

MEDIA-SMEDLEY CONNECTOR TRAIL FEASIBILITY STUDY

DELAWARE COUNTY PLANNING DEPARTMENT

2020

County of Delaware
A RESOLUTION CLOSING OUT COMMUNITY CONSERVATION PARTNERSHIPS
GRANT PROJECT (BRC-TAG-23-163)

WHEREAS, the County of Delaware has prepared the Media-Smedley Connector Trail Feasibility Study; and

WHEREAS, the purpose of the study is to identify the best potential alignment for an on and off-road trail that connects trailheads in Smedley County Park through the county seat of Media Borough, and to trailheads in the multi-municipal and county-owned parkland of the Mineral Hill Area, with a goal of creating an accessible and safe trail for all users including walkers, runners, and bicyclists, and serving as a major east-west connection in the countywide trail network; and

WHEREAS, the study was financed in part by a Community Conservation Partnerships Program grant under the administration of the Pennsylvania Department of Conservation and Natural Resources, Bureau of Recreation and Conservation, under contract number **BRC-TAG-23-163**

NOW, THEREFORE, BE IT HEREBY RESOLVED by Delaware County Council that:

- a. The project was completed in accordance with the Grant Agreement.
- b. All project expenditures have been made and were in accordance with the Grant Agreement.
- c. The study and related materials are acceptable to the County.
- d. The study and related materials will be used to guide future recreation and trail decisions.

ADOPTED THIS 2nd DAY OF December 2020, by Delaware County Council.



Brian P. Zidek, Chairman

Attest:



Anne M. Coogan, County Clerk

Anne M. Coogan, County Clerk

Acknowledgments

Delaware County Council

Brian P. Zidek, Chairman
Dr. Monica Taylor, Vice Chair
Kevin M. Madden
Elaine Paul Schaefer
Christine A. Reuther



County Executive

Howard S. Lazarus

Delaware County Planning Commission

Cecile Charlton, Chairman, At Large
Claudia S. Cueto, Secretary, District 2
Kathy Bogosian, District 4
James P. Gallagher, District 1
John Gillespie, At Large
Brian Razzi, At Large
William Smith, District 3
David A. Petrucci, Jr., P.E., PTOE, RSP2I, District 5

Planning Director

Linda F. Hill



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Acknowledgments (continued)

Delaware County Planning Department

Steven R. Beckley, AICP, Open Space and
Trails Manager

Corey Brown, Senior Planner

Anne Stauffer, Senior Planner

Julie Del Muto, GIS & Information Services
Manager

Thomas J. Luskin, Jr., GIS Specialist

Amanda Taylor, Senior GIS Specialist



Consultant

Traffic Planning & Design, Incorporated



Study Committee

Marc Manfre, Director, County Parks Department

Jacob A. Bierling, Director, County Public Works

Darryl Harris, Project Manager, County Public Works

Karen Wilwol, Watershed Specialist, Delaware County Conservation District

Greg Krykewycz, Media Borough Environmental Advisory Council

Karen Taussig-Lux, Grants Administrator, Media Borough

Dave Grady, Township Manager, Nether Providence Township

Ralf Graves, Nether Providence Parks Commission

Elgin Akarsoy, Township Councilman, Upper Providence Township

Meredith Merino, Assistant Manager/Zoning Officer, Middletown Township

Frank Pappa, Springfield Township Parks Superintendent

Meghan Lockman, Executive Director, Chester Ridley Crum Watersheds Association

Richard Abraham, Bike Delaware County

Tracy Brown Barusevicius, Executive Director, DCTMA

Cecile Charlton, Executive Director, DCTMA (former)

Tim D'Ignazio, Media Business Authority

Kevin Dion, Friends of Smedley Park

Stephanie Gaboriault, Friends of Glen Providence Park

Ryan Judge, Manager, Strategic Planning, SEPTA

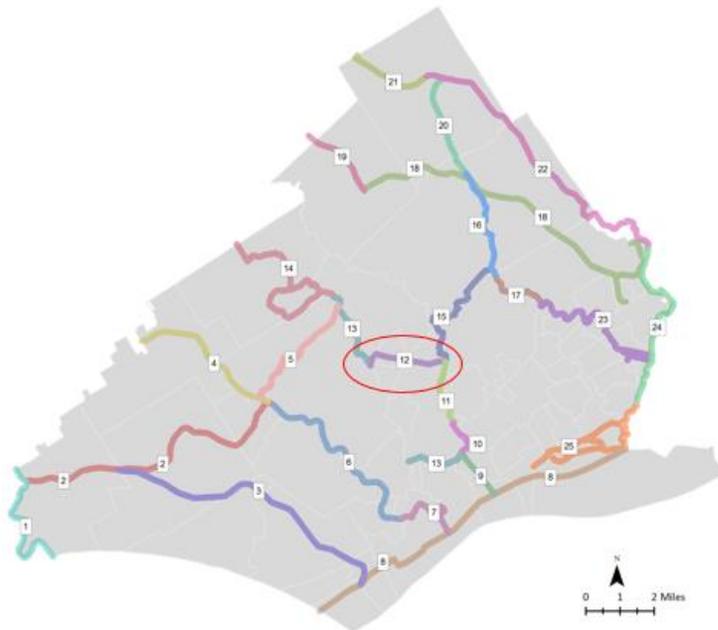
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Chapter I: Introduction and Context

Where the Concept Comes From

The Media-Smedley Connector Trail (MSCT) was conceptualized during the creation of the *Delaware County Open Space, Recreation, and Greenway Plan (2015)*. It is a segment of Delaware County’s Primary Trail Network (PTN), which is a countywide network of existing and potential multiuse trails. During the development of the 2015 plan, a compelling need became clear for an east-west connection in the center of the County between the Ridley and Crum Creek valleys. The Media-Smedley Connector Trail emerged as a solution. Although possible constraints were evident, including topography and lack of available off-road land, it had the potential to become a popular transportation and recreation resource. The trail would also be a highly visible public



Study Area Location within the Delaware County Primary Trail Network

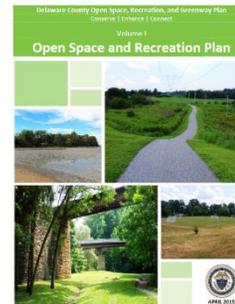
awareness tool for promoting the ability to travel without an automobile between the two stream valley park areas and the center of Media Borough.

A brief profile for the potential trail contained within the Countywide Greenway Plan states that the trail would have to be studied for feasibility and ideal location for its exact alignment.

The Delaware County Open Space, Recreation and Greenway Plan (2015)

The *Delaware County Open Space, Recreation, and Greenway Plan (OSRGP)* serves as a guide and resource for countywide, municipal, and multi-municipal open space planning efforts. It examines open space policies and trends identified in the County’s comprehensive plan, *Delaware County 2035: Land Use Framework Plan (2013)* and makes recommendations regarding open space, recreation, and greenway needs and opportunities specific to Delaware County. The OSRGP is arranged in the following three volumes:

Volume I: Open Space and Recreation Plan



review of municipal, county, state, and federal open space within Delaware County. It includes an inventory of existing open spaces and natural resources, analysis of open space and recreational needs and opportunities, and an overview of implementation methods for municipalities and the County to consider. Chapter 4: Trails as a Recreation Facility details a vision for a County trail network and describes the benefits of trails.

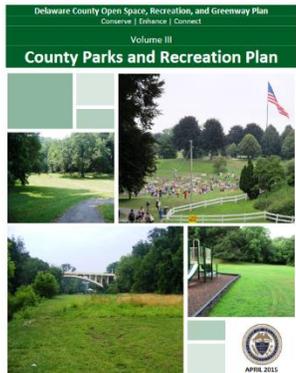
Volume II: Countywide Greenway Plan is Delaware County's first ever countywide greenway plan. It identifies a Primary Trail Network (PTN) which connects recreational and cultural hubs via multi-use trails.



The trails in the PTN, as presented in the Greenway Plan, “serve as the main spokes in the countywide network of multi-use trails.” The plan shows potential segments, but not specific alignments. They represent “planning corridors” for more detailed trail studies in the future.

The Countywide Greenway Plan states that County PTN trails are “Intended to be Type I and Type II (hard surface) off-road connector trails owned or managed at the County, municipal, or multi-municipal level.” If an entirely off-road trail is not feasible, some sections may be sited on sidewalks, roadsides, and/or roadways. It was also recommended that newly developed Primary Trails be designed to meet Americans with Disabilities Act (ADA) standards where feasible.

Volume III: County Parks and Recreation Plan specifically examines the Delaware County Parks and Recreation system and includes long range site development drawings and accompanying narratives for several of the major parks, including Smedley and Glen Providence Parks. The master plans are intended to be conceptual and flexible over time. They are meant to give each park an overall vision so that facilities are designed in an interrelated way with the cohesive, whole park in mind, and not haphazardly.



Why Do This Study?

Soon after adopting the Countywide Greenway Plan, the Delaware County Planning Department developed a connectivity scoring and ranking tool. The tool scores the segments of the PTN based on the

number of destinations, the surrounding population the trail serves, and the connectivity to other segments. Among trail segments in the PTN not constructed or studied, the Media-Smedley Connector Trail scored highly and thereby was prioritized. This is one reason for the timing of this feasibility study initiative.



Example of a road-based trail design. (Photo credit: cambridgema.gov.)

The Media-Smedley Connector Trail is a rare opportunity for an east-west connection located in the center of Delaware County. Due to the topography of the County, it is often challenging to create east-west connections. Not only is the MSCT a rare connection opportunity, it is also an ideal opportunity as it connects through the thriving business district and county seat of Media Borough and to two stream valleys (Ridley and Crum) with parks and developing trail systems of their own.

This study was completed to identify the best potential alignments for the trail connecting Smedley and Memorial Parks through Media Borough and demonstrate a path forward for implementing the trail. In

order to determine the best alignment, the challenges listed earlier, the topography and low availability of off-road land, required further study and analysis. Traffic and safety are also important considerations.

The Benefits of Trails

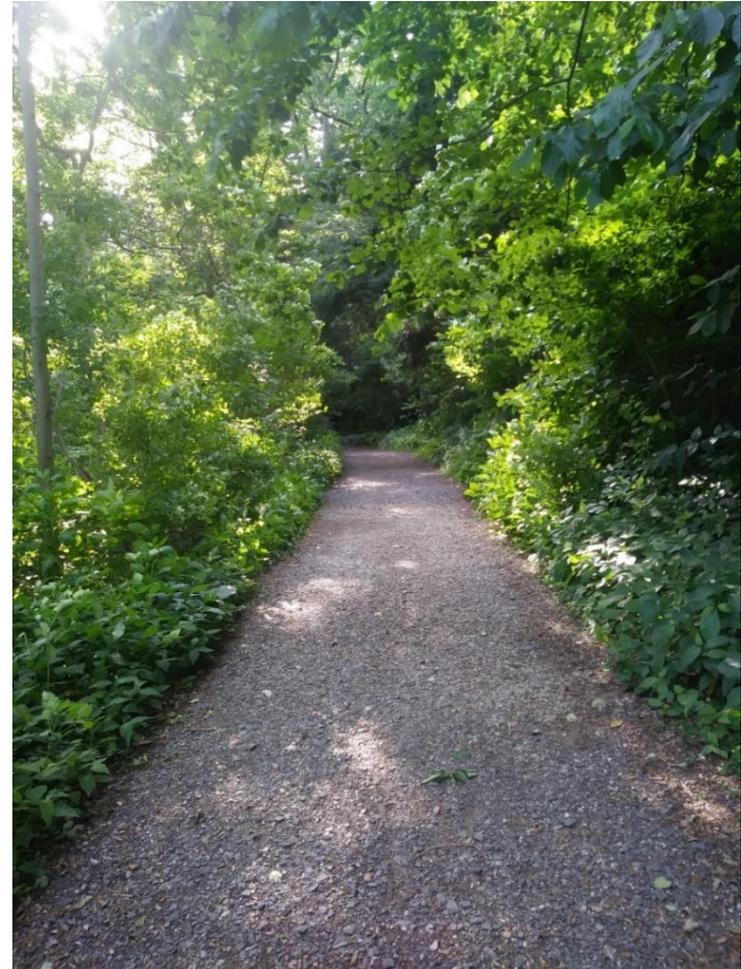
Trails provide recreational and transportation options for communities. They are an asset to many communities and invite people to explore and experience outdoor enjoyment. In addition to recreation, trails provide essential opportunities for people to connect to employment centers and find work. Trails also provide for a vibrant economy. One recent study of the Ohio and Erie Canal Towpath Trail in Northeast Ohio found that trail users spent \$6.9 million annually.¹ Trails in many areas of the country have provided an economic boost, connecting customers with local businesses. That same study also found that bicyclists spent more than their non-cycling partners in local economies.¹

Trails provide essential connections for transportation especially for low-income populations who may not have access to a private vehicle. While walking and bicycling provide inexpensive forms of transportation, the built environment is often hostile for these users. “The most commonly reported single barrier to bicycling, regardless of bicycling category, was heavy traffic (10.3% of total bicyclists), followed by no nearby paths or trails (7.6% of total bicyclists).”² Trails provide space which is often protected from heavy traffic and provide designated spaces for cyclists.

Trails provide recreational opportunities for all with no cost to access the trail. With increased health concerns surrounding obesity and the ails of sedentary lifestyles, trails encourage active lifestyle habits. More than a third of trail users in a recent study met or exceeded the minimum recommended activity levels.¹

As greenhouse gas emissions continue to rise, transportation has continued to contribute a greater portion of these emissions. According

to the EPA, in 2017 transportation made up the largest contribution of US greenhouse gas emissions.³ While commuter traffic accounts for only a portion of this, any effort to encourage active transportation, through trails for example, can have an effect at reducing emissions.



Crum Woods, Swarthmore College – A multi-use trail in a park setting

¹ Rails to Trails Conservancy (2018). Ohio & Erie Canal Towpath Trail: Trail User Spending Impact Study. Rails to Trails Conservancy. https://www.railstotrails.org/resourcehandler.aspx?name=ohio-erie-canal-towpath-trail-trail-user-spending-impact-study&id=16558&fileName=Ohio_Erie+Canal+Towpath+User+Spending+Study+2018.pdf ² Porter, A. K., Kontou, E., McDonald, N. C. & Evenson, K. R. (2020). Perceived barriers to commuter and exercise bicycling in U.S. adults: The 2017 National Household Travel Survey. *Journal of Transportation & Health*, 16 (2020), 1-2. <https://doi.org/10.1016/j.jth.2020.100820> ³ United States Environmental Protection Agency. (2018). Sources of Green House Gas Emissions. EPA.gov. <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions>

STUDY GOALS AND PROCESS

Goals of This Study

The primary goal of this feasibility study is to investigate the best route for a pedestrian and bicycle trail connecting parkland in the Ridley Creek and Crum Creek valleys, east-west, through and on either side of Media Borough. This trail connection has the potential to be a valuable recreation and transportation amenity to local residents, visitors, and commuters as it fits into the overall implementation strategy for both the County's and the region's non-motorized transportation and greenway networks.

Specific objectives of the study are as follows.

1. Identify and weigh alternative alignments for the trail to arrive at a proposed route;
2. Identify property ownership along the proposed route and assess the steps necessary to establish public rights-of-way;
3. Identify technical constraints to construction;
4. Identify potential connections and adjacent destinations;
5. Describe public benefits of the trail;
6. Establish design standards for the trail;
7. Recommend an implementation strategy; and
8. Provide cost estimates for implementation.

With these goals in mind, this Study is organized in the following chapters:

- **Chapter 1: Introduction and Context**

Overall project goals, objectives, and study planning context.

- **Chapter 2: Community Profile**

Description of the local community and its characteristics, as well as methods and results of the public participation element of this study including what it said about how the locals will potentially use the trail.



Breakout Discussion during Public Meeting #1

- **Chapter 3: Feasibility Study**

Physical inventory and assessment of the entire study area, including, physical condition, technical constraints, surrounding land uses, and an alternative alignments analysis.

- **Chapter 4: Trail Master Plan**

Detailed description of the recommended trail alignments and segmentation with recommended design elements.

- **Chapter 5: Implementation**

Outline of realistic steps for trail development and oversight, including responsible parties and stakeholders, trail development sequence, challenges, costs and funding, and maintenance considerations.

- **Appendices**

Includes a construction cost estimate table, trail concept map panels, key properties table, and a details of public participation elements.

Public Participation

This study was developed through extensive outreach and dialogue with a wide range of interested stakeholders, including local public officials, local institutions, adjacent property owners, and the general public. The study was conducted over a 30-month period from June 2018 through November 2020. Community outreach took place in several forms. A Study Committee, comprised of key representatives of the municipalities and other relevant stakeholders, was established to review and comment on trail alignment, design, and study impact and progress. Formal meetings of the committee took place on four occasions. Study Committee members are noted in the acknowledgements section at the beginning of this document and in Appendix F, Public Participation. Additionally, meetings took place to seek input and gauge response from individual agencies, planning officials, local institutions, and property owners that could potentially be impacted by the trail alignment. The reactions of stakeholders to the plans presented in this study were generally positive. Public meetings were held in Media Borough and online in order to present the study purpose, design alternatives, and solicit feedback. There was also an online survey, which was open from late February through April 2020, and received 105 responses.

Overall, there appears to be widespread support for the study's underlying purpose and goal. Area residents have a general agreement on the value of promoting local trails and connected open spaces. Commercial, institutional, and public-sector property owners expressed

an appreciation for the goal of increasing connectivity to the local community and in promoting access to alternative modes of transportation, such as walking and biking. For some segments, a safer design (i.e., separated bike lane with sidewalk) of the trail may have to wait until it can be coupled with a more comprehensive road redesign. Therefore, opposition from adjacent property owners is not an issue that will eliminate feasibility of the trail, but it might cause the implementing party to choose a different route or design as a compromise or interim alternative.

Those residents and commercial landowners most directly impacted by the potential trail expressed legitimate concerns. The predominant concern is the proximity of a bike and pedestrian route to residential properties and the use of road rights-of-way for the trail that have been used for parking, vehicle travel, or the edge of yards.

In some cases, the most legally feasible route is on-road on streets that are currently crowded or busy (i.e., they will require a re-design). Some respondents who were hoping for lower-stress segments across parklands were unhappy as an initial reaction.

Stakeholder participation in the feasibility study process is discussed further in Chapter 2 and summarized in Appendix F.

Traffic Planning and Design, Inc.

The County hired Traffic Planning and Design, Inc. (TPD) to assist with the development of this study. TPD contributed analysis and design expertise to the plan by making recommendations on the ideal route for the trail and providing conceptual trail designs along each segment. TPD also developed recommendations on plan implementation and assisted with public engagement, particularly for discussions regarding trail design, permitting, and costs. Lastly, TPD developed cost calculations for the trail's development as recommended in this study.

PLANNING CONTEXT

There are a number of large and small-scale plan documents that support the idea for a trail or bikeway along the conceptual corridor and/or recommended segments of the Media-Smedley Connector Trail. Many of these have been adopted at the county or municipal level.

Countywide Greenway Plan

As mentioned previously, within the *Delaware County Open Space, Recreation and Greenway Plan* (OSRGP, 2015), the general concept for this trail was laid out in Volume II, the *Countywide Greenway Plan*. This was the County's first true greenway plan. It identifies the County's goal of establishing a primary trail network to connect recreational and cultural hubs throughout the County via trails. In the overview of the Media-Smedley Trail, the goal of connecting the Mineral Hill Area, Glen Providence Park, and Smedley Park through Media Borough is recognized. The plan also calls attention to the need for key local stakeholders to work cooperatively in the planning and development of the Connector Trail.

County Park Master Plans

Volume III of the *OSRGP* is the County Parks and Recreation Plan, a plan for the county-owned park system and the County's Parks and Recreation Department that maintains and programs the facilities. There are chapters within this volume that serve as master plans for each of the six major parks in the system – two of which, Glen Providence County Park and Smedley County Park, are part of this study area.

Glen Providence County Park

Chapter 3 of *OSRGP* Volume III is the master plan for Glen Providence County Park. It recommended better connections between Glen Providence Park and its surroundings and to other County Parks, such as Mineral Hill, Smedley, and Rose Tree Parks. It called out directions for new or improved gateways and trails and improved signage.

Smedley County Park

Chapter 6 of *OSRGP* Volume III, the master plan for Smedley County Park, acknowledges the existence of connections to surrounding parks via trails throughout Smedley Park. It also mentions the hope to expand the existing Trolley Trail through the Penza Tract (western section) to continue to connect to Media Borough in the future. The plan also addresses the park's need for improving its internal pedestrian network and trails. The previous 1990 master plan for Smedley Park was also examined as part of this study, as it contained some different information about rights-of-way in the park and its recent history.

Mineral Hill Area Parks Master Plan

A separate Mineral Hill Area Parks Master Plan was created under County leadership in 2014 to plan for the future of the unique "Mineral Hill Area," which is made up of forested land around Ridley Creek just west of Media Borough. This plan incorporates three separate parks owned or controlled by Delaware County and three municipalities (Media Borough, and Upper Providence and Middletown Townships) that unite to make up the Mineral Hill Area. The master plan calls for a re-designed trail and pathway system and the creation of "crosswalks on roads to provide access between parks and Glen Providence Park." While this park is in the preliminary stages of development, the plan lays out opportunities to connect the Mineral Hill Area to Glen Providence County Park and Media Borough.



Municipal Comprehensive Plans

Media Borough Comprehensive Plan

In the 2015, Media Borough adopted their comprehensive plan, which includes recommendations for multimodal transportation improvements within and connecting to neighboring municipalities. The plan outlines possible bike routes across the borough and trail connections on both the east and west sides of the borough into neighboring municipalities.

Nether Providence, Rose Valley, Rutledge, Swarthmore Multi-municipal Plan

Adopted in 2006, the Multi-Municipal Comprehensive Plan includes Nether Providence Township, and Rose Valley, Rutledge and Swarthmore Boroughs. The plan outlines the vision for these communities to guide their development and improvement. The plan outlines the need for creating more multi-modal transportation options and highlights the Leiper-Smedley Trail and the soon-to-be-created Bicyclists Baltimore Pike as important trail facilities in the study area.

Upper Providence Township Comprehensive Plan

The Upper Providence Township Comprehensive Plan, adopted in 2005, sets goals to enhance the transportation infrastructure within the township. The plan specifically states, “Identify potential routes for trails, paths, and sidewalks to connect residential areas with facilities such as parks, schools, churches, transit stops, retail areas, and employment centers.” This plan outlines a desire for connection of important hubs in the township using multimodal infrastructure.

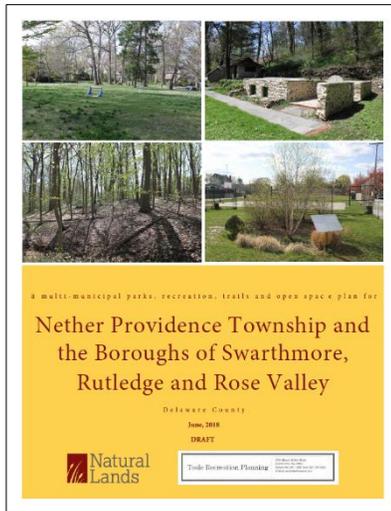
Springfield and Clifton Heights Comprehensive Plan

Adopted in 2006, Springfield Township and Clifton Heights Borough’s multi-municipal comprehensive plan sets out the vision for future development on these two municipalities. The plan outlines the need to create more multimodal transportation options in the municipalities and establishes an objective to create a trail system in the area.

Other Municipal Plans

Springfield Township Parks and Recreation Plan

Springfield Township sits right at the eastern edge of the study area for the Media-Smedley Connector Trail. The township developed its Parks and Recreation Plan in 2018 and outlined the care and future for park facilities and trails. The plan calls for the creation of new trail connections into Smedley County Park, which is owned by the County and would be a terminus for the MSCT.



A Multi-municipal Parks, Recreation, Trails, and Open Space Plan for Nether Providence Township and the Boroughs of Swarthmore, Rutledge, and Rose Valley. This 2018 plan outlines trail and recreation priorities for Nether Providence, Swarthmore, Rutledge and Rose Valley. A key highlight of the plan is the lack of current infrastructure for pedestrian activity in the study area, making any non-motorized transportation challenging. Specifically, the plan highlights Delaware County's efforts

to build a connection trail between Media Borough and Smedley County Park as an effort for priority support. The plan notes the Leiper-Smedley Trail as an underutilized resource in the study area. It also states support for the development of the Media-Smedley trail.

Media Borough Bicycle Plan

The Media Borough Bike Facility Implementation Plan (or "Bicycle Plan") outlines guidance for the borough's bike infrastructure moving forward. Completed in 2016, it included several surveys to engage residents. The plan supports future trail connections to the east and west of the borough. The plan also supports an on-road network of bicycle infrastructure traversing the borough, including sharrows and bike lanes.

Media Wayfinding Master Plan

The Media Wayfinding Master Plan developed in 2016, outlines and lays a path for wayfinding infrastructure in Media Borough. The plan supports the promotion of environmentally friendly modes of transportation such as walking, bicycling and mass transit. The plan is also supportive of the creation and implementation a user-friendly and visible navigational system that will improve traffic flow as it guides visitors and residents around the Borough.

Media Traffic Calming Study (under development)

The Media Traffic Calming Study is an ongoing study which began in the fall of 2019 with the project due to be completed by the end of 2020. The study looked at the overall transportation system of Media Borough and identifies transportation safety issues in the borough. Traffic Planning and Design the firm that assisted with the Media-Smedley Trail Feasibility Study, was hired previously by Media to develop the Media Traffic Calming Study. These plans overlap with many similar goals. A key recommendation from the Media Traffic Calming Study is the reimagining of the western gateway to Media along Baltimore Avenue. The study recommends calming traffic and including space for the Media-Smedley Connector Trail entering Media Borough.

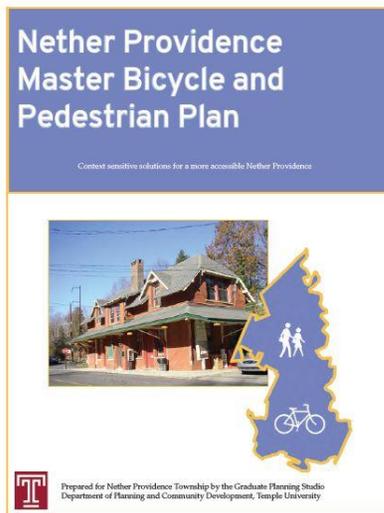
The Traffic Calming study focuses on six key areas within the borough, Baltimore Avenue, State, Front and Third Streets, Jefferson Street, Orange Street, Providence Road and Monroe Street and finally Ridge Road and Olive Street. Engineering recommendations from the study include raised intersections, pedestrian refuge islands and corner extensions. The study emphasizes an educational component as well to encourage a culture of traffic safety.

Media Open Space and Recreation Plan (under development)

Another ongoing study from Media Borough is its Plan for Open Space, Parks and Recreation. The need for this plan comes from survey data found in the Borough's 2015 Comprehensive Plan. The process is being led by a professional parks and recreation consultant and has involved an inclusive Study Committee with meetings open to the public. The plan will be a vision for open space, parks and recreation for the borough. Greenways, trails, and the use of certain "streets as recreation" are all being explored, and the topic of the Media-Smedley Connector Trail has been discussed during their meetings.



Bike Network from the Media Borough Bicycle Plan



Nether Providence Master Bicycle and Pedestrian Plan - A Temple University Design Studio Project
 The Nether Providence Bicycle and Pedestrian Master Plan is an unofficial, unadopted report that was prepared in 2016 by a group of students from Temple University’s graduate Planning Studio. Its intent is to be used by the township as an aid to promoting alternatives to auto travel. It identified opportunities for connectivity between the neighborhoods, destinations, transit access points,

and existing trails – including planned trails in the County Primary Trail Network such as the MSCT. Recommendations were mainly for street

and intersection improvements to better bicycle and pedestrian mobility.

Other Regional and State Plans and Initiatives

The Circuit

In 2012, a coalition was formed to coordinate existing trails in the Greater Philadelphia area to form one formalized regional trail system. When complete, the regional network coined “The Circuit” will be composed of over 750 miles of bicycle and pedestrian trails connecting various urban and suburban communities. The Circuit Coalition, the facilitator in the creation of the Circuit, is comprised of a variety of non-profit and foundation partners, including the Delaware County Planning Department. While much of the Circuit is already developed, the Coalition continues to look for new trail nominations to join the network. While the Media-Smedley Connector Trail is not currently part of the Circuit, there are a lack of Circuit Trails through the center of Delaware County. Off-road sections of the Media-Smedley Connector Trail could serve to meet the need for more central Circuit connections in Delaware County.



Pennsylvania Greenways Plan

Pennsylvania’s Department of Conservation and Natural Resources views greenways as a significant contributor to quality of life in the Commonwealth. The Pennsylvania Greenways Action Plan (2001) recognized that “within urban and suburban areas, opportunities abound to connect neighborhoods, schools, work places, recreation facilities, natural areas and parks through greenways.” The Media-Smedley Connector Trail would allow for a beneficial connection between neighborhoods in an urbanized area of the state while putting more greenways in Delaware County on the map.

Chapter 2: Community Profile

The Media-Smedley Connector Trail (MSCT) will be a roughly three-mile, east-west trail located in the center of Delaware County. It will connect three County Parks and run through five municipalities while roughly paralleling Baltimore Pike/Avenue. Beginning just east of Mineral Hill County Park, in Middletown Township, the trail will traverse east through Upper Providence Township and past Glen Providence County Park into the more densely populated Media Borough. It will continue eastward across Nether Providence Township into Smedley County Park, which is also partly in Springfield Township.

MULTI-MUNICIPALITY STUDY AREA

The study area for this project includes five municipalities. Middletown and Springfield Townships, which will be the eastern and western termini for this trail, both have the potential for trailheads within large areas of passive parkland. The remaining three municipalities are Media Borough and Upper Providence and Nether Providence Townships. The borough and the neighborhoods of the townships that the trail will travel through are mostly built-out. There are limited opportunities to construct trails for pedestrians and cyclists in this area, which makes the potential benefit of the Media-Smedley connection very high.

Demographics

The five municipalities that make up the area have seen two distinct patterns in population change. Media Borough's and Springfield Township's total populations dipped during the period of 1980-2010; however, the 2019 census estimates for both municipalities have shown growth since 2010. Meanwhile, Middletown, Nether Providence, and Upper Providence Townships' populations have experienced continuous growth since 1980.

The population of the five-municipality study area is projected to grow through 2045 (DVRPC Forecasts, 2016). Four of the five municipalities are expected to grow at a rate greater than the stable growth rate of Delaware County as a whole, which is 4.10%. The fastest growth rates are projected to occur in Upper Providence Township and Media Borough at 7.20% and 7.10%, respectively. The total projected growth for the five-municipality study area is 3,691 people by 2045. This population growth suggests a strong future demand for the MSCT.

Both the east and west sides of the trail begin in large parklands and travel through suburban neighborhoods of lower population density. From there, the trail would lead into Media Borough, which has the highest population density of 7,081 per square mile (note, this is greater than the total population of the borough, 5,327, because the borough is less than one square mile in size).

County / Municipality	1980	1990	2000	2010	2010 Density (pop/sq. mile)	2019 Estimates	2020 Forecast	2045 Forecast	Absolute Change (2015-2045)	Percentage Change (2015-2045)
Delaware County			551,989	558,979			568,337	587,037	23,143	4.10%
Media Borough	6,119	5,597	5,530	5,327	7,018	5,682	5,445	5,788	425	7.90%
Middletown Twp.	12,463	14,130	16,065	15,807	1,173	16,073	16,185	16,972	974	6.10%
Nether Providence Twp.	12,370	13,229	13,456	13,706	2,907	13,780	13,893	14,251	443	3.20%
Springfield Township	25,236	24,160	23,675	24,211	3,830	24,261	24,612	25,500	1,099	4.50%
Upper Providence Twp.	9,477	9,727	10,510	10,142	1,810	10,444	10,592	11,198	750	7.20%

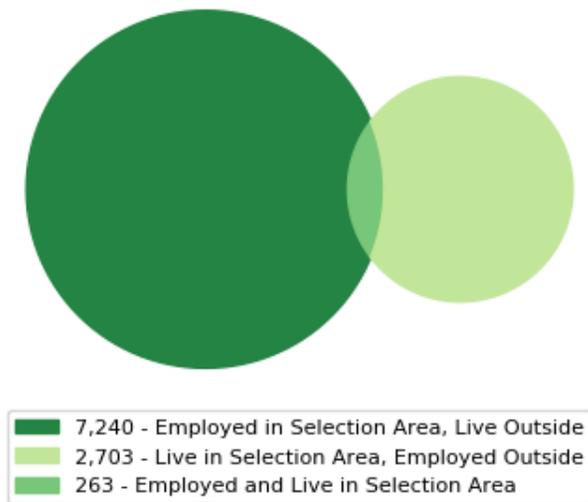
Study Area Population Data and Forecasts (Source: U.S. Census, DVRPC)

Media Borough

The unique character of Media Borough, located in the heart of Delaware County, is particularly desirable for a trail to connect to its neighboring communities. In addition to being the county seat for Delaware County government, it is the home of a thriving downtown with restaurants, shops, various businesses, and cultural attractions. People from around the County are drawn to the borough for the many events that occur in its downtown, including the very popular “Dining Under the Stars” nights on Wednesdays in the summer. Media Borough is also well-connected by transit options with a SEPTA regional rail line (located on the edge of the borough in Upper Providence Township), a SEPTA trolley line that runs through the business district, and multiple SEPTA bus routes.

According to the 2017 Longitudinal Employer-Household Dynamics data, which is compiled by the Center for Economic Studies at the U.S. Census Bureau, 7,240 people that are employed by businesses in Media Borough live outside of the borough.

Chart 2-1 Inflow/Outflow Job Counts 2017



“My husband and I live in Media and work in Swarthmore. We both would love to be able to bike to work, but currently there are no roads that feel safe for bike commuting (no shoulders and no designated roads for bikes/bike lanes). The Smedley connector trail would be a huge benefit to us and others who would be able to travel between Media and Springfield/Swarthmore by bike.”

“I commute from home (Media) to work (Ridley Park) and use part of an existing trail when I commute on my bicycle. I would primarily use the additional trail to avoid taking roads and make my commute safer.”

Chart 2-1 displays the inflow-outflow dynamics for the study area. The influx of approximately 7,240 employees to the borough puts strain on the surrounding roads. The Media-Smedley Connector Trail could be another option for commuters to the borough. Close to 10% of the 105 respondents to our online public-participation survey indicated that they would use the trail to commute to work. Above are quotes written by survey respondents regarding using the trail as a commuting option. More information about the online public survey and its results can be found in Appendix F, Public Participation.

Another notable result of the public survey is that 50% of people who took the survey said that their point of access to the trail to be would be next to their residence. Because the trail travels through a densely populated borough, it is accessible to many residents without the additional need for parking. As the population of the borough continues to grow, there will be even more residents within easy access to the trail.

POTENTIAL TRAIL USE

Recreational runners and cyclists are expected to be the predominant users of the Media-Smedley Connector Trail. This was confirmed in the public meetings and by the public survey conducted through the feasibility study. Currently, there are limited options for runners and cyclists to connect to locations beyond the boundaries of Media Borough or beyond the boundaries of the Mineral Hill Area and Smedley County Parks. The public survey asked participants what activities they would undertake on the trail and how they would utilize the trail. Charts 2-2 and 2-3 depict the results of these questions. The data show that the majority of people would use the trail for recreation and exercise, and the most popular activities would be bicycling and walking.

PUBLIC PARTICIPATION

A key tenet in the development of any trail study is the engagement and the participation of local stakeholders. The project team held public meetings, enlisted the help of a key stakeholder team, and conducted an online-public survey to understand and encourage public participation in the study of the Media-Smedley Connector Trail. There were three public meetings conducted over the course of the study. The findings from the public meetings and survey were overwhelmingly positive to the idea of a trail through Media, connecting it to park areas.

The first public meeting was hosted at the Media Borough Community Center on June 18th, 2019 and drew approximately 43 attendees. The Planning Department staff presented an overview of trails in the County including how the MSCT would fit into the County's trail network vision and the Circuit Trails network in the Philadelphia region.

Following the presentation, planners facilitated a workshop where attendees provided feedback on four geographic sections of the trail and routing alternatives for each section. Attendees expressed safety concerns regarding traffic for segments located within the borough. Enthusiasm for bicycle trail planning in general was also expressed by attendees.

Chart 2-2 Public Survey Responses for Trail Use

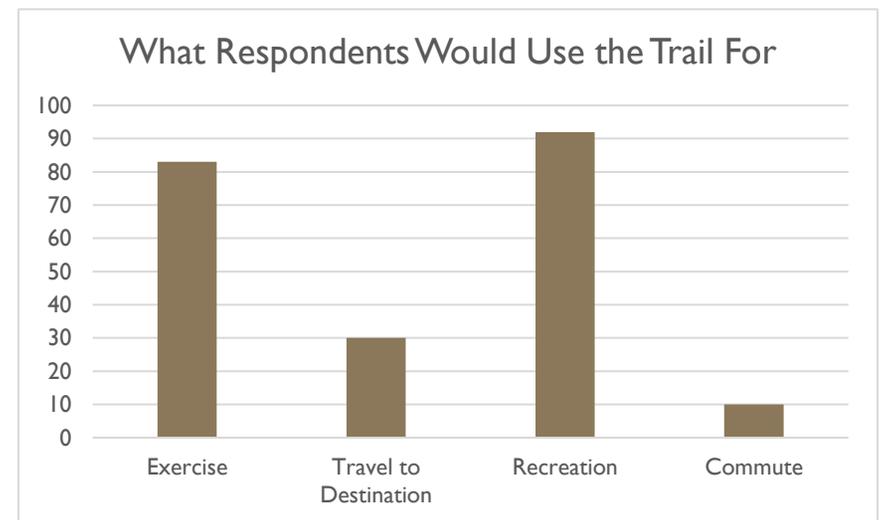
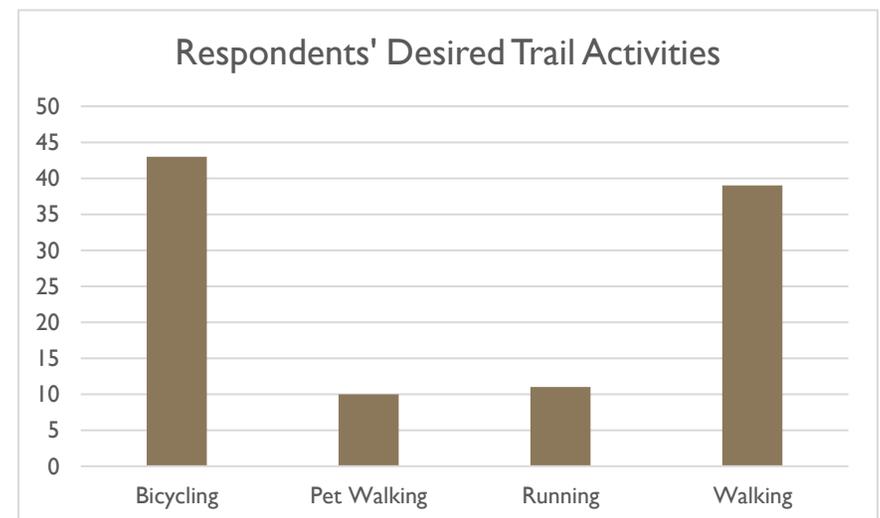


Chart 2-3 Public Survey Responses for Trail Activities



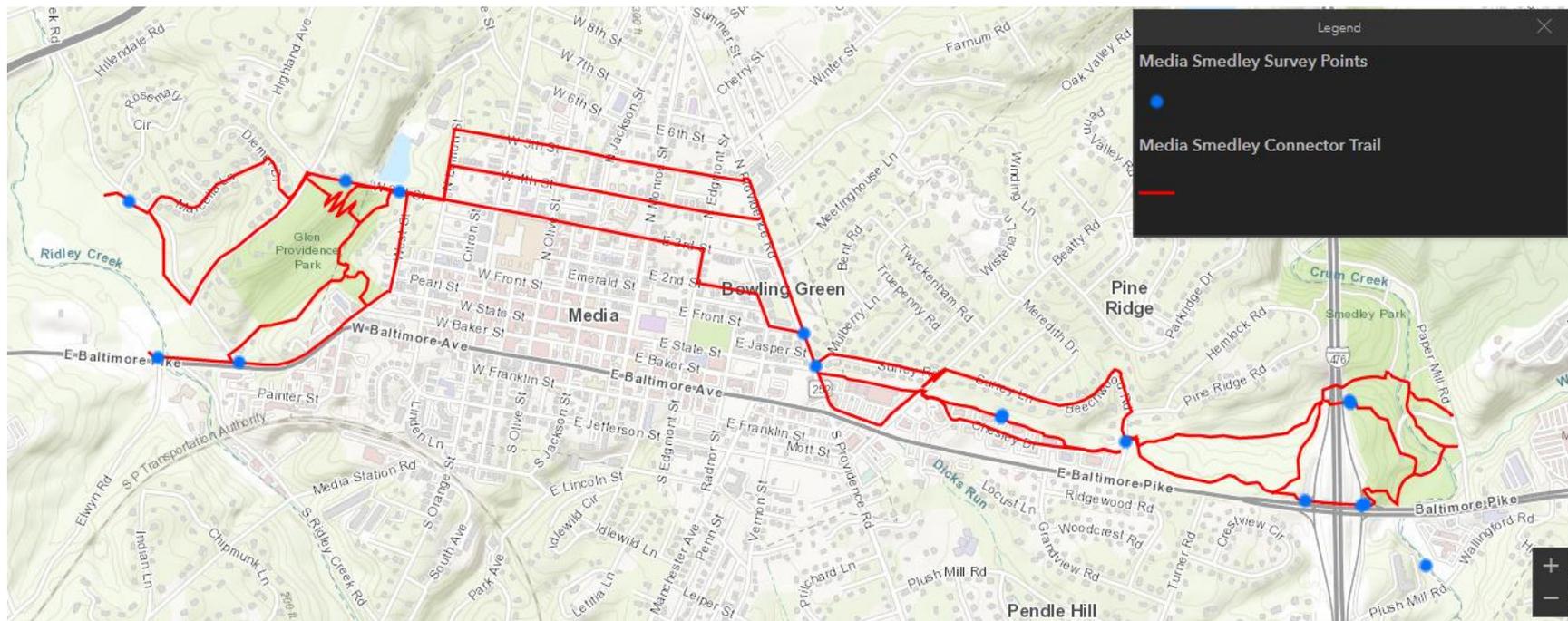
The second public meeting, held on July 14, 2020, featured a presentation by the project consultant, Traffic Planning & Design. The proposed final alignment was presented to the public for comments and feedback. This meeting was held virtually online due to COVID-19 concerns. The third public meeting, also held virtually, discussed the final draft of the feasibility study and solicited comments and feedback. This meeting was held on November 10, 2020.

