Chester Valley Trail West

Feasibility Study/Master Plan

CHESTER COUNTY Planning COMMISSION

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Feasibility Study / Master Plan

Prepared by the

Chester County Planning Commission

December 2018

BRC-TAG-22-71

Funding for this trail study provided by the: Community Conservation Partnerships Program, Keystone Recreation, Park, and Conservation Fund, under the administration of the PA Department of Conservation and Natural Resources (DCNR) Bureau of Recreation and Conservation

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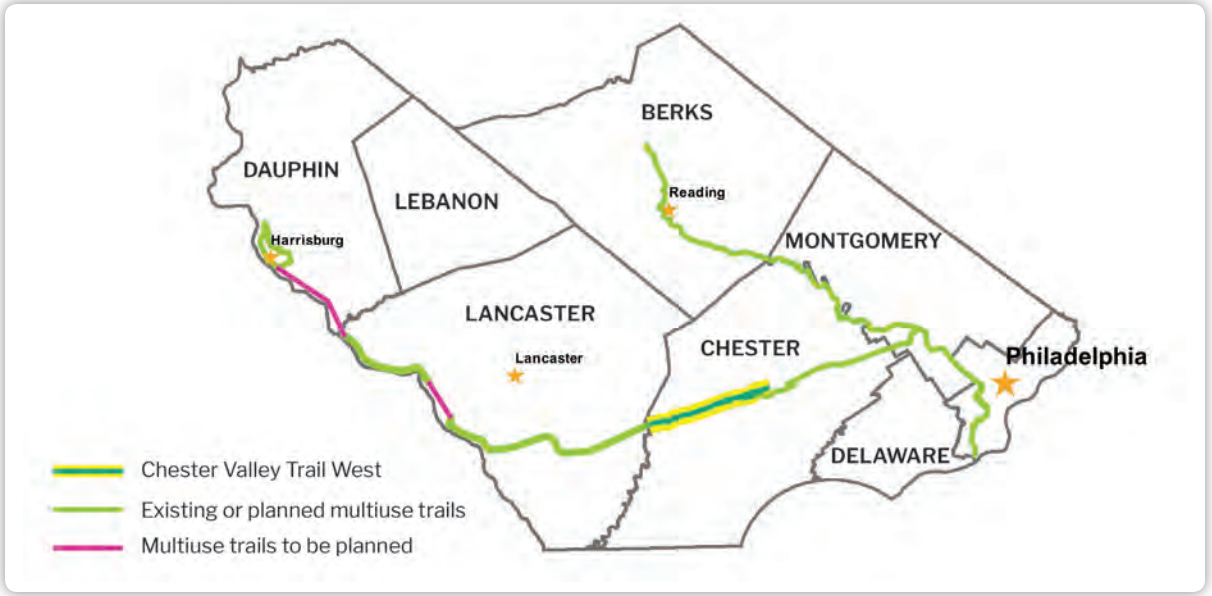
History of the Chester Valley Trail

The Chester Valley Trail (CVT) project dates back to 1991 when representatives of Chester County, Montgomery County and the Pennsylvania Department of Transportation (PennDOT) envisioned the soon-to-be-abandoned Chester Valley Branch of the Reading Railroad as a major trail corridor. In August 1996, Chester County acquired a section beginning at Route 29 and ending west of the Exton Bypass by way of a Certificate of Interim Trail Use (CITU) from the Federal Surface Transportation Board, which recognized county ownership of this portion of the rail corridor through a process called rail banking. The first phase of the CVT opened to the public in September 2010 and spanned from Valley Creek Boulevard in West Whiteland Township to Route 29 in East Whiteland Township. The County's CVT Phase II and Phase III projects were completed in 2014, which resulted in the current 14.5 mile trail from Main Street at Exton to the King of Prussia park-and-ride lot in Montgomery County. A 1-mile western trail extension to the Oaklands Corporate Center is planned for construction in 2019. Additionally, Montgomery County is working diligently to develop a connection between the eastern end of the CVT and the Schuylkill River Trail in Norristown.

Chester County envisions the CVT to traverse the Chester Valley- a 1 to 2 mile-wide geologic feature that spans the width of the county and is home to some of the County's most densely developed communities. As a first step towards extending the trail further west across the county, the Chester County Planning Commission (CCPC) completed the CVT Extension to Downingtown Feasibility Study and Master Plan in 2017. This study proposed a plan for extending the CVT an additional 8+ miles to the west using the inactive Philadelphia and Thorndale (P&T) rail corridor for the majority of the route. With its steep canyon-like walls and iconic historic bridges like the Downingtown Trestle, this segment of the CVT will assuredly become a major regional attraction when constructed.

The P&T rail corridor and potential future CVT terminates into the Amtrak Keystone Corridor in Thorndale, and west of this point there is no continuous inactive right-of-way for the future trail to follow. The Chester Valley Trail West study was commissioned to pick up where the Extension to Downingtown plan left off by identifying a route by which to connect the western terminus of the P&T corridor to the eastern terminus of Lancaster County's Enola Low Grade Trail, just west of Atglen Borough at the county line.

The Chester Valley Trail West is the final portion to be planned in a trail system that will one day connect Harrisburg and Philadelphia. Once complete, this 100+ mile network will be a regional and perhaps national draw for cyclists looking for a new multi-day adventure as well as a recreation and transportation amenity for local residents and commuters.



Study Area Context

The project study area encompasses an area of nearly 22 square miles and spans nearly 16 linear miles. It includes eight municipalities in Chester County:

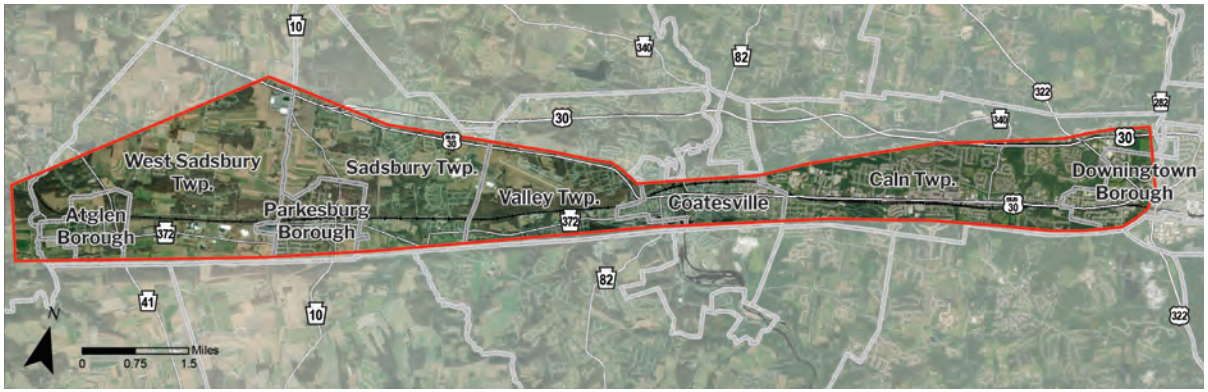
- Downingtown Borough;
- Caln Township;
- Coatesville City;
- Valley Township;
- Sadsbury Township;
- Parkesburg Borough;
- West Sadsbury Township; and
- Atglen Borough

The Chester Valley, sometimes called the Great Valley, is a landform that cuts through Chester County and parts of Montgomery and Lancaster Counties. Much of the project study area lies within the Chester Valley and contains the steep valley walls. The floor of the valley ranges between one and two miles in width. Because the goal of this plan is to identify a feasible location for a multiuse trail wherever possible, the relatively flat or gently rolling topography of the valley floor presents an ideal location for such a trail.

The Amtrak Keystone Corridor and SEPTA's Paoli-Thorndale regional rail line (formerly the Main Line of the Pennsylvania Railroad), much of the US 30 bypass, Business Route 30, and multiple population centers are also located within the Chester Valley. Although a multiuse trail in this densely developed region would serve a large number of residents, existing land use patterns present constraints to the development of a continuous multiuse trail.

Nearly all of the existing and planned CVT in Chester County is located on a former rail corridor, making the planning and development of these segments relatively straight-forward. However, no continuous former rail corridor that traverses the entire study area is available. Accordingly, this study required a comprehensive analysis of many alternatives to determine the optimal alignment. The lack of a continuous corridor presents many challenges as well as opportunities. The character of the communities through which the trail will pass vary greatly from one another, including densely developed suburban areas, an urbanized city center, charming boroughs with walkable main streets, and pastoral rural areas. This diverse landscape will create a unique user experience within the overall trail system and will likely attract trail users to stop and take advantage of trailside amenities within each of these communities, providing potentially significant economic benefits.

Project Study Area



Project Purpose

- Identify a feasible alignment for a multi-use trail (where possible) between the western terminus of the planned CVT Extension and the eastern terminus of the in-progress Enola Low Grade Trail at the Chester-Lancaster county line;
- Create a master plan for the recommended alignment in order to project costs for development and ongoing maintenance;
- Develop an implementation strategy to advance trail development, including recommendations for project phasing, ongoing stakeholder involvement and potential funding sources;
- Address the potential value of the trail as a driver for economic development, and provide recommendations for how municipalities can best leverage the trail to advance their existing revitalization efforts; and
- Mobilize partnerships amongst municipal officials, partner organizations, local businesses and interested individuals to advance the project.

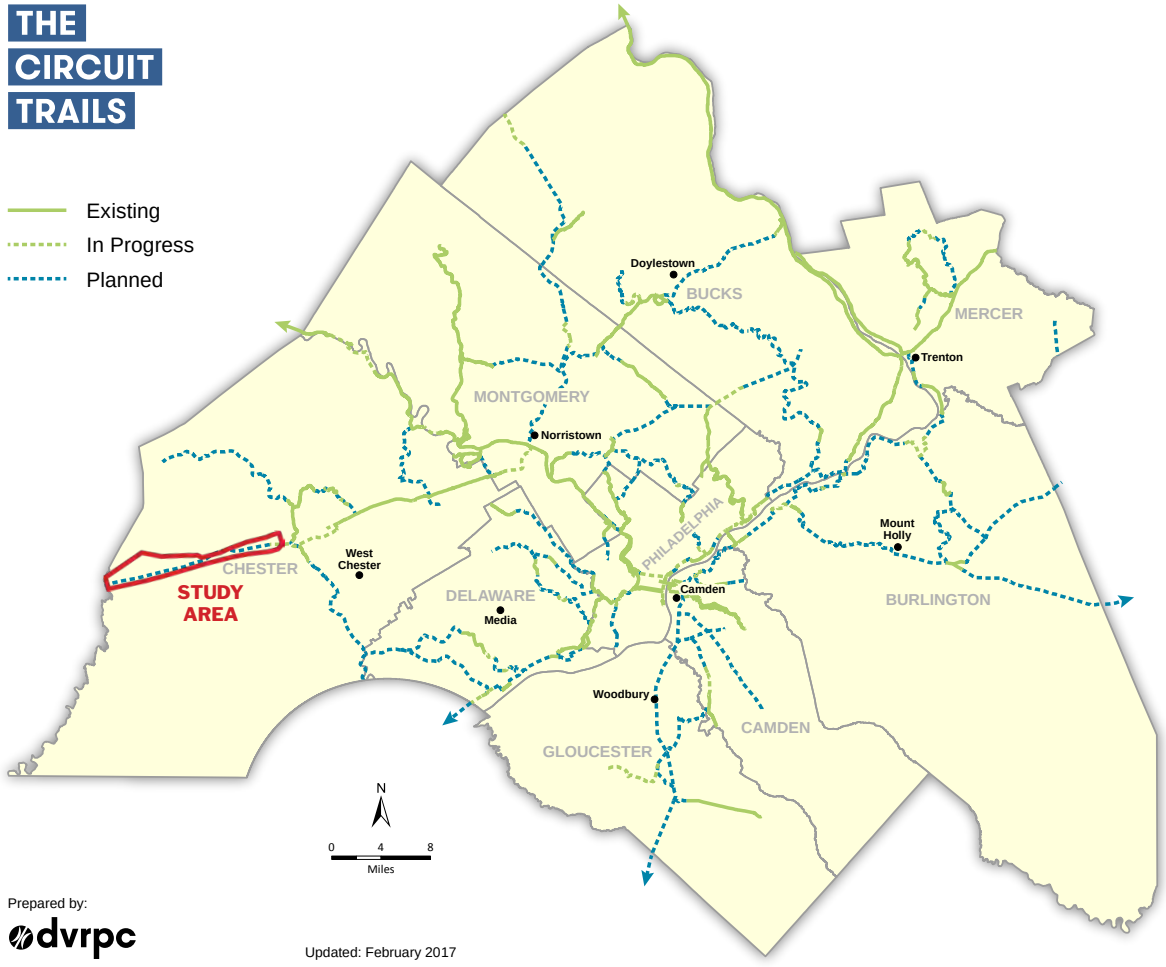
Trail projects, especially lengthy, complicated ones like the CVT West, can take years to implement. In order to maintain the project's momentum and generate excitement, enthusiasm and ownership, it is critical to gain buy-in from local governments, project champions and residents during the planning process. The public showed a great deal of interest in the Chester Valley Trail West throughout the planning study, and some communities have already taken steps to garner local support around building an identity as a "Trail Town". The Economic Development discussion within the Master Plan section of this report elaborates on how this excitement can be leveraged to realize the project vision.

The project team sought input on where the trail should go at the first public meeting.

Regional Trail Network

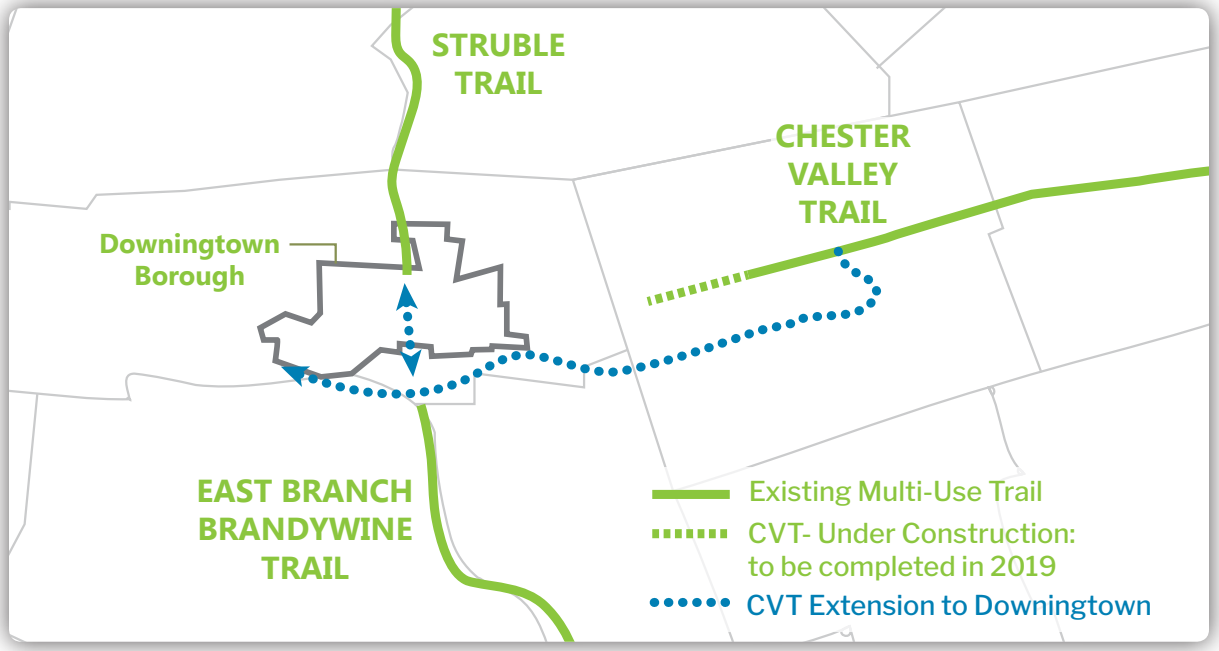
The Chester Valley Trail West is envisioned to be part of a 100+ mile trail connection between Harrisburg and Philadelphia. Its eastern terminus will connect with the planned Chester Valley Trail Extension and its western terminus will connect with the Enola Low Grade Trail. The Pennsylvania Department of Conservation and Natural Resources (DCNR) is considering designating this corridor as a Statewide Major Greenway. In order to be considered for this designation, a trail network must: 1.) be fifty or more miles in length (existing or planned); 2.) pass through two or more counties; and 3.) be recognized in an official planning document. Chester County is supportive of this designation and will work with Lancaster County to produce a conceptual map of the entire greenway corridor, name the overall greenway corridor (for example, “The Schuylkill to Susquehanna Trail”), and work toward passing a resolution in each county to officially recognize the effort to become designated as a Statewide Major Greenway.

In addition to being part of the “Schuylkill to Susquehanna” trail, the CVT West is also part of the Circuit Trails network. Consisting of over 800 miles of planned and existing multiuse trails, the Circuit is the Greater Philadelphia regional trail network that can be likened to an “interstate highway system” of trails. The Circuit trails form the spine of the network into which other collector trails feed, creating a robust regional multimodal system for recreation and transportation.



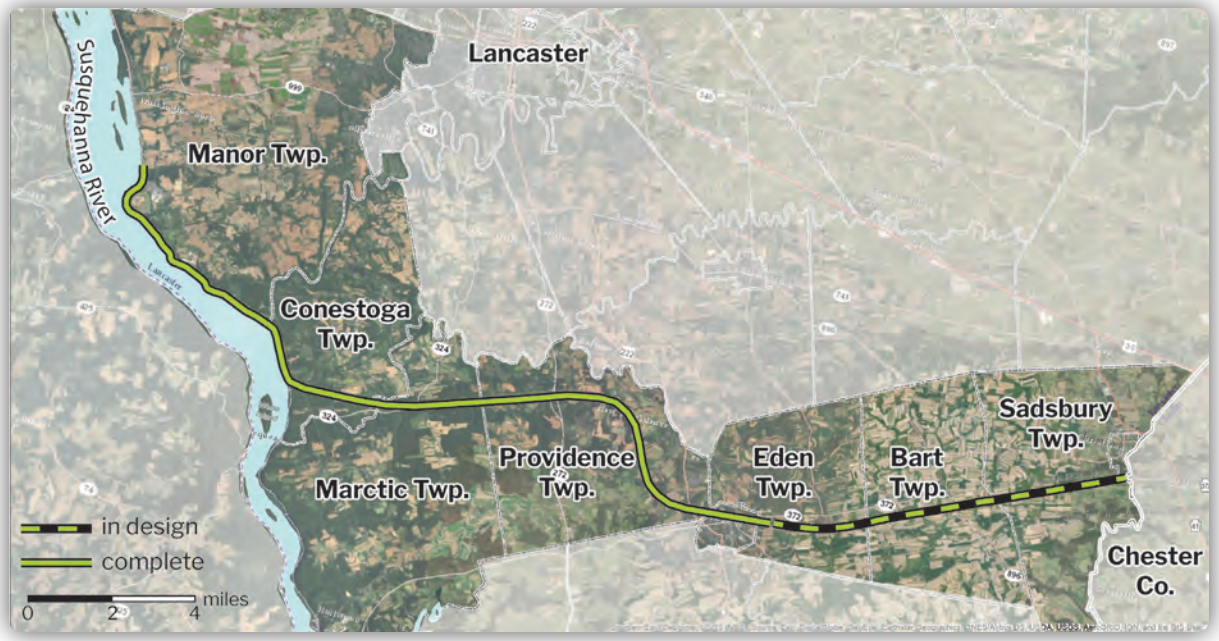
Chester Valley Trail Extension to Downingtown

In 2017, the Chester County Planning Commission completed a feasibility study for an extension of the CVT to Downingtown. The plan recommends construction of a 7.4 mile multiuse trail along the former Philadelphia & Thorndale (P&T) rail corridor. Additionally, the Extension to Downingtown plan includes both on and off-road connections through the Borough of Downingtown to connect trail users to the Borough's central business district and to the Struble and East Branch Brandywine trails, both popular multiuse trails on the Circuit. Although construction costs are estimated at over $20 million, significant interest in this project amongst the trail funding community and the public could allow this trail to be developed within five to ten years.



Enola Low Grade Trail

The Enola Low Grade rail-trail in Lancaster County will be over 29 miles long when complete and will span between Manor Township's Turkey Hill trail head in the west and Atglen Borough in the east. The "low grade" line is a former rail corridor that parallels an active freight line along the Susquehanna River before making a turn to head east across Lancaster County's pastoral landscape. Currently about two thirds of the trail is complete, with expected completion of the entire trail - including renovation of several large, iconic structures - within the next five years.



CASE STUDY:
Great Allegheny Passage

The Great Allegheny Passage (GAP) serves as a relatively local example of how a long-distance trail can bring significant economic benefits to small towns. This 150-mile rail-trail spans between Pittsburgh and Cumberland, MD and connects to the 45-mile multiuse Montour Trail to the north and to the 185-mile Chesapeake & Ohio Canal Trail to the south, which terminates in Washington, DC. The GAP's success as a driver for economic development in depressed former industrial towns in Western Pennsylvania is well-documented. A 2014 study revealed the following findings:

- The trail receives over 1 million users per year
- Over 60% of trail users were planning an overnight stay along the trail
- Day users spend an average of $18/day, and overnight users spend an average of $124/night
- Towns along the GAP have had a net gain of 65 new businesses since 2007, which have produced 270+ net new jobs
- Businesses estimate that over 40% of their 2014 sales were driven by trail traffic, and this number rises every year.

Businesses that sprang up to meet the needs of trail users, such as this inn in Frostburg, MD, can be found all along the GAP.

Current Economic Development Initiatives

Industry drove the growth and development of many small towns in America during the 19th and early 20th centuries. As manufacturing is outsourced more and more, many of these small towns have lost much of their population, commerce and vitality. The Pennsylvania Environmental Council has called trail building "a cottage industry for the new millennium" that has the potential to spark revitalization in these small towns. The project study area for the CVT West includes three such towns: Coatesville City, Downingtown, Parkesburg and Atglen Boroughs, as well as picturesque farmland. Over the course of the study, the project team heard significant enthusiasm for these small towns becoming hubs of trail-related activity, with points of interest and other amenities for trail users sprinkled in between. This type of revitalization strategy is called "Trail Oriented Development".

There are many successful precedents in our region showing that regional trails are unequivocally good for business: they draw users from far and wide who patronize local businesses like restaurants, bike shops, cafes, and bed and breakfasts. This study identified several initiatives already underway within the study area that municipalities can leverage to capitalize on the future trail through a regional approach to Trail Oriented Development.

Downingtown Main Street Association is dedicated to revitalization efforts in Downingtown's Main Street district (Lincoln Highway) to enhance commerce and vitality to the borough. In addition to spearheading streetscape beautification activities, the Association organizes events, including an outdoor summer music series and a popular fine arts festival, that bring new visitors to the Borough and provide residents with opportunities to get out and enjoy Main Street.

The installation of sidewalks along Lincoln Highway (Business Route 30) in Caln Township is a priority for Township Commissioners. Lincoln Highway is the Township's primary commercial corridor and the location of the SEPTA/Amtrak Thorndale train station. The addition of sidewalks will greatly enhance streetscape appearance, pedestrian experience and safety along this predominantly autocentric corridor.

Downingtown

Coatesville Growing Greater initiative resulted in a revitalization plan for the City of Coatesville completed in 2015. It included specific community-driven strategies to address the priority concerns identified throughout the process, which included safety, resident engagement, jobs and economic opportunity, and youth empowerment. The plan continues to drive many of the City's goals, and Coatesville recently received funding to begin implementing the plan's recommendations.

Coatesville 2nd Century Alliance is the community and economic development partner of the City of Coatesville whose goals are tied to those identified within the Coatesville Growing Greater Initiative. The Alliance is involved in attracting new businesses and jobs to the City, revitalizing the downtown district, promoting the City to potential investors and developers, and advocating for progress that will benefit the Coatesville community.

The proposed 'Gateway" redevelopment project in the heart of downtown Coatesville.

The newly-formed **Parkesburg Action Committee** seeks to create a sense of community and to promote growth and improvement in downtown Parkesburg. The committee raised funds for improvements to a much-loved community center and also organizes seasonal Final Friday street fairs. They serve as advocates for borough revitalization projects.

Parkesburg Final Friday. Photo by Shelly McKenna of McKenna Moments Photography

The Atglen Public Library At the time of this report's printing, the Atglen Public Library is working towards moving to a location in the center of town. In this new location it plans to open a coffee shop to build demand within the town for café services. Once demand has sufficiently grown it intends to "spin off" the café, which would open a larger location elsewhere within the Borough. In this way, the library could function as a sort of incubator.

Future home of the Atglen public library.

Demand for and Potential Use of Trail

With over 375,000 annual users, the existing Chester Valley Trail is the second most used trail on the Circuit trail network after only Schuylkill Banks in Center City Philadelphia. As the purpose of this plan is to connect the CVT with other regional trail systems to the west, it is important to understand the current user counts of the existing trails to which the CVT West will connect.

The Enola Low Grade Trail, the trail to which the CVT West will connect to the west, sees over 70,000 users per year. This rail-trail is newer than the CVT and passes through more rural areas than does the existing CVT, and therefore draws its user base from a smaller population. Furthermore, several key crossings are needed along the trail to create connectivity between the completed segments. Usership will likely increase significantly upon completion of the final nine miles of trail and crossings. In time, the Enola Low Grade trail will connect to the Northwest Lancaster River Trail in Columbia Borough, Lancaster County. This recently completed scenic trail follows the Susquehanna River north from Columbia Borough to Falmouth and receives over 150,000 visitors per year.

The Enola Low Grade Trail's Turkey Hill trail head

Table 2: Trail Usage Statistics

Trail Name	Miles Completed	Annual Users
Chester Valley Trail	14.5	375,000+
Enola Low Grade Trail	20.0	70,000+
Northwest Lancaster County River Trail	14.1	150,000+

Source: Chester County Department of Facilities and Parks, Lancaster County Planning Commission

The chart below shows both current population estimates from the US Census Bureau as well as population projections for the year 2030 for each of the eight municipalities through which the trail will pass. The eastern half of the study area (Downingtown, Caln, Coatesville and Valley) is already quite developed, whereas the western half of the study area (Sadsbury, Parkesburg West Sadsbury and Atglen) still has significant rural character and varying degrees of development pressure.

Table 3: Study Area Population

	2017	2030 (Estimate)	% change
Atglen Borough	1,406	1,858	+32%
West Sadsbury Township	2,475	3,150	+27%
Parkesburg Borough	3,840	4,551	+19%
Sadsbury Township	3,958	5,235	+32%
Valley Township	7,731	9,301	+20%
Coatesville City	13,123	14,706	+12%
Caln Township	14,255	16,848	+18%
Downingtown Borough	7,928	9,636	+22%
Total Estimated Population:	**56,733**	**65,285**	**+15%**

Source: US Census Bureau and DVRPC

For comparison, the estimated 2017 population for the municipalities through which the existing CVT passes is approximately 90,200. Because population is significantly higher in the areas surrounding the existing CVT, it is reasonable to expect fewer users on the Chester Valley Trail West than on the existing CVT. However, the public survey for this project found that 63% of respondents who live in the project study area travel to use the Chester Valley Trail and would likely use the Chester Valley Trail West instead upon its completion.

More results from the public survey may be found on page 18.

Table 4: Median Household Income

	Median Household Income
Coatesville City	$36,212
Study Area	$60,761
Chester County	$88,995
Pennsylvania	$54,895

Source: 2016 American Community Survey, US Census Bureau

In addition to population numbers, another demographic trend of note in parts of the CVT West study area is low levels of household income relative to the rest of the County. Coatesville City, which is in the heart of the project study area, has the lowest median household income in the county.

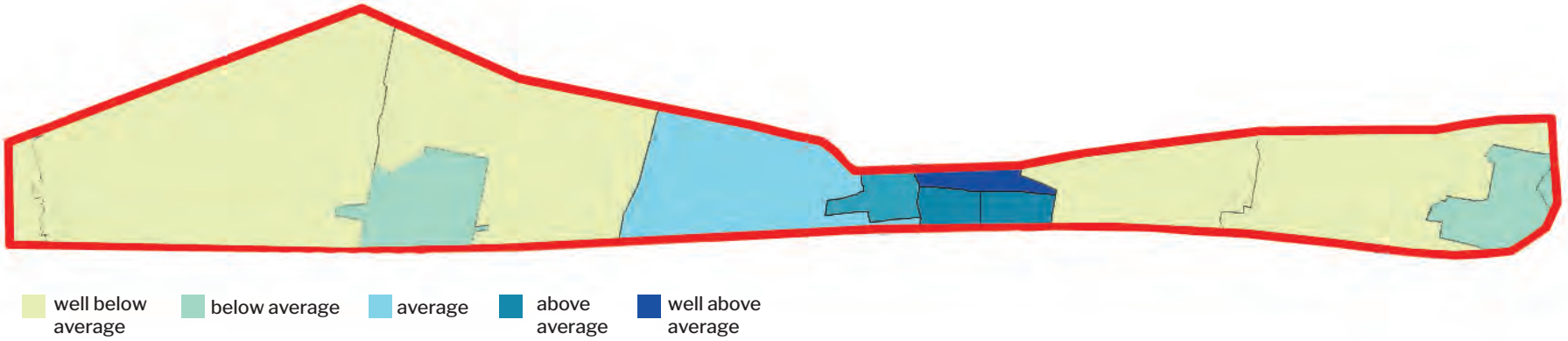
The Delaware Valley Regional Planning Commission (DVRPC) has developed mapping tools which display the percentage of a municipality's population which may be

disadvantaged, according to several indicators. DVRPC's Indicators for Potential Disadvantage (IPD) are youth, older adults, female, racial minorities, ethnic minorities, foreign born, limited English proficiency, disabled, and low income individuals. The map below shows an analysis of potentially disadvantaged populations within the project study area in relation to the average in the Delaware Valley Region. Coatesville City received the highest score for percentage of potentially disadvantaged residents:

- nearly **60%** of residents have a household income that falls below **200%** of the poverty line
- almost **20%** report having imperfect English proficiency
- over **55%** identify as a racial minority
- over **20%** of residents were born outside the United States.

A high-quality trail amidst disadvantaged populations can serve significant beneficial functions that otherwise might not be available, such as a safe and free place to exercise for youth and seniors, a place to interact with neighbors, and as a transportation route to work for those without access to a car.

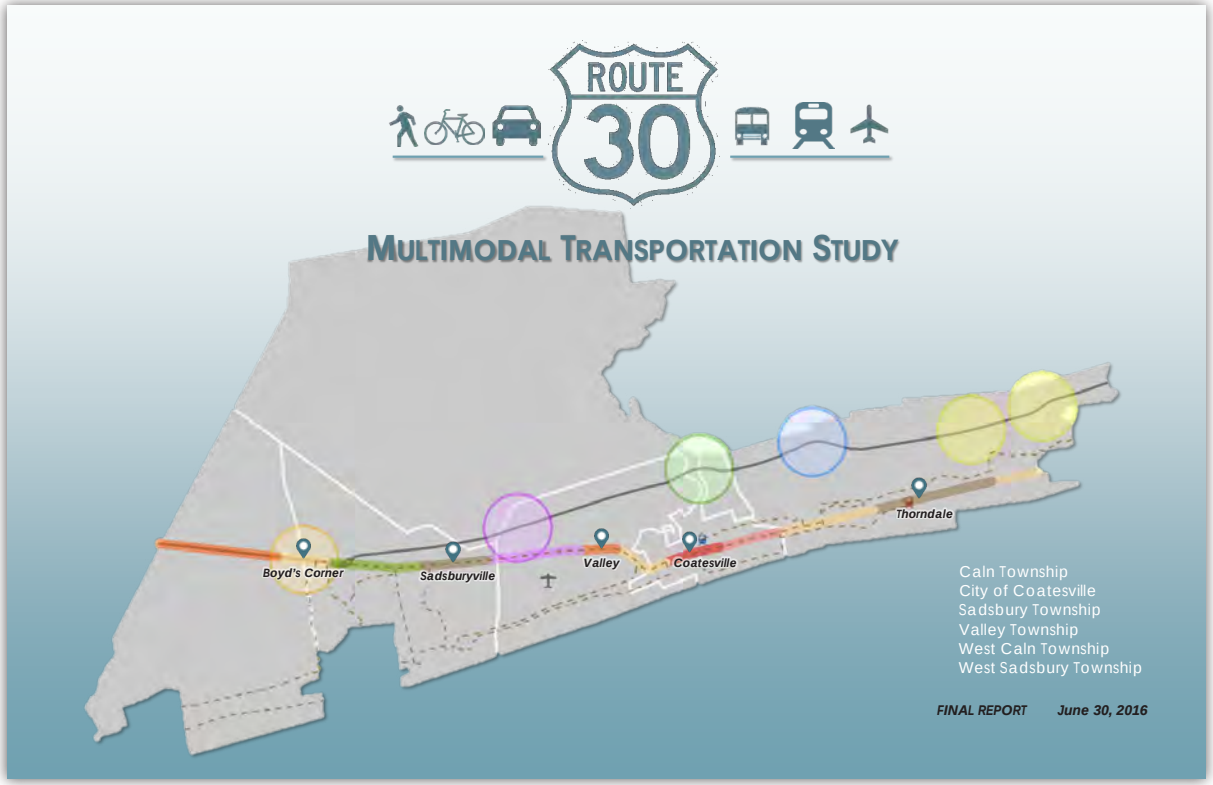
DVRPC's Level of Potential Disadvantage Mapping for CVT West Study Area



Public Input

Previous Planning Documents

Because of the public input process that is part of all communities' comprehensive plans, revitalization plans or special studies, the findings and recommendations in these plans are understood to reflect the values and priorities of the community. The project team reviewed many existing planning documents to understand the priorities of municipalities within the study area and to learn of any previous planning efforts for east-west trails in western Chester County.



The most recent and relevant of the plans reviewed was the 2016 Route 30 Multimodal Transportation Study commissioned by the Western Chester County Chamber of Commerce and six sponsor municipalities (Caln, Coatesville, Valley, Sadsbury, West Caln and West Sadsbury). This report generated a vision for coordinated land use and transportation improvements along the Business Route 30 and Route 30 bypass corridors, including several cursory alignment alternatives for an extension of the CVT that were recommended for further study. The current study assessed the Route 30 plan alignments, alignments recommended in other planning documents, and additional alignments identified through public outreach over the course of this study. A list of plans reviewed and goals stated within each that support this project are listed in Table 1 on the following two pages.

Table 1: Plans Reviewed

Plan Name	Year Adopted	Study Area Municipalities Involved	Key Goals/Recommendations Related to this Plan
Route 30 Multimodal Transportation Study	2016	Caln Township, Coatesville City, Sadsbury Township, Valley Township, West Sadsbury Township	• Complete trail plans to establish a regional trails network, particularly focused on identifying a preferred alignment for the Chester Valley Trail from Downingtown to Atglen, and design for the West Branch Brandywine Trail • Provide or update standards and design requirements related to bicycle, pedestrian and transit facilities • Recommends continuation of bike lanes along Route 30 in Coatesville west of First Avenue
Central Chester County Bicycle and Pedestrian Plan	2013	Downingtown	• Bike lane along Pennsylvania Ave. connecting Kardon Park with Kerr Park • Multi-use trail along Beaver Creek that connects Lloyd Park with Kerr Park and uses existing trails to Borough Hall • Improve on-road cycling connections between Pennsylvania Ave., proposed G.O. Carlson extension trail and bike lanes on Rt. 30
Octorara Regional Comprehensive Plan	2004	Atglen, West Sadsbury, Parkesburg	• Develop a trail along Octoraro creek connecting Atglen and Wolf's Hollow Park, and ensure Parkesburg residents can connect to this trail • Recommended improvements for bicycle transportation for local residents and as a tourism opportunity through restriping and resurfacing roadways and adding signage • Increase pedestrian connectivity between Parkesburg and Atglen boroughs via 372, the Amtrak rail corridor, Valley Creek or Upper Valley Rd.
Downingtown Borough Comprehensive Plan	2013	Downingtown Borough	• Study the feasibility of connecting Kerr Park with Kardon Park via a more formalized East Pennsylvania Avenue connection and/or through Caln Township via the Struble Trail in the Norwood Road area. • Work with Caln Township to establish a link (along Beaver Creek or elsewhere) between Lloyd Park, Beaver Creek Elementary School and open spaces east of that school in Downingtown. • Examine the feasibility of pedestrian and bicycle improvements along the Route 30 and Pennsylvania Avenue corridors, including key cross streets.
Caln Township Comprehensive Plan	2017	Caln Township	• Continue the excellent parks and recreation facilities. Seek funding to improve existing parks to meet a wide variety of recreational needs and to add selected parkland. • Carry out “Complete Streets” concepts when planning transportation and circulation improvements. • Improve pedestrian and bicycle access, and provide additional locations for bicycle parking. • Improve sidewalks, particularly along the Lincoln Highway and around Thorndale. • Promote additional business investment, particularly in under-used areas such as Caln Rd. and Lincoln Hwy.
Coatesville Growing Greater 5-Year Action Plan		Coatesville City	• Focus beautification and redevelopment efforts on portion of Lincoln Highway between 1st and 4th Aves. • Have safe, inviting and active parks and public spaces • Market downtown Coatesville as a destination for living working and recreation
Mill Trail Feasibility Study	2017	Coatesville City, Valley Township	• Connect community destinations in Valley Township, Coatesville, South Coatesville, and Modena with pedestrian and bicycle infrastructure • Build upon the 2012 Brandywine Trail Feasibility study to extend the Riverwalk northward
Valley Township Comprehensive Plan	2003	Valley Township	• Develop the township’s vacant land into a network of passive parks, open space and trails • Develop a system of trails for use by pedestrians and bicycles

Table 1: Plans Reviewed (continued)

Plan Name	Year Adopted	Study Area Municipalities Involved	Key Goals/Recommendations Related to this Plan
Valley Township Open Space and Recreation plan	2018	Valley Township	• Recommended additional open space resources at Valley Suburban Center, potential sports fields adjacent to Rainbow school and at Airport Newton property • Study feasibility of developing a trail along existing gas pipeline • Extend the Brandywine Creek trail between Coatesville River Walk and proposed pipeline trail • Study the feasibility of an East-West trail along Amtrak corridor
Parkesburg Revitalization Plan	2016	Parkesburg Borough	• Develop Route 10 as a multimodal transportation center • Create Borough "theme" • Redesign Minch Park as the Borough's primary active recreation center • Encourage rail-related transportation, including extension of SEPTA service • Encourage pedestrian and bicycle transportation and discourage the use of automobiles for trips within the Borough • Open space and recreation amenities should be "an ingredient" of any new development proposal • Improve connectivity between First Ave, Main St. and Minch Park
West Sadsbury Township Comprehensive Plan	2009	West Sadsbury Township	• Link open space within the Township through the development of linear stream parks • Develop a trail corridor along Valley Creek to connect the Township to Parkesburg, Atglen and the Octoraro scenic area • Investigate the feasibility of a greenway link along abandoned railroad bed of the Atglen-Susquehanna line. • Township building and park should be the hub of recreational facilities and programs
Sadsbury Township Comprehensive Plan	2014	Sadsbury Township	• Link open space areas and community facilities via non-vehicular corridors • Encourage the development of a trail along Buck Run. Establish development standards so any developers along the trail are required to include the trail in their plans. • Do not encourage cycling on Route 372, Old Wilmington Rd., and Quarry Road • Examine feasibility of developing an off-road trail along PECO easement
Atglen Borough Comprehensive Plan	2018	Atglen Borough	• Connect Atglen Borough to the growing regional trail system and regional recreation facilities. • Enhance physical connections to and the visibility of parks • Pursue bicycling connections to destinations within and outside of the Borough • Use the Borough's cultural resources, historic identity, future trail connections, and the surrounding agricultural region to forge a unique identity and marketing strategy for economic development.

Public Engagement

Due to the large study area and complex nature of this project, public engagement was a critical component of the Chester Valley Trail West study. Project stakeholders and members of the public served a key role in helping to identify the best route for the trail, how the trail could be maintained, and how to leverage the trail as an engine for economic development.

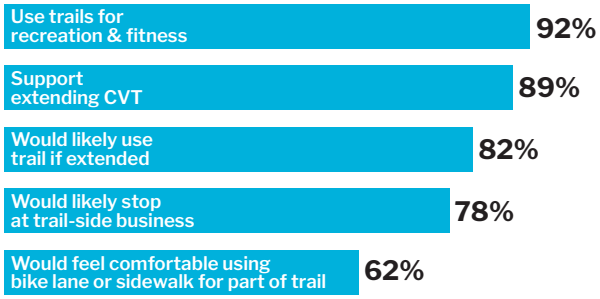
Steering Committee. The project team met three times over the course of the 18-month long study with a 35-member steering committee comprised of municipal officials and representatives from partner organizations and other County departments. The steering committee provided feedback on the draft alignment and draft report and played an invaluable role in spreading the word about the project amongst each organization's constituents.

Public Survey. Open between September 2017 and February 2018, the online public survey for the project received 2,819 responses. The results helped the project team gauge public support for the project and understand the public's vision for the trail. Notably, most of the survey respondents did not live within the project study area: 38% of respondents lived within the study area, 56% lived elsewhere in Chester County, and 6% lived outside Chester County. Responses from these groups were not significantly different.

