

SHEEPSKIN TRAIL FEASIBILITY STUDY

UPDATE OF THE JULY 1999 FEASIBILITY STUDY

Prepared for

National Road Heritage Corridor (NRHC)



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1. EXECUTIVE SUMMARY

In 1996, Fayette County received a planning grant from the Department of Conservation and Natural Resources (DCNR) and selected Mackin Engineering to conduct a trail feasibility study. A major study goal was to define and assess the potential trail route. The 1999 Feasibility Study produced evidence that the Sheepskin Trail was a viable project. As the management entity for the development and construction of the Sheepskin Trail, the National Road Heritage Corridor (NRHC) determined there was a need to update the 1999 Feasibility Study based on the length of time since the original study was completed, changes in land use/ownership and potential impact of the Marcellus Shale industry on proposed and alternate routes. Gibson-Thomas Engineering (Gibson-Thomas) was hired to update the 1999 Feasibility Study.

The intent of this study update is to utilize and update the 1999 Feasibility Study as necessary based on changes to the trail corridor that have occurred in the past 18 years. Trail alignments developed in 1999 were reviewed and updated as necessary. Detailed Feasibility Study Exhibits (FSE) were developed to display the proposed Sheepskin Trail alignments. Based on the project background, field views, public input, and segment cost estimates a 'Main Corridor Alignment' was developed which is the recommended alignment of the proposed Sheepskin Trail.

2. PROJECT BACKGROUND

The Sheepskin Trail, a rail-trail project is a proposed 34 mile bicycle/pedestrian path that will extend from Dunbar Township to Point Marion Borough at the Pennsylvania/West Virginia state line. In 1996, Fayette County received a planning grant from the Department of Conservation and Natural Resources (DCNR) and selected Mackin Engineering to conduct a trail feasibility study. A major study goal was to define and assess the potential trail route. In July 1999 Mackin submitted the 'Sheepskin Trail Final Feasibility Study' to Fayette County. The 1999 Feasibility Study produced evidence that the Sheepskin Trail was a viable project.

In 2014, Fayette County executed a Memorandum of Understanding with the National Road Heritage Corridor (NRHC) for the NRHC to become the management entity for the development and construction of the Sheepskin Trail. As manager of trail development the NRHC hired Gibson-Thomas to update the 1999 Feasibility Study. A study update is necessary due to the length of time since the original study was completed, changes in land use/ownership and potential impact of the Marcellus Shale industry on proposed and alternate routes. The intent of this study update is to utilize and update the 1999 Feasibility Study as necessary based on changes to the trail corridor that have occurred in the past 18 years.

a. Project Scope

The scope of work for this project was based on the Request for Proposal (RFP) prepared by the NRHC. This study update utilized the 1999 Feasibility Study as a starting point and included steps discussed below:

Project Start-up and Identification of Trail Alignment Alternatives

A review of existing maps, plans, and the 1999 Feasibility Study was conducted. Materials utilized include USGS 7.5 minute series mapping, Pennsylvania Spatial Data Access (PASDA) aerial imagery, Lidar Contours as well as Sheepskin Trail Construction Plans previously completed by Widmer Engineering, K2 Engineering, Inc. and Triad Engineering Inc. Fayette County provided Gibson-Thomas with GIS tax parcel information for the entire Sheepskin Trail Corridor. The NRHC provided assistance with organizing property owner meetings and stakeholder interviews. Potential trail alignments were developed based on the collected background data and field trips.

Site Analysis and Preliminary Alignment Concepts Overview

Site analysis evaluated the feasibility of the preliminary trail alignments developed during project start-up. The analysis took into consideration land availability (corridor width, top-of-bank width, and property ownership/easements), channel conditions, especially in areas of potential structures (underpasses,

cantilever trail segments, pedestrian/bicycle bridges), existing bridge types (structure design, location of abutments, channel lining), and roadway conditions in areas where at-grade crossings may be necessary (traffic volumes, speed, existing bike/pedestrian facilities). Preliminary trail alignments were modified based on site analysis and input solicited from project stakeholders and public meetings. A Feasibility Study Exhibit (FSE) was developed to display investigated alignments.

b. Project Partners

The NRHC is engaged with the Fayette County Planning Office, DCNR, the Southwestern Pennsylvania Commission (SPC), the Industrial Heartland Trails Coalition (IHTC), and the Rails-to-Trails Conservancy (RTC) to develop and construct the Sheepskin Trail.

c. Regional Context

i. Relationship to Local Communities

The Sheepskin Trail, entirely located within Fayette County, will pass through many communities including Dunbar, Uniontown, Fairchance, Smithfield, Outcrop, and Point Marion. The trail runs adjacent to Laurel Highlands and Uniontown High Schools and will be in close proximity to Penn State's Fayette Campus. Recreational resources that will be connected by the trail include: Fairchance Community Park, Hutchinson Park, Bailey Park, Uniontown Rotary Walk, Shady Grove Park, and Leith Park. The Sheepskin Trail will also provide fishing access to Dunbar Creek, Redstone Creek, and Grassy Run.

ii. Relationship to Connecting Trails

The Sheepskin Trail is a missing link to connect multiple nationally significant trail systems. To the north, it will link with the Pittsburgh-to-Washington DC Rail-Trail Network known as the Great Allegheny Passage (GAP) and the Potomac Heritage National Scenic Trail. To the south, it will link with the West Virginia Mon River Rail-Trail System. The Sheepskin Trail will also connect directly to the proposed Browns Run Rail-Trail, which will run from Smithfield to Shoaf and continue on to Ronco at the Monongahela River.

Additionally, the Sheepskin Trail is part of the IHTC vision of a regional trail project focused on bridging the borders of 48 counties within four states via an off-road trail network totaling more than 1400 miles. Planned to be completed by 2033, the effort was born from the original southwest Pennsylvania's Power of 32 initiative. Pittsburgh is serving as the network's hub, with five mega corridors radiating out of that metro area and connecting to Cleveland, Erie, Morgantown, Parkersburg, and more. Specifically, the 34-mile Sheepskin Trail project is key to completing the 260-mile Parkersburg to Pittsburgh (P2P) Connection, of which 210 miles are already completed. The update of the Sheepskin Trail Feasibility study will complement a simultaneous feasibility effort now underway along West Virginia's portion of the P2P. (See page 3 for P2P Mapping)

3. **METHODOLOGY**

a. Existing Plans / Field Survey

Prior to the development of potential trail alignments a thorough review of background documents was completed. Materials reviewed include the original 1999 Feasibility Study, USGS 7.5 minute series mapping, Pennsylvania Spatial Data Access (PASDA) aerial imagery, Lidar Contours as well as Sheepskin Trail Construction Plans previously completed by Widmer Engineering, K2 Engineering, Inc. and Triad Engineering Inc. Fayette County provided Gibson-Thomas with GIS tax parcel information for the entire Sheepskin Trail Corridor.

Multiple site visits were conducted to document and measure field conditions which can impact project costs. Examples of field conditions noted include:

- Surrounding roadways, local parks, schools, community centers, and other potential multimodal traffic generators
- Bridge/Tunnel Assessments
- Roadway Crossings
- Rail Line Crossings

b. Development of Alignment and Alternatives

The Main Corridor Alignment was developed by analyzing and revising the 1999 Feasibility Study Main Corridor Alignment. This alignment primarily followed an abandoned Penn Central line, B&O/CSX lines and the active short line – Southwest Pennsylvania Railroad (SWP). The viability of all portions of the 1999 Main Corridor Alignment were analyzed using updated topographic maps, aerial photos, tax maps, engineering studies, and stakeholder interviews. Revisions were made to the 1999 Feasibility Study Main Corridor Alignment based on changes to the area that have occurred in the past 18 years. A Feasibility Study Exhibit (FSE) was developed to display investigated alignments. The Feasibility Study Exhibit is included in Appendix A of this report.

The proposed Sheepskin ‘Main Corridor Alignment’, which was initially based off of the 1999 Main Corridor Alignment, is shown on the FSE in yellow. In certain cases short Alignment Alternatives to the Main Corridor were considered and are shown on the FSE in red. In these cases there are trail features along the Main Corridor that may need to be avoided. Examples of these features include structures that require significant rehabilitation or trail areas that require significant earthwork. An ‘East Alignment’ was considered which is shown on the FSE in grey. The East Alignment is a “rail-with-trail” and exclusively follows an active SWP rail line. Conceptual cost estimates were developed for the Main Corridor Alignment as well as any short Main Corridor Alignment Alternatives. These estimates are included in Appendix B of this report. At this time the East Alignment is not a viable option for the Sheepskin trail due to the presence of the active rail line. Negotiations with the SWP were ongoing at the time of this study update. A conceptual cost estimate was not developed for the East Alignment because it is uncertain whether or not it will be an available option for the Sheepskin Trail. In the future, should the viability of the East Alignment change, the mapping of the alignment will be valid however a conceptual cost estimate will need to be completed.

c. Stakeholder Interviews

The NRHC conducted stakeholder interviews with representatives from the City of Uniontown, North Union Township, South Union Township, Georges Township, Fairchance Borough, and Smithfield Borough. Most stakeholder comments were concerned with whether or not the property owners on the FSE are displayed accurately. The information displayed on the FSE reflects the latest owner on record at the Fayette County Recorder of Deeds. When construction plans are developed for unconstructed segments of the trail, in-depth deed research will need to be performed to confirm the property owner information.

d. Public Participation

Two public meetings were held during the development of Sheepskin Trail alignments. The intent of these meetings was to present conceptual trail alignments and solicit public feedback.

Public meeting 1 was held concurrently with a ‘Friends of the Sheepskin Trail’ monthly meeting on May 10, 2017 in Dunbar Borough. Representatives from Gibson-Thomas described the intent of the Feasibility Study update and displayed initial trail alignments.

Public meeting 2 was held concurrently with a ‘Friends of the Sheepskin Trail’ monthly meeting on September 26, 2017 in Fairchance Borough. The general public was invited to attend this meeting. Representatives from Gibson-Thomas displayed the FSE and answered questions during the two hour meeting.

Questionnaires were distributed to meeting participants in order to solicit public feedback for the trail alignments.

e. Construction Cost Estimate

After completion of the background and field studies, conceptual cost estimates were developed for the Main Corridor Alignment as well as any short Main Corridor Alignment Alternatives. These estimates are included in Appendix B of this report. At the time of this study the East Alignment was not a viable option for the Sheepskin trail due to the presence of the active SWP rail line. A conceptual cost estimate was not developed for the East Alignment because it is uncertain whether or not it will be an available option for the Sheepskin Trail. In the future should, the viability of the East Alignment change, the mapping of the alignment will be valid however a conceptual cost estimate will need to be completed.

The following assumptions were made in the process of construction cost estimation:

- Each segment would be constructed by professional contractors working on a low bid basis. Volunteer labor was not considered in the estimated figures.
- A purchase value of \$4000.00 per acre was used for land acquisition unless otherwise informed by landowners or the NRHC.
- A cost of 5% of the Combined Trail+Structure Subtotal was used for erosion and sediment control.
- A cost of 10% of the Combined Trail+Structure Subtotal was used for a construction contingency.
- A cost of 12% of the Combined Trail+Structure Subtotal was used for construction engineering and mobilization.
- A cost of 10% of the Combined Trail+Structure Subtotal was used for construction inspection.

The following assumptions were made in the process of engineering cost estimation:

- A cost of 10% of the Construction Subtotal was used for administration costs.
- A cost of 10% of the Construction Subtotal was used for an environmental impact study.
- A cost of 10% of the Construction Subtotal was used for engineering, survey and design.

Unit prices for construction items were developed from several resources including previous bids for the construction of the Sheepskin trail, the 1999 Feasibility Study, PennDOT ECMS Item Price History, and phone conversations with manufacturers.

Trail cost estimates were broken into three categories: Land Acquisition, Trail Construction, and Structures.

i. Land Acquisition

All landowners along the Sheepskin Trail alignments were identified using GIS tax parcel information provided by Fayette County. This information reflects the latest owner on record at the Fayette County Recorder of Deeds. A number of properties were acquired by 'Quit Claim'. Research into revisionary clauses in previous deeds was not completed for this feasibility study. As segments of the Sheepskin Trail progress into the design phase, thorough deed research will need to be completed to determine the ownership status of properties acquired by 'Quit Claim'.

The NRHC provided assistance by handling any contact with landowners to determine their willingness to sell or enter into a right-of-way agreement for property for the proposed trail. The feasibility of acquiring specific properties was not assessed as a part of this study.

A purchase value of \$4000.00 per acre was used for land acquisition unless otherwise informed by landowners or the NRHC. This value was based off of the purchase value used in the 1999 Feasibility Study, with the price adjusted to account for inflation. Acreages were calculated assuming a 25' right-of-way width would be purchased for the trail.

ii. Trail Construction

The typical Sheepskin Trail section was assumed to be a 10' wide trail with 7.5' wide berms on each side of the trail which makes the entire disturbed construction area 25' wide. Trail Construction includes items such as trail paving, trail surfacing, clearing and grubbing, seeding and mulching, drainage improvements, road crossings, and fence.

Trail paving and trail surfacing typical sections were based off of previously approved construction plans for Segments 2 and 3. The trail paving section consists of:

- 2" AASHTO #10
- 4" Compacted PennDOT #2A Crushed Aggregate
- 4" Sub-base

The trail surfacing section consists of:

- 2" AASHTO #10
- 4" Compacted PennDOT #2A Crushed Aggregate

Costs for the trail paving section were calculated in areas where an existing railroad ballast is not present whereas costs for the trail surfacing section were calculated in areas where an existing railroad ballast is present. The presence of an existing railroad ballast was assumed based on field views and previous studies. Class 1 excavation was calculated for areas where trail paving was assumed.

Clearing and grubbing and seeding and mulching were assumed to be required at a width of 25'. In some cases it was noted that certain sections of proposed trail were already clear or partially clear, so the area of required clearing and grubbing was adjusted to reflect these clear areas. Split rail fence was assumed to be required on one side of the trail for 10% of the trail length.

Drainage improvements consisted of the construction of ditches and placement of cross pipes. Cross pipe installation assumed the use of 18" diameter high-density polyethylene (HDPE) pipes at 25' in length with timber endwall structures and size R-4 stone at the pipe inlet and outlet. Pipes were assumed to be necessary every 500' of proposed trail. Drainage ditch installation assumed 25% of the cut slope of the trail requires ditch cleaning and 25% of the cut slope requires new ditches.

Road crossing costs assume the following:

- Pair of R1-1 Stop Signs for trail users
- Pair of W11-15 Combined Bicycle/Pedestrian Signs for vehicular traffic
- Pair of wooden bollard posts
- 60' of crosswalk painting

Costs for 'Share the Road' segments include:

- W16-101 Share the Road Signs
- Sheepskin Trail Signs/Directional Arrows
- Bicycle Sharrows
- Rectangular Rapid Flash Beacons (as recommended)

iii. Structures

Structural improvements include construction of a pre-fabricated pedestrian truss bridge on new concrete abutments and wingwalls, construction of a pre-fabricated pedestrian truss bridge on existing abutments and wingwalls, or construction of new approach rails and side rails for an existing structure which will be utilized by the Sheepskin Trail.

The proposed structural improvements from the 1999 Feasibility Study were assumed to still be valid for the purpose of this report. The structural condition of these existing structures may have changed since

the 1999 Feasibility Study was completed. A detailed structural evaluation of all existing structures will need to be completed during the engineering design phase of this project.

The following assumptions were made in the process of structural cost estimation:

- New abutments are to support a 12' wide truss, 10' above the streambed.
- Existing structures will require new bridge rail and new approach rail. It is assumed 15' of approach rail will be required at all four corners of the structure.
- The price for the pre-fabricated truss bridge includes materials, delivery and installation.

Existing and proposed structure lengths were based off of field views, the 1999 Mackin Feasibility Study and previous construction plans. If no structural information was available the proposed structure length was assumed to be 30'.

4. SEGMENT ANALYSIS

In order to better manage the development of trail alignments and preparation of cost estimates, the entire 34-mile trail corridor was divided into ten segments. The segment limits have been revised since the completion of the 1999 Feasibility Study such that segment limits correspond to municipality limits. The segments are numbered in ascending order from north to south with Segment 1 beginning at Sheepskin trailhead located near South Connellsville Borough and Segment 8 ending at the West Virginia/Pennsylvania state line. The results of the field study and segment descriptions are discussed below.

a. Overview Map

See Appendix A for an 'Overview Map' which shows segment limits and the proposed Sheepskin Trail as it navigates through the heart of central Fayette County.

b. Introduction

A Feasibility Study Exhibit (FSE) was developed to display the Main Corridor Alignment, Main Corridor Alignment Alternatives, the East Alignment, all proposed stream crossings, roadway crossings, rail crossings, potential trail access areas, property lines, and affected property owners. The Segments are numbered in ascending order from north to south with Segment 1 beginning at Sheepskin trailhead located near South Connellsville Borough and Segment 8 ending at the West Virginia/Pennsylvania state line. Trail segments are in various development stages. Some segments have been constructed and are "open", some have been "designed" but have yet to be constructed, some are designed and scheduled "to be constructed" and some segments are "gaps" in the Sheepskin Trail network.

Table: Summary of Sheepskin Trail Segments

Segment Number	Municipality	Status	Segment Length (miles)
1	Dunbar Township	Open	2.0
2	Dunbar Borough	Gap/Previously Designed	2.8
3	North Union Township	Gap/Previously Designed	5.1
4	City of Uniontown	Gap	1.9
5A	South Union Township	Open	2.3
5B	South Union Township	Gap	1.4
6A	Georges Township	Gap	3.2
6B	Georges Township	Gap	5.4
7	Springhill Township	Gap	7.7
8	Point Marion Borough	To be Constructed	1.7
Total Mileage			33.5

Existing and proposed stream crossings were identified using completed construction plans, the 1999 Feasibility Study, and field views. Roadway crossings and rail crossings were field viewed to identify potential safety issues for pedestrians and cyclists utilizing the Sheepskin Trail.

All landowners along the Sheepskin Trail alignments were identified using GIS tax parcel information provided by Fayette County. This information reflects the latest owner on record at the Fayette County Recorder of Deeds. A number of properties were acquired by 'Quit Claim'. Research into revisionary clauses in previous deeds was not completed for this feasibility study. As segments of the Sheepskin Trail progress into the design phase, thorough deed research will need to be completed to determine the ownership status of properties acquired by 'Quit Claim'.

c. Segments

i. Segment 1

Segment 1 is approximately 2 miles in length and extends from the connection to the GAP in Dunbar Township to Bridge Street in Dunbar Borough (Total Sheets 2 and 3 FSE). Segment 1 primarily runs along an active Southwest Pennsylvania Railroad (SWP) rail line and has been designed and constructed. Completed Segment 1 closely matches the 'Main Corridor' Alignment from the 1999 Feasibility Study. To construct Segment 1, Fayette County leased the land from the SWP and the lease is due to expire in 2031. This lease may not renew so an alternate option that primarily runs through properties with which the Western PA Water Company (WPWC) has a utility easement was investigated.

Segment 1 Alternate

Segment 1 Alternate begins at the GAP in Dunbar Township. From the GAP the Sheepskin Trail would access Riverside Drive from an existing gravel parking lot that serves as trail access for the GAP. The Trail would 'Share the Road' with vehicular traffic for approximately 2100'. This segment of Riverside Drive is owned by the Pennsylvania Department of Conservation and Natural Resources (DCNR) and there is no iTMS data available for this roadway. Along this section of Riverside Drive, the Trail would cross the active SWP line At-Grade.



Photo: At-Grade Rail Crossing, Segment 1 Alternate

The trail would meet an abandoned Penn Central rail line along the WPWC utility easement and follow this rail bed for approximately 6100' until Segment 1 Alternate merges with completed Segment 1. Completed Segment 1 continues traveling south into Dunbar Borough. Segment 1 Alternate would cross over Dunbar Creek one time. It is anticipated a new structure will be required for this stream crossing.

A cost estimate for Segment 1 Alternate was not prepared for this Study. Because Segment 1 is completed and usable through 2031, a detailed cost estimate is not necessary at this time.

ii. Segment 2

Segment 2 is approximately 2.8 miles in length and extends from Bridge Street in Dunbar Borough to T-533 Mt. Braddock Drive in North Union Township (Total Sheets 3-4 and 6 FSE). Two alignment options were considered for Segment 2. The alignment options are a 'Main Corridor' Alignment that primarily follows an abandoned Penn Central line through a WPWC utility easement and an 'East' Alignment that primarily runs along an SWP active rail line. The Main Corridor Alignment closely matches the Main Corridor Alignment from the 1999 Feasibility Study. Construction plans for Segment 2 prepared by Widmer Engineering in 2011 also closely match the Main Corridor Alignment.

Main Corridor Alignment

Main Segment 2 begins at Bridge Street in Dunbar Borough. There are two options for the Sheepskin Trail to navigate a short section of Borough streets before continuing on the abandoned Penn Central line.

Main Segment 2 travels south on Bridge Street and 'Share the Road' with vehicular traffic for approximately 75'. The trail would use the existing Bridge Street structure to cross Dunbar Creek. Main Segment 2 would then travel south on the proposed trail through property owned by the Franklin Memorial United Methodist Church. The trail would be approximately 400' in length and would terminate at SR 1053 Woodvale St. The Sheepskin Trail would cross SR 1053 (2303 vehicles per day (vpd)) and continue on the abandoned Penn Central line. During a field view of the area it was noted that Bridge Street is lightly traveled and would be safe for cyclists to utilize.

Main Segment 2 Alternate

Main Segment 2 Alternate travels south on Bridge Street and 'Share the Road' for approximately 250' to the intersection with SR 1053 Woodvale St. The Sheepskin Trail would then head east on SR 1053 for approximately 300' until SR 1053 meets the abandoned Penn Central Line. Main Segment 2 Alternate would then travel south on the abandoned Penn Central Line and merge with Main Segment 2.



Photo: Bridge Street in Dunbar Borough

Widmer Engineering construction plans include the construction of a new pedestrian bridge on top of existing piers and abutments. This new bridge

would provide a dedicated crossing of Dunbar Creek for the Sheepskin Trail. This option was not considered for this feasibility study since there is low traffic volume of Bridge Street, cyclist and pedestrian traffic can utilize the existing Bridge Street structure to cross Dunbar Creek. The added cost of a dedicated pedestrian structure is not necessary at this location.

Main Segment 2 would cross the Dunbar Borough/Dunbar Township line and continue south along the abandoned Penn Central line for approximately 2.7 miles. Main Segment 2 ends at the intersection with T-533 Mt. Braddock Drive in North Union Township. This portion of Main Segment 2 includes two road crossings:

- SR 1030 Church Hill Road (At-Grade, 1305 vpd)
- SR 1028 Pechin Road (At-Grade, 1531 vpd)

It is anticipated that there will be sufficient sight distance for cyclists and pedestrians crossing SR 1030 and SR 1028.

There would be four stream crossings along Main Segment 2. The 2011 Widmer Engineering construction plans indicate there are existing Reinforced Concrete Slab Bridges or Reinforced Concrete Box Culverts at all four crossing locations. It is anticipated that these four structures will be suitable for use by the Sheepskin Trail and no significant structural upgrades will be required.

Main Segment 2 (shown as Main Corridor Alignment on FSE) is estimated to cost \$1,404,946. Segment 2 Alternate (shown as Main Corridor Alignment Alternative on FSE) is estimated to cost \$1,369,563. Trail construction is the primary expense for Segment 2. Because there are existing stream crossings in place the structure cost is limited.

It is anticipated that 8.3 acres of right-of-way will need to be acquired to construct the trail. The majority of this right-of-way is on property through which WPWC has a utility easement. There is a small section of required right-of-way located on Conrail Corp. property. If Main Segment 2 is constructed, a small section of required right-of-way located on Franklin Memorial United Methodist Church property will need to be acquired.

East Alignment

East Segment 2 begins at Bridge Street in the Dunbar Borough. East Segment 2 and Main Segment 2 share the same three options for traveling through Dunbar Borough. Instead of traveling along an abandoned Penn Central line, East Segment 2 would travel along an active SWP line, east of the Main Corridor Alignment. East Segment 2 would cross the Dunbar Borough/Dunbar Township line and continue south along the active SWP line for approximately 2.7 miles. East Segment 2 ends at the intersection with T-533 Mt. Braddock Drive in North Union Township. This portion of East Segment 2 includes two road crossings:

- SR 1030 Church Hill Road (At-Grade, 1305 vpd)
- SR 1028 Pechin Road (At-Grade, 1531 vpd)

It is anticipated that there will be sufficient sight distance for cyclists and pedestrians crossing SR 1030 and SR 1028.

There would be seven stream crossings along East Segment 2. It is unknown at this time whether or not these structures would be suitable for use by the Sheepskin Trail. Should the East Alignment become a viable alternative for the Sheepskin Trail in the future, a thorough investigation would need to be performed to determine the adequacy of the existing structures.

iii. Segment 3

Segment 3 is approximately 5.1 miles in length and extends from T-533 Mt. Braddock Drive in North Union Township to SR 1020 North Gallatin Avenue Extension in North Union Township. (Total Sheets 6-9 FSE). Two alignment options were considered for Segment 3. One alignment option is a 'Main Corridor' Alignment that primarily follows an abandoned Penn Central line through a WPWC utility easement, SWP right-of-way and Malkan, Inc. property. The second alignment option is an 'East Alignment' that primarily runs along an active SWP rail line. The Main Corridor Alignment closely matches the 'Main Corridor' Alignment from the 1999 Feasibility Study. Construction plans for Segment 3 prepared by Widmer Engineering in 2011 also closely match the Main Corridor Alignment.

Main Corridor Alignment

Main Segment 3 begins at T-533 Mt. Braddock Drive in North Union Township and would follow an abandoned Penn Central Line through a WPWC utility easement for 0.4 miles before continuing on property adjacent to an active SWP line. This section of Main Segment 3 would progress through an existing rail yard for 0.5 miles and make two at-grade rail crossings. Main Segment 3 would reenter the WPWC utility easement and follow the abandoned rail line for approximately 1.3 miles. This portion of Main Segment 3 includes three road crossings:

- T-533 Mt. Braddock Drive (At-Grade, ADT Unknown)
- SR 1020 Shady Grove Road (At-Grade, 5827 vpd)
- T-682 Youngstown Road (At-Grade, ADT Unknown)

It is anticipated that there will be sufficient sight distance for cyclists and pedestrians to cross these roadways. There is one existing structure along this portion of Main Segment 3 that carries the abandoned rail line over Cove Run. It is anticipated that the existing structure will be suitable for use by the Sheepskin Trail and no significant structural upgrades will be required.

Approximately 600' north of the SR 1055 Starlite Drive crossing, Main Segment 3 will need to depart the abandoned Penn Central line. There is an unnamed tributary to Cove Run that runs alongside SR 1055. It is not feasible to construct a new pedestrian bridge at this location so the trail would need to detour around this stream crossing.

Two options for Main Segment 3 to cross the unnamed tributary to Cove Run were considered. Main Segment 3 involves detouring the Trail from the WPWC utility easement property onto Lemont Furnace Sportsman Club property. New trail would be constructed to connect Main Segment 3 to Misty Lane (ADT Unknown). The Trail would 'Share the Road' with Misty Lane, SR 1055 and T-684 and return to the abandoned rail line. Main Segment 3 closely matches the preferred alternative from the 1999 Feasibility Study.

Main Segment 3 Alternate

Main Segment 3 Alternate involves detouring the Trail from the WPWC utility easement onto SWP right-of-way. Main Segment 3 Alternate would follow the active rail for approximately 1100' and utilize an existing tunnel to cross over SR 1055 and the stream. The Trail would briefly 'Share the Road' with

Maddis Street (ADT Unknown) then return to the abandoned rail line and merge with Main Segment 3. Widmer Engineering used Main Segment 3 Alternate for the construction plans developed in 2011.

The Sheepskin Trail would follow the abandoned rail line for approximately 4000' until Main Segment 3 enters Malkan, Inc. property. Main Segment 3 would continue to progress along the abandoned rail line for approximately 2.8 miles to the intersection with SR 1020 North Gallatin Avenue Extension. During this 2.8 mile portion the trail crosses the following roadways:

- SR 2027 Connellsville Road (Above Grade)
- T-648 Brushwood Road (At-Grade, 890 vpd)

It is anticipated that there will be sufficient sight distance for cyclists and pedestrians to cross these roadways. There are five stream crossings of Cove Run and one stream crossing of Shutes Run along this portion of Main Segment 3. There are existing structures at all six stream crossing locations. It is anticipated that these structures will be suitable for use by the Sheepskin Trail and no significant structural upgrades will be required.

Segment 3 (shown as Main Corridor Alignment on FSE) is estimated to cost \$2,499,014. Segment 3 Alternate (shown as Main Corridor Alignment Alternative on FSE) is estimated to cost \$2,598,136. Trail construction is the primary expense for Segment 3. Because there are existing stream crossings in place the structure cost is limited.

It is anticipated that 14.9 acres of right-of-way will need to be acquired to construct the trail. The majority of this right-of-way is along the WPWC utility easement, the active SWP line and Malkan Inc. property. There is a small section of required right-of-way located on PennDOT and Lemont Furnace Sportsman Club property.

East Alignment

East Segment 3 begins at T-533 Mt. Braddock Drive in North Union Township. The Sheepskin Trail would follow an active SWP line for 5.1 miles to the SR 1020 North Gallatin Avenue Extension intersection.

There would be nine road crossings along East Segment 3:

- T-533 Mt. Braddock Drive (At-Grade, ADT Unknown)
- SR 1020 Shady Grove Road (At-Grade, 5827 vpd)
- T-682 Youngstown Road (At-Grade, ADT Unknown)
- SR 1055 Morgan Station Road (At-Grade, 1359 vpd)
- SR 1055 Starlite Drive (Below Grade)
- Maddis Street (At-Grade ADT Unknown)
- T-684 Main Street (At-Grade, ADT Unknown)
- SR 2027 Connellsville Road (Above Grade)
- T-648 Brushwood Road (At-Grade, 890 vpd)

There are six stream crossings along the existing active SWP line. It is unknown at this time whether or not these structures would be suitable for use by the Sheepskin Trail. Should the East Alignment become a viable alternative for the Sheepskin Trail in the future, a thorough investigation would need to be performed to determine the adequacy of the existing structures.

iv. Segment 4

Segment 4 is approximately 1.9 miles in length and extends from SR 1020 North Gallatin Avenue Extension in North Union Township to Dunbar Street in the City of Uniontown (Total Sheets 9 and 11 FSE). Two alignment options were considered for Segment 4. The alignment options are a 'Main Corridor' that primarily runs along an abandoned rail line through Laurel Hill Development Corporation property, Community Opportunities Inc. property, SWP right-of-way, and private property and an 'East

Alignment' that primarily runs along an active SWP rail line. The Main Corridor Alignment partially follows the 'Main Corridor' Alignment from the 1999 Mackin Feasibility Study.