Public Online Survey-Map

The project team created a survey which was open for comment from February until April 2020 and had 105 participants. Over 90% of the responses were from residents of the study area. Survey responses confirmed that the most desired activities for trail use would be biking followed closely by walking. The survey results followed closely with the

comments and support received in from the first public meeting held in June of 2019.

Throughout the study, stakeholders have advocated for a multiuse trail which would accommodate a variety of uses, chiefly walking and biking. Survey participants were able to place points on an online map (pictured below) and add comments. Many of the comments received voiced support of the overall idea of a multiuse trail through the area. Participants noted key intersections and current pain points such as Providence Road (SR 252), Baltimore Pike, and Interstate 476. Other participants noted the Third Street area as a potential linkage to connect the western portion of the study area. A full list of the survey results and questions can be found in Appendix F.



The Online Survey-Map allowed respondents to add points to the map for submitting comments.

Steering Committee

The project team engaged with a group of local stakeholders from the following organizations:

- Media Borough
- Middletown Township
- Nether Providence Township
- Springfield Township
- Upper Providence Township
- Delaware County Planning Department
- Delaware County Parks Department
- Delaware County Public Works Department
- Delaware County Conservation District
- Chester Ridley Crum Watersheds Association
- Bike Delaware County/Bicycle Coalition of Greater Philadelphia
- Delaware County Transportation Management Association
- Media Business Authority
- Friends of Smedley Park
- Friends of Glen Providence Park
- SEPTA

The Steering Committee met on four occasions throughout the project development to provide feedback and critical input guiding the direction of the feasibility study. The committee meetings were generally very positive. The proposed alignment and designs by Traffic, Planning & Design were well-received by the group.

Key-Stakeholder Interviews

The project team also conducted interviews with more than 15 local stakeholders to gain insight about the area and about concerns and opportunities for the trail. Details from these interviews can be found in Appendix F, Public Participation.



Attendees discuss possible route alignments at the first public meeting.

Chapter 3: Feasibility Study

In this chapter, the feasibility of the Media-Smedley Connector Trail is examined – first with a physical inventory and assessment of the study area, and then by analyzing and discussing all of the possible trail route and alignment options put forth during the course of the study.

PHYSICAL INVENTORY AND ASSESSMENT

The following maps and narrative descriptions evaluate natural and man-made features that may impact the feasibility of a multi-use trail that meets the general alignment goals of this study. Specific locations where the features directly impact specific alignment alternatives are noted within the Trail Alignments Alternatives Evaluation found later in this chapter.

Existing Land Use

The study area is mostly densely developed with commercial and residential uses, as shown on Map 3-1. There is a high concentration of commercial uses in downtown and eastern Media Borough and in adjacent Nether Providence Township with the presence of Media's business district, Media Shopping Center, and the Chesley Office Campus. Media's West End includes high-density residential and some adjoining commercial uses. The extreme eastern and western ends of the study area contain the largest expanses of woodlands and open space in the area, mostly contained within public parkland.

There is a wide diversity of land uses within the Borough of Media. In addition to its residential and commercial uses, Media also hosts some stretches of institutional government facility uses relating to it being the county seat, mainly at its center. There are also a few small recreational parks, an elementary school, and wooded areas within the borough boundaries. The sections of both Upper Providence and Nether Providence Townships located in the MSCT study area are largely a mix of residential and wooded areas with some strips of commercial use along the Baltimore Pike corridor.

Topographic Features

Being that the goal of this trail is to span the area between two major creeks, there are significant hills to deal with on both its east and west ends. As there is opportunity in the eastern end for the trail within parkland to follow parallel to a tributary stream, the grade change may not be as severe as on its west end. The hills between downtown Media and Ridley Creek are the longest and steepest that cannot be avoided at levels greater than 20%.

The majority of the study area contains slopes of less than 10%. Between Orange Street in Media Borough and the middle of Smedley Park, slopes are relatively moderate, except for a steep section of Beechwood Road in Nether Providence. Topographic features of the study area are displayed on Map 3-2.

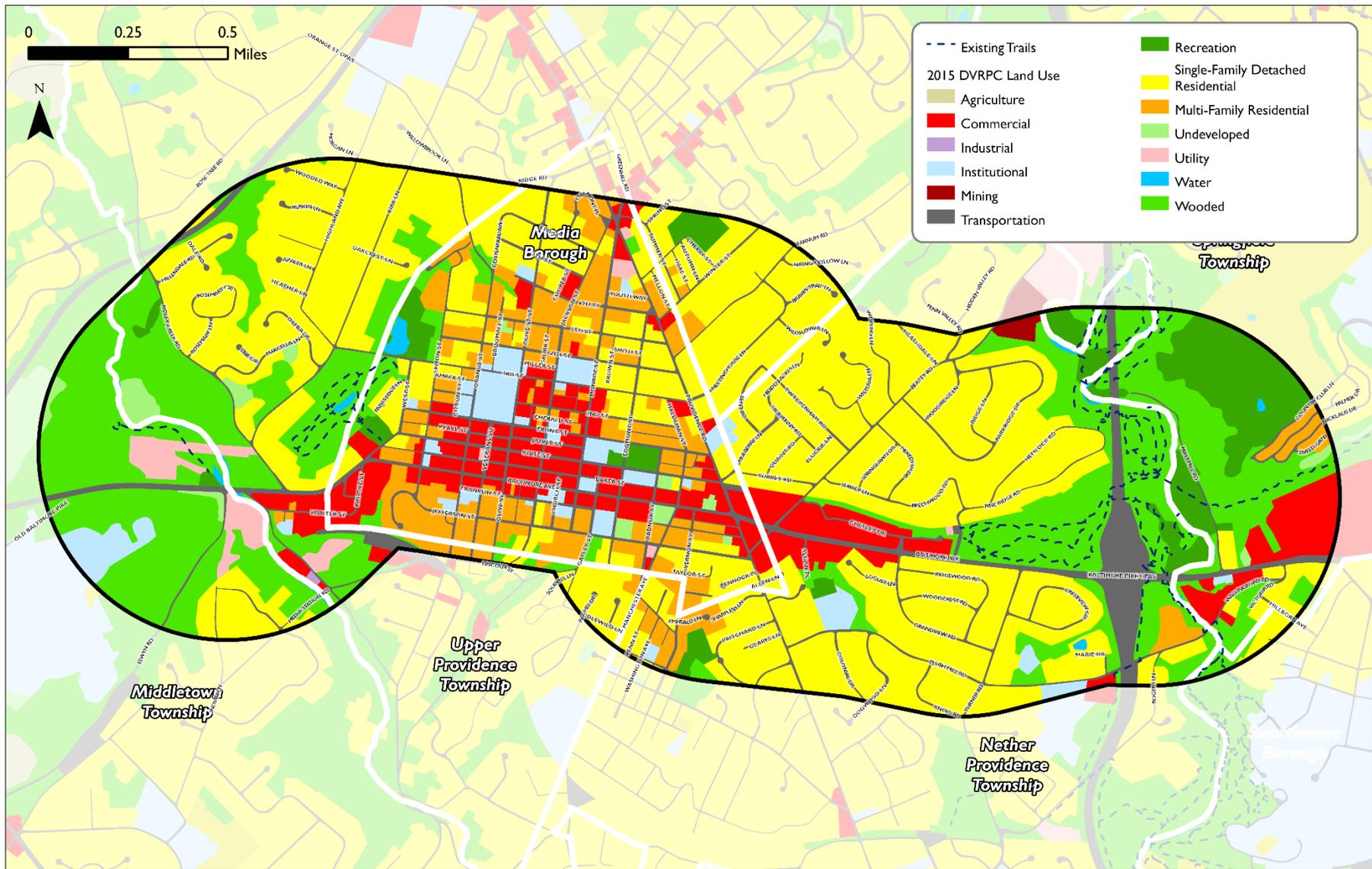
Hydrologic Features

The main water bodies in the study area, the Ridley and Crum Creeks, run north to south at its east and west ends, respectively. The Crum and Ridley watersheds' boundary, the line of high points between the two streams, runs roughly parallel to Providence Road (Route 252) on the east side of Media Borough.

Broomall's Run is a major tributary of Ridley Creek that historically has had two lakes or ponds - the pond in Glen Providence County Park and Broomall's Lake, although the latter was drained when the Third Street Dam was breached in 2017. Both of these ponds were man-made and require maintenance by their owners.

The study area contains one major tributary of Crum Creek, officially unnamed, but known locally as Pine Ridge Run. This creek is located mostly in Smedley County Park roughly parallel to the trolley tracks.

Map 3-1: Study Area Land Use



Map 3-2: Topographic Features of the Study Area

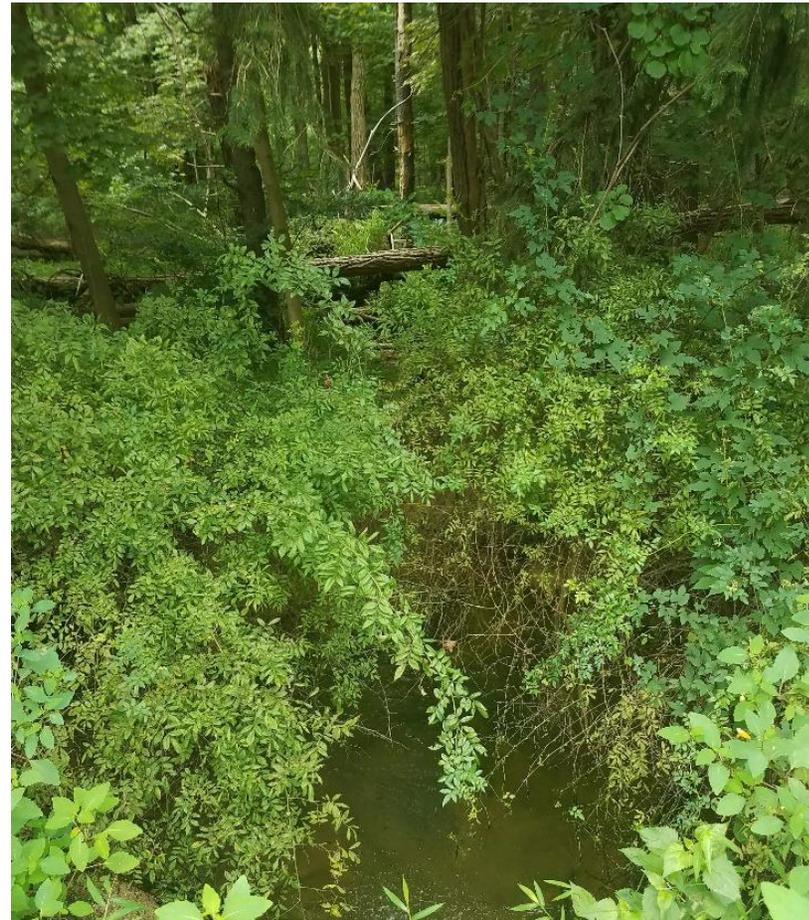


Floodplain and floodway areas are mostly found along the major creeks within parkland. Wetlands and hydric soil locations mostly coincide with floodplain areas. There are relatively large areas of hydric soil located in Scott Park (the “Media Wetlands”) and Smedley County Park (along Crum Creek).

Media Borough has been addressing its stormwater management with projects and practices implementing its 2017 Stormwater Master Plan. These include the design of public spaces with surfaces that infiltrate, rather than convey, water. Hydrologic features of the study area are displayed on Map 3-3.

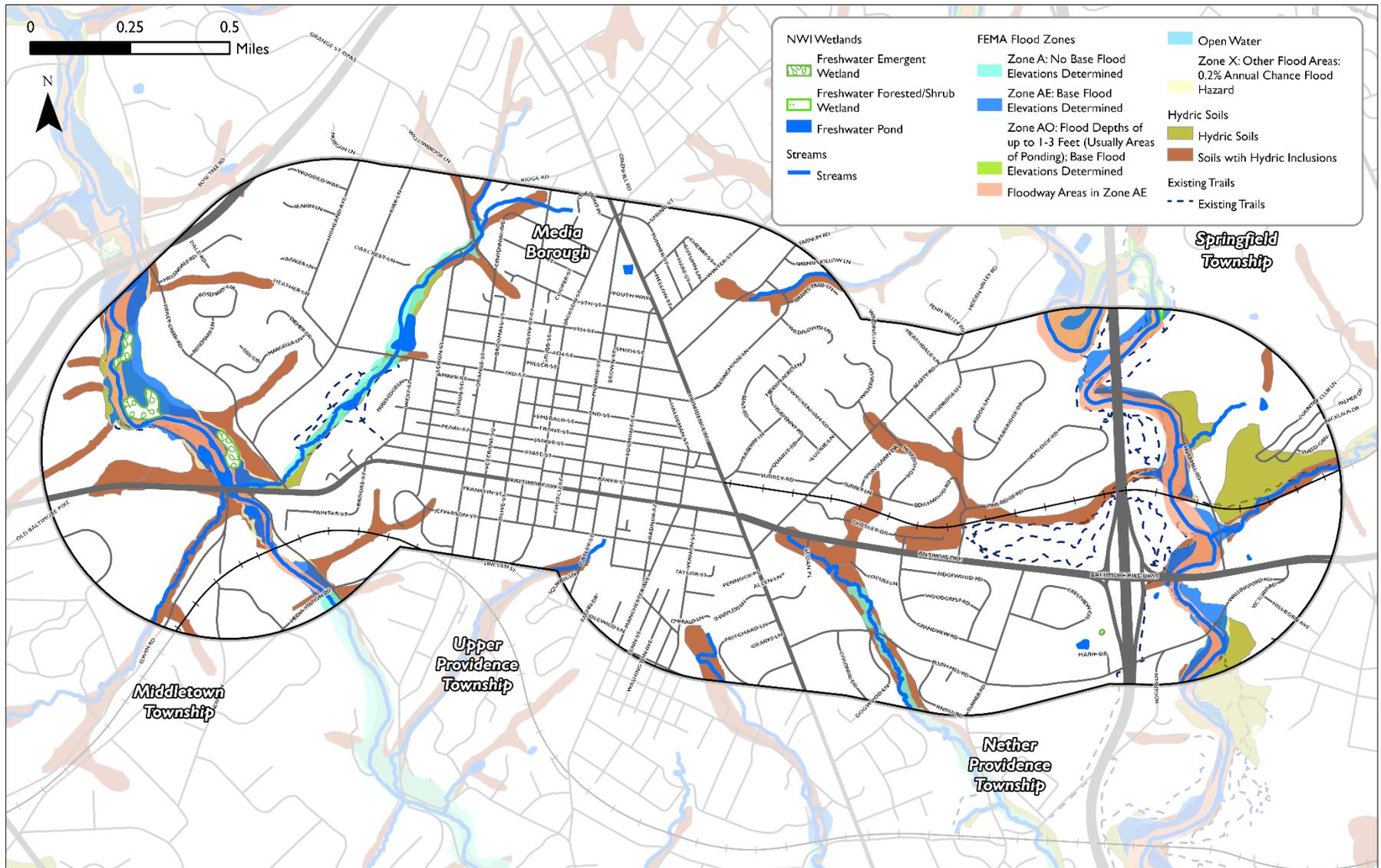
Natural Heritage Features

Natural landscapes (woodlands, undeveloped meadows) are found on the east and west ends of the study area, concentrated within the public parkland around Ridley Creek, Crum Creek, and their tributaries. Natural heritage areas that are included in the Delaware County Natural Heritage Inventory (DCNHI) are displayed on Map 3-4. Natural heritage areas consist of sensitive ecological habitats and the locations of animal and plant species of concern (endangered, threatened, or rare). The study area includes one core habitat natural heritage area (NHA) - the Media Wetlands (immediately adjacent to the Mineral Hill NHA to its west). This area is categorized as having “local significance.” Core habitat natural heritage areas are defined as areas that cannot absorb significant levels of activity without substantial negative impacts to elements of concern. The immediate riparian areas around Broomalls Run and Crum Creek were identified as a natural heritage “supporting landscape.” A supporting landscape is considered an area directly connected to core habitat (such as the Media Wetlands and the nearby Crum Woods) that maintains vital ecological processes and/or secondary habitat. These areas are able to withstand some low level of activity without substantial negative impacts to species of concern.

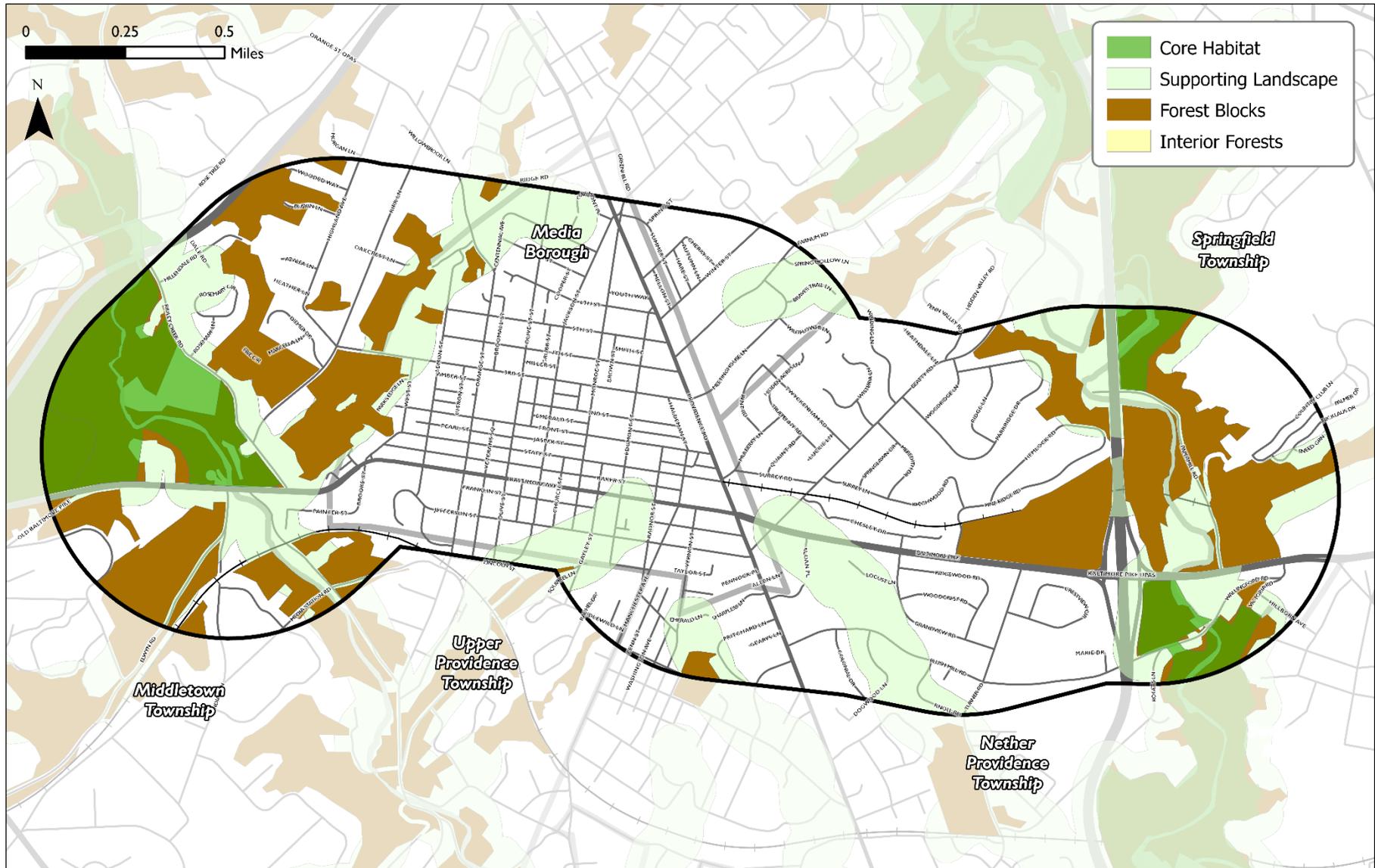


Tributary to Ridley Creek in Scott Park

Map 3-3: Hydrologic Features of the Study Area



Map 3-4: Natural Heritage Features of the Study Area



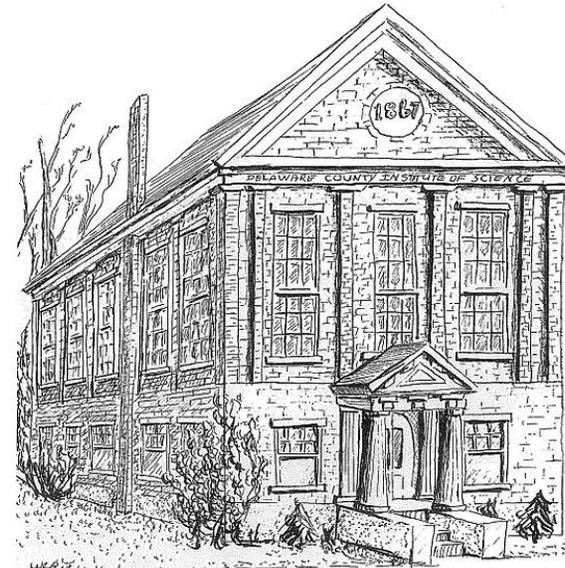
Cultural Features

There are a number locally and nationally recognized historic resources within the study area boundaries. Three locations are listed on the National Register of Historic Places, and another seven historic sites have been determined by the Pennsylvania Historic and Museums Commission (PHMC) to be eligible for the National Register.

Additionally, there are three locally regulated historic districts in Media Borough, covering approximately 46 properties.

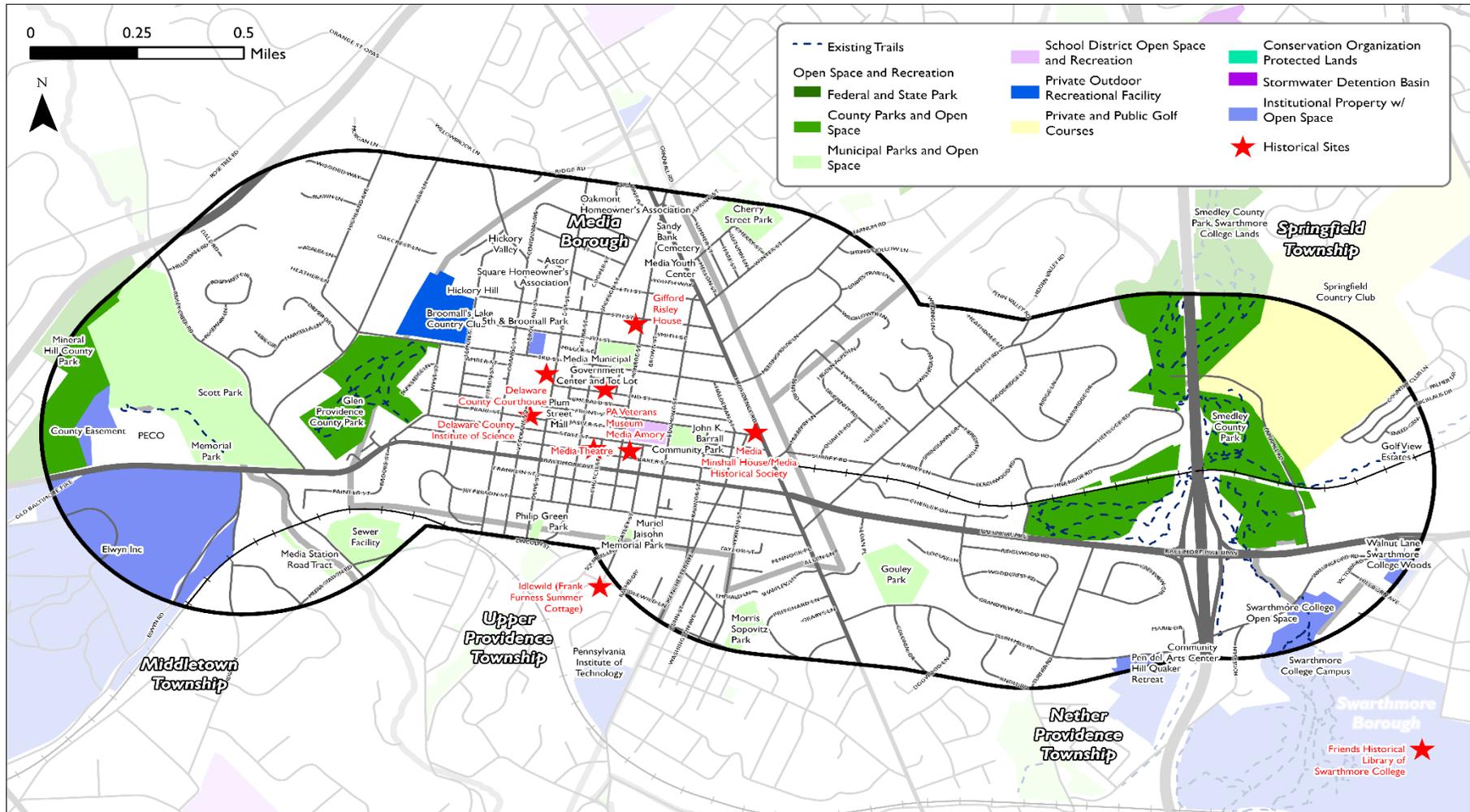
The Media National Guard Armory on State Street, now repurposed as a Trader Joe's grocery store as well as a Veteran's Museum, is one of the National Register listed sites in the borough. Two attractions located in downtown Media that are eligible for the National Register are the Media Theater and the Delaware County Institute of Science. The Delaware County Courthouse, also located in the business district of Media and eligible for the National Register, is an employment center and draws many residents daily.

Glen Providence County Park, situated in both Media Borough and Upper Providence Township, was determined to be eligible for listing in the National Register as a site significant to the history of recreation. The park is a good example of a community park, as it retains its historic setting, layout, and structures. The Friends of Glen Providence Park have been pursuing National Register status for the park after finding out that it is eligible. Smedley County Park contains the Lewis House, a restored building associated with the former owner of the mill operation on the site, now used for the Penn State Extension office for Delaware County. Major cultural heritage features of the study area are displayed on Map 3-5.

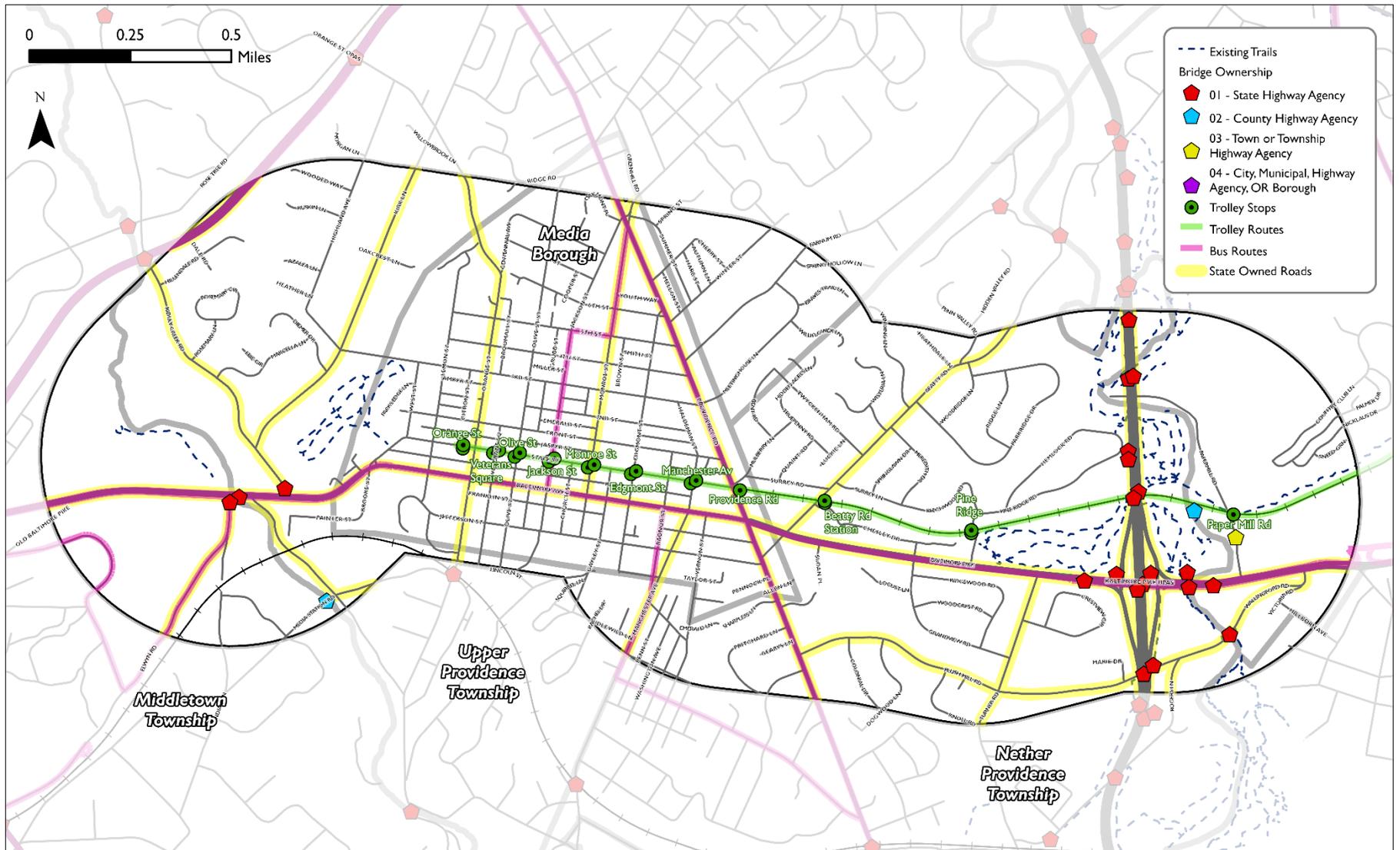


Clockwise from top left: Delaware County Courthouse, Lewis House, Media Theater, Delaware County Institute of Science, Glen Providence Park.

Map 3-5: Cultural Heritage Features of the Study Area



Map 3-6: Transportation Features Study Area



Utilities and Related Structures

The study area is crisscrossed with various utilities and structures (underground lines, poles); however, for the purposes of this feasibility study, there are just a few of relevance. Many of these features are covered in greater detail in the 2014 *Mineral Hill Area Parks Master Plan* and the 1990 *Smedley Park Master Plan*.

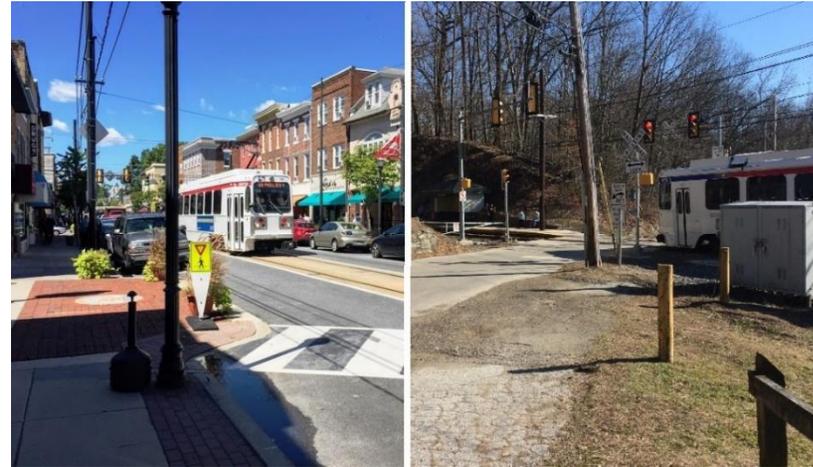
Within the Mineral Hill Area on the western end of the study area, there is an existing PECO substation facility along Baltimore Pike just west of Memorial Park in Middletown. A right-of-way extends eastward across Ridley Creek, where there is another much smaller facility in Scott Park along Ridley Creek Road. On the eastern end of the study area within Smedley Park, a Central Delaware County Sewer Authority (CDCA) underground sanitary sewer line runs along Crum Creek in the main section of the park. Another CDCA line extends to the west along Pine Ridge Run and the SEPTA Media Trolley tracks.

While the trail may need to cross over or next to these utilities, neither the electric right-of-way nor sewer lines should be an obstacle for implementing a trail.

Transportation Features

The transportation features in the study area are shown on Map 3-6. Both the state (PennDOT) and the municipalities oversee a variety of road types throughout the corridor. Baltimore Pike and Providence Road are Principle Arterial Highways maintained by PennDOT. South Orange Street and North Monroe Street are minor arterials through the study area also maintained by PennDOT. There are many PennDOT owned major collector roads within the study area including North Ridley Creek Road, Kirk Lane, North Orange Street, Manchester Road, and Beatty Road.

The study area is bounded on the south by Baltimore Pike, which, on the west side of Media, is a high-speed corridor leading to Middletown Township destinations such as The Promenade at Granite Run and the Riddle Hospital complex. In the study area, the road is wide and



The SEPTA Media Trolley on State Street (left) and at Papermill Road in Smedley County Park (right)

characterized by fast moving traffic. Within the Borough of Media, the character of the transportation features shifts to more low-volume, neighborhood streets. Media Borough is bounded to the east by Providence Road (SR 252). This is a high-volume street presenting a challenging environment for cyclists and pedestrians. On the east side of Media, the area in Nether Providence Township is characterized by neighborhood streets and to the south Baltimore Pike, which here again is characterized by high-volume and high-speed traffic.

The removal of the former Third Street Dam resulted in a gap and dead ends in Third Street on either side of Broomall's Run next to Glen Providence Park. It is anticipated that a possible connection between the two segments of Third Street could be made again; however, the exact nature of a transportation connection is yet to be determined.

The 110 and the 118 SEPTA buses run through the study area with stops clustered in Media Borough. The SEPTA Media Trolley ends its route in Media at Orange Street. The trolley is a defining characteristic of the State Street landscape in Media, and the route connects to 69th Street Terminal in Upper Darby. The availability of transit access near the proposed trail provides recreational and multimodal transportation options for those who may not have access to a private vehicle.

SUMMARY OF OPPORTUNITIES AND CONSTRAINTS

The following is a summary of the opportunities and constraints for building a bicycle and pedestrian trail across the study area.

Opportunities

- Within the study area there are numerous cultural, historic, and natural features which provide destinations for visitors and residents. Creating a trail connection would provide better access to these destinations and increase economic opportunity.
- The study area includes three parks, creating a hub for outdoor recreation. Creating a connection between these natural areas would provide access for residents to enjoy these park spaces and provide increased active transportation options.
- The study area is centrally located within Delaware County and spans two stream valleys. This location provides an opportunity to connect to other destinations within the County such as the Promenade at Granite Run and the Springfield Mall, which are near the study area.

Constraints

- The study area presents some challenging topography for a multiuse trail. The center of the study area rises sharply climbing out of one stream valley before falling gradually again as it enters the next. The routing of a trail, while challenging, can help users navigate this difficult terrain.
- The study area has several high-speed roadways that, in their current state, pose a challenge to trail development. While these roadways provide key access to the area, they also pose a challenge for a multiuse trail. As part of the development of a trail, these roadways should be adapted to better accommodate multimodal travel.
- The study area traverses five municipalities, PennDOT roadways, SEPTA facilities, and Delaware County parks. This

mix of stakeholders presents a complicated picture for implementing a multiuse trail with responsibility for trail development falling to many different partners. Throughout the study process, the team has worked with each of these partners to help aid in future trail development and provide a comprehensive, singular vision for a Media-Smedley Connector Trail.

CONCEPTUAL INTENT/GOAL FOR THE STUDY AREA AND TRAIL ALIGNMENT

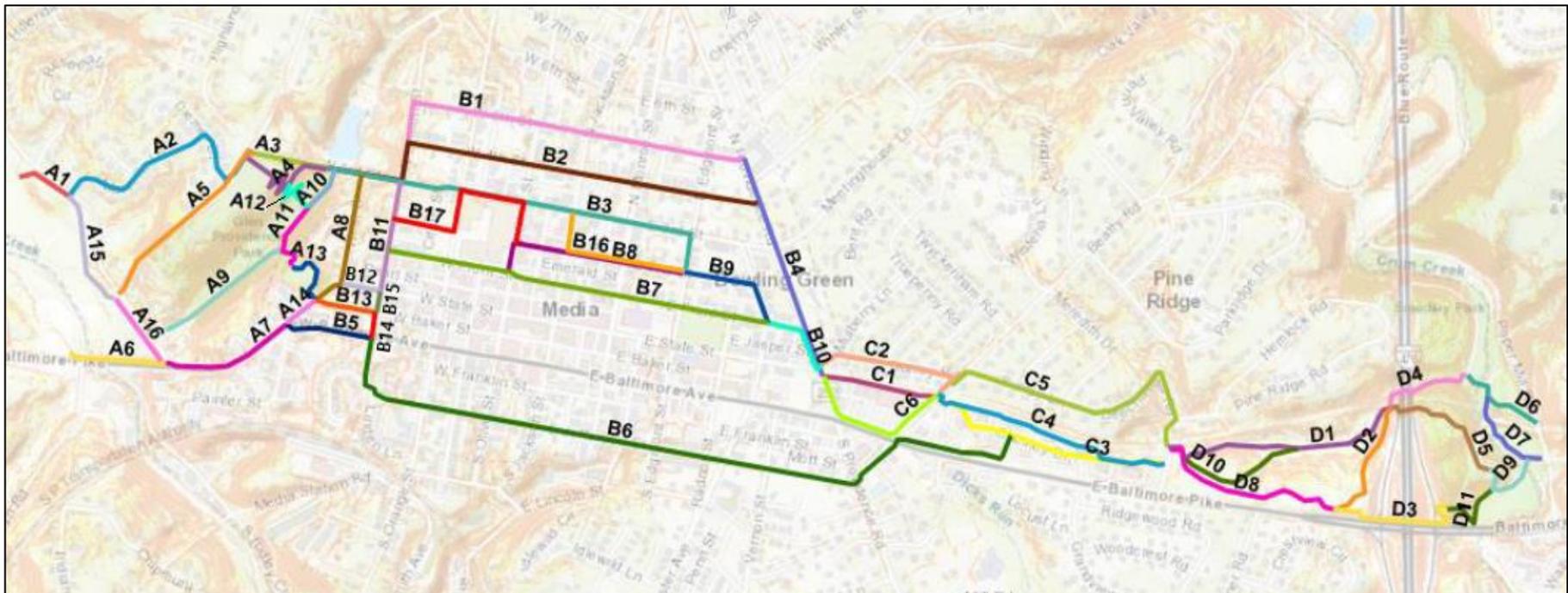
The intent for the route and alignment of the Media-Smedley Connector Trail as laid out in this study is for an east-west trail that is as straight as possible and as flat as possible, with trailhead parking at the terminus of either end. Design specifics beyond that, and the reasoning for the chosen route, will be discussed in the next chapter. Bringing the trail through the Borough of Media, as opposed to around it, will both keep the trail straight and direct while also bringing users into the commercial and government center of downtown Media. It will benefit trail users and the Media business community to have the trail in close proximity to the State Street and Baltimore Pike commercial districts. This will accomplish the goal of bringing people both to and from the district, either from parks and residential areas to the downtown, or from employment centers to parks, recreation, or on a return route home. It will also fulfill the goal of a direct link in the overall Countywide trail network, for the energetic cyclist passing through from one side of the borough to the other. The trail will encourage a well-marked and alternative to sharing high-stress Baltimore Pike with automobiles.

TRAIL ALIGNMENT ALTERNATIVES EVALUATION

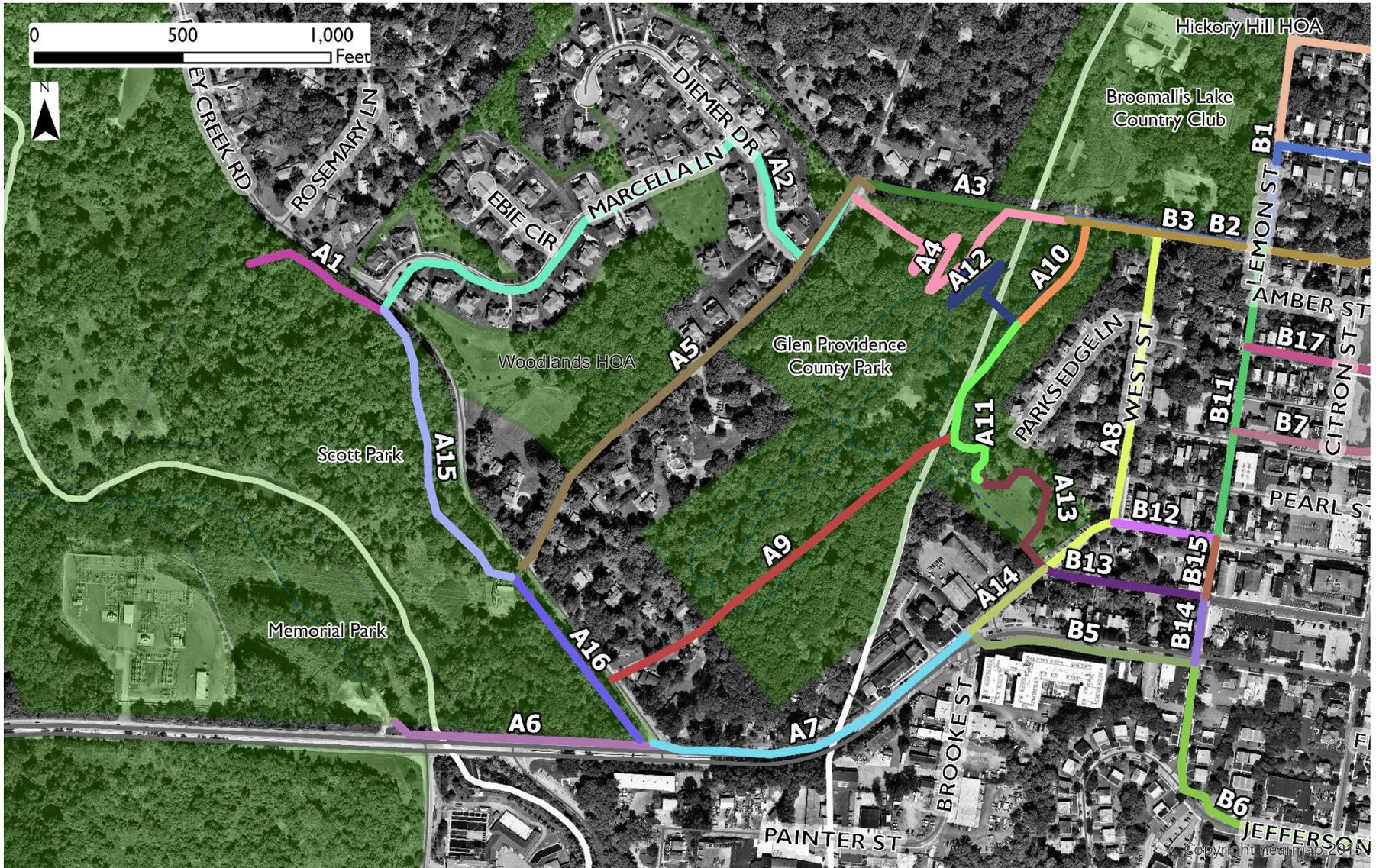
The proposed Media-Smedley Connector Trail corridor has been divided into four sections, each roughly one-fourth of the east to west geography of the study area. These sections, or panels, lettered A, B, C,

and D, were used throughout the analysis phases of the study. In each of these panels, multiple segments were considered as routing options for the trail. The following pages evaluate the physical layout, opportunities, constraints, and legal considerations for each segment that was considered.

