	5.4%
Surface maintenance of parking areas	2.7%
Litter clean up, trash cans	2.7%
Maintenance of toilets at trailheads	13.0%
Maintenance of toilets along the trail	1.2%
Trailhead parking snow removal	1.1%
Repair/maintenance of signs	6.3%
Recovery from illegal acts of vandalism / dumping	5.3%
Other trail maintenance activities	9.1%

SMART SCALE Cost Estimates

Separate cost estimates were developed for each of the three SMART SCALE applications. The SMART SCALE application costs include off-rail improvements and connections to destinations along the corridor. Therefore, the per-mile costs submitted for SMART SCALE vary slightly from the costs assumed for the full 49-mile alignment discussed above. Additionally, the SMART SCALE costs include inflation to the assumed phase start date. **Table 4** provides the planning-level cost estimates for each of the three SMART SCALE applications, reflected in future-year dollars.

Table 4. Submitted SMART SCALE Project Cost Estimates

	Town of Cape Charles	Town of Onley	Accomack County
<i>Preliminary Engineering</i>	\$ 384,500	\$ 407,845	\$ 2,414,661
<i>Right of Way</i>	—	\$ 263,814	\$ 311,780
<i>Construction</i>	\$ 5,295,133	\$ 2,862,117	\$ 17,952,204
TOTAL	\$ 5,679,634	\$ 3,533,776	\$ 20,678,645



7. Potential Segment and Phasing Opportunities

The 49-mile length of the corridor provides ample opportunity to design and construct the shared use path in multiple phases. Dividing the design and construction of the shared use path allows the towns, counties, and other agencies to determine shorter sections that will provide the most benefit and may create more competitive funding applications when applying for state, federal, and other funding. It is

Proper segmentation and phasing of the shared use path will increase the benefit seen by the adjacent communities and maximize the funding required for design and construction.

important to note that while the segmentation/phasing strategies outlined below may hold true, the specific sections identified are not intended to preclude other shared use path sections and may change as the Eastern Shore and its destinations develop overtime.

One segmentation strategy could be to divide the 49 miles into smaller (e.g., 10- or 15-mile) consecutive segments. Simply dividing the corridor into equal-length segments may result in constructing the shared use path in the lesser-demand areas before reaching the higher-demand areas. Instead, the consecutive segments should be based on logical start and end points more so than achieving equal-length segments. Breaking the 49-mile corridor into smaller areas provides the following four segments for consideration:

1. **Segment 1**—Cape Charles to Nassawadox
2. **Segment 2**—Nassawadox to Eastern Shore Community College
3. **Segment 3**—Eastern Shore Community College to Onley
4. **Segment 4**—Onley to Taylor Street south of Hallwood

Figure 6 provides a visual of the segmentation, and **Appendix G** provides additional information on each identified segment. Based on the potential connection to the Southern Tip Hike and Bike Trail and the density in Cape Charles, the Cape Charles to Nassawadox segment could be the highest priority. From there, the design and construction could either work to the north, constructing Nassawadox to the Eastern Shore Community College next, or could cover the other higher-density areas in the north in the Onley to Taylor Street segment. Continuing the segments from the South to the North in order provides a contiguous facility throughout the duration of the project; however, constructing the southern-most segment and then the northern-most segment provides additional incentive to complete the segments in the middle.

Ideally, the shared use path will be designed and constructed in the four segments outlined above to provide a contiguous facility rather than short segments broken up. If, however, funding is not available for an entire segment, the segments may be further broken down into smaller sections and constructed through the following phasing strategy:

Phase 1—Larger Towns

The logical first phase of the shared use path is to start in the larger towns within the corridor, such as Cape Charles, Exmore, Onley, and Parksley. These towns typically have higher populations as well as a mix of land uses, primarily residential and retail. These larger towns are anticipated to have a higher innate demand for shared use path users due to the type and density of land uses. Thus, the shared use path will provide a larger immediate benefit to these users and towns compared to other locations along the corridor.

Phase 2—Smaller Towns and Destination Connections

The next phase would be to construct the shared use path in locations where the next highest benefit may be realized. Depending on the anticipated demand, this phase may include constructing the shared use path within small-to-medium sized towns or connecting to popular destinations along the corridor. Towns that may be part of this phase include Cheriton, Eastville, Machipongo, Nassawadox, Painter, Keller, Melfa, and Bloxom. One major destination along the corridor that may fall into this category is the Eastern Shore Community College. As part of constructing the shared use path within these towns and destinations, consideration should be given to connecting to the adjacent larger-town sections of the shared use path outlined under the first phase. Prime candidates for these connections include: Cape Charles and Cheriton, Exmore and Nassawadox, Onley and Melfa/Eastern Shore Community College.

