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# DARBY CREEK TRAIL - PHASE 2

Delaware County Planning Department

Feasibility Study - 2021



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# Darby Creek Trail Phase 2 Feasibility Study

*Prepared by*

Michael Baker International

*For the*

Delaware County Planning Department



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## Acknowledgments

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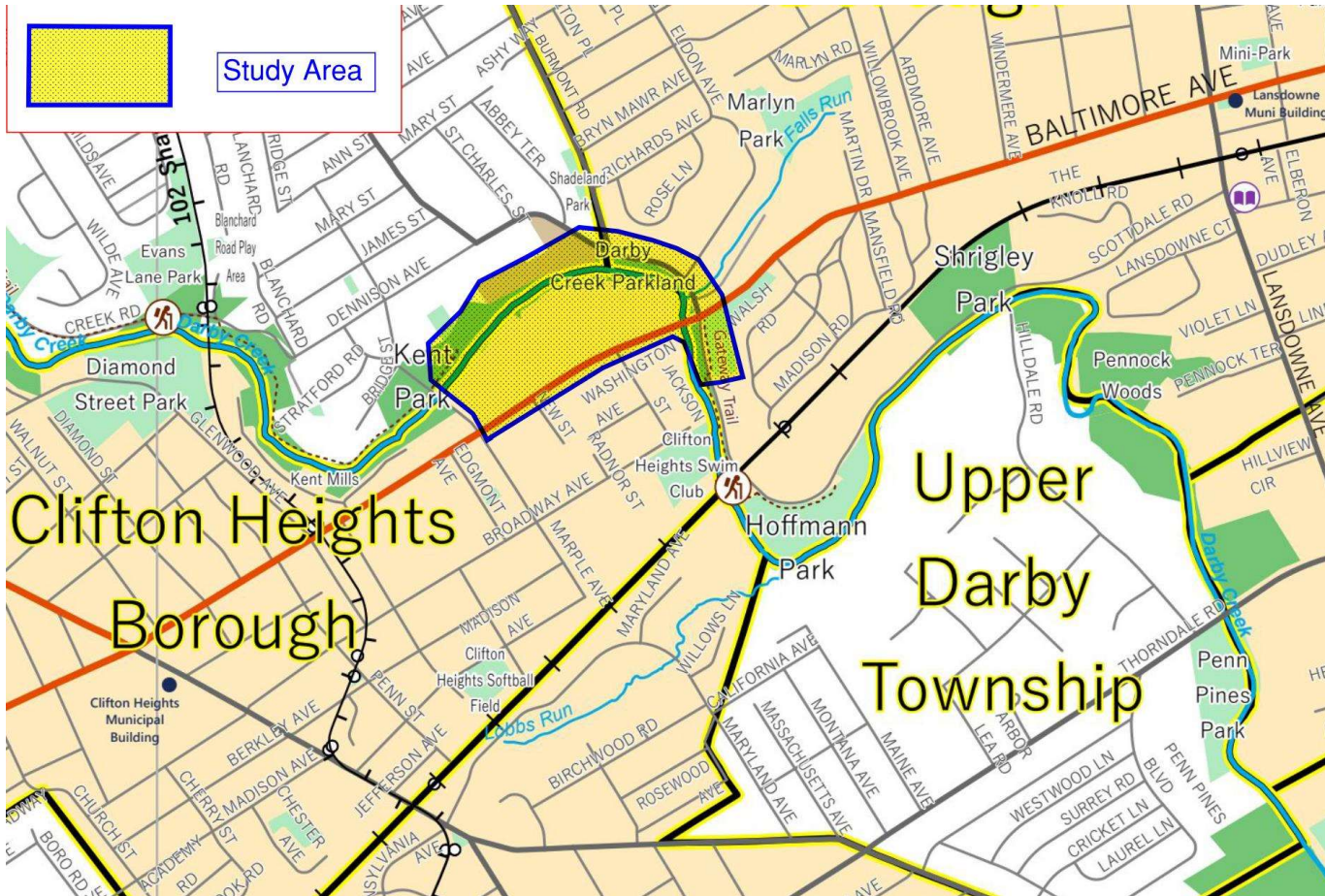


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## Overview

The Delaware County Planning Department (DCPD) has a goal to increase the overall mobility options for their residents through a network of bicycling and walking trails. They believe that a well-connected and safe trail network is one of the top items people look for when choosing a place to live. In 1987, DCPD organized a master plan for a park along the Darby Creek Corridor. The cornerstone of that study was a trail along Darby Creek from the Lower Swedish Cabin downstream to Bartram Park near 12<sup>th</sup> Street in Darby Borough. In 2009, the master plan was updated which provided a long-range guide for park development and emphasized the development of a trail for foot and nonmotorized traffic. The master plan area was extended to begin at Garrett Road in Upper Darby Township and extend downstream to Pine Street in Darby Borough.



Study Location Map

Since the master plan was created, four major pieces of the Darby Creek Trail have been constructed in some capacity, but the overall corridor remains segmented and unconnected. This study aims to connect one of the existing trail gaps of the Darby Creek Trail from Kent County Park to the existing trail south of the Baltimore Avenue / Scottsdale Road intersection. Implementation of this plan depends on the cooperative efforts of Delaware County, Clifton Heights Borough, and the affected property owners. This plan also recognizes that implementation depends on available design and construction funding.

## Project Scope

The scope of this study includes the following tasks:

- Property and Right of Way Research
- Field Views to Identify Constraints and Opportunities
- Environmental Constraints and Cultural Resources
- Opportunities and Constraints Map
- Trail Alternatives Development and Analysis
- Development of Preferred Alternative
- Concept Plan for Preferred Alternative
- Order of Magnitude Project Cost Estimates
- Study Report



## Regional Context

The Delaware Valley Regional Planning Commission (DVRPC) has a goal to connect people to jobs, communities, parks, and waterways via a multi-use trail network they've coined, "The Circuit". Governments, non-profits, and foundations have collaborated to complete over 300 miles of the envisioned 750-mile regional network. More miles are added to the network each year. The Darby Creek Trail is part of DVRPC's Circuit which aims to connect Newtown Square and Eastwick with an off-road walking/bicycling network generally following the Darby Creek corridor (see The Circuit Trails Map Below). Presently, there are several built segments of the trail which do not interconnect and are not easily accessible via an on-road route. This study aims to eliminate one specific trail gap between an existing trail segment within Kent County Park and another along Scottsdale Road. Through future planning, design and construction efforts, the Darby Creek Trail will eventually connect local Delaware County Residents of Newtown Square, Broomall, Springfield and others to the John Heinz National Wildlife Refuge, the East Coast Greenway, and the 9/11 National Memorial Trail.



# THE CIRCUIT TRAILS

100s OF MILES OF HAPPY



### MAP LEGEND

	Passenger Rail Stations		East Coast Greenway (ECG)
	Bus Stations		9/11 National Memorial Trail
	Watershed Education Centers		Existing Trails
	Parks		Trail Network Spines
			Trails in Progress
			Other Regional Trails

Regional Context Map (DVRPC's Circuit Trail Map)

## Existing Conditions

Most of this project will likely be off-road, but roads that may be impacted include Baltimore Avenue and Burmont Road. The Annual Average Daily Traffic (AADT) for Baltimore Avenue (S.R. 2016) is approximately 19,000 vehicles/day. The posted speed limit is 25 m.p.h. Towards the western project limits, Baltimore Avenue has one lane in each direction with a painted median varying from 0 to 10 feet in width. Both sides of the road have 5' sidewalk.



Looking East Along Baltimore Avenue from Western Project Limits in front of Caliber Collision



Baltimore Avenue Looking East at Jackson St. Intersection

The intersection of Baltimore Avenue and Jackson Street is a signalized 4-leg intersection that also provides access to the existing commercial property that was formally Kmart, owned by Gator Clifton Partners, LLC. There are pedestrian accommodations on three of the corners including ADA ramps, longitudinal crosswalks, pedestrian signal heads, and push buttons. Pedestrian crossings are prohibited to the northeast quadrant due to lack of sidewalk or other access.

East of Jackson Street, Baltimore Avenue widens to accommodate a turning lane, and sidewalk exists only on the eastbound side until after a driveway to the Gator property. At this point, there is a bridge over Darby Creek that is 50' wide outside to outside, with 38' pavement width to accommodate the eastbound and westbound travel lanes and a left turn lane onto Burmont Road. 5' sidewalk is present on both sides of the road.



Baltimore Avenue Looking East towards Darby Creek Bridge





Baltimore Avenue Looking East at Burmont Road/Scottdale Road Intersection

Baltimore Avenue and Burmont Road/Scottdale Road is a 4-leg signalized intersection. Pedestrian accommodations including ADA ramps, longitudinal crosswalks, pedestrian signal heads, and push buttons are present in all quadrants.

Burmont Road has one lane in each direction with a left turn lane at its intersection with Baltimore Avenue. There is no record of AADT. The posted speed limit is 25 m.p.h. No sidewalk is present along the west side of Burmont Road or Scottdale Road.

The intersection of Burmont Road/Dennison Avenue and Shadeland Avenue is a stop controlled 3-leg intersection. The Burmont Road approach is uncontrolled. The intersection has significant skew and sight distance issues. Pedestrians are only accommodated with a crosswalk across Shadeland Road. No sidewalk exists on the Southern side of Burmont Road, and the sidewalk and curb ramps on the northern side are not ADA compliant.

SEPTA bus route 109 operates on Baltimore Avenue, which provides access between Chester Transportation Center and 69<sup>th</sup> Street Transportation Center.

The property most impacted by the project is the Gator Property. This was once a Kmart but is now being repurposed as a retail center with improvements consisting of a new parking layout, a truck loading area, and a dumpster enclosure behind the building. A steep slope (>2:1) is present between Baltimore Avenue and the existing Structure. Development Plans from Gator Property can be found in **Appendix B**.



Burmont Road Looking Northwest at Dennison Ave Intersection

## Trail Alternatives Development and Analysis

The study will examine five potential alternatives for an approximate 10' wide shared use path that adheres to local standards including the American Association of State Highway and Transportation Official (AASHTO), PennDOT, and the Circuit Trail Network. This analysis strives to close an important gap in the existing Darby Creek Trail network. Once developed, the alternatives were analyzed for safety, user comfort, feasibility, constructability, cost effectiveness, environmental permitting requirements, right of way requirements, etc. Advantages and disadvantages of the alternatives are organized into a summary table later in this report. Each alternative begins at the Darby Creek Trail termini within Kent County Park and crosses over existing wetlands with a 165' span bicycle/pedestrian structure. From there, the trail will continue along one of the following alignments depicted in the project map below. The artistic rendering on page 9 depicts what a prefabricated pedestrian truss bridge crossing the Darby Creek could look like.