Map 3-7: Study Area Alternative Trail Segments Key



Map 3-8: Study Area Panel A - Alternative Trail Segments



Panel A - Ridley Creek Valley Section

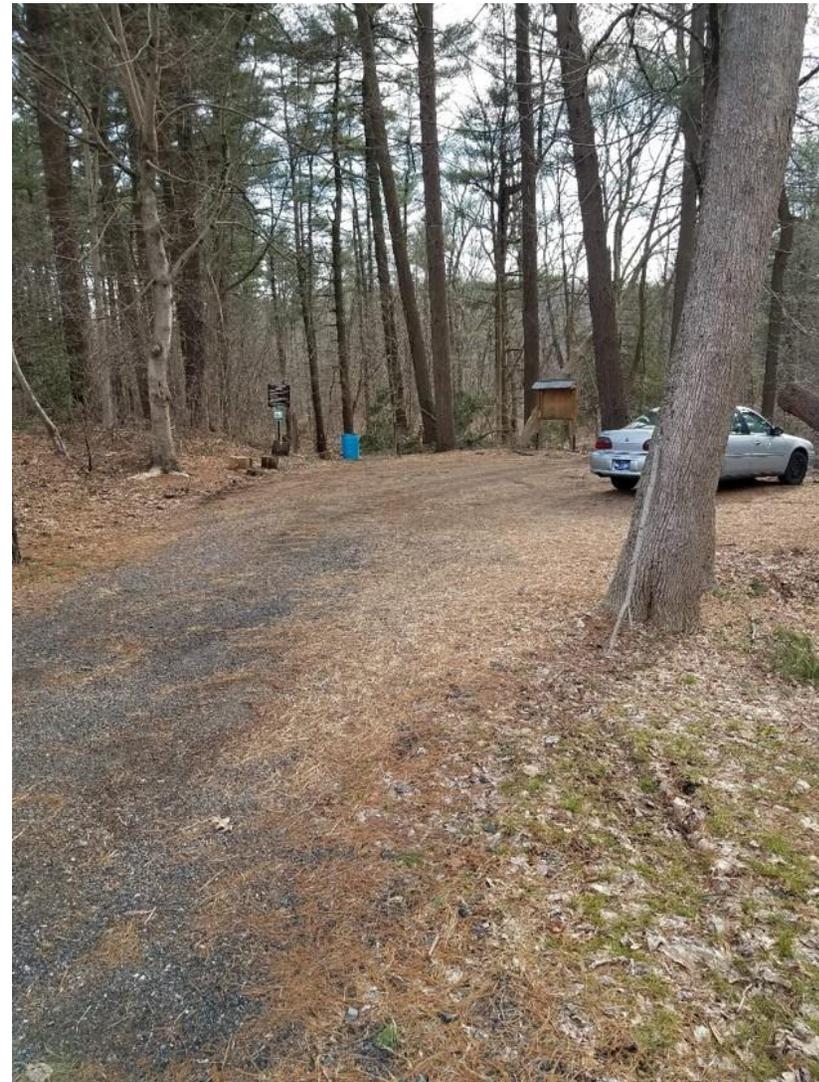
Mineral Hill Area

The Mineral Hill area is comprised of three parks along Ridley Creek. Mineral Hill County Park makes up the westernmost section of this area and borders a PECO substation that sits along Baltimore Pike. Middletown Township manages Memorial Park, which is wedged between the PECO substation and Ridley Creek. The final park in this area is Louis Scott Park, managed by Upper Providence, which sits primarily on the eastern side of Ridley Creek.

In 2014, Delaware County, in consultation with Natural Lands Trust, created a master plan for the Mineral Hill Area. The plan calls for passive recreation improvements to the area parks including a trail system, signage, and related amenities. A planned trail running along Baltimore Pike (A6), as shown in the plan, would continue to the edge of the Area and turn north along North Ridley Creek Road (A1, A15, A16).



The Memorial Park parking lot on Baltimore Pike (A6)



Trailhead parking lot in Scott Park on Ridley Creek Road (A1)

Glen Providence County Park

Glen Providence County Park sits in a steep stream valley on the border between Media Borough and Upper Providence Township. The park encompasses 35 acres of lush woodland and marsh habitat. The park has approximately 2 miles of existing earthen trails and a pond at its center. The park is home to a small performance stage, which hosts community events throughout the year. The park is owned by Delaware County and maintained by its Parks and Recreation Department in partnership with the Friends of Glen Providence Park. The main entrance to the park is at State Street in Media, which has parking and quick access to the stage area.

There are other entrances to the park from Kirk Lane and Third Street in Upper Providence and at Third Street in Media. The park provides a connection point and a destination for a potential Media-Smedley Trail.



Third Street looking west, adjacent to Glen Providence Park (A3)

The team explored various options that would route a multiuse trail through the park (A4, A9, A10, A11, A12, A13). A few of these alternatives (A3, A4) would rely on a completed section of Third Street to navigate the steep terrain within the park.

The Woodlands at Ridley Creek

A few options for a trail would use routes through The Woodlands at Ridley Creek (A2) using the calm neighborhood streets to climb the hill and connect to Media. Another option in the vicinity would use Kirk Lane (A5) to connect from North Ridley Creek Road to Third Street in Upper Providence. This area is characterized by neighborhood streets and steep topography with woodlands surrounding the area.



Marcella Lane in The Woodlands at Ridley Creek (A2)

Media West End Gateway and Traffic Calming

The western entrance to Media is a critical linkage when envisioning a Media-Smedley trail connection. Baltimore Pike/Avenue is the key roadway linkage entering the borough from the west and was considered as an option in this study (A7). This area is defined by the features of Baltimore Pike as it climbs the hill entering Media. It is currently designed for high volumes and high speeds. Recent developments at the western edge of Media (West End Walk, West End Flats) have precipitated changes to the intersection of Baltimore Pike, Brooke Street, and State Street, which calm traffic before continuing into the borough.



Baltimore Pike at West End Walk (A7)

Trail Routing Options

The study reviewed trail routing options guided by the feedback from public outreach. With the vision of a multiuse trail in mind, the team evaluated the alternative alignments through the Ridley Creek Valley section. It became clear that many alternatives through Glen Providence Park pose significant challenges due to steep slopes in the area (A4,

A10, A11, A13). One alternative route suggested a bridge spanning Broommall's Run (A12) through the park just south of Third Street, which could likely be costly to build. One option running along Broommall's Run through the park (A9) provided some of the most forgiving grade within the park, though still not without engineering challenges. However, this route would require significant property acquisition to connect to North Ridley Creek Road. A route along A3 would present significant challenges considering the uncertain nature of the Third Street bridge project and/or without a structure spanning Broommall's Run at Third Street.

A trail along Kirk Lane (A5) and Marcella Lane (A2) would share the existing roadway. Both roadways have steep slopes presenting a challenge to navigate while maintaining the standard for a multiuse pathway. Marcella Lane was built with space for additional multimodal uses in mind with ample roadway width. Kirk Lane is a narrow roadway which presents significant challenges for providing safe, shared multimodal space.

Baltimore Pike in its current state provides challenges to a trail. In its current form, Baltimore Pike entering Media is designed as a wide, high speed Principle Arterial Roadway with a posted speed limit of 25 MPH beginning at the bridge over Ridley Creek. The current design of this segment of the roadway is not in line with the context of Media Borough, which consists of mostly of low speed and low volume neighborhood streets. Given the width of roadway and the available space in which changes to the roadway could be made, options A6 and A7 presented strong options for routes for a trail. Memorial Park in Middletown provides an ideal location for a trailhead for a Media-Smedley Trail. Currently, there is room for trail parking, and with good visibility along Baltimore Pike, a trailhead could encourage visitors to use the trail to travel to Media and beyond.

North Ridley Creek Road travels along the edge of Louis Scott Park. The study team looked at three routes A1, A15, and A16 from Rosemary Lane to Baltimore Pike, which would all travel along this

roadway. Given that North Ridley Creek Road has limited room, the trail through this area would be within Louis Scott Park, paralleling North Ridley Creek Road. This option rose to the top, given that the trail could be routed through the park to take advantage of its natural beauty. Louis Scott Park currently has a small parking area along North Ridley Creek Road, which provides an excellent trailhead location for the Media-Smedley Connector Trail. A trailhead at this location would provide another starting point for visitors to the study area and would connect the trails in Louis Scott Park with the MSCT.



Kirk Lane, steep with no shoulders (A5)



The existing Mountain Laurel Trail on the west side of Glen Providence Park (A9)

Map 3-9: Study Area Panel B - Alternative Trail Segments



Panel B – Downtown Media Section

Physical Layout

This section of the study area within Media Borough is comprised mainly of residential land uses. There are areas of commercial land use across the borough focused in the area between Baltimore Avenue north to Front Street. There are additional commercial land use areas around the western gateway to the borough and to the east of Olive Street. Throughout the borough, there are various institutional land uses. Chief among these is the County of Delaware, which has most of its government service offices and facilities located within Media Borough.

Media Borough Streetscape

Much of the Media Borough street network is characterized by neighborhood streets, many of which are low volume, low speed roadways. There are a few notable exceptions which include Baltimore Avenue and Providence Road, both of which are high volume streets and high stress areas for pedestrians. Much of the streetscape in Media is characterized by tree-lined, low stress streets providing an interesting and unique opportunity for a potential trail.

Trail Routing Options

The key western gateway into the borough is Baltimore Pike/Avenue. West End Flats sits on the corner of Brooke Street and Baltimore Avenue, and the intersection has recently been improved with updated signals and improved pedestrian amenities. Option B5 would traverse Baltimore Avenue from Brooke Street to Lemon Street. Baltimore Avenue is a higher volume roadway; however, with its recent improvements, it could provide for a safe option if additional pedestrian facilities would be added to the roadway. Option B6 would use a more southern route following Lemon Street south, turning onto Jefferson Street and following it across the borough. This route would then use South Beatty Road to head north and cross Baltimore Avenue, eventually connecting to Chesley Drive. This route would require a redesigned Jefferson Street to accommodate an on-road shared-use pathway.

Option B13 would use Baker Street for a block from State Street to Lemon Street. Option B12 would use State Street from West Street to Lemon Street. These parallel options (B12, B13) provide calmer alternatives than the parallel stretch of Baltimore Avenue. Various trail options would traverse Lemon Street to navigate north to south in the borough. These include B14, B15 and B11. To navigate west to east across the borough, many of the roadways north of State Street were explored, including Fifth Street (B1), Fourth Street (B2), Third Street (B3), Second Street, and Front Street. As the team evaluated alternatives, a route close to the business district along Front Street emerged as an idea with merit (B7). Much of a trail through Media would be a shared facility with vehicular traffic, so the need for calm streets was paramount in selecting a route through the borough which



Fourth Street in Media (B2), a typical 2-way residential street with parking on both sides



Third Street in Media, behind County Government Center (B3)

could safely accommodate a trail. The area along Front Street (B7) and Second Street (B8, B16, B9) provided a favorable option. The County Courthouse sits on Front Street and while the street is narrow, there is space for a sidepath running parallel to the roadway along county property. Improvements would be needed for a trail to run along Front Street, but this option would allow a trail to cross the borough with a clear path and near the businesses along State Street.

Providence Road in the borough is a high-speed roadway, making it a challenging area for a trail. Early options for a trail would traverse along Providence Road, requiring a multi-block sidepath (B4). Given the existing structures within this area and the traffic volumes along Providence Road, the idea was abandoned in favor of a shorter one-block segment along Providence Road. Option B10 presented a shortened use of Providence Road and a better experience for trail users. The trail would traverse a small section on Front Street before traversing a block along Providence Road and then crossing east to Mulberry Lane.

Obstacles

The trail through Media Borough will present a different character than the surrounding areas. The borough section of the trail will wander through neighborhood streets rather than enjoying more natural scenery. Many of the high stress streets in the borough, such as Providence Road, will require modifications to accommodate a trail or a trail crossing. The trail will have to work with the current street grid and in many cases share the roadway with vehicular traffic. While this may be different from many trails in the area, it provides an opportunity to enjoy Media Borough from a new perspective.

While the terrain in Media is more forgiving than some of the steep areas around the borough, there are a few different agencies which will need to be coordinated with in order to make a trail happen. There are PennDOT-owned and municipality-owned roads in the Media Borough section of the study area. This section of the study area focuses on one municipality; however, Delaware County owns property in the borough and would be a partner in developing the trail along courthouse frontage. This section of the trail could provide a ready connection to the business district in Media while providing a tour through the borough. Residents of the borough would have new non-vehicular connections to park amenities which are otherwise difficult to visit without an automobile.

Other Opportunities

A trail through Media Borough provides several unique opportunities for creative trail design. Interpretive signage throughout the borough could provide visitors with historical information about key sites around town. Unique wayfinding, such as on-road markers or signs, could be developed for the trail to create consistency along the trail and to guide users to points of interest along the route. Key transit connections like the SEPTA Media Trolley and Media Regional Rail station should be called out to trail users, highlighting options for travel to and from the study area. Bike racks, restrooms and other amenities for cyclists should be considered in key locations through the borough such as transit stops, parks, or the central business district.

Panel C - Nether Providence Section

Physical Layout

This portion of the study area is in Nether Providence Township and is west of Smedley County Park. It includes the commercial zone along Baltimore Pike between Providence Road and Pine Ridge Road. Beatty Road is the other major street crossing at the center of this section. The western commercial area is a shopping center and on the east is an office campus. The area immediately behind the commercial zone is a residential area of single-family homes. There is a little bit of Media Borough in this section, but it is mostly in Nether Providence Township. The big question in this section was whether the trail could possibly be routed off-road on any off-road right-of-way that could be obtained in the commercial areas, if it would have to be routed on-road through the residential areas, or a combination of the two.



Media Shopping Center delivery lane and SEPTA Trolley right-of-way (C1)

Media Shopping Center (Acme)

The Media Shopping Center, anchored by Acme supermarket, was explored for a few trail routing options. The complex contains a delivery lane at its rear (C1), between back doors for store deliveries, and a retaining wall along the SEPTA Trolley right-of-way. The delivery lane leads across the back of the center to Beatty Road. A bank building sits next to a SEPTA Trolley stop parking lot at Providence Road. A trail would probably have to share some of a drive-through lane there if it were to be routed behind the shopping center.

The site has a large parking lot with some landscaped buffer areas along the outer edges. The recent addition of a Starbucks building at the corner of Providence Road and Baltimore Avenue left little usable right-of-way along the outer edge of that corner. Other sections of the narrow edges along Baltimore Avenue and Beatty Road include some usable open space (C6).

SEPTA Media Trolley Line

From Providence Road to its western terminus, the SEPTA Media Trolley line runs down the middle of State Street on a single track. However, east of Providence Road in this section, the trolley runs in a dedicated right-of-way, on a double-track, until a point just west of Interstate 476, where it merges back into a single track. There are multiple downtown stops, but the more spread-out eastern stops are at Providence Road, Beatty Road, Pine Ridge Road, and Papermill Road (within Smedley County Park). SEPTA owns small parking lots at Providence Road and Pine Ridge Road that are restricted for SEPTA passenger use only.

Streets - Mulberry Lane, Surrey Road and Beatty Road

The corridor of Surrey Road, along with parts of Mulberry Lane and Beatty Road (C2) runs east-west, parallel to the SEPTA trolley on its north side, with homes and backyards between the two corridors.

The intersection of State Street, Providence Road (Route 252), and Mulberry Lane is a fairly busy intersection. Mulberry Lane (C2) is probably the calmest of the routes extending from this intersection, as it leads into a residential neighborhood. Following C2 onto Surrey Road,

Chapter 3: Feasibility Study

vehicular through traffic is discouraged by both signage (Do Not Enter, Local Traffic Only, Not a Thru Street) and the character of the neighborhood, with no street striping or curbing and excluding the stub Mulberry Lane leading to Rt. 252, has narrow sidewalks on just the north side of the street. The easternmost half of Surrey Road (east of Quaint Road) has no sidewalks. Further calming is mandated with a posted speed limit of 25 m.ph. and speed humps posted at 15 m.p.h. The street is also not lit in the evening hours. On-street parking is allowed, but not prevalent, as the houses all have driveways.

As an on-road option, Beatty Road (C2) would be needed to connect the trail from Surrey Road to the next segment to the east. This busy section of road would have to be crossed and improved for safe pedestrian and cyclist passage. There is potential room on adjacent residential lots, especially on the east side of the road, to negotiate right-of-way for a sidepath trail. The SEPTA Trolley tracks at the Beatty



Very steep sections of Beechwood Road (left) and Pine Ridge Road (C5)

Road station, would require a safe crossing if the trail turns south (towards C3 or C4). If the trail turns north, the distance is a little longer along the busy Beatty Road, until the Surrey Lane (C5) intersection.

Streets - Surrey Lane, Beechwood Road, Pine Ridge Road

Surrey Lane differs from Surrey Road in that the neighborhood lots along it are slightly larger and the trees taller and more spread out, giving the impression of openness. The street is still not very wide and is without sidewalks, speed humps, or curbing. After seven houses east of Beatty Road, Surrey Lane becomes Beechwood Road and there are sharp curves and steep hills down. In order to connect to Smedley County Park (Section D) an on-road trail would have to return up another steep hill on Beechwood and Pine Ridge Roads.

Chesley Office Campus

The Chesley Office Campus is situated between Beatty Road and Pine Ridge Road, and between Baltimore Pike and a wooded buffer along the SEPTA Media Trolley line. There is an agreement filed with Nether Providence Township and the homeowners on Surrey Lane, which states that the wooded buffer shall be maintained and the number of trees shall not be thinned out.

The east-west road through the campus, Chesley Drive (C3), and Grandview Road, which links to Baltimore Pike, are both private streets, maintained by a property owners association. The Henderson Group, which manages the association, owns and occupies the building at the eastern end, next to a cul-de-sac that is next to, but not attached to Pine Ridge Road. A narrow asphalt pathway connects the cul-de-sac and the parking lot to the road.

Map 3-10 Study Area Panel C - Alternative Trail Segments



Seven (7) landowners are on record for the properties along the northern edge of the Chesley Office Campus. Each of these properties contains a wooded buffer that backs up to the SEPTA trolley line. The western-most property contains parking spaces behind the building. Some of the other buildings contain existing paved pathways at their rear (C4), and parking between the buildings.



Chesley Drive (C3)

Widest at its western end, there is lawn area within a buffer at the Baltimore Pike side of the campus. The portion of lawn area at the corner of Beatty Road and Baltimore Pike is outside of the campus proper and is a separate commercial property. The lawn here, at the east end of alternative segment B6, may be wide enough for a sidepath trail.

There are no sidewalks along the curb of Chesley Drive (C3), except in front of the easternmost building on the north side. Signage is not permitted by the property owners association, except simple signs that identify the building names (Jamestown Building, Lafayette Building, etc.), and speed limits. Despite the lack of sidewalks, pedestrians and locals are known to walk along Chesley Drive, as the traffic is sparse.

Trail Routing Options

To use any of the options in this section, the trail would have to cross Providence Road. The safest and best spot to cross is at the State Road intersection next to the SEPTA Providence Road Trolley station.

The Media Shopping Center's delivery lane (C1) is likely too narrow to accommodate any kind of trail, and a trail there would result in the loss of parking spaces needed for unloading delivery trucks. For this reason, the idea of co-locating a trail there is not supported by the center's owners, Echo Realty. Although at times it appears wide enough and unoccupied, it is often blocked by trucks and would not be passable when they are parked. There is also a perception by some people of low safety/security in this out of the way spot.

Because of there being little space available for a trail around the outer edges of the shopping center's parking lot, and because it would have to be sited right up against the high-stress southwest corner, C6 was ruled out.

The SEPTA trolley right-of-way itself was considered briefly for possibly being used for the trail, perhaps immediately parallel to the rails. This idea was immediately abandoned as an option upon field inspection, and therefore is not even shown on maps as an alternative in this study. The

rail right-of-way lacks adequate width to safely accommodate both uses and it often contains steep edges at its borders.

It is likely that any preferred route will have to cross the trolley tracks once in this section at Beatty Road (when connecting C2 to C4 or C3). A well-designed trail would safely formalize this crossing with signage and pavement parkings. Many walkers and cyclists venturing to and from the trail will likely also cross the tracks at Providence Road.

The neighborhood association for Surrey Road would have to be given notice and perhaps asked to give approval for the design of a bike and pedestrian route (C2 or C5). To use Beatty Road to connect Surrey Lane to the next section east may require some additional easement from an adjacent property for the safest option – a road-parallel sidepath.

When weighing the options of taking the trail through the Chesley Campus versus using the roadway north of it (C5), the steepness and sharp curves of Beechwood Road and the hill connecting back to Pine Ridge Road was a big drawback to C5. Slopes in that area are in excess of 30%, and the sharp curves on the narrow road leave poor sight distances.

Either alternatives C4 or C3, within Chesley, are fairly level the whole way. A road-based trail within Chesley Drive, while potentially less expensive and intrusive on existing property lines, would sacrifice some utilization by those that don't feel comfortable or just don't enjoy comingling/riding on-road. If right-of-way for a shared-use path could be obtained behind the buildings (C4) next to the wooded buffer, a somewhat park-like feel could be extended that much further away from Smedley County Park; perhaps all the way west to Beatty Road. If C4 takes longer to secure, an interim bike and pedestrian route using Chesley Drive (C3) could be signed and marked.



Wooded buffer on the northwestern side of the Chesley Office Campus (C4)

Panel D - Smedley Park Section

Physical Layout

The areas explored in this section include the southern part of Smedley County Park (owned by the County of Delaware) and the transportation rights of way within and adjacent to it (Baltimore Pike, Interstate 476, and the SEPTA Media Trolley line). Pine Ridge Road is the boundary of the western edge of the park. Crum Creek bisects Smedley Park and is the municipal boundary between Nether Providence Township to the west, and Springfield Township to the east. The unofficially named "Pine Ridge Run" stream is a tributary of Crum Creek running roughly east-west in this section. The closest residential neighborhood to this section of the park is the Pine Ridge section of Nether Providence Township that is separated by either the trolley or steep slopes.

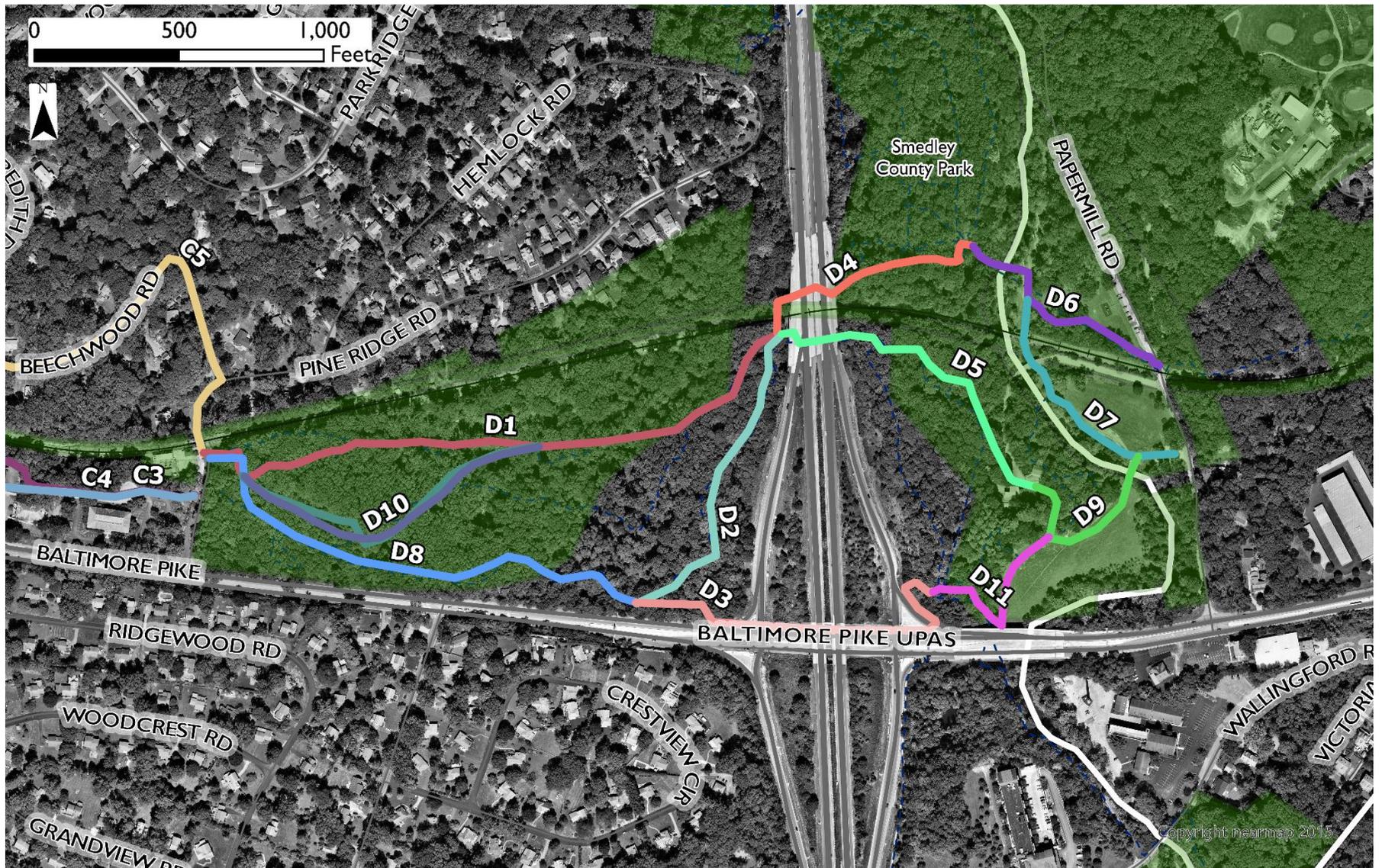


Pine Ridge Road at the west end of Smedley County Park, view west to Chesley Office Campus (D1, D8)



Existing trail parallel to the SEPTA Trolley, not far from Pine Ridge Road (D1)

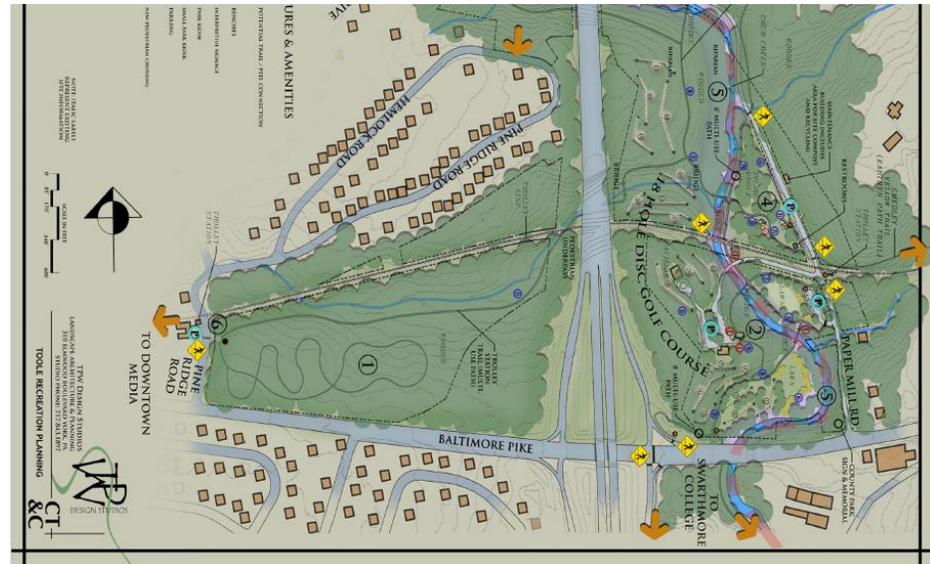
Map 3-11: Study Area Panel D - Alternative Trail Segments



Smedley County Park

Smedley County Park is owned by the County of Delaware. The Delaware County Parks and Recreation Department maintains and manages the park. The parts of the park that are within the study contain mostly woodlands, lawns, and playgrounds. The area includes the Penza Tract section (west of Interstate 476), and the parts east of I-476, south of the unofficially named "Pine Ridge Run" stream and the playground/picnic area all the way to Baltimore Pike. Smedley Park existed prior to the construction of I-476 in the early 1990's. PennDOT took ownership of the land under and immediately around the highway at the time of its construction.

In the southeast section of the park, east of I-476, there are multiple parking lots that could be utilized as the eastern trailhead for the Media-Smedley Connector Trail. A line of 60 parking spaces is situated near the Papermill Road SEPTA Trolley Stop and the nearby playground and picnic area. The southernmost parking lot in the park is off of Papermill



Smedley Park Master Plan (2015) – Site development drawing with conceptual recommendations for multi-use trails

Road closer to Baltimore Pike. This approximately 15-space lot has been discussed for improvement as the area around it can often be wet or flooded. An even larger 31-space two-tiered parking lot is accessed by a driveway that bridges Crum Creek and serves the Penn State Extension office and the Environmental Center building.

The park contains miles of earthen hiking trails throughout the study area, as well as mountain bike trails in the Penza Tract section. The Friends of Smedley Park help to watch over the park and help to maintain the trails in a volunteer role in coordination with the County Parks Department. Mountain bikers also organize work sessions to maintain the trails that they frequent.

The Smedley County Park master plan chapter within the 2015 Delaware County Open Space, Recreation, and Greenway Plan recognized the retention of the popular mountain biking area as part of the long-term concept plan for the Penza Tract section of the park. The



A Mountain Bike Trail near Baltimore Pike (D8)

plan also recommended a conceptual route for an ADA-compliant multi-use trail to coexist alongside the mountain biking area.

SEPTA Media Trolley Line

The SEPTA Media Trolley line runs in a dedicated right-of-way from west to east in this section – on a double track until a point just west of Interstate 476, where it merges back into a single track. The right-of-way, which is level but raised up above the rest of the park, runs through the County’s land, underneath the elevated Interstate 476, and on its own overpass bridge over Crum Creek. There are stations at the edge of this section at Pine Ridge Road, and at Papermill Road, within Smedley County Park. SEPTA owns a small parking lot at Pine Ridge Road that is restricted for SEPTA passenger use only.

A large box culvert passes under the SEPTA Media Trolley tracks just on the west side of the elevated I-476. The culvert is utilized by the unofficially named "Pine Ridge Run" stream which flows east to Crum Creek. In the 1990’s, a metal grate elevated walkway was installed within the culvert a few feet above the water. After passing through the culvert, and under I-476, the earthen trail is flat and spacious, as it was once an old road running between Pine Ridge Run and a slope. Some mill ruins can be seen in this area.

Trail Routing Options

The main questions regarding trail alignment in this section was what route to take the trail through the County’s parkland, where to cross I-476, and at what point or points to recommend for the eastern terminus and trailhead of the Media-Smedley Connector Trail.

Planners looked at existing trails and common pedestrian routes from place to place within the park. As much of this section is already publicly owned, the possibilities were many. However, not every rugged pathway is a good option for potential upgrade to a multi-use ADA compliant trail. Some paths are steep and challenging and would not be ideal at all, or unless significant regrading took place.

Alternative D1, known by park users as the Smedley Trolley Trail or the Pine Ridge Trail, roughly parallels Pine Ridge Run and the SEPTA Trolley. Much of this general route is set at a fairly level grade, with the exception of the western end, where there are steep ups and downs. For that reason, a route that would follow a more level topography (D10) was drawn for consideration diverging from D1 at its west end, leading to Pine Ridge Road.

D8 is considered as an alternative that is still within the boundaries of Smedley Park, but sticks close to Baltimore Pike. The existing trail along D8 follows an existing trail used by mountain bikers. Especially at its center and eastern end, there are many ups and downs, with slopes in excess of 40%. D2 is a path paralleling I-476 that would connect back to the trolley’s underpass of the highway. However, slopes on this section are also over 40% and perhaps the steepest in the entire project area. For that reason, the D2 area is also popular with adventurous mountain bikers.



Existing steep hiking & mountain bike trail in western Smedley Park (D2)

A trail crossing under I-476 at Baltimore Pike was explored as alternative D3. The trail would have to exit the park, cross off-ramps, proceed alongside Baltimore Pike under the highway overpass, then across two on-ramp entrances. From there the trail could join an existing multi-use trail that enters Smedley Park's main section. This trail is officially the northern end of the Lieper-Smedley Trail which exists in the right-of-way of I-476 in Nether Providence Township and crosses at-grade across Baltimore Pike. The Lieper-Smedley Trail leads to the Lewis House, a historic building that houses the Penn State Extension, the Environmental Center building and the adjacent parking area in Smedley Park. The 2015 Park Master Plan proposed a new route for the Lieper-Smedley Trail trail that would lead to the southern lawn in the park, as shown by D11. Whether or not it is needed for the Media-Smedley Connector Trail, D11 will likely be explored by the County in the coming years, not just to make another connection to Baltimore Pike at-grade, but possibly to formalize a trail underneath the bridge along Crum Creek.

The other logical alternative for crossing I-476 is to build a trail underneath the same elevated section of highway that the SEPTA Media Trolley runs underneath. The D4 route takes the trail through the box culvert, and its interior bridge, and then runs between Pine Ridge Run and the Trolley. After routing through highway support abutments, the D4 eastward route continues eastward along Pine Ridge Run and follows a very level and cleared earthen trail located on historic road that was once part of the paper mill operation on this site. The eastern end of D4 would utilize an existing trail bridge over Pine Ridge Run.

In 2019 Delaware County applied for grant funding to construct a multi-use trail roughly paralleling Crum Creek within much of the north-south length Smedley Park. The route that this study labels as alternatives D6, D7, D9, and D11 were part of that proposed route, that also extended much further to the north. Although the County was not awarded funds in that round and so did not proceed with the project, it will be attempted again. In the meantime, these segments at that trail's lower

end were noted to be overlapping with the goals of the Media-Smedley Connector Trail and have been re-examined for this study.

D6 would utilize an existing trail bridge over Crum Creek and connect what the Friends of Smedley Park call the "Living Room" trail junction area to the large picnic and playground area near the Papermill trolley station. A spur trail could connect to the road, parking area, and station, via a gradual sloping area alongside the trolley.

D7 brings a multi-use trail alongside Crum Creek until it meets the southern Papermill Road parking lot. It passes underneath overpasses for the trolley and the Lewis House (Penn State Extension) access road. This route, while not a formal trail, is an oft-traversed route for foot traffic along the stream. D7 could be alongside or on top of an underground sanitary sewer line of the Central Delaware County Authority, for which manholes can be seen along the creek. Young stream buffer trees have also been planted here in recent years.

Alternative D9 would utilize the existing pedestrian bridge near the southern parking lot and follow the treeline of the south lawn. An existing cleared pathway follows a moderate slope up to the Lewis House and Environmental Center buildings. Potentially, an ADA-compliant route could be designed along this gradual slope that traverses some otherwise steep terrain.

From the Lewis House and its adjoining parking lot, a trail (D5) would be routed up the slope of an existing service road past a pavilion in the woods. The trail could be carefully routed through the woods towards the underpass of I-476 on the south side of the SEPTA Trolley. A trail here would be engineered across the center of the slope that is underneath the elevated highway. Currently, a hiking path that is not clearly defined traverses the slope and extends down on the western side using a wooden staircase. A few stone steps lead down to the south end of the Pine Ridge Run culvert passageway under the trolley and the junction of alternatives D5, D4, D2, and D1.

While improving any of these routes to multi-use standards would not be cheap or easy, the best route is the one that utilizes the County’s parkland, stays clear of high-stress road crossings, and has an interesting high-value user experience. For that reason, it is probably better to cross under I-476 (D4 or D5) than cross at-grade (D3).

Since it is already in the County’s long-term plans to connect each of the three southern parking areas within Smedley County Park with a multi-use trail, it may be advisable to recommend that most or all of them be considered trailheads for the Media Smedley Trail. If any of these connections is to be left off of the phases of this study, it could be D6 (leading to the parking near the trolley stop), which could be seen as a supplemental “spur” to the main trail system.

Obstacles, Challenges, and Other Considerations

Pine Ridge Road would need to be crossed if a trail is extended into Smedley Park from the Chesley Office Campus. This is a particularly wide road, especially for a mid-block crossing.

In order for a trail or trails to cross under the elevated highway of Interstate 476, a legal agreement will need to be made between the County of Delaware and PennDOT. PennDOT may not agree to a formal multi-use or bicycle trail within its right-of-way, next to its highway support abutments, unless the terms of the agreement are to its satisfaction. Such an agreement needs to be executed by both parties before funding for engineering the trail is sought.

If the passageway through the Pine Ridge Run culvert under the SEPTA trolley is to be improved or changed to make any new trail safer, SEPTA and the County need to first consult their agreement to make sure the terms remain satisfied. Under the agreement SEPTA must approve any designs of structural work within the culvert.

Any trail in the low areas along Crum Creek would be subject to water related damage or a high level of maintenance required due to periodic flooding events. Special care should be taken in the design and

construction of any trail along alternatives D6, D7, and D9 to make it as flood resistant as possible.

When the multi-use trail is complete there will be multiple user groups interacting at certain points. Steps may have to be taken to minimize conflict and maintain safety for all user groups. There is enough space that both types of trails should be able to coexist side by side.



Culvert with walkway under SEPTA Trolley (D4)



Along the CDCA sewer line right-of-way on the east side of Crum Creek (D7)

Other Opportunities

Smedley County Park presents a unique opportunity to not only have a trail terminus with multiple parking areas, but to have a junction with other trails in the County network, both of the multi-use type, like the Leiper-Smedley Trail, and more rugged hiking paths, like the Springfield Trail. It also presents the unique feature of a light rail transit stop within a County Park. Each of these features could be an opportunity for signage and other promotions and awareness activities to point the way to a pedestrian and cycling route into Media.

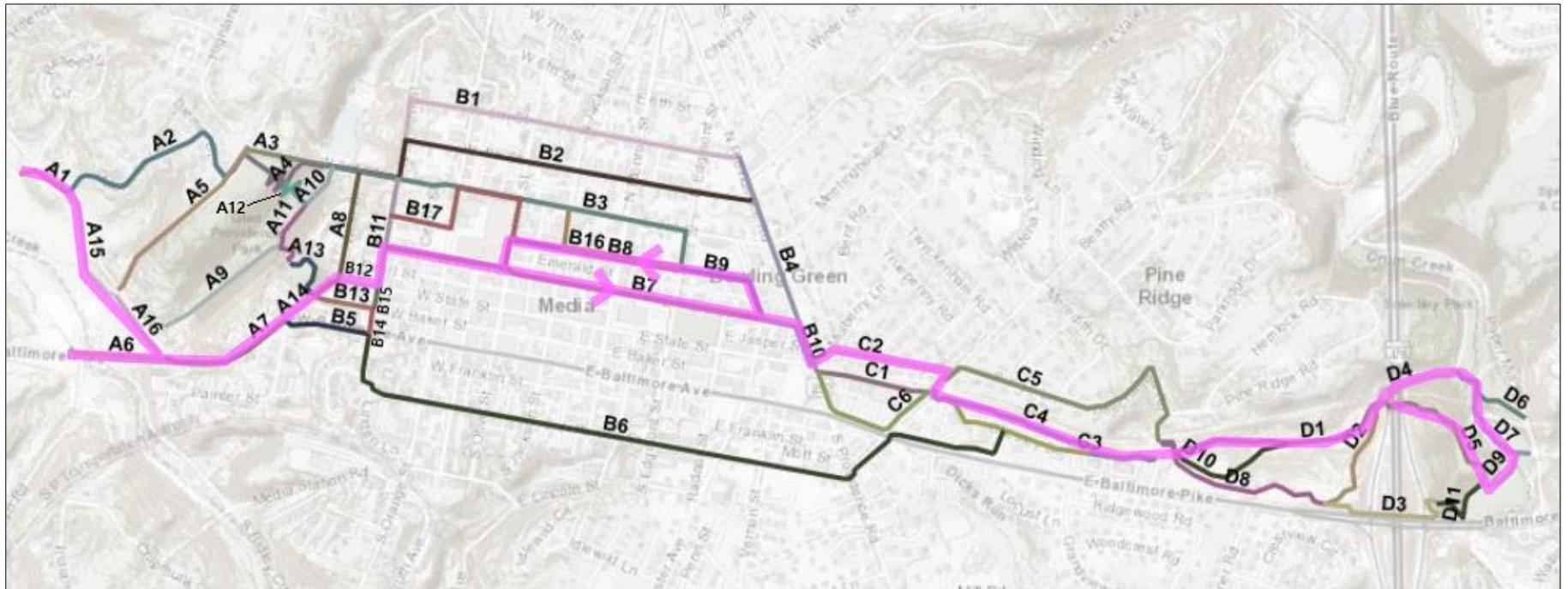


Views west on Baltimore Pike at I-476 off-ramp next to Smedley Park (left) and under-476 (right) (D3)



South field in Smedley County Park, with Baltimore Pike bridge over Crum Creek at far end (D9, D11)

Map 3-12: Study Area Alternative Trail Segments Key – Chosen Alternatives



Overall Alignment Evaluation

The above map displays the best alternatives for trail alignment as evaluated in the preceding sections. The next chapter will go into detail on the design recommendations for this trail, broken into manageable segments for development.

Chapter 4: Trail Master Plan

In Chapter 3, the physical layout and attributes of the study area were discussed. All of the possibilities under consideration for the alignment of the trail were discussed in detail. In this chapter, the factors or reasons why a recommended route was chosen are first stated, followed by a presentation of the recommended alignment and conceptual design. Design recommendations are laid out segment by segment followed by some overall recommendations for the various types of trails, signage, and other amenities. Considerations for phasing the development of the trail are then discussed as they relate to trail design.