Phase 3—Missing Links

The last phase would involve filling in the missing links between the sections already constructed. To see a more immediate benefit, the shorter missing links should be constructed first, followed by the longer missing links. After this phase is complete, the entire segment would be complete.

The recommended phasing strategy was applied to three locations along the corridor in developing Smart Scale applications. VDOT's SMART SCALE program is the primary, general transportation funding mechanism available in Virginia and accepts

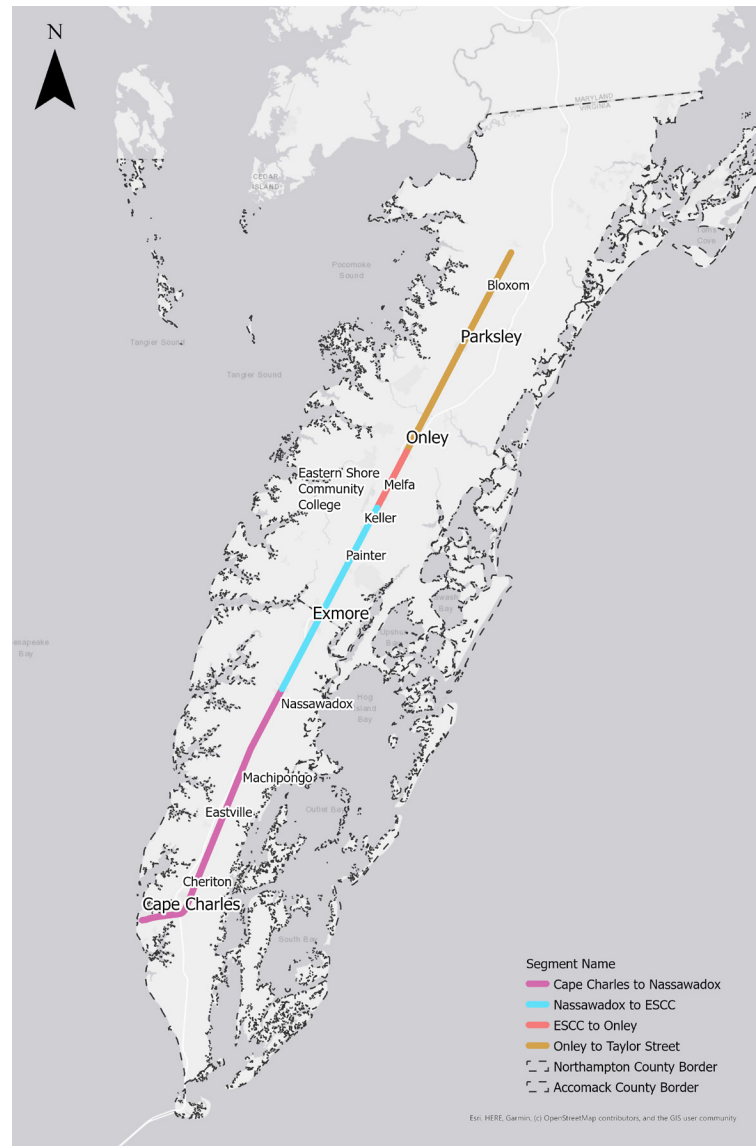


Figure 6. Shared Use Path Segmentation

applications every two years. During the 2020 round of SMART SCALE, the phasing strategy outlined above produced the following three SMART SCALE applications:

1. Town of Cape Charles Segment

The Town of Cape Charles is one of the larger towns and destinations for residents and tourists along the Eastern Shore with a high potential demand for a shared use path. The 2.5-mile segment runs from downtown Cape Charles on Mason Avenue to the Food Lion shopping center near the intersection of Route 13 and Stone Road. This segment connects the higher density residential area within Cape Charles to the main retail area on Route 13.

2. Town of Onley Segment

The Town of Onley is one of the larger towns on the Eastern Shore with multiple surrounding retail centers and residential areas. This SMART SCALE application includes 2.3 miles of a shared use path and 0.4 miles of sidewalk improvements along Coastal Boulevard. The shared use path provides an alternative path for the residents to access these retail land uses.

