



SR 0001 Section RC3 Improvement Project



Environmental Assessment

Langhorne and Langhorne Manor Boroughs, and
Middletown Township, Bucks County, Pennsylvania

November 2025



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ENVIRONMENTAL ASSESSMENT
for the
**SR 0001 SECTION RC3,
IMPROVEMENT PROJECT**

State Route 0001 Section RC3
Bucks County, Pennsylvania

MPMS #93446
Federal Project Unique ID #EAXX-XPA-1732648986

Prepared by:
US Department of Transportation
Federal Highway Administration
and
Pennsylvania Department of Transportation
Engineering District 6-0
Pursuant to 42 U.S.C. 4332(2)(C)
and, as applicable:
Executive Order 11990, Protection of Wetlands; Executive Order 11988, Floodplain
Management; and 49 U.S.C. Section 303(c) – Section 4(f)

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General Information about This Document

What's in this document:

The U.S. Department of Transportation (DOT) Federal Highway Administration (FHWA) and the Pennsylvania Department of Transportation (PennDOT) have prepared this environmental assessment (EA) which examines the direct and reasonably foreseeable environmental effects of the alternative(s) being considered for the proposed project located in Langhorne and Langhorne Manor Boroughs, and Middletown Township in Bucks County, Pennsylvania. FHWA is the lead agency under the National Environmental Policy Act (NEPA). The document tells you why the project is being proposed, what alternatives we have considered for the project, how the existing environment could be affected by the project, and the proposed avoidance, minimization, and/or mitigation measures.

What you should do:

- Please read this document.
- Additional copies of this document are available for review at:
 - Federal Highway Administration – PA Division / 30 North Third Street, Suite 700 / Harrisburg, PA 17101 / (717) 221-3461 / Office Hours: 8 am to 4 pm (Monday to Friday)
 - PennDOT Engineering District 6-0 / 7000 Geerdes Boulevard, King of Prussia, PA 19406 / (610) 205-6700 / Office Hours: 7:30 am to 4 pm (Monday to Friday)
 - Middletown Township / 3 Municipal Way, Langhorne, PA 19047 / (215) 750-3800 / Office Hours: 8:30 am to 4:30 pm (Monday to Friday)
 - Langhorne Manor Borough / 618 Hulmeville Avenue, Langhorne, PA 19047 / (215) 752-5835 / Office Hours: 11 am to 2 pm (Monday to Thursday) or by appointment
 - Langhorne Borough / 114 E. Maple Avenue, Langhorne Borough, PA 19047 / (215) 757-3768 / Office Hours: 9 am to 3 pm (Monday to Thursday)
 - Bucks County Free Library - Langhorne / 310 S. Pine Street, Langhorne, PA 19047 / (215) 757-2510 / Hours: 9 am to 8 pm (Monday, Tuesday, Wednesday); 10 am to 6 pm (Thursday and Friday)
 - Bucks County Planning Commission / 1260 Almshouse Road, Doylestown, PA 18901 / (215) 345-3400 / Office Hours: 8:30 am to 4 pm (Monday to Friday)
- This document and related technical studies may be downloaded at the following website: <https://us1bucks.com/section-rc3/>
- The Public Hearing will be held on **December 10, 2025 at the Sheraton Bucks County Hotel, 400 Oxford Valley Road, Langhorne, PA 19047, 4:00PM – 8:30PM.**

- We would like to hear what you think. If you have any comments about this environmental assessment, please attend the Public Hearing on December 10, 2025 and/or send your written comments via postal mail, email, or through the project website to PennDOT by the deadline.
- Send comments via postal mail to:
Sibty Hasan, P.E., PMP, PennDOT Project Manager, PennDOT District 6-0, 7000 Geerdes Boulevard, King of Prussia, PA 19406
- Send comments via email to: shasan@pa.gov
- Send comments via the project website: <https://us1bucks.com/section-rc3/>
- Be sure to send comments by the deadline: **Monday January 2, 2026.**

What happens next:

After comments are received from the public and reviewing agencies, FHWA may give environmental approval to the proposed project, this would be in the form of a finding of no significant impact (FONSI); or request additional environmental studies in the form of an environmental impact statement (EIS). PennDOT will still need to obtain the permits required for the project. If the project is given environmental approval and funding is obtained, PennDOT could design and construct the project.

Alternative Formats:

The project documents can be made available in alternative languages or formats if requested. If you need translation/interpretation services or have special needs or have special concerns that require individual attention, please contact:

Sibty Hasan, P.E., PMP, Portfolio Manager and Plans Engineer, PennDOT District 6-0, 7000 Geerdes Boulevard | King of Prussia, PA 19406; Telephone: (610) 205-6854; email shasan@pa.gov.



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I. Proposed Project

a. Introduction/Description of the Proposed Action

The Pennsylvania Department of Transportation (PennDOT), Engineering District 6-0, in coordination with the Federal Highway Administration (FHWA), is proposing transportation improvements to US Route 1 (State Route [SR] 0001), Section RC3 (hereafter, SR 0001 RC3), to facilitate safe travel through the project area that meets current and future transportation needs, design criteria, and driver expectations.

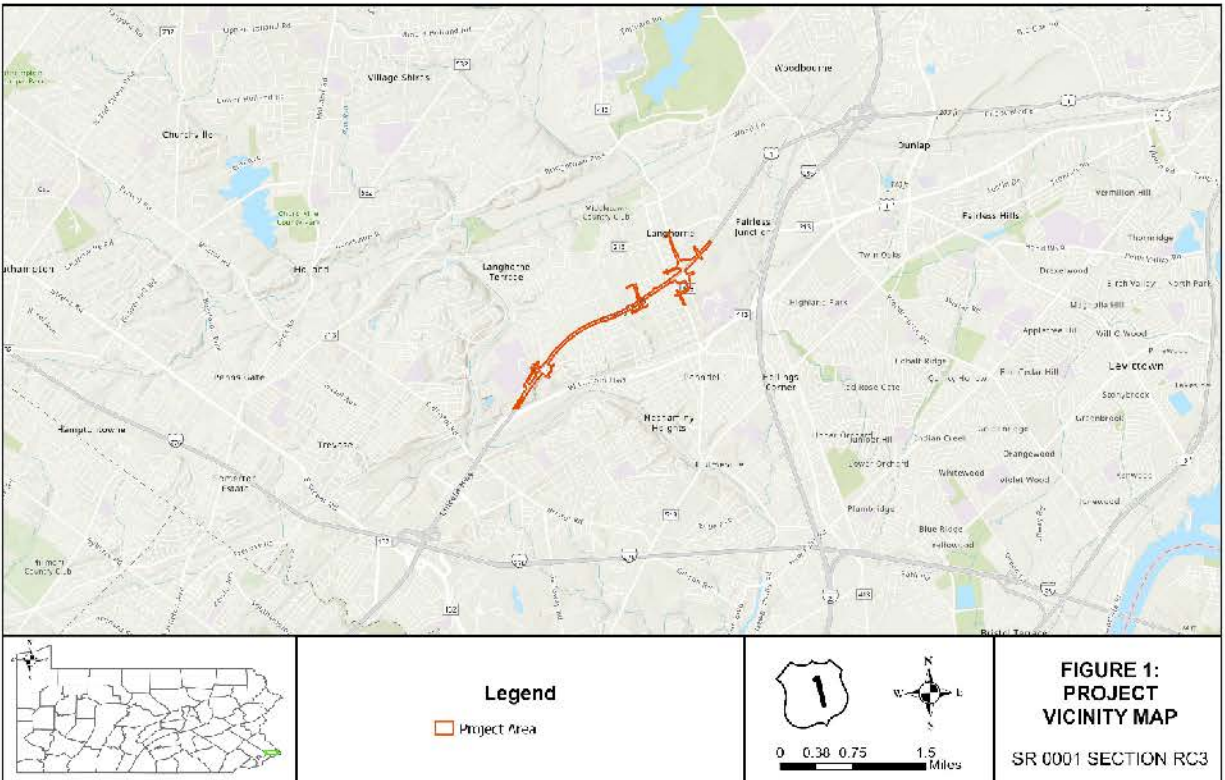
State Route (SR)
It should be noted that US, Route, and SR have all been used to reference the project. However, SR will be used throughout this Streamlined EA.

The SR 0001 RC3 Improvement Project is located in Middletown Township and Langhorne Manor and Langhorne Boroughs, Bucks County, PA (**Figure 1**). Improvements include approximately 2.6 miles of roadway reconstruction and widening from just north of the Lincoln Highway (SR 0001) bridge over Business Route 1 (SR 2037) and the CSX Transportation (CSX) and Southeastern Pennsylvania Transit Authority (SEPTA) rail lines to approximately 0.2-mile north of the Corn Crib Lane (SR 2197) bridge over Lincoln Highway (SR 0001). The project also includes the two (2)-mile segment of the northbound and southbound service (frontage) roads. Representative images of SR 0001 within the project area are provided in **Photos 1 – 3**.

*Larger versions of the project maps contained within this EA are provided in **Appendix B**.*



Figure 1: Project Vicinity Map



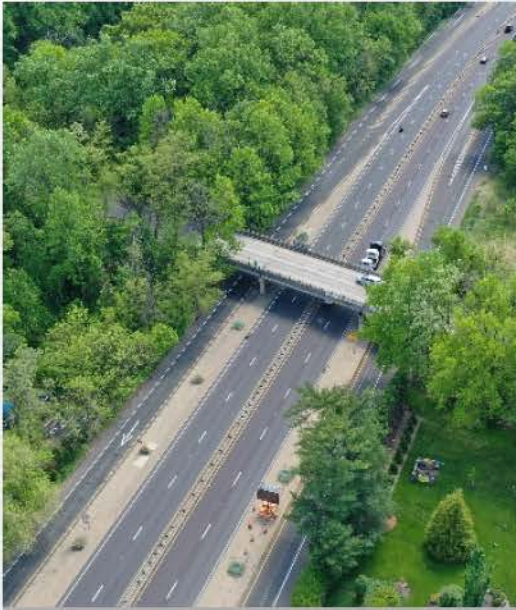


Photo 1. Aerial View of West
Interchange Road Overpass
(Looking South)



Photo 2. Aerial View Near Southern Project
Limit (Looking North)



Photo 3. Aerial View of Gillam Avenue Intersection and SR 0413 Overpass
(Looking East)



The proposed alternative involves the following transportation improvements:

- The construction of two (2) new Lincoln Highway (SR 0001) mainline interchanges and the removal of the northbound and southbound service (frontage) roads
- The replacement of four (4) bridges and one (1) box culvert
- Installation of roundabouts at three (3) intersections
- Signalization of two (2) intersections
- Minor realignments to the approaches at one (1) existing signalized intersection
- Traffic calming improvements
- Sidewalk and sidepath improvements and installations
- Stormwater management facilities
- Relocation of three (3) Intelligent Transportation System devices

For a detailed description of the Preferred Alternative and all associated improvements, see **Section 2.0, Alternatives.**

b. Project Background

Improvements to Section RC3 of the SR 0001 Group 03S project were originally scoped in 1999 as a rehabilitation and double-face guide rail median barrier replacement. In 2011, PennDOT expanded the scope to include several safety improvements. In 2014, during public involvement efforts for the safety improvement project, the public asked PennDOT to review the design and to address noise concerns, increased traffic volumes on the service (frontage) roads, and increased emergency medical services (EMS) response times. Consequently, alternative designs were investigated in 2019 and 2020. During a public officials meeting in 2020, the current project footprint was established. The SR 0001 RC3 Improvement Project, (Multi-modal Project Management System [MPMS] #93446), is now an independent project within the overall corridor improvement program. Since 2020, public outreach has continued including public plans displays, virtual and in person public and public official's meetings, and continued updates to the project website. For a detailed description of the public involvement efforts, see **Section 6.0, Public Involvement and Agency Coordination.**

c. Project Setting

The project is located in suburban Bucks County (Middletown Township and Langhorne Manor and Langhorne Boroughs) and is in a densely developed residential area with heavy traffic demand. Land use/cover within the immediate vicinity of the project area consists of residential and commercial development, public facilities, woodlands, and maintained (i.e., mowed) areas. There are several educational and community facilities in the project area,



such as Neshaminy High School, the Woods Services School for children and adults with disabilities, and Cairn University. Our Lady of Grace Cemetery is located north and west of the project along the southbound service road.

d. Purpose and Need

The primary purpose of this project is to facilitate safe and efficient travel along SR 0001 RC3 within and through the project area to meet current and future transportation needs while providing a functional and modern roadway that meets current design criteria and driver expectations. In addition, a goal of the project is to consider bicycle and pedestrian mobility within the SR 0001 RC3 corridor. The goal of considering pedestrian and bicycle mobility resulted from comments received from the public over the lifespan of the project, specifically in the vicinity of SR 0413, and in the vicinity of West Interchange Road and Highland Avenue. Additionally, Langhorne Manor and Middletown Townships have expressed interest in the idea of improved non-vehicular mobility such as a potential future multi-use path in the area of the existing service roads, but neither municipality has committed to the possibility.

The SR 0001 RC3 project needs have been identified as follows:

- **Existing roadway configurations and traffic conditions contribute to safety concerns in the project area.**
 - Acceleration lanes do not meet current design criteria for length or gap acceptance (room to safely merge into traffic).
 - Curbed traffic island along a high-speed facility (SR 0001), combined with a lack of inside and outside shoulders along SR 0001, limits vehicle recovery or refuge.
 - Low profile traffic island does not prevent errant vehicles from leaving the roadway.
 - SR 2199 (West Interchange Road) overpass pier columns are unprotected in separator traffic island and located within the clear zone (bridge pier not protected by barrier or guide rail).
 - Crashes were identified throughout the project corridor with crash clusters located at multiple locations along SR 0001, including near the SR 2008 (Highland Avenue) underpass, SR 2199 (West Interchange Road) overpass, and SR 0413 (Pine Street) overpass, which are also in the vicinity of the multiple merge / diverge points (slip ramps) between the service roads and the SR 0001 mainline.
 - The Enhanced Interchange Safety Analysis Tool (ISATe) analysis and crash data analysis indicated that nearly half of the segments within the SR 0001 RC3 corridor have an 'Expected' number of crashes that exceeds the 'Predicted' number of



crashes, with 3.1 more expected than predicted crashes overall. This correlates to a positive potential for safety improvements (PSI), within the SR 0001 RC3 corridor.

The 'Predicted' number of crashes is the estimate of long-term average crash frequency based on the geometric design, traffic control features, and traffic volume of the site. This measure does not account for any observed site-specific crash history. The 'Expected' number of crashes is the estimate of long-term average crash frequency, calculated based on the observed crash frequency. Observed crashes are the historical crash data observed/reported at the site during the period of analysis.

- **SR 0001 does not meet current design standards.**
 - The following table (**Table 1**) identifies areas along the SR 0001 RC3 project corridor that do not meet current design standards:

Table 1: Design Criteria Deficiencies

Existing Condition	Design Criteria Requirement
SR 2199 (West Interchange Road) bridge over SR 0001 has a vertical clearance of 14'-5 ¾" (posted 14'-2").	The required minimum clearance is 16'-6".
SR 0413 (Pine Street) bridge over SR 0001 has a vertical clearance of 14'-2 ¼" (posted 13'-11").	The required minimum clearance is 16'-6".
SR 0001 mainline travel lanes within the service road corridor have 1'-0" outside shoulders.	The required outside shoulder width is 10'-0" minimum, with 12'-0" preferred.
SR 0001 mainline travel lanes north of the service road corridor have outside shoulders that range from 7.5' to 8' in the northbound direction and 6.3' to 8' in the southbound direction.	The required outside shoulder width is 10'-0" minimum, with 12'-0" preferred.
SR 0001 median width is 4'-0".	The minimum required median width is 10'-0".
SR 0001 existing left (median) shoulder width is 1'-0".	The minimum required left (median) shoulder width is 4'-0".
SR 0001 has vertical curbs within the service road corridor as part of the median.	Design standards dictate that "...vertical curbs should not be used along freeways or other high-speed roadways".



Existing Condition	Design Criteria Requirement
Service road ramp acceleration lanes onto SR 0001 do not provide minimum design lengths to allow vehicles to reach merging travel speeds.	The minimum required acceleration lane length is 550'.
Portions of northbound (925') and southbound (910') SR 0001 have a vertical grade of 0.45%.	The minimum required vertical grade is 0.5%.
SR 0001 sight distance just south of the SR 2199 (West Interchange Road) overpass is 404'.	The minimum required sight distance is 570'.
SR 0001 horizontal curves from just north of Park Avenue to just south of the SR 2199 (West Interchange Road) overpass have as flat as 1.75% roadway bank.	The required roadway bank is 2.70%.
The SR 2199 (West Interchange Road) bridge pier columns, located in the SR 0001 raised concrete island, are unprotected from vehicular traffic within the mainline and service road clear zones.	Design standards dictate that bridge piers require barrier protection when located within 30' of the adjacent travel lane.

- **The roadway network and configuration in the project area lack continuity and do not meet driver expectations.**
 - The SR 0001 roadway sections north and south of SR 0001 RC3 are more typical of a limited access freeway (i.e., interstate) open section with full width outside paved shoulders, four to twelve-foot inside (median shoulders) and full interchanges. Whereas the SR 0001 RC3 service road section lacks full width paved shoulders and introduces curb height concrete traffic islands offset one foot from the mainline travel lanes with cut-through acceleration and deceleration lanes for intermediate (slip ramp) access. The service road section is not typical of a limited access freeway; therefore, driver expectations are not met when traveling through SR 0001 RC3.

For a detailed discussion and supporting information regarding the project purpose and needs please refer to the *SR 0001, Section RC3 Project Purpose and Need Statement*, dated August 2025, located in the project technical file.



II. Alternatives

This section will discuss the alternatives investigated to address the project's purpose and needs. The No Build alternative, the alternatives considered but dismissed, and the proposed alternative are discussed below.

a. No Build Alternative

The No Build Alternative would not propose any improvements to the existing SR 0001 RC3 highway corridor.

The No Build Alternative would leave the service roads in place and maintain the crossover access roads throughout the corridor that provide entrance/exit points to/from the mainline SR 0001 roadway. These crossover access roads are not consistent with the interchange areas found throughout other sections of the SR 0001 corridor to the northeast and to the southwest. This alternative would not improve the existing highway to meet current design criteria set forth by PennDOT and FHWA. This alternative would leave in place the intermediate access points that are high-frequency crash locations. Additionally, based on a design year of 2050, SR 0001 traffic is anticipated to grow to approximately 78,000 vehicles in both directions with 8% truck traffic in the northbound direction and 10% truck traffic in the southbound direction.

The No Build Alternative would not address any of the identified needs of improved safety, meeting current design standards, and system continuity and driver expectations.

The *SR 0001 Section RC3 US 1 Improvement Project Traffic and Safety Analysis Update Report*, dated September 2025, included in the project's technical file, details the negative impacts of a No Build condition in 2050.

b. Alternatives Considered but Dismissed

PennDOT considered an alternative that involved the replacement of the existing raised concrete traffic islands with full width paved shoulders and concrete median barrier separating mainline SR 0001 traffic from service road traffic. The alternative would eliminate the intermediate crossovers requiring entrance and exit at the northern and southern endpoints of the service roads and would replace the existing West Interchange Road overpass.

This alternative was presented at a public officials' meeting, open house public plans display, and town hall meeting in May and September 2014. The public raised concerns involving increased traffic volumes along the service roads, increased emergency services response times to incidents along mainline SR 0001, and lack of noise mitigation.



A traffic study was completed at the time this alternative was being developed. The results of that study determined there would be an increase in traffic volumes along the service roads (the southbound service road ranges from an 18.0% increase to a 625.0% increase with northbound ranging from 28.0% to 760.0% between 2050 no build and 2050 build conditions). It was determined this alternative would meet the need of improving current design standards; however, it would not meet the needs of safety or improving system continuity and driver expectations.

- This alternative would not improve system continuity due to the continued indirect manner in which the traffic would need to travel to access between SR 0001 and SR 0413 or access between SR 0001 and Old Lincoln Highway and Highland Avenue. Additionally, this alternative would not improve driver expectations because the expectation for SR 0001 in this area would be to have interchanges providing access between major crossing arterials.
- Existing roadway configurations and traffic conditions contribute to safety concerns in the project area. The alternative does not meet the safety need because the post construction design is very similar to the existing although it does remove the potential crash clusters at the intermediate crossovers. Additionally, per the local EMS feedback, the alternative would potentially increase EMS response times because they would not be able to access SR 0001 by crossing over the concrete islands since there would be proposed concrete median barrier separating the service roads from SR 0001.

For those reasons, coupled with the public's concerns, this alternative was dismissed from further study.

The detailed traffic analysis can be found in the *U.S. 1 Frontage Road Traffic Assessment Technical Memorandum*, dated July 2012, located in the project technical file.

c. Proposed Alternative

The Proposed Alternative includes approximately 2.6 miles of roadway reconstruction and widening from just north of the Lincoln Highway (SR 0001) bridge over Business Route 1 (SR 2037) and CSX and SEPTA to approximately 0.2-mile north of the Corn Crib Lane (SR 2197) bridge over Lincoln Highway (SR 0001). The project also includes the two (2)-mile segments of the northbound and southbound service (frontage) roads.

The transportation improvements included in the Proposed Alternative include:

- Construction of two Lincoln Highway (SR 0001) mainline interchanges



The first interchange, near the existing Highland Avenue (SR 2008) bridge at the southern end of the project, will connect Lincoln Highway (SR 0001) with Old Lincoln Highway (SR 2045) west of Lincoln Highway (SR 0001) and Lincoln Highway (SR 0001) with Highland Avenue (SR 2008) east of Lincoln Highway (SR 0001).

The second interchange, near the existing Pine Street (SR 0413) bridge at the northern end of the project, will connect Lincoln Highway (SR 0001) with Pine Street (SR 0413). Gillam Avenue and Woods Drive will be realigned to tie into the interchange ramp locations with Pine Street (SR 0413). A retaining wall is proposed along a portion of Gillam Avenue and Pine Street (SR 0413).

Due to the proposed interchanges, access to and from Lincoln Highway (SR 0001) and the northbound and southbound service roads will be removed. After construction, the northbound and southbound service roads will only provide access to the local road network for adjacent properties along the service roads in certain areas. In the other areas, sections of both service roads will be removed, and side roads will be terminated with cul-de-sacs.

- Replacement of four (4) bridges and one (1) box culvert
 - West Interchange Road (SR 2199) over Lincoln Highway (SR 0001)
 - Corn Crib Lane (SR 2197) over Lincoln Highway (SR 0001)
 - Pine Street (SR 0413) over Lincoln Highway (SR 0001)
 - Lincoln Highway (SR 0001) over Highland Avenue (SR 2008)
 - Lincoln Highway (SR 0001) over an unnamed tributary to Neshaminy Creek (box culvert)
- Roundabout construction at three (3) intersections
 - Northbound Lincoln Highway (SR 0001) ramps (to be constructed) and Highland Avenue (SR 2008)
 - Pine Street (SR 0413), Bellevue Avenue (SR 2049), and West Highland Avenue
 - Bellevue Avenue (SR 2049) and Gillam Avenue
- Signalization of two (2) intersections
 - Northbound Lincoln Highway (SR 0001) ramps (to be constructed) and Pine Street (SR 0413)
 - Southbound Lincoln Highway (SR 0001) ramps (to be constructed) and Pine Street (SR 0413)
- Slight road adjustments at the intersection of Highland Avenue (SR 2008), Old Lincoln Highway (SR 2045), and Fairhill Avenue.



- Traffic calming improvements
 - Pine Street (SR 0413) between Flowers Avenue and Maple Avenue (SR 0213)
 - Curb bulb-outs, painted cross walks, and rectangular rapid flashing beacons
 - Gillam Avenue between Bellevue Avenue (SR 2049) and Pine Street (SR 0413)
 - Mini-roundabout, curb bulb-outs, rectangular rapid flashing beacons, and raised crosswalk/speed table

- Sidewalk and sidepath improvements and installations

The traffic calming improvements along Pine Street (SR 0413) will occur between the existing curblines of the roadways, plus potentially within the adjacent existing sidewalk limits (e.g., replace deteriorated sections of sidewalk and construct new Americans With Disabilities Act (ADA) accessibility standards ramps, if needed).

A sidewalk is a narrower path intended for pedestrians while a sidepath is a wider path that can accommodate pedestrians and cyclists.

Sidewalks will be replaced and extended along Highland Avenue (SR 2008) and Old Lincoln Highway (SR 2045) in the area of the southern interchange along with the inclusion of necessary ADA ramp upgrades. A sidewalk is proposed along the southbound side of Pine Street (SR 0413) and a sidepath is proposed along the northbound side of Pine Street (SR 0413). This will connect existing facilities at both the northern and southern Pine Street (SR 0413) project limits and accommodate both bicycles and pedestrians. These additions will allow for easier access to the multiple bus stops located along Pine Street (SR 0413) within the project limits. Coordination with SEPTA will continue through the design phase.

With the removal of much of the existing service roads, the potential exists to convert these spaces into a multi-use trail that would loop along both northbound and southbound service roads between Highland Avenue (SR 2008) and Pine Street (SR 0413). Approval from Middletown Township and Langhorne Manor Borough would be required due to maintenance considerations; municipal coordination is ongoing.