FACTORS THAT DETERMINED RECOMMENDED ALIGNMENT

The primary mindset for selecting the recommended route for the trail was primarily to achieve the safest and best user experience within what was seen as implementable and legally feasible. In some cases that meant that the route would be more expensive or difficult to achieve than some other legally feasible options.

Besides “safest and best user experience,” factors used by the project team to arrive at the final alignment include the following:

- Facility Type (Off-Road preferred over On-Road)
- Environmental Impact (lower impacts preferred)
- ADA Accessibility (avoiding steep slopes, if possible)
- Engineering Feasibility (complexity to design/build)
- Legal Feasibility (impact on private property)
- Cost (relative to other segments)

There are few, if any, places in this complicated study area where all six of the factors above are achieved with optimal results, even in the recommended alternative. But when weighing the alternative routes against one another, the route that best fulfilled the factors, without

encountering any other “fatal flaws,” and kept the trail generally moving in a direct manner, became the preferred alignment.

Facility Type

An off-road multi-use trail is always the highest preferred option, but there were many areas in this study area where that was not possible. Because potential trail users may just as likely be walking as riding a bicycle, planners thought that there should be a place to walk or ride in every segment. For the on-road portions that means there should be existing or future sidewalks adjacent to bike lanes or share-the-road areas.

A trail in the road right-of-way, if it is the only option, should ideally be separated by a buffer, (at which point we are calling it “off-road” in our definition and labeling). If a buffer is not possible, planners looked at whether a bike lane was possible on at least one, if not both directions. If one direction could be off-road, that was explored. There are some segments in Media Borough, however, where the cycling route will still have to share the road with traffic due to the lack of available right-of-way width.

Environmental Impact

The recommended trail alignment should attempt to steer clear of impacts to wetlands and stormwater management issues. Engineering the trail in this manner along the preferred route should be possible. The proximity to and crossing of streams and the necessity of environmental permitting was a consideration in selecting the alignment.

ADA Accessibility

Topography in this study area made things difficult since the flattest trail was preferred, but in some places a steep slope was unavoidable. ADA regulates slopes on sidewalks and crosswalks, but actually provides no specific regulations for off-road shared use paths. The local topography in the vicinity of some path segments will require the route to exceed this ideal slope. There are “best management practices” for Shared Use Paths that must exceed a 5% longitudinal slope as follows, such as those

offered in the white paper "Universal Access Trails and Shared Use Paths" published by WeConservePA (conservationtools.org).

Engineering Feasibility

Engineering feasibility is an important consideration as it refers to the complexity and the difficulty in designing and building the trail in the space available. The more factors that are involved in terms of materials, approvals, labor, clearing of obstacles, and/or unique innovative design, the more questionable the engineering feasibility might be. Steep terrain and existing obstacles like utility poles or stormwater flow issues can figure into this. The difficulty and complexity of engineering a trail is usually directly related to cost, but a certain level of engineering complexity may still be acceptable when considering other factors.

Legal Feasibility

The alternatives that could be built in already public rights-of-way, or that had fewer impacts on private property were seen as an easier path to implementation. Negotiation with private property owners for new public right-of-way can be unpopular and cumbersome. However, for some preferred segments, new right-of-way on private property is recommended anyway because either the alternative was an unsafe situation or was seen as a much lower-value user experience. It is possible that a landowner that gives up some right-of-way to the public can be appeased with the knowledge of the benefits a trail brings, and monetary compensation such as a tax break or a property tax decrease.

Cost

Generally, if all other things were equal and cost were a tie-breaking factor, the lower cost route would be selected. But there are multiple other factors at play, and if a safer, more "enjoyable" trail is a little more expensive, that route would probably win out. If it was a lot more expensive, say, because of a need to overcome a right-of-way or potentially expensive engineering problem the cost factor would weigh heavily against the route.

With the mindset and other factors listed incorporated, it could mean that some chosen segments may take longer to build than a route that would have been less expensive, but a lower-value user experience, once built. Some of those lower-value routes may also still be used as "interim" options, until right-of-way or funds can be secured for the primary recommended alignment and design.

The Feasibility Matrix in Appendix C gives more information about how the preceding factors figured into the evaluation of each segment under analysis. See also the Trail Alternative Route Segments Key tables in Appendix B for clarification on which alternatives were chosen for the recommended trail route.

RECOMMENDED TRAIL ROUTE

This study has broken out the recommended Media-Smedley Connector Trail into eleven segments for discussion and cost and phasing analysis. The following report sections breakdown the recommended route and conceptual design elements of each of these segments.

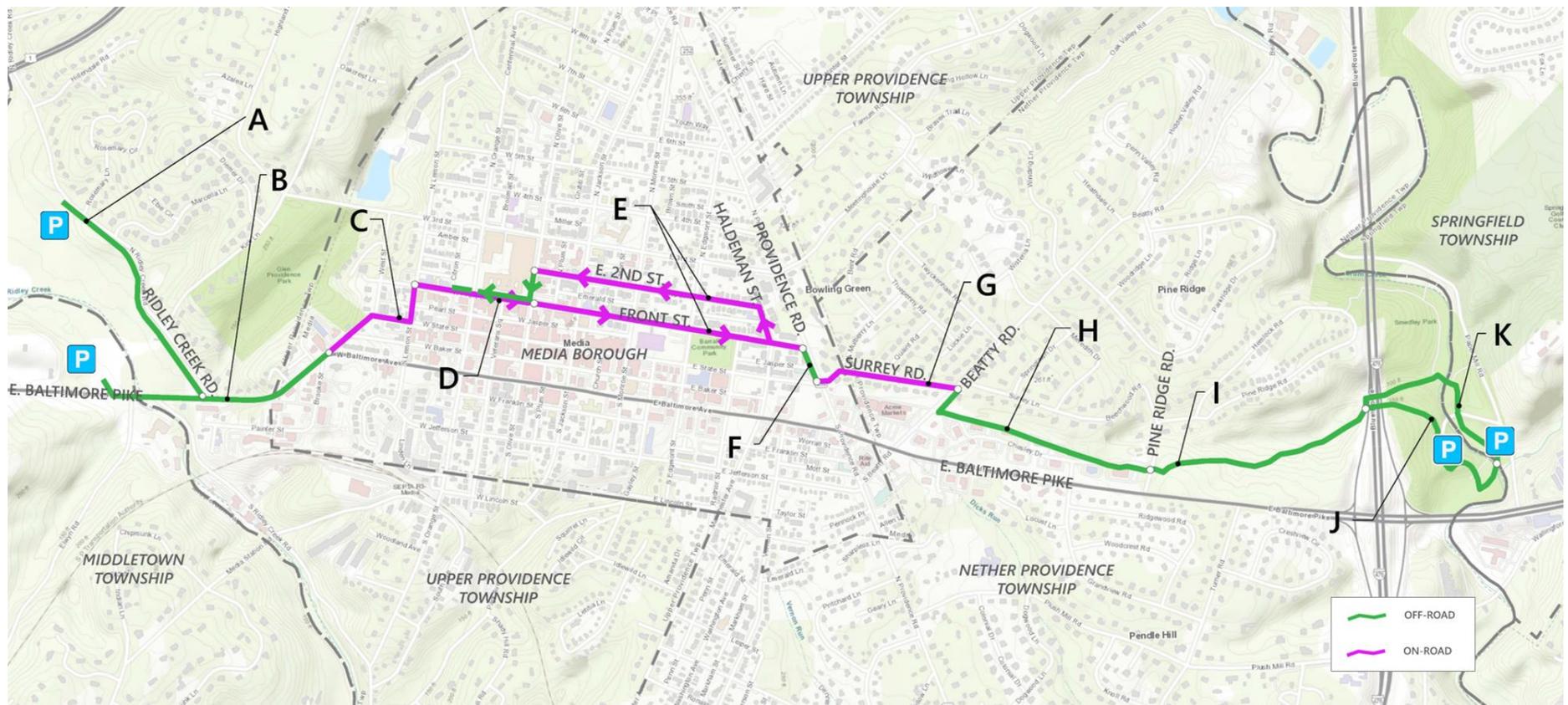
The distance of this recommended trail is approximately 3 miles, end-to-end; however, the loop on the eastern end, separate routes for each direction in a middle section, and branches to two separate trailheads on the western end, results in the total mileage for all segments adding up to approximately 4.20 miles (or 22,174 feet).

For the purposes of discussion and implementation, each segment has been labeled with an unofficial name and identifying letter as follows:

Overall Recommended Trail Segments:

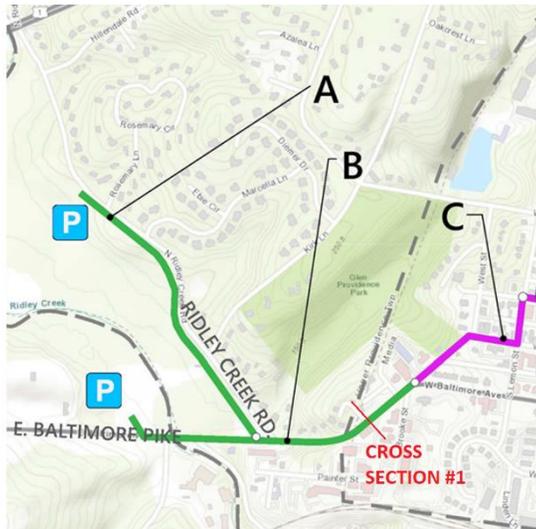
- A. Ridley Creek Road-Parallel Trail in Scott Park (2038', 0.39 mi.)
- B. Baltimore Avenue Sidepath (2200', 0.42 mi.)
- C. State Street & Lemon Street (1303', 0.25 mi.)
- D. Front Street & Olive Street (1399', 0.26 mi.)
- E. Second Street & Front Street (5188', 0.98 mi.)
- F. Providence Road Sidepath (352', 0.07 mi.)
- G. Surrey Road & Mulberry Lane (1298', 0.25 mi.)
- H. Chesley Trail & Beatty Road Sidepath (2382', 0.45 mi.)
- I. Smedley Park Pine Ridge Multi-Use Trail (2212', 0.42 mi.)
- J. Smedley Park Multi-use Loop - South Side (1985', 0.38 mi.)
- K. Smedley Park Multi-use Loop - North Side (1817', 0.34 mi.)

Map 4-1: Recommended Route Segments Overall Key Map



Segment A: Ridley Creek Road-Parallel Trail in Scott Park

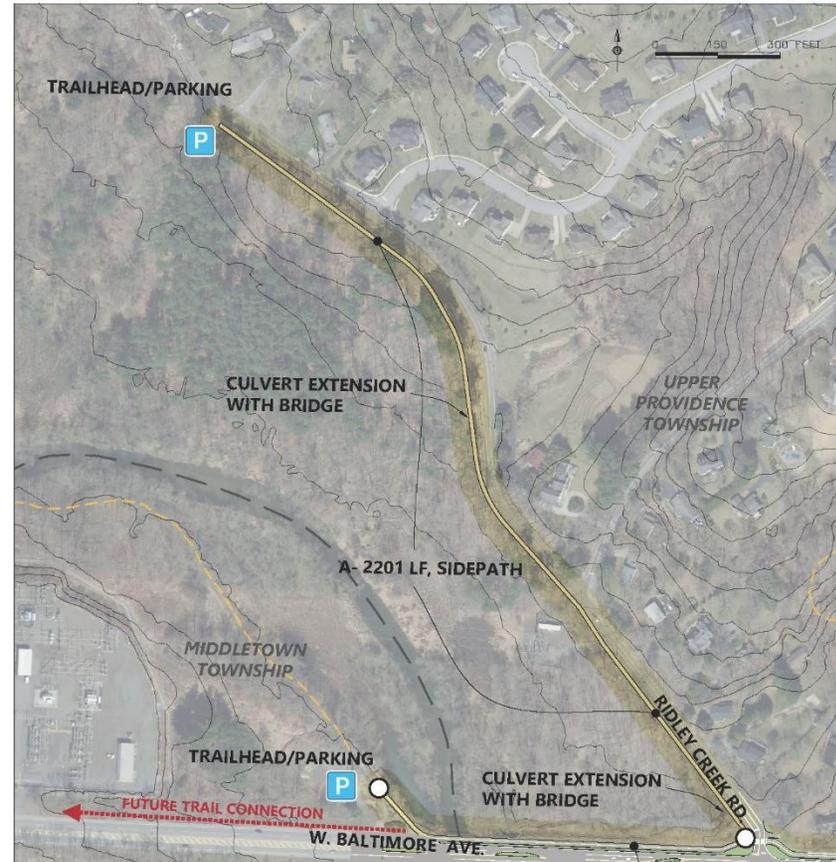
Segment A of the preferred Media-Smedley Trail route would travel along Ridley Creek Road through Louis W. Scott Park. The trail would begin at a park entrance parking area at the intersection of Rosemary Lane and North Ridley Creek Road. This park entrance provides an opportunity for improvements for park amenities, including expanding parking areas to accommodate more park visitors, improved lighting, and bike racks. The trail would travel south paralleling North Ridley



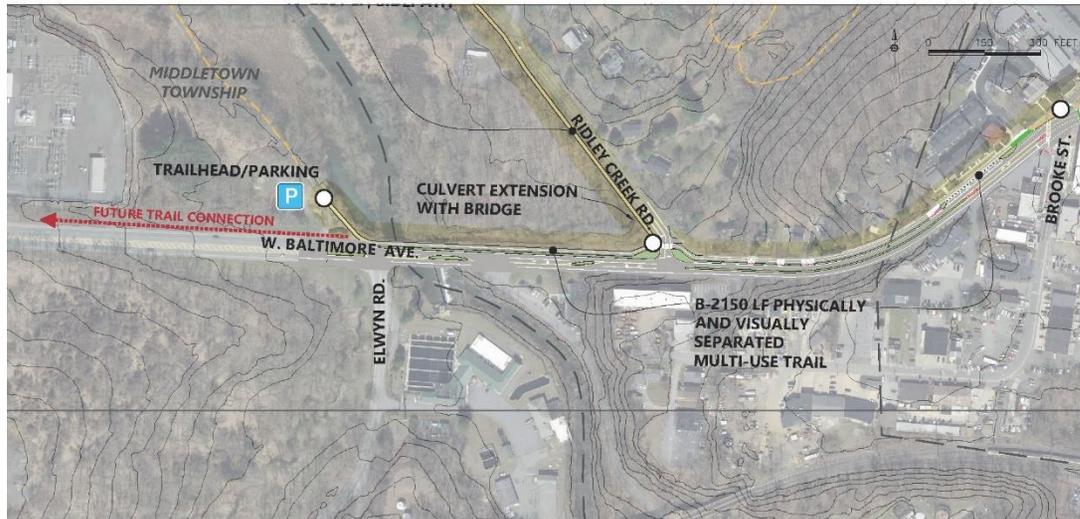
Creek Road with a trail through the woods along the edge of Louis W. Scott Park. This route of the trail would introduce visitors to one of the many parks in the area while providing a safe pathway.

This section of the trail will require significant vegetation clearing along the trail route.

Designers should take care when planning a route to avoid established trees to preserve the woodland character of the area. The trail running along the edge of the park provides an opportunity to connect trail users with other trail connections within Louis Scott Park, allowing users to explore the park and use the Media-Smedley Trail as a sort of connector trail around the edge of the park.



Segment A Trail Concept



Segment B Trail Concept

Segment B: Baltimore Avenue Sidepath

Segment B of the proposed route begins at Memorial Park in Middletown. The trail would trace the edge of Baltimore Pike/Avenue heading east into Media Borough. This section of the trail is perhaps the starkest reimagining throughout the proposed route due to a completely reimagined Baltimore Avenue. The roadway would be changed to accommodate a sidepath for the Media-Smedley Trail along the northern edge of the roadway. The roadway in its current form is designed for something more akin to a highway with wide shoulders and lanes. Instead, our study and others such as the Media Borough Traffic Calming Plan envision Baltimore Avenue as a much calmer roadway. In addition to the trail, the roadway would have a center median and narrower lanes to encourage slow driving speeds. The trail would be separated from the roadway using treatments such as brick pavers or a planter strip.



Baltimore Avenue Sidepath design recommendation. (Image credit: [Streetmix.net](https://www.streetmix.net), [TPD](https://www.tpd.com))

Trail developers will need to coordinate with PennDOT to complete improvements to Baltimore Avenue and create space for the trail. North Ridley Creek Road and Baltimore Pike/Avenue is a key intersection for the trail. The northern spur of the trail, Segment A, will meet Segment B just to the west of the intersection. Signage in this area should be clear for users to avoid confusion and ensure safety as users approach the trail junction. North Ridley Creek Road intersects Baltimore Pike/Avenue near the base of a steep hill and the area currently seeing significant backups during peak times. The trail will cross North Ridley Creek Road before climbing along Baltimore Avenue into Media. Trail designers should focus on the safety of trail users and vehicles in this area.

Segment C: State Street & Lemon Street

Continuing from the eastern end of segment B at the intersection of Baltimore Avenue, Brooke Street and State Street, Section C follows State Street up a rise, passing by an entrance to Glen Providence Park, before bending eastward following state street until the intersection of Lemon Street. From this intersection, the trail would turn north on Lemon Street to the intersection of Lemon Street and Front Street.

Section C of the trail will be an on-road section of the trail, meaning that the trail will need to share space with vehicles traveling on the roadway. The roadway would be marked to signal to both vehicles and trail users. Wayfinding signs would guide users along the preferred trail route in Media Borough. The trail should be branded, and treatments

could be applied to the roadway to create an easily recognizable symbol for trail users and vehicles alike. Such treatments have been used for other trails and provide increased awareness of the trail in the community and enhanced wayfinding for trail users.

As mentioned, the trail through section C will pass along Glen Providence Park, which is a county park facility. Amenities for trail users should be included in this area including wayfinding guiding users to the park, bicycle parking, and bike repair stations. There is parking at Glen Providence Park where trail users could begin their trip on the Media-Smedley Trail. Restroom facilities in Glen Providence Park would provide a welcome amenity for park visitors and trail users alike.



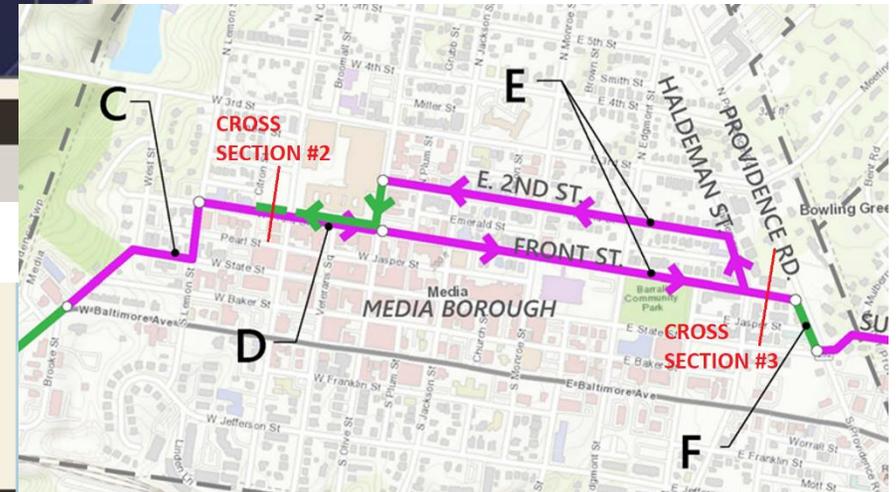
Segment C Trail Concept



State Street entrance to Glen Providence Park, Segment C, proposed as a share-the-road trail route.



Front Street – Lemon St. to Orange St. design recommendation. (Image credit: Streetmix.net, TPD)



Front Street, eastern end, design recommendation. (Image credit: Streetmix.net, TPD)

Segment D: Front Street & Olive Street

Section D begins at the intersection of Lemon Street and Front Street picking up from the eastern end of Section C. This section continues along Front Street from Lemon Street to Olive Street. Here the trail passes the Delaware County Offices located along Front Street. Front Street is a narrow street as it passes the County Courthouse with angle parking on the north side of the street. Eastbound trail traffic will share the roadway and follow Front Street, which is one-way heading east. Front Street is already marked with sharrow, but trail markings and signs will need to be added to the street treatment to create continuity for trail users. Signage through this area will be critical for the success of the trail in this area as the trail traffic will split here. Westbound trail traffic will use an off-road pathway starting on the western edge of the intersection of 2nd street and Olive street. This off-road pathway will head south and turn west at the intersection of Front Street and Olive Street and continue to Citron Street. The off-road facility will take advantage of the wide sidewalk provided in the front of the Delaware County Courthouse Complex to provide space for the westbound portion of the trail.



Segment D - Front and Olive Streets Design Concept Details (Credit: TPD)



Rendering of design recommendation for Courthouse sidewalk (Credit: TPD)

The trail will need to be clearly marked to reduce conflicts with pedestrians and visitors to the courthouse complex. Providing clarity for trail users about the direction they should follow will be paramount as the eastbound and westbound trail traffic will use different facilities through this section.

The trail provides an opportunity for users to connect with County services and enjoy the grand architecture of the County Courthouse. There are bike racks around the courthouse complex, benches, and tables around the complex where trail users can stop. This area becomes a key connection for the trail to take advantage of the existing amenities in the area, and it is only a few blocks from the core business area in Media Borough.



Segment E: Second Street & Front Street

Segment E is a split section of the trail in which eastbound and westbound trail traffic will follow the separate routes started in Section D. East bound trail traffic will continue along Front street from Olive street to the intersection of Haldeman Street and Manchester Avenue. At this point both eastbound and westbound trail traffic meet and use Front Street to travel to the intersection of Front Street and Providence Road. For this eastbound trail segment along Front Street, the trail will move with the flow of traffic, which is one way eastbound. The roadway is already marked with sharrow; however additional on road trail markings and branding should be applied to the area as in other stretches of the trail to continue to guide trail users along the pathway.

The westbound section of segment E will travel from the intersection of Second Street and Olive Street along 2nd street to Haldeman Street. At Haldeman Street the westbound arm will follow Haldeman Street until

the intersection with Front Street where the east and westbound sections reconnect traveling the same course along Front Street to Providence Road. The westbound section of segment E will also be an on-road facility. Sharrows, trail pavement markings, and signage will be need for this section of trail to guide trail users and alert drivers to possible conflicts. As mentioned earlier, wayfinding, especially in on-road sections of the trail, will be critical to making the trail successful.



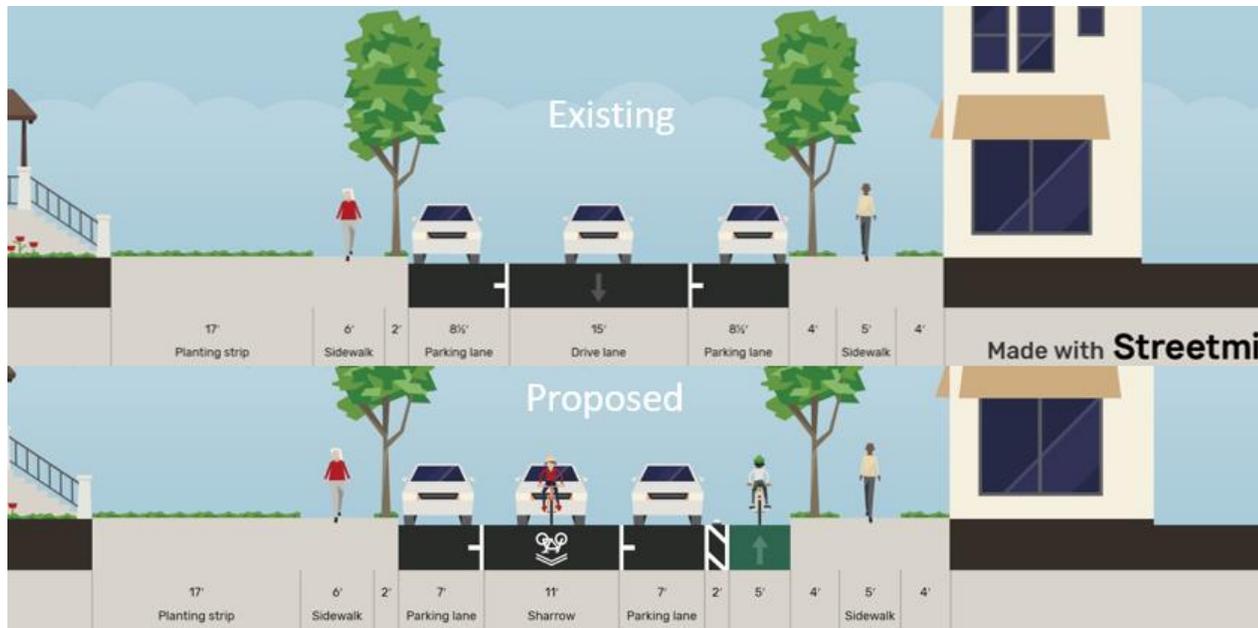
Existing Second Street to be designated as westbound share-the-road



Example of sharrow pavement markings in Portland OR, (Photo provided by TPD)



Segment E Trail Concept



Design recommendation for Front Street, east end near Providence Rd. (Image credit: Streetmix.net, TPD)



Segment F Trail Concept – Providence Road Sidepath



Providence Road Sidepath concept rendering (Image credit, TPD, Google Maps)

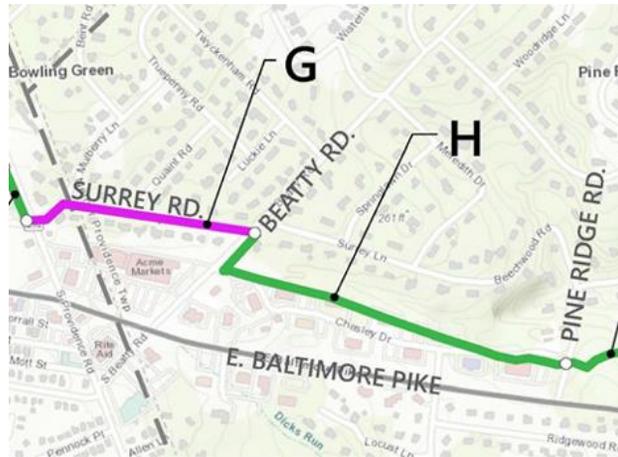
Segment F: Providence Road Sidepath

Having traversed Media Borough, the trail will continue by turning south along Providence Road to the intersection of Providence Road and State Road. This section of trail will be an off-road section of trail with a sidepath along Providence Road. By creating a sidepath for section F, the trail will avoid traveling directly on Providence Road which is a high-speed roadway.

The idea for a sidepath in this area is supported through the recommendations in the Draft Media Borough Traffic Calming Plan, which identified the treatment to alleviate pedestrian and cyclist safety concerns. The addition of decorative crosswalks at Providence Road and State Road as identified in the Media Borough Wayfinding Plan and the Draft Media Traffic Calming plan would help to not only draw visitors to State Street, but also raise awareness of increased bike and pedestrian activity in the area from the Media-Smedley Trail.

Trail designers will need to coordinate with PennDOT in order to accommodate a sidepath and trail crossings along Providence Road. The trail will also need to be well signed in order to guide trail users across Providence Road and connect to Surrey Road. The Providence Road Trolley station sits just to the east of the intersection along Providence Road and provides another key connection to transit services along the trail. The trail here will cross north of the trolley tracks as to avoid conflicts with trolley operations and equipment.

The eastern end of Segment F will be at two consecutive trail-striped crosswalks needed for the trail to cross Providence Road and then Mulberry Lane. Coordination with PennDOT will be needed to permit the crosswalk markings, especially if they, as recommended, are of a unique color or style differing from the current standard stripes.



Segment G Trail Concept (above); Surrey Road location proposed to be improved for share-the-road and sidewalk improvements (below)

Segment G: Surrey Road & Mulberry Lane

Continuing from the Providence Road and Mulberry Lane crosswalks at the eastern end of Segment F, Segment G proceeds east as a share-the-road trail incorporating two-way sharrow street markings. The municipal boundary between Media Borough and Nether Providence Township is on the east side of the Surrey Road intersection.

Media-Smedley Connector Trail signage or street markings should be clear enough to keep users along Surrey Road. Cyclists are meant to ride with traffic in the street, and pedestrians should use the sidewalk on the north side of Surrey Road. Mulberry Lane between Surrey and Providence has sidewalks on both sides.

Nether Providence Township is planning to re-pave Surrey Lane in the near future and will install permanent speed humps (current humps are temporary). The re-paving will make the street more comfortable for a bikeway. It is recommended that the township also complete the 645-foot gap in the sidewalk on Surrey Lane where it is missing east of Quaint Road.

A double trail crosswalk crossing Beatty Road – one each on both the north and the south sides of Surrey Road – will connect the Surrey



Road section of the trail to Segment H. Coordination with PennDOT will be needed to permit these crossing markings.



Location for trail along Beatty Road, across SEPTA Trolley station (Photo: Google Maps)

Segment H: Chesley Trail & Beatty Road Sidepath

A shared-use sidepath is recommended to continue the trail from the crosswalks across Beatty Road from Segment G on Surrey Road. The trail will then turn southward along Beatty Road. The acquisition of an easement on the neighboring property is recommended for the development of the trail (see the Important Properties Table in Appendix E). The adjacent trees at the edge of the property closer to the SEPTA tracks may need to be significantly pruned or removed. Compensation for the easement could also require new screening (fencing or trees).

The shared-use sidepath should continue along the east side of Beatty Road, crossing the SEPTA trolley tracks, and past the Beatty Road station. Three poles exist right next to each other – for electric utility, SEPTA Beatty Road Trolley station lighting, and traffic signaling – are situated on or next to the optimal location for a shared-use sidepath. The trail could be located between the poles and the neighbor’s

wooden fence. A low ledge wall on the south side of the station may also be situated in the best path for the trail if it could enter the Chesley Office Campus on the adjacent lawn. It may easily be shortened to make room. Some SEPTA signage may also be in the way and may be able to be moved.

Trail developers should coordinate the final trail design with SEPTA’s planned trolley modernization planning and development. Decisions at SEPTA that have not yet been made regarding this station could affect the design, cost, and development of the trail. It is possible that costs could be saved on an optimal design if done concurrently with modernization changes to the station.

As shown in the concept plan, the multi-use trail is proposed to enter the Chesley Office Campus. It is recommended that a 2,200-linear foot shared-use trail be developed behind (to the north side) of the four buildings adjacent to the landscaped and wooded buffer behind the buildings on Chesley Drive. (See the Important Properties table in Appendix E for the impacted properties within Chesley Office Campus.) There is ample room and level ground for a trail here to meet ADA and Circuit Trails design standards. There are benefits that would make this trail an attractive amenity to have adjacent to commercial office buildings, including as a means for employees to travel to and from work or for recreation on their lunch break.

There are sections immediately behind two of the buildings where there is already a paved path of either asphalt or concrete. These existing paths can be connected, improved, and incorporated as part of the longer trail. Right-of-way for the trail will need to be acquired from each of the seven (7) property owners. It could possibly be attained through the sale of a recreational trail easement or through subdivision of the buffer land right up to a few feet from the building, and sale to the public entity who would manage the trail.

Negotiation and close coordination with the individual property owners and the Chesley property owner’s association will be essential for acquisition of the right-of-way and to maintain good-neighbor relations

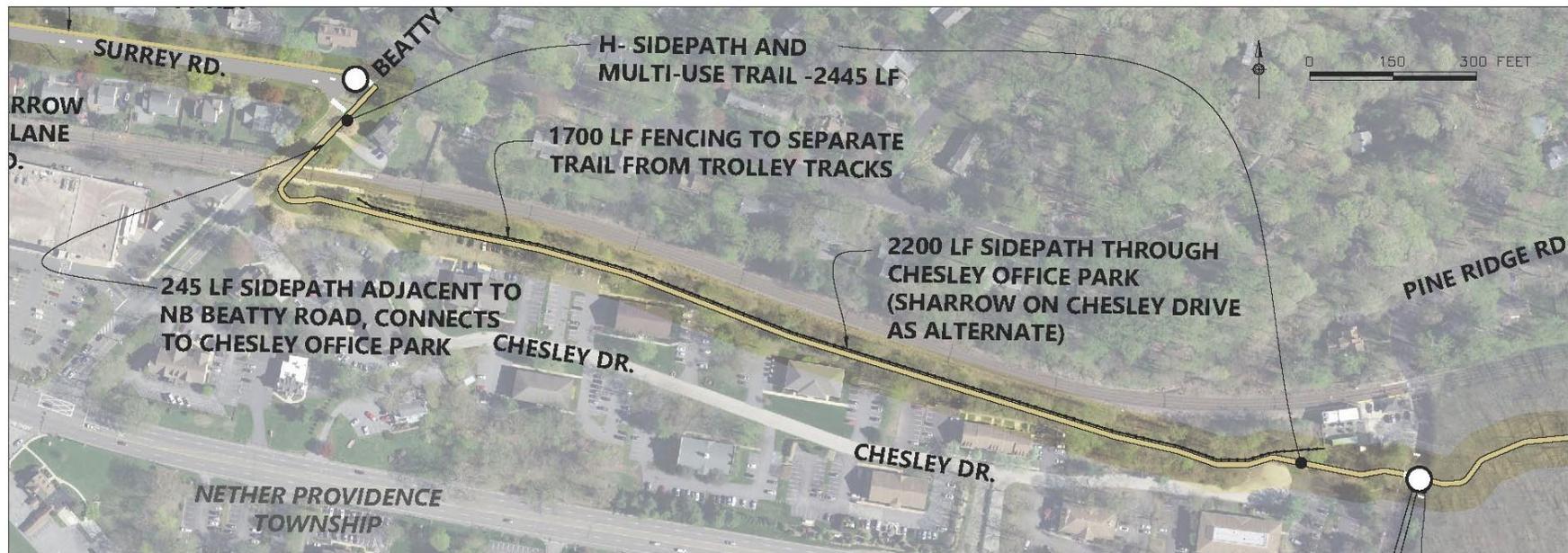
once the trail is built and open to the public. Signage and design elements should be installed to keep users informed of trail etiquette and to be mindful of adjacent property rights. A low fencing (possibly post-and-rail) should be installed on the north side of the trail to keep users from wandering into the woods towards the trolley tracks. Minimal, if any permits, would be needed for the shared-use path through the office park.

The final design and location of the trail shall also conform to the wooded buffer conservation code that Nether Providence Township has regarding the trees in this area. This should not be an issue if the trail keeps in close proximity to the buildings, rather than in the woods, which may necessitate the removal of older trees. The removal of a few younger trees or some landscaping shrubs may be unavoidable. To keep out of the wooded buffer, it is possible that parts of the existing parking

lots may be sought for use for the trail, unless the buffer code could be waived in this instance in close proximity to the buildings.

As an interim or alternate to the multi-use trail, a share-the-road route on Chesley Drive could be marked with sharrows and signage.

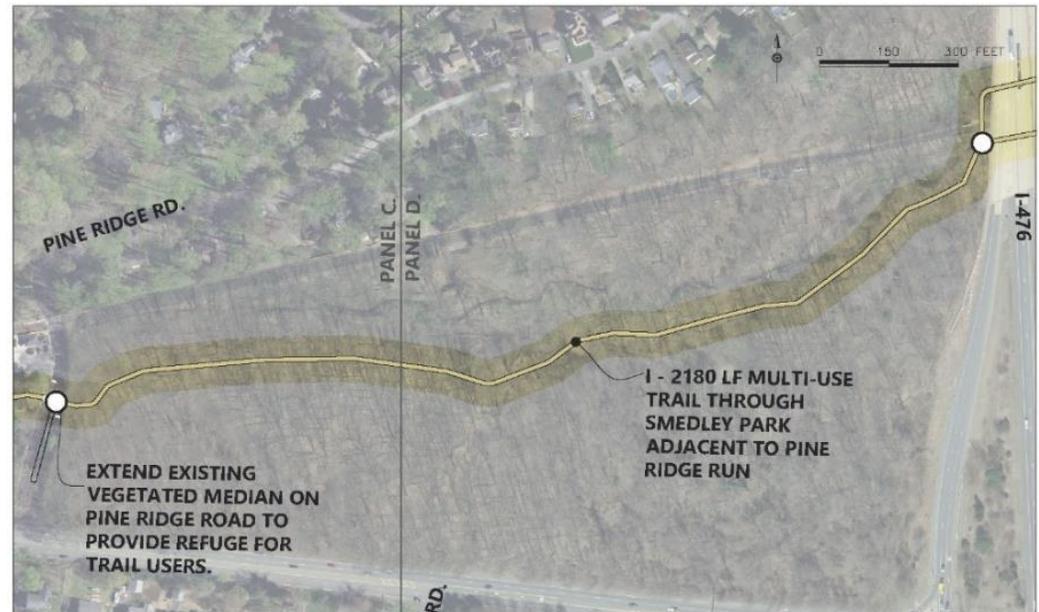
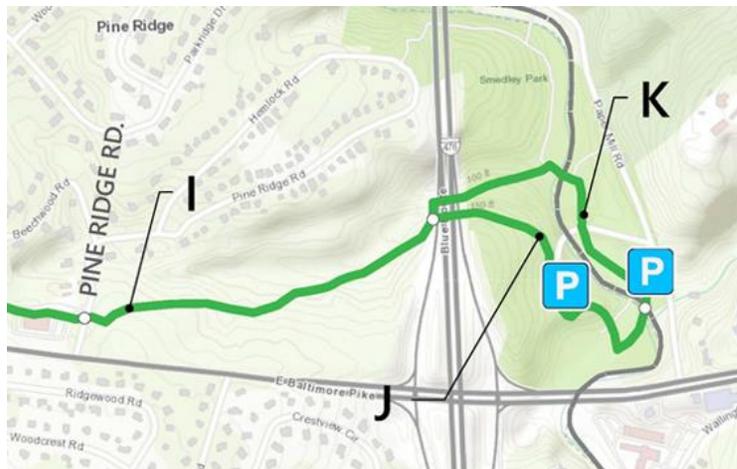
At the eastern end of the campus, the trail will approach a cul-de-sac and the parking lot at the building owned by the Henderson Group. The trail may or may not need to join the Chesley Drive at this end to keep in conformance with the buffer code, but it should be attempted to design it as a separate path. The trail could be next to, or be built over and upgrade, the existing narrow concrete path that connects the cul-de-sac to Pine Ridge Road.



Segment H Trail Concept



These existing paths behind the Chesley Office Campus buildings could be improved and connected as part of the trail.



Segment I Trail Concept

Segment I: Smedley Park Pine Ridge Multi-Use Trail

At Pine Ridge Road, markings for a mid-block crossing should be made to connect the shared-use path extending from Segment H at the Chesley Office Campus, to a new multi-use trail within Smedley County Park. The existing vegetated median on Pine Ridge Road should be extended to provide refuge for trail users crossing the road. Signage should have users on either side stop and look both ways before crossing.

Through the Penza Tract of Smedley County Park, a 2,180-foot long multi-use trail should be developed. The surface type could be of a paved or unpaved variety (See Multi-Use Trails in the General Design Recommendations later in this chapter for options), but an unpaved (stone cinder) trail could require more maintenance. Engineering should make efforts to design the trail to withstand damage from water.

Final design of the Pine Ridge multi-use trail should determine the optimal exact placement for a trail through the woods. For the western end connection to a crossing of Pine Ridge Road in relation to the alternatives presented in Chapter 3, the trail should be routed somewhere between D1 and D10. This area would present flatter topography and not intrude too much into the mountain biking area. Note that the concept plan shows Segment I following the contours just south of the existing hiking trails that are much closer to the banks of Pine Ridge Run. Near the middle of the Penza Tract, the alignment will join and be built on top of the existing path. As the trail approaches Interstate 476 and the SEPTA Trolley culvert, the trail may have to curve south before approaching the intersection more head-on, to avoid having to re-grade some steep gullies. Some regrading of ground may not be able to be avoided in this area to maintain a fairly level trail. Stormwater mitigation and environmental permitting relating to stream proximity should also be addressed.

High regard and consideration should be given to design the trail to minimize user conflicts or issues at junction points with mountain bike trails and the multi-use trail. Signage should be installed for wayfinding to inform of regulations, safety, and trail etiquette.



Existing Pine Ridge hiking path to the west of I-476 - part of Segment

Segments J and K: The Smedley Park Multi-Use Loop

It was concluded that the best recommendation for the eastern end of the Media-Smedley Connector Trail should be not just one route leading to one terminus and trailhead in Smedley County Park, but instead should be in the form of a large multi-use loop, along which multiple trailheads and multiple junctions with other existing or planned hiking paths and trails are located. This trail will allow more interesting and exciting possibilities for recreational excursions and travel to and from the central entrances in the park.

The big loop is represented by two segment halves, Segment J on the south side, and Segment K on the north side. The two dividing points where they meet are at the southwest side of the intersection of the SEPTA Media Trolley line and the elevated Interstate 476, and at the southernmost existing pedestrian bridge over Crum Creek within the park.



Segments J & K Trail Concept

Segment J: Smedley Park Multi-use Loop - South Side

From the eastern end of the Pine Ridge Run multi-use trail (Segment I), a multi-use, shared-use path on Segment J should be designed to rise up and across the slope situated underneath the elevated I-476. This rise should be gradual if the trail is to meet ADA standards (avoiding the use of the existing stairs). Safety devices such as guard rails or railings should be installed here. Once on the eastern side of the highway, the trail should be routed on a route as level as possible in a southeasterly direction through a wooded upland section of the park, turning with the rim of a slope towards an existing picnic pavilion.

The trail could follow the existing service driveway that connects the pavilion to the two-tiered parking area next to the Lewis House (Penn State Extension) and Environmental Center building. The driveway does come down a steep hill, so if a route down a more gradual descent could be found, that might be preferable.

The trail should then be directed, with paint markings and signage, through the upper parking lot and up to proximity of the two buildings. The trail could either be routed behind or in front of the Environmental Center. The rear path may be more shaded and out of the Penn State Extension Master Gardeners “plaza,” while the front of the building is within this plaza but contains an already existing wide, flat right-of-way.

From the Environmental Center, a route should be designed towards the southern lawn of Smedley County Park. There is an existing gravel service road that extends down a slope turning to the southeast from the buildings. This road could be steep for an ADA acceptable trail, but it may be possible for an alternate path to find a more gradual route down the slope. Once at the south lawn, the trail should turn to the east and follow the tree line until meeting an existing pedestrian bridge. The new paved multi-use trail should utilize this bridge to get users to and from the trailhead parking area on the other side.

It appears possible that with careful routing and an eye to engineering the grade, the multi-use Segment J trail can be designed and built to preferred 5% maximum grades and Circuit Trails design standards. It is

also possible that at some point certain hills may exceed these standards. In these cases, best management practices for trails at higher grades should be consulted. In the event that a trail with some steeper hills is constructed in this segment, users in need of a less strenuous and flatter route should be advised to take the North Side of the loop (Segment K). This segment has the potential to connect to the existing Leiper-Smedley Trail (currently terminating behind the Lewis House) and to be extended farther along the south lawn as a new re-routing of the Leiper-Smedley Trail. Further Study is needed for the latter beyond the borders of Smedley County Park; however the portion that would lead up to the edge of the Baltimore Pike bridge has been proposed already (the un-awarded grant project proposal from 2019, described in Chapter 3).