Main Corridor Alignment

Main Segment 4 begins at SR 1020 North Gallatin Avenue Extension in North Union Township and follows an abandoned Penn Central rail line for approximately 1.5 miles to Penn Street in the City of Uniontown. This portion of Main Segment 4 includes two road crossings:

- SR 1020 North Gallatin Avenue Extension (At-Grade, 5827 vpd)
- T-916 Washington Street (At-Grade, ADT Unknown)

The at-grade crossing of SR 1020 is located along a level, tangent section of the roadway. There is sufficient sight distance for cyclists and pedestrians crossing SR 1020. During a field view of this location it was found that crossing SR 1020 is difficult due to the speed and volume of traffic. An option for increasing driver awareness at this trail crossing would be to install two Rectangular Rapid Flash Beacons. Rectangular Rapid Flash Beacons have been shown to significantly increase driver yielding behavior at unsignalized or mid-block pedestrian crossings. Costs to install the Flash Beacons at the SR 1020 intersection are included in the conceptual cost estimate.

The at-grade crossing of T-916 is located north of a sharp 90° horizontal curve. This area is clear of vegetation and there is sufficient sight distance for cyclists and pedestrians crossing T-916.

There are five stream crossings along this portion of Main Segment 4. Two structures cross Cove Run and three structures cross Redstone Creek. Structures 4.4 and 4.5 will require new superstructure to be suitable for use by the Sheepskin Trail. The proposed structure length was estimated based on field views and reviewing aerial imagery. It is assumed that the existing abutments and wingwalls will be able to be used by the trail. The remaining structures along this portion of Main Segment 4 are anticipated to be suitable for use by the Sheepskin Trail.

An alternate option for Main Segment 4 to enter the City of Uniontown was considered. Main Segment 4 alternate would depart the abandoned Penn Central rail line south of the Main Segment 4 crossing of Redstone Creek on structure 4.3 and travel between the abandoned rail line and the active SWP line. This option would end at the parking lot for Meadow Heights, an apartment building located at the end of North Beeson Avenue and continue to 'Share the Road' with North Beeson Avenue until the Penn Street intersection. Main Segment 4 Alternate is the preferred alignment in the 1999 Feasibility Study.

At this point Main Segment 4 Alternate and Main Segment 4 merge into one alignment. This alternate option would include the construction of one new structure crossing Redstone Creek. Main Segment 4 Alternate closely matches Segment 2 Alternative 1 from the 1999 Feasibility Study. The 1999 Study included an alternative route due to severe streambank erosion along Redstone Creek. Streambank erosion severe enough to detour the trail was not observed during a project field view. However, due to accessibility issues the entire proposed Main Segment 4 corridor was not investigated. A complete field survey of the entire Main Segment 4 will need to be completed to determine if the Sheepskin Trail needs to be detoured.



Photo: North Beeson Avenue in City of Uniontown

Main Segment 4 would progress through the City of Uniontown by 'Sharing the Road' with South Beeson Avenue (Unknown ADT) for approximately 1000'. South Beeson Avenue crosses the following roads at-grade:

- Penn Street (Signalized, 4411 vpd)

- Peter Street (Minor Street Stop Controlled, ADT Unknown)
- SR 2040 Main Street (Signalized, 6506 vpd)
- South Street (Minor Street Stop Controlled, ADT Unknown)
- Church Street (Signalized, Unknown ADT)
- Library Place (Minor Street Stop Controlled, ADT Unknown)

South Beeson Avenue is a thoroughfare through Uniontown's main business district. Cyclists traveling on Main Segment 4 will need to have a comfort level sharing the road with vehicular traffic. The majority of curb ramps along Main Segment 4 are not ADA compliant. It is recommended that ADA compliant curb ramps and a dedicated bike lane be installed along South Beeson Avenue. The existing roadway is likely wide enough to accommodate a bike lane if existing on-street parking were removed. Costs for these improvements were not included in the conceptual cost estimate as coordination with the City of Uniontown would be required. It is assumed that these improvements would be completed under a separate project.



Photo: South Beeson Avenue in City of Uniontown

Main Segment 4 would depart from South Beeson Avenue and return to the abandoned Penn Central rail line for approximately 1100' to the Dunbar Street intersection. There is one road crossing along this section of Main Segment 4:

- SR 2040 East Fayette Street (At-Grade, 8482 vpd)

The SR 2040 crossing occurs at a 4-leg signalized intersection with South Gallatin Avenue. Upgrades to this intersection are recommended to accommodate the Sheepskin Trail. Possible upgrades include new pedestrian signal heads and push buttons as well as new sidewalk construction that meets ADA requirements.

Main Segment 4 (shown as Main Corridor Alignment on FSE) is estimated to cost \$1,479,637. Main Segment 4 Alternate (shown as Main Corridor Alignment Alternative on FSE) is estimated to cost \$1,393,078. Both Options will require significant structural rehabilitation as a part of Sheepskin Trail construction. Main Segment 4 includes the installation of new superstructure for structures 4.4 and 4.5. Main Segment 4 Alternate includes the installation of one entire new structure (4.6). Main Segment 4 Alternate also involves sharing the road for a longer segment of Beeson Avenue, which reduces the amount of new trail construction.

It is anticipated that 5.1 acres of right-of-way will need to be acquired to construct Main Segment 4 and 3.7 acres of right-of-way will need to be acquired to construct Main Segment 4 Alternate. The majority of the Main Segment 4 required right-of-way is along Laurel Hill Development Corporation property and SWP right-of-way. The majority of the Main Segment 4 Alternate required right-of-way is along Laurel Hill Development Corporation property, Community Opportunities Inc. property and SWP right-of-way.

East Alignment

East Segment 4 begins at SR 1020 North Gallatin Ave Extension in North Union Township and follows an active SWP rail line for approximately 2.0 miles to Pennsylvania Avenue in the City of Uniontown. This portion of East Segment 4 includes nine road crossings:

- SR 1020 North Gallatin Avenue Extension (At-Grade, 5827 vpd)
- T-916 Washington Street (At-Grade, ADT Unknown)
- Maple Street (At-Grade, ADT Unknown)
- North Gallatin Avenue (At-Grade, 5238 vpd)
- Locust Street (At-Grade, ADT Unknown)
- East Penn Street (At-Grade, 2662 vpd)

- SR 2040 Main Street (At-Grade, 6506 vpd)
- Jefferson Street (At-Grade, ADT Unknown)
- SR 2040 East Fayette Street (At-Grade, 8482 vpd)

There are five existing structures along East Segment 4. Two structures cross Cove Run, two structures cross Redstone Creek, and one structure crosses a drainage swale. It is unknown at this time whether or not these structures would be suitable for use by the Sheepskin Trail. Should the East Alignment become a viable alternative for the Sheepskin Trail in the future, a thorough investigation would need to be performed to determine the adequacy of the existing structures.

v. Segment 5A

Segment 5A is approximately 2.3 miles in length and extends from Dunbar Street in the City of Uniontown to T-456 Reservoir Road in South Union Township (Total Sheets 11-13 FSE). In August 2017, construction of the majority of Segment 5A was completed by South Union Township. Construction Plans for Segment 5A were prepared by K2 Engineering, Inc. A trail grand opening ceremony was held on August 31, 2017 at Hutchison Park in South Union Township.

The portion of Segment 5A that was not constructed in 2017 begins at Dunbar Street in the City of Uniontown and follows an abandoned Penn Central rail line along SWP right-of-way for approximately 1800' to the intersection with Barton Row in South Union Township.

This portion of Segment 5A includes four road crossings:

- Dunbar Street (At-Grade, ADT Unknown)
- Pennsylvania Avenue (At-Grade, 1728 vpd)
- T-479 Barton Mill Road (At-Grade, 1281 vpd)
- Barton Row (At-Grade, ADT Unknown)

All four At-Grade crossings are located along level, tangent sections of the respective roadways. It is anticipated that there will be sufficient sight distance for cyclists and pedestrians crossing these four roadways.

Completed Segment 5A begins at Barton Row in South Union Township. The completed portion of Segment 5A continues for approximately 1.8 miles to Hutchinson Park. Completed Segment 5A includes a newly paved bike trail as well as a dedicated bike lane along T-445 Stadium Drive. Segment 5A then 'Shares the Road' with Stadium Drive for approximately 800' to the intersection with T-456 Reservoir Road.

Segment 5A is estimated to cost \$123,958. There is no structural rehabilitation along Segment 5A. All costs are associated with trail construction. It is anticipated that 1.1 acres of right-of-way will need to be acquired to construct Segment 5A.



Photo: Completed Segment 5A in South Union Township

vi. Segment 5B

Segment 5B is approximately 1.4 miles in length and extends from T-456 Reservoir Road in South Union Township to T-451 Burgess Field Road in Georges Township (Total Sheets 13 and 15 FSE). Two alignment options were considered for Segment 5B. The alignment options are a 'Main Corridor Alignment' that primarily travels through Hutchinson Sportsman Club and along an abandoned rail line through Malkan, Inc. and Georges Township property and an 'East Alignment' that primarily runs along an active SWP rail line. The Main Corridor Alignment partially matches the 'Main Corridor' Alignment from the 1999 Mackin Feasibility Study.

Main Corridor Alignment

Main Segment 5B begins at T-456 Reservoir Road in South Union Township. The Trail would 'Share the Road' for approximately 100' along Reservoir Road and approximately 275' along Gun Club Road. Main Segment 5B would proceed through the Hutchinson Sportsman Club on a new trail around a pond.



Photo: Proposed Trail Location through Hutchinson Sportsman Club

The Sheepskin Trail would cross Gun Club Road and continue for approximately 500' through Hutchinson Sportsman Club and Malkan, Inc. property to Lower Shaffers Lane. The Sheepskin Trail would 'Share the Road' for 850' to the intersection with T-455 Brownfield Road. Main Segment 5B would cross T-455 At-Grade (ADT Unknown). This crossing is located on a tangent section of the roadway. It is anticipated that there will be sufficient sight distance for cyclists and pedestrians crossing this roadway.

After crossing T-455 the Trail would return to the abandoned Penn Central rail line on Malkan, Inc. and Georges Township property for approximately

0.9 miles to the intersection with T-451 Burgess Field Road in Georges Township.

There is one drainage structure along this portion of Main Segment 5B. It is anticipated that this structure will be suitable for use by the Sheepskin Trail.

Segment 5B is estimated to cost \$610,300. There is no required major structural rehabilitation along Segment 5B. The majority of construction costs are associated with trail construction.

It is anticipated that 3.6 acres of right-of-way will need to be acquired to construct Segment 5B. The majority of required right-of-way is located on property owned by Hutchinson Sportsman Club, Malkan Inc., and Georges Township Supervisors. Acquisition of required right-of-way located on Georges Township property was not included in the cost estimate for Segment 5B.

East Alignment

East Segment 5B begins at the intersection of T-455 Brownfield Road and Lower Shaffers Lane. For the first 0.6 miles of Segment 5B there is only one alignment option (Main Segment 5B). East Segment 5B begins by 'Sharing the Road' for approximately 75' on Brownfield Road. East Segment 5B would continue south along an active SWP rail line for approximately 0.75 miles to the intersection with T-451 Burgess Field Road. There is one drainage structure along this portion of East Segment 5B. It is unknown at this time whether or not this structure would be suitable for use by the Sheepskin Trail. Should the East Alignment become a viable alternative for the Sheepskin Trail in the future, a thorough investigation would need to be performed to determine the adequacy of the existing structure.

vii. Segment 6A

Segment 6A is approximately 3.2 miles in length and extends from T-451 Burgess Field Road in Georges Township to SR 0857 Morgantown Street in Fairchance Borough (Total Sheets 15-17 FSE). Two alignment options were considered for Segment 6A. The 'Main Corridor Alignment' option primarily follows an abandoned Penn Central rail line through Malkan, Inc., Georges Township, Fairchance-Georges Sewage Authority, Fairchance Borough, and several private properties. The 'East Alignment' primarily runs along an active SWP rail line. The Main Corridor Alignment is identical to the 'Main Corridor' Alignment from the 1999 Mackin Feasibility Study.

Main Corridor Alignment

Main Segment 6A begins at the intersection with T-451 Burgess Field Road in Georges Township. The Sheepskin Trail would follow the abandoned Penn Central rail line for approximately 0.5 miles to the T-342 Oliphant Road intersection. Main Segment 6A would cross T-342 and 'Share the Road' with T-476 Long Street (ADT Unknown) for approximately 0.3 miles to the intersection with T-477 Dupont Village Road. An existing bridge that carried the rail line over T-477 was removed several years ago. Due to the bridge removal, significant grading of this area would be required to accommodate the Sheepskin Trail.

Main Segment 6A would cross T-477 and continue to follow abandoned rail line for approximately 1.1 miles to the intersection with Elm Street. The trail would mostly pass through Georges Township, Malkan Inc., Fairchance-Georges Sewage Authority property, as well as SWP right-of-way. There are three stream crossings of Muddy Run along this portion of Main Segment 6A. There is one existing structure in place that is anticipated to be suitable for use by the Sheepskin Trail. The other two stream crossings will require the construction of new structures.

The Sheepskin Trail would 'Share the Road' with Elm Street (ADT Unknown) for 250'. 'Sharing the Road' with Elm Street will allow the trail to use an existing bridge to cross Georges Creek. This short segment of Elm Street is a level 18'-20' wide bituminous road with a posted speed limit of 25 MPH. After the stream crossing, a short section of new trail would be constructed to return Main Segment 6A to the abandoned rail line.

The Sheepskin Trail would follow the abandoned rail line for approximately 0.5 miles and then cross Sheldon Avenue and enter Fairchance Community Park. There is an existing trail through the park which will be utilized by Main Segment 6A. The park trail crosses over Georges Creek on an existing concrete structure that is expected to be suitable for use by the Sheepskin Trail. Main Segment 6A would exit Fairchance Community Park and travel along a private driveway for Wynnwood Commons for approximately 175' to SR 3027 Church Street. The Trail would cross SR 3027 at-grade and continue along abandoned rail line for approximately 0.4 miles to SR 0857 Morgantown Street.



Photo: Existing Paved Trail in Fairchance Community Park

There would be six road crossings along Main Segment 6A:

- T-451 Burgess Field Road (At-Grade, ADT Unknown)
- T-342 Oliphant Road (At-Grade, ADT Unknown)
- T-477 Dupont Village Road (At-Grade, ADT Unknown)
- Elm Street (At-Grade, ADT Unknown)
- Sheldon Avenue (At-Grade, ADT Unknown)
- SR 3027 Church Street (At-Grade, 2262 vpd)

The T-451, T-342, Sheldon Avenue and SR 3027 intersections are located on tangent sections of the

respective roadways. It is anticipated that there will be sufficient sight distance for cyclists and pedestrians crossing these roadways. The T-477 and Elm Street intersections are located on horizontal curves that may restrict sight distance for cyclists and pedestrians crossing these roadways.

Segment 6A is estimated to cost \$2,596,655. Two entire new structures will need to be installed which accounts for a significant portion of anticipated construction costs.

It is anticipated that 7.7 acres of right-of-way will need to be acquired to construct Segment 6A. The majority of required right-of-way is located on property owned by Malkan Inc., Georges Township Supervisors, Fairchance-Georges Sewage Authority, Fairchance Borough, as well as SWP right-of-way. Segment 6A also passes through several private properties. Acquisition of required right-of-way located on Georges Township, Fairchance-Georges Sewage Authority, and Fairchance Borough property was not included in the cost estimate for Segment 6A.

East Alignment

East Segment 6A begins at the intersection with T-451 Burgess Field Road in Georges Township. The Sheepskin Trail would follow an active SWP rail line for approximately 3.2 miles to the SR 0857 Morgantown Street intersection. There is one stream crossing of Georges Creek and two drainage structures along this portion of East Segment 6A. It is unknown at this time whether or not these structures would be suitable for use by the Sheepskin Trail. Should the East Alignment become a viable alternative for the Sheepskin Trail in the future, a thorough investigation would need to be performed to determine the adequacy of the existing structures.

There would be seven road crossings along East Segment 6A:

- T-451 Burgess Field Road (At-Grade, ADT Unknown)
- Frogtown Road (At-Grade, ADT Unknown)
- T-342 Oliphant Road (At-Grade, ADT Unknown)
- T-477 Dupont Village Road (At-Grade, ADT Unknown)
- Elm Street (At-Grade, ADT Unknown)
- Sheldon Avenue (At-Grade, ADT Unknown)
- SR 3027 Church Street (At-Grade, 2262 vpd)

viii. Segment 6B

Segment 6B is approximately 5.4 miles in length and extends from SR 0857 Morgantown Street in Fairchance Borough to SR 3009 Outcrop Road in Springhill Township (Total Sheets 17-20, 22 FSE). Two alignment options were considered for the first 3.1 miles of Segment 6B. The 'Main Corridor Alignment' option travels through property owned by Fayette Industrial Fund, Calfrac Well Services Corp, Carlisle Syntec Incorporation, Fay Penn Economic Development Council, as well as CSX Transportation

Inc. (CSX), and SWP right-of-way. The 'East Alignment' option travels along an active SWP line until Smithfield Borough. In Smithfield Borough the active SWP line ends and the Main and East Alignments merge into one combined alignment. Merged Segment 6B follows abandoned rail bed through CSX right-of-way and Fayette County property to SR 3009 Outcrop Road.

Main Corridor Alignment

Main Segment 6B begins at the intersection with SR 0857 Morgantown Street in Fairchance Borough. The Sheepskin Trail would navigate through six privately owned properties for approximately 0.7 miles to SR 3029 Big Six Road. Two new structures would be required to carry Main Segment 6B over Muddy Run and Georges Creek. The Sheepskin Trail would cross SR 3029 and then 'Share the Road' with T-397 Mountain View Drive for approximately 0.5 miles and T-394 Summit View Drive for approximately 0.3 miles. T-394 ends at a warehouse owned by Carlisle Syntec Incorporation and the trail wraps around the property and merges with East Segment 6B. Both alignments are combined to cross US 43 below grade. After crossing US 43 the alignments split and Main Alignment 6B would continue for approximately 0.8 miles to the intersection with a private SWP roadway. One new structure would be required to carry Main Segment 6B over an unknown tributary to Georges Creek.

The Sheepskin Trail would then 'Share the Road' with the following roads in Smithfield Borough:

- Private SWP Roadway (ADT Unknown)
- Ross Street (ADT Unknown)
- Liberty Street (1723 vpd)
- Washington Way (ADT Unknown)
- SR 3007 Water Street (1106 vpd)

Main Segment 6B would travel along SR 3007 Water Street for approximately 400' and then merge with East Segment 6B. This portion of SR 3007 has a posted speed limit of 35 MPH and features a narrow bridge as well as horizontal and vertical curves. During a field visit it was noted that there is moderate traffic that travels faster than 35 MPH along this roadway. Warning beacons could be used to supplement appropriate warning signs alerting vehicular traffic to the presence of cyclists and pedestrians.

There would be four road crossings along Main Segment 6B:

- SR 0857 Morgantown Street (At-Grade, 2219 vpd)
- Green Street (At-Grade, ADT Unknown)
- SR 3029 Big Six Road (At-Grade, 3697 vpd)
- US 43 (Above Grade)

All three At-Grade crossings are located along level, tangent sections of the respective roadways. It is anticipated that there will be sufficient sight distance for cyclists and pedestrians crossing these three roadways.

East Alignment

East Segment 6B begins at the intersection with SR 0857 Morgantown Street in Fairchance Borough. The Sheepskin Trail would follow active SWP rail for approximately 3.4 miles to the intersection with SR 3007 Water Street. At this point Main Segment 6B and East Segment 6B merge into one alignment.

There would be four road crossings along East Segment 6B:

- SR 0857 Morgantown Street (At-Grade, 2219 vpd)
- SR 3029 Big Six Road (At-Grade, 3697 vpd)
- US 43 (Above Grade)
- Liberty Street (At-Grade, 1723 vpd)

There would be two stream crossings along East Segment 6B. It is unknown at this time whether or not these structures would be suitable for use by the Sheepskin Trail. Should the East Alignment become a

viable alternative for the Sheepskin Trail in the future, a thorough investigation would need to be performed to determine the adequacy of the existing structures.

Merged Alignment

Merged Segment 6B would cross SR 3007 Water Street and follow an abandoned Baltimore & Ohio rail bed through CSX right-of-way and Fayette County property and continue for approximately 2.6 miles to the intersection with SR 3009 Outcrop Road.

The abandoned rail line originally crossed SR 3007 and T-500 Weaver Mill Road above grade. The bridge over SR 3007 has been removed and the bridge over T-500 is scheduled to be removed. The abandoned rail bed is raised above both roadways and in order for the trail to cross SR 3007 and T-500 At-Grade, a significant amount of earthwork will be required. An alternate for Merged Segment 6B was considered in order to detour the trail around the SR 3007 and T-500 crossings. Merged Segment 6B would 'Share the Road' with T-380, T-500, and T-365 Stager Road for approximately 0.6 miles instead of utilizing the abandoned rail bed. Approximately 300' from the intersection of T-500 and T-365 Merged Segment 6B Alternate would return to the abandoned rail bed.



Photo: T-380 Typical Roadway Section

There would be one stream crossing of Georges Creek along Merged Segment 6B. The 1999 Feasibility determined that the existing abutments for this structure were in suitable condition but a new deck would be required. It is assumed that the abutments and wingwalls are still in suitable condition but a new prefabricated truss bridge will need to be installed during construction of the Sheepskin Trail. A thorough structural inspection of the existing structure will need to be completed prior to developing this portion of the trail.

There would be four road crossings along Merged Segment 6B:

- SR 3007 Water Street (At-Grade, 1106 vpd)
- T-500 Weaver Mill Road (At-Grade, ADT Unknown)
- T-365 Stager Road (At-Grade, ADT Unknown)
- T-339 Tunnel Road (At-Grade, ADT Unknown)

The crossings of SR 3007, T-500, and T-339 are located along level, tangent sections of the respective roadways. It is anticipated that there will be sufficient sight distance for cyclists and pedestrians crossing these three roadways. The crossing of T-365 is located north of a sharp horizontal and vertical curve which restricts sight distance for cyclists and pedestrians crossing this roadway. Based on a field view of the intersection, T-365 is a sparingly used roadway and additional traffic control devices are not warranted for this location.

There are currently structures owned by CSX Transportation Inc. that at one point carried the active rail line above T-500 and T-339. At the time of this Feasibility Study CSX intended to remove these structures. Bergmann Associates of Conshohocken, PA prepared Bridge Removal Plans for both structures in August 2017. For the purpose of this Study it is assumed that these structures will be removed before construction of the Sheepskin Trail is to begin. Significant grading of these areas would be required due to the anticipated bridge removals.

Segment 6B (shown as Main Corridor Alignment on FSE) is estimated to cost \$7,735,446. Segment 6B Alternate (shown as Main Corridor Alignment Alternative on FSE) is estimated to cost \$6,830,373. Both Options will require the installation of three new structures. The cost difference between Segment 6B and

Segment 6B Alternate can be attributed to the Shared Road with T-380 and T-500. Detouring from the abandoned rail bed allows the trail to avoid significant earthwork associated with Water Street and T-500.

It is anticipated that 13.4 acres of right-of-way will need to be acquired to construct Segment 6B and 11.6 acres of right-of-way will need to be acquired to construct Segment 6B Alternate. Acquisition of required right-of-way located on Fayette County property was not included in the cost estimate for Segment 6B.

ix. Segment 7

Segment 7 is approximately 7.7 miles in length and extends from SR 3009 Outcrop Road in Springhill Township to US 119 in Springhill Township (Total Sheets 22-26 FSE). One alignment was considered for Segment 7. This alignment was not modified from the 'Main Corridor' alignment in the 1999 Feasibility Study. Segment 7 would follow an abandoned Baltimore & Ohio rail line through property owned by Fayette County, and through CSX right-of-way.

Approximately 1000' from the crossing of SR 3009 Outcrop Road, the Sheepskin Trail would travel through the Morgan Tunnel. The Morgan Tunnel is approximately 440' in length and 26' wide. A condition inspection of the tunnel was performed in September 2017. The purpose of the inspection was to determine the viability of using the existing tunnel as part of the Sheepskin Trail. Based on the inspection results it was determined that the Morgan Tunnel is not suitable for use by the Sheepskin Trail. Three repair options were considered to rehabilitate the tunnel such that it is able to be used by cyclist and pedestrian traffic. Section 4.d of this Feasibility Study outlines the repair options and includes a detailed summary of the condition inspection. Cost estimates for all three repair options are included in Appendix B of this Feasibility Study.



Photo: Morgan Tunnel

One alternate was investigated to detour the Sheepskin Trail around the Morgan Tunnel. Segment 7 Alternate would 'Share the Road' with SR 3009 Outcrop Road (432 vpd) and head south for approximately 0.6 miles to the intersection with SR 3005 Gans Woodbridge Road (261 vpd). The Trail would turn right onto SR 3005 and travel west for approximately 0.2 miles to the intersection with T-335 Cornish Road (ADT unknown). Segment 7 Alternate would turn right onto T-335 and travel approximately 100' until intersecting the original 'Main Corridor' alignment. SR 3009 and SR 3005 are both paved roadways approximately 18' wide.

The posted speed limit for both roadways is 40 MPH. SR 3009 features a steep vertical grade that may be difficult for some cyclists to navigate.

Upon returning to the 'Main Corridor', Segment 7 would travel for approximately 1.1 miles to the intersection with SR 3002 Gans Road. After crossing SR 3002 Gans Road the Sheepskin Trail would follow the abandoned rail bed through the unincorporated communities of Lake Lynn and Nilan. In Nilan the rail bed crosses T-461 Nilan road over an existing masonry arch owned by CSX Transportation. Bridge Removal plans for this structure were prepared by Bergmann Associates in August 2017. For the purpose of this Study it is assumed that this structure will be removed before construction of the Sheepskin Trail is to begin which would make the trail crossing of T-461 an at-grade crossing. Significant grading of this area would be required due to the anticipated bridge removal.

Segment 7 continues along abandoned rail bed for approximately 1.4 miles. At this location abandoned rail bed ends and the Trail 'Shares the Road' with T-461 Nilan Road for approximately 300' to the intersection with US 119. Segment 7 heads south on US 119 to cross the Cheat River. Cyclists will be

required to dismount and walk along the sidewalk on US 119. Segment 7 ends at the intersection of US 119 and Cheat Street in Point Marion Borough.

There would be several stream crossings along Segment 7. In Gans the Trail would cross two unknown tributaries to Grassy Run. Both structures are culverts under fill and are expected to be suitable for use by the Sheepskin Trail. Between Gans and Lake Lynn, Segment 7 crosses Grassy Run six times. The 1999 Feasibility Study identified that there are six existing structures in place. It is assumed that the existing abutments and wingwalls are in good condition and can be used for the trail. New prefabricated truss bridges that can accommodate the Sheepskin Trail will need to be installed at all six locations. Between Lake Lynn and Nilan, Segment 7 crosses an unknown tributary to Cheat River. There is an existing culvert in place that is expected to be suitable for use by the Sheepskin Trail.

There would be seven road crossings along Segment 7:

- SR 3009 Outcrop Road (At-Grade, 432 vpd)
- T-335 Cornish Road (At-Grade, ADT Unknown)
- T-362 Main Street (At-Grade, ADT Unknown)
- SR 3002 Gans Road (At-Grade, 1046 vpd)
- T-463 Lake Lynn Road (At-Grade, ADT Unknown)
- T-461 Nilan Road (At-Grade, ADT Unknown)
- T-461 Nilan Road (At-Grade, ADT Unknown)

The SR 3009 crossing is located between two sharp horizontal curves which restricts sight distance for pedestrians and cyclists crossing the roadway. As a part of trail construction, vegetation removal at this location would provide additional sight distance. The T-335 and first T-461 crossings are located along a level section of the respective roadways and sight distance is anticipated to be suitable for pedestrians and cyclists. The T-362 crossing is located close to the SR 3005 and T-362 intersection. Sight distance is currently limited at this location, however it should improve after necessary clearing and grubbing as a part of new trail construction is completed.

During the September 2017 Public Meeting a local resident expressed concern for the trail crossing of SR 3002. This segment of Gans Road experiences significant traffic due to the nearby PA 43 interchange. The roadway geometry at the trail crossing features three sharp horizontal curves which limit stopping sight distance for vehicular traffic on SR 3002. An option for increasing driver awareness at this trail crossing would be to install two Rectangular Rapid Flash Beacons. Rectangular Rapid Flash Beacons are pedestrian activated and have been shown to significantly increase driver yielding behavior at unsignalized or mid-block pedestrian crossings. Costs to install the Flash Beacons at the SR 3002, T-463 and the second T-461 intersections are included in the conceptual cost estimate. Due to roadway horizontal and vertical geometry, it is anticipated that sight distance will be limited at all three roadway crossings.

Segment 7 (shown as Main Corridor Alignment on FSE) is estimated to cost \$8,450,725. Segment 7 Alternate (shown as Main Corridor Alignment Alternative on FSE) is estimated to cost \$4,587,345. Both Options will require the installation of six new structures. The cost difference between Segment 7 and Segment 7 Alternate can be attributed to the Shared Road with SR 3009 and SR 3005. Detouring from the abandoned rail bed allows the trail to avoid utilizing the Morgan Tunnel. Costs for rehabilitating the Morgan Tunnel range from \$2.3 to \$3.9 million. Segment 7 Alternate would produce significant cost savings by avoiding the Morgan Tunnel.

It is anticipated that 22.7 acres of right-of-way will need to be acquired to construct Segment 7 and Segment 7 Alternate. Acquisition of required right-of-way located on Fayette County property was not included in the cost estimate for Segment 7.

x. Segment 8

Segment 8 is approximately 1.7 miles in length and extends from US 119 in Point Marion Borough to the West Virginia State Line. (Total Sheets 26-27 FSE). Construction plans for Segment 8 were completed by Triad Engineering Inc., in April 2015. Construction of Segment 8 is anticipated to begin in 2018.

d. Morgan Tunnel Structural Inspection

On Thursday September 21, 2017, a field inspection of the Morgan Tunnel was completed as part of the Sheepskin Trail Feasibility Study. The purpose of the inspection was to determine the viability of using the existing tunnel as part of the Sheepskin Trail.