3. Accomack County Segment

The Accomack County Smart Scale Segment is a combination of all three phasing levels discussed above. This segment connects multiple towns and destinations in Accomack County. The 15.7-mile length begins at the Eastern Shore Community College, terminates at Bloxom, and connects the towns of Melfa, Onley, Parksley, and Bloxom. This segment provides a connection to various destinations along the way and serves as an active recreational alternative.

Similarly, a phasing strategy could be applied to the shared use path features and amenities in addition to the location phasing previously discussed. In some locations where high user volume is anticipated, the full shared use path with all the trailheads and amenities (e.g., benches and wayfinding signs) may be considered during the initial design and construction of the shared use path. In locations with a lower anticipated demand, it may be more appropriate to construct the 10' shared use path with minimal amenities during the initial design and construction phase. A similar phasing strategy may be applied to the trailhead locations. At the lower-demand trailhead locations, fewer amenities (e.g., bike racks, benches, picnic tables) may be needed during the initial design and construction. As the demand grows and the phasing progresses, additional amenities may be added.



8. Management Alternatives

Ownership

Long-term success of the Eastern Shore Rail to Trail Project (ESRT) will require an effective ownership and maintenance structure. Various options have proven successful throughout the commonwealth, as described below. Given the length of the ESRT, and the large number of jurisdictions through which the shared use path passes, stakeholders will need to consider the best option or combination of options for ownership and maintenance. This section of the feasibility study outlines potential management framework alternatives and provides examples within Virginia. The Rails to Trails Conservancy provides additional best practice guidance based on national research and experience.¹

Local Governing Agencies

The ESRT will pass through two counties and multiple towns. One option is for these individual governments to assume ownership and maintenance of the portions of the shared use path within their jurisdictions. Counties and towns are eligible for certain types of funding, and this arrangement would allow localities to pursue such funding at their own pace and consistent with other priorities. Local ownership might also help facilitate connections to primary destinations and tourist attractions. However, this management structure could result in disconnected sections of the ESRT and potentially inconsistent maintenance, branding, and wayfinding.

One example within Virginia is the South Hampton Roads Trail, a rail to trail facility traversing the cities of Suffolk, Chesapeake, Portsmouth, Norfolk, and Virginia Beach. Several sections of the trail have been constructed, and others are under design. The facility, planned as a regional attraction, is moving forward at the local level, with each jurisdiction responsible for funding, ownership, and maintenance. As such, the trail is not necessarily being constructed in a sequential fashion.

Regional Governing Agencies

The ESRT is essentially a regional facility running through and connecting local jurisdictions, regional tourism attractions, and state and federal destinations. As such, one option for management is a regional agency. By representing multiple local interests, such a framework could help ensure strategic and prioritized implementation of shared use path phases. However, a regional entity might not enjoy the same funding eligibility as local governing bodies and might need to rely on local partners for individual funding applications.

The Washington & Old Dominion Trail (W&OD Trail), managed by the NOVA Parks organization², is one example of regional trail management. NOVA Parks represents three counties and three cities in Northern Virginia. As managers of the popular W&OD Trail, the agency can ensure consistent branding, maintenance, and operation.

¹ <https://www.railstotrails.org/build-trails/trail-building-toolbox/management-and-maintenance/management-basics/>

² <https://www.novaparks.com/parks/washington-and-old-dominion-railroad-regional-park>