- Installation of stormwater management facilities

Stormwater facilities proposed include vegetated swales along Fairhill Avenue, SR 0001 southbound south of Hulmeville Road, and proposed at the toe of fill slopes along Corn Crib Lane and SR 0001 southbound around Corn Crib Lane. Additionally, an infiltration basin is proposed between SR 0001 southbound, Central Avenue, and Hill Avenue, and an infiltration basin or vegetated swale at the toe of proposed fill

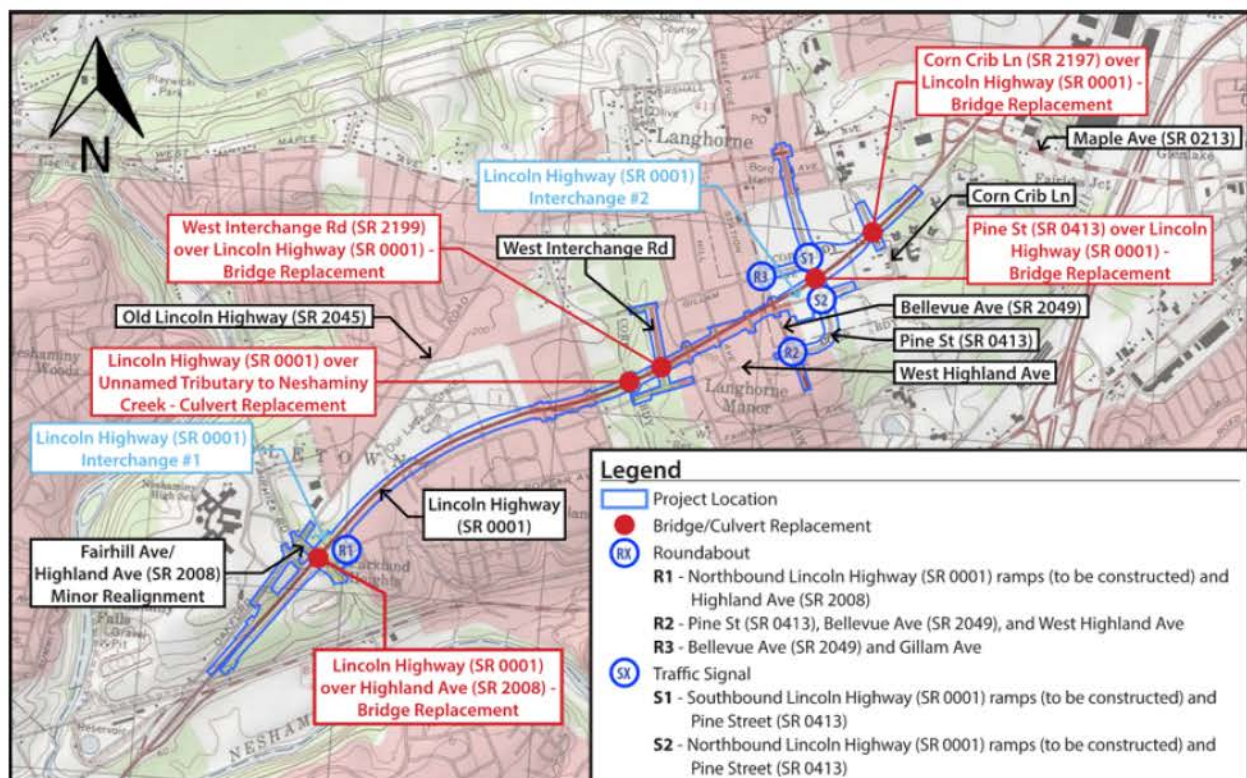


slopes from the new interchange at Pine Street (SR 0413). This includes all ramps and approaches

- Relocation of three (3) Intelligent Transportation System devices to include relocation of existing cameras and installation of digital messaging signs (DMS).

The location of the proposed improvements within the project study corridor is shown in **Figure 2**.

Figure 2: Detailed Project Map



The Proposed Alternative best meets the purpose and needs for the project by providing transportation improvements that use current design standards to address operational and safety concerns. The Proposed Alternative eliminates existing non-standard roadway configurations while providing system continuity and meets driver expectations with the adjacent sections of the SR 0001 corridor. As a result, the Proposed Alternative is the Preferred Alternative for the SR 0001 RC3 project. The overview of the Preferred Alternative is shown in **Figure 3A**. **Figures 3B** and **3C** provide a closer view of the proposed new interchanges.



Figure 3A: Preferred Alternative Map

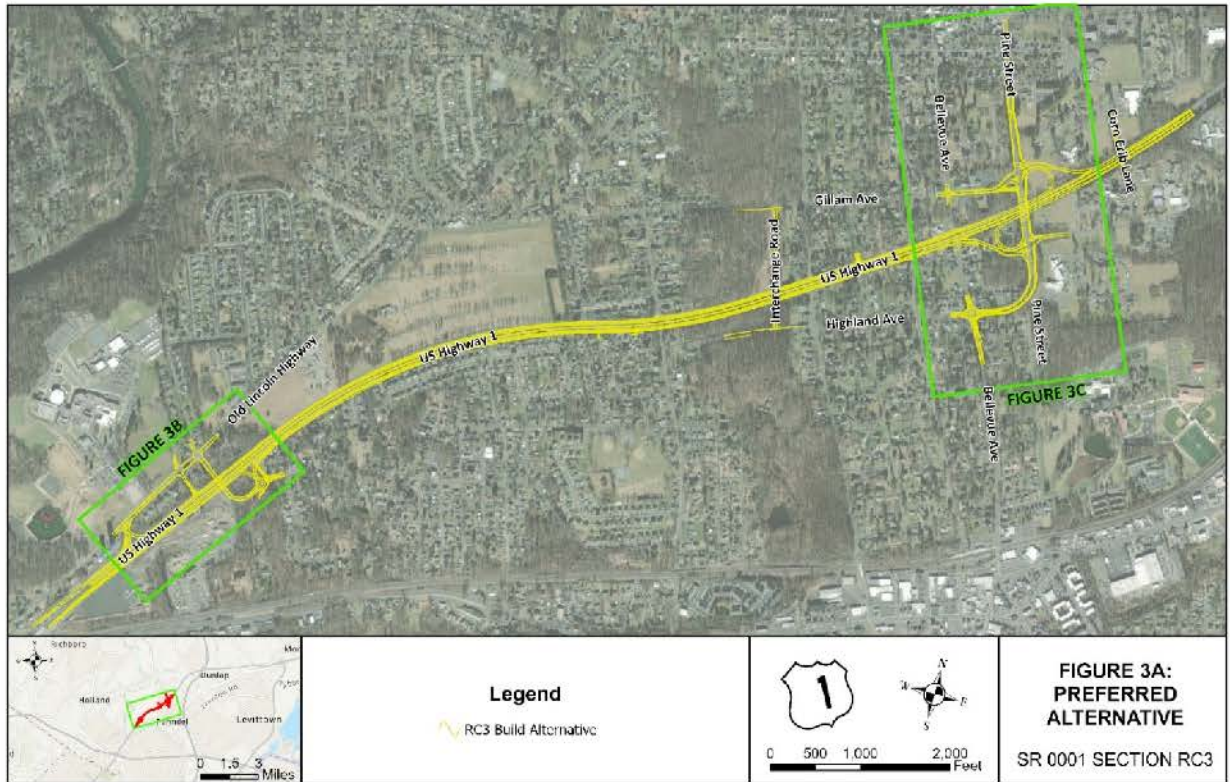


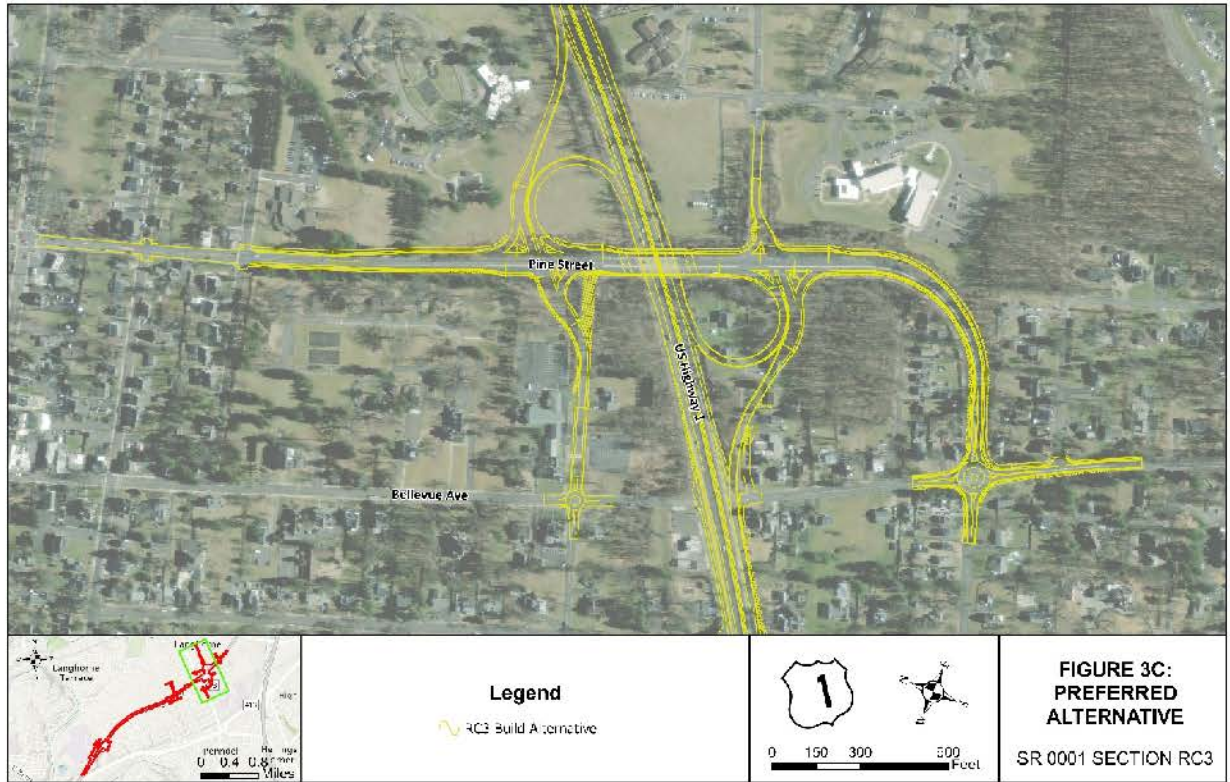


Figure 3B: Preferred Alternative Map





Figure 3C: Preferred Alternative Map



i. Funding Plan and Project Schedule

Table 2: Project Funding and Fiscal Constraint

Project Funding and Fiscal Constraint						
MPMS	Preliminary Design \$	Final Design \$	Right of Way \$	Utilities \$	Construction \$	TIP/LRTP
93446	8,000,000	10,000,000	18,546,000	5,000,000	185,000,000	DVRPC FY 2025- 2028

The funding information presented in **Table 2** matches the current TIP except for Preliminary Design, which is not included in the current TIP because it was included in previous year's TIPs. The Preliminary Design cost is estimated based on the previous agreements. Additionally, the construction costs noted above include construction inspection.



Table 3: Funding Entity

Federal %	State %	Local %	Other %
80	20	0	0

The project schedule is partially dependent on funding availability as shown above in **Table 2** and **Table 3**. **Figure 4** shows elements of the proposed project schedule.

Figure 4: Project Schedule



III. Environmental Resources, Effects, and Mitigation

EAs are to be completed within one year [42 U.S.C. § 4336a(g)], and a streamlined EA is a tool to help accomplish this. This document focuses on only those resources or features that apply to the project. This allows for study and discussion of resources present in the project area, rather than expend effort on resources that were either not present or not affected. Although not all resources are discussed in the EA, they were considered during the planning process and are documented in the streamlined resource summary, shown in **Appendix A**.

The following table shows the resources considered during the environmental review for this project. The first column with a check indicates the resource is not present in the project area. The second column with a check indicates the resource is present in the project area.



The third column indicates the resource is present but not affected. The fourth column with a check means the effect to or the proximity of the resource warrants more discussion in this document. All listed resources have been reviewed and are included in the streamlined resource summary, shown in **Appendix A**. The streamlined resource summary includes information about the resources, the method used to evaluate them, and documentation completed.

Table 4: Resources Considered

Resource	Not Present	Present	No Effect	Detailed Discussion
Natural Environment				
Wetlands	☐	☒	☐	☒
Streams, Rivers, and Other Surface Waters	☐	☒	☐	☒
Wild and Scenic Rivers	☒	☐	☐	☐
Floodplains	☐	☒	☐	☒
Coastal Zones	☐	☒	☒	☐
Threatened and Endangered Species	☐	☒	☐	☒
Vegetation and Wildlife	☐	☒	☐	☒
National Natural Landmarks	☒	☐	☐	☐
Wildlife Sanctuaries	☒	☐	☐	☐
Wilderness, Natural, and Wild Areas	☒	☐	☐	☐
Public Lands (Parks, Recreation Areas, State Game Lands, Section 6(f), etc.)	☐	☒	☐	☒
Groundwater Resources	☒	☐	☐	☐
Unique Geological Features	☒	☐	☐	☐
Agricultural Resources	☒	☐	☐	☐
Hazardous or Residual Waste	☐	☒	☐	☒
Air Quality	☐	☒	☐	☒
Noise	☐	☒	☐	☒



Resource	Not Present	Present	No Effect	Detailed Discussion
Socioeconomic				
Land Use	☐	☒	☒	☐
Community Cohesion	☐	☒	☐	☒
Community Facilities and Services	☐	☒	☐	☒
Community Economics	☐	☒	☒	☐
Right of Way and Displacements	☐	☒	☐	☒
Cultural				
Above-Ground Resources	☐	☒	☐	☒
Archaeological Resources	☒	☐	☐	☒
Other				
Visual/Aesthetics	☐	☒	☐	☒
Section 4(f) Resources	☐	☒	☐	☒
Stafford Act Properties	☒	☐	☐	☐

The following section provides discussion of impacts on project area resources as a result of the proposed action and only compares the proposed alternative and the No Build alternative. Additionally, the impacts will be described as temporary or permanent, when applicable. Temporary impacts occur during construction and are expected to be restored similar to existing conditions through restoration efforts, while permanent impacts are considered irreversible impacts to the resource and require resource specific mitigation measures to account for the impacts.

a. Wetlands

Methodology

Wetlands were identified, delineated, and mapped within the project area in accordance with Chapter 105 of Title 25 of the Pennsylvania (Pa.) Code; Section 404 of the Federal Clean Water Act and its regulations at 33 C.F.R. Parts 320-330; U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual, Technical Report Y-87-1 (1987); and the USACE Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (2012). Wetlands were identified using both off-site review of secondary source information (e.g., National Wetlands Inventory (NWI) maps, soil survey maps, etc.) and on-site field investigations, (conducted April/May 2021, July 2022, and November 2024).



Existing Conditions

Eight (8) palustrine wetlands were identified and delineated totaling approximately 0.795-acre within the project area. Per 25 Pa. Code § 105.17(1), none of the wetlands within the project area would be classified as Exceptional Value (EV) wetlands. Wetlands identified and delineated are located within the Delaware Estuary Coastal Zone Management Resource Area. Additional details on the wetlands identified in the project area can be found in the *Aquatic Resource Identification & Delineation Report*, dated January 2025, located in the project technical file.

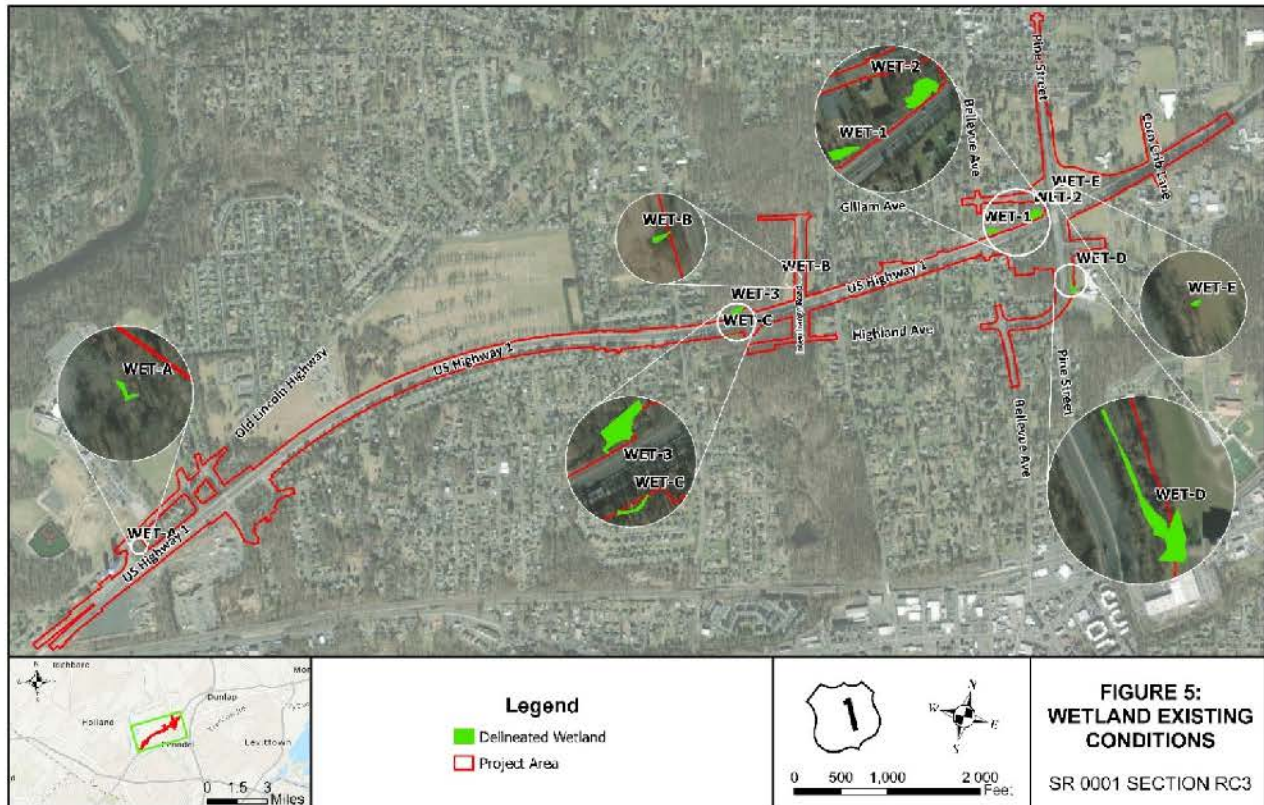
Under the Cowardin System of Wetland Classification, all eight (8) delineated wetlands were determined to be palustrine, which refers to non-tidal freshwater wetlands dominated by trees, shrubs, and other plants; are less than 20 acres in size; and have a maximum water depth of no more than 6.6 feet. Wetlands were further characterized into palustrine emergent (PEM – characterized by herbaceous and grass-like plants), palustrine scrub-shrub (PSS – dominated by woody vegetation less than 20 feet tall), or palustrine forested (PFO – dominated by woody vegetation 20 feet or taller) classifications. Of the eight (8) wetlands delineated in the project area, four were determined to be PEM wetlands (WET-A, WET-B, WET-D, WET-E), two were determined to be PSS wetlands (WET-1, WET-C), one was determined to be a PFO wetland (WET-3), and one was determined to be a mixed PFO/PEM wetland (WET-2). **Table 5** provides a summary of each wetland within the project area (shown in **Figure 5**).

Table 5: Summary of Wetlands in the Project Area

Wetland ID	Wetland Size (acres)	Wetland Type	Main Watercourse/Drainage Associated with Wetland Location
WET-1	0.129-acre (open-ended)	PSS	Mill Creek
WET-2	0.302-acre	PFO/PEM	Mill Creek
WET-3	0.188-acre (open-ended)	PFO	Neshaminy Creek
WET-A	0.005-acre	PEM	Neshaminy Creek
WET-B	0.007-acre (open-ended)	PEM	Neshaminy Creek
WET-C	0.027-acre (open-ended)	PSS	Neshaminy Creek
WET-D	0.133-acre	PEM	Mill Creek
WET-E	0.004-acre	PEM	Mill Creek
Total	0.795-acre		



Figure 5: Wetland Existing Conditions



Impacts

The Preferred Alternative would result in impacts to seven (7) palustrine wetlands totaling 0.063-acre of permanent impacts and 0.058-acre of temporary impacts (**Table 6** and **Figure 6**). Impact quantities are preliminary and based on the total potential impact as a result of the Preferred Alternative limits of disturbance (LOD). Direct impacts to wetlands will be adjusted and classified as permanent or temporary during final design as additional avoidance and minimization efforts are evaluated and erosion and sediment controls are established.

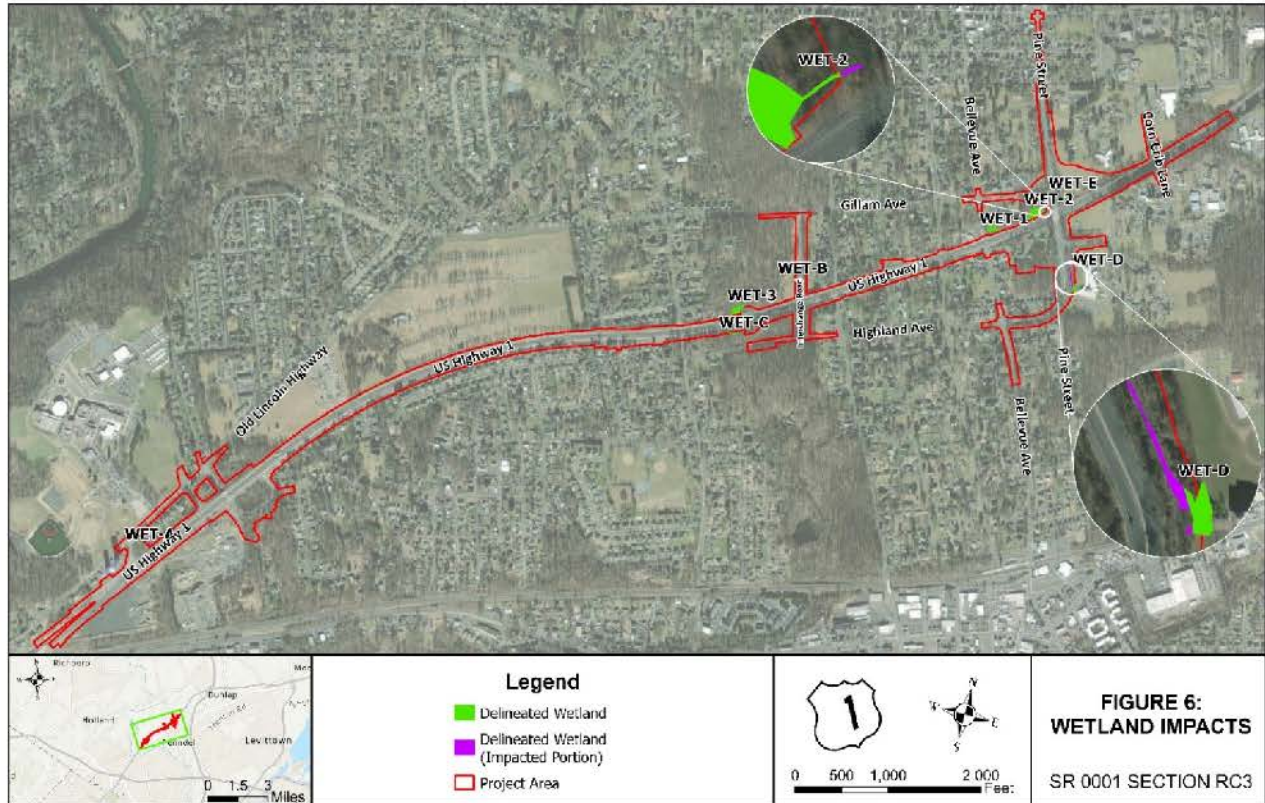


Table 6: Impacts to Wetlands by the Preferred Alternative

Wetland ID	Wetland Type	Proposed Activity	Permanent Impact (acres)	Temporary Impact (acres)
WET-2	PFO/PEM	Fill placement, construction activities	—	0.005
WET-3	PFO	Fill placement, construction activities	—	0.002
WET-A	PEM	Fill placement, construction activities	—	0.020
WET-B	PEM	Fill placement, construction activities	—	0.001
WET-C	PSS	Fill placement, construction activities	0.001	0.001
WET-D	PEM	Fill placement, construction activities	0.062	0.027
WET-E	PEM	Fill placement, construction activities	—	0.004
Total			0.063	0.058



Figure 6: Wetland Impacts



The No Build Alternative would result in no impacts to palustrine wetlands within the project area.

Mitigation

PennDOT is in the process of considering mitigation options for unavoidable permanent impacts to wetlands associated with the proposed project. Mitigation options in accordance with the USACE Final Compensatory Mitigation Rule (33 CFR part 332) include the procurement of wetland mitigation bank credits, fee-in-lieu payment, and permittee responsible mitigation to offset unavoidable impacts, which must be considered in that order. If wetland mitigation credits are not available, fee-in-lieu payment and then permittee-responsible mitigation options both on-site and off-site will be evaluated. These may include wetland restoration and enhancement measures, as applicable. Mitigation efforts will be consistent with the Delaware Estuary Coastal Zone Management Resource Program.



Mitigation commitments related to wetland impacts will be defined during final design to satisfy Chapter 105 and Section 404 permit requirements and in coordination with the appropriate agencies (Pennsylvania Department of Environmental Protection (PA DEP), Pennsylvania Fish and Boat Commission (PFBC), USACE). Temporary wetland impacts will be restored and monitored in accordance with Chapter 105 and/or Section 404 permit conditions.

b. Streams, Rivers, and Other Surface Waters

Methodology

Watercourses were identified, delineated, and mapped within the project area in accordance with Chapter 105 of Title 25 of the PA. Code and Section 404 of the Federal Clean Water Act and its regulations at 33 C.F.R. Parts 320-330. Field aquatic resource investigations were conducted from April to May 2021, July 2022, and November 2024.

Existing Conditions

The aquatic resources field investigation resulted in the identification of 18 watercourses or Waters of the U.S. (WUS), which are within the Core Creek-Neshaminy Creek and Mill Creek-Silver Lake HUC-12 sub-watersheds. The primary streams that feature tributaries within the project area are Neshaminy Creek and Mill Creek. A Preliminary Jurisdictional Determination was held with the USACE on July 27, 2022 in order to verify delineated boundaries and obtain unofficial opinions from the USACE on the jurisdictional status of a subset of resources from the project (**Figure 7**). Additional details on the watercourses identified in the project area can be found in the *Aquatic Resource Identification & Delineation Report*, dated January 2025, located in the project technical file.

Unnamed Tributaries (UNT) to Mill Creek:

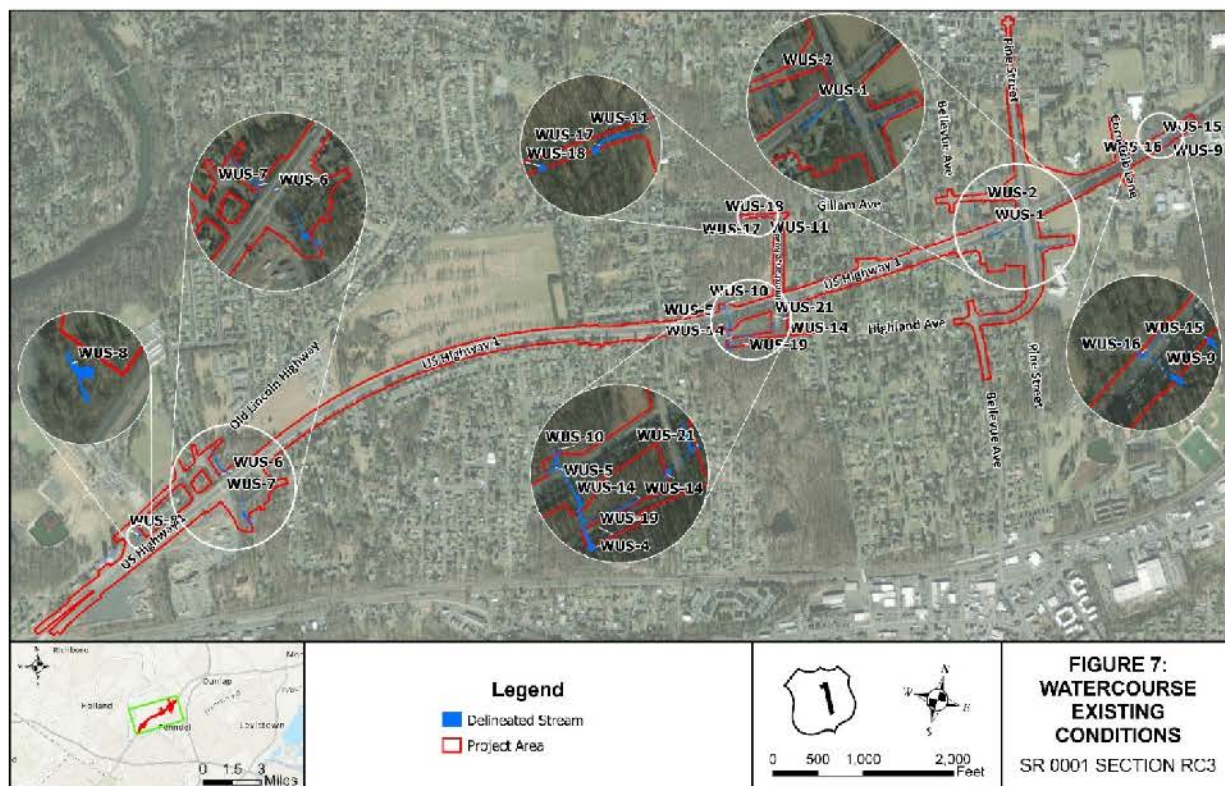
- Include five intermittent watercourses (conveying water during wet portions of the year; WUS-1, WUS-2, WUS-3, WUS-9, WUS-15) and one ephemeral watercourse (conveying water immediately after precipitation events; WUS-16) located in the eastern portion of the project area
- Are warmwater fisheries (WWFs) and migratory fisheries (MFs) based on their association with Mill Creek
- Are not associated with approved trout waters, stocked trout streams, or streams supporting natural trout reproduction (i.e., wild trout stream)
- Are not considered navigable waterways by the USACE or PFBC
- Are listed in the Section 303(d) list of impaired waters based on aquatic life
- Are located within the Delaware Estuary Coastal Zone Management Resource Area



Unnamed Tributaries (UNT) to Neshaminy Creek:

- Include four perennial watercourses (WUS-4, WUS-6, WUS-17, WUS-18) and eight intermittent watercourses (WUS-5, WUS-7, WUS-8, WUS-10, WUS-11, WUS-14, WUS-19, WUS-21) located in the western half of the project area
- Are considered WWFs and MFs based on their association with Neshaminy Creek
- Are not associated with approved trout waters, stocked trout streams, or streams supporting natural trout reproduction (i.e., wild trout stream)
- Are not considered navigable waterways by the USACE or PFBC
- Are listed in the Section 303(d) list of impaired waters based on aquatic life
- Are located within the Delaware Estuary Coastal Zone Management Resource Area

Figure 7: Watercourse Existing Conditions



Impacts

The Preferred Alternative would result in 4,412.0 linear feet of stream impact, (2,445.1 linear feet of permanent impact, and 1,966.9 linear feet of temporary impact) to 17 watercourses (**Table 7**). Nine (9) new culvert and pipe culvert structures are anticipated with the proposed improvements, affecting the following resources: WUS-2 (two [2] pipe culvert crossings),



WUS-4 (one [1] culvert and one [1] pipe culvert crossing), WUS-6 (three [3] pipe culvert crossings), WUS-9 (pipe culvert), and WUS-14 (pipe culvert). Twelve (12) additional streams (WUS-1, WUS-5, WUS-7, WUS-8, WUS-10, WUS-11, WUS-15, WUS-16, WUS-17, WUS-18, WUS-19, and WUS-20) are situated adjacent to the proposed roadway and will be impacted by fill placement and other construction activities. Direct impacts to watercourses will be adjusted during final design as additional avoidance and minimization efforts are evaluated and erosion and sediment controls are established. The summary of impacts to watercourses can be found in **Table 7** and shown in **Figure 8**.

Table 7: Impacts to Streams by the Preferred Alternative

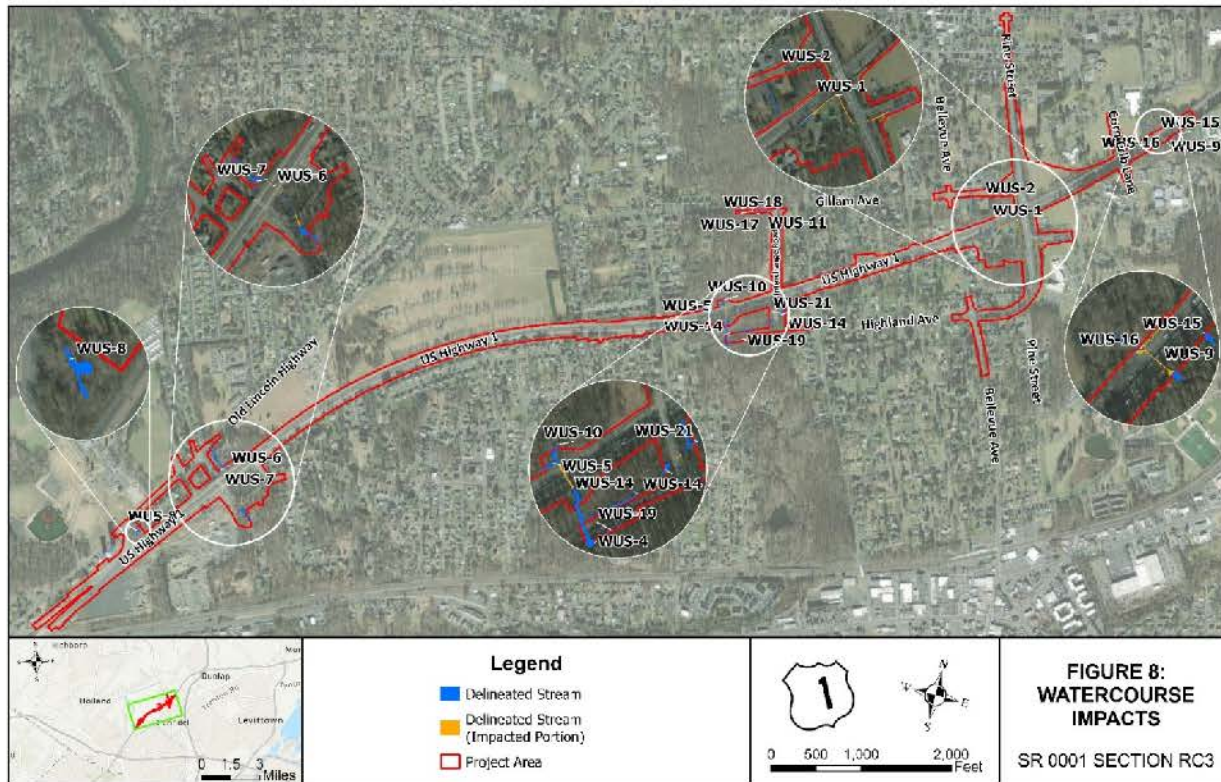
Stream ID	Stream Name	Stream Type	Proposed Activity	Permanent Impact (LF)	Temporary Impact (LF)	Permanent Impact (Acres)	Temporary Impact (Acres)
WUS-1	UNT to Mill Creek	Intermittent	Fill placement, construction activities	381.5	154.9	0.054	0.032
WUS-2	UNT to Mill Creek	Intermittent	Culvert crossings, fill placement, construction activities	1393.9	249.6	0.128	0.042
WUS-4	UNT to Neshaminy Creek	Perennial	Culvert crossings, fill placement, construction activities	132.6	295.7	0.024	0.104
WUS-5	UNT to Neshaminy Creek	Intermittent	Fill placement, construction activities	—	64.5	—	0.016
WUS-6	UNT to Neshaminy Creek	Perennial	Culvert crossings, fill placement, and construction activities	249.1	362.9	0.039	0.100
WUS-7	UNT to Neshaminy Creek	Intermittent	Fill placement, construction activities	—	86.2	—	0.014
WUS-8	UNT to Neshaminy Creek	Intermittent	Fill placement, construction activities	—	111.1	—	0.036



Stream ID	Stream Name	Stream Type	Proposed Activity	Permanent Impact (LF)	Temporary Impact (LF)	Permanent Impact (Acres)	Temporary Impact (Acres)
WUS-9	UNT to Mill Creek	Intermittent	Culvert crossing, fill placement, construction activities	137.5	14.1	0.017	0.005
WUS-10	UNT to Neshaminy Creek	Intermittent	Fill placement, construction activities	—	15.8	—	0.002
WUS-11	UNT to Neshaminy Creek	Intermittent	Fill placement, construction activities	—	148.4	—	0.023
WUS-14	UNT to Neshaminy Creek	Intermittent	Culvert crossing, fill placement, construction activities	50.4	283.2	0.004	0.068
WUS-15	UNT to Mill Creek	Intermittent	Fill placement, construction activities	—	14.1	—	0.003
WUS-16	UNT to Mill Creek	Ephemeral	Fill placement, construction activities	100.0	—	0.006	—
WUS-17	UNT to Neshaminy Creek	Perennial	Fill placement, construction activities	—	35.3	—	0.010
WUS-18	UNT to Neshaminy Creek	Perennial	Fill placement, construction activities	—	18.4	—	0.008
WUS-19	UNT to Neshaminy Creek	Intermittent	Fill placement, construction activities	—	87.3	—	0.007
WUS-21	UNT to Neshaminy Creek	Intermittent	Fill placement, construction activities	—	25.5	—	0.005
Total				2445.1	1966.9	0.273	0.474



Figure 8: Watercourse Impacts



The No Build Alternative would result in no impacts to project area streams, rivers, or other surface waters.

Mitigation

PennDOT is in the process of considering mitigation options for unavoidable permanent impacts to watercourses associated with the proposed project. Mitigation options include the procurement of stream mitigation credits to offset unavoidable impacts. If stream mitigation credits are not available, permittee-responsible mitigation options both on-site and off-site will be evaluated. These may include open bottom culverts; larger culvert structures to increase the span of existing floodplains (improve stream corridor stability, as well as allow animal and aquatic organism passage); vegetative cover that would enhance the riparian corridor(s); localized streambank grading to decrease streambank erosion and improve riverine stability; and other stream restoration and enhancement mitigation measures, as applicable. Mitigation efforts will be consistent with the Delaware Estuary Coastal Zone Management Resource Program.



Erosion and sedimentation controls during construction will include protective fencing and other best management practices (BMPs). Post construction stormwater management concepts will include linear swales and infiltration stormwater control measures which are sized to adequately mitigate runoff increases while minimizing footprint impacts.

Temporary watercourse impacts will be restored to original conditions and monitored in accordance with Chapter 105 and/or Section 404 permit conditions.

Mitigation commitments related to watercourse impacts will be defined during final design to satisfy Chapter 105 and Section 404 permit requirements and in coordination with the USACE, PA DEP, and the PFBC.

c. Floodplains

Methodology

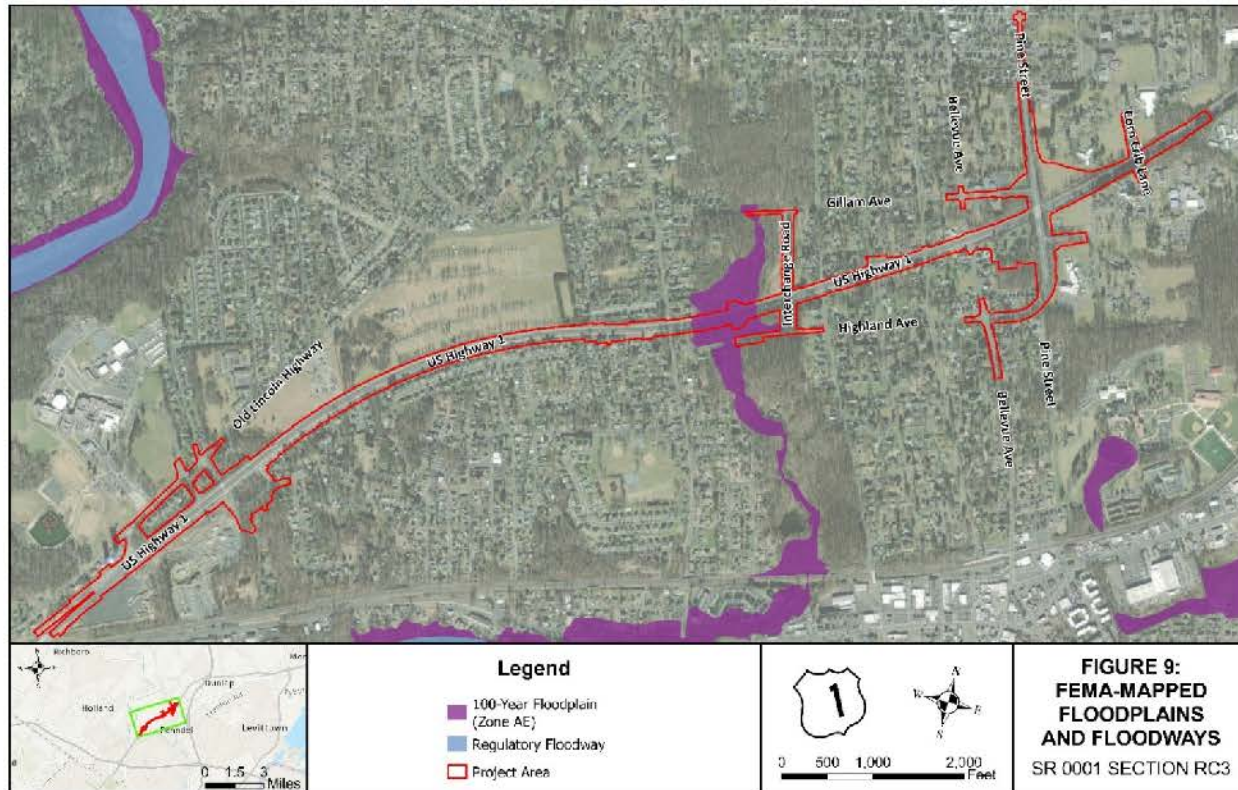
Flood Insurance Rate Maps (FIRMs), published by the Federal Emergency Management Agency (FEMA), were used to identify floodways and floodplains within the project area. A FEMA Flood Insurance Study (FIS, August 27, 2021) was conducted on the UNT to Neshaminy Creek (Chubb Run) within the project area and was used in conjunction with the FIRMs to establish 100-year flood elevations.

Existing Conditions

The central portion of the project area features a FEMA-mapped 100-year floodplain (Zone AE) without a regulatory floodway for the UNT to Neshaminy Creek (Chubb Run), which extends from the confluence of the Neshaminy Creek, through the proposed project corridor and ends upstream of Gillam Avenue (**Figure 9**).



Figure 9: FEMA-Mapped Floodplains and Floodways



Hydrologic and hydraulic (H&H) studies will be conducted during final design to satisfy the requirements of the FHWA policy 23 CFR Part 650, Subpart A, Section 650.117. Peak flows will be computed using the hydrologic methods and models described in PennDOT Design Manual 2, Section 10.6.C, and hydraulic analyses will be performed using the USACE HEC-RAS River Analysis System program. When streams do not feature FEMA-mapped floodways, then it is assumed per PADEP regulations (Chapter 105 of Pennsylvania Title 25), absent evidence to the contrary, that the floodway extends from the jurisdictional watercourse 50 feet landward from the top of bank. Therefore, any H&H studies conducted for stream crossings will be used to delineate the floodway/floodplain boundaries; otherwise, 50 feet from the top of bank on each side of the jurisdictional watercourse will be assumed as the regulated floodway.

Impacts

Based on the current design, the Preferred Alternative would result in approximately 2.554 acres of impact to the 100-year floodplain due primarily to culvert crossing, fill placement, and construction activities. As the UNT to Neshaminy Creek is already carried under SR 0001 through an existing culvert, replacing this culvert system will maintain current conditions



and/or improve the conveyance condition through the structure. The floodplain encroachments associated with the Preferred Alternative will be further minimized during final design to avoid increases to the 100-year base flood elevation and are not anticipated to result in an increase to flood elevations in the project area.

Because detailed H&H studies have yet to be conducted for this project, floodways for intermittent and perennial stream reaches in the Preferred Alternative footprint that do not have FEMA-delineated floodway boundaries were mapped as 50 feet landward from the top of each bank. Based on the current design, construction of the Preferred Alternative would result in approximately 9.844 acres of impact to non-FEMA mapped floodways (**Table 8**), due primarily to pipe culvert crossings, fill placement, construction activities.

Table 8: Impacts to Floodplains and Floodways by the Preferred Alternative

Stream ID	Floodplain/Floodway Type	Proposed Activity	Impact (Acres)
WUS-4 (Chubb Run)	FEMA 100-Year Floodplain	Culvert crossing, fill placement, construction activities	2.554
Total FEMA 100-Year Floodplain Impacts			2.554
WUS-1	PA DEP 50-Foot Floodway Impacts	Fill placement, construction activities	1.067
WUS-2	PA DEP 50-Foot Floodway Impacts	Pipe culvert crossings, fill placement, construction activities	3.027
WUS-4	PA DEP 50-Foot Floodway Impacts	Pipe culvert crossing, fill placement, construction activities	0.862
WUS-5	PA DEP 50-Foot Floodway Impacts	Fill placement, construction activities	0.260
WUS-6	PA DEP 50-Foot Floodway Impacts	Fill placement, construction activities	1.702
WUS-7	PA DEP 50-Foot Floodway Impacts	Fill placement, construction activities	0.284
WUS-8	PA DEP 50-Foot Floodway Impacts	Fill placement, construction activities	0.435
WUS-9	PA DEP 50-Foot Floodway Impacts	Fill placement, construction activities	0.359
WUS-10	PA DEP 50-Foot Floodway Impacts	Fill placement, construction activities	0.097



Stream ID	Floodplain/Floodway Type	Proposed Activity	Impact (Acres)
WUS-11	PA DEP 50-Foot Floodway Impacts	Fill placement, construction activities	0.247
WUS-14	PA DEP 50-Foot Floodway Impacts	Fill placement, construction activities	0.826
WUS-15	PA DEP 50-Foot Floodway Impacts	Fill placement, construction activities	0.108
WUS-17	PA DEP 50-Foot Floodway Impacts	Fill placement, construction activities	0.104
WUS-18	PA DEP 50-Foot Floodway Impacts	Fill placement, construction activities	0.096
WUS-19	PA DEP 50-Foot Floodway Impacts	Fill placement, construction activities	0.234
WUS-21	PA DEP 50-Foot Floodway Impacts	Fill placement, construction activities	0.136
Total PA DEP 50-Foot Floodway Impacts			9.844

Although the Preferred Alternative would result in floodplain encroachments to approximately 2.554 acres to the FEMA 100-Year floodplain and 9.844 acres to the PA DEP 50-Foot floodway, no adverse floodplain impacts are anticipated because the new structures would be designed to adequately convey the 100-year flood flows.

The No Build Alternative would have no impact on floodplains or floodways.

Mitigation

In accordance with 23 CFR Part 650.115 and 650.117, detailed H&H analyses will be conducted during final design for floodplain encroachments associated with the Preferred Alternative. This will ensure that structures are properly sized for the design flood and impacts to the base flood are minimized to the greatest extent possible.

Prior to construction of the Preferred Alternative, PennDOT will obtain all required state and federal water obstruction and encroachment permits. Any proposed fill within the 100-year floodplain will comply with FEMA regulations, and PennDOT will coordinate with the appropriate municipalities regarding consistency with local floodplain regulations and ordinances.

The Preferred Alternative is not expected to increase the flood elevation in the project area; therefore, mitigation for floodplain impacts is not anticipated for this project. Should an increase in water surface elevation to the FEMA Delineated/Mapped 100-year floodplain be



identified later in final design, a Conditional Letter of Map Revision (CLOMR) will be submitted for FEMA compliance. PennDOT will coordinate with the municipalities as part of this submission.

d. Threatened and Endangered Species

Methodology

Threatened and endangered (T&E) species are federally protected under the Endangered Species Act (ESA) of 1973 and at the state level through regulations contained within the Pennsylvania Fish and Boat Code (30 Pa.C.S. §§102, 2502, 2504, and 2506); the Game and Wildlife Code (34 Pa.C.S. §§ 102, 925, 2164-67, and 2924); the Wild Resource Conservation Act (32 P.S. §§ 5301-5314); and the Conservation of Pennsylvania Native Wild Plants (17 Pa. Code § 45.1-91).

The Pennsylvania Natural Diversity Index (PNDI) database operated by the Pennsylvania Department of Conservation and Natural Resources (PA DCNR) was accessed to determine if occurrences of threatened and endangered species and their habitats or other sensitive resources were known within the vicinity of the proposed project area. The PNDI receipt obtained through this search acts as preliminary coordination with the PA DCNR, Pennsylvania Game Commission (PGC), PFBC, and U.S. Fish and Wildlife Service (USFWS).

Existing Conditions

PNDI Receipt (PNDI-723293) was obtained on April 18, 2022 and was updated on November 13, 2024 and July 2, 2025 (see the project's technical file for the most recent July 2025 PNDI receipt). The PNDI receipts identified a potential impact to an unidentified, sensitive species under the jurisdiction of the PFBC. The name of the sensitive species was not released by the PFBC.

Impacts

Coordination with PFBC regarding the sensitive species noted in the PNDI receipt was completed on April 19, 2022, November 18, 2024, and August 8, 2025. The PFBC determined that no impact was likely to result from the proposed Preferred Alternative; the July 2, 2025 PNDI Receipt (PNDI-723293) and the PFBC correspondence dated August 8, 2025 are provided in **Appendix C** and the project's technical file.

The No Build Alternative would have no impacts on threatened or endangered species.



Mitigation

Since the project will not result in potential adverse impacts, no mitigation for T&E species is anticipated. The PNDI receipt and required agency coordination will be updated, as necessary, as the project moves through the final design and permitting stages.

e. Vegetation and Wildlife

The proposed project is located in suburban Bucks County and is in a densely developed residential area with heavy traffic demand. Land use/cover within the immediate vicinity of the project area consists of residential and commercial development, public facilities, woodlands, and maintained (i.e., mowed) areas.

Vegetation Identification

Largely due to the extensive cover of developed properties within the project area, a detailed evaluation and vegetative land cover analysis was not considered appropriate for this project. Many of the vegetative communities in the project area were infested with invasive species, such as Amur honeysuckle (*Lonicera maackii*), multiflora rose (*Rosa multiflora*), Japanese wineberry (*Rubus phoenicolasius*), Japanese honeysuckle (*Lonicera japonica*), garlic mustard (*Alliaria petiolata*), lesser celandine (*Ranunculus ficaria*), and Japanese stiltgrass (*Microstegium vimineum*).

Small, wooded lots are present within the project area, specifically at the northern and southern ends of the project area. A larger forested corridor of land is located in the center of the project area, in Middletown Township, and is split by SR 0001 and the service roads. This corridor consists of two (2) parcels that are preserved under a Heritage Conservancy conservation easement with no public access.

Executive Order 13751 requires the FHWA to limit, to the extent practicable, the spread of invasive species. PennDOT Publication 756 provides BMPs to limit the spread of invasive species in the design, construction, and maintenance of highways.

Invertebrate pollinators (e.g., bees, butterflies, and moths) are economically critical to agriculture and ecologically critical to ecosystem structure and diversity. Pollinators use a variety of vegetative habitats in both urban and rural landscapes, including many of the habitats within the project area. Pollinator populations have been in decline for several years, and many state and federal agencies have developed policies to reverse this trend. One such policy is the “Roadside Best Management Practices that Benefit Pollinators” published by FHWA in 2015. In 2017, the Pennsylvania Pollinator Protection Plan (P4) was completed through a collaborative effort of 28 state, national, and private stakeholder organizations and includes general guidelines in considering pollinator habitat development



along roadsides and ROWs. The PennDOT Pollinator Habitat Plan was developed in support of the P4, state and federal actions. It supports the establishment of pollinator habitat, applies vegetation management measures to sustain developed pollinator habitats, protects the species from vehicle/pollinator conflicts, partners with local community organizations through the PennDOT Adopt and Beautify Program, and promotes the importance of pollinators and their habitats in ROWs.

Impacts

The preferred alternative will impact approximately 2.75 acres of wooded areas as a result of the construction of the proposed interchanges. The southern interchange will impact approximately 1.75 acres, and the northern interchange will impact approximately 1.0 acre of wooded areas. Temporary construction easements (TCEs) will be required in the vicinity of the forested conservation corridor to replace the culvert under SR 0001 and to conduct grading for a pipe outfall along West Interchange Road south of SR 0001, as a result trees may be removed for this effort; however, the quantity is unknown at this time. Impacts to trees in the vicinity of the forested corridor are expected to be minimal. The construction of the Preferred Alternative could result in the spread of invasive species and the elimination of plant species that pollinators use for larval hosts and foraging, unless otherwise mitigated.

The No Build Alternative would not impact vegetation, result in the spread of invasive species, nor would it implement strategies to control existing populations.

Mitigation

Over the footprint of the entire project, it is anticipated that approximately three (3) acres of impervious surface will be removed and converted to green space. Trees will also be replanted, if applicable, in the vicinity of the forested conservation corridor. Location of the tree replanting(s) will be determined in coordination with PennDOT and Middletown Township. Orange construction fencing will be installed along the limits of the TCE to prevent additional impacts to the forested conservation corridor.

PennDOT BMPs included in Publication 756, Design Manual Part 2, and Publication 408, Construction Specifications, will be used to mitigate the spread of invasive species. In addition, disturbed earthen surfaces will be promptly seeded to minimize the colonization by invasive species. Wetland mitigation areas, riparian buffers, and stormwater management facilities may have specific invasive species performance standards as conditions of the USACE Section 404, PA DEP Chapter 105, and National Pollution Discharge Elimination System (NPDES) permits that will be implemented.



Per FHWA's *Guidance on Pollinator Species, Pollinators and Roadsides: Best Management Practices for Managers and Decision Makers*, several BMPs can be implemented that will be beneficial for pollinator species. Strategic reduced mowing, consideration of the timing of mowing, and conservation mowing contracts, as well as spot-spraying of herbicides vs. broadcast spraying or pellet dispersal, will be recommended in future roadway maintenance plans to promote pollinators. In addition, native seed mixes used for roadside planting, stormwater facilities, wetland mitigation areas, and riparian buffers will be augmented with plant species that provide forage and larval host species used by pollinators.

Wildlife Identification

Based on field views of the project area, wildlife in the project area could include woodland and aquatic creatures and urban/suburban wildlife, such as deer, fox, chipmunks, raccoons, skunks, opossum, squirrels, mice, turtles, snakes, etc. It is expected the various species find shelter, food, and move throughout the project area within the suburban environment and large open-canopy and forested wetland complex of the conservation easement, located in the center of the project area. Due to the extensive cover of developed properties within the project area, a detailed evaluation of project area wildlife species was not considered appropriate for this project. Additionally, no migratory birds or bird habitat were identified in the project area (based on review of the project by USFWS and PGC, and review of the Pennsylvania Conservation Explorer Mapping website).

Based upon a review of the PGC and the PFBC Wildlife Action Plan Mapping tool, (wildlifeactionmap.pa.gov), "species of greatest conservation need" are present within Bucks County, and include various mammals, birds, reptiles, amphibians, and invertebrates. Since these species are identified by the state as a conservation need, it is assumed they could be considered target species per PennDOT Publication 13M (DM-2), Chapter 21, Wildlife Crossings. A target species is defined as a species that has been identified as the subject of conservation or monitoring actions. Potential target species will continue to be evaluated during final design in order to avoid and minimize impacts to these species.

Impacts

The preferred alternative will impact approximately 2.75 acres of wooded areas as a result of the construction of the proposed interchanges and trees may be removed in the vicinity of the forested conservation area as noted above. However, the construction of the Preferred Alternative is unlikely to have an impact on wildlife movement or habitat due to the extensive cover of developed properties within the project area and the vast majority of the



construction being on existing alignment with present roadways and not altering existing land uses.

The No Build Alternative would not result in impacts to project area wildlife.

Mitigation

The proposed action is unlikely to impact wildlife or wildlife movement throughout the project area; however, PennDOT recognizes the importance of reducing impacts to wildlife and improving, or at the very least, maintaining habitat connectivity, when applicable. Wildlife passages will be considered and further analyzed in final design. Additionally, PennDOT understands the importance of migratory bird and migratory bird habitat protection. The preferred alternative is designed to minimize land and vegetation disturbance, avoid fragmentation, and avoid or minimize impacts to the forested corridor of land located in the center of the project area. If trees are removed within the vicinity of the forested corridor, they will be replanted (if applicable). Location of the tree replanting(s) will be determined in coordination with PennDOT and Middletown Township.

f. Public Lands (Parks, Recreation Areas, State Game Lands, Section 6(f), etc.)

Methodology

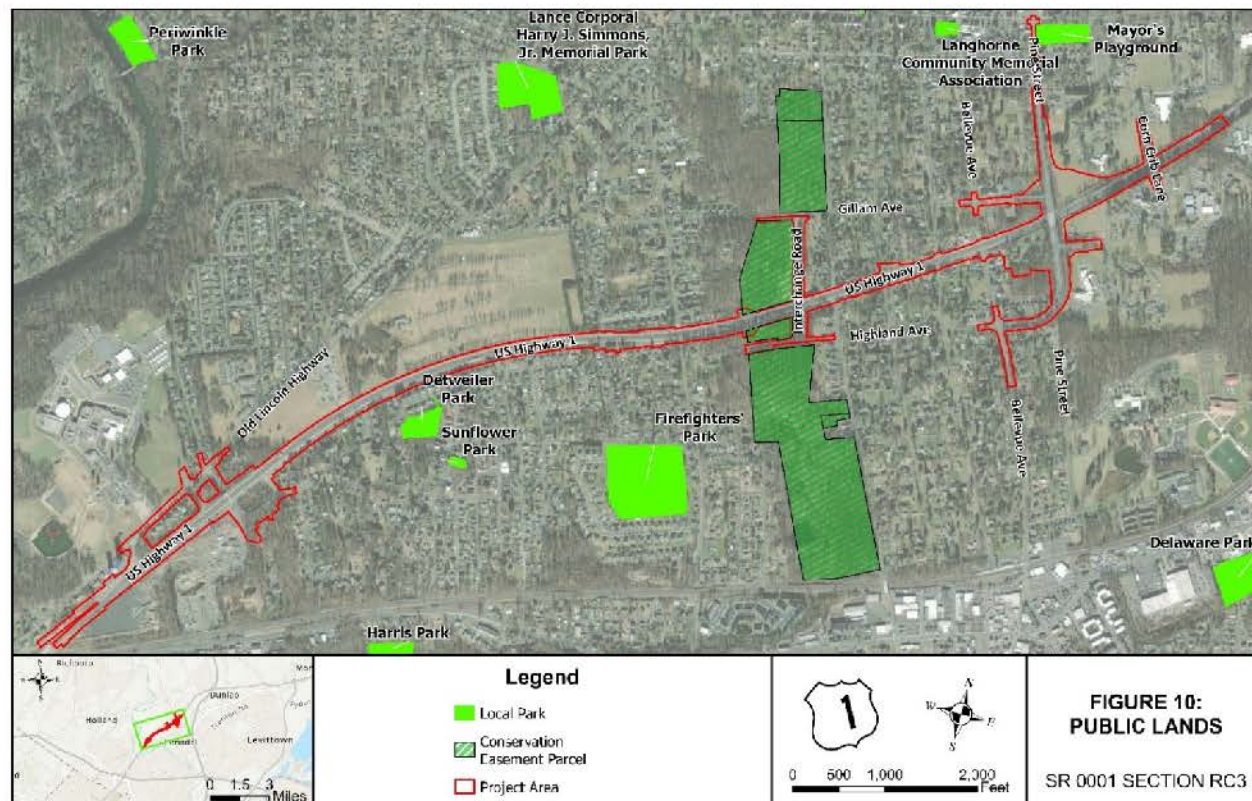
Data for public lands present within the project corridor was gathered from secondary sources, including aerial photography; PennDOT One Map; the Bucks County, Middletown Township, Langhorne Borough and Langhorne Manor Borough websites; the 2020 Middletown Township and the 2014 Langhorne Borough Comprehensive Plans; and site reconnaissance. Public lands include parks and recreation areas, forest and gamelands, wilderness and natural wild areas, and National Natural Landmarks. Additionally, data was gathered on presence of properties afforded protection under federal and/or state recreation grants.

Existing Conditions

Public lands within the project corridor include one local park, the Borough of Langhorne's Mayor's Playground, and one natural resource conservation corridor. Other parks and recreation areas exist within Langhorne Borough, Langhorne Manor Borough, and Middletown Township, including, but not limited to Detweiler Park, Sunflower Park, Firefighter's Park, and the Catawissa Nature Preserve; however, none are located within the project limits (**Figure 10**). No properties funded by federal and/or state recreation grants (i.e., subject to Section 6(f) of the Land and Water Conservation Act of 1965, PA Project 70 Land Acquisition and Borrowing Act, etc.) are present within the project corridor.



Figure 10: Public Lands



The Mayor's Playground, owned, operated, and maintained by Langhorne Borough, is located within the project area at the southeast corner of Pine Street (SR 0413) and E. Maple Avenue (SR 0213). This resource is approximately 3.5 acres and contains a playground, picnic facilities, several recreation fields, a basketball court, benches, and a paved walking path along the perimeter of the site. The fields are often utilized by local sports associations. This resource is also afforded protection under Section 4(f) of the US DOT Act of 1966. Please refer to **Section 4.0, Section 4(f) Resources** for additional information.

A forested corridor of land is located in the center of the project area, in Middletown Township, and is split by SR 0001 and the service roads. This corridor consists of two (2) parcels that are preserved under a Heritage Conservancy conservation easement with no public access. The northern parcel is 11 acres, bound by SR 0001 and the service roads to the south, Gilliam Road to the north, West Interchange Road to the east, and forested and residential land to the west. The second parcel is located immediately south of SR 0001 and is two (2) acres, bound by SR 0001 and the service roads to the north, West Highland Street to the south, West Interchange Road to the east and forested and residential land to the west. These parcels are part of a larger conservation corridor (totaling approximately 100-



acres), which extends north and south beyond the identified parcels. Based on coordination with officials from Middletown Township these parcels are owned, managed, and maintained through a conservancy lien (ensuring the land remains undeveloped) with the Township. The parcels are closed access and are not open to the public for recreational use and do not qualify as a park or recreation area. Coordination with FHWA and PennDOT during project scoping determined this resource is not afforded protection under Section 4(f).

Impacts

No temporary or permanent impacts to The Mayor's Playground will occur as a result of the Preferred Alternative. All proposed work within the vicinity of the park will occur within the existing transportation right of way (ROW). Access to the park will not be interrupted and the park will remain open throughout construction.

Temporary construction easements (TCEs) will be required in the vicinity of the forested conservation corridor to replace the culvert under SR 0001 and to conduct grading for a pipe outfall along West Interchange Road south of SR 0001. As a result, trees may be removed for this effort; however, the quantity is unknown at this time. Impacts to trees in the vicinity of the forested corridor are expected to be minimal.

The No Build Alternative would not result in impacts to project area public lands.

Mitigation

Project plans/construction specifications will include strict directives to restrict project staging within the vicinity of The Mayor's Playground to prevent any unintentional impacts to the park. Additionally, trees will be replanted, if applicable, in the vicinity of the forested conservation corridor. Location of the tree replanting(s) will be determined in coordination with PennDOT and Middletown Township. Orange construction fencing will be installed along the limits of the TCE to prevent additional impacts.

g. Hazardous or Residual Waste Sites

Methodology

A Phase I Environmental Site Assessment (ESA) was originally completed in October 2021 to identify potential hazardous or residual waste sites within the project corridor in accordance with PennDOT Publication 281: The Transportation Project Development Process: Waste Site Evaluation Procedures Handbook, August 2018. The original Phase I ESA did not include a PA DEP file review as the PA DEP offices were closed due to the COVID-19 pandemic. An addendum was prepared in September 2022 to include a file review. Phase



I ESA Recommendations Review was completed in July 2025 due to changes in the limits of disturbance (LOD) since the completion of the Phase I ESA and Phase I ESA Addendum. The Phase I ESA Recommendations Review identified sixteen (16) sites that may require additional review during a Phase II/III ESA in final design. For additional information, please refer to the aforementioned documents located in the project's technical file.

Existing Conditions

Twenty (20) properties were investigated during the Phase I ESA. Four (4) of the 20 properties were given a recommendation of No Further Action (NFA). One (1) of the 16 remaining properties is "recommended" to conduct a Phase II/Phase III ESA, while the remaining 15 properties "may be required" to conduct Phase II/Phase III ESAs.

Additionally, the potential exists for the presence of asbestos containing material (ACM) and lead-based paint (LBP) in connection with the existing structures which are proposed for demolition. A description of ROW and displacements can be found in **Section 3.0: Right of Way and Displacements**.

Impacts

The Preferred Alternative would impact hazardous waste sites and would require further studies in final design. **Table 9** summarizes the Phase I ESA recommendations and **Figure 11** depicts the location and recommendation for each site.

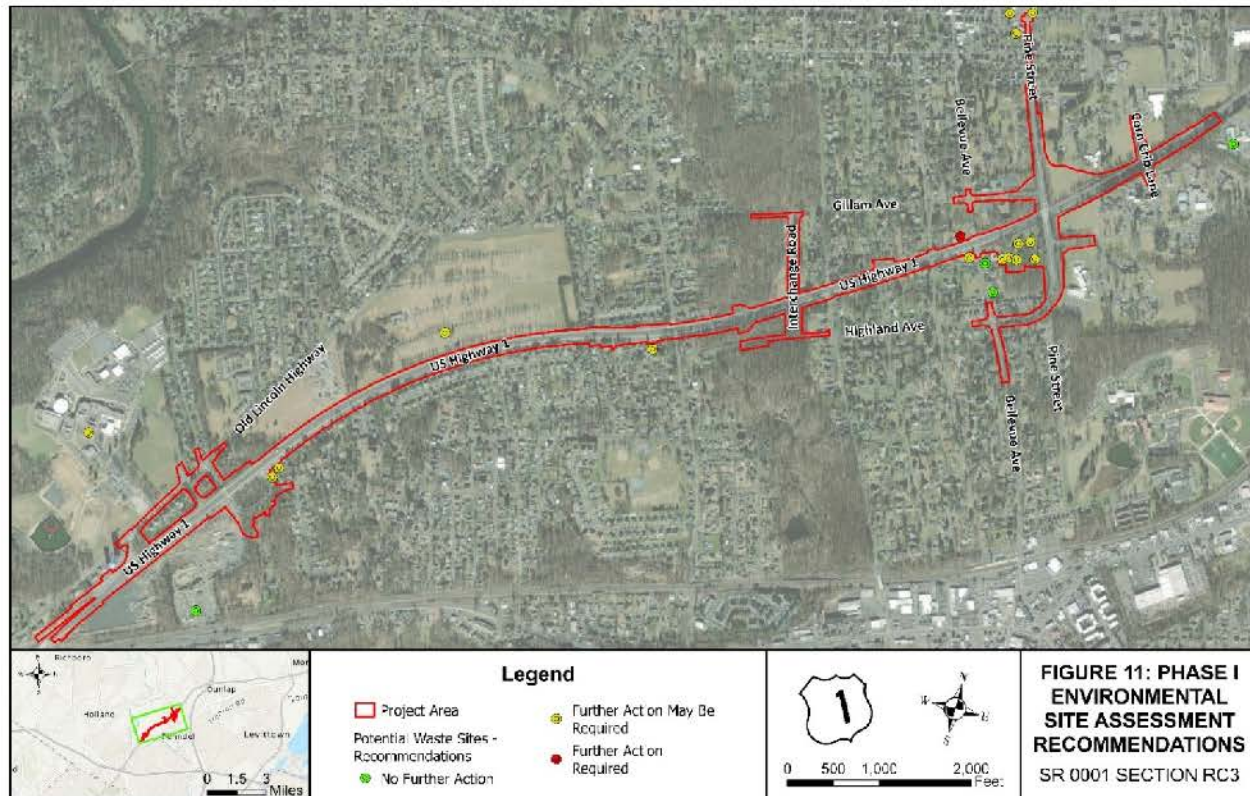
Table 9: Phase I Environmental Site Assessment Recommendations

Waste Site ID#	Site/Location	Recommendations
1	1868 Super Highway – Delaware Quarries Inc. Langhorne Stone	No Further Action
2	1732 Super Highway – Flooring Decor	Confirm excavation depths and property impacts. Phase II/III ESA activities may be required.
3	1732 Super Highway (Adjacent)/Park Avenue – Former Gas Station	Confirm excavation depths and property impacts. Phase II/III ESA activities may be required.
4	1215 Super Highway – Our Lady of Grace Cemetery	Confirm excavation depths and property impacts. Phase II/III ESA activities may be required.
5	452 S. Bellevue Avenue – Picernos Conoco Gas Station	Phase II/III ESA activities are recommended.
6	507 S. Bellevue Avenue – Foster Mower Services, Inc.	No Further Action

Waste Site ID#	Site/Location	Recommendations
7	734 North Street – Historic auto repair shop	Confirm excavation depths and property impacts. Phase II/III ESA activities may be required.
8	531 S. Bellevue Avenue – Residence	No Further Action
9	136 Central Avenue – Residence	Confirm excavation depths and property impacts. Phase II/III ESA activities may be required.
10	140 Central Avenue – Residence	Confirm excavation depths and property impacts. Phase II/III ESA activities may be required.
11	141 Central Avenue – Residence	Confirm excavation depths and property impacts. Phase II/III ESA activities may be required.
12	142 Central Avenue – Residence	Confirm excavation depths and property impacts. Phase II/III ESA activities may be required.
13	143 Central Avenue – Residence	Confirm excavation depths and property impacts. Phase II/III ESA activities may be required.
14	514 S. Pine Street –Residence	Confirm excavation depths and property impacts. Phase II/III ESA activities may be required.
15	500 S. Bellevue Avenue	Confirm excavation depths and property impacts. Phase II/III ESA activities may be required.
16	40 Martin Gross Drive –Woods School	No Further Action
17	2001 Old Lincoln Highway – Neshaminy High School	Confirm excavation depths and property impacts. Phase II/III ESA activities may be required.
18	123 North Pine Street - Exxon	Confirm excavation depths and property impacts. Phase II/III ESA activities may be required.
19	110 North Pine Street – Texaco 100926	Confirm excavation depths and property impacts. Phase II/III ESA activities may be required.
20	152 Maple Street – Lukoil 69709	Confirm excavation depths and property impacts. Phase II/III ESA activities may be required.



Figure 11: Phase I Environmental Site Assessment Recommendations



The No Build Alternative would have no impact on hazardous waste sites. There would also be no net benefit with this alternative as there would be no mitigation of hazardous waste sites.

Mitigation

Interiors of structures slated for demolition will be investigated for drums, home heating oil tanks, and miscellaneous waste items prior to demolition. Additionally, an LBP and ACM survey will be conducted for impacted structures believed to pre-date 1978. A Phase II/III ESA will be completed in final design to further investigate the identified potential hazardous waste sites to determine mitigation. Recommendations from the Phase II/III ESA will be included in design plans/specifications.

The Preferred Alternative would result in a net benefit to hazardous and residual waste sites by remediating areas of known contamination. Detailed information for the potential waste sites is included in the *Addendum to Phase I Environmental Site Assessment*, dated September 2022, located in the project technical file.



h. Air Quality

Methodology & Existing Conditions

The proposed SR 0001 RC3 project was assessed for potential air quality impacts and conformity in accordance with guidelines outlined in PennDOT's Pub 321, *Project Level Air Quality Handbook (October 2017)*. In particular, the U.S. National Ambient Air Quality Standards (NAAQS) were assessed. The Environmental Protection Agency (EPA) established the NAAQS under authority of the Clean Air Act (42 U.S.C. 7401 et seq) and presents them as standards for harmful pollutants that are applied to outdoor air throughout the country. The EPA has set NAAQS standards for the following pollutants: particulate matter (PM₁₀), fine particulate matter (PM_{2.5}), carbon monoxide (CO), and ozone (O₃). Additional information regarding air quality pollutants can be found at <https://www.epa.gov/criteria-air-pollutants/naaqs-table>. Mobile Source Air Toxics (MSATs) are also included as air quality pollutants.

The level of analysis required for specific criteria pollutants is based on several factors, including the air quality attainment status of the area in which the project is located, the magnitude and scope of the proposed project, future traffic volumes in the corridor, the overall efficiency of existing and future signalized intersections in the project corridor, and the presence of air quality sensitive receptors adjacent to the project corridor. In consideration of these factors, air quality has been assessed qualitatively for this project.

Currently, Bucks County is in attainment for all criteria pollutants, with the exception of Ozone and PM 2.5. Bucks County is classified as a non-attainment area relative to the 2008 and 2015 Ozone standards. Bucks County has been designated as a maintenance area relative to the 2006 PM 2.5 standard. Pennsylvania non-attainment and maintenance areas are required to undergo regional macro-scale modeling, often called regional conformity analysis. A regional conformity analysis is ultimately a way to ensure that federal funding and approval are only given to those transportation activities that are consistent with air quality goals established by a State Implementation Plan (SIP).

The SR 0001 RC3 project is included in the Delaware Valley Regional Planning Commission's (DVRPC) 2025-2028 Transportation Improvement Program (TIP) and was found to meet applicable Air Quality Conformity requirements and conforms to the SIP. Inclusion within the TIP indicates that the project has been considered and included as part of an approved Regional Conformity Analysis. The 2025-2028 TIP was adopted by the DVRPC on July 25, 2024, and is in full force and effect as of that date. Additional details can be found in the *Air Quality Technical Memorandum*, dated October 2025, located in the project's technical file.



Impacts

The Preferred Alternative impact findings include the following:

Carbon Monoxide (CO)

The proposed project does not include or directly affect any roadways for which the 20-year forecasted daily traffic volume will exceed the established threshold level of 125,000 vehicles per day. Therefore, the project will not have an adverse impact on air quality as a result of CO emissions.

Particulate Matter (PM_{2.5} and PM₁₀) and Ozone

Bucks County has been designated as a maintenance area for PM_{2.5} (i.e., this area meets the air quality standards of NAAQS but has a plan in place to maintain compliance). The project is not exempt; however, it is not considered to be of air quality concern according to the thresholds provided in PennDOT Pub 321. These thresholds were agreed upon by an interagency consultation group considering 40 CFR 93.123(b)(1)(i-v) and **Appendix B** of the November 2015 EPA Guidance (EPA-420-B-15-084) entitled “Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM_{2.5} and PM₁₀ Nonattainment and Maintenance Areas.” Because the SR 0001 RC3 project is included in the DVRPC 2025-2028 TIP and was found to meet applicable Air Quality Conformity requirements and conforms to the SIP, detailed ozone studies were not required.

Mobile Source Air Toxics (MSATs)

A qualitative analysis provides a basis for identifying and comparing differences among MSAT emissions. The qualitative analysis presented below is derived in part from a study conducted by FHWA entitled “A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives”, found at: https://www.fhwa.dot.gov/environment/air_quality/air_toxics/research_and_analysis/methodology/methodology00.cfm

For the Preferred Alternative, the amount of MSAT emitted would be proportional to the vehicle miles traveled (VMT). Since the VMT estimated for the No Build Alternative is the same as the Preferred Alternative, higher levels of MSAT emission are not expected from the Preferred Alternative compared to the No Build. Also, regardless of the alternative chosen, emissions will likely be lower than present levels in the design year as a result of the EPA national control programs that are projected to reduce annual MSAT emissions by over 76 percent from 2020 to 2060 (*Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents*, FHWA, January 2023). Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures.



However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the project area are likely to be lower in the future in virtually all locations.

Under the Preferred Alternative there may be localized areas where VMT would increase, and other areas where VMT would decrease. Therefore, it is possible that localized increases and decreases in MSAT emissions may occur. The localized increases in MSAT emissions would likely be most pronounced along the new roadway sections that would be built at the proposed SR 0001 northbound off-ramp at Highland Avenue and the proposed partial cloverleaf interchange at SR 0001 and Pine Street (SR 0413), with associated road tie-in and turning lane improvements. However, even if these increases do occur, they will also be substantially reduced in the future due to the implementation of EPA's vehicle and fuel regulations.

In sum, under the Preferred Alternative in the design year, it is expected there would be reduced MSAT emissions in the immediate area of the project when compared to the No Build Alternative due to both the reduced VMT associated with more direct routing and EPA's MSAT reduction programs.

As a result of increased design year traffic volumes and increased congestion/decreased traffic speed, the No Build Alternative would be expected to negatively impact air quality.

Mitigation

The Preferred Alternative will not have an adverse impact on air quality as a result of CO emissions. The level of MSAT emissions for the Preferred Alternative may show localized increases in one portion of the project (along SR 0001 northbound off ramp at Highland Ave and proposal partial cloverleaf interchange at SR 0001 and Pine Street [SR 0413]) and localized decreases in another portion of the project where there are reductions in congestion. Overall, future MSAT emissions on a regional level are anticipated to be substantially reduced compared to current levels due to EPA's vehicle and fuel regulations and coupled with future fleet turnover in the region.

Construction of the Preferred Alternative would create short-term air pollutant emissions from equipment exhaust, vehicle exhaust from travel to and from the project site, and fugitive dust from soil disturbance. However, air quality impacts resulting from roadway construction activities are temporary and typically not a concern provided that contractors utilize appropriate control measures.

In Pennsylvania, contractors must perform all construction activities in accordance with 25 Pa. Code Article III (Chapters 121-145, Air Resources) to ensure adequate control measures



are in place. The use of approved dust palliatives, such as calcium chloride or water will be required to control fugitive dust emissions. Methods for reducing impacts to existing air quality may also include covering stockpiles during storage or transport, and restoration of vegetation as quickly as possible to prevent windblown dust. It is also important to provide advance notice and warning signs to communities that may be impacted by fugitive dust emissions.

Based on air quality analysis and guidance from state and federal agencies, no adverse impact on air quality is anticipated within the project area as a result of the Preferred Alternative. Therefore, no mitigation measures are required.

i. Noise

Methodology

A Preliminary Technical Noise Report was completed using the methodology described in PennDOT Publication No. 24, Project Level Highway Traffic Noise Handbook (November 2015) and FHWA criteria as described in 23 CFR Part 772. Per 23 CFR Part 772, this project is classified as a Type 1 project, requiring noise analysis, as it includes the reconstruction and widening of an existing roadway, along with the development of two new interchanges at either end of the corridor. The objective of the Preliminary Technical Noise Report was to provide an overview of the existing and future noise environment and predict the potential effects the project would have on the noise environment. The *Preliminary Technical Noise Report*, dated October 2022, and the *Preliminary Engineering Noise Report Addendum Memo*, dated April 2025, are located in the project technical file.

The project corridor was evaluated to identify noise sensitive land uses per the FHWA/PennDOT defined land use activity categories (**Table 10**) listed in 23 CFR, Part 772.

Table 10: Noise Abatement Criteria

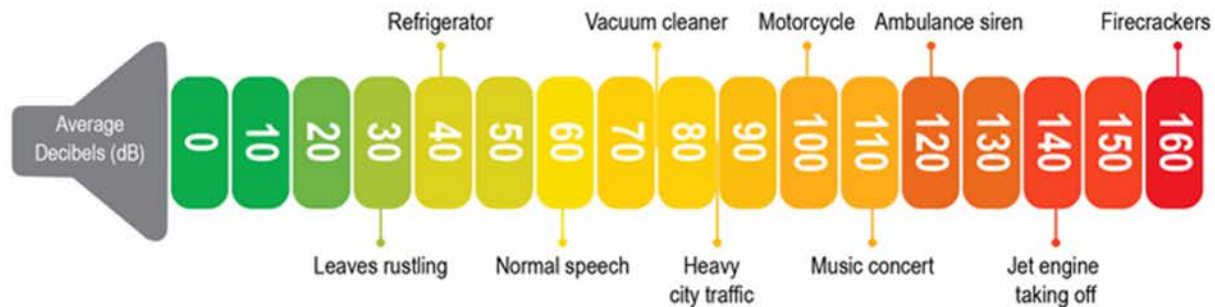
Activity Category	LEQ(h)*	Description of Activity Category
A	57 (Exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B ²	67 (Exterior)	Residential

Activity Category	LEQ(h)*	Description of Activity Category
C ²	67 (Exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52 (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E ²	72 (Exterior)	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A, B, or C.
F	--	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	--	Undeveloped lands that are not permitted.
¹ Impact thresholds should not be used as design standards for noise abatement purposes. ² Includes undeveloped lands permitted for this activity category *LEQ(h)1 – Equivalent Continuous Sound Level measured over the duration of an hour. Source: 23 C.F.R. § 772		

Noise-sensitive land uses identified within the project area include Category B (residential) and Category C (daycare centers, cemeteries, hospitals, playgrounds, etc.) land uses. Categories B and C have an acceptable exterior base noise level of 67 decibels (db(A)). An example of these noise levels would be a normal conversation at three (3) feet (60 db(A)) or a vacuum cleaner from a distance of 10 feet (70 dB(A)). See **Figure 12** for a visual representation of the average decibels and representative real-world examples.



Figure 12: Noise Levels of Common Sounds



The noise analysis involved the measurement of the existing noise levels and noise model validation of existing conditions at representative noise-sensitive land uses. It also included noise modeling of existing (2019) and design year (2050) noise conditions (No Build and Build) and design year noise impact assessment and noise abatement evaluations in areas, where warranted. All noise modeling was conducted using FHWA's Traffic Noise Model v2.5 (TNM®), hereafter referred to as simply "TNM". Details of the noise analysis are provided in the Preliminary Technical Noise Report (October 2022) and the Preliminary Engineering Noise Report Addendum Memo (April 2025). A summary of the project's noise analysis is provided below.

Existing Conditions

The project area was divided into nine (9) Noise Study Areas (NSAs). NSAs are groupings of receptor sites that, by location, form distinct communities within the project area and contain receptors with similar exposures to noise. These areas are used to evaluate traffic noise impacts and potential noise abatement measures for communities as a whole and to assess the feasibility and reasonableness of possible noise abatement measures.

All predictive modeling utilized the validated base model with modifications to reflect worst-case conditions. The Existing and No Build Alternative noise levels were predicted by incorporating worst-case 2019 and 2050 No Build traffic volumes, composition, and speeds respectively; no other alterations were made to the validated model environment. The 2050 Build Alternative noise levels were predicted by including proposed changes in the facility design, along with future traffic data specific to the Preferred Alternative. The Preferred Alternative model was then used to identify potential noise impacts that require noise abatement consideration. Noise abatement measures, such as barriers, are designed to reduce noise levels in impacted areas; however, noise abatement measures must be determined to be warranted, feasible, and reasonable, according to federal and state guidance. See **Figure 13** for an explanation of warranted, feasible, and reasonable.



Figure 13: Explanation of Warranted, Feasible, and Reasonable for Noise Abatement Consideration

Warranted	Feasible	Reasonable
If noise levels meet or exceed PennDOT/FHWA impact thresholds, noise abatement consideration is warranted and abatement measures to address impacts will be evaluated for feasibility and/or reasonableness.	To be considered feasible, abatement measures (barriers) should be able to achieve a 5 dBA reduction at the majority of the impacted receptors, physically be able to be constructed at the identified location while not causing an issue with safety, not restrict vehicular or pedestrian access, provide for maintenance and inspection of the abatement measure, and allow utilities and drainage to adequately function.	Noise abatement measures (barriers) must be cost-effective, achieve noise reduction goals, and be receptive to the affected property owners. For PennDOT projects, cost-effectiveness is met if the square footage of a barrier is 2,000 square feet per benefited receptor. Noise reduction goals are met if one benefited receptor receives a noise reduction of 7 dBA and the proposed noise abatement measure is acceptable by a majority of the affected property owners.

Noise impacts are design year build condition noise levels that approach or exceed the noise abatement criteria for the future build scenario or create a substantial noise increase over existing noise levels. PennDOT has defined “approaches” for noise levels as one (1) dBA below the noise-sensitive land use activity dBA standard and has defined an increase of 10 dBA over existing noise levels as a “substantial noise increase”. For this project, Categories B and C have a base acceptable noise level of 66 dB(A).

Within the nine (9) NSAs, existing noise levels were monitored or predicted at 400 receptor (receiver) locations or areas where frequent human outdoor activity occurs (31 monitored sites and 369 “modeled” sites). The No Build Alternative noise levels were predicted from the 2050 No Build traffic data. The Preferred Alternative noise levels were predicted based on the validated model, which was adjusted for future traffic volumes (2050), composition, and speeds specific to the Preferred Alternative.

An evaluation of future design year 2050 Build Alternative traffic noise levels on undeveloped lands was performed to assist local officials with future planning efforts. The 71 dBA and 66



dBA impact contours are estimated to occur at distances of 65 feet and 175 feet respectively from the edge of pavement at undeveloped parcels along the project corridor.

Impacts

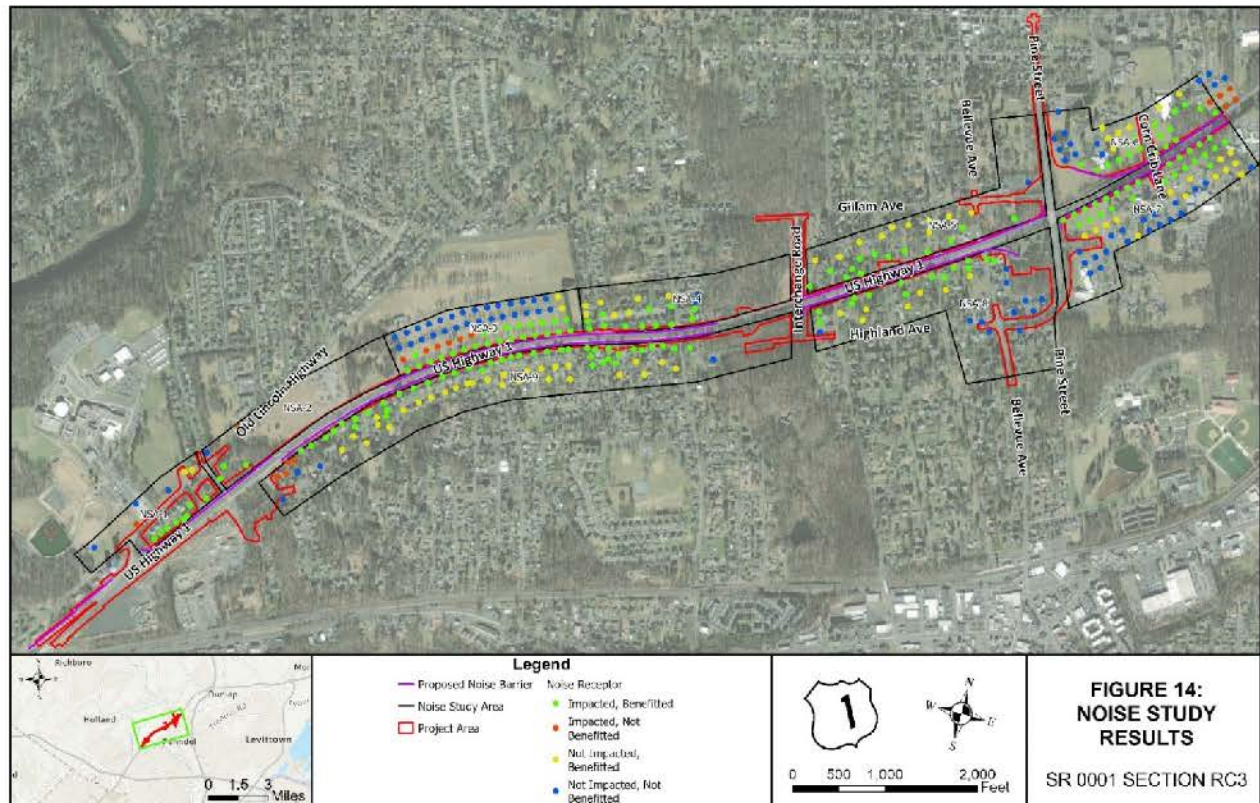
The existing year condition, the future design year 2050 No Build Alternative condition, and the future design year 2050 Build Alternative condition were modeled, documented, and analyzed to determine the effects of the project at each of the nine (9) NSAs. **Table 11** contains the Impact Noise Level Summary (shown visually in **Figure 14**) and groups the impacts by NSA and provides ranges of noise level conditions.

Table 11: Impact Noise Level Summary

NSA	Land Use Category	NAC Impact Level*	2019 Existing Worst-Case Traffic Noise Level [dB(A)]	2050 No Build Maximum Predicted Noise Level [dB(A)]	2050 Build Maximum Predicted Noise Level [dB(A)]
NSA 1	B/C	66	75	76	76
NSA 2	B/C	66	67	68	69
NSA 3	C	66	77	77	76
NSA 4	B	66	75	75	73
NSA 5	B/C	66	75	75	74
NSA 6	B/C	66	76	76	77
NSA 7	B/C	66	76	75	78
NSA 8	B	66	74	75	74
NSA 9	B/C	66	77	77	76
* In accordance with 23 CFR 772.11(e), highway agencies shall use an approach level at least 1 dB(A) less than the Noise Abatement Criteria for Activity Categories A to E listed in Table 1 of 23 CFR 772.					



Figure 14: Noise Study Results



Currently, all NSAs have at least one (1) receptor that is at or above the noise abatement criteria (NAC). In the future Preferred Alternative, a total of 187 receptors have traffic noise levels that are equal to or exceeding the NAC [66dB(A)]. All NSAs have 2019 existing conditions, 2050 No Build Alternative, and 2050 Build Alternative noise levels that exceed the NAC criteria; mitigation appears to be feasible from a constructability standpoint in that there are no utility or drainage conflicts, or other physical limitations to building noise walls in the proposed locations. Barriers were found to be warranted, feasible, and reasonable in stretches of all NSAs.

The No Build will not have a substantial increase in noise levels and therefore will not have an impact on project area sensitive receptors.

Mitigation

Given the presence of impacts in the 2019 existing conditions, the 2050 No Build alternative, and the Preferred Alternative, abatement consideration is warranted in all nine (9) NSAs. Noise abatement measures (vertical noise barriers) were evaluated and determined to be



feasible and reasonable in portions of all nine (9) NSAs. The following summarizes the NSA community benefited, and the type of barrier considered.

- NSA 1 consists of the residential areas and Neshaminy High School on the north side of SR 0001 bounded by the RC3 southern limit and Fairhill / Highland Avenue. There are nine (9) receptors where the predicted future 2050 Build Condition levels are at or above 66 dB(A). Predicted levels range from 61 dB(A) to 76 dB(A), with a maximum increase of four (4) dB(A) from the existing worst-case condition.
- NSA 2 consists of the residential area and undeveloped cemetery land on the north side of SR 0001 bounded by the area north of Highland Avenue and the active portion of Our Lady of Grace Cemetery. There are four (4) receptors where the predicted future 2050 Build Condition levels are at or above 66 dB(A). Predicted levels range from 64 dB(A) to 69 dB(A), with a maximum increase of two (2) dB(A) from the existing worst-case condition.
 - A single noise barrier was evaluated for both NSA 1 and 2. A 1,780-foot-long, 16-foot-tall (average) (28,649 ft²) noise barrier provides the required noise reduction of $\geq$ five (5) dB(A) for 74% of impacted receptors in NSA 1 and 2; therefore, meeting the feasibility criteria in this area. This noise barrier also meets the design goal of providing a seven (7) dB(A) noise reduction for at least one (1) benefited receptor (BR). This optimized noise barrier benefits a total of 15 residential units, equating to 1,910 ft²/BR; this is less than the 2,000 ft²/BR reasonableness threshold specified by PennDOT guidance, resulting in a noise barrier that is feasible and reasonable.
- NSA 3 consists of the active portion of the cemetery property on the north side of SR 0001 bounded by Old Lincoln Highway and the cemetery property lines. There are 33 receptors where the predicted future 2050 Build Condition levels are at or above 66 dB(A). Predicted levels range from 61 dB(A) to 76 dB(A), with no increases from the existing worst-case condition.
- NSA 4 consists of the residential area on the north side of SR 0001 bounded by the cemetery and W. Interchange Road. There are twelve receptors where the predicted future 2050 Build Condition levels are at or above 66 dB(A). Predicted levels range from 59 dB(A) to 73 dB(A), with no increases from the existing worst-case condition.
 - A single noise barrier was evaluated for both NSA 3 and 4. A 3,816-foot-long, 12-foot-tall (average) (46,657 ft²) noise barrier provides the required noise reduction of $\geq$ five (5) dB(A) for 99% of the impacted receptors within NSA 3 and 4; therefore, meeting the feasibility criteria in this area. This noise barrier



also meets the design goal of providing a seven (7) dB(A) noise reduction for at least one (1) benefited receptor. This optimized noise barrier benefits a total of 26.49 residential units, equating to 1,762 ft²/BR; resulting in a noise barrier that is feasible and reasonable.

- NSA 5 consists of the mixed-use area on the north side of SR 0001 bounded by W. Interchange Road and S. Pine Street. There are 14 receptors where the predicted future 2050 Build Condition level is at or above 66 dB(A). Predicted levels range from 55 dB(A) to 74 dB(A), with a maximum increase of 3 dB(A) from the existing worst-case condition. A 2,730-foot-long, 13-foot-tall (average) (34,717 ft²) noise barrier provides the required noise reduction of $\geq$ five (5) dB(A) for 100% of the impacted receptors within NSA 5; therefore, meeting the feasibility criteria in this area. This noise barrier also meets the design goal of providing a seven (7) dB(A) noise reduction for at least one (1) benefited receptor. This optimized noise barrier benefits a total of 25 residential units, equating to 1,389 ft²/BR; resulting in a noise barrier that is feasible and reasonable.
- NSA 6 consists of the Woods Services School and the Langhorne Branch of the Bucks County Free Public Library on the north side of SR 0001 bounded by S. Pine Street and Flowers Avenue. There are 25 receptors where the predicted future 2050 Build Condition level is at or above 66 dB(A). Predicted levels range from 51 dB(A) to 77 dB(A), with a maximum increase of five (5) dB(A) from the existing worst-case condition. A 1,732-foot-long, 16-foot-tall (average) (27,417 ft²) noise barrier provides the required noise reduction of $\geq$ five (5) dB(A) for 86% of the impacted receptors within NSA 6; therefore, meeting the feasibility criteria in this area. This noise barrier also meets the design goal of providing a seven (7) dB(A) noise reduction for at least one (1) benefited receptor. This optimized noise barrier benefits a total of 21.89 residential units, equating to 1,253 ft²/BR; resulting in a noise barrier that is feasible and reasonable.
- NSA 7 consists of the Woods School on the south side of SR 0001 bounded by Pine Street (SR 0413) and the northern project limits. Please note that some gridded receptors were removed from areas that are not used for frequent outdoor use or are displaced in the Build Condition, so receptor numbers may be non-sequential. There are 31 receptors where the predicted future 2050 Build Condition level is at or above 66 dB(A). Predicted levels range from 54 dB(A) to 78 dB(A), with a maximum increase of five (5) dB(A) from the existing worst-case condition. A 2,331-foot-long, 16-foot-tall (average) (37,300 ft²) noise barrier provides the required noise reduction of $\geq$ five (5)



dB(A) for 100% of the impacted receptors within NSA 7; therefore, meeting the feasibility criteria in this area. This noise barrier also meets the design goal of providing a seven (7) dB(A) noise reduction for at least one (1) benefited receptor. This optimized noise barrier benefits a total of 25.09 residential units, equating to 1,487 ft²/BR; resulting in a noise barrier that is feasible and reasonable.

- NSA 8 consists of the residential area on the south side of SR 0001 bounded by Pine Street (SR 0413) and West Interchange Road. There are 14 receptors where the predicted future 2050 Build Condition level is at or above 66 dB(A). Predicted levels range from 51 dB(A) to 74 dB(A), with a maximum increase of three (3) dB(A) from the existing worst-case condition. A 2,364-foot-long, 13.74-foot-tall (average) (32,469 ft²) noise barrier provides the required noise reduction of $\geq$ five (5) dB(A) for 100% of the impacted receptors within NSA 5; therefore, meeting the feasibility criteria in this area. This noise barrier also meets the design goal of providing a seven (7) dB(A) noise reduction for at least one (1) benefited receptor. This optimized noise barrier benefits a total of 25 residential units, equating to 1,299 ft²/BR; resulting in a noise barrier that is feasible and reasonable.
- NSA 9 consists of the residential and mixed-use area on the south side of SR 0001 bounded by West Interchange Road and Park Ave. There are 45 receptors where the predicted future 2050 Build Condition level is at or above 66 dB(A). Predicted levels range from 56 dB(A) to 76 dB(A), with a maximum increase of one (1) dB(A) from the existing worst-case condition. A 4,968-foot-long, 14.23-foot-tall (average) (70,704 ft²) noise barrier provides the required noise reduction of $\geq$ five (5) dB(A) for 93% of the impacted receptors within NSA 5; therefore, meeting the feasibility criteria in this area. This noise barrier also meets the design goal of providing a seven (7) dB(A) noise reduction for at least one (1) benefited receptor. This optimized noise barrier benefits a total of 120 residential units, equating to 589 ft²/BR; resulting in a noise barrier that is feasible and reasonable.

Figure 14 shows the locations of the anticipated barriers and the NSA communities benefited. **Table 12** provides a summary of the noise barrier analysis for the Preferred Alternative.



Table 12: Preferred Alternative Preliminary Sound Barrier Analysis Summary

NSA	# of Impacted ¹ Equivalent Receptor Units (ERU) ²	Total # of Benefited ERU	Noise Barrier Length (ft)	Noise Barrier Height (ft)	Noise Barrier Area (ft ²)	Square Footage per Benefited Receptor (sf)	Feasible/ Reasonable
NSA 1/2	19	15	1,780	13'-18'	28,649	1,910	Yes/Yes
NSA 3/4	16.56	26.49	3,816	10'-14'	46,657	1,762	Yes/Yes
NSA 5	14	25	2,730	9'-14'	34,717	1,389	Yes/Yes
NSA 6	17.26	21.89	1,732	14'-16'	27,417	1,253	Yes/Yes
NSA 7	16.51	25.09	2,331	16'	37,300	1,487	Yes/Yes
NSA 8	15	24	2,364	11'-14'	32,469	1,299	Yes/Yes
NSA 9	70	120	4,968	14'-15'	70,704	589	Yes/Yes
¹ Impacted receptors are those that warrant the investigation of noise abatement. This occurs where the predicted noise levels meet any of the following PennDOT Criteria: Predicted Highway Traffic Noise levels approach or exceed Noise Abatement Criteria or Predicted Highway Traffic Noise substantially exceeded (by 10 dB(A) or more) the existing Highway Traffic Noise levels.							
² The Equivalent Receptor Units (ERUs) referenced in the table primarily reflect residential units, but also include values developed to represent non-residential land uses. Examples include the Neshaminy High School athletic fields, Our Lady of Grace Cemetery, and a picnic area at the Bucks County Library. The ERU values are a ratio of the person hours per year usage for a single-family residence (always one) as compared to the outdoor human activity at these non-residential land uses, which vary in both frequency and duration.							

During the final design phase of the project additional noise analysis using more detailed engineering data will be conducted and documented in the Final Design Noise Report. The report will refine the noise modeling effort and verify abatement warrants, feasibility, and reasonableness. For areas where noise abatement is warranted, feasible, and reasonable, coordination with the affected public to solicit their viewpoints regarding potential mitigation options will be conducted and documented as the final step for noise abatement reasonableness before any noise barriers are recommended for construction.

j. Community Cohesion

Methodology

Data was collected from the US Census Bureau 2023 American Community Survey. Five (5)-Year Estimates for all census block groups within the project area were reviewed to understand the population demographics within the project area (**Table 13**).



Table 13: Census Data

Data Category		Bucks County	Pennsylvania	USA
Population	1990	541,174	11,881,643	248,709,873
	2000	597,635	12,281,054	281,421,906
	2010	625,249	12,702,379	308,745,538
	2020	646,538	13,002,700	331,449,281
Race	White Alone	529,895	9,594,136	202,651,652
	Black or African American	26,373	1,368,208	40,619,972
	Asian	35,216	499,380	20,052
	Native Hawaiian & Other Pacific Islander	178	4,170	662,417
	American Indian and Alaska Native Alone	1,173	30,714	3,341,333
	Some Other Race	16,821	510,560	24,848,381
	Two or More Races	36,882	954,515	42,738,818
Poverty Rate		6.7%	12%	12.5%
Median Age		44.3	41.1	39.2
Foreign Born		10.9%	8.0%	14.3%
Language other than English Spoken at Home		14.9%	13.0%	22.5%
High School Graduate or Higher		95.7%	92.2%	89.8%
Bachelor's Degree or Higher		44.2%	35.3%	36.2%
Total Households		245,587	5,324,209	126,817,580
Median Household Income		\$107,221	\$73,824	\$77,719
Median Home Price		\$450,900	\$259,900	\$340,200
Average Rent		\$1,612	\$1,197	\$1,406
Home Ownership Rate		77.6%	69.5%	65.2%

Source: US Census Bureau, ACS Five-Year Estimates (2023)

Existing Conditions

A review of the U.S. Housing and Urban Development (HUD) Resources page did not identify any subsidized housing within or near the project area.



Impacts

Temporary impacts from construction of the Preferred Alternative would include a potential increase in noise during construction hours and potential detours during construction; however, these are temporary and will subside upon completion of the project. While traffic patterns are anticipated to change, traffic volumes within the project study area are not anticipated to increase due to the preferred alternative improvements. Proposed traffic calming measures include a mini-roundabout, curb bulb-outs, painted and/or raised crosswalks, and rectangular rapid flashing beacons. Measures to improve sidewalks and sidepaths include rehabilitation or replacement of deteriorated sections of sidewalk, ADA-accessible ramps, and construction of new sidewalk to improve connectivity between existing facilities.

The No Build Alternative would have no impact on community cohesion nor would it provide benefits by improving mobility and safety throughout the project area, increasing capacity and safety for pedestrians and cyclists, and increasing ADA compliance.

Mitigation

The Preferred Alternative will not result in any negative impacts to community cohesion within the project area. The Preferred Alternative would benefit the community by improving mobility and safety throughout the project area, increasing capacity and safety for pedestrians and cyclists, and increase ADA compliance along Pine Street (SR 0413) into Langhorne Borough. As the project progresses through design and construction, public outreach will occur to inform the community and the traveling public about pedestrian, bicycle, and vehicular detours, along with the construction schedule.

k. Community Facilities and Services

Methodology

Community facilities and services were identified using existing maps, spatial data from the Pennsylvania Spatial Data Access (PASDA) service, and via field reconnaissance. Community facilities and services within proximity to the project area include places of worship, a cemetery, parks and recreation areas, bicycle and pedestrian facilities, and public transit routes. For more information, see the *Community Impact Assessment Report*, dated August 2025, located in the project technical file.

Existing Conditions

The project area is serviced by the Neshaminy School District. The Neshaminy High School is located near the western portion of the project area. The Woods School and the



Crestwood and Gardner Education Centers are found in the eastern portion of the project area. Cairn University occurs southeast of the project area.

Four (4) places of worship were identified in the project area including First Baptist Church, Bethlehem AME Church, St. James Episcopal Church, and Langhorne Presbyterian Church, all occurring towards the eastern portion of the project area. One cemetery, Our Lady of Grace Cemetery, was identified north of the western portion of the project area.

The project area is serviced by the Langhorne Borough Police, Langhorne Manor Police, Parkland Fire Department, Langhorne-Middletown Fire Company, Trevose Fire Company Sub Station, and Penn-del-Middletown Emergency Squad. None of these facilities will be impacted by the proposed project, but emergency services should be notified of anticipated road closures prior to construction.

The Southeastern Pennsylvania Transportation Authority (SEPTA), features two (2) main fixed bus routes that pass through the project area, including Bus 14, FTC to Neshaminy/Oxford Valley, and Bus 130, BCCC to Frankford-Knights.

For a discussion of parks located around the project area, please see **Section 3, Public Lands**.

Impacts

The Preferred Alternative would not result in long-term impacts to any public facilities or services. No schools, places of worship, cemeteries, public parks, or public transit routes would be directly impacted by the Preferred Alternative. No impacts to public safety or emergency services are anticipated.

The No Build Alternative would have no impact on community facilities or services.

Mitigation

Coordination with schools, transit, and other community and facility services will continue to ensure no disruption of service occurs as a result of the project. As the project progresses through design and construction, public outreach would occur to inform the community and the traveling public about pedestrian, bicycle, and vehicular detours along with the construction schedule.



I. Right of Way and Displacements

Methodology

Zoned land uses were identified using data and GIS layers collected from the DVRPC. Existing land use and zoning from Bucks County were also used to determine individual parcel use.

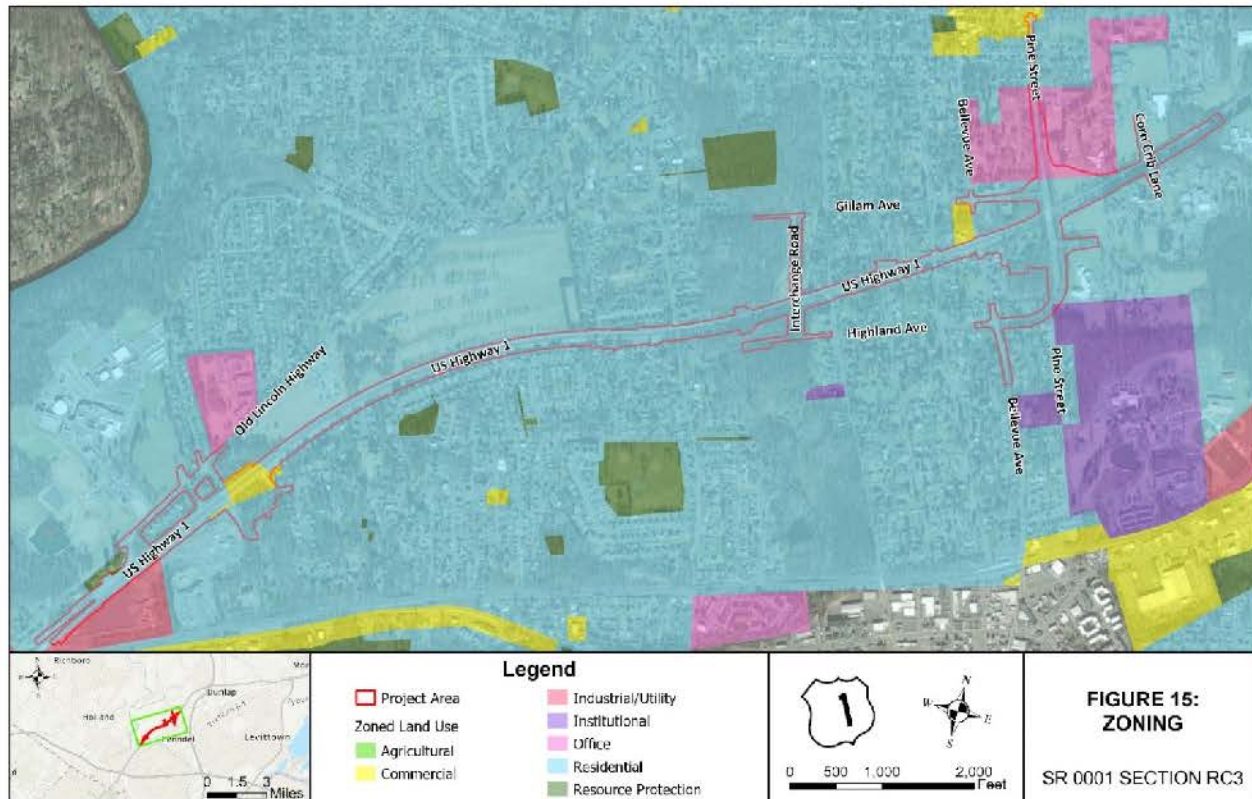
Existing Conditions

The project area is primarily urban including a mix of residential, commercial, and industrial land uses. Zoning throughout the project area consists of Residential, Office, and Commercial zones (see **Table 14, Zoned Land Use** below), and **Figure 15, Zoning**. For additional information regarding zoning in the project area, please see the *Community Impact Assessment Report*, dated August 2025, located in the project technical file.

Table 14: Zoned Land Use

Zoned Use	Percent of Project Area
Residential	91.03%
Office	4.23%
Commercial	3.94%
Industrial/utility	0.67%
Institutional	0.10%
Resource Protection	0.03%

Figure 15: Zoning

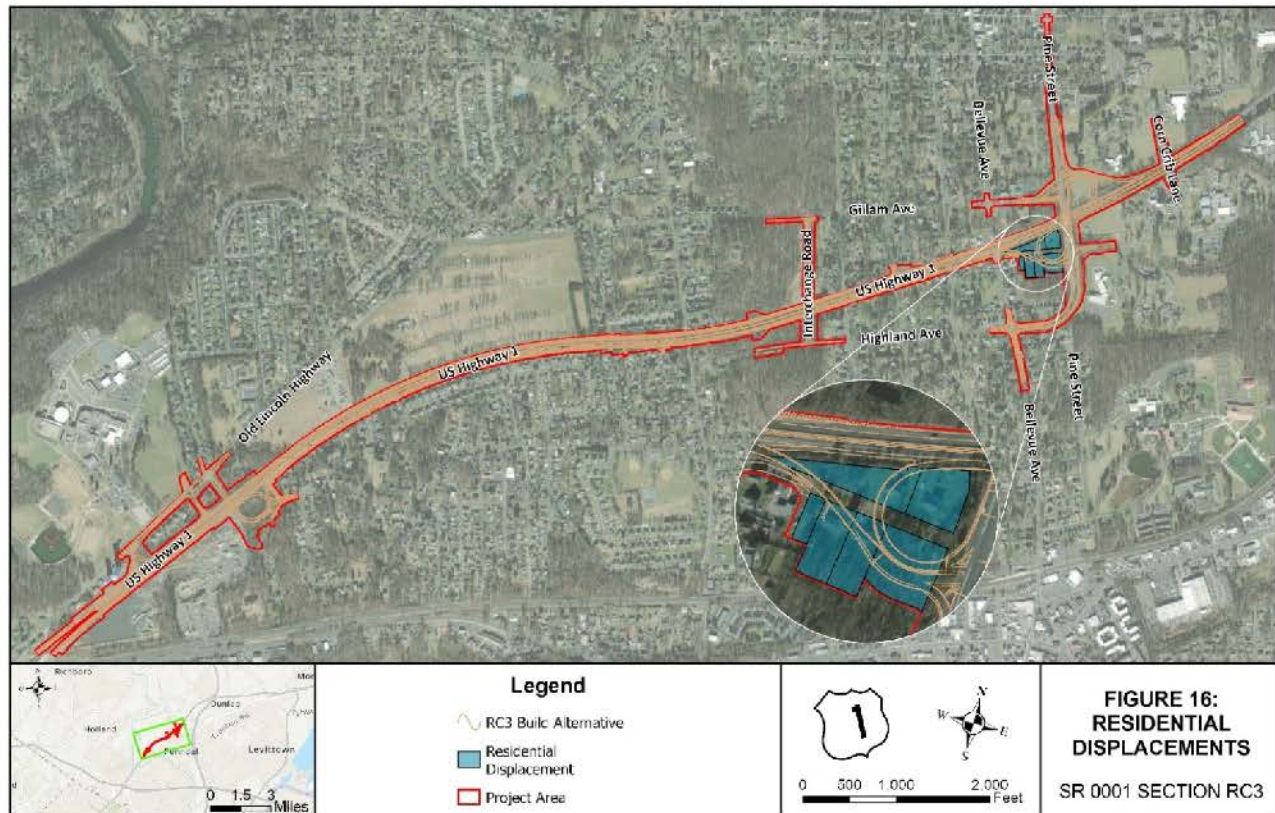


Impacts

During the development of the Preferred Alternative, a concerted effort was taken to minimize ROW impacts while still addressing the purpose and needs of the project. This project will impact 38 properties. There will be two (2) total residential acquisitions. There will be five (5) properties that will be partially required but are considered full acquisitions due to the remaining property being landlocked. Of these, four (4) will result in residential displacements. **Figure 16** depicts the parcels that will result in residential displacements. There will be 32 partial acquisitions. Of these, 29 will require permanent ROW acquisition and three (3) will have temporary construction easement acquisitions.



Figure 16: Potential Residential Displacements



The No Build Alternative would not require ROW or result in displacements.

Mitigation

As the project advances into final design, the extent of ROW required for the project will be verified and updated. PennDOT staff will coordinate with the individual property owners and any tenants. All property acquisitions will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisitions Policies Act of 1970, as amended; Title VI of the Civil Rights Act of 1964; and the Pennsylvania Eminent Domain Code of 1964. Fair market value will be paid for the acquisitions required for the project. Relocation assistance will be available to residents who are displaced as a result of the proposed project. Temporary Construction Easements (TCE) will also be required and coordinated with the individual property owners in the same fashion for any temporary access needs beyond the limits of the legal ROW. TCEs are only to be used until construction is completed.



m. Cultural Resources

Methodology

The project is subject to the requirements of Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and the implementing regulations of 36 CFR Part 800. This law requires federal agencies to consider the effects of their undertakings on cultural resources, including above-ground historic resources and below-ground archaeological resources. In addition, the Section 106 process requires federal agencies to engage in meaningful consultation with consulting parties, State and Tribal Historic Preservation Officers (SHPOs/THPOs), Tribes and Nations, local governments, and others with demonstrated interest. Consulting parties on the SR 0001 RC3 project provided critical input and have been kept informed of cultural resource investigations and analysis as the project progressed via email notifications, the project website, and updates posted on PennDOT's Project and Transportation Hub (PATH) online cultural resources portal, <https://path.penndot.pa.gov/PostingDetails.aspx?ProjectID=47470&PostingID=34413>.

Historic Resources (Aboveground)

- One (1) NRHP-Listed Historic District in APE
- Eleven (11) Newly Identified Historic Resources Determined Not Eligible

No Adverse Effect to Historic Properties

Archaeological Resources (Belowground)

- Spring House Site Recommended Not Eligible.
- None of the additional artifact concentrations contained historically significant information.

No additional archaeological investigation is warranted.



Photo 4. A view of the Langhorne Historic District from the National Register Inventory Form.

As defined in 36 CFR Part 800 – Protection of Historic Properties, a historic property, or historic resource, is “any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP).” To be eligible for listing, a historic resource must retain sufficient integrity to convey significance and meet at least one of the four following criteria:

- Criterion A: Association with significant historic events and broad patterns of history;
- Criterion B: Association with significant persons;
- Criterion C: Architectural, design, or artistic significance; or
- Criterion D: Archaeological significance.

Historic resource identification, survey, reporting, and determinations of effects were conducted and issued in accordance with federal and state laws that protect significant historic and cultural resources. This includes the NHPA (as amended), the USDOT Act of 1966 (as amended in 1968), Executive Order 11593 (36 FR 8921, 3 CFR 1971 Comp. P. 154), the NEPA, the Archaeological and Historic Preservation Act of 1974, and the Commonwealth of Pennsylvania State Act No. 1978-273. These legislative mandates require that the potential effects of any federally assisted action on historically significant resources be taken into account during project planning. The Effect Report also followed the guidance published in PennDOT Publication 689, “Cultural Resources Handbook” (2023). All technical work for these investigations and reporting were completed by architectural historians who meet or exceed the Secretary of the Interior’s Professional Qualifications Standards in the areas of History and/or Architectural History.



Background research in support of historic resource compliance efforts was followed by field survey, which was conducted by a team of architectural historians in 2024. Field survey involved documenting historic-age resources (typically those 45 years of age or older) and identifying known and potentially historic architectural resources within the project Area of Potential Effects (APE). Following the field survey, PennDOT evaluated potential effects on above ground historic resources within the vicinity of the proposed project. The evaluation included a determination of effects analysis and eligibility recommendations.

Area of Potential Effects (APE)

In accordance with the regulations set forth in 36 CFR § 800.16(d), the APE is defined as the geographic area within which the undertaking may directly or indirectly cause alterations in the character or use of historic properties, if such properties exist. For this project, the APE was defined as the construction footprint, which includes all areas of anticipated direct physical impact from project activities (**Figures 17 and 18**). The APE encompasses the limits of construction, including:

- All areas of ground disturbance for roadway, interchange, and bridge work
- Locations of permanent ROW acquisitions and temporary construction easements
- Areas identified for traffic calming features and stormwater management infrastructure
- Zones required for contractor access, staging, and utility relocation

Existing Conditions

Identification of Historic Properties

Background research and a review of the PA SHPO's Pennsylvania's State Historic and Archaeological Resource Exchange (PA-SHARE) database initially revealed 23 previously recorded historic resources within 1000 feet of the APE. After the APE was further refined, historic resource identification studies for the project identified a total of one (1) previously recorded historic resource within the APE: the local, state, and NRHP-listed Langhorne Historic District (SHPO ID# 1975RE00016, 1981RE00542, 1985RE00546, 1986RE00483). The Langhorne Historic District is an 185-acre historic district located in southern Bucks County. The district is significant under Criterion A in the areas of Commerce and Transportation and Criterion C for Architecture. It contains 252 contributing buildings, one (1) contributing site (a cemetery), and 51 non-contributing buildings. The APE is adjacent to four contributing buildings. The contributing buildings are primarily 2.5 story residences built of frame or stone. These buildings were erected between 1738 and 1937, with the majority constructed between 1850 and 1937. The historic district was established in 1975 at the local level and



expanded in 1981 and 1986 and listed on the National and State Register in 1987 with a slightly modified boundary.

In addition, eleven (11) newly identified historic resources were evaluated within the APE to determine whether they were eligible for the National Register (**Table 15**). These include four bridges and a culvert that will be replaced as part of the project, and six residential properties that will be acquired and demolished. PennDOT's District 6-0 Cultural Resources Professional (CRP) found that the bridges and culvert are not eligible for listing in the NRHP per the Advisory Council on Historic Preservation's (ACHP) *Program Comment for Post-1945 Concrete and Steel Bridges*. In addition, the PennDOT CRP determined, on behalf of FHWA, that the six residential properties to be acquired are not eligible for listing in the NRHP due to a lack of significance and integrity. The PennDOT CRP entered minimal records for the six residential properties into PA SHARE.

Table 15 includes a summary of the eleven newly identified historic resources determined Not Eligible for the NRHP. The PA SHPO concurred with the eligibility determinations. For more details, see the PA SHPO Concurrence on Eligibility and Effects Finding Dated 10/22/2025 (**Appendix D**) and the Effects Finding Memorandum dated 10/17/2025 located in the project technical file.

Table 15: Newly Identified Potential Historic Resources within the Project APE

SHPO ID#	Resource Name	Type	NRHP Eligibility	Date of Construction
2025RE01088	136 Central Avenue	Residential Building	Not Eligible	1923
2025RE01087	140 Central Avenue	Residential Building	Not Eligible	1958
2025RE01086	141 Central Avenue	Residential Building	Not Eligible	2002
2025RE01085	142 Central Avenue	Residential Building	Not Eligible	2006
2025RE01084	143 Central Avenue	Residential Building	Not Eligible	2002
2025RE01083	514 Pine Street	Residential Building	Not Eligible	1960



SHPO ID#	Resource Name	Type	NRHP Eligibility	Date of Construction
Not in PA-SHARE	Bridge 6722	Bridge	Not Eligible*	1965
Not in PA-SHARE	Culvert 6724	Culvert	Not Eligible*	1963
Not in PA-SHARE	Bridge 6725	Bridge	Not Eligible*	1965
Not in PA-SHARE	Bridge 7027	Bridge	Not Eligible*	1965
Not in PA-SHARE	Bridge 6727	Bridge	Not Eligible*	1965

*Per ACHP's Program Comment for Post-1945 Concrete and Steel Bridges.

Figure 17: Historic Resources within the APE

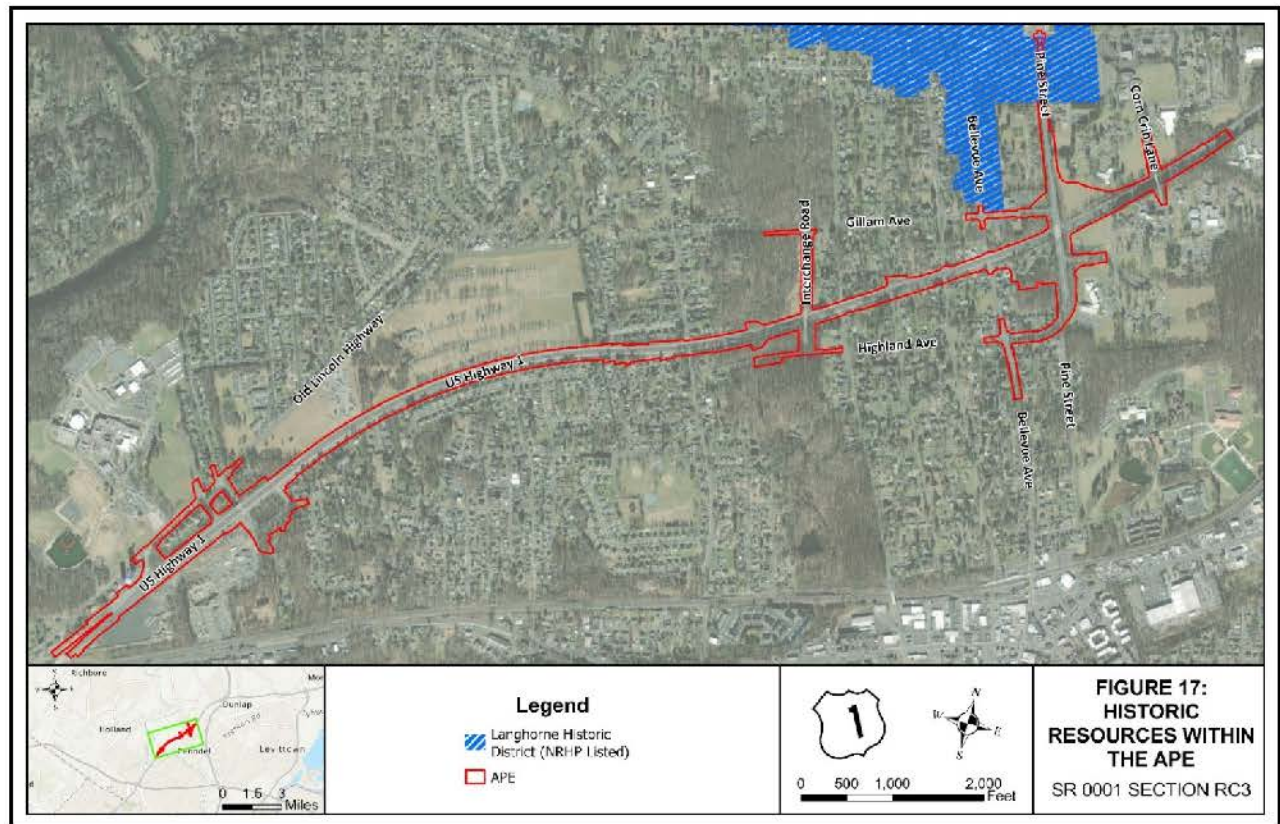
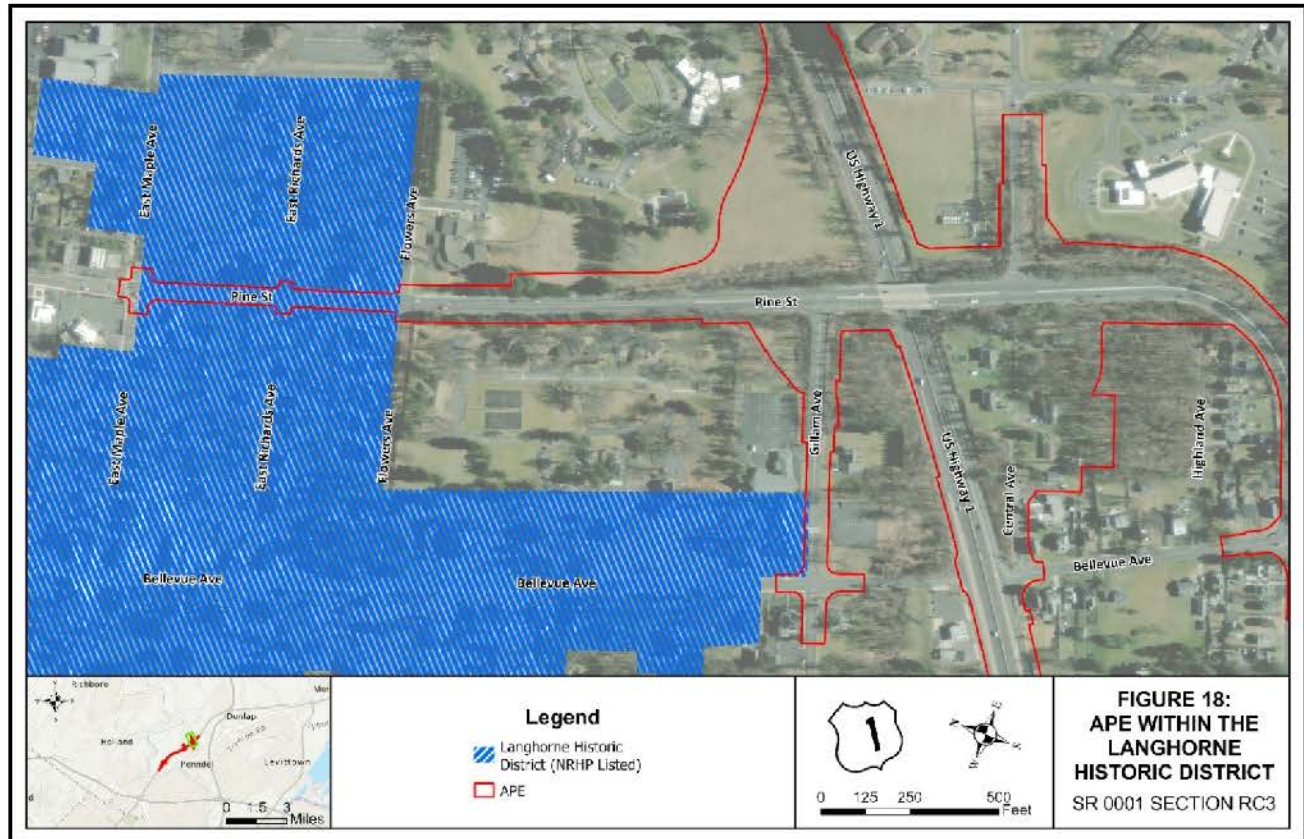


Figure 18: A View of the APE within the Langhorne Historic District



Impacts

The northern portion of the APE travels through the NRHP-listed Langhorne Historic District, which is listed at the local, state, and national levels (SHPO ID# 1975RE00016, 1981RE00542, 1985RE00546, 1986RE00483). No contributing resources within the Langhorne Historic District will be demolished, relocated, or physically altered as part of the undertaking. No property will be acquired from any of the contributing properties to the historic district as permanent ROW for the project. No tall structures are proposed that would dominate the existing streetscape or 2.5-story residential buildings that comprise the majority of the district. No new roadways will be introduced that would alter the visual character of the district or its surroundings. The proposed pedestrian improvements in the district are modest in nature and will not alter or diminish the integrity of the district to the extent that it can no longer convey significance under Criterion A in the areas of Commerce and Transportation and Criterion C for Architecture. The district will retain its historic setting, streetscape character, and sufficient integrity to convey significance. Therefore, based on the criteria for adverse effect in 36 CFR 800.5 and the definition of effect provided



in 36 CFR 800.16, PennDOT on behalf of FHWA determined the project will result in No Adverse Effect to Historic Properties regarding the Langhorne Historic District. PennDOT submitted these findings to consulting parties, including the PA-SHPO, and requested concurrence with a **No Adverse Effect** finding for the Langhorne Historic District. The PA SHPO concurred with the finding of No Adverse Effect to the Langhorne Historic District on 10/22/2025 (**Appendix D**).

For more information on the eligibility recommendations and/or impacts to the resources described above, please review the *Determination of Effects Documentation*, dated October 2025, located in the project's technical file or via PATH, <https://path.penndot.pa.gov/PostingDetails.aspx?ProjectID=47470&PostingID=34413>.

The No Build Alternative would not result in any impact to above ground historic resources.

Mitigation

As the project has a Section 106 determination of No Adverse Effect, mitigation is not required.

Archaeological Resources

Methodology

The archaeological investigation was conducted in accordance with Section 106 of the NHPA, 36 CFR 800, and Executive Order 11593. In accordance with PennDOT's Section 106 Programmatic Agreement, PennDOT notified Tribes and Nations of the project on August 10, 2022 via PATH. The following Tribes and Nations were notified:

- Absentee-Shawnee Tribe of Indians of Oklahoma
- Delaware Nation, Oklahoma
- Delaware Tribe of Indians
- Eastern Shawnee Tribe of Oklahoma
- Shawnee Tribe
- Stockbridge Munsee Community, Wisconsin

Relatively undisturbed portions of the project area were determined to have potential to contain pre-contact and historic archaeological sites. These areas required Phase I archaeological investigations.

Identification of Archaeological Resources

A Phase 1 Archaeological Survey was performed between May and June 2022 and August 2024. A total of 326 Shovel Test Pits (STPs) were excavated. Of those STPs, 15 were positive for cultural materials resulting in the identification of one (1) archaeological site (The Spring



House Site) and six (6) artifact clusters that do not meet requirements to be considered a site, non-site collection, or isolated find. The Phase I survey identified no Pre-Contact archaeological sites.

The Spring House Site was identified near the southern extent of the project area. The site consists of a nineteenth to early twentieth century spring house foundation and is bounded by road disturbance and slope. The artifact assemblage contains activity, architecture, kitchen, personal, and clothing group artifacts, mostly ceramic and glass container fragments. The site was recommended not eligible for listing in the NRHP because of the commonality of spring houses in southeastern Pennsylvania farmsteads. Additionally, the Spring House Site has limited integrity due to modern development of the area. The remainder of the original farmstead is no longer present, and the artifact assemblage contains limited diagnostic artifacts. The *2024 Phase I Archaeological Investigation of SR 0001 RC3 Improvement Project Report*, was posted on PATH on January 21, 2025, <https://path.penndot.pa.gov/PostingDetails.aspx?ProjectID=47470&PostingID=34413>. The PA SHPO did not respond to the finding, therefore PA SHPO coordination on Archaeology Effects is complete as of February 21, 2025.

Impacts

It was determined that the Preferred Alternative would not affect NRHP-eligible or listed archaeological resources.

More information on archaeological resources, and Tribes and Nation Consultation Coordination can be seen via PATH:

<https://path.penndot.pa.gov/PostingDetails.aspx?ProjectID=47470&PostingID=34413>.

The PennDOT Archaeologist will review any potential alignment shifts during final design and determine if additional testing is required.

The No Build Alternative would not result in any impact to archaeological resources.

Mitigation

No mitigation is required for archaeological resources.

n. Visual / Aesthetics

Methodology

Photographs were taken at various locations within the project area to document the existing conditions. Visual representation of post construction conditions was superimposed on photographs and project area mapping. The existing and post condition was then compared to assess visual impacts.



Existing Conditions

The existing visual setting of the project area is densely developed residential area with heavy traffic demand. Land use/cover within the immediate vicinity of the project area consists of residential and commercial development, public facilities, woodlands, and maintained (i.e., mowed) areas. Neshaminy High School is located in the southwestern portion of the project area north of SR 0001, our Lady of Grace Cemetery is located in the central portion of the project area north of SR 0001, and the Woods School is located in the northern portion of the project area. The south side of SR 0001 is mostly residential. To avoid or minimize effects on the local setting, the areas in close proximity to new interchanges and roundabouts have been considered in the evaluation of visual impacts.

Impacts

Impacts were determined by assessing the change to the visual character of the viewshed as a result of the placement of the proposed improvements within the landscape and assessing the visual consistency or non-consistency with the existing landscape.

Construction of the preferred alternative would have impacts to the viewshed within the project area.

The entirety of the preferred alternative is immediately adjacent to the existing SR 0001 RC3 corridor or adjacent roadways, such as Corn Crib Lane, SR 0413 (Pine Street), SR 2008 (Highland Avenue), SR 2049 (Bellevue Avenue), SR 2199 (West Interchange Road), and Fairhill Avenue. A majority of the proposed project is positioned within the existing roadway corridor and includes upgrades to existing features, such as replacement of existing bridges, and construction of hammerhead cul-de-sacs and stormwater facilities. There are portions of the project, mainly interchanges and roundabouts, that are new features within the corridor that will result in a change to the visible landscape. While noise walls are warranted, reasonable, and feasible at various locations throughout the corridor, the locations, heights, and styles have not yet been determined. Therefore, a discussion of noise walls in this section is not appropriate at this time. Noise wall location and types will be determined through public engagement and finalized in final design.

The construction of two Lincoln Highway (SR 0001) mainline interchanges:

The first interchange is near the existing Highland Avenue (SR 2008) bridge at the southern end of the project. It will connect Lincoln Highway (SR 0001) with Old Lincoln Highway (SR 2045) and Highland Avenue (SR 2008), west and east of Lincoln Highway (SR 0001), respectively. Much of the interchange will utilize existing roadways and will not impact the viewshed for the majority of residences. However,

this interchange will be partially located in an existing wooded area and will require removal of portions of the wooded area. This will impact the viewshed of residences along Buchanan Drive and Highland Avenue from an aesthetic standpoint.

The second interchange is near the existing Pine Street (SR 0413) bridge at the northern end of the project. It will connect Lincoln Highway (SR 0001) with Pine Street (SR 0413). Gillam Avenue and Woods Drive will be realigned to tie into the interchange ramp locations with Pine Street (SR 0413). A retaining wall is proposed along a portion of Gillam Avenue and Pine Street (SR 0413). This interchange will be located in a residential area and will impact the existing landscape by the displacement of existing residences, removal of maintained vegetation (lawns) and removal of a portion of the existing wooded area. This will impact the viewshed of the residences along the east side of Bellevue Avenue between West Highland Avenue and Central Avenue as well the residential facilities at Woods Services.

See **Figure 19** for a rendering of the Proposed Northern Interchange.

Figure 19. Proposed Northern Interchange Rendering.





The Preferred Alternative will include construction of roundabouts at three (3) intersections (northbound Lincoln Highway [SR 0001] ramps [to be constructed] and Highland Avenue [SR 2008]; Pine Street [SR 0413], Bellevue Avenue [SR 2049] and West Highland Avenue; and Bellevue Avenue [SR 2049] and Gillam Avenue). This will impact the existing visual landscape from traditional intersections to updated intersections with roundabouts. Although visually different, the project is not introducing a new roadway network in the vicinity of the roundabouts. See **Figures 20A & 20B**, depicting the existing condition and the post condition of the proposed roundabout at Gillam Avenue and Bellevue Avenue.

Figure 20A. Existing Condition of Gillam Avenue and Bellevue Avenue Intersection.



Figure 20B. Proposed Roundabout at Gillam Avenue and Bellevue Avenue Intersection



Although changes to the services roads, reconstruction of four bridges and one culvert, signalization and traffic calming measures, and stormwater features are proposed, the landscape and viewshed will not change as a result of these improvements. See **Figures 21A & 21B**, depicting the existing condition and the post condition of the proposed bridge reconstruction at Lincoln Highway (SR 0001) over Highland Avenue (SR 2008).



Figure 21A. Existing Bridge at Lincoln Highway over Highland Avenue



Figure 21B. Proposed Bridge Reconstruction at Lincoln Highway over Highland Avenue



The No Build Alternative would not have an impact on the landscape and viewshed of the area.

Mitigation

Construction of the Preferred Alternative would result in a visual change to the landscape within the vicinity of the two proposed interchanges and the three proposed roundabouts. The project team will coordinate further with local officials and affected property owners in final design to review the project's visual impacts and to identify and implement reasonable mitigation measures. Examples of mitigation measures that will be considered include:

- Vegetative screenings
- Bridge designs (color/texture/materials) that will blend into the landscape
- Filtered views of bridge piers; clusters of trees may be planted if they do not cause additional displacement or create hazards for errant vehicles
- Tinted colors of retaining walls and noise barriers that will blend into the landscape
- Aesthetic treatments will be considered for the center of the roundabouts in coordination with PennDOT and the municipalities in final design.



IV. Section 4(f) Resources

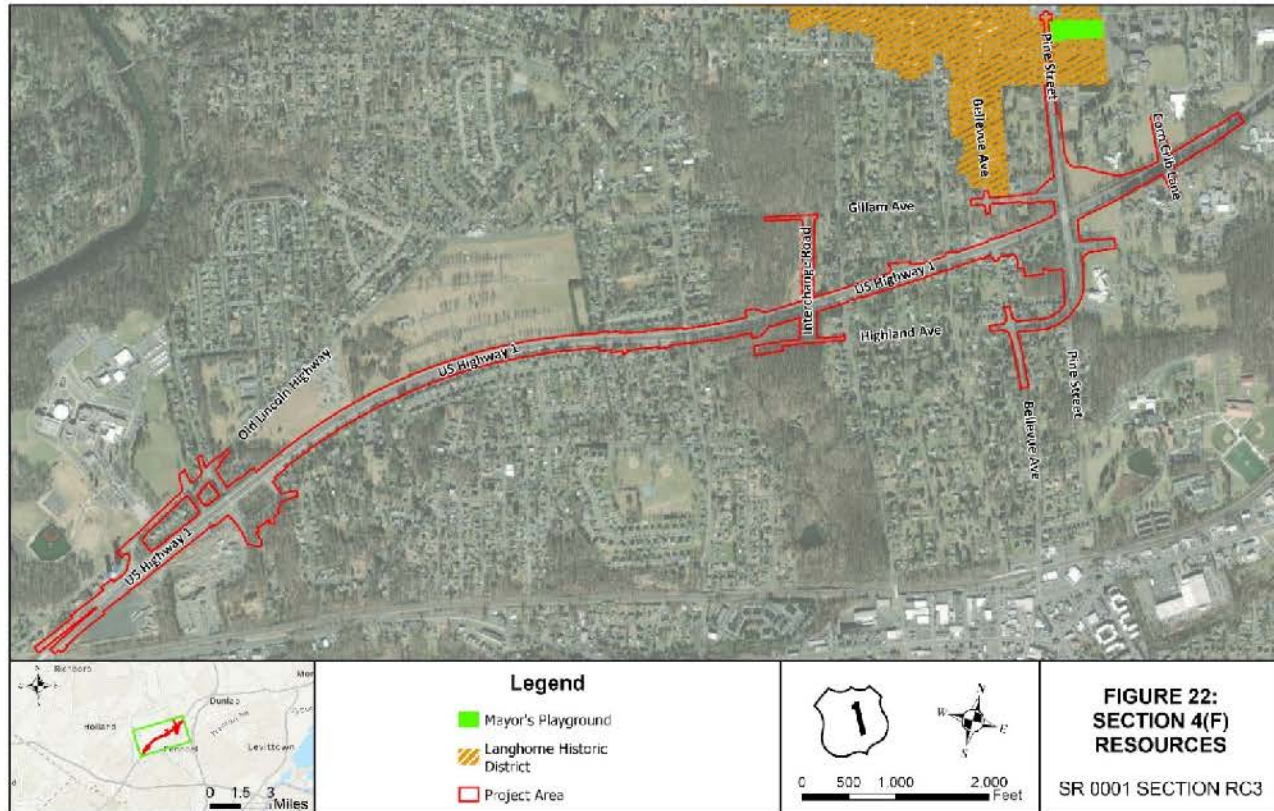
In accordance with Section 4(f) of the US DOT Act of 1966 and Section 2002 of PA Act 120, Section 4(f)/2002 resources were identified in the project area. Section 4(f) resources include publicly owned parks and recreational lands; wildlife and waterfowl refuges; and historic properties of national, state, or local significance, whether publicly- or privately-owned. The SR 0001 RC3 project area contains two (2) Section 4(f) resources: the National Register of Historic Places (NRHP) listed Langhorne Historic District and the Mayor's Playground (**Figure 22**).

The Langhorne Historic District: The Langhorne Historic District is a 185-acre historic district, located in Langhorne Borough, within the northern portion of the project area along the northern limits of Pine Street (SR 0413) and the north side of Gillam Avenue. The District was listed on the NRHP in 1987 and is significant under Criterion A in the areas of Commerce and Transportation and Criterion C for Architecture.

The Mayor's Playground: The Mayor's Playground is a local park, owned, operated, and maintained by Langhorne Borough, and is located at the southeast corner of Pine Street (SR 0413) and Maple Avenue (SR 0213). The park is approximately 3.5 acres and contains a playground, picnic facilities, several recreation fields, a basketball court, benches and a paved walking path along the perimeter of the site. The fields are often utilized by local sports associations.



Figure 22: Project Area Section 4(f) Resources



The proposed project would have the following use of 4(f) resources:

The Langhorne Historic District – No Use. Two (2) components of the Preferred Alternative fall within the boundaries of the Langhorne Historic District:

- Construction of a mini roundabout at the intersection of Gillam Avenue and Bellevue Avenue (SR 2049).
- Traffic calming and intersection improvements along Pine Street (SR 0413) between Flowers Avenue and Maple Avenue (SR 0213). These include potential curb bulb-outs, ADA ramp upgrades, sixteen (16) rectangular rapid flashing beacons (RRFBs), and sidewalk repairs or reconstruction.

The proposed mini roundabout at Gillam Avenue will be designed to fit within the existing intersection footprint without realigning the street grid or altering the historic street layout. The roundabout and traffic calming features will be installed within the existing roadway and sidewalk footprint, with all work occurring in previously disturbed and paved areas.



Pine Street (SR 0413) improvements, such as curb bulb-outs and painted medians, will follow existing curblines and street patterns, preserving the spatial relationships and orientation of historic properties along the corridor. Streetscape elements such as mature trees, sidewalks, setbacks, and property frontages will remain intact.

No contributing resources within the Langhorne Historic District will be demolished, relocated, or physically altered as part of the undertaking. The Preferred Alternative does not extend beyond the PennDOT-owned ROW within the limits of the Langhorne Historic District and will not use any property associated with any contributing properties within the Langhorne Historic District. It was determined that the project will not use the Langhorne Historic District. PennDOT, on behalf of FHWA, determined the project will result in No Adverse Effect to Historic Properties regarding the Langhorne Historic District. PennDOT submitted these findings to the PA SHPO and requested concurrence with a **No Adverse Effect** finding for the Langhorne Historic District. The PA SHPO concurred with the finding of No Adverse Effect to the Langhorne Historic District on 10/22/2025 (**Appendix D**).

A Section 4(f) Non-Applicability/No Use Checklist was prepared and approved on 10/24/2025 and is attached as **Appendix E**.

The Mayor's Playground - No Use. No temporary or permanent impacts to The Mayor's Playground Park will occur as a result of the Preferred Alternative. All proposed work within the vicinity of the parks will occur within the existing transportation ROW. Access to the park will not be interrupted and the park will remain open throughout construction.

A Section 4(f) Non-Applicability/No Use Checklist was prepared and approved on 9/1/2025 and is attached as **Appendix E**.

No Section 4(f) mitigation measures are required for this project. However, project plans/construction specs will include strict directives to not allow project staging within the vicinity of the Mayor's Playground, to prevent any unintentional impacts to the park.

V. Reasonably Foreseeable Effects

NEPA requires examination of the reasonably foreseeable effects of a project in addition to direct project impacts. Reasonably Foreseeable Effects (RFE) refer to environmental impacts that are considered likely or probable to occur as a result of a proposed action, rather than being mere possibilities or speculative. Resources evaluated for RFE are those that will have direct impacts from the Preferred Alternative including natural, socioeconomic, and cultural resources (discussed in **Section 3.0**). This assessment will identify if the potential effect would be substantial enough to further impair the resource to



irretrievable levels or to the point that mitigation is required. **Table 16** summarizes the RFEs on project area resources.

Table 16: RFEs to Resources

Resource	Representative Sub-Boundary	Potential for Encroachment Alteration Effects*
Streams	HUC 12 Watershed	Impacts could include water quality and aquatic habitat degradation downstream from highway runoff of pollutants from vehicles. Water quality will be addressed in the NPDES permit and post construction stormwater controls. Following all permit requirements and conditions should reduce this risk.
Wetlands	HUC 12 Watershed	Impacts could include influx of surface water and sediments, loss of recharge area, or changes in local drainage patterns. These effects could alter wetland functions. Following all permit requirements / conditions should reduce this risk.
Floodplains	HUC 12 Watershed	Impacts could include alterations of existing drainage patterns and flood flows. Following the guidance in the Floodplain Management E011988 should reduce this risk.
Vegetation and Wildlife	HUC 12 Watershed	Impacts could include inadvertent introduction of invasive species as well as the creation of more edge habitat, creating barriers to wildlife movement. Mitigation commitments are included to avoid the introduction of invasive species.
Public Lands	Municipality	Impacts are not anticipated given that there is limited area for development or major alternations to the transportation network within the project area.
Noise	Municipality	Noise levels predicted by traffic modeling already incorporate anticipated reasonably foreseeable traffic noise impacts and would be analyzed and mitigated for as a direct impact.
Air Quality	Municipality	Emissions will likely be lower in future years as a result of the EPA's national control programs that are projected to reduce annual MSAT emissions by 2060.



Resource	Representative Sub-Boundary	Potential for Encroachment Alteration Effects*
Community Cohesion	Municipality	Impacts are not anticipated given that there is limited area for development or major alternations to the transportation network within the project area.
Community Facilities and Services	Municipality	
ROW and Displacements	Municipality	
Visual / Aesthetics	Municipality	Impacts could include changes to vegetation along the new highway over time if invasive species are not managed.
Above Ground Historic Resources	Area of Potential Effects	Impacts are not anticipated given that there is limited area for development or major alternations to the transportation network surrounding the historic district.

**Encroachment alteration effects are physical, chemical, or biological changes in the environment that occur as a result of the project but are removed in time or distance from the direct effects.*

VI. Public Involvement and Agency Coordination

Through preliminary engineering, coordination with multiple organizations, agencies, public entities, and individuals was conducted to receive input to develop the proposed improvement concepts for the SR 0001 RC3 Improvement Project. Using this information, alternatives were developed and evaluated as to how they address the transportation purpose and needs, type and level of potential resource impacts, and public feedback and preferences.

a. Public Outreach

Multiple outreach activities were conducted for the project to inform the public of the project, provide updates, and solicit feedback. **Table 17** summarizes the public outreach



activity, the date of the activity, the number of comments received, and the information presented.

Table 17: Public Outreach Summary

Meeting Type	Date	Attendees	Comments Received	Information Presented
Public Meeting (In-Person)	May 29, 2014	51 (36 from general public)	25 Comments	Introduced the proposed project and solicited feedback from the public
Town Hall Meeting (In-Person)	September 29, 2014	21 (9 from general public)	18 Questions	Held by then State Representative Frank Farry to obtain input from citizens regarding the proposed project
Public Presentation (Virtual)	June 7, 2021	124 views	83 comment responses received	Reviewed alternatives studied for the project and solicited feedback from the public
Public Meeting (Virtual)	April 23, 2025	168 live attendees, 27 viewers of online recording	147 questions	Provided updates on the proposed project and solicited questions/feedback from the public
Public Meeting (Virtual)	October 22, 2025	Approximately 75 virtual attendees	60 questions	Provided information regarding the Environmental Assessment schedule and where to find FAQs, Technical Files, and the EA on the website, and solicited questions/feedback from the public

b. Stakeholder Outreach

In addition to public outreach activities, multiple stakeholder-specific events were conducted for the project (**Table 18**).



Table 18: Stakeholder Meeting Summary

Stakeholder Party	Date	Attendees	Comments / Questions Received	Information Presented
Public Officials Meeting	October 1, 2020	12	30	Reviewed proposed alternatives and solicited feedback from the officials
Public Officials Meeting	May 27, 2021	21	8	Provided advance viewing of June 2021 public presentation materials
Public Officials Meeting	November 22, 2021	33	34	Provided project updates since the May 2021 meeting
Public Officials Meeting	October 20, 2022	36	14	Provided project updates on engineering, environmental, and traffic analysis
Public Officials Meeting	February 27, 2025	23	3	Provided project updates on engineering, environmental, traffic, and overall schedule
Public Officials Meeting	April 9, 2025	20	19	Provided advance viewing of April 2025 public meeting materials
Meeting with BAME Church	March 22, 2022	3	5	Discussed project improvements in the vicinity of the BAME church
Meeting with Langhorne Borough	September 15, 2021	20	7	Discussed project improvements within Langhorne Borough limits
Meeting with Langhorne Borough	September 13, 2024	7	6	Discussed project improvements within Langhorne Borough limits
Meeting with Our Lady of Grace Cemetery	March 23, 2021	7	8	Discussed project improvements in the vicinity of the cemetery
Meeting with Woods Services	June 14, 2022	8	3	Discussed project improvements in the vicinity of Woods School property



Stakeholder Party	Date	Attendees	Comments / Questions Received	Information Presented
Meeting with Woods Services	June 11, 2025	4	10	Discussed project improvements in the vicinity of Woods School property
Meeting with Neshaminy School District	April 20, 2022	10	8	Discussed project improvements in the vicinity of Neshaminy School District property
Meeting with Neshaminy School District	May 23, 2025	5	7	Discussed project improvements in the vicinity of Neshaminy School District property
Consulting Party Meeting	June 12, 2025	36	29	Discussed potential impacts on historic features within the project area with consulting party members

c. Section 106 Coordination

The Section 106 process requires federal agencies to engage in meaningful consultation with consulting parties. A Section 106 Consulting Parties Meeting was held on June 12, 2025 (see **Table 18**, above). Consulting parties on the SR 0001 RC3 project provided critical input regarding historic and archaeological features within the project area, were given the opportunity to express questions and concerns, and learn more about the project. The June 12, 2025 Consulting Party Meeting Minutes are available in the Project Technical File and on PATH,

<https://path.penndot.pa.gov/PostingDetails.aspx?ProjectID=47470&PostingID=34413>.

d. Project Website

A study-specific website (<https://us1bucks.com/section-rc3/>) was created to keep the public informed (**Figure 23**). The website offers access to approved technical memoranda, along with public and agency outreach information, frequently asked questions, public meeting materials, a comment page, and a form to sign up for the electronic mailing list.



Figure 23: SR 0001, Section RC3 Website



e. Press Releases and Social Media

PennDOT has used press releases and their social media accounts to publicize project information. This provides members of the public who follow PennDOT's social media accounts the ability to view project information and post their comments on the various platforms.

f. Public Meeting Notifications

Notifications for all public meetings included:

- Electronic invitations
- Post Card Notification (to adjacent property owners)
- Social media (X, Facebook, and Instagram)
- Press releases

g. Agency Coordination

PennDOT coordinated with the USACE, Philadelphia District and the EPA, and both agencies agreed to become cooperating agencies for the project. Additionally, the following agencies will have oversight/involvement in reviewing technical reports, memoranda, the EA, and future permits for the project.

- Pennsylvania Department of Environmental Protection, Southeastern Regional Office (PA DEP)
- United States Fish and Wildlife Service (USFWS)
- Pennsylvania Department of Conservation and Natural Resources (DCNR)



- Pennsylvania Fish and Boat Commission (PFBC)
- Pennsylvania Game Commission (PGC)
- Bucks County Conservation District (BCCD)
- Pennsylvania State Historical Museum Commission (PHMC)/ Pennsylvania State Historic Preservation Office (PA SHPO)

VII. Environmental Commitments and Mitigation Summary

The SR 0001 RC3 Improvement Project has been designed to avoid and minimize impacts where practicable, while meeting the project purpose and need. Where impacts are unavoidable, mitigation commitments have been made to compensate for impacts (**Table 19**). Efforts to minimize impacts will continue in final design. Mitigation commitments will be tracked through final design and carried into construction, as necessary, via PennDOT's Environmental Commitments and Mitigation Tracking System (ECMTS). This section summarizes the mitigation commitments identified in **Section 3**.

Table 19: Environmental Commitments and Mitigation

Resource	Preferred Alternative Effect	Commitments/Mitigation
Streams	Unavoidable permanent impacts to seven (7) project area watercourses totaling 2,445 linear feet.	• PennDOT is evaluating specific mitigation options for unavoidable permanent impacts to watercourses. These options will include procurement of stream mitigation credits, as well as on-site and off-site mitigation. • Erosion and sediment controls and post construction stormwater management concepts will be implemented. • Further coordination with the USACE and PA DEP regarding mitigation of stream impacts will be conducted in final design. • NPDES permits will be implemented to address stormwater.

Resource	Preferred Alternative Effect	Commitments/Mitigation
Wetlands	Unavoidable permanent impacts to two (2) palustrine wetlands totaling 0.063-acre.	• PennDOT is evaluating specific mitigation options for unavoidable permanent impacts to wetlands associated with the proposed project. These options will include procurement of wetland mitigation credits, as well as on-site and off-site mitigation. • Further coordination with the USACE and PA DEP regarding mitigation of wetland impacts will be conducted in final design.
Floodplains	Unavoidable impact to 2.554 acres of FEMA-mapped 100-year floodplain and 9.844 acres of impact to non-FEMA floodways. The floodplain encroachments are not anticipated to result in an increase in base flood elevations.	• In accordance with 23 CFR Part 650.115 and 650.117, detailed H&H analyses will be conducted during final design to ensure that structures are properly sized for the design flood stage. • All required state and federal water obstruction and encroachment permits will be obtained. • Any proposed fill within the 100-year floodplain will comply with FEMA regulations, and PennDOT will coordinate with the appropriate municipalities regarding consistency with local floodplain regulations. • Floodplain encroachments will be further minimized during final design.
Threatened & Endangered Species	Agency coordination for the project resulted in the determination that no adverse impacts on threatened or endangered species are anticipated from the project.	• No mitigation anticipated. • The PNDI receipt and required agency coordination will be updated, as necessary, as the project moves through the final design and permitting stages.

Resource	Preferred Alternative Effect	Commitments/Mitigation
Vegetation	Potential for the spread of invasive species. Potential for the elimination of plant species that pollinators use for larva hosts and foraging.	- Utilization of BMPs to mitigate the spread of invasive species as outlined in PennDOT Publication 756, Design Manual Part 2, and Publication 408. - Disturbed earthen surfaces will be promptly seeded to minimize colonization of invasive species. - BMPs will be implemented that will be beneficial for pollinator species (mowing and spot spraying). - Seed mixes used for roadside planting, stormwater facilities, wetland mitigation areas, and riparian buffers will be augmented with native plant species that provide forage and larval host species used by pollinators. - Approximately three (3) acres of impervious surface will be removed and converted to green space. Trees will also be replanted, if applicable, in the vicinity of the forested conservation corridor. Location of the tree replanting(s) will be determined in coordination with PennDOT and Middletown Township. Orange construction fencing will be installed along the limits of the TCE to prevent additional impacts to the forested conservation corridor.
Wildlife	Unlikely to have an impact on wildlife movement or habitat.	- PennDOT will investigate the use of wildlife crossings and exclusionary devices. - Mitigation measures will be further investigated in final design and in coordination with the appropriate agencies (PA DEP, PFBC, USACE).
Public Lands	No temporary or permanent impacts anticipated, to local park (Mayor's Playground). Temporary Construction Easements (TCEs) will be required for the conservation corridor, but no permanent impacts.	- Mitigation measures for potential impacts to public lands will not be required as the project will have no permanent impacts. - Project plans and construction specifications will include strict directions to not allow project staging within the vicinity of Mayor's Playground. - Trees will be replanted in the vicinity of the forested conservation corridor upon completion of the project, and orange construction fencing will be installed along the limits of the TCE to prevent impacts.

Resource	Preferred Alternative Effect	Commitments/Mitigation
Hazardous and Residual Waste	Sixteen (16) sites identified with the potential for environmental concerns. Potential exists for the presence of ACM and LBP in connection with the existing structures which are proposed for demolition.	- Phase II/Phase III ESA investigations were recommended for 16 sites with potential for environmental concerns. - Phase II/III ESA results and recommendations will be included in design plans/specifications. - Interiors of structures slated for demolition will be investigated for drums, home heating oil tanks, and miscellaneous waste items prior to demolition. - LBP and ACM surveys will be conducted for impacted structures believed to pre-date 1978.
Air Quality	The project is not anticipated to have an impact on air quality due to carbon monoxide (CO) emissions. The project is not anticipated to exceed PennDOT thresholds for particulate matter (MP2.5 and PM10) and ozone levels. Mobile Source Air Toxics are not expected to increase from the preferred alternative.	No adverse impact on air quality is anticipated within the project area. Therefore, no mitigation measures are required.
Noise	Noise sensitive lands were identified within the vicinity of the project area.	- Additional refined noise modeling and coordination to define the desires of the benefited communities will occur during the final design phase of the project along with an analysis of undeveloped lands. - Final design noise analysis public community meetings will be held in affected communities.
Community Cohesion	No impacts to community cohesion will occur as a result of this project.	No mitigation required.

Resource	Preferred Alternative Effect	Commitments/Mitigation
Facilities and Services	Community facilities and services will be maintained or improved post-construction.	• Coordination with schools, transit, and other community and facility services (i.e., EMS) will continue to ensure no disruption of service occurs because of the project. • As the project progresses through design and construction, public outreach would occur to inform the community and the traveling public about pedestrian, bicycle, and vehicular detours along with the construction schedule.
ROW & Displacements	Thirty-eight (38) properties will be impacted (including 6 residential displacements, 29 permanent ROW or easements, and 3 TCEs)	• Coordinate with individual property owners and tenants as project advances to final design. • All property acquisitions will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisitions Policies Act of 1970, as amended; Title VI of the Civil Rights Act of 1964; and the Pennsylvania Eminent Domain Code of 1964. • Fair market value will be paid for all acquisitions. • Relocation assistance will be available to residents who are being displaced because of the proposed project.
Historic Resources	PennDOT determined, and the PA SHPO concurred, that the project will result in No Adverse Effect to the Langhorne Historic District.	• No mitigation anticipated
Archaeological Resources	No impact to NHRP-eligible or listed archaeological resources.	• No mitigation anticipated
Visual Aesthetics	Construction of the preferred alternative would result in a visual change to the landscape within the vicinity of the two proposed interchanges and the three proposed roundabouts	• The project team will coordinate further with local officials and affected property owners, in final design to review the project's visual impacts and to identify and implement reasonable mitigation measures.
Section 4(f) Resources	No Section 4(f) resources will be used.	• No mitigation anticipated



VIII. Permits, Approvals, and Final Design Activities

All studies, permits, and approvals noted in **Table 20** will be completed in final design prior to construction. Final design is anticipated to begin in 2026 and be completed in 2029. Construction is anticipated to begin in 2029 and be completed in 2032. These dates are subject to change.

Table 20: Final Design Activities

Resource	Final Design Activity
Hazardous and Residual Waste	Phase II/III Environmental Site Assessment investigations (will include a Health and Safety Plan and a Field Sampling Plan).
Noise	Final Design Noise Report (will include a Final Design noise specific community meeting).
Floodplains	In accordance with 23 CFR Part 650.115 and 650.117, detailed H&H analyses will be conducted during final design for floodplain encroachments associated with the Preferred Alternative.
Public Outreach	Continued public outreach will be conducted throughout final design and construction.
Permits – Chapter 105/Section 404	A Joint Permit Application (JPA) is anticipated based on acreage of permanent wetland impacts and linear feet of permanent stream impacts. A Pre-Application meeting will be held with the PA DEP and USACE, along with other resource agencies, prior to the permit submittal.
Permits – Chapter 102	An NPDES permit is anticipated based on earth disturbance exceeding one acre during construction. This application will be submitted to the PA DEP for approval.
Permits – Section 401	A Water Quality Certification will be required for construction of a facility that will have discharges to WUS and require federal approval.



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Appendix A: Streamlined Resource Summary



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Appendix B: Project Mapping

B-1 Enlarged EA Figures

B-2 Environmental Constraints Map



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Appendix A: Streamlined Resource Summary

Natural Environment	
Wetlands	
Evaluation:	Resource is discussed in Section 3 – Environmental Effects and Mitigation
Method of Evaluation:	Field delineation
Documentation:	Aquatic Resource Delineation Report dated January 2025, available in the project technical file
Streams, Rivers, and Other Surface Waters	
Evaluation:	Resource is discussed in Section 3 – Environmental Effects and Mitigation
Method of Evaluation:	Field delineation
Documentation:	Aquatic Resource Delineation Report dated January 2025, available in the project technical file
Wild and Scenic Rivers	
Evaluation:	Resource is not in the study area
Method of Evaluation:	Desktop evaluation
Documentation:	Approved Scoping Field View Form (https://dominoappsbp.penndot.pa.gov/onepdf/Pkg%2031684%20-%20Route%201%20Impr(Frontage)%20-%20Kenawell.pdf#pagemode=bookmarks)
Floodplains	
Evaluation:	Resource is discussed in Section 3 – Environmental Effects and Mitigation
Method of Evaluation:	Desktop evaluation
Documentation:	Approved Scoping Field View Form (https://dominoappsbp.penndot.pa.gov/onepdf/Pkg%2031684%20-%20Route%201%20Impr(Frontage)%20-%20Kenawell.pdf#pagemode=bookmarks)
Coastal Zones	
Evaluation:	Resource is in the study area but will not be impacted
Method of Evaluation:	Desktop evaluation
Documentation:	Coastal Zone Management Act Federal Consistency concurrence letter available in the project technical file.

Threatened and Endangered Species	
Evaluation:	Resource is in the study area but will not be impacted
Method of Evaluation:	Desktop evaluation/Agency Coordination
Documentation:	Pennsylvania Natural Diversity Inventory receipt, and the Agency coordination letter available in Appendix C and the project technical file.
Vegetation and Wildlife	
Evaluation:	Resource is discussed in Section 3 – Environmental Effects and Mitigation
Method of Evaluation:	Desktop Evaluation/Field View
Documentation:	Environmental Assessment document
National Natural Landmarks	
Evaluation:	Resource is not in the study area
Method of Evaluation:	Desktop evaluation
Documentation:	Approved Scoping Field View Form (https://dominoappsbp.penndot.pa.gov/onepdf/Pkg%2031684%20-%20Route%201%20Impr(Frontage)%20-%20Kenawell.pdf#pagemode=bookmarks)
Wildlife Sanctuaries	
Evaluation:	Resource is not in the study area
Method of Evaluation:	Desktop evaluation
Documentation:	Approved Scoping Field View Form (https://dominoappsbp.penndot.pa.gov/onepdf/Pkg%2031684%20-%20Route%201%20Impr(Frontage)%20-%20Kenawell.pdf#pagemode=bookmarks)
Wilderness, Natural, and Wild Areas	
Evaluation:	Resource is not in the study area
Method of Evaluation:	Desktop evaluation
Documentation:	Approved Scoping Field View Form (https://dominoappsbp.penndot.pa.gov/onepdf/Pkg%2031684%20-%20Route%201%20Impr(Frontage)%20-%20Kenawell.pdf#pagemode=bookmarks)
Public Lands (Parks, Recreation Areas, State Game Lands, Section 6(f), etc.)	
Evaluation:	Resource is discussed in Section 3 – Environmental Effects and Mitigation
Method of Evaluation:	Desktop evaluation
Documentation:	Section 4(f) No Use/Non Applicability Form (see Appendix E and the project technical file)

Groundwater Resources	
Evaluation:	Resource is not in the study area
Method of Evaluation:	Desktop evaluation
Documentation:	Approved Scoping Field View Form (https://dominoappsbp.penndot.pa.gov/onepdf/Pkg%2031684%20-%20Route%201%20Impr(Frontage)%20-%20Kenawell.pdf#pagemode=bookmarks)
Unique Geological Features	
Evaluation:	Resource is not in the study area
Method of Evaluation:	Desktop evaluation
Documentation:	Approved Scoping Field View Form (https://dominoappsbp.penndot.pa.gov/onepdf/Pkg%2031684%20-%20Route%201%20Impr(Frontage)%20-%20Kenawell.pdf#pagemode=bookmarks)
Agricultural Resources	
Evaluation:	Resource is not in the study area
Method of Evaluation:	Desktop evaluation
Documentation:	Approved Scoping Field View Form (https://dominoappsbp.penndot.pa.gov/onepdf/Pkg%2031684%20-%20Route%201%20Impr(Frontage)%20-%20Kenawell.pdf#pagemode=bookmarks)
Hazardous or Residual Waste	
Evaluation:	Resource is discussed in Section 3 – Environmental Effects and Mitigation
Method of Evaluation:	Desktop evaluation/Field Surveys
Documentation:	Phase I Environmental Site Assessment (ESA), Phase I ESA Addendum, and Phase I ESA Recommendations Review, available in the project technical file
Air Quality	
Evaluation:	Resource is discussed in Section 3 – Environmental Effects and Mitigation
Method of Evaluation:	Desktop evaluation
Documentation:	Air Quality Technical Memorandum available in the project technical file

Noise	
Evaluation:	Resource is discussed in Section 3 – Environmental Effects and Mitigation
Method of Evaluation:	Desktop Evaluation
Documentation:	Preliminary Engineering Noise Report and Preliminary Engineering Noise Report Addendum Memo, available in the project technical file
Socioeconomic	
Land Use	
Evaluation:	Resource is discussed in Section 3 – Environmental Effects and Mitigation
Method of Evaluation:	Desktop evaluation
Documentation:	Community Impact Assessment report, available in the project technical file
Community Cohesion	
Evaluation:	Resource is in the study area but will not be impacted
Method of Evaluation:	Desktop evaluation
Documentation:	Community Impact Assessment report, available in the project technical file
Community Facilities and Services	
Evaluation:	Resource is discussed in Section 3 – Environmental Effects and Mitigation
Method of Evaluation:	Desktop evaluation
Documentation:	Community Impact Assessment report, available in the project technical file
Community Economics	
Evaluation:	Resource is discussed in Section 3 – Environmental Effects and Mitigation
Method of Evaluation:	Desktop evaluation
Documentation:	Community Impact Assessment report, available in the project technical file
Right-of-Way and Displacements	
Evaluation:	Resource is discussed in Section 3 – Environmental Effects and Mitigation
Method of Evaluation:	Desktop evaluation
Documentation:	Environmental Assessment document

Cultural	
Above-Ground Resources	
Evaluation:	Resource is discussed in Section 3 – Environmental Effects and Mitigation
Method of Evaluation:	Desktop evaluation and field analysis
Documentation:	Historic Resource Survey Form and Determination of Effects documentation, available in the project technical file. Section 4(f) No Use/Non Applicability Form (see Appendix E and the project technical file)
Archaeological Resources	
Evaluation:	Resource is discussed in Section 3 – Environmental Effects and Mitigation
Method of Evaluation:	Desktop evaluation and field analysis
Documentation:	Environmental Assessment document and information on the Phase I Archaeological Investigation Report available via PATH.
Other	
Visual/Aesthetics	
Evaluation:	Resource is discussed in Section 3 – Environmental Effects and Mitigation
Method of Evaluation:	Desktop Evaluation
Documentation:	Environmental Assessment document
Section 4(f) Resources	
Evaluation:	Resource is discussed in Section 3 – Environmental Effects and Mitigation
Method of Evaluation:	Desktop evaluation
Documentation:	Section 4(f) No Use/Non-Applicability Forms (see Appendix E and the project technical file)
Stafford Act Properties	
Evaluation:	Resource is not in the study area
Method of Evaluation:	Desktop evaluation
Documentation:	Approved Scoping Field View Form (https://dominoappsbp.penndot.pa.gov/onepdf/Pkg%2031684%20-%20Route%201%20Impr(Frontage)%20-%20Kenawell.pdf#pagemode=bookmarks)



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Appendix B-1: Enlarged EA Figures

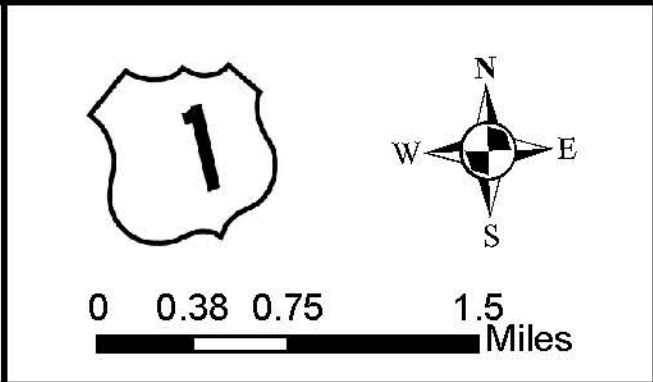
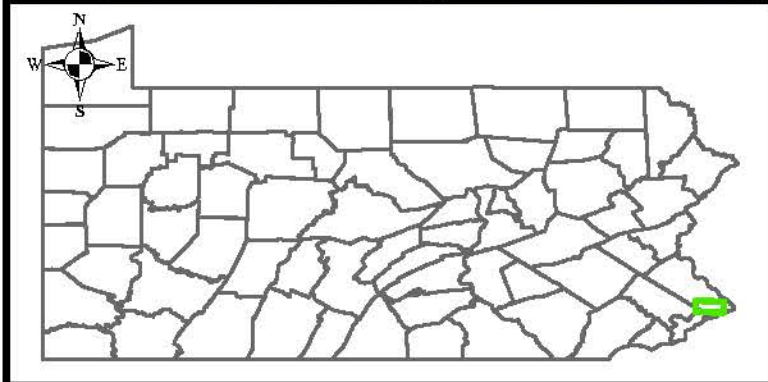
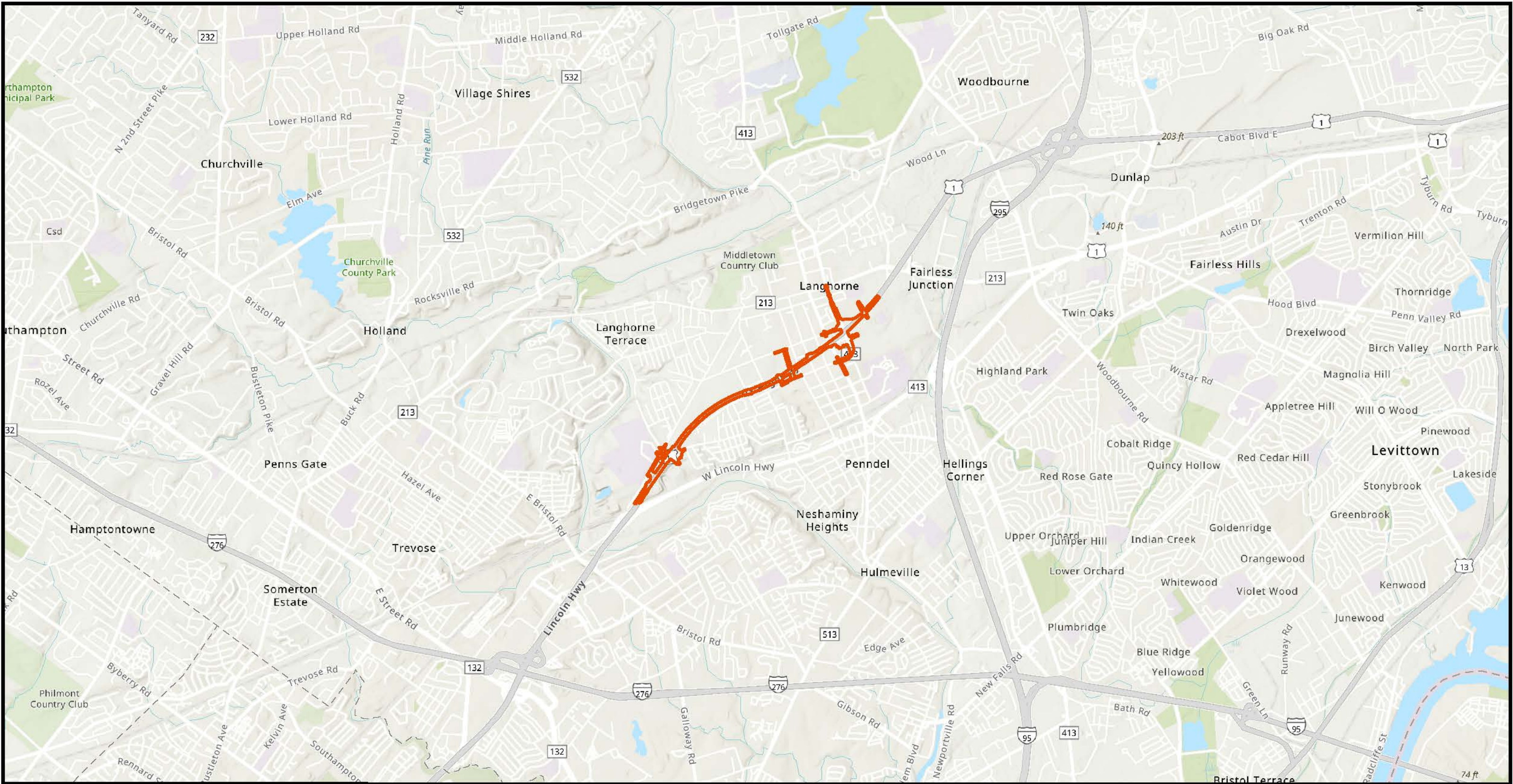
*Enlarged project resource mapping is provided for the following figures in the EA:

Figure 1: Project Vicinity Map
Figure 2: Detailed Project Map
Figure 3A-3C: Preferred Alternative Map
Figure 5: Wetland Existing Conditions
Figure 6: Wetland Impacts
Figure 7: Watercourse Existing Conditions
Figure 8: Watercourse Impacts
Figure 9: FEMA-Mapped Floodplains and Floodways
Figure 10: Public Lands
Figure 11: Phase I Environmental Site Assessment Recommendations

Figure 14: Noise Study Results
Figure 15: Zoning
Figure 16: Potential Residential Displacements
Figure 17: Historic Resources within the APE
Figure 18: A View of the APE within the Langhorne Historic District
Figure 22: Project Area Section 4(f) Resources