The existing 440' brick arch tunnel was acquired by Fayette County through a land purchase agreement with CSX Railroad Corporation in 2011. Dates present on the entrance of the tunnel indicated an original construction in 1883 with rehabilitation in 1916. The existing tunnel has an underclearance of approximately 25' taken from existing grade to the apex of the arch. The tunnel exhibits signs of significant deterioration throughout, with moderate cracking and efflorescence present. Areas of the existing tunnel exhibit signs of rehabilitation where a concrete facing was placed on top of the existing brick liner. There are multiple areas where the concrete facing has failed and collapsed. In some adjacent areas to facing failure/collapse, it is evident that additional concrete facing has failed and is bowing inward putting the facing at risk of immediate collapse. There are a few locations where the existing brick arch has failed exposing backfill material. Water infiltration was observed along the apex of the arch at various areas throughout the tunnel. The concrete wingwalls and headwalls at the tunnel entrances are in overall fair condition, exhibiting moderate cracking and efflorescence.

During the field inspection, Fayette County personnel indicated that the tunnel deterioration has not advanced significantly since the County took ownership of the structure. Based on local testimony and the field inspection, it has been determined that Morgan Tunnel is not at risk of collapse; however, the tunnel should not be used for cyclist or pedestrian traffic as part of the Sheepskin Trail until rehabilitation of the tunnel has been completed. It is recommended that barriers restricting access to the tunnel be placed at both entrances until such time that rehabilitation can take place.

Various options have been investigated for the rehabilitation of Morgan Tunnel and cost estimates have been prepared for the various alternatives which can be found in Appendix B. The alternatives include a galvanized steel plate arch tunnel liner (similar to Pinkerton Tunnel as part of the Greater Allegheny Passage) constructed within the existing tunnel, reinforced concrete arch constructed within the existing tunnel or the removal of the tunnel with a bridge structure constructed above to maintain the property access road.

e. Access Points & Potential Parking

As part of the feasibility study, potential parking/trail access areas were identified. Costs to improve parking areas or construct trail heads were not considered as a part of this study. Feasibility of acquiring land necessary to develop parking areas was not considered as a part of this study. These were preliminary assessments and further study and design would be needed to develop these areas.

Within Segment 1, two potential areas were identified:

- Riverside Drive Gravel Lot
- Dunbar Ballfield Parking Area

The Riverside Drive Grave Lot is currently used to access the Great Allegheny Passage. The Sheepskin Trail is located approximately 1800' from this parking lot. Existing parking for Dunbar Ballfield could also be used for Sheepskin Trail Access.

Within Segment 2, one potential area was identified.

- Along T-533 Mt. Braddock Drive

There is a large gravel lot located adjacent to the T-533 crossing of the active rail line.

Within Segment 3, two potential areas were identified:

- Along T-682 Youngstown Road
- Along T-648 Brushwood Road

There is an abandoned community pool near the at-grade crossing of T-682. This area could be used as a trail access location. There is a small gravel lot located adjacent to the T-648 at-grade crossing.

Within Segment 4, one potential area was identified:

- Bailey Park

A large existing parking lot for Bailey Park could also be used for Sheepskin Trail Access. The Main Corridor Alignment runs adjacent to Bailey Park.

Within Segment 5B, one potential area was identified:

- Hutchinson Sportsman Club

A large existing parking lot for Hutchinson Sportsman Club could also be used for Sheepskin Trail Access. The Main Corridor Alignment runs along a pond on Hutchinson Sportsman Club property.

Within Segment 6A, one potential area was identified:

- Fairchance Community Park

A large existing gravel parking lot for Fairchance Community Park could also be used for Sheepskin Trail Access. The Main Corridor Alignment runs through the park on an existing walking trail.

Within Segment 7, one potential area was identified:

- Along SR 3002

A large existing gravel parking lot near the at-grade crossing of SR 3002 could be used for Sheepskin Trail Access.

f. Segment Cost Estimate Summary

Segment Cost Estimate Summary

Segment Number	Municipality	Status	Length (miles)	Land Acquisition	Construction	Environmental/Engineering	Total
1	Dunbar Township	Open	2.0				
2	Dunbar Borough	Gap/Previously Designed	2.8	\$33,200	\$1,055,189	\$316,557	\$1,404,946
2 Alt	Dunbar Borough	Gap/Previously Designed	2.8	\$31,600	\$1,029,202	\$308,761	\$1,369,563
3	North Union Township	Gap/Previously Designed	5.1	\$59,600	\$1,876,473	\$562,942	\$2,499,015
3 Alt	North Union Township	Gap/Previously Designed	5.1	\$62,400	\$1,950,566	\$585,170	\$2,598,136
4	City of Uniontown	Gap	1.9	\$20,400	\$1,122,491	\$336,747	\$1,479,638
4 Alt	City of Uniontown	Gap	1.9	\$14,800	\$1,060,214	\$318,064	\$1,393,078
5A	South Union Township	Partially Open (1.9 miles complete)	2.3	\$4,400	\$91,968	\$27,590	\$123,959
5B	South Union Township	Gap	1.4	\$13,200	\$459,308	\$137,792	\$610,301
6A	Georges Township	Gap	3.2	\$21,600	\$1,980,812	\$594,244	\$2,596,655
6B	Georges Township	Gap	5.4	\$36,000	\$5,922,651	\$1,776,795	\$7,735,447
6B Alt	Georges Township	Gap	5.4	\$28,800	\$5,231,979	\$1,569,594	\$6,830,373
7	Springhill Township	Gap	7.7	\$13,200	\$6,490,404	\$1,947,121	\$8,450,725
7 Alt	Springhill Township	Gap	7.9	\$13,200	\$3,518,573	\$1,055,572	\$4,587,345
8	Point Marion Borough	To be Constructed (Funded)	1.7				
TOTAL TO COMPLETE (low)			27.9	\$187,200	\$15,248,530	\$4,574,559	\$20,010,289
TOTAL TO COMPLETE (high)			28.1	\$204,400	\$19,073,390	\$5,722,017	\$24,999,807

5. RECOMMENDATIONS

It is the conclusion that the proposed Sheepskin Trail as presented in this report is feasible if the following issues can successfully be addressed:

- Extend the lease agreement between SWP and Fayette County beyond 2031.
- Complete deed research into WPWC utility easements along the corridor.
- Coordinate with the City of Uniontown to place trail pavement markings and signage along South Beeson Avenue. Limiting on-street parking on South Beeson Avenue would make construction of a dedicated bike lane possible through Uniontown.
- Negotiate with SWP to allow the trail to access their right-of-way to cross beneath US 43.
- Coordinate with CSX Corporation to determine ownership of abandoned rail bed.
- Negotiate use of township and state roadways with affected municipalities and PennDOT.

- Acquire necessary property along trail corridor.
- Acquire funding for trail construction and structure rehabilitation/construction.

The cost estimate is based on assumptions that lead to a “worst case” cost for completing the trail. If volunteer labor is used for the project it will greatly reduce construction costs.

A significant challenge facing the construction of the Sheepskin Trail will be landowner coordination. If affected municipalities are proactive with beginning the landowner negotiation process it will reduce the necessary time to complete the trail. All landowners along the Sheepskin Trail alignments were identified using GIS tax parcel information provided by Fayette County. Research into revisionary clauses in previous deeds was not completed for this feasibility study and will need to be completed before any segments of the trail are developed.

Design and Construction Prioritization

The 1991 Makin Study recommended the following prioritize implementation plan for the construction of the segments. Segment 1, Segment 2, Segment 3, Segment 6, Segment 5, Segment 4, Segment 7 and Segment 8. The segments are slightly different from this report but the general areas are the same.

Segment design and construction since the 1991 Makin Study includes (based on this study’s segments):

Segment 1 has been constructed.

Segment 2 and 3 were designed however right-of way issues have delayed any construction.

Segment 5A. The majority of the segment has been constructed. This section of the trail is owned and maintained by South Union Township.

Segment 7 (SR 0119 to the Nilan Tunnel) is in the preliminary design phase and funding for final design and construction has been obtained.

Segment 8: Bids for construction have been obtained and construction will begin on this segment in the Spring of 2018.

Based on issues discuss in this study and available funding, the following is an updated recommended prioritized implementation plan for the construction of the segments for the completion of the trail. Multiple segments can be progressed concurrently as funding becomes available:

Segment 7 (SR 0119 to the Nilan Tunnel) is in the preliminary design phase and funding for final design and construction has been obtained by Fayette County.

Segment 7 (Nilan Tunnel to Northern Limits). Fayette County is in the process of obtaining funding for the design of this segment.

Segment 5B & 6A (Connection to Constructed Segment 5A). South Union Township and Georges Township are in the process of obtaining funding for the design. It is anticipated that the townships will own and maintain these segments.

Segment 6B. Georges Township and Fayette County will attempt to obtain design funding.

Segment 2, 3 & 4. The design for segment 2 and 3 have been completed. Fayette County will concurrently attempt to purchase right-of-way for these three segments.

Funding Options for the Development of the Sheepskin

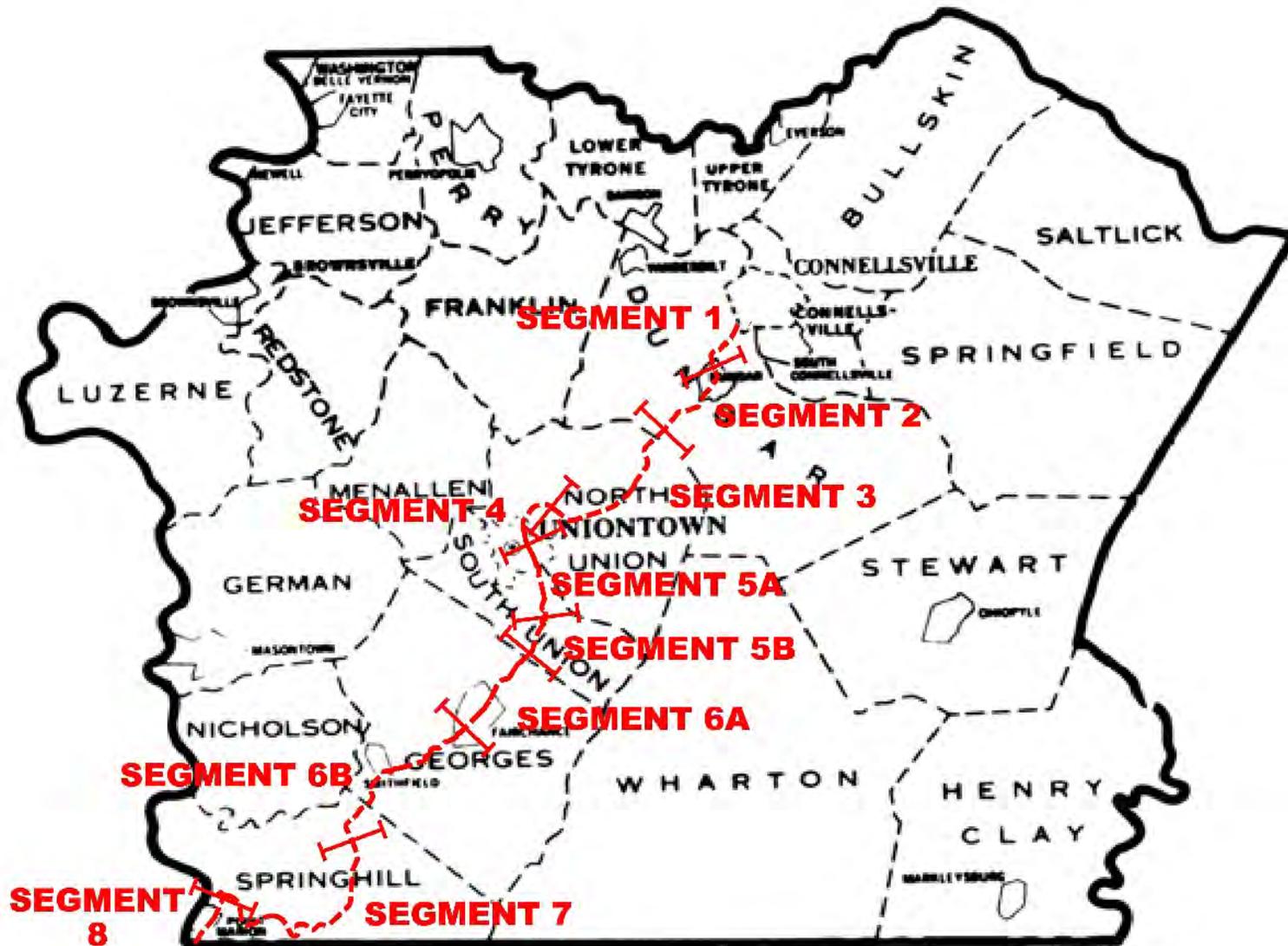
Most people not familiar with rail-trail development are surprised to learn that, since 1991, there are several federal and state funding mechanisms available that have money dedicated to rail-trails and other bicycle and pedestrian projects.

Federal Transportation Funding

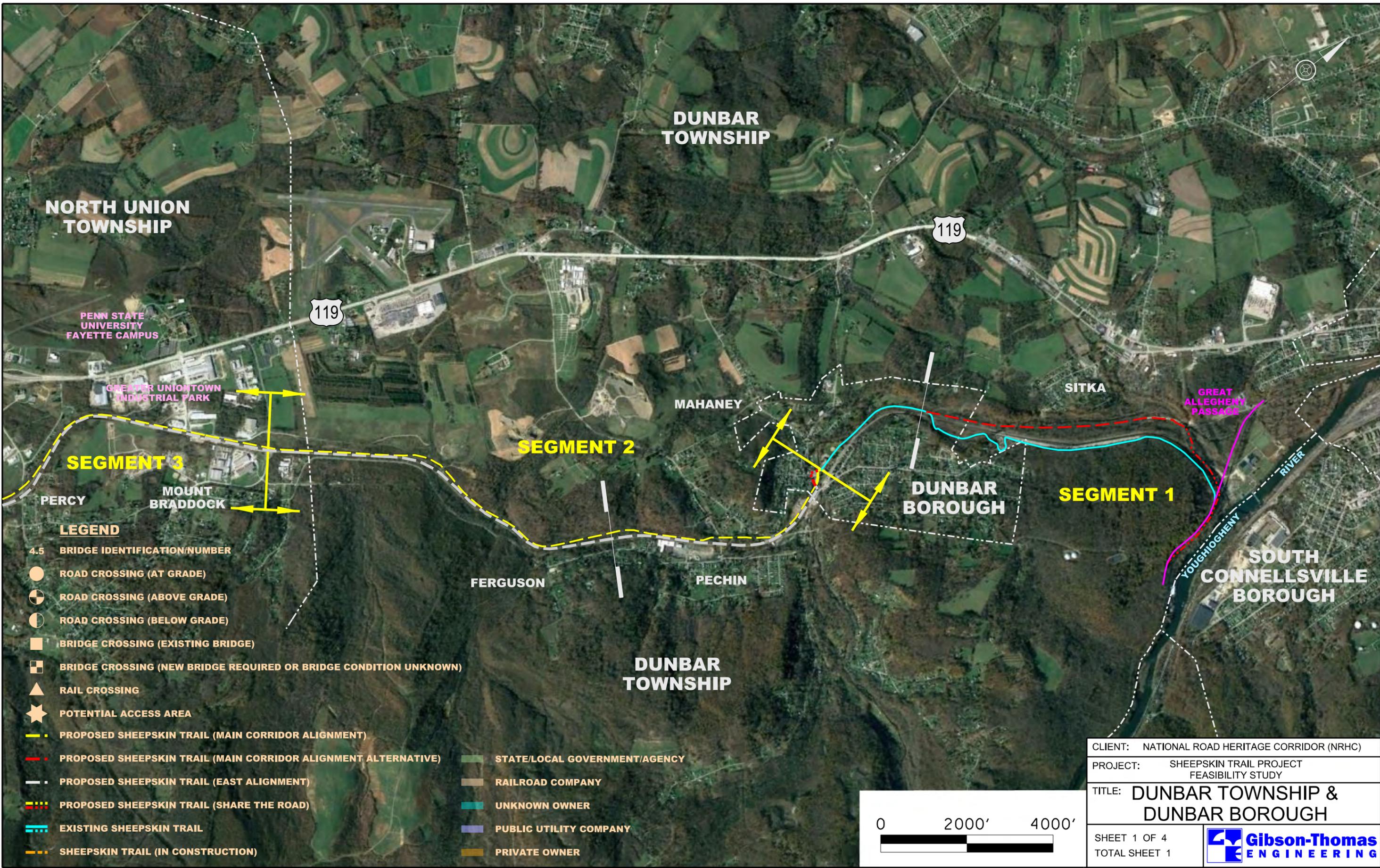
Fixing America’s Surface Transportation or the **FAST Act** was signed into law in December 2015 and ensures that states and localities will have a dedicated source of transportation funding through 2020.

Appendix A

Feasibility Study Exhibit (Mapping)



Overview Map of the Proposed Sheepskin Trail Corridor



NORTH UNION TOWNSHIP

DUNBAR TOWNSHIP

119

119

PENN STATE UNIVERSITY FAYETTE CAMPUS

GREATER UNIONTOWN INDUSTRIAL PARK

SEGMENT 3

SEGMENT 2

SEGMENT 1

PERCY MOUNT BRADDOCK

MAHANEY

SITKA

GREAT ALLEGHENY PASSAGE

DUNBAR BOROUGH

SOUTH CONNELLSVILLE BOROUGH

FERGUSON

PECHIN

DUNBAR TOWNSHIP

YOUGHIOGHENY RIVER

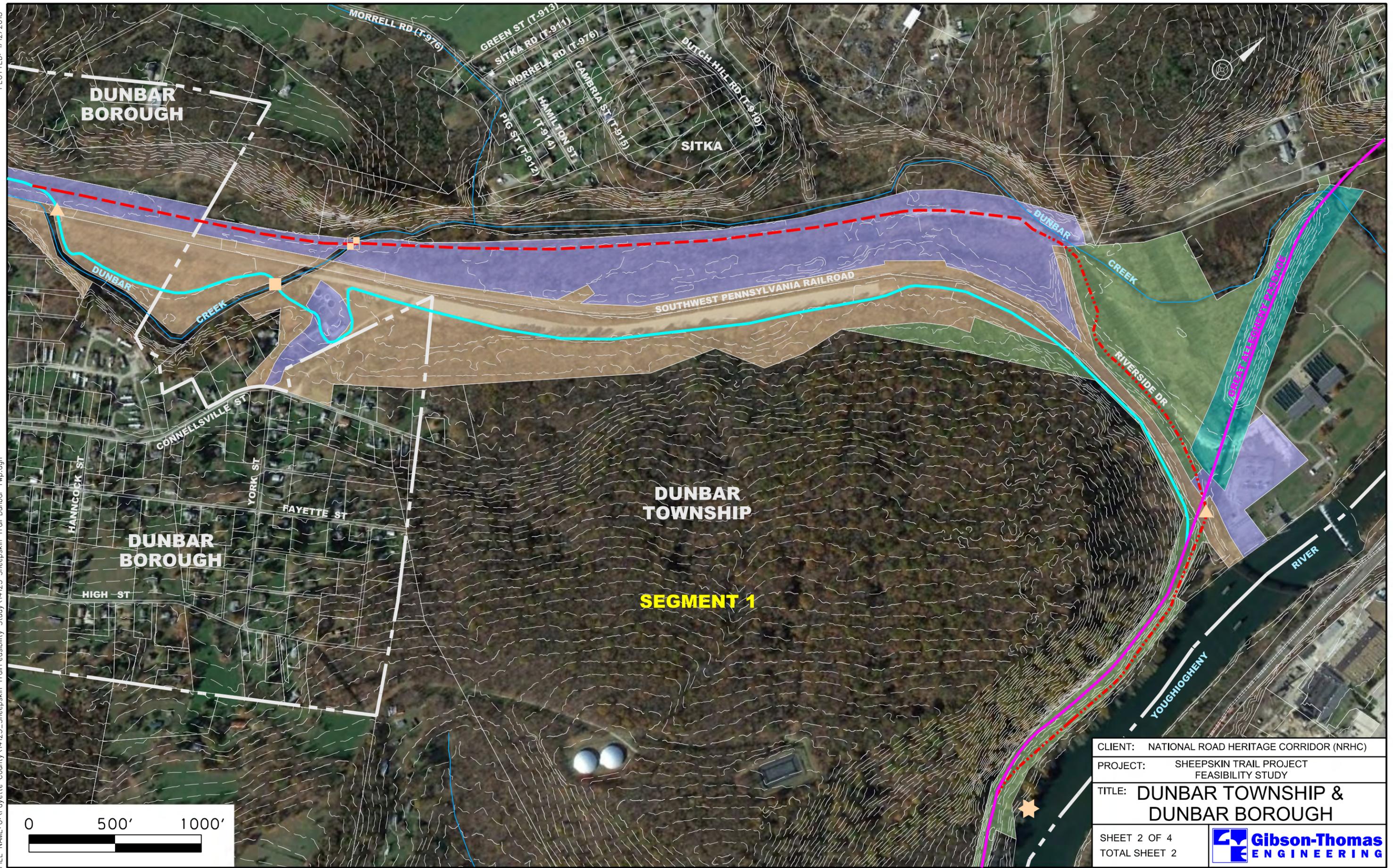
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- BRIDGE CROSSING (EXISTING BRIDGE)
- ▣ BRIDGE CROSSING (NEW BRIDGE REQUIRED OR BRIDGE CONDITION UNKNOWN)
- ▲ RAIL CROSSING
- ★ POTENTIAL ACCESS AREA
- PROPOSED SHEEPSKIN TRAIL (MAIN CORRIDOR ALIGNMENT)
- - PROPOSED SHEEPSKIN TRAIL (MAIN CORRIDOR ALIGNMENT ALTERNATIVE)
- · - PROPOSED SHEEPSKIN TRAIL (EAST ALIGNMENT)
- · · PROPOSED SHEEPSKIN TRAIL (SHARE THE ROAD)
- · — EXISTING SHEEPSKIN TRAIL
- - - SHEEPSKIN TRAIL (IN CONSTRUCTION)

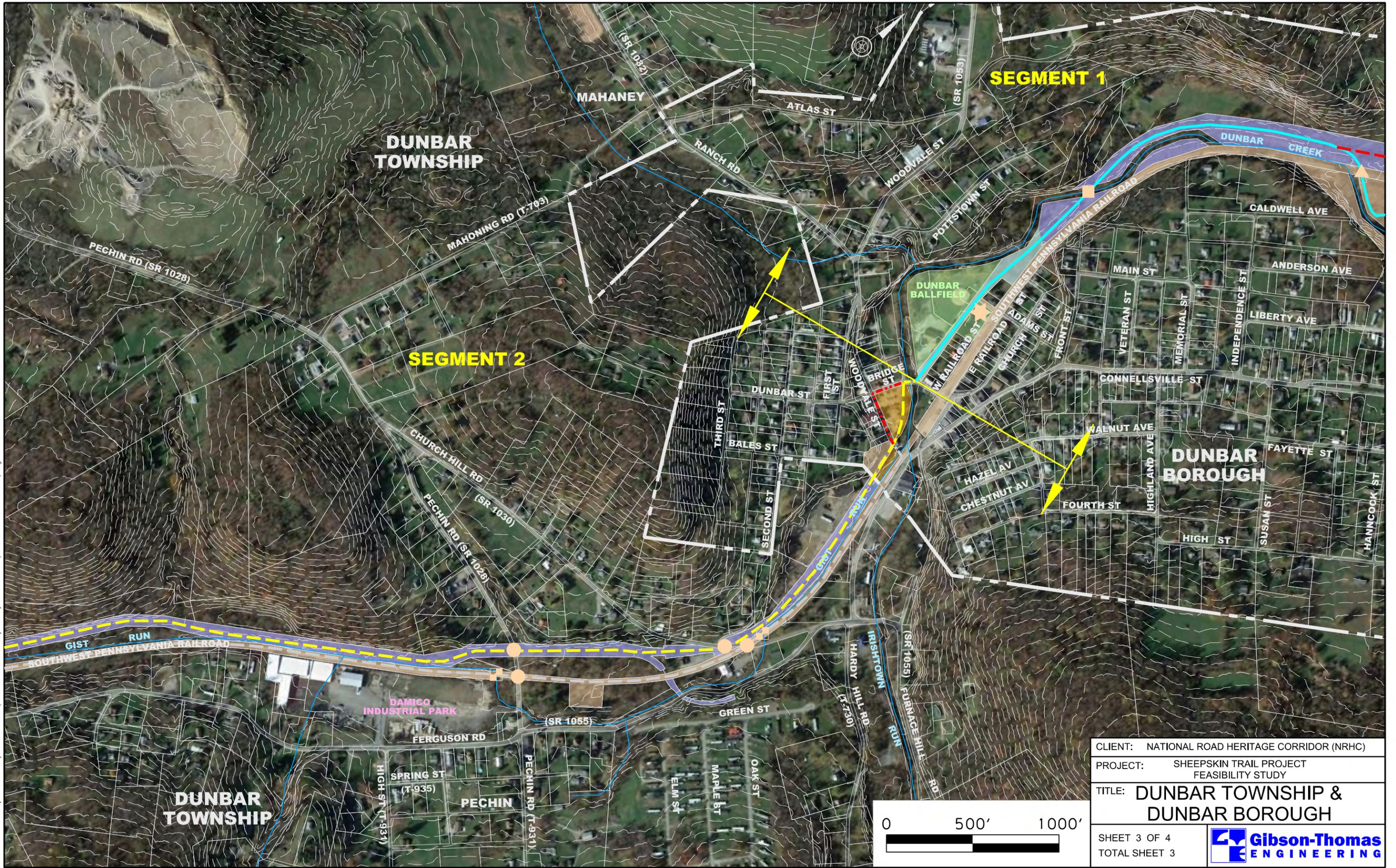
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- PRIVATE OWNER