Project Map with Trail Alternatives

PROPOSED OVERLOOK AREA

PROPOSED PEDESTRIAN BRIDGE



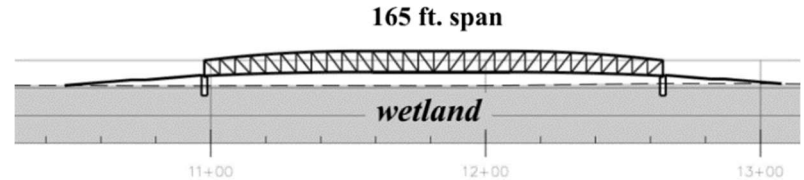
DARBY CREEK TRAIL - PHASE 2 PEDESTRIAN BRIDGE \_ DARBY CREEK (EAST BANK)



### Alternative 1 (North side of Darby Creek)

Beginning at the existing Darby Creek Trail termini within Kent Park, the Northern Alternative continues along Darby Creek on the back side of St Charles' cemetery to the intersection of Shadeland Avenue and Burmont Road. The alignment crosses Burmont Road and Shadeland Avenue and continues down the northeastern side of Burmont Road until it reaches Baltimore Avenue. Refer to **Appendix A** for a concept map of this Alternative.

As with all alternatives, crossing the existing wetlands within Kent Park will require an approximate 165' span bicycle/pedestrian structure (see sketch on this page). The trail then continues in a northeasterly direction along a steep embankment that is ~50' high from the edge of creek to the top of slope. This steep embankment will require a retaining wall or bicycle/pedestrian bridge approximately 700' in length. The proposed trail will be located within the regulatory floodway of the Darby Creek, and a more detailed hydraulic study will be required to determine the impact on flood elevations. See **Appendix B** for FEMA flood map. Consultation will be needed with PA DEP regarding modification of the side slope so close to the creek.



Bicycle/Pedestrian Structure Sketch

The intersection of Shadeland Avenue and Burmont Road is a skewed, three-way intersection where two of the legs are stop controlled, and one leg is free flowing. The following improvements would be necessary to ensure safe conditions for both motorized and non-motorized traffic.

1. Substantial grading may be required as the trail approaches this intersection. Additionally, guiderail modifications and ADA improvements will be required.



Intersection of Burmont Road and Shadeland Avenue

2. Northbound traffic along Burmont Road is not currently stop controlled. Adding a shared use path crossing would require this leg to be stop-controlled.

3. The steep existing side slope will require a ~300' retaining wall and several bicycle easements from the adjacent properties.

After the Shadeland Avenue and Burmont Road intersection, the proposed trail will continue South along the East side of Burmont Road until it ties into the existing sidewalk at Baltimore Avenue. In this segment, the existing culvert along Burmont Road will require widening to facilitate a shared-use path that meets current AASHTO standards of 10' width and 5' buffer. An H&H analysis will be needed to determine potential impacts of the culvert extension.

**Advantages of Alternative 1:**

- Scenic and serene. This trail alternative temporarily immerses users in a wooded, creek-side environment, away from vehicular traffic for a substantial portion of the alignment.
- Trail users maintain a clear line of sight giving users a feeling of control and safety

**Disadvantages of Alternative 1:**

- Constructability, especially within the dense wooded areas will be complex and likely expensive
- Burmont / Shadeland intersection will require many safety enhancements for trail users. Even with these intersection improvements, the geometry of the existing intersection is not ideal for pedestrian/bicycle crossings.
- Over 1000' of retaining walls are needed for this alternative to be viable. The upfront construction cost, and ongoing maintenance will be high.
- Logistics of construction on the Cemetery Property.
- 9 right of way acquisitions would be necessary: See table below:



Burmont Road looking South Towards Baltimore Avenue

Number	Parcel ID	Property Owner	Address
1	16130163901	ST CHARLES R C CHURCH	0 DENNISON AVE
2	16130310200	BODZIUCH STAINSLAW & ASIA	50 SHADELAND AVE
3	23000084322	MADALION LUCILLE	5 ELDON AVE
4	23000084337	POLK PAMELA	4 ELDON AVE
5	23000282505	BARNES HARRY	23 ROSE LN
6	23000282506	PAPADOPOULOS ALEXI G &	27 ROSE LN
7	23000282507	QUIN MICHAELA & SUSAN BREEN	31 ROSE LN
8	23000282508	WEST WALIDAH E	35 ROSE LN
9	23000292900	LANSDOWNE SWIM CLUB	0 SHADELAND AVE

List of properties requiring easements/acquisition for Alternative 1

Alternative 2 (At Grade in Gator Property Parking Lot)

Beginning at the existing Darby Creek Trail termini within Kent Park, this alternative will cross the Darby Creek and continue along the South side of the creek, adjacent to the Gator property parking lot. Once the trail meets Baltimore Avenue, it ties into the existing sidewalk along Baltimore Avenue until the intersection of Baltimore Avenue and Burmont Road. Refer to **Appendix A** for a concept map of Alternative 2.

After crossing the existing wetlands within Kent Park, a trail/pedestrian bridge of approximately 150' will be needed to get users to the southern side of Darby Creek. The existing stormwater basin must not be impacted, so the bridge over Darby Creek will continue for another approximately 150' until the basins are cleared.

The alternative continues adjacent to the parking lot for approximately 1000' where it meets Baltimore Avenue. This stretch will include a proposed fence on the left side of the trail and guide rail on the right to protect users from the slope down to Darby Creek and from vehicles navigating the parking lot. It will also require the removal of 60 parking spaces to accommodate the trail, a buffer, and guide rail.

Once the trail reaches Baltimore Avenue, it could run along the existing sidewalk until the Baltimore Avenue and Burmont Road intersection. This sidewalk is only 5' wide due to constraints of the existing bridge. A separate trail bridge is another option and is further discussed under Alternative 4.

**Advantages of Alternative 2:**

- Most of this proposed trail is on existing grade making this the most economic trail alternative
- This alternative does not require a high degree of engineering complexity
- Only 1 private property would be impacted.

- Constructability is straight forward
- Trail users maintain a clear line of sight giving users a feeling of control and safety

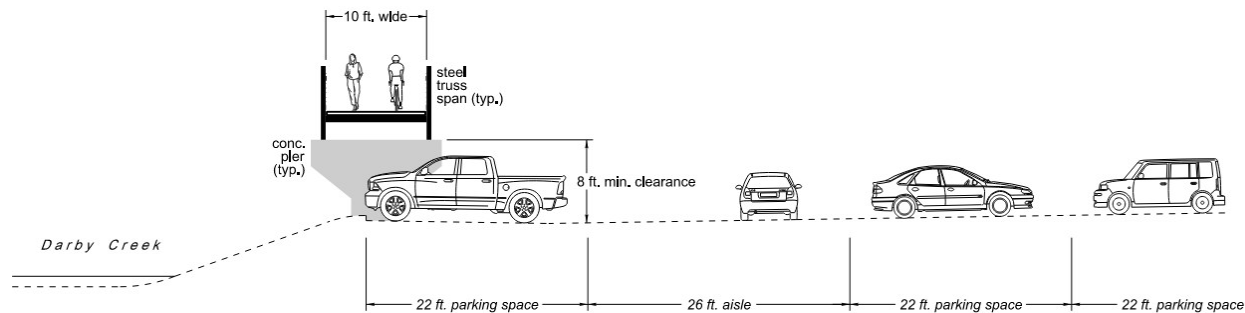
**Disadvantages of Alternative 2:**

- This proposed trail is within the regulated floodway of the Darby Creek and could be subject to future flooding events
- The 1 private property impacted, Gator, is opposed to this option due to 60 parking spaces being eliminated from the existing parking lot.
- Cost of acquiring land from Gator Clifton LLC.

**Alternative 3 (Elevated Trail)**

This alternative follows a very similar alignment to that of Alternative 2, beginning at the existing Darby Creek Trail termini within Kent Park, crossing Darby Creek and running adjacent to the Gator property parking lot until tying into the existing sidewalk along Baltimore Avenue. Refer to **Appendix A** for a concept map of the “Elevated Trail” Alternative.

The main difference between Alternative 2 and Alternative 3 is that the majority of Alternative 3 is elevated to maintain as many of the existing parking spaces as possible. The elevated structure will be supported by concrete piers spanned by either steel trusses or steel I-beams. A minimum of 8’ vertical clearance will be provided over the parking spaces, each of which being 22’ long and 9’ wide. The total length of the elevated portion will be approximately 975’. The typical section below illustrates the potential layout to conserve parking spaces.



**Advantages of Alternative 3:**

- Only 1 private property would be impacted.
- Minimal property impacts to the existing Gator parking lot. Approx. 7 parking spaces would be lost
- The elevated structures raise the proposed trail outside of the regulated floodway.

- Trail users maintain a clear line of sight giving users a feeling of control and safety

### Disadvantages of Alternative 3:

- The extensive use of pre-constructed truss bridges makes this alternative expensive to build and maintain in the future.
- The south side of Darby Creek is less scenic than the North Side.
- Cost of acquiring land from Gator Clifton LLC.

### Alternative 4 (Back of Gator Property At-Grade)

Beginning at the existing Darby Creek Trail termini within Kent Park, this alternative will cross the Darby Creek and continue along the back side of existing Gator Property (Parcel ID 10000016200). The alignment follows the exterior of the Gator property, parallel to Baltimore Avenue. The alternative extends past the Gator Property Parking Lot to the intersection of Burmont Road and Baltimore Avenue. Refer to **Appendix A** for a concept map of the “Back of Gator Property” Alternative.

After crossing the existing wetlands within Kent Park, this alternative will also require a trail/pedestrian bridge of approximately 150’ to get users to the southern side of Darby Creek.

Once past Darby Creek and onto the Gator Parcel, this trail alternative will follow the existing retaining wall along the adjacent Caliber Collision Property (557 East Baltimore Avenue LLC) while avoiding the existing stormwater basin. In the most recent development Plans from Gator Clifton Partners, LLC, the back side of this property includes plans for loading areas, dumpster enclosures, a receiving room, and a proposed sign, all of which needs to be avoided or will require relocation as part of the trail project. Additionally, a proposed trail will need to be outside of the truck turning radius to avoid excess wear and tear on the bituminous surface. See **Appendix B** for Gator’s Development Plans.



Existing Retaining wall along Caliber Collision

There is a very steep slope at the corner of the Gator property building and the Caliber Collision property line (557 East Baltimore Avenue LLC) that will require an approximately 300’ long retaining wall to stabilize the slope.

Once past the proposed retaining wall, the trail alternative will cross the existing entrance/exit at Jackson Street and follow the frontage of the parking lot. A minimum 5’ buffer must be provided from the edge of the existing turn lane and the proposed 10’ trail. To meet this requirement, modifications of the proposed parking lot design may be necessary. A potential alternative is to narrow the travel lanes along Baltimore Avenue to provide the necessary width of the buffer and trail.



modifications of the proposed parking lot design may be necessary. A potential alternative is to narrow the travel lanes along Baltimore Avenue to provide the necessary width of the buffer and trail.