Location recommended for trail Segment J under I-476 (view east with SEPTA Trolley on left)

One important point for the western end of Segment J (just as with Segment K): In order for this trail to cross under the elevated highway of Interstate 476, a legal agreement will need to be made between the County of Delaware and PennDOT. PennDOT may not agree to a formal multi-use or bicycle trail within its right-of-way, unless the terms of the agreement are to its satisfaction. This agreement needs to be executed by both parties before funding for engineering the trail is sought.

Also of importance to Segment J is the issue of flooding. A trail in the low areas along Crum Creek would be subject to water related damage or a high level of maintenance required due to periodic flooding events. Special care should be taken in the design and construction of the parts of Segments J that are routed near the low-lying areas of Crum Creek.



Segment K Trail location under I-476 leading to North side of the Culvert Walkway under SEPTA Trolley.

They should be designed in such a way that is as flood resistant as possible. Environmental permitting relating to stream proximity should also be addressed.

Upland sections of Segment J may be surfaced with crushed stone as long as it is out of the path of potentially damaging stormwaters. In sections that appear subject to erosion problems, the trail should be hard-surfaced and designed to be as erosion-resistant as possible. (See Multi-Use Trails in the General Design Recommendations later in this chapter for options.)

Segment K: Smedley Park Multi-use Loop - North Side

From the eastern end of Segment I and the junction with the Segment K side of the Multi-Use Loop, Segment K will first split north to bring the trail through the culvert under the SEPTA Media Trolley. Instead of the current steps on the south side, the new trail should include a ramp up to the opening. The existing open metal grate bridge may be utilized to cross over the creek within the concrete passageway.

The grate should be modified to allow for proper turning radii, or bicyclists should be advised to stop and dismount in order to safely negotiate this sharp, blind curve with bi-directional bicycle traffic. A blind curve may also pose perceived and real risks of security threats. Ideally, the curve should be modified to reduce opportunities for an individual to hide from oncoming trail users. The width of the surface of the walk does not take up the whole interior width of the box culvert, so it's conceivable that it could be widened. Any redesign of the structure requires coordination with SEPTA under the terms of the County-SEPTA agreement for the public pedestrian use of the culvert. Any designs need to be approved by SEPTA before they can move forward.

The metal grate walkway extends out around the edge of the trolley berm on the north side of the culvert opening. With the development of the multi-use trail, a full railing should be installed around the walkway as it transitions to a paved multi-use trail.

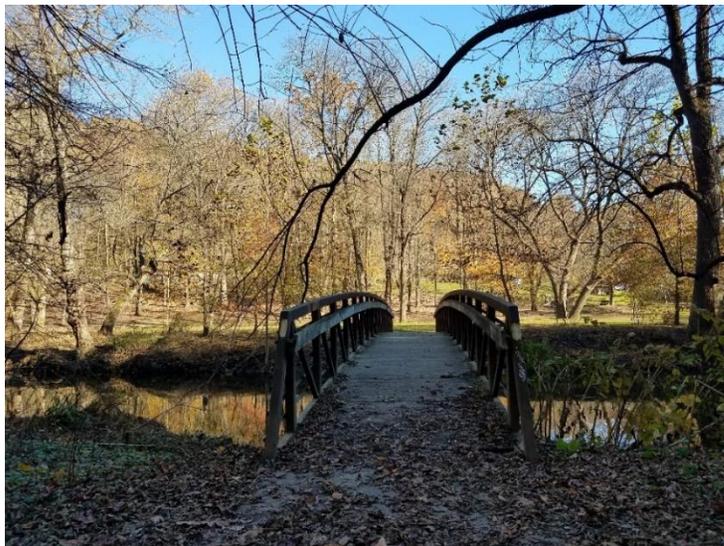
The trail should be routed under the elevated I-476, between Pine Ridge Run and the Trolley, well up-slope from the creek. The trail should be designed in a manner adjacent to and around the highway support abutments. The eastward route of Segment K continues along Pine Ridge Run and follows a very level and cleared earthen trail (a former historic mill operations road, where mill ruins will be visible from the trail). The trail should then be routed across an existing trail bridge over Pine Ridge Run.

Members of the Friends of Smedley Park call the trail junction zone between the two pedestrian bridges (over Pine Ridge Run and Crum Creek) the “Living Room.” The Living Room also represents a major trail junction area in the overall Delaware County Primary Trail Network. A trail extending north from here is referred to by the Friends as the “Carriage Trail” and has already been formally proposed for development (the un-awarded grant project proposal from 2019, described in Chapter 3). The Living Room area should be improved with amenities such as benches, wayfinding signage, and kiosk signage. When the trail is developed between the bridges, a solution to Pine Ridge

Run’s bank erosion issues should also be engineered, to prevent future damage to the trail.



Pine Ridge Trail east of I-476, to be improved as multi-use.



Existing bridge across Crum Creek, near the “Living Room” trail junction zone,, to be used for Segment K



Location for Segment K Trail along the east side of Crum Creek

The multi-use trail shall utilize the existing pedestrian bridge over Crum Creek and then be routed southward along the creek, under the SEPTA trolley and park driveway overpasses. The trail here can be constructed alongside or over top of the sanitary sewer easement that is alongside the creek. It should continue along the creek, but not too close to its banks, allowing room for buffer plantings to grow and thicken. Junction access can be given to a pedestrian bridge at the north end of the lawn. The trail however will continue to meet the bridge at the southern end of the lawn (the junction with Segment J). The trail also should join with the southernmost parking lot in Smedley Park. The County Parks Department has a strong desire to implement plans to upgrade and improve this parking area in the near future – which would be of great benefit to trail users.

It appears highly possible for the multi-use Segment K trail in Smedley County Park to easily be designed and built to meet ADA and Circuit Trails design standards. However, one important item to address for the western end of Segment K (just as with Segment J): In order for this trail to cross under the elevated highway of Interstate 476, a legal agreement will need to be made between the County of Delaware and PennDOT. PennDOT may not agree to a formal multi-use or bicycle trail within its right-of-way, next to its highway support abutments, unless the terms of the agreement are to its satisfaction. This agreement needs to be executed by both parties before funding for engineering the trail is sought.

Also of importance to Segment K is the issue of flooding. A trail in the low areas along Crum Creek may be subject to water related damage or a high level of maintenance required due to periodic flooding events. Special care should be taken in the design and construction of the parts of Segment K that are routed near the low-lying areas of Crum Creek and Pine Ridge Run. They should be designed in such a way that is as flood resistant as possible. Environmental permitting relating to stream proximity is also an important item that needs to be addressed.



Existing bridge to be used for connecting trail Segments J and K



Existing southern parking lot in Smedley Park, to be improved and connected to the trail

FACILITY TYPES AND DESIGN STANDARDS

The Media-Smedley Connector Trail is proposed to be a fully compliant multi-use trail. The trail design standards for the various types of trails among the trail's segments – as summarized below – are based upon contemporary design standards from The American Association of State Highway and Transportation Officials (AASHTO), The Americans with Disabilities Act (ADA) of 1990, the Manual on Uniform Traffic Control Devices (MUTCD), and Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way (PROWAG). At the end of the summary of each trail type, the trail segments in the proposed trail most meeting the description are noted in parentheses.

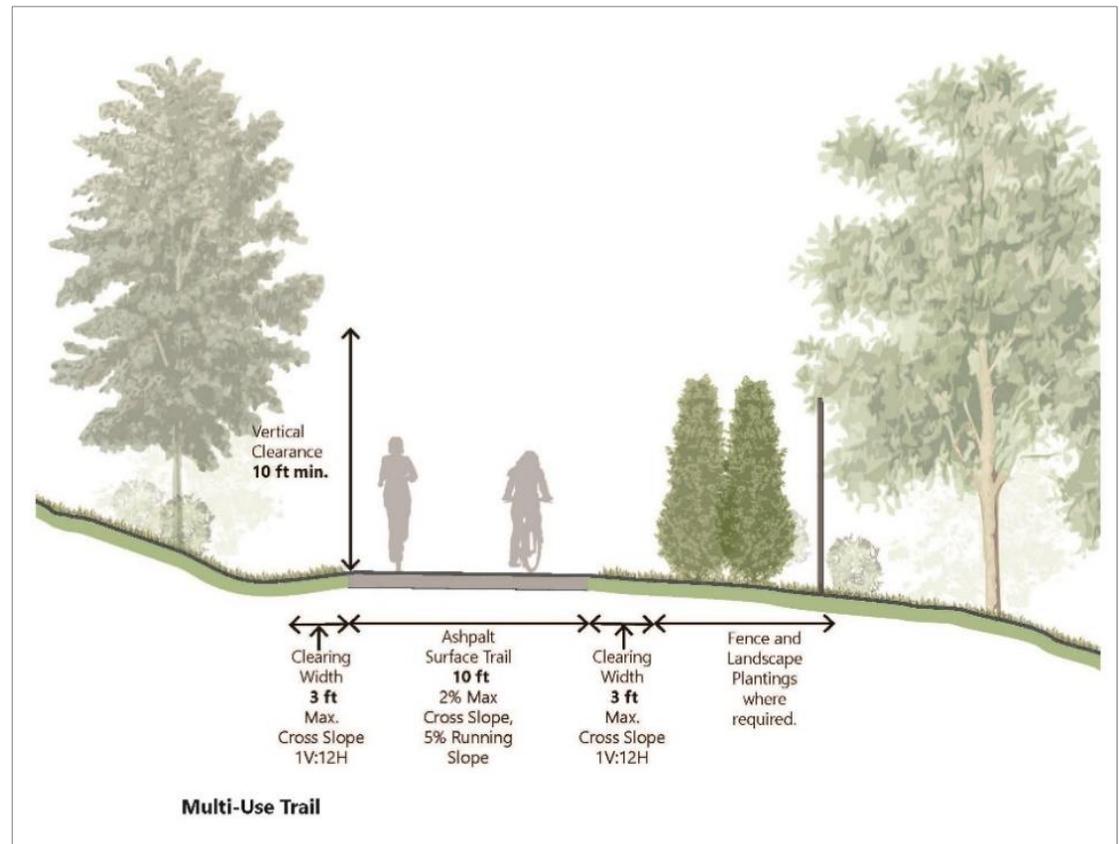
Shared-Use Path

The terms “multi-use trail” and “sidepath” are sometimes used interchangeably. Both of them are types of “shared-use path,” meaning they contain both directions of travel for both bikers and walkers in a combined pathway.

Multi-Use Trail

The term “multi-use trail” is generally (but not always) used for a trail located well within public parkland, well away from other parallel rights-of-way. The preferred width of a multi-use trail is 10-14 feet. When dealing with physically or environmentally constrained areas, a minimum width of 10 feet is recommended. A two-foot shoulder on each side is recommended as well to allow for clearance between obstacles adjacent to the trail. For the purposes of lower maintenance costs, the preferred surface type of multi-use trails is a hard surface as opposed to unpaved or crushed stone. Providing striping is not necessary, however, it can be applied to delineate directional separation. Careful consideration should be made for placement of benches, trash

receptacles, fencing, and any other objects so that they are not too close to the traveled areas of the trail and creating potential hazards. (Segments A, H, I, J, K)



A Recommended design Cross-Section for a Multi-Use Trail (Image provided by TPD)

Sidepath

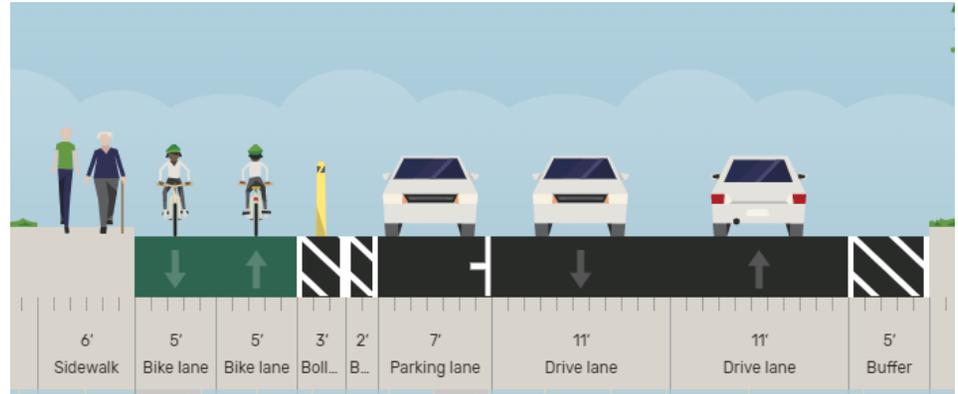
Sidepaths allow for bidirectional non-motorized traffic on a shared-use pathway next to a roadway, or other parallel structure or right-of-way. Sidepath widths can vary, but they are generally 8-12 feet with a minimum 5-foot buffer or grass separation between the sidepath and the adjacent roadway. For areas where the buffer is less than 5 feet, a physical barrier between the roadway and the sidepath is recommended. (Segment B, H)



Parking Protected Cycle-Track with Sidewalk on Maryland Avenue in Baltimore (Photo Credit: Bikemore.net)

Parking Protected Cycle-Track with Sidewalk

A cycle-track is an exclusive bicycle facility that is separated from the roadway but also separate from the sidewalk. These facilities combine the features of an off-road path with the roadway characteristics of a bike lane. Cycle tracks can vary in width depending on the volume of bicycle traffic and whether it is one-way or two-way but generally should be wide enough to allow for bicycles to ride side by side or pass each other. Cycle tracks are also preferred by users of all ages and



Parking Protected Cycle-Track with Sidewalk, Cross-Section (Image credit: Streetmix.net, TPD). See also – Segment B, Cross Section #1 earlier in this chapter.

ability levels over bike lanes because they are perceived to be safer and the bicyclist is separated from vehicular traffic. (Segment B, eastern end)

On-Road Shared Lane Marking (Sharrow) with Sidewalk

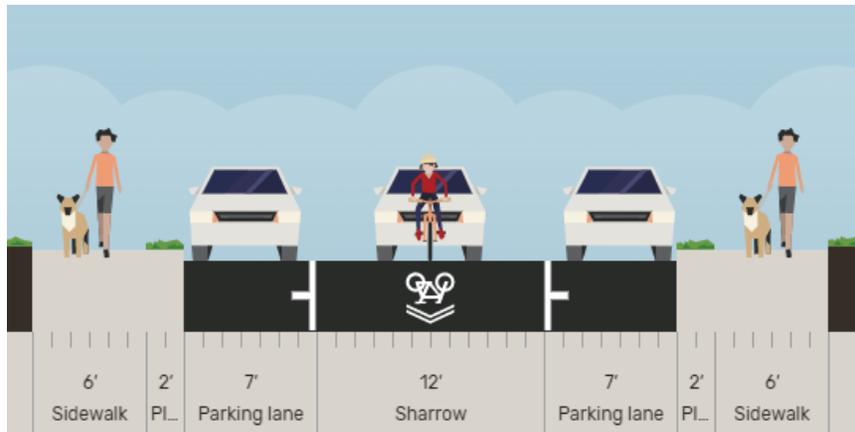
On-road shared lane markings, or sharrows, are shared lane markings indicating to motorists to expect to encounter bicycles. Bicycles are considered legal vehicles, so they are permitted to operate on any public roadways unless they are specifically restricted, such as on limited access highways, and are not restricted to a specific area on the road like bike lanes are. Sharrows are generally applied to local roadways and roads with a speed limit of 25 miles per hour.



Typical Sharrow Street marking in Media Borough

Sidewalks are typically 5-6 feet wide, however, can be much wider in urban or high volume pedestrian areas. In addition to the pedestrian

through zone of the sidewalk facility, additional space is recommended to allow for utility poles, mailboxes, and other facilities along the roadway and to provide pedestrians with a buffer from parked vehicles opening doors, to allow for snow storage during winter months, or to provide a buffer from being splashed by passing vehicles during rain events. (Segments C, E, D, G)



On-Road Shared Lane Marking with Sidewalk, Cross-Section. (Image credit: Streetmix.net, TPD)

This facility design permits bicyclists to ride opposite (contra-flow) of the travel lane with a buffered zone. Meanwhile, bicyclists traveling with the direction of traffic cycle in the travel lane with a sharrow marking. The preferred width of a separated bike lane is 7 feet to allow for bikers to ride side by side or pass each other. The minimum width recommended is 5 feet, which makes passing difficult, but is acceptable in physically constrained areas. A buffer area between the bike lane and the roadway or parking lane is recommended to be 3 feet to allow for door openings and passenger unloading. (Segment D, west of Citron St.)



Contra-Flow Bike-Lane with On-Road Shared Lane Marking and Sidewalk, Cross-Section. (Image credit: Streetmix.net, TPD) See also – Segment D, Cross Sections #2 & #3, earlier in this chapter.

Trail Bridges & Culverts

Final engineering and design should include the selection of trail crossings such as trail bridges and culverts. Existing shared-use path trail bridges in Smedley County Park have been used for hiking paths and are wide enough for one-way bicycle passage. Over time, any new or replacement shared-use path bridges should be made wide enough for two-way passage. A variety of designs and materials are acceptable, with varying costs to build and maintain. Options include pre-fabricated bridges and the re-use and re-location of existing bridges in good condition. Generally, bridges for use with a shared-use path should meet contemporary design standards and environmental permitting requirements.

A culvert is a pipe or passageway buried underground to allow constant or intermittent stormwater flow. If the flow is low enough, and environmental permitting is achievable, this can be preferable to a bridge. A well-functioning culvert is generally low-maintenance. The trail in Smedley County Park has the unique situation of a bridge inside of a large culvert, which to be improved with increased width and improved safety will require a custom re-design.

Wayfinding and Signage Standards

A Known Brand

The Media-Smedley Trail weaves through Media Borough with a diverse hierarchy of mode types varying from off-road shared use paths to shared lanes on low volume roads. Locals will likely learn this routing quickly and will need little guidance to make their way through the Borough on the preferred route. Visitors and new trail users will need a consistent and predictable messaging system that can provide directional confidence to the trail user. The Media-Smedley Trail will be a link through the Borough, connecting Smedley County Park to Louis W. Scott Memorial Park and Memorial Park in Upper Providence and Middletown Townships. This park connection trail should be branded with signage that is compatible with the wayfinding programs that have recently been developed for Media Borough and the Delaware County Parks System.



A very standard type of on-road bike route sign.



Custom trail Branding graphics can be placed in conjunction with standard paint markings. (Photo credit: armofmn.com)



Durable outdoor custom vinyl graphics can be used to celebrate and establish the brand for the new trail. These vinyl graphics will last for a year or more in pedestrian zones. (Photo provided by TPD)

Hierarchy and Placement

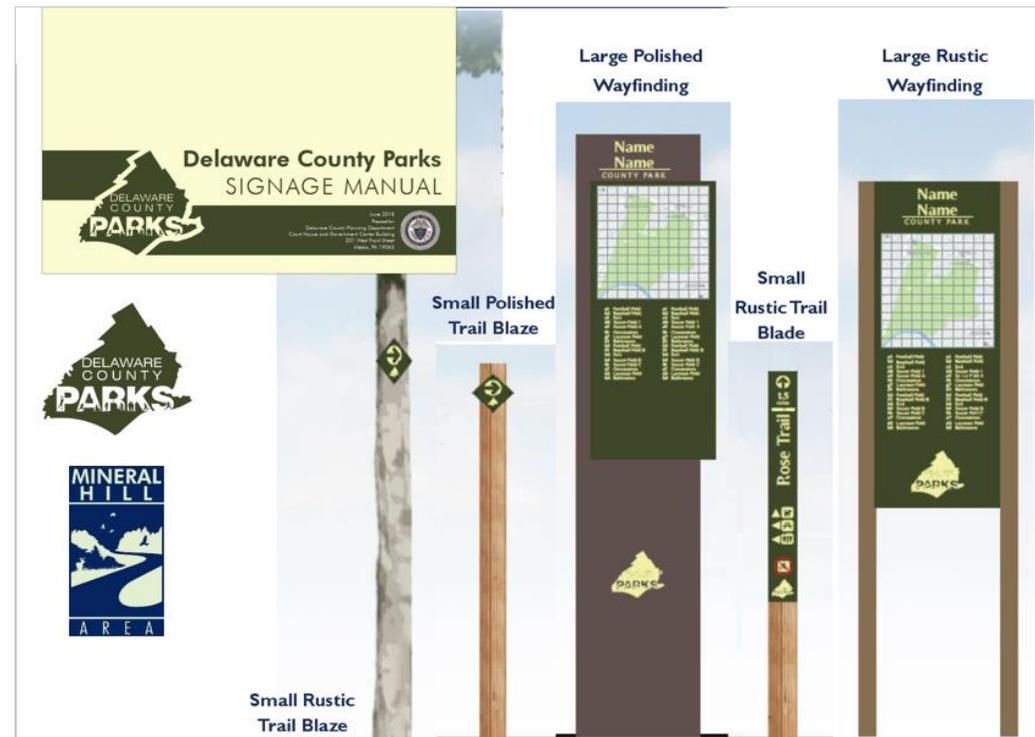
Wayfinding signage should be scaled according to the location of the sign and the perspective of the user. Because the wayfinding signage will be mainly oriented to bicyclists and pedestrians, the scale of the signs can be relatively small and unobtrusive.

Trailheads are typically a place where trail users assemble at the beginning or end of their trip. At trailheads, trail users should be able to view a map of their route. The map should be positioned in a “heads up” orientation, so that the map viewer is looking in the direction of the trail for easier user comprehension.

Along the trail route, a trail blaze should be placed at least every 1,000 feet or at every point along the trail where a routing decision should be made. The trail blaze locations should address trail users in both directions, keeping in mind that the trail blaze may not be effectively located on the same pole location for each direction. Trail blaze placement should account for potential visual obstructions such as parked cars and growing vegetation. Trail blazes can be placed on a unique pole at approximately 60” in height, or can be attached to an existing sign, streetlight, traffic signal or other object within the right of way, with full cooperation of the municipality or agency which holds jurisdiction over the area. Trail blazes or signs that protrude into a pedestrian way more than 4” from the signpost shall be set greater than 80” above the pavement surface. On the off-road segments of a trail, a trail blade marker should be placed at major trail decision points and may also contain information about nearby park amenities.

The wayfinding signage program can also be used to advertise the trail and entice potential new users to give the trail system a try. Strategic placement of larger signage (such as at prominent road crossings) will indicate to motorists and passengers that the trail system is available and accessible. Signage at road crossings should be designed with Manual

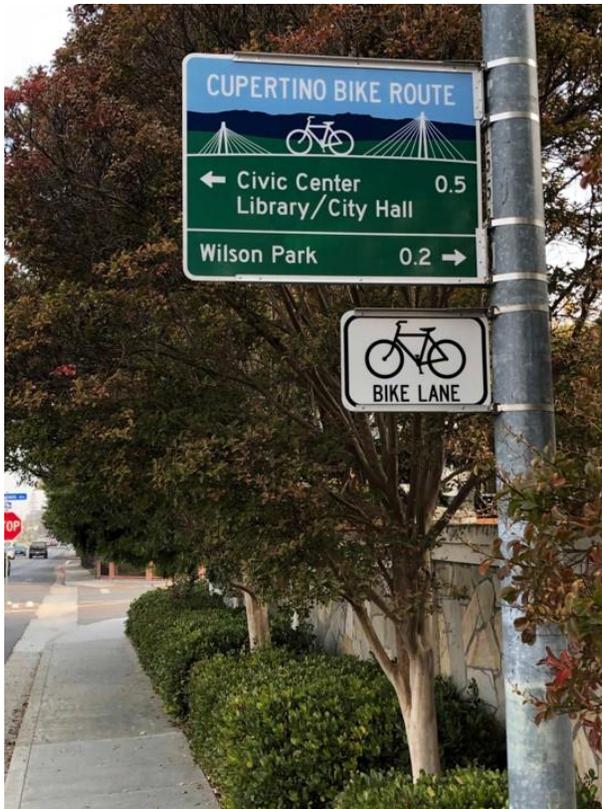
on Uniform Traffic Control Devices (MUTCD) compliant lettering, graphics, and placement location. This will also help to identify the trail crossing to motorists.



Graphics from the Delaware County Parks Signage Manual

Custom Trail Recognition Graphics

While the Media-Smedley Trail route will take many forms, it will be important to carry a recognizable “identity” and “brand” throughout. Custom graphics within the pavement are a unique way to identify the trail to users while also advertising the trail to motorists and residents in town. Custom graphics can be placed in line with trail markings in the street, at paved trailheads, and in crossings. The graphics can be temporary markers to celebrate the arrival of the trail with the use of durable outdoor stickers, or they can be custom painted stencils or thermoplastic pavement markings that could possibly last as long as the pavement surface.



Custom Trail graphics on wayfinding signage (Photo credit: City of Cupertino, Bicycle Wayfinding Program, www.cupertino.org)



The Hagerstown Hub features on-road pavement legends with the trail logo. (Photo credit: www.hagerstownmd.org/255/Bicycling)

Custom pavement wayfinding graphics should be bold, simple, and easily recognizable to the trail brand, and they should be consistent with other branding efforts. These graphics should be legible at a variety of travel speeds and transportation modes, from pedestrians to moving vehicles. Wayfinding can also be in the form of a unique paint color, pavement pattern, or surface material used to designate different modes of active transportation within the trail.

Trail Amenities

In the final design of the trail segments, the responsible parties should attempt to find space to provide facilities such as bike racks, bike repair stations, trash and pet waste receptacles, and seating along the trail segments. Benches would be especially recommended along segments with slopes – at the top and middle of hills. Each municipality and the County may elect to use quality items typical of their own park and trail systems or follow the example of items used around the public areas of Media Borough and the County courthouse complex.



A bike repair station along the Chester Creek Trail.



A trash receptacle and pet waste station along the Chester Creek Trail.

Chapter 5: Implementation

STEPS TO IMPLEMENTATION

This chapter summarizes the issues to be resolved and steps to be taken to develop and manage the Media-Smedley Connector Trail as an effective and successful transportation and recreational amenity. Project stewardship, responsible parties for trail development, tasks and considerations associated with remaining right-of-way acquisition, and other implementation challenges are discussed. Estimated costs for each segment of the trail are laid out and a summary of grant funding sources is given. A section on segment prioritization and an oversight action plan summarizes general phasing in a general recommended sequence. Lastly, there is a section summarizing recommended maintenance and operations oversight considerations for once the various segments are built.

PROJECT STEWARDSHIP

Implementation of a trail feasibility study involves not just building the trail but also keeping energetic stakeholders and citizens involved in the process. It will involve not just the responsible parties for implementation (the County and municipalities) but the broader group of citizen and stakeholder organization project stewards who can assist, lead, or motivate the responsible parties for each section.

Responsible Parties for Implementation

The primary responsibility for implementation and management of the various segments of the trail will be the municipal and County governing bodies. Generally, the municipality in which the proposed trail segment is situated will have responsibility, except within Smedley County Park where the County of Delaware will have responsibility.

Please see Appendix A, Cost Estimates, for specific recommendations for responsibility. The on-sidewalk part of the trail in Segment D (Front and Olive Sts) may be a special case where Media Borough and the County collaborate or share responsibility, as it involves redesign using

both County property and municipal sidewalk. Two other segments, B and G, could be divided along municipal lines, but it would make more on-the-ground sense if the responsible parties could collaborate.

Delaware County

The portions of the trail within Smedley County Park will all be developed by Delaware County. The County should also act as a project partner under the lead of Media Borough where the project involves land at the Courthouse (Segment D) and could also provide auxiliary trailhead amenities at or near the State Street entrance to Glen Providence County Park.



The County Parks and Planning Departments will likely provide the staff for implementation of these segments. Planning staff can also provide assistance to see that all segments of the trail are progressing. This includes helping with the Trail Committee and lending advice and support to municipalities. The County Parks Department will manage the trail in Smedley County Park, once built.

Municipalities

This section includes brief descriptions of each municipality's interest in implementing the trail, its governmental structure, and the staff or committees. All of the five municipalities listed below, with the exception of Springfield Township (on which trail segments are on County-owned land), shall have a lead role in developing and managing one or more segments of the trail.

Media Borough

In Media Borough, Borough Council, with all at-large membership, is responsible for setting budgets and approving projects. The Borough can utilize interrelated work products and recommendations from its



2016 Wayfinding Master Plan, 2020 Traffic Calming Plan, and the in-progress Borough Open Space Plan to help with implementation of its segments. Within the Media Borough government, the appointed and advisory Environmental Advisory Committee (EAC) has overseen the development of the Bicycle Master Plan.



Upper Providence Township

In Upper Providence, Township Council, with members representing districts, is responsible for setting budgets and approving projects. The Township has an interest in access into Media, passive recreational development within Scott Park, and improving the Ridley Creek Road/Baltimore Pike/Ave intersection.

It is likely that the restored Third Street will have bike and pedestrian facilities, which could be a popular alternate or spur on-road trail route, especially for access into Media from the residents of the Woodlands at Ridley Creek and vicinity.



Nether Providence Township

In Nether Providence, Township Board of Commissioners, with members representing seven wards, is responsible for setting budgets and approving projects. The Nether Providence Township Sidewalks and Walkways Committee is an appointed committee of the Township Commissioners,

The Sidewalk Committee prepares the sidewalk plan and makes recommendations on prioritizing where to install sidewalks and helps on grant applications. The committee could help with right-of-way and development of the Nether Providence segments.

Nether Providence will be interested in a trail connection from this trail to points south along Crum Creek and I-476. Continued maintenance and improvement of a connection to the Leiper-Smedley Trail is of

interest to many trail users in in around Nether Providence Township and Swarthmore Borough.

Middletown Township

Middletown Township is led by a council from four districts and three at-large members. A parks director and a number of planning and development staff work for the township.



In accordance with the Mineral Hill Area Master Plan, Middletown has in its long-term plans to make improvements to Memorial Park, including the parking lot, one of this trail's the western trailheads.

The Township is working towards exploring a township-wide trail network concept that includes a Baltimore Pike sidepath. That pathway could extend bikeable road-separated trail connections much farther west – past the Promenade at Granite Run, Riddle Hospital, until it connects to the Chester Creek Trail.

The Memorial Park trailhead could connect to the rest of the trail via Baltimore Pike Ridley Creek Bridge improvement.

Springfield Township

Springfield Township's interest and involvement in this trail comes from the adjoining hiking paths that extend outside of the Smedley County Park boundaries. The Friends of Smedley Park and the leaders of the Springfield Trail are the liaisons between those trails and the Township Commissioners. The Township government itself will not need to have any direct involvement in trail development but may elect to be indirectly involved by having representation on the Trail Committee.

Stakeholder Organizations

Other than the County and municipalities, there are many other groups and organizations in the project area, as listed below. It is recommended that these stakeholders be engaged as implementation moves forward. Many of them will benefit from the trail and, in turn, can

give back to it through stewarding and championing it by section, or overall, and encouraging those within their members and patrons to support it.



Friends of Glen Providence Park - Founded in 2011, Friends of Glen Providence Park is an all-volunteer, nonprofit organization working to preserve and enhance the natural and historic resources in Glen Providence

County Park - the oldest in the County's system. The Friends conduct volunteer activities in coordination with County Parks, including planting days and park improvement projects, arts, history, and nature programs, concerts, and documentation of plants and wildlife.



Friends of
Smedley Park

Friends of Smedley Park - Established in 2017, the Friends of Smedley Park is a non-profit organization which works with Delaware County to promote and beautify Smedley County Park. Members are active users of the park – many of them residents of the surrounding neighborhoods – and are always looking for ways to help improve and better care

for its trails, natural features, and facilities. The Friends will be a great asset for looking after and advocating for the trail.

The Springfield Trail – An over 50-year old unpaved loop trail that runs both within and outside of Smedley County Park. The Trail is mainly on the east side of the park that is in Springfield Township. Many leaders of the trail group also have membership in the Friends of Smedley Park. Because the Springfield Trail will link with and may overlap with the finished Media-Smedley Trail, it provides continued hiking access east into Springfield to points along Sproul Road (Route 320).

Upper Providence for Open Space - Upper Providence for Open Space (UPOS) is essentially a friends organization for the natural passive open

spaces in Upper Providence Township, with particular attention to the lands along Ridley Creek and Ridley Creek Road known as Louis Scott Park. UPOS advocates and provides volunteer leadership and help in maintaining the park. As a segment of this trail and one of its western trailheads is planned within Scott Park, UPOS and its members will be a key stakeholder of influence.

Mineral Hill Friends – Tangentially related to UPOS, the adjacent Mineral Hill County Park has “friends” (not yet an organized group, some are members of the Reserve at Rose Tree Homeowners Association). Leaders of this group have an interest in being connected via internal park trails and/or a Baltimore Pike trail or bikeway to the Media-Smedley Connector Trail.

Media Business Authority - The Media Business Authority (MBA) aims to encourage economic growth, cultivate a positive visual environment, and sustain and nurture business development in the Borough of Media. The MBA also helps increase Media business patronage through regular activities and events such as Dining Under the Stars, music festivals, and other community events. MBA and its members could potentially play a big role in the Trail-Wide Committee or Organization and its activities. MBA members have a lot to gain from a successful trail.



Homeowners/Property Owners Associations – There are a few official and unofficial neighborhood groups along the proposed trail and should be engaged often especially when planning trail development nearby. These include residents of Surrey Road, the Pine Ridge Civic Association and the Woodlands at Ridley Creek homeowners (across Ridley Creek Road from Segment A).

Media Shopping Center - Echo Realty – The shopping center land was ruled out as a location for the trail, but the trail being in close proximity should make it a destination or stop-off for trail users along the way. It

should be suggested that the shopping center install bike parking facilities at minimum. Potentially more amenities like tables, benches, wayfinding signage, or even tenant businesses that cater to trail users should be encouraged.

Bicycle Coalition of Greater Philadelphia / Bike Delaware County – BCGP is the main bicycling advocacy organization in the southeast Pennsylvania region. Within BCGP, there is a local Bike Delaware County Chapter run by volunteers. Both are a great resource for mobilizing awareness and garnering positive support for trail projects.



Delaware County Transportation Management Association – The DCTMA advocates for infrastructure and travel practices in Delaware County that reduce vehicular demand on roadways and increase the use of transit and non-vehicular travel methods. DCTMA holds conferences and organized the annual Bike-to-Work Day in Media. Their headquarters is located in Front Street in Media. DCTMA can provide venues for cross-promotion and help promote the trail as a model to towns countywide.



Mountain Bike Groups of Smedley Park – There are a few groups of avid mountain bikers who use the undeveloped western portion of Smedley County Park where Segment I of the trail is planned. They maintain dirt trail “runs” in the parkland. One group is known as the “Delco Composite MTB,” a youth mountain bike team youth with members in 6th-12th grades that is part of the PA Interscholastic Cycling League. The “Smedley Park Trail Team,” is another group with older riders that schedules meet-ups using social media. To curb user group conflicts, and in coordination with the Friends of Smedley Park, the mountain bikers should be contacted and engaged by the County when final design of the Smedley segments occurs and as management practices and park user policies for the trails are discussed.

Chesley Office Campus Property Owners Association – The commercial property owners in the Chesley Office Campus have an association that should be engaged by Nether Providence Township in obtaining trail right-of-way or passage for Segment H – though the individual owners themselves have control over the land, the association owns the streets within the campus

Chester-Ridley-Crum Watersheds Association – The local watershed organization and its members hold events and activities including environmental education, tree plantings, and stream cleanups. The trail can benefit these events with access close to streams, and the activities will enhance the environment of the trail.



Broomalls Lake Country Club – This swim and recreation club, while not located directly on the proposed trail route, would benefit from the trail as an alternative transportation route for its members.

Bryn Mawr Running Company/Club – This running outfitter business on Front Street organizes regular group runs in Media which may find benefit in the trail as a running venue.

Various other civic and youth organizations – Organizations such as the Media Arts Council, youth athletic leagues, Scouts BSA, Girl Scouts, Media Lions, and Rotary should also be engaged for their interest in supporting and using the trail for recreation, activities, and events.

Trail-Wide Committee or Organization

It would be extremely advantageous for a citizen-led organization to emerge after the adoption of this study to help drive the development and promotion of the trail. Perhaps a member of the Study Committee or an inspired attendee of the public meetings would be driven to spearhead this group. Ideally there would be citizen representation from every municipality. Direct representation (a liaison) from governing bodies may be advantageous. Anything advanced by the Trail

Committee that will be implementation in any way by the municipalities or County will need to be approved by their elected officials.

The agenda and work of the “Trail Committee” should be work items that contribute to trail-wide recognition, branding – projects that will be used trail-wide or advance recognition of the overall Media-Smedley Connector Trail effort. This Trail Committee may decide to brand itself another way – such as a Friends-of group. The Committee may decide early on that they prefer another name for the trail than Media-Smedley Connector Trail.

Projects that will fall under this umbrella include:

- Design of a trail logo and style of graphics on promotional materials;
- Graphic design of trail wayfinding signage (and how it will fit into existing signage styles of the municipalities and County);
- Public relations of the trail using websites, social media, and gaining assistance from and cross-promotion local businesses and organizations; and
- Organizing other activities and events aimed build and maintain positive grass-roots support for the trail.

An existing stakeholder organization in the study area or a municipality may have to serve as the project sponsor on a case-by case basis or as an ongoing sponsor of the Trail Committee. This would help in areas like holding funds and applying for grants.

See the Phasing section in this chapter for more on the recommended implementing actions for a Trail Committee.

Agencies with Roles to Play

There are a handful of agencies with rights-of-way or utility lines in the study area who have roles to play to facilitate implementation. These include:



SEPTA

The principal regional transit organization in the region, SEPTA operates the Media Trolley line. The project team interviewed staff from SEPTA who advised on the design on the trail in the places where it is proposed to intersect the line. The County and municipalities will coordinate with SEPTA as the trail is designed and developed.

PennDOT

The Pennsylvania Department of Transportation



(PennDOT) oversees all state-owned roadways. The Project team interviewed staff from PennDOT District 6 who advised on the design of the trail within the street right-of-way at PennDOT controlled roads, at-grade trail road crossings, and changes in lane widths to allow for trail inclusion. PennDOT oversees Interstate 476 and will need agreements to allow the recommended trail underneath and adjacent to the highway.

Central Delaware County Authority

The Central Delaware County Authority (CDCA) is a public sewage utility authority that owns and maintains a main that runs alongside Crum Creek in Smedley County Park. The County should communicate plans for the trail along this line with the authority to confirm that its placement will not negatively interfere with its maintenance and operation.

PECO

PECO is the major utility provider in the region and maintains several overhead power lines and easements within the study area. Portions of the proposed trail alignment area adjacent to PECO overhead wires within the street network.



SEGMENT PRIORITIZATION AND PHASING

The segments broken out in this chapter make the most sense for implementation purposes. Those that cross municipal borders (B, H) will require municipal coordination/cooperation. One segment (D) involves both municipal street right-of-way and the use of County-owned land, and so will also require intergovernmental coordination/cooperation.

General Trail Development Implementation Sequence

A strict prioritization of all segments would not be particularly beneficial for this study. Although Delaware County has been the lead party on this feasibility study, but a majority of the trail development will be the responsibility of the municipalities. Within those segments, the prioritization and timing of implementation is really a decision for them to decide.

That being said, there are some logical places to begin, and a recommend approximate overall sequencing could be as follows. Medium and Long-Term projects could certainly begin early, especially if there are reasons to postpone the short-term projects. Responsible parties should look ahead in the sequence, seeking funding ahead of time to support the effort necessary to engage in these projects. This includes acquisition of right-of-way in the segments where it is incomplete.

Short-Term (To Begin in Years 1 to 2)

Smedley County Park (I+J+K)

The most obvious section to begin work on is the trail within Smedley County Park. This multi-use trail could “stand on its own,” and the park already is a key trail destination. It is county-controlled land already. At its earliest convenience, the County should lay the groundwork for any needed funding assistance and the scope of work for a design-build project, and the intergovernmental agreement with PennDOT for the trails underneath I-476.

If doing I-J-K all at once is cost prohibitive, the ideal sequence would be to do K first, or K and I together, since J is potentially less ADA compliant. If all three cannot be built at once, the south side of the loop (J) could be done later and combined with a future project to improve a connection to the Leiper-Smedley Trail.



Paving of a multi-use trail (Photo Credit: Friends of the Radnor Trail)

Downtown Media Borough (C+D+E)

Segments C, D, and E combined would make a good short-term project with Media as the lead, and Delaware County as a major collaborative partner for Segment D. At approximately \$975,000, it might make a good PennDOT TA Set-Aside program candidate, which will have its next round expected in Spring 2021 (\$1 million program cap). If the parking issue is seen as a hurdle, conversations about mitigating the loss of on-street municipal parking spaces due to the design of these segments should begin immediately.

Until the more expensive elements of Segment D are done (Courthouse sidewalk trail), westbound bike traffic may have to be routed on an alternate route around the courthouse if the trail is to be open in an interim fashion.

Medium-Term (Year 3)

Ridley Creek Road-Parallel Trail in Scott Park (A)

Upper Providence Township would be the lead on this project that would be a great candidate for a state DCNR grant.

Surrey Road and Mulberry Road (G)

It makes on-the-ground sense for the timing of both the Mulberry Lane and Surrey Road Segments improvements to be done at the same time, despite being in two municipalities. Nether Providence could take the lead, since it has the most area, with Media Borough as a partner. The pavement markings should be coordinated with repaving and sidewalk extension/improvements.

Chesley Trail – First Steps and/or Interim On-Road (H)

Nether Providence Township could be working towards obtaining public right-of-way for a shared-use path while installing signage for an interim on-road route.

Long-Term (Beyond Year 3)

Baltimore Avenue Sidepath (B)

This is a multi-municipal effort (Middletown, Upper Providence, and Media) that should be done in conjunction and in sequence with the Media West End traffic calming re-design. Multi-municipal grant applications could be made to applicable transportation grant programs for further study, design, and development.

Providence Road Sidepath (F)

Media Borough's should oversee coordination and permitting with PennDOT for the use of the Providence Road right-of-way for a sidepath. A grant application should be prepared to help fund it.

Chesley Trail – Multi-Use Trail and Beatty Road Sidepath (H)

Nether Providence Township's negotiation and acquisition of right-of-way and subsequent design and development of the off-road multi-use trail behind the buildings at the Chesley Office Campus could take a number of years. Right-of-way acquisition and trail design for Beatty Road sidepath could also take some time. Conversations for both could begin at any time. Various aspects are eligible for grant funding, and the County government may also be able to offer assistance.