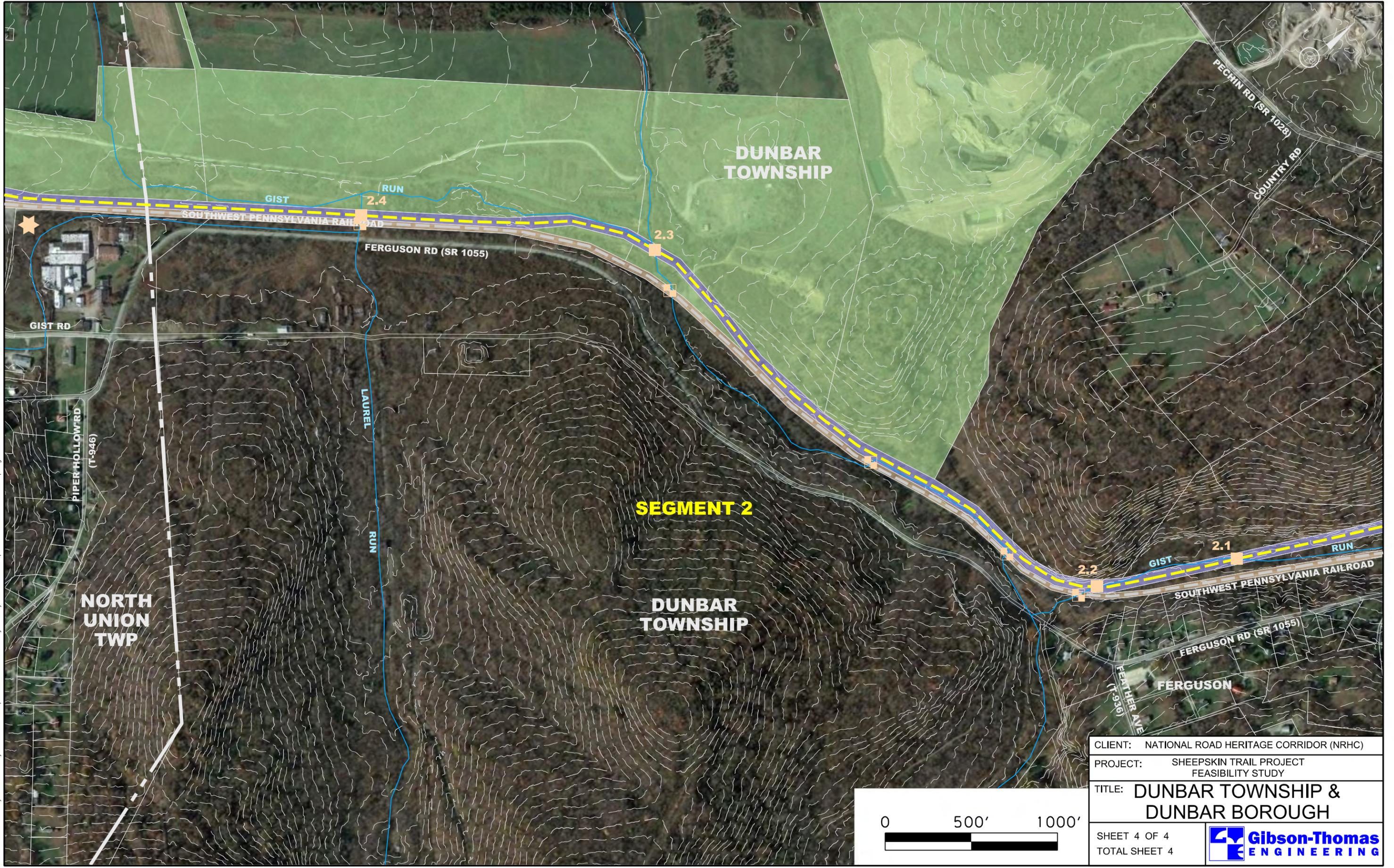
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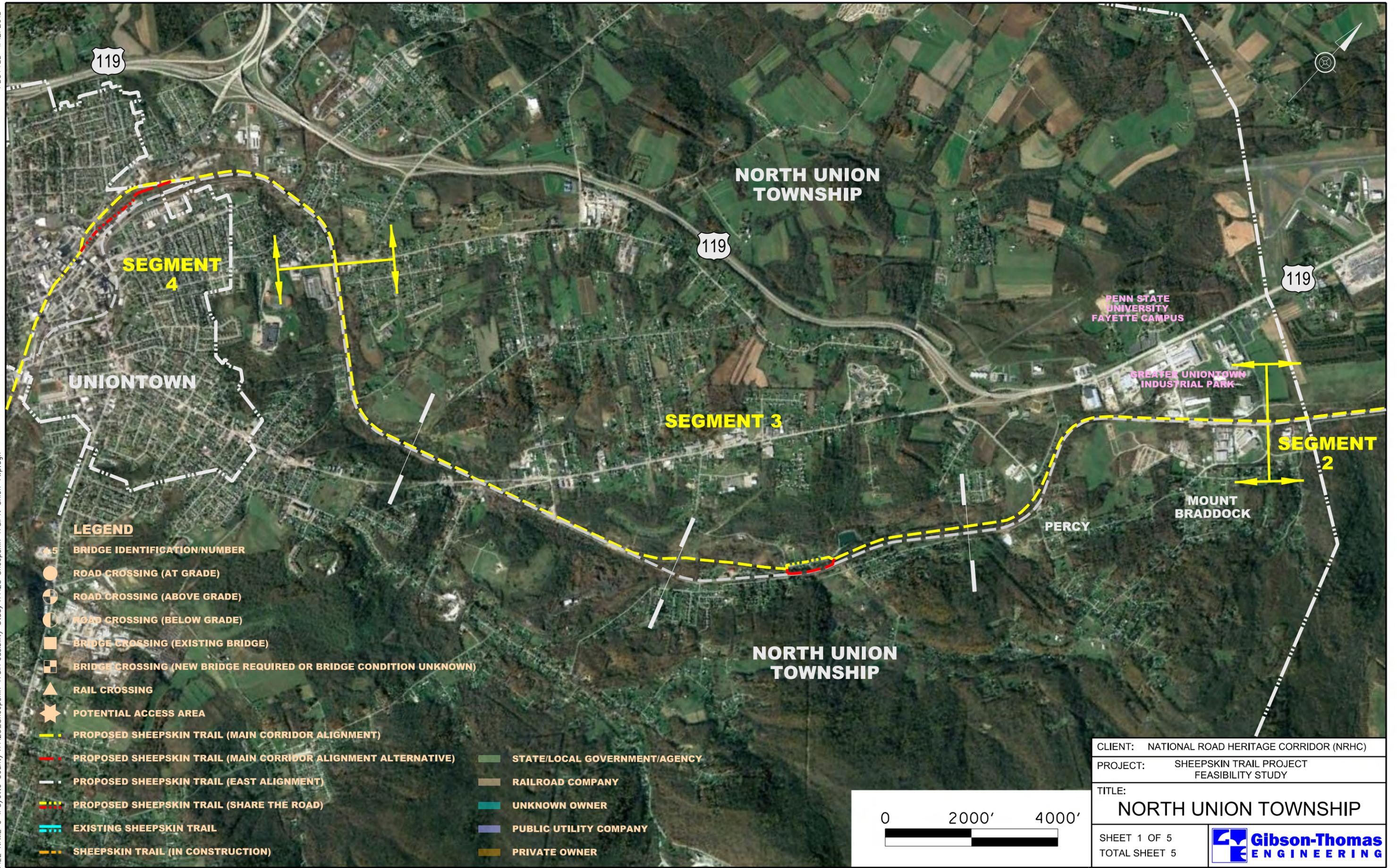
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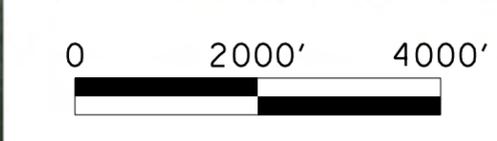
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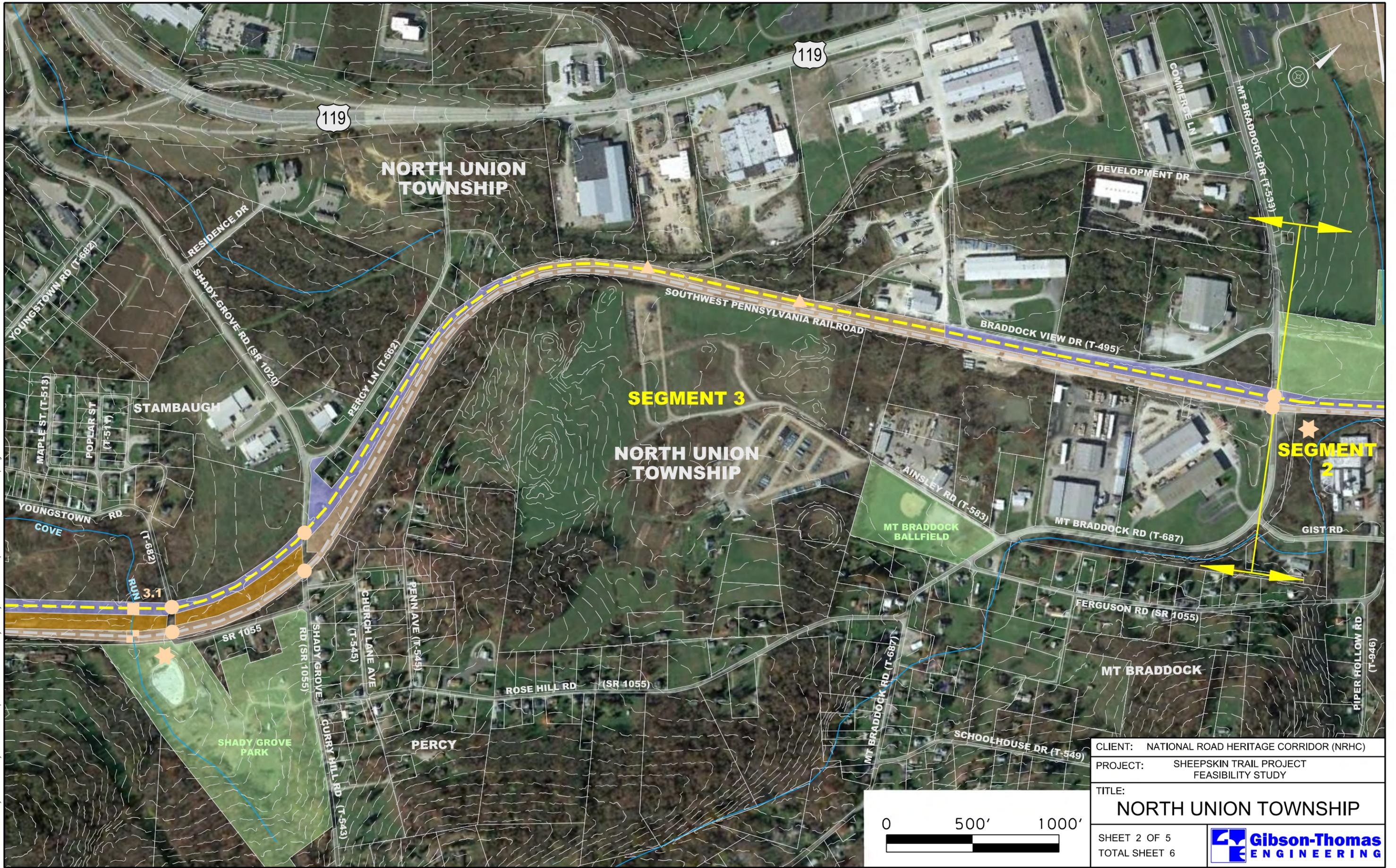
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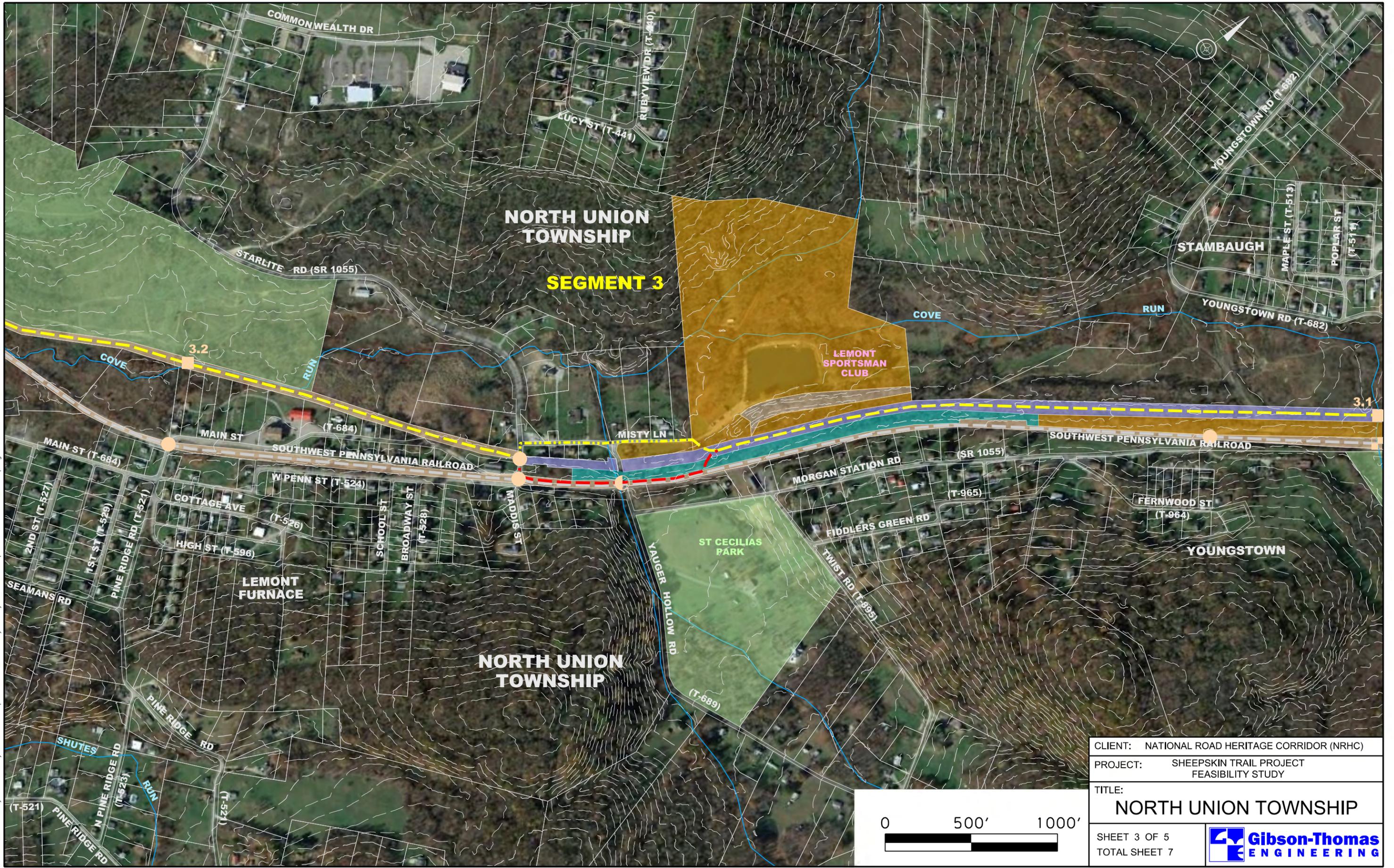
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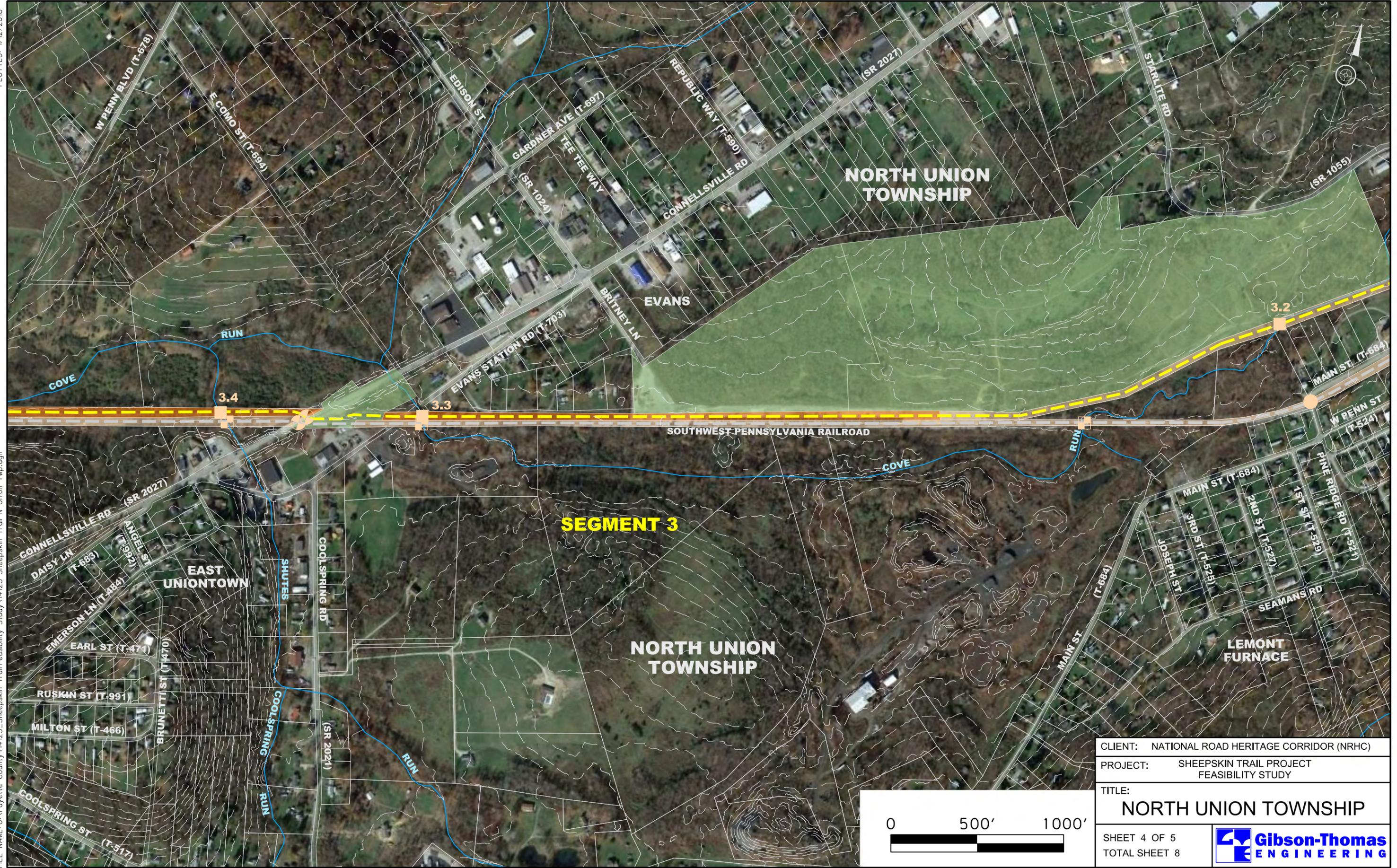
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TITLE:	NORTH UNION TOWNSHIP
SHEET 3 OF 5	
TOTAL SHEET 7	



SEGMENT 3

NORTH UNION TOWNSHIP

NORTH UNION TOWNSHIP

EAST UNIONTOWN

LEMONT FURNACE

SOUTHWEST PENNSYLVANIA RAILROAD



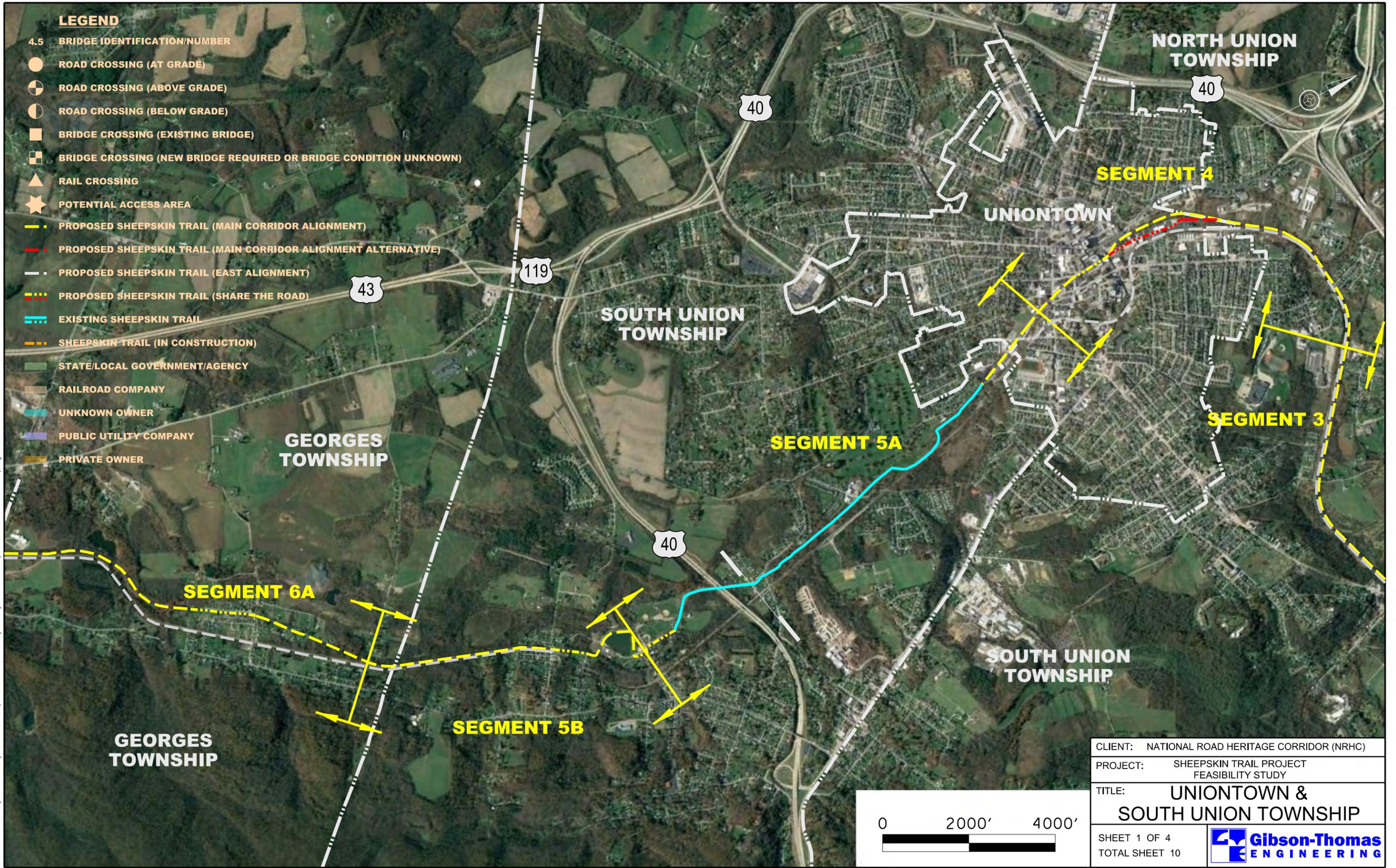
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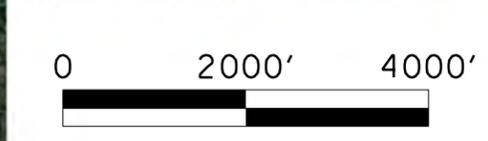
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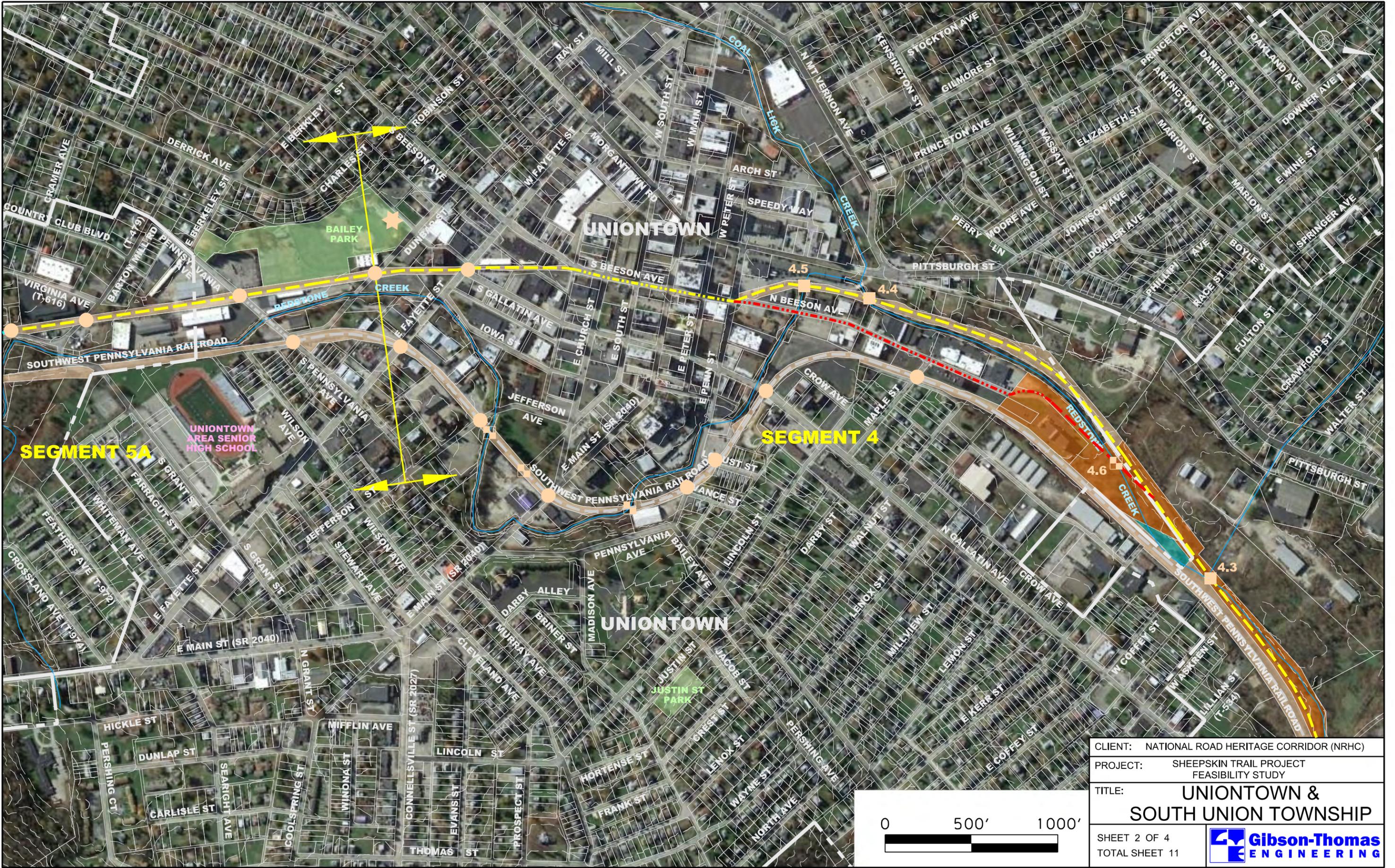
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- PUBLIC UTILITY COMPANY
- PRIVATE OWNER

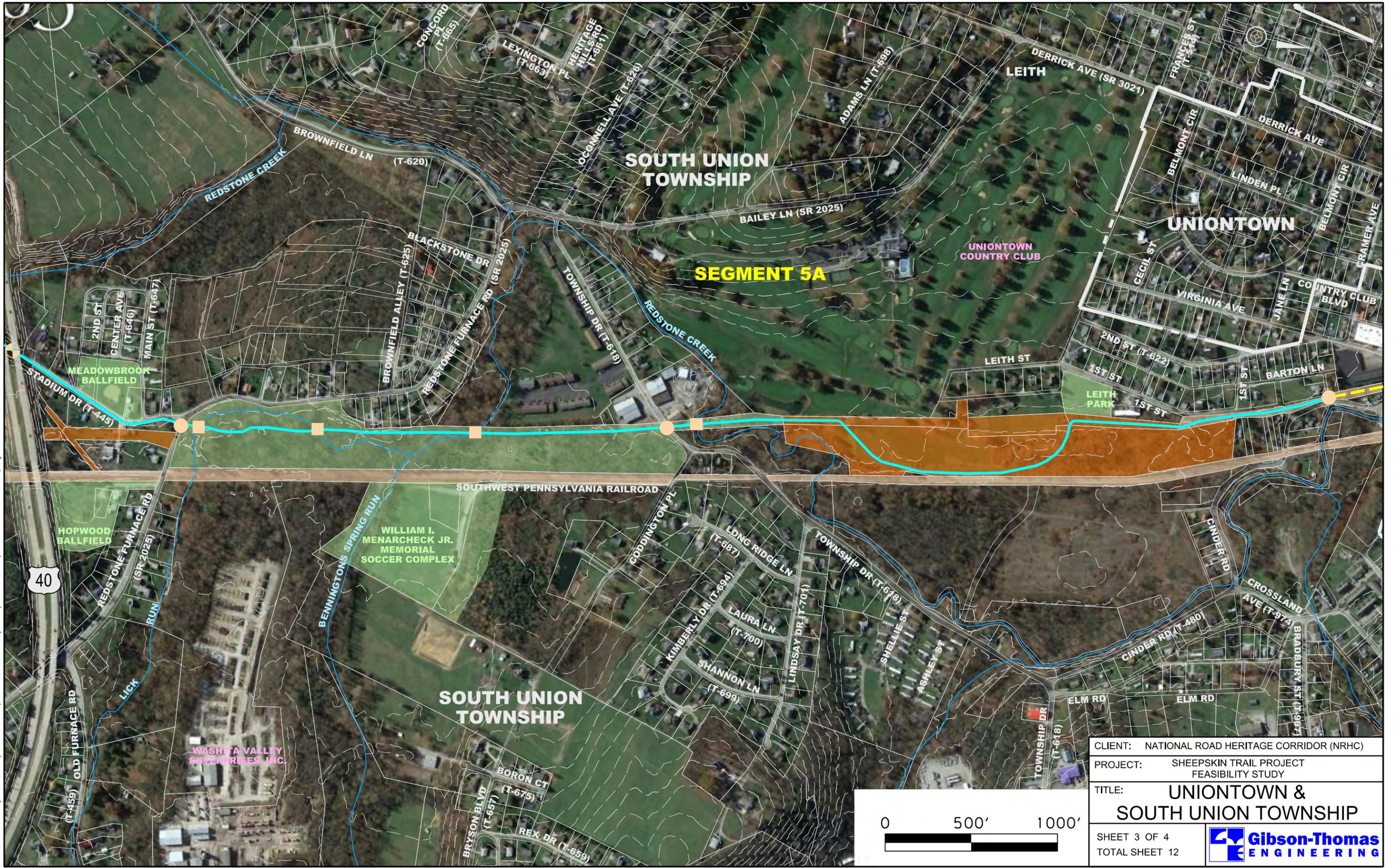


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PROJECT:	SHEEPSKIN TRAIL PROJECT FEASIBILITY STUDY
TITLE:	UNIONTOWN & SOUTH UNION TOWNSHIP
SHEET 2 OF 4	
TOTAL SHEET 11	



SOUTH UNION TOWNSHIP

UNIONTOWN

SEGMENT 5A

CLIENT: NATIONAL ROAD HERITAGE CORRIDOR (NRHC)

PROJECT: SHEEPSKIN TRAIL PROJECT
FEASIBILITY STUDY

TITLE: **UNIONTOWN &
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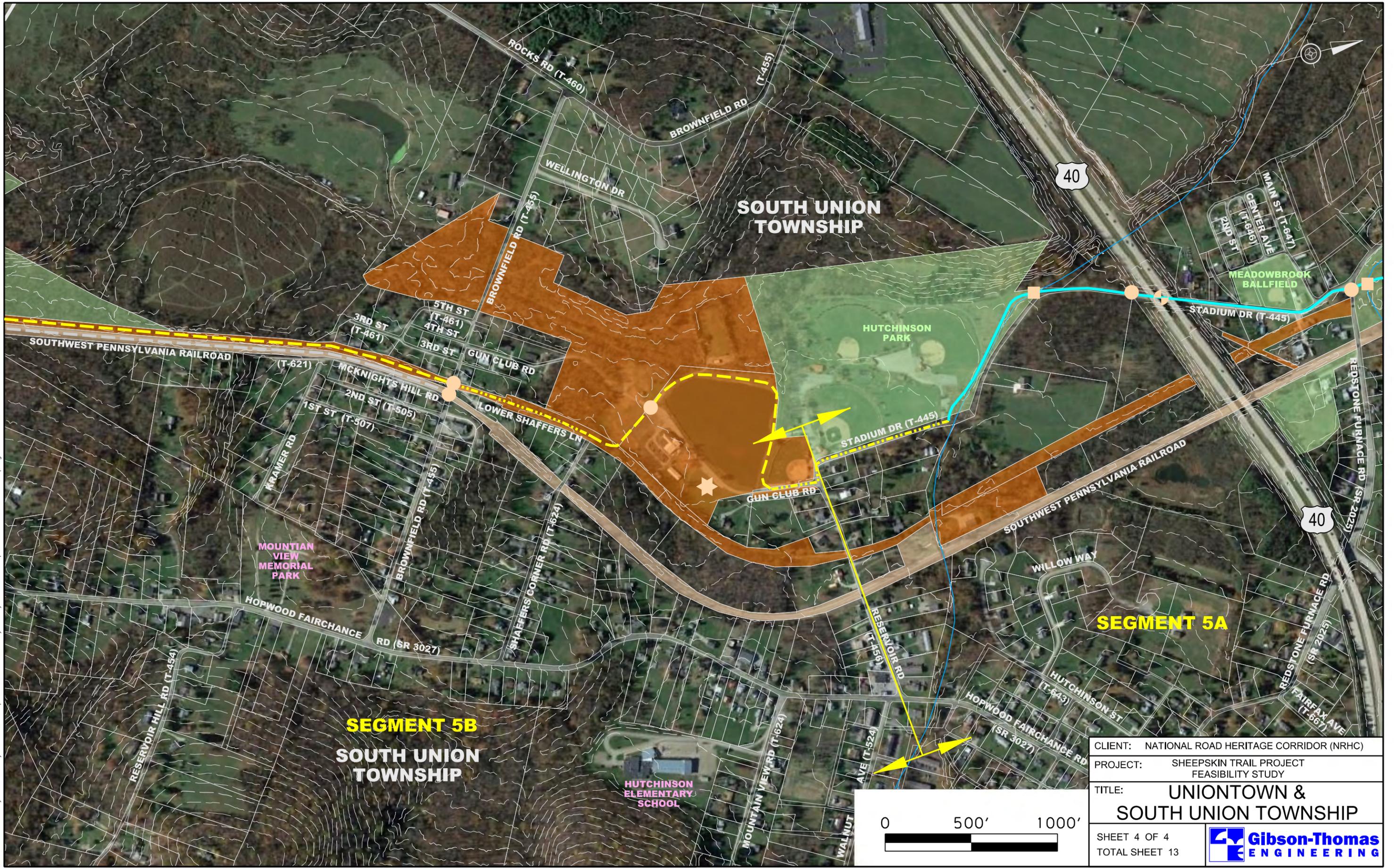
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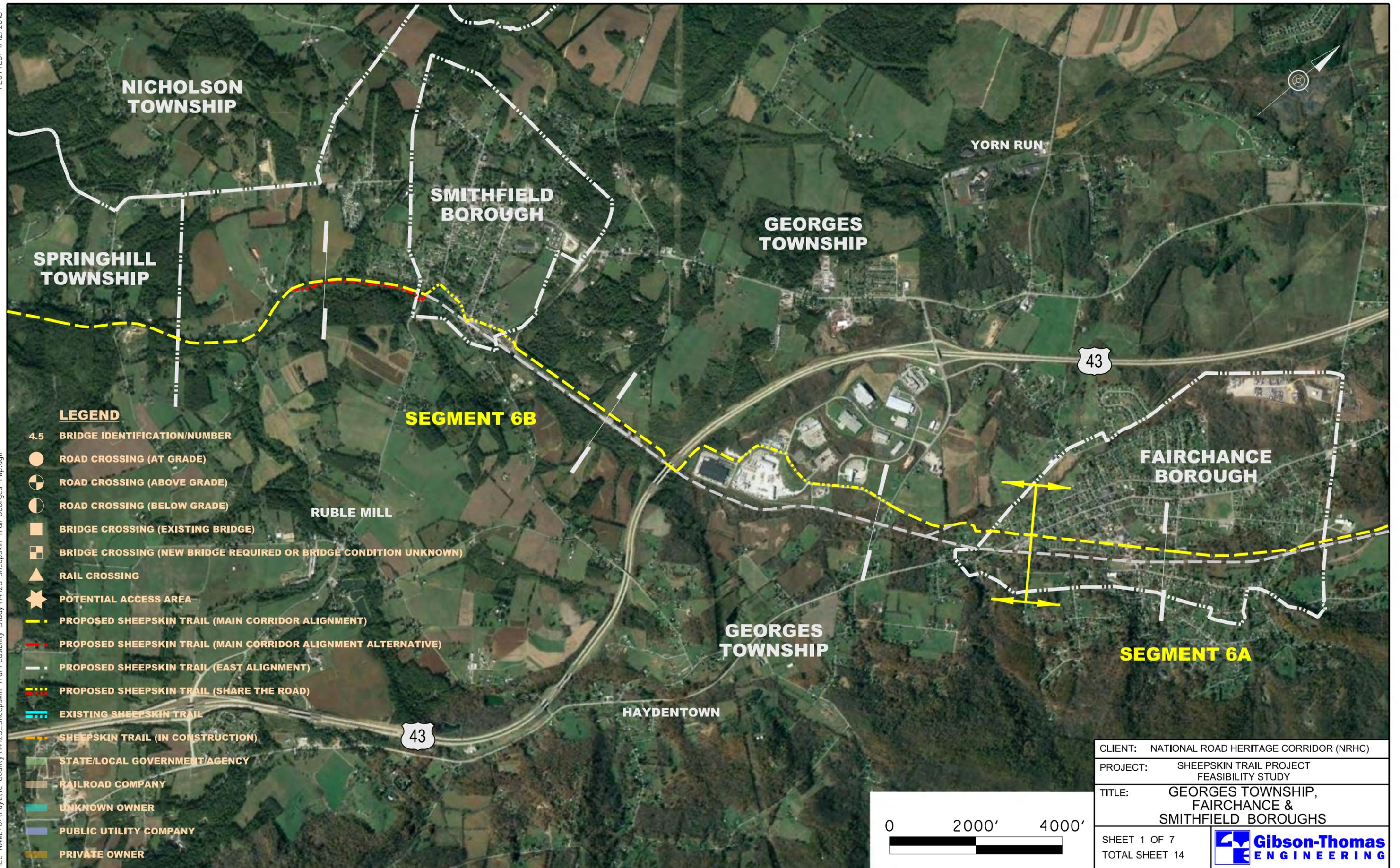
LEITH PARK