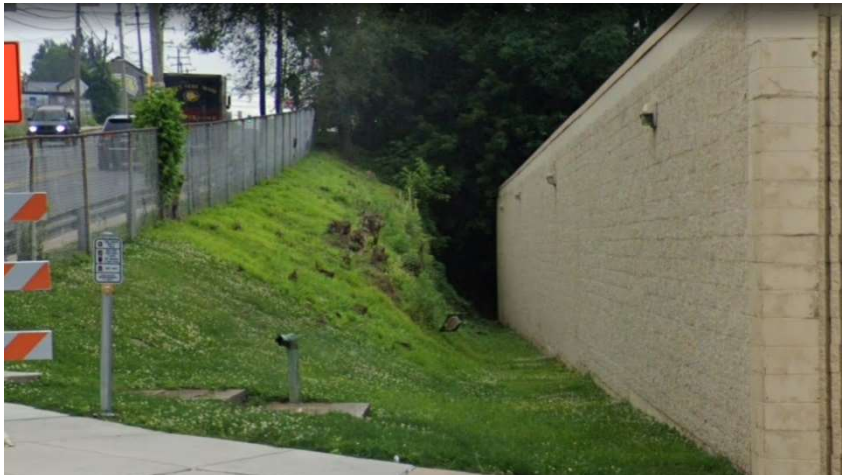
Once past the parking lot, this trail alternative would span the Darby Creek with a bicycle/pedestrian bridge of approximately 150' L and 10' W.

**Advantages of Alternative 4:**

- Only 1-2 private properties would be impacted. (Gator and Caliber Collision)
- The parking lot of the Gator property would remain relatively unchanged, with potentially no loss of parking spaces.

**Disadvantages of Alternative 4:**

- The retaining walls behind the Gator building will involve a complex construction effort
- This trail alternative deviates from the Darby Creek giving trail users a less scenic ride.
- Trail users are funneled between a retaining wall and the backside of the existing Gator Property Building, limiting trail users' line of sight. This can cause safety concerns for trail users.



Steep Slope Parallel to Baltimore Ave. Retaining Wall Required

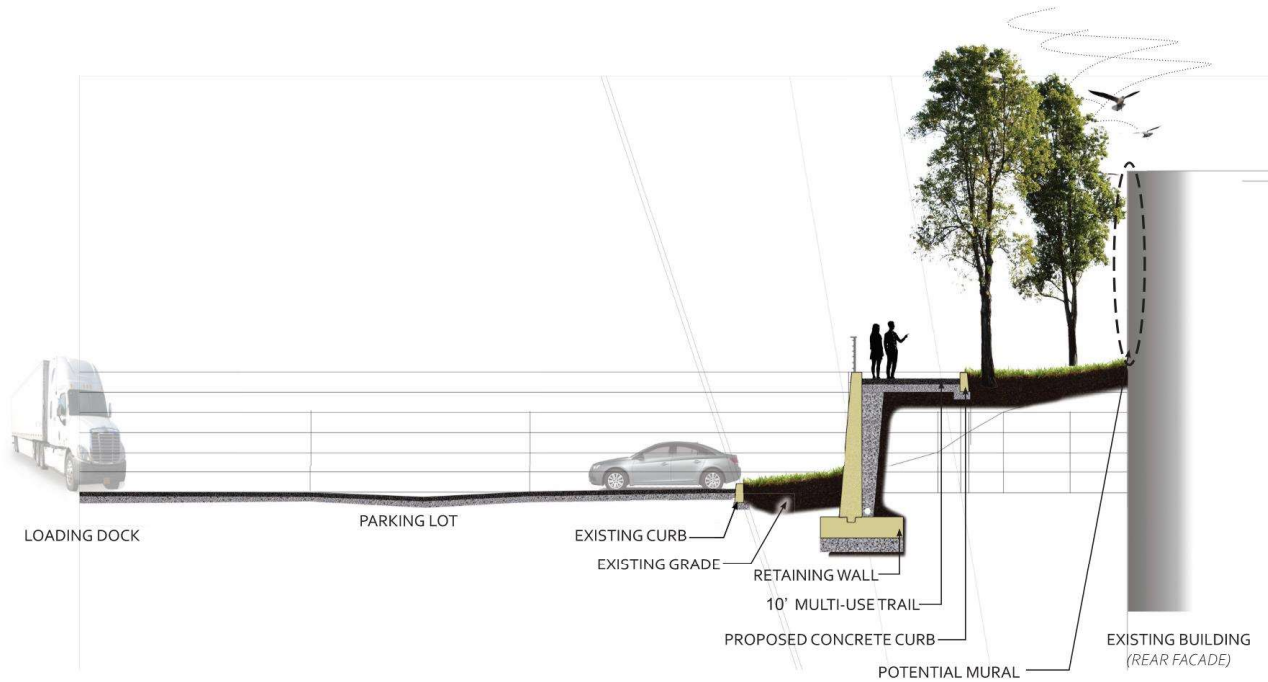


Sketch of Alternative 4 – Retaining Wall Location

### Alternative 5 (Back of Gator Property Elevating to Road)

This alternative follows a very similar alignment to that of Alternative 4, beginning at the existing Darby Creek Trail termini within Kent Park, crossing Darby Creek, and continuing along the back side of existing Gator Property (Parcel ID 10000016200). The trail gradually elevates to meet grade at Baltimore Avenue where it ties into the existing sidewalk and runs along Baltimore Avenue until its intersection with Burmont Road. Refer to **Appendix A** for a concept map of the “Back of Gator Property Elevating to Road” Alternative. After crossing the existing wetlands and Darby Creek, this alternative will follow along the existing retaining wall adjacent to the Caliber Collision Property (Parcel ID 10000022402). A new retaining will need to be constructed adjacent to the Gator property which will support the trail on the built-up ground. Loading docks, dumpsters, and other additions proposed by the Gator property developer must be avoided. The existing ground will need to be brought up by importing fill to meet existing grade at Baltimore Avenue. Refer to the illustrative cross section to see the proposed trail and retaining wall in relationship to the existing conditions.

Like Alternative 4, the existing sidewalk along Baltimore Avenue will need to be widened to accommodate the 10’ wide shared use path and 5’ grass buffer.



DARBY CREEK TRAIL - PHASE 2 ILLUSTRATIVE CROSS SECTION \_ INDUSTRIAL PROPERTY EASEMENT (SOUTH)

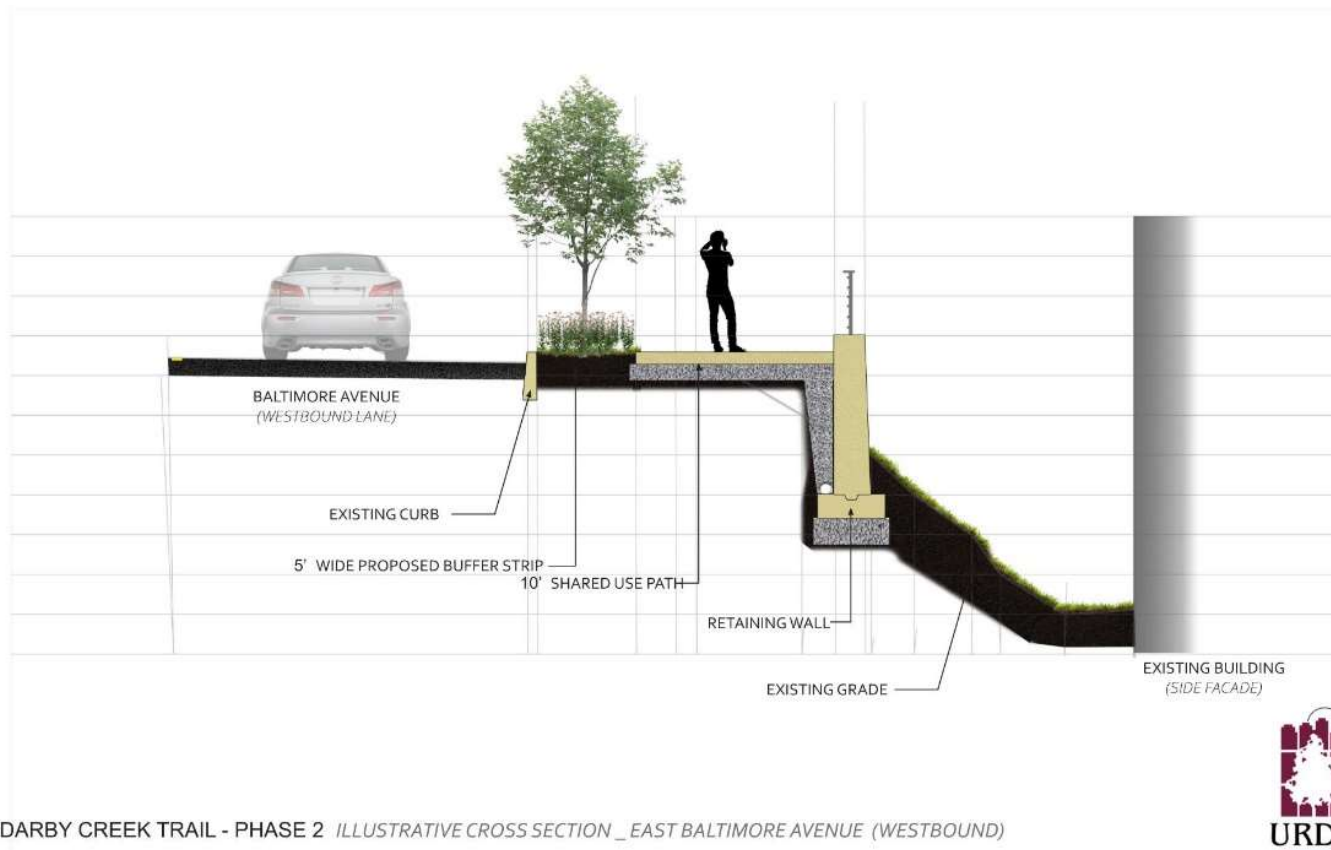


**Advantages of Alternative 5:**

- Only 1-2 private properties would be impacted. (Gator and Caliber Collision)
- The parking lot of the Gator property would remain relatively unchanged, with potentially no loss of parking spaces.
- Trail users maintain a clear line of sight giving users a feeling of control and safety