The design of the Beatty Road Station trolley crossing design should be coordinated with the SEPTA Trolley Modernization program and its schedule.

TRAIL OVERSIGHT ACTION PLAN

While phasing for physical development of the trail can take place approximately according to the sequence of the section above, activities and efforts relating to advancement, promotion, and oversight of a cohesive trail should also be taking place concurrently. These steps are closely tied with and not separate from trail development. Just as with the Trail Development Implementation Sequence above, the sequence is approximate.

Short Term (Year 1-2)

- Feasibility Study Committee meets twice post-study adoption, discussing primary projects and roles for a Trail Committee (or Organization) or other long-term stakeholder oversight.
- Trail Committee organizes and invites members representing municipalities, the County, and key project stakeholder organizations.
- Develop branding for the trail (logo, graphics, and public relations style and mechanisms).
- Develop efforts for fundraising needed for projects where cost may not be covered by public funds (graphic design, advertising).

Medium-Term (Year 2-3) and Ongoing Thereafter

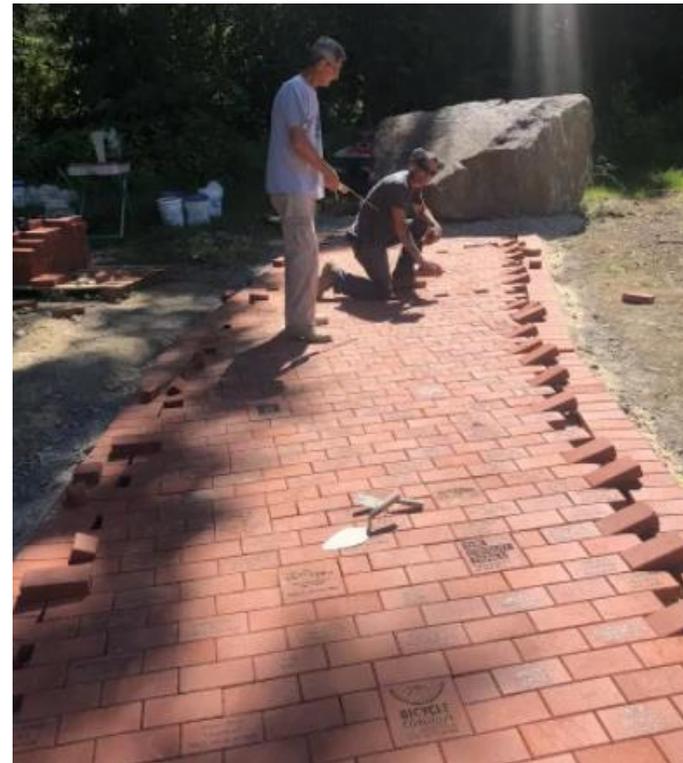
- Find locations for trail signage and trail support amenities such as bike racks and benches. (Some of these items may not have to wait until trail development. Trail signage could be installed to mark a future route or an interim route.)
- Hold events to promote the trail and get people on the newly developed segments.
- Using social media and other public awareness techniques, spread awareness of progress and the potential for expansion into undeveloped planned segments.
- Organized support for obtaining funding and approval for trail development should be provided to the municipalities and the County.
- Communication between trail responsible parties and the public occurs with the assistance of the Trail Committee.
- The Trail Committee, as a private or non-profit partner, assists the municipalities and the County with maintenance aspects of the trail.



A volunteer clean-up and beautification event (Photo: Indianapolis Cultural Trail, Indyhub.org)

Long-Term (Beyond Years 3-5 & Ongoing Thereafter)

- Hold regular events on the trail to continue to build support and awareness.
- Evolve the Trail Committee into a non-profit organization with a budget and business sponsorships. The organization will use funds to fund trail improvement and development projects by granting them to the municipality or county that oversees the segment of trail.



This rest area with engraved bricks and plaques is an example of a way to help raise funds and awareness of support for a trail. (Photo credit: Chestercreektrail.org)

IMPLEMENTATION CHALLENGES

Securing right-of-way for the trail in the remaining places where it is not yet in public ownership is one major challenge to building the optimal trail. In addition to this challenge, there are political and technical challenges that must be addressed effectively to bring the trails to fruition.

Right of Way Acquisition

The proposed trail involves many individual segments many of which are already in the public right-of-way on-street or in public parks. A few areas, particularly in Segment H, would be best served if off-road right-of-way could be acquired. Nearby on-road routes are possible but less desirable and not as safe. To build these trail segments as recommended, it will be necessary to acquire rights-of-way to allow access across the individual properties. Each specific segment in need of right-of-way will need to be studied in greater detail to identify every direct and adjacent property owner.

There are several common mechanisms for the acquisition of open space land and right-of-way for trails, such as fee simple purchase, easements, and donations. They can be used separately or in combination with other techniques to facilitate acquisition.

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easements, and donations. They can be used separately or in combination with other techniques to facilitate acquisition.

With **fee simple acquisition**, a landowner sells the entirety of a parcel of land or carves out a portion to create a new parcel of land. The land can be sold or donated outright to a public entity and used as parkland for a trail. An advantage for the landowner, in the case of subdivision, is that with the reduced size of the owner's remaining land they may pay less annually in property taxes.

An **easement** is a mechanism by which a municipality or conservation organization can obtain a legal interest in private land for public use or conservation purposes. A **pedestrian easement or right of public access easement** allows public access for walking, hiking, bicycling, and other activities. The easement language typically establishes rules and restrictions, such as limiting when, where, and how the easement may be utilized. PA Act 68, Recreational Use of Land and Water Act (RULWA), assures that the landowner is not held liable for any injuries, crimes, or death associated with public use of the land.

Easements place restrictions that allow the public trail at a lower cost than fee simple acquisition. Under an easement, land remains in current ownership, but the property owner voluntarily agrees to donate or sell one or more rights attached to the land. In the case of a conservation or access easement, it would be the right to develop a portion of the land and restrict public access across it. The easement can be held by a municipality, county, or a private conservancy.

Political Issues

As trails are community-based projects, every trail needs broad community support to be a success. Outreach to the community is one of the most important ongoing activities. It is to be expected that trail implementation may encounter some degree of skepticism and even opposition, most commonly from property owners situated alongside or near the planned trail alignment. Some common neighbor misconceptions can include confusion related to property rights issues, concerns that property values will drop and liability will increase, and

fears of increased crime such as littering, trespassing, burglary and vandalism. If informed of the benefits of a trail early in the process, adjacent property owners almost invariably become enthusiastic trail users and supporters within a few years of a trail's creation.

Prioritization of the trail in municipal budgets could also suffer if excitement is perceived as low. The trail may be interrelated to other issues that could affect its popularity. One example is municipal parking, where some parking spaces are proposed to decrease in favor of the trail. Municipal parking and allowing dedicated space for non-vehicular transportation could be addressed concurrently as part of a larger transportation strategy.

Technical Issues

Along the proposed trail segments there are a variety of physical obstacles that will place constraints on the final trail designs. Some of these will limit the space available for the trail, affect its final placement, or its ability to be fully accessible for all ages and abilities. Other issues, while surmountable, will require engineered solutions that will affect construction cost.

Road Crossings

The proposed trail is almost entirely at grade, meaning that trails will need to cross numerous streets of varying traffic levels. Design provisions must be made to facilitate safe crossings for trail users and sufficient warnings for vehicles.

Steep Slopes

Portions of this trail are located on steeply sloped terrain, which was unavoidable to some degree with the general path which was the goal. Where steep slopes are encountered for hard-surfaced off-road paved trails, minor retaining walls and other structural solutions are sometimes necessary. For unpaved trails, design precautions must be taken to inhibit erosion.

Water Crossings

In numerous locations, it will be necessary to cross streams and drainage swales, which will require construction of culverts or bridges, or improvements to existing infrastructure.

Wetlands

Wetlands are unique natural resources that require protection. Several areas along the trail have designated wetland areas. Though final trail designs should be selected that minimize impacts to these wetlands, there may be sections of trails where encroachments are unavoidable. The Pennsylvania Department of Environmental Protection (DEP) requires permitting for any impacts to wetlands resulting from trail construction. Mitigation of any loss of wetland acreage may require the expansion of the footprint of the existing wetland at its upland boundary.

ANTICIPATED CONSTRUCTION COST

A segment-by-segment outline of the estimated costs of trail development can be seen in the cost tables in Appendix A. These tables, developed by Traffic Planning and Design (TPD), exclude the pre-construction aspects of the trail's development (i.e. design and engineering, remaining right-of-way acquisition). Pre-construction cost values are best estimated on a case by case basis depending on the type of funding (e.g. state, federal) and the applicable restrictions.

Often there can be a frustration on the part of municipal and county trail developers with cost estimates that seemingly turn out to be always under-estimated. In some trail feasibility studies, planners simply calculate engineering at 15%, which is quick and easy, but potentially misleading because of the amount of uncertainties ahead of time in type of funding being sought or further segmentation of the phases. TPD recommended avoiding estimating pre-construction costs in this manner. It will be up to the individual responsible parties to determine methods for estimating the various pre-construction costs.

Table 5-1: Estimated Construction Costs Summary

Item/Segment	A	B	C	D	E	F
	Ridley Creek Road	Baltimore Pike/Memorial Park to State St.	State-Lemon	Front St.-Olive St.	Front and Second Street	Providence Road
	Sidepath	Sidepath / Sharrows	Sharrows	Sharrows / Sidepath	Sharrows and Cycle Tracks	Sidepath
Materials and Labor	\$320,800	\$1,038,500	\$6,600	\$350,700	\$6,800	\$83,600
Wayfinding and Signage	\$26,600	\$48,200	\$10,200	\$20,700	\$40,800	\$5,900
Drainage	\$48,100	\$155,800		\$52,600		\$12,500
Mobilization, Equipment, and Cons. Trailer	\$41,100	\$75,000		\$42,600		\$9,100
Protection of Traffic	\$24,200	\$75,000		\$26,300		\$6,200
Construction Survey/Stakeout	\$12,100	\$37,500		\$13,200		\$3,100
Erosion & Sedimentation Controls	\$12,100	\$37,500		\$13,200		\$3,100
Subtotal	\$485,000	\$1,467,500	\$16,800	\$519,300	\$47,600	\$123,500
Escalation	\$45,000	\$136,100	\$1,600	\$48,200	\$4,400	\$11,500
Contingency	\$132,500	\$400,900	\$4,600	\$141,900	\$13,000	\$33,800
Estimate For Construction (sum of subtotal, esc, contingency)	\$662,500	\$2,004,500	\$23,000	\$709,400	\$65,000	\$168,800
Construction Inspection (12%)	\$79,500	\$240,500	\$2,800	\$85,100	\$7,800	\$20,300
Construction Management (5% of Construction)	\$33,100	\$100,200	\$1,200	\$35,500	\$3,300	\$8,400
Utility Relocation Allowance (5% of Construction)	\$33,100	\$100,200	\$1,200	\$35,500	\$3,300	\$8,400
Total Segment Cost *	\$808,200	\$2,445,400	\$28,200	\$865,500	\$79,400	\$205,900

Item/Segment	G	G	H	I	J	K
	Mulberry St. (Media)	Surrey Rd. (Nether Providence).	Beatty Rd., Chesley Office Park	Western Smedley Park	Eastern Smedley Park to Parking Lot	Eastern Smedley Park- Loop
	Sharrows / Sidewalk	Sharrows / Sidepath	Sidepath/ Multi-use trail	Multi-use trail	Multi-use trail	Multi-use trail
Materials and Labor	\$5,000	\$85,000	\$205,800	\$423,300	\$247,100	\$314,900
Wayfinding and Signage	\$1,700	\$11,100	\$24,900	\$29,700	\$21,000	\$21,300
Drainage		\$12,800	\$30,900	\$63,500	\$37,100	\$47,200
Mobilization, Equipment, and Cons. Trailer		\$9,200	\$14,900	\$46,000	\$37,700	\$40,900
Protection of Traffic		\$6,300	\$14,900	\$31,500	\$19,000	\$23,800
Construction Survey/Stakeout		\$3,200	\$7,400	\$15,700	\$9,500	\$11,900
Erosion & Sedimentation Controls		\$3,200	\$14,500	\$15,700	\$9,500	\$11,900
Subtotal	\$6,700	\$130,800	\$313,300	\$625,400	\$380,900	\$471,900
Escalation	\$600	\$12,100	\$29,100	\$58,000	\$35,300	\$43,800
Contingency	\$1,800	\$35,700	\$85,600	\$170,850	\$104,100	\$128,900
Estimate For Construction (sum of subtotal, esc, contingency)	\$9,100	\$178,600	\$428,000	\$854,250	\$520,300	\$644,600
Construction Inspection (12%)	\$1,100	\$21,400	\$51,400	\$102,500	\$62,400	\$77,400
Construction Management (5% of Construction)	\$500	\$8,900	\$21,400	\$42,700	\$26,000	\$32,200
Utility Relocation Allowance (5% of Construction)	\$500	\$8,900	\$21,400	\$42,700	\$26,000	\$32,200
Total Segment Cost *	\$11,200	\$217,800	\$522,200	\$1,042,150	\$634,700	\$786,400

*Does not include: Permitting, Engineering, Topographic Survey, Environmental, or Right-of-Way Acquisition
Cost figures provided by Traffic Planning and Design, Inc.

Construction estimates

As part of its contract, Traffic Planning & Design estimated the costs for construction of each of the segments of the MSCT. The segments vary in construction costs from 11 thousand dollars to 2.45 million dollars. The following table depicts the summary of costs for each of the twelve possible segments.

FUNDING SOURCES

It is the expectation that all or most of the expense of constructing the trail will be provided through grants, and that little or none of the cost shall have to be borne by local municipal budgets, fundraising campaigns, or donations, though the latter two of those would be welcome especially for maintenance and management expenses once the trail is built.

Grant Funding Programs

Grants can be a great source of funding trail final design and development. Many of the existing programs are very competitive and each have their own specific application requirements. The programs listed in the following section typically fund projects of types that will advance the implementation of this trail. Details shown are from the most recent round and guidelines. Please be aware that timing and program details may change in future grant rounds. New grant programs may also arise and existing programs subject to ceasing or going on hiatus.

In order to be successful attaining grant funding, it is essential that planning, time, and care be devoted to writing quality applications and to administrating the awarded funds according to program rules. All municipalities, the County, and stakeholder organizations in the study area should provide letters of support for grants to fund projects along the entire route.

Trails Grant Funding Program Summary

Delaware County

Open Space Fund - County Projects

- Timing: rolling
- For use at County Council's discretion for projects within County-owned properties (such as County Parks) or for acquisition of new County parkland or trail right-of-way
- Amount: no set limit, available funds vary from year to year

Open Space Fund - Delco Green Ways Municipal Open Space and Recreation Grant Program

- Timing: 1 round to date (2019)
- Funding Amount: up to \$500,000 (limits by project type)
- Match: 10% local
- Activities: Planning, design, construction, acquisition
- <https://www.delcopa.gov/planning/currentprojects/DelcoGreenWays.html>



DCNR - PA Department of Conservation and Natural Resources

Community Conservation Partnership Program (C2P2)

Recreational Trails Program (RTP), Park Rehabilitation and Development Funding, or Land Acquisition and Conservation Funding

- Timing: annual – mid-April deadline
- Funding Amount: limits vary, consult regional advisor
- Match: 50% local



- Activities: Planning, design, construction, land/right-of-way acquisition
- <http://www.dcnr.state.pa.us/brc/grants/index.aspx>

DCED – Department of Community and Economic Development

Greenways, Trails and Recreation Program (GTRP)

- Timing: annual, May 31 deadline
- Funding Amount: up to \$250,000
- Match: 15% local
- Activities: Planning, design, construction
- <https://dced.pa.gov/programs/greenways-trails-and-recreation-program-gtrp/>

Multimodal Transportation Fund (DCED MTF)

- Timing: annual, July 31 deadline
- Funding Amount: up to \$3,000,000, for projects with a total cost of \$100,000 or more
- Match: 30% local
- Activities: Rehabilitation, enhancement of transportation assets
- <https://dced.pa.gov/programs/multimodal-transportation-fund/>



DVRPC - Delaware Valley Regional Planning Commission

Transportation and Community Development Initiative (TCDI)

- Timing: rolling (latest rounds in 2018 and 2020)
- Amount: up to \$100,000
- Match: 20% local
- Activities: Planning only
- <http://www.dvrpc.org/TCDI/>

Regional Trails Program (RTP)

- Timing: rolling (latest rounds in 2018 and 2020)
- Amount: up to \$200,000
- Match: varies
- Activities: Planning, design, engineering, land/r.o.w. acquisition
- Source: William Penn Foundation
- <https://www.dvrpc.org/trails/RegionalTrailsProgram/>



Congestion Mitigation and Air Quality Improvement Program (CMAQ)

- Timing: latest PA round awarded in 2019
- Amount: unlimited
- Match: 20% local
- Activities: Design and Construction
- <http://www.dvrpc.org/CMAQ/>

PA Governor's Budget Office

Redevelopment Assistance Capital Program (RACP)

- Timing: annual – August 12 (2020 deadline)
- Amount: unlimited, for projects with a total cost of \$1,000,000 or more
- Match: 50% local
- Activities: Construction only
- <https://www.budget.pa.gov/Programs/RACP>



PECO

Green Region Open Space Grant Program

- Timing: annual – October 31 (2020 deadline)
- Funding Amount: up to \$10,000
- Match: 50% local
- Activities: Planning, design, construction
- Administered by Natural Lands
- <http://www.natlands.org/greenregion>



PennDOT – Pennsylvania Department of Transportation

Multimodal Transportation Fund (PennDOT MTF)

- Timing: annual - July 31
- Amount: up to \$3,000,000
- Match: 30% local
- Activities: Design (10% max.), construction
- <https://www.penndot.gov/ProjectAndPrograms/MultimodalProgram/Pages/default.aspx>

Transportation Alternatives Set-Aside Program (TASA)

- Timing: annual. 2020 round deadline Nov. 6.
- Amount: up to \$1,000,000
- Match: 20% local
- Activities: Construction only
- <https://www.dvrpc.org/TAP/>

Transportation Improvement Program (TIP)

- Timing: unlimited
- Amount: unlimited
- Amount: 20% local
- Match: 20% local
- Activities: Construction only
- <https://www.dvrpc.org/TIP/PA/>



MAINTENANCE AND OPERATIONS

Maintenance is critical to a successful trail effort. Short-term savings achieved by not keeping the trail in top condition will cause lack of respect for the trail and invite vandalism, which will inevitably erode support for the facility. Maintenance should be the responsibility of the landowner or easement holder.

The owners and those responsible for maintenance of the various sections of the trail, once constructed, should make an effort to integrate the PA Department of Conservation and Natural Resources (DCNR), Bureau of Recreation’s Green Principles for Park Development and Sustainability into their policies and practices.

On the County-owned sections of the trail in Smedley County Park, Delaware County Parks Department and Community Service crews could be used for maintenance on land owned by the County. Segments within municipal streets, sidewalks, parks, easements, and other rights-of-way will be under the responsibility of the municipalities to maintain. Depending on the type of trail in a particular segment, the time and cost devoted to these tasks will vary. It is not anticipated that this trail, once built will add significantly to the budget of existing public works budgets for each municipal and entity and the County.

There are many precedents in the region for public-private partnership for operations and maintenance of trails and parks. It’s foreseeable that the Trail Committee recommended in this chapter could help with such an arrangement. A trail non-profit organization may develop for the entire trail or local organizations or friends-of groups for individual segments could take on some responsibility with arrangements with municipal and county trail managers.

Outside of Smedley Park, it is recommended that aspects of the trail related to public safety, for reasons of liability, should always be under the responsibility of the municipality. These elements would include maintenance of the pavement surface, pavement markings, drainage facilities, curbs and other physical buffers, traffic regulatory signs, and

operations of traffic signal equipment. These items fall generally within typical municipal maintenance regimens and should be within municipal capacity to carry out.

Overall, primary attention should be given to the following maintenance items:

- Administration – The following maintenance tasks will need to be efficiently coordinated and administered.
- Trash Pick-up – Place signs along the trail to “carry-in/carry-out.” Trash pickup details will need to be undertaken once a month and can be done by volunteers.
- Tree Blow-downs – Remove unwanted trees from the trail as soon as possible.
- Vegetation Trimming – Trees and shrubs should be trimmed to allow proper clearance on the trail. Trimming should occur in early fall.
- Grass Mowing – Mowing of the trail shoulders and other grassy areas along the trail should be performed on a monthly basis from May through September.
- Snow removal – Snow should be swept or plowed from both on and off-road portions of the trail if it is to be considered a valid mode of transportation year-round. Snow should not be piled in the bicycle travel lane designated as part of the trail.
- Emergency Conditions – The trail will need to be monitored twice a week in order to detect any conditions that may limit use of the trail or be a safety risk to users. Limiting or hazardous conditions should be addressed as soon as possible.
- Long-term Maintenance – Trail surfaces, bridges, and other trail structures need to be inspected on a regular basis – at least once a year in the first five years and every six months thereafter. Funding must be budgeted for repairs and replacement.

Appendix A: Cost Estimate Details for each trail segment

Cost estimates were prepared by TPD, Inc.

A: Ridley Creek Road Trail in Scott Park, Upper Providence Township

<u>Item</u>	<u>QTY</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>EXTENDED COST</u>	<u>Notes</u>
Site Preparation/Demolition					
Clearing and Grubbing	66350	SF	\$ 0.50	\$ 33,200.00	
Earthwork					
Class 1A Excavation	815.19	CY	\$ 56.00	\$ 45,700.00	12" Depth for Trail
Structures					
Culvert Extension	2	LS	\$ 30,000.00	\$ 60,000.00	
Fence/ Bicycle Guiderail	250	lf	\$ 25.00	\$ 6,300.00	
42" Pedestrian Railing	250	lf	\$ 300.00	\$ 75,000.00	
Masonry					
Asphalt Paving					
10' Wide Bituminous Concrete Trail	2446	SY	\$ 30.00	\$ 73,400.00	6" 2A Base, 4" Binder, 2" Wearing
ADA compliant parking spaces and pedestrian access	119	SY	\$ 30.00	\$ 3,600.00	6" 2A Base, 4" Binder, 2" Wearing
Pavement Markings					
DWS -cast Iron	20	SF	\$ 80.00	\$ 1,600.00	ECMS 2695
Landscape					
Fine Grading/Seeding	44020	SF	\$ 0.50	\$ 22,000.00	Assumes 10' on either side of trail
				\$ 320,800.00	Subtotal Segment A
Miscellaneous Construction Items					
Signage and Pavement Markings (3% of known Items)	1	LS	\$ 9,624.00	\$ 9,600.00	
Drainage (15% of known items)	1	LS	\$ 48,120.00	\$ 48,100.00	
Construction Trailer	1	LS	\$ 20,000.00	\$ 20,000.00	
Equipment Package	1	LS	\$ 5,000.00	\$ 5,000.00	
				\$ 82,700.00	Subtotal Miscellaneous Items
				\$ 403,500.00	Subtotal Pay Items

Appendix A: Cost Estimate Details for each trail segment

A: Ridley Creek Road Trail in Scott Park, Upper Providence Township (continued)

Item	QTY	Unit	Unit Cost	EXTENDED COST	Notes
Other Items					
Wayfinding	1	LS	\$ 17,000.00	\$ 17,000.00	
Mobilization (4%)	1	LS	\$ 16,140.00	\$ 16,100.00	
Maintenance and Protection of Traffic (6%)	1	LS	\$ 24,210.00	\$ 24,200.00	
Erosion & Sedimentation Control (3%)	1	LS	\$ 12,105.00	\$ 12,100.00	
Construction Survey and Stakeout (3%)	1	LS	\$ 12,105.00	\$ 12,100.00	
				\$ 81,500.00	Subtotal other Items
				\$ 485,000.00	Subtotal Pay and Other Items
Escalation (3% for 3 years)				\$ 45,000.00	
				\$ 530,000.00	Estimate to Mid-Construction Year (2023)
Contingency (25%)				\$ 132,500.00	
Total estimate For Construction				\$ 662,500.00	
Professional Fees					
Construction Inspection (12% Construction Cost)	1	LS	\$ 79,500.00	\$ 79,500.00	
Survey (2% of Pay Items)	1	LS		\$ -	
Environmental (3% of Construction)	1	LS		\$ -	
Construction Management (5% of Construction)	1	LS	\$ 33,125.00	\$ 33,100.00	
Utility Relocation					
Utility Relocation Allowance (5% of Construction)	1	LS	\$ 33,125.00	\$ 33,100.00	
Right-of-Way					
ROW Acquisition, includes legal fees	1	LS		\$ -	
ESTIMATED SEGMENT A TOTAL COST				\$ 808,200.00	

B: Baltimore Pike/Avenue from Memorial Park to State St. (Middletown Township, Upper Providence Township, and Media Borough)

*Improvements east of State Street on Baltimore Avenue are not included in cost.

**percentage based upon linear footage within each municipality

<u>Item</u>	<u>QTY</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>EXTENDED COST</u>	<u>Notes</u>
Site Preparation/Demolition					
Earthwork					
Class 1B Excavation	1607.00	CY	\$ 49.00	\$ 78,700.00	12" Depth for Trail
Sawcut	6200.00	LF	\$ 8.00	\$ 49,600.00	
Structures					
42" fence/ guiderail on bridge parapet	600	LF	\$ 150.00	\$ 90,000.00	
Concrete					
Plain Cement Concrete Curb	4590	LF	\$ 41.90	\$ 192,300.00	PADOT Item 630
Plain Concrete Mountable Curb	1610	LF	\$ 80.00	\$ 128,800.00	PADOT Item 633 type a
Concrete Sidewalk for Curb Ramps	135	SY	\$ 200.00	\$ 27,000.00	
DWS -cast Iron	160	SF	\$ 80.00	\$ 12,800.00	
Asphalt Paving					
Includes mill and overlay and addition of multi-use trail					
SUPERPAVE WEARING COURSE, 1.5" DEPTH, WMA	17708	SY	\$ 11.00	\$ 194,800.00	
SUPERPAVE BINDER COURSE, 2.5" DEPTH WMA	2285	SY	\$ 18.00	\$ 41,100.00	
SUPERPAVE BASE COURSE, 3" DEPTH WMA	1301	SY	\$ 25.00	\$ 32,500.00	
SUPERPAVE BASE COURSE, 10" DEPTH WMA	1584	SY	\$ 55.00	\$ 87,100.00	
MILLING OF BITUMINOUS PAVEMENT SURFACE, 1 1/2" DEPTH	14823	SY	\$ 5.00	\$ 74,100.00	
BITUMINOUS TACK COAT	14823	SY	\$ 1.00	\$ 14,800.00	
Landscape					
Seeding, soil amendments and mulch	42	LBS	\$ 73.00	\$ 3,100.00	
Topsoil	217	CY	\$ 54.53	\$ 11,800.00	
				\$ 1,038,500.00	Subtotal known items

Appendix A: Cost Estimate Details for each trail segment

B: Baltimore Pike/Avenue from Memorial Park to State St.; Middletown Township, Upper Providence Township, and Media Borough (continued)

<u>Item</u>	<u>QTY</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>EXTENDED COST</u>	<u>Notes</u>
Miscellaneous Construction Items					
Signage and Pavement Markings (3% of known Items)	1	LS	\$ 31,155.00	\$ 31,200.00	
Drainage (15% of known items)	1	LS	\$ 155,775.00	\$ 155,800.00	
Construction Trailer	1	LS	\$ 20,000.00	\$ 20,000.00	
Equipment Package	1	LS	\$ 5,000.00	\$ 5,000.00	
				\$ 212,000.00	Subtotal Miscellaneous Items
Subtotal Pay Items				\$ 1,250,500.00	Subtotal Pay Items
Other Items					
Wayfinding	1	LS	\$ 17,000.00	\$ 17,000.00	
Mobilization (4%)	1	LS	\$ 50,020.00	\$ 50,000.00	
Maintenance and Protection of Traffic (6%)	1	LS	\$ 75,030.00	\$ 75,000.00	
Erosion & Sedimentation Control (3%)	1	LS	\$ 37,515.00	\$ 37,500.00	
Construction Survey and Stakeout (3%)	1	LS	\$ 37,515.00	\$ 37,500.00	
				\$ 217,000.00	Subtotal other Items
				\$ 1,467,500.00	Subtotal Pay and Other Items
Escalation (3% for 3 years)				\$ 136,100.00	
				\$ 1,603,600.00	Estimate to Mid-Construction Year (2023)
Contingency (25%)				\$ 400,900.00	
				\$ 2,004,500.00	Total estimate For Construction

B: Baltimore Pike/Avenue from Memorial Park to State St.; Middletown Township, Upper Providence Township, and Media Borough (continued)

<u>Item</u>	<u>QTY</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>EXTENDED COST</u>	<u>Notes</u>
Professional Fees					
Construction Inspection (12% Construction Cost)	1	LS	\$ 240,540.00	\$ 240,500.00	
Survey (2% of Pay Items)	1	LS		\$ -	
Environmental (3% of Construction)	1	LS		\$ -	
Construction Management (5% of Construction)	1	LS	\$ 100,225.00	\$ 100,200.00	
Utility Relocation					
Utility Relocation Allowance (5% of Construction)	1	LS	\$ 100,225.00	\$ 100,200.00	
Right-of-Way					
ROW Acquisition, includes legal fees	1	LS		\$ -	
ESTIMATED SEGMENT B TOTAL COST				\$ 2,445,400.00	

Appendix A: Cost Estimate Details for each trail segment

C: State & Lemon Streets Sharrows, Media Borough

<u>Item</u>	<u>QTY</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>EXTENDED COST</u>	<u>Notes</u>
Pavement Markings					
Thermoplastic Sharrow Markings	12	EA	\$ 500.00	\$ 6,000.00	
Signage	1	LS	\$ 600.00	\$ 600.00	
				\$ 6,600.00	Subtotal known items
Miscellaneous Construction Items					
Signage and Pavement Markings (3% of known Items)		LS	\$ 18.00	\$ -	
Drainage (15% of known items)		LS	\$ 90.00	\$ -	
Construction Trailer		LS	\$ 20,000.00	\$ -	
Equipment Package		LS	\$ 5,000.00	\$ -	
				\$ -	Subtotal Miscellaneous Items
				\$ 6,600.00	Subtotal Pay Items
Other Items					
Wayfinding	1	LS	\$ 10,200.00	\$ 10,200.00	
Mobilization (4%)		LS	\$ 264.00	\$ -	
Maintenance and Protection of Traffic (6%)		LS	\$ 396.00	\$ -	
Erosion & Sedimentation Control (3%)		LS	\$ 198.00	\$ -	
Construction Survey and Stakeout (3%)		LS	\$ 198.00	\$ -	
				\$ 10,200.00	Subtotal other Items
				\$ 16,800.00	Subtotal Pay and Other Items
Escalation (3% for 3 years)				\$ 1,600.00	
Estimate to Mid-Construction Year (2023)				\$ 18,400.00	
Contingency (25%)				\$ 4,600.00	
Total estimate For Construction				\$ 23,000.00	Total estimate For Construction

C: State & Lemon Streets Sharrows, Media Borough (continued)

<u>Item</u>	<u>QTY</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>EXTENDED COST</u>	<u>Notes</u>
Professional Fees					
Construction Inspection (12% Construction Cost)	1	LS	\$ 2,760.00	\$ 2,800.00	
Survey (2% of Pay Items)	1	LS		\$ -	
Environmental (3% of Construction)	1	LS		\$ -	
Construction Management (5% of Construction)	1	LS	\$ 1,150.00	\$ 1,200.00	
Utility Relocation					
Utility Relocation Allowance (5% of Construction)	1	LS	\$ 1,150.00	\$ 1,200.00	
ESTIMATED SEGMENT C TOTAL COST				\$ 28,200.00	

*Assumes that work may be performed without survey.

Appendix A: Cost Estimate Details for each trail segment

D: Front St. & Olive St. - Sharrow/Sidepath, Media Borough

<u>Item</u>	<u>QTY</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>EXTENDED COST</u>	<u>Notes</u>
Site Preparation/Demolition					
Type 1B Excavation	360.56	CY	\$ 125.00	\$ 45,000.00	includes removal - existing Concrete sidewalk, assumes 12" depth, curb to remain
Masonry					
Remove and replace Existing Stone Curbing	1	LS	\$ 30,000.00	\$ 30,000.00	Front Street along Courthouse frontage
Concrete					
Concrete Sidewalk	870	SY	\$ 125.00	\$ 108,800.00	assumes existing concrete curbing to remain
Dry Laid Clay Unit Paver Sidewalk, 8" stone base	4840	SF	\$ 22.00	\$ 106,500.00	includes setting bed and geotextile for pedestrian area along Front St. and Olive St.
Asphalt Paving					
Pavement Markings					
Thermoplastic Sharrow Markings	8	EA	\$ 500.00	\$ 4,000.00	
4" Wide white thermoplastic striping	770	LF	\$ 3.00	\$ 2,300.00	bike lane markings and parking striping
High Visibility Continental Crosswalk					
2' Wide White Thermoplastic Striping	190	LF	\$ 15.00	\$ 2,900.00	
Flexible Delineator	31	EA	\$ 73.00	\$ 2,300.00	
DWS -cast Iron	96	SF	\$ 80.00	\$ 7,700.00	ECMS 2695
Thermoplastic Paving Treatments	1840	SF	\$ 20.00	\$ 36,800.00	Cycle track markings, Decorative Brick Style treatment, Median gaps and traffic calming items
Landscape					
Fine Grading/Seeding	8800	SF	\$ 0.50	\$ 4,400.00	Assumes 10' on Either side of Trail
Topsoil	81.5	CY	\$ 54.53	\$ 4,400.00	
				\$ 350,700.00	Subtotal known items

D: Front St. & Olive St. - Sharrow/Sidepath, Media Borough (continued)

<u>Item</u>	<u>QTY</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>EXTENDED COST</u>	
Miscellaneous Construction Items					
Signage and Pavement Markings (3% of known Items)	1	LS	\$ 10,521.00	\$	10,500.00
Drainage (15% of known items)	1	LS	\$ 52,605.00	\$	52,600.00
Construction Trailer	1	LS	\$ 20,000.00	\$	20,000.00
Equipment Package	1	LS	\$ 5,000.00	\$	5,000.00
				\$	88,100.00
					Subtotal Miscellaneous Items
Subtotal Pay Items				\$	438,800.00
					Subtotal Pay Items
Other Items					
Wayfinding	1	LS	\$ 10,200.00	\$	10,200.00
Mobilization (4%)	1	LS	\$ 17,552.00	\$	17,600.00
Maintenance and Protection of Traffic (6%)	1	LS	\$ 26,328.00	\$	26,300.00
Erosion & Sedimentation Control (3%)	1	LS	\$ 13,164.00	\$	13,200.00
Construction Survey and Stakeout (3%)	1	LS	\$ 13,164.00	\$	13,200.00
				\$	80,500.00
					Subtotal other Items
				\$	519,300.00
					Subtotal Pay and Other Items
Escalation (3% for 3 years)				\$	48,200.00
Estimate to Mid-Construction Year (2023)				\$	567,500.00
					Estimate to Mid-Construction Year (2023)
Contingency (25%)				\$	141,900.00
Total estimate For Construction				\$	709,400.00
					Total estimate For Construction
Professional Fees					
Construction Inspection (12% Construction Cost)	1	LS	\$ 85,128.00	\$	85,100.00
Survey (2% of Pay Items)	1	LS		\$	-
Environmental (3% of Construction)	1	LS		\$	-
Construction Management (5% of Construction)	1	LS	\$ 35,470.00	\$	35,500.00
Utility Relocation					
Utility Relocation Allowance (5% of Construction)	1	LS	\$ 35,470.00	\$	35,500.00
ESTIMATED SEGMENT D TOTAL COST				\$	865,500.00

Appendix A: Cost Estimate Details for each trail segment

E: Second Street & Front Street - Sharrow and Cycle Tracks, Media Borough

<u>Item</u>	<u>QTY</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>EXTENDED COST</u>	<u>Notes</u>
Pavement Markings					
Thermoplastic Sharrow Markings	34	EA	\$ 200.00	\$ 6,800.00	
4" Wide white thermoplastic striping	822	LF	\$ 3.00	\$ 2,500.00	bike lane markings and parking striping
High Visibility Continental Crosswalk					
2' Wide White Thermoplastic Striping	74	LF	\$ 15.00	\$ 1,100.00	
Flexible Delineator	25	EA	\$ 73.00	\$ 1,800.00	Assumes flex post every 10' in cycle track
DWS -cast Iron		SF	\$ 35.00	\$ -	ECMS 2695
Thermoplastic Paving Treatments	340	SF	\$ 20.00	\$ 6,800.00	Cycle track markings, Decorative Brick Style treatment, Median gaps and traffic calming items
				\$ 6,800.00	Subtotal known items
Miscellaneous Construction Items					
Signage and Pavement Markings (3% of known Items)		LS	\$ 204.00	\$ -	
Drainage (15% of known items)		LS	\$ 1,020.00	\$ -	
Construction Trailer		LS	\$ 20,000.00	\$ -	
Equipment Package		LS	\$ 5,000.00	\$ -	
				\$ -	Subtotal Miscellaneous Items
Subtotal Pay Items				\$ 6,800.00	Subtotal Pay Items
Other Items					
Wayfinding	1	LS	\$ 40,800.00	\$ 40,800.00	
Mobilization (4%)		LS	\$ 272.00	\$ -	
Maintenance and Protection of Traffic (6%)		LS	\$ 408.00	\$ -	
Erosion & Sedimentation Control (3%)		LS	\$ 204.00	\$ -	
Construction Survey and Stakeout (3%)		LS	\$ 204.00	\$ -	
				\$ 40,800.00	Subtotal other Items
				\$ 47,600.00	Subtotal Pay and Other Items

E: Second Street & Front Street - Sharrow and Cycle Tracks, Media Borough (continued)

<u>Item</u>	<u>QTY</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>EXTENDED COST</u>	<u>Notes</u>
Escalation (3% for 3 years)				\$ 4,400.00	
Estimate to Mid-Construction Year (2023)				\$ 52,000.00	Estimate to Mid-Construction Year (2023)
Contingency (25%)				\$ 13,000.00	
Total estimate For Construction				\$ 65,000.00	Total estimate For Construction
Professional Fees					
Construction Inspection (12% Construction Cost)	1	LS	\$ 7,800.00	\$ 7,800.00	
Survey (2% of Pay Items)	1	LS		\$ -	
Environmental (3% of Construction)	1	LS		\$ -	
Construction Management (5% of Construction)	1	LS	\$ 3,250.00	\$ 3,300.00	
Utility Relocation					
Utility Relocation Allowance (5% of Construction)	1	LS	\$ 3,250.00	\$ 3,300.00	
ESTIMATED SEGMENT E TOTAL COST				\$ 79,400.00	
*Assumes that work may be performed without survey.					

Appendix A: Cost Estimate Details for each trail segment

F: Providence Road Sidepath, Media Borough

<u>Item</u>	<u>QTY</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>EXTENDED COST</u>	<u>Notes</u>
Site Preparation/Demolition					
Type 1B Excavation	60.19	CY	\$ 125.00	\$ 7,500.00	includes removal - existing Concrete sidewalk, assumes 9" depth
Clearing and Grubbing	1450	SF	\$ 0.50	\$ 700.00	
Erosion and Sedimentation Controls					
Earthwork					
Excavation	53.70	CY	\$ 56.00	\$ 3,000.00	12" Depth for Trail
Utilities					
Masonry					
Concrete					
Concrete Sidewalk	290.6	SY	\$ 125.00	\$ 36,300.00	10' Wide sidepath
Plain Cement Concrete Curb	360.0	LF	\$ 60.00	\$ 21,600.00	
Asphalt Paving					
Pavement Markings					
High Visibility Continental Crosswalk					
2' Wide White Thermoplastic Striping	64	LF	\$ 15.00	\$ 1,000.00	
DWS -cast Iron	32	SF	\$ 80.00	\$ 2,600.00	ECMS 2695
Thermoplastic Paving Treatments	250	SF	\$ 20.00	\$ 5,000.00	Cycle track markings, Decorative Brick Style treatment, Median gaps and traffic calming items
Landscape					
Fine Grading/Seeding	3200	SF	\$ 0.50	\$ 1,600.00	Assumes 10' on Either side of Trail
Topsoil	71.11	CY	\$ 60.00	\$ 4,300.00	2' Depth for proposed landscape verge
				\$ 83,600.00	Subtotal known Items
Miscellaneous Construction Items					
Signage and Pavement Markings (3% of known Items)	1	LS	\$ 2,508.00	\$ 2,500.00	
Drainage (15% of known items)	1	LS	\$ 12,540.00	\$ 12,500.00	
Equipment Package	1	LS	\$ 5,000.00	\$ 5,000.00	
				\$ 20,000.00	Subtotal Miscellaneous Items
Subtotal Pay Items				\$ 103,600.00	Subtotal Pay Items

F: Providence Road Sidepath, Media Borough (continued)

Item	QTY	Unit	Unit Cost	EXTENDED COST	Notes
Other Items					
Wayfinding	1	LS	\$ 3,400.00	\$ 3,400.00	
Mobilization (4%)	1	LS	\$ 4,144.00	\$ 4,100.00	
Maintenance and Protection of Traffic (6%)	1	LS	\$ 6,216.00	\$ 6,200.00	
Erosion & Sedimentation Control (3%)	1	LS	\$ 3,108.00	\$ 3,100.00	
Construction Survey and Stakeout (3%)	1	LS	\$ 3,108.00	\$ 3,100.00	
				\$ 19,900.00	Subtotal other Items
				\$ 123,500.00	Subtotal Pay and Other Items
Escalation (3% for 3 years)				\$ 11,500.00	
Estimate to Mid-Construction Year (2023)				\$ 135,000.00	Estimate to Mid-Construction Year (2023)
Contingency (25%)				\$ 33,800.00	
Total estimate For Construction				\$ 168,800.00	Total estimate For Construction
Professional Fees					
Construction Inspection (12% Construction Cost)	1	LS	\$ 20,256.00	\$ 20,300.00	
Survey (2% of Pay Items)	1	LS		\$ -	
Environmental (3% of Construction)	1	LS		\$ -	
Engineering (15% of Construction, Preliminary and Final)		LS	\$ 25,320.00	\$ -	
Construction Management (5% of Construction)	1	LS	\$ 8,440.00	\$ 8,400.00	
Utility Relocation					
Utility Relocation Allowance (5% of Construction)	1	LS	\$ 8,440.00	\$ 8,400.00	
Right-of-Way					
ROW Acquisition, includes legal fees	1	LS		\$ -	
ESTIMATED SEGMENT F TOTAL COST				\$ 205,900.00	

Appendix A: Cost Estimate Details for each trail segment

G: Mulberry Ln. – Sharrow, Media Borough

<u>Item</u>	<u>QTY</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>EXTENDED COST</u>	<u>Notes</u>
Pavement Markings					
Thermoplastic Sharrow Markings	2	EA	\$ 500.00	\$ 1,000.00	
4" Wide white thermoplastic striping		LF	\$ 3.00	\$ -	bike lane markings and parking striping
High Visibility Continental Crosswalk					
2' Wide White Thermoplastic Striping	64	LF	\$ 15.00	\$ 1,000.00	
Flexible Delineator		EA		\$ -	
DWS -cast Iron		SF	\$ 35.00	\$ -	ECMS 2695
Thermoplastic Paving Treatments	250	SF	\$ 20.00	\$ 5,000.00	Cycle track markings, Decorative Brick Style treatment, Median gaps and traffic calming items
Subtotal Pay Items				\$ 5,000.00	Subtotal Pay Items
Other Items					
Wayfinding	1	LS	\$ 1,700.00	\$ 1,700.00	
Mobilization (4%)		LS	\$ 200.00	\$ -	
Maintenance and Protection of Traffic (6%)		LS	\$ 300.00	\$ -	
Erosion & Sedimentation Control (3%)		LS	\$ 150.00	\$ -	
Construction Survey and Stakeout (3%)		LS	\$ 150.00	\$ -	
				\$ 1,700.00	Subtotal other Items
				\$ 6,700.00	Subtotal Pay and Other Items
Escalation (3% for 3 years)				\$ 600.00	
Estimate to Mid-Construction Year (2023)				\$ 7,300.00	
Contingency (25%)				\$ 1,800.00	
Total estimate For Construction				\$ 9,100.00	
Professional Fees					
Construction Inspection (12% Construction Cost)	1	LS	\$ 1,092.00	\$ 1,100.00	
Construction Management (5% of Construction)	1	LS	\$ 455.00	\$ 500.00	
Utility Relocation					
Utility Relocation Allowance (5% of Construction)	1	LS	\$ 455.00	\$ 500.00	
ESTIMATED SEGMENT F TOTAL COST				\$ 11,200.00	Subtotal

*Assumes that work may be performed without survey.