WILLIAM I. MENARCHECK JR. MEMORIAL SOCCER COMPLEX

SOUTH UNION TOWNSHIP



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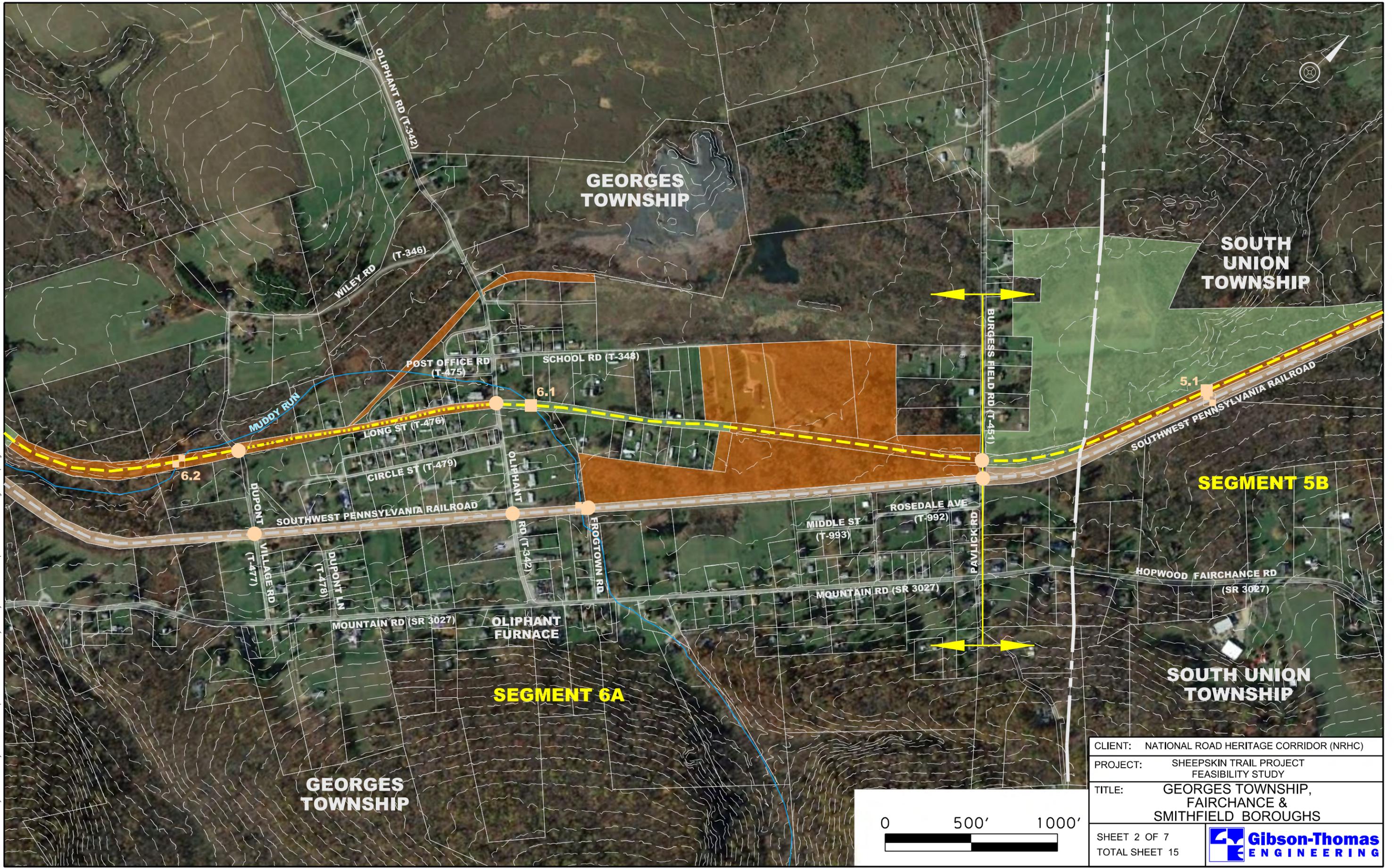


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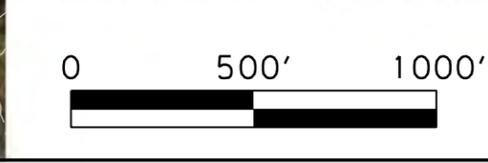
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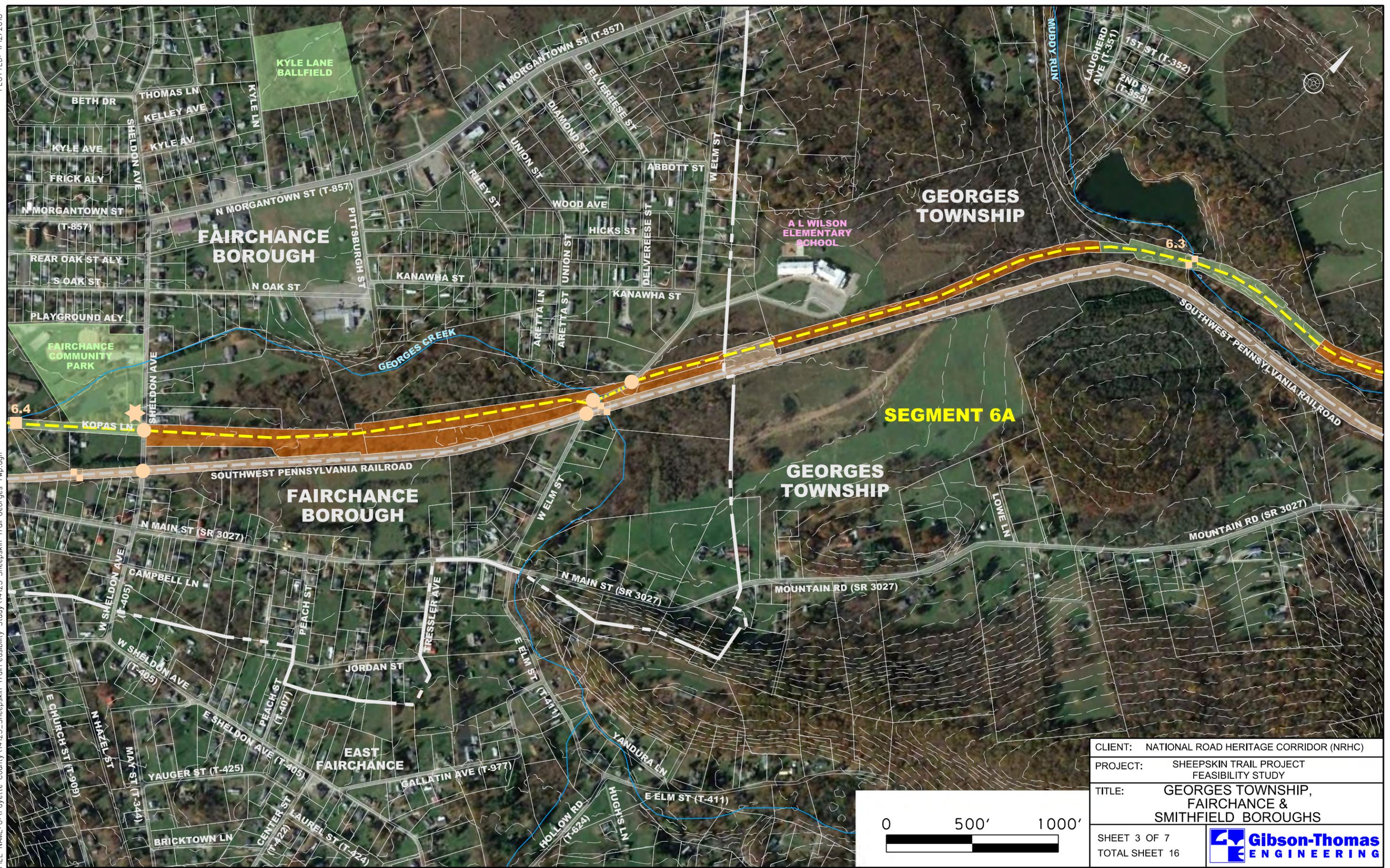


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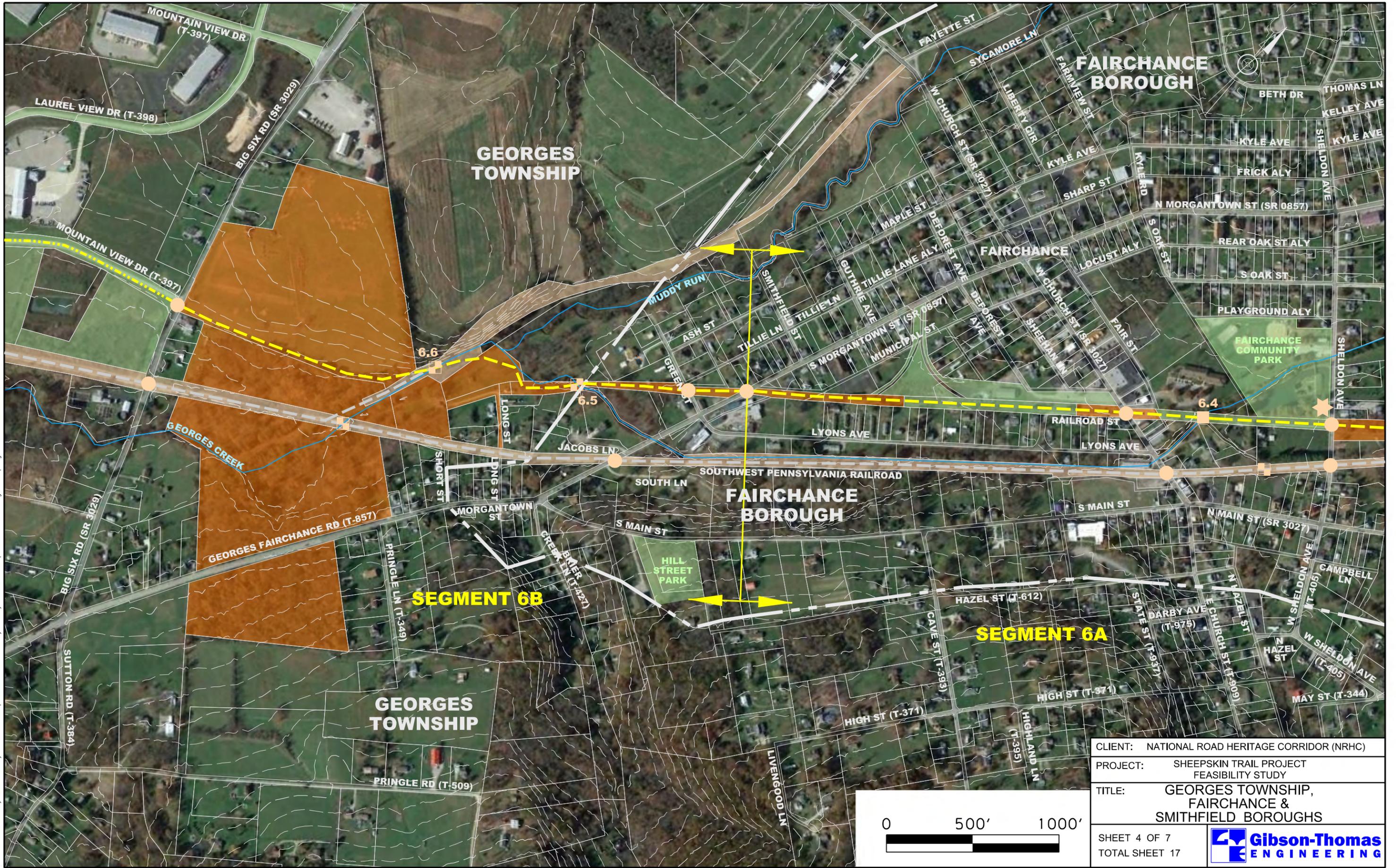


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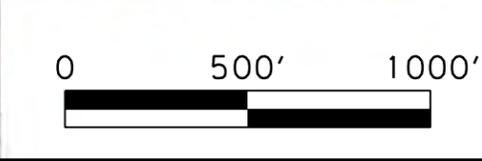


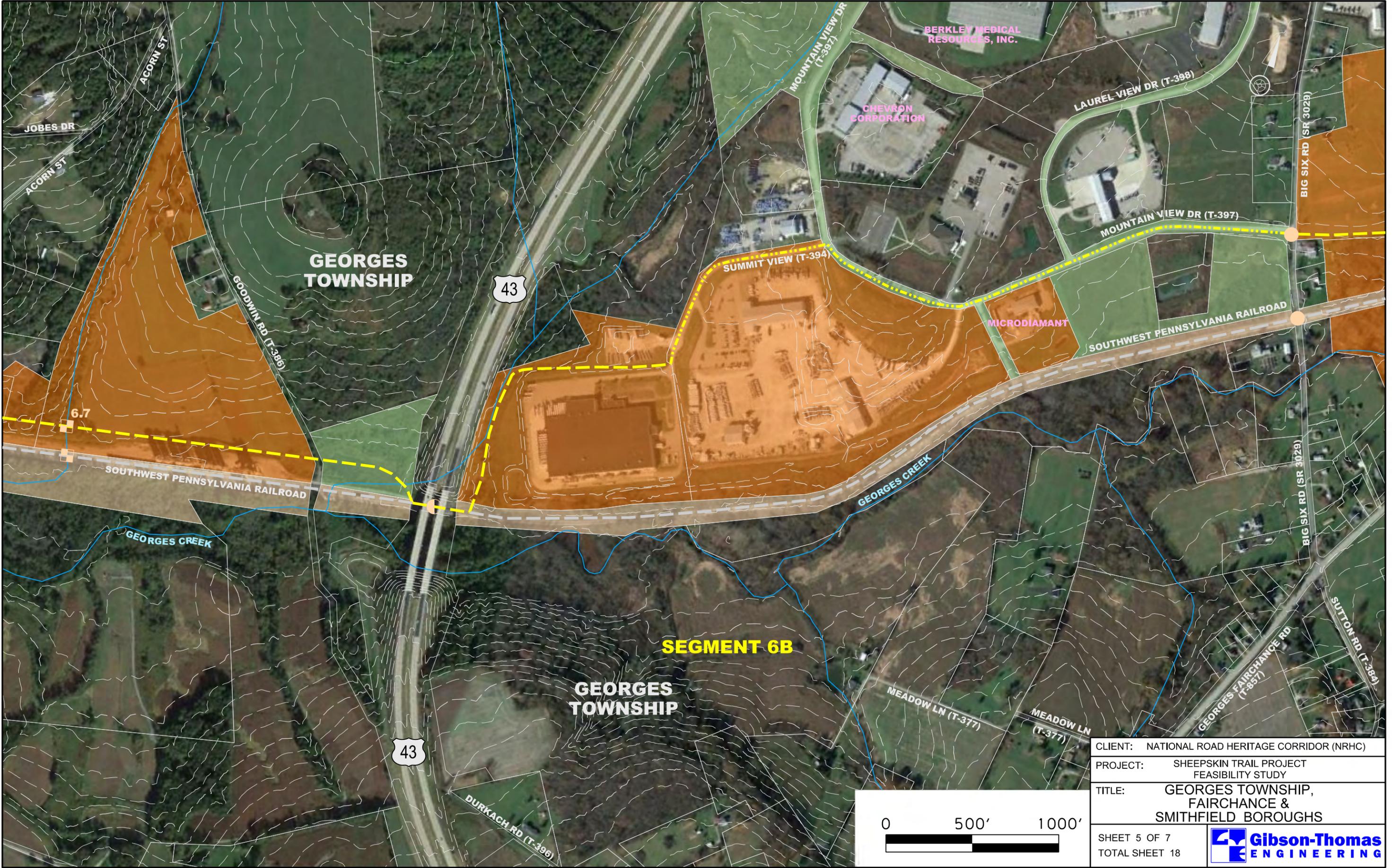


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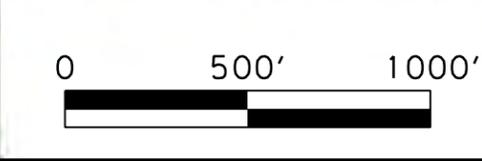


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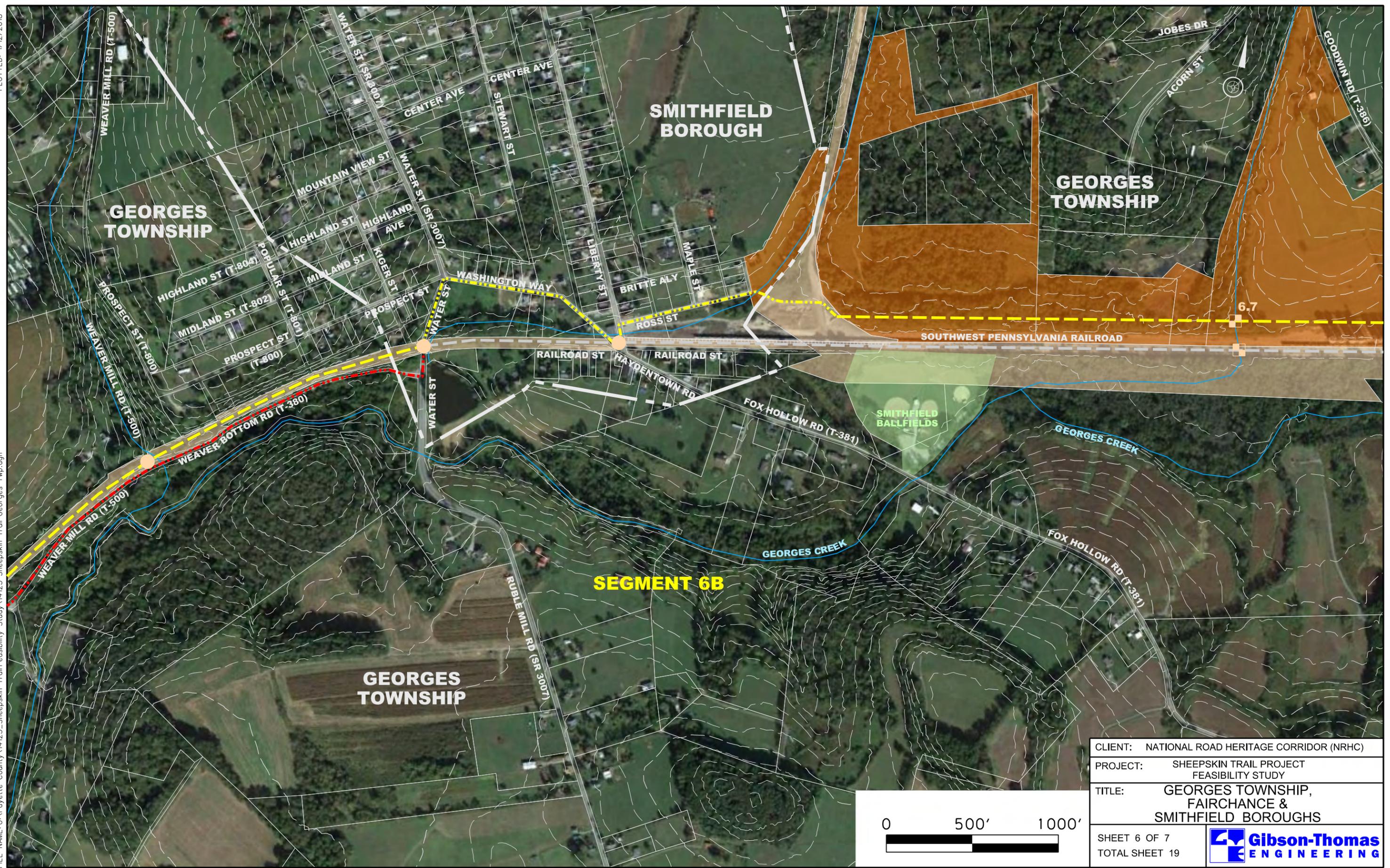


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SHEET 5 OF 7 TOTAL SHEET 18	



FILE NAME: U:\Fayette County\14125_Sheepskin Trail\Feasibility Study\14125-Sheepskin Trail-Georges Twp.dgn

PLOTTED: 1/12/2018



SMITHFIELD BOROUGH

GEORGES TOWNSHIP

GEORGES TOWNSHIP

SEGMENT 6B

SOUTHWEST PENNSYLVANIA RAILROAD

SMITHFIELD BALLFIELDS

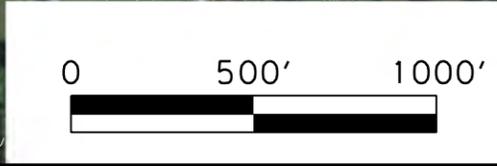
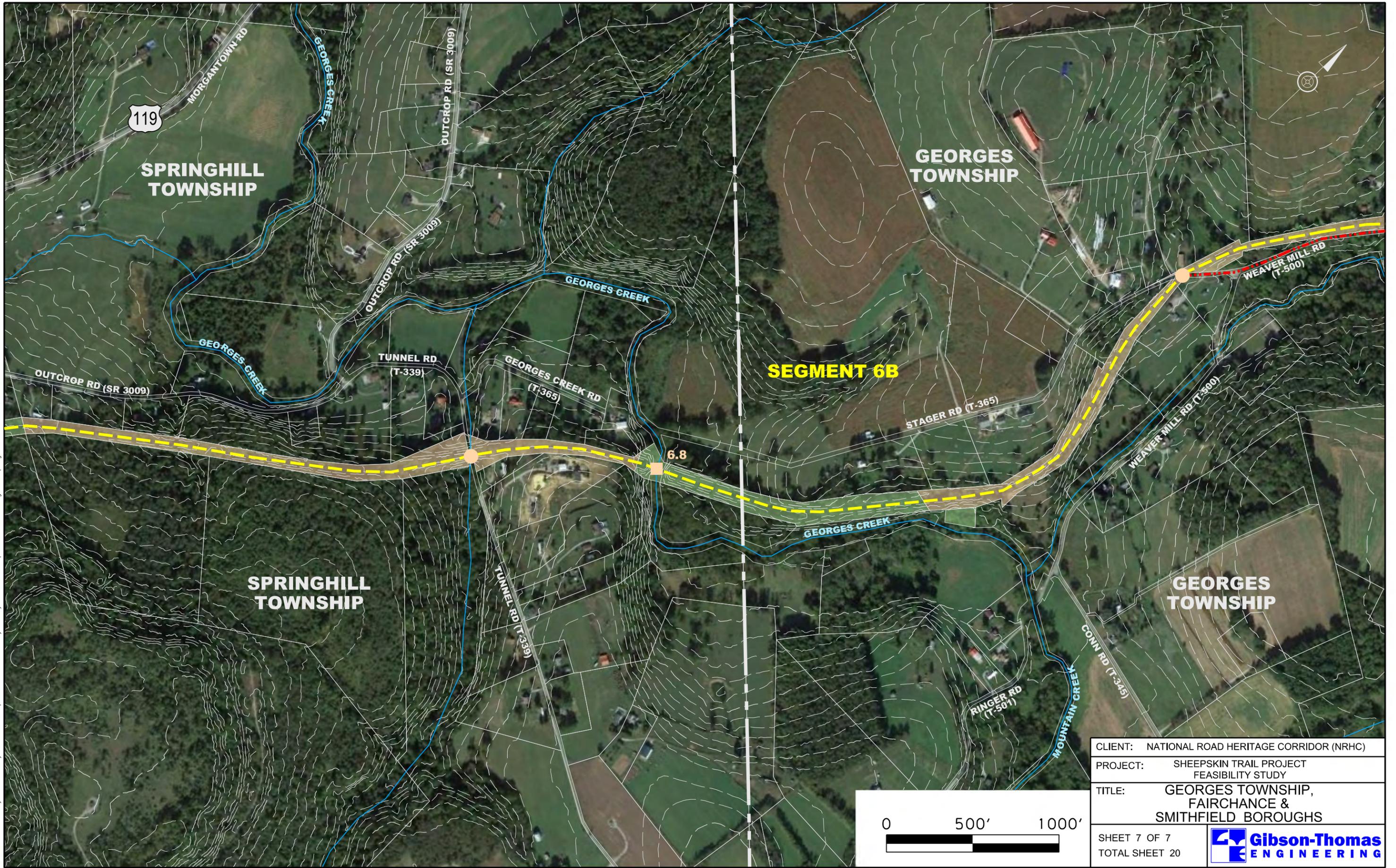
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GEORGES CREEK

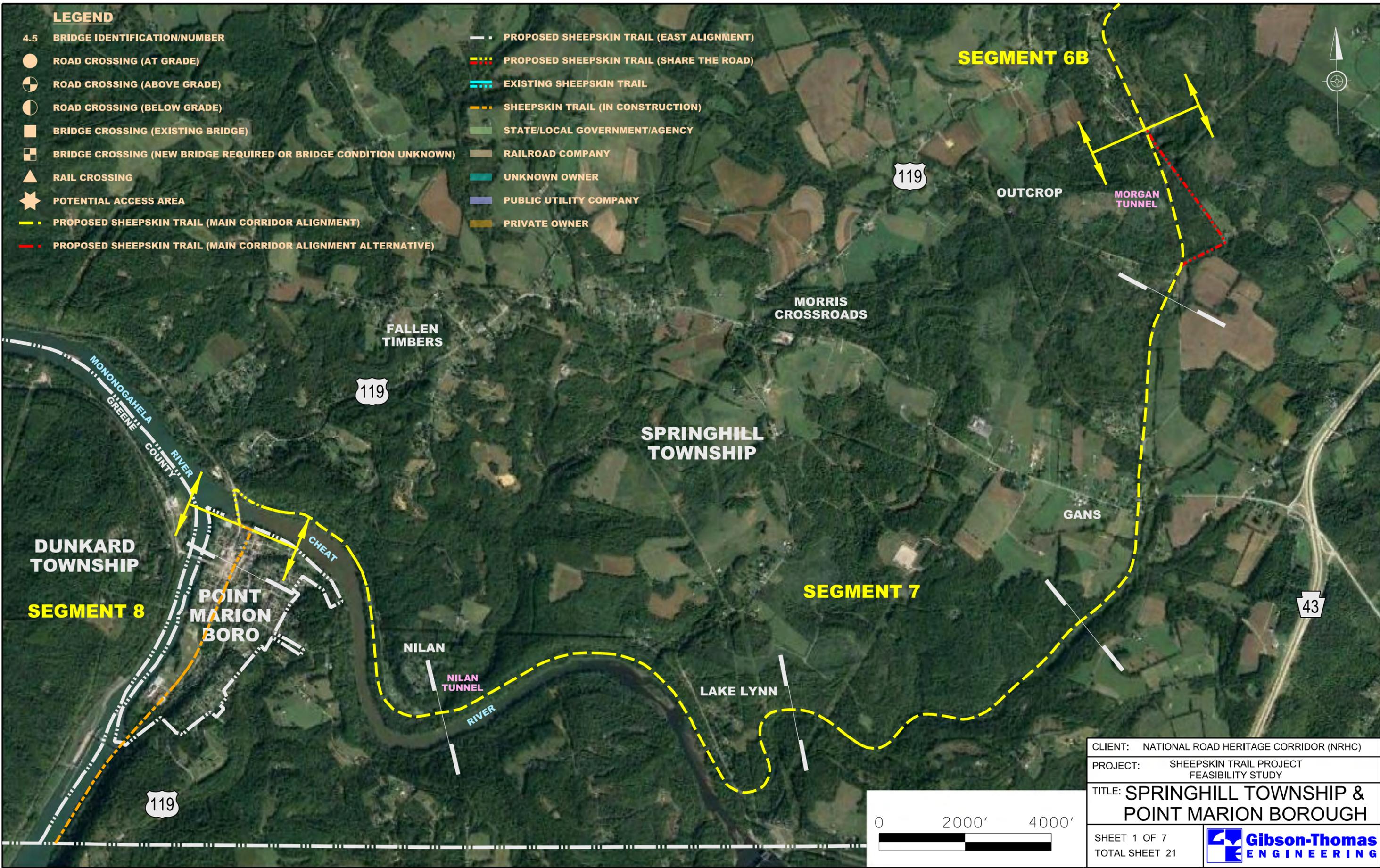
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SHEET 6 OF 7 TOTAL SHEET 19	