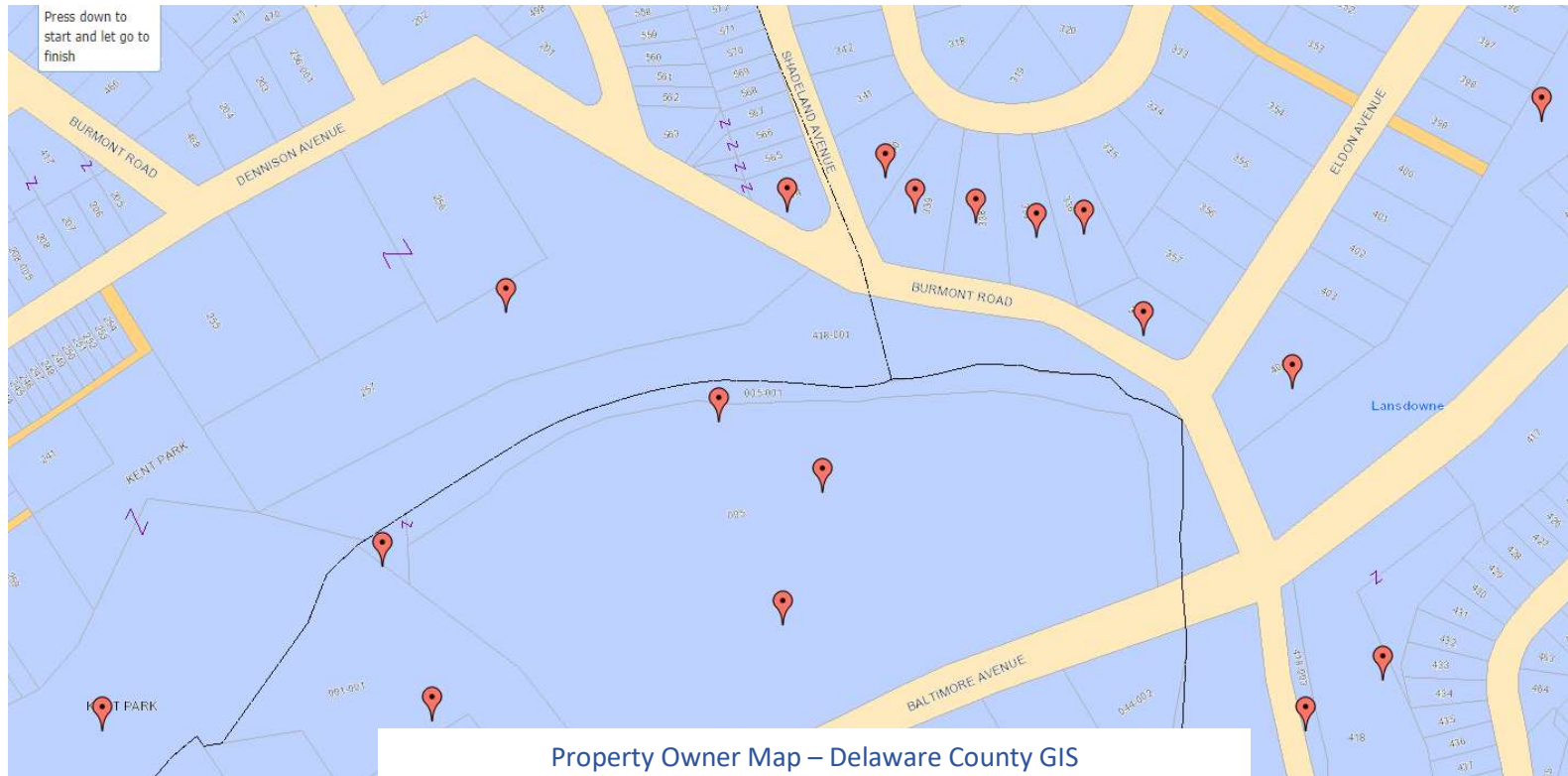
**Disadvantages of Alternative 5:**

- The large retaining walls will be expensive to build and maintain in the future.
- This trail alternative deviates from the Darby Creek giving trail users a less scenic ride.



## Right of Way Analysis

Alternatives 1 through 5 are located on, or near 17 separate parcels. A map of the area is shown below, and a list of parcel data can be found on page 18.



10000016200	GATOR CLIFTON PARTNERS LTD	713 E BALTIMORE AVE
10000016201	DELAWARE COUNTY	0 BURMONT RD
10000022402	557 EAST BALTIMORE AVENUE LLC	557 E BALTIMORE AVE
16130147900	COUNTY OF DELAWARE	3900 BRIDGE ST
16130163901	ST CHARLES R C CHURCH	0 DENNISON AVE
16130310200	BODZIUCH STAINSLAW & ASIA	50 SHADELAND AVE
23000028300	COMMONWEALTH OF PA	0 BALTIMORE AVE
23000028302	LANSDOWNE BOROUGH	0 SCOTTDAL RD
23000060000	DELAWARE COUNTY	0 BURMONT RD
23000084322	MADALION LUCILLE	5 ELDON AVE
23000084337	POLK PAMELA	4 ELDON AVE
23000282504	WALLS CONNIE E	19 ROSE LN
23000282505	BARNES HARRY	23 ROSE LN
23000282506	PAPADOPOULOS ALEXI G &	27 ROSE LN
23000282507	QUIN MICHAELA & SUSAN BREEN	31 ROSE LN
23000282508	WEST WALIDAH E	35 ROSE LN
23000292900	LANSDOWNE SWIM CLUB	0 SHADELAND AVE

Alternative 1 will impact the largest number of privately owned parcels (9) from trail development. A list of affected property owners can be found on page 12. Alternatives 2 through 5 will impact primarily only 1 private property, Gator Clifton Partners LTD. Alternatives 4 and 5 abut the existing retaining wall on the adjacent property which contains the Caliber Collision business (557 East Baltimore Avenue LLC).

## Soil Survey:

Regional soil survey map (Figure 1) indicates that the site surficial soils predominantly consist of completed weathered schist and gneiss material made land (Me) in the hilly areas. A typical vertical soil profile shows that at the top 3 inches is silty soils, the gravelly silty soils are between 3 and 60 inches.



**Figure 1 Site Soil Survey Map**

## Site Geology:

The project site is within the Wissahickon Formation (Czw, Figure 2) bedrock geology. This formation consists of pelitic schist and gneiss interlayered at inches level. This geologic formation is well known of having various degrees of weathering with very thick completely weathered soils. Based on the site soil survey and site geological map, the site subsurface conditions are favorable to the proposed trail retaining wall construction. Ground improvement and deep foundations are not anticipated.

The proposed trail retaining wall alignment might be close to the existing retaining wall that is parallel to the west side of the former K-Mart building. The additional load from the trail retaining wall will increase the load on the existing retaining wall. Therefore, the integrity of the retaining wall should be evaluated. To avoid the adverse impact on the existing retaining wall, the edge of the new wall alignment should keep a distance away from the existing wall. The horizontal safe distance is to be one time the exposed wall height of the existing retaining wall. If this distance cannot be met, using light weight fill material to construct the trail retaining wall is another effective way of minimizing the negative impact. One of the widely used local lightweight material is the foam glass aggregate. Its unit weight is 15-18 pcf, which is only 15% of the conventional soil backfill unit weight.

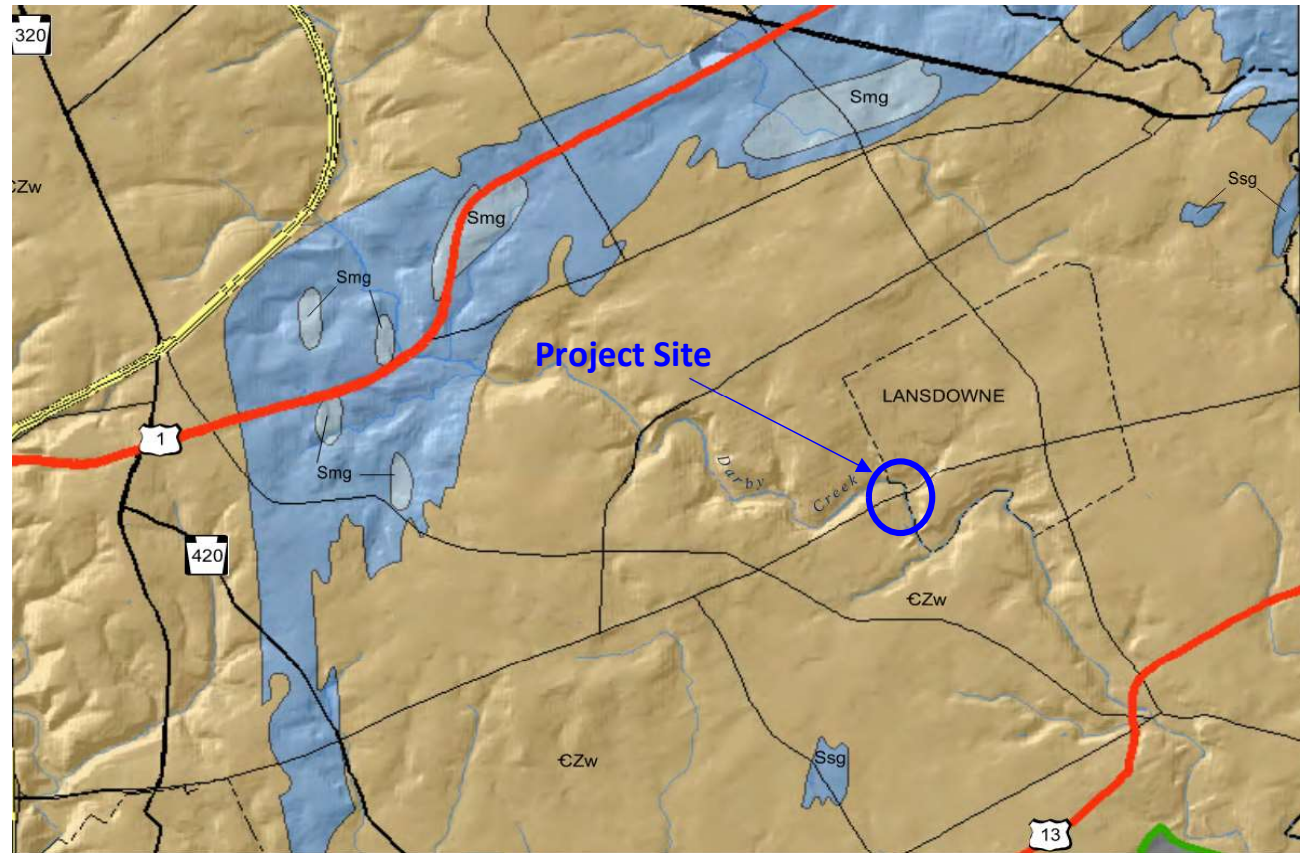


Figure 2 Site Bedrock Geology

## Alternative Analysis

### Property Impacts

Alternative 1 has significantly more property impacts than all other alternatives mostly due to sidewalk widening along Burmont Road. The other alternatives only impact the Gator property, and alternatives 3 and 4 may impact the adjacent property owned by 557 E Baltimore Avenue LLC which is currently occupied by Caliber Collision. If needed, these impacts would likely be temporary construction easements.

### Structural Needs

Alternative 3 has by far the most structural bridge work because of the elevated portion of trail along the Gator property. Alternatives 2, 3, and 4 have bridges over Darby Creek and wetlands, and Alternative 1 has only one bridge over wetlands, but the 1000' of retaining walls along Darby Creek and Burmont Road will present a significant amount of work. Alternatives 4 and 5 will also likely require retaining walls along the back of the Gator property to either allow for the trail elevation to meet Baltimore Avenue or to hold up the slope along Baltimore Avenue.

### Environmental

Environmental permitting will likely be necessary for all alternatives, but the Alternative 1 will require the most effort due to the slope wall along Darby Creek and the widening along Burmont Road, including widening the culvert.

### Design Complexity

The most complex alternatives to design will be 1 and 3 due to the number of structures involved. Next will be alternatives 4 and 5 which will include the challenge of establishing an alignment that avoids developments within the Gator property and has acceptable vertical geometry in that stretch. Alternative 2 will likely have the simplest design as most of the trail will be at grade and following a pre-determined path adjacent to the parking lot.

### Traffic

This project should generally not have significant impacts on traffic throughout the corridor, but some alternatives will have more of an effect than others. For example, Alternative 1 will require converting the Burmont Road/Dennison Avenue and Shadeland Avenue intersection into an all-way stop instead of just two approaches. Alternatives 4 and 5 may also have greater impacts if the right-turn lane into the Gator property must be eliminated to allow for adequate trail and buffer width. However, this property also has another entrance approximately 290' East of this entrance, so a traffic study may be performed to better understand the true impact.