G: Surrey Rd. – Sharrow, Nether Providence Township

Item	QTY	Unit	Unit Cost	EXTENDED COST	Notes
Site Preparation/Demolition					
Clearing and Grubbing	5950	SF	\$ 0.50	\$ 3,000.00	
Erosion and Sedimentation Controls					
Silt Sock	630	LF	\$ 6.00	\$ 3,800.00	Assumes 12" compost filter sock
Earthwork					
Excavation	89.44	CY	\$ 56.00	\$ 5,000.00	9" Depth for Sidewalk
Masonry					
Concrete					
Concrete Sidewalk	368.9	SY	\$ 125.00	\$ 46,100.00	assumes existing concrete curbing to remain
Asphalt Paving					
Pavement Markings					
Thermoplastic Sharrow Markings	10	EA	\$ 500.00	\$ 5,000.00	
4" Wide white thermoplastic striping		LF	\$ 3.00	\$ -	bike lane markings and parking striping
High Visibility Continental Crosswalk					
2' Wide White Thermoplastic Striping	126	LF	\$ 15.00	\$ 1,900.00	
DWS -cast Iron	40	SF	\$ 80.00	\$ 3,200.00	ECMS 2695
Thermoplastic Paving Treatments	500	SF	\$ 20.00	\$ 10,000.00	Cycle track markings, Decorative Brick Style treatment, Median gaps and traffic calming items
Landscape					
Fine Grading/Seeding	2750	SF	\$ 0.50	\$ 1,400.00	Assumes 10' on Either side of Trail
Topsoil	92.59	CY	\$ 60.00	\$ 5,600.00	2' Depth for proposed landscape verge
				\$ 85,000.00	Subtotal known Items
Miscellaneous Construction Items					
Signage and Pavement Markings (3% of known Items)	1	LS	\$ 2,600.00	\$ 2,600.00	
Drainage (15% of known items)	1	LS	\$ 12,800.00	\$ 12,800.00	
Equipment Package	1	LS	\$ 5,000.00	\$ 5,000.00	
				\$ 20,400.00	Subtotal Miscellaneous Items
Subtotal Pay Items				\$ 105,400.00	Subtotal Pay Items

Appendix A: Cost Estimate Details for each trail segment

G: Surrey Rd. – Sharrow, Nether Providence Township (continued)

<u>Item</u>	<u>QTY</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>EXTENDED COST</u>	<u>Notes</u>
Other Items					
Wayfinding	1	LS	\$ 8,500.00	\$ 8,500.00	
Mobilization (4%)	1	LS	\$ 4,200.00	\$ 4,200.00	
Maintenance and Protection of Traffic (6%)	1	LS	\$ 6,300.00	\$ 6,300.00	
Erosion & Sedimentation Control (3%)	1	LS	\$ 3,200.00	\$ 3,200.00	
Construction Survey and Stakeout (3%)	1	LS	\$ 3,200.00	\$ 3,200.00	
				\$ 25,400.00	Subtotal other Items
				\$ 130,800.00	Subtotal Pay and Other Items
Escalation (3% for 3 years)				\$ 12,100.00	
Estimate to Mid-Construction Year (2023)				\$ 142,900.00	Estimate to Mid-Construction Year (2023)
Contingency (25%)				\$ 35,700.00	
Total estimate For Construction				\$ 178,600.00	Total estimate For Construction
Professional Fees					
Construction Inspection (12% Construction Cost)	1	LS	\$ 21,400.00	\$ 21,400.00	
Survey (2% of Pay Items)	1	LS		\$ -	
Construction Management (5% of Construction)	1	LS	\$ 8,900.00	\$ 8,900.00	
Utility Relocation					
Utility Relocation Allowance (5% of Construction)	1	LS	\$ 8,900.00	\$ 8,900.00	
Right-of-Way					
ROW Acquisition, includes legal fees	1	LS		\$ -	
ESTIMATED SEGMENT G TOTAL COST				\$ 217,800.00	

H: Beatty Rd. Sidepath/Chesley Office Campus Trail, Nether Providence Township

<u>Item</u>	<u>QTY</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>EXTENDED COST</u>	<u>Notes</u>
Site Preparation/Demolition					
Concrete Demolition		CY	\$ 84.00	\$ -	
Curb Demolition		If	\$ 4.90	\$ -	
Clearing and Grubbing	37800	SF	\$ 0.50	\$ 18,900.00	
Erosion and Sedimentation Controls					
Inlet Protection		EA		\$ -	
Silt Sock		LF	\$ 6.00	\$ -	
Earthwork					
Excavation	874.07	CY	\$ 56.00	\$ 48,900.00	12" Depth for Trail
Utilities					
Masonry					
Concrete					
Asphalt Paving					
10' Wide Bituminous Concrete Trail	2778	SY	\$ 30.00	\$ 83,300.00	6" 2A Base, 4" Binder, 2" Wearing
Pavement Markings					
DWS -cast Iron	52	SF	\$ 35.00	\$ 1,800.00	ECMS 2695
Landscape					
Fine Grading/Seeding	15800	SF	\$ 0.50	\$ 7,900.00	Assumes 10' on Either side of Trail
Fencing	1800.00	LF	\$ 25.00	\$ 45,000.00	Post and Rail with wire Mesh 4' H
				\$ 205,800.00	Subtotal Known Items
Miscellaneous Construction Items					
Signage and Pavement Markings (3% of known Items)	1	LS	\$ 6,200.00	\$ 6,200.00	
Drainage (15% of known items)	1	LS	\$ 30,900.00	\$ 30,900.00	
Equipment Package	1	LS	\$ 5,000.00	\$ 5,000.00	
				\$ 42,100.00	Subtotal Miscellaneous Items
				\$ 247,900.00	Subtotal Pay Items

Appendix A: Cost Estimate Details for each trail segment

H: Beatty Rd. Sidepath/Chesley Office Campus Trail, Nether Providence Township (continued)

<u>Item</u>	<u>QTY</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>EXTENDED COST</u>	<u>Notes</u>
Other Items					
Wayfinding	1	LS	\$ 18,700.00	\$ 18,700.00	
Mobilization (4%)	1	LS	\$ 9,900.00	\$ 9,900.00	
Maintenance and Protection of Traffic (6%)	1	LS	\$ 14,900.00	\$ 14,900.00	
Erosion & Sedimentation Control	1	LS	\$ 14,500.00	\$ 14,500.00	
Construction Survey and Stakeout (3%)	1	LS	\$ 7,400.00	\$ 7,400.00	
				\$ 65,400.00	Subtotal other Items
				\$ 313,300.00	Subtotal Pay and Other Items
Escalation (3% for 3 years)				\$ 29,100.00	
Estimate to Mid-Construction Year (2023)				\$ 342,400.00	Estimate to Mid-Construction Year (2023)
Contingency (25%)				\$ 85,600.00	
Total estimate For Construction				\$ 428,000.00	Total estimate For Construction
Professional Fees					
Construction Inspection (12% Construction Cost)	1	LS	\$ 51,400.00	\$ 51,400.00	
Survey (2% of Pay Items)	1	LS		\$ -	
Construction Management (5% of Construction)	1	LS	\$ 21,400.00	\$ 21,400.00	
Utility Relocation					
Utility Relocation Allowance (5% of Construction)	1	LS	\$ 21,400.00	\$ 21,400.00	
Right-of-Way					
ROW Acquisition, includes legal fees	1	LS		\$ -	
ESTIMATED SEGMENT H TOTAL COST				\$ 522,200.00	

I: Smedley Park Pine Ridge Multi-Use Trail, Delaware County

<u>Item</u>	<u>QTY</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>EXTENDED COST</u>		<u>Notes</u>
Site Preparation/Demolition						
Type 1B Excavation	6.25	CY	\$ 125.00	\$	800.00	includes removal - existing Concrete sidewalk, assumes 9" depth
Curb Demolition	35	lf	\$ 4.90	\$	200.00	Per RS Means
Clearing and Grubbing	87000	SF	\$ 0.50	\$	43,500.00	Assumes clearing 40' wide corridor of grading and earthmoving
Tree Clearing, up to 400 trees per acre	2	acre	\$ 9,571.00	\$	19,100.00	Per RS Means
Earthwork						
Miscellaneous earthmoving	1	LS	\$ 100,000.00	\$	100,000.00	Assumed earthmoving, cannot be determined without topographic survey
Excavation	2420.00	CY	\$ 56.00	\$	135,500.00	12" Depth for Trail
Utilities						
Masonry						
Concrete						
Concrete Sidewalk	10.0	SY	\$ 125.00	\$	1,300.00	
Plain Cement Concrete Curb	50.0	LF	\$ 60.00	\$	3,000.00	for median extension on Pine Ridge Rd.
Asphalt Paving						
10' Wide Bituminous Concrete Trail	2420	SY	\$ 30.00	\$	72,600.00	6" 2A Base, 4" Binder, 2" Wearing
Pavement Markings						
High Visibility Continental Crosswalk						
2' Wide White Thermoplastic Striping	80	LF	\$ 15.00	\$	1,200.00	
Flexible Delineator		EA	\$ 73.00			
DWS -cast Iron	64	SF	\$ 80.00	\$	5,100.00	ECMS 2695
Thermoplastic Paving Treatments	420	SF	\$ 20.00	\$	8,400.00	Cycle track markings, Decorative Brick Style treatment, Median gaps and traffic calming items
Landscape						
Fine Grading/Seeding	65200	SF	\$ 0.50	\$	32,600.00	Assumes 10' on Either side of Trail
Topsoil		CY	\$ 60.00	\$	-	
Fencing		LF	\$ 25.00	\$	-	Post and Rail with wire Mesh 4' H
				\$	423,300.00	Subtotal Known Items

Appendix A: Cost Estimate Details for each trail segment

I: Smedley Park Pine Ridge Multi-Use Trail, Delaware County (continued)

<u>Item</u>	<u>QTY</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>EXTENDED COST</u>	<u>Notes</u>
Miscellaneous Construction Items					
Signage and Pavement Markings (3% of known Items)	1	LS	\$ 12,700.00	\$ 12,700.00	
Drainage (15% of known items)	1	LS	\$ 63,500.00	\$ 63,500.00	
Construction Trailer	1	LS	\$ 20,000.00	\$ 20,000.00	
Equipment Package	1	LS	\$ 5,000.00	\$ 5,000.00	
				\$ 101,200.00	Subtotal Miscellaneous Items
Subtotal Pay Items				\$ 524,500.00	Subtotal Pay Items
Other Items					
Wayfinding	1	LS	\$ 17,000.00	\$ 17,000.00	
Mobilization (4%)	1	LS	\$ 21,000.00	\$ 21,000.00	
Maintenance and Protection of Traffic (6%)	1	LS	\$ 31,500.00	\$ 31,500.00	
Erosion & Sedimentation Control (3%)	1	LS	\$ 15,700.00	\$ 15,700.00	
Construction Survey and Stakeout (3%)	1	LS	\$ 15,700.00	\$ 15,700.00	
				\$ 100,900.00	Subtotal other Items
				\$ 625,400.00	Subtotal Pay and Other Items
Escalation (3% for 3 years)				\$ 58,000.00	
Estimate to Mid-Construction Year (2023)				\$ 683,400.00	
Contingency (25%)				\$ 170,850.00	
Total estimate For Construction				\$ 854,250.00	
Professional Fees					
Construction Inspection (12% Construction Cost)	1	LS	\$ 102,500.00	\$ 102,500.00	
Survey (2% of Pay Items)	1	LS		\$ -	
Environmental (3% of Construction)	1	LS		\$ -	
Construction Management (5% of Construction)	1	LS	\$ 42,700.00	\$ 42,700.00	
Utility Relocation					
Utility Relocation Allowance (5% of Construction)	1	LS	\$ 42,700.00	\$ 42,700.00	
ESTIMATED SEGMENT I TOTAL COST				\$ 1,042,150.00	

J: Smedley Park Multi-use Loop - South Side, Delaware County

Item	QTY	Unit	Unit Cost	EXTENDED COST	Notes
Site Preparation/Demolition					
Clearing And Grubbing	70132	SF	\$ 0.50	\$ 35,100.00	Assumes clearing 40' wide corridor for grading and earthmoving
Tree Clearing, up to 400 trees per acre	1.61	acre	\$ 9,571.00	\$ 15,400.00	Per RS Means
Earthwork					
Miscellaneous earthmoving	1	LS	\$ 100,000.00	\$ 100,000.00	Assumed earthmoving, cannot be determined without topographic survey
Excavation for trail	470.00	CY	\$ 56.00	\$ 26,300.00	12" Depth for Trail
Masonry					
Asphalt Paving					
10' Wide Bituminous Concrete Trail	1411	SY	\$ 30.00	\$ 42,300.00	6" 2A Base, 4" Binder, 2" Wearing
Landscape					
Fine Grading/Seeding	25400	SF	\$ 0.50	\$ 12,700.00	Assumes 10' on Either side of Trail
Fencing	610.00	LF	\$ 25.00	\$ 15,300.00	Post and Rail with wire Mesh 4' H- under I-476
				\$ 247,100.00	Subtotal Known Items
Miscellaneous Construction Items					
Signage and Pavement Markings (3% of known Items)	1	LS	\$ 7,400.00	\$ 7,400.00	
Drainage (15% of known items)	1	LS	\$ 37,100.00	\$ 37,100.00	
Construction Trailer	1	LS	\$ 20,000.00	\$ 20,000.00	
Equipment Package	1	LS	\$ 5,000.00	\$ 5,000.00	
				\$ 69,500.00	Subtotal Miscellaneous Items
Subtotal Pay Items				\$ 316,600.00	Subtotal Pay Items

Appendix A: Cost Estimate Details for each trail segment

J: Smedley Park Multi-use Loop - South Side, Delaware County (continued)

<u>Item</u>	<u>QTY</u>	<u>Unit</u>	<u>Unit Cost</u>	<u>EXTENDED COST</u>	<u>Notes</u>
Other Items					
Wayfinding	1	LS	\$ 13,600.00	\$ 13,600.00	
Mobilization (4%)	1	LS	\$ 12,700.00	\$ 12,700.00	
Maintenance and Protection of Traffic (6%)	1	LS	\$ 19,000.00	\$ 19,000.00	
Erosion & Sedimentation Control (3%)	1	LS	\$ 9,500.00	\$ 9,500.00	
Construction Survey and Stakeout (3%)	1	LS	\$ 9,500.00	\$ 9,500.00	
				\$ 64,300.00	Subtotal other Items
				\$ 380,900.00	Subtotal Pay and Other Items
Escalation (3% for 3 years)				\$ 35,300.00	
Estimate to Mid-Construction Year (2023)				\$ 416,200.00	Estimate to Mid-Construction Year (2023)
Contingency (25%)				\$ 104,100.00	
Total estimate For Construction				\$ 520,300.00	Total estimate For Construction
Professional Fees					
Construction Inspection (12% Construction Cost)	1	LS	\$ 62,400.00	\$ 62,400.00	
Construction Management (5% of Construction)	1	LS	\$ 26,000.00	\$ 26,000.00	
Utility Relocation					
Utility Relocation Allowance (5% of Construction)	1	LS	\$ 26,000.00	\$ 26,000.00	
ESTIMATED SEGMENT J TOTAL COST				\$ 634,700.00	

K: Smedley Park Multi-use Loop - North Side, Delaware County

Item	QTY	Unit	Unit Cost	EXTENDED COST	Notes
Site Preparation/Demolition					
Clearing and Grubbing	17860	SF	\$ 0.50	\$ 8,900.00	Assumes clearing 40' wide corridor for grading and earthmoving
Tree Clearing, up to 400 trees per acre	0.2	acre	\$ 9,571.00	\$ 1,900.00	Per RS Means
Erosion and Sedimentation Controls					
Inlet Protection		EA			
Silt Sock	2020	LF	\$ 6.00	\$ 12,100.00	Assumes 12" compost filter sock
Earthwork					
Excavation	561.89	CY	\$ 56.00	\$ 31,500.00	12" Depth for Trail
Utilities					
Miscellaneous earthmoving	1	LS	\$ 100,000.00	\$ 100,000.00	Assumed earthmoving, cannot be determined without topographic survey
Masonry					
Concrete					
Asphalt Paving					
10' Wide Bituminous Concrete Trail	1930	SY	\$ 30.00	\$ 57,900.00	6" 2A Base, 4" Binder, 2" Wearing
Landscape					
Fine Grading/Seeding	35210	SF	\$ 0.50	\$ 17,600.00	Assumes 10' on Either side of Trail, 15' in wooded areas
Fencing	200.00	LF	\$ 25.00	\$ 5,000.00	Post and Rail with wire Mesh 4' H
Miscellaneous Structures					
Upgrades to existing Trolley underpass bridge	1.00	LS	\$ 80,000.00	\$ 80,000.00	estimation, requires structural inspection and design
				\$ 314,900.00	Subtotal Known Items
Miscellaneous Construction Items					
Signage and Pavement Markings (3% of known Items)	1	LS	\$ 9,400.00	\$ 9,400.00	
Drainage (15% of known items)	1	LS	\$ 47,200.00	\$ 47,200.00	
Construction Trailer	1	LS	\$ 20,000.00	\$ 20,000.00	
Equipment Package	1	LS	\$ 5,000.00	\$ 5,000.00	
				\$ 81,600.00	Subtotal Miscellaneous Items
Subtotal Pay Items				\$ 396,500.00	Subtotal Pay Items

Appendix A: Cost Estimate Details for each trail segment

K: Smedley Park Multi-use Loop - North Side, Delaware County (continued)

Item	QTY	Unit	Unit Cost	EXTENDED COST	Notes
Other Items					
Wayfinding	1	LS	\$ 11,900.00	\$ 11,900.00	
Mobilization (4%)	1	LS	\$ 15,900.00	\$ 15,900.00	
Maintenance and Protection of Traffic (6%)	1	LS	\$ 23,800.00	\$ 23,800.00	
Erosion & Sedimentation Control (3%)	1	LS	\$ 11,900.00	\$ 11,900.00	
Construction Survey and Stakeout (3%)	1	LS	\$ 11,900.00	\$ 11,900.00	
				\$ 75,400.00	Subtotal other Items
				\$ 471,900.00	Subtotal Pay and Other Items
Escalation (3% for 3 years)				\$ 43,800.00	
Estimate to Mid-Construction Year (2023)				\$ 515,700.00	Estimate to Mid-Construction Year (2023)
Contingency (25%)				\$ 128,900.00	
Total estimate For Construction				\$ 644,600.00	Total estimate For Construction
Professional Fees					
Construction Inspection (12% Construction Cost)	1	LS	\$ 77,400.00	\$ 77,400.00	
Survey (2% of Pay Items)	1	LS		\$ -	
Environmental (3% of Construction)	1	LS		\$ -	
Construction Management (5% of Construction)	1	LS	\$ 32,200.00	\$ 32,200.00	
Utility Relocation					
Utility Relocation Allowance (5% of Construction)	1	LS	\$ 32,200.00	\$ 32,200.00	
ESTIMATED SEGMENT K TOTAL COST				\$ 786,400.00	

Appendix B: Trail Alternative Route Segments Key

TABLE B: ALTERNATIVE ROUTE SEGMENTS

Alternatives for Analysis ID	Recommended Route for Trail?	Final Proposed Trail Segment ID	Municipality	Location Description
Panel A: Ridley Creek Road to Media Borough - West Street/Lemon Street (Upper Providence Township/Media Borough)				
A1	YES	A	Upper Providence	From Scott Park parking lot/trailhead, along Ridley Creek Rd to Marcella Ln intersection sidepath in Scott Park
A2	NO		Upper Providence	Marcella Ln and Diemer Dr (residential streets), Kirk Ln to Glen Providence Park entrance. Crossing of Ridley Creek Rd at Marcella Ln
A3	NO		Upper Providence	Third St, from Kirk Ln to bridge/dam (currently out) near West St
A4	NO		Upper Providence	Through Glen Providence Park, Kirk Ln to Third St
A5	NO		Upper Providence	Kirk Ln, connecting Third St, Glen Providence Park entrance to Ridley Creek Rd
A6	YES	B	Middletown, Upper Prov.	Baltimore Pk, Memorial Park parking lot to Ridley Creek Rd
A7	YES	B	Upper Providence, Media	Along Baltimore Ave, from Ridley Creek Rd intersection to State St/Baltimore Ave intersection
A8	YES (part)	C	Media	On-road along State St and West St, around Glen Providence Park. (West Street portion not in recommended route.)
A9	NO		Upper Providence	Through Glen Providence Park, via the "Mountain Laurel Trail" and continuing to Ridley Creek Rd (right-of-way not secured for the entire distance)
A10	NO		Media	Through Glen Providence Park, from the Third and West Streets entrance, roughly via the northern part of the "Ice House Trail"
A11	NO		Upper Providence, Media	Through Glen Providence Park, roughly via the southern part of the "Ice House Trail" and the "1941 Trail"
A12	NO		Upper Providence, Media	A new trail bridge over Broomalls Run within Glen Providence Park (by-passes bridge on Third Street)
A13	NO		Media	Through Glen Providence Park, from pond to State St overlook, passing by performance stage
A14	YES	A	Media	State St, From Baltimore Pike intersection to Glen Providence Park overlook entrance
A15	YES	A	Upper Providence	Sidepath of Ridley Creek Rd along Scott Park perimeter, between Marcella Ln and Kirk Ln
A16	YES	A	Upper Providence	Sidepath of Ridley Creek Rd along Scott Park perimeter, between Kirk Ln and Ridley Creek Road
Panel B: Media Borough Street Network				
B1	NO		Media	Fifth St, with parts of Third St and Lemon St
B2	NO		Media	Fourth St, with parts of Third Stand Lemon St
B3	NO		Media	Third St from Lemon St or Glen Providence Park/re-built Bridge east to Jackson St
B4	NO		Media	Using Providence Rd/Rt 252 to connect B1, B2, or B3 to Section C
B5	NO		Media	Along the south side of Baltimore Ave from West End gateway to Lemon Street
B6	NO		Media, Nether Prov.	Jefferson Street, via Lemon Street, Beatty Road, and a Baltimore Pike sidepath into Chesley office campus
B7	YES	D, E	Media	Front St, from Lemon St to Haldeman St
B8	YES	D, E	Media	Second St from Front Street to Edgmont St, via Olive St
B9	YES	E	Media	Second St and Haldeman St from Edgmont St to to State St
B10	YES	F, E, G	Media	Providence Rd connection to Front Street and Mulberry Ln
B11	YES (part)	C	Media	Lemon St from Third St to State St. (Recommended route includes only Lemon St between Front St and State St)

Appendix B: Trail Alternative Route Segments Key

B12	YES	C	Media	State St, from West St to Lemon St
B13	NO		Media	Baker St, from W. State St to Lemon St
B14	NO		Media	Lemon St, from Baker St to crossing of Baltimore Pk
B15	NO		Media	Lemon St, from State St to Baker St
B16	NO		Media	Second St, from Edgmt St west to Jackson St, & Jackson St north to connect to Third St
B17	NO		Media	Second, Orange, Third, and Olive Sts, going behind the County Gov. Ctr., between Lemon and Second Sts.
Panel C: Providence Road to Pine Ridge Road (Media Borough/Nether Providence Township)				
C1	NO		Nether Prov., Media	Behind the Media Shopping Center (Acme), sharing its delivery lane
C2	YES	G	Nether Prov., Media	Surrey Rd, along with parts of Mulberry Ln and Beatty Rd
C3	NO (except as interim)		Nether Providence	Chesley Office Campus, primarily on internal roadways
C4	YES	H	Nether Providence	Chesley Office Campus, routing trail behind buildings and parking lots
C5	NO		Nether Providence	Surrey Ln and Beechwood Rd with parts of Beatty Rd and Pine Ridge Rd
C6	NO		Nether Prov., Media	Around the south side of the Media Shopping Center, along Providence Rd, Baltimore Ave, and Beatty Rd
Panel D: Smedley County Park (Nether Providence/Springfield Township)				
D1	YES	I	Nether Providence	Trail mainly - but not exactly - following the existing SEPTA Media Trolley line-parallel hiking path to a point near overpass of Interstate 476. (West end near Pine Ridge Rd may be sited away from Trolley trail path for best route.)
D2	NO		Nether Providence	North-south trail parallel to southbound I-476 along its west side within Smedley Park
D3	NO		Nether Providence	Following alongside Baltimore Pk from the west side of Smedley Park to the east side, over I-476 ramps and under the highway until connecting with existing Leiper-Smedley Trail within the park
D4	YES	K	Nether Providence	Use an existing culvert and its interior bridge to pass under the SEPTA Media Trolley then under the I-476 overpass, and continue east on an existing hiking path along a small stream until joining an existing footbridge.
D5	YES	J	Nether Providence	Take the trail under I-476 through woods to pavilion and parking lot at Lewis House (Penn State Extension).
D6	NO*		Springfield, Nether Prov.	Trail from existing bridge over Pine Ridge Run to another existing bridge over Crum Creek. Connect trail through playground area to parking area at Papermill Rd across from SEPTA Media Trolley stop. *Future connection to Papermill parking/trolley stop may be explored outside of this study.
D7	YES	K	Nether Providence	Connect Trail from existing bridge over Crum Creek southward along the creek, under the SEPTA trolley overpass, and connecting to the southernmost parking lot in Smedley Park.
D8	NO		Nether Providence	Trail mainly following the existing Baltimore Pk-parallel hiking path in Smedley Park (currently used heavily by mountain bikers)
D9	YES	K	Springfield, Nether Prov.	Connect southernmost parking lot on Papermill Rd within Smedley Park with the Lewis House/Environmental Center buildings via the south lawn near Baltimore Pk.
D10	NO		Nether Providence	Trail mainly following the existing SEPTA Media Trolley line-parallel hiking path, but veering closer to the middle of the park and Baltimore Pk than D1, avoiding existing mountain bike trails, for the most part.
D11	NO*		Nether Providence	Trail on the south lawn of Smedley Park near Baltimore Pk, making a connection to D3 and the Leiper-Smedley Trail, *Future study/project for trail here is recommended. As D3 is not a chosen alternative, then D11 is outside the scope/goals of this particular study.

Appendix C: Feasibility Matrix

Table data compiled by: Traffic Planning and Design, Inc.

Segment ID	Location	Proposed Facility Type	Meets Circuit Multi-use Trail Design Standard?	Engineering Feasibility	Environmental Impact and Permitting Requirements	Roadway and Railroad Crossings
A1	Scott Park west side of Ridley Creek Rd	Shared Use Path	Yes	Few Challenges, significant vegetation, clearing required.	Few Challenges	None
A2	Through residential Subdivision	On-Road facility (sharrow)	No	Few Challenges, community was designed for future multi-use path, slopes in excess of 15%	Few Challenges, HOPs	Requires crossing Ridley Creek Road and Kirk Lane, both PennDOT roads
A3	3rd ST, from Kirk Ln to West ST	On-Road facility (sharrow, or side path)	No	Narrow roadway, not feasible without bridge structure to traverse stream leading from Broomall's Lake, slopes exceeding 30% on West 3rd St.	Stream Crossing	On-road, minimal ROW
A4	Glen Providence Park	Shared Use Path	Yes	Steep Slopes, significant clearing and grading	May Require NPDES (greater than one acre), potential public opposition to significant construction activities, historic impacts.	None
A5	Kirk Lane	On-Road facility (sharrow)	No	On-road, narrow roadway, infeasible without significant improvements, slopes in excess of 30%	HOP	Requires crossing Ridley Creek Road, on-road W/ minimal ROW
A6	Baltimore Ave - Ridley Creek Rd to Memorial Park	Sidepath	Yes	Requires redesign of Baltimore Ave, running slope over 15%	HOP	Crosses Ridley Creek Road
A7	Baltimore Ave - Ridley Creek Rd to State St	Sidepath	Yes	Some driveways, Sidepath Construction, impacts existing commercial parking, slopes in excess of 15%	HOP	No crossings, multiple driveways

Key: Favorable attribute Significant constraint/issue

Appendix C: Feasibility Matrix

Segment ID	Location	Proposed Facility Type	Meets Circuit Multi-use Trail Design Standard?	Engineering Feasibility	Environmental Impact and Permitting Requirements	Roadway and Railroad Crossings
A8	West/State - 3rd St to Baker St	On-Road facility (sharrow)	No	On-road, vertical curve sight distance, intermittent sidewalks, requires additional sidewalk construction, slopes in excess of 20%	No permits anticipated	On-road. Several driveways, may require 3 way stop at Front St
A9	Interior GP Park to Ridley Creek Rd	Shared Use Path	Yes	Mitigate steep slopes, significant vegetation, clearing required., steep slopes in excess of 30%	Along creek, requires environmental permits	Challenging slopes
A10	Through Glen Providence Park, from the Third and West Streets entrance, roughly via the northern part of the "Ice House Trail"	Shared Use Path	Yes	Steep Slopes, significant vegetation and clearing	Along creek, requires environmental permits	Minimal
A11	Through Glen Providence Park, roughly via the southern part of the "Ice House Trail" and the "1941 Trail"	Shared Use Path	Yes	Steep Slopes, significant vegetation and clearing	Along creek, requires environmental permits	None
A12	Bridge over Broomalls Run within Glen Providence Park	Shared Use Path Bridge	Yes	Requires new bridge	Environmental permits, along stream bed	None
A13	Through Glen Providence Park, from pond to State St overlook, passing by stage	Shared Use Path	Yes	Steep slopes	Possible environmental permits needed	None
A14	State St, From Baltimore Ave intersection to Glen Providence Park overlook entrance	Sharrow	No	On-road, some driveways, slopes in excess of 15%	HOP	No crossings, multiple driveways
A15	Sidpath of Ridley Creek Rd along Scott Park perimeter, between Marcella Ln and Kirk Ln	Sidpath	Yes	Significant vegetation clearing required, potential utility pole relocation, guardrail, possible steep drop off	Possible environmental permits needed	None
A16	Southern part of paved sidpath within Scott Park	Sidpath	Yes	Significant vegetation clearing required, potential utility pole relocation	Possible environmental permits needed	None

Key: Favorable attribute Significant constraint/issue

Segment ID	ADA Requirements	Structural Requirements	Legal Feasibility	Cost (Relative)	Cost Factors/ Considerations
A1	Minimal Slope or other challenges	None required	None	Low	
A2	On-road, minimal challenges	None required	Need support from community	Medium	Two road crossings
A3	On-road, steep slope	Bridge Required	Need support from community	High	
A4	Steep Slopes require numerous switchbacks, and rest areas on trail.	One Stream Crossing	No Issues, within park (deed restrictions?)	High	Steep Slopes, bridge, retaining walls
A5	Narrow Roadway, no additional ROW for sidepath	Retaining walls/steep slope stabilization	Need support from community, ROW acquisition.	High	Requires on-road facilities, road crossing
A6	Roadway Crossing requires ADA treatment, possible hand/man	None required	Moderate	High	On-road facilities and road crossing treatment
A7	Requires construction of sidepath and commercial driveway crossings	None required	On-road, driveway crossings, needs HOP with PennDOT	Medium	On-road treatment, driveways
A8	Steep Slopes	None required	No Major Issues	Medium	On-road facilities and navigating multiple driveways, Moderate
A9	Major slopes, challenging for ADA	Small structures for stream	Incredibly challenging, requires purchasing residential homes or access easement	Very High	Requires residential home purchase
A10	Steep Slopes	None required	No Issues, within park (deed restrictions?)	Medium	Steep slopes and vegetation
A11	Steep Slopes	None required	No Issues, within park (deed restrictions?)	Medium	Steep slopes and vegetation
A12	Potentially could be designed to be ADA-compliant		No major issues	High	New structure
A13	Steep slopes	None	No major issues	Medium	Steep slopes
A14	Requires on-road treatment, upgraded sidewalks	None required	On-road, driveway crossings, needs HOP with PennDOT	Low	On-road treatment, driveways
A15		Possible structure required where existing guardrail is	No major issues	Medium	vegetation clearing, possible slope mitigation
A16			No major issues	Medium	vegetation clearing
Key:		Favorable attribute	Significant constraint/issue		

Appendix C: Feasibility Matrix

Segment ID	Location	Proposed Facility Type	Meets Circuit Multi-use Trail Design Standard?	Engineering Feasibility	Environmental Impact and Permitting Requirements	Roadway and Railroad Crossings
B1	Fifth St, with parts of Third St and Lemon St	On-Road facility (sharrow)	No	On-road, minimal, Lemon St. is narrow, slopes in excess of 20%, 300 block of 5th has no sidewalk facilities	uses local roads	on-road facilities, multiple intersections
B2	Fifth St, with parts of Third St and Lemon St	On-Road facility (sharrow)	No	On-road, minimal	uses local roads	on-road facilities, multiple intersections
B3	Third St from Lemon St or Glen Providence Park/re-built Bridge east to Jackson St	On-Road facility (sharrow)	No	On-road, minimal, one-way conditions would lead to contra-flow of modes, steep slope west of Orange Street	uses local roads	on-road facilities, multiple intersections
B4	Providence Rd (SR252)	Sidepath on west or east side of Providence (State Street to Third)	Yes	Very constrained due to walls and limited setbacks. Requires shared use path, HOP	Shared use path along east side of Providence Rd, HOP for crossing on Providence	Requires crossing Providence Ave
B5	Sidepath along the south side of Baltimore Ave from West End gateway to Lemon Street	Sidepath	Yes	Retro-fit/replace sidewalk along south side of Baltimore Ave; reconfigure center turn lane	HOP	Some driveway modifications needed
B6	Jefferson St, via Lemon St, Beatty Rd, and a Baltimore Pike sidepath into Chesley office campus	On-road facility, bicycle blvd, sidepath on far east end at Chesley Office campus	No	Requires reconfiguration of street design, greenway/bicycle blvd treatment, mini-circles along Jefferson, crosses Providence and Baltimore Ave on east side of Borough, crossings of Providence and Baltimore Aves.	uses local roads, HOP for state road crossings	Driveways and multiple intersections, crosses Baltimore and Providence Aves
B7	Front St, from Lemon St to Haldeman St	On-road facility, bike lane	No	Requires reconfiguration of parking, bike lane, other on-road treatments, reconfigure area in front of courthouse	uses local roads	Driveways and multiple intersections
B8	Second St from Front Street to Edgmont St, via Olive St	On-Road facility (sharrow)	No	On road facility with multiple driveways and on-street parking	uses local roads	Driveways and multiple intersections

Key: Favorable attribute Significant constraint/issue

Segment ID	Location	Proposed Facility Type	Meets Circuit Multi-use Trail Design Standard?	Engineering Feasibility	Environmental Impact and Permitting Requirements	Roadway and Railroad Crossings
B9	Second St and Haldeman St from Edgmont St to State St	On-Road facility (sharrow)	No	On road facility with multiple driveways and on-street parking	uses local roads	Driveways and multiple intersections
B10	Providence Rd connection to Mulberry Ln	On-Road facility (sharrow)	No	On road facility with driveways and on-street parking, Providence Ave crossing	uses local roads mostly, crosses Providence Ave	Driveways and intersections, Major crossing of Providence Ave
B11	Lemon St from Third St to State St	On-Road facility (sharrow)	No	On-road, vertical curve sight distance, intermittent sidewalks, requires additional sidewalk construction, slopes in excess of 20%, mitigates some of the slope in A8	HOP	Crosses multiple intersections
B12	State St, from West St to Lemon St	On-Road facility (sharrow)	No	On-road, on-street parking, steep slope	Uses local roads	requires intersection treatment
B13	Baker St, from W. State St to Lemon St	On-Road facility (sharrow)	No	On-road, on street parking, sharrows, narrow ROW	Uses local roads	requires intersection treatment
B14	Lemon St, from Baker St to crossing of Baltimore Pk	On-Road facility (sharrow)	No	On-road, on-street parking, moderate slope, unsignalized crossing of Baltimore Ave	Uses local roads	Crosses Baltimore Avenue at unsignalized intersection
B15	Lemon St, from State St to Baker St	On-Road facility (sharrow)	No	On-road, on-street parking, moderate slope	Uses local roads	requires intersection treatment
B16	Second St, from Edgmont St west to Jackson St, & Jackson St north to connect to Third St	On-Road facility (sharrow)	No	On-road, on street parking, two-way traffic, sharrows, narrow ROW on Second Street	Uses local roads	requires intersection treatment
B17	Second, Orange, Third, and Olive Sts, going around the rear of the County Government Center, between Lemon and Second St.	On-Road facility (sharrow)	No	On-road, on street parking, two-way traffic, sharrows, narrow ROW on some roadways	Uses local roads	requires intersection treatments

Key: Favorable attribute Significant constraint/issue

Appendix C: Feasibility Matrix

Segment ID	ADA Requirements	Structural Requirements	Legal Feasibility	Cost (Relative)	Cost Factors/ Considerations	Notes
B1	No major issues	None Required	No major issues	Low	Minimal on-road facilities needed	
B2	No major issues	None Required	No major issues	Low	Minimal on-road facilities needed	Existing low-street street with widest cartway, steep slope west of Orange
B3	No major issues	None Required	No major issues	Low	Minimal on-road facilities needed	
B4	Able to comply with ADA standards with crosswalk	Ped signal and ADA ramps	Requires coordination and permits with PennDOT	High	Sidepath on Providence, Crossing infrastructure for Providence	Need community buy-in
B5	Requires on-road treatment, upgraded sidewalks	None required	On-road, driveway crossings, needs HOP with PennDOT, needs support from property owners	High	Reconfiguring sidewalk/regrading/driveways	Reliant on Jefferson St Greenway/crossing of Providence Road
B6	On-road, ADA crossing of state roadways	None Required	HOP for crossing treatment at Providence and Baltimore	Medium-high	Crossing of Providence Ave as well Baltimore Ave requires crosswalk, PennDOT permitting	
B7	On-road, minimal challenges	None Required	No major issues	Medium	Loss of parking in areas, may conflict with bus activity during pick-up and drop-off	
B8	On-road, minimal challenges	None Required	No major issues	Low		
B9	On-road, minimal challenges	None Required	No major issues	Low		
B10	Providence Ave crossing	None Required		Medium-high	Crossing of Providence ave requires crosswalk, PennDOT permitting	
B11	Steep Slopes	None required	No major issues	Medium	On-road facilities and navigating multiple driveways, possible new sidewalk construction	
B12	Steep Slopes	None required	No major issues	Low		
B13	Slopes	None required	No major issues	Low		
B14	Slopes, unsignalized road crossing of Baltimore Ave	None required	HOP for crossing treatment at Baltimore Ave	Medium (if signalizing)	Crossing of Baltimore Ave is currently unsignalized	
B15	Slopes	None required	No major issues	Low		
B16		None required	No major issues	Low		
B17			No major issues	Low		

Key: Favorable attribute Significant constraint/issue

Segment ID	Location	Proposed Facility Type	Meets Circuit Multi-use Trail Design Standard?	Engineering Feasibility	Environmental Impact and Permitting Requirements	Roadway and Railroad Crossings
C1	Behind the Media Shopping Center (Acme), sharing its delivery lane	On-road facility (co-located on delivery access road)	No	Narrow area behind shopping center, slopes, parking spaces and guardrail, challenging	minimal requirements	None
C2	Surrey Rd, along with parts of Mulberry Ln and Beatty Rd	On-Road facility (sharrow)	No	Minimal, on-road through residential neighborhood	Minimal if any permits	Crossing at Beatty Road
C3	Chesley Office Complex	On-Road facility (sharrow)	No	Through Office Park mostly using existing roadway surfaces	Minimal if any permits	Crossing at Beatty Road
C4	Chesley Office Complex	Shared Use Path	Yes	Through Office Park however requires new paved surface in between buildings and trolley ROW	Minimal if any permits	Crossing at Beatty Road
C5	Surrey Ln and Beechwood Rd with parts of Beatty Rd and Pine Ridge Rd	On-Road facility (sharrow)	No	Uses mostly residential roads, trolley crossing and two roadway crossings; steep curves and in-direct alignment, slopes in excess of 30%, poor sight distance, no sidewalk facilities	Potential permits with SEPTA/PennDOT for crossings	Crosses trolley tracks, crosses Pine Ridge Road and Beatty Road
C6	In frontage of Acme and Shopping Center	Shared Use Path	Yes	Constrained frontage, esp. along Beatty Road and at Beatty Road/Balt. Ave intersection	Potential permits with SEPTA/PennDOT for crossings	Crosses trolley tracks and Acme shopping center access points