The survey queried respondents about the amenities and design considerations they would like to see along the trail. Of the 450 responses received related to this prompt, the most common response expressed a need for a wider trail that allows for more separation of pedestrians and cyclists. Many respondents commented on trail surfacing materials: approximately half requested a paved surface while the other half requested a crushed stone surface. Other common suggestions included:

- Restrooms and water stations at regular intervals along the trail
- Lighting and other safety enhancements in unpopulated areas
- As much separation from vehicles as possible, and better markings/signals to make motorists more aware of trail users
- More places to access the trail (trail heads)

Percentage of survey respondents who...



Survey respondents were asked to list destinations to which they would like the trail to connect. **In order, the top 10 destinations requested were:**

271 votes	**Commercial districts/ local businesses**
117 votes	**Community services** (libraries, senior centers, grocery stores, etc.)
108 votes	**Public transportation**
108 votes	**Restaurant/deli**
105 votes	**Parks**
79 votes	**Schools**
54 votes	**Breweries**
43 votes	**Other trails**
40 votes	**Coffee shops/cafes**
28 votes	**Cultural attractions**

All survey results, including a complete list of comments, can be found in the report appendix.

Municipal Meetings. The project team met with study area municipalities twice over the course of the study. The first round of meetings was held in the beginning stages of the project to understand each municipality's priorities and ideas for where the trail should or should not be located. The second round was held toward the end of the process to vet each municipality's portion of the recommended alignment and to discuss implementation steps. In addition to these individual meetings, municipal representatives also participated as members of the project steering committee.

Over 100 members of the Western Chester County community attended a public meeting in March 2018.

Focus Groups. As this project has many facets and complexities, three focus groups were held to better understand certain aspects of the project:

1. **Recreation, health and open space focus group -** November, 2017. This focus group explored how trail use might differ in each part of the study area, what the drivers of these differences might be, and how should the trail user experience be crafted to accommodate this use.

   Key takeaways: The differing environments (rural vs. suburban vs. urban) through which the trail will pass are a special feature of this section of the CVT and should be celebrated. The trail could and should be tied in to existing long-standing community events to become a focal point of each community.

2. **Economic Development focus group -** November 2017. The goal of this focus group was to share the concept of "Trail Oriented Development" and to discuss the appropriateness of such an initiative in the study area.

   Key takeaways: Economic development will look very different in each municipality: Coatesville and Parkesburg may want to attract new businesses and density, while more rural areas like Sadsbury and West Sadsbury Township might seek opportunities for trail-side farmers markets and bed and breakfasts. Atglen is re-envisioning itself as a trail town through its comprehensive plan and could serve as a regional model. Connections to destinations off the trail will require effective, streamlined wayfinding. Safety and perceptions regarding the lack of safety will play a role in the trail's success. Overt safety features (such as lighting or emergency call boxes) and/or a visible presence (patrol or trail ambassadors) will help make the trail feel safe and contribute to its success.

3. **Historic and cultural interpretation -** October, 2018. Historic and cultural interpretation along the trail can forge connections between trail users and the places through which they are passing, creating a more meaningful trail experience overall. The project team convened representatives from township or regional historic commissions and historical societies to discuss the important people, places, stories and themes that should be conveyed along the trail.

   Key Takeaways: Using the themes interpreted along the existing Chester Valley Trail as a starting point, the group identified several additional themes that help tell the story of western Chester County's history and culture. Important features and locations for potential signage were identified. More information on historic and cultural interpretation recommendations can be found in the Master Plan section of this report.

4. **Interim alignment mobile focus group -** July 2018. The trails to the east and west of the CVT West will likely develop before the CVT West, leaving a gap in the network for through cyclists. In order to determine the safest and most enjoyable on-road connector route between the Enola Low Grade Trail and future CVT Extension, the project team partnered with Bike Chester County to ride two potential on-road interim alignments with experienced cyclists.

   Key takeaways: Rural roads with picturesque scenery and little traffic are optimal for on-road cycling routes, even if they are not the most direct routes. Heavily trafficked roads without bike lanes should be avoided. Hilly routes are not a problem for experienced cyclists, but very steep and long climbs should be avoided. Refer to page 126 for the recommended interim alignment.

Technical Coordination Meetings. The project team met with various agencies including Pennsylvania Department of Transportation (PennDOT), Chester County Department of Facilities and Parks, and Chester County Department of Community and Economic Development to work through issues related to operations, safety and maintenance.

Property Owner Coordination Meetings. Upon identifying a recommended alignment, the project team reached out to key property owners who could potentially be impacted by the project. Property owners were overwhelmingly supportive of the project and willing to work with future trail development efforts.

Project Website. A project website was launched in July 2017. It served as a source of information about the project, a venue for the public to provide comments on the project or request additional information, and a place to find out about upcoming project-related events. The project website can be found at this URL: http://www.chescoplanning.org/transportation/cvtw.cfm.

CCPC staff, members of Bike Chester County and other experienced cyclists trialled two different routes that could serve as an interim cycling connection between the CVT Extension to Downingtown and the Enola Low Grade Trail.

Feasibility Study

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Physical Inventory and Assessment

Natural and man-made conditions within the study area affect trail alignment location and/or the type of trail facility that could feasibly be developed. The following maps and corresponding narratives evaluate these conditions and resulting impacts to trail alignments that result from existing conditions are discussed within the Alignment Alternatives Evaluation section found later in this chapter.

Aerial view of the Downingtown area.

Existing Land Use

The project study area is quite large, and land use patterns vary significantly from one end to the other. In general, the eastern portion of the study area is more densely developed than the western end. Dense suburban development dominates the eastern portion while agricultural uses and lower density suburban development form the primary land use patterns in the west.

Urban centers are spaced relatively evenly area along the Amtrak Keystone Corridor within the 15-mile-wide study area. Dense urban development - both commercial and residential - exists in Coatesville City, whereas the boroughs of Downingtown, Parkesburg and Atglen are less dense urban centers. The majority of commercial uses and residential developments are located along Amtrak's Keystone Corridor and Business Route 30 (also known as Lincoln Highway) which both run the length of the study area.

Downtown Coatesville

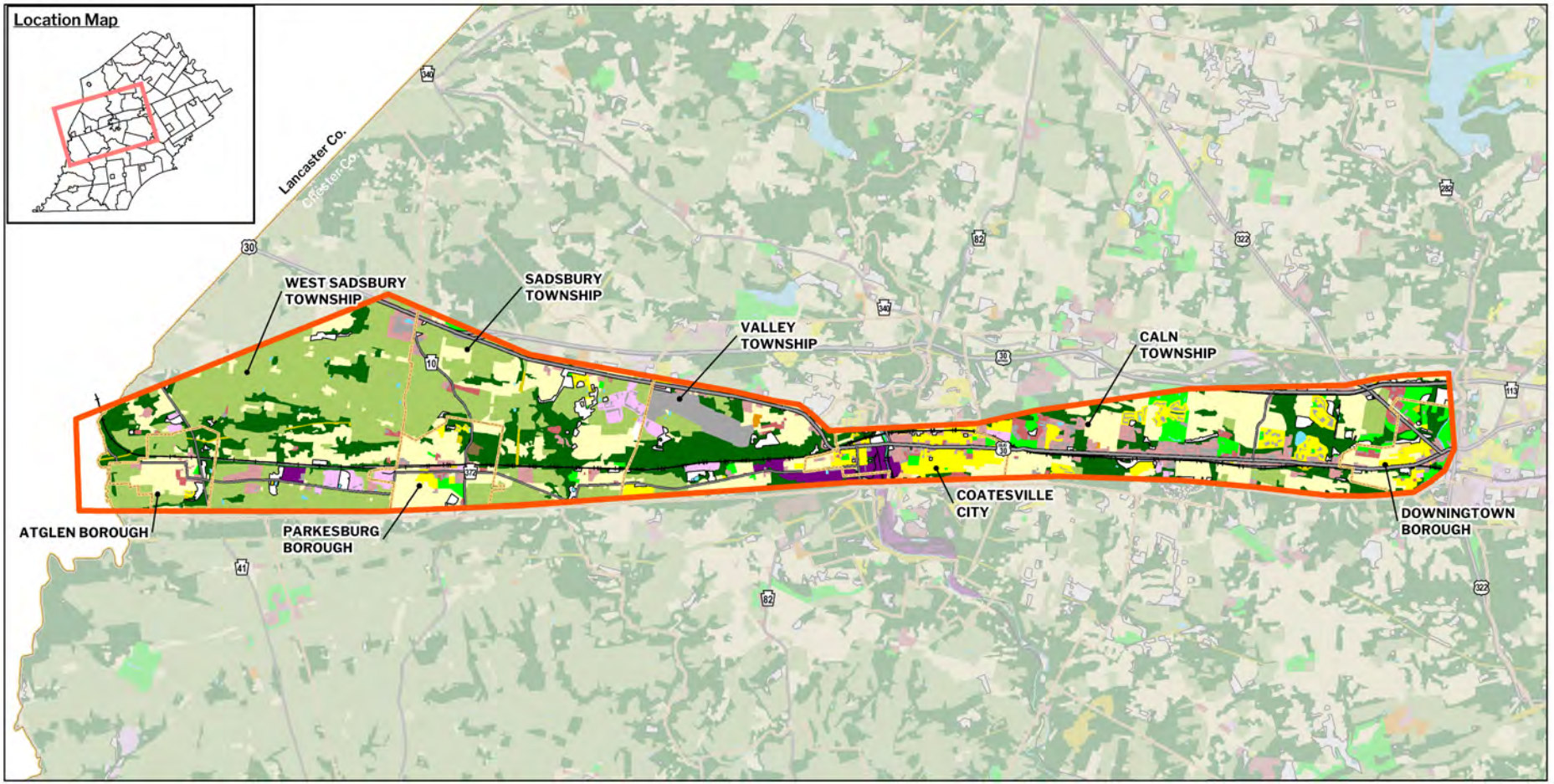
Additional noteworthy land use patterns include:

- A recreation hub in Downingtown Borough that features several municipal parks, the Struble Trail, and the east branch of the Brandywine Creek;
- Significant wooded areas along the north side of the Chester Valley (which correspond to areas of steep, undevelopable slopes); and
- A significant heavy manufacturing facility in Coatesville.

The scenic Buck Run winds through Bert Reel Park in Sadsbury Township

The variation in land uses presents both opportunities and constraints to trail development; although there is little to no space where a multiuse trail could be developed in urbanized areas, the variety these urban centers provide can also create a unique and memorable experience for trail users.

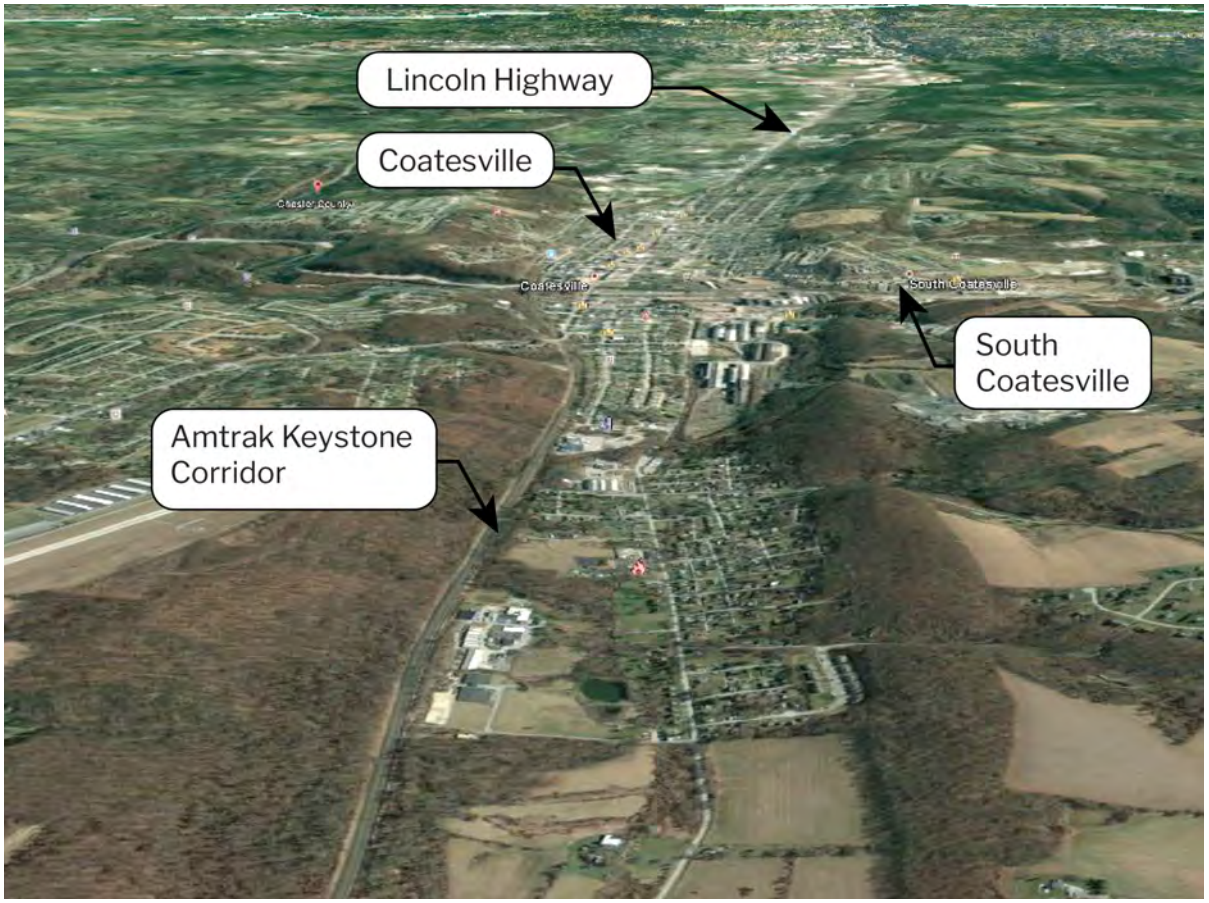
Existing Land Use (2015)



Data source: Delaware Valley Regional Planning Commission

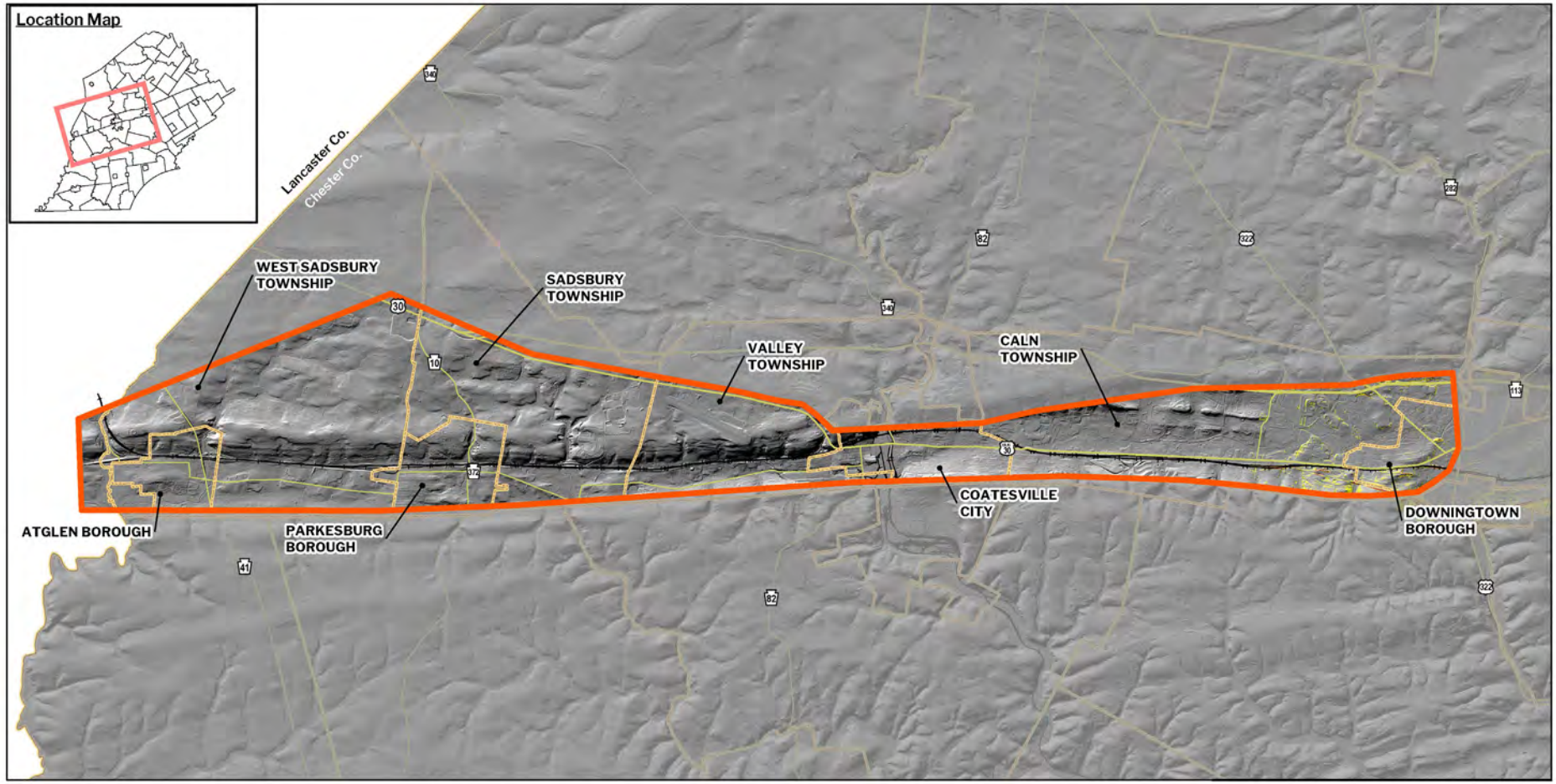
Topographic Features

The Chester Valley is the study area's primary topographical feature. The eastern end of the study area lies mostly within the valley floor. Moving west, the valley narrows and the "walls" to the north and south become steeper. Significant grade changes present a constraint to development of a multiuse trail as slopes greater than 5% may preclude some users from being able to use the trail.



View of the Chester Valley looking east from Valley Township. The steep walls on either side of the valley floor are wooded and undevelopable. Source: CONNECTExplorer pictometry

Topographic Features



Data source: Chester County Planning Commission

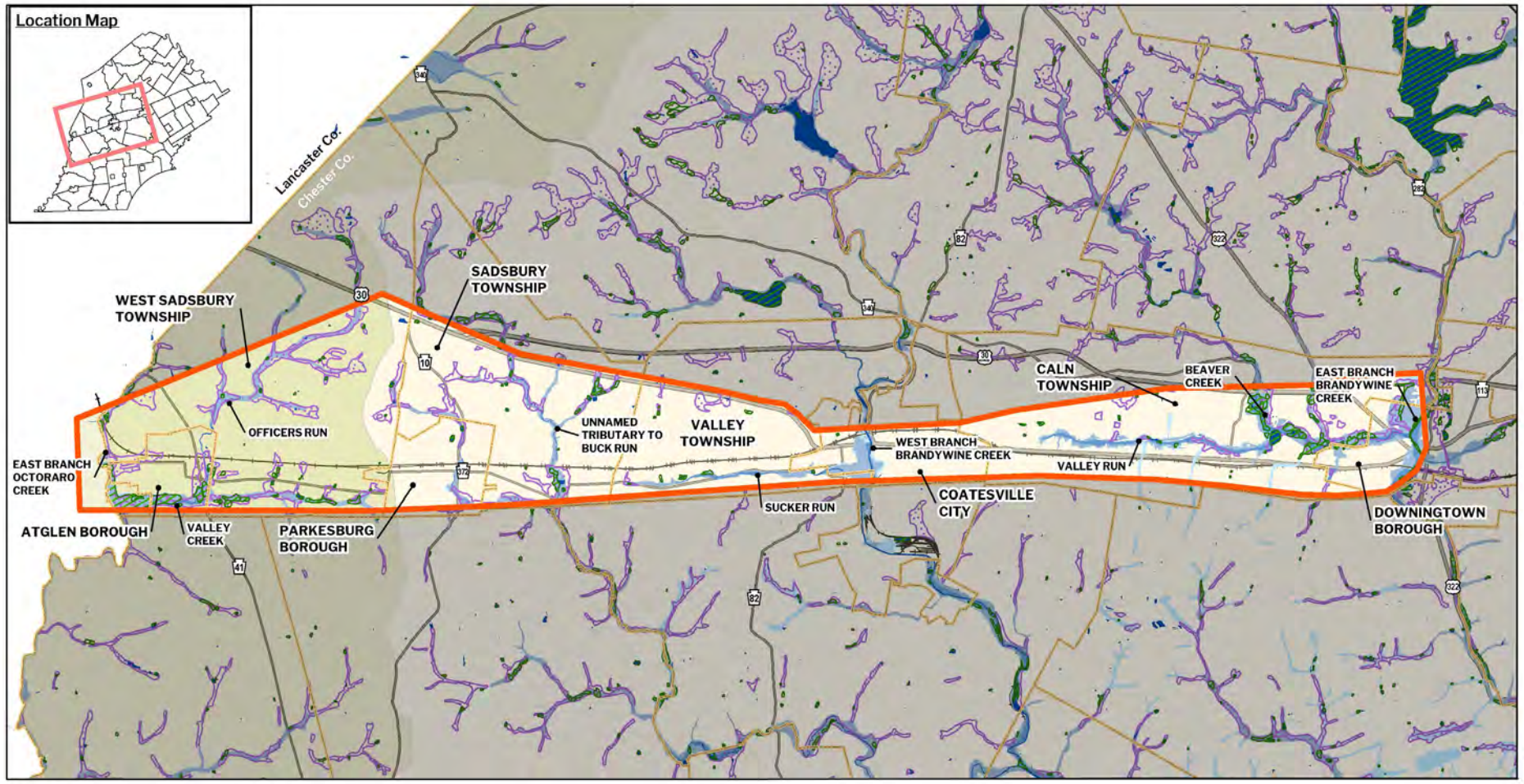
Hydrologic Features

Water features like streams and lakes can serve as points of interest along trails and provide scenic views. However, crossing water bodies, hydric (wet) soils or wetlands generally raises project costs and can have negative environmental impacts.

All creeks and streams within the study area flow into either the Octoraro Creek or the Brandywine Creek, the two main water bodies that flow through the study area. Several smaller creeks run along the floor of the Chester Valley, including Valley Creek, Sucker Run, Valley Run, and Beaver Creek. Significant known wetlands exist in West Sadsbury Township and Atglen Borough along the banks of Valley Creek, as well as in Caln Township and Downingtown Borough along Beaver Creek and the east branch of the Brandywine Creek. Other wetlands that do not appear on this map likely exist, especially along Valley Run in Caln Township and tributaries to Valley Creek in West Sadsbury Township.

The west branch of the Brandywine Creek in Coatesville is both a scenic amenity and barrier to trail route planning since there is only one existing crossing of the creek within the study area.

Hydrologic Features



Data source: Chester County Planning Commission

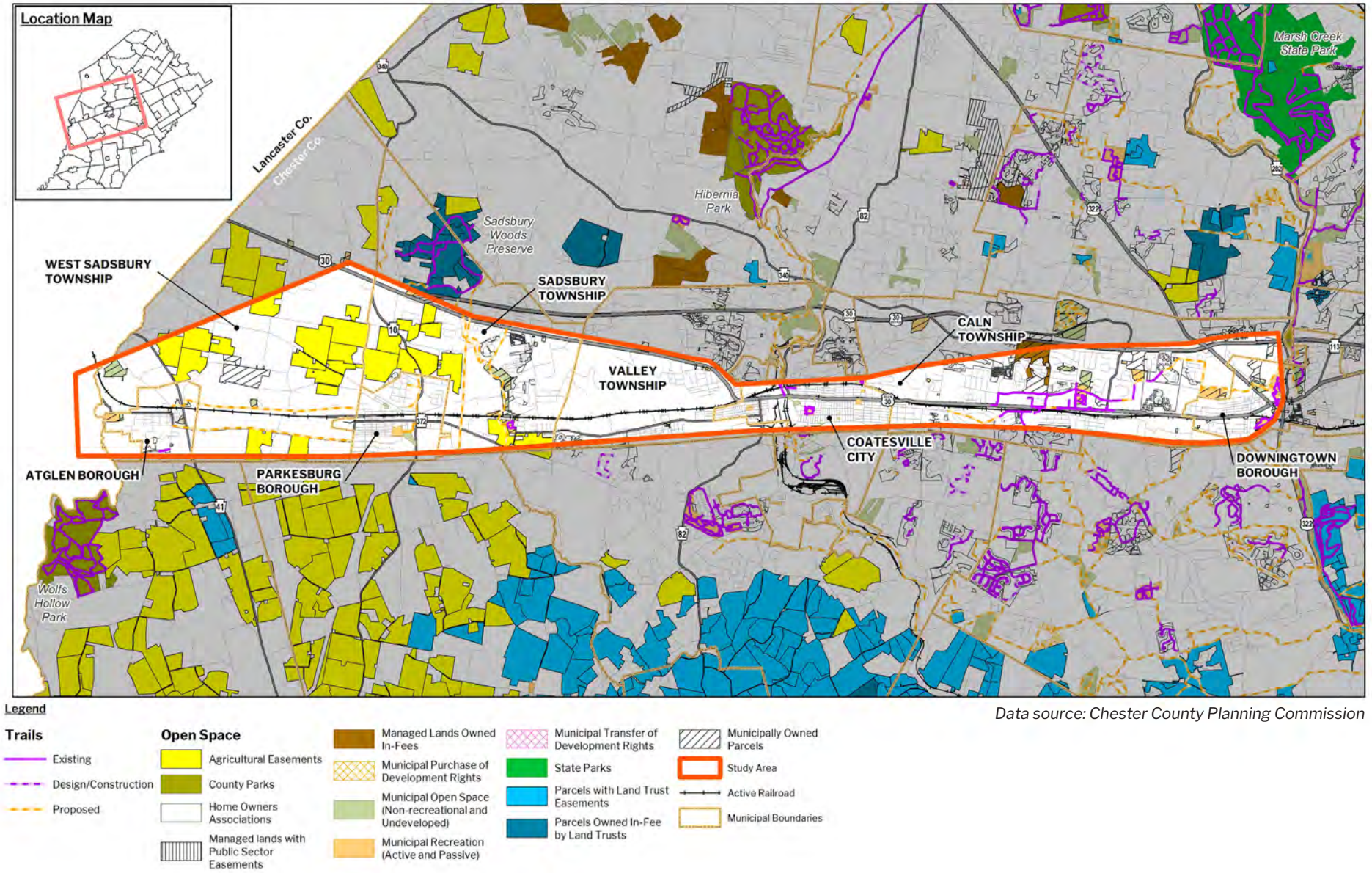
Open Space and Recreation Features

The Chester Valley Trail (CVT) will serve as the main spine of a regional recreation network that connects nearby open space and recreation assets. Accordingly, the project team identified existing open space and recreation nodes in order to understand how best to connect them.

- **Trails**. The eastern end of the study area features several non-contiguous surfaced trails and bicycle facilities including: the GO Carlson Boulevard path; the Johnsontown Park trail system in Downingtown; the short but popular Coatesville River Walk; and bike lanes along Lincoln Highway between PA 82 in Coatesville and the Thorndale train station. No public surfaced trails currently exist in the western end of the study area.
- **Public Open Space**. Several parks and preserves are sprinkled throughout the study area. These parks feature amenities such as playgrounds, sports fields and pavilions and serve as civic focal points within their communities. Sadsbury Woods Preserve, a 508-acre nature preserve with over five miles of wooded hiking trails, lies north of the study area in Sadsbury and West Caln Townships. Additionally, Wolf's Hollow County Park is located just south of the western end of the study area in West Fallowfield Township and is a primary recreation destination for those in western Chester County.
- **Protected Farmland**. Farmland preserved in perpetuity by agricultural easements presents both an opportunity and constraint to trail development. Trails that pass by protected farmland benefit from the pastoral views and sense of place they provide, but the Pennsylvania Agricultural Security Area law currently prohibits trails from passing through these lands. Significant tracts of protected farmland are found in the western part of the study area. Whether farmland is protected or not, conflicts between trail activity and farm operations could also arise.

Wolf's Hollow Park in West Fallowfield Township just south of the study area.

Open Space and Recreation Features



Data source: Chester County Planning Commission

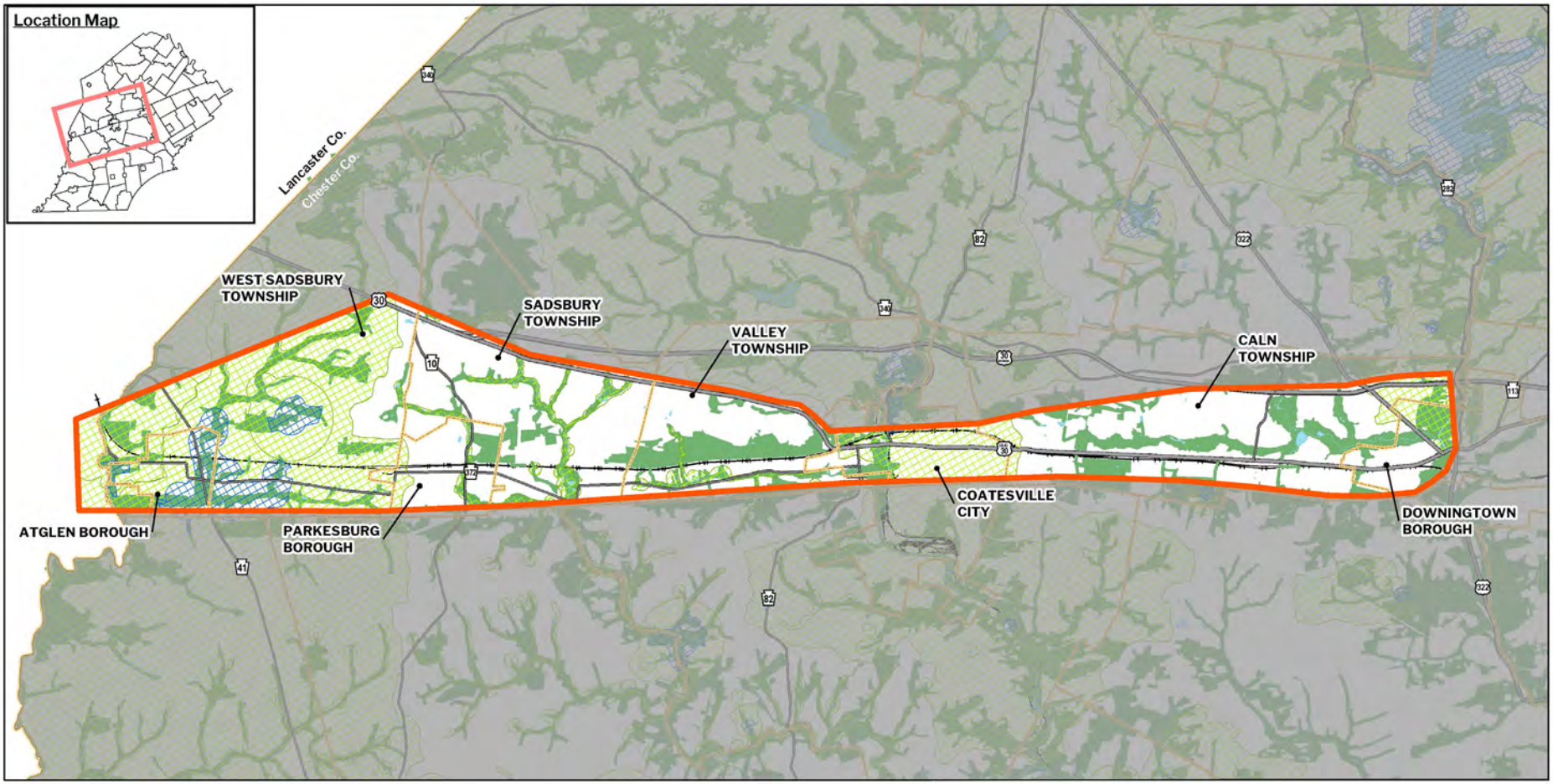
Natural Heritage Features

Areas indicated as “core species habitat” are locations where the state of Pennsylvania has found rare, threatened or endangered plant or animal species. Those areas shown as “supporting habitat buffer” indicate where the species of concern could be found or areas to which the species could travel or spread from its core habitat area. Disturbance within these areas, particularly within a core species habitat area, can adversely affect these sensitive species and can complicate the construction permitting process.

Natural heritage areas are cataloged within the Chester County Natural Heritage Inventory. The entire western end of the study area is included within the supporting habitat buffer for a threatened species. A Pennsylvania Natural Diversity Inventory (PNDI) Environmental Review of the entire project study area can be found in the appendix of this report.

The land adjacent to the Octoraro Creek in Atglen’s future Borough park are home to a threatened plant species.

Natural Heritage Features



Data source: Chester County Planning Commission

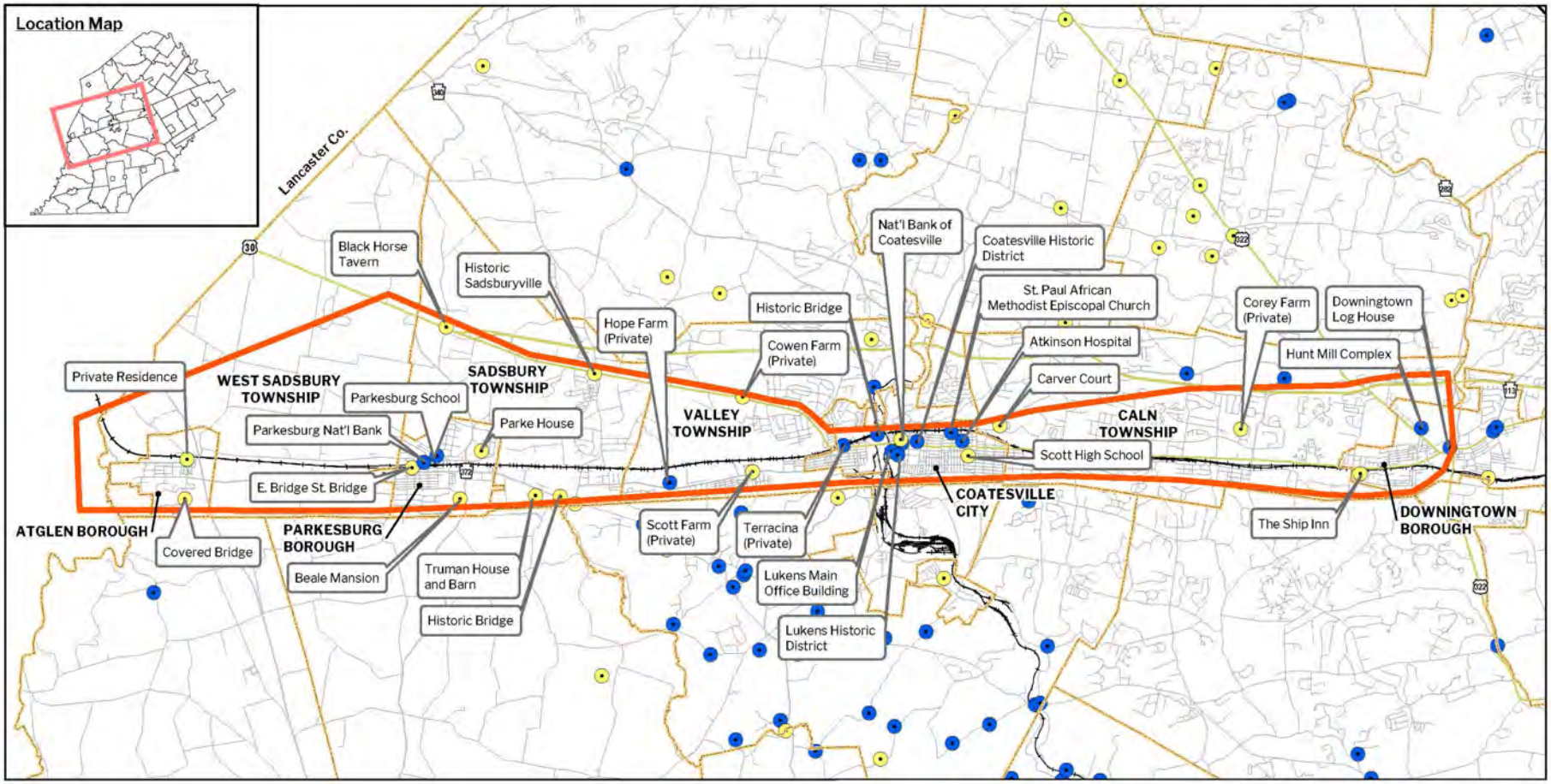
Historic and Cultural Features

Historic and cultural sites contribute to a sense of place along trails and help to forge connections between people and place. Users of the existing CVT report that interpretive signage along the trail enhances their experience and provides a deeper understanding of the place through which they are passing.

The majority of historic and cultural sites within the study area are concentrated in urban centers with the highest concentration in the City of Coatesville. Additional resources are located along major roads like Lincoln Highway and Route 372 outside of the urban centers. As the CVT continues west through the Chester Valley, the primary narratives told along the existing CVT can be carried through, as well. These include stories relating to agriculture, transportation and industry. In addition to these themes, stories relating to race and equality can also be highlighted along the CVT West corridor. More information on signage locations and interpretive themes can be found in the Master Plan section of this report.

Lukens Historic District in Coatesville

Historic & Cultural Features



Data source: Chester County Planning Commission

Legend

Historic Resources
- Locally Recognized
- Nationally Registered

- Study Area
- Active Railroad
- Municipal Boundaries

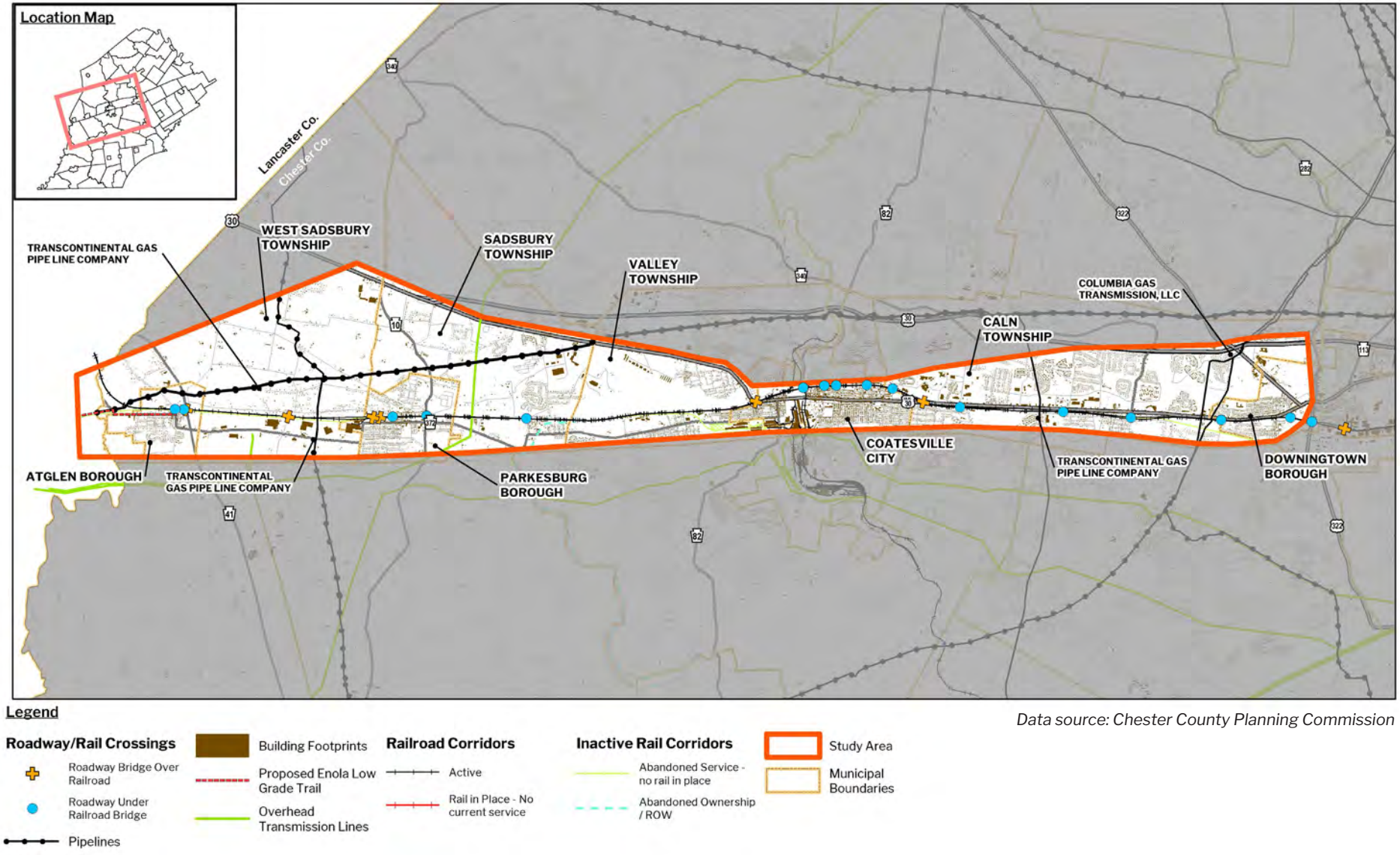
Infrastructure Features

Many infrastructure elements, such as roads, rail lines and utility rights-of-way, create continuous corridors along which a trail could be considered for trail development. However, they can also serve as physical barriers to trail development.