### Quality of Serenity

According to Federal Highway Administration's (FHWA) Evaluation of Safety, Design, and Operation of Shared Use Paths, measures of user comfort on a trail include trail and buffer width, proximity to live traffic, frequency and degree of grade changes and curves, and quality of scenery.



Alternatives 2 and 3 have a minimal amount of trail adjacent to live traffic because they run along the creek. Alternatives 1 and 5 have the most, but the design will incorporate a 5' buffer to mitigate the proximity to live traffic. A buffer may not be possible to construct along the Baltimore Avenue bridge over Darby Creek due to pavement width constraints, so a separate pedestrian bridge is the proposed solution. Alternatives 2-5 all require two curves with very small radii to allow for approximately 90-degree direction changes. Scenery is not likely to be a major priority for this trail as its main purpose is to close a relatively short gap in the existing network, however, the alternatives with the least quality of scenery are those that run adjacent to buildings and roadway, such as 1, 4, and 5. Alternative 1 does contain a stretch of the alignment where it is completely secluded in dense vegetation before connecting to Burmont Road.

#### Constructability Complexity:

The alternative that contains the highest constructability concern is Alternative 1, specifically the construction of the proposed 700' retaining wall north of Darby Creek. Navigating construction equipment along the northern side of the Darby Creek where steep slopes are present will be challenging and likely expensive.

A summary of the analysis of alternatives is as follows:

	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Properties Impacted	9	1	1	2	2
Total Length	2144'	2185'	2184'	2125'	2133'
Number of Parking Spaces Impacted	0	60	7	0	0
Length of Structures	165'	615'	1465'	465'	465'
Supported by Gator Properties?	No	No	No	No	Yes
Length of Retaining Walls	1000'	N/A	N/A	300'	270'
Permitting Requirements	High	Medium	Medium	Medium	Medium
Design Complexity	High	Low	High	Medium	Medium
Length of Travel Along Road	860'	190'	190'	570'	830'
Impact on traffic	Medium	Low	Low	Medium	Medium
Quality of Scenery	Low	Medium	Medium	Low	Medium
Overall Cost	\$ 4,195,307	\$ 2,543,231	\$ 4,519,003	\$ 2,848,073	\$ 3,587,573
Constructability Complexity	High	Low	Medium	Medium	Medium

## Recommendation

Considering each factor in the alternative analysis, Alternative 5 is recommended based on overall feasibility, property owner preference, relative project cost, construction complexity, and trail user safety. Alternatives 1 and 3 are the most expensive, have multiple obstacles, and would only be recommended if there is an overwhelming desire to locate the trail along the stream for most of the distance despite the high cost and other issues. An opportune funding source could be the only way to do this. Alternative 2 is the least expensive and most straight forward design that would be recommended but is not supported by the current property owner due to the loss of 60 parking spaces. Alternative 4 is slightly less expensive compared to Alternative 5 but introduces a section of trail that reduces sight distance, and creates a blind curve, which may lead to unsafe conditions for users. Alternative 5 brings trail users to street level of Baltimore Avenue and introduces street trees to beautify the trail area and create a more defined buffer from vehicular traffic. Considering each of the major differentiators between the proposed trail alternatives, Alternative 5 - “Back of Gator Property Elevating to Road” is preferred. The construction of this trail segment will close an important gap within the Darby Creek Trail corridor and increase the overall connectivity for bicyclists and pedestrians within Delaware County, and the surrounding regions.

## Funding Options:

Securing adequate funding for the design and construction of these types of projects can be a challenge. The following is a list of possible funding sources for this project:

### Pennsylvania Transportation Alternatives Program

The Transportation Alternatives Set-Aside (TASA) provides funding for projects and activities defined as transportation alternatives, including on- and off-road pedestrian and bicycle facilities, infrastructure projects for improving non-driver access to public transportation and enhanced mobility, community improvement activities, and environmental mitigation, trails that serve a transportation purpose, and safe routes to school projects.

<https://www.penndot.gov/ProjectAndPrograms/Planning/Pages/Transportation%20Alternatives%20Set-Aside%20-%20Surface%20Trans.%20Block%20Grant%20Program.aspx>



### DCED Act 13 Grants: Greenways, Trails and Recreation Program (GTRP)

Act 13 of 2012 establishes the Marcellus Legacy Fund and allocates funds to the Commonwealth Financing Authority (the “Authority”) for planning, acquisition, development, rehabilitation and repair of greenways, recreational trails, open space, parks, and beautification projects using the Greenways, Trails and Recreation Program (GTRP).

<https://dced.pa.gov/programs/greenways-trails-and-recreation-program-grp/>

### DCED Multimodal Transportation Fund

The Multimodal Transportation Fund provides grants to encourage economic development and ensure that a safe and reliable system of transportation is available to the residents of the commonwealth. Funds may be used for the development, rehabilitation, and enhancement of transportation assets to existing communities, streetscape, lighting, sidewalk enhancement, pedestrian safety, connectivity of transportation assets and transit-oriented development.

<https://dced.pa.gov/programs/multimodal-transportation-fund/>

### PennDOT Multimodal Transportation

Act 89 also established a dedicated Multimodal Transportation Fund that stabilizes funding for ports and rail freight, increases aviation investments, establishes dedicated funding for bicycle and pedestrian improvements, and allows targeted funding for priority investments in any mode.

<https://www.penndot.gov/ProjectAndPrograms/MultimodalProgram/Pages/default.aspx>



## PENNDOT – Surface Transportation Program

The Twelve-Year Transportation Program (as required by Act 120 of Pennsylvania State Law and its amendments) targets the Commonwealth's improvement efforts in all major transportation modes: highways, bridges, aviation, rail, and transit. Transportation projects that focus on improving safety, enhancing mobility, moving goods, and preserving the existing system are key to achieving the Department's goals and objectives. The Division will continue to focus on incorporating the philosophy of the most current Federal and State Regulations in the continuous update of the Program; this includes the tie-in of planning requirements for Transportation Improvement Plans (TIPs), and the all-encompassing State TIP (STIP). This program also involves the preparation of comprehensive information packages for key Department staff, the State Transportation Commission (STC), and elected state and federal legislators and officials. These packages facilitate and communicate the development of a transportation system responsive to the needs of the Commonwealth, monitors progress on key programs and projects, and aids in resolving outstanding Transportation Program issues. Staff and support services are also provided to the STC and other Program Center functions to prepare improvement programs which maintain and enhance the existing transportation system.



<http://www.dvrpc.org/TIP/>



Robert Wood Johnson  
Foundation

### Robert Wood Johnson Foundation

The mission of the Robert Wood Johnson Foundation is to improve the health and health care of all Americans. Our goal is clear: To help our society transform itself for the better.

Website: <http://www.rwjf.org/grants/>

### William Penn Foundation

The William Penn Foundation, founded in 1945 by Otto and Phoebe Haas, is dedicated to improving the quality of life in eastern Pennsylvania through efforts that foster rich cultural expression, strengthen children's futures, and deepen connections to nature and community. In partnership with others, the Foundation works to advance a vital, just, and caring community.



<http://www.williampenntfoundation.org/Grants.aspx>



### National Parks Service – Trails Assistance Program

The Rivers, Trails, and Conservation Assistance Program is the community assistance arm of the National Park Service. RTCA supports community-led natural resource conservation and outdoor recreation projects. RTCA staff provides technical assistance to communities so they can conserve rivers, preserve open space, and develop trails and greenways.

Website: <http://www.nps.gov/ncrc/programs/rtca/>

### PA Department of Conservation and Natural Resources – Keystone Grant Program and Recreational Trails Program

Established on July 1, 1995, the Pennsylvania Department of Conservation and Natural Resources is charged with maintaining and preserving the 117 state parks; managing the 2.1 million acres of state forest land; providing information on the state's ecological and geologic resources; and establishing community conservation partnerships with grants and technical assistance to benefit rivers, trails, greenways, local parks and recreation, regional heritage parks, open space, and natural areas.

Local governments, county governments and non-profit organizations can apply for Community Conservation Partnerships Program (C2P2) funding to assist them with addressing their recreation and conservation needs as well as supporting economically beneficial recreational tourism initiatives.

Website: <https://www.dcnr.pa.gov/Communities/Grants/TrailGrants/Pages/default.aspx>

Contact:

Southeast Regional Office: (Region 1)

Jean Lynch | Regional Advisor: 610-892-3903

email: [jealynch@pa.gov](mailto:jealynch@pa.gov)

The following local funding sources may also be available:

- County, City, Borough and Township funds
- Private sponsorships, local fund raisers, etc.
- County Open Space funds



## Next Steps

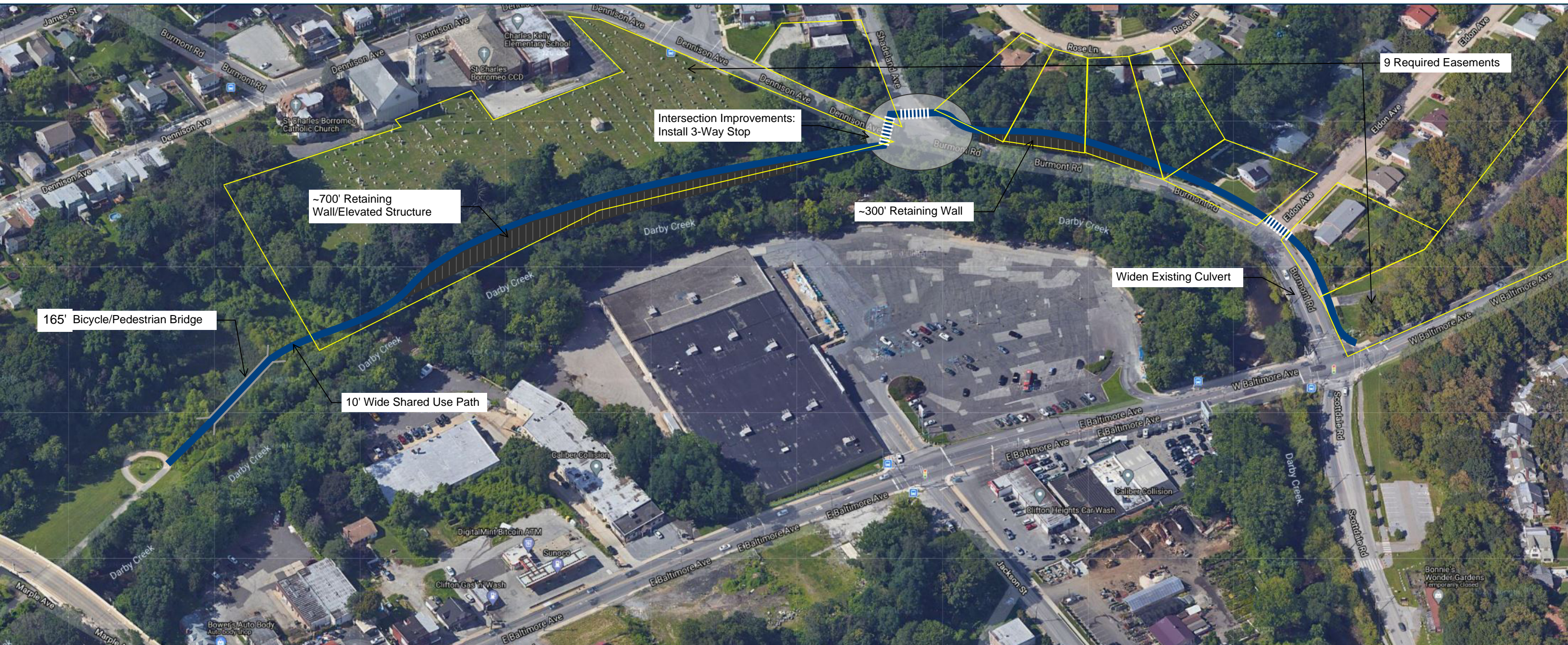
The study identified several alternative alignments, evaluated the feasibility of these alternatives, and recommended a preferred trail alignment. The next steps to bring this study's findings into active use includes:

- Secure Right of Way
- Explore Grant Opportunities for Engineering Design and Construction Funding
- Complete Engineering Design
- Complete Project Construction

Regular coordination with key stakeholders will be necessary in the development of the trail identified in this study. This includes coordination with PennDOT District 6-0, Delaware County, and Clifton Heights Borough and the affected property owners.