Figure 7. Washington and Old Dominion Trail (W&OD)¹

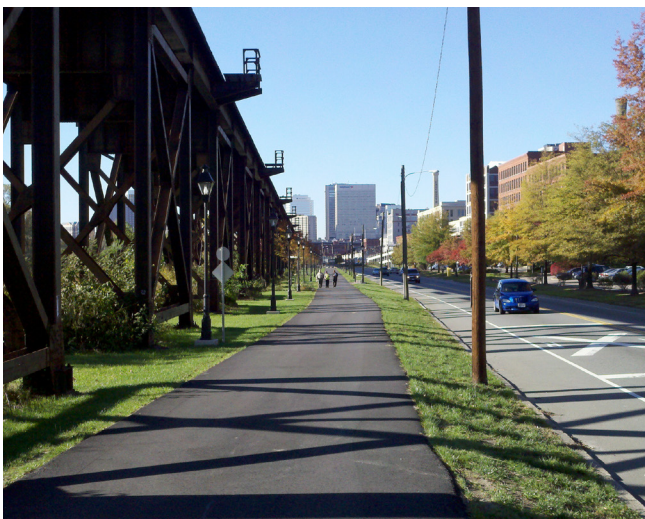


Figure 8. Capital Trail Section in Richmond

State Agencies

The ESRT will serve multiple purposes and convey benefits at the state level, including transportation, recreation, tourism, and economic development. Ownership and maintenance at the state level could help bolster these benefits by providing funding, workforce, and visibility that local or regional entities might not possess. However, state management might result in less local control over phasing and maintenance priorities. Two primary state agencies that could assume this role are the Virginia Department of Transportation and the Virginia Department of Conservation and Recreation.

The Virginia Capital Trail¹ is owned and maintained by the Virginia Department of Transportation, which also oversaw design and construction of the majority of the trail (certain segments were designed and constructed under local authority using a variety of funding sources). It is important to note that the Virginia Capital Trail Foundation (a not-for-profit advocacy organization) works in partnership with VDOT on trail maintenance and improvements.

Federal Agencies

In addition to local and state agencies, federal entities support recreation, conservation, and tourism on the Eastern Shore. Such agencies may bring additional funding sources into the decision-making framework and can assert a high degree of branding visibility for the shared use path. Federal ownership and maintenance could result in less local control over priorities and potential uses and events for the shared use path. Likely federal agencies include the US Fish and Wildlife Service, the National Park Service, and the US Forest Service.

Working in conjunction with the Nature Conservancy and local leaders, the US Fish and Wildlife Service (which operates the Eastern Shore of Virginia National Wildlife Refuge), funded construction of the Southern Tip Trail², to which the ESRT will connect to create a contiguous facility along the Eastern Shore.

¹ <https://www.funin Fairfaxva.com/wp-content/uploads/2016/04/Washington-and-Old-Dominion-bike-trail-Ashburn-Virginia.jpg>

² https://www.co.northampton.va.us/visitors/tourism/free_things_to_see_and_do/free_recreation/bikes_and_hikes/southern_tip_bike_hike_trail



Figure 9. Southern Tip Bike and Hike Trail¹

Maintenance

The study process included a brief investigation into the maintenance capabilities of the Study Work Group members and the localities. The intent of this investigation was to better understand the capabilities that already exist among the SWG members and additional maintenance needs the shared use path would require. The purpose of this effort was not to identify a maintenance sponsor for the shared use path at this stage.

State Agency Capabilities

VDOT currently maintains the roadway shoulder, up to the right of way line, through mowing contracts 3-4 times per year depending on the location. The mowing specifically stays away from the railroad ballast due to safety concerns with the blades kicking ballast. Canolie Atlantic Company does not currently mow in their right of way and instead rely on herbicides to maintain the area.

Aside from mowing, VDOT typically has most of the equipment necessary to maintain the shared use path, though would still have to purchase some of the smaller equipment. VDOT has three maintenance facilities along the Eastern Shore with the capability for

Multi-Agency Partnership

It is possible that multiple levels of government agencies could form partnerships to construct and manage the ESRT. This approach could encourage flexibility and potentially capitalize on locally specific interests or attractions. However, multi-layered management could complicate priorities and efforts at overall consistency.

The Virginia Creeper Trail¹ is an example of successful multi-agency partnership. Located in southwestern Virginia, a portion of this rail to trail is managed by the towns of Abingdon and Damascus, while the portion within the Mt. Rogers National Recreation Area is managed by the US Forest Service.

patching asphalt; drainage, excavation, and clearing of drainage ditches / pipes; and sign installation and maintenance. The maintenance facilities do not have the capability to pave the surface, and any large maintenance areas would likely need to be contracted out. VDOT maintains a utility vehicle that could patrol the shared use path, but it currently is on Tangier Island and would require as much as \$20,000 to relocate. So, VDOT would need to purchase a new one, or more, for patrolling the shared use path.

The investigation revealed that the Department of Conservation and Recreation (DCR) does not currently have the capabilities to maintain the shared use path. Although DCR maintains two similar rails to trails in Virginia (High Bridge and New River), those capabilities do not exist on the Eastern Shore for DCR. The DCR capabilities on the Eastern Shore are mostly related to maintenance efforts for Kiptopeke State Park. The maintenance that DCR currently performs involves mostly carpentry capabilities to maintain benches. To maintain the shared use path, DCR would need to purchase new equipment.