- **Active Rail**. The Amtrak Keystone Corridor, the active rail corridor that runs transversely through the study area, is the most significant infrastructure element for the purposes of this study. It forms a straight, unbroken corridor that follows the shortest distance across the study area - typically a positive attribute for co-locating an off-road trail. However, if the trail were not co-located with the Keystone Corridor, it presents a physical barrier to trail development as there are limited locations to cross the tracks.
- **Inactive Rail**. Inactive or abandoned rail corridors often present the greatest opportunity for trail development as they are relatively flat and separated from vehicular traffic. Two abandoned rail corridors were identified within the study area: (1) the portion of the Enola Low Grade line that extends into Parkesburg Borough from the Lancaster County line, and (2) a single track that parallels the Keystone Corridor in Valley Township and terminates at the steel plant in Coatesville.
- **Major Roads**. Lincoln Highway (Business Route 30) travels the length of the study area. The US 30 Bypass is the only expressway within the study area and mostly lies to the north of the study area.
- **Utility lines**. Several gas pipelines and overhead electric transmission lines cut through the study area. These features do not create continuous corridors since they pass over or under streams and major roads and regularly cross residential properties.

The Amtrak Keystone Corridor bisects the study area into northern and southern halves.

Infrastructure Features



Data source: Chester County Planning Commission

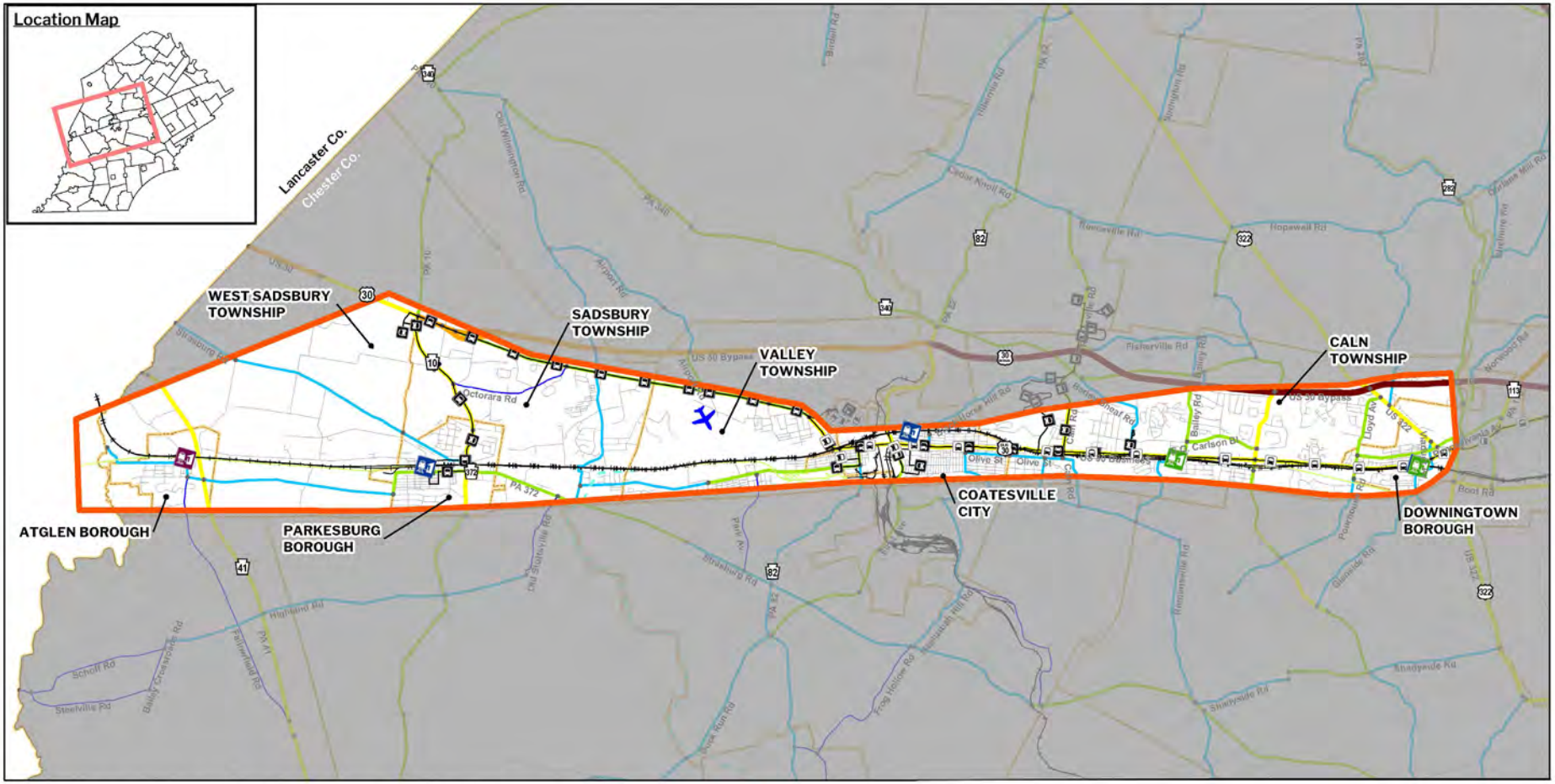
Transportation Features

As this trail will be part of a multimodal transportation network, the project team inventoried and analyzed other transportation features within the study area.

- **Roadways**. US 30, PA 41, PA 10, Business Route 30 (Lincoln Highway), Caln Road, PA 340, and US 322 are the most heavily traveled roads. Of these, PA 41 presents the greatest barrier to trail development as there are only three existing locations to cross this road, which carries substantial truck traffic.
- **Rail Service**. SEPTA and Amtrak serve the study area along Amtrak's Keystone Corridor, though the current westernmost terminus of SEPTA's regional rail service is Thorndale station. Major improvements are planned for the Downingtown, Coatesville and Parkesburg rail stations within the next decade, including increased parking. SEPTA has studied the feasibility of extending service to Atglen, though their 2012 Atglen Station Concept Plan indicates it would likely be several decades before this would potentially happen.
- **Bus Service**. Two bus lines serve the study area: (1) the Coatesville Link, which provides service between Parkesburg and the Brandywine Hospital via Coatesville and the Walmart shopping center in West Sadsbury Township, and (2) Krapf's A bus line, which travels between the Exton Square Mall, West Chester, and Coatesville.
- **Multiuse Trails**. The popular Struble Trail is located at the easternmost end of the study area in Downingtown. This trail runs in a north-south direction and links Downingtown Borough to Marsh Creek State Park. Additionally, the planned alignment for the future CVT extension along the former Philadelphia and Thorndale rail corridor also extends into the eastern part of the study area and terminates near Thorndale. When complete, this portion of the CVT will likely be the focal point of the County's trail system. Few other multiuse trails exist within the study area, though a north-south route connecting Coatesville, South Coatesville and Modena is planned.
- **Airport**. The Chester County Airport is located near the center of the study area.

Business Route 30 in Caln Township is one of the more heavily traveled roads in the study area.

Transportation Features



Data source: Chester County Planning Commission

Summary of Opportunities and Constraints

The following findings from the project team's existing conditions analysis summarize the primary opportunities and constraints for the development of a multiuse trail:

- Areas that are already densely developed may constrain the development of a multiuse trail, though these urban areas could also positively contribute to trail experience.
- Because of the steep topography of the Chester Valley, the area within the valley floor presents the most opportune location to develop a multiuse trail.
- Municipal parks present opportunities for trail connections, whereas preserved farmland should be avoided.
- The urban centers contain the highest concentration of historic and cultural resources and present significant opportunity for trail-side interpretation.
- The Keystone Corridor presents a physical barrier to trail alignments that switch from one side of the tracks to the other since crossing locations are limited. However, a trail alignment parallel to the Corridor could potentially take advantage of its separation from vehicular traffic and straight, unbroken nature.
- Public transportation is currently not available west of Parkesburg.
- There are few existing multiuse trails, none of which are located within the western half of the study area.

Potential Facility Types

The primary goal of the CVT West study is to identify an alignment where a multiuse connection between the future Downingtown Extension of the CVT and the Enola Low Grade trail could feasibly be constructed. Refer to the description below for the design requirements of multiuse trail facilities.

Multiuse trails are relatively straight-forward to develop if a continuous corridor is available (such as an abandoned rail line). However, this study could not identify a feasible continuous, uninterrupted corridor for multiuse trail construction, so the ultimate alignment will likely include segments that are not designed and built to a multiuse standard. The following descriptions highlight the bicycle and pedestrian facility types that this study recommends for segments of the trail where a multiuse facility cannot be accommodated. The recommended facility type for each trail segment is included within the Master Plan section of this report. Most of these facility types are found within Chester County's Multimodal Handbook. Here they are listed in order of their inclusiveness for all user groups and therefore their desirability.

Multiuse Trail

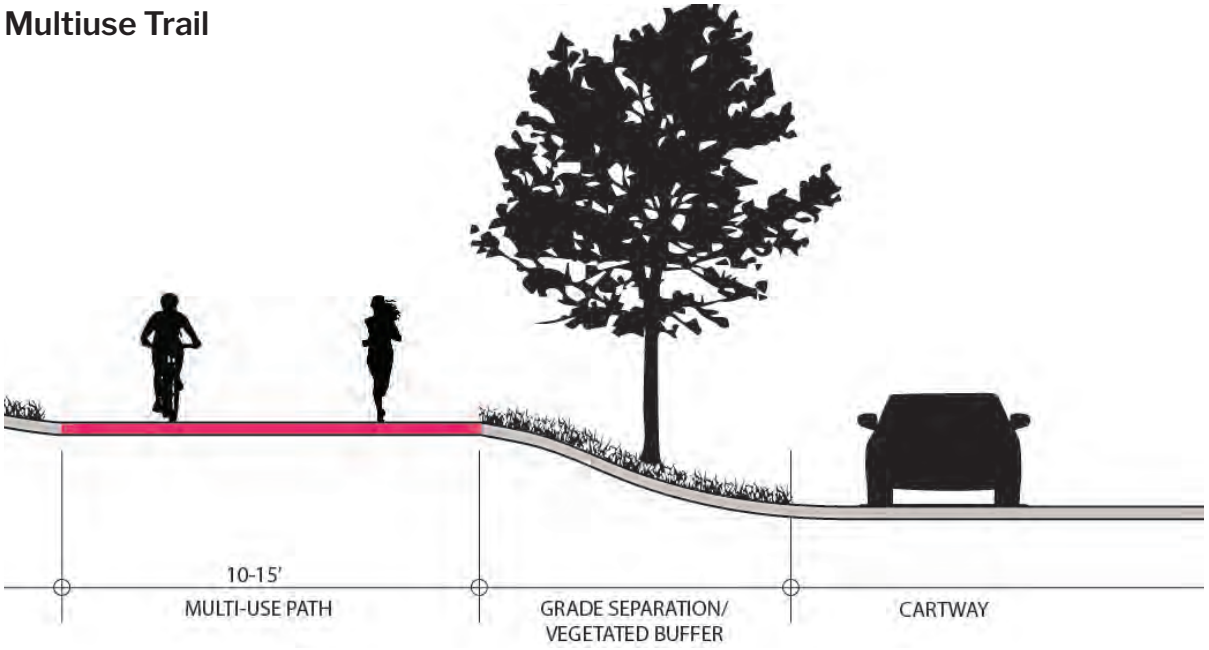
Multiuse trails are off-road facilities intended for pedestrians and cyclists. They can accommodate the widest range of users including children, senior citizens and individuals with disabilities.

Key Features:

- 10-15' wide, 8' minimum width in spatially constrained or environmentally sensitive areas
- Typically have a hard surface such as asphalt or compacted gravel
- Slopes less than 5%

The existing 14-mile section of the Chester Valley Trail is built to a multiuse standard.

Multiuse Trail



Curbless Street

A roadway design that encourages all transportation modes to share the right-of-way. These very low volume, low speed streets or alleys typically already operate as a shared street between pedestrians and vehicles and are codified as shared spaces through visual cues like signage, improved paving and beautification. Curbless street improvements have been shown to increase pedestrian and bicyclist safety and reduce crime. Many curbless streets also contain green infrastructure for stormwater management.

Key Features:

- Volume of pedestrians and cyclists is typically greater than volume of vehicles
- Use higher quality paving materials
- Feature well-defined entrances and gateways
- May contain traffic calming features such as a non-linear travel path
- Only a permissible design treatment on locally-owned streets

Photosimulation of Maple Street in Parkesburg after potential curbless street improvements.

Maple Street in Parkesburg - current conditions.

Split Mode with Dedicated Bike Facility

Improvements of this kind are divided into two different types within the Master Plan section of this report:

Parking-Protected Cycle Track

Facility exclusively for cyclists that is constructed within the existing roadway and allows for two-way bicycle traffic. The facility is situated between the sidewalk and the on-street parking lane, which serves to buffer the facility from the travel lane. A barrier - either striped or physical - separates the cycle track from the on-street parking lane. Pedestrians use adjacent sidewalks.

Note: These facility types are not currently allowed under the Pennsylvania Vehicle Code. Efforts are currently underway to amend the Code, though these facility types would only be a viable option if the changes were made. More information can be found on page 76 in the Master Plan section of this report.

Key Features:

- 12' wide for two-way cycle track
- 18" clear "door zone" between cycle track and on-street parking lane that includes striping, flexible delineators, and/or curbing
- Separated from pedestrian traffic on sidewalk through visual cues like signage or paint, or through physical barriers like a planting strip or curbing

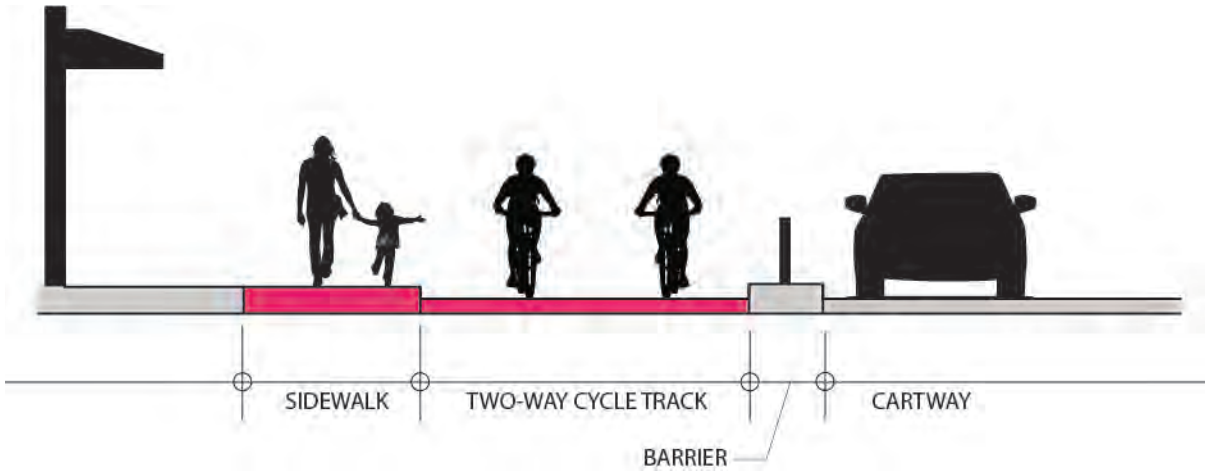
Parking-Protected Bike Lane

Similar to the bike lane facility described on the following page, these are designated travel lanes for exclusive use by bicyclists within the cartway or along the road shoulder. Whereas typical bike lanes are located between the vehicular travel lane and the on-street parking lane, parking protected bike lanes are located between the sidewalk/curb and the on-street parking lane. This provides an extra barrier between bicycle traffic and vehicular traffic. Pedestrians use existing sidewalks.

Key Features:

- 5' wide, one-directional lanes
- 18" clear "door zone" between bike lane and on-street parking lane that includes striping, flexible delineators, and/or curbing
- Separated from pedestrian traffic on sidewalk through visual cues like signage or paint, or through physical barriers like a planting strip or curbing

Parking-Protected Cycle Track

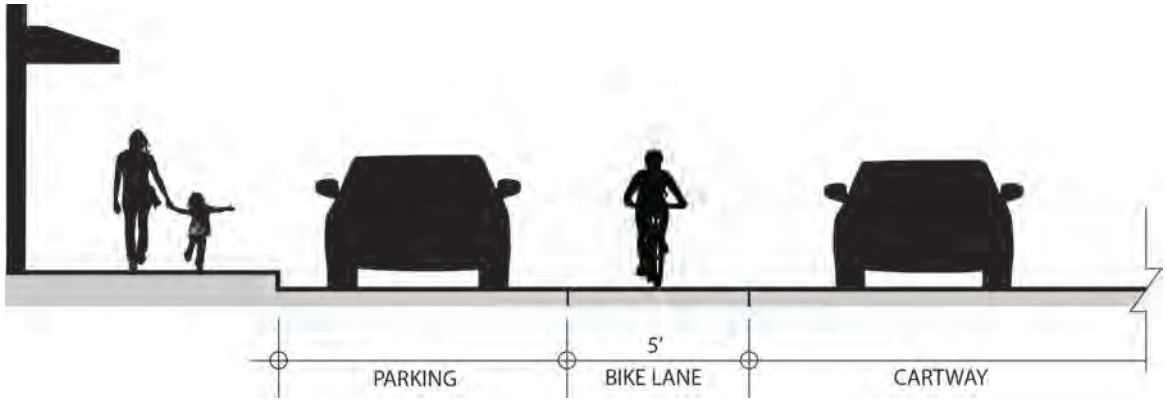


Bike Lanes

Designated travel lanes for exclusive use by bicyclists within the cartway or along the road shoulder. Bike lanes typically involve a combination of supplemental indicators including “Share the Road” signs and other pavement markings. Pedestrians use adjacent sidewalks. Bike lanes already exist within the study area and are a recommended treatment only as part of the interim recommended on-road alignment.

Key Features:

- 5’ wide, one-directional lanes
- 18” striped “door zone” between bike lane and parking lane, where possible and applicable
- Continuation of striping through intersections to increase visibility
- Painted bike legends to improve lane visibility and enhance motorists’ awareness of cyclists
- “Share the Road” signage



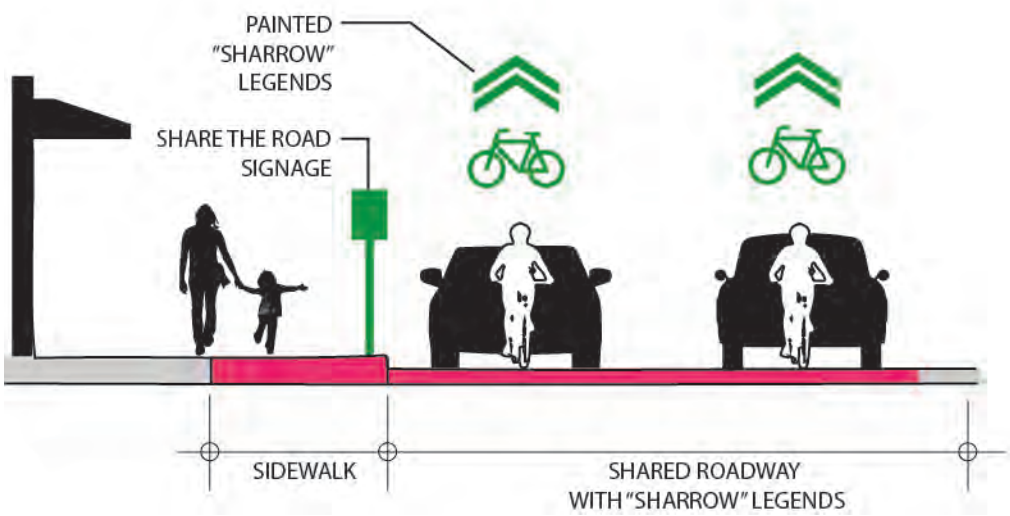
Existing bike lanes along Route 30 in Thorndale. Photo credit: Amanda Lozinak.

Split Mode with or without Existing Sidewalk

Existing roadways that accommodate both vehicular and bicycle traffic within the same travel lane. Use only where the speed limit is 35 mph or less. Pedestrians use sidewalks, whether they exist or need to be constructed. This report proposes installing sidewalks along the recommended alignment where they do not exist to accommodate safe use by pedestrians.

Key Features:

- "Share the Road" signage at regular intervals
- Painted "sharrow" legends on the road surface at regular intervals
- Wide (12-15') outside travel lanes where possible to accommodate passing
- Paved and striped shoulders where possible
- Sidewalks 5' minimum width and 8' minimum width in urban areas
- Streetscape elements such as lighting, benches and planters to enhance pedestrian experience



Signed Bike Route

The designation of a preferred route for cyclists' use that provides wayfinding guidance to cyclists. These facilities provide the lowest level of accommodations for bicycle traffic and are accordingly used predominantly by confident and experienced cyclists.

Key Features:

- Recommended treatment for interim route only to create a safe on-road cycling connection between the Enola Low Grade and Chester Valley Trail.
- CVT branded signage along existing roadways to provide wayfinding to cyclists and to raise motorists' awareness of bicycle traffic
- Minor improvements to the roadway such as striping or improving shoulders can enhance cyclist safety

Trail Usage

The type of trail facility that is provided determines the activities and user groups that it will support. The following chart indicates the type of users and primary activities that each facility type described in the previous section is best suited to accommodate. Additionally, the chart includes implications for the facility type's application as part of the Chester Valley Trail West alignment.

Facility Type	Type of User	Primary Uses	Implications
Multiuse trail	· All ability levels· · Children and teens, families, seniors, fitness-seekers	· Recreation and fitness · Local and regional transportation	Locate trail or access points near population centers for easy and walkable access. Segments do not need to be very long but should be scenic destinations.
Curbless Street	All ability levels: children and teens, families, seniors	Connector route to multiuse trails for recreation and fitness	Locate on locally-owned very low volume streets or alleys that directly connect to a multiuse facility
Protected cycle track/bike lane with sidewalk	· All but the least confident cyclists · Shoppers and those making local trips on foot will use sidewalks	· Local transportation · Connector route to multiuse trails for recreation and fitness	For use in areas with on-street parking. Connect population centers to nearby multiuse facilities.
Bike lanes	· Moderately and very confident cyclists · Sidewalks for use by pedestrians making very local trips	· Local transportation · Connector route to multiuse trails for recreation and fitness	For use on higher volume, higher speed roadways that are wide enough to accommodate this facility type.
Shared Road	· Moderately and very confident cyclists · Sidewalks for use by pedestrians making very local trips	· Local transportation · Connector route to multiuse trails for recreation and fitness	Use on low volume, low speed roadways where right-of-way is not sufficient to accommodate separated bike facilities.
Signed Bike Route	· Confident cyclists · No pedestrian accommodations	· Regional transportation/ recreation · Connector route to multiuse trails	Use only as an interim solution to create continuity between two existing multiuse trails.

Trail Alignment Alternatives Evaluation

Methodology

Based on input from project stakeholders and accepted trail design principles, the following criteria were used to assess the physical and legal feasibility of all trail alternatives studied:

- **Safety**. The safest alignments provide the greatest amount of separation between trail users and vehicular traffic. Alignment alternatives that provide fewer at-grade road crossings and the most separation between pedestrian and vehicular traffic were considered most favorable.

In addition to vehicular safety concerns, crime and the perception of crime surfaced as concerns through the public engagement process. In areas where the public voiced such concerns, alignments that are more visible and populated were considered more desirable than less visible routes.

- **Continuity**. Maintaining a continuous multiuse trail standard to match the facility type of the existing Chester Valley Trail (CVT) was an important factor. Multi-use trails accommodate users of all ages and abilities and are universally ADA accessible. Where multiuse trails are not feasible, "straight-shot" alignments that require the fewest number of turns, crossings and wayfinding were viewed as more preferable.

- **Connectivity** – The ability to connect the trail alignment to existing trails, parks and other destinations identified through the public participation process was a significant consideration. Trails that are circuitous or do not offer direct routes to key destinations may not only deter trail use but may also result in additional trail development costs due to increased length. Trails with limited connectivity can cause users to deviate from the trail and use roads and sidewalks that are less desirable for pedestrian and bicycle use. Routes that provide the most connectivity to adjacent or nearby attractions such as schools, parks and local businesses provide for a pedestrian-friendly place and increase the potential for trail related economic development opportunities.

- **User Experience** – A trail's ultimate success is closely tied to its users' experience. A trail that is noisy, has unpleasant views, or feels unsafe may exclude recreational users and families and only attract those who use it for transportation. Alignments that traverse the most scenic environments were considered more favorable, as were routes that efficiently and safely create direct routes to key destinations and separate trail users from vehicular traffic.

- **Potentially Affected Privately-Owned Land** – The number of potentially impacted privately-owned parcels was considered with each alignment. Generally, the fewer impacted parcels a trail alignment requires, the more feasible that alignment will be to develop. Assembling multiple land acquisitions to form a continuous trail requires legal administration, acquisition costs and time.

- **Economic Benefits** – Multiuse trails, especially long-distance trails that connect trail users to local businesses, can offer significant economic benefits to communities. These trails bring new users into the community to eat, shop, and potentially stay overnight, generating revenue for existing local businesses and enticing new businesses to open to meet these needs. Trail alignments that pass directly through existing central business districts present the greatest opportunity to provide economic benefits and were preferred over those which offered only long or cumbersome connections to central business districts.

- **Environmental and Cultural Impacts** – Important environmental or cultural features along a trail can enhance a user's experience by providing interest and destinations along the trail. Alignments that feature nearby environmental or cultural features are preferable, whereas routes that directly impact these areas, such as sensitive environments like wetlands or historic properties, should be avoided.

Alignment Alternatives

Several planning documents have proposed preliminary alignments for the CVT West, including several municipal comprehensive plans and the Route 30 Multimodal Transportation Study (see page 16: Plans Reviewed). These alignments were reviewed as part of this study, as well as many more that were identified through the public engagement process, input from the project's Steering Committee, review of existing GIS information, and field reconnaissance.

The entire study area spans over 15 miles; therefore, to show adequate detail, the alignment alternatives that follow are presented by municipality starting at the eastern end of the study area. More alignments than those shown on the following maps were studied, but only those alignments believed to be the most feasible are shown and discussed.

Additionally, each trail segment is color-coded based on the type of facility the project team believes would be feasible in that location. Facility type is perhaps the most important factor in determining the relative preference for each segment as this project's primary goal is to identify a route where a continuous multiuse trail could feasibly be developed.

Downingtown

Recommended Alignment

The recommended alignment through Downingtown is the predominantly multiuse Beaver Creek alignment as shown on the opposite page. This trail would connect to the southern terminus of the Struble Trail. The following points summarize the opportunities and constraints of this alignment.

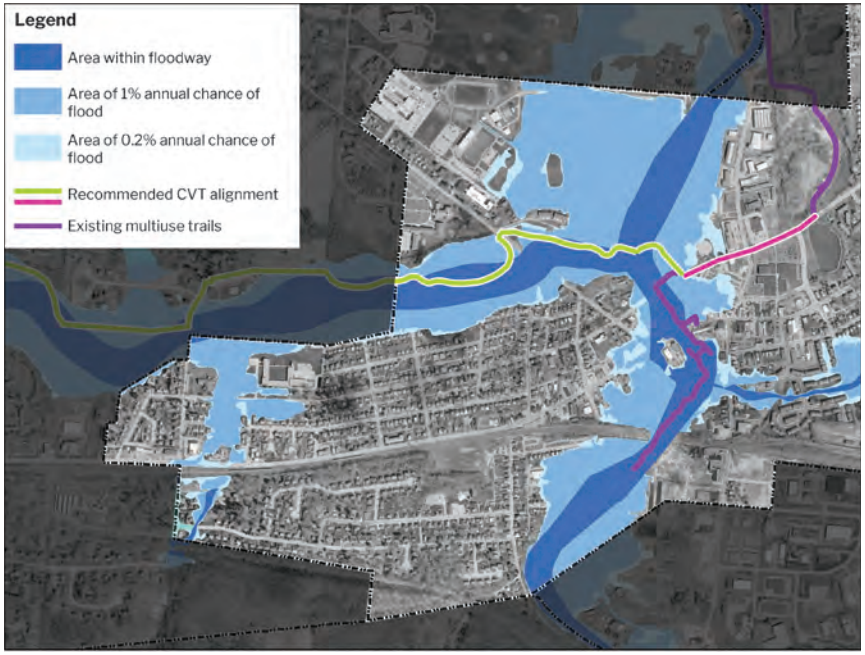
- Alignment provides a continuous, off-road multiuse trail with the exception of a short on-road segment along Pennsylvania Avenue
- Pennsylvania Avenue segment has existing sidewalks and is wide enough to accommodate bike lanes
- Provides connections between Downingtown's parks and recreation facilities and is easily accessible to central business district
- A new pedestrian bridge over the Brandywine Creek, although costly, would contribute to a scenic trail experience
- Wetlands and/or hydric soil conditions between the Brandywine Creek and Manor Avenue could necessitate special trail design considerations or potentially re-routing the alignment
- An at-grade crossing of Manor Avenue (Route 322) would be required
- No direct impacts to private property

Other Alignment Studied

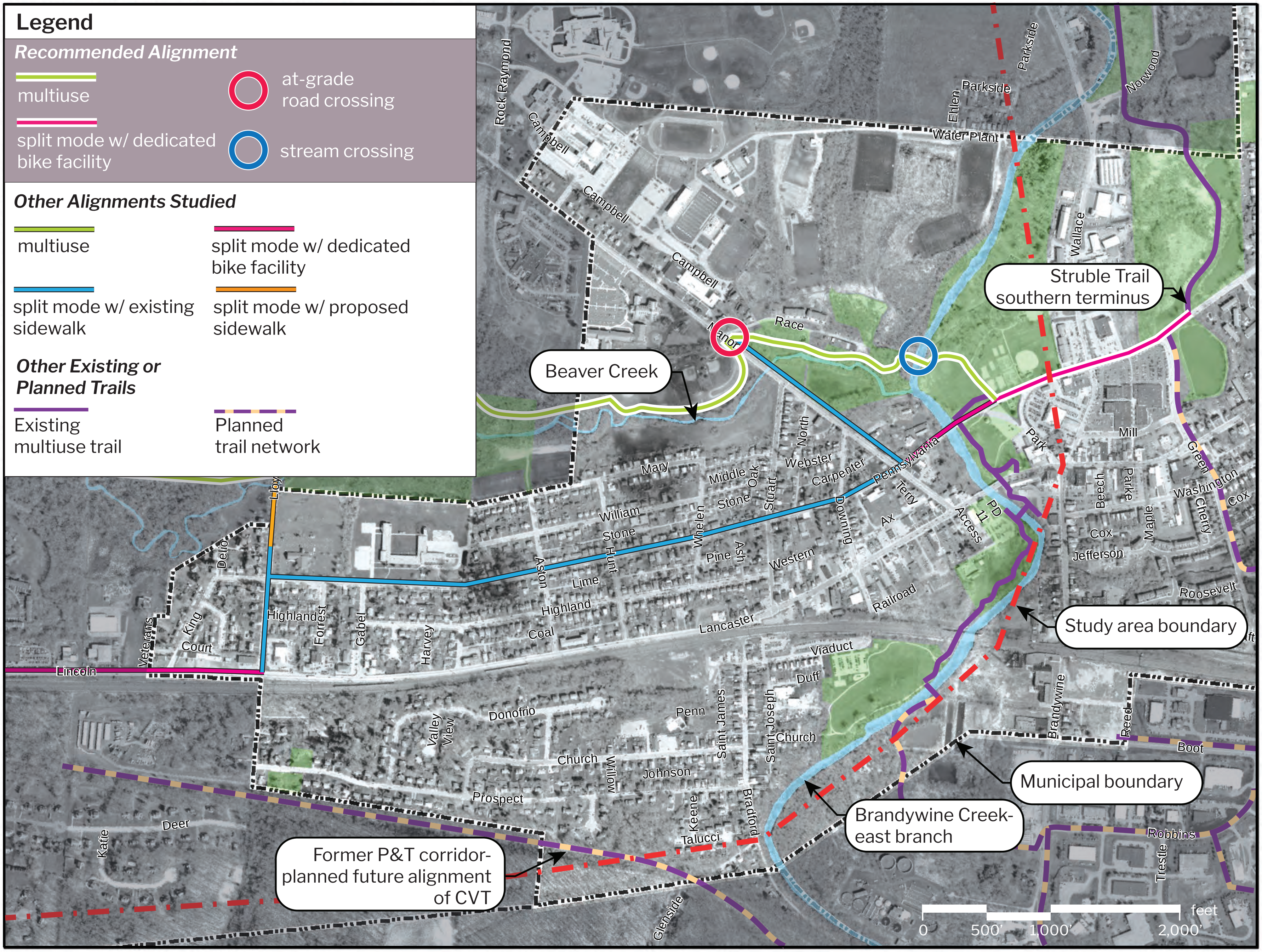
If the Beaver Creek alignment is determined to be infeasible, an on-road route along Pennsylvania Avenue should be considered. West of the Brandywine Creek, the existing cartway is not wide enough to accommodate bike lanes, but this street sees low traffic volumes and speed and has existing sidewalks. Lloyd Avenue could serve as a connector between the Beaver Creek trail or South to Route 30, where bike lanes could be continued east from their current terminus at the Thorndale train station.

Although development costs would be relatively low, novice cyclists, including seniors and children, may not feel comfortable riding on the road. This trail alignment would serve primarily as a connector to segments with more recreational value rather than as a recreational asset itself.

Pennsylvania Avenue



The recommended alignment passes through floodways and flood plains in Downingtown Borough and may require special design treatments and permitting.


Legend
Recommended Alignment
multiuse
split mode w/ dedicated bike facility
at-grade road crossing
stream crossing
Other Alignments Studied
multiuse
split mode w/ dedicated bike facility
split mode w/ existing sidewalk
split mode w/ proposed sidewalk
Other Existing or Planned Trails
Existing multiuse trail
Planned trail network
Beaver Creek
Struble Trail southern terminus
Study area boundary
Municipal boundary
Brandywine Creek- east branch
Former P&T corridor- planned future alignment of CVT
Rock Raymond
Campbell
Parkside
Ehlen
Water Plant
Norwood
Wallace
Race
Manor
Pennsylvania
Lincoln
Veterans
King
Court
Lloyd
Delo
Highland
Forest
Gabel
Harvey
Aston
Lime
Coal
Lancaster
Mary
William
Stone
Hunt
Whelen
Middle
Oak
Stuart
North
Webster
Carpenter
Downing
Pine
Ash
Western
Terry
Ax
Access
Railroad
Park
Mill
Beech
Parke
Maple
Cox
Jefferson
Green
Washington
Cherry
Roosevelt
Viaduct
Duff
Penn
Saint James
Saint Joseph
Church
Donofrio
Valley View
Willow
Johnson
Prospect
Keene
Talucci
Bradford
Deer
Katie
Glenside
Brandywine
Reed
Boot
Robbins
Trestle
feet
0
500'
1,000'
2,000'

Caln Township

Recommended Alignment

There are two recommended alignments within Caln Township:

1) a multiuse alignment that continues the Beaver Creek alignment west out of Downingtown and follows GO Carlson Boulevard, and

2) an on-road connection between the western terminus of the planned CVT extension and the Beaver Creek alignment. There are limited locations to cross the Keystone Corridor to connect the CVT to the Beaver Creek alignment. Two different locations are recommended: the existing pedestrian underpass at Embreeville Road for pedestrians, and the existing grade-separated walkway at Bailey Road for cyclists.

GO Carlson Boulevard alignment:

- Scenic alignment that would connect many of Caln Township's parks and open spaces
- Wetland conditions and hydric soils within the floodplain of the Beaver Creek could necessitate re-routing the alignment or could implicate higher development costs.
- In most locations the existing walking path along GO Carlson Boulevard could be widened to meet a multiuse standard.

Existing path along GO Carlson Boulevard

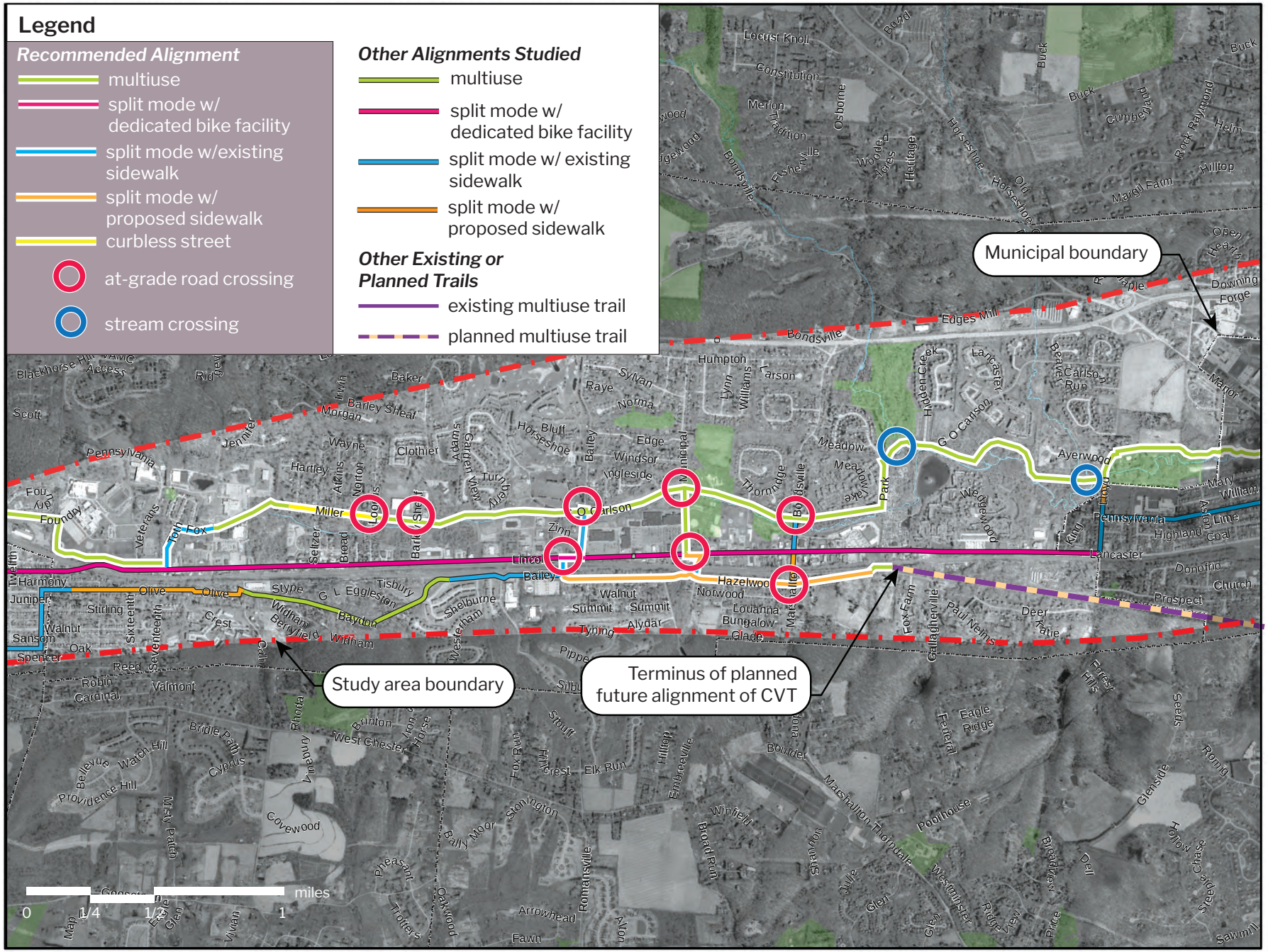
- Alignment impacts 11 privately owned parcels. Many of these landowners were approached through a previous trail study and expressed interest in the trail.

P&T to Beaver Creek connector alignment:

- Continuing the CVT as a multiuse trail beyond the P&T corridor is not feasible due to spatial constraints.
- Trail improvements could provide traffic calming on Hazelwood Avenue.
- Construction of sidewalks along Hazelwood Avenue would require significant property owner coordination.
- Connector trail along Municipal Drive would link both the northern and southern trails to Caln Township's Athletic Association playing fields.
- The existing grade-separated walkway that at Bailey Road provides a connection to the Thorndale train station and provides separation between trail users and vehicular traffic.

Hazelwood Avenue

Bailey Road


Legend
Recommended Alignment
multiuse
split mode w/ dedicated bike facility
split mode w/existing sidewalk
split mode w/ proposed sidewalk
curbless street
at-grade road crossing
stream crossing
Other Alignments Studied
multiuse
split mode w/ dedicated bike facility
split mode w/ existing sidewalk
split mode w/ proposed sidewalk
Other Existing or Planned Trails
existing multiuse trail
planned multiuse trail
Municipal boundary
Study area boundary
Terminus of planned future alignment of CVT
0
1/4
1/2
1
miles

Other Alignments studied

- The project team studied the possibility of a pedestrian bridge over the Amtrak line to connect the western end of the P&T trail with bike lanes on Route 30. Due to the cost of such a structure, the height of existing active catenary lines and lack of a logical terminus for the bridge on the north side of the tracks, this idea was determined to be infeasible.
- A connection from the north alignment to the south alignment via Marshallton-Thorndale Road was deemed undesirable due to high traffic volumes, vehicular turning movements at the intersection with Route 30, and no space to accommodate pedestrian traffic under the Amtrak overpass.
- Continuing bike lanes along route 30 east of Thorndale station could be a potential trail alignment for the trail, although some areas are not sufficiently wide. Existing sidewalks are sporadic, and gaps would need to be completed to accommodate pedestrians. Furthermore, existing automobile-oriented commercial uses and profusion of curb cuts create an uninviting atmosphere for trail users.
- Informal trails exist throughout a large wooded parcel slated for development south of the Keystone Corridor and between GL Eggleston Boulevard and South Caln Road. Legal feasibility is uncertain given the pending development status of this parcel.