Appendix A  
Concept Plans for Trail Alternatives 1-5





165' Bicycle/Pedestrian Bridge

10' Wide Shared Use Path

~700' Retaining Wall/Elevated Structure

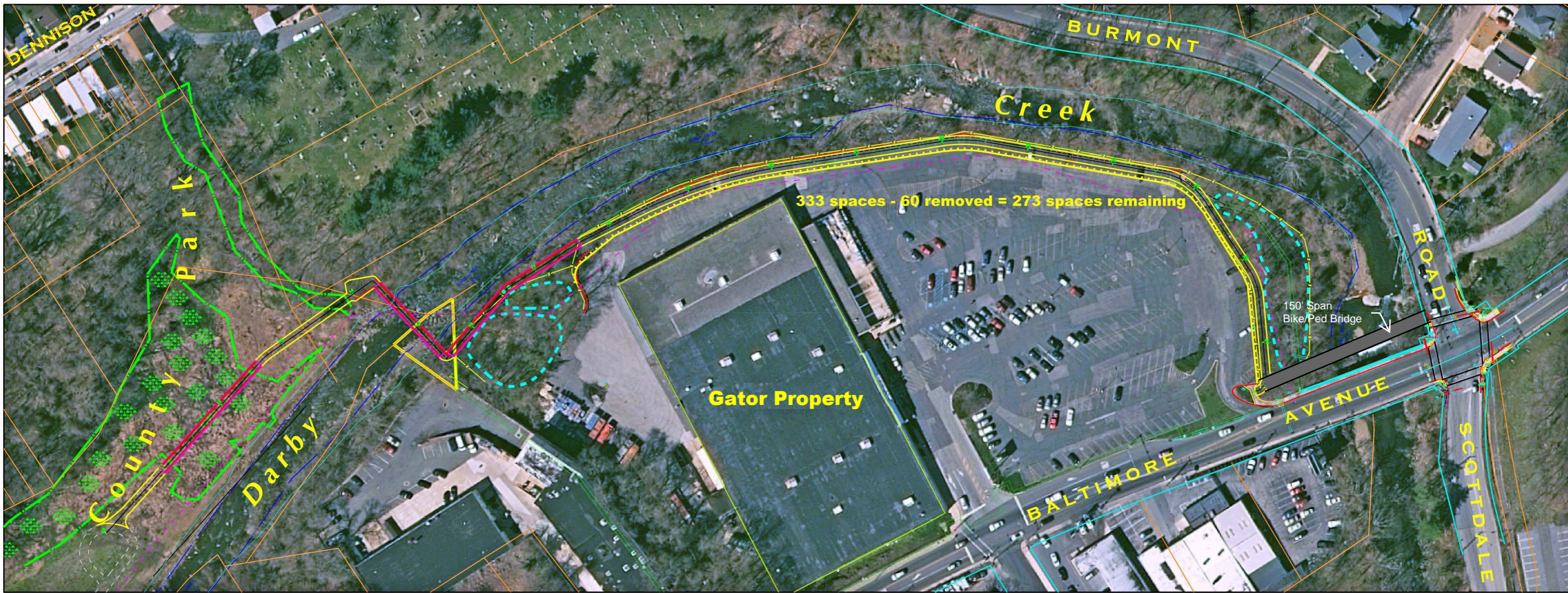
~300' Retaining Wall

Intersection Improvements:  
Install 3-Way Stop

Widen Existing Culvert

9 Required Easements

Alternative 1 - North Side of Darby Creek



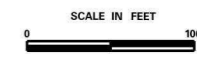
**LEGEND:**

- PROPOSED 10' SHARED-USE PATH
- PROPOSED GUIDERAIL
- EXISTING STORMWATER BASIN
- EXISTING WETLAND

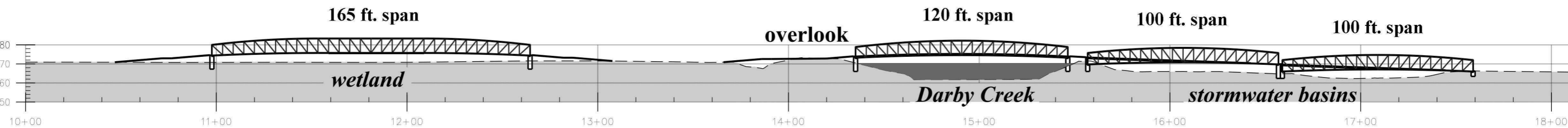
## Darby Creek Trail Phase 2

Delaware County Pennsylvania  
Alternative 2 - At Grade in Gator Parking Lot

December 2021



PREPARED BY:  
**Michael Baker**  
INTERNATIONAL  
500 OFFICE CENTER DRIVE, SUITE 210,  
FORT WASHINGTON, PA 19034-3234  
Phone: (215) 444-0888 · M.BAKERINTL.COM



Alternative 2 - At Grade in Gator Parking Lot

29-NOV-2021

E:\169812\_DarbyCreek\_Ph2\PI\101\ISP\lay\_Boards\DC\T\_Ph2\_A1\13\_GatorParcel1.dgn



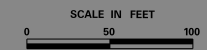
**LEGEND:**

- PROPOSED TRAIL
- PROPOSED TRAIL BRIDGE
- EXISTING PARKING AREA
- EXISTING STORMWATER BASIN
- EXISTING WETLAND

# Darby Creek Trail Phase 2

Delaware County Pennsylvania  
Alternate 3 - Elevated Concept

DECEMBER, 2021



PREPARED BY:

**Michael Baker**

**INTERNATIONAL**  
 500 OFFICE CENTER DRIVE, SUITE 210,  
 FORT WASHINGTON, PA 19034-3234  
 Phone: (215) 444-0888 • MBAKERINTL.COM

Alternative 3 - Elevated Trail



**LEGEND:**

- PROPOSED TRAIL
- EXISTING PARKING AREA
- EXISTING STORMWATER BASIN
- EXISTING WETLAND

**Darby Creek Trail Phase 2**  
 Delaware County Pennsylvania  
 Alternative 4 – Back of Gator Property At Grade

DECEMBER, 2021



SCALE IN FEET  
 0 50 100

PREPARED BY:

**Michael Baker**

**INTERNATIONAL**  
 500 OFFICE CENTER DRIVE, SUITE 210,  
 FORT WASHINGTON, PA 19034-3234  
 Phone: (215) 444-0888 • M.BAKERINTL.COM

**Alternative 4 - Back of Gator Property at Grade**

29-NOV-2021

E:\169812\_DarbyCreek\_Ph2\NP lot\Disp\lay\_Boards\DCT\_PH2\_A115\_GatorParcel.dgn



**LEGEND:**

- PROPOSED TRAIL
- EXISTING PARKING AREA
- EXISTING STORMWATER BASIN
- EXISTING WETLAND

**Darby Creek Trail Phase 2**  
 Delaware County Pennsylvania  
 Alternative 5 – Back of Gator Property Elevating



SCALE IN FEET  
 0 50 100

DECEMBER, 2021

PREPARED BY:  
**Michael Baker**  
 INTERNATIONAL  
 500 OFFICE CENTER DRIVE, SUITE 210,  
 FORT WASHINGTON, PA 19034-3234  
 Phone: (215) 444-0888 • M.BAKERINTL.COM

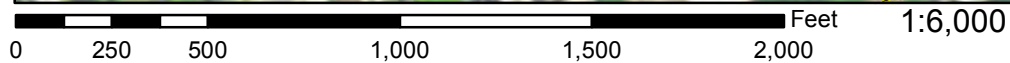
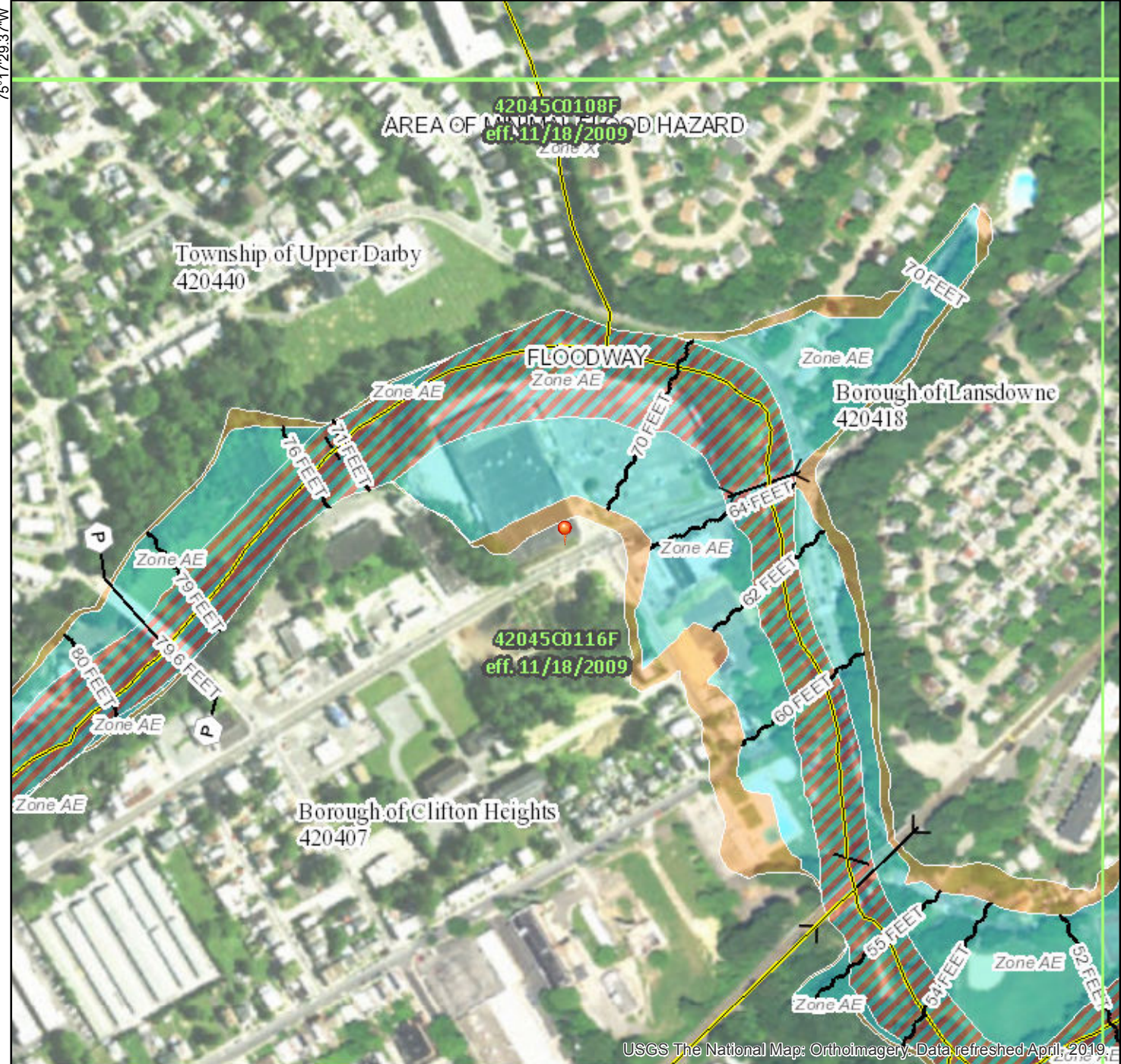
Alternative 5 - Back of Gator Property Elevating