¹ https://www.co.northampton.va.us/visitors/tourism/free_things_to_see_and_do/free_recreation/bikes_and_hikes/southern_tip_bike_hike_trail

¹ <https://www.vacrepertrail.org/>

Locality Capabilities

Although A-NPDC’s coordination with the Towns was still ongoing at the time of this study, the investigation determined that most towns along the corridor do not have the maintenance capabilities required. Cape Charles expressed interest in maintaining the section within their town limits, and Exmore and Parksley have very minimal maintenance staff. No other towns have the capabilities. In some cases, such as in Parksley, they are maintaining (mowing) certain areas. That effort could potentially be continued throughout the town limits along the shared use path corridor if desired by Parksley.

Advocacy and Support

These groups are generally not eligible for the types of construction funding available to governmental agencies. However, they provide critical advocacy and support in the form of maintenance volunteers, trail ambassador programs, branding, mapping, and wayfinding. Advocacy groups also help prioritize shared use path construction and planning for enhancements. In partnership with larger ownership and funding entities, support organizations can also facilitate construction of shared use path amenities such as trailheads. As mentioned above, the Virginia Capital Trail Foundation works in partnership with VDOT “to protect, promote, and enhance the Virginia Capital Trail, and to serve as a resource, community builder, and connector to other trails throughout the Commonwealth.” As part of the public engagement, the Accomack-Northampton Planning District Commission (A-NPDC) began developing a “friends of the trail” group called the Eastern Shore of Virginia Rail Trail Working Group in June 2020. Their actions to date are described in Chapter 9.

Not-for-profit organizations and friends-of-the-trail groups are often important elements of successful shared use path management frameworks.



9. Next Steps

This study developed a planning-level alignment for the shared use path and identified possible trailhead locations and amenities along the corridor.

Recommendations from this study can be used to guide the future design and construction efforts of the shared use path corridor when funding is obtained. The next steps, outlined in this section, include identifying priority segments, continuing coordination with Study Work Group partners, identifying a foundation and consistent branding, and obtaining funding through various sources.

Study Work Group and Public Coordination

Owner Identification

While many of the steps outlined below can occur before a shared use path owner / management structure is identified, the shared use path cannot be constructed until this is determined. The Study Work Group and interested parties should coordinate to determine the most appropriate management structure and identify specific shared use path owners. The future owner must be involved in negotiations and agreements with Canonie Atlantic Company regarding receipt and use of the right of way before construction can begin.

Study Work Group Coordination

Continued coordination between members of the Study Work Group is vital to the shared use path's success through the preliminary engineering, construction, and maintenance phases. Study Work Group members should continue to communicate

agency updates that may affect the shared use path's development and work together to prioritize the segments and obtain funding. A unified approach will ensure that the design and construction of the shared use path is consistent and occurs in a logical order. The Study Work Group should work to produce a shared vision document that identifies a shared phasing vision and tracks funding opportunities and commitments.

Utility Coordination

Study Work Group Member HRSD should continue coordination with the ultimate shared use path owner and designers to ensure that the future sewer line and the shared use path will cohabitate in the right of way without interfering with one another. Although the final alignment within the railroad ROW has not yet been determined, Phase 1 of the Eastern Shore Sanitary Sewer Transmission Force Project¹ identifies potential location where the sewer line will cross 13 or deviate from the rail corridor to connect to a pump station. These potential shared use path crossings are identified on the alignment graphics presented in Appendix D.

STB Sponsor

An "STB sponsor" should be identified through the study work group members. This sponsor will continue to coordinate with the Surface Transportation Board (STB) to further the construction of the shared use path, and Canonie Atlantic Company to ensure all required agreements are in place by the stated deadline of July 2021 or securing an extension.

¹ [Phase 1 Eastern Shore Force Main Sewer Project \(accomack.va.us\)](https://www.vdot.virginia.gov/phase-1-eastern-shore-force-main-sewer-project)

Canonie Atlantic Company Negotiations

Negotiations include the current railbanking agreement as well as future negotiations regarding the existing leases and agreements that Canonie Atlantic Company currently holds with various land owners. Canonie Atlantic Company currently manages approximately 75 leases along the railroad. Over half of the existing leases are with Spectrum (Charter Communications), and other lessors include Verizon, Cape Charles, Crown Castle Coordination, and other small businesses. The leases typically cover underground utility crossings of the railroad as well as parking and signing for small businesses. The Eastern Shore Broadband Authority and Accomack-Northampton Electric Cooperative also utilize the right of way. The revenue from the various leases is approximately \$46,000 per year.