Amtrak overpass over Marshallton-Thorndale Road

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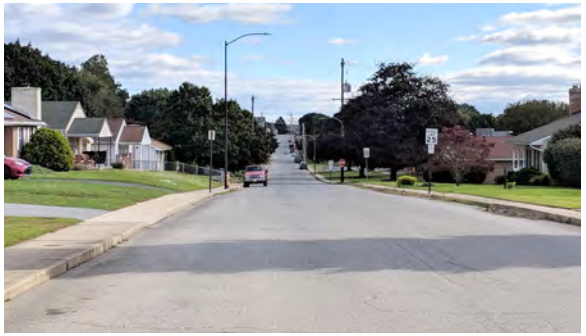
City of Coatesville

Business Route 30 through Downtown Coatesville

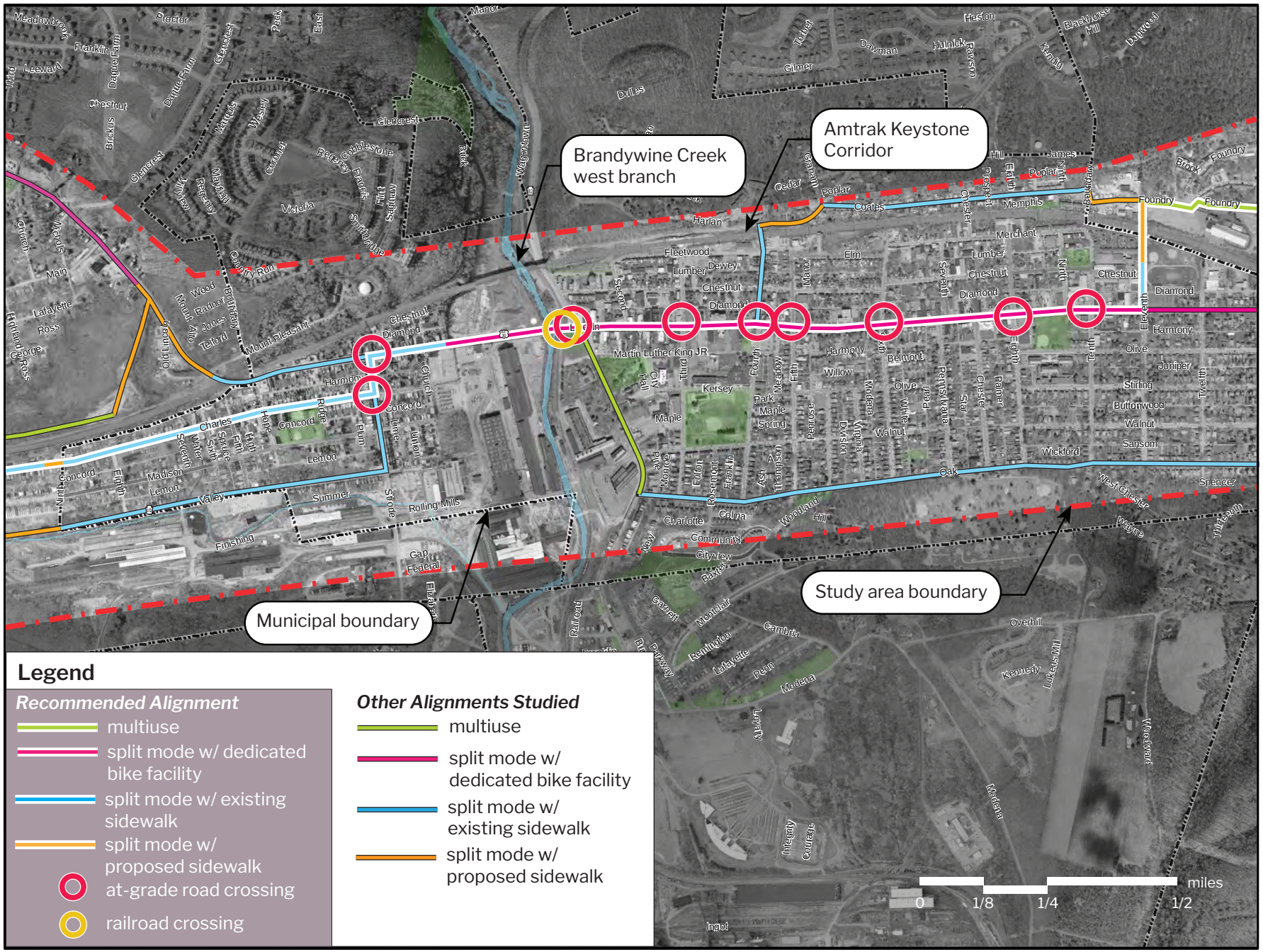
Recommended Alignment

A continuous multiuse trail standard through the City is not possible due to Coatesville's densely developed land use patterns. All alignments studied, including the recommended alignment, use Lincoln Highway to cross the Brandywine Creek as it is the only existing crossing within the study area. Through site reconnaissance and conversations with the public and project stakeholders, the project team determined that improving the existing bike lanes and sidewalks on Lincoln Highway would be the best route for the trail. The recommended improvements are described in the Master Plan section of this report.

- No direct impact to privately owned land.
- Space for a trail is constrained on 11th Avenue where it passes under the Amtrak Keystone Corridor
- Gaps in existing sidewalk network on 11th Avenue
- Bringing trail users down the City's main thoroughfare, Lincoln Highway, could benefit current and future businesses.
- The bike lanes in Coatesville are sparsely used; providing additional safety improvements will likely increase their use by local residents and trail users.
- All alignments studied cross Route 82, the Brandywine Creek, and an active at-grade freight line and would require pedestrian safety improvements.
- Charles Street is a low-volume, low speed residential street with existing sidewalks along most of its length.



Charles Street


Brandywine Creek west branch
Amtrak Keystone Corridor
Municipal boundary
Study area boundary
Legend
Recommended Alignment
multiuse
split mode w/ dedicated bike facility
split mode w/ existing sidewalk
split mode w/ proposed sidewalk
at-grade road crossing
railroad crossing
Other Alignments Studied
multiuse
split mode w/ dedicated bike facility
split mode w/ existing sidewalk
split mode w/ proposed sidewalk
miles
0
1/8
1/4
1/2

Other Alignments studied - east of Route 82

- An alignment north of the Keystone Corridor along the residential Coates Street was explored as a possible on-road connection. This street is not wide enough to accommodate a separated bike facility, and it is significantly removed from the central business district.
- Oak Street, a low-volume residential street south of Lincoln Highway, is located near the city's high point on the "wall" of the Chester Valley. Trail users would have a steep and sustained climb up to this on-road alignment which would prove challenging for many.

Other Alignments studied - west of Route 82

- Following Route 30 west, the road passes over the Amtrak Keystone Corridor and makes a long, steep climb out of the valley. The steep hill renders this section of Route 30 and all sections west of this point infeasible as a multiuse trail or on-road connection. Heavy traffic volume and relatively few destinations identified through the public survey contribute to this section of Route 30 being a less desirable option.
- Another option explored followed Route 30 across the Keystone Corridor and then down a steep service road to parallel the tracks on the north side. A multiuse trail could be potentially be developed north of the rail corridor, however the feasibility of this alignment is questionable as the trail would be located on Amtrak property and would result in significant impact to wooded slopes.
- The project team studied all east-west oriented roads in the West End of Coatesville for their feasibility as on-road connector alignments. Route 372 was identified as a potential alignment, but its high traffic volume- including truck traffic - makes it less desirable than Charles Street.

Oak Street would pose a significant climb for trail users.

Steep service road leading to Amtrak corridor

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Valley Township

Recommended Alignment

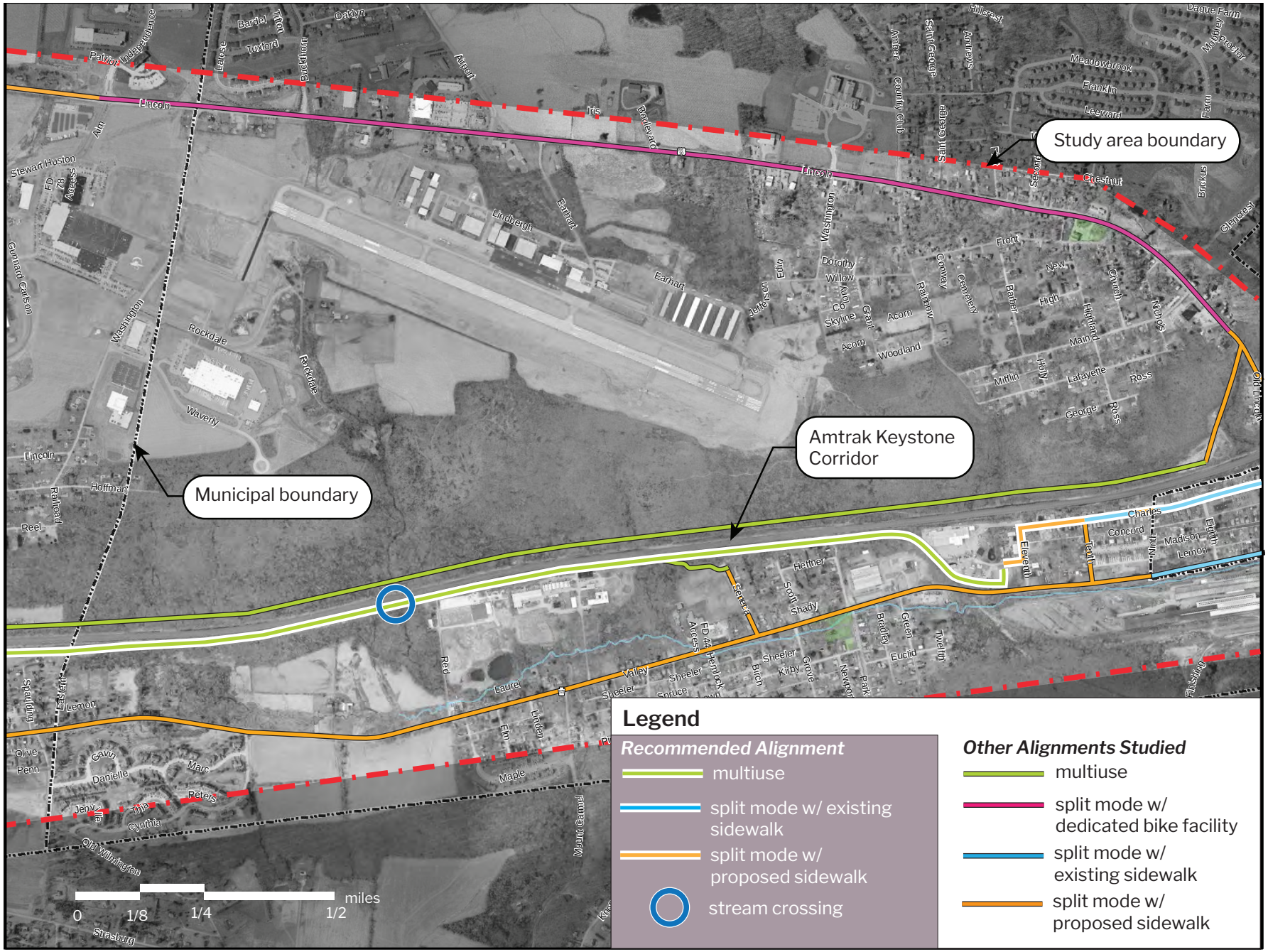
In Valley Township the “floor” of the Chester Valley is bounded by the Keystone Corridor to the north and Route 372 to the south. On either side of these corridors, the topography ascends steeply, particularly to the north. This topography presents the greatest constraint to trail development in Valley Township, and the flat, linear land adjacent to the Amtrak Keystone Corridor presents the greatest opportunity.

- A former single rail track runs parallel to and south of the Keystone Corridor.
- The entire corridor within the Township is owned by a single entity. Positive preliminary conversations with this landowner indicate the trail could be feasible.
- This alignment would allow for an unbroken multiuse trail completely separated from vehicular traffic for approximately 1.5 miles.
- This relatively secluded corridor is currently used by ATVs and could require additional patrol and special design measures to control motorized vehicle use.

Other Alignments studied

- Alignments that use Route 30 west of Coatesville were considered but are not included in subsequent maps or discussions since the route was determined to be infeasible. However, this study recognized that Route 30 currently has sporadic sidewalks and relatively wide shoulders that provide pedestrian access between Valley Township and Coatesville. Connections along this corridor are recommended for future study. See the Proposed Future Connections section within the Master Plan chapter of this report for more information.
- A multiuse trail north of the Amtrak corridor along an existing maintenance path could be physically feasible, though using Amtrak’s property may not be feasible. Alternatively the trail could be built on adjacent private property, impacting three private landowners and requiring significant grading and clearing of wooded slopes.
- An on-road route along Route 372 would make a fine cycling route but would not provide a valuable recreational amenity for many groups. There are no existing sidewalks along Route 372 in Valley Township.

A former single rail track parallels the Keystone Corridor in Valley Township.


Study area boundary
Amtrak Keystone Corridor
Municipal boundary
Legend
Recommended Alignment
multiuse
split mode w/ existing sidewalk
split mode w/ proposed sidewalk
stream crossing
Other Alignments Studied
multiuse
split mode w/ dedicated bike facility
split mode w/ existing sidewalk
split mode w/ proposed sidewalk
0
1/8
1/4
1/2
miles

Sadsbury Township

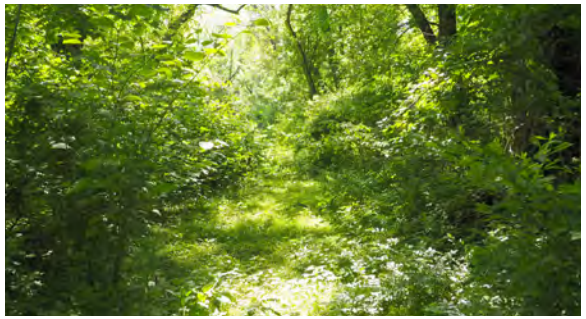
Recommended Alignment

The recommended alignment through Sadsbury Township would continue as a multiuse trail along a former rail spur and would connect to an on-road segment through the village of Pomeroy. This on-road section would quickly join with another proposed multiuse trail that uses an existing path on the north side of the Keystone Corridor.

- Impacts five private landowners, including Sadsbury Township and Amtrak. Initial conversations with the majority of these landowners indicate this trail alignment could be feasible; however, significant coordination with Amtrak is required to officially determine feasibility.
- The underpass where Old Wilmington Road crosses under the Amtrak line sees relatively high traffic volume, and sight distance is limited. Additionally, spatial constraints of the underpass all but preclude the installation of sidewalks for pedestrians.
- A level, wooded path that parallels the Amtrak Corridor to the north could provide approximately one mile of scenic multiuse trail completely separated from traffic.

Other Alignments studied

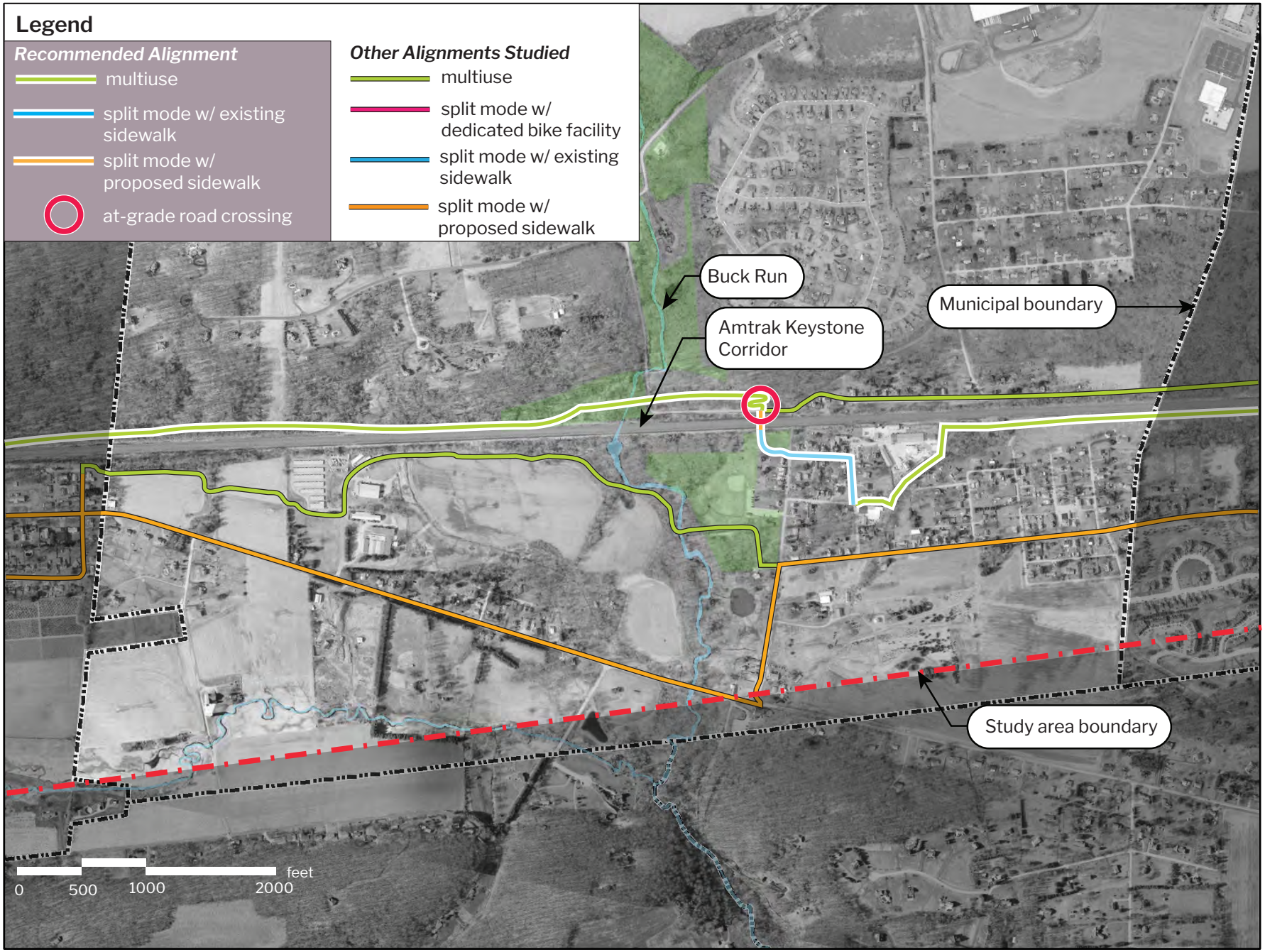
- Several alignment alternatives parallel to but south of the Keystone Corridor were studied. Of these, the most feasible route would be a multiuse path accessed from Sadsbury Township's Bert Reel Park. As many as four stream crossings would be required, and at least eight different landowners could be impacted. This alignment is preferred if using Amtrak's property is determined to be infeasible.
- A multiuse trail north of the Amtrak line could be physically feasible for the length of Sadsbury Township. Using Amtrak's property for a longer distance could reduce the likelihood that Amtrak can accommodate the request.
- A multiuse trail along Route 372 was determined to be infeasible due to steep slopes and insufficient width within the right-of-way, although this road could serve as a cycling route.



A flat overgrown path that was once either a spur or maintenance path for the Keystone Corridor parallels the active rail corridor to the north in Sadsbury Township.

Bert Reel Park

Old Wilmington Road looking north. The bridge carries the Amtrak Keystone Corridor over the roadway.


Legend
Recommended Alignment
multiuse
split mode w/ existing sidewalk
split mode w/ proposed sidewalk
at-grade road crossing
Other Alignments Studied
multiuse
split mode w/ dedicated bike facility
split mode w/ existing sidewalk
split mode w/ proposed sidewalk
Buck Run
Municipal boundary
Amtrak Keystone Corridor
Study area boundary
0
500
1000
2000
feet

Parkesburg Borough

Main Street in Parkesburg contains several historic buildings.

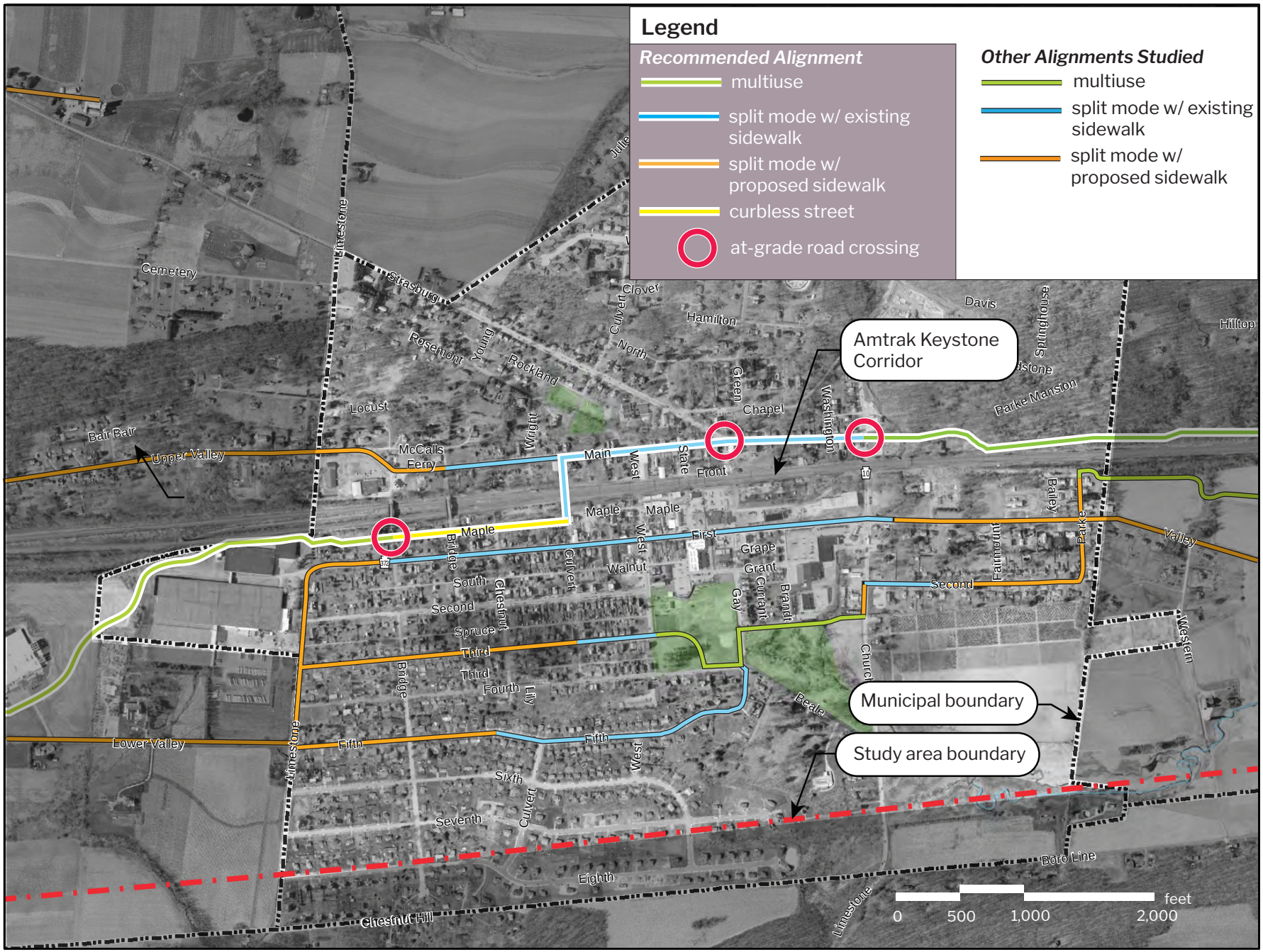
Recommended Alignment

Similar to Coatesville, a location for a continuous multiuse trail was not identified through the Borough of Parkesburg due to its relatively dense, urban development patterns. The project team analyzed many on-road alignments through the Borough to determine which would provide the best user experience, the most direct route between proposed multiuse trails at the the east and west ends of the Borough, and the best access to destinations identified within the Borough. Parkesburg is bisected by the Keystone Corridor with one commercial street to the north (Main Street) and one to the south (First Avenue/Route 372). Ultimately, Main Street was determined to be the most desirable route as it contains the historic shopping district, half the traffic volume of First Avenue, and less truck traffic. To connect with a potential multiuse trail alignment in the west end of the borough, the recommended alignment passes under the Amtrak line at Culvert Street and continues onto Maple Street, a very low-volume residential street that connects to the Parkesburg Amtrak station.

- Pedestrian and potentially vehicular signalization would be needed to cross Route 10 (Church Street), a high-volume thoroughfare.
- Alignment connects directly to a commercial district and the Parkesburg Amtrak station.
- Trail-related improvements on Culvert Street could potentially be incorporated into upcoming improvements to the Parkesburg Amtrak station.
- Maple Street already functions as a shared street (children play and people walk and ride bikes amongst occasional vehicular use). Improvements that codify this shared street condition would improve safety and provide opportunities for placemaking.
- Alignment is primarily within the public right-of-way, although the multiuse segments shown in the east and west of the Borough could impact up to three landowners, including the Borough of Parkesburg. Preliminary discussions with landowners indicate the multiuse trail alignments shown could be feasible.

A view looking north on Route 10 toward the potential future trail crossing location at Main Street.

Maple Street is a paved alley that already functions like a shared street.


Legend
Recommended Alignment
multiuse
split mode w/ existing sidewalk
split mode w/ proposed sidewalk
curbless street
at-grade road crossing
Other Alignments Studied
multiuse
split mode w/ existing sidewalk
split mode w/ proposed sidewalk
Amtrak Keystone Corridor
Municipal boundary
Study area boundary
Cemetery
Strasburg
Limestone
Clover
Hamilton
Davis
Springhouse
Hilltop
Rosemont
Young
Rockland
North
Culvert
Green
Chapel
Washington
Parke Mansion
Locust
Wright
Bair Bair
Upper Valley
McCalls Ferry
Main
West
State
Front
Bailey
Maple
Bridge
First
Grape
Grant
Curtain
Brandt
Second
Fairmont
Parke
Valley
South
Chestnut
Walnut
Gay
Spruce
Third
Fourth
Lily
Beale
Church
Western
Lower Valley
Fifth
Sixth
Seventh
Eighth
Boro Line
Chestnut Hill
0
500
1,000
2,000
feet

Other Alignments Studied

- An alignment was considered that continues along Main Street west of Culvert Street to connect to an on-road route on Upper Valley Road. Benefits of this alignment include low traffic volume and a connection to The Point youth center, however, there is no opportunity for development of a multiuse trail.
- Like Main Street, First Avenue is not wide enough to accommodate a multiuse sidepath or even separated bike facility. The traffic volume and heavy truck traffic on First Avenue was determined to be incompatible with trail use. Trail users can connect to destinations along First Avenue using existing sidewalks.
- Third and Fifth Avenue, both low-volume residential streets, were also considered for on-road alignments. These streets both connect with Minch Park, the civic focal point of the Borough, but are removed from commercial districts and the multiuse trail alignments identified to the east and west of the Borough. These streets lack continuous sidewalks, and the completion of sidewalk networks would require significant property owner coordination and additional cost.
- East of Route 10, an on-road alignment was identified that would use the low-volume Parke Avenue and East Second Avenue to connect to Minch Park and either the Third or Fifth Avenue alignments described above. This would require a new at-grade crossing of both Route 372 and Route 10, as well as a pedestrian bridge over an unnamed tributary to Buck Run.

First Avenue

Minch Park

Intentionally left blank

West Sadsbury Township

Lower Valley Road (Route 372)

Recommended Alignment

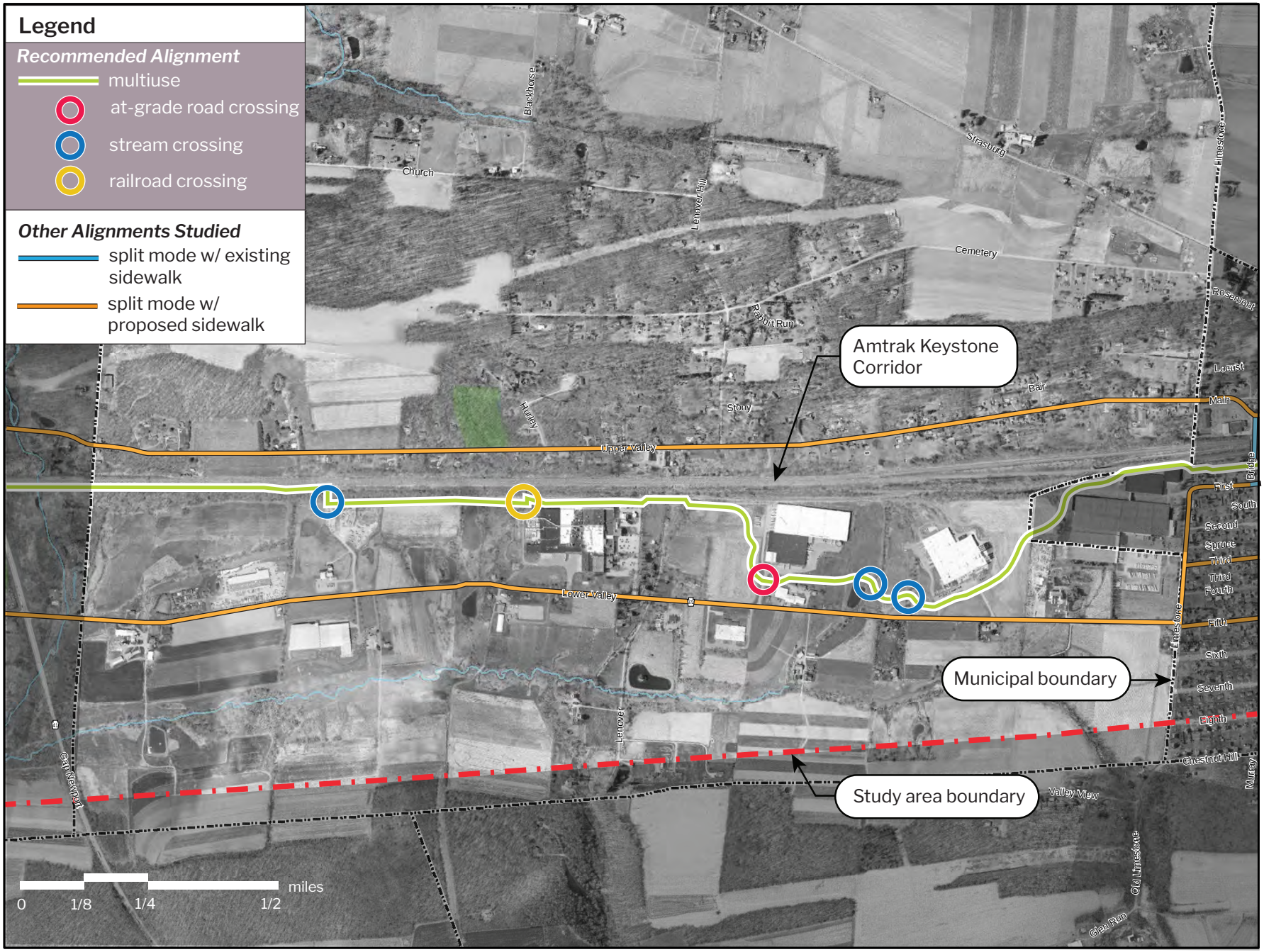
Three primary alignments were studied in West Sadsbury Township. Two of these could not feasibly accommodate a continuous multiuse facility, so the multiuse alignment was the obvious choice. This alignment would traverse the industrial parcels between Route 372 and the Amtrak Keystone Corridor to connect with the former Enola Low Grade rail corridor adjacent to the Amtrak line.


There is space for a trail between the industrial buildings along Route 372 and the freight rail line that serves these buildings.

- The multiuse alignment through West Sadsbury Township would be part of a proposed 4+ mile natural extension of the Enola Low Grade Trail. This segment combine with the segment to the west would be a significant recreational and transportation asset as a stand-alone trail.
- Provides a connection to Victory Brewing's Parkesburg location, a popular destination within the study area.
- Seven private landowners including SEPTA would be impacted by this alignment; however, preliminary discussions with many of these landowners indicate this alignment could be feasible.
- Wetland conditions and species of concern are likely to be found in the area through which the trail will pass on its way to the Enola Low Grade corridor. Delineation of these wetlands could potentially require re-routing the trail alignment.
- Significant excavation would be required at the intersection of the rail corridor and the former terminus of Lenover Road.

Other Alignments Studied

- This study identified that spatial and topographical constraints on Upper Valley Road could not accommodate a multiuse side path or even separate bike facilities. However, this relatively low-volume rural road could serve as an alternate cycling route for confident cyclists.
- Although there are segments of Lower Valley Road (Route 372) that could potentially accommodate a multiuse sidepath, most segments would likely be on-road. Sidewalks do not fit the vocabulary of this agricultural and industrial landscape and would add significant cost.


Legend
Recommended Alignment
multiuse
at-grade road crossing
stream crossing
railroad crossing
Other Alignments Studied
split mode w/ existing sidewalk
split mode w/ proposed sidewalk
Amtrak Keystone Corridor
Municipal boundary
Study area boundary
Upper Valley
Lower Valley
Church
Blackhorse
Lenover Hill
Strasburg
Limestone
Cemetery
Rosemont
Rabbit Run
Locust
Bair
Main
Stony
Hurley
Birdie
First
South
Second
Spruce
Third
Third
Fourth
Fifth
Sixth
Seventh
Eighth
Chestnut Hill
Murray
Valley View
Old Limestone
Glen Run
Glen Newport
Lenover
miles
0
1/8
1/4
1/2

Atglen Borough

Recommended Alignment

The recommended alignment for the CVT West through Atglen Borough and the Western side of West Sadsbury Township is entirely along the SEPTA-owned former Enola Low Grade corridor. The primary opportunities and constraints to trail development are as follows:

- Complete separation from vehicular traffic and passes under Route 41, a major barrier for an at-grade trail crossing.
- Direct connection to the Enola Low Grade trail at the county line, providing an additional 29 miles of multiuse trail.
- Corridor is owned by SEPTA, which is considering extending passenger rail service to Atglen within the next several decades. Although additional surveying and engineering would be needed, this study found that the Enola Low Grade corridor appears wide enough to accommodate both a multiuse trail and the installation of a single rail track when SEPTA extends service.
- Requires coordination with Amtrak as the Keystone Corridor is immediately adjacent.

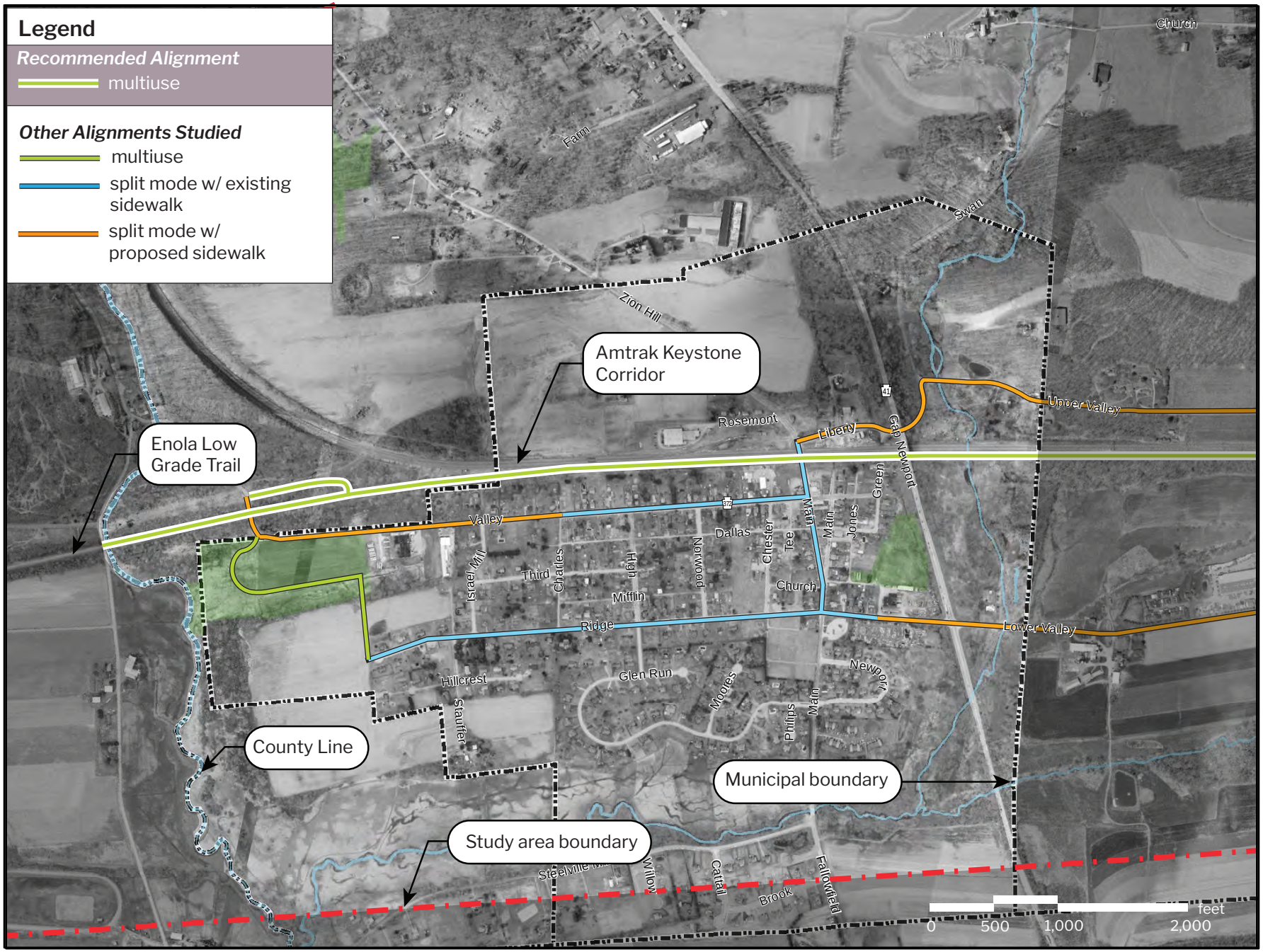
Other Alignments Studied

- Upper Valley Road, which would likely be a cycling-only connection, passes below Route 41 and through Atglen's commercial zone. The western half would require the installation of sidewalks.
- Lower Valley Road crosses Route 41 at a signalized intersection just west of the Atglen Borough line. A pedestrian bridge would be required here as trail users could not safely cross Route 41 due to high vehicular speeds and the amount of truck traffic.
- Both these alignments would connect to the Enola Low Grade corridor on Valley Avenue under the stone arch underpass near the Borough line. A safe pedestrian connection under this bridge would be challenging due to spatial constraints and minimal sight distance.

Truck traffic on Route 41

The former Enola Low Grade corridor passes under Route 41.

Valley Avenue/Route 372 passes under the Enola Low Grade corridor via this narrow stone arch bridge. Horizontal curvature of the road restrict sight distances at the bridge .