Appendix B  
FEMA Flood Map  
Gator Property Development Plan

# National Flood Hazard Layer FIRMette



39°56'17.06"N



39°55'49.47"N

## Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D

OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall

OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance
		17.5 Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
OTHER FEATURES		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature

MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped

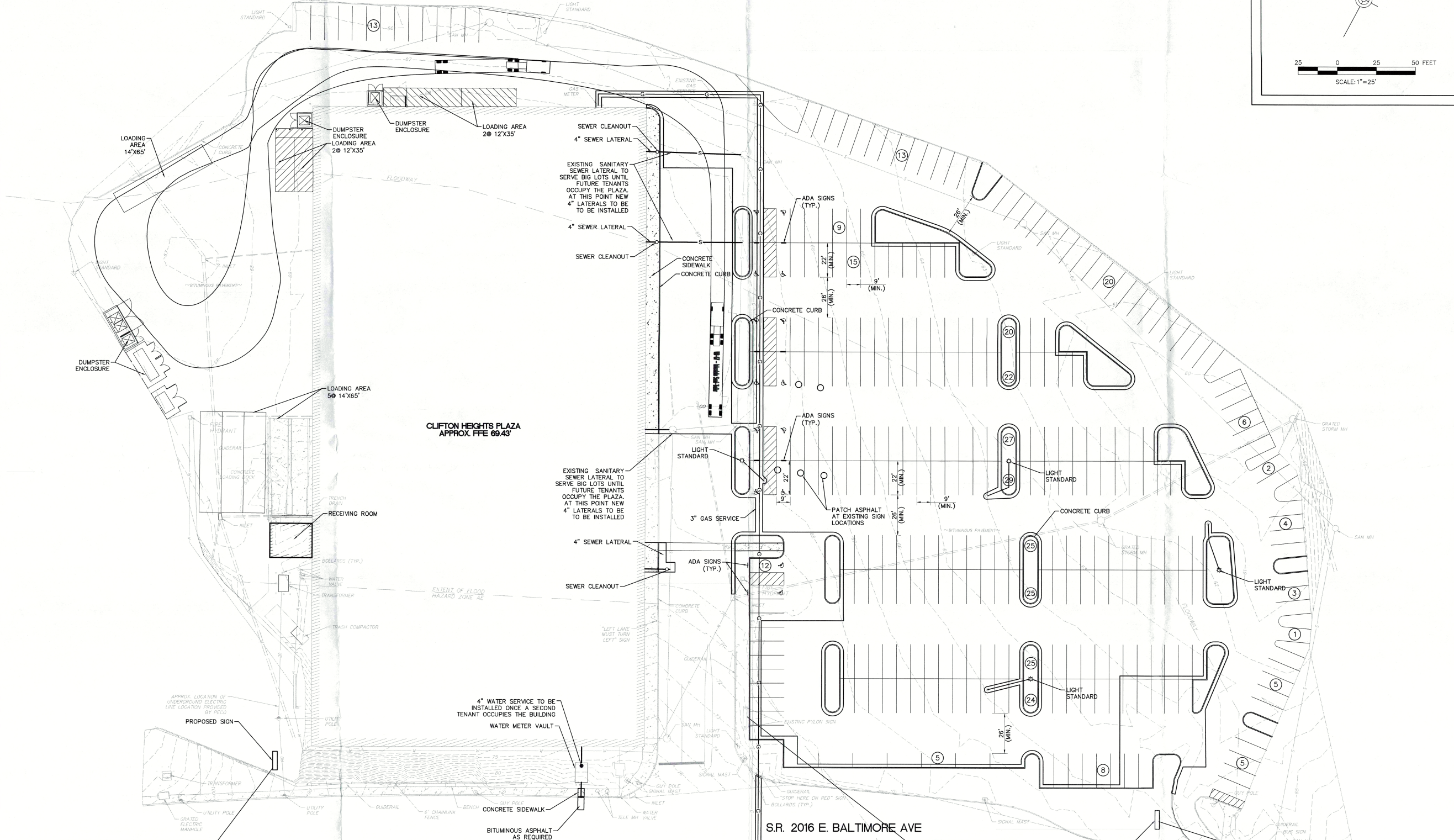
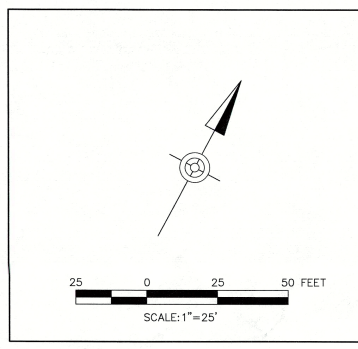
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 9/30/2019 at 10:22:14 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

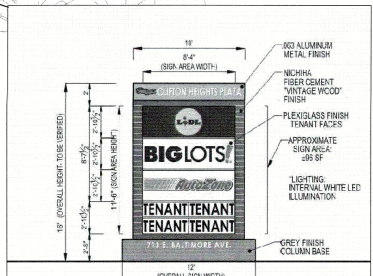
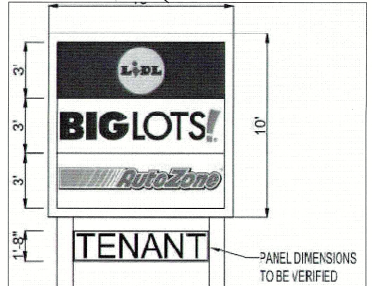
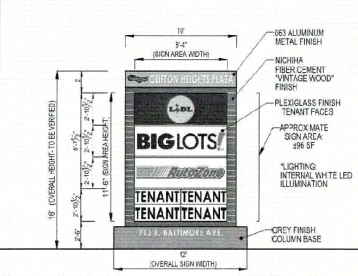
This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.





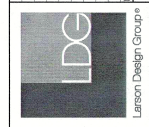
CLIFTON HEIGHTS PLAZA  
APPROX. FFE 69.43'

S.R. 2016 E. BALTIMORE AVE



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NO.	DATE	COMMENTS	ISSUE / REVISIONS



Larson Design Group  
1000 Commerce Park Drive • Suite 201  
Millsboro, DE 19966  
PHONE (877) 439-9605  
FAX 570.323.9902 • www.larsondesigngroup.com

**PROPOSED SITE IMPROVEMENTS**  
**CIVIL CONSTRUCTION SET**  
**CLIFTON HEIGHTS PLAZA MULTI-TENANT BLDG.**  
CLIFTON HEIGHTS BOROUGH, DELAWARE COUNTY, PENNSYLVANIA  
Larson Design Group • Architects Engineers Surveyors  
1000 Commerce Park Drive • Suite 201  
Millsboro, DE 19966 • PHONE (877) 439-9605  
FAX 570.323.9902 • www.larsondesigngroup.com



# Appendix C

## Cost Estimates

**Darby Creek Ph 2**  
**Alternative 1 - Northern Alternative**  
**Preliminary Cost Estimate**

Description	Item	Quan.	Unit	Unit Cost	Total Item Cost
Shared Use Path	Excavation (Shared Use Path)	684	CY	\$ 30	\$ 20,533
	6" Subbase	2,347	SY	\$ 15	\$ 35,200
	3" Bituminous Base Course	2,347	SY	\$ 25	\$ 58,667
	1.5" Bituminous Wearing Course (Shared Use Path)	2,347	SY	\$ 35	\$ 82,133
	Landscaping/Earthwork	2112	LF	\$ 5	\$ 10,560
Structures	165 LF Contech Prefabricated Bridge Truss	1	Each	\$ 214,720	\$ 214,720
	Cast in place bridge deck	1	Each	\$ 15,400	\$ 15,400
	Bridge Abutments / Soil Testing	1	Each	\$ 100,000	\$ 100,000
	Culvert Widening	1	LS	\$ 100,000	\$ 100,000
	Retaining Wall #1	8400	SF	\$ 200	\$ 1,680,000
	Retaining Wall #2	300	LF	\$ 500	\$ 150,000
Traffic	Intersection Improvement	2	Each	\$ 30,000	\$ 60,000
Misc.	Guiderail	100	LF	\$ 45	\$ 4,500
	Impact Attenuating Devices	2	EACH	\$ 8,000	\$ 16,000
	Grading / Earthwork approaching Burmont Road	1	LS	\$ 60,000	\$ 60,000
	ADA ramps	10	EACH	\$ 3,500	\$ 35,000
				Subtotal =	\$ 2,642,713

Signing / Pavement Marking (10%)	1	LS		\$ 264,271	
Drainage/Stormwater (5%)	1	LS		\$ 132,136	
E&S Control (4%)	1	LS		\$ 105,709	
Survey (3%)	1	LS		\$ 79,281	
Traffic Control (5%)	1	LS		\$ 132,136	
				Subtotal =	\$ 3,356,246
Design (20%)				\$ 671,249	
Construction Management & Inspection (5%)	1	LS		\$ 167,812	
				<b>Total =</b>	<b>\$ 4,195,307</b>

Darby Creek Ph 2  
Alternative 2 - At Grade in Gator Property Parking Lot  
Preliminary Cost Estimate

Description	Item	Quan.	Unit	Unit Cost	Total Item Cost
Shared Use Path	Excavation (Shared Use Path)	719	CY	\$ 30	\$ 21,560
	6" Subbase	2,464	SY	\$ 15	\$ 36,960
	3" Bituminous Base Course	2,464	SY	\$ 25	\$ 61,600
	1.5" Bituminous Wearing Course (Shared Use Path)	2,464	SY	\$ 35	\$ 86,240
	Landscaping/Earthwork	2218	LF	\$ 5	\$ 11,088
	Concrete Curb	1000	LF	\$ 45	\$ 45,000
	Parking Lot Alternations	1	LS	\$ 50,000	\$ 50,000
Traffic	Intersection Improvement	1	Each	\$ 30,000	\$ 30,000
Structures	165 LF Contech Prefabricated Bridge Truss	1	Each	\$ 214,720	\$ 214,720
	Cast in place bridge deck	1	Each	\$ 15,400	\$ 15,400
	Bridge Abutments / Soil Testing	1	Each	\$ 110,000	\$ 110,000
	300 LF Contech Prefabricated Bridge Truss	1	Each	\$ 390,400	\$ 390,400
	Cast in place bridge deck	1	Each	\$ 28,000	\$ 28,000
	Bridge Abutments / Soil Testing	1	Each	\$ 200,000	\$ 200,000
	150 LF Contech Prefabricated Bridge Truss	1	Each	\$ 195,200	\$ 195,200
	Cast in place bridge deck	1	Each	\$ 14,000	\$ 14,000
Misc.	ADA ramps	5	EACH	\$ 3,500	\$ 17,500
				Subtotal =	\$ 1,627,668

