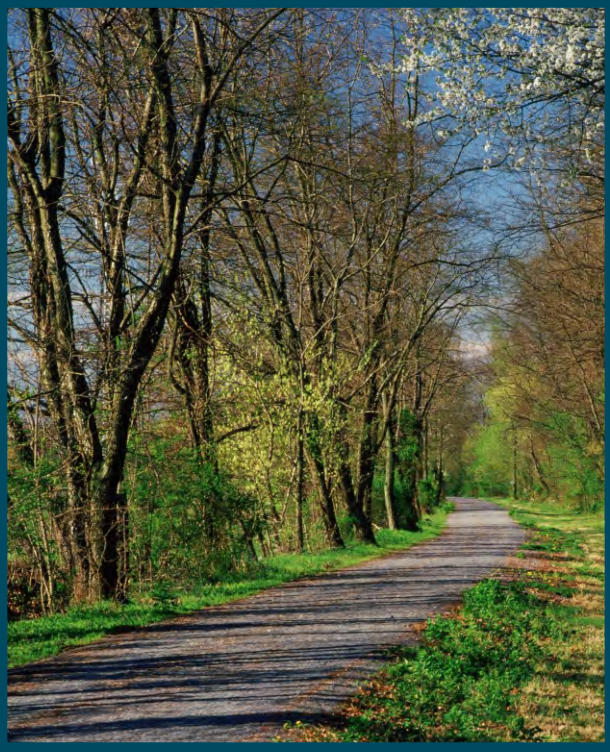
NeWPeC Feasibility Study/ Master Plan

The Newville to Carlisle Extension of the Cumberland Valley Rail Trail



Prepared by

RETTEW SM

June 2013

Acknowledgements

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Table of Contents

Table of Contents

List of Maps

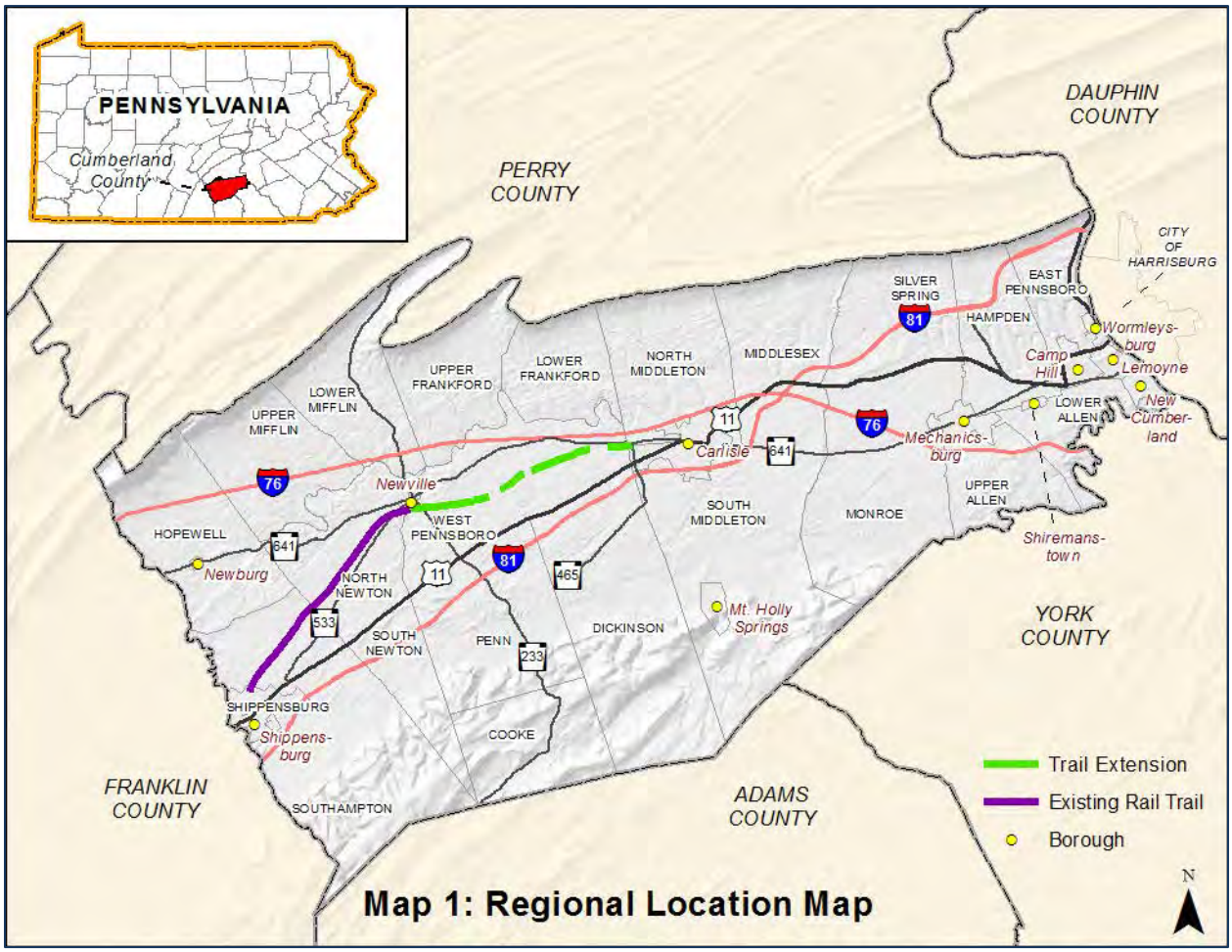
Table of Contents

List of Figures

Chapter 1: Project Introduction

Study Purpose

The Newville to Carlisle extension of the Cumberland Valley Rail Trail is a rail to trail conversion project located in Cumberland County, Pennsylvania. This report is the NeWPeC Feasibility Study/Master Plan, with the term "NeWPeC" representing the municipalities where the majority of the abandoned railway is located: Newville Borough, West Pennsboro Township, and Carlisle Borough. Map 1 places the project location into a regional context. The purpose of the project is to convert the abandoned railway into a trail for both recreation and non-motorized transportation and to identify trail development opportunities outside the corridor that provide continuous access for trail users from Newville to Carlisle. The master plan describes the existing conditions of the corridor, the landscape and natural resources, issues related to the trail including management, financing, operations and maintenance, and issues and opportunities that would influence the trail's development and success. The master plan provides recommendations for the development, operation, management and maintenance of the trail. It does not provide construction specifications from which the trail could be constructed. Those specifications will be developed following the adoption of this master plan.



Chapter 1: Project Introduction

Brief History of the Cumberland Valley Railroad

The existing Cumberland Valley Rail Trail and the Newville to Carlisle extension occupy the former right-of-way of the historic Cumberland Valley Railroad and later the Pennsylvania Railroad. The Cumberland Valley Railroad began operation in 1837 and provided freight and passenger service initially from Harrisburg to Chambersburg in Pennsylvania before extending service south to Winchester, Virginia. During the American Civil War the line had strategic importance in supplying Union troops in the Shenandoah Valley. It also ran the first passenger sleeping car in the U.S. on the Chambersburg-Harrisburg route in 1839.[1] The Cumberland Valley Railroad was bought out by the Pennsylvania Railroad in 1919, and regular passenger service ended in 1952. The portion of rail line from the west side of Carlisle to Shippensburg (which comprises most of the existing Cumberland Valley Rail Trail and the Newville to Carlisle extension) was abandoned in 1979-1980.

Cumberland Valley Rails-to-Trails Council, Inc.

The Cumberland Valley Rails-to-Trails Council, Inc. (CVRTC) is a private, non-profit, volunteer organization established in 1990 to promote multi-use trails in south-central Pennsylvania and western Maryland. CVRTC is dedicated to conservation, historic preservation, recreation, and alternative transportation in the Cumberland Valley region of Pennsylvania through the development of trails along former railroad corridors and in other areas. Over the past 16 years, CVRTC has developed 9.3 miles of the former Cumberland Valley Railroad from Shippensburg Township Park to the Borough of Newville into an improved multi-use trail to serve all ages and abilities and the organization is currently working on the last mile to connect Shippensburg Township Park to the Township line at Fort Street.

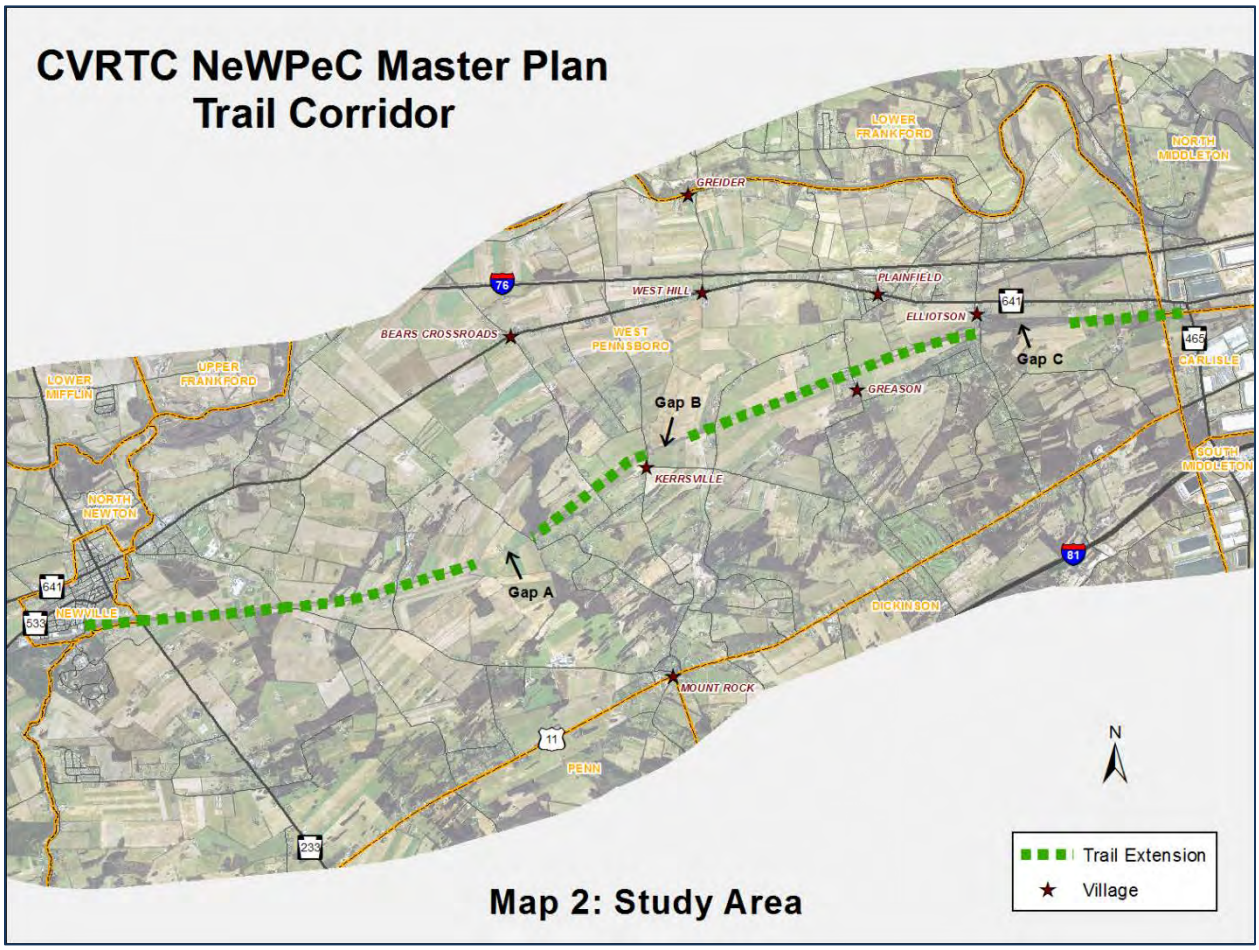
In 2011, with funding assistance from the Pennsylvania Department of Conservation and Natural Resources (DCNR), and the Carlisle Area Health and Wellness Foundation (CAWHF), CVRTC purchased 101.15 acres of railroad corridor between Newville and Carlisle from PPL Corporation. CVRTC obtained additional funding from both DCNR and the CAHWF for the development of the NeWPeC Feasibility Study/Master Plan. The bounds of the study area addressed in this report include the section of the corridor from terminus of the existing trail just west of Big Spring Road in Newville Borough to the west side of Allen Road in Carlisle Borough.

Narrative Description of the Study Area and Adjoining Properties

The existing Cumberland Valley Rail Trail and the Newville to Carlisle extension are nestled in the picturesque Cumberland Valley in Cumberland County, Pennsylvania. The trail corridor property owned by CVRTC between Newville and Carlisle is located in four municipalities: Newville Borough, West Pennsboro Township, Carlisle Borough, and North Middleton Township. The vast majority of the extension runs through West Pennsboro Township, which is a largely agricultural setting that features quaint villages, historical stone farmhouses, and barns. Most of the land area in the Township is in agricultural use although residential housing development is accelerating. The majority of the properties adjacent to the rail trail corridor are in active agriculture; a few small villages, including Kerrsville, Greason, and Elliotson, are located adjacent to the road crossings as well as several rural residential subdivisions. The western end of the trail corridor in Newville Borough is largely wooded. The eastern end of the corridor in Carlisle Borough and North Middleton Township is in the vicinity of dense residential and industrial areas. Map 2 depicts an aerial view of the Study Area. The trail corridor, as

[1] "St. Paul 'Pullmans'", TIME Magazine (June 6, 1927). Retrieved on 19 November 2012.

shown on Map 2, consists of four (4) separate trail segments with three (3) gaps, hereafter referred to as Gap A, Gap B, and Gap C.



Physical Inventory Overview and Summary of Conditions

The Physical Inventory Overview and Summary of Conditions are based on a field analysis of the corridor performed in September-October 2012 that also includes information from the RETTEW August 2008 Preliminary Corridor Analysis. The full field report is included in the Appendix. This section includes:

- Areas of Steep Slopes
- Existing Rail Bed Material
- Drainage Patterns and Erosive Conditions that May Impact Trail Development
- Pennsylvania Natural Diversity Inventory (PNDI) Search
- Descriptions of Existing Vegetation
- Descriptions of Wildlife Activities
- Agricultural Crossings (equipment and animal)
- Existing Bridges, Culverts, and Visible Drainage Features
- Encroachments
- Utilities Serving or Impacting Future Trail Development
- Street Crossings with Sight Distance Information

Aerial photos of existing field conditions are shown on the Natural and Cultural Features Maps following this section.

Areas of Steep Slopes

Areas of steep slopes are located at many places along the length of the trail corridor; however, significant steep slopes are present at locations where the trail corridor passed over or under an intersecting road. All bridges that carried the former Cumberland Valley Railroad across the intersecting roads have been removed; therefore, each road crossing will require evaluation during trail design. Additionally, steep slopes are present along the north side of the corridor from the eastern boundary of Gap A to Goodyear Road. The available width of the corridor in this area is narrow, and the impact of the steep slopes will require evaluation during trail design.

Existing Rail Bed Material

Ballast and gravel were the two existing rail bed materials observed along the trail corridor. Ballast is generally present along densely vegetated sections of the trail corridor; these sections include the segment from the eastern boundary of Gap A to Goodyear Road and the segment from Big Spring Creek to east of the Centerville Road crossing. Gravel is generally present along sparsely vegetated sections of the trail corridor; these sections include the segment between Mount Rock Road and the western boundary of Gap A, the segment between the eastern boundary of Gap B and Greason Road, and the portion of trail just east of Gap C. In addition, gravel is evident between Big Spring Road and Big Spring Creek in the area disturbed by the bridge removal, and ballast is disturbed in areas of transmission line construction. The available ballast and gravel observed is generally suitable for trail base. Organic material (roots, brush, and herbaceous vegetation) will need to be removed to form a suitable trail base.

Drainage Patterns and Erosive Conditions that May Impact Trail Development

Surface drainage patterns are generally to the north and south from the trail corridor with the exception of sections with a very flat linear grade, where the drainage patterns are from west to east. These sections include the Goodyear Road to Kerrsville Road segment and the Springview Road to Greason Road segment.

Since the trail corridor was formerly a railroad, it is generally higher in elevation than the surrounding area, so this mitigates most flooding and erosive conditions. At the Centerville Road crossing, the corridor is at a lower elevation than the road surface, and runoff from the east and west sides of Centerville Road drains along the fill/corridor cut slope interface. Minor erosion was also noted on the north and south sides of the interface. This issue will require evaluation during design.

Pennsylvania Natural Diversity Inventory (PNDI) Search

A Pennsylvania Natural Diversity Inventory (PNDI) search of the corridor property owned by CVRTC was conducted on October 8, 2012. There were no known impacts to threatened and endangered species – the PNDI report is provided in the Appendix.

Descriptions of Existing Vegetation

Existing vegetation along the trail corridor is variable, ranging from wooded areas with dense vegetation to unmaintained scrub and shrub vegetation. The wooded portion of the corridor extends east from Big Spring Road to the PPL substation east of Centerville; however, this section does have a partially maintained (mowed) path. Other sections of dense vegetation along the trail corridor have mowed

paths that are maintained, primarily for agricultural activities on adjacent properties. The areas with the sparsest scrub and shrub vegetation cover are generally mowed at a width sufficient to allow unobstructed vehicle passage, and farm vehicles such as combines and tractors travel these lanes. Detailed information about trail maintenance can be found in the Operation, Maintenance, and Security section of the report.

Descriptions of Wildlife Activities

Along the length of the corridor, evidence of small mammals including groundhogs, rabbits, and raccoons, in addition to passerine (perching) birds and raptors (birds of prey) were observed.

Agricultural Crossings

Three (3) agricultural access areas are located along the south side of the trail corridor approximately six hundred (600) feet west of Mount Rock Road. An additional access is located approximately six hundred (600) feet west of the above access points. One (1) agricultural access area is located along the north side of the trail serving the east end of the Wax property between Mount Rock Road and Green Hill Road. Two (2) agricultural access areas are located along the south side of the trail between Springview Road and Greason and appear to be serving the Zimmerman property. One (1) agricultural crossing was observed west of Elliotson near the western boundary of the Nelson property. There are agricultural drives from Green Hill Road to the western boundary of Gap A and from Springview Road to the Brenizer property adjacent to Greason Road. These drives appear to provide interim access to the adjoining agricultural lands.

Existing Bridges, Culverts, and Visible Drainage Features

There are three (3) named stream crossings along the corridor (Big Spring Creek, Mount Rock Spring Creek, and Alexander Spring Creek). Detailed conditions of existing bridges, culverts, and drainage features are included in the appendices (*see Field Report – Physical Inventory and Assessment*).

Encroachments

Several mobile homes and sheds, as noted on the official boundary survey, encroach onto CVRTC's property just west of Allen Road in North Middleton Township. This encroachment has been field verified. The 2011 CVRTC boundary survey by C.S. Davidson and the 2004 Sandy Point Properties (the mobile home park) boundary survey by James C. Hockenberry, PLS, both indicate an encroachment by the mobile home park on CVRTC property. There appears to be an approximately thirty-six (36) foot north to south discrepancy in the location of the east to west boundary line between CVRTC and the mobile home park and the extent of the encroachment. Additional deed research may be required to determine if the discrepancy is the result of a typographical error in a legal description. Both CVRTC and the mobile home park are aware that the issue will need to be resolved during trail design.

Utilities Serving or Impacting Future Trail Development

The PPL overhead electrical transmission lines and utility poles are located along the trail corridor from east of Centerville Road all the way to Allen Road in Carlisle Borough. PPL also maintains a substation at the western end of the study area, adjacent to the corridor off of Centerville Road. The location of the transmission towers and guy wires in relation to the varying width of the corridor will impact the trail's future location. A sanitary sewer line traverses the corridor through a thirteen (13) by twelve (12) foot culvert approximately five hundred and fifty (550) feet west of Mount Rock Road. Additional overhead utilities (phone, cable, electric) are located at most of the road crossings. The location of the overhead

utilities will need to be evaluated during trail design for conflicts. The location of the overhead utility along Big Spring Road will need to be evaluated for potential conflicts during the design of a bridge carrying the trail over the road.

Street Crossings with Sight Distance Information

Detailed below is a list of street crossings.

- Big Spring Road Crossing: Sight distance looking south from both sides of the road is limited and cannot be readily or economically corrected. Sight distance to the north is partially blocked by the bridge abutment and fill placed to build the original railroad. Bank grading can remove the obstruction. Existing slopes along both sides of Big Spring Road prohibit vehicular access, which may be necessary for emergency access or maintenance. The east side can be re-graded to provide suitable vehicular access. There is currently a steep pedestrian trail that curves down to the road from the end of the existing trail on the west side of Big Spring Road.
- Centerville Road Crossing: Sight distance is unobstructed on both sides to the north and south. Existing slopes along both sides of Centerville Road prohibit vehicular access to the corridor. Additional fill will need to be placed on both sides of the road to provide suitable vehicular access.
- Mount Rock Road Crossing: Sight distance to the south is partially obstructed by the embankment of the rail bed. Sight distance to the north appears adequate and is unobstructed to a point north of the entrance to the Big Spring High School campus. PPL has constructed driveways to access the rail bed from both sides of the road and these appear to provide suitable vehicular access to the corridor.
- Green Hill Road Crossing: Sight distance to the north along both sides of the road is partially obstructed by the embankment of the rail bed. Grading will be required to improve sight distance at the crossing. PPL has constructed driveways to access the rail bed from both sides of the road and these provide suitable vehicular access to the corridor.
- Crossroad School Road Crossing: Currently, the corridor on both sides of Crossroad School Road is held in private ownership; therefore, no driveways have been constructed to access this portion of the rail bed. Sight distance is currently unobstructed on the east and west sides to both the north and the south, however, if the field on the west side of the road is planted in corn or a similar height crop, it will obstruct the sight distance to the south. The geometry of the roadway will help to control the speed of the traffic heading in a northerly direction. Alternative routes for the trail will be necessary in the area of the Crossroad School Road crossing.
- Goodyear Road Crossing: Sight distance is unobstructed on the east and west sides to both the north and the south. PPL has constructed driveways to access the rail bed from both sides of the road and these provide suitable vehicular access to the corridor.
- Kerrsville Road Crossing: Sight distance on the west side of Kerrsville Road is partially obstructed to the north by the road bank and is somewhat limited by roadway geometry to the south. The available sight distance will need to be further evaluated during trail design to determine what, if any, measures will be required to provide adequate sight distance. PPL has constructed a driveway to access the west side of Kerrsville Road that provides suitable vehicular access to the corridor. The portion of the corridor to the east of Kerrsville Road is held in private ownership.
- Springview Road Crossing: Sight distance along the east side of the road looking south appears adequate. The sight distance to the north is blocked by the fill that was placed to build the railroad. Sight distance along the west side of the road looking south is partially obstructed by

existing brush. The sight distance to the north appears adequate although the impact of a dip in the cartway of Springview Road north of the rail bed will need to be further evaluated during final design. PPL has constructed driveways to access the rail bed from both sides of the road and these provide suitable vehicular access to the corridor.

- Greason Road Crossing: An "at-grade" crossing; sight distance is unobstructed on the east and west sides to both the north and the south.
- McAllister Church Road Crossing: Sight distance on the west side of the road appears to be adequate; however, there is some bedrock to the south that could obstruct the required sight distance. There is currently no suitable vehicular access from McAllister Church Road onto the corridor.

Community Character and Existing Land Use

The Newville to Carlisle extension of the Cumberland Valley Rail Trail passes through a rural town and country landscape, and the community character along the trail is a mix of primarily rural residential and agricultural uses. Farmland alternates with smaller residential parcels adjacent to the corridor, and several rural residential subdivisions are located near the villages of Kerrsville and Elliotson. This rural landscape is replete with history and natural beauty, and there are numerous landmarks and viewsheds along the length of the corridor. West of Greason Road and west of Springview Road are two notable viewsheds looking north at the Blue Mountain range, and at the Mount Rock Road and Springview Road crossings, there are scenic views of the South Mountain range. There is an historic cut stone bridge over Alexander Spring Creek west of Allen Road that is a landmark with the potential for interpretive signage.

The western end of the corridor is in close proximity to the Borough of Newville, Big Spring High School, Big Spring Middle School, Mount Rock Elementary School, and Green Ridge Village, a Presbyterian Senior Living community. Pennsylvania State Route 641 (SR 641), located north of the trail corridor, runs parallel to the trail from Newville to Carlisle, and just north of SR 641 is the Pennsylvania Turnpike. This portion of SR 641 includes small residential parcels on one or both sides of the road as well as adjacent agricultural and commercial uses. The eastern end of the corridor is in close proximity to several large industrial warehouses, and a future connection to Valley Meadows Park and the Carlisle Borough Bicycle and Pedestrian Trail Network would provide access to Dickinson College, residences, and businesses in downtown Carlisle. Connecting to the Carlisle Area Bicycle and Pedestrian Trail Network may also enable future regional connections to the trail planned as a part of the Letort Regional Authority Master Trail/Urban Greenway Plan.

Map 4: Land Use shows land uses in the area of the corridor.

Compatibility of Trail Development with Adjacent Land Uses

The trail corridor traverses a primarily agricultural setting and does not pose a threat to adjacent agricultural land use. Sections of the trail corridor are presently utilized by farmers, and CVRTC will work with adjacent landowners to maintain existing agricultural crossings where it is practical to allow farmers to access fields that are bisected by the trail corridor. For residential areas, CVRTC will install fencing or landscaping in order to provide additional privacy. Gates and signs will be installed where CVRTC property terminates at properties held in private ownership. CVRTC has taken this approach on the existing portion of the Cumberland Valley Rail Trail and it appears to be working well.