Legend
Recommended Alignment
multiuse
Other Alignments Studied
multiuse
split mode w/ existing sidewalk
split mode w/ proposed sidewalk
Amtrak Keystone Corridor
Enola Low Grade Trail
County Line
Municipal boundary
Study area boundary
Church
Farm
Swan
Zion Hill
Rosemont
Liberty
Gap Newport
Upper Valley
Lower Valley
Valley
Ridge
Mifflin
Third
Charles
High
Norwood
Dallas
Chester
Tee
Main
Jones
Green
Church
Israel Mill
Hillcrest
Stauffer
Glen Run
Moores
Phillips
Newport
Willow
Cattail
Brook
Fallowfield
0
500
1,000
2,000
feet

The Recommended Alignment At-a-Glance:

Municipality	Miles of Multiuse Trail	Miles of On-Road Trail Segments	Total CVT Trail Mileage
Downingtown	0.74	0.30	1.04
Caln	5.26	2.43	7.69
Coatesville	-	2.36	2.36
Valley	1.89	0.36	2.25
Sadsbury	1.50	0.26	1.76
Parkesburg	1.13	0.79	1.92
West Sadsbury	2.55	-	2.55
Atglen	1.54	-	1.54
Total	**14.61**	**6.5**	**21.11**

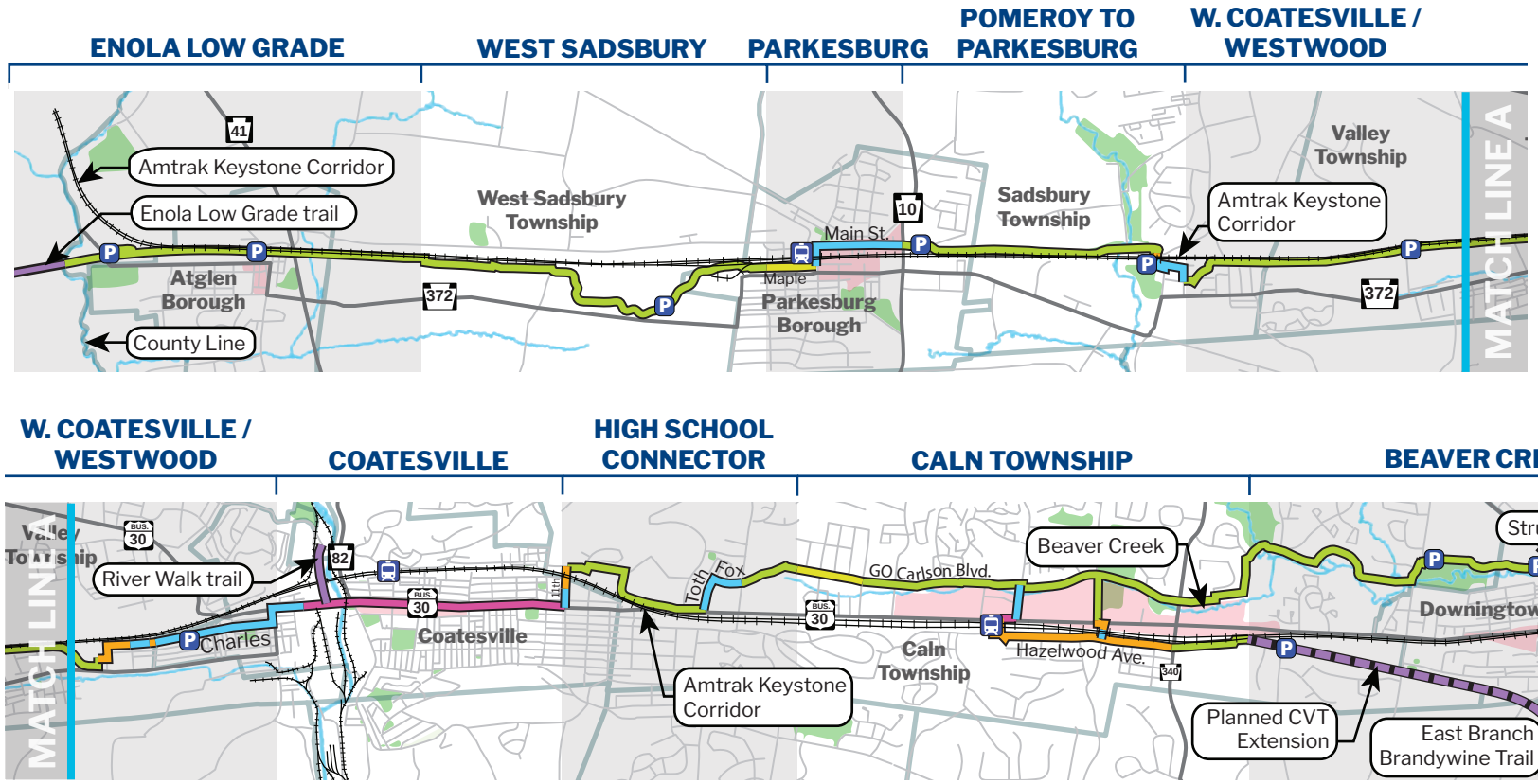
Master Plan

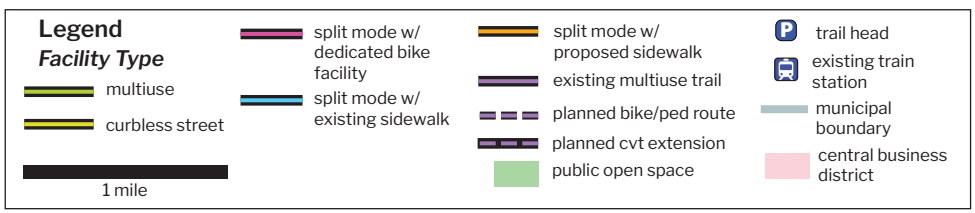
Recommended Alignment

The recommended alignment for the Chester Valley Trail West is over 20 miles long and includes both multiuse trails and on-road connector facilities. Accordingly, the alignment has been divided into nine segments, each of which could be developed as a separate project. Although Chester County currently operates the existing +/- 14 miles of the Chester Valley Trail, it may not operate the entire CVT West. The development of this trail network will involve multiple project partners given its complexity. An indication of who may own and operate each segment is provided in the Trail Segment Profiles on the following pages, however, these responsibilities will be clarified as each segment moves through the implementation process. More information is provided in the Overall Trail Master Plan section of this report.

Brown flag icons on each trail segment map indicate recommended locations for interpretive signage. Descriptions of each sign's potential content can be found in the Historic and Cultural Interpretation section on page 133.

Overall Recommended Alignment for the Chester Valley Trail West





Segment 1: Beaver Creek

Length: 2.2 miles

Location: Downingtown Borough and Caln Township

Ownership/Operation: Downingtown Borough, Chester County, Caln Township

Facility type(s):

Split mode with dedicated bike facility	0.3 miles
Multiuse	1.8 miles

Impacted landowners: 6

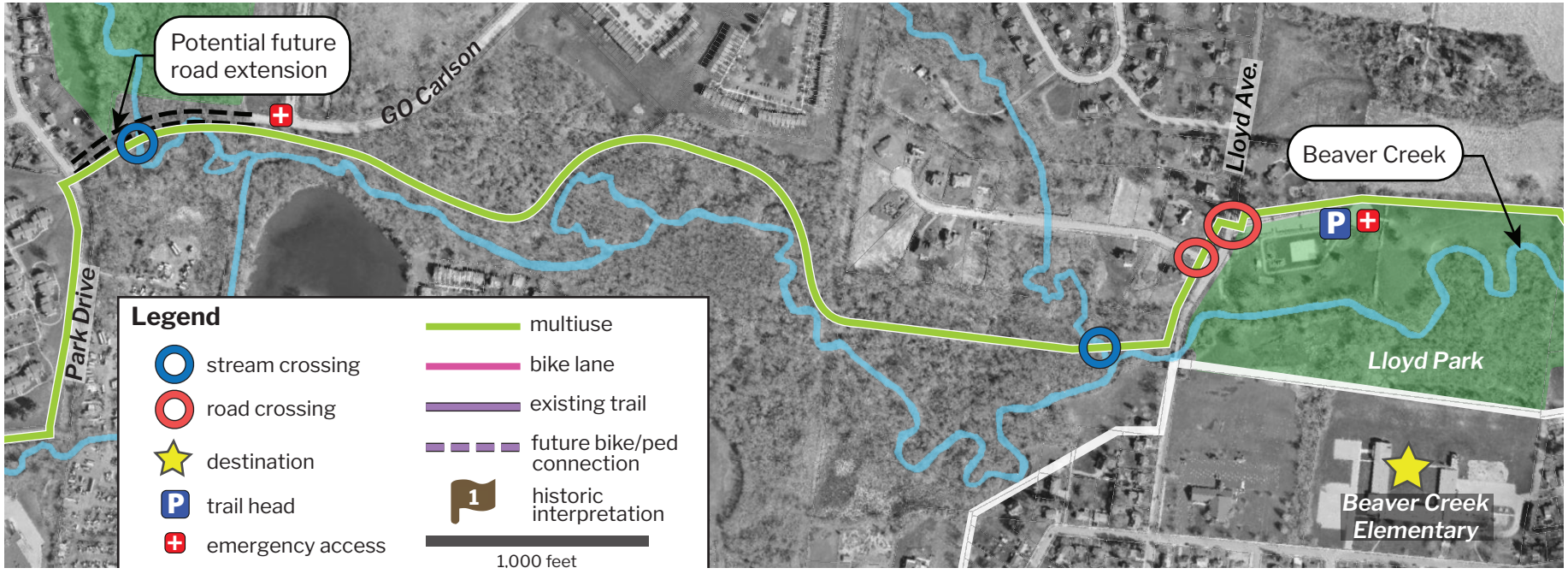
Right-of-way status: Mixed

Public right-of-way	0.3 miles
Public park property	0.8 miles
Existing trail easement through private property	0.4 miles
Private property	0.7 miles

Estimate of Segment's Probable Cost: $4,565,000

General Description of Alignment:

This segment known in Downingtown and Caln as the "Beaver Creek Trail" is envisioned to connect recreation facilities in these municipalities. As part of the larger CVT network, this segment will connect the existing Struble Trail in the east and the existing GO Carlson Boulevard walking path in the west, thereby elevating the recreation value of all of these facilities.

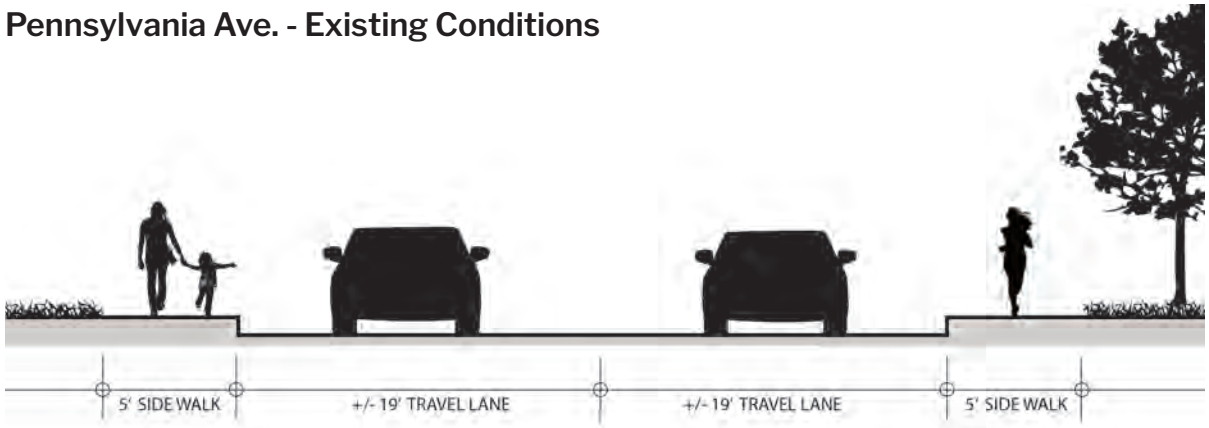


Recommended improvements

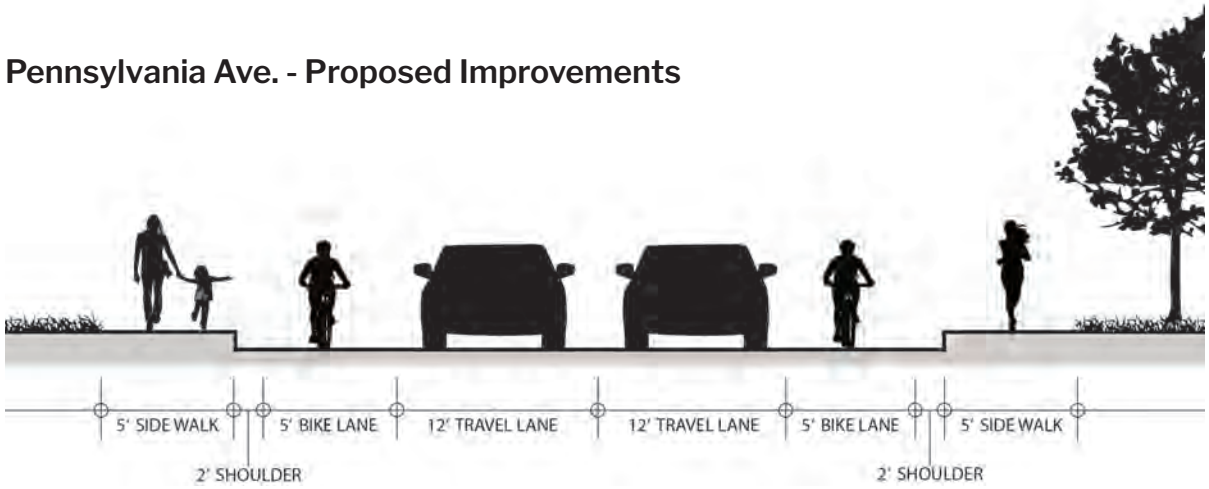
Pennsylvania Avenue Bike Lanes: There is an existing sidewalk along the segment of Pennsylvania Avenue between the driveway to Kardon Park and the existing mid-block pedestrian crossing that leads to the skate park in Kerr Park, and the roadway is wide enough to accommodate bike lanes. The striping of 5' bike lanes would require a "road diet": existing vehicular lane widths would be reduced from 17' to 12'. Pennsylvania Avenue is a local road, and therefore any restriping activities would be the responsibility of Downingtown Borough.

Wide travel lanes on Pennsylvania Avenue could be reduced to allow for bike lanes on both sides of the street.

Pennsylvania Ave. - Existing Conditions

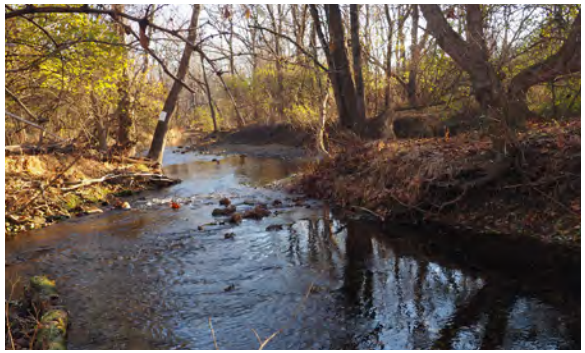


Pennsylvania Ave. - Proposed Improvements



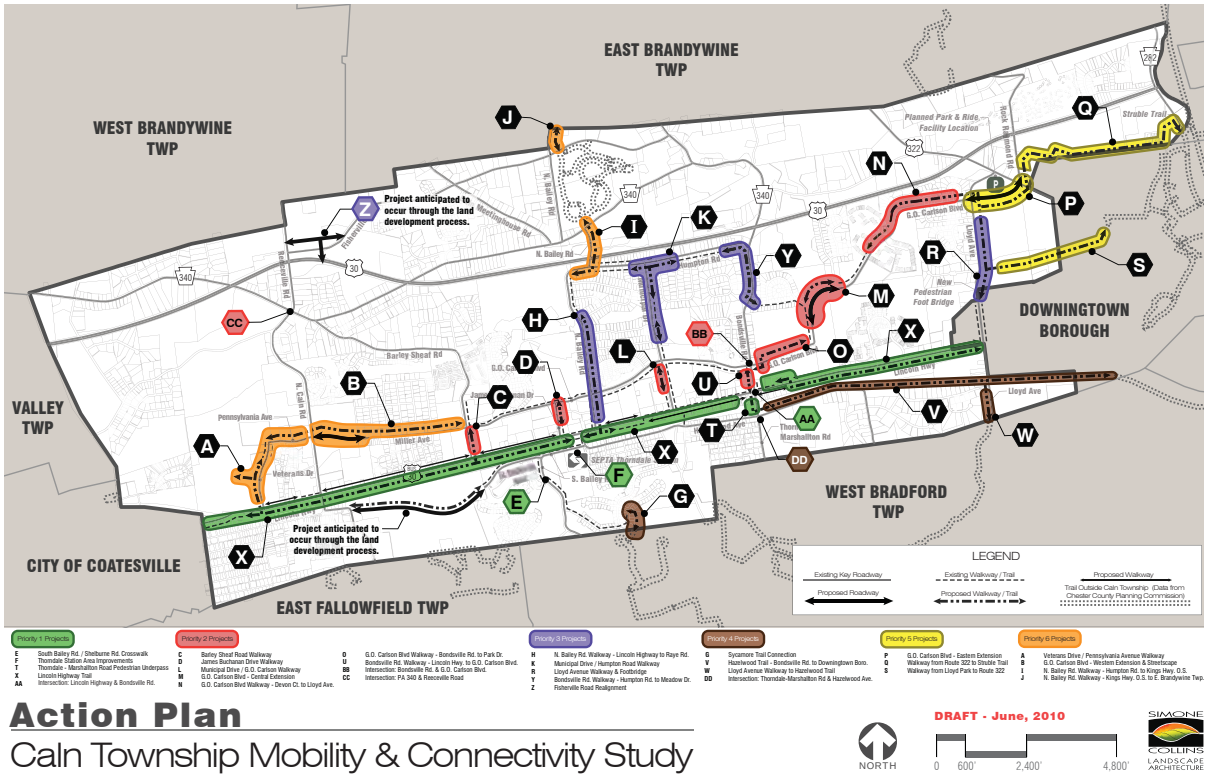
The proposed bridge over the Brandywine Creek may look similar to the existing pedestrian bridge over the creek in Downingtown.

Multiuse Trail: The multiuse portion of this segment would use existing paved paths in Kerr Park as well as a proposed multiuse trail connecting the existing paths to the Brandywine Creek. A pedestrian bridge would be required to cross the creek. On the west bank of the creek the trail would pass through a property owned by the Pennsylvania Department of Transportation. Rather than obtaining an easement through this property, PennDOT staff indicated they would likely prefer to execute a maintenance agreement. The trail would continue through Downingtown's Tabas Park to cross Manor Avenue (US322) at Race Street. New crossing improvements including a crosswalk, pedestrian signalization and advance warning signs for the east and westbound lanes of 322 would need to be coordinated with PennDOT due to higher traffic volumes on this state road.



Beaver Creek

West of Manor Avenue, the trail would follow the existing driveway of the Downingtown Little League. New striping designating the pedestrian zone would enhance safety, especially during baseball games. The trail would head toward the Brandywine Creek to utilize the existing trail easement granted to Downingtown Borough and Caln Township by the Archdiocese of Philadelphia. The easement extends 100' on either side of the Brandywine Creek through this property and the adjacent property to the west. Continuing west, the trail would pass along the north side of Lloyd Park. A fence between the trail and the dog park may be necessary to separate trail users from unleashed dogs. The trail will cross Lloyd Avenue at an existing crosswalk. On the west side of Lloyd Avenue, the multiuse trail would head south, requiring easements from adjacent land owners. Just north of the single-lane Lloyd Avenue Bridge, the trail will veer west. In the long-term, Caln Township plans to connect the disconnected sides of GO Carlson Boulevard through this wooded area. If the road connection occurs before the development of the trail, this portion of the trail should be included as part of the roadway project.



Action Plan

Caln Township Mobility & Connectivity Study

The recommended alignment will likely impact five private properties between Lloyd Avenue and Park Drive. The majority of these property owners were contacted during a previous study of this potential trail alignment, and property owners expressed willingness to support the trail effort. The route depicted here is conceptual only; a more refined route will be studied and recommended in Brandywine Conservancy's Beaver Creek Trail study which is currently underway. Preliminary site reconnaissance revealed wet conditions in woodland areas, especially near the creek. Special trail design considerations and permitting may be required.

Trail heads: No new trail heads are recommended for this segment; however, this study recommends that the existing parking lots for the Downingtown Little League fields and Lloyd Park include designated parking for the Chester Valley Trail. Chester County, Downingtown Little League, the Archdiocese and Caln Township should coordinate implementation and ongoing maintenance of these lots. Additional improvements at these locations such as wayfinding signage, seating, water stations and/or bike fix-it stations may be considered.

Conceptual Cost Estimate

This segment was studied in a cursory way in order to minimize duplicated efforts with Brandywine Conservancy's current study. Accordingly, the following rough order of magnitude cost estimate is conceptual and for information purposes only.

Pennsylvania Ave. Bike Lanes	$5,000
Multiuse Trail	$2,644,000
Trail head Improvements	$20,000
Inspection, Permitting, Engineering, Mobilization and Contingency	$1,896,000
Total	**$4,565,000**

Implementation

Upon completion of Brandywine Conservancy's more in-depth study of this alignment, the following steps are recommended for implementation:

- Complete Brandywine Conservancy's Beaver Creek Trail study to determine a more refined recommended alignment.
- Assemble a project team consisting of the following partners: Chester County Department of Facilities and Parks, Downingtown Borough, Caln Township, PA DCNR, Friends of the Chester Valley Trail and other key stakeholders. The team would determine roles for trail implementation and management and would develop a funding strategy for design and construction.
- Coordinate with property owners to obtain required trail easements.
- Restripe Pennsylvania Avenue to provide bike lanes between Lake Drive and Manor Avenue. Segments of roadway not wide enough to accommodate full 5' bike lanes should be striped with shared road legends ("sharrows").
- Contract professional services for design, engineering and permitting of the trail.
- Work with PennDOT to obtain a permit for the crossing of Manor Avenue, a state roadway.
- Obtain funding, and construct the trail.

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Segment 2: Caln Township

Length: 5.0 miles

Location: Caln Township

Ownership/Operation: Chester County, Caln Township

Impacted Landowners: 8

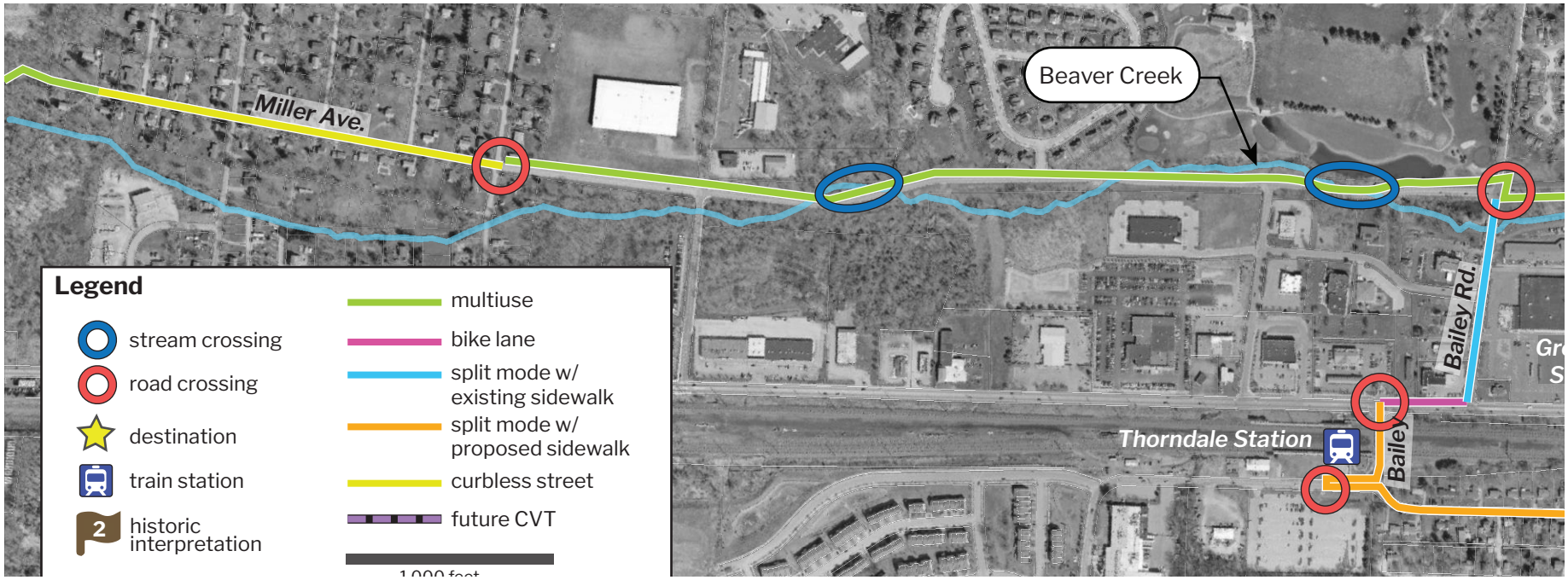
Estimate of Segment's Probable Cost: $9,985,000

Facility type(s):

Multiuse	3.3 miles
Split mode with dedicated bike facility	0.1 miles
Split mode with existing sidewalk	0.3 miles
Split mode with proposed sidewalk	1.0 miles
Curbless street	0.3 miles

Right-of-way status: Mixed. The mileage presented below is approximate and based on available GIS parcel data. Land surveys should be conducted to determine whether the trail would be within the public right-of-way or would encroach on private property.

Public right-of-way or publicly owned land	4.5 miles
Private property	0.5 miles



General Description of Alignment:

The Caln Township Segment consists of two separate segments:

1. A multiuse trail along GO Carlson Boulevard that would connect the Beaver Creek trail to the CVT alignment through Coatesville; and

2. An on-road segment south of the Amtrak Keystone Corridor primarily along Hazelwood Avenue that would connect the western terminus of the planned P&T segment of the CVT to the GO Carlson Boulevard alignment.

Both segments are important pieces of the overall network to establish bicycle and pedestrian connectivity between Downingtown Borough, the Struble Trail and Chester Valley Trail. These segments will join together at GO Carlson Boulevard and continue west as the Chester Valley Trail.

Recommended improvements

GO Carlson Boulevard Multiuse Trail

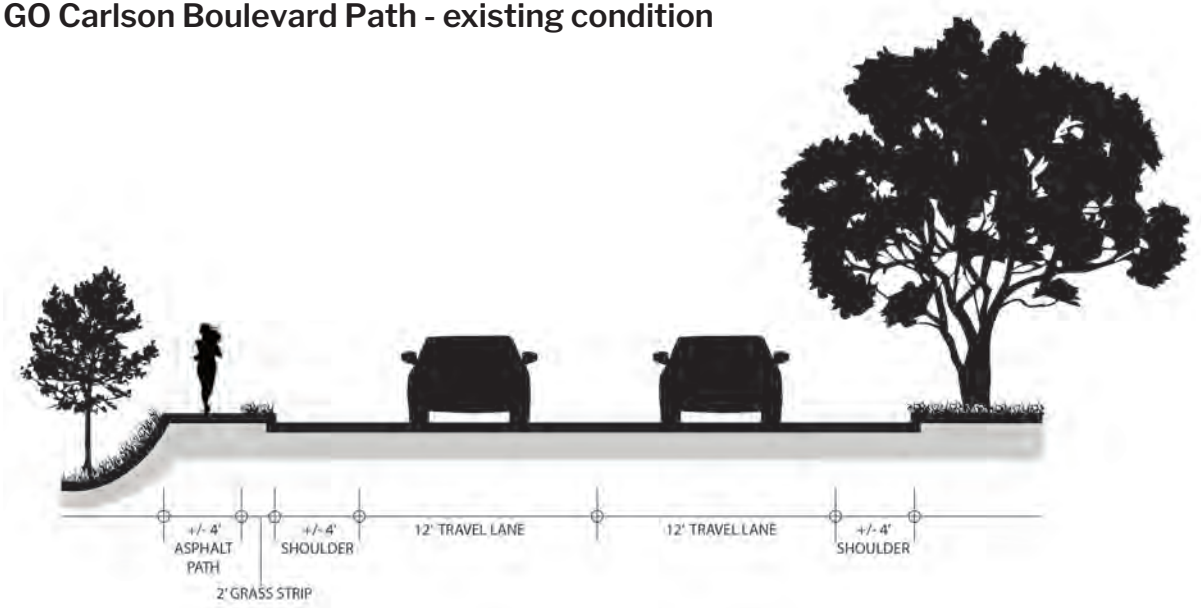
East of Bailey Road. A crossing of the low-volume Park Drive will be necessary to connect the Beaver Creek segment (see page 76) to the proposed multiuse trail on the west side of Park Drive. The Trail would turn west to head along the north side of GO Carlson Boulevard. A survey would be required to determine whether the proposed trail would be located within the public right-of-way or on private property. Available GIS information indicates the proposed trail would likely be on private property along Park Drive and within the public right-of-way the entire length of GO Carlson Boulevard. It will be necessary to coordinate with the apartment community on the installation of this part of the trail.

The proposed trail would cross from the north side to the south side of GO Carlson Boulevard at the entrance to the apartment community (Meadowlake Drive) to join an existing +/- 4'-wide path along the south side of GO Carlson Boulevard between Meadowlake Drive and Bailey Road. This existing path is recommended to be upgraded to a multiuse standard. East of Bondsville Road there is ample flat area adjacent to the roadway to widen the path to 10'. West of Bondsville Road the grade along the path drops off sharply toward an adjacent stream, so the path would need to be widened toward the roadway. This would require resetting the curb line and restriping the roadway to either reduce

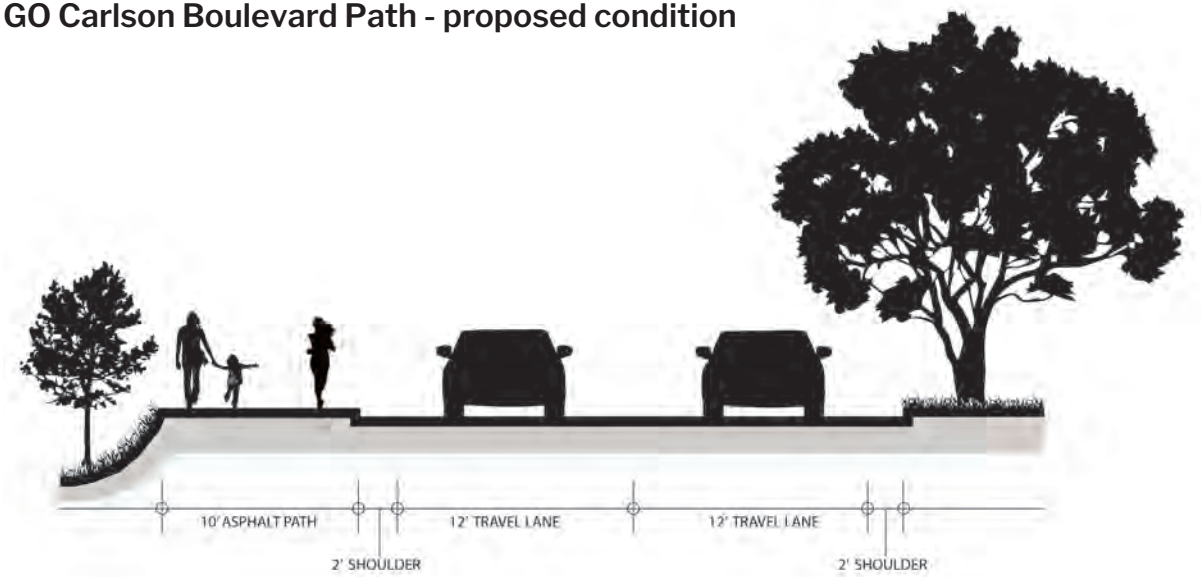
the shoulder width (approximately 4' currently) and/or reduce the lane width (approximately 12' currently.) This "road diet" would also serve as a traffic calming measure on this straight, flat thoroughfare, making conditions safer for trail users and motorists alike.

The topography along the existing path drops off toward an adjacent stream. To widen the path, it must be widened toward the roadway.

GO Carlson Boulevard Path - existing condition



GO Carlson Boulevard Path - proposed condition



Miller Avenue

An existing "pinch point" along the GO Carlson Boulevard path

West of Bailey Road. The existing path crosses to the north side of GO Carlson west of Bailey Road. There are three pinch points between Bailey Road and Barley Sheaf Road where streams flow underneath GO Carlson Boulevard through culverts, significantly restricting the possibility of widening the path. The study team analyzed an alignment alternative that continued the trail along the south side of GO Carlson Boulevard west of Bailey Road, but the grade drops off steeply at the curb line toward the adjacent creek and would require significant engineering and channelization of the creek to create a level path. In the short-term it is recommended to install signage on either side of these three pinch points warning trail users to take turns as the path is not wide enough for two-way trail traffic. In the long term, a trail bridge could be built at each of these locations to accommodate a multiuse path.

The existing path terminates at the intersection of Barley Sheaf Road. The recommendation is to continue the proposed multiuse trail west along the north side of GO Carlson Boulevard to Loomis Avenue. A survey would be required to determine whether this segment of trail would enter the adjacent private properties, one industrial and one residential property, which would require obtaining a trail easement. Additionally, regrading on the industrial property may be necessary to push an existing drainage ditch back from the road in order to accommodate the trail.

Miller Avenue Curbless Street. West of Loomis Avenue, GO Carlson Boulevard becomes Miller Avenue. Traffic volume decreases significantly through this residential area. A multiuse sidepath on this street would likely require disruptions to private property, so a curbless street treatment is recommended along Miller Avenue (see page 42 for details about this facility type). Curbless streets involve improvements that beautify the street, resulting in traffic calming, an increased awareness of the presence of pedestrians and as a result a positive trail experience. Attractive or improved paving, wayfinding signage, "Share the Road" signage, and planting - whether for screening of adjacent residences, stormwater management, or general beautification - are all recommended.

Several road crossing improvements are recommended on GO Carlson Boulevard if the path is widened to a multiuse standard. Beginning from the east:

- A new crosswalk striping and pedestrian crossing signage are recommended at Meadowlake Boulevard where the trail would cross from the north side of the street to the south side. This would not only provide wayfinding cues for trail users but would also raise motorists' awareness of the presence of pedestrians.
- A pedestrian crossing with push button signal exists at the intersection of GO Carlson Boulevard and Bondsville Road (PA Route 340). The crosswalk is currently faded and should be restriped.
- A crosswalk across the access road to the fire department property would increase visibility of the trail.
- Given the lower traffic volume on Municipal Drive and four-way stop, a crosswalk paired with pedestrian crossing signage will allow trail users to safely cross Municipal Drive. Crosswalk striping should be more visible than the existing striping, which is a single set of white lines.
- Trail users will cross to the north side of GO Carlson Boulevard at Bailey Road and then will cross Bailey Road to continue on the proposed trail. Similar to the recommended treatment at Municipal Drive, this plan recommends the striping of more visible crosswalks as well as pedestrian crossing signage at this four-way stop.
- There is currently no crosswalk where the GO Carlson path crosses Links Street. A highly visible crosswalk should be striped across this road.

The recommended alignment would cross Bondsville Road (PA Route 340) at the existing crosswalk. Image source: Google Streetview.

Hazelwood Avenue

P&T Trail connector. The southern trail connection in this segment begins in the east at the terminus of the proposed P&T section of the Chester Valley Trail. The former P&T rail corridor joins with the Amtrak Keystone Corridor near the intersection of Gallagherville Road and Hazelwood Avenue, at which point the multiuse rail-trail would transition to an on-road route through Thorndale. With substantial clearing and grading, it may be possible to construct a multiuse sidepath along the north side of Hazelwood Avenue between the end of the proposed CVT extension and Marshallton Thorndale Road. This may require an easement from the owner of the private property at the northeast corner of the intersection of Hazelwood Avenue and Marshallton Thorndale Road.

Looking west on Hazelwood Road toward the intersection of Marshallton-Thorndale Road (PA340).

Marshallton Thorndale Road Crossing. Steep embankments on either side of Hazelwood Avenue at Marshallton Thorndale Road restrict visibility at the intersection. Further study is warranted to determine how this crossing can be made safe for pedestrians and cyclists. West of this intersection, trail users would travel along the straight and relatively flat Hazelwood Avenue. There are currently no sidewalks on this street; since sidewalks would not only provide pedestrian connectivity for trail users but also for the surrounding residents, they should be installed along the length of Hazelwood Avenue to connect with the Thorndale Train Station. Cyclists would share the road, so shared road legends, Share the Road signage, and branded CVT signage are all recommended to provide wayfinding and enhance visibility of this route. Since the recommended improvements are on-road facilities and are located on township roads, the implementation and maintenance of these improvements would likely be the responsibility of Caln Township.

Recommended Connections between GO Carlson Boulevard and Hazelwood Avenue Segments

The Amtrak Keystone Corridor forms a physical barrier between this southern route and the GO Carlson Boulevard path. The following connections are recommended to join these two routes:

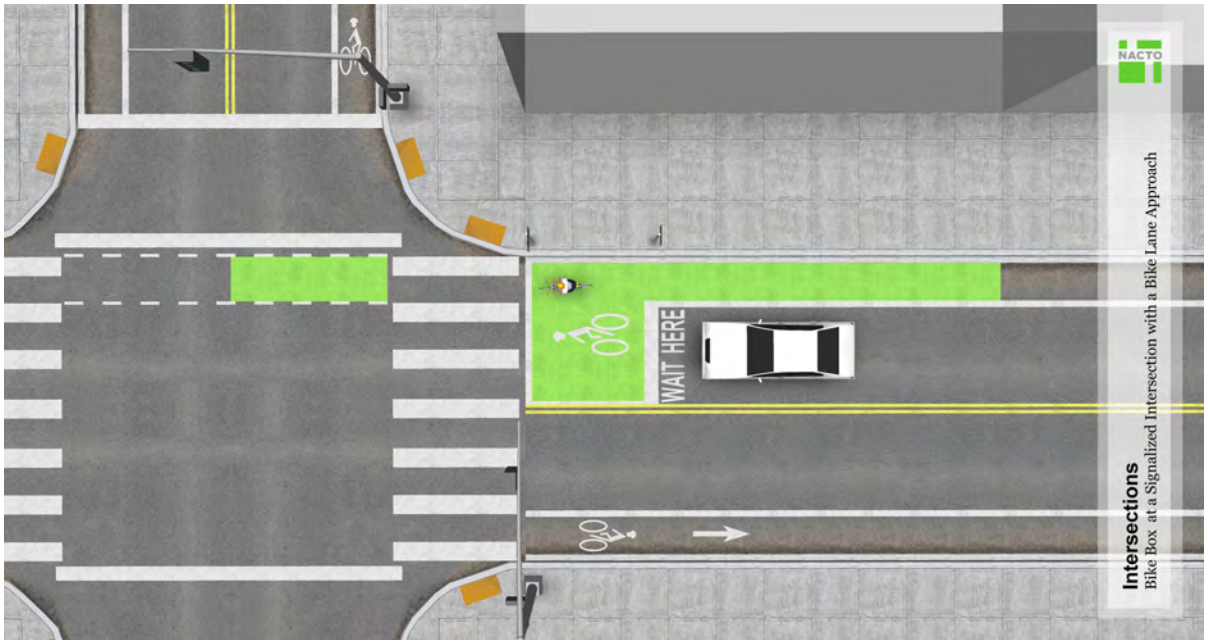
1. **Pedestrian Underpass Improvements.** An existing pedestrian underpass near the terminus of Embreeville Road allows pedestrians to cross under the Amtrak Keystone Corridor and emerge in sight of Business Route 30. The entrances to this underpass could be made more visible and approachable with signage, landscaping and other beautification measures. The northern entrance to the underpass is located in a parking lot, which could be striped to direct trail users to Route 30, where a new sidewalk would be required to safely connect to a signalized crossing at Municipal Drive. Although sidewalks exist along Municipal Drive, a multiuse path is recommended on the eastern side of the road to provide bicycle and pedestrian connections to the church, playground and municipal sports fields on this road. This trail would connect to the GO Carlson Boulevard Trail. The improvements recommended for this connection would likely be the responsibility of Caln Township or another designated partner organization.

Existing pedestrian underpass under the Amtrak corridor.

Elevated walkway along Bailey Road crossing under the Amtrak corridor at the Thorndale Station.

2. **Bailey Road Underpass**. The connection previously described would be inaccessible for cyclists, those with strollers, and the physically disabled due to the steps, therefore, a second crossing is proposed at Bailey Road where there is an existing grade-separated walkway that passes below the Amtrak corridor. This route would also connect trail users to the Thorndale train station. While the existing walkway provides greater separation between pedestrians and vehicular traffic, it is not wide enough to accommodate bi-directional pedestrian and bicycle traffic, so cyclists are required to dismount on this walkway. Currently the easternmost extent of the existing bike lanes along Route 30 is the Thorndale Station; the study team recommends the bike lanes be continued east at least to the intersection of North Bailey Road, allowing cyclists to connect to the GO Carlson Boulevard path via North Bailey Road. Intersection improvements at North

Bailey Road and Route 30 including bike stop boxes, dashed markings carrying the bike lane through the intersection, and Share the Road signage are recommended. Shared road markings, signage, and Branded CVT signage should be applied to North Bailey Road, as well. Since this is an on-road connection, Caln Township would be the primary party responsible for implementation and maintenance of this connector route.



Conceptual illustration of bicycle-friendly intersection treatments from the National Association of City Transportation Officials' Urban Bikeway Design Guide.

Conceptual Cost Estimate

GO Carlson Boulevard	**$7,516,000**
Multiuse Trail	$3,562,000
Curbless Street	$832,000
Inspection, Permitting, Engineering, Mobilization and Contingency	$3,122,000

Hazelwood Ave	**$2,469,000**
Split Mode w/ Proposed Sidewalks	$761,000
Split Mode w/ Existing Sidewalks	$3,800
Pedestrian Underpass Improvements	$20,000
Multiuse Trail	$658,000
Inspection, Permitting, Engineering, Mobilization and Contingency	$1,027,000

Implementation

A discussion between Caln Township and Chester County should be the first step to determine a plan for moving forward and to establish roles and responsibilities. As a general rule, municipalities would be responsible for maintaining any recommended on-road trail segments since the County owns no roads. Improvements recommended for the southern alignment along Hazelwood Avenue would not be necessary until the CVT extension is implemented. The recommended shared road striping and signage along Hazelwood Avenue would be relatively simple and inexpensive to implement, however, installing sidewalks along this 0.9 mile stretch of road would be a longer term project. Each homeowner along the proposed sidewalk would need to agree to permit its construction and to take responsibility for its maintenance, and funding would need to be put in place for engineering and construction. Homeowners may see more value in sidewalks once the Chester Valley Trail extension is complete as sidewalks will provide them with safe and direct access to this recreation amenitytrofitting the existing GO Carlson path to a multiuse standard could potentially be undertaken by Chester County. Since the County has no other park or trail facilities in the vicinity, the likelihood of this segment being operated by Chester County increases if it were connected to the recommended Beaver Creek segment to the east, which would create a 5.4 mile-long continuous multiuse trail.

The GO Carlson segment could potentially be implemented in phases. Portions of trail that do not currently exist, such as along Park Drive and west of Barley Sheaf Road, could be engineered and installed first. Intersection crossings could be improved, and shared road legends and signage could be striped on the roadway to improve bicycle safety. Retrofitting the existing walking path to a multiuse standard is a more costly project with complex engineering and permitting that could be undertaken as a later phase.