Key: Favorable attribute Significant constraint/issue

Appendix C: Feasibility Matrix

Segment ID	ADA Requirements	Structural Requirements	Legal Feasibility	Cost (Relative)	Cost Factors/ Considerations	Notes
C1	Mostly level but one steep area through parking spaces	None required	Challenging, narrow area behind shopping center, likely too narrow to accommodate any kind of trail, loss of parking spaces/loading/unloading areas	Medium	Some slope mitigation	Access easement for trail may be challenging, unsafe perception while behind the shopping building.
C2	On-road, mostly level	None required	No major issues, need residents approval	Low	Minimal on-road facilities needed	Majority of alignment missing sidewalk
C3	On-road, mostly level	None required	No major issues, need approval of business/office park	Low	Minimal on-road facilities needed	Access easement for facility may be challenging, but path through business park will be amenity for tenants.
C4	No major issues, mostly level	None required	No major issues, need approval of business/office park	Medium	Some new paving required	Access easement for facility may be challenging, but path through business park will be amenity for tenants.
C5	Mostly on-road, crossings need to be ADA	None required	No major issues, need residents approval, and approval of PennDOT/SEPTA	Medium	Crossings and ADA, otherwise on-road facility	
C6	Able to comply with ADA standards	None required	Requires shopping center cooperation/ROW	Medium-high	Frontage/landscaping/retaining walls needed	Crosses multiple busy entrances to shopping center

Key: Favorable attribute Significant constraint/issue

Segment ID	Location	Proposed Facility Type	Meets Circuit Multi-use Trail Design Standard?	Engineering Feasibility	Environmental Impact and Permitting Requirements	Roadway and Railroad Crossings
D1	Trail mainly following the existing SEPTA Media Trolley line-parallel hiking path to a point near overpass of Interstate 476	Shared Use Path	Yes	Steep slopes, existing footpath south of the stream, slopes in excess of 40%	Environmental permits, along stream bed	Road crossing at Pine Ridge Road
D2	Smedley Park West of I-476, running adjacent to 476..	Shared Use Path	Yes	slopes in excess of 40%, significant highway noise from I-476.	Possible environmental permits needed	None
D3	Smedley Park West of I-476, North of Baltimore Pike, grade crossing.	Mostly on-road facility	Yes	On-road, crosses major interchange, very high-stress condition	PennDOT Permits required	Crosses I476 interchange at-grade
D4	Under, trolley line and I-476, connects to D6.	Shared Use Path	Yes	Crosses under existing opening under 476, uses existing open grate bridge to cross trolley, slopes in excess of 20%, may require coordination with PennDOT and SEPTA	Near stream, environmental permitting required	All crossings already present
D5	Under I-476, connects to Delaware County Co-Op extension.	Shared Use Path	Yes	Crosses under existing opening under 476, uses existing walking paths, moderate slopes, slopes in excess of 20%	May require coordination with PennDOT	Utilizes existing crossings under 476, may require coordination with PennDOT

Key: Favorable Attribute Significant constraint/issue

Appendix C: Feasibility Matrix

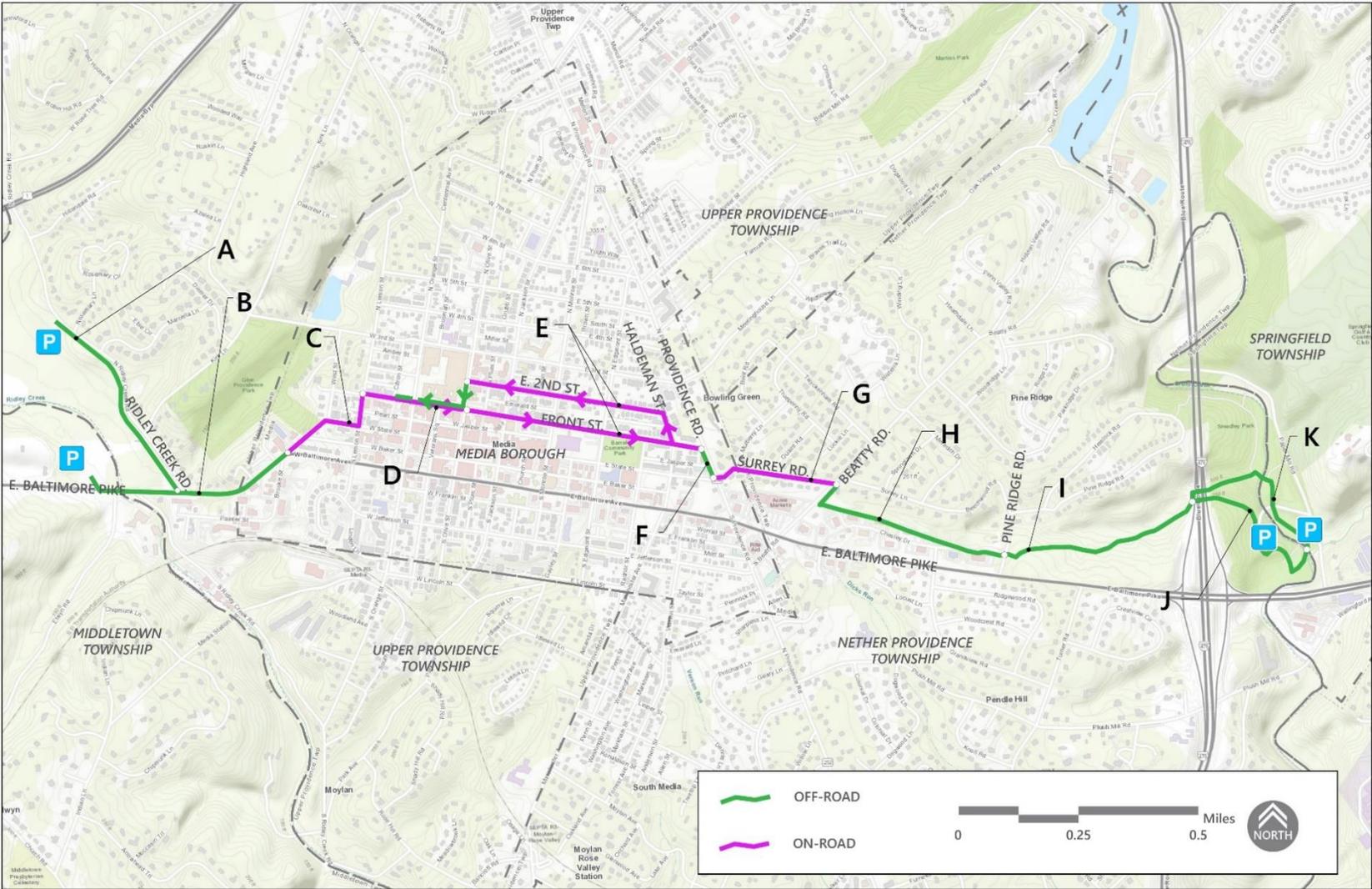
Segment ID	Location	Proposed Facility Type	Meets Circuit Multi-use Trail Design Standard?	Engineering Feasibility	Environmental Impact and Permitting Requirements	Roadway and Railroad Crossings
D6	trail from existing bridge over tributary stream to another existing bridge over Crum Creek. Connect trail through playground area to parking area at Papermill Rd across from SEPTA Media Trolley stop.	Shared Use Path	Yes	No major issues, crosses over existing open park land mostly, moderate slope mitigation, slopes in excess of 20%, should include safe crossing to connect to trolley stop	One stream crossing requiring permit	No crossings
D7	Connect Trail from existing bridge over Crum Creek southward along the creek, under the SEPTA trolley overpass, and connecting to the southernmost parking lot in Smedley Park.	Shared Use Path	Yes	Moderate slopes, slopes in excess of 20%	No major issues	Crosses under existing opening under trolley
D8	Trail mainly following the existing Baltimore Pk-parallel hiking path in Smedley Park (currently used heavily by mountain bikers)	Shared Use Path	Yes	Very steep slopes, slopes in excess of 40%	No major issues	Road crossing at Pine Ridge Road
D9	Connecting Southernmost parking lot on Papermill Rd within Smedley Park with the Lewis House/Environmental Center buildings via the south lawn near Baltimore Pk	Shared Use Path	Yes	Moderate slopes	Minor drainage improvements	None
D10	Smedley Park West of I-476, refined between D1 and D8	Shared Use Path	Yes	Steep slopes, along creek	At least one creek crossing, steep slope mitigation near stream	Road crossing at Pine Ridge Road

Key: Favorable attribute Significant constraint/issue

Appendix D: Map Panels for Proposed Trail Layout

Developed by: Traffic Planning and Design, Inc.

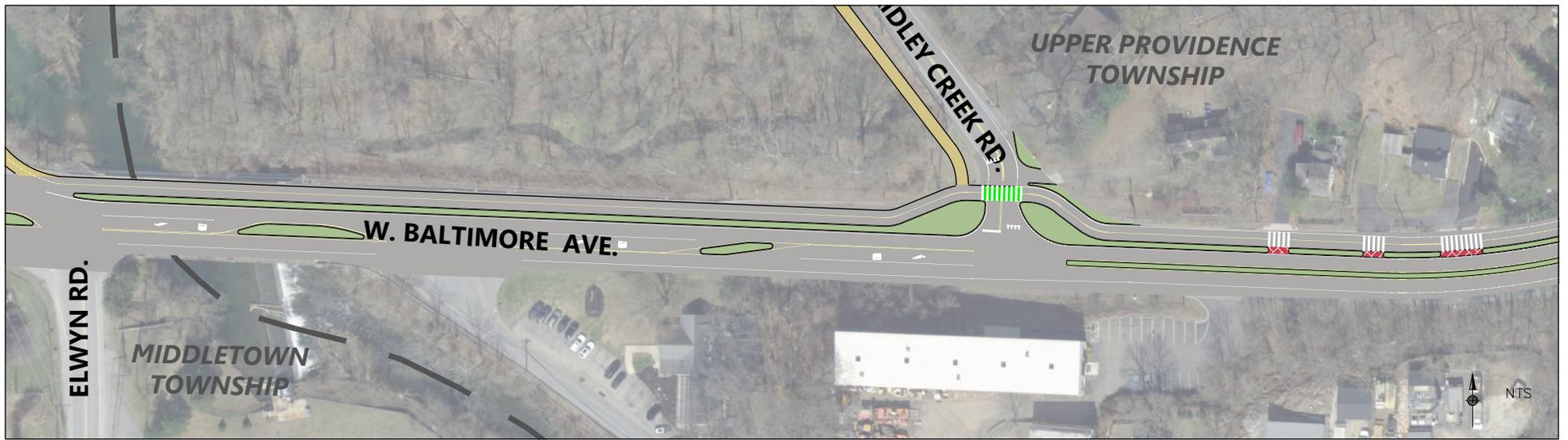
Map A-1: Overall Trail Segment Alignment Key





MEDIA-SMEDLEY CONNECTOR TRAIL CONCEPT

SEGMENTS A-C



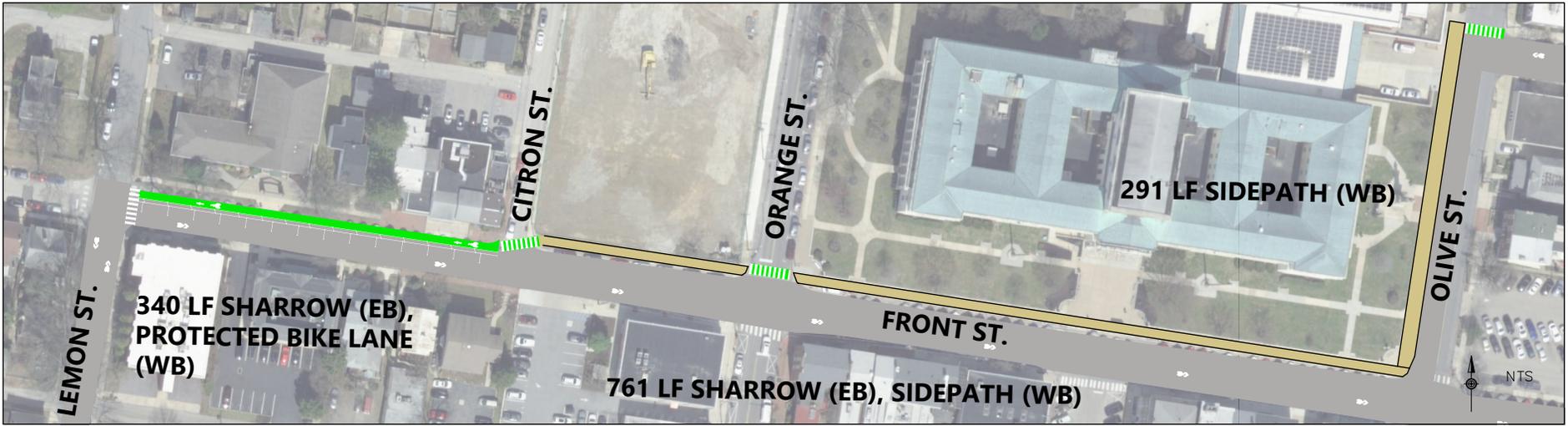
MEDIA-SMEDLEY CONNECTOR TRAIL CONCEPT

INSET - SEGMENT B



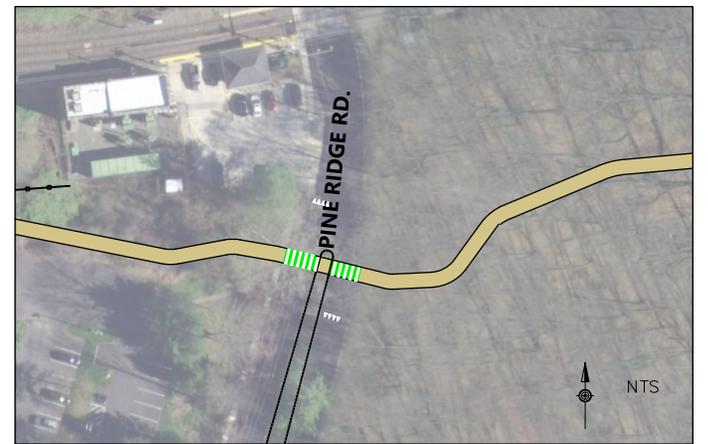
MEDIA-SMEDLEY CONNECTOR TRAIL CONCEPT

SEGMENTS D-F



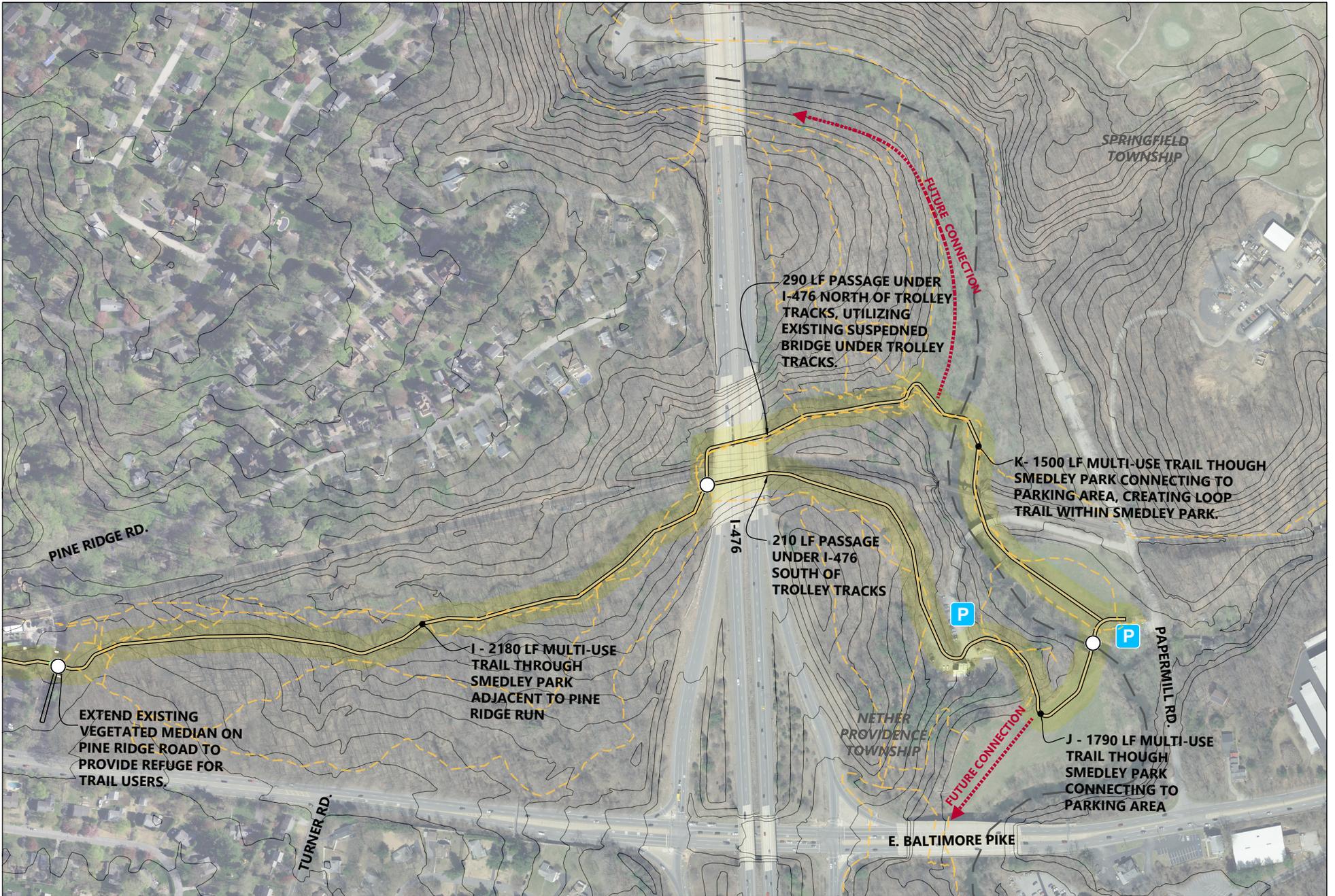
MEDIA-SMEDLEY CONNECTOR TRAIL CONCEPT

INSET - SEGMENT D & F



MEDIA-SMEDLEY CONNECTOR TRAIL CONCEPT

SEGMENTS G-H



MEDIA-SMEDLEY CONNECTOR TRAIL CONCEPT

SEGMENTS I-K

Appendix E: Important Properties Along Recommended Trail Alignment

The following properties are either a) adjacent to the trail and may be affected by implementation due to existing right-of-way enforcement (such as PennDOT road shoulder at front yards), b) may be contacted to negotiate further right-of-way acquisition to accommodate the trail, or c) are parcels of public parkland owned by municipalities or the County where the trail is proposed to be located.

Ref. #	Tax Map #	Folio #	Municipality	Trail Master Plan Segment	Land Use	Site Address	Description / Potential Trail Implications
1	27-23-001:000	27000006000	Middletown	B	Public Parkland	NW corner Baltimore Pk. and Ridley Creek	Owned by Media Borough, Leased to Aqua PA, sub-leased to Middletown Twp. for use as a park (Memorial Park). Part of Mineral Hill Area Master Plan area. One of western trailheads.
2	35-25-004:000	3500000199	Upper Providence	A, B	Public Parkland	NW corner Baltimore Pk. and Ridley Creek Rd.	Owned by Media Borough, Leased to Aqua PA, maintained by Upper Providence Twp. for use as a park. Part of Scott Park and the Mineral Hill Area Master Plan area. Potential perimeter trail and trailhead parking within park.
3	35-25-004:000	35000164700	Upper Providence	A (indirectly)	Public Parkland	1020 Ridley Creek Rd.	Owned by Upper Providence Twp. Part of Scott Park and the Mineral Hill Area Master Plan area. If Twp. develops a trail any further north than shown in this plan, it would go into this parcel.
4	35-25-025:000	35000000201	Upper Providence	B	Private Residential	699 W. Baltimore Ave.	Redesign of the Road ROW on adjacent Baltimore Pike may cause minor change to landscaped edge.
5	35-25-026:000	35000000200	Upper Providence	B	Private Residential	697 W. Baltimore Ave.	Redesign of the Road ROW on adjacent Baltimore Pike may cause minor change to landscaped edge.
6	35-25-028:000	35000000300	Upper Providence	B	Private Residential	695 Baltimore Ave.	Redesign of the Road ROW on adjacent Baltimore Pike may cause minor change to landscaped edge.
7	35-25-029:000	35000000400	Upper Providence	B	Private Residential	693 Baltimore Ave.	Redesign of the Road ROW on adjacent Baltimore Pike may cause minor change to landscaped edge.
8	35-25-033:000	35000245800	Upper Providence	B	Private Residential	2 West End Ave.	Redesign of the Road ROW on adjacent Baltimore Pike may cause minor change to landscaped edge.
9	35-25-031:000	35000245600	Upper Providence	B	Private Residential	3 West End Ave.	Redesign of the Road ROW on adjacent Baltimore Pike may cause minor change to landscaped edge.
10	26-03-002:000	26000179800	Upper Providence	B	Private Residential	659 Baltimore Ave.	Redesign of the Road ROW on adjacent Baltimore Pike may cause minor change to landscaped edge.
11	(no number on file)	(no number on file)	Upper Providence & Media	B	Private Residential/HoA	West End Walk (front of townhouse complex)	Redesign of the Road ROW on adjacent Baltimore Pike may cause minor change to landscaped edge.
12	26-03-005:000	26000179500	Media	B/C	Private Commercial	609 W. State St.	Proposed trail design transitions around this location from re-designed road to share-the-road. May or may not affect this property.
13	26-04-218:000	26000117500	Media	D	Public Government Building Grounds	NW corner of Front and Orange Sts.	Vacant County-owned property between Citron and Orange Streets could include off-road trail segment.
14	26-04-219:000	(no number on file)	Media	D	Public Government Building Grounds	201 W, Front St.	County Courthouse lawn and sidewalk. Recommended design requires usage of the edge of the lawn and part of the sidewalk for a bike path.

Appendix E: Important Properties Along Recommended Trail Alignment

15	26-05-209:000	26000132300	Media	F	Private Commercial	50 S. Providence Rd.	Redesign of the Road ROW on adjacent Providence Rd. for separated sidepath may cause change to landscaped edge of property.
16	26-05-224:000	26000170400	Media	F	Private Commercial	441 E. State St.	Redesign of the Road ROW on adjacent Providence Rd. for separated sidepath may cause change to landscaped edge of property.
17	34-04-030:000	34000013200	Nether Providence	H	Private Residential	100 Beatty Rd.	Recommended design would require easement for sidepath separated from Beatty Road.
18	34-04-115:000	34000072124	Nether Providence	H	Private Commercial	101 Chesley Dr. (vacant ground)	Chesley Office Campus proposed for shared-use path behind buildings. This property is the northwestern-most in the campus that would connect the trail to Beatty Rd.
19	34-04-116:000	34000072125	Nether Providence	H	Private Commercial	102 Chesley Dr.	Chesley Office Campus proposed for shared-use path behind buildings. This property is known as the "Jamestown Building."
20	34-04-117:000	34000072126	Nether Providence	H	Private Commercial	103 Chesley Dr.	Chesley Office Campus proposed for shared-use path behind buildings. This property is known as the "Lafayette Building."
21	34-05-260:000	34000072127	Nether Providence	H	Private Commercial	109 Chesley Dr.	Chesley Office Campus proposed for shared-use path behind buildings. This property is known as the "William Penn Building."
22	34-05-259:000	34000072128	Nether Providence	H	Private Commercial	110 Chesley Dr.	Chesley Office Campus potential use for shared-use path behind buildings. Contains commercial condo building known as the "Clusters Building."
23	34-05-258:000	34000072131	Nether Providence	H	Private Commercial	110 Chesley Dr. (vacant ground)	Chesley Office Campus potential use for shared-use path. Vacant small triangular property east-adjacent to the "Clusters Building."
24	34-05-257:000	34000072129	Nether Providence	H	Private Commercial	111 Chesley Dr. (vacant ground)	Chesley Office Campus, Vacant wooded property proposed for shared-use path.
25	34-05-256:000	(no number on file)	Nether Providence	H	Private Commercial	Chesley Dr. (north side of eastern cul-de-sac, vacant ground)	Part of the Chesley Office Campus (easternmost property with a proposed segment). Proposed for shared-use path connecting to Pine Ridge Rd.
26	34-05-264:000	34000010100	Nether Providence	I	Public Parkland	West of I-476, east of Pine Ridge Rd., south of SEPTA Media Trolley line.	Smedley County Park ("Penza Tract") – Trails to be developed by Delaware County.
27	42-20-001:000	42000452702	Springfield	K	Public Parkland	On Papermill Rd. and east side of Crum Creek	Smedley County Park – Trails to be developed by Delaware County.
28	34-05-264:000	34000010100	Nether Providence	I, J, K	Public Parkland	East side of I-476, north of Baltimore Pk., and west of Crum Creek	Smedley County Park – Trails to be developed by Delaware County. Parcel in multiple sections bisected by trolley ROW and Interstate 476.

Appendix F: Public Participation Process

Overview

Delaware County Planners conducted an extensive public participation component as part of the Media-Smedley Connector Trail Feasibility Study. During the course of plan development, four steering committee meetings, three public meetings, and numerous key person or group interviews were held. Additionally, planners conducted an online survey using GIS (Geographic Information Systems) so that respondents could make comments regarding specific locations in the study area.

Public Meetings

Public Meeting #1 – June 18, 2019

Media Borough Municipal Center

The first public meeting was held at the Media Borough Community Center, and approximately 40 people from the community attended. Steven Beckley, the Open Space and Trails Manager for the Delaware County Planning Department, and project manager, gave a presentation about trail planning in general and trail planning specifically by Delaware County. He also gave an overview of the project, the Media-Smedley Connector Trail (MSCT) Feasibility Study. The slides from his presentation were posted on the Delaware County Planning Department's website and are available at the Delaware County Planning Department.

Following the presentation, residents broke out into four stations for a workshop. Planners displayed a unique map panel of the study area at each of the four stations. Residents chose which station to join based on the map they had the most interest in commenting on, and they were encouraged to visit multiple panels. Planners facilitated discussion and took notes on comments and preferences residents gave for each potential alignment in a panel. The notes were typed, and photographs of the notes were taken and posted online as well. The photographs of the written notes are included in this appendix.

Attendees were overall very positive about the potential MSCT. Although there were concerns regarding specific potential alignments of the route, the overall concept of a trail connecting the County parks through Media Borough was welcomed. The most common concerns were those of safety on the roads from automobiles and existing steep slopes.

Due to COVID-19 concerns, the second and third public meetings were held virtually on July 14, 2020 and November 10, 2020.



(a) Walking
 Biking

 (d) Recreation
 Commute
 Travel to Media III

 (e) Marcella Ln. III III
 A2
 A6 - different part of park?
 Baltimore pike with reduced lanes/speeds
 ii) soft surface path along creek through Glen Prov. III III
 + stream
 + safe
 look to use thin parcel
 A5 through scott park III III
 ii) cut-through Glen Prov. to A6

~~A4~~
 (c) Crossing Ridley Creek rd. (light (RRFB))
 Erosion
 Flooding

 (b) Trailhead @ Glen Prov. - A2
 bike racks @ Glen Prov.
 dog waste stations " "

 (d) Paved or separate @ Ridley Creek
 Paved but context sensitive (not paved in parks)
 mile markers
 label streets, crossings
 wayfinding
 Maps
 Bike repair stations
 water fountains

(d) security cameras
 bathrooms

 stay off/avoid providence rd.
 ride all routes
 Present @ Municipal meetings
 *Upper Providence for Open space

PB - Elgmont is closed off for
 Media Elementary

PB
 a. i. biking w/reservations III
 - traffic safety
 - funning
 - walking II

 * recreation
 • business destinations
 - Springfield Mall connection

 b. Providence road is very dangerous
 3rd narrow
 propose 5th but no lane element ^{with}
 subways
 4th and 5th about equal
 No bike rack at police station

PB
 Front are any possible problem
 • South side of Baltimore pike - poss. be?
 - Jefferson pass. be - in Media pike plan
 - could go to Beatty
 - stay away from State St
 • steep slopes getting into Smedley
 - less steep at Baltimore pike but getting
 over Blue Route is difficult
 - getting across blue route
 - Already use Acme/Office Complex - C1
 + C4
 - Brown Manor Runway
 - Road says "Do not drive on this rd" off of
 second and Hutterman - could be a
 good alternative
 C. - Stop sign enforcement makes going
 through Media difficult
 - Private yards in Glen Providence
 - confusing signs signage

PB
 C. Getting to Ridley Creek Road
 Run BPP is difficult
 - Kirk Lane really steep and narrow
 - Bad option
 - 3rd St???
 - Better option to go through BPP - small slope
 connection to Scott Park
 - could be along Belt Pike here
 - would be pick count
 - road dividers needed on Belt Pike

 Identify multi-use trail
 - Friends might be able to do about parking
 - Media feels dangerous - structures not
 adequate for children
 - Signage in keeper connector and smaller
 trail

PB - Safe Route to Cherry St
 park
 - Cross Pk. at State, Bulling Green
 area up to Cherry
 - existing walking signage in Media

 - Connections to Rose Tree Park just to get
 there would be nice
 - Bridge
 - Currently not practical to commute
 - link to Media Train Station
 - consider Belt Pike
 - link to Jefferson Cul-de-sac

 * Ridley Creek Park connection
 - Ridley Creek Rd
 - Signage 3D
 - Definition of a non-motorized vehicle - ^{golf} _{electric}

PC a use of trail?
 - to travel to Media
 - businesses shopping

trail designation not needed, can already walk to Media (from Surrey Ln.)

PC (b)
 C2 - as long as buffer/woods remained.
 C3 fine as well.
 C5 - Beechwood - steep & unsafe for bikes w/ cars.
 - Nether Row has advance on Chesley mandated buffer. trail could still go alongside.
 C4 - Scenic, C1 safer, Acme would need to approve.

PC c
 - (Pera Row on septa row on Residential side) need confirm
 - Beauty Rd - narrow shoulder for trail. (on plus side trolley passage stops traffic)
 Acme built new walkway at Beauty Rd from Trolley Stop

PC (d.)
 - crime & security issue
 - any trail near residences could be crime issue. Commercial land could be better.
 - painted bike lane
 - signs w/ wayfinding / logo.
 * Another alternative idea trail around Acme near Balt. PK & Starbucks
 C6
 + C7 to Chesley front Entrance

PD
 If this trail existed now...
 → uses: biking, recreation/transformation

D-1
 Preferred route?
 → ideas not shown north through from creek
 - concerns carrying bike up stairs, not ADA accessible
 → D1 and D4
 - scenic, most immersive (may make it less feasible for heavy equip)
 → D3 seems unsafe for children
 - D3 seems more financially feasible
 → D4 + D5 has safety issues
 → C4 route behind grocery store is more accommodating
 - comment to also have access to the foot store directly via bike
 → can't imagine being on 252 (B4) especially when thinking of a trail
 → physical barriers preferred over paint on the road

D-2
 What type of trail?
 → paved
 ↳ raises issue of permeation (however gravel is not desirable for steep hills)
 → some kind of light flashing to signal to traffic when crossing roads
 → want bike racks at locations near commercial areas

Public Meeting 2 – July 14, 2020

Online Virtual Meeting – Microsoft Teams

At the second public meeting, Randy Waltermeyer, AICP, presented Traffic Planning & Design’s (TPD) findings and recommendations. TPD, through analysis of existing conditions, proposed an alignment and design for the trail. Twenty-three members of the public attended the meeting. Although technical difficulties made discourse difficult, a variety of responses to the material was received. There were concerns raised regarding safety and competing uses in Smedley Park. Currently, the park is used by a few mountain biking groups that would be adversely affected by paving the trails in the park. Other feedback was positive and requested that the trail connect to the Leiper Trail.

Public Meeting 3 – November 10, 2020

Online Virtual Meeting – Zoom

At the third public meeting, the project manager, Steven Beckley, AICP, presented the final draft of the Media-Smedley Connector Trail Feasibility Study and explained the entire study process and background. Thirty members of the public were in attendance. The project team fielded comments and questions that were very positive, inquisitive, and enthusiastic. The draft study was also posted on the project website for viewing and comments in advance of the meeting and remained there afterwards in case of additional comments or questions.

Study Committee

The project team engaged with a Study Committee of local stakeholders from the following organizations:

1. Media Borough
2. Middletown Township
3. Nether Providence Township
4. Springfield Township
5. Upper Providence Township
6. Delaware County Planning Department
7. Delaware County Parks Department
8. Delaware County Public Works Department

9. Delaware County Conservation District
10. Chester Ridley Crum Watersheds Association
11. Bike Delaware County
12. Delaware County Transportation Management Association
13. Media Business Authority
14. Friends of Smedley Park
15. Friends of Glen Providence Park
16. SEPTA



The Study Committee met on 4 occasions throughout the project development to provide feedback and critical input guiding the direction of the feasibility study.

Study Committee Meeting #1 – April 3, 2019

Media Borough Municipal Center

At the first meeting, the Study Committee was presented with background information on Delaware County Planning Department’s

trail planning and an overview of the MSCT. After the presentation, committee members were invited to markup maps of the study area and give guidance on opportunities and constraints of the various potential segments (photo above).

Study Committee Meeting #2 – August 20, 2019 **Smedley Park Environmental Center**

The main topic at the second study committee meeting was that of consultant selection. Planners informed the committee of the RFP that had been issued, the responses that the County had received, and the selection of Traffic Planning & Design. Planners also solicited suggestions for key groups, businesses, and individuals for the key person interviews to take place in the following months.

Study Committee Meeting #3 – April 6, 2020 **Online Virtual Meeting – WebEx**

Randy Waltemeyer, AICP, presented TPD's findings and proposed route alignment at the third Study Committee meeting. The committee's response was overwhelmingly positive and supportive of TPD's design. There was discussion regarding the segment along Baltimore Pike (and whether that is the best option for the plan) and the segment through Nether Providence, but it was overall positive.

Study Committee Meeting #4 – October 15, 2020

Online Virtual Meeting – Teams

Prior to the fourth Study Committee, members had been sent a draft of the study so that they could provide feedback at the meeting. There was much discussion about funding the MSCT as many of the segments have significant costs in construction, and design and engineering costs had not been included. Grant funding opportunities and potential partners (PennDOT) were identified as possible ways to help fund trail development. Because the proposed trail crosses into Media along the heavily used Baltimore Pike, steering committee members asked how this study related to Media Borough's own traffic calming study that was undertaken at during the same period as the MSCT. TPD was the chosen consultant for both projects and was able to assure committee

members that the two projects align. One member raised concern about the Baltimore Pike segment due to safety concerns and the steepness of the slopes which brought about discussion on the alignment choice. This alignment was considered the most feasible after analysis of the constraints. The private property that would need to be traversed in order for the trail to enter Glen Providence Park is a barrier for an alignment through the park. Overall the feedback was positive, and members discussed implementation steps.

Municipal Focus Group Meeting – June 24, 2020

An online meeting took place between the project team and municipal officials and staff representatives from throughout the study area to discuss the recommended trail routes and designs under consideration for this study. County staff and consultants listened to questions concerns and explained the reasonings for their current recommendations.

Key Person Interviews

The project team also conducted interviews with more than 15 local stakeholders to gain insight about the area and about concerns and opportunities for the trail.

Individuals Interviewed:

1. Greg Krykewycz, Media Borough Environmental Advisory Council
2. Peter Williamson, Media Borough Council
3. Amy Johnson, Media Borough Council
4. Stephanie Gaboriault, Friends of Glen Providence Park
5. Kevin Dion, Friends of Smedley Park
6. Dave Grady, Nether Providence Township Manager
7. Greg Lebold, Upper Providence Township Manager
8. John Coyle, IV, Sr. Vice President, General Counsel, Henderson Group (Chesley Office Campus Property Owners)
9. Media Shopping Center-Echo Realty (Nicholas Meriwether, Andrew Gorman, Lisa Lomb)
10. Jane Ferry, Upper Providence for Open Space

11. Pat Ackroyd, Mineral Hill Area Friends/Reserve at Rose Tree Homeowners Assoc.
12. Dan Schaefer President, Woodlands at Ridley Creek Homeowners Assoc.
13. Meghan Lockman, Executive Director, Chester-Ridley-Crum Watersheds Association
14. Mountain biking groups using Smedley County Park (Delco MTB and others)
15. SEPTA (Ryan Judge, Mark Cassell, Jennifer Dougherty)
16. PennDOT, District 6 (Ashwin Patel)

Online Public Survey Map

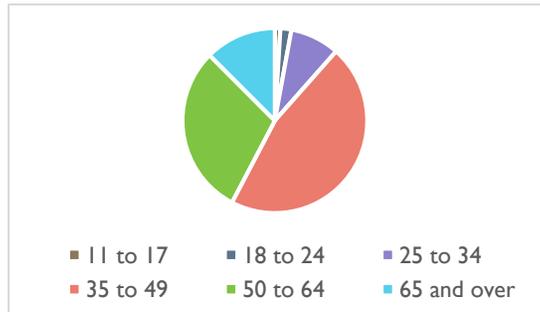
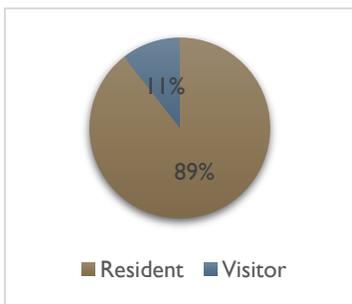
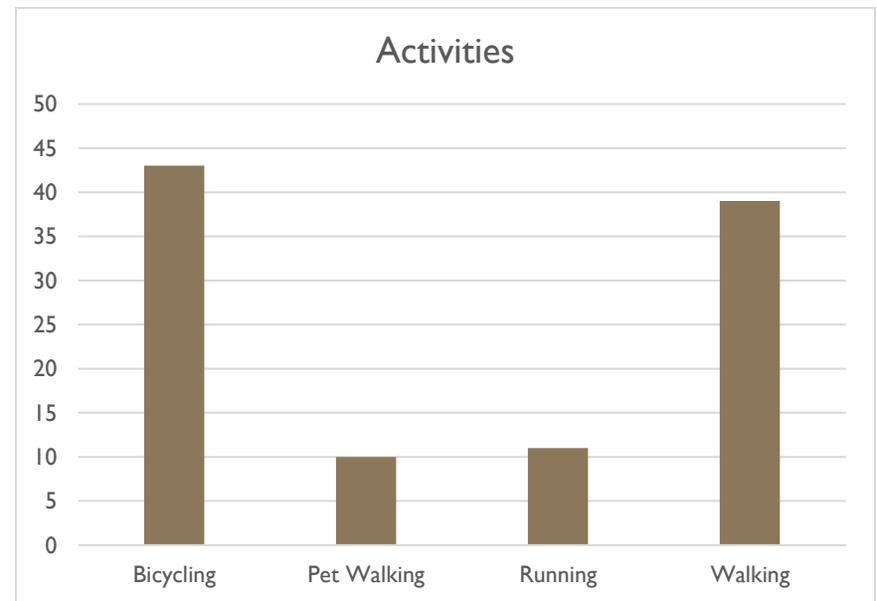
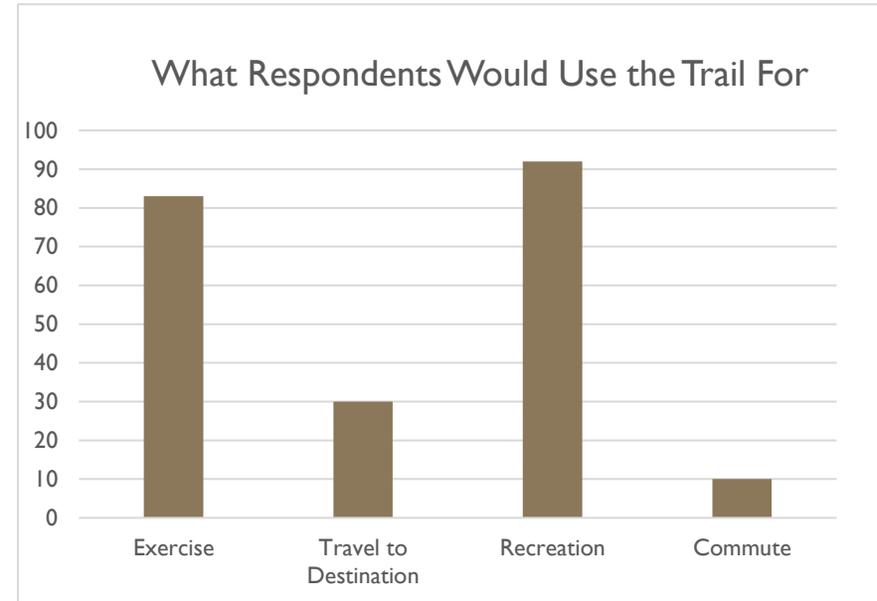
The Online Survey Map was posted on February 26, 2020 and concluded on April 21, 2020. In that time, 104 people responded to the survey and answered questions about what they would use the trail for (the choices were recreation, commuting, exercise, or travel to a destination), what activities they would do on the trail (walk, run, bicycle, walk a pet), what amenities they would like to see on the trail, what destinations they may use the trail to travel to, and where they thought they might access the trail from. There was also an open-ended question for comments.

The clear majority, 92%, of those surveyed, are residents of the study area, and the age range of 34-49 was the most represented age range followed by 50-64.

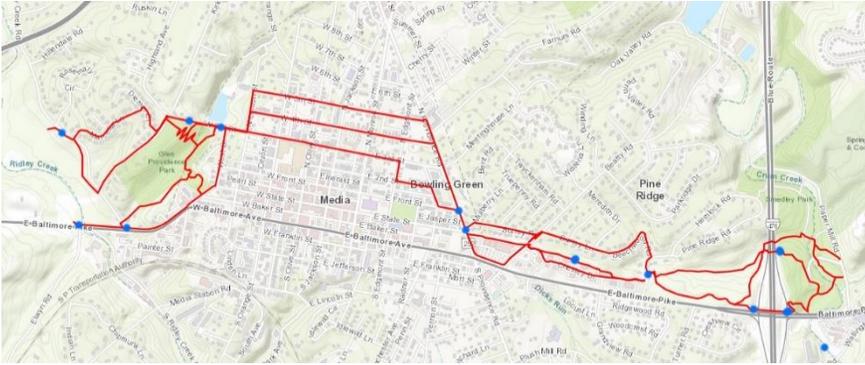
Survey Findings

The following are some key findings from the online survey:

- About half of respondents will access the trail from their residences
- Respondents identified bicycling and walking the most as anticipated trail activities over running and pet-walking.
- Approximately 10% of respondents said they would use the trail to commute
- Wayfinding signage and benches were identified as the most wanted amenities



Appendix F: Public Participation Process



The public survey included an online map on which respondents could create points and comment on concerns or trail preferences. Many of the points depicted concerns about safety, slopes and connections. Respondents created 16 points on the map.