Preliminary Engineering

To prepare for available funding sources, the Study Work Group members should procure and engineering consultant to begin preliminary engineering for entire corridor to the 30% design level. The preliminary engineering will include a full survey with right of way information and better inform the total cost and final design of the shared use path. A detailed environmental assessment should be performed prior to purchase of the right of way from Canonie Atlantic Company.

As funding becomes available for sections of the shared use path, final design, including a formal environmental assessment should be completed.

Eastern Shore of Virginia Rail Trail Working Group

As part of the public engagement, the Accomack-Northampton Planning District Commission (A-NPDC) began developing a “friends of the trail” group called the Eastern Shore of Virginia Rail Trail Working Group in June 2020. The group’s mission statement reads “the mission of the Eastern Shore of Virginia Rail Trail Working Group is to promote and support development of a 50-mile regional hike and bike trail along the historic Eastern Shore railroad corridor that connects towns, encourages outdoor recreation and tourism, contributes to economic growth, and support a healthier and more prosperous community.” The group has established a work plan and is working to engage more locality and community organizations. The A-NPDC has received a National Parks Service Rivers, Trails and Conservation Assistance Program capacity-building grant to establish this group and continue their efforts.

Public Coordination

Continued public engagement is also essential to the success of the shared use path. As part of this effort, VDOT, or another Study Work Group Agency, should maintain the Eastern Shore Rail to Trail project website as a source of information and updates to the public throughout the design and construction phases.

Branding and Marketing

Establishing a recognizable and consistent branding/marketing strategy is key to the success of the shared use path. This effort includes identifying a logo for the shared use path as well as a new name, if desired, for the shared use path. Started as part of this planning study, the branding should be consistent throughout

Figure 10. Primary and Simple Logos



all future outreach and marketing documents to establish a consistent brand for the shared use path that is easily recognizable and identifiable with the Eastern Shore Rail to Trail. The logos presented as part of this planning-level study, shown in **Figure 4**, could serve as a basis for the future branding of the shared use path. The logos presented represent multiple comments from the Study Work Group and represent elements that characterize the Eastern Shore. A simple logo is presented alongside the main logo that could be used in certain situations, such as on vehicle bumper stickers.

Funding Opportunities

While no funding is currently allocated to the design and construction of the shared use path, multiple funding opportunities and programs exist. It is important to note that the funding eligibility is largely dependent on the maintenance structure as not all agencies are eligible for all the funding opportunities outlined below. The following list is a sample of the available funding opportunities. The shared use path may also qualify for additional funding opportunities not listed below. The Study Work Group should consider the project phasing and priority segments before pursuing the funding opportunities listed below.

Smart Scale

VDOT's SMART SCALE program is the primary, general transportation funding mechanism available in Virginia. Every two years, localities submit project funding applications, and VDOT scores the project on a series of measures including safety benefit, operational benefit, and cost. Bicycle and pedestrian projects, such as the shared use path, are eligible for SMART SCALE. Within the project corridor, Accomack County, Northampton County, and Accomack-Northampton Planning District Commission are eligible to apply for SMART SCALE funding. Three SMART SCALE applications were submitted during the FY 2020 application round for the Eastern Shore Rail to Trail.

Transportation Alternatives Set-Aside

Installed by the Fixing America's Surface Transportation (FAST) Act in 2015, this funding, focuses on non-motorized transportation opportunities. Bicycle and

pedestrian trails, like the Eastern Shore Rail to Trail, are prime candidates for this funding. This funding mechanism is on a two-year application cycle. VDOT administers some projects under this funding mechanism, but the Virginia Department of Conservation and Recreation (DCR) specifically administers "Recreational Trails" activities. A myriad of local and regional government entities are eligible for this funding mechanism; regional Metropolitan Planning Organizations (MPOs) and VDOT are not eligible.

Highway Safety Improvement Program's (HSIP) Bicycle and Pedestrian Safety Program (BPSP)

BPSP is one of the core programs of HSIP, administered by the Federal Highway Administration (FHWA) to address non-motorized crashes and risks. The Eastern Shore Rail to Trail, particularly in location adjacent to the Pedestrian Safety Action Plan (PSAP) corridor on Route 13, is a candidate for the BPSP and PSAP funding. Localities, A-NPDC, and VDOT are eligible for this funding mechanism.