Segment 3: High School Connector

Length: 1.7 miles

Location: Caln Township, City of Coatesville

Ownership/Operation: Caln Township, City of Coatesville

Facility type(s):

Multiuse	1.2 miles
Split mode with existing sidewalk	0.4 miles
Split mode with proposed sidewalk	0.1 miles

Impacted Landowners: 5

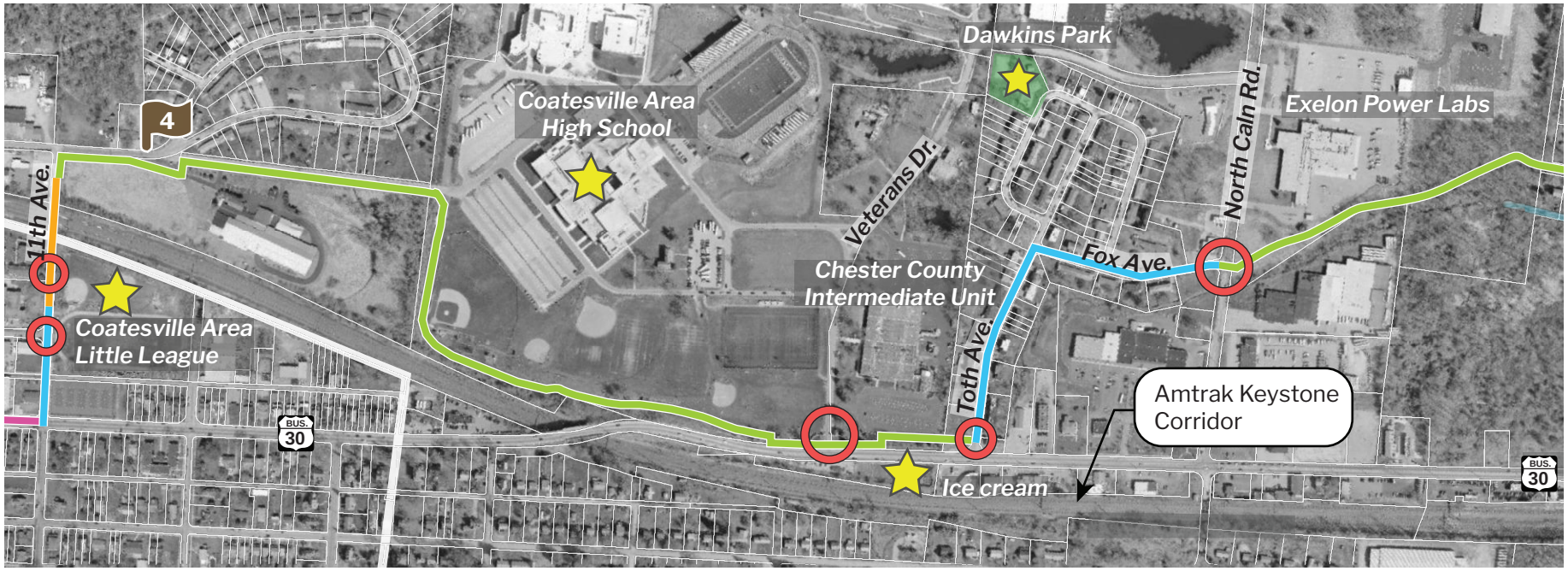
Right-of-way status: Mixed

Public right-of-way	0.5 miles
Coatesville area SD property	0.4 miles
Private property	0.8 miles

Estimate of Segment's Probable Cost: $4,056,800

General Description of Alignment:

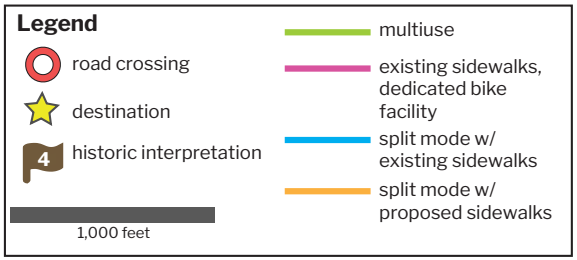
The public survey indicated that many would like the trail to connect to schools. Providing safe routes for children, parents and staff to travel to and from school can have positive impacts on health and also reduce peak hour traffic congestion. An alignment through the campus of the Coatesville Area High School was selected instead of using the existing bike lanes along Route 30 to access these potential benefits and to adhere to the project's goal of establishing a multiuse trail standard wherever possible.



Recommended improvements

Multiuse trail through Exelon property: At the western terminus of Miller Avenue, the alignment would become a multiuse trail that would extend into the woods along Valley Run on Exelon property. The project team spoke with Exelon staff about the trail, who were open to working with the trail and agreed to look into its feasibility with regard to their plant's future operational needs. Caln Township has a sewer easement just off the property and reported that an associated wetland survey delineated areas of wetland in this area. A wetland survey and delineation of Exelon's property would be necessary, and findings could necessitate special trail design considerations, permitting and/or potentially re-routing the alignment.

Fox Avenue / Toth Avenue On-Road Segment: The multiuse trail would terminate at North Caln Road directly across from the south side of Fox Avenue. Upon completion of this trail, a crosswalk at North Caln Road and accompanying actuated pedestrian flashing signal would be installed to cross this busy street. Pedestrians would continue along the south side of Fox Avenue using the existing sidewalk, and another crosswalk would be painted across Fox Avenue to allow cyclists to safely cross to the right side of the road. Shared road legends, or "sharrows" would be painted in both lanes of Fox Avenue and Toth Avenue in accordance with the National Association of City Transportation Officials' design guidelines. Additionally, branded wayfinding signage should be located sporadically along the alignment to assure trail users they are following the correct route.



Looking east on Fox Avenue toward the potential future crossing of North Caln Rd.

Gatehouse and stone wall flanking Veteran's Drive at Business Route 30

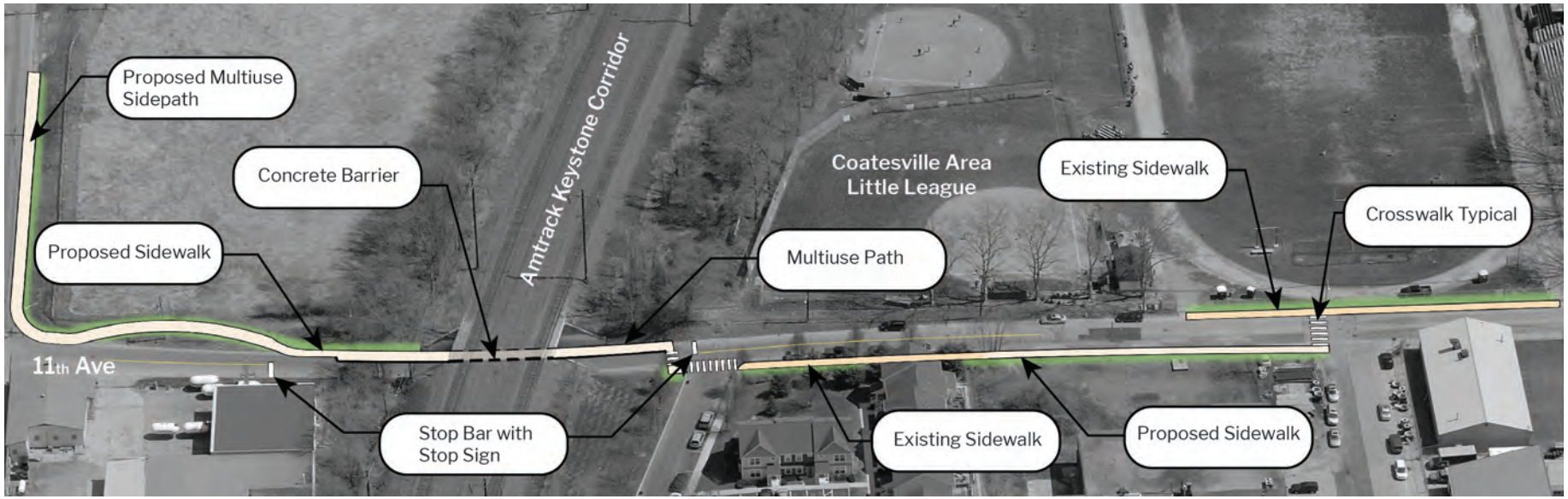
Multiuse Trail through High School Property: The existing sidewalk ends at the corner of Toth Avenue and Route 30. From this point, a multiuse trail would be developed parallel to Route 30 on the adjacent private properties. The project team contacted the Chester County Intermediate Unit (CCIU) Learning Center, one of the property owners, and learned that the use of the edge of their property for the trail would likely be feasible. A stone wall parallels Route 30 along both the CCIU property and the High School property. Veteran's Drive bisects the wall and is flanked by a stone gatehouse attached to the stone wall. Optimally the trail would be located on the north side of the stone wall to provide separation between the trail and Route 30; however, this would require creating an opening in the stone wall to cross Veteran's Drive at the existing crosswalk. It would also likely require the relocation of a bus shelter on the east side of Veteran's Drive and utilities on the west side to accommodate the trail. A more detailed engineering study of this intersection is needed.

West of this crossing, the trail would hug the southern boundary of the school property and pass behind the practice fields. Initial conversations with Coatesville Area School District officials indicated this alignment could be feasible, though final designs would need to be coordinated with staff to ensure adequate separation between students using practice fields and trail users. The trail would connect to Foundry Road and continue on the south side of this private road to 11th Street.

11th Avenue Sidewalks: At the corner of Foundry Street and 11th Avenue, the trail would turn south onto 11th Avenue. A multiuse trail would be challenging to accommodate along 11th Avenue, so this plan recommends 5' wide sidewalks be constructed on the eastern side of the road for pedestrians, painted "sharrow" legends and signage be installed for safer cycling accommodations. The roadway beneath the 11th Avenue Amtrak overpass is not wide enough to accommodate a 5' sidewalk and two travel lanes. Accordingly, this plan recommends replacing the northbound travel lane with a 10' wide multiuse lane under the overpass only. A concrete barrier would separate the multiuse lane from the single travel lane. Stop signs would be placed on either side of the bridge for the northbound and southbound lanes, and it would function as a one-lane underpass, of which Chester County has many. The sidewalk is not continuous on 11th Avenue, so the installation of new sidewalk and crosswalks to access existing sidewalk would be necessary. Refer to the concept plan on the opposite page for details.

Conceptual Cost Estimate

Split Mode w/ Proposed Sidewalks	$799,000
Split Mode w/ Existing Sidewalks	$6,800
Multiuse Trail	$1,566,000
Inspection, Permitting, Engineering, Mobilization and Contingency	$1,685,000
Total	**$4,056,800**



Conceptual improvements along 11th Avenue

Implementation

Chester County's Department of Facilities and Parks currently maintains the County's 20+ miles of multiuse trails. As more miles of multiuse trails are built, the County must be selective regarding which trails it commits to maintain. The strongest candidates for County ownership are multiuse trail segments of significant length in close proximity to other County facilities. The multiuse portion of this segment is less than a mile long and is not sufficiently close to other County facilities; therefore, the development and maintenance of the multiuse portion of this segment would likely be the responsibility of either the School District or Caln Township. Caln Township would be responsible for the on-road segments within the Township, and the City of Coatesville would be responsible for developing and maintaining on-road segments within the City. The following steps are recommended for implementation:

- **Identify stakeholders** - Assemble a group of stakeholders including representatives from Coatesville Area School District, Caln Township and the City of Coatesville to determine ownership and maintenance responsibilities of this trail segment. This group would then formulate an action plan for moving forward. County representatives can facilitate this conversation and provide technical support as needed.
- **Funding** - Develop and execute a funding strategy for right-of-way acquisition and engineering/ construction.
- **Right-of-Way** - Coordinate with property owners to acquire trail easements.
- **Design and Engineering** - Contract professional services for design, engineering and permitting of the trail. Consultant will determine an appropriate crossing of Veteran's Drive at Route 30 and will adjust the alignment accordingly.
- **Traffic Impact Study** - Commission a traffic impact study for proposed lane changes to 11th Avenue under the Amtrak overpass.
- **On-road Improvements** - Paint "sharrow" legends on Fox Avenue, Toth Avenue and 11th Avenue.

Segment 4: Coatesville

Length: 1.7 miles

Location: City of Coatesville

Ownership/Operation: City of Coatesville, PennDOT

Facility type(s):

Split mode with dedicated bike facility	1.7 miles

Impacted Landowners: 0

Right-of-way status: Public

Estimate of Segment's Probable Cost: $190,300

General Description of Alignment:

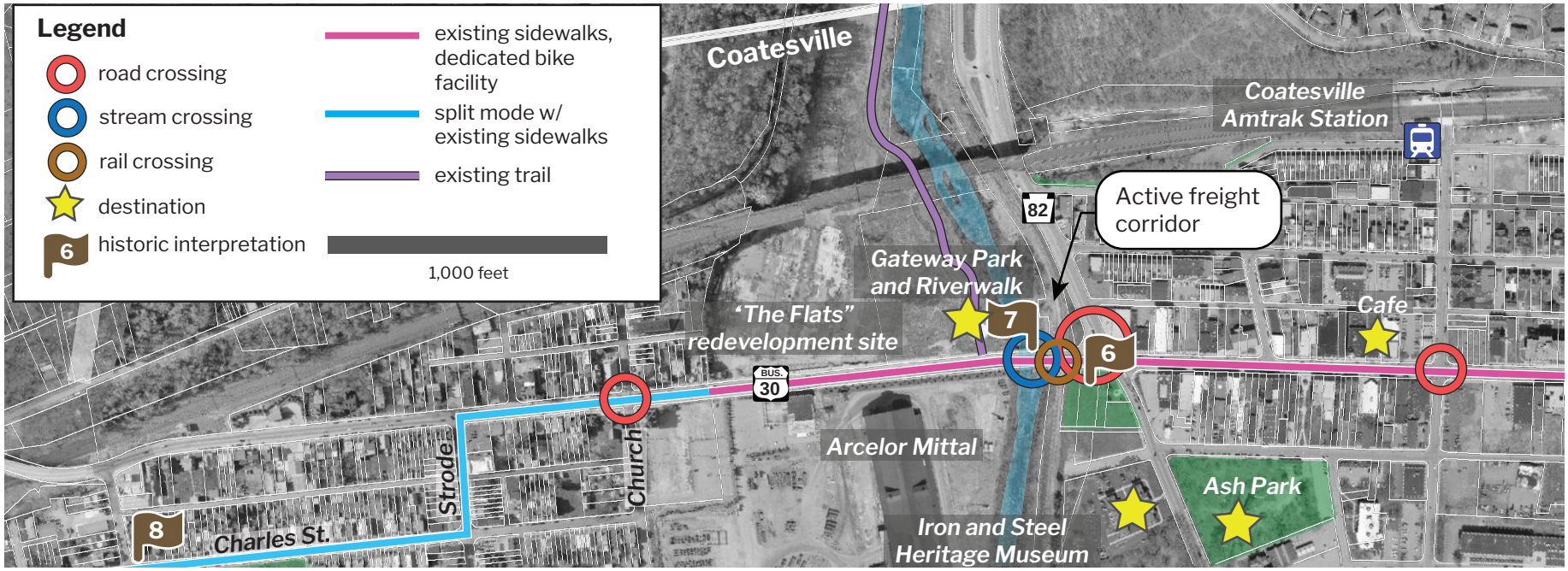
This project generated a robust public discussion of potential trail alignments through the City of Coatesville. Early on in the process, the project team determined that:

1. Bypassing the city to the north or south would involve steep climbs out of the valley, making the trail challenging for most users and rendering the development of a multiuse trail infeasible;

2. Passing through Coatesville's central business district could spur economic development and revitalization of the corridor; and

3. The City's dense development patterns could not accommodate a multiuse trail.

Due to the infeasibility of developing a multiuse trail through the City, only on-road alignments were studied. After many comments from the public, conversations with stakeholders and field reconnaissance, Business Route 30 was determined to be the best alignment through the City. Its proximity to the central business district, existing bike lanes and well-lit, public atmosphere were all contributing factors to this decision.



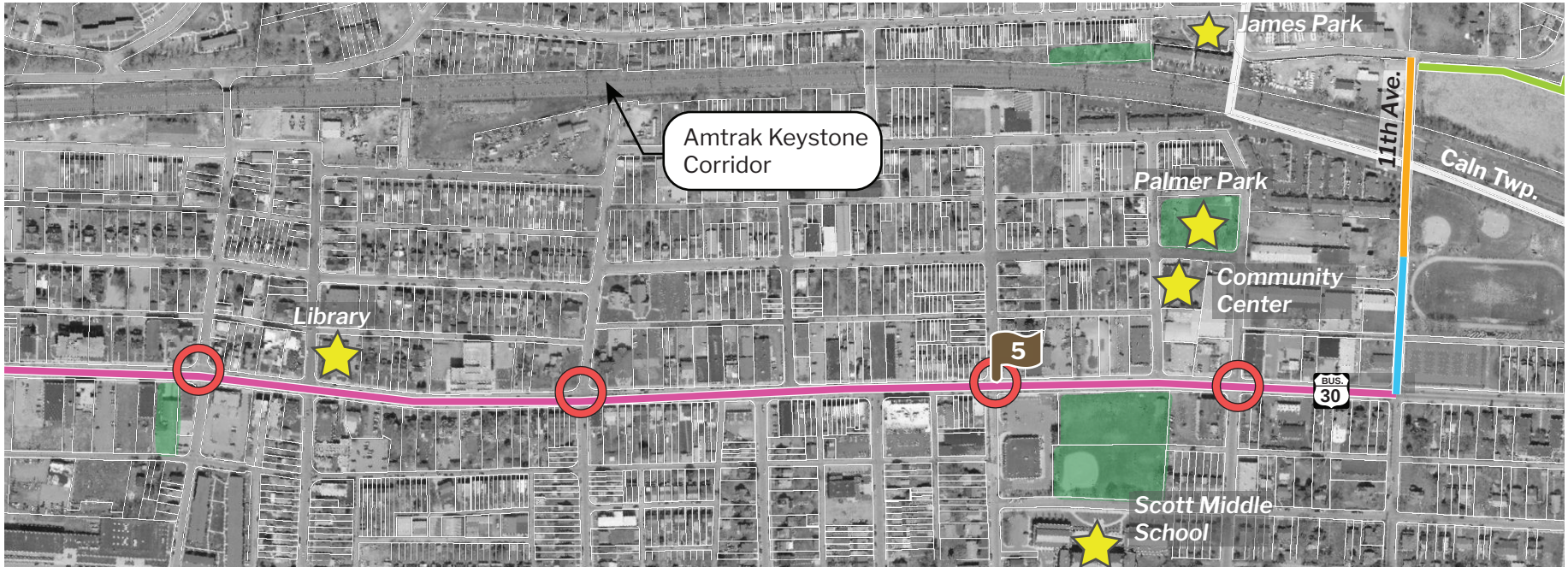
Short-Term Recommended Improvements

East of First Avenue. Since Route 30 already features bike lanes and sidewalks, no improvements are necessary in the short-term for connectivity. However, the existing bike lanes see limited use (approximately 20 bicycles per day in each direction according to 2017 counts from DVRPC), and observational data revealed that more people bike on the sidewalks than in the bike lanes, indicating a perceived lack of safety. In the long-term, a more defined facility that enhances bicycle and pedestrian safety and makes the central business district more vibrant can improve trail user experience, boost perceptions of the corridor and help attract businesses to the City. See the Long-Term Recommended Improvements section on the following page.

West of First Avenue. The existing bike lanes along Route 30 currently end approximately 250' east of the intersection of Route 82. PennDOT has indicated that no additional space within the cartway is available for a dedicated bike facility through this intersection. Cyclists must enter the roadway to cross this intersection or dismount and use the sidewalks and crosswalks. Crosswalks with pedestrian signalization are needed for the east and west bound lanes of Route 30 to cross this intersection and are currently being installed by the City as part of an improvement project to this intersection.

West of First Avenue it is recommended to replace the rarely used on-street parking lane with a bike lane. This bike lane would continue west on Route 30 to a point approximately 300' west of the intersection of Church Street. At this point, on-street parking is needed for the residences and businesses on Route 30, so

Existing automatic gate does not block pedestrians on the sidewalk from crossing the tracks when a train is coming.



westbound cyclists would be required to enter the travel lane. The eastbound side of Route 30 between First Avenue and Church Street has ample shoulder width, and a bike lane should be striped accordingly.

An active at-grade rail crossing lies 150' west of this intersection. Currently there are automatic gates and flashing lights that signal oncoming trains and block vehicular traffic (including cyclists) from crossing the tracks. However, the gate for the eastbound traffic lane is positioned such that it does not block pedestrians crossing the tracks on the sidewalk. This automatic gate should be relocated to block pedestrians on the sidewalk from crossing the tracks.

Long-Term Recommended Improvements

In order to create a more defined facility along this thoroughfare, further study of the feasibility of either protected bike lanes or a protected cycle track on the north side of the street is recommended. Both of these facilities would be located within the existing cartway. As described on page 43, a protected bike lane is a one-directional 5' lane located on each side of the street between the on-street parking lane and the sidewalk. It is separated from the parking lane by a striped buffer, curb or other barrier. The parked cars serve as a barrier between bike traffic and the vehicular lane of travel, providing both perceived and proven safety benefits. Similarly, a protected cycle track is a two-lane, bi-directional bike facility located on one side of the street between the on-street parking lane and the sidewalk. Cycle tracks are also buffered from the parking lane by striping, curbing or other barrier

Despite their proven safety benefits, protected bike facilities are currently not permitted under the Pennsylvania Vehicle Code as of this report's printing. As a result of growing interest across the state in making roads safer for cyclists, legislation has been introduced in the Pennsylvania legislature that would permit protected bike facilities. Since it may be only a short time until these facility types are permitted, planning for a protected bike facility along the Route 30 corridor is recommended so the feasibility and implementation process may begin upon passage of the pending legislation.

Photosimilulation of a protected cycle track along Business Route 30.

Since Business Route 30 is also a bus route, design and engineering of the cycle track would require the incorporation of bus stops and access between the bus stop and sidewalk. Since cycle tracks are strictly for cyclists' use, keeping pedestrians on the parallel sidewalk out of the cycle track would also be an important design consideration. A planting strip that could also function as a green stormwater management feature could be located along the sidewalk to separate pedestrians and cyclists and for streetscape beautification.

The large brownfield property west of the rail crossing known as "The Flats" is slated for redevelopment. To provide further separation between the vehicular traffic and the proposed cycle track, the cycle track could be incorporated into site plans for the future redevelopment project.

Conceptual Cost Estimate

Extend Bike Lanes and Split Mode with Existing sidewalks	$11,300
Relocate automatic gate for rail traffic	$100,000
Inspection, Permitting, Engineering, Mobilization and Contingency	$79,000
Total	**$190,300**

Implementation

The city of Coatesville would be responsible for implementing this segment as the recommended facilities are all on-road. If the pending legislation passes, PennDOT will revise their Bicycle and Pedestrian Design Manual to include protected bike lanes and cycle tracks. Once this guidance is released, an engineering consultant should determine whether this facility can be accommodated within the cross-section of the existing roadway.

Short-Term Implementation Steps:

- Obtain funding to relocate automatic gate for at-grade rail crossing for eastbound lane of Route 30.
- Install branded CVT signage along Route 30.
- Stripe bike lanes and legends on Route 30 between Church Street and First Avenue. Where widths cannot accommodate a bike lane, stripe shared road legends ("sharrows"). This project could be incorporated into roadway resurfacing work PennDOT undertakes for Route 30, scheduled for 2019.

Long-Term Implementation Steps:

- Upon the passage of legislation that would make protected cycle tracks permitted, obtain funding to hire a consultant to determine the feasibility of implementing a cycle track on Route 30 between 11th Avenue and Church Street Coordination between the City, consultants, PennDOT would be required to ensure all current City initiatives along the Route 30 corridor are considered in this project.
- If protected bike facilities are determined to be feasible:
  - Obtain funding for design, engineering and construction of protected bike facility and planted buffer/stormwater planter
  - Determine project partners for maintenance of potential planted buffer/ stormwater planter

Conceptual rendering showing the incorporation of a bus stop into a protected bike facility. Source: Alta Planning + Design.

Segment 5: West Coatesville and Westwood

Length: 3.6 miles

Location: City of Coatesville, Valley Township, Sadsbury Township

Ownership/Operation: City of Coatesville, Valley Township, Chester County

Facility type(s):

Multiuse trail	2.4 miles
Split mode with existing sidewalk	1.0 miles
Split mode with proposed sidewalk	0.2 miles

Impacted Landowners: 5

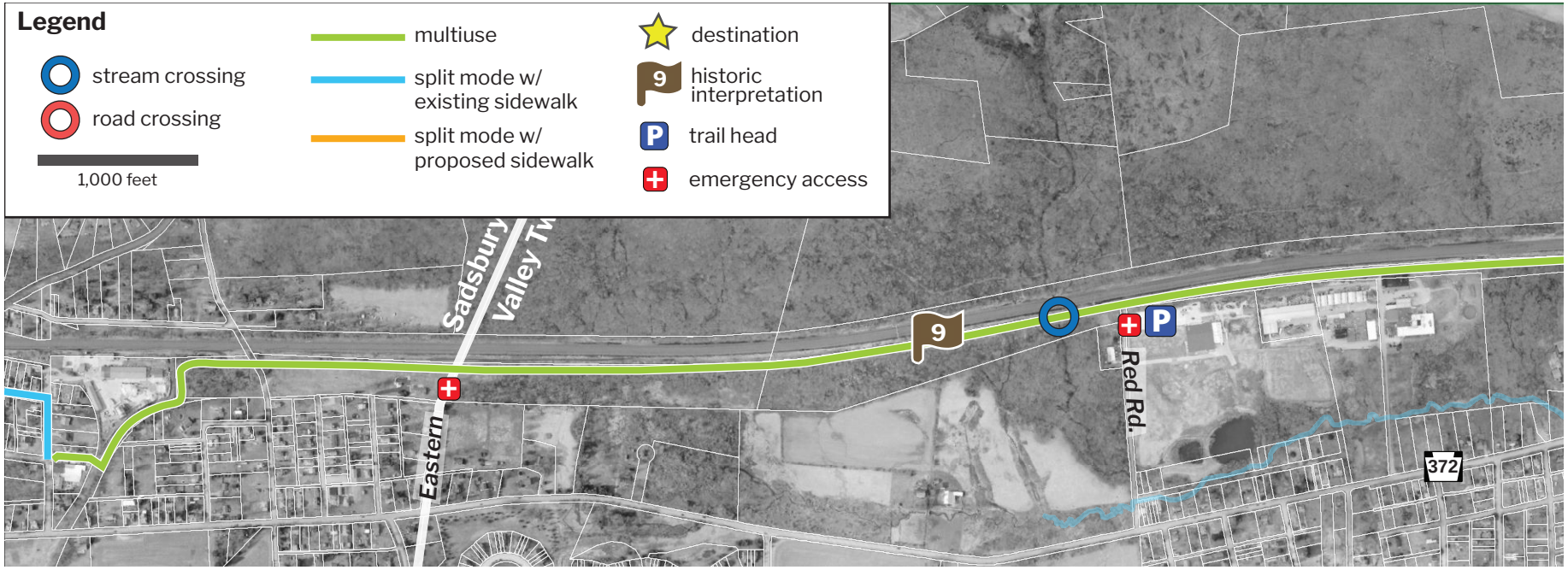
Right-of-way status: Mixed

Public right-of-way	1.2 miles
Private property	2.4 miles

Estimate of Segment's Probable Cost: $4,338,000

General Description of Alignment:

A feasible alignment for a multiuse trail was not identified through West Coatesville due to its densely developed urban nature. An on-road connection via relatively low-volume streets is recommended to connect to a potential multiuse trail just west of the City in Valley Township. This trail would be located on a former rail corridor that spans nearly 2.5 miles, and two of these miles are owned by a single entity. The project team discussed the trail with the property owner and believes a trail could be possible along this corridor. The westernmost half-mile of this proposed multiuse alignment is split amongst four different property owners.

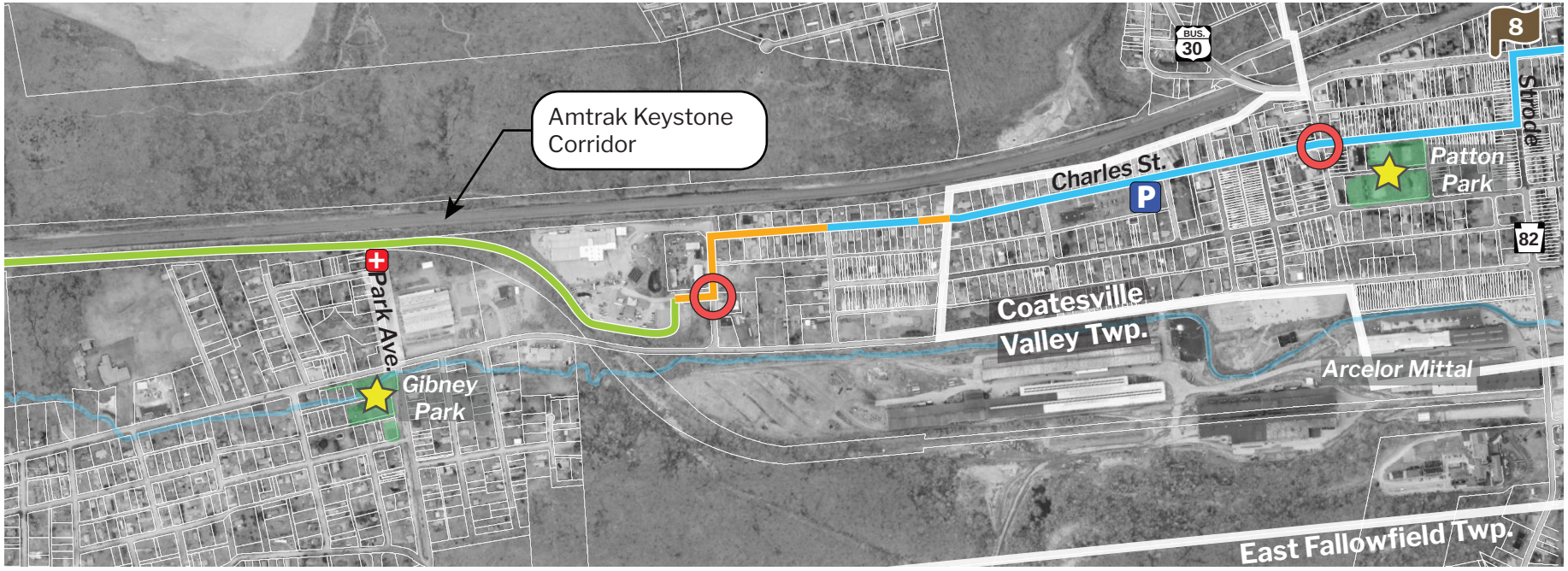


Recommended improvements

Business Route 30 narrows west of Church Avenue, and the recommended bike lanes or cycle track would transition to a shared road condition west of this intersection. Shared road legends, CVT branded signage and "share the road" signage would be installed on Route 30, Strode Avenue and Charles Street to provide wayfinding cues to trail users and to alert motorists as to the presence of cyclists and pedestrians. The City of Coatesville would be primarily responsible for the development and maintenance of these on-road segments, with Valley Township being responsible for the small segments of Charles Street and 11th Avenue that lie outside the City limits.

Charles Street on-road segment. This low-volume residential street features sidewalks for most of its length, but a few short segments of sidewalk are missing. Completing these sidewalk gaps is recommended, which would require determining the limits of the public right-of-way and obtaining approval from adjacent property owners to build the sidewalk. Each property owner would likely need to grant a temporary construction easement for the installation of the sidewalks, as well as agree to maintain the sidewalk in front of their property. Charles Street dead-ends at a large industrial operation on 11th Avenue. Trail users would turn south on 11th Avenue, where the installation of a sidewalk is recommended on the east side of the street. A new crosswalk across from the industrial property's driveway on 11th Avenue would allow trail users to cross the street to a proposed multiuse sidepath along the western side of the driveway that would connect to the proposed multiuse path along the former rail spur. The location of the trail through the industrial property shown on the map is

Charles Street



conceptual and would need to be coordinated with the property owner to provide security for their facility and safety for trail users.

Portions of the former rail spur would require significant clearing and grading to achieve a multiuse standard while other portions are substantively clear.

Trail heads. Two trail heads are recommended along this segment as residents not within walking distance of the multiuse trail may access it by driving.

1. The United Steel Workers union has a facility on Charles Street with a large parking lot. The city could approach the union about allowing trail users to park in this lot.

2. Another existing parking lot at the end of Red Road adjacent to the proposed multiuse trail could potentially serve as a public trail head. This lot appears to be unused and is owned by the industrial company that owns the rail spur where the trail is proposed.

Multiuse rail-trail segment. The multiuse portion of this segment is relatively secluded, and the project team learned that there is significant illicit ATV use along the former rail spur between Coatesville and Parkesburg. Opening this trail to the public and increasing its visibility will quell some of the ATV use, though additional measures could increase the safety of trail users and reduce undesirable use of the trail. See page 121 for a discussion of potential safety and security measures that could be implemented if warranted.

An underutilized parking lot along Charles Street could potentially serve as a trail head.

Some sections of the former rail corridor are clear while others are overgrown.

Implementation

Given its substantial length, the multiuse portion of this segment could potentially be owned and operated by Chester County. The development and maintenance of on-road portions would be the responsibility of the City of Coatesville and Valley Township. This segment is recommended as an earlier phase project since obtaining a trail easement could happen in the short term given that the majority of the multiuse alignment is owned by a single entity. Creating the safe on-road connections between Coatesville's central business district and the multiuse trail would require only striping and signage, and could potentially be implemented in the short-term. The following actions are recommended for implementing this trail segment:

- Work with PennDOT to stripe "sharrows" on Route 30 between Church Avenue and Strode Avenue, as well as on Strode Avenue.
- Municipalities stripe "sharrows" on Charles Street between Strode Avenue and 11th Avenue, and on 11th Avenue. Install CVT branded signage and Share the Road signage on these roads.
- Negotiate acquisition of right-of-way for former rail spur with 5 property owners.
- Obtain funding for design, engineering and construction.
- Conduct boundary surveys for sidewalk gaps on Charles Street and 11th Avenue. Coordinate with property owners to obtain any necessary easements.
- Identify funding for engineering and construction of sidewalks.

Conceptual Cost Estimate

Split Mode w/ Proposed Sidewalks	$192,000
Split Mode w/ Existing Sidewalks	$16,000
Multiuse Trail	$2,827,000
Trail Head Improvements	$70,000
Inspection, Permitting, Engineering, Mobilization and Contingency	$1,233,000
Total	**$4,338,000**

Segment 6: Pomeroy to Parkesburg

Length: 1.7 miles

Location: Sadsbury Township, Parkesburg Borough

Likely party(ies) to own and operate: Sadsbury Township, Chester County

Facility type(s):

Multiuse	1.4 miles
Split mode with existing sidewalk	0.1 miles
Split mode with proposed sidewalk	0.2 miles

Number of private landowners impacted: 3

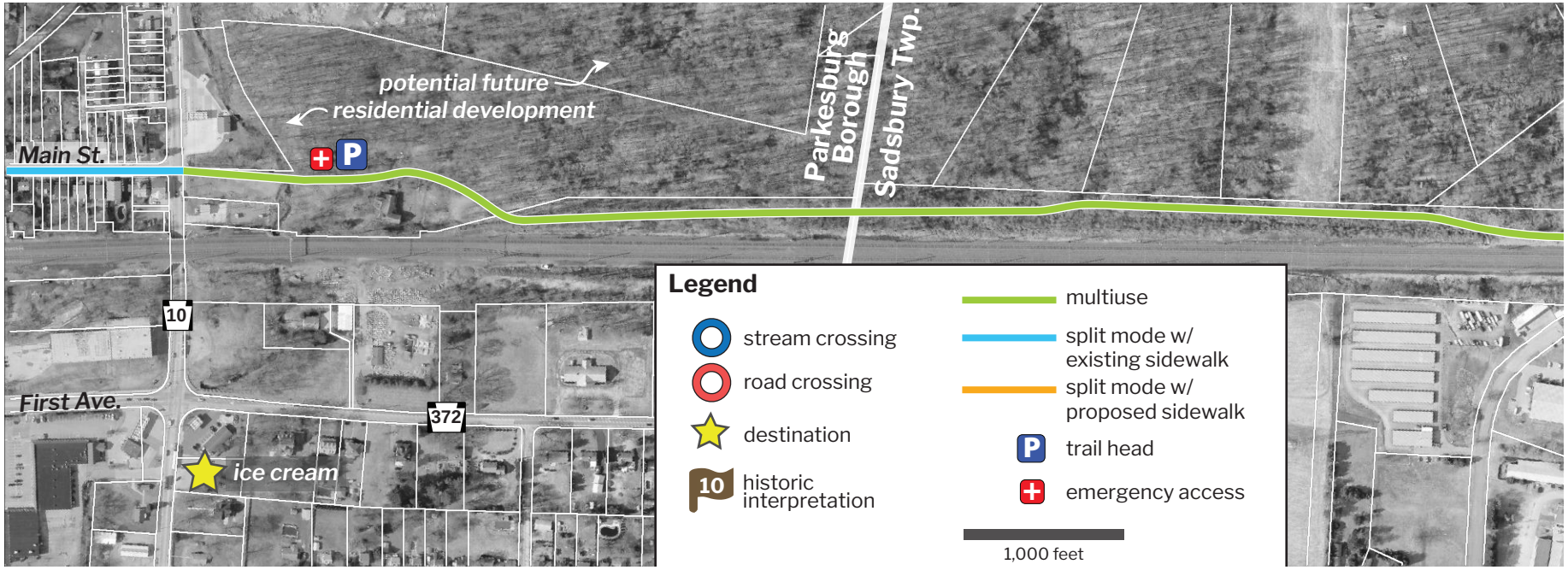
Right-of-way status: Mixed

Public right-of-way	0.3 miles
Township owned property	0.4 miles
Private property	1.0 miles

Estimate of Segment's Probable Cost: $3,031,000

General Description of Alignment:

With only a brief on-road connection through Pomeroy, this 1-1/3 mile multiuse segment would connect with the proposed Westwood segment to form nearly four miles of off-road multiuse trail connecting the population centers of Parkesburg and Coatesville.



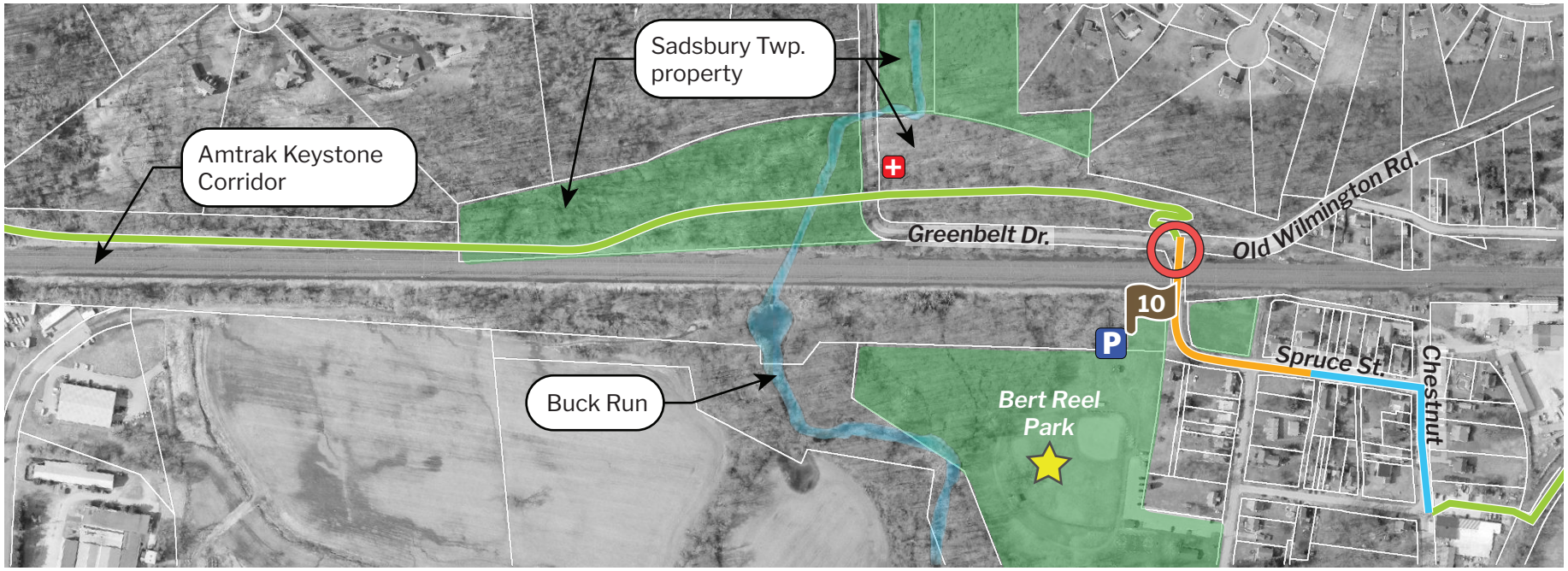
Recommended improvements

On-road connection through Pomeroy: A feasible alignment for a multiuse trail through the small village of Pomeroy could not be identified. A brief on-road connection is recommended to connect the proposed multiuse trail on the south side of the Amtrak corridor to its counterpart on the north side. The south side trail would be closest to meeting street level at a commercial property on Chestnut Street. A safe connection either through the parking lot associated with this building or in the vicinity would need to be negotiated with the property owner. The negotiated location would determine the necessary improvements. Both Chestnut Street and Spruce Street are low-volume streets with existing sidewalks. Striping of shared road legends and installation of wayfinding signage on these streets would be the responsibility of Sadsbury Township. A short segment of sidewalk is missing between the Amtrak underpass and Oak Street, and a sidewalk and crosswalk should be installed to connect trail users to Sadsbury Township's Bert Reel Park.