Signing / Pavement Marking (5%)	1	LS		\$ 81,383	
Drainage/Stormwater (5%)	1	LS		\$ 81,383	
E&S Control (2%)	1	LS		\$ 32,553	
Survey (3%)	1	LS		\$ 48,830	
Traffic Control (10%)	1	LS		\$ 162,767	
				Subtotal =	\$ 2,034,585
Design (20%)				\$ 406,917	
Construction Management & Inspection (5%)	1	LS		\$ 101,729	
				<b>Total =</b>	<b>\$ 2,543,231</b>

Description	Item	Quan.	Unit	Unit Cost	Total Item Cost
Shared Use Path	Excavation (Shared Use Path)	257	CY	\$ 30	\$ 7,700
	6" Subbase	880	SY	\$ 15	\$ 13,200
	3" Bituminous Base Course	880	SY	\$ 25	\$ 22,000
	1.5" Bituminous Wearing Course (Shared Use Path)	880	SY	\$ 35	\$ 30,800
	Landscaping/Earthwork	792	LF	\$ 5	\$ 3,960
Traffic	Intersection Improvement	1	Each	\$ 25,000	\$ 25,000
Structures	Contech Prefabricated Bridge Truss' (17 bridges)	1533	LF	\$ 1,300	\$ 1,992,900
	Cast in place bridge decks	1533	LF	\$ 94	\$ 144,102
	Bridge Abutments / Soil Testing	5	Each	\$ 50,000	\$ 250,000
	Bridge Piers / Soil Testing	15	Each	\$ 25,000	\$ 375,000
Misc.	Guiderail	100	LF	\$ 45	\$ 4,500
	Impact Attenuating Devices	2	EACH	\$ 8,000	\$ 16,000
	ADA ramps	2	EACH	\$ 3,500	\$ 7,000
Subtotal =					\$ 2,892,162

Signing / Pavement Marking (5%)	1	LS		\$ 144,608
Drainage/Stormwater (5%)	1	LS		\$ 144,608
E&S Control (2%)	1	LS		\$ 57,843
Survey (3%)	1	LS		\$ 86,765
Traffic Control (10%)	1	LS		\$ 289,216
Subtotal =				\$ 3,615,203
Design (20%)				\$ 723,041
Construction Management & Inspection (5%)	1	LS		\$ 180,760
<b>Total =</b>				<b>\$ 4,519,003</b>

**Darby Creek Ph 2**  
**Alternative 4 - Back of Gator Property**  
**Preliminary Cost Estimate**

Description	Item	Quan.	Unit	Unit Cost	Total Item Cost
Shared Use Path	Excavation (Shared Use Path)	599	CY	\$ 30	\$ 17,967
	6" Subbase	2,053	SY	\$ 15	\$ 30,800
	3" Bituminous Base Course	2,053	SY	\$ 25	\$ 51,333
	1.5" Bituminous Wearing Course (Shared Use Path)	2,053	SY	\$ 35	\$ 71,867
	Landscaping/Earthwork	1848	LF	\$ 5	\$ 9,240
	Concrete Curb	165	LF	\$ 45	\$ 7,425
	Parking Lot Alternations	1	LS	\$ 25,000	\$ 25,000
Traffic	Intersection Improvement	2	Each	\$ 25,000	\$ 50,000
Structures	165 LF Contech Prefabricated Bridge Truss	1	Each	\$ 214,720	\$ 214,720
	Cast in place bridge deck	1	Each	\$ 15,400	\$ 15,400
	Bridge Abutments / Soil Testing	1	Each	\$ 100,000	\$ 100,000
	125 LF Contech Prefabricated Bridge Truss	1	Each	\$ 162,602	\$ 162,602
	Cast in place bridge deck	1	Each	\$ 11,662	\$ 11,662
	Bridge Abutments / Soil Testing	1	Each	\$ 100,000	\$ 100,000
	150 LF Contech Prefabricated Bridge Truss	1	Each	\$ 195,200	\$ 195,200
	Cast in place bridge deck	1	Each	\$ 14,000	\$ 14,000
	Bridge Abutments / Soil Testing	1	Each	\$ 100,000	\$ 100,000
Misc.	Retaining Wall #1	2700	SF	\$ 200	\$ 540,000
Misc.	Landscaping / Streetscape Improvements	1	Each	\$ 150,000	\$ 150,000
	ADA ramps	9	EACH	\$ 3,500	\$ 31,500
				<b>Subtotal =</b>	<b>\$ 1,898,715</b>

Signing / Pavement Marking (5%)	1	LS		\$ 94,936	
Drainage/Stormwater (5%)	1	LS		\$ 94,936	
E&S Control (2%)	1	LS		\$ 37,974	
Survey (3%)	1	LS		\$ 56,961	
Traffic Control (5%)	1	LS		\$ 94,936	
				<b>Subtotal =</b>	<b>\$ 2,278,458</b>
Design (20%)				\$ 455,692	
Construction Management & Inspection (5%)	1	LS		\$ 113,923	
				<b>Total =</b>	<b>\$ 2,848,073</b>

**Darby Creek Ph 2**  
**Alternative 5 - Back of Gator Property - Elevating to Road**  
**Preliminary Cost Estimate**

Description	Item	Quan.	Unit	Unit Cost	Total Item Cost
Shared Use Path	Excavation (Shared Use Path)	599	CY	\$ 30	\$ 17,967
	6" Subbase	2,053	SY	\$ 15	\$ 30,800
	3" Bituminous Base Course	2,053	SY	\$ 25	\$ 51,333
	1.5" Bituminous Wearing Course (Shared Use Path)	2,053	SY	\$ 35	\$ 71,867
	Landscaping/Earthwork	1848	LF	\$ 5	\$ 9,240
	Concrete Curb	165	LF	\$ 45	\$ 7,425
	Parking Lot Alternations	1	LS	\$ 25,000	\$ 25,000
Traffic	Intersection Improvement	2	Each	\$ 25,000	\$ 50,000
Structures	165 LF Contech Prefabricated Bridge Truss	1	Each	\$ 214,720	\$ 214,720
	Cast in place bridge deck	1	Each	\$ 15,400	\$ 15,400
	Bridge Abutments / Soil Testing	1	Each	\$ 100,000	\$ 100,000
	125 LF Contech Prefabricated Bridge Truss	1	Each	\$ 162,602	\$ 162,602
	Cast in place bridge deck	1	Each	\$ 11,662	\$ 11,662
	Bridge Abutments / Soil Testing	1	Each	\$ 100,000	\$ 100,000
	150 LF Contech Prefabricated Bridge Truss	1	Each	\$ 195,200	\$ 195,200
	Cast in place bridge deck	1	Each	\$ 14,000	\$ 14,000
	Bridge Abutments / Soil Testing	1	Each	\$ 100,000	\$ 100,000
	Retaining Wall #1	4320	SF	\$ 200	\$ 864,000
Barrier Mounted Glare Screen	540	LF	\$ 250	\$ 135,000	
Misc	Guiderail	50	LF	\$ 40	\$ 2,000
	Sidewalk Widening	200	LF	\$ 125	\$ 25,000
	Impact Attenuator	2	Each	\$ 3,500	\$ 7,000
	Landscaping / Streetscape Improvements	1	Each	\$ 150,000	\$ 150,000
	ADA ramps	9	EACH	\$ 3,500	\$ 31,500
				Subtotal =	\$ 2,391,715

Signing / Pavement Marking (5%)	1	LS		\$ 119,586	
Drainage/Stormwater (5%)	1	LS		\$ 119,586	
E&S Control (2%)	1	LS		\$ 47,834	
Survey (3%)	1	LS		\$ 71,751	
Traffic Control (5%)	1	LS		\$ 119,586	
				Subtotal =	\$ 2,870,058
Design (20%)				\$ 574,012	
Construction Management & Inspection (5%)	1	LS		\$ 143,503	
				<b>Total =</b>	<b>\$ 3,587,573</b>

Appendix D  
Public Involvement and Outreach

## Public Involvement and Outreach

This is a unique study that is more of an alignments analysis that picks up where the previous [Darby Creek Stream Valley Park Master Plan \(2009\)](#) study left off. That study included an extensive public outreach component with local focus groups, municipal officials meetings, public meetings that showed that a Darby Creek Trail is highly desired by the residents in the surrounding community. Especially when presented with the benefits of the trail, that outreach concluded that local officials are in support of it as well. A section detailing the Public Input from that Master Plan begins on page A-4 of that report, which can be found at:

<https://www.delcopa.gov/planning/pubs/DarbyCreekStreamValleyParkMasterPlan.html>.

The challenge for this follow-up study was to analyze all the possible alignments for this gap segment, which would lay the groundwork for work to secure right-of-way and final design and pre-construction activities for the trail. During this study, the County engaged in sensitive conversations with Gator Clifton Partners, LLC., the private landowner involved in most of the alignment alternatives. Most of the questions to answer had to do with engineering solutions and conversations with Gator.

The County engaged Clifton Heights Borough officials and staff during the course of the study, especially since most of the alternatives involved a majority of right-of-way in Clifton Heights. Staff from Upper Darby Township and Lansdowne Borough were notified as well.

The COVID-19 pandemic made it more difficult to reach a lot of people if we wanted to and get a meaningful response. Some representative boards and groups were updated periodically by the County. Delaware County Planning Department staff briefed the Delaware County Park Board at a number of their meetings during the project.

County Planning staff also spoke on the project during presentations at four annual Philadelphia Western Suburbs Trail Summits in February of 2019, 2020, 2021, and 2022. All of these Delaware County-centric summits have high attendance, and the ones held in 2021 and 2022 were held online, due to the COVID-19 pandemic. Attendees to this Summit are trail enthusiasts, members of trail advocacy groups, municipal and agency officials and staff, and the general public. County Planning Presentations made by Steven R. Beckley, AICP, of the County Planning Department at these Summits can be found at: <https://www.havtrail.com/summit/index.htm>.

County staff also had some conversations with leadership of the primary citizen trail group in the area, the Friends of Upper Darby Trails, who were engaged and interested in the pre-design and study process. Planners also engaged the Delaware Valley Regional Planning Commission staff, who administer the Circuit Trails Coalition and their Regional Trails Program.

This study will be posted on the Delaware County website and sent to the local trail groups and municipalities as well. The County will include more outreach to the local Trail groups, County Park Board, and municipalities during the trail's final design process, when the final decision of the trail's alignment will be made, with the analysis from this study taken into account.