Revenue Sharing Program

The revenue sharing program is a cash-match funding focused on immediately needed improvements. Accomack County and Northampton County are eligible for this funding mechanism. The Eastern Shore Rail to Trail project would be eligible for this funding with a 50% locality match, up to the maximum allowed allocation.

EPA Brownfields Grants

The U.S. Environmental Protection Agency (EPA) aims to address environmental contamination and provides funds to prevent, inventory, assess, clean up, and reuse contaminated sites. Given the corridor's history as a railroad, the Eastern Shore Rail to Trail may qualify for an assessment grant, cleanup grant, or multipurpose grant depending on the stage at which the project is at time of application.

Future Spur Connections

Although this planning-level study primarily considered the shared use path alignment and features within the railroad right of way, the shared use path has the potential to connect to destinations and active transportation facilities that are not directly adjacent to the railroad corridor. The SMART SCALE application for the Town of Onley presented a sample of one of these possible connections. As the shared use path proceeds to preliminary engineering and construction, other opportunities to connect to nearby land uses should be considered in more detail.

Rail with Trail Opportunities

Towards the end of the study period, the study team was presented with two proposals for rail with trail sections along the railroad right of way. Though a detailed feasibility study of these alternatives is outside the scope of this study, consideration should be given to both opportunities as the project progresses. Each presents distinct benefits to the shared use path as well as considerations, such as the necessary setback distance. The setback distance, or the lateral offset of the shared use path to the adjacent tracks, is based on multiple factors including the type, speed, and frequency of the trains; maintenance needs; separation technique and need for physical separation (e.g., fences); sight distance; historical issues such as trespassing; and the topography of the corridor. Setback distances are determined on a case-by-case basis and can range from as low as 10' from low-speed, low-frequency trains to as far as 100' for high-frequency and/or high-speed trains. The presence of vertical separation, such as fences, may allow for narrower setbacks, but no lower than 10'.

Taylor Street to Hallwood Shared Use Path Extension

The abandoned railroad right of way ends at Taylor Street, approximately 0.6 miles south of Hallwood. Delmarva Central Railroad Company (DCR), the company that operates this section of railroad, has expressed interest in considering a rail with trail section to connect the proposed shared use path into Hallwood. Given the width of the rail right of way, it appears that a shared use path (and possibly an

adjacent soft surface path) could be installed with enough physical separation from the active rail. This would likely also require a physical barrier such as fencing between the active rail and shared use path. Negotiations between Canonie Atlantic Company (the owner of the land), DCR (the railroad operator), and the future shared use path owner are required. DCR has prepared a draft agreement for such a situation, included as Appendix H.

Nassawadox to Exmore Novelty Train Service

The second rail with trail opportunity was presented by an interested private party to run a novelty tourist train service between Nassawadox and Exmore, approximately 4.5 miles. Similar to other novelty train services around the country, this train would be a low-speed (10-30 MPH) train adjacent to the future shared use path. The existing railbed, track, and ties would remain to service this train. The intent of the novelty train service would be for use during special town events in Nassawadox and/or Exmore.

Canonie Atlantic Company has recognized this proposal as an attractive idea but have determined that it is too early in the process to solidify any proposals or agreements. The cost estimate through this section would vary from the cost estimate presented in this study as the existing railroad track and ties would remain in place, and the existing ballast could not be fully re-used for the shared use path subbase. Additionally, a physical barrier may be required to achieve an appropriate setback distance from the active rail. A detailed cost analysis would have to be completed to determine the cost implications of this alternative. Preliminary engineering would better inform the feasibility of this idea with available parcel and right of way information.



10. Appendices

**A—MetroQuest Survey Results and
Frequently Asked Questions Document**

B—5% Concept Alignment and Constraints

C—Environmental Desktop Review Summary

D—Final Concept Graphics

D1—Concept Alignment

D2—Typical Crossings

D3 – Typical Sections

D4 – Planning-Level Cost Estimates

E—Shared Use Path Design Criteria

F—SMART SCALE Applications

F1 – Cape Charles

F2 – Onley

F3 – Accomack

G – Map Segment Summary Packages

H – Draft Rail with Trail Agreement