An informal parking lot for the park exists near the Amtrak underpass . This plan recommends formalizing this parking lot as a shared trail head for the park and trail by adding spaces and wayfinding signage.

The stone arch overpass over Old Wilmington Road presents a challenge for the safe passage of trail users. This road sees relatively high traffic volume and has minimal sight distance at the overpass. Engineering for this portion of the trail will require a detailed study of how the trail can safely cross under this overpass and across the road to connect to the township owned property on the other side without significantly impacting traffic operations. If safe pedestrian access is determined infeasible, a new tunnel under the Amtrak corridor strictly for trail use may be considered.

Multiuse trail: Switchbacks to climb the 6' embankment just north of the overpass are necessary to create an ADA accessible path to the top of the embankment where a level path



Minimal sight distance and higher traffic volume on Old Wilmington Road at the Amtrak underpass

The recommended alignment passes over Greenbelt Drive

exists. This path runs parallel to the Amtrak Keystone Corridor and is located on parcels owned by Sadsbury Township and Amtrak. It crosses over Greenhill Road on a stone arch overpass, would require significant clearing and some grading to achieve a multiuse standard. In most locations it is separated from the Amtrak corridor by dense vegetation and significant grade change, so fencing may not be necessary. A pedestrian bridge may be required to cross a small tributary approximately 2,000' west of the bridge over Greenbelt Drive.

The westernmost part of this multiuse trail passes through a proposed residential development where 500 apartment homes could be built. Incorporating the CVT and a trail head into the design of this property would provide a major amenity to future residents.

Conceptual Cost Estimate

Split Mode w/ Proposed Sidewalks	$110,000
Split Mode w/ Existing Sidewalks	$2,000
Crossing study for Old Wilmington Rd. Underpass	$30,000
Multiuse Trail	$1,610,000
Trail Head Improvements	$20,000
Inspection, Permitting, Engineering, Mobilization and Contingency	$1,259,000
Total	**$3,031,000**

Implementation

Chester County is the recommended implementer of the multiuse portion of this segment, while the on-road improvements should be spearheaded by Sadsbury Township. A 4+ mile regional recreation amenity would be created through the implementation of this segment paired with the multiuse portion of the West Coatesville-Westwood segment to connect Coatesville and Parkesburg.

Just over half a mile of the proposed multiuse trail is located on Amtrak property. Amtrak has a lengthy process for determining whether their property can be used for a trail, and if they determine it can be, working with them on design and engineering to ensure the trail and active rail do not conflict is an even longer process. Initiation of this segment's development is recommended when the trails on either side of this segment are in progress to make a stronger case for the necessity of this segment.

Implementation steps include:

- **Coordination** - Continue to coordinate with the developer of the future apartment home development to ensure trail and trail head are incorporated into land development plans.
- **Access** - Work with Sadsbury Township to obtain access rights through township owned property.
- **Funding** - Identify funding for engineering of the multiuse trail segment.
- **Amtrak** - Upon either of the adjacent trail segments entering the implementation phase, begin coordination with Amtrak on use or purchase of a portion of their property. This will involve contacting their real estate department to initiate the process of obtaining an Engineering and Operating Clearance. Conceptual design drawings indicating the proposed alignment and improvements will need to be submitted to multiple Amtrak departments for review.
- **Design and Engineering** - Retain engineering services for design and permitting of trail head at Bert Reel Park, crosswalk, sidewalks and on-road improvements including a special study of trail improvements on Old Wilmington Road below the Amtrak overpass.

Segment 7: Parkesburg

Length: 0.8 miles

Location: Parkesburg Borough

Ownership/Operation: Parkesburg Boro.

Facility type(s):

Split mode with existing sidewalk	0.5 miles
Curbless street	0.3 miles

Impacted Landowners: 0

Right-of-way status: Public

Estimate of Segment's Probable Cost: $1,521,000

General Description of Alignment

This study was not able to identify a feasible alignment for a multiuse trail through the Borough of Parkesburg. However, proposed multiuse trail segments to the east and west of the Borough would be within easy walking or biking distance of most borough residents. The goal for this segment was twofold:

1. To create safe and pleasant routes by which to connect residents to adjacent multiuse trails; and

2. To choose a route through the borough that shows off Parkesburg's charm and offers amenities for trail users.

Parkesburg is bisected by the Amtrak Keystone Corridor and features a commercial street on both sides of the tracks. North of the rail line, Main Street has some historic buildings, a few boutique shops and restaurants, and more of a small-town atmosphere. First Avenue (PA 372) parallels the Amtrak corridor to the south and features more "every day" businesses like banks, delis, and auto body shops. Both streets have existing sidewalks, and neither is wide enough to accommodate a separate bike facility. Main Street was chosen as the preferred alignment through Parkesburg for two primary reasons:

1. It has roughly half the traffic volume and less truck traffic than First Avenue; and

2. Its charm is more conducive to the type of economic development trails can help to catalyze.

Public input revealed that vehicles commonly speed on Main Street, and that the road is not wide enough for two-way traffic if one of the vehicles is a tractor trailer. In conjunction with the trail, traffic calming improvements should be considered on Main Street, which could include planted stormwater management bumpouts and potentially speed tables/ raised crosswalks. Such improvements could slow traffic to the posted 25 mile-per-hour speed limit, improve safety for all users of the roadway and enhance the visual quality of the streetscape.

Multiple development projects within Parkesburg are in flux and depending on how they are resolved could impact the alignment for the trail. These include: an in-progress design for train station improvements, a potential residential development that may or may not require signalization at the intersection of Main Street and Route 10; and uncertainty around whether Amtrak will permit the trail on their property east of Parkesburg. Additionally, at the time of this report's completion, Parkesburg was beginning a comprehensive planning process which could also generate more input about potential trail routes through the Borough. The recommended alignment through Parkesburg may remain undecided until there is more certainty around these developments.

Looking east across Route 10 from Main Street. This would be the potential signalized crossing location of the trail.

Recommended improvements

As the trail enters Parkesburg from the east it transitions from a multiuse trail to an on-road connection. Trail users will cross Church Street (Route 10) across from the terminus of Main Street. This crossing location has significant traffic volume but good sight distance; PennDOT recommends a rapid flashing beacon signalizing the trail crossing, a high-visibility crosswalk, and signage warning motorists in advance of the trail crossing. Vehicular signalization of this crossing may be required in conjunction with the proposed apartment

Photosimulation of potential improvements along Maple Street at the Parkesburg Train Station.

Legend

- road crossing
- destination
- 12 historic interpretation
- split mode w/ existing sidewalk
- curbless street
- train station

1,000 feet

development, and trail crossing improvements should be incorporated into this project.

Main Street and Culvert Street are both recommended as shared road facilities where pedestrians will use existing sidewalks and cyclists will share the road with motorists. The Parkesburg Amtrak Station is slated for improvements in the coming years, including improvements to Culvert Street and the main parking lot for the station on Maple Street. Accommodations for the CVT, including signage, shared road striping and other beautification treatments, should be considered as part of this project.

The recommended alignment follows the low-volume Maple Street as an alternate on-road route to First Avenue for the western half of this segment. This narrow Borough-owned road is more often used by children shooting hoops and residents walking dogs than by vehicular traffic. The recommended facility type for Maple Street is a curbless street; as described on page 42, improvements would primarily include beautification treatments including attractive paving, wayfinding signage, "Share the Road" signage, and planting- either for screening adjacent residences, stormwater management, or general beautification. These beautification treatments serve as traffic calming devices and would create a memorable and intimate trail experience.

Conceptual Cost Estimate

Split Mode w/ Existing Sidewalks	$8,000
Crossing at Route 10	$123,000
Curbless Street	$758,000
Inspection, Permitting, Engineering, Mobilization and Contingency	$632,000
Total	**$1,521,000**

Implementation

Given that the entirety of this segment is on-road, the implementation and future maintenance of all improvements would be the responsibility of Parkesburg Borough. Chester County can provide technical support to obtain funding for sidewalk and streetscape improvements as well as road striping. Steps toward implementation include:

- **Coordination** - Coordinate with the developer of the potential apartment community to incorporate trail crossing infrastructure at their main entrance on Route 10 across from Main Street.
- **Roadway Improvements** - Monitor PennDOT's maintenance schedule and incorporate "sharrow" striping on Main Street into PennDOT's resurfacing.
- **Train Station** - Keep the CVT recommended alignment in mind when coordinating with PennDOT and Amtrak regarding the train station improvement project. Depending on the scope of the project, pedestrian improvements to Culvert Street and some beautification elements on Maple Street may be incorporated into the train station redevelopment project.
- **Maple Street** - Identify funding for design and construction of beautification improvements on Maple Street. This could be undertaken as a later phase since Maple Street has so little traffic volume and already provides a relatively safe connection for Borough residents to the proposed multiuse trail just to the west (see page 110).

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Segment 8: West Sadsbury

Length: 2.1 miles

Location: Parkesburg Borough, West Sadsbury Township

Ownership/Operation: Chester County

Facility type(s):

Impacted Landowners: 6

Multiuse	2.1 miles

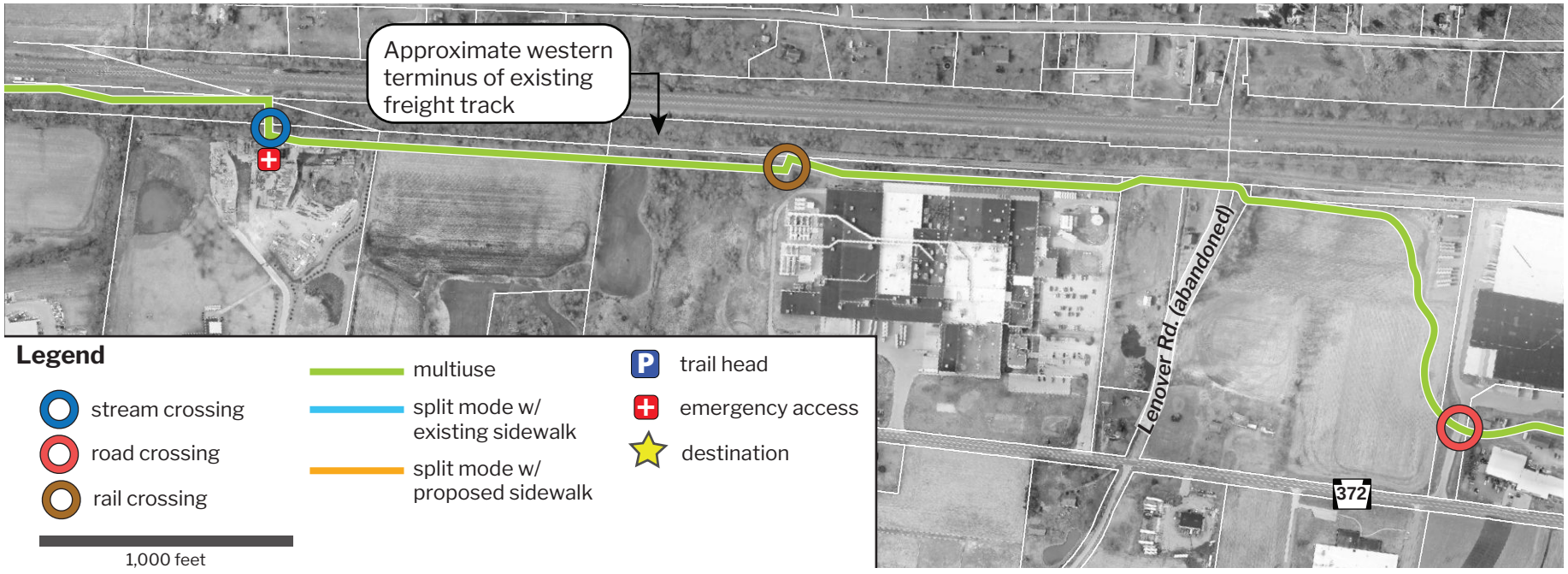
Right-of-way status: Mixed

Public right-of-way (paper street)	0.1 miles
Private property	2.0 miles

Estimate of Segment's Probable Cost: $4,658,000

General Description of Alignment:

An off-road multiuse trail that roughly parallels the Amtrak corridor to the south is the recommended alignment between Parkesburg Borough and the proposed Enola Low Grade segment in Atglen (see page 114). This segment is primarily located on private property. The project team contacted the major landowners to discuss the possibility of the trail and feasible alignments through these properties. All landowners approached expressed willingness to accommodate the trail, although more detailed study is needed.

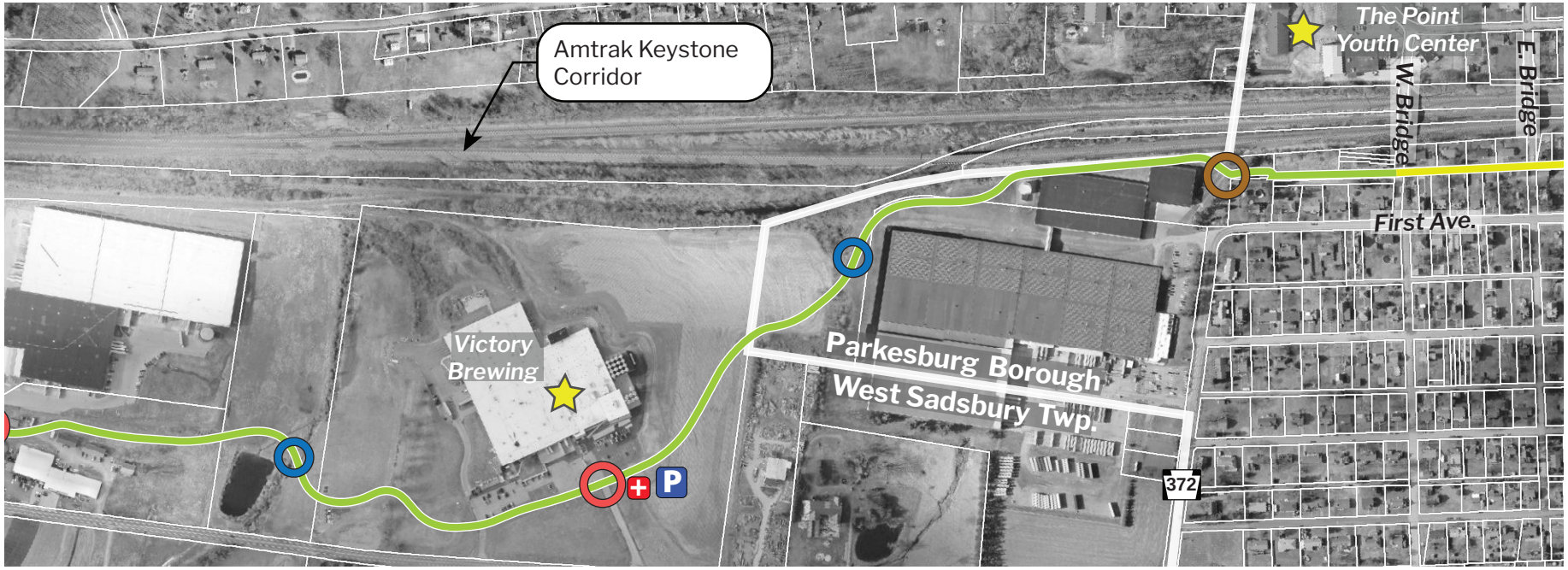


Recommended Improvements

Beginning in the east, the paved portion of Maple Avenue currently ends at the intersection of West Bridge Street, which is presently closed to vehicular traffic but will re-open within the next few years. When open, West Bridge Street will likely have low traffic volume, so crossing improvements could include signage and a high-visibility crosswalk. On the west side of West Bridge Street, the right-of-way for Maple Street continues west as a driveway and then as an unpaved paper street for approximately 400'. The recommended alignment continues along this right-of-way (or directly adjacent to the right-of-way as to not conflict with the existing driveway) and onto adjacent property owned by trucking company A. Duie Pyle. An existing unused but active rail spur serves this property that the trail would have to cross. Although rail service would be infrequent if this spur were ever used, future engineering would need to consider safe crossing treatments and permitting for a trail crossing of this spur. Similar consideration would be needed for the crossing of a second rail spur that once served another of the industrial buildings along this corridor.

The public engagement process identified that residents would like to be able to connect to Victory Brewing's Parkesburg location on the trail. Victory is also enthusiastic about this idea and would prefer the trail pass in front of its building and parking lot. Victory expressed future plans of building an outdoor beer garden adjacent to its parking lot, and the trail could be incorporated into the design of this space.

The recommended alignment crosses an active but unused rail spur on private property.

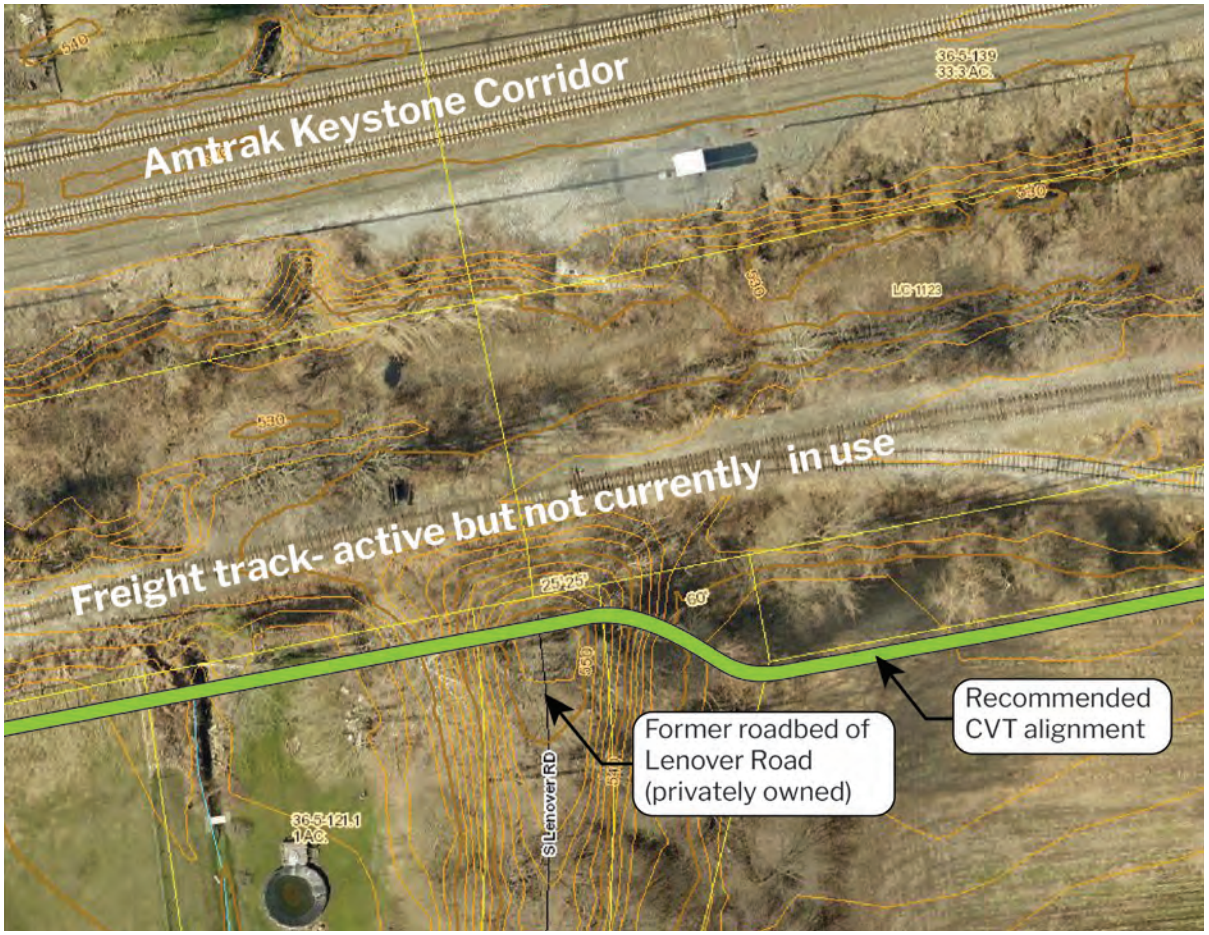


Victory Brewing representatives also seemed interested in the possibility of designating their parking lot as a CVT trail head.

Victory Brewing's Parkesburg brewery will be a popular destination along the trail.

The trail would pass through several currently undeveloped industrial parcels that could be developed in future years. Future detailed trail engineering and right-of-way acquisition would require ongoing communication with property owners to accommodate both the trail and future plans for these properties. These private landowners should also be included in design and engineering discussions to ensure adequate physical separation is provided between the trail and existing and proposed industrial uses.

This segment contains both previously delineated and suspected wetland conditions as well as bog turtle habitat, a threatened species in the area that could necessitate the relocation of the trail alignment. The recommended trail alignment for this segment indicates the route preferred by the major landowners, but further design would require careful inventory of sensitive environmental conditions and mitigation measures to avoid impacting these features.



The embankment of the former Lenover Road which will require significant excavation in order to construct the recommended alignment of the CVT.

The proposed trail passes between the former Lenover Road, which was recently abandoned by the Township north of Route 372, and the freight track that serves the industrial buildings along this corridor. The embankment that once carried Lenover road over the Amtrak corridor still exists and would require significant excavation to accommodate a multiuse trail between the embankment and the adjacent rail corridor.

At the western end of this segment the trail would enter the former Enola Low Grade rail corridor, currently owned by SEPTA, via an existing utility access path on private property. The access path crosses a drainage ditch, and a small bridge that can accommodate both trail users and heavy equipment may be required in this location.

Trail users will use this access path to enter the former Enola Low Grade rail corridor - refer to the Enola Low Grade Segment section that follows.

Conceptual Cost Estimate

Multiuse Trail	$2,703,000
Trail Head Improvements	$20,000
Inspection, Permitting, Engineering, Mobilization and Contingency	$1,935,000
Total	**$4,658,000**

Implementation

This segment of the CVT West would likely be undertaken by Chester County. The first step toward implementation is to conduct a thorough environmental scoping investigation to identify all environmental constraints that could influence the trail's location. The findings of this study should be discussed with each land owner to determine a final alignment. Once the alignment has been finalized, the process of obtaining right-of-way, whether through easements, use agreements or fee-simple purchase, can begin.

The recommended alignment crosses two active but currently unused rail spurs that serve the industrial buildings along this corridor. Coordination with Norfolk Southern Railway, the owner and operator of these freight spurs, will be necessary to determine acceptable crossing treatments.

Segment 9: Enola Low Grade

Length: 1.8 miles

Location: West Sadsbury Township, Atglen Borough

Ownership/Operation: Chester County

Facility type(s):
Multiuse 1.8 miles

Impacted Landowners: 2

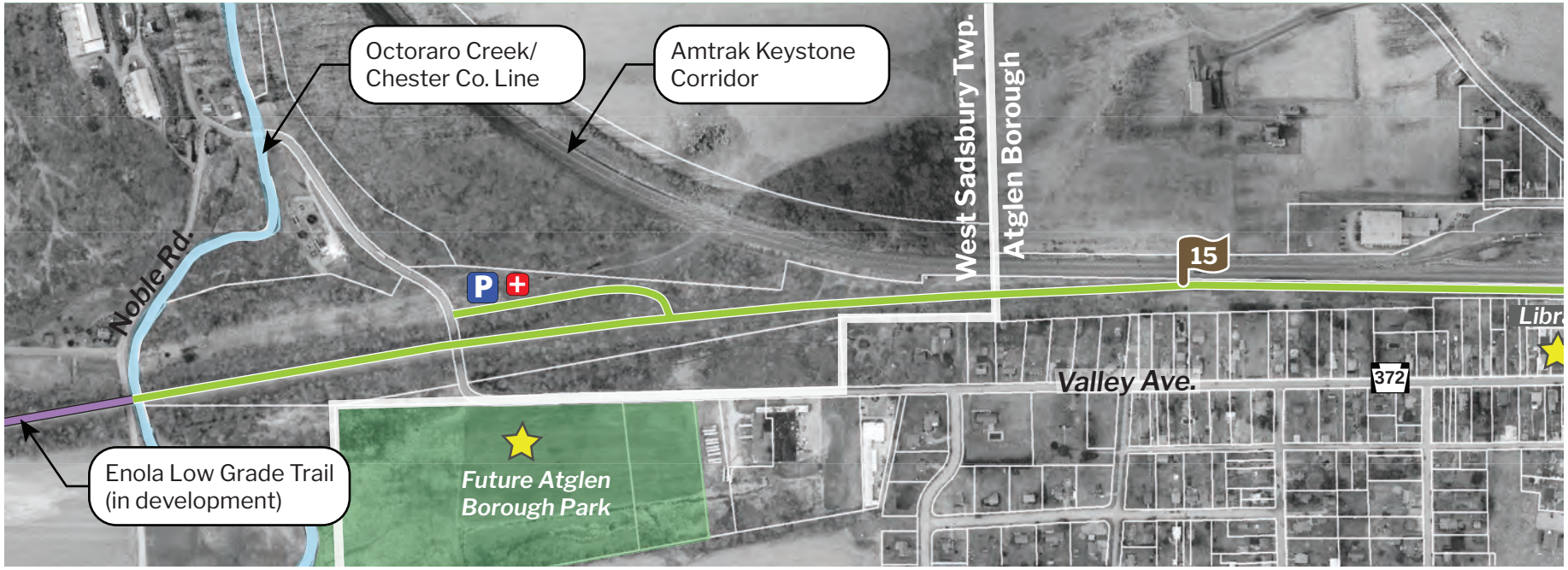
Right-of-way status: Private

Estimate of Segment's Probable Cost:
$3,987,000

General Description of Alignment:

Just across the Octoraro Creek, municipalities in Lancaster county are busy developing the Enola Low Grade rail-trail (see page 119 for details). The easternmost nine miles are currently in design and are planned for construction up to the Chester County line by 2020. Chester County wishes to continue this trail east along the same former rail corridor, which is currently owned by SEPTA. SEPTA purchased the corridor with the intention of bringing rail service to Atglen in the long-term. Although SEPTA has not yet committed to this service extension, this study found that a single rail track and the CVT could be designed to co-exist within this corridor.

This segment provides complete separation between trail users and vehicular traffic. Most significantly, the former rail corridor passes under PA Route 41, a major thoroughfare for regional truck traffic that would present a significant barrier for trail crossing.

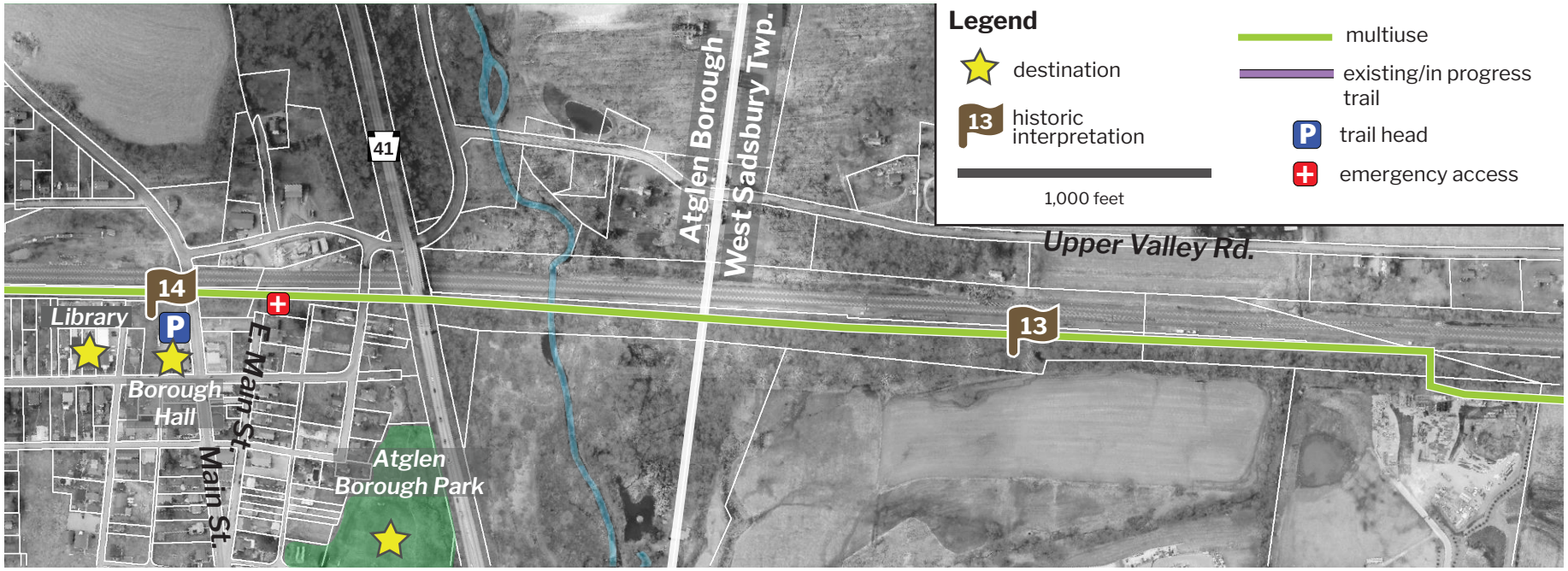


Photosimulation showing the coexistence of the trail and potential future SEPTA track servicing Atglen. The trail will pass under Route 41.

Recommended Improvements

Field reconnaissance of this segment indicated that aside from paving, few improvements would be necessary to convert this former rail corridor into a multiuse trail.

SEPTA is just beginning a three-year long-range planning process that will determine whether or not extending service to Atglen will occur within the next thirty years. Therefore, it is not yet known whether the trail will need to share the corridor with a single passenger rail track. Because this trail segment is a short-term priority and rail service is a long-term possibility, the life of the trail pavement will likely be nearing its end when and if rail service becomes a reality. At this point, the trail could be relocated within SEPTA's property to



accommodate the train. With this phasing in mind, it is recommended that the trail be built in the location where it would be simplest to develop and not necessarily where it would not conflict with a potential future rail track. If SEPTA determines it will one day pursue service extension to Atglen, trail design can be included in the engineering for rail service extension.

For most of its length the corridor is directly adjacent to the active Amtrak line, so significant coordination with Amtrak would be required to ensure adequate separation between the trail and the Keystone Corridor.

Valley Avenue passes under the Enola Low Grade at this stone arch overpass. The narrow width and minimal sight distance make this portion of the road an undesirable trail route.

Photosimulation showing trail improvements on the Enola Low Grade rail corridor in Chester County.

Trail heads. The closest planned trail head for the Enola Low Grade Trail is several miles west of the County line. Two trail heads are recommended along this segment to provide nearby residents access to the trail:

1. A driveway and trail head on SEPTA property are recommended for those driving to the trail as crossing under the Enola Low Grade corridor at Valley Avenue is narrow and has restricted sight distance, making a pedestrian or bicycle connection under this overpass challenging.

2. Borough residents wanting to walk to the trail could access the corridor via a trail head located behind Atglen Borough Hall. This potential trail head is also the proposed location of a future train station parking lot if SEPTA were to extend service to Atglen. If this development should occur in the future, trail head parking and amenities should be included.

Atglen Borough is currently pursuing a study to create connections between their existing and future public parks and the Enola Low Grade Trail. This study may identify alternate trail head locations, so those suggested in this plan could be considered in Atglen's future study.

A view from the rail corridor of the potential trail head/SEPTA parking lot behind Atglen Borough Hall.

Conceptual Cost Estimate

Multiuse Trail	$2,101,000
Trail Head Improvements	$230,000
Inspection, Permitting, Engineering, Mobilization and Contingency	$1,656,000
Total	**$3,987,000**

Implementation

Paired with the recommended West Sadsbury segment, a 4-mile long multiuse trail could be built that connects to the 29-mile Enola Low Grade trail. This would create a significant recreation amenity for residents of and visitors to western Chester County. Due to the length of this multiuse segment and its proximity to Wolf's Hollow County Park in West Fallowfield Township, this segment would likely be developed and operated by Chester County. Significant coordination would be required with various stakeholders including SEPTA, Amtrak, PA DCNR and the municipalities in Chester and Lancaster County. Since Lancaster County's portion of the Enola Low Grade trail is anticipated to be complete within the next few years, extending that trail into Chester County to provide access to County residents elevates this segment to the first recommended phase of the CVT West. The following steps would be required for implementation:

- **Title Search** - Obtain a title search for the eastern half of the stone arch bridge that connects the Enola Low Grade corridor into Chester County to definitively determine the bridge's ownership.
- **Bridge Ownership** - Based on findings of title search, negotiate ownership of the eastern half of the bridge, if applicable.
- **Funding** - Identify and secure funding for trail engineering.
- **Utilities** - Identify utilities within rail corridor and coordinate access and trail placement.
- **Coordination with SEPTA** - Coordinate all proposed improvements with SEPTA to obtain their approval. Work with SEPTA to obtain an easement or use agreement for the corridor.
- **Design** - Coordinate with Amtrak on design and engineering to ensure adequate separation from the active rail corridor.

Overall Trail Master Plan

Implementation

Phasing

The recommended CVT West alignment is over 20 miles long and contains multiple challenges including stream crossings, roadway crossings, private property impacts and sensitive environmental areas. Developing the trail in its entirety would be an immense undertaking, and therefore breaking it into manageable phases is recommended.

Each trail segment presented in the Trail Segment Profiles section indicates a portion of the trail that would make sense to develop as one project. One exception to this is the Caln Township segment, which contains a northern alignment as well as a southern alignment. These could be developed as two separate projects.

It is likely that both the P&T section of the Chester Valley Trail and the Enola Low Grade Trail will be built before most if not all segments of the CVT West. This would create a gap between these two trails which otherwise form a continuous multiuse trail connection between the Susquehanna River and Philadelphia. Long-distance cyclists would benefit from an on-road bike route to fill this gap. Creating this signed and improved interim on-road alignment is recommended as the first phase of this project. See the Recommended Interim Alignment section within this chapter.

When prioritizing the development of the CVT West, some segments are more appropriate than others as short-term or early action projects. Segments that meet the any of the following criteria should be prioritized:

- Extend or connect to an existing multiuse trail;
- Build upon existing public support, political will or momentum;
- Capitalize on upcoming design or construction work - wrapping two projects into one creates efficiency and can reduce costs; or
- Have minimal development challenges or costs, such as those that require only signage and striping but that would greatly enhance pedestrian and bicycle safety and connectivity.

The study team recommends three segments as early action or short-term projects:

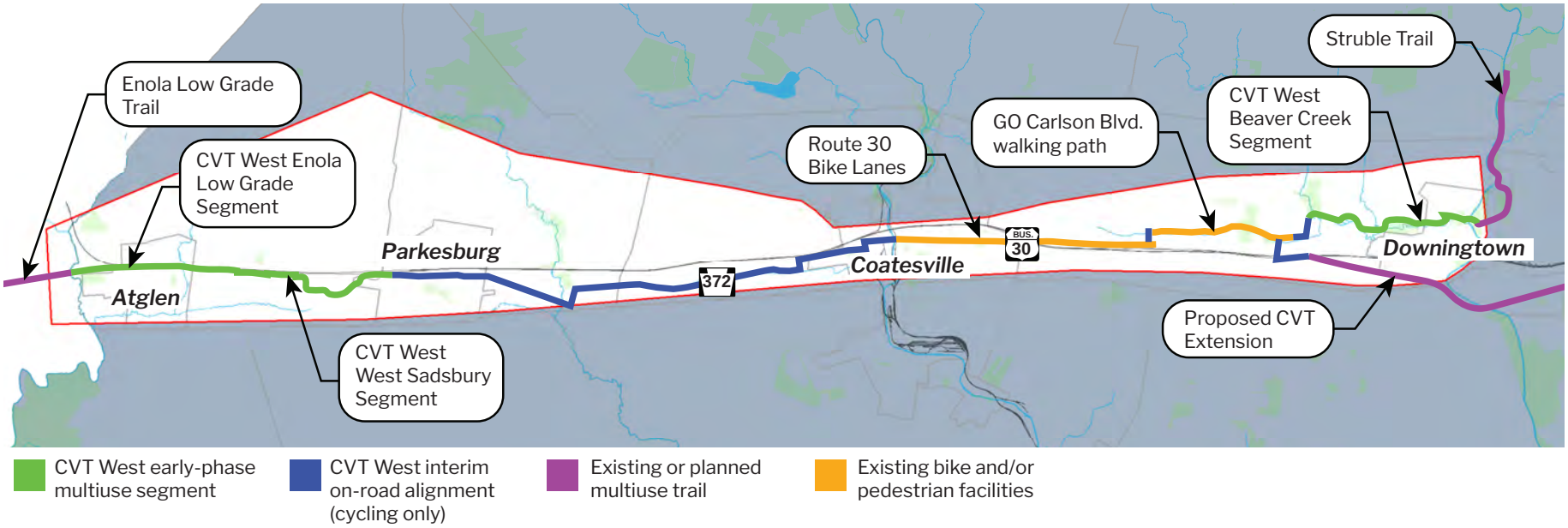
1) **Beaver Creek segment**. This segment will connect the southern end of the popular Struble Trail with the existing walking path on GO Carlson Boulevard and will provide safer access to several municipal parks. Additionally, a previous study conducted by Caln Township and a study currently underway by the Brandywine Conservancy will lay the foundation for public support of the project and will prepare it to move directly into engineering upon securing funding.

2) **West Sadsbury segment**. Just east of the Atglen segment, this segment will serve to further extend the Enola Low Grade Trail into Chester County and will provide Parkesburg residents easy access to the trail. Additionally, it will provide a bicycle and pedestrian connection between Atglen and Parkesburg Boroughs, which has long been desired. Although there are several private landowners with which the trail

implementing agency (likely Chester County) would have to negotiate for access, many of these landowners have already been approached and were amenable to finding an appropriate alignment for the trail through their property.

3) **Atglen segment**. This proposed multiuse segment will directly connect to the Enola Low Grade Trail at the Lancaster County Line, which is slated for completion by 2020. Even this short extension will make this regional recreational amenity more accessible to Chester County residents and will allow Atglen Borough to benefit from potential economic development benefits of being located at one end of the trail. Additionally, the corridor is owned by only two entities: SEPTA, and an entity still to be determined who owns the eastern half of the rail bridge that spans the Octoraro Creek and county line. Coordinating access to this corridor with only two entities can increase the feasibility of trail development in the short-term.

Phasing Diagram



Segments recommended for early-phase implementation will greatly enhance bicycle and pedestrian connectivity within the regional network of multiuse trails.

Operations, Maintenance and Security

The Chester County Department of Facilities and Parks is responsible for maintaining the 13.5 miles of the existing Chester Valley Trail and will likely take on operations and maintenance responsibilities for selected multiuse segments recommended within this report. According to the department, the County's 2018 maintenance budget for the Chester Valley Trail is approximately $286,000, or approximately $21,000 in annual maintenance costs per mile of trail. This figure includes all grounds, maintenance and supply costs, as well as salaries and benefits for three full-time maintenance workers assigned to this facility. In comparison with similar trails this figure is fairly high; however, the Chester Valley Trail is one of the most complex trails in the County system in terms of its number of signalized and non-signalized roadway crossings, bridges and culverts that are regularly maintained. Additionally, the Chester Valley Trail is maintained all year long which incurs costs for plowing and salting atypical of other trails.

The recommended alignment for the CVT West includes 14.0 miles of multiuse trail (12.9 of these miles are recommended to be maintained by Chester County), and 6.5 miles of on-road improvements, which would be maintained by each municipality. The budget listed below includes expected annual maintenance costs for the recommended multiuse segments only.

Annual Maintenance Costs for CVT West Recommended Multiuse Segments - +/-$294,000

- 2018 Chester County CVT Maintenance Budget = +/- $21,000/mile
- Total 14.0 miles of multiuse trail

Municipalities would be responsible for maintaining signage and pavement markings for on-road facilities such as bike lanes and shared road facilities. Sidewalks, which are the pedestrian component of shared road facilities, are typically maintained by the property owner. Maintenance of on-road facilities will be significantly less costly than maintaining a multiuse trail; municipalities will likely not need to hire additional staff to maintain on-road segments. Typical maintenance activities for on-road facilities include:

- Re-striping faded pavement legends as needed;
- Regular inspection of roadway condition, ensuring paving is free of potholes and debris;
- Regular inspection of signage; and
- Trimming or removal of vegetation to provide adequate clearances and sight distances.

In addition to maintenance, patrolling is also a cost necessary to safely operate the Chester Valley Trail. Chester County park rangers patrol all of the county's parks and trails, and their work patrolling the CVT is augmented by municipal police forces. The Chester County Parks and Facilities department believes the addition of 14 miles of multiuse trail to the CVT will warrant hiring an additional ranger, raising the County's current patrol budget by approximately $50,000.

Annual Security Costs +/-$50,000

- Chester County Park Rangers patrol county trails with assistance from municipal police forces.
- Volunteer Trail Ambassadors can augment municipal and County patrol on the trail and provide additional value.