CLIENT:	NATIONAL ROAD HERITAGE CORRIDOR (NRHC)
PROJECT:	SHEEPSKIN TRAIL PROJECT FEASIBILITY STUDY
TITLE:	GEORGES TOWNSHIP, FAIRCHANCE & SMITHFIELD BOROUGHES
SHEET 7 OF 7 TOTAL SHEET 20	Gibson-Thomas ENGINEERING



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- ROAD CROSSING (AT GRADE)
- ⊕ ROAD CROSSING (ABOVE GRADE)
- ◐ ROAD CROSSING (BELOW GRADE)
- BRIDGE CROSSING (EXISTING BRIDGE)
- ▣ BRIDGE CROSSING (NEW BRIDGE REQUIRED OR BRIDGE CONDITION UNKNOWN)
- ▲ RAIL CROSSING
- ★ POTENTIAL ACCESS AREA
- PROPOSED SHEEPSKIN TRAIL (MAIN CORRIDOR ALIGNMENT)
- - PROPOSED SHEEPSKIN TRAIL (MAIN CORRIDOR ALIGNMENT ALTERNATIVE)
- · - · PROPOSED SHEEPSKIN TRAIL (EAST ALIGNMENT)
- · - · - · PROPOSED SHEEPSKIN TRAIL (SHARE THE ROAD)
- ▬ EXISTING SHEEPSKIN TRAIL
- - - SHEEPSKIN TRAIL (IN CONSTRUCTION)
- STATE/LOCAL GOVERNMENT/AGENCY
- RAILROAD COMPANY
- UNKNOWN OWNER
- PUBLIC UTILITY COMPANY
- PRIVATE OWNER

SEGMENT 6B

OUTCROP

MORGAN TUNNEL

MORRIS CROSSROADS

SPRINGHILL TOWNSHIP

GANS

SEGMENT 7

DUNKARD TOWNSHIP

SEGMENT 8

POINT MARION BORO

FALLEN TIMBERS

119

119

43

119

NILAN

NILAN TUNNEL

RIVER

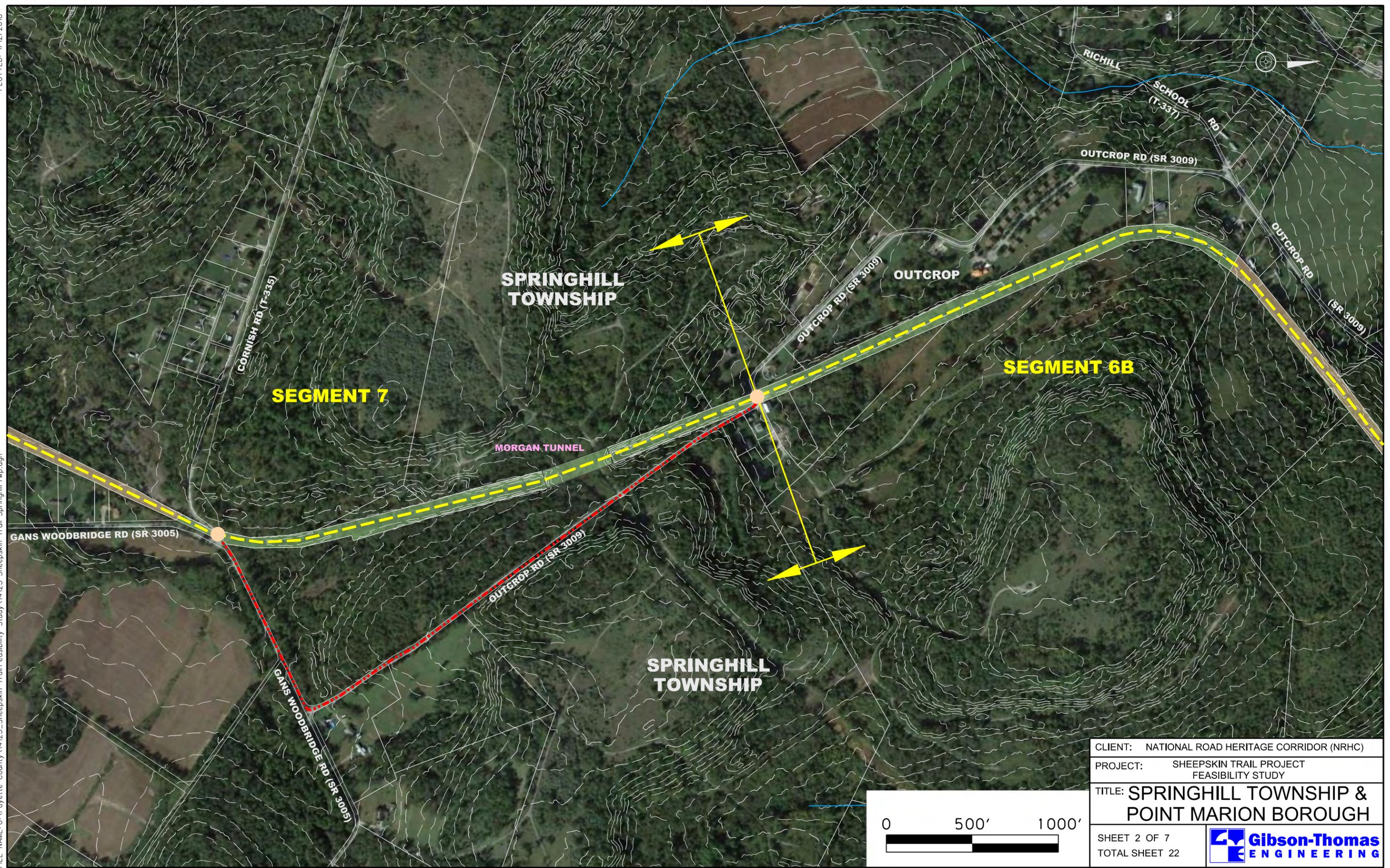
LAKE LYNN

CLIENT:	NATIONAL ROAD HERITAGE CORRIDOR (NRHC)
PROJECT:	SHEEPSKIN TRAIL PROJECT FEASIBILITY STUDY
TITLE:	SPRINGHILL TOWNSHIP & POINT MARION BORO
SHEET 1 OF 7 TOTAL SHEET 21	

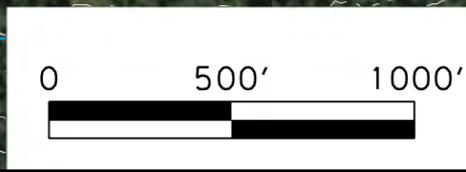


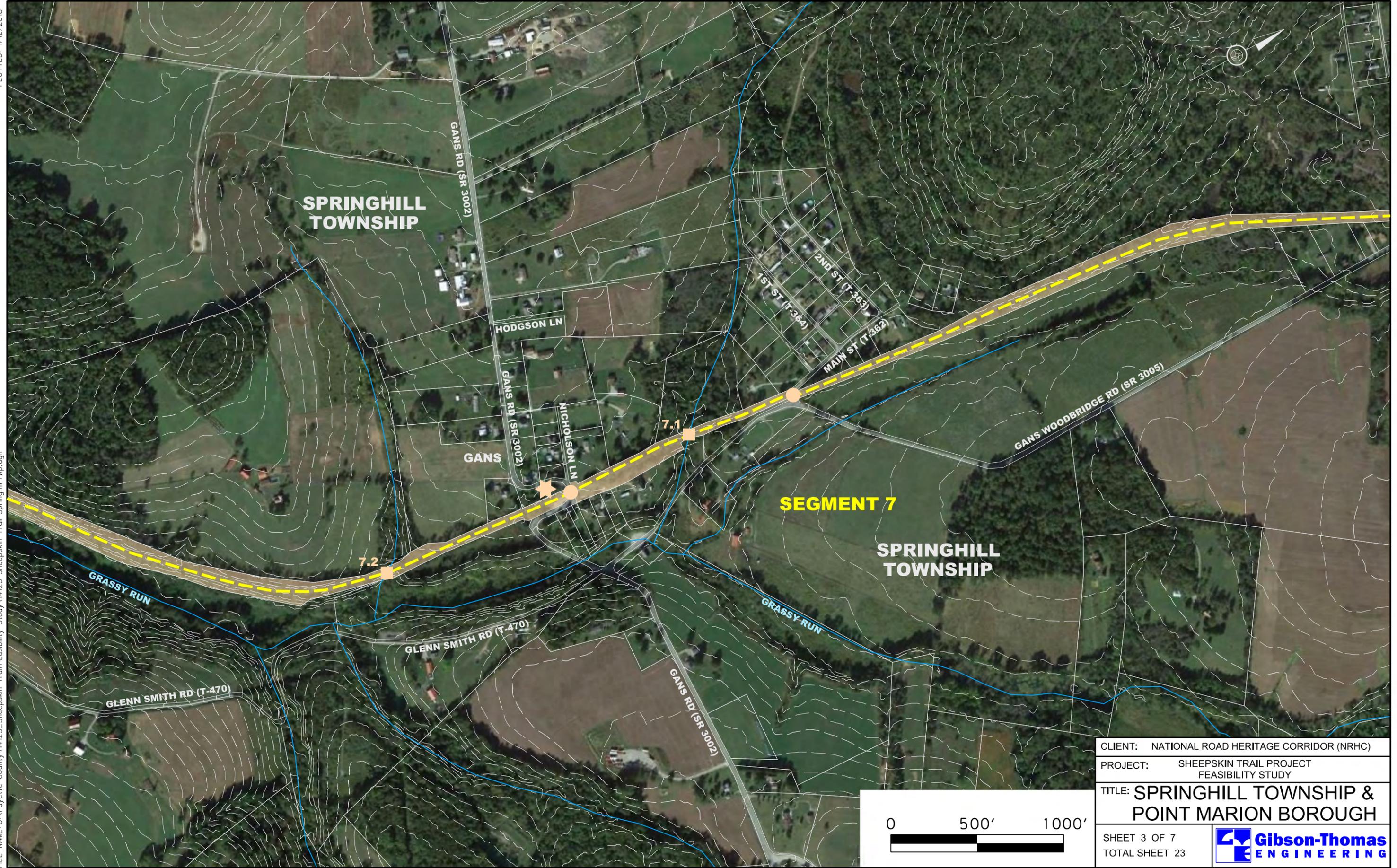
PLOTTED: 1/12/2018

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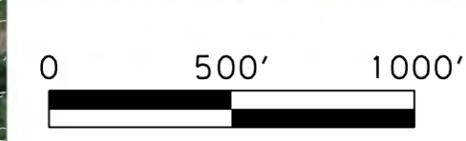
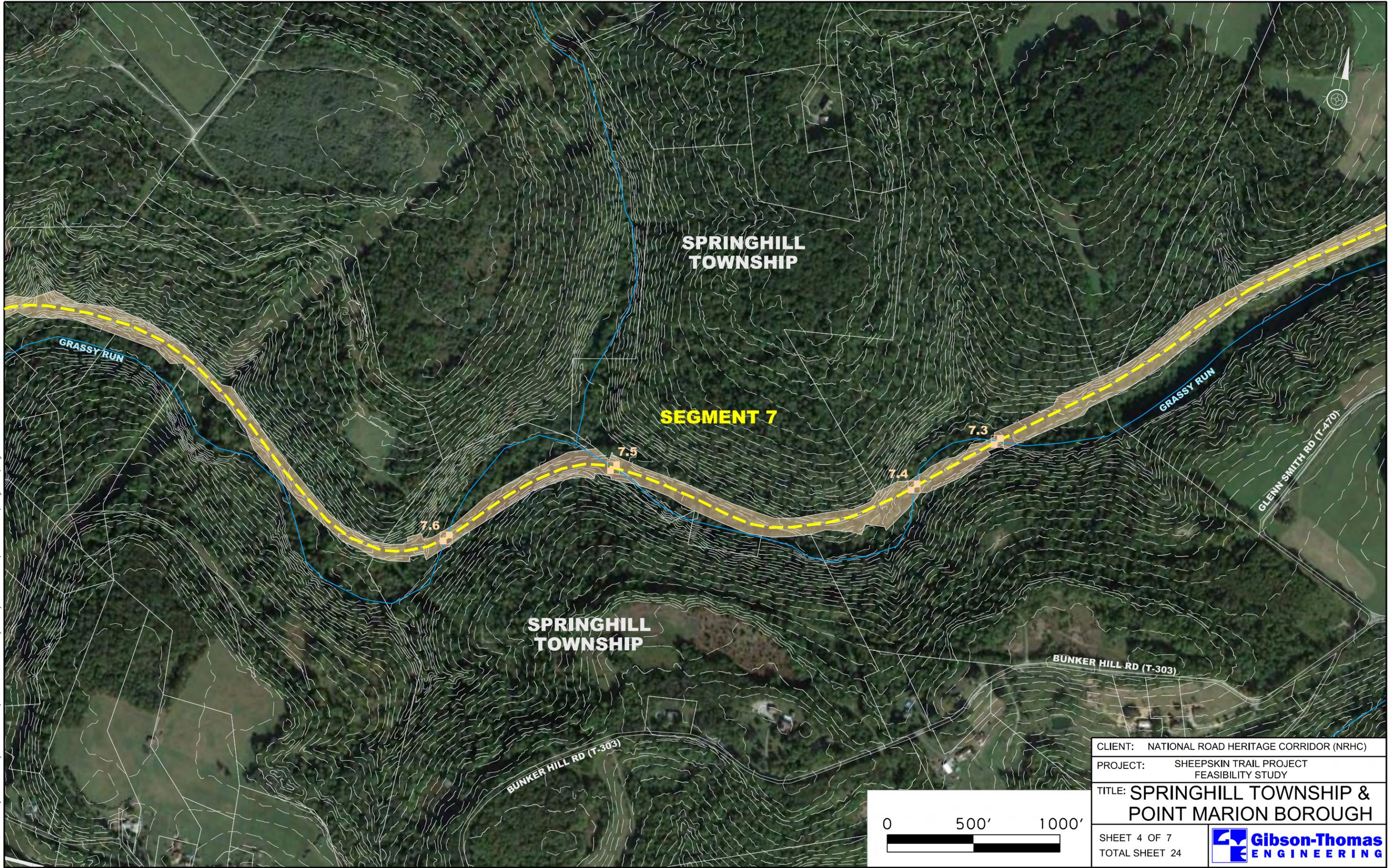


CLIENT:	NATIONAL ROAD HERITAGE CORRIDOR (NRHC)
PROJECT:	SHEEPSKIN TRAIL PROJECT FEASIBILITY STUDY
TITLE:	SPRINGHILL TOWNSHIP & POINT MARION BOROUGH
SHEET 2 OF 7	
TOTAL SHEET 22	

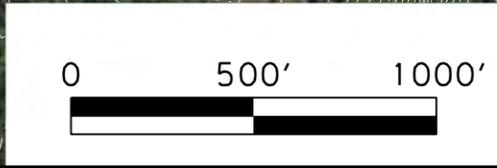
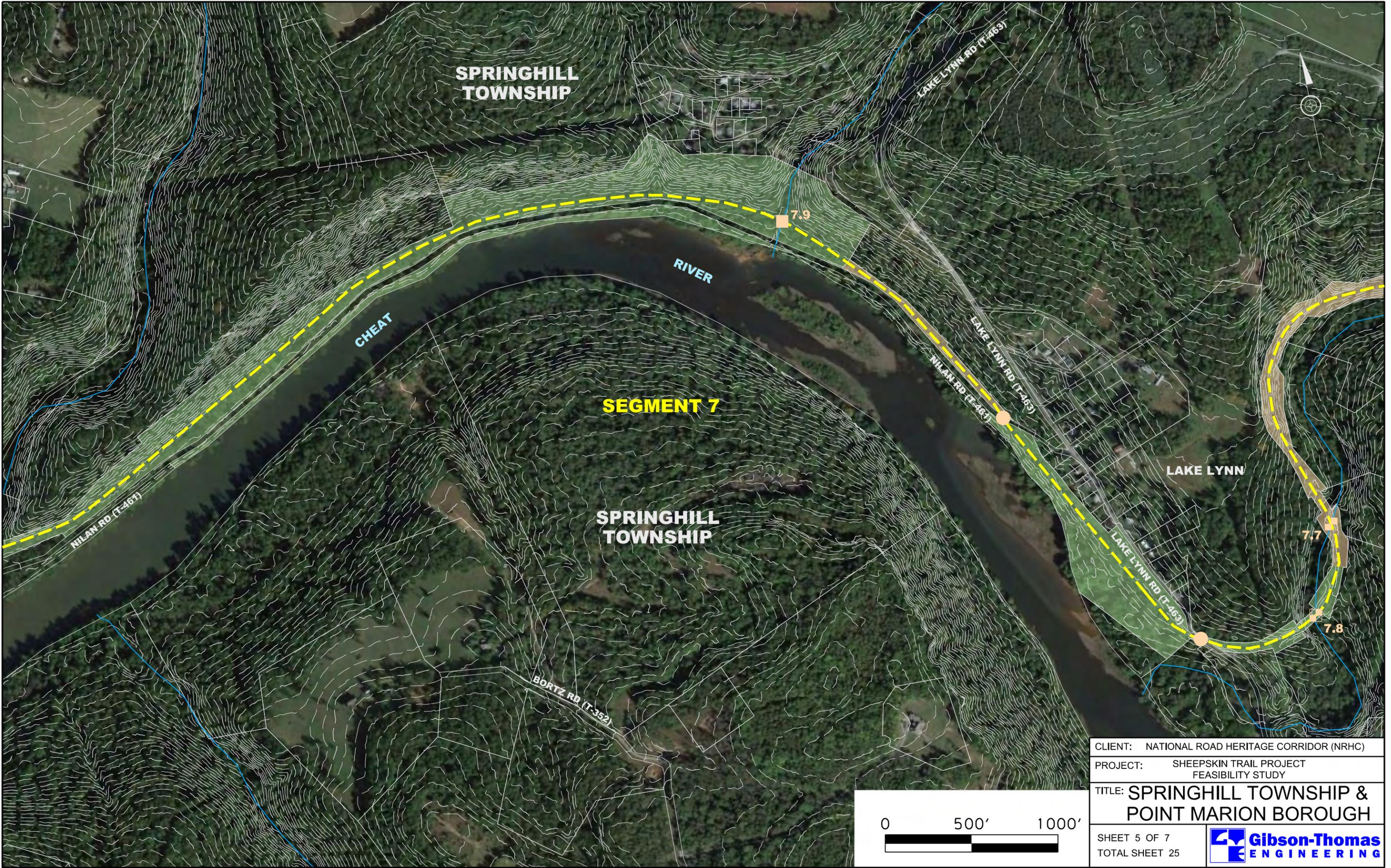




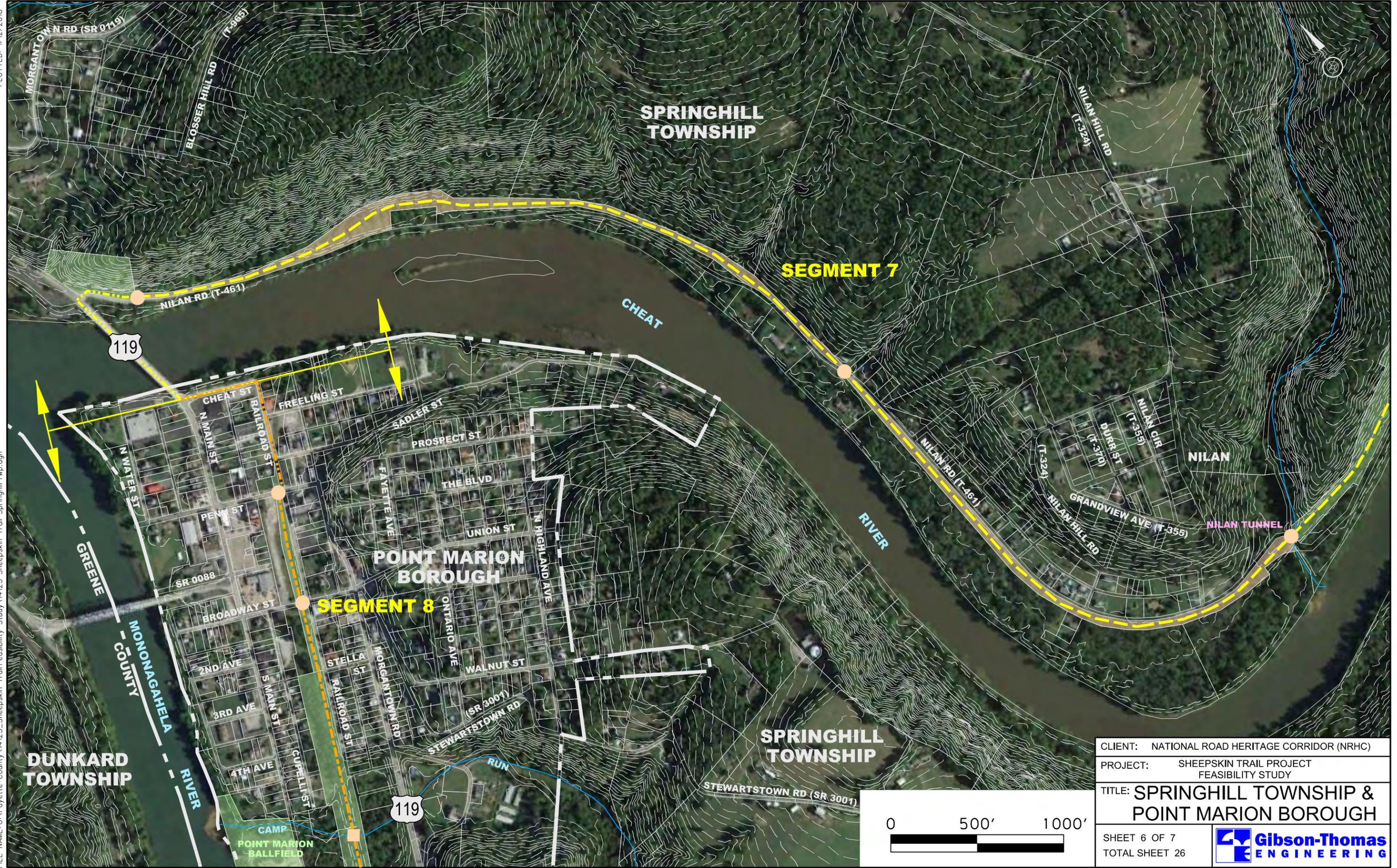
CLIENT:	NATIONAL ROAD HERITAGE CORRIDOR (NRHC)
PROJECT:	SHEEPSKIN TRAIL PROJECT FEASIBILITY STUDY
TITLE:	SPRINGHILL TOWNSHIP & POINT MARION BOROUGH
SHEET 3 OF 7 TOTAL SHEET 23	



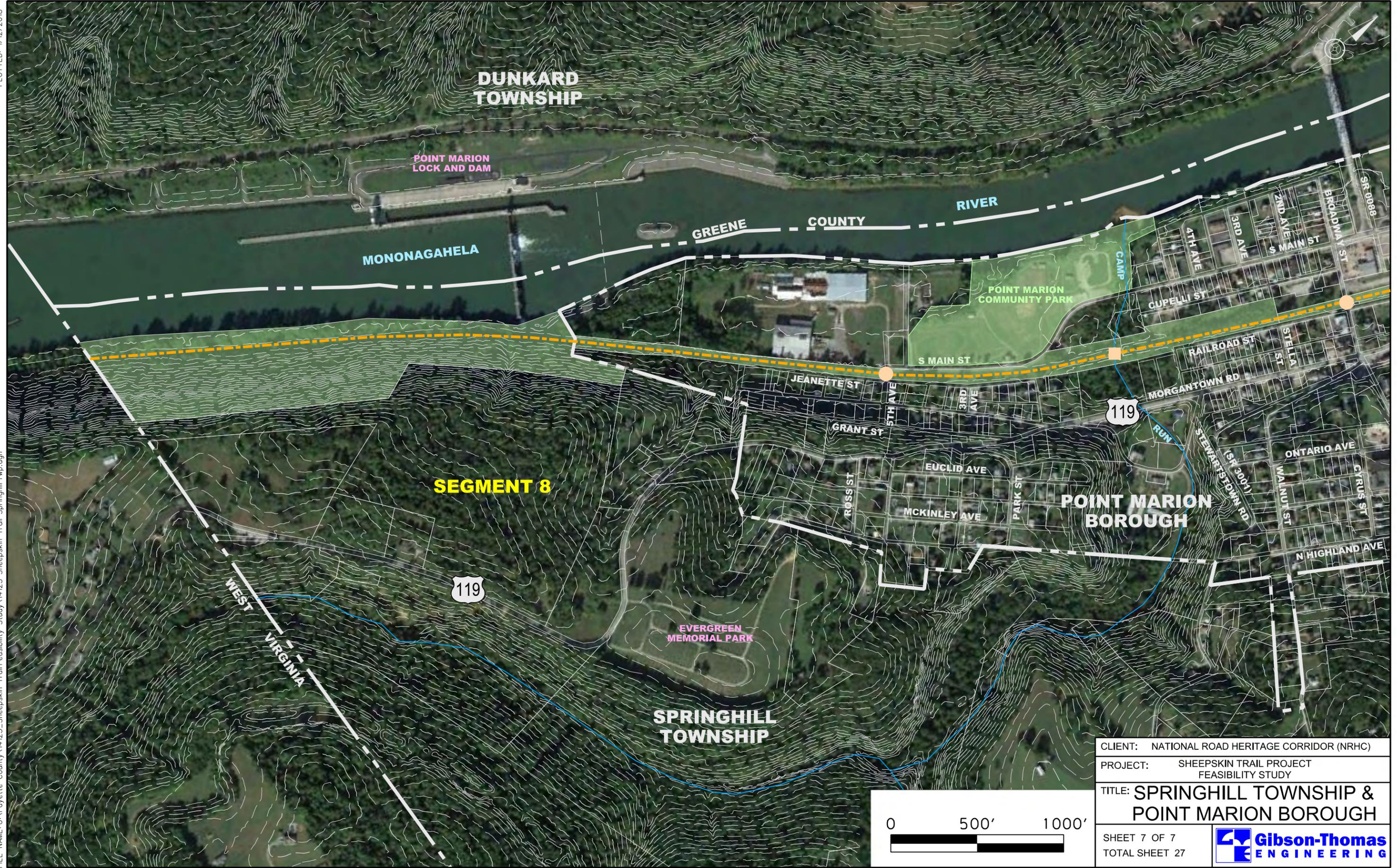
CLIENT:	NATIONAL ROAD HERITAGE CORRIDOR (NRHC)
PROJECT:	SHEEPSKIN TRAIL PROJECT FEASIBILITY STUDY
TITLE:	SPRINGHILL TOWNSHIP & POINT MARION BOROUGH
SHEET 4 OF 7 TOTAL SHEET 24	



CLIENT:	NATIONAL ROAD HERITAGE CORRIDOR (NRHC)
PROJECT:	SHEEPSKIN TRAIL PROJECT FEASIBILITY STUDY
TITLE:	SPRINGHILL TOWNSHIP & POINT MARION BOROUGH
SHEET 5 OF 7	
TOTAL SHEET 25	



CLIENT:	NATIONAL ROAD HERITAGE CORRIDOR (NRHC)
PROJECT:	SHEEPSKIN TRAIL PROJECT FEASIBILITY STUDY
TITLE:	SPRINGHILL TOWNSHIP & POINT MARION BOROUGH
SHEET 6 OF 7	
TOTAL SHEET 26	



CLIENT:	NATIONAL ROAD HERITAGE CORRIDOR (NRHC)
PROJECT:	SHEEPSKIN TRAIL PROJECT FEASIBILITY STUDY
TITLE:	SPRINGHILL TOWNSHIP & POINT MARION BOROUGH
SHEET 7 OF 7	
TOTAL SHEET 27	



Appendix B

Segment Cost Estimates



Customer: National Road Heritage Corridor
 Project Title: Fayette County Sheepskin Trail Feasibility Study
 Subject: Preliminary Cost Estimate
 Segment # 2 - Dunbar Borough/Dunbar Township
 Made By: MPM Date: 10/23/2017
 Reviewed By: Date:
 Approved By: Date:

Calculation No.:
 Revision No.:
 Revision Date:
 Contract No.:
 Division/Section: Transportation
 Item No.:
 Drawing No.:

Segment # 2 - Dunbar Borough/Dunbar Township

	Unit	Quantity	Unit Price	Subtotal	Remarks
LAND ACQUISITION					
Purchase	AC	8.3	\$4,000.00	\$33,200.00	25' ROW Width
TRAIL CONSTRUCTION					
Trail Paving	SY	16041	\$27.00	\$433,110.00	
Trail Surfacing	SY	0	\$14.50	\$0.00	
Class 1 Excavation	CY	4456	\$20.00	\$89,117.28	
Clearing and Grubbing	AC	5.0	\$5,000.00	\$25,000.00	10' trail, 7.5' berms each side
Seeding and Mulching	AC	5.0	\$1,200.00	\$6,000.00	7.5' berms each side
18" HDPE Cross Pipe	LF	722	\$25.00	\$18,046.25	Assume (1) 25' pipe every 500'
Timber Endwall	EA	58	\$1,000.00	\$57,748.00	2 EA/Pipe
R-4 Rock Apron	CY	58	\$120.00	\$6,929.76	Assume 2 CY/pipe
Class 4 Excavation	CY	573	\$25.00	\$14,318.70	
Ditch Cleaning	LF	3609	\$5.00	\$18,046.25	Assume 25% Ditch Cleaning/
Proposed Ditch	LF	3609	\$10.00	\$36,092.50	25% Proposed Ditch
Wooden Bollards	EA	8	\$500.00	\$4,000.00	
Crosswalk Painting	LF	180	\$2.00	\$360.00	
Post Mounted Signs	EA	30	\$350.00	\$10,500.00	
Warning Beacons	PAIR	0	\$15,000.00	\$0.00	
Bicycle Sharrows	EA	2	\$375.00	\$750.00	
Split Rail Fence	LF	1444	\$25.00	\$36,092.50	Assume fence on 10% of trail
TRAIL SUBTOTAL				\$756,111.24	
STRUCTURES					
2.1 over Gist Run					
Split Rail Fence Bridge Rail	LF	160	\$25.00	\$4,000.00	80' long structure (Mackin 99)
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
2.2 over Gist Run					
Split Rail Fence Bridge Rail	LF	70	\$25.00	\$1,750.00	35' long structure (Mackin 99)
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
2.3 over Gist Run					
Split Rail Fence Bridge Rail	LF	50	\$25.00	\$1,250.00	25' long structure (Mackin 99)
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
2.4 over Laurel Run					
Split Rail Fence Bridge Rail	LF	44	\$25.00	\$1,100.00	22' long structure (Mackin 99)
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner



Customer: National Road Heritage Corridor
 Project Title: Fayette County Sheepskin Trail Feasibility Study
 Subject: Preliminary Cost Estimate
 Segment # 2 - Dunbar Borough/Dunbar Township
 Made By: MPM Date: 10/23/2017
 Reviewed By: Date:
 Approved By: Date:

Calculation No.:
 Revision No.:
 Revision Date:
 Contract No.:
 Division/Section: Transportation
 Item No.:
 Drawing No.:

Segment # 2 - Dunbar Borough/Dunbar Township

STRUCTURE SUBTOTAL	\$14,100.00
LAND ACQUISITION SUBTOTAL	\$33,200.00
COMBINED TRAIL+STRUCTURE SUBTOTAL	\$770,211.24
EROSION AND SEDIMENT CONTROL (5%)	\$38,510.56
CONSTRUCTION CONTINGENCY (10%)	\$77,021.12
CONSTRUCTION ENGINEERING AND MOBILIZATION (12%)	\$92,425.35
CONSTRUCTION INSPECTION (10%)	\$77,021.12
CONSTRUCTION SUBTOTAL	\$1,055,189.40
ADMINISTRATION (10%)	\$105,518.94
ENVIRONMENTAL IMPACT STUDY (10%)	\$105,518.94
ENGINEERING, SURVEY AND DESIGN (10%)	\$105,518.94
ENGINEERING SUBTOTAL	\$316,556.82
GRAND TOTAL	\$1,404,946.23



Customer: National Road Heritage Corridor
 Project Title: Fayette County Sheepskin Trail Feasibility Study
 Subject: Preliminary Cost Estimate
 Segment # 2 Alternate - Dunbar Borough/Dunbar Township
 Made By: MPM Date: 10/23/2017
 Reviewed By: Date:
 Approved By: Date:

Calculation No.:
 Revision No.:
 Revision Date:
 Contract No.:
 Division/Section: Transportation
 Item No.:
 Drawing No.:

Segment # 2 Alternate - Dunbar Borough/Dunbar Township

	Unit	Quantity	Unit Price	Subtotal	Remarks
LAND ACQUISITION					
Purchase	AC	7.9	\$4,000.00	\$31,600.00	25' ROW Width
TRAIL CONSTRUCTION					
Trail Paving	SY	15630	\$27.00	\$422,010.00	
Trail Surfacing	SY	0	\$14.50	\$0.00	
Class 1 Excavation	CY	4342	\$20.00	\$86,833.33	
Clearing and Grubbing	AC	4.8	\$5,000.00	\$24,000.00	10' trail, 7.5' berms each side
Seeding and Mulching	AC	4.9	\$1,200.00	\$5,880.00	7.5' berms each side
18" HDPE Cross Pipe	LF	703	\$25.00	\$17,583.75	Assume (1) 25' pipe every 500'
Timber Endwall	EA	56	\$1,000.00	\$56,268.00	2 EA/Pipe
R-4 Rock Apron	CY	56	\$120.00	\$6,752.16	Assume 2 CY/pipe
Class 4 Excavation	CY	558	\$25.00	\$13,956.70	
Ditch Cleaning	LF	3517	\$5.00	\$17,583.75	Assume 25% Ditch Cleaning/
Proposed Ditch	LF	3517	\$10.00	\$35,167.50	25% Proposed Ditch
Wooden Bollards	EA	6	\$500.00	\$3,000.00	
Crosswalk Painting	LF	120	\$2.00	\$240.00	
Post Mounted Signs	EA	32	\$350.00	\$11,200.00	
Warning Beacons	PAIR	0	\$15,000.00	\$0.00	
Bicycle Sharrows	EA	4	\$375.00	\$1,500.00	
Split Rail Fence	LF	1407	\$25.00	\$35,167.50	Assume fence on 10% of trail
TRAIL SUBTOTAL				\$737,142.69	
STRUCTURES					
2.1 over Gist Run					
Split Rail Fence Bridge Rail	LF	160	\$25.00	\$4,000.00	80' long structure (Mackin 99)
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
2.2 over Gist Run					
Split Rail Fence Bridge Rail	LF	70	\$25.00	\$1,750.00	35' long structure (Mackin 99)
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
2.3 over Gist Run					
Split Rail Fence Bridge Rail	LF	50	\$25.00	\$1,250.00	25' long structure (Mackin 99)
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
2.4 over Laurel Run					
Split Rail Fence Bridge Rail	LF	44	\$25.00	\$1,100.00	22' long structure (Mackin 99)
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner



Customer: National Road Heritage Corridor
 Project Title: Fayette County Sheepskin Trail Feasibility Study
 Subject: Preliminary Cost Estimate
 Segment # 2 Alternate - Dunbar Borough/Dunbar Township
 Made By: MPM Date: 10/23/2017
 Reviewed By: Date:
 Approved By: Date:

Calculation No.:
 Revision No.:
 Revision Date:
 Contract No.:
 Division/Section: Transportation
 Item No.:
 Drawing No.:

Segment # 2 Alternate - Dunbar Borough/Dunbar Township

STRUCTURE SUBTOTAL	\$14,100.00
LAND ACQUISITION SUBTOTAL	\$31,600.00
COMBINED TRAIL+STRUCTURE SUBTOTAL	\$751,242.69
EROSION AND SEDIMENT CONTROL (5%)	\$37,562.13
CONSTRUCTION CONTINGENCY (10%)	\$75,124.27
CONSTRUCTION ENGINEERING AND MOBILIZATION (12%)	\$90,149.12
CONSTRUCTION INSPECTION (10%)	\$75,124.27
CONSTRUCTION SUBTOTAL	\$1,029,202.49
ADMINISTRATION (10%)	\$102,920.25
ENVIRONMENTAL IMPACT STUDY (10%)	\$102,920.25
ENGINEERING, SURVEY AND DESIGN (10%)	\$102,920.25
ENGINEERING SUBTOTAL	\$308,760.75
GRAND TOTAL	\$1,369,563.24



Customer: National Road Heritage Corridor
 Project Title: Fayette County Sheepskin Trail Feasibility Study
 Subject: Preliminary Cost Estimate
 Segment #3 - North Union Township
 Made By: MPM Date: 10/23/2017
 Reviewed By: Date:
 Approved By: Date:

Calculation No.:
 Revision No.:
 Revision Date:
 Contract No.:
 Division/Section: Transportation
 Item No.:
 Drawing No.:

Segment #3 - North Union Township

	Unit	Quantity	Unit Price	Subtotal	Remarks
LAND ACQUISITION					
Purchase	AC	14.9	\$4,000.00	\$59,600.00	25' ROW Width
TRAIL CONSTRUCTION					
Trail Paving	SY	28711	\$27.00	\$775,200.00	
Trail Surfacing	SY	0	\$14.50	\$0.00	
Class 1 Excavation	CY	7975	\$20.00	\$159,506.17	
Clearing and Grubbing	AC	8.9	\$5,000.00	\$44,500.00	10' trail, 7.5' berms each side
Seeding and Mulching	AC	8.9	\$1,200.00	\$10,680.00	7.5' berms each side
18" HDPE Cross Pipe	LF	1292	\$25.00	\$32,300.00	Assume (1) 25' pipe every 500'
Timber Endwall	EA	103	\$1,000.00	\$103,360.00	2 EA/Pipe
R-4 Rock Apron	CY	103	\$120.00	\$12,403.20	Assume 2 CY/pipe
Class 4 Excavation	CY	1025	\$25.00	\$25,634.00	
Ditch Cleaning	LF	6460	\$5.00	\$32,300.00	Assume 25% Ditch Cleaning/
Proposed Ditch	LF	6460	\$10.00	\$64,600.00	25% Proposed Ditch
Wooden Bollards	EA	10	\$500.00	\$5,000.00	
Crosswalk Painting	LF	240	\$2.00	\$480.00	
Post Mounted Signs	EA	48	\$350.00	\$16,800.00	
Warning Beacons	PAIR	0	\$15,000.00	\$0.00	
Bicycle Sharrows	EA	8	\$375.00	\$3,000.00	
Split Rail Fence	LF	2584	\$25.00	\$64,600.00	Assume fence on 10% of trail
TRAIL SUBTOTAL				\$1,350,363.37	
STRUCTURES					
3.1 over Cove Run					
Split Rail Fence Bridge Rail	LF	60	\$25.00	\$1,500.00	30' long structure (Mackin 99)
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
3.2 over Cove Run					
Split Rail Fence Bridge Rail	LF	48	\$25.00	\$1,200.00	24' long structure (Mackin 99)
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
3.3 over Cove Run					
Split Rail Fence Bridge Rail	LF	54	\$25.00	\$1,350.00	27' long structure (Mackin 99)
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
3.4 over Shutes Run					
Split Rail Fence Bridge Rail	LF	72	\$25.00	\$1,800.00	36' long structure (Mackin 99)
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner



Customer: National Road Heritage Corridor
 Project Title: Fayette County Sheepskin Trail Feasibility Study
 Subject: Preliminary Cost Estimate
 Segment #3 - North Union Township
 Made By: MPM Date: 10/23/2017
 Reviewed By: Date:
 Approved By: Date:

Calculation No.:
 Revision No.:
 Revision Date:
 Contract No.:
 Division/Section: Transportation
 Item No.:
 Drawing No.:

Segment #3 - North Union Township

	Unit	Quantity	Unit Price	Subtotal	Remarks
3.5 over Cove Run					
Split Rail Fence Bridge Rail	LF	54	\$25.00	\$1,350.00	27' long structure (Mackin 99)
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
3.6 over Cove Run					
Split Rail Fence Bridge Rail	LF	125	\$25.00	\$3,125.00	62' long structure (Mackin 99)
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
STRUCTURE SUBTOTAL				\$19,325.00	
LAND ACQUISITION SUBTOTAL				\$59,600.00	
COMBINED TRAIL+STRUCTURE SUBTOTAL				\$1,369,688.37	
EROSION AND SEDIMENT CONTROL (5%)				\$68,484.42	
CONSTRUCTION CONTINGENCY (10%)				\$136,968.84	
CONSTRUCTION ENGINEERING AND MOBILIZATION (12%)				\$164,362.60	
CONSTRUCTION INSPECTION (10%)				\$136,968.84	
CONSTRUCTION SUBTOTAL				\$1,876,473.07	
ADMINISTRATION (10%)				\$187,647.31	
ENVIRONMENTAL IMPACT STUDY (10%)				\$187,647.31	
ENGINEERING, SURVEY AND DESIGN (10%)				\$187,647.31	
ENGINEERING SUBTOTAL				\$562,941.92	
GRAND TOTAL				\$2,499,014.99	



Customer: National Road Heritage Corridor
 Project Title: Fayette County Sheepskin Trail Feasibility Study
 Subject: Preliminary Cost Estimate
 Segment #3 Alternate - North Union Township
 Made By: MPM Date: 10/23/2017
 Reviewed By: Date:
 Approved By: Date:

Calculation No.:
 Revision No.:
 Revision Date:
 Contract No.:
 Division/Section: Transportation
 Item No.:
 Drawing No.:

Segment #3 Alternate - North Union Township

	Unit	Quantity	Unit Price	Subtotal	Remarks
LAND ACQUISITION					
Purchase	AC	15.6	\$4,000.00	\$62,400.00	25' ROW Width
TRAIL CONSTRUCTION					
Trail Paving	SY	30010	\$27.00	\$810,270.00	
Trail Surfacing	SY	0	\$14.50	\$0.00	
Class 1 Excavation	CY	8336	\$20.00	\$166,722.22	
Clearing and Grubbing	AC	9.4	\$5,000.00	\$47,000.00	10' trail, 7.5' berms each side
Seeding and Mulching	AC	9.4	\$1,200.00	\$11,280.00	7.5' berms each side
18" HDPE Cross Pipe	LF	1350	\$25.00	\$33,761.25	Assume (1) 25' pipe every 500'
Timber Endwall	EA	108	\$1,000.00	\$108,036.00	2 EA/Pipe
R-4 Rock Apron	CY	108	\$120.00	\$12,964.32	Assume 2 CY/pipe
Class 4 Excavation	CY	1071	\$25.00	\$26,775.90	
Ditch Cleaning	LF	6752	\$5.00	\$33,761.25	Assume 25% Ditch Cleaning/
Proposed Ditch	LF	6752	\$10.00	\$67,522.50	25% Proposed Ditch
Wooden Bollards	EA	10	\$500.00	\$5,000.00	
Crosswalk Painting	LF	240	\$2.00	\$480.00	
Post Mounted Signs	EA	36	\$350.00	\$12,600.00	
Warning Beacons	PAIR	0	\$15,000.00	\$0.00	
Bicycle Sharrows	EA	2	\$375.00	\$750.00	
Split Rail Fence	LF	2701	\$25.00	\$67,522.50	Assume fence on 10% of trail
TRAIL SUBTOTAL				\$1,404,445.94	
STRUCTURES					
3.1 over Cove Run					
Split Rail Fence Bridge Rail	LF	60	\$25.00	\$1,500.00	30' long structure (Mackin 99)
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
3.2 over Cove Run					
Split Rail Fence Bridge Rail	LF	48	\$25.00	\$1,200.00	24' long structure (Mackin 99)
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
3.3 over Cove Run					
Split Rail Fence Bridge Rail	LF	54	\$25.00	\$1,350.00	27' long structure (Mackin 99)
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
3.4 over Shutes Run					
Split Rail Fence Bridge Rail	LF	72	\$25.00	\$1,800.00	36' long structure (Mackin 99)
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner



Customer: National Road Heritage Corridor
 Project Title: Fayette County Sheepskin Trail Feasibility Study
 Subject: Preliminary Cost Estimate
 Segment #3 Alternate - North Union Township
 Made By: MPM Date: 10/23/2017
 Reviewed By: _____ Date: _____
 Approved By: _____ Date: _____

Calculation No.: _____
 Revision No.: _____
 Revision Date: _____
 Contract No.: _____
 Division/Section: Transportation
 Item No.: _____
 Drawing No.: _____

Segment #3 Alternate - North Union Township

	Unit	Quantity	Unit Price	Subtotal	Remarks
3.5 over Cove Run					
Split Rail Fence Bridge Rail	LF	54	\$25.00	\$1,350.00	27' long structure (Mackin 99)
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
3.6 over Cove Run					
Split Rail Fence Bridge Rail	LF	125	\$25.00	\$3,125.00	62' long structure (Mackin 99)
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
STRUCTURE SUBTOTAL				\$19,325.00	
LAND ACQUISITION SUBTOTAL				\$62,400.00	
COMBINED TRAIL+STRUCTURE SUBTOTAL				\$1,423,770.94	
EROSION AND SEDIMENT CONTROL (5%)				\$71,188.55	
CONSTRUCTION CONTINGENCY (10%)				\$142,377.09	
CONSTRUCTION ENGINEERING AND MOBILIZATION (12%)				\$170,852.51	
CONSTRUCTION INSPECTION (10%)				\$142,377.09	
CONSTRUCTION SUBTOTAL				\$1,950,566.19	
ADMINISTRATION (10%)				\$195,056.62	
ENVIRONMENTAL IMPACT STUDY (10%)				\$195,056.62	
ENGINEERING, SURVEY AND DESIGN (10%)				\$195,056.62	
ENGINEERING SUBTOTAL				\$585,169.86	
GRAND TOTAL				\$2,598,136.05	



Customer: National Road Heritage Corridor
 Project Title: Fayette County Sheepskin Trail Feasibility Study
 Subject: Preliminary Cost Estimate
 Segment #4 - North Union Township/City of Uniontown
 Made By: MPM Date: 10/23/2017
 Reviewed By: Date:
 Approved By: Date:

Calculation No.:
 Revision No.:
 Revision Date:
 Contract No.:
 Division/Section: Transportation
 Item No.:
 Drawing No.:

Segment # 4 - North Union Township/City of Uniontown

	Unit	Quantity	Unit Price	Subtotal	Remarks
LAND ACQUISITION					
Purchase	AC	5.1	\$4,000.00	\$20,400.00	25' ROW Width
TRAIL CONSTRUCTION					
Trail Paving	SY	0	\$27.00	\$0.00	
Trail Surfacing	SY	9800	\$14.50	\$142,100.00	
Class 1 Excavation	CY	0	\$20.00	\$0.00	
Clearing and Grubbing	AC	2.4	\$5,000.00	\$12,000.00	10' trail, 7.5' berms each side
Seeding and Mulching	AC	3.1	\$1,200.00	\$3,720.00	7.5' berms each side
18" HDPE Cross Pipe	LF	450	\$25.00	\$11,250.00	Assume (1) 25' pipe every 500'
Timber Endwall	EA	36	\$1,000.00	\$36,000.00	2 EA/Pipe
R-4 Rock Apron	CY	36	\$120.00	\$4,320.00	Assume 2 CY/pipe
Class 4 Excavation	CY	357	\$25.00	\$8,925.00	
Ditch Cleaning	LF	2211	\$5.00	\$11,053.75	Assume 25% Ditch Cleaning/
Proposed Ditch	LF	2211	\$10.00	\$22,107.50	25% Proposed Ditch
Wooden Bollards	EA	8	\$500.00	\$4,000.00	
Crosswalk Painting	LF	180	\$2.00	\$360.00	
Post Mounted Signs	EA	22	\$350.00	\$7,700.00	
Warning Beacons	PAIR	1	\$15,000.00	\$15,000.00	
Bicycle Sharrows	EA	10	\$375.00	\$3,750.00	
SR 2040/S Gallatin Ave Int Upgrades	LS	1	\$200,000.00	\$200,000.00	
Split Rail Fence	LF	882	\$25.00	\$22,050.00	Assume fence on 10% of trail
TRAIL SUBTOTAL				\$504,336.25	
STRUCTURES					
4.1 over Cove Run					
Split Rail Fence Bridge Rail	LF	82	\$25.00	\$2,050.00	41' long structure (Mackin 99)
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
4.2 over Cove Run					
Split Rail Fence Bridge Rail	LF	68	\$25.00	\$1,700.00	34' long structure (Mackin 99)
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
4.3 over Redstone Creek					
Split Rail Fence Bridge Rail	LF	150	\$25.00	\$3,750.00	75' long structure (assumed)
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
4.4 over Redstone Creek					
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
Materials and Installation	LF	85	\$2,000.00	\$170,000.00	85' long structure (assumed)



Customer: National Road Heritage Corridor
 Project Title: Fayette County Sheepskin Trail Feasibility Study
 Subject: Preliminary Cost Estimate
 Segment #4 - North Union Township/City of Uniontown
 Made By: MPM Date: 10/23/2017
 Reviewed By: Date:
 Approved By: Date:

Calculation No.:
 Revision No.:
 Revision Date:
 Contract No.:
 Division/Section: Transportation
 Item No.:
 Drawing No.:

Segment # 4 - North Union Township/City of Uniontown

	Unit	Quantity	Unit Price	Subtotal	Remarks
4.5 over Redstone Creek					
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
Materials and Installation	LF	65	\$2,000.00	\$130,000.00	65' long structure (assumed)
STRUCTURE SUBTOTAL				\$315,000.00	
LAND ACQUISITION SUBTOTAL				\$20,400.00	
COMBINED TRAIL+STRUCTURE SUBTOTAL				\$819,336.25	
EROSION AND SEDIMENT CONTROL (5%)				\$40,966.81	
CONSTRUCTION CONTINGENCY (10%)				\$81,933.63	
CONSTRUCTION ENGINEERING AND MOBILIZATION (12%)				\$98,320.35	
CONSTRUCTION INSPECTION (10%)				\$81,933.63	
CONSTRUCTION SUBTOTAL				\$1,122,490.66	
ADMINISTRATION (10%)				\$112,249.07	
ENVIRONMENTAL IMPACT STUDY (10%)				\$112,249.07	
ENGINEERING, SURVEY AND DESIGN (10%)				\$112,249.07	
ENGINEERING SUBTOTAL				\$336,747.20	
GRAND TOTAL				\$1,479,637.86	



Customer: National Road Heritage Corridor
 Project Title: Fayette County Sheepskin Trail Feasibility Study
 Subject: Preliminary Cost Estimate
 Segment #4 Alternate - North Union Township/City of Uniontown
 Made By: MPM Date: 10/23/2017
 Reviewed By: Date:
 Approved By: Date:

Calculation No.:
 Revision No.:
 Revision Date:
 Contract No.:
 Division/Section: Transportation
 Item No.:
 Drawing No.:

Segment # 4 Alternate - North Union Township/City of Uniontown

	Unit	Quantity	Unit Price	Subtotal	Remarks
LAND ACQUISITION					
Purchase	AC	3.7	\$4,000.00	\$14,800.00	25' ROW Width
TRAIL CONSTRUCTION					
Trail Paving	SY	500	\$27.00	\$13,500.00	
Trail Surfacing	SY	6610	\$14.50	\$95,845.00	
Class 1 Excavation	CY	139	\$20.00	\$2,780.00	
Clearing and Grubbing	AC	2.0	\$5,000.00	\$10,000.00	10' trail, 7.5' berms each side
Seeding and Mulching	AC	1.9	\$1,200.00	\$2,280.00	7.5' berms each side
18" HDPE Cross Pipe	LF	325	\$25.00	\$8,125.00	Assume (1) 25' pipe every 500'
Timber Endwall	EA	26	\$1,000.00	\$26,000.00	2 EA/Pipe
R-4 Rock Apron	CY	26	\$120.00	\$3,120.00	Assume 2 CY/pipe
Class 4 Excavation	CY	258	\$25.00	\$6,450.00	
Ditch Cleaning	LF	1600	\$5.00	\$7,998.75	Assume 25% Ditch Cleaning/
Proposed Ditch	LF	1600	\$10.00	\$15,997.50	25% Proposed Ditch
Wooden Bollards	EA	8	\$500.00	\$4,000.00	
Crosswalk Painting	LF	180	\$2.00	\$360.00	
Post Mounted Signs	EA	26	\$350.00	\$9,100.00	
Warning Beacons	PAIR	1	\$15,000.00	\$15,000.00	
Bicycle Sharrows	EA	14	\$375.00	\$5,250.00	
SR 2040/S Gallatin Ave Int Upgrades	LS	1	\$200,000.00	\$200,000.00	
Split Rail Fence	LF	524	\$25.00	\$13,097.50	Assume fence on 10% of trail
TRAIL SUBTOTAL				\$438,903.75	
STRUCTURES					
4.1 over Cove Run					
Split Rail Fence Bridge Rail	LF	60	\$25.00	\$1,500.00	41' long structure (Mackin 99)
Split Rail Fence Approach Rail	LF	41	\$25.00	\$1,025.00	15 LF rail each corner
4.2 over Cove Run					
Split Rail Fence Bridge Rail	LF	68	\$25.00	\$1,700.00	34' long structure (Mackin 99)
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
4.3 over Redstone Creek					
Split Rail Fence Bridge Rail	LF	150	\$25.00	\$3,750.00	75' long structure (assumed)
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner



Customer: National Road Heritage Corridor
 Project Title: Fayette County Sheepskin Trail Feasibility Study
 Subject: Preliminary Cost Estimate
 Segment #4 Alternate - North Union Township/City of Uniontown
 Made By: MPM Date: 10/23/2017
 Reviewed By: Date:
 Approved By: Date:

Calculation No.:
 Revision No.:
 Revision Date:
 Contract No.:
 Division/Section: Transportation
 Item No.:
 Drawing No.:

Segment # 4 Alternate - North Union Township/City of Uniontown

	Unit	Quantity	Unit Price	Subtotal	Remarks
4.6 over Redstone Creek					
Materials and Installation	LF	30	\$2,000.00	\$60,000.00	Assumed 30' Structure
Abutments and Wingwalls	CY	150	\$1,750.00	\$262,500.00	
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
STRUCTURE SUBTOTAL				\$334,975.00	
LAND ACQUISITION SUBTOTAL				\$14,800.00	
COMBINED TRAIL+STRUCTURE SUBTOTAL				\$773,878.75	
EROSION AND SEDIMENT CONTROL (5%)				\$38,693.94	
CONSTRUCTION CONTINGENCY (10%)				\$77,387.88	
CONSTRUCTION ENGINEERING AND MOBILIZATION (12%)				\$92,865.45	
CONSTRUCTION INSPECTION (10%)				\$77,387.88	
CONSTRUCTION SUBTOTAL				\$1,060,213.89	
ADMINISTRATION (10%)				\$106,021.39	
ENVIRONMENTAL IMPACT STUDY (10%)				\$106,021.39	
ENGINEERING, SURVEY AND DESIGN (10%)				\$106,021.39	
ENGINEERING SUBTOTAL				\$318,064.17	
GRAND TOTAL				\$1,393,078.05	



Customer: National Road Heritage Corridor
 Project Title: Fayette County Sheepskin Trail Feasibility Study
 Subject: Preliminary Cost Estimate
 Segment #5A - City of Uniontown/South Union Township
 Made By: MPM Date: 10/23/2017
 Reviewed By: Date:
 Approved By: Date:

Calculation No.:
 Revision No.:
 Revision Date:
 Contract No.:
 Division/Section: Transportation
 Item No.:
 Drawing No.:

Segment #5A - City of Uniontown/South Union Township

	Unit	Quantity	Unit Price	Subtotal	Remarks
LAND ACQUISITION					
Purchase	AC	1.1	\$4,000.00	\$4,400.00	25' ROW Width
TRAIL CONSTRUCTION					
Trail Paving	SY	0	\$27.00	\$0.00	
Trail Surfacing	SY	2000	\$14.50	\$29,000.00	
Class 1 Excavation	CY	0	\$20.00	\$0.00	
Clearing and Grubbing	AC	0.5	\$5,000.00	\$2,500.00	10' trail, 7.5' berms each side
Seeding and Mulching	AC	0.7	\$1,200.00	\$840.00	7.5' berms each side
18" HDPE Cross Pipe	LF	100	\$25.00	\$2,500.00	Assume (1) 25' pipe every 500'
Timber Endwall	EA	8	\$1,000.00	\$8,000.00	2 EA/Pipe
R-4 Rock Apron	CY	8	\$120.00	\$960.00	Assume 2 CY/pipe
Class 4 Excavation	CY	80	\$25.00	\$2,000.00	
Ditch Cleaning	LF	450	\$5.00	\$2,250.00	Assume 25% Ditch Cleaning/
Proposed Ditch	LF	450	\$10.00	\$4,500.00	25% Proposed Ditch
Wooden Bollards	EA	8	\$500.00	\$4,000.00	
Crosswalk Painting	LF	240	\$2.00	\$480.00	
Post Mounted Signs	EA	16	\$350.00	\$5,600.00	
Warning Beacons	PAIR	0	\$15,000.00	\$0.00	
Bicycle Sharrows	EA	0	\$375.00	\$0.00	
Split Rail Fence	LF	180	\$25.00	\$4,500.00	Assume fence on 10% of trail
TRAIL SUBTOTAL				\$67,130.00	
STRUCTURE SUBTOTAL				\$0.00	
LAND ACQUISITION SUBTOTAL				\$4,400.00	
COMBINED TRAIL+STRUCTURE SUBTOTAL				\$67,130.00	
EROSION AND SEDIMENT CONTROL (5%)				\$3,356.50	
CONSTRUCTION CONTINGENCY (10%)				\$6,713.00	
CONSTRUCTION ENGINEERING AND MOBILIZATION (12%)				\$8,055.60	
CONSTRUCTION INSPECTION (10%)				\$6,713.00	
CONSTRUCTION SUBTOTAL				\$91,968.10	
ADMINISTRATION (10%)				\$9,196.81	
ENVIRONMENTAL IMPACT STUDY (10%)				\$9,196.81	
ENGINEERING, SURVEY AND DESIGN (10%)				\$9,196.81	
ENGINEERING SUBTOTAL				\$27,590.43	
GRAND TOTAL				\$123,958.53	



Customer: National Road Heritage Corridor
 Project Title: Fayette County Sheepskin Trail Feasibility Study
 Subject: Preliminary Cost Estimate
 Segment #5B - South Union Township/Georges Township
 Made By: MPM Date: 10/23/2017
 Reviewed By: Date:
 Approved By: Date:

Calculation No.:
 Revision No.:
 Revision Date:
 Contract No.:
 Division/Section: Transportation
 Item No.:
 Drawing No.:

Segment #5B - South Union Township/Georges Township

	Unit	Quantity	Unit Price	Subtotal	Remarks
LAND ACQUISITION					
Purchase	AC	3.3	\$4,000.00	\$13,200.00	25' ROW Width
TRAIL CONSTRUCTION					
Trail Paving	SY	6891	\$27.00	\$186,060.00	
Trail Surfacing	SY	0	\$14.50	\$0.00	
Class 1 Excavation	CY	1914	\$20.00	\$38,283.95	
Clearing and Grubbing	AC	2.2	\$5,000.00	\$11,000.00	10' trail, 7.5' berms each side
Seeding and Mulching	AC	2.2	\$1,200.00	\$2,640.00	7.5' berms each side
18" HDPE Cross Pipe	LF	325	\$25.00	\$8,125.00	Assume (1) 25' pipe every 500'
Timber Endwall	EA	26	\$1,000.00	\$26,000.00	2 EA/Pipe
R-4 Rock Apron	CY	26	\$120.00	\$3,120.00	Assume 2 CY/pipe
Class 4 Excavation	CY	258	\$25.00	\$6,450.00	
Ditch Cleaning	LF	1551	\$5.00	\$7,752.50	Assume 25% Ditch Cleaning/
Proposed Ditch	LF	1551	\$10.00	\$15,505.00	25% Proposed Ditch
Wooden Bollards	EA	5	\$500.00	\$2,500.00	
Crosswalk Painting	LF	60	\$2.00	\$120.00	
Post Mounted Signs	EA	22	\$350.00	\$7,700.00	
Bicycle Sharrows	EA	6	\$375.00	\$2,250.00	
Split Rail Fence	LF	620	\$25.00	\$15,505.00	Assume fence on 10% of trail
TRAIL SUBTOTAL				\$333,011.45	
STRUCTURES					
5.1 over Unknown Stream					
Split Rail Fence Bridge Rail	LF	30	\$25.00	\$750.00	15' long structure (assumed)
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
STRUCTURE SUBTOTAL				\$2,250.00	
LAND ACQUISITION SUBTOTAL				\$13,200.00	
COMBINED TRAIL+STRUCTURE SUBTOTAL				\$335,261.45	
EROSION AND SEDIMENT CONTROL (5%)				\$16,763.07	
CONSTRUCTION CONTINGENCY (10%)				\$33,526.15	
CONSTRUCTION ENGINEERING AND MOBILIZATION (12%)				\$40,231.37	
CONSTRUCTION INSPECTION (10%)				\$33,526.15	
CONSTRUCTION SUBTOTAL				\$459,308.19	
ADMINISTRATION (10%)				\$45,930.82	
ENVIRONMENTAL IMPACT STUDY (10%)				\$45,930.82	
ENGINEERING, SURVEY AND DESIGN (10%)				\$45,930.82	
ENGINEERING SUBTOTAL				\$137,792.46	
GRAND TOTAL				\$610,300.64	