Description of the Cultural, Economic, and Fitness Benefits of Rail Trails

The Newville to Carlisle extension of the Cumberland Valley Rail Trail has the potential to become an important cultural, economic, and recreational asset within Cumberland County and the broader south central Pennsylvania region. Rail trails contribute to the quality of life and benefit those who live within the trail corridor. They increase the natural beauty of communities and increase property values of the surrounding area. Rail trails can become community trademarks that are focal points of civic pride and help to attract new residents and businesses. The additional mileage of an extended Cumberland Valley Rail Trail makes the trail a regional destination that would benefit tourism within Cumberland County and provide an economic boost to the area. According to the CVRT 2012 User Survey, the existing developed portion of the Cumberland Valley Rail Trail sees an estimated 40,917 annual visits. The report notes that these visits result in an estimated economic impact of between $440,000 and $460,000, including direct spending of almost $270,000 by trail visitors. The economic potential of the trail corridor would be attractive to trail-friendly businesses such as bike shops, bed and breakfasts, fitness stores, and restaurants.

One of the most important aspects of the Newville to Carlisle extension is the connection between Shippensburg and Carlisle that would be realized upon completion of the trail. This connection would be an alternative transportation option and also provide convenient trail access for the greater Carlisle area. An extended Cumberland Valley Rail Trail would be within 15 minutes of the majority of the population in central and western Cumberland County. The rail trail will help to promote fitness by providing people of all ages and abilities with an attractive, safe, and accessible place to walk, run, hike, bike or ride horses.

CVRTC NeWPeC Master Plan

Map 3: Existing Natural and Cultural Features

Sheet 1 of 5

Utility Pole
Parcel Boundary
Utility Crossing
Transmission Line
Road / Street
Municipal Boundary
Water Feature
Bridge
Culvert
Swale
Church
Town
School
Park
Floodplain

Existing Rail Bed Material

Ballast
Gravel

Existing Vegetation

sparse, less than 10' high
dense, less than 10' high
dense, greater than 10' high
dense, wooded
varied - sparse/dense

Projection: PA State Plane South, NAD 1983 (feet)

Basemap Source:
Cumberland County GIS
Cumberland County Planning Department
CVRTC
RETTEW Associates, Inc.

Map Date: 1/14/2013

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1 inch = 300 feet
when printed at 24" x 36"

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WEST PENNSBORO

WAGNERS LN

HOREN

GREEN HILL RD

CROSSROAD SCHOOL RD

GOODYEAR RD

LAWRENCE LN

WATSON DR

MT ROCK RD

GRAHAM RD

N/F Richard C. Basih Deed Book 173, Page 1120

N/F Michael W. & Sharon M. Reitzmyer Parcel 74 Instrument No. 200825716

N/F Rodney L. Comman Lot 2 Deed Book 35-Q, Page 1081

N/F Rodney L. Comman Lot 1 Parcel 2 Deed Book 35-Q, Page 1081

N/F Alvin S. & Marian O. Leid Parcel 4 Deed Book 223, Page 288

N/F Larry K. And Pamela E. Wilhide Inst. No. 201115859

N/F Timothy F. & Julia Faye Leid Deed Book 249, Page 4263

N/F Melvin Z. & Ada H. Leid Deed Book 249, Page 4261

N/F Phillip S. & Heather Hayslett Inst. No. 201110813

N/F Melvin Z. And Ada H. Leid Book 29-I, Page 187

N/F Edward J. & Linda L. Ward Deed Book 179, Page 1114

N/F Robert E. Gilbert Deed Book 360, Page 625

CVRTC NeWPeC Master Plan

Map 3: Existing Natural and Cultural Features

Sheet 2 of 5

Utility Pole
Parcel Boundary
Utility Crossing
Transmission Line
Road / Street
Municipal Boundary
Water Feature

Bridge
Culvert
Swale
Church
Town
School

Park
Floodplain

Existing Rail Bed Material
Ballast
Gravel

Existing Vegetation
sparse, less than 10' high
dense, less than 10' high
dense, greater than 10' high
dense, wooded
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Projection: PA State Plane South, NAD 1983 (feet)

Basemap Source:
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Cumberland County Planning Department
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CVRTC NeWPeC Master Plan

Map 3: Existing Natural and Cultural Features

Sheet 3 of 5

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CVRTC NeWPeC Master Plan

Map 3: Existing Natural and Cultural Features

Sheet 4 of 5

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CVRTC NeWPeC Master Plan

Map 3: Existing Natural and Cultural Features

Sheet 5 of 5

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Cumberland County Planning Department
CVRTC
RETTEW Associates, Inc.

Map Date: 1/14/2013

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CVRTC NeWPeC Master Plan

Map 4: Existing Land Use Map

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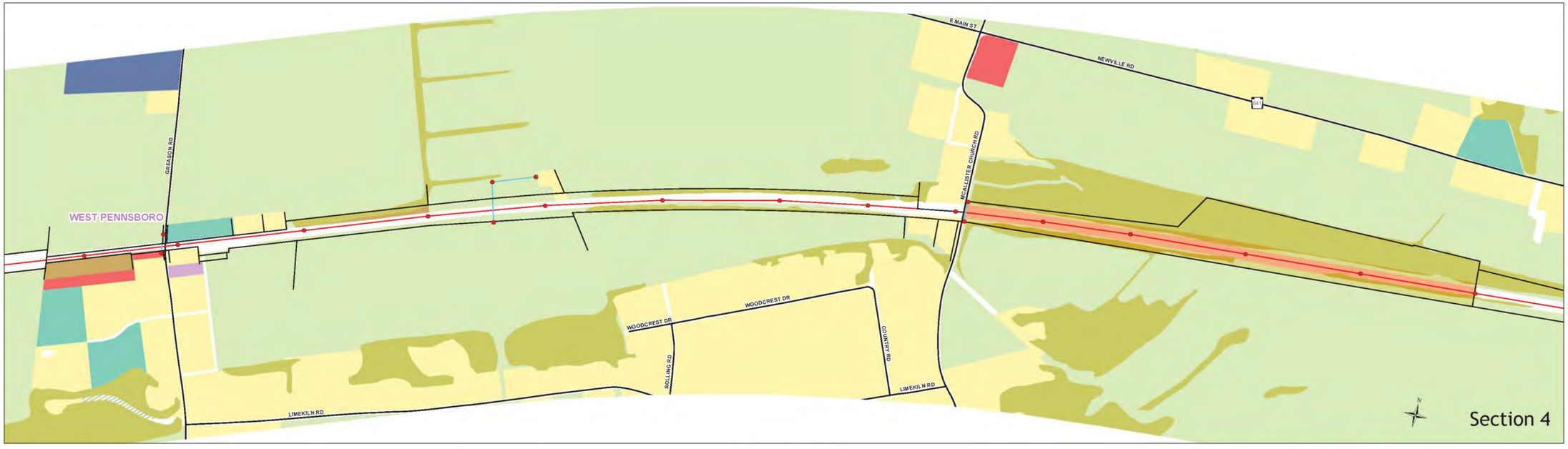

CVRTC NeWPeC Master Plan
Map 4: Existing Land Use Map

Agricultural
Agricultural Easement
Residential
Commercial
Industrial
Institutional
Transportation and Utilities
Deciduous Forest
Herbaceous Vegetation
Mixed Cover Vegetation
Shrub Vegetation
Utility Pole
Parcel Boundary
Utility Crossing
Transmission Line
Road / Street
Water Feature
Trail Gap
Municipal Boundary

Projection: PA State Plane South, NAD 1983 (feet)

Basemap Source:
Cumberland County GIS
Cumberland County Planning Department
CVRTC
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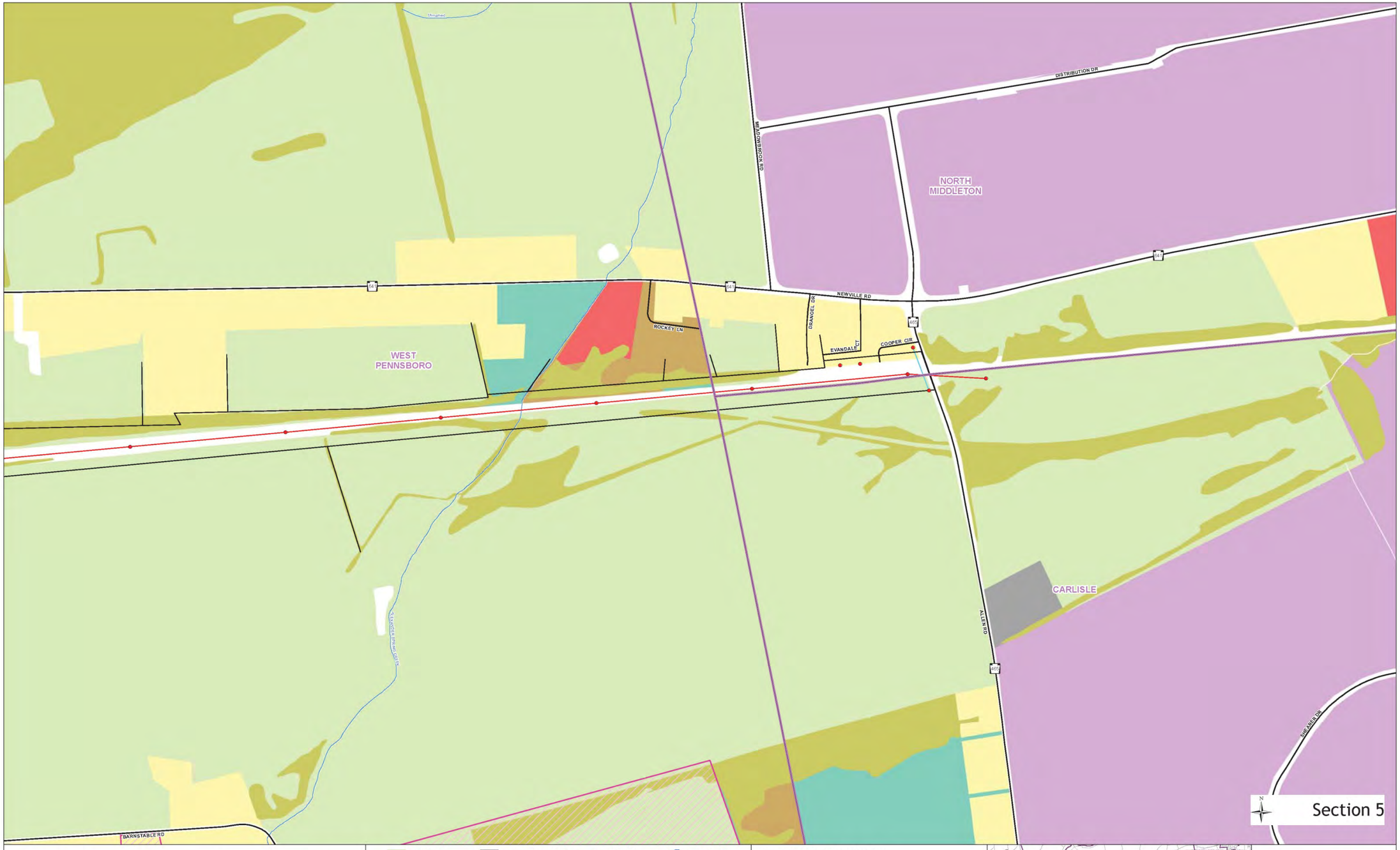
DISTRIBUTION DR
MEADOWBROOK RD
NORTH MIDDLETON
NEWVILLE RD
DRANGEL DR
ROCKEY LN
EVANDALE CT
COOPER CIR
WEST PENNSBORO
CARLISLE
ALLEN RD
SHEARER DR
BARNSTABLE RD
Section 5
CVRTC NeWPeC Master Plan
Map 4: Existing Land Use Map
Agricultural
Agricultural Easement
Residential
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Transportation and Utilities
Deciduous Forest
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Regional Demographic Overview

Cumberland County had a population of 235,406 residents (2010 Census) and an estimate of 237,892 residents by mid-2011 (US Census Data). The county experienced 11.3% population growth between 2000 – 2011.

The County has a range of moderate population densities – with greater population densities in the eastern part of the county. The County's eleven boroughs contain the greatest population densities. Carlisle, with 5.4 square miles, is the County's largest borough. The general trend throughout the County is that the eastern townships have the greatest densities, with townships becoming less densely populated as one moves in a westward direction.

Suburban development pressures generated in the Harrisburg Urbanized Area cause the greater densities. High population density patterns have also developed along the major transportation corridors connecting Carlisle with the Harrisburg Urbanized Area. Suburban development pressures in areas surrounding Carlisle Borough have also increased the population densities of adjacent townships.

The presence of Michaux State Forest and the steep slopes of South Mountain limit development intensity keeping population density low in the southwestern townships of the County. Western and central townships of the County are prime agricultural activity areas, which has helped to preserve their low densities. The northern fringes of the northern townships lie on the flanks of Blue Mountain. State Forests, State Game Lands, and steep slopes account for the low density in those municipalities.

The proposed NeWPeC segment of the Cumberland Valley Rail Trail, running west to east, provides a connection between the Borough of Newville, West Pennsboro Township, North Middleton Township, and Carlisle Borough. The proposed trail corridor passes through a rural town and country landscape before entering the county seat of Carlisle. The following table presents a review of U.S. Census data on population and growth rates for the municipalities surrounding the NeWPeC segment of trail.

	Population 2000	Population 2010	Population Est. 2011	% Change, 2000 - 2011 Estimate
Carlisle Borough	17,970	18,682	19,072	6.1
Dickinson Township	4,702	5,223	5,174	10.0
Lower Frankford Township	1,823	1,732	1,783	-2.2
Newville Borough	1,367	1,326	1,335	-2.3
North Middleton Township	10,197	11,143	11,225	10.1
North Newton Township	2,169	2,430	2,281	5.2
Penn Township	2,807	2,924	2,911	3.7
Upper Frankford Township	1,807	2,005	2,248	24.4
South Middleton Township	12,939	14,663	14,776	14.2
West Pennsboro Township	5,263	5,561	5,602	6.4

Source: U.S. Census Bureau

With the exception of Newville Borough, all of the municipalities surrounding the proposed NeWPeC trail corridor are experiencing moderate rates of population growth. The trail will serve the recreational needs of a growing population. The trail may also serve as a catalyst for new businesses and residential reinvestment into places like Newville Borough, the villages in close proximity to the future trail, and the neighborhoods and downtown area of Carlisle.

Profiles of Top Trail Users

The CVRT User survey and other trail user surveys have shown that health and recreation are the top reasons for using the trail and that biking, walking, and running are the primary activities. The majority of users are typically 45 years and older and gender percentages vary about ten percent or less, with the majority of users being male. A summary of CVRTC and comparable trail user survey results can be found in the appendix. Based on the results of these surveys, users of the CVRT fall into one of the following classifications:

The Active Adult

The top user groups of the CVRT are males and females between the ages of 40-64 years old. Members of this age group are at the midpoint or in the latter parts of their careers, or are considered to be stay-at-home workers or retirees. These users are more likely to use the trail during the middle of the day as their personal/professional lives allow for more flexibility. They are often accompanied by children 15 and under but also use the trail individually or with small groups of friends for walking, dog-walking, running, and biking. They are frequent visitors to the trail and view their use of the trail as part of their active-living/fitness program.

The Young Adult

Another top user group of the CVRT is the group of young adult users, both male and female, age 26-39. These are young professionals early in their careers and with young families. They typically use the trail before or after work, or between activities in their busy schedules. They are as likely to use the trail alone as they are to use the trail with a friend or family member. This group is more likely to log more miles on a typical visit to the trail – though their visits are often limited by time constraints. This user group is more likely to engage in more rigorous exercise (running and biking) than the Active Adult group.

The Social Biker

Biking is the most common activity on the CVRT. The Social Biker rides with a partner, in small groups or with the family. Biking requires a little more logistical planning and preparation – so most bike trips occur on the weekend, especially on Sunday. Many bikers ride the entire trail – a trip taking several hours to complete, and as a result, they are more likely to spend money on food and drinks associated with their trip to the trail. The Social Biker spends more money on equipment than other user groups and creates economic opportunities for bike shops, cafes, and restaurants.

Estimated Initial, Future, and Seasonal Trail Usage Including the Project Service Area

Shippensburg is the population center of western Cumberland County, with the rest of the west end characterized by flat, fertile farmland framed by the forested slopes of Blue Mountain and South Mountain. The rural municipalities of Southampton and North Newton Townships have few recreational amenities which include Southampton Municipal Park and Multi-Purpose Center. The Cumberland Valley Rail Trail (CVRT) plays an important role in providing a quality recreational amenity for residents living in the area.

The current extent of the CVRT, connecting Shippensburg and Newville, provides a quality trail experience for walking, biking and equestrian uses. Trail use and demand will increase significantly when the trail is extended to connect to Carlisle. A trail that connects Shippensburg, Newville, and Carlisle, as the NeWPeC link proposes to accomplish, connects the region's three population centers, providing close to home recreation for more than 24,000 residents of these communities. The proposed trail expansion will also make the CVRT more functional as an alternative transportation, commuter corridor for residents. The NeWPeC segment of trail will allow for immediate and future connections to such destinations as the Big Spring School campus; the villages of Kerrsville, Greason, Plainfield, and Elliotson; and numerous other rural residential subdivisions and neighborhood commercial uses adjacent and in proximity to the corridor.

Through this extension, CVRTC has the opportunity to expand trail use to additional user groups:

Active Youth

The proposed connection to Big Spring High School and nearby educational institutions provides the opportunity to attract active high school and college students to the trail.

Heritage Tourists

By building upon the existing Civil War heritage interpretative signage program, CVRTC may also consider showcasing aspects of Native American and American history.

Weekend Retreaters and Day Trippers

The CVRT may capture weekend and day trippers from Baltimore and Washington, D.C. that are looking to get out of the city and experience nature and a scenic rural landscape and small town charm.

Birders and Eco-Tourists

CVRTC should be mindful of future opportunities to work with partners to facilitate connections from the CVRT to important natural areas such as Big Spring, Laughlin Mill, and Cool Spring.

Trail Location and Alternate Routes within Municipalities

Extending the Cumberland Valley Rail Trail from Newville to Carlisle

The proposed concept plan for the NeWPeC extension of the Cumberland Valley Rail Trail will extend the trail from its existing terminus in Newville Borough along the portions of the former rail corridor owned by CVRTC, Inc. in West Pennsboro Township, to the Carlisle Borough line at Allen Road.

Several alternate routes were analyzed for the trail where portions of the corridor are held in private ownership. Meetings were held with each of the private owners and it was determined that none of them were interested in granting an easement for the trail to traverse their property at this time. CVRTC also had discussions with adjoining property owners to determine if there were other routes nearby that could serve as plausible work-arounds for the properties held in private ownership in order to provide an off-road trail that would eventually link back to the corridor. Unfortunately, none of these discussions resulted in a solution that provided a cost effective work-around.

As a result, the master plan for the NeWPeC extension to the CVRT is showing discontinuity at this time. As CVRTC moves forward and implements this plan, they should continue to have discussions with property owners to determine if other solutions become available that would enable them to form a continuous corridor for this portion of the trail from Newville to Carlisle.

Alternative Routes

If it appears that a landowner is willing to work with CVRTC to establish routes that would help to provide a contiguous trail around the areas of the linear corridor that are held in private ownership, or if the potential arises to make a significant regional connection, there are several typical trail designs that CVRTC may consider to extend the trail. Typical sketches of the following overland routes are shown in Figures 1 and 2 on the following page.

- On-road trail – An on-road trail is made possible by providing four (4) foot wide shoulders and appropriate signage. This type of trail may be appropriate for experienced cyclists, and potentially pedestrians if the roads have low traffic volume. This type of improvement is not recommended within the extent of this plan because of safety concerns associated with the relatively narrow roads.
- Parallel Bicycle/Pedestrian Path – Depending on the width of the road right-of-way, this approach could require approval of the roadway owner and would likely require an easement from a private property owner. With this approach, a ten (10) foot wide shared use (bicycle and pedestrian) trail is created that parallels the roadway and is physically separated from the road by a grass planting strip in the right of way.

Big Spring Road Alternative Route – Newville Borough

The Big Spring Road crossing in Newville Borough, located just east of the end of the existing developed portion of trail, will be challenging because of the significant grade differences and sight distance limitations on Big Spring Road. For this reason, the concept plan is recommending a bridge for pedestrian and equestrian use across Big Spring Road. Because this is a high cost item, CVRTC is looking into interim alternate routes that could be implemented to allow people to cross Big Spring Road. This alternative route requires the cooperation of the adjoining landowner to provide a narrower trail along the east and west sides of Big Spring Road to an at-grade crossing approximately one hundred (100) feet north of CVRTC property.

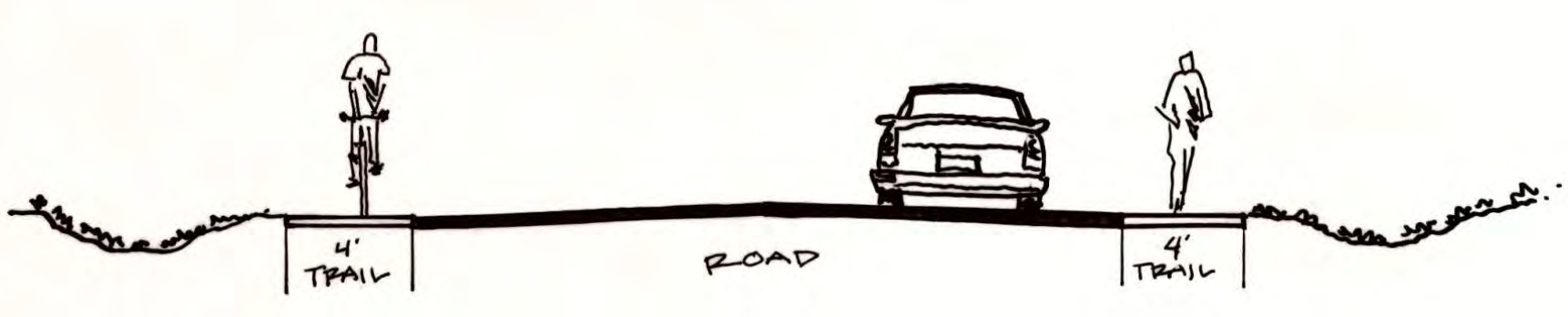


Figure 1: Alternate Route On-Road Trail

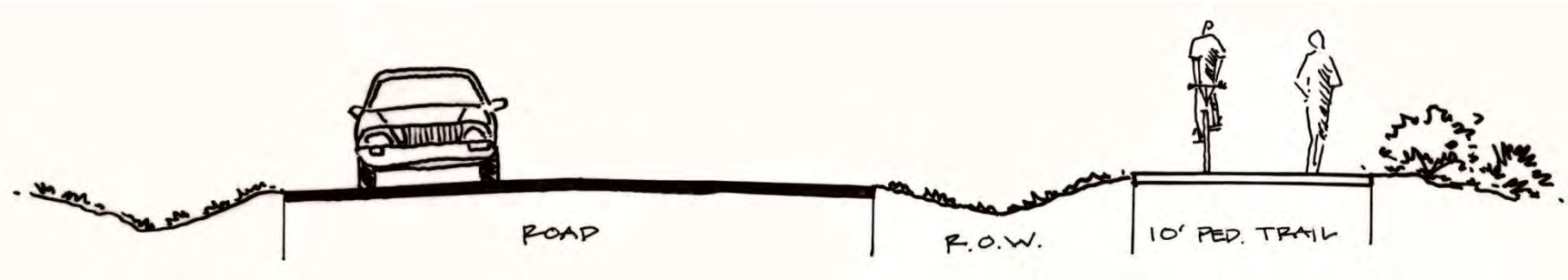


Figure 2: Parallel Bike/Pedestrian Path

Acquisition Options and Processes

Lands or approval for trail construction for alternative routes may be obtained from landowners by two (2) general means: 1) Fee simple acquisition; and, 2) Permanent easement acquisition.

Fee simple acquisition transfers full ownership of the property, including the underlying title, to another party. Fee simple land acquisition may also be the result of a donation, with the landowner realizing tax benefits from the donation. Sometimes a combination of purchase and donation occurs, resulting in a sale of land for below market value and the landowner donating a portion of the property's value to the buyer. Under this scenario, landowners enjoy direct economic gains from the sale of their land and potentially from the tax benefits of donating a portion of their land.

Easement acquisition does not transfer full ownership of the property to another party. An easement is a right of use by one party over the property of another. Generally, easements are granted by one landowner for the benefit of another landowner. Historically, the permitted kinds of easements were limited. One of the more historically important easements was to provide access and rights to flowing waters. Easements are used for many purposes today. Easements may be granted allowing public access to a property or may be used to preserve a property from future development.

In general, easements acquired for trail purposes need to be a permanent easement running with the land. The easement description should include language defining specific location and permitted uses of the easement. Provisions should also be included protecting the integrity of the trail corridor from adverse impacts from adjoining land uses.

Proposed Linkages to Parks, Schools, and Neighborhoods

Several proposed links are shown on the master plan. These links represent defined opportunities to connect the trail to other existing trails, adjoining uses, or planned developments.

Green Ridge Village

Green Ridge Village is a senior living continuing care retirement community located south of the CVRT in West Pennsboro Township, near the end of the existing developed trail. The community contains a private trail system, and many residents of Green Ridge Village use the rail trail on a regular basis, although there is not a current direct connection from Green Ridge Village to the rail trail.

It appears that area where the rail trail transitions from cut to fill (approximately mid-way between Big Spring Road and Centerville Road) would be the most appropriate location to construct a connection to the rail trail. The location of the connector trail will need to be coordinated with Green Ridge Village's for the agricultural lands. CVRTC should continue to work with Green Ridge Village to determine the feasibility of a spur trail to connect to the Green Ridge community. In addition to cost and maintenance responsibilities, CVRTC will also need to discuss the availability of the trail for public use, since the Green Ridge Village trails are private.

Big Spring Master Plan Connection

A master plan was prepared for the Big Spring area to the west of Big Spring High School. This plan represents one proposal for the area and shows the tract being developed with residential and some commercial uses. The plan also contained walking trails and a connection to the NeWPeC extension of the CVRT in the vicinity of the unnamed tributary to Big Spring. This proposed connection is replicated as a part of this plan.

Big Spring High School Connection

Currently, Big Spring High School students are accessing the corridor via a mowed path, and a mountain biking club has been using the trail routinely. CVRTC recognizes the health and wellness potential for Big Spring High School staff and students, in addition to the environmental education benefits that the school district may find through use of the rail trail. The existing connection to Big Spring High School is proposed to remain; CVRTC should coordinate with the school district on any future improvements to the connection itself.

Allen Road / Carlisle Borough Bicycle and Pedestrian Trail Network Connection

Carlisle Borough has an existing trail network and sharrow system that connects pedestrians and bicyclists to various parks, community destinations, and downtown Carlisle. The NeWPeC extension of the CVRT will provide an opportunity to connect to the Carlisle Borough Bicycle and Pedestrian Trail Network east of Allen Road. CVRTC should continue to work with Carlisle Borough as industrial properties east of Allen Road are developed and trail connections into Carlisle become feasible.

Potential Future Connections

The Newville to Carlisle extension of the Cumberland Valley Rail Trail will provide numerous opportunities to engage members of the community. Convenient access to the trail is one of the most important aspects of engagement; to that end, CVRTC should work with community partners to evaluate the feasibility of the following connections to the rail trail:

- Dickinson College
- Shippensburg University
- Village of Plainfield
- West Pennsboro Township Municipal Park
- Appalachian Trail via Carlisle Borough Bicycle and Pedestrian Trail Network and proposed Letort Regional Authority Master Trail/Urban Greenway Plan.

CVRTC has an opportunity to engage and partner with educational institutions in Cumberland County, specifically Dickinson College and Shippensburg University, to establish a connection between Carlisle and Shippensburg and potentially connect the two campuses in the future.

Conceptual Design of Trailheads and Key Facilities

The NeWPeC extension of the CVRT will extend east from the existing developed portion of the trail that connects Shippensburg and Newville. In developing the concept plan, major key infrastructure and facilities were considered to enable the connection. The concept plan proposes trailheads at two locations along the corridor, at the village of Greason and at Allen Road.

Village of Greason Trailhead and Parking Area

The village of Greason is considered an ideal location between Newville and Carlisle Boroughs for a trailhead and parking facility. Its close proximity to the villages of Plainfield, Elliotson, and Kerrsville, provides residents with a place to access the trail.

The width of the corridor east of Greason Road is sufficient to provide vehicular access to a parking area that can accommodate approximately twenty-eight (28) cars, as shown in Figure 3. Sight distance is adequate on Greason Road for the at-grade trail crossing and for safe vehicular access to the parking area. The proposed trail intersects Greason Road north of the parking area and pedestrian traffic would be separated from vehicular traffic by a series of boulders or other natural barrier placed between PPL

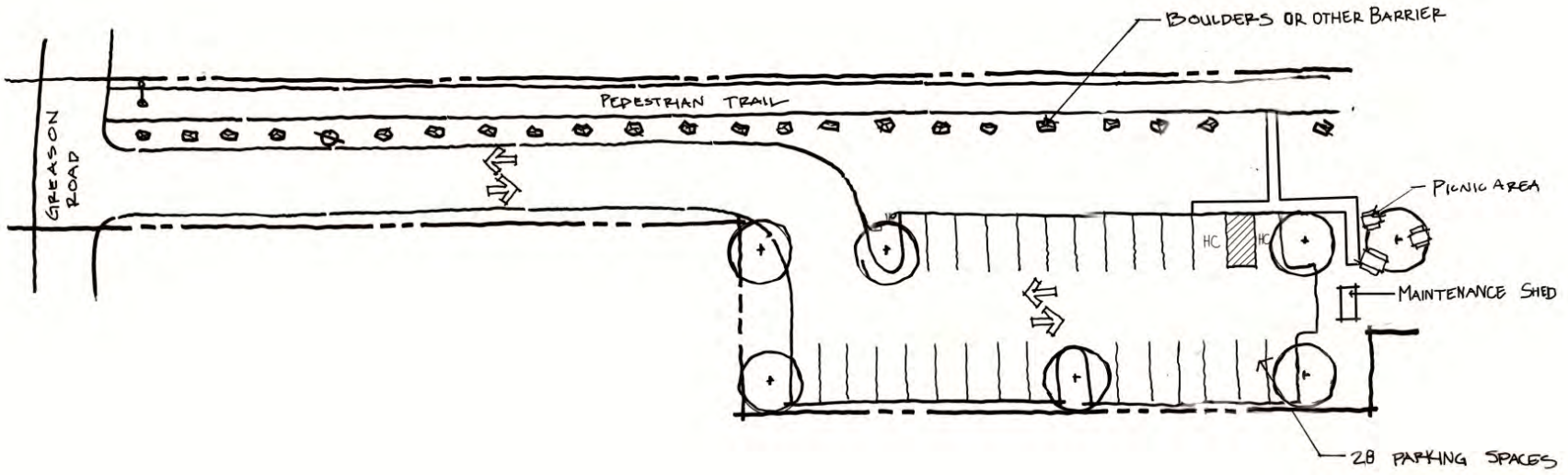


Figure 3: Greason Road Parking Area

utility poles. The natural barrier would be placed to discourage automobile traffic, but would allow for sufficient access by PPL vehicles to the utility poles, as necessary. The parking area would be crushed aggregate material, landscaped with trees, and a small picnic area would be located immediately to the east of the parking area. Handicapped parking will be provided, and an ADA accessible path will provide access to the picnic area and the trail. CVRTC's property in this area is wide enough to accommodate passenger vehicles utilizing one-way traffic within the parking area. However, there is not sufficient width and trail separation to accommodate the area required to accommodate horse trailers. For this reason, an equestrian trail is not proposed for Phase 3, which extends east and west of the Greason Trailhead. If CVRTC considers equestrian uses in the future, additional land may need to be acquired to accommodate horse trailers in this area.

Allen Road Trailhead and Parking Area

The Allen Road trailhead will provide access to the trail at its western terminus at the Borough of Carlisle. A parking area at this location will provide Carlisle residents and residents of nearby West Pennsboro, North Middleton, South Middleton, and Dickinson Townships with a convenient, close-to-home location to access the trail. CVRTC should work with the owner of the mobile home park located to the north of the corridor to determine if they can share a common entrance on Allen Road to access both the mobile home park and the rail trail parking area. Given the surrounding industrial and warehousing land uses in this area, and the heavy volumes of truck traffic on Allen Road, limiting the number of access points on Allen Road will increase safety in this area for all types of users.

Other Key Facilities – Bridge over Big Spring Road and Centerville Road Underpass

Other key infrastructure facilities located along the trail include the proposed bridge over Big Spring Road and a pedestrian underpass to cross under Centerville Road.

When the railroad was operating, there was a bridge to carry the railroad over Big Spring Road. This bridge has since been removed, but since the railroad bed is in fill at this location, an at-grade crossing would require significant earthwork, and sight distance to the south on Big Spring Road is limited at this location. A pedestrian and equestrian bridge is proposed for this location; a conceptual drawing of this bridge is located on the following page in Figure 4. Because this bridge will require significant financial resources to construct, it is recommended that CVRTC consider an interim work-around that would allow pedestrian trail users to cross Big Spring Road at a safer location. The section on alternative trail routes discusses the proposed alternative specifically. While it is important to note that this alternative is planned to serve as an interim solution only, with the bridge being the desired trail infrastructure solution to crossing Big Spring Road, this interim solution for the trail may serve as a longer term pedestrian connection into downtown Newville.

At the Centerville Road crossing, the trail is in cut, and significant fill would be needed to provide an at-grade pedestrian crossing. Although sight distance on Centerville Road is not a concern, vehicles traveling at high rates of speed is an issue, as the speed limit changes from 35 mph to 45 mph just south of the trail crossing. Many vehicles on this section of Centerville Road are travelling at high rates of speed. To safely cross Centerville Road, an underpass is proposed for this location that would allow pedestrians and equestrians to safely cross under Centerville Road. A conceptual drawing of the proposed underpass is shown in Figure 5 on the following pages. Similar to the bridge over Big Spring Road, the Centerville Road underpass will be a significant cost item for CVRTC. As an interim solution, CVRTC may consider constructing an at-grade pedestrian crossing at this location that is well marked with appropriate signage and markings.

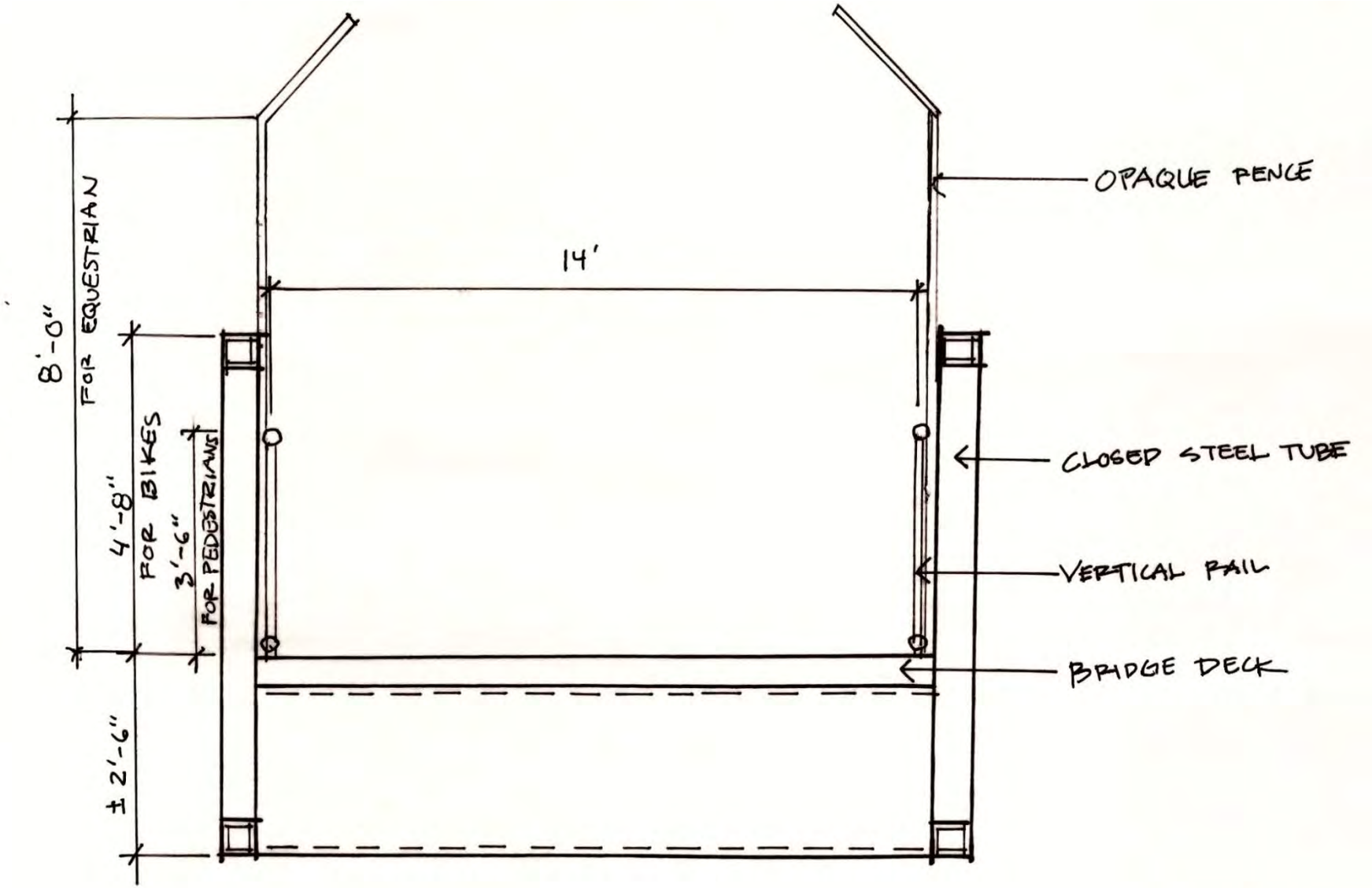


Figure 4: Pedestrian Trail Bridge

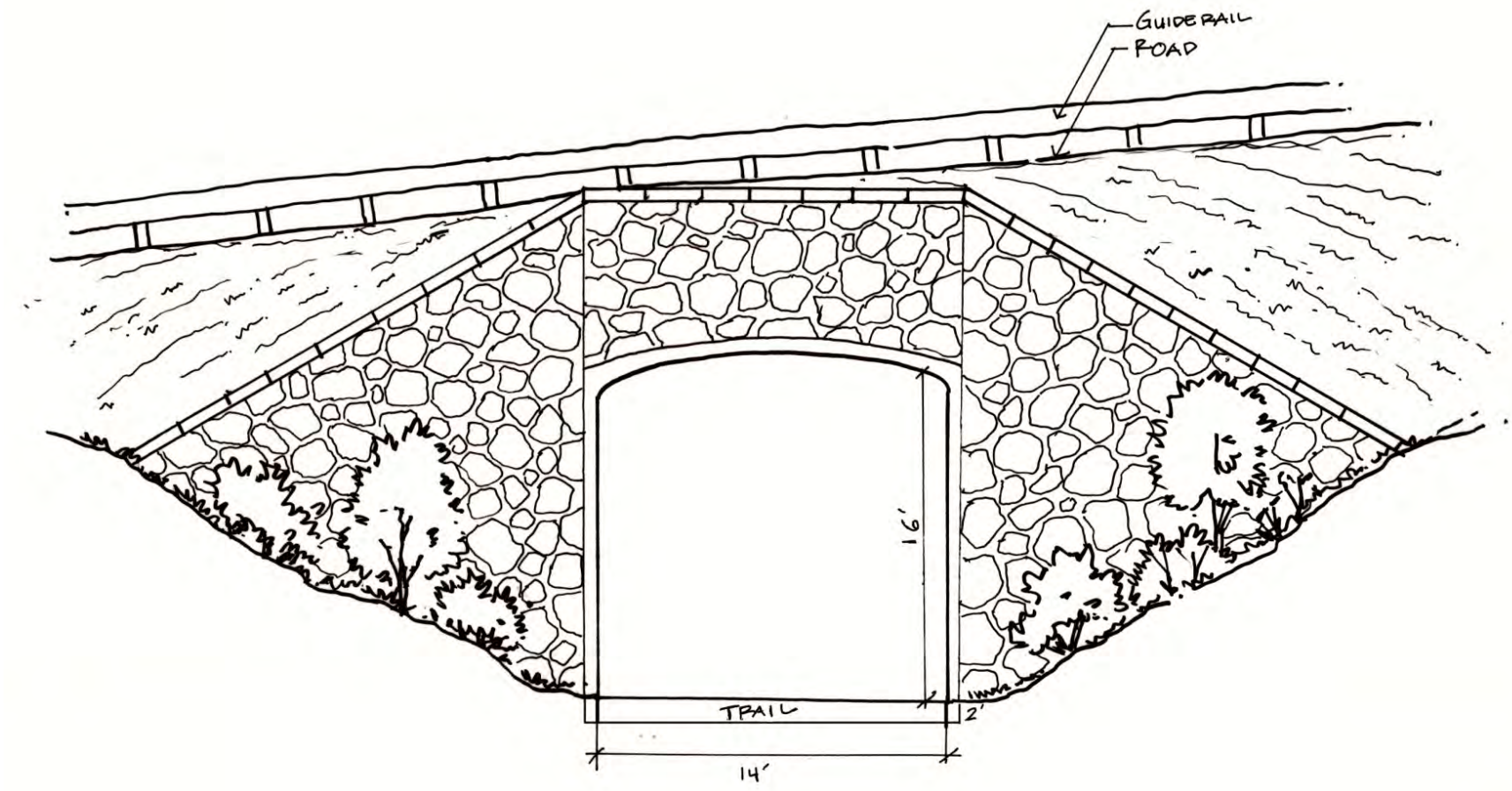


Figure 5: Pedestrian Box Culvert Underpass at Centerville Road (SR 233)

Conceptual Design for Auxiliary Facilities

Big Spring High School Parking Area

The concept plan proposes a parking area on a portion of the Big Spring High School property off of Mount Rock Road. Although conceptual at this point, feedback from the school district has indicated that they are open to the idea of using a corner of their property as a small parking lot to access the trail. Such a lot would need to be large enough to allow horse trailers to safely maneuver through the lot since this section of trail will be used for equestrians as well as pedestrians. The conceptual design for this facility is shown in Figure 6 on the following page.

Village of Greason Maintenance Area

As CVRTC implements the concept plan and extends the rail trail from Newville to Carlisle, they will need a secondary location to store maintenance equipment. CVRTC has a maintenance shed in the village of Oakville, roughly halfway between Shippensburg and Newville Boroughs on the existing trail. This intermediate location allows volunteers to drive to the shed and take out the equipment east and west of the shed on the trail. This practice seems to be working well as it provides volunteers with an option to divide the workload over multiple sessions. The Greason Trailhead provides a location for the storage of equipment closer to the Carlisle end of the trail.

Kerrsville Picnic Area

CVRTC owns a wooded parcel north of the trail corridor west of Kerrsville Road. Although this area was initially considered for a trailhead or parking area, the wooded lot is elevated significantly from the roadway and significant grading would be required to provide vehicular access to this area, which would result in the removal of many of the trees. Additionally, sight distance to the north on Kerrsville Road is obstructed by the hill and a curve in the road. As CVRTC develops Phase 4 of the corridor in this area, this plan proposes a small picnic area at this location, to be accessed and used by pedestrians on the trail.

Areas with Single- or Double-Tread Access

Equestrian Use

The existing developed portion of the Cumberland Valley Rail Trail provides equestrian use between Shippensburg Township Park and the trail's terminus in Newville Borough. This plan proposes to extend equestrian use east from the existing trail to Gap A, and also proposes an equestrian section of trail between Allen Road in Carlisle and Gap C. Sunshine Farms, a horse farm, is located adjacent to the trail in this area. Equestrian use along both of these sections of trail is proposed to the north of the pedestrian section of trail. This concept plan proposes that the equestrian trails be developed in the same manner as the existing equestrian trails. A conceptual sketch is shown on the following pages. The trail will be double tread in areas where equestrian use is present, as pedestrian trail access is proposed for the entire length of the corridor that CVRTC owns.

In those phases where equestrian and pedestrian uses are proposed, CVRTC is considering the equestrian use to be a potential future development. Existing funding constraints and maintenance concerns led to the Board's decision to first focus on developing the pedestrian trail, leaving the development of the equestrian trail for future consideration should conditions change and demand for equestrian use increase.

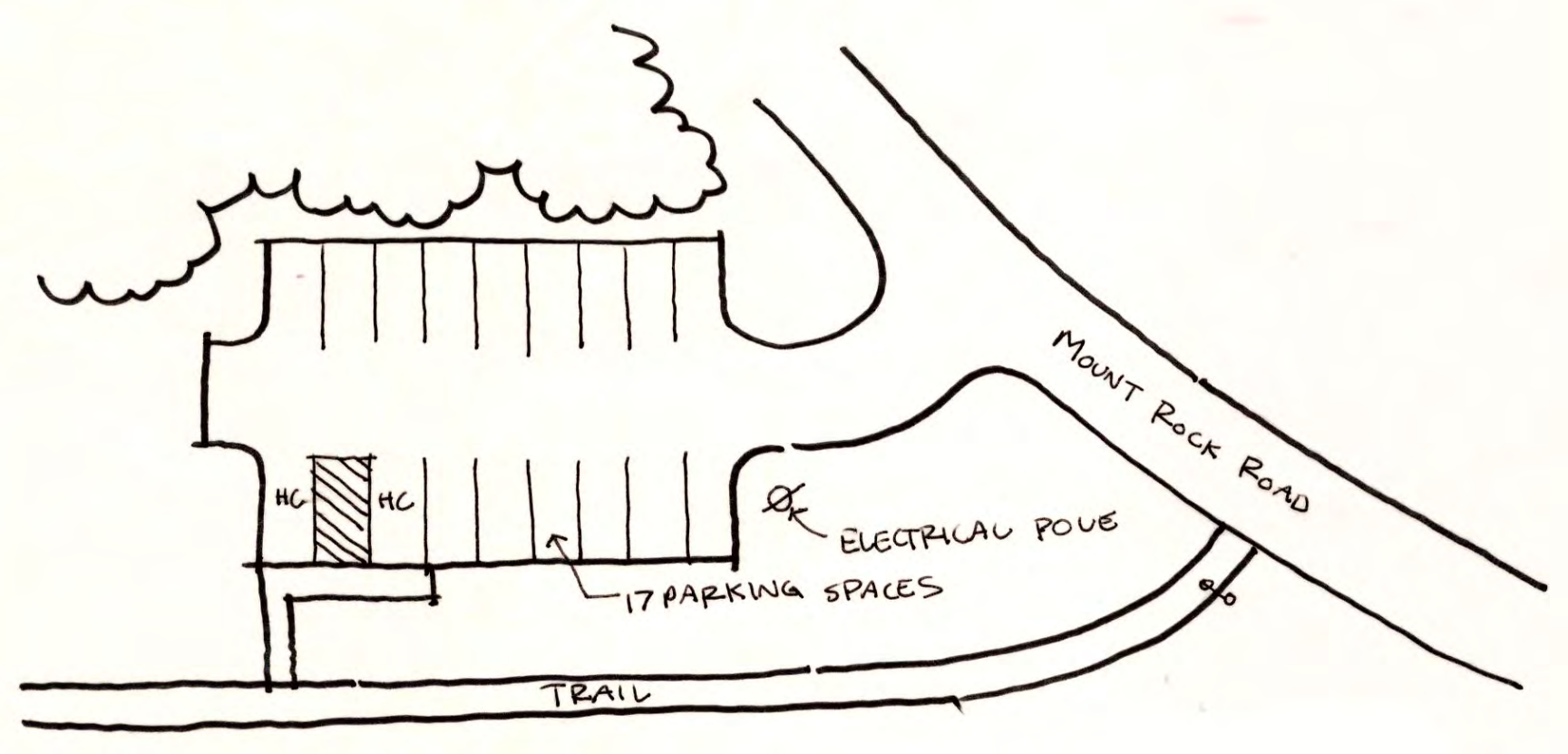


Figure 6. Mount Rock Road Parking

Pedestrian Use

The pedestrian trail will be a crushed stone material, like the traditional packed stone dust surface of the existing developed trail. At the at-grade crossings, the trail will be paved a certain distance back from the intersection where it is graded to achieve ADA accessibility at the road crossings. This concept is shown on the following pages. Equestrians and pedestrians will share the paved section of trail and cross at the same location. Typical cross sections for both pedestrian and dual tread sections of trail are shown in Figures 7 and 8 on the following pages. A typical street at-grade crossing plan view is shown in Figure 9, and trail construction cross sections are shown in Figures 10 and 11.

Providing Accessible Facilities

Accessibility Guidelines for Outdoor Developed Areas

As CVRTC develops the trail, it will be necessary to adhere to accessible design requirements as outlined in the Draft Final Accessibility Guidelines for Outdoor Developed Areas. These guidelines include provisions for trail surface, width, and running slope and resting intervals, among other guidelines to ensure accessibility of the trail.

The corridor has also been planned to provide accessible parking and trail access facilities, including handicapped parking spaces at parking facilities and a firm, stable, slip-resistant route from the parking facility to the trail access point. In addition to developing accessible facilities for people of all ages and abilities, it is important to also include appropriate informational signage so that trail users understand the conditions they will encounter and can make an informed decision about whether or not to use the trail. ADA informational signage is further discussed in the section on recommended signage.

Emergency Vehicle Access

Big Spring Emergency Access Route

Currently, PPL uses the trail to provide maintenance and clearing around the utility poles. The section of trail from the substation east of Centerville Road to Mount Rock Road is traveled by PPL utility trucks. An emergency access route is proposed for the corridor between Centerville Road and Mount Rock Road, with a direct connection to Big Spring High School. Based on existing conditions, it appears that the corridor is in sufficient structural condition to accommodate trucks or ambulances, if necessary. However, additional analysis is needed to confirm this assumption and determine the structural soundness of the corridor and its ability to accommodate other emergency vehicles, especially heavy fire engines and tankers. This additional analysis will need to occur during design; the exact vehicle access point to the corridor will also need to be determined. Additionally, use of this section of the corridor for emergency vehicle access would need to be approved by PA DCNR and PPL.

Conceptual Design for Conflict Mitigation

Fencing

As noted previously, there are certain areas of the trail corridor where residential dwellings are located in close proximity to the trail. In these areas, fencing is proposed to provide a buffer between the trail and the residences. This will help to mitigate conflicts, provide privacy, and encourage trail users to remain on the trail corridor and property owned by CVRTC. Areas where fencing is proposed are depicted on the concept plan. The exact type of fencing will be determined during design, but cost estimates included in this plan have been prepared for a three-rail post and rail fence.

Delineating the Bounds of CVRTC Property

CVRTC understands that it will be necessary to clearly mark the end of their property in areas where the corridor is held in private ownership. CVRTC intends to make reasonable efforts to ensure that trail users stay off of private property and clearly understand where the trail ends. To do this, the plan calls for fencing at the end of the trail that will cross the trail, and extend down the north and south edges of the trail approximately eighty (80) feet so that it is clear that the corridor is held in private ownership beyond that point. In addition to fencing, it is also recommended that CVRTC install appropriate signage in these areas to indicate the bounds of CVRTC property.

Trail under Development

As discussed in the phasing plan, certain sections of the trail will be more difficult to develop than others. This is due in part to sections of the corridor that are held in private ownership as well as narrow sections of corridor and steep grades that make trail development on CVRTC's property challenging.

As the corridor is developed, CVRTC will encourage people to use the sections of trail that have been completed in an effort to encourage user safety as well as to provide private property owner privacy and ensure people understand the bounds of CVRTC's property. This plan is recommending "trail under development" signage to deter people from using sections of trail that have not yet been completed or are under construction.

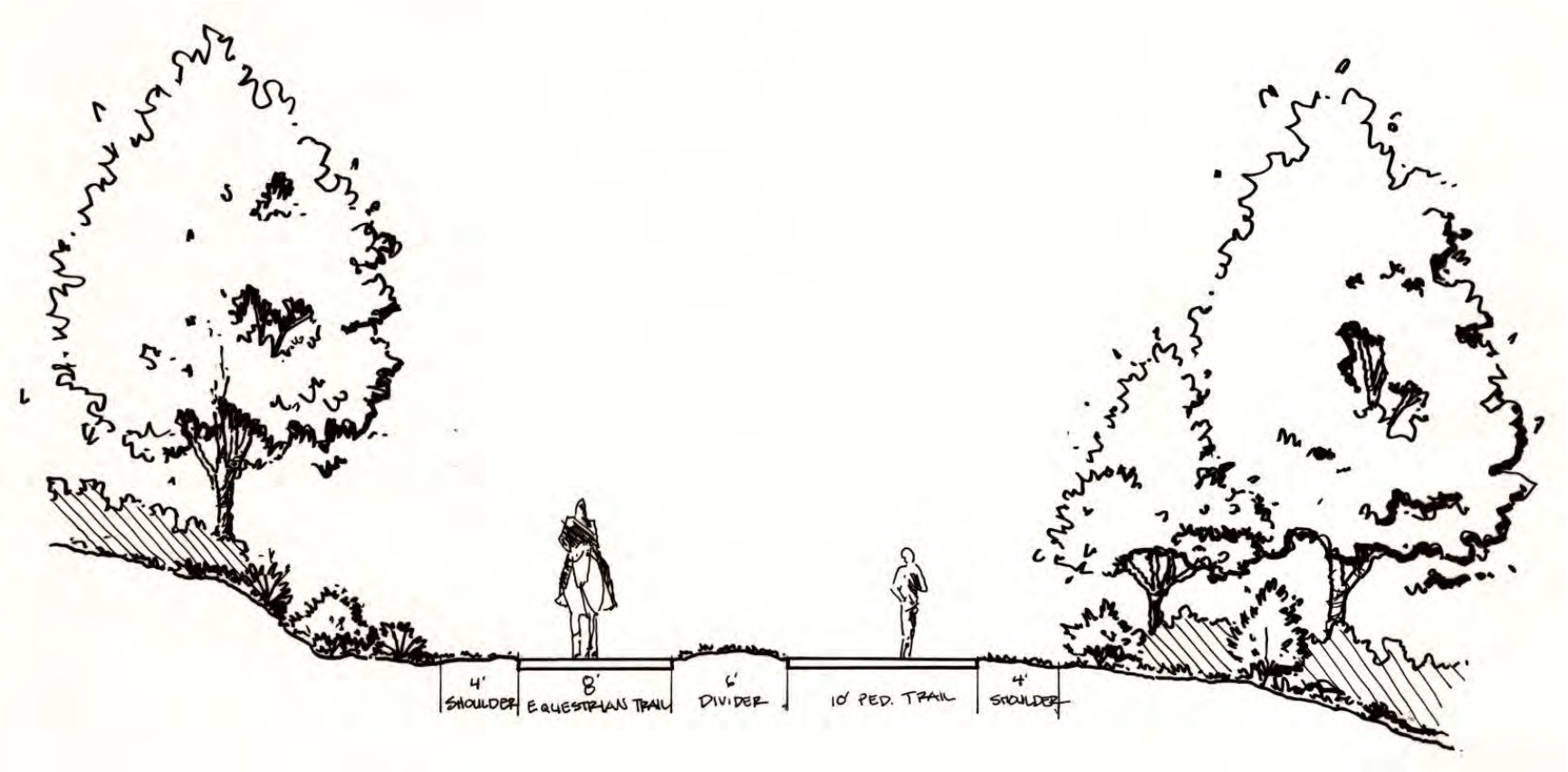


Figure 7. Pedestrian and Equestrian Trail

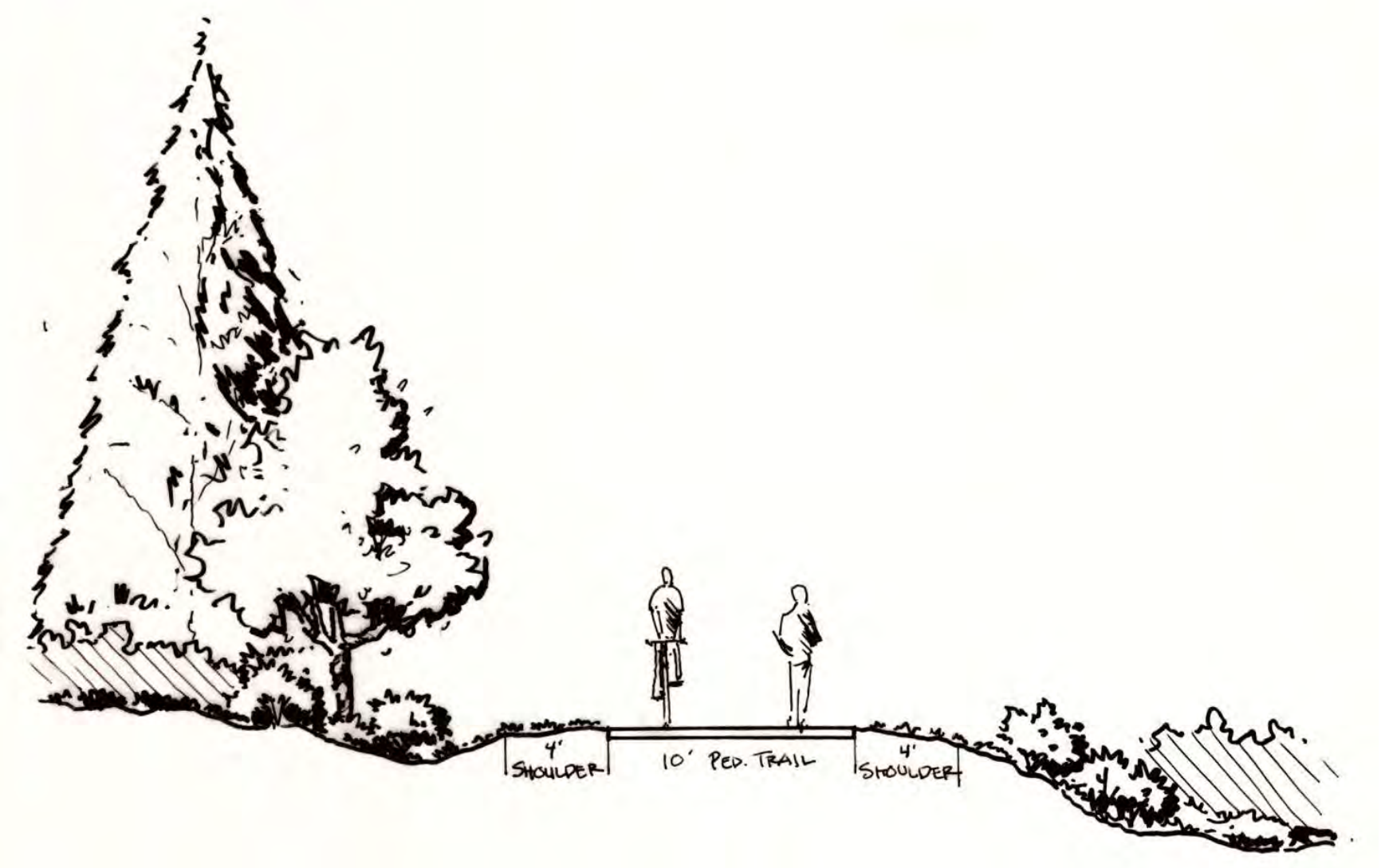


Figure 8. Pedestrian Trail

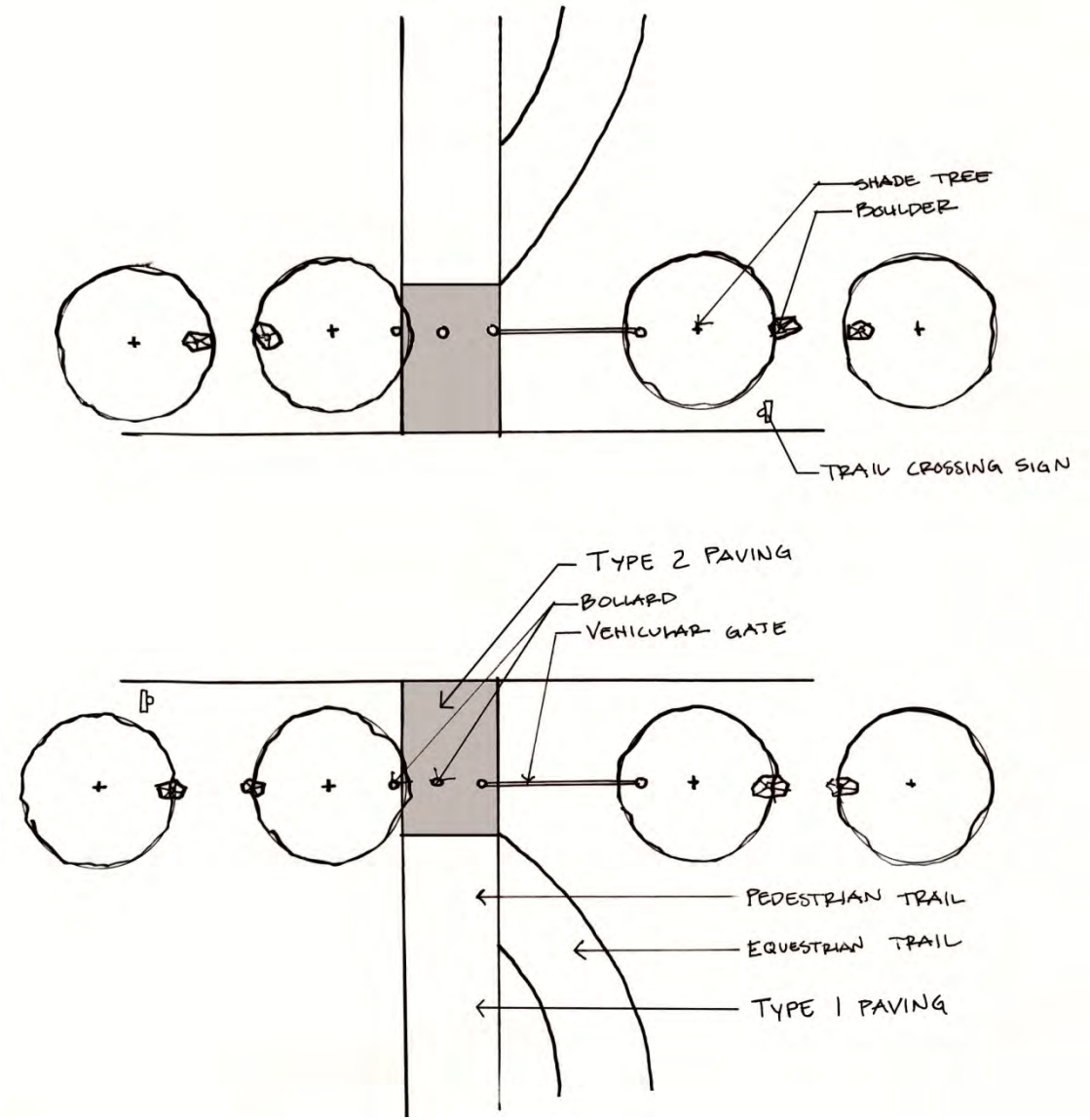


Figure 9. Trail At-Grade Crossing

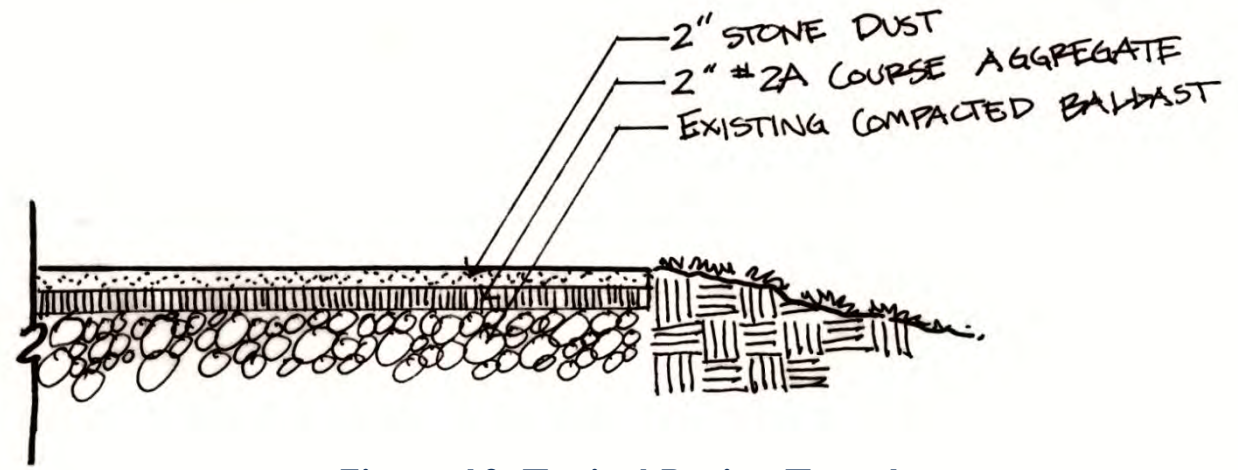


Figure 10. Typical Paving Type 1

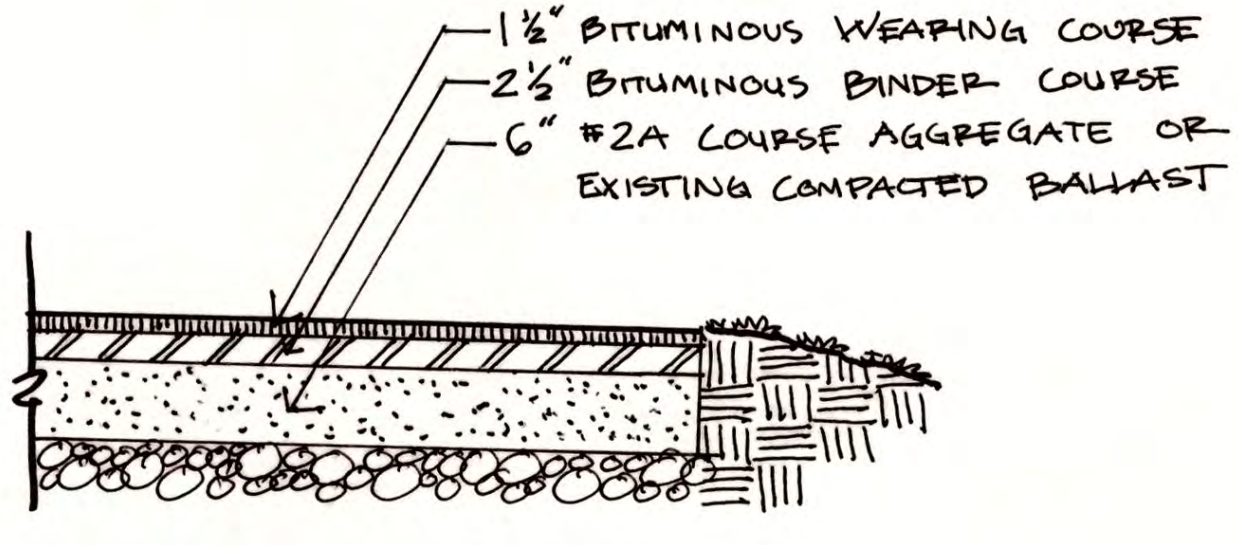


Figure 11. Typical Paving Type 2

Required Signage

Directional and Informational Signage

Signage should be located throughout the trail, at all road crossings, trailheads, and rest areas to orient the user and provide information and direction regarding the trail and trail use, as shown on the next page in Figures 12 and 13. CVRTC should continue incorporating its logo for the Cumberland Valley Rail Trail on each sign and using similar materials and design themes used on the Shippensburg to Newville link to provide a unified approach to signage.

Signage should include ADA trail information signage as outlined in the Draft Final Accessibility Guidelines for Outdoor Developed Areas, section 1017.11. Trail signs shall include the following information: length of the trail or trail segment, surface type, typical and minimum tread width, typical and maximum running slope, and typical and maximum cross slope. Such signage is helpful in providing users with information about the degree of accessibility to assist them in making an informed decision about whether or not to use the trail.

Interpretive Signage

CVRTC's existing Civil War and Agricultural signage program along the existing section of trail between Shippensburg and Newville has been successful. These signs provide an additional attraction for trail users and may attract additional users, such as heritage tourists, who are specifically interested in the history of the region. There are many opportunities for CVRTC to expand upon this program along the NeWPeC extension to highlight significant cultural, historical, or environmental areas. These include the following:

- Historic bridge abutment east of Big Spring Road in Newville Borough
- Former mill in Village of Greason
- Stone arch bridge between Allen Road and Gap C.

Regional Signage

The Cumberland Valley Trail Connections group is a group of local government and nonprofit leaders that meet to discuss and further trail connections in Cumberland County in support of the organization's mission: "An alliance of citizens, organizations, and governments who support the development, connection and promotion of trails in our region as critically important to our quality of life." CVRTC is a part of the organization and may consider applying the Cumberland Valley Trail Connections group logo on signage at trail heads and at key points along the corridor where connections to other trail systems are possible. These locations may include the eastern end of the corridor at Allen Road where the trail can potentially connect to the Carlisle Borough Bicycle and Pedestrian Trail Network and the Big Spring connection into Newville Borough.

cumberland valley pa
TRAIL NETWORK

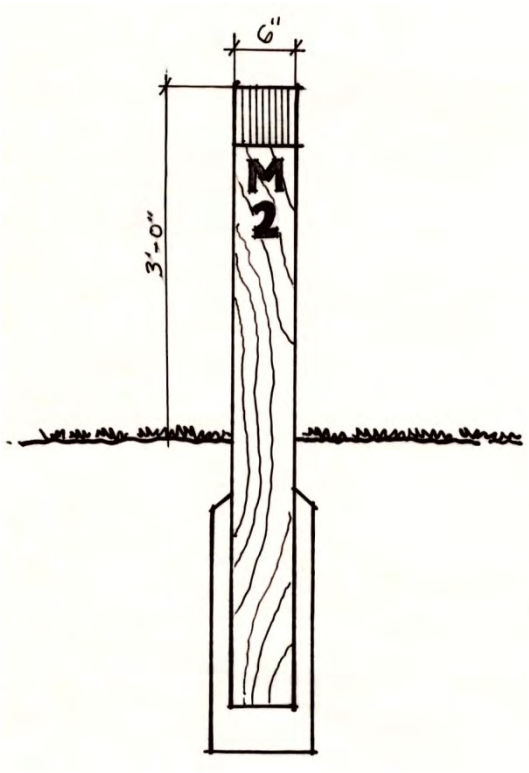


Figure 12. Mile Marker

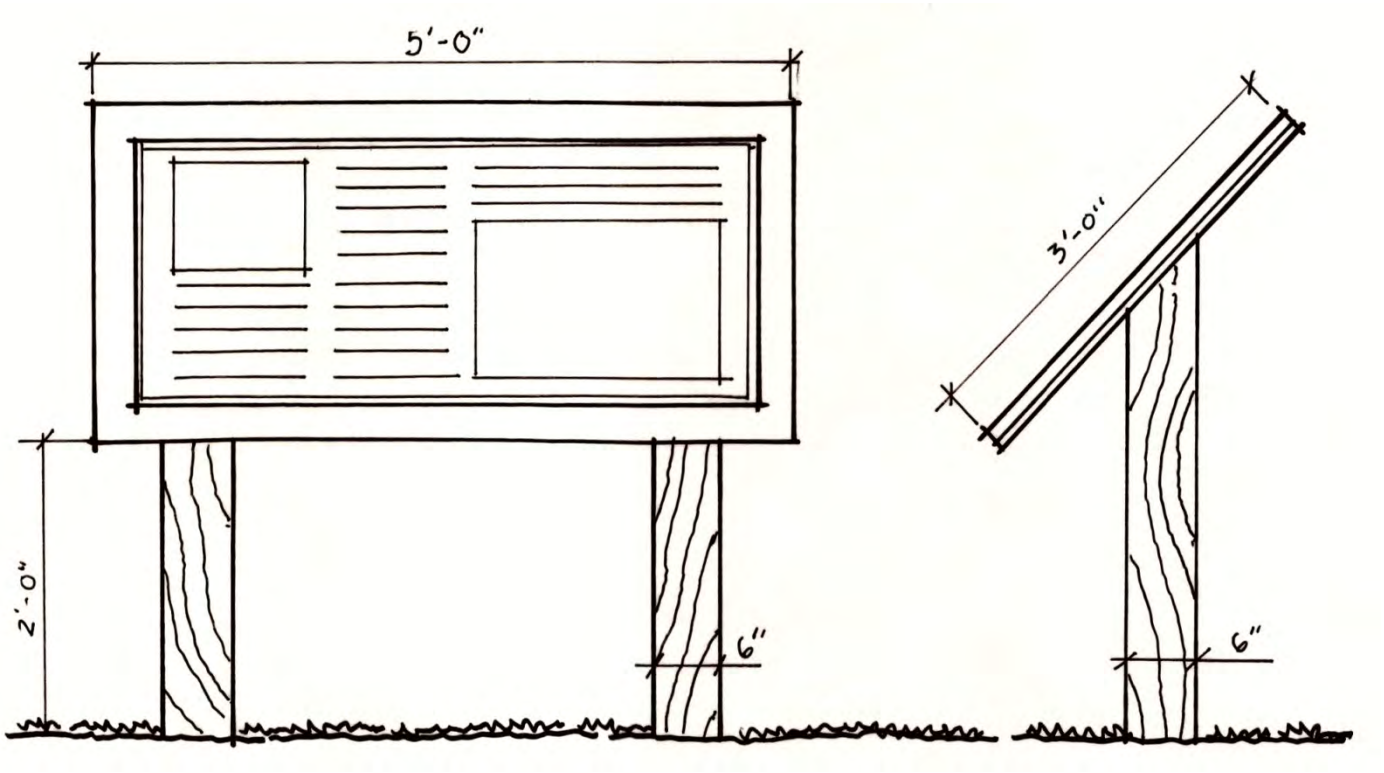


Figure 13. Information Sign

Chapter 4: Operation, Maintenance, and Security

An Introduction to Operations, Maintenance and Security

A successfully implemented trail operation, maintenance, and security program is crucial to the continued success of the Cumberland Valley Rail Trail. Most trail users have a very favorable view of the existing CVRT – describing the trail as a great community asset. Trail users comment favorably on the design of the trail, the maintenance and upkeep of trail facilities, the safety of existing roadway crossings, and the successful accommodation of equestrian users.

Safety, aesthetics, and convenience are three factors that influence first time and repeated use of trails. Proper trail maintenance is critical to address issues of safety and aesthetics. A well maintained trail improves perceptions of trail safety and enhances the overall experience of the trail user. As CVRTC plans the next phase of trail, this is a good time to assess what's working well, and what areas need improvements in regards to trail operations, maintenance, and security. Nearly doubling the length of trail will generally double the expenses associated with trail maintenance and upkeep. However, there may be opportunities to realize an economy of scale associated with optimal use of machinery and equipment, and the opportunity to expand the volunteer network to assist in trail maintenance and monitoring.

Overview of CVRTC

CVRTC is currently operating as a 501(c)(3) organization that is guided by dedicated volunteers. The organization is managed by a board of directors that currently contains twelve (12) members that meet on a monthly basis. CVRTC has adopted by-laws that govern the Council's operation as a non-profit organization. The organization's fiscal year runs from October 1 to September 30, and the board meets annually to elect officers for the positions of president, vice president, secretary, and treasurer. As of December 2012, there were 284 paid members. Current membership fees are outlined below, and these memberships cover the cost of insurance for CVRTC, which amounts to several thousand dollars a year.

Individual	$ 20.00
Each individual at the same mailing address	$ 1.00
Supporting	$ 35.00
Sustaining	$ 50.00
Patron	$100.00
Lifetime	$300.00
Non-profit Organization	$ 20.00
Corporate	$100.00
Honorary	Gratis

Use of Volunteers

CVRTC relies on volunteers to handle much of the organization's operations, fundraising, and maintenance; there are about a dozen volunteers that are considered very active. As CVRTC begins to develop the Newville to Carlisle extension, it will be necessary to analyze the effectiveness of volunteers on a regular basis to ensure that the trail is being adequately managed and maintained and that volunteers are not being overwhelmed or overtaxed.

Organizational Structure

The original master plan that was prepared for the first section of trail from Shippensburg to Newville provided a recommended organizational structure for CVRTC that included the establishment of committees for the following:

- Maintenance
- Safety and security
- Trail development
- Marketing and public outreach
- Fundraising and special events

In its infancy, the organization tried to establish these committees but they did not find them to be effective, and as noted previously, operations are primarily carried out by a handful of volunteers. As the length of trail increases, it is recommended that CVRTC re-visit this initial recommendation and consider reorganizing these committees to manage trail activities and operations. The previously prepared master plan should be used as a guide in establishing these committees and their roles and responsibilities. This approach could help to ensure that necessary organizational activities are occurring in a timely and efficient manor, allowing the organization to better manage the trail and CVRTC operations.

Fundraising and Financial Management

CVRTC hosts three fundraising events a year to generate revenues. The Race, Ride, Run, and Ramble is held in the spring and is the organization's largest event. Artship is an art and wine festival at Shippensburg University, and CVRTC holds a 10k race in conjunction with that event. Fall Down on the Trail is a 5k fall race that is held at the Newville end of the trail. Typically, the organization is able to raise $7,000 to $9,000 through these three events.

There is one person that is primarily responsible for organization of the fundraising events. Although these events have been successful for CVRTC, as the organization continues to develop the next sections of the trail, additional fundraising events will be necessary to not only raise additional revenues, but also to promote the trail and the organization. It will be necessary for additional volunteers to become involved, or to consider hiring someone part-time to assist with the responsibilities that accompany an active fundraising program.

CVRTC currently maintains an operating budget to track income and expenses associated with donations, the various special events that the organization manages, administrative expenses, insurance, and trail maintenance. Although simple, the existing budget structure appears to be meeting the organization's needs. A more detailed budget of income and expenses could help the organization to plan and organize the use of funds, as well as to set goals for fundraising to meet certain objectives.

Operations, Maintenance, and Stewardship

Operations and maintenance refers to the day-to-day upkeep as well as the smooth and safe functioning of the trail. Stewardship refers to long-term care and oversight of the trail resource. Both are essential to assure the sustainability of the CVRT as a quality community asset and a good neighbor to adjacent properties owners. Stewardship also includes building community support and advocacy for the CVRT so the integrity of the trail is maintained in the future.

Routine Maintenance refers to the day-to-day regimen of trail inspection, litter pick-up, trash and debris removal, weed and vegetation control; trail sweeping, sign replacement, tree and shrub trimming and other regularly scheduled activities. Routine maintenance also includes minor repairs and replacements such as fixing trail surface problems or a damaged sign or gate.

Currently, approximately six (6) individuals are active in mowing and maintaining the trail on a regular basis during the summer. CVRTC owns a tractor, riding mower, push mower, chainsaw, and they also have a trailer. Volunteers use their personal vehicles to transport equipment as needed. Regular maintenance tasks include mowing and clean-up of downed trees. Equipment is currently stored in a small maintenance shed in Oakville, and this arrangement functions well for the existing section of trail between Shippensburg and Newville.

Going forward, the organization intends to continue to use volunteers for much of the trail's day-to-day maintenance. The Board has looked into hiring a private contractor to assist with maintenance, but costs proved to be prohibitive. The Board may wish to consider hiring a part-time employee for the summer months to assist with maintenance as a less-expensive alternative to contracting out work.

The final concept of the NeWPeC section of trail includes a small maintenance shed at the proposed trailhead in the Village of Greason. This location will provide another location at which to store equipment for maintenance of the new section of trail. It is recommended that CVRTC purchase and store another set of equipment at this location to avoid the time and costs that would be associated with transporting equipment from the Shippensburg to Carlisle ends of the trail on a regular basis.

Current maintenance costs mainly consist of fuel for the tractor and repairs to equipment, which represents the largest expense. Maintenance costs typically range from $4,000 to $7,000 and are paid as they are incurred. Developing a maintenance budget would help to hone these costs for appropriate and necessary maintenance activities.

Remedial Maintenance refers to correcting significant defects as well as repairing, replacing, or restoring major components that have been destroyed, damaged, or significantly deteriorated during the life of the project. Minor repairs such as repainting, or replacing signs may occur on a five- to ten-year cycle. Major reconstruction items might occur over a longer period. Other examples include stabilizing a severe erosion area, resurfacing a segment of trail, or replacing a bridge.

Since the existing portion of trail was developed within the past twenty years, CVRTC has not yet had to deal with remedial maintenance issues. However, remedial maintenance should be a consideration going forward so that necessary improvements can be identified and appropriately planned and budgeted for before they are necessary. One way to accomplish this is through the formulation of a long-term capital improvements plan, though budgeting for remedial improvements could be on an individual and as-anticipated basis.

Typical Management and Maintenance Budget

MAINTENANCE ACTIVITY	FREQUENCY	UNIT	QUANTITY	UNIT COST	TOTAL COST
10' Wide Crushed Stone Trail					
Resurface	Annual for 3 Years	SY	12,000	$7.50	$90,000.00
Crosswalk Maintenance (3/year)	Annual	EA	3	$1,000.00	$3,000.00
Re-Grading	Annual	EA	2	$2,000.00	$4,000.00
Pothole repair and other patches	Annual or As Required	LS	1	$1,500.00	$1,500.00
				Subtotal	$98,500.00
Landscaping					
Keep trail-side land clear of trash and debris	Annual	LS	1	$2,500.00	$2,500.00
General maintenance of 10 car trailhead (litter clean-up, etc.)	Annual	LS	2	$1,500.00	$3,000.00
Mowing	Annual	LS	1	$10,000.00	$10,000.00
Leaf removal (If Required)	Annual	HRS	40	$40.00	$1,600.00
Tree pruning	Annual	HRS	40	$40.00	$1,600.00
Tree removal	Annual	LS	1	$3,000.00	$3,000.00
Invasive species removal	Annual	MI	10	$100.00	$1,000.00
Application of herbicides or pesticides	Annual	MI	10	$150.00	$1,500.00
Clearing of drainage channels and culverts	Annual or As Required	MI	10	$105.00	$1,050.00
				Subtotal	$25,250.00
Facilities & Structures					
Empty trash cans at trailheads and along trail	Annual	MI	10	$200.00	$2,000.00
Maintenance of informational kiosks (repairs, etc.)	Annual or As Required	EA	2	$250.00	$500.00
Maintenance of picnic tables, benches, etc.	Annual or As Required	LS	1	$100.00	$100.00
Repair/maintenance of signs	Annual or As Required	MI	203	$10.00	$2,030.00
Maintenance of lighting	Annual	EA	2	$250.00	$500.00
Maintenance of gates, bollards and fencing	Annual or As Required	MI	10	$287.00	$2,870.00
General bridge maintenance (minor deck/railing repair)	Annual	LS	1	$1,500.00	$1,500.00
Railroad at-grade crossing maintenance (inspection, signage, drainage)	Annual	LS	1	$500.00	$500.00

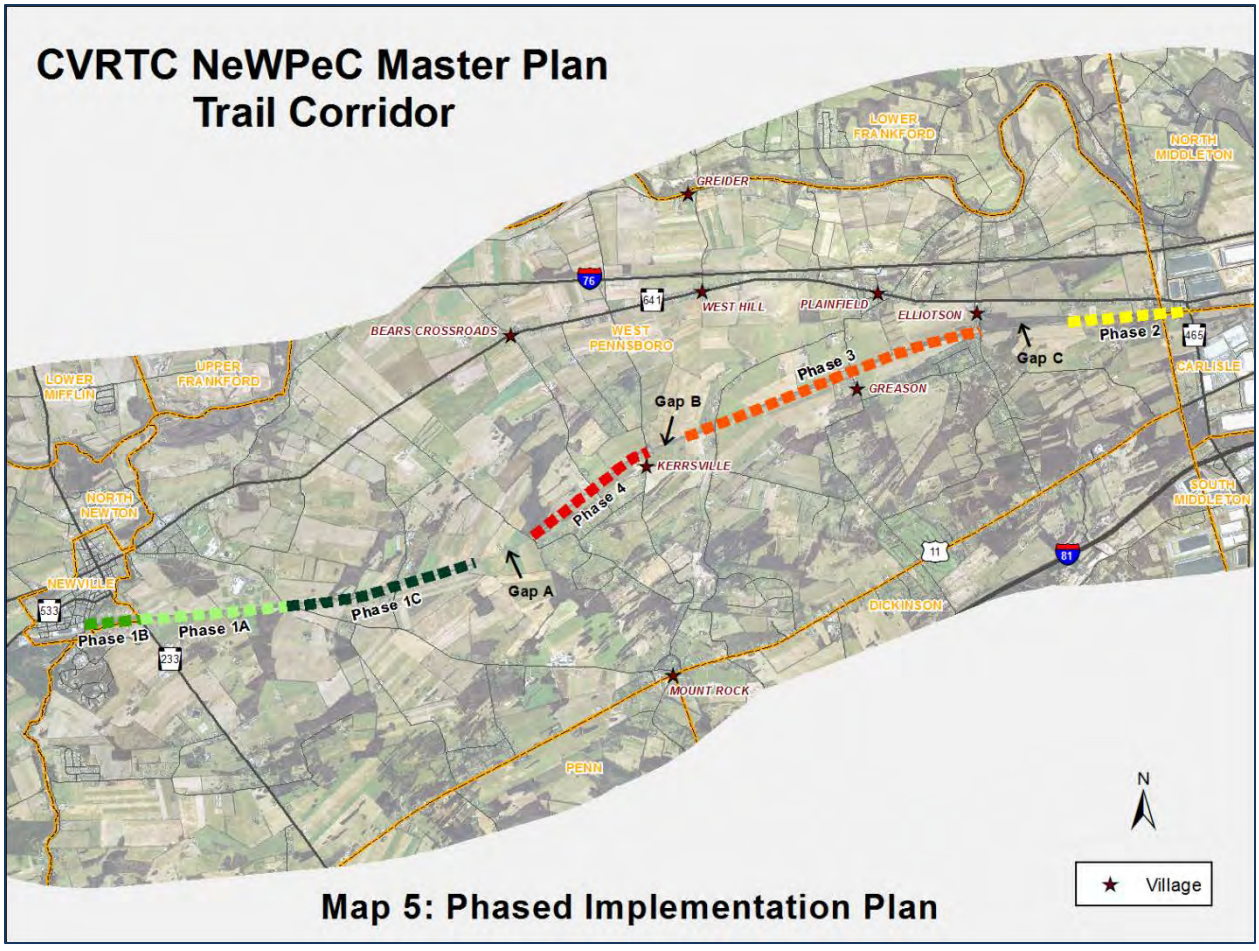
MAINTENANCE ACTIVITY	FREQUENCY	UNIT	QUANTITY	UNIT COST	TOTAL COST
				Subtotal	$10,000.00
				Total Estimated Annual Costs with Crushed Stone Trail	$133,750.00
				Contingency 10%	$13,375.00
				Management/Staffing	$14,712.50
				Total	$161,837.50

Unit Abbreviations
EA – Each
HRS - Hours
LS – Lump Sum
MI - Miles
SY – Square Yards

Phased Implementation Plan

This master plan and feasibility study represents the first step in moving from acquisition to a developed trail. It should be noted, however, that developing the entire corridor will take many years; CVRTC has been working on the first section of trail, from Shippensburg to Newville since the master plan for that section was prepared in 1998. The last section from Shippensburg Township Park to the Shippensburg Borough line is expected to be completed within the next two years – a seventeen (17) year time frame. It is assumed that the development of this section of trail will take close to twenty (20) years as well. Given that there are three sections of the corridor that are held in private ownership, forming a continuous trail from Newville to Carlisle may take longer than twenty years, as it is not possible to determine when solutions will become available that will enable the connection.

This plan sets forth a schedule for implementation, focusing on manageable sections of trail. This implementation schedule was developed by considering priorities as well as ease of implementation. Some phases are further divided into sub-phases with the intent of creating complete, usable sections of trail at a manageable cost. In some cases, where a continuous connection is not currently feasible, CVRTC may consider maintaining the corridor rather than constructing that section of trail until a viable connection is apparent.



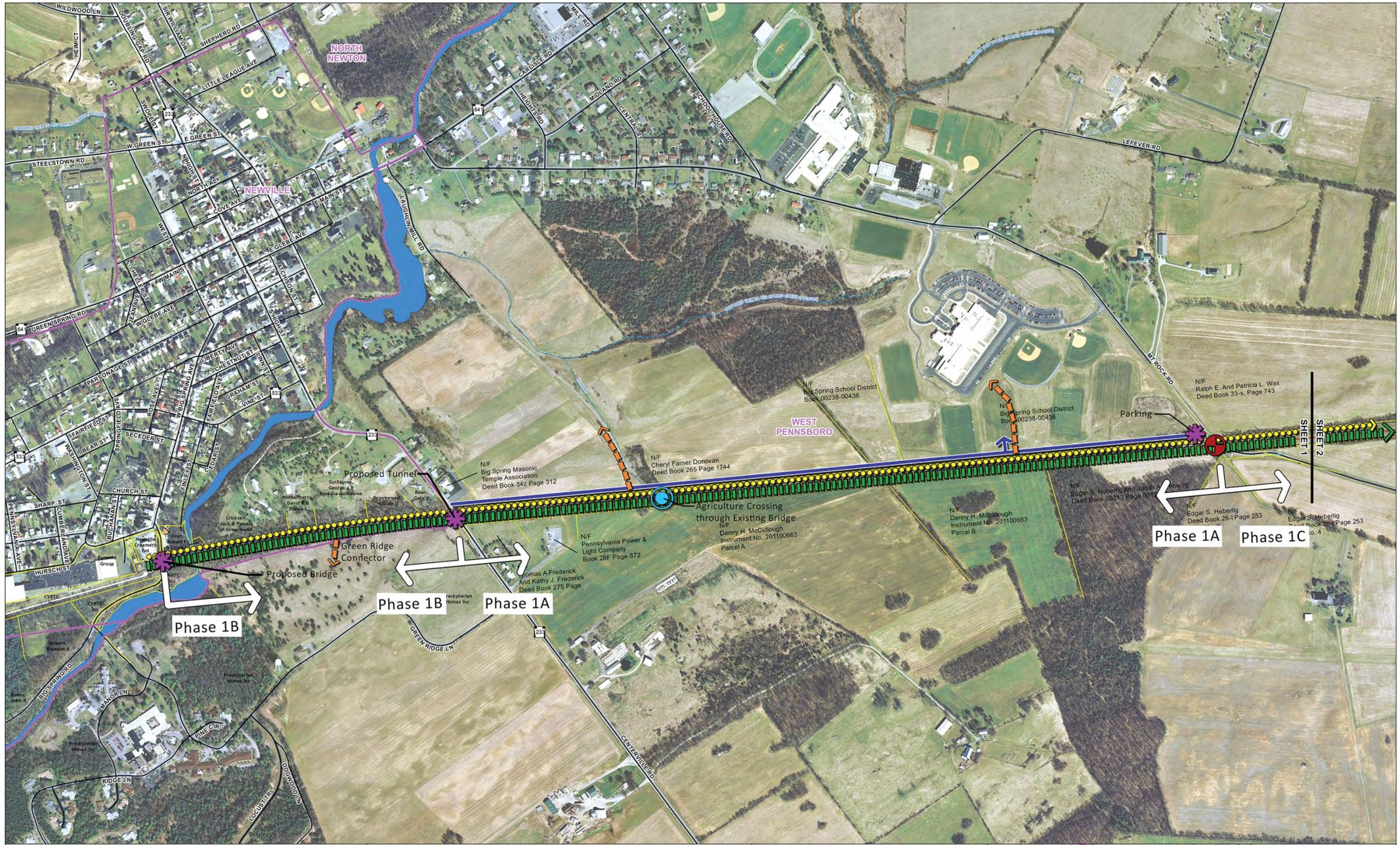
It is important to note that although many phases of development depict the trail as a dual-tread, equestrian and pedestrian trail, at this time CVRTC is considering the equestrian portion of trail to be a future use for the corridor. Existing funding constraints and maintenance concerns led to the Board's decision to first focus on developing the pedestrian trail, leaving the equestrian trail for future considerations.

The following implementation timeline summarizes each phase of trail development. The timeframes are intended to set forth a realistic schedule for development of the trail, and are based on the existing trail's relative pace of development. Each phase is discussed in more detail following the table and a cost estimate is included following the discussions.

Implementation Timeline

Phase	Estimated Cost	Timeframe	Ease of Implementation	Potential Funding Source
Phase 1A	$766,000	2013-2016	Moderate to Challenging – Although the majority of this first section of trail is relatively flat and clear, the construction of the underpass at Centerville Road represents a costly infrastructure improvement that could be challenging to fund. CVRTC has the potential to involve other parties that have an interest in developing this section in the development of the trail.	• CVRTC • PA DCNR • Cumberland County • Carlisle Area Health & Wellness Foundation • Corporate Partners • Community Foundations • Developers (Big Spring Area) • Emergency services providers • Transportation Alternatives (with municipal partner)
Phase 1B	$390,000	2014-2018	Moderate to Challenging – The cost of the bridge over Big Spring Road will make this section challenging, although the portion of the trail between Big Spring Road and Centerville Road will be relatively easy to develop.	• CVRTC • PA DCNR • Cumberland County • Carlisle Health & Wellness Foundation • Municipal Partners • Corporate Partners
Phase 1C	$419,100	2013-2020	Easy to Moderate – CVRTC may consider continuing to maintain this section of the trail, rather than constructing a trail in this area, until a viable alternative is selected to connect this portion of the trail to the next section.	• CVRTC

Phase	Estimated Cost	Timeframe	Ease of Implementation	Potential Funding Source
Phase 2	$238,600	2015-2020	Easy to Moderate – This section of trail will be easy to develop, but will require coordination with the owner of the mobile home park. Because of its proximity to Carlisle, CVRTC may be able to involve other partners specifically interested in this section of the corridor.	• CVRTC • PA DCNR • Cumberland County • Carlisle Area Health & Wellness Foundation • Corporate Partners
Phase 3	$866,500	2020-2025	Moderate – This section of the corridor is relatively flat and sufficient width exists in much of the corridor. There will be a need for landowner involvement in the areas where residences are located adjacent to the trail. The number of facilities proposed at the Greason Trailhead could entice smaller donors to become involved. CVRTC should consider maintaining the section of this phase west of Springview Road until a viable alternative is selected to connect this portion of the corridor with the section to the west.	• CVRTC • PA DCNR • Cumberland County • Carlisle Area Health & Wellness Foundation • Corporate Partners
Phase 4	$523,650	2025-2030	Challenging – This section of the corridor will be challenging to develop based on topography coupled with the narrow width of the corridor and landowner concerns. The timing and construction of this section will ultimately depend on the ability to connect this section of the corridor to the portions of the corridor to the east and west.	• CVRTC • PA DCNR • Cumberland County • Carlisle Area Health & Wellness Foundation • Corporate Partners



CVRTC NeWPeC Master Plan

Map 6: Trail Concept Plan

Sheet 1 of 5

Parcel Boundary
Utility Crossing
Transmission Line
Road / Street
Municipal Boundary
Water Feature
Pedestrian Trail
Equistrian Trail
Connecting Trail
Special Feature
At-Grade Trail Crossing
Fence
Agriculture Crossing
Emergency Vehicle Access

Projection: PA State Plane South, NAD 1983 (feet)

Basemap Source:
Cumberland County GIS
Cumberland County Planning Department
CVRTC
RETTEW Associates, Inc.

Map Date: 1/14/2013

N

1 inch = 300 feet
when printed at 24" x 36"

0 150 300 600
Feet

RETTEW

CVRTC NeWPeC Master Plan

Map 6: Trail Concept Plan

Sheet 2 of 5

Parcel Boundary
Utility Crossing
Transmission Line
Road / Street
Municipal Boundary
Water Feature
Pedestrian Trail
Equistrian Trail
Connecting Trail
Special Feature
At-Grade Trail Crossing
Fence
Agriculture Crossing

Projection: PA State Plane South, NAD 1983 (feet)

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CVRTC
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Map Date: 1/14/2013

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Feet

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CVRTC NeWPeC Master Plan

Map 6: Trail Concept Plan

Sheet 3 of 5

- Parcel Boundary
- Utility Crossing
- Transmission Line
- Road / Street
- Municipal Boundary
- Water Feature
- Pedestrian Trail
- Equistrian Trail
- Connecting Trail
- Special Feature
- At-Grade Trail Crossing
- Fence
- Agriculture Crossing

Projection: PA State Plane South, NAD 1983 (feet)

Basemap Source:
Cumberland County GIS
Cumberland County Planning Department
CVRTC
RETTEW Associates, Inc.

Map Date: 1/14/2013

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CVRTC NeWPeC Master Plan

Map 6: Trail Concept Plan

Sheet 4 of 5

Parcel Boundary
Utility Crossing
Transmission Line
Road / Street
Municipal Boundary
Water Feature
Pedestrian Trail
Equistrian Trail
Connecting Trail
Special Feature
At-Grade Trail Crossing
Fence
Agriculture Crossing

Projection: PA State Plane South, NAD 1983 (feet)

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CVRTC
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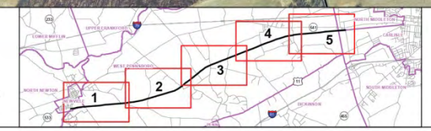

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CVRTC NeWPeC Master Plan

Map 6: Trail Concept Plan

Sheet 5 of 5

Parcel Boundary
Utility Crossing
Transmission Line
Road / Street
Municipal Boundary
Water Feature
Pedestrian Trail
Equistrian Trail
Connecting Trail
Special Feature
At-Grade Trail Crossing
Fence

Projection: PA State Plane South, NAD 1983 (feet)

Basemap Source:
Cumberland County GIS
Cumberland County Planning Department
CVRTC
RETTEW Associates, Inc.

Map Date: 1/14/2013

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Feet

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Phase 1 – Newville Borough to Gap A

CVRTC owns the corridor from the existing trail's terminus in Newville Borough to Gap A, a distance of nearly three miles. Developing this section first will enable trail users to continue on the trail past Newville, and will show people that CVRTC is implementing the plan. This phase has been divided into three sub-phases, based on the infrastructure needed to develop the trail.

Phase 1A

Phase 1A involves the construction of a dual-tread, pedestrian and equestrian trail from Centerville Road to Mount Rock Road. This phase includes an underpass at Centerville Road, an at-grade crossing at Mount Rock Road, and the parking area at Big Spring High School. This phase also includes provisions for emergency vehicle access along this section. Costs associated with the underpass at Centerville Road are significant; this item is estimated to cost $400,000, and this actual cost could be significantly higher depending on the source of funding.

Between Centerville Road and the PPL substation, this section of trail is wooded and some clearing will be necessary. Existing conditions on the trail east of the PPL substation to Mount Rock Road are manageable; there is minimal clearing that will need to occur, and gravel is present in many areas, helping to decrease the amount of material necessary for development. Total estimated costs associated with Phase 1A are $766,000.

Phase 1B

Phase 1B will connect the existing trail's terminus in Newville Borough with Phase 1A. Costs in this phase are driven up by the proposed bridge over Big Spring Road that is estimated at a cost of $300,000. As discussed previously, significant grade differences, limited sight distance, and the potential for automobile traffic traveling at high rates of speed along Big Spring Road and Centerville Road make these infrastructure improvements necessary. Aside from the intersections, the remainder of the corridor in this phase is relatively flat, and ballast and gravel are located along portions of the corridor, providing some material for trail development. This section of trail is currently wooded; although it does not contain significant underbrush, some clearing will be necessary.

The improvements in this sub-phase were selected as the second priority in Phase 1 to acknowledge the relatively high importance of the bridge to enable the connection to the existing developed portion of trail. CVRTC will need to effectively plan its resources to implement this critical connection, which will ultimately provide a continuous connection between Shippensburg Borough, Newville Borough, and Big Spring High School. Due to the high infrastructure cost associated with the bridge, CVRTC may consider the alternative route that provides an at-grade crossing north of the corridor to allow people to safely cross Big Spring Road. Although this alternative may provide an interim solution, it will be important for CVRTC to not lose sight of the ultimate goal of constructing a bridge as part of this phase. However, the at-grade crossing may be modified slightly and maintained to provide a connection to Newville Borough. Total estimated costs associated with Phase 1B are $390,000, which includes the bridge, but does not include the alternative at-grade crossing that is discussed as an alternative.

Phase 1C

Phase 1C will extend the corridor from Mount Rock Road to the western boundary of Gap A. The concept for this section of trail includes the dual-tread pedestrian and equestrian trail, the at-grade

crossing at Green Hill Road, and the post and rail fence to demarcate the end of CVRTC's property. An existing agricultural crossing is also planned for this sub-phase. This section of trail is relatively flat and, as such, it will be easy to construct. However, because a viable work-around of the properties held in private ownership is not available at this time, CVRTC may consider simply maintaining this section of corridor in the near term, rather than constructing a trail, until a feasible alternative route becomes available. Cost estimates for constructing this section of trail total $419,100.

Phase 2 – Allen Road to Gap C

The second phase slated for development is the portion of the corridor between Allen Road and the eastern boundary of Gap C. This section of trail is also bordered by the Ferrell property to the north, which includes Sunshine Farms, a horse farm. For this reason, this section of trail is proposed to be dual-tread, accommodating both pedestrians and equestrians west of Carlisle Borough. Also in this phase is a small parking area off of Allen Road developed in coordination with the adjoining mobile home park and an interpretive sign at the stone arch bridge over which the trail crosses.

Given the relatively flat terrain, significant corridor width, generally sparse vegetation, and availability of gravel and ballast in some locations, this section of trail will be relatively easy to develop. Additionally, it provides the benefit of connecting the corridor to Carlisle Borough, and the potential to connect to the Carlisle Area Bicycle and Pedestrian Trail Network and, ultimately, the downtown. Costs associated with Phase 2 are $238,600.

Phase 3 – Village of Greason

Phase III extends east and west outward from the Village of Greason and includes a trailhead and parking area in the Village, near the intersection of the corridor with Greason Road. The Greason Road crossing is an at-grade crossing with adequate sight distance to the north and south. The proposed parking area will be located east of the trail and will accommodate approximately 28 vehicles. Although the width of the corridor in this area is enough to accommodate a parking area, there will not be sufficient room to allow horse trailers to enter, maneuver within, and exit the parking area. For this reason, Phase 3 of the trail is proposed for pedestrian and bicycle use only; there will be no separate equestrian trail due to the inability to provide parking and access for equestrians in this section.

The Greason Trailhead will also include a small picnic area and a maintenance shed, which CVRTC can use to store equipment to maintain the eastern portion of the trail. Additionally, interpretive signage is proposed for this area that discusses the Village of Greason and nearby grain mill.

To the west of Greason Road, the corridor narrows to approximately fifty (50) feet for a length of approximately seven hundred and fifty (750) feet, before widening again to over one hundred (100) feet. The trail is relatively flat in this area and existing vegetation is sparse. Several agricultural crossings are located in this section and will be maintained to provide access for adjacent farm properties from one side of the corridor to the other. An at-grade crossing is located at Springview Road and the trail continues west to the end of CVRTC's property. Fencing is proposed at the end of the corridor to clearly delineate the end of CVRTC's property. Similar to other sections where the trail abuts property that is held in private ownership, CVRTC may consider simply maintaining the section of the corridor between Springview Road to the end of their property until an alternative route is determined.

To the east of Greason Road, the width of the corridor is sufficient to accommodate the trail, although

the corridor narrows shortly before the intersection with McAllister Church Road. Fencing along the trail is proposed in this section, and in several locations along the corridor where residences are located in close proximity to the trail. There is an existing agricultural crossing along this section of the corridor that will be maintained. Costs associated with Phase III total $866,500.

Phase 4 – Kerrsville Road to east of Crossroad School Road

Phase 4 extends the corridor from Kerrsville Road west to the end of CVRTC's property east of Crossroad School Road. An at-grade crossing is located at Goodyear Road. This section of the corridor will be challenging to develop because of the narrow width of the corridor and the location of the utility poles in relation to the topography. Post and rail fencing is proposed along the south side of the corridor in this section to clearly delineate the bounds of CVRTC's property. Additionally, this area is more densely developed with residences and there has been opposition by neighboring property owners. Because both ends of this portion of the corridor are bound by property that is held in private ownership, it is likely that this will be the last section of the corridor to be developed.

Like Phase 3, the trail in this area will be a single-tread pedestrian trail, due to the inability to provide a parking area and access for equestrians, and due to the narrow width of the corridor. CVRTC owns a small wooded parcel to the north of the corridor along Kerrsville Road. The wooded area is on a small hill, and there is insufficient room and sight distance along Kerrsville Road to allow this area to be used for a parking area. A small picnic area is proposed for this area to be used as a rest area for trail users. Total costs for Phase 4 are estimated to be $523,650.

Cost Estimates

NeWPeC Cumberland Valley Rail Trail Extension

Feature	Quantity	Units	Unit Price	Total	Phase Subtotal
Phase 1A					
Pedestrian/Equestrian Trail	5,850	LF	$40.00	$234,000.00	
1 At-Grade Crossing	1	LS		$35,000.00	
Centerville Road Underpass	1	EA		$400,000.00	
Big Spring High School Parking	8,000	SF	$2.75	$22,000.00	
Emergency Vehicle Access	1	LS		$75,000.00	
			Total Phase 1A	$766,000.00	$766,000.00
Phase 1B					
Pedestrian/Equestrian Trail	2,250	LF	$40.00	$90,000.00	
Big Spring Road Bridge	1	EA		$300,000.00	
			Total Phase 1B	$390,000.00	$390,000.00
Phase 1C					
Pedestrian/Equestrian Trail	7,800	LF	$40.00	$312,000.00	
3 At-Grade Crossings	1	LS		$105,000.00	
Post and Rail Fence	60	LF	$35.00	$2,100.00	
			Total Phase 1C	$419,100.00	$419,100.00
Phase 2					
Pedestrian/Equestrian Trail	4,850	LF	$40.00	$194,000.00	
1 At-Grade Crossing	1	LS		$35,000.00	
Parking Lot Improvements	1	LS		$7,500.00	
Post and Rail Fence	60	LF	$35.00	$2,100.00	
			Total Phase 2	$238,600.00	$238,600.00
Phase 3					
Pedestrian Trail	12,500	LF	$40.00	$500,000.00	
5 At-Grade Crossing	1	LS		$280,750.00	
Post and Rail Fence	800	LF	$35.00	$28,000.00	
Greason Parking	21,000	SF	$2.75	$57,750.00	
			Total Phase 3	$866,500.00	$866,500.00
Phase 4					
Pedestrian Trail	5,800	LF	$40.00	$232,000.00	
3 At-Grade Crossing	1	LS		$105,000.00	
Post and Rail Fence	5,190	LF	$35.00	$181,650.00	
Picnic Area	1	EA		$5,000.00	
			Total Phase 4	$523,650.00	$523,650.00
				Construction Subtotal	$3,203,850.00
				Contingency (15%)	$480,577.50
				Construction Total	$3,684,427.50
				Engineering (15%)	$552,664.13
				GRAND TOTAL	**$4,237,091.63**

Unit Abbreviations
EA – Each
LF – Linear Feet
LS – Lump Sum
SY – Square Feet

Potential Sources of Capital and Operating Revenue

In addition to the capital improvements associated with developing the trail – construction activities and the purchasing of equipment – there are also a series of capital and non-capital costs that CVRTC will incur as they operate and maintain the trail. These operating costs include day-to-day administration and maintenance tasks such as carrying insurance, cutting grass, and emptying waste receptacles, as well as periodic or annual activities such as bridge and equipment inspections, equipment replacement, trail maintenance, etc.

Going forward, CVRTC will need to secure adequate financial and organizational resources to preserve and enhance the Cumberland Valley Rail Trail. Public funding resources include federal, state, regional, and local government and quasi-government grant and loan programs. These programs may be offered on an annual basis, or may be a one-time funding opportunity, and they may or may not require matching funds. Private resources can be divided into corporations or corporate foundations, and community or family foundations. These resources typically provide funding to nonprofit organizations and sometimes governments and for-profit corporations for projects that fit within a specific area of interest or geographical service area. Listed below are potential funding opportunities:

PA Department of Conservation and Natural Resources (PA DCNR) Community Conservation Partnerships Program (C2P2) – funds acquisition, planning, and development (construction) projects for parks and recreation, among other conservation and recreation activities through their C2P2 program. Grant applications are typically due in the spring, with announcements occurring in the fall or winter. A match is required for all projects and is usually equal to the grant funds awarded.

Website: http://www.dcnr.state.pa.us/brc/grants/c2p2programguidance/index.htm

PA DCNR Recreational Trails Program – The Recreational Trails Program is administered by the Department of Conservation & Natural Resources (DCNR), Bureau of Recreation & Conservation (BRC) in consultation with the Pennsylvania Recreational Trails Advisory Board (PARTAB). Eligible project categories include construction of new trails, acquisition of property for recreational trails, and maintenance and restoration of existing trails. The program requires a 20% match.

Website: http://www.dcnr.state.pa.us/brc/grants/rectrails.aspx

Act 13 – Marcellus Shale Legacy Fund – The amount of available funds is dependent on Marcellus Shale natural gas drilling in Pennsylvania. Impact fees are distributed to county/local governments with natural gas wells, but funds are also provided to all Pennsylvania counties to be used only for planning, acquisition, development, rehabilitation and repair of greenways, recreational trails, open space, natural areas, community conservation and beautification, community and heritage parks, and water resource management. Each county manages the funds received and should be contacted for additional information.

Greenways, Trails, and Recreation Program – The Commonwealth Financing Authority (CFA) administers the Greenways, Trails and Recreation Program, which is funded through Act 13. This program provides grants of up to $250,000 for planning, acquisition, development, rehabilitation, and repair of greenways, recreational trails, open spaces, and parks, as well as beautification projects. Municipalities, councils of governments, nonprofit organizations, higher education institutions, watershed organizations, and businesses are eligible to apply. Most projects require a 50% local match. Municipalities with a population of less than 5,000 are eligible for a 20% match.

Website: http://www.newpa.com/find-and-apply-for-funding/funding-and-program-finder/greenways-trails-and-recreation-program-gtrp

Transportation Alternatives Program (TAP) Funding – The Moving Ahead for Progress in the 21st Century Act (MAP-21) makes available $105 billion for surface transportation programs from 2013-2014. Projects must fall into one or more of the twelve eligible categories established in the Transportation Equity Act. These categories include pedestrian and bicycle facilities, historic transportation buildings, structures, or facilities, and rail to trail conversions. Projects must have a relationship to the surface transportation system. Typically, the federal government will pay 80% for construction costs and the sponsor pays 20% for pre-construction costs. The Pennsylvania Department of Transportation (PennDOT) distributes this funding through its Metropolitan Planning Organizations (MPOs) and Rural Planning Organizations (RPOs). The MPO for Cumberland County is the Harrisburg Area Transportation Study (HATS). PennDOT is developing guidelines on MAP-21 funding.

Website: http://www.dot.state.pa.us/TYP/Index.htm

Transportation, Community, and System Preservation Program (TCSP) – The program is implemented by the Federal Highway Administration (FHWA) and provides funding for a comprehensive initiative including planning grants, implementation grants, and research to investigate and address the relationships among transportation, community, and system preservation plans and practices. Funds are to be allocated by the Secretary of Transportation to states, MPOs, and local governments.

Website: http://www.fhwa.dot.gov/tcsp/index.html

Carlisle Area Health and Wellness Foundation (CAHWF) – Founded in 2001, the mission of CAHWF is to identify and address health care needs and policies, promote responsible health practices, and enhance access to and delivery of health services. The #1 focus of CAHWF is nutrition, physical activity, and tobacco cessation. Important factors in applications include references to CAHWF's focus areas and mission, scale and seriousness of problem, and community/institutional values. Nonprofits are the only eligible applicants, and they can apply for several levels of grant funding: Level I Grants range from $2,000 to $25,000 and Level II Grants are over $25,000. Level I grant applications can be submitted on a rolling basis, and Level II grant applications must be submitted by March 1st, with a letter of inquiry submitted by December 15th of the prior year.

Website: http://www.cahwf.org/grants.htm

South Mountain Partnership Mini-Grant Program – The South Mountain Partnership Mini-Grant Program has been developed to encourage economic development among local communities by funding projects to build trails and regional trail feasibility studies, among other things. Funds come from DCNR's C2P2 Program, Keystone Recreation, Park and Conservation Fund, Environmental Stewardship Fund, Growing Greener Bond Fund, and several federal funding sources. A one-to-one match is required, but no portion of the match can originate from the sources listed above. Grant requests are not to exceed $25,000; applications are usually due in the summer with awards in the fall.

Website: http://www.southmountainpartnership.org

Tread Lightly! Stewardship Grant Program – designed to help individuals and clubs organize clean-ups, trail maintenance work days, and other small stewardship projects. Maximum grant award is $500. Summer application deadline.

Website: http://www.treadlightly.org/page.php/stewardshipgrants/stewardship%20grants.html

Rivers, Trails, and Conservation Assistance Program (RTCA) – implements the natural resource conservation and outdoor recreation mission of the National Park Service in communities across America. RTCA will help create local, regional, and state networks of parks, rivers, trails, greenways, and open spaces by collaborating with community partners and National Park areas in every state. Focus is on helping communities help themselves by providing expertise and experience from around the nation. From urban promenades to trails along abandoned railroad rights-of-way to wildlife corridors, their assistance in greenway efforts is wide ranging. RTCA works with nonprofit organizations, community groups, and local, state, and federal government agencies. Nonprofit organizations and citizens' groups may apply for assistance. Applications are typically due August 1st.

Website: http://www.nps.gov/ncrc/programs/rtca/index.htm

Environmental Education Grant Program (EEGP) – Administered through DEP, EEGP funds are used for projects ranging from creative, hands-on lessons for students, teacher training programs, and outdoor learning resources to conservation education for adults. Eligible applicants include public schools and school districts, incorporated private schools, nonprofit organizations, and municipalities. Grant applications are due in December, and awards are announced on or around Earth Day of the following year. Up to $7,500 may be requested, and a 20 percent match is required for projects exceeding $3,000.

Website: http://www.ahs2.dep.state.pa.us/GrantsCenter/GrantAndLoanPrograms.asp

The Foundation for Enhancing Communities – Grants are awarded to organizations in Dauphin, Cumberland, Perry, Franklin, and Lebanon Counties for projects that reduce health disparities among underserved populations, providing for basic human needs, quality early childhood care and education programs, moving families out of poverty, creating sustainable communities, and promoting arts and culture.

Website: http://www.tfec.org/index.cfm

Outdoor Nation (ON) Explore Fund – This program provides funds to organizations that encourage youth outdoor participation, focusing primarily on creating more connections of children to nature, increasing access to both front and backcountry recreation, as well as providing education for both personal and environmental health. Applicants can apply for up to $2,500 for projects that encourage youth outdoor participation, focus on sustainability initiatives, or help to create a connection to nature. Nonprofit organizations are the only eligible applicants; applications that come with matching dollars will be viewed favorably. The deadline to apply for fall/winter programs is October, with awards in December.

Website: http://www.explorefund.org/

Additional Considerations for Generating Revenue and Procuring Assistance

Other revenue generating options to consider for the Newville to Carlisle extension include:

Soliciting and Utilizing Volunteers – To help with trail maintenance, see if a nonprofit group or organization is interested in maintaining a section of the trail. Perhaps a young resident can assist CVRTC with trail facilities development as part of his Eagle Scout project.

Employ Interns – Summer interns offer a cost effective method for CVRTC to receive assistance with mowing/maintenance during the busy summer months, while interns will gain valuable work experience on the job.

Sharing Services or Equipment – Evaluate the potential of working with other community partners to operate and maintain the trail, or sharing in the purchase and use of certain equipment. A local college or high school may also be contacted to join in constructing and maintaining interpretive signage.

Analyze Equipment Suppliers – CVRTC should consider participation in local government purchasing agreements, including General Surplus, Pennsylvania Correctional Industries, COSTARS Program, Pennsylvania Industries for the Blind & Handicapped.

Consider Training Programs – Certain tasks, such as grading and construction, may be completed by a union organization or training school at a discounted cost to CVRTC.

Dedications – Allowing residents to purchase a dedication or memorial plaque for a bench or tree along the trail will help to alleviate costs while at the same time involving community residents in the development of the trail.

Business Contributions – Businesses and private donors could purchase naming rights for sections of trail and/or donor plaques for trailside benches. CVRTC should also investigate the availability of corporate giving opportunities. In some cases, corporate giving is limited to geographical areas where employees live and work.

Appendix 1: Public Involvement Process

The final conceptual trail plan for the NeWPeC extension of the Cumberland Valley Rail Trail represents a culmination of several concepts and public input during the planning process. CVRTC recognizes that involving members of the community in the rail trail planning process is critical. In September and October 2012, RETTEW conducted key stakeholder interviews via telephone where feedback was provided on the extension of the CVRT. In addition, two public meetings were held where the public was invited to discuss the conceptual trail plan and provide input on how they would like to see the trail developed. Included in this appendix are summaries of the key stakeholder interviews and both community public meetings.

Summary of Key Stakeholder Interviews

Each stakeholder provided responses to the questions listed below. The responses have been summarized for each question.

1. What has been the greatest success of the completed segment of the CVRT?

- The trail is used but not overused – the trail provides a nice enjoyable user experience.
- The trail is a good community asset and a good asset for the business community.
- The existing CVRT is an 'easy' trail which is good for a wide range of users, especially families.

2. Have there been any disappointments with the CVRT?

- Too many people do not know about the Cumberland Valley Rail Trail.
- The trail needs better marketing and promotion.

3. What is the best opportunity presented by the new (NeWPeC) trail segment?

- Connect the existing trail to Carlisle – the connection will enhance the trail's positive economic impact.
- CVRTC should undertake joint advertising/promotion of the evolving trail network with the Cumberland Valley Visitors Bureau, Harrisburg Bike Club, Carlisle Borough, Dickinson College, etc.
- Schools have an Active Living Program – trail addresses obesity problem.
- Connect kids to nature – outdoor classrooms.

4. What is the biggest obstacle/constraint to the NeWPeC link?

- Private landowners that own portions of the PPL corridor are adamantly opposed to the trail.
- Trail work-arounds will detract from the quality of the trail and funnel trail users out on narrow public roads – need to create a seamless trail.
- Must consider long-term land use of areas adjacent to the corridor; work towards uses that are compatible with the trail (Ag Preservation, Warehouse District Redevelopment, subdivision open space, etc.).
- The construction costs for trail and bridges are expensive and securing funding could be an obstacle.

5. What elements do you like best about the CVRT?

- Nice trail surface (firm enough for road bikes), restrooms, trailheads nicely designed, nice rural landscape.
- Signage program – with funding assistance from the Visitors Bureau. Signage touches on multiple themes: Native Americans, Railroad history, Civil War, Agriculture and Commerce, Soils and Geology.

6. What elements need to be added or included in the NeWPeC link?

- More benches – more rest areas.
- Spur connections into adjacent towns and villages.

7. What key connections should be made in the NeWPeC Link?

- Connection to Carlisle Borough and Dickinson College – lots of tourist attractions – old courthouse, historic museum, historic cemeteries, and student population.
- Big Spring School Campus.
- Green Ridge Village senior living facility.

8. Are there key partners/partnerships to be created through this project?

- Municipalities (Newville Borough, West Pennsboro Township, Carlisle Borough, North Middleton Township)
- Harrisburg Bike Club
- LeTort Regional Authority
- Cumberland Valley Visitors Bureau
- South Mountain Partnership
- Carlisle Area School District
- Big Spring School District
- Big Spring Watershed Association
- Cumberland County Commissioners and County Planning Department
- Dickinson College
- Carlisle Area Health & Wellness Foundation

9. What unique natural or cultural resources exist along the trail that could / should be interpreted or otherwise celebrated?

- Native American history and culture.
- The Cumberland Valley was the 'Frontier' during the Revolutionary War (production of Revolutionary War muskets).
- Carlisle Indian School (Jim Thorpe).
- Civil War Theme – 150th anniversary of the Battle of Carlisle.
- Celebrate the region's Civil War history (Civil War Trail).
- Cemeteries and museums.
- Important natural areas – to preserve habitat areas/open space:
  - Big Spring
  - Laughlin Mill
  - Cool Spring – old source of Newville Borough water supply

Community Public Meeting #1 Summary

On Tuesday, October 23, 2012, a community public meeting was held at Big Spring United Lutheran Church, where a large number of people could be accommodated. RETTEW made a presentation about the history, objectives, and process of the NeWPeC Master Plan; following the presentation, attendees broke out into three small group discussion sessions to discuss issues and opportunities associated with the proposed extension of the CVRT. A large group discussion to review feedback from each of the three groups closed out the public meeting. Listed below is a summary of discussion.

Strengths of Existing Trail

- Multiple access points and trailhead locations
- Good views of farms, horses, etc., from the trail
- Good educational trail signs along the trail
- Good surface
- Not many hills
- Good mixture of bicycle, pedestrian, and equestrian users
- Safe corridor
- Family friendly
- Well maintained
- Access to town
- Restroom facilities located at the beginning, middle and end of trail
- Asset to Big Spring health and physical education classes
- Trail material is good – dries out fast
- Most trail users are outdoor enthusiasts who appreciate and enjoy the trail
- Intersections with roads aren't too busy
- Most trail users are respectful of landowners
- Trail users are experiencing the beauty of the Cumberland Valley
- New signage is extremely valuable and helps to teach people about the history of the Cumberland Valley
- County has strong trail system already in place, lots of these are challenging, and the CVRT is accessible
- Presence of milepost marker
- Presence of some directional signs outside of the trail corridor, directing folks to the trail

Strengths/Assets of Acquired Corridor

- Provides access to and for Carlisle residents
- Provides safer access for more people
- Provides more economic development opportunities
- Enhances and extends the sense of community over larger areas and impacts more communities
- Provides a much longer trail to appeal to more varied users
- Enhances transportation opportunities
- Possibility for equestrian uses, trail heads, and picnic tables
- Provides an economic draw and provides a reason for people to come to Cumberland County
- Provides facilities at both ends of the trail and they aren't too far apart
- Makes sense to extend the trail to Carlisle for economic reasons

Additional Comments – Strengths

- An adjacent property owner is excited because she has horses and is excited to be able to take them on the trail, but is concerned about the horses' privacy. At the front end of her property, there is a berm; vegetation could help to serve as a buffer. She wants people to be respectful.
- A respondent indicated that his daughter lives in Highland Ranch, CO and he is amazed by the number of trails. He feels that the new trail will increase the value of people's property.
- A gentleman that volunteers on the portion from Newville to Bulls Head Road spoke and indicated that he loves to walk on the trail and thinks it is great for the community.
- The agricultural crossing should be kept at Burgners Mill, if possible.
- One Greason resident indicated that he is excited to have the trail come by his house.
- A youth from Greason indicated that he is excited that he will have a nearby place to ride his bike with friends.
- Three residents of Green Ridge Village indicated their appreciation for the trail. They indicated that there are about 16-17 residents of Green Ridge Village that regularly use the trail. They like the grade of the existing trail from Newville to Shippensburg and appreciate the restrooms and accessibility. They did note that in order to get access from Green Ridge village you have to walk the bikes up a hill. It is hard to get the car out and put the bike rack on so they would appreciate a level access to and from Green Ridge Village. However, the trails within Green Ridge Village are not open to the public; this would have to be considered in connecting into the system.

Weaknesses of Existing Trail

- Better maintenance of some areas with loose gravel (maybe too much material in certain locations) – questions about cost and schedule of maintenance.
- Horses do not stay on the grass – but this is less of a problem since the trail has aged.
- Not enough big trees.
- More benches needed.
- Sight distance at road crossings.
- Problems with groundhog holes.
- Safety concerns.
- Basic trail etiquette.
- Traffic volumes on roads intersecting with trail.
- Vegetation in certain areas needs cut back further from the trail.

Weaknesses of Acquired Corridor

- SR 641 is a busy road.
- Trail is too close to back yards.
- Adjacent landowner privacy concerns.
- Crossing design at SR 233 (Centerville Rd) – look at the crossing at SR 533, and Appalachian Trail crossing at SR 944 for ideas.
- Either a bridge over Big Spring Road or a switchback is needed to get down.
- More directional signs outside of the trail corridor needed, directing folks to the trail.
- Mileposts (distance to the next major asset, such as mileage to Newville and/or Carlisle) indicating how far someone is are needed.
- Allen Road is busy at the proposed ending.
- Parking is a concern, especially the potential lack of parking along Allen Road.

Opportunities

- Close proximity to Appalachian Trail
- Economic development opportunities
- Opportunity to bring trail into Newville by connecting with Big Springs Master Plan instead of crossing SR 233 southeast of Newville (map markup has trail crossing Big Spring Creek at SR 641)
- Opportunities to educate residents about donating “in honor of” or “in memory of” trail related facilities - recognition
- Opportunities to work with Boy Scouts – include plaques for recognition
- Opportunities to work with school – community service group projects
- Opportunities for connections to the SR 641 Heritage Corridor (North Newton, West Pennsboro and Newville)
- Opportunity to connect with West Pennsboro Municipal Park via McAllister Church Road
- Opportunity to continue extending the corridor and connect to Harrisburg
- Opportunity for parking at Valley Meadows Park (½ to ¾ of mile) off Allen Road
- Opportunity for a potential trail head northwest of trail corridor intersection with Mount Rock Road
- Opportunities for users to pay for the trail instead of government
- Federal transportation bill cuts put onus on states and local governments to fund projects such as these, which makes them more meaningful
- Opportunities for better and more direct connections to adjacent and nearby subdivisions and neighborhoods
- Opportunities for “on road or better” connections and alternate routes abound private property “out parcels”
- Opportunities to work with Newville for an alternative route to downtown
- Opportunity to work with PPL as a partner and have them do preliminary clearing and grubbing?
- Opportunities relating to the state law change that requires a larger percentage of money generated by small games of chance to be used for community projects and work with civic organizations

Threats

- The three existing gaps that prohibit forming a continuous trail are a concern, as is the potential for detouring the trail onto the roads. It would be ideal to form a continuous corridor, but this is not an option
- Potential for misconceptions
- Potential for NIMBYism (Not In My Backyard)
- Potential for crime/vandalism closer to population centers
- Lack of government funding
- Why should the government pay for it?
- Permits associated with wetlands and bridges could hold up the project
- Adjacent landowners and their privacy
- Willingness of property owners abutting the gaps for supporting “alternate” routes potentially impacting their properties
- A landowner who owns property east of Crossroad School Road is concerned about tree removal near her property, especially down the slope and at the bottom of the slope near her property. She wants it kept to a minimum.

Community Public Meeting #2 Summary

On Tuesday, January 15, 2013, a community public meeting was held at Big Spring United Lutheran Church, where a large number of people could be accommodated. RETTEW made a presentation about the history, objectives, and process of the NeWPeC Master Plan; following the presentation, attendees broke out into three small group discussion sessions to discuss issues and opportunities associated with the proposed extension of the CVRT. A large group discussion to review feedback from each of the three groups closed out the public meeting. Listed below is a summary of discussion.

General Comments

- The question was asked if a survey had been conducted that describes the use of the existing trail (over or underused?).
- Volvo has a construction equipment plant in Shippensburg (used to be Ingersoll-Rand), and the company is trying to get employees to move to the Shippensburg area. The extended rail trail would be a real draw.
- There may be several possibilities for Volvo to get involved:
    - sponsor a cycling event
    - assist CVRTC in getting the word out for trail events
- CVRTC should look into the potential to use structural engineering students from Penn State Harrisburg for trail design features.
- The Cumberland Valley rail trail is a wonderful asset and enhances the community.
- The question was asked if there were plans to pave the trail, or if it would be possible to have a paved bike trail separated from the stone dust pedestrian trail.
- A respondent indicated that cyclists who would use the trail for commuting might want to ride on a paved surface and would not prefer to ride on a stone dust trail mix.
- The existing trail is special, and the extension to Carlisle will be too.

Phase 2 Comments

- The stone masonry arch bridge west of Allen Road is a great asset for the trail.
- Phase 2 trail development (west from Carlisle) should be a high priority because Carlisle users will want the trail to be extended towards Newville.

Phase 3 Comments

- Equestrian use should be integrated into Phase 3. If it is not done now, it should be an option later.
- Make reference to future equestrian use in the plan text.

Appendix 2: Field Report

Big Spring Road Crossing

Big Spring Road is the eastern terminus of the existing rail trail. This section of trail is constructed of concrete and asphalt and is a pedestrian/bicycle shared use facility that is also used as a profiler calibration track. PennDOT built the profiler calibration track in cooperation with CVRTC and PennDOT and other authorized personnel use it to calibrate roadway profilers. Profilers use vehicle mounted laser sensors to measure a road's "rideability." The trail terminates in a concrete cul-de-sac at the crest of the slope west of Big Spring Road.

This portion of the trail is separated from adjoining lands by a wooden post and rail guiderail system. An opening in the guiderail at the cul-de-sac provides passage from the trail to Big Spring Road by a steep (non-ADA compliant) asphalt path. The path dead ends at a section of wooden guiderail at the toe of the slope on the west side of Big Spring Road.

This area is south of and generally parallels the original rail alignment. The crossing at Big Spring Road is at an approximately eighty (80) degree skew and was formerly a railroad overpass. The bridge carrying the railroad over the road was removed. There is evidence of earthmoving activities and debris east of Big Spring Road, most likely from the bridge removal. The remaining road banks are approximately fifteen (15) to twenty (20) feet high. A steep (non-ADA compliant) unimproved single tread community trail climbs from the east side of Big Spring Road up the slope to the former rail bed.

Sight distance looking south from the east and west sides of Big Spring Road is limited by the horizontal curve and vertical geometry (downhill slope) of Big Spring Road. This sight distance limitation cannot be readily or economically corrected. The sight distance to the north is partially blocked by the bridge abutment and fill that was placed to build the original railroad. Adequate sight distance to the north can be obtained by bank grading to remove the obstruction.

Existing slopes along the east and west sides of Big Spring Road currently prohibit vehicular access, which may be necessary for emergency access or maintenance. The east side can be re-graded to provide suitable vehicular access. Vehicular access to the west side is available at the Newville Trail Head.

Big Spring Road to Centerville Road (SR 0233) Segment

Surrounding land use – Agriculture is the predominant land use to the south of the corridor. The Green Ridge Village retirement community adjoins the agriculture lands. The original railroad bed adjoins the corridor to the north with wooded residential land adjacent to the property to the north.

Existing rail bed materials – Gravel is evident on the east side of Big Spring Road in the area disturbed by the bridge removal. Ballast is evident along the majority of this portion of the corridor.

General description of existing vegetation – The area is wooded with a generally closed canopy. Black Locust *(Robinia pseudoacacia),* Box Elder Maple *(Acer negundo)*, Black Walnut *(Juglans nigra)* and Atlanthis *(Ailanthus altissima)* dominate this area. A partially maintained (mowed) path is evident along this portion of the corridor.

Steep slopes – Steep slopes created by the fill placed to cross Big Spring Road and Big Spring Creek and the cut to cross under Centerville Road (SR 0233) are located to the north and south of the corridor. The corridor transitions from fill to cut as you travel east to Centerville Road.

Agricultural crossings (equipment and animal) – A mowed sod crossing is maintained generally along the toes of slope of the fill along the west side of Centerville Road. While the area is mowed, the lack of tire tracks or a worn path indicate the use of this area as an equipment or animal crossing is minimal.

Existing bridges, culverts and visible drainage features – Big Spring Creek crosses under the corridor approximately two hundred and fifty (250) feet east of Big Spring Road via a concrete and brick arch culvert. The original brick culvert was extended upstream to accommodate the railroad realignment. The original masonry headwall on the north side of the corridor failed and collapsed in to Big Spring Creek. Through a collaborative effort with Newville Borough, CVRTC was able to receive DEP funding to repair/replace the headwall.

There is a twenty-four (24) inch concrete pipe that conveys storm water east to west under Centerville Road (SR 0233).

Streams – Big Spring Creek crosses under the corridor approximately two hundred and fifty (250) feet east of Big Spring Road via a concrete and brick arch culvert.

Utilities including potential to serve or impact future trail development – none observed.

Drainage patterns – Surface drainage is to the north and south from the trail and generally from east to west from Centerville Road to Big Spring Creek. No significant drainage patterns were observed along this segment.

Erosive conditions that may impact trail development – Runoff from the west side of Centerville Road (SR 0233) drains along the Centerville Road fill/corridor cut slope interface. Minor erosion was noted at the south side of the interface.

PA Natural Diversity Inventory Search – There are no species of concern within this segment of the corridor.

General description of observed wildlife activities – Evidence of small mammals including groundhogs, rabbits, and raccoons, as well as passerine (perching) birds and raptors (birds of prey) were observed along the segment.

Encroachments - The boundary survey did not include this segment of the corridor No obvious permanent structural encroachments were observed in this area.

Centerville Road (SR 0233) Crossing

The crossing at Centerville Road (SR 0233) is at an approximately sixty (60) degree skew. The existing sloped approaches at Centerville Road (SR 0233) are the result of the road overpass being removed and the area of the overpass filled to the grade of the highway. The fill for the highway is approximately fifteen (15) to eighteen (18) feet deep. There is also a twenty-four (24) inch concrete pipe that crosses under Centerville Road (SR 0233) to conduct storm water from the east side to the west side.

Sight distance is unobstructed (excluding the existing guiderail) on the east and west sides of Centerville Road (SR 0233) to both the north and the south.

Existing slopes along the east and west sides of Centerville Road (SR 0233) currently prohibit vehicular access to the corridor. Additional fill will need to be placed on both sides of the highway to provide suitable vehicular access.

Centerville Road (SR 0233) to Mount Rock Road Segment

Surrounding land use – Agriculture is the predominant land use to the north and south of the corridor. The Heberlig farm, a county preserved farm, adjoins the south side of the trail, west of Mount Rock Road. The agricultural conservation easement will not allow granting any easement or right-of-way for a trail.

The Masonic Temple adjoins the corridor at the north east side of Centerville Road. Residential dwellings and the PPL substation (the west end of the PPL transmission line) adjoin the rail trail at the south east side of Centerville Road.

A joint municipal sponsored master plan is in the planning process for the large property north of the rail trail generally bordered on the south by the rail trail, on the east by the Big Springs High School, to the north by Carlisle Road (SR 0641), and to the west Centerville Road (SR 0233) and Big Spring.

Big Spring High School adjoins the rail trail to the north at its junction with Mount Rock Road.

General description of existing vegetation – The area east of Centerville Road to the first transmission line tower is wooded with a generally closed canopy. Black Locust *(Robinia pseudoacacia),* Box Elder Maple *(Acer negundo)*, Black Walnut *(Juglans nigra)* and Atlanthis *(Ailanthus altissima)* dominate this area.

The segment of the corridor from the first transmission tower to the high school is generally very dense scrub and shrub vegetation that is not maintained. Eastern Red Cedar (*Juniperus virginiana*), Tartarian Honeysuckle (*Lonicera tatarica*) and Autumn Olive (*Elaeagnus umbellata)* are dominant species throughout this area and along the entire corridor.

The area from the high school to Mount Rock Road is characterized by dense scrub and shrub vegetation. Eastern Red Cedar (*Juniperus virginiana*), Tartarian Honeysuckle (*Lonicera tatarica*) and Autumn Olive (*Elaeagnus umbellata)* are dominant species throughout this area. A mowed path is maintained from the school district property to Mount Rock Road.

Steep slopes – Steep slopes created by the cut of the former railroad to travel under Centerville Road are located to the north and south of the corridor as you travel east from Centerville Road (SR 0233). The corridor transitions from cut to fill as you approach the bridge, transitions from fill to at-grade in the area of the Big Spring High School, and then transitions to fill as you approach Mount Rock Road.

Agricultural crossings (equipment and animal) – Three (3) agricultural access areas are located along the south side of the trail approximately six hundred (600) feet west of Mount Rock Road. The access points appear to be serving the Heberlig and McCullough properties. An additional agricultural access, serving the McCullough property is located approximately six hundred (600) feet west of the above access points.

There is also an existing access to Big Spring High School. The access and mowed portion of the corridor appear to be used frequently.

Existing bridges, culverts and visible drainage features – Approximately five hundred and fifty (550) feet west of Mount Rock Road, a large drainage area flows from south to north under the rail bed through a thirteen (13) by twelve (12) foot culvert at an approximately fifteen (15) or twenty (20) degree skew from the rail bed alignment. There is evidence of minor seepage throughout the structure and minor concrete spalling on the bottom of the deck with some rebar exposed at various places.

The wing walls are a combination of cut stone capped with concrete and poured-in-place concrete. The handrail on the north side of the culvert is damaged and will need to be repaired. A sanitary sewer line traverses the rail trail through the structure. Vegetation is starting to encroach upon the structure and should be cleared to prevent further penetration into the structure.

Utilities including potential to serve or impact future trail development – The PPL substation (the west end of the PPL transmission line) and the overhead electrical transmission line are located along the rail trail from this segment all the way to Allen Road in Carlisle Borough. The location of the transmission towers and related guys wires, in relation to the overall corridor width will impact future trail locations. A sanitary sewer line traverses the trail through the culvert located approximately five hundred and fifty (550) feet west of Mount Rock Road.

Drainage patterns – Surface drainage is generally to the north and south from the trail. Approximately five hundred and fifty (550) feet west of Mount Rock Road, a large drainage area flows from south to north under the rail bed through a thirteen (13) by twelve (12) foot culvert (discussed above).

Erosive conditions that may impact trail development – Runoff from the east side of Centerville Road (SR 0233) drains along the Centerville Road fill/corridor cut slope interface. Minor erosion was noted at the north side of the interface.

PA Natural Diversity Inventory Search – There are no species of concern within this segment of the corridor.

General description of observed wildlife activities – Evidence of small mammals including groundhogs, rabbits, and raccoons, as well as passerine (perching) birds and raptors (birds of prey) were observed along the segment.

Encroachments – No additional permanent encroachments were observed in this area.

Mount Rock Road Crossing

The crossing at Mount Rock Road is at an approximately sixty (60) degree skew and was formerly a railroad overpass. The bridge carrying the railroad over the road was removed. PPL has constructed driveways to access the rail bed from both sides of the road and these appear to provide suitable vehicular access to the corridor. Along the east side of Mount Rock Road, sight distance to the north appears adequate and is unobstructed to a point north of the entrance to the Big Spring High School campus. Sight distance to the south is partially obstructed by the embankment of the rail bed. Along the west side of Mount Rock Road, sight distance is clear and unobstructed in both directions.

Mount Rock Road to Greenhill Road Segment

Surrounding land use – Agriculture is the predominant land use to the north and south of the corridor. The Heberlig farm, a county preserved farm, adjoins the south side of the trail, east of Mount Rock Road. The Wax farm, a county preserved farm, adjoins the north side of the trail, east of Mount Rock Road. The agricultural conservation easements will not allow granting any easement or right-of-way for a trail.

A private target (shooting) range is located along the north side of the rail bed, west of Green Hill Road. There are bench rests, and at least three (3) target backstops. This will conflict with the use of the rail bed as a trail. The target range is not included on the October 5, 2011 boundary survey. CVRTC will need to work with neighboring land owners to ensure safety in these areas.

Existing rail bed materials – Gravel is evident at different areas along this segment of the rail trail.

General description of existing vegetation – This segment is mowed at a width sufficient to allow unobstructed vehicle passage. The fringe of the mowed areas is generally dense and not maintained scrub and shrub vegetation. Eastern Red Cedar (*Juniperus virginiana*), Tartarian Honeysuckle (*Lonicera tatarica*) and Autumn Olive (*Elaeagnus umbellata)* are dominant species throughout this area.

The rail bed in the area immediately west of Green Hill Road is regularly mowed and maintained in a lawn condition.

Steep slopes – Steep slopes are created by the fill that was put in place to enable the railroad to cross Mount Rock Road. These steep slopes are located to the north and south of the corridor as you travel east from Mount Rock Road and cross the culvert. The corridor transitions from fill to cut as you approach the east end of the Wax property; transitions from cut to at-grade in the area of the Ward property and then transitions to fill as you approach Green Hill Road.

Agricultural crossings (equipment and animal) – One (1) agricultural access area is located along the north side of the trail serving the east end of the Wax property. Recent deposition of brush and tree trimmings may indicate a desire to abandon or block use of this access.

Existing bridges, culverts and visible drainage features – Immediately adjacent to Mount Rock Road, and along the south side of the rail trail, there is what appears to be a detention facility/diversion channel that extends east to the arch culvert. The detention facility/diversion channel conveys runoff

from Mount Rock School Road and areas north of the rail trail. The downslope (east) end of the facility consists of a berm rip-rap that allows runoff to discharge to the arch culvert. Evidence was observed that indicates this facility is capable of storing water at depths of between two (2) and three (3) feet.

There is a twenty-four (24) inch by twenty-four (24) inch stone and concrete box culvert just east of Mount Rock Road. Flow appears to go from north to south and discharge into the detention facility/diversion channel on the south side of the rail trail.

Approximately three hundred and fifty (350) feet west of Green Hill Road, a large drainage area flows from south to north under the rail bed through a fourteen (14) foot by twelve (12) foot arch stone and concrete culvert. No active flow was observed during our evaluation. There is evidence of minor seepage throughout the structure and minor concrete spalling. There is a portion of the southeast wing wall where the concrete parget has deteriorated and exposed the original cut stone of the structure. The wingwalls on the north side of the culvert are much more stable with very minor spalling. Vegetation is starting to encroach upon the structure.

Utilities including potential to serve or impact future trail development – The PPL overhead electrical transmission line continues along this segment of the rail trail. The location of the transmission towers and related guys wires, in relation to the overall corridor width, will impact the trail's future location. No additional utilities were observed that would impact future trail development.

Drainage patterns – Surface drainage is generally to the north and south from the trail. Immediately adjacent to Mount Rock Road, and along the south side of the rail trail, there is what appears to be a detention facility/diversion channel that extends east to the arch culvert. The detention facility/diversion channel conveys runoff from Mount Rock Road and areas north of the rail trail. The downslope (east) end of the facility consists of a rip-rap berm that allows runoff to discharge to the arch culvert. Evidence was observed that indicates this facility is capable of storing water at depths between two (2) and three (3) feet.

There is a twenty-four (24) inch by twenty-four (24) inch stone and concrete box culvert just east of Mount Rock Road. Flow appears to go from north to south and discharge into the detention facility/diversion channel on the south side of the rail trail.

Approximately 1,800 feet east of Mount Rock Road, a large drainage area flows from south to north under the rail bed through a fourteen (14) foot by twelve (12) foot arch stone and concrete culvert. No active flow was observed during our evaluation. There is evidence of minor seepage throughout the structure and minor concrete spalling. There is a portion of the southeast wing wall where the concrete parget has deteriorated and exposed the original cut stone of the structure. The wingwalls on the north side of the culvert are much more stable with very minor spalling. Vegetation is starting to encroach upon the structure.

PA Natural Diversity Inventory Search – There are no species of concern within this segment of the corridor.

General description of observed wildlife activities – Evidence of small mammals including groundhogs, rabbits, and raccoons, in addition to passerine (perching) birds and raptors (birds of prey) were observed along the segment.

Encroachments – No additional permanent encroachments were observed in this area.

Green Hill Road Crossing

The crossing at Green Hill Road is at an approximately sixty-five (65) degree skew. The crossing at Greenhill Road was formerly a railroad overpass. The bridge carrying the railroad over the road has been removed. The remaining road banks are approximately fifteen (15) feet high. PPL has constructed driveways to access the rail bed from both sides of the road.

Sight distance to the north along both sides of the road is partially obstructed by the embankment of the rail bed.

There is evidence of runoff conveyance/drainage along the east side of Green Hill Road that will need to be maintained.

The existing driveways provided on the east and west sides of Green Hill Road provide suitable vehicular access to the corridor.

Green Hill Road to Gap A Segment

Surrounding land use – Agriculture is the predominant land use to the north and south of the corridor.

Existing rail bed materials – Gravel is evident at different areas as you continue east to Gap A.

General description of existing vegetation – This area is maintained in a rough sod condition the full width of the rail trail with a partial row of trees along the south boundary.

Steep slopes – Steep slopes created by the fill that was placed to cross Green Hill Road are located to the north and south of the corridor as you travel east from Green Hill Road. The corridor quickly transitions from fill to at-grade east of Green Hill Road.

Agricultural crossings (equipment and animal) – There is an agricultural drive from Green Hill Road to Gap A. The drive appears to provide interim access to the adjoining agricultural lands.

Existing bridges, culverts and visible drainage features – none observed.

Utilities including potential to serve or impact future trail development – The location of the transmission towers and related guys wires, in relation to the overall corridor width, will impact future trail locations. No additional utilities were observed that would impact future trail development.

Drainage patterns – Surface drainage is generally from the north on to the rail trail and then west to the fill area at Green Hill Road.

PA Natural Diversity Inventory Search – There are no species of concern within this segment of the corridor.

General description of observed wildlife activities – Evidence of small mammals including groundhogs, rabbits, and raccoons, as well as passerine (perching) birds and raptors (birds of prey) were observed along the segment.

Encroachments – No additional permanent encroachments were observed in this area.

Proposed Improvements
There is a need for an adequately sized conveyance facility to convey upslope agricultural runoff along the trail and discharge to north.

Crossroad School Road Crossing

The crossing at Crossroad School Road is at an approximately seventy (70) degree skew. This is an "at-grade" crossing; there are no driveways constructed to access this portion of the rail bed.

No additional analysis was conducted at this crossing. The property on the east and west side of Crossroad School Road is held in private ownership.

The following analysis is from the August 2008 Preliminary Corridor Assessment: "*Sight distance is currently unobstructed on the east and west sides to both the north and the south, however, if the field on the west side of the road is planted in a corn or similar height crop, it will obstruct the sight distance to the south. The geometry of the roadway will help to control the speed of the traffic heading in a northerly direction.*"

Gap A to Goodyear Road Segment

Surrounding land use – Agriculture is the predominant land use to the north and south of the corridor. Residential use adjoins the south side of the corridor on the east side of Crossroad School Road. Forested land adjoins the north side of the rail trail east of Crossroad School Road.

This is the first segment of the rail trail that "narrows" from adjoining landowners acquiring a portion of the former rail bed. The average width of the corridor acquired by CVRTC thorough this section is approximately fifty-five (55) feet. The transmission towers are located on CVRTC property and are offset approximately ten (10) feet from the south property boundary line.

Existing rail bed materials – Gravel is evident at different areas as you continue east to Goodyear Road.

General description of existing vegetation – The area from Gap A to Goodyear Road is characterized by dense scrub and shrub vegetation north of the transmission towers. Eastern Red Cedar (*Juniperus virginiana*), Tartarian Honeysuckle (*Lonicera tatarica*) and Autumn Olive (*Elaeagnus umbellata)* are dominant species throughout this area. A mowed path is maintained south of the transmission towers from Crossroad School Road to Goodyear Road on private property.

Steep slopes – The rail trail transitions quickly from at-grade to fill east of Gap A and then transitions from fill to at-grade as you approach the Goodyear Road. The design of a multi-use trail through this segment will require at least a portion of the trail to be located north of the transmission towers. Steep slopes associated with the fill through this area will need to be evaluated during trail design.

Agricultural crossings (equipment and animal) – none observed.

Existing bridges, culverts and visible drainage features – An approximately twenty-four (24) inch by thirty (30) inch dry stone culvert is located approximately eight hundred (800) feet west of Goodyear Road. The culvert is overgrown and partially silted in at both ends. There is no evidence of active flow to, through, or out of the culvert.

Utilities including potential to serve or impact future trail development – The location of the transmission towers nearer the southern property line, in relation to the overall corridor width, will have an impact on the future trail location. The design of a multi-use trail through this segment will require at least a portion of the trail to be located north of the transmission towers. Steep slopes associated with the fill through this area will need to be evaluated during trail design.

Drainage patterns – Surface drainage is generally to the north and south from the trail. Sheet 26 of the Cumberland Valley Railroad Company Railroad Right of Way & Track Map indicates a culvert approximately eight hundred (800) feet west of Goodyear Road. Due to the heavy vegetative cover, we were not able to locate this facility. Additional field reconnaissance work during trail design will need to be completed to locate and evaluate this drainage facility.

PA Natural Diversity Inventory Search – There are no species of concern within this segment of the corridor.

General description of observed wildlife activities –Evidence of small mammals including groundhogs, rabbits, and raccoons, in addition to passerine (perching) birds and raptors (birds of prey) were observed along the segment.

Encroachments – No additional permanent encroachments were observed in this area.

Goodyear Road Crossing

The crossing at Goodyear Road is nearly perpendicular to the road. This crossing was originally two (2) to three (3) feet lower than Goodyear Road. PPL has constructed driveways to access the rail bed from both sides of the road. Sight distance is unobstructed on the east and west sides to both the north and the south.

The existing driveways provided on the east and west sides of Goodyear Road provide suitable vehicular access to the corridor.

Goodyear Road to Kerrsville Road Segment

Surrounding land use – Agriculture is the predominant land use to the north and south of the corridor. Residential land use adjoins the rail trail at the southeast side of Goodyear Road and the southwest side of Kerrsville Road.

This is the second segment of the rail trail that "narrows" from adjoining landowners acquiring a portion of the former rail bed. The average width of the corridor acquired by CVRTC thorough the first two thousand (2,000) feet of this segment is approximately fifty-five (55) feet before it narrows to approximately forty (40) feet in width along the Yinger and Harrison properties. Approximately 370 feet west of Kerrsville Road, the width increases to approximately one hundred thirty-five (135) feet. The transmission towers are located on CVRTC property and are offset from the south property boundary line approximately ten (10) feet at Goodyear Road and narrow to less than one (1) foot at the Yinger property.

Existing rail bed materials – Gravel and some ballast is evident at different areas as you continue east to Kerrsville Road.

General description of existing vegetation – The portion of the rail trail north of the transmission towers is characterized by dense scrub and shrub vegetation. Eastern Red Cedar (*Juniperus virginiana*), Tartarian Honeysuckle (*Lonicera tatarica*) and Autumn Olive (*Elaeagnus umbellata)* are dominant species throughout this area.

An approximately one (1) acre wooded area adjoins the north side of the rail trail adjacent and west of Kerrsville Road. Black Locust *(Robinia pseudoacacia), Common Hackberry (Celtis occidentalis)* and Ailanthus *(Ailanthus altissima)* dominate this area.

Steep slopes – A significant portion of the rail trail is at-grade moving east from Goodyear Road. Steep slopes along the north property boundary are encountered as the rail trail transitions to cut along the Notz property. The trail transitions to at-grade at the west side of the wooded area, then transitions back to steep slopes associated with the cut created to cross under Kerrsville Road as you travel east to Kerrsville Road.

Agricultural crossings (equipment and animal) – none observed.

Existing bridges, culverts and visible drainage features – none observed.

Utilities including potential to serve or impact future trail development – The location of the transmission towers near or at the south property boundary line, in relation to the overall corridor width, will have an impact on the future trail location. The design of a multi-use trail through this segment will require at least a portion of the trail to be located north of the transmission towers. Steep slopes associated with the fill through this area will need to be evaluated during trail design. No additional utilities were observed that would impact future trail development.

Drainage patterns – Surface drainage is generally from the west and east to the center of this segment and then to the north, north and south from the trail. The linear grade along the rail trail is very flat in this area and will need to be considered during the design of the trail.

PA Natural Diversity Inventory Search – There are no species of concern within this segment of the corridor.

General description of observed wildlife activities – Evidence of small mammals including groundhogs, rabbits, and raccoons, and passerine (perching) birds and raptors (birds of prey) were observed along the segment.

Encroachments – No additional permanent encroachments were observed in this area.

Proposed Improvements
Linear drainage and use of the wooded area will be considered.

Kerrsville Road Access

The access at Kerrsville Road is at an approximately eighty-five (85) degree skew. The bridge carrying Kerrsville Road over the railroad was removed. The west side is five (5) to six (6) feet lower than Kerrsville Road. PPL constructed a driveway to access the rail trail from Kerrsville Road.

Sight distance on the west side of Kerrsville Road is partially obstructed to the north by the road bank and is somewhat limited by roadway geometry to the south. The available sight distance will need to be further evaluated during trail design to determine what, if any, measures will be required to provide adequate sight distance.

No additional analysis was conducted on the east side of Kerrsville Road. The property on the east side of Kerrsville Road is held in private ownership.

The existing driveway provided on the west side of Kerrsville Road provides suitable vehicular access to the corridor.

Gap B to Springview Road Segment

Surrounding land use – Agriculture is the predominant land use to the north and south of the corridor.

Existing rail bed materials – Gravel is evident along the rail trail from Gap B east to Springview Road.

General description of existing vegetation – The center of the rail trail is maintained in a rough mowed condition. The north and south edges of the rail trail are characterized by dense scrub and shrub vegetation bordered by a maturing tree/hedge row. Tartarian Honeysuckle (*Lonicera tatarica*), Autumn Olive (*Elaeagnus umbellata)* and Box Elder Maple *(Acer negundo)* are dominant species along this segment.

Steep slopes – Steep slopes created by the fill to cross Mount Rock Spring Creek and Springview Road are located to the north and south of the rail trail as one travels east from Gap B to Springview Road.

Existing bridges, culverts and visible drainage features – Approximately three hundred (300) feet west of Springview Road, Mount Rock Spring Creek passes under the rail bed through a concrete/stone arch culvert. The flow is from south to north. The south side is a cut stone arch with a concrete cap. The north side is a concrete arch culvert with no evidence of spalling or undermining. The culvert appears to be cut stone for approximately half its distance from south to north.

Utilities including potential to serve or impact future trail development – The location of the transmission towers and related guy wires, in relation to the overall corridor width will impact future trail locations. No additional utilities were observed that would impact future trail development.

Drainage patterns – Surface drainage is generally to the north and south from the trail. Approximately three hundred (300) feet west of Springview Road, Mount Rock Spring Creek passes under the rail bed through a concrete/stone arch culvert. The culvert is described in more detail above.

PA Natural Diversity Inventory Search – There are no species of concern within this segment.

General description of observed wildlife activities – Evidence of small mammals including groundhogs, rabbits, and raccoons, and passerine (perching) birds and raptors (birds of prey) were observed.

Encroachments – No additional permanent encroachments were observed in this area.

Proposed Improvements – The interior of the structure looks sound at the south side with no evidence of undermining of the wing walls or the abutments. Minor deterioration of this concrete was observed but overall, it appears to be in good condition. However, this could not be verified. The stone work will require minor re-pointing. Vegetation is starting to encroach upon the structure and should be cleared or removed to prevent further penetration into the structure.

Springview Road Crossing

The crossing at Springview Road is at an approximately seventy-five (75) degree skew and was formerly a railroad overpass. The bridge carrying the railroad over the road has been removed. The remaining road banks are approximately fourteen (14) to sixteen (16) feet high. PPL has constructed driveways to access the rail bed from both sides of the road. The driveway on the east side of the road is along the south side of the rail trail. The driveway on the west side of the road is along the north side of the rail trail.

Sight distance along the east side of the road looking south appears adequate. The sight distance to the north is blocked by the fill that was placed to build the railroad. Sight distance along the west side of the road looking south is partially obstructed by existing brush. The sight distance to the north appears adequate although the impact of a dip in the cartway of Springview Road north of the rail bed will need to be further evaluated during final design.

The existing driveways provided on the east and west sides of Springview Road provide suitable vehicular access to the corridor.

Springview Road to Greason Road Segment

Surrounding land use – Agriculture is the predominant land use to the north and south of the corridor. Residential use adjoins the trail in the village of Greason.

The segment of rail trail adjoining the Cornman and Brenizer properties and west of Greason Road narrows to approximately forty (40) feet in width. The segment of rail trail adjoining the Cornman and Weigel properties and west of Greason Road widens to approximately fifty (50) feet in width immediately adjacent to Greason Road.

There is a 2½ plus story structure on the west side of Greason Road adjacent to the south side of the rail trail. It appears to be an old siding station that was converted to residential use, but it appears unoccupied.

Existing rail bed materials – Gravel is evident at different areas as you continue east to Greason Road.

General description of existing vegetation – The segment through the Clouse farm is characterized by un-mowed herbaceous vegetation. A hedgerow/tree line exists along a portion of the north property boundary the Zimmerman property. Cropland adjoins the remaining portion of the trail to a point approximately eight hundred (800) feet west of Greason Road. Mowed and un-mowed lawn adjoin the trail immediately west of Greason Road.

Steep slopes – Steep slopes created by the fill to cross Springview Road are located to the north and south of the corridor as you travel east from Springview Road. The corridor transitions from fill to at-grade just east of Springview Road and maintains at-grade condition east to Greason Road.

Agricultural crossings (equipment and animal) – There is an agricultural drive from Springview Road to the Brenizer property. The drive appears to provide interim access to the adjoining agricultural lands.

Two (2) agricultural access areas are located along the south side of the trail and appear to be serving the Zimmerman property.

Existing bridges, culverts and visible drainage features – none observed.

Utilities including potential to serve or impact future trail development – The location of the transmission towers and related guy wires, in relation to the overall corridor width will impact future trail locations. No additional utilities were observed that would impact future trail development.

Drainage patterns – Surface drainage is generally from the east and west to the center of this segment and then to the north near the center of the Zimmerman property. The linear grade along the rail trail is very flat in this area and will need to be considered during the design of the trail.

PA Natural Diversity Inventory Search – There are no species of concern within this segment.

General description of observed wildlife activities – Evidence of small mammals including groundhogs, rabbits, and raccoons, and passerine (perching) birds and raptors (birds of prey) were observed along the segment.

Encroachments – No additional permanent encroachments were observed in this area.

Proposed Improvements
An adequately sized conveyance facility is needed to convey upslope agricultural runoff along the trail and discharge to the north.

Greason Road Crossing

The crossing at Greason Road is nearly perpendicular to the road. This is an “at-grade” crossing. There are no driveways constructed to access this portion of the rail trail.

Sight distance is unobstructed on the east and west sides to both the north and the south.

The existing driveways provided on the east and west sides of Greason Road provide suitable vehicular access to the corridor.

Greason Road to McAllister Church Road Segment

Surrounding land use – Agriculture is the predominant land use to the north and south of the corridor Residential use adjoins the trail in the village of Greason and extends east along the north side of the trail to property currently owned by Zimmerman. Additional residential use adjoins the trail at McAllister Church Road.

The width of the rail trail varies from approximately fifty (50) feet at Greason Road with a jog to approximately one hundred and ten (110) feet in width, back to approximately eighty-five (85) feet in width then back to approximately one hundred and forty (140) feet in width which is maintained until the adjoining Enyeart property where the width is approximately sixty (60) feet in width.

Existing rail bed materials – Gravel is evident at different areas as you continue east to McAllister Church Road.

General description of existing vegetation – The area east of Greason Road, along the frontage of the residential uses, is a mix of mowed lawn and scrub and shrub vegetation. The segment of the corridor from the Snyder property to the Enyeart property is generally very dense and not maintained scrub and shrub vegetation. Tartarian Honeysuckle (*Lonicera tatarica*) and Autumn Olive (*Elaeagnus umbellata)* are dominant species throughout this area.

Steep slopes – The rail trail transitions from more or less at-grade to cut as you pass along the adjoining Stone & Nelson properties. Steep slopes associated with the fill placed to cross over McAllister Church Road are located to the north and south of the corridor as you approach McAllister Church Road.

Agricultural crossings (equipment and animal) – One (1) agricultural crossing was observed near the western boundary of the Nelson property.

Existing bridges, culverts and visible drainage features – none observed.

Utilities including potential to serve or impact future trail development – The location of the transmission towers and related guy wires, in relation to the overall corridor width, will impact future trail locations. No additional utilities were observed that would impact future trail development.

Drainage patterns – Surface drainage is generally from west to east from Greason Road to just west of McAllister Church Road at which point the drainage appears to split and drain to the north and south of the trail.

Erosive conditions that may impact trail development – Runoff from the east side of Centerville Road (SR 0233) drains along the Centerville Road fill/corridor cut slope interface. Minor erosion was noted at the north side of the interface.

PA Natural Diversity Inventory Search – There are no species of concern within this segment.

General description of observed wildlife activities – Evidence of small mammals including groundhogs, rabbits, and raccoons, and passerine (perching) birds and raptors (birds of prey) were observed.

Encroachments - No additional permanent encroachments were observed in this area.

McAllister Church Road Access

The access at McAllister Church Road is at an approximately eighty-five (85) degree skew. The crossing at McAllister Church Road was formerly a railroad overpass. The bridge carrying the railroad over the road has been removed. The remaining road banks are approximately fifteen (15) feet high with considerable bedrock exposed in the road cut. PPL has constructed driveways to access the rail bed from both sides of the road.

Sight distance on the west side of the road appears to be adequate; however there is some bedrock to the south that could obstruct the required sight distance.

There is currently no suitable access from McAllister Church Road on to the corridor.

No additional analysis was conducted for the east side of McAllister Church Road. The property on the east side of McAllister Church Road is held in private ownership.

Gap C to Allen Road Segment

Surrounding land use – West of Alexander Spring Creek, agriculture is the predominant land use to the south of the rail trail. Industrial land use (existing and proposed) is the predominant land use south of the rail trail east of Alexander Spring Run. A mix of agriculture and residential uses adjoin the rail trail to the north.

Existing rail bed materials – Ballast and gravel is evident at different areas along this segment of the rail trail. The ballast is most evident east of Gap C between the transmission towers.

General description of existing vegetation – There is a segment, approximately one thousand five hundred (1,500) feet in length from the eastern boundary of Gap C that is characterized by un-mowed herbaceous vegetation. From this point, east to the mobile home park, the area is generally very dense and not maintained scrub and shrub vegetation. The area south of the mobile home park is partially mowed covered by dense scrub and shrub vegetation. Eastern Red Cedar (*Juniperus virginiana*), Tartarian Honeysuckle (*Lonicera tatarica*) and Autumn Olive (*Elaeagnus umbellata)* are dominant species throughout this area and along the entire corridor.

Steep slopes – Steep slopes created by the rail trail are located to the north and south of the corridor as you travel east from Gap C and cross Alexander Spring Run. The rail trail transitions to at-grade east of Alexander Spring Run before transitioning to fill at the approach to Allen Road.

Agricultural crossings (equipment and animal) – none observed.

Existing bridges, culverts and visible drainage features - Alexander Spring Run crosses the rail bed approximately two thousand (2,000) feet west of Allen Road. Due to seasonal high water conditions, a close-up stream level observation was not possible. The entire arch structure is constructed from cut stone and appears sound and in good visual condition.

Utilities including potential to serve or impact future trail development – The location of the transmission towers and related guy wires, in relation to the overall corridor width will impact future trail locations. No additional utilities were observed that would impact future trail development.

Drainage patterns – Surface drainage is generally to the north and south from the trail and east/west to the culvert carrying Alexander Spring Creek under the rail trail.

PA Natural Diversity Inventory Search – There are no species of concern within this segment.

General description of observed wildlife activities –Evidence of small mammals including groundhogs, rabbits, and raccoons, and passerine (perching) birds and raptors (birds of prey) were observed.

Encroachments – No additional permanent encroachments were observed in this area.

Proposed Improvements
Noting the above mentioned limitations, no evidence of undermining was observable. Vegetation is starting to encroach upon the structure and should be cleared/removed to prevent further penetration into the structure.

Appendix 3: Bridge Inspection Report

Concrete/Masonry Single Span Arch Culvert

General:

Approximately 350' west of Green Hill Road, a large drainage area flows from south to north under the rail bed through a concrete/masonry single span arch culvert. A brief visual inspection of this structure was performed on September 26, 2012. There is evidence that this structure was likely rehabilitated and widened during the same time the rail bed was widened. The original bridge is likely a historic railroad masonry arch culvert. During rehabilitation and widening, the widened portions of the structure were likely constructed entirely out of concrete and the original stone masonry portion of the structure was resurfaced with a concrete facade. No active flow was noted during field observations. Heavy vegetation was noted around the structure. Typical historic steel railroad railing is present on both headwalls of the structure.

Geometry:

The structure has a clear span of 14'-0" and a vertical under clearance of 11'-6". The out-to-out width of the structure is 36'-0" and both headwalls have a width of 1'-6". The structure is positioned on a 90 degree skew and the approximate depth of fill over the structure is 3'-0".

Deterioration Noted During Visual Inspection:

Both the top and front face of the south headwall has experienced moderate to significant spalling. A moderate full height vertical crack was noted in both the north and south headwall. A moderately sized crack, extending the entire width of the structure was noted in the crown of the arch. Both a minor spall and an isolated area of seepage were noted on the west side of the arch. A large portion of the concrete facade on the southeast masonry wingwall has spalled. Minor spalling was noted on both the east arch and southwest wingwall.

Recommendations:

1. During construction of the rail trail, minimize the magnitude and frequency of heavy construction loads on the structure as much as possible.
2. As construction proceeds over and around the structure, monitor the structure for any signs of distress caused by construction.
3. Further deterioration of the significantly spalled concrete areas could potentially affect the structural adequacy of the structure in the future if deterioration in these areas continues to progress. Patching the significantly spalled concrete areas is recommended.
4. Removal of vegetation around the structure is recommended.
5. After the trail is open for use, periodically inspect the structure.
6. Replace the existing railing with railing that meets current standards.
7. During construction, perform excavation and backfilling evenly in the vicinity of the structure to prevent the structure from being loaded unevenly.
8. If exposing the top of the structure is necessary during construction, consult an engineer prior to exposing the top of the structure.

Concrete/Masonry Single Span Arch Culvert Pictures:

Looking South

Looking West

Looking North

Concrete/Masonry Single Cell Box Culvert

General:

Just east of Mount Rock Road, a drainage area flows north to south under the rail bed through a concrete/masonry single cell box culvert and discharges into a detention facility/diversion channel on the south side of the rail bed. A brief visual inspection of this structure was performed on September 26, 2012. This structure was likely widened during the same time the rail bed was widened. The original structure is a historic railroad masonry culvert and this portion of the structure is located approximately in the middle of the structure. The widened portions of the structure are constructed out of concrete. No active flow was noted during field observations. Moderate vegetation was noted around the structure.

Geometry:

The structure has a clear span of 2'-0" and a clear height of 2'-0". The structure is positioned on a 90 degree skew and the approximate depth of fill over the structure is 8'-0".

Deterioration Noted During Visual Inspection:

Both walls of the masonry portion of the box culvert are moderately bulged/kinked.

Recommendations:

1. During construction of the rail trail, minimize the magnitude and frequency of heavy construction loads on the structure as much as possible.
2. As construction proceeds over and around the structure, monitor the structure for any signs of distress caused by construction.
3. Removal of vegetation around the structure is recommended.
4. After the trail is open for use, periodically inspect the structure. Monitor the masonry portion of the structure for further shifting.
5. During construction, perform excavation and backfilling evenly in the vicinity of the structure to prevent the structure from being loaded unevenly.

Pictures:

Typical Inlet/Outlet

Concrete/Masonry Single Span Slab/Plank Beam Bridge

General:

Approximately 1,550' east of Centerville Road, a large drainage area flows from south to north under the rail bed through a concrete/masonry single span slab/plank beam bridge. A brief visual inspection of this structure was performed on September 26, 2012. This structure was likely widened during the same time the rail bed was widened. The original bridge was constructed mostly of cut masonry stone. During rehabilitation and widening, the widened portions of the structure were entirely constructed out of concrete. No active flow was noted during field observations. Heavy vegetation was noted around the structure. Typical historic steel railroad railing is present on both headwalls of the structure.

Geometry:

The structure has a clear span of 14'-0" and a vertical under clearance of 12'-0". The out-to-out width of the structure is 37'-0" and both headwalls have a width of 1'-3". The structure is positioned on a 70 degree skew and the depth of fill over the structure is minimal.

Deterioration Noted During Visual Inspection:

Minor concrete spalling was noted on top of the south headwall. Minor concrete spalling was also noted on both abutments near the transition from stone masonry to concrete. There are isolated areas of moderate concrete spalls with exposed rebar in the bottom of the concrete slab superstructure. A minor vertical full height crack was noted in the northwest wingwall and a moderate vertical full height crack was noted in the southeast wingwall.

Recommendations:

1. During construction of the rail trail, minimize the magnitude and frequency of heavy construction loads on the structure as much as possible.
2. As construction proceeds over and around the structure, monitor the structure for any signs of distress caused by construction.
3. Further deterioration of the moderately spalled concrete and exposed rebar areas on the bottom of the concrete slab superstructure could potentially affect the structural adequacy of the structure in the future if deterioration in these areas continues to progress. Patching of these areas is recommended.
4. Removal of vegetation around the structure is recommended.
5. After the trail is open for use, periodically inspect the structure.
6. Replace the existing railing with railing that meets current standards.
7. During construction, perform excavation and backfilling evenly in the vicinity of the structure to prevent the structure from being loaded unevenly.

Concrete/Masonry Single Span Slab/Plank Beam Bridge Pictures:

Looking South

Bottom of Slab/Plank Superstructure

Looking North

Concrete/Masonry Single Span Arch Culvert

General:

Approximately 200' west of Springview Road, Mount Rock Spring Creek flows south to north and passes under the rail bed through a concrete/masonry single span arch culvert. A brief visual inspection of this structure was performed on September 26, 2012. This arch culvert was likely widened on the north side during the same time the rail bed was widened. The original structure is a historic railroad masonry arch culvert. During widening, the widened portions of the structure were entirely constructed out of concrete. Moderate vegetation was noted around the structure.

Geometry:

The structure has a clear span of 6'-0" and a vertical under clearance of 6'-0". The structure is positioned on a 90 degree skew and the approximate depth of fill over the structure is 4'-6".

Deterioration Noted During Visual Inspection:

Minor mortar loss and a few missing stones were noted in the stone masonry arch culvert. A minor crack and spall was noted on the south headwall. A portion of the southwest wingwall consists of a dry stone masonry stacked wall. Shifting was noted in this dry stone masonry stacked wall.

Recommendations:

1. During construction of the rail trail, minimize the magnitude and frequency of heavy construction loads on the structure as much as possible.
2. As construction proceeds over and around the structure, monitor the structure for any signs of distress caused by construction.
3. If the dry stone masonry stacked wall fails, erosion of the west approach could occur. Monitor the condition of this wall periodically.
4. Removal of vegetation around the structure is recommended.
5. After the trail is open for use, periodically inspect the structure.
6. During construction, perform excavation and backfilling evenly in the vicinity of the structure to prevent the structure from being loaded unevenly.
7. If exposing the top of the structure is necessary during construction, consult an engineer prior to exposing the top of the structure.

Concrete/Masonry Single Span Arch Culvert Pictures:

Looking North

Looking South

Concrete/Masonry Single Cell Box Culvert

General:

Approximately eight hundred (800) feet west of Goodyear Road, a drainage area flows north to south under the rail bed through an approximately twenty-four (24) inch by thirty (30) inch masonry (dry stone) culvert. A brief visual inspection of this structure was performed on March 27, 2013. This structure does not appear to have been widened during the time the rail bed was widened. The overall structure is a historic railroad masonry culvert. No active flow was noted during field observations. Moderate vegetation was noted around the structure.

Geometry:

The structure has a clear span of 2'-0" and a clear height of 2'-4". The structure is positioned on a 90 degree skew and the approximate depth of fill over the structure is 12'-0".

Deterioration Noted During Visual Inspection:

The end portion and cap stone on the south end of the culvert has shifted and needs to be reset.

Recommendations:

1. Work with private property owner to excavate and reset culvert stones and cap stone on south side.
2. During construction of the rail trail, minimize the magnitude and frequency of heavy construction loads on the structure as much as possible.
3. As construction proceeds over and around the structure, monitor the structure for any signs of distress caused by construction.
4. Removal of vegetation around the structure is recommended.
5. After the trail is open for use, periodically inspect the structure. Monitor the masonry portion of the structure for further shifting.
6. During construction, perform excavation and backfilling evenly in the vicinity of the structure to prevent the structure from being loaded unevenly.

Pictures:

Masonry Single Span Arch Culvert

General:

West of Allen Road, a moderately sized stream flows under the rail bed through a large historic railroad stone masonry single span arch culvert. A brief visual inspection of this structure was performed on September 26, 2012. Heavy vegetation was noted around the structure.

Geometry:

The structure has a clear span of 20'-0" and a vertical under-clearance of 14'-6". The structure is positioned on a 90 degree skew and the approximate depth of fill over the structure is 3'-6".

Deterioration Noted During Visual Inspection:

No notable deterioration was observed during field investigations.

Recommendations:

1. During construction of the rail trail, minimize the magnitude and frequency of heavy construction loads on the structure as much as possible.
2. As construction proceeds over and around the structure, monitor the structure for any signs of distress caused by construction.
3. Removal of vegetation around the structure is recommended.
4. After the trail is open for use, periodically inspect the structure.
5. During construction, perform excavation and backfilling evenly in the vicinity of the structure to prevent the structure from being loaded unevenly.
6. If exposing the top of the structure is necessary during construction, consult an engineer prior to exposing the top of the structure.

Pictures:

Looking Downstream

Looking Upstream

Appendix 4: Rail Trail User Surveys

2012 Cumberland Valley Rail Trail User Survey

In order to provide trail users with a high quality recreational experience, CVRTC conducted a rail trail user survey intended to reach people using the existing developed portion of trail between Shippensburg and Newville. Survey results were kept anonymous. The survey tabulations showed that:

- There are users of all ages, although adults aged 26-64 are most common.
- There are mainly three types of users:
    - Walkers (some with dogs) who go 0.5-2 miles at a time, and are frequent users on weekdays and weekends.
    - Runners who go 1-5 miles at a time, and who are frequent users, weekdays and weekends.
    - Bikers (often couples or families) who do the whole trail, 1-2 times per month, usually on Sunday.

The main complaint of trail users who took the survey was teenagers hanging out on or near the trail, and the assumption that they are responsible for instances of garbage or graffiti on the trail.

Buffalo Valley Rail Trail – Case Study

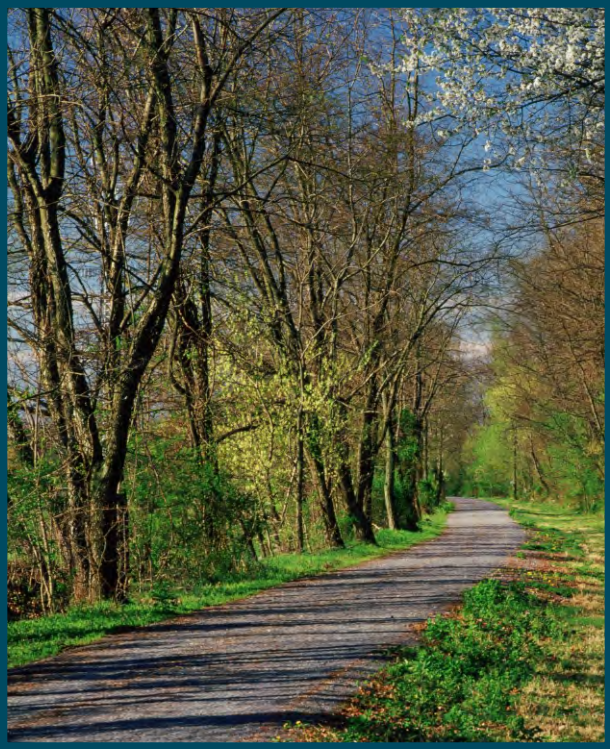
The Buffalo Valley Rail Trail (BVRT) in Union County, Pennsylvania opened in early November 2011 and spans 9.2 miles between Mifflinburg, PA and Lewisburg, PA. The Planning Department of Union County commissioned faculty at Bucknell University to perform a study to estimate trail usage and economic impact during the trail's first year of use. The *Buffalo Valley Rail Trail 2012 User Survey and Economic Impact Analysis* report estimated the trail had 100,000 visits to the trail; the average trail user was 48.8 years old and travelled 5 miles to access the trail. The average time using the trail was estimated to be 86.85 minutes per visit.

The direct economic impacts of the BVRT result from recreational purchases of an estimated $280,925 annually. This direct spending increases local incomes which, when spent again via the spending multiplier, were responsible for indirect and induced spending of an estimated $477,572 per year in the Susquehanna Valley region and $589,942 per year in the Commonwealth of Pennsylvania. The full *Buffalo Valley Rail Trail 2012 User Survey and Economic Impact Analysis* report can be viewed here: http://www.bvrt.org/2012-BVRTUserSurveyEconomicImpactAnalysis.pdf

Since there are many similarities between the CVRT and the BVRT, including similar distance of existing trail and rural/small town setting, the user and economic impacts for the CVRT should be similar. What the Buffalo Valley Rail Trail lacks, a larger population center, will make the proposed connection to Carlisle one that will greatly enhance the number of users and the economic benefits of the CVRT.

Trail User Surveys and Economic Impacts – Report Review

In assessing the economic impacts of other trails throughout the Mid-Atlantic Region, the Rails-to-Trails Conservancy and PA Department of Conservation and Natural Resources (PA DCNR) produced a document entitled *Trail User Surveys and Economic Impacts, A Comparison of Trail User Expenditures (2009)*. The purpose of this report is to review a selection of trail user surveys which analyze the economic impact of rail-trails, to compare this data and the methodology used, and to create a comparative table report revealing the dollar amount spent per trail user on each trail. The *Trail User Surveys and Economic Impact* report seeks to establish a common methodology for these types of assessments – to produce reliable and comparable data for the performance of Rail-Trail projects. The full report can be viewed here:
http://www.railstotrails.org/resources/documents/resource_docs/Comparison_of_Trail_Users_Surveys_FINAL.pdf



CUMBERLAND VALLEY RAILS-TO-TRAILS