Emergency Access

Providing adequate emergency access to the off-road portions of the recommended CVT West alignment will require careful consideration and design when the trail segments are engineered. There are limited locations along the proposed multiuse segments where emergency access would be possible due to topography, the Amtrak Keystone Corridor, woodlands and wetland conditions. Emergency access will be most critical in the more secluded off-road segments, including the Beaver Creek, West Coatesville/ Westwood, Pomeroy, West Sadsbury and Atglen segments. The project team sought to identify emergency access locations every ½ mile along these segments, though in some

locations access points are spaced as much as 1 mile apart. Coordination with property owners would be required where emergency access locations are located on or would require traversing private property. The following locations (from east to west) are recommended as potential emergency access locations:

1. Downingtown Little League*

2. Lloyd Park*

3. GO Carlson Boulevard east

4. Park Lane (Valley Township)

5. Red Road (Valley Township)*

6. Eastern Avenue (Sadsbury Township)

7. Greenbelt Drive (Sadsbury Township)

8. Parke Mansion Drive (Parkesburg Borough)*

9. Victory Brewing parking lot (West Sadsbury Township)*

10. JD Eckman equipment yard (West Sadsbury Township)

11. Main Street (Atglen Borough)

12. Proposed county line trail head (West Sadsbury Township)*

These locations are indicated on each individual trail segment's map.

* Indicates an emergency access location that is also a proposed trail head.

Safety

Concerns about safety on the trail surfaced during the public engagement process for this project. In the project team's experience, the likelihood of crime on the trail is commensurate with the amount of crime in the surrounding community. No community is free from crime, and some have more than others; therefore, during the design and engineering process for each segment, consultants should assess the potential for crime and employ appropriate Crime Prevention through Environmental Design (CPTED) standards. The following recommendations could also boost security on the trail:

- Populating a previously uninhabited area with trail users has been shown time and again to reduce illicit behavior. Simply developing the trail and opening it to the public is likely to reduce crime.
- Ensure full cellphone coverage for all carriers along the route of the trail. Since the majority of trail users will have cell phones, this eliminates the need for on-site infrastructure such as emergency call boxes.
- Additional patrol beyond Chester County park rangers is recommended. Township police could augment hours and visibility of patrol presence.
- Volunteer "Trail Ambassadors" can be effective in providing an official presence that not only makes trail users feel more secure but also deters undesirable activity. Several examples in our region have been successful and could be used as models:
- Other municipalities' police forces have organized volunteer "trail watch" programs along the Chester Valley Trail.

Volunteer Trail Ambassadors on the Schuylkill River Trail. Photo courtesy Schuylkill River Greenways National Heritage Area.

  - A similar "Trail Ambassador" program on the Schuylkill River Trail in Reading, PA has been successful in deterring crime.

  - Coatesville is in the process of adopting the City of Minneapolis' acclaimed StreetReach program which hires young adults from the community to be a presence in parks and other public spaces to keep a watchful eye out for trouble and provide casual mentorship for children in the community. These StreetReach employees could be stationed on the trail route if necessary.

- Requests for lighting along the trail were heard throughout the public engagement process. The existing Chester Valley Trail is open from dawn to dusk, and therefore lighting is not provided. Any segments owned and operated by the County will have similar operating hours and would therefore not be lit.

Overall Cost Estimate

This conceptual statement of probable construction costs is provided for information purposes only to allow implementing agencies to have an idea of the order of magnitude of potential costs for developing each segment. The cost of right-of-way acquisition is not included in these estimates and could add significantly to the cost of segments that require multiple acquisitions, whether purchasing land in-fee or through easements.

Beaver Creek	Cost Estimate
Pennsylvania Ave. Bike Lanes	$5,000
Multiuse Trail	$2,644,000
Trail head Improvements	$20,000
Inspection, Permitting, Engineering, Mobilization and Contingency	$1,896,000
Total	**$4,565,000**

Caln Township	
GO Carlson Boulevard	
Multiuse Trail	$3,562,000
Curbless Street	$832,000
Inspection, Permitting, Engineering, Mobilization and Contingency	$3,122,000
Total	**$7,516,000**
Hazelwood Avenue	
Split Mode w/ Proposed Sidewalks	$761,000
Split Mode w/ Existing Sidewalks	$3,800
Pedestrian Underpass Improvements	$20,000
Multiuse Trail	$658,000
Inspection, Permitting, Engineering, Mobilization and Contingency	$1,027,000
Total	**$2,469,000**

High School Connector	Cost Estimate
Split Mode w/ Proposed Sidewalks	$799,000
Split Mode w/ Existing Sidewalks	$6,800
Multiuse Trail	$1,566,000
Inspection, Permitting, Engineering, Mobilization and Contingency	$1,685,000
Total	**$4,056,800**

Coatesville	
Extend Bike Lanes and Split Mode with Existing sidewalks	$11,300
Relocate automatic gate for rail traffic	$100,000
Inspection, Permitting, Engineering, Mobilization and Contingency	$79,000
Total	**$190,300**

West Coatesville/Westwood	
Split Mode w/ Proposed Sidewalks	$192,000
Split Mode w/ Existing Sidewalks	$16,000
Multiuse Trail	$2,827,000
Trail Head Improvements	$70,000
Inspection, Permitting, Engineering, Mobilization and Contingency	$1,233,000
Total	**$4,338,000**

Pomeroy to Parkesburg	
Split Mode w/ Proposed Sidewalks	$110,000
Split Mode w/ Existing Sidewalks	$2,000
Crossing study for Old Wilmington Rd. Underpass	$30,000
Multiuse Trail	$1,610,000
Trail Head Improvements	$20,000
Inspection, Permitting, Engineering, Mobilization and Contingency	$1,259,000
Total	**$3,031,000**

Parkesburg	Cost Estimate
Split Mode w/ Existing Sidewalks	$8,000
Crossing at Route 10	$123,000
Curbless Street	$758,000
Inspection, Permitting, Engineering, Mobilization and Contingency	$632,000
Total	**$1,521,000**

West Sadsbury	
Multiuse Trail	$2,703,000
Trail Head Improvements	$20,000
Inspection, Permitting, Engineering, Mobilization and Contingency	$1,935,000
Total	**$4,658,000**

Enola Low Grade	
Multiuse Trail	$2,101,000
Trail Head Improvements	$230,000
Inspection, Permitting, Engineering, Mobilization and Contingency	$1,656,000
Total	**$3,987,000**

Potential Funding Sources

The following funding sources are currently available for multiuse trail development activities:

- PA DCNR Community Conservation Partnerships Program (C2P2) (https://www.grants.dcnr.state.pa.us/);
- Multimodal Transportation Fund Programs offered by PennDOT and the PA Department of Community and Economic Development (DCED) (http://www.penndot.gov/ProjectAndPrograms/MultimodalProgram/Pages/default.aspx) (http://dced.pa.gov/programs/multimodal-transportation-fund/);
- PennDOT Transportation Alternatives Set Aside Program (http://www.penndot.gov/ProjectAndPrograms/Planning/Pages/Transportation-Alternatives-Program.aspx);
- PA DCED Greenways, Trails, Recreation Program (GTRP) (http://dced.pa.gov/programs/greenways-trails-and-recreation-program-gtrp/);
- DVRPC Regional Trails Program (http://www.dvrpc.org/Trails/RegionalTrailsProgram/);
- The Circuit TIP line item;
- Public / Private Partnerships;
- Private Foundations; and,
- Chester County.

While some of the funding sources listed above are specific to multiuse trails, there are several funding sources that could support the on-road improvements recommended in this plan, such as sidewalk construction and striping for on-road bicycle facilities.

- Regional Trails Program (http://www.dvrpc.org/Trails/RegionalTrailsProgram/);
- Multimodal Transportation Fund Programs offered by PennDOT and the PA Department of Community and Economic Development (DCED) (http://www.penndot.gov/ProjectAndPrograms/MultimodalProgram/Pages/default.aspx) (http://dced.pa.gov/programs/multimodal-transportation-fund/); and
- PennDOT Transportation Alternatives Set Aside Program (http://www.penndot.gov/ProjectAndPrograms/Planning/Pages/Transportation-Alternatives-Program.aspx);
- Chester County Community Revitalization Program (available to urban centers only) (http://chesco.org/1916/Community-Development)

Applications and/or funding requests for these programs will be coordinated with the phased implementation strategy to be further developed as the project moves forward.

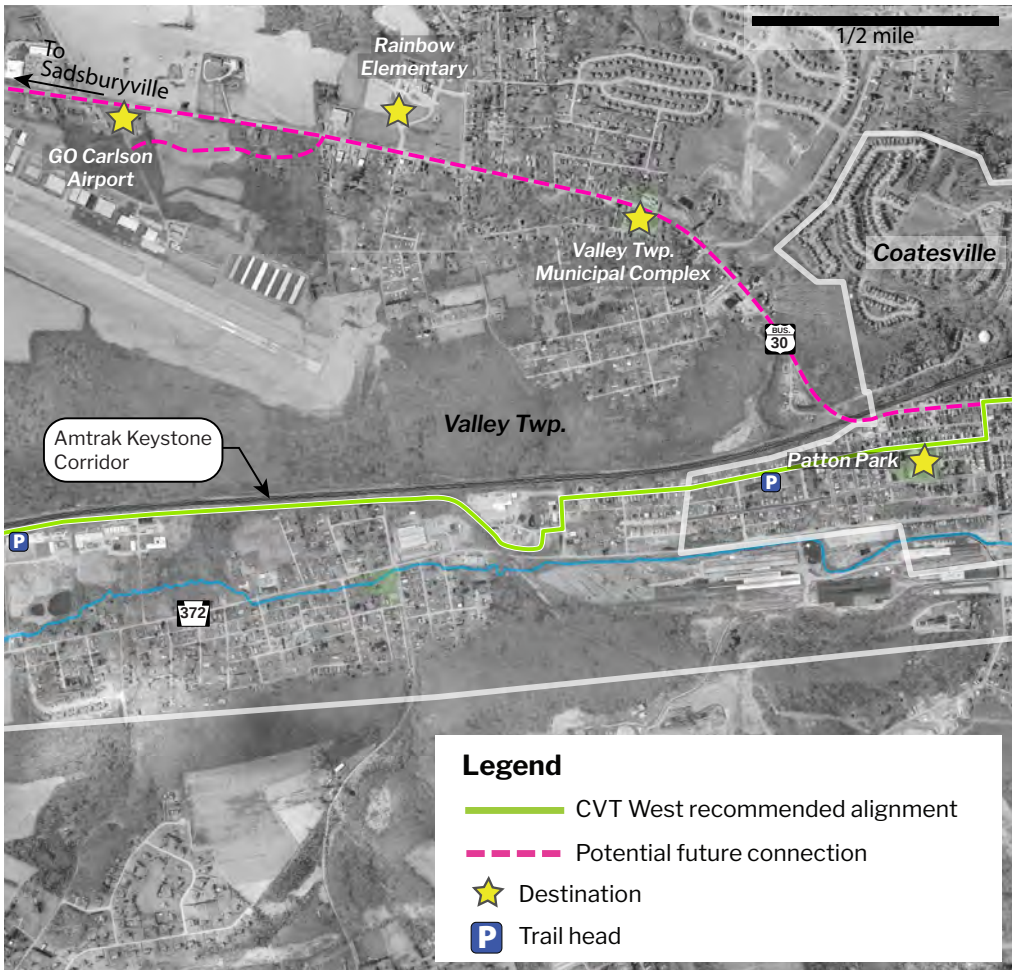
Proposed Future Connections

As part of the Circuit Trails network, the CVT forms the main spine of an east-west route across Chester County. In order to create a more interconnected multimodal transportation network, local trails and safe routes for pedestrians and cyclists must be developed to create connections between these spine trails and the places people want to go– home, work, school, shopping, etc. During the public engagement process, the study team asked the public to identify destinations to which they'd like the trail to connect. The recommended alignment identified through this study seeks to connect as many of these destinations as possible while still remaining a relatively direct route. Therefore, this plan recommends future connections be made to key destinations just off of the trail in order to encourage walking and biking for transportation and to give greater independence to those without cars.

A list of the recommended connections is presented in Table 3.0, and accompanying maps can be found in the Appendix of this report. These connections were chosen based on results from the public survey (see page 18), trails and other multimodal routes recommended in previous planning documents, and interest from municipal leaders. The alignments shown are conceptual only - further study would be needed to identify final alignments, to determine what type of facility would be most appropriate, and to assess the feasibility of these routes. Municipalities would be responsible for spearheading development of these local connections between the CVT and destinations within their community.

Perhaps the most important future connection is along Business Route 30 through Valley and Sadsbury Townships. The commercial centers of Valley, Sadsbury and West Sadsbury Townships are all located along Business Route 30. However, the recommended alignment veers off of this road in West Coatesville for multiple reasons discussed in the Alternative Alignments section of this report. The public engagement process identified a need for safe pedestrian and bicycle facilities along Business Route 30; multiple destinations are located along this route, and pedestrians are often seen walking along the shoulder to access stores and services. This connection is a priority and has value whether or not the CVT West is developed.

Valley Township - Proposed Future Connections



Next Steps

Municipalities do not need to wait for the CVT West to be in place to set the stage for creating these connections. Comprehensive Plans, Parks and Recreation plans, and Official Maps can be updated to show the CVT and connector routes. These publicly vetted documents will provide leverage when applying for funding to study, engineer and construct these facilities.

As the CVT West is being developed, municipalities can apply for funding to conduct feasibility studies of their proposed connector routes. These studies should include a recommended facility type, environmental and cultural impacts, right-of-way necessary to build the connection, and estimated development costs. Upon understanding development costs, funding can be secured for engineering and construction. The same funding sources listed previously in this chapter are applicable to these connector routes.

Table 3.0: Destinations that warrant a future bicycle/pedestrian connection to the CVT

Destination	Distance from Trail	Municipality(ies)
Downingtown High School	0.4 miles	Downingtown/Caln
Downingtown Middle School	0.6 miles	Downingtown/Caln
Beaver Creek Elementary	0.1 miles	Caln
Thorndale Park and Ride lot	0.5 miles	Caln
Businesses along Business 30	varies	Downingtown/ Caln
Johnson Park	0.4 miles	Caln
Coatesville Amtrak station	0.1 miles	Coatesville
Ash Park	0.2 miles	Coatesville
Courtyard Marriott Hotel	1.3 miles	Coatesville
Business Route 30 - Valley Twp. Municipal Building	0.9 miles	Valley
Business Route 30 - Rainbow Elementary	1.4 miles	Valley
Business Route 30 - GO Carlson Airport	2.0 miles	Valley
Business Route 30 - Valley Twp. Commercial Area	2.1 miles	Valley
Sadsburyville restaurants	1.8 miles	Sadsbury
Proposed trail along Buck Run	0.1 miles	Sadsbury
Sadsbury Woods Preserve	2.2 miles	Sadsbury
Stottsville Inn	0.5 miles	Sadsbury
Businesses on First Avenue	0.3 miles	Parkesburg
Minch Park	0.4 miles	Parkesburg
Parkesburg Library	0.5 miles	Parkesburg
Parkesburg Point Youth Center	0.1 miles	Parkesburg
Walmart shopping center	2.0 miles	Parkesburg/ West Sadsbury
West Sadsbury Municipal Complex	2.6 miles	Parkesburg/West Sadsbury
Octorara Schools	3.0 miles	Parkesburg/W. Sadsbury/Atglen
Wolf's Hollow Park	1.9 miles	Atglen
Christiana Borough shops	0.7 miles	Atglen

Recommended Interim Alignment

Overview

Completion of all phases of this 20+ mile trail will likely take several years, and it is expected that both the Enola Low Grade Trail and CVT extension to Downingtown will be complete in advance of the CVT West, leaving a significant gap in this network. In order to accommodate trail users who are looking for a longer multi-day ride by linking the ELG and CVT, an interim on-road alignment is recommended to connect these two regional trails. Improvements required to provide wayfinding and enhance safety for cyclists would be minimal, and therefore the route could be deployed relatively quickly. Those who would be using this on-road alignment would be experienced cyclists, and the recommendations herein are geared toward this user group. The criteria for gauging the suitability of an on-road route for experienced cyclists vary from those considered for developing a multi-use trail. Since the entire route will fall within the road right-of-way, private ownership of adjacent land is not a concern. The primary considerations for selecting a route included:

Connectivity: Does the route provide a direct link between the ELG trail and CVT? Are there amenities such as food, drink and restrooms along the way?

Safety: Traffic volumes, lane and shoulder widths, sight distance, and presence of driveways and curb cuts all contribute to the safety of an on-road cycling route, as well as how comfortable cyclists feel on this route. If the route feels unsafe or stressful, cyclists may not use it or may seek out alternate routes.

Experience: Is the route scenic? Are there points of interest along the route? Do the landscapes through which the route passes convey the sense of place unique to Western Chester County?

Difficulty: A mix of flat roadway, hills and descents makes for an interesting and challenging route. However, a lack of variation and/or steep, sustained climbs can make a route too unenjoyable or difficult for even experienced cyclists.

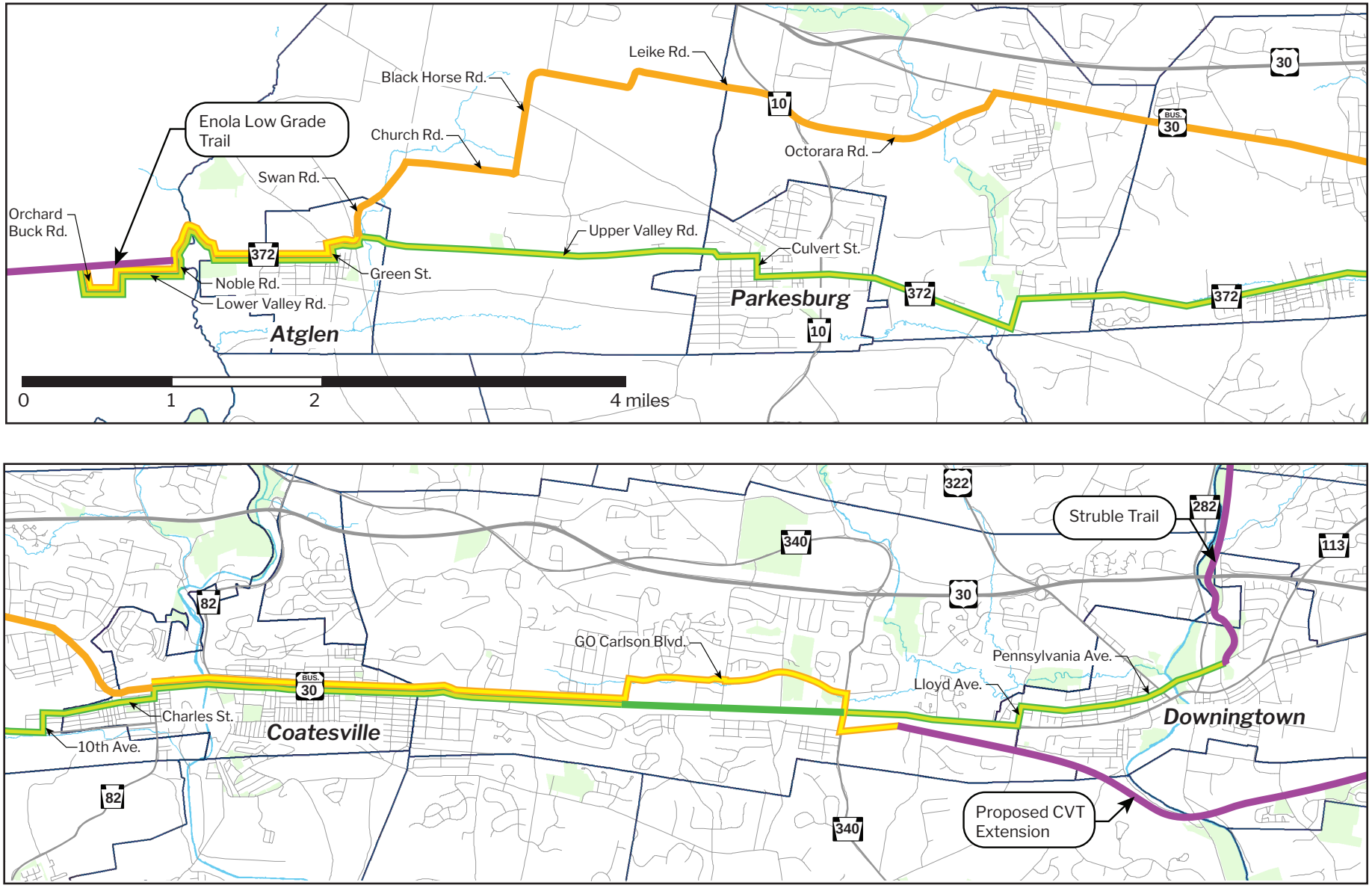
Using these criteria, the project team conducted a desktop review using aerial imagery and GIS information to determine two potential routes that could serve as interim on-road connector routes between the eastern terminus of the ELG and the western terminus of the P&T section of the CVT (see page 75 for a map of both alignments). In order to choose a route, the Planning Commission partnered with Bike Chester County to organize a "study ride" to obtain feedback from experienced cyclists as to which of the identified routes was more suitable as an interim on-road connection and what improvements would make the route safer and more enjoyable. In July 2018, eleven experienced cyclists familiar with the area rode the entirety of both potential alignments, stopping along the way to discuss the merits of each segment and recommendations for roadway improvements.

Participants in the "study ride" riding west on Business Route 30 in Coatesville

Alignment Alternatives

The maps on the following pages show the two different alignments identified and trialed. The first route was chosen primarily for its directness - it provides the shortest link between the Enola Low Grade Trail and the Chester Valley Trail Extension to Downingtown and Struble Trail. This route also provides connections to amenities like restaurants, convenience stores and parks. Its topography varies with several long, relatively flat stretches and some hilly areas. The areas with the highest traffic volume are along Business Route 30, where there are existing bike lanes, and along First Avenue in Parkesburg, where cyclists must share the somewhat narrow roadway.

Interim On-Road Alignment Alternative Routes



Legend

- Alignment 1- Recommended
- Alignment 2- Recommended
- Existing or planned multiuse trail
- Alignment 1
- Alignment 2

The second route is less direct and seeks to provide a more scenic ride that showcases the region's sense of place. East of Coatesville, much of the alignment for the first and second routes overlaps with the exception of a deviation from Route 30 onto the parallel and lower volume GO Carlson Boulevard. West of Coatesville, this route continues on Business Route 30 where although there are wide shoulders that could accommodate bike lanes, it also involves a steep, sustained climb out of the Chester Valley. The western half of this route passes amenities including a grocery store and pharmacy as well as the small village of Sadsburyville where there are a few restaurants. West of Sadsburyville, cyclists would ride several miles through picturesque rolling farmland to Atglen Borough with a short interruption along the busy PA Route 10.

Both routes utilize the same route through Atglen Borough to connect to the Enola Low Grade trail as well as Business Route 30 through Coatesville as there is only one place to cross the Brandywine Creek.

Feedback from Cyclists

Route 1:

- Debris is common on heavily trafficked roads like Business Route 30. Establishing who would be responsible for regularly removing debris is important.
- The shoulder width on Route 30 fluctuates, however, the consistent center turning lane allows vehicles to move over for cyclists.
- Many of the stormwater grates and manhole covers within the road shoulder are sunken, which can be dangerous to cyclists. Resetting these to make them flush with the road surface would be optimal.
- Cyclists felt comfortable using the bike lanes in Coatesville - they felt there was adequate separation between bikes and vehicles.
- Legends indicating bike lanes are inconsistently spaced. More legends at even spacing would make the lanes more visible.
- The speed limit on the eastern end of Coatesville is 35 mph. Lowering the speed limit to 25 or 30 mph would increase safety for cyclists and pedestrians.
- Cyclists enjoyed the stretch of Route 372 between Coatesville and Parkesburg due to light traffic volume and pleasant scenery. Nearing Parkesburg from the east, Route 372 became more stressful. They noted the intersection of First Avenue and Route 10 was busy and stressful and would be nice to avoid.
- Upper Valley Road has low traffic volume and is scenic and peaceful. The road surface is rough and should be resurfaced.

Route 2:

- Most agreed that GO Carlson Boulevard is worth the short amount of distance added to deviate off of Business Route 30.
- Although fun to ride down, the long, steep climb out of Coatesville would be very unpleasant. Many expressed that they would likely try to find an alternate route to avoid this hill.
- The shoulders along Business Route 30 between Coatesville and Sadsburyville are

Cyclists riding scenic country roads that were part of Interim Alignment Route 2.

relatively consistent and would be wide enough to accommodate a bike lane. This stretch of Business Route 30 seems long and monotonous, and high traffic volume make it unpleasant.

- While everyone loved riding low-volume roads through farmland in the western part of this route, it was noted that it would be difficult for cars to pass groups of cyclists on these narrow roads.
- All agreed that crossing Route 10 was dangerous and unpleasant. They felt that unless this crossing could be avoided, the pastoral route was not the best choice.

The cyclists unanimously agreed that they preferred the first route to the second. The primary reasons cited were the crossing of Route 10 and the steep hill out of Coatesville in the second route. The deviation from Route 30 onto GO Carlson Boulevard was part of the second route, and they recommended including this deviation in the chosen route. Based on this feedback, the map on page 127 shows the final recommended interim on-road alignment for the CVT West.

Implementation

Implementation of the interim alignment can begin in conjunction with the development of the P&T section of the CVT. There are three primary types of improvements to the existing roadway to make this route safer and more navigable for cyclists:

1) signage

2) roadway improvements

3) regular maintenance.

Since all these improvements will involve on-road facilities and the County owns no roads or roadway equipment, municipalities will be primarily responsible for implementing the interim route with County support for coordinating with PennDOT on the design and installation of facilities on state roads. The party responsible for each specific improvement will depend on whether the improvement is located on a state road or locally owned road. The table below lists the road ownership of each road that comprises recommended route.

Table 3.1: Interim On-Road Alignment Road Ownership

Road Name	Municipality(ies)	Ownership	Distance
Pennsylvania Avenue	Downingtown Borough	local	1.4 miles
Lloyd Avenue	Downingtown Borough	local	0.2 miles
Business Route 30	Caln Township, City of Coatesville	state	5.0 miles
Route 340 / Bondsville Road	Caln Township	state	0.1 miles
GO Carlson Boulevard	Caln Township	local	1.5 miles
Barley Sheaf Road	Caln Township	local	0.2 miles
Strode Avenue / Route 82	City of Coatesville	state	0.1 miles
Charles Street	City of Coatesville, Valley Township	local	0.8 miles
10th Avenue	Valley Township	local	0.1 miles
Route 372	Valley Township, Sadsbury Township, Parkesburg Borough	state	4.6 miles
Culvert Street	Parkesburg Borough	local	0.1 miles
Main Street	Parkesburg Borough	state	0.2 miles
Upper Valley Road	West Sadsbury Township, Atglen Borough	local	2.3 miles
Swan Road	Atglen Borough	state	0.1 miles
Green Street	Atglen Borough	local	0.1 miles
Valley Avenue / Route 372	Atglen Borough / West Sadsbury Township	state	1.2 miles
Valley Avenue / Noble Road	Sadsbury Township (Lancaster Co.)	state	0.4 miles
Lower Valley Road	Sadsbury Township (Lancaster Co.)	local	0.8 miles
Orchard Buck Road	Sadsbury Township (Lancaster Co.)	local	0.1 miles

Signage

Two types of signage are recommended to be installed along the interim cycling route: CVT branded wayfinding signage and "share the road" signage alerting motorists to the presence of cyclists. Together, this signage will provide multiple benefits. It will raise awareness of the interim route so more cyclists take advantage of it, draw motorists' attention to the fact that they should look out for cyclists, and provide wayfinding for cyclists that confirms they are following the correct route.

Wayfinding signage along the route will help cyclists stay on the trail and will alert motorists to be aware of cyclists.

Share the road signage can be installed by PennDOT on state roads at the request of municipalities. Signage on local roads would be the responsibility of the municipality.

Chester County has developed branded signage for the Chester Valley Trail. This signage would be available for municipalities to install along the route. In addition to this signage which would simply demarcate the route, municipalities may wish to install additional signage that directs trail users to their central business district, points of interest or other amenities. Such signage should be coordinated between municipalities to ensure a consistent brand.

Road Markings and Improvements

All roadways that are included in the interim on-road route should be inventoried to determine what interventions would improve their safety for cyclists. Inventories might include:

- Presence of bicycle-safe grates that are installed flush with pavement surface;
- Vegetation that encroaches on the shoulder and intersections where it impacts sight distance;
- Width and condition of shoulders;
- Areas of debris deposition and build-up; and
- Areas of ponding on roadway or shoulders.

Once inventoried, municipalities should identify solutions and develop strategies for implementing improvements. With some planning, many of these improvements can be included in planned roadway maintenance projects to maximize efficiency. For improvements on state roads, municipalities can coordinate with the Chester County Planning Commission to determine if PennDOT has any planned maintenance work into which improvements could be incorporated.

Optimally, all roads that are a part of this on-road alignment would have shared road legends within the vehicular travel lanes. This is particularly important on roads that do not have wide shoulders. Roads that have narrow or no shoulders should be assessed for the possibility of widening the shoulder. This can sometimes be included in a planned maintenance project for the road.

Regular Maintenance

The entity who owns the roadway would generally be responsible for maintenance unless other arrangements are made. Regular maintenance activities should include clearing debris build-up in the lanes or shoulder, especially after rainstorms, clearing on the road shoulder and within sight triangles around curves and at intersections, filling potholes, and clearing snow. For bike facilities on state roads, municipalities may need to sweep debris more frequently than PennDOT's regular maintenance schedule allows.

Trail Town Economic Development

Trails can be part of the story to galvanize new businesses in the Boroughs and the City that are located along the route - Downingtown, Parkesburg, Atglen, and Coatesville. Development of trail-related business relies upon the completion of the trail, viable business models, and marketing that enhances the connection between the business and the trail. In northern Chester County, where the established Schuylkill River Trail runs parallel to the underutilized Route 724 commercial corridor, the Chester County Economic Development Council is working with communities to realize the opportunities for existing employers as well as for new businesses that the trail provides. As evidenced by the Great Allegheny Passage which opened in 2007, trails can bring new relevance to small post-industrial towns; over 65 new businesses opened along the trail over the past 11 years. Most successful trail towns have grown organically from the grass-roots level with businesses opening in response to the burgeoning need created by a growing number of trail users. The most successful trail-oriented business models are often modular and can grow proportionately with the trail's popularity.

In addition to bringing business to towns along a trail, opportunity for growth in rural markets in the form of agritourism and farm product sales are largely relevant for the rural areas through which this section of the CVT will pass. Trails can provide economic development opportunities to any of the distinct landscapes they pass through as long as the enterprise is tailored to the scale, market, and community while meeting the needs of trail users.

Strategies

The following recommended strategies were developed specifically for the municipalities within the study area through a variety of primary and secondary resources including interviews, focus groups, and review of existing publications such as the Progress Fund's Trail Town Guide. A list of publications reviewed can be found in the Appendix of this report.

Entrepreneurs must have the capacity and tools to capitalize on new demand generated by trail users. Municipalities and supporting organizations can play a major role in encouraging trail-town development and setting new businesses up for success. The following tools focus on the municipal role (or another lead agency) in supporting trail-oriented economic development initiatives.

1. Trail Oriented Design

- Install bicycle and pedestrian friendly infrastructure and amenities such as bike racks or bike share stations, ensure sidewalk networks are complete and in good condition, and pursue streetscape beautification projects.
- Provide branded wayfinding signage that directs the community to the trail and trail users to the community's amenities.
- Maximize multimodal options through proximity to public transportation. More

Atglen Borough's small-town charm and opportune location at the intersection of the Enola Low Grade Trail and future Chester Valley Trail make it well-positioned to benefit from new business generated by trail users.

people will use the trail for transportation purposes if it can connect them to where they want to go. Public transportation can be an important link in overall connectivity.

- Develop local trails that connect to the CVT to enhance connectivity between destinations.

2. Regulation and Incentives

- Adopt appropriate provisions to encourage start-ups and attraction of established businesses. Two examples of such programs include:
  - The Local Economic Revitalization Tax Assistance (LERTA) program could apply to new businesses around trail head locations; and
  - Programs from the Pennsylvania Department of Community and Economic Development like Business in Our Sites can support business attraction.
- Permit by-right uses that encourage trail-friendly businesses, such as bed and breakfasts, outdoor dining, parklets, or outdoor markets in Boroughs or farm stands and camping in rural townships.
- Promote adaptive reuse and heritage tourism programs through local historical committees or commissions.

3. Infrastructure Improvements

- Complete sidewalk gaps to contribute to the trail or provide trail connections
- Road improvements to encourage cycling and enhance bicycle safety
- Streetscape beautification elements such as branded signage, pedestrian-scale lighting, furnishings, and ornamental planting.
- Incorporate trail recommendations into municipal road improvement plans.

4. Partnerships

- Convene a group of partners to implement trail oriented development and programming at a regional level
- Produce a market study to assess what kind of businesses and attractions would succeed along the trail and where they would be best suited
- Organize events to market the trail and town attractions to visitors
- Develop a cohesive marketing campaign to promote the trail and trail towns via a variety of media, maps and other promotional materials

Next Steps:

1. **Initiate a trail town economic development program**. Form a CVT-wide trail town organization that advocates for the trail's development. Once the trail is built the organization's role could include:
   - Developing and executing a cohesive branding strategy through signage and events;
   - Coordinating the provision of amenities across the entire CVT corridor to provide a quality trail experience across municipal borders;
   - Advocacy for maintenance and trail-related improvements; and
   - Serving as a point of contact and resource for prospective businesses.
2. **Undertake an inventory/visioning process for the CVT corridor** centered on business and tourism that will identify each community's unique identity and associated opportunities. This process would focus on capitalizing on each community's sense of place and existing strengths to offer users of the CVT corridor a desirable experience.
3. **Make strategic improvements to infrastructure**. Timed opportunistically with new development projects, regular maintenance work, and utility work to install bike lanes, "sharrow" markings, and sidewalks can be undertaken at any time. Applications to complete sidewalk gaps are eligible in the Boroughs for funding through the Chester County Department of Community Development Community Revitalization Program.
4. **Permit temporary and seasonal uses**. Municipal planning commissions and elected officials should review their zoning ordinance to ensure trail-oriented uses are permitted in the vicinity of the trail. Such uses are often temporary or seasonal and can include farm stands, outdoor dining, food trucks or other mobile businesses. Such uses can provide access to the market for those interested in starting a business, who are often local residents.

Historic and Cultural Interpretation

Interpretive signage along the trail affords trail users the opportunity to understand more about the place through which they are passing. Signage is a relatively simple way to create value along the trail that contributes to a meaningful experience. It can also draw new awareness of historic and natural resources, potentially increasing public support for their protection. The project team met with representatives from western Chester County historic commissions and historical societies to understand what meaningful stories could be told about the region through resources along or near the recommended trail alignment. The goal of interpretation is not to place a marker at every historic site the trail passes but rather to use specific resources to relate selected themes important to the region's history, culture and development.

Interpretive Themes

Signage along the existing Chester Valley Trail interprets a number of overarching themes that relate to the history of the area through which the trail passes. Several of these themes are also relevant in the western part of the county and are recommended to be continued:

Agriculture - The region has a long history as an agricultural leader and innovator. The history of agriculture in the region is closely entwined with the history of transportation including railroads, as this was the main method of exporting goods produced.

War and Wagons - Although no battles were fought in the western part of the county, the region played a key support role in the American Revolution by supplying ammunition, agricultural products and soldiers.

Railroads - The existing Chester Valley Trail follows the former alignment of the Chester Valley Railroad, and the CVT West alignment roughly parallels the Amtrak Keystone Corridor, formerly the main line of the Pennsylvania Railroad, which is eligible for the National Historic Register.

Additional themes specific to telling western Chester County's story were identified. They include:

Mill and Bridge Towns - Downingtown, Thorndale and Coatesville were all established around the presence of mills and bridges that played an important role in the formation of the region's transportation system. Some of these structures are still visible today.

Iron and Steel - In 1825, Rebecca Lukens took over her family's company along the Brandywine Creek and saved it from bankruptcy to become Lukens Steel, the longest continuously operating firm in the American iron and steel industry. This theme is still highly relevant in the Coatesville region today as evidenced by active steel mills and the National Iron and Steel Heritage Museum.

Education and Opportunity - Drawn to the region by the booming economy after the Civil War, the story of diversity, the fight to end slavery, segregation and growing opportunity is clearly evident in the history of schools and housing developments in this region.

Recommended Interpretive Panels

The maps on pages 76 through 115 indicate approximate locations of interpretive signage along the trail. The numbers on each marker correspond with the following descriptions:

1 **Downingtown Log House** - Home to the early founders of Downingtown, the c. 1706 log house gives visitors an idea of what life in the Downingtown area was like at the turn of the 17th century and how the county's industrial towns were formed. (*Mill and Bridge Towns theme*)

Downingtown Log House

2 **Hexagonal Schoolhouse** - In 1837, Quakers Richard and Mary Edge Pim constructed this stone hexagonal schoolhouse to begin the early education of their 9 children. The unique 75-ton structure was relocated to Municipal Drive in 1968 and is maintained by the Caln Historical Commission. (*Education and Opportunity theme*)

Hexagonal Schoolhouse in Caln Township

3 **All Roads Lead to the Great Valley** - Lincoln Highway (America's first toll road) and the active rail corridor that transect the Great Valley have been major thoroughfares for the movement of people, goods and supplies for much of our nation's history. The mills along this corridor gave rise to its importance as a transportation spine. (*Mill and Bridge Towns, Railroads themes*)

4 **Opportunity and Division** - Carver Court was built in the 1940s as workforce housing for African American employees of the nearby steel mills. It is an example of quality affordable housing designed by prominent architects George Howe, Louis Kahn and Oscar Stonorov. It is listed on the National Register of Historic Places. In contrast, the nearby Brandywine homes development was for whites only. (*Education and opportunity, Iron and Steel themes*)

Carver Court

5 **Segregation Gives Way to Integrated Schools** - The James Adams School, also known as the Merchant Street School, once stood at the corner of 8th and Merchant Street in Coatesville just two blocks off of the recommended trail alignment. It was a school for African American children for its entire life, from 1906 until its demolition in 1964. A memorial stands there to remember its legacy. (*Education and Opportunity theme*)

6 **High Bridge** - The railroad bridge visible from Lincoln Highway is designated as a National Historic Landmark. In April 1917, 28 troops from the Pennsylvania National Guard were brought into Coatesville to provide extra security until they were called to active duty that August. (*Railroads or War and Wagons theme*)

High Bridge in Coatesville

7 **Rebecca Lukens Story** - Rebecca Lukens (1794-1854) was America's first female industrialist. She took over the Brandywine Iron Works and Nail Factory in 1825 and operated the business successfully for 25 years. Her legacy lives on as the steel manufacturing site she once ran still operates and is the longest continuously running iron and steel site in the country. (*Iron and Steel theme*)

Rebecca Lukens

Wrapping the May Pole at Passtown School on May Day, 1955

8 **African American Heritage** - *Passtown Elementary School, Valley Township School District* - The former Passtown Elementary School (currently serving as the Valley Township municipal building) was built on the south side of route 30 in 1923 for colored students. The building is the only school building for negro students during the era of segregation still standing in the Coatesville area. This 2-room school building replaced the adjacent 1-room schoolhouse, currently a private residence also on the south side of route 30, which educated colored students from 1914 to 1923.White students attended nearby Rainbow Elementary School.

Hayti - The community in which Passtown School is located is called Hayti. After the Civil War (1861-1865) areas where blacks settled were often called "Hayti" (pronounced HAY-tie), after the country of Haiti. During the Great Migration (beginning circa 1910), African Americans in the southern states migrated in large numbers to northern areas including Hayti in Valley Township. Most of the African American residents of Hayti were property owners who worked in the Lukens Steel Mill in Coatesville and who established a vibrant, thriving, and close-knit African American community. (*Education and Opportunity theme*)

9 **Hope Handy Farm** - This is the longest continually operating family-owned farm in the County. After 325 years, farming remains the foundation of the agricultural industry and is still the top industry in Pennsylvania.By supplying a reliable food source for its citizens, the progression of farming in Chester County has provided for our economic growth and sustainability. (*Agriculture theme*)

10 **From Taverns to Trains** - The village of Pomeroy illustrates many of the elements of a railroad town. Aside from a log cabin, the Stottsville Inn was the first establishment in the town and provided a respite for weary travelers. Industry followed- Pomeroy was home to a cattle dehorner manufacturing facility. With the industry came workers and their families, and several one room school houses were established- a few of which are still standing today. (*Railroad theme*)

Pomeroy Railroad Station

11 **Parkesburg Iron Company** - The Parkesburg Iron Company was established in 1872 and operated near the rail corridor until the Great Depression. A half a mile south on Route 10 is the Beale Manor, the former home of Parkesburg Iron tycoon Horace Beale. (*Iron and Steel theme*)

Beale Manor

12 **Parkesburg School** - This structure is listed on the National Register of Historic Places. (*Education and Opportunity theme*)

13 **Modern Agriculture** - Agriculture is not an industry of the past- it is still one of the most robust industries in Chester County and to a large extent drives the County's economy. (*Agriculture theme*)

14 **A Town is Born** - The first settlers to Atglen were farmers drawn to the fertile soil or millers who established mills along the Octoraro Creek. Upon the development of the railroad in the 1850s and again in the first decade of the 20th century when the Enola Low Grade rail was built, Atglen experienced a

"building boom", the results of which can be viewed from the rail bridge over Main Street. Atglen became a producer and transporter of agricultural products, which it still is today. (*Railroad and agriculture themes*)

15 **Founding Industrialists** - The McCanna home and its picturesque Pear Barn sit high on a hill overlooking the railroad and future trail. It was built with the first railroad boom in the 1850s. (*Railroad theme*)

The McCanna Home and Pear Barn in Atglen. Photo credit: Ed Heaton