Customer: National Road Heritage Corridor
 Project Title: Fayette County Sheepskin Trail Feasibility Study
 Subject: Preliminary Cost Estimate
 Segment #6A - Georges Township/Fairchance Borough
 Made By: MPM Date: 10/23/2017
 Reviewed By: Date:
 Approved By: Date:

Calculation No.:
 Revision No.:
 Revision Date:
 Contract No.:
 Division/Section: Transportation
 Item No.:
 Drawing No.:

Segment #6A - Georges Township/Fairchance Borough

	Unit	Quantity	Unit Price	Subtotal	Remarks
LAND ACQUISITION					
Purchase	AC	5.4	\$4,000.00	\$21,600.00	25' ROW Width
TRAIL CONSTRUCTION					
Trail Paving	SY	8511	\$27.00	\$229,800.00	
Trail Surfacing	SY	6247	\$14.50	\$90,576.67	
Class 1 Excavation	CY	2364	\$20.00	\$47,283.95	
Clearing and Grubbing	AC	4.3	\$5,000.00	\$21,500.00	10' trail, 7.5' berms each side
Seeding and Mulching	AC	4.8	\$1,200.00	\$5,760.00	7.5' berms each side
T-477 Dupont Village Road Earthwork	CY	500	\$20.00	\$10,000.00	
18" HDPE Cross Pipe	LF	675	\$25.00	\$16,875.00	Assume (1) 25' pipe every 500'
Timber Endwall	EA	54	\$1,000.00	\$54,000.00	2 EA/Pipe
R-4 Rock Apron	CY	54	\$120.00	\$6,480.00	Assume 2 CY/pipe
Class 4 Excavation	CY	536	\$25.00	\$13,400.00	
Ditch Cleaning	LF	3321	\$5.00	\$16,602.50	Assume 25% Ditch Cleaning/
Proposed Ditch	LF	3321	\$10.00	\$33,205.00	25% Proposed Ditch
Wooden Bollards	EA	9	\$500.00	\$4,500.00	
Crosswalk Painting	LF	580	\$2.00	\$1,160.00	
Post Mounted Signs	EA	30	\$350.00	\$10,500.00	
Warning Beacons	PAIR	0	\$15,000.00	\$0.00	
Bicycle Sharrows	EA	8	\$375.00	\$3,000.00	
Split Rail Fence	LF	1328	\$25.00	\$33,205.00	Assume fence on 10% of trail
TRAIL SUBTOTAL				\$597,848.12	
STRUCTURES					
6.1 over Muddy Run					
Split Rail Fence Approach Rail	LF	40	\$2,000.00	\$80,000.00	20' long structure (Assumed)
Materials and Installation	LF	60	\$2,000.00	\$120,000.00	15 LF rail each corner
6.2 over Muddy Run					
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
Materials and Installation	LF	30	\$2,000.00	\$60,000.00	30' long structure (Assumed)
Abutments and Wingwalls	CY	150	\$1,750.00	\$262,500.00	
6.3 over Muddy Run					
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
Materials and Installation	LF	30	\$2,000.00	\$60,000.00	30' long structure (Assumed)
Abutments and Wingwalls	CY	150	\$1,750.00	\$262,500.00	



Customer: National Road Heritage Corridor
 Project Title: Fayette County Sheepskin Trail Feasibility Study
 Subject: Preliminary Cost Estimate
 Segment #6A - Georges Township/Fairchance Borough
 Made By: MPM Date: 10/23/2017
 Reviewed By: Date:
 Approved By: Date:

Calculation No.:
 Revision No.:
 Revision Date:
 Contract No.:
 Division/Section: Transportation
 Item No.:
 Drawing No.:

Segment #6A - Georges Township/Fairchance Borough

STRUCTURE SUBTOTAL	\$848,000.00
LAND ACQUISITION SUBTOTAL	\$21,600.00
COMBINED TRAIL+STRUCTURE SUBTOTAL	\$1,445,848.12
EROSION AND SEDIMENT CONTROL (5%)	\$72,292.41
CONSTRUCTION CONTINGENCY (10%)	\$144,584.81
CONSTRUCTION ENGINEERING AND MOBILIZATION (12%)	\$173,501.77
CONSTRUCTION INSPECTION (10%)	\$144,584.81
CONSTRUCTION SUBTOTAL	\$1,980,811.92
ADMINISTRATION (10%)	\$198,081.19
ENVIRONMENTAL IMPACT STUDY (10%)	\$198,081.19
ENGINEERING, SURVEY AND DESIGN (10%)	\$198,081.19
ENGINEERING SUBTOTAL	\$594,243.58
GRAND TOTAL	\$2,596,655.50



Customer: National Road Heritage Corridor
 Project Title: Fayette County Sheepskin Trail Feasibility Study
 Subject: Preliminary Cost Estimate
 Segment #6B - Georges Township/Springhill Township
 Made By: MPM Date: 10/23/2017
 Reviewed By: Date:
 Approved By: Date:

Calculation No.:
 Revision No.:
 Revision Date:
 Contract No.:
 Division/Section: Transportation
 Item No.:
 Drawing No.:

Segment #6B - Georges Township/Springhill Township

	Unit	Quantity	Unit Price	Subtotal	Remarks
LAND ACQUISITION					
Purchase	AC	9.0	\$4,000.00	\$36,000.00	25' ROW Width
TRAIL CONSTRUCTION					
Trail Paving	SY	25873	\$27.00	\$698,580.00	
Trail Surfacing	SY	0	\$14.50	\$0.00	
Class 1 Excavation	CY	7187	\$20.00	\$143,740.74	
Clearing and Grubbing	AC	9.5	\$5,000.00	\$47,500.00	10' trail, 7.5' berms each side
Seeding and Mulching	AC	8.2	\$1,200.00	\$9,840.00	7.5' berms each side
Water St Earthwork	CY	8500	\$20.00	\$170,000.00	
T-500 Weaver Mill Road Earthwork	CY	8500	\$20.00	\$170,000.00	
T-339 Tunnel Road Earthwork	CY	82000	\$20.00	\$1,640,000.00	
18" HDPE Cross Pipe	LF	1175	\$25.00	\$29,375.00	Assume (1) 25' pipe every 500'
Timber Endwall	EA	94	\$1,000.00	\$94,000.00	2 EA/Pipe
R-4 Rock Apron	CY	94	\$120.00	\$11,280.00	Assume 2 CY/pipe
Class 4 Excavation	CY	932	\$25.00	\$23,300.00	
Ditch Cleaning	LF	5822	\$5.00	\$29,107.50	Assume 25% Ditch Cleaning/
Proposed Ditch	LF	5822	\$10.00	\$58,215.00	25% Proposed Ditch
Wooden Bollards	EA	14	\$500.00	\$7,000.00	
Crosswalk Painting	LF	300	\$2.00	\$600.00	
Post Mounted Signs	EA	56	\$350.00	\$19,600.00	
Warning Beacons	PAIR	0	\$15,000.00	\$0.00	
Bicycle Sharrows	EA	14	\$375.00	\$5,250.00	
Split Rail Fence	LF	2329	\$25.00	\$58,215.00	Assume fence on 10% of trail
TRAIL SUBTOTAL				\$3,215,603.24	
STRUCTURES					
6.5 over Muddy Run					
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
Materials and Installation	LF	30	\$2,000.00	\$60,000.00	30' long structure (Assumed)
Abutments and Wingwalls	CY	150	\$1,750.00	\$262,500.00	
6.6 over Georges Creek					
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
Materials and Installation	LF	30	\$2,000.00	\$60,000.00	30' long structure (Assumed)
Abutments and Wingwalls	CY	150	\$1,750.00	\$262,500.00	



Customer: National Road Heritage Corridor
 Project Title: Fayette County Sheepskin Trail Feasibility Study
 Subject: Preliminary Cost Estimate
 Segment #6B - Georges Township/Springhill Township
 Made By: MPM Date: 10/23/2017
 Reviewed By: Date:
 Approved By: Date:

Calculation No.:
 Revision No.:
 Revision Date:
 Contract No.:
 Division/Section: Transportation
 Item No.:
 Drawing No.:

Segment #6B - Georges Township/Springhill Township

	Unit	Quantity	Unit Price	Subtotal	Remarks
6.7 over UNT to Georges Creek					
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
Materials and Installation	LF	30	\$2,000.00	\$60,000.00	30' long structure (Assumed)
Abutments and Wingwalls	CY	150	\$1,750.00	\$262,500.00	
6.8 over Georges Creek					
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
Materials and Installation	LF	67	\$2,000.00	\$134,000.00	67' long structure (Mackin)
STRUCTURE SUBTOTAL				\$1,107,500.00	
LAND ACQUISITION SUBTOTAL				\$36,000.00	
COMBINED TRAIL+STRUCTURE SUBTOTAL				\$4,323,103.24	
EROSION AND SEDIMENT CONTROL (5%)				\$216,155.16	
CONSTRUCTION CONTINGENCY (10%)				\$432,310.32	
CONSTRUCTION ENGINEERING AND MOBILIZATION (12%)				\$518,772.39	
CONSTRUCTION INSPECTION (10%)				\$432,310.32	
CONSTRUCTION SUBTOTAL				\$5,922,651.44	
ADMINISTRATION (10%)				\$592,265.14	
ENVIRONMENTAL IMPACT STUDY (10%)				\$592,265.14	
ENGINEERING, SURVEY AND DESIGN (10%)				\$592,265.14	
ENGINEERING SUBTOTAL				\$1,776,795.43	
GRAND TOTAL				\$7,735,446.87	



Customer: National Road Heritage Corridor
 Project Title: Fayette County Sheepskin Trail Feasibility Study
 Subject: Preliminary Cost Estimate
 Segment #6B Alternate - Georges Township/Springhill Township
 Made By: MPM Date: 10/23/2017
 Reviewed By: Date:
 Approved By: Date:

Calculation No.:
 Revision No.:
 Revision Date:
 Contract No.:
 Division/Section: Transportation
 Item No.:
 Drawing No.:

Segment #6B Alternate - Georges Township/Springhill Township

	Unit	Quantity	Unit Price	Subtotal	Remarks
LAND ACQUISITION					
Purchase	AC	7.2	\$4,000.00	\$28,800.00	25' ROW Width
TRAIL CONSTRUCTION					
Trail Paving	SY	22312	\$27.00	\$602,430.00	
Trail Surfacing	SY	0	\$14.50	\$0.00	
Class 1 Excavation	CY	6198	\$20.00	\$123,956.79	
Clearing and Grubbing	AC	7.6	\$5,000.00	\$38,000.00	10' trail, 7.5' berms each side
Seeding and Mulching	AC	7.1	\$1,200.00	\$8,520.00	7.5' berms each side
T-339 Tunnel Road Earthwork	CY	82000	\$20.00	\$1,640,000.00	
18" HDPE Cross Pipe	LF	1025	\$25.00	\$25,625.00	Assume (1) 25' pipe every 500'
Timber Endwall	EA	82	\$1,000.00	\$82,000.00	2 EA/Pipe
R-4 Rock Apron	CY	82	\$120.00	\$9,840.00	Assume 2 CY/pipe
Class 4 Excavation	CY	813	\$25.00	\$20,325.00	
Ditch Cleaning	LF	5020	\$5.00	\$25,101.25	Assume 25% Ditch Cleaning/
Proposed Ditch	LF	5020	\$10.00	\$50,202.50	25% Proposed Ditch
Wooden Bollards	EA	10	\$500.00	\$5,000.00	
Crosswalk Painting	LF	180	\$2.00	\$360.00	
Post Mounted Signs	EA	64	\$350.00	\$22,400.00	
Warning Beacons	PAIR	0	\$15,000.00	\$0.00	
Bicycle Sharrows	EA	20	\$375.00	\$7,500.00	
Split Rail Fence	LF	2008	\$25.00	\$50,202.50	Assume fence on 10% of trail
TRAIL SUBTOTAL				\$2,711,463.04	
STRUCTURES					
6.5 over Muddy Run					
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
Materials and Installation	LF	30	\$2,000.00	\$60,000.00	30' long structure (Assumed)
Abutments and Wingwalls	CY	150	\$1,750.00	\$262,500.00	
6.6 over Georges Creek					
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
Materials and Installation	LF	30	\$2,000.00	\$60,000.00	30' long structure (Assumed)
Abutments and Wingwalls	CY	150	\$1,750.00	\$262,500.00	
6.7 over UNT to Georges Creek					
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
Materials and Installation	LF	30	\$2,000.00	\$60,000.00	30' long structure (Assumed)
Abutments and Wingwalls	CY	150	\$1,750.00	\$262,500.00	



Customer: National Road Heritage Corridor
 Project Title: Fayette County Sheepskin Trail Feasibility Study
 Subject: Preliminary Cost Estimate
 Segment #6B Alternate - Georges Township/Springhill Township
 Made By: MPM Date: 10/23/2017
 Reviewed By: _____ Date: _____
 Approved By: _____ Date: _____

Calculation No.: _____
 Revision No.: _____
 Revision Date: _____
 Contract No.: _____
 Division/Section: Transportation
 Item No.: _____
 Drawing No.: _____

Segment #6B Alternate - Georges Township/Springhill Township

	Unit	Quantity	Unit Price	Subtotal	Remarks
6.8 over Georges Creek					
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
Materials and Installation	LF	67	\$2,000.00	\$134,000.00	67' long structure (Mackin)
STRUCTURE SUBTOTAL				\$1,107,500.00	
LAND ACQUISITION SUBTOTAL				\$28,800.00	
COMBINED TRAIL+STRUCTURE SUBTOTAL				\$3,818,963.04	
EROSION AND SEDIMENT CONTROL (5%)				\$190,948.15	
CONSTRUCTION CONTINGENCY (10%)				\$381,896.30	
CONSTRUCTION ENGINEERING AND MOBILIZATION (12%)				\$458,275.56	
CONSTRUCTION INSPECTION (10%)				\$381,896.30	
CONSTRUCTION SUBTOTAL				\$5,231,979.36	
ADMINISTRATION (10%)				\$523,197.94	
ENVIRONMENTAL IMPACT STUDY (10%)				\$523,197.94	
ENGINEERING, SURVEY AND DESIGN (10%)				\$523,197.94	
ENGINEERING SUBTOTAL				\$1,569,593.81	
GRAND TOTAL				\$6,830,373.17	



Customer: National Road Heritage Corridor
 Project Title: Fayette County Sheepskin Trail Feasibility Study
 Subject: Preliminary Cost Estimate
 Segment #7 - Springhill Township
 Made By: MPM Date: 10/23/2017
 Reviewed By: Date:
 Approved By: Date:

Calculation No.:
 Revision No.:
 Revision Date:
 Contract No.:
 Division/Section: Transportation
 Item No.:
 Drawing No.:

Segment #7 - Springhill Township

	Unit	Quantity	Unit Price	Subtotal	Remarks
LAND ACQUISITION					
Purchase	AC	3.3	\$4,000.00	\$13,200.00	25' ROW Width
TRAIL CONSTRUCTION					
Trail Paving	SY	0	\$27.00	\$0.00	
Trail Surfacing	SY	43831	\$14.50	\$635,551.11	
Class 1 Excavation	CY	0	\$20.00	\$0.00	
Clearing and Grubbing	AC	13.9	\$5,000.00	\$69,500.00	10' trail, 7.5' berms each side
Seeding and Mulching	AC	13.9	\$1,200.00	\$16,680.00	7.5' berms each side
Nilan Tunnel Earthwork	CY	6875	\$20.00	\$137,500.00	
18" HDPE Cross Pipe	LF	1975	\$25.00	\$49,375.00	Assume (1) 25' pipe every 500'
Timber Endwall	EA	158	\$1,000.00	\$158,000.00	2 EA/Pipe
R-4 Rock Apron	CY	158	\$120.00	\$18,960.00	Assume 2 CY/pipe
Class 4 Excavation	CY	1567	\$25.00	\$39,175.00	
Ditch Cleaning	LF	9862	\$5.00	\$49,310.00	Assume 25% Ditch Cleaning/
Proposed Ditch	LF	9862	\$10.00	\$98,620.00	25% Proposed Ditch
Wooden Bollards	EA	17	\$500.00	\$8,500.00	
Crosswalk Painting	LF	600	\$2.00	\$1,200.00	
Post Mounted Signs	EA	46	\$350.00	\$16,100.00	
Warning Beacons	PAIR	3	\$15,000.00	\$45,000.00	
Bicycle Sharrows	EA	8	\$375.00	\$3,000.00	
Split Rail Fence	LF	3945	\$25.00	\$98,620.00	Assume fence on 10% of trail
TRAIL SUBTOTAL				\$1,445,091.11	
STRUCTURES					
7.1 over UNT to Grassy Run					
Split Rail Fence Bridge Rail	LF	60	\$25.00	\$1,500.00	30' long structure (Assumed)
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
7.2 over UNT to Grassy Run					
Split Rail Fence Bridge Rail	LF	60	\$25.00	\$1,500.00	30' long structure (Assumed)
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
7.3 over Grassy Run					
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
Materials and Installation	LF	75	\$2,000.00	\$150,000.00	75' long structure (Mackin 99)
7.4 over Grassy Run					
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
Materials and Installation	LF	75	\$2,000.00	\$150,000.00	75' long structure (Mackin 99)



Customer: National Road Heritage Corridor
 Project Title: Fayette County Sheepskin Trail Feasibility Study
 Subject: Preliminary Cost Estimate
 Segment #7 - Springhill Township
 Made By: MPM Date: 10/23/2017
 Reviewed By: Date:
 Approved By: Date:

Calculation No.:
 Revision No.:
 Revision Date:
 Contract No.:
 Division/Section: Transportation
 Item No.:
 Drawing No.:

Segment #7 - Springhill Township

	Unit	Quantity	Unit Price	Subtotal	Remarks
7.5 over Grassy Run					
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
Materials and Installation	LF	75	\$2,000.00	\$150,000.00	75' long structure (Mackin 99)
7.6 over Grassy Run					
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
Materials and Installation	LF	75	\$2,000.00	\$150,000.00	75' long structure (Mackin 99)
7.7 over Grassy Run					
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
Materials and Installation	LF	125	\$2,000.00	\$250,000.00	125' long structure (Mackin 99)
7.8 over Grassy Run					
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
Materials and Installation	LF	175	\$2,000.00	\$350,000.00	175' long structure (Mackin 99)
7.9 over UNT to Cheat River					
Split Rail Fence Bridge Rail	LF	40	\$25.00	\$1,000.00	20' long structure (Assumed)
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner

Morgan Tunnel Rehabilitation Option 1 - Galvanized Steel Plate Arch Liner*
 LS 1 \$2,074,930.00 \$2,074,930.00

*Assume that the lowest cost rehabilitation option is chosen

STRUCTURE SUBTOTAL \$3,292,430.00

LAND ACQUISITION SUBTOTAL \$13,200.00

COMBINED TRAIL+STRUCTURE SUBTOTAL \$4,737,521.11

EROSION AND SEDIMENT CONTROL (5%) \$236,876.06

CONSTRUCTION CONTINGENCY (10%) \$473,752.11

CONSTRUCTION ENGINEERING AND MOBILIZATION (12%) \$568,502.53

CONSTRUCTION INSPECTION (10%) \$473,752.11

CONSTRUCTION SUBTOTAL \$6,490,403.92

ADMINISTRATION (10%) \$649,040.39

ENVIRONMENTAL IMPACT STUDY (10%) \$649,040.39

ENGINEERING, SURVEY AND DESIGN (10%) \$649,040.39

ENGINEERING SUBTOTAL \$1,947,121.18

GRAND TOTAL \$8,450,725.10



Customer: National Road Heritage Corridor
 Project Title: Fayette County Sheepskin Trail Feasibility Study
 Subject: Preliminary Cost Estimate
 Segment #7 Alternate - Springhill Township
 Made By: MPM Date: 10/10/2017
 Reviewed By: Date:
 Approved By: Date:

Calculation No.:
 Revision No.:
 Revision Date:
 Contract No.:
 Division/Section: Transportation
 Item No.:
 Drawing No.:

Segment #7 Alternate - Springhill Township

	Unit	Quantity	Unit Price	Subtotal	Remarks
LAND ACQUISITION					
Purchase	AC	3.3	\$4,000.00	\$13,200.00	25' ROW Width
TRAIL CONSTRUCTION					
Trail Paving	SY	0	\$27.00	\$0.00	
Trail Surfacing	SY	40187	\$14.50	\$582,706.67	
Class 1 Excavation	CY	0	\$20.00	\$0.00	
Clearing and Grubbing	AC	12.7	\$5,000.00	\$63,500.00	10' trail, 7.5' berms each side
Seeding and Mulching	AC	12.7	\$1,200.00	\$15,240.00	7.5' berms each side
Nilan Tunnel Earthwork	CY	6875	\$20.00	\$137,500.00	
18" HDPE Cross Pipe	LF	1825	\$25.00	\$45,625.00	Assume (1) 25' pipe every 500'
Timber Endwall	EA	146	\$1,000.00	\$146,000.00	2 EA/Pipe
R-4 Rock Apron	CY	146	\$120.00	\$17,520.00	Assume 2 CY/pipe
Class 4 Excavation	CY	1448	\$25.00	\$36,200.00	
Ditch Cleaning	LF	9042	\$5.00	\$45,210.00	Assume 25% Ditch Cleaning/
Proposed Ditch	LF	9042	\$10.00	\$90,420.00	25% Proposed Ditch
Wooden Bollards	EA	15	\$500.00	\$7,500.00	
Crosswalk Painting	LF	480	\$2.00	\$960.00	
Post Mounted Signs	EA	60	\$350.00	\$21,000.00	
Warning Beacons	PAIR	3	\$15,000.00	\$45,000.00	
Bicycle Sharrows	EA	16	\$375.00	\$6,000.00	
Split Rail Fence	LF	3617	\$25.00	\$90,420.00	Assume fence on 10% of trail
TRAIL SUBTOTAL				\$1,350,801.67	
STRUCTURES					
7.1 over UNT to Grassy Run					
Split Rail Fence Bridge Rail	LF	60	\$25.00	\$1,500.00	30' long structure (Assumed)
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
7.2 over UNT to Grassy Run					
Split Rail Fence Bridge Rail	LF	60	\$25.00	\$1,500.00	30' long structure (Assumed)
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
7.3 over Grassy Run					
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
Materials and Installation	LF	75	\$2,000.00	\$150,000.00	75' long structure (Mackin 99)
7.4 over Grassy Run					
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
Materials and Installation	LF	75	\$2,000.00	\$150,000.00	75' long structure (Mackin 99)



Customer: National Road Heritage Corridor
 Project Title: Fayette County Sheepskin Trail Feasibility Study
 Subject: Preliminary Cost Estimate
 Segment #7 Alternate - Springhill Township
 Made By: MPM Date: 10/10/2017
 Reviewed By: Date:
 Approved By: Date:

Calculation No.:
 Revision No.:
 Revision Date:
 Contract No.:
 Division/Section: Transportation
 Item No.:
 Drawing No.:

Segment #7 Alternate - Springhill Township

	Unit	Quantity	Unit Price	Subtotal	Remarks
7.5 over Grassy Run					
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
Materials and Installation	LF	75	\$2,000.00	\$150,000.00	75' long structure (Mackin 99)
7.6 over Grassy Run					
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
Materials and Installation	LF	75	\$2,000.00	\$150,000.00	75' long structure (Mackin 99)
7.7 over Grassy Run					
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
Materials and Installation	LF	125	\$2,000.00	\$250,000.00	125' long structure (Mackin 99)
7.8 over Grassy Run					
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
Materials and Installation	LF	175	\$2,000.00	\$350,000.00	175' long structure (Mackin 99)
7.9 over UNT to Cheat River					
Split Rail Fence Bridge Rail	LF	40	\$25.00	\$1,000.00	20' long structure (Assumed)
Split Rail Fence Approach Rail	LF	60	\$25.00	\$1,500.00	15 LF rail each corner
STRUCTURE SUBTOTAL				\$1,217,500.00	
LAND ACQUISITION SUBTOTAL				\$13,200.00	
COMBINED TRAIL+STRUCTURE SUBTOTAL				\$2,568,301.67	
EROSION AND SEDIMENT CONTROL (5%)				\$128,415.08	
CONSTRUCTION CONTINGENCY (10%)				\$256,830.17	
CONSTRUCTION ENGINEERING AND MOBILIZATION (12%)				\$308,196.20	
CONSTRUCTION INSPECTION (10%)				\$256,830.17	
CONSTRUCTION SUBTOTAL				\$3,518,573.28	
ADMINISTRATION (10%)				\$351,857.33	
ENVIRONMENTAL IMPACT STUDY (10%)				\$351,857.33	
ENGINEERING, SURVEY AND DESIGN (10%)				\$351,857.33	
ENGINEERING SUBTOTAL				\$1,055,571.99	
GRAND TOTAL				\$4,587,345.27	



Customer: National Road Heritage Corridor
 Project Title: Fayette County Sheepskin Trail Feasibility Study
 Subject: Preliminary Cost Estimate
 Morgan Tunnel Rehabilitation Estimates
 Made By: NEL Date: 9/28/2017
 Reviewed By: MAB Date: 9/29/2017
 Approved By: _____ Date: _____

Calculation No.: _____
 Revision No.: _____
 Revision Date: _____
 Contract No.: _____
 Division/Section: Structure/Bridge
 Item No.: _____
 Drawing No.: _____

Option 1 - Galvanized Steel Plate Arch Liner

	Unit	Quantity	Unit Price	Subtotal
Galvanized Steel Plate Arch	LF	440	\$2,500.00	\$1,100,000.00
Class 3 Excavation	CY	700	\$40.00	\$28,000.00
Selected Borrow Excavation, Structure	CY	650	\$50.00	\$32,500.00
Class A Cement Concrete	CY	70	\$1,000.00	\$70,000.00
Reinforcement Bars, Epoxy Coated	LB	14000	\$1.75	\$24,500.00
Membrane Waterproofing	SY	3130	\$10.00	\$31,300.00
Concrete Repairs (New Facing)	SF	4000	\$150.00	\$600,000.00
STRUCTURE SUBTOTAL				\$1,886,300.00
CONSTRUCTION CONTINGENCY (10%)				\$188,630.00
CONSTRUCTION SUBTOTAL				\$2,074,930.00



Customer: National Road Heritage Corridor
 Project Title: Fayette County Sheepskin Trail Feasibility Study
 Subject: Preliminary Cost Estimate
 Morgan Tunnel Rehabilitation Estimates
 Made By: NEL Date: 9/28/2017
 Reviewed By: MAB Date: 9/29/2017
 Approved By: _____ Date: _____

Calculation No.: _____
 Revision No.: _____
 Revision Date: _____
 Contract No.: _____
 Division/Section: Structure/Bridge
 Item No.: _____
 Drawing No.: _____

Option 2 - Reinforced Concrete Arch

	Unit	Quantity	Unit Price	Subtotal
Class 3 Excavation	CY	550	\$40.00	\$22,000.00
Selected Borrow Excavation, Structure	CY	450	\$50.00	\$22,500.00
Class A Cement Concrete	0	1435	\$1,000.00	\$1,435,000.00
Reinforcement Bars, Epoxy Coated	LB	287000	\$1.75	\$502,250.00
Membrane Waterproofing	SY	3130	\$10.00	\$31,300.00
Concrete Repairs (New Facing)	SF	4000	\$150.00	\$600,000.00
STRUCTURE SUBTOTAL				\$2,613,050.00
CONSTRUCTION CONTINGENCY (10%)				\$261,305.00
CONSTRUCTION SUBTOTAL				\$2,874,355.00



Customer: National Road Heritage Corridor
 Project Title: Fayette County Sheepskin Trail Feasibility Study
 Subject: Preliminary Cost Estimate
Morgan Tunnel Rehabilitation Estimates
 Made By: NEL Date: 9/28/2017
 Reviewed By: MAB Date: 9/29/2017
 Approved By: _____ Date: _____

Calculation No.: _____
 Revision No.: _____
 Revision Date: _____
 Contract No.: _____
 Division/Section: Structure/Bridge
 Item No.: _____
 Drawing No.: _____

Option 3 - Single-Span Integral Abutment Bridge & Removal of Existing Tunnel

	Unit	Quantity	Unit Price	Subtotal
Class AAAP Cement Concrete	CY	110	\$1,200.00	\$132,000.00
Class AA Cement Concrete	CY	45	\$1,100.00	\$49,500.00
Class A Cement Concrete	CY	140	\$1,000.00	\$140,000.00
Reinforcement Bars, Epoxy Coated	LB	74000	\$1.75	\$129,500.00
6" Diameter Foundation Drain	LF	50	\$20.00	\$1,000.00
6" Diameter Foundation Drain Outlets	LF	40	\$20.00	\$800.00
No. 57 Coarse Aggregate	CY	15	\$75.00	\$1,125.00
Steel Beam Bearing Piles	LF	150	\$150.00	\$22,500.00
Predrilling for Driven Piles	LF	150	\$200.00	\$30,000.00
Steel Beam Test Piles	EA	5	\$15,000.00	\$75,000.00
Prestressed Concrete Beams	LF	650	\$450.00	\$292,500.00
Plain Neoprene Bearing Pad	EA	10	\$600.00	\$6,000.00
Class 3 Excavation	CY	6000	\$40.00	\$240,000.00
Selected Borrow Excavation, Structure	CY	60	\$50.00	\$3,000.00
Membrane Waterproofing	SY	35	\$10.00	\$350.00
Removal of Existing Structure	LS	1	\$2,000,000.00	\$2,000,000.00
STRUCTURE SUBTOTAL				\$3,123,275.00
CONSTRUCTION CONTINGENCY (10%)				\$312,327.50
CONSTRUCTION SUBTOTAL				\$3,435,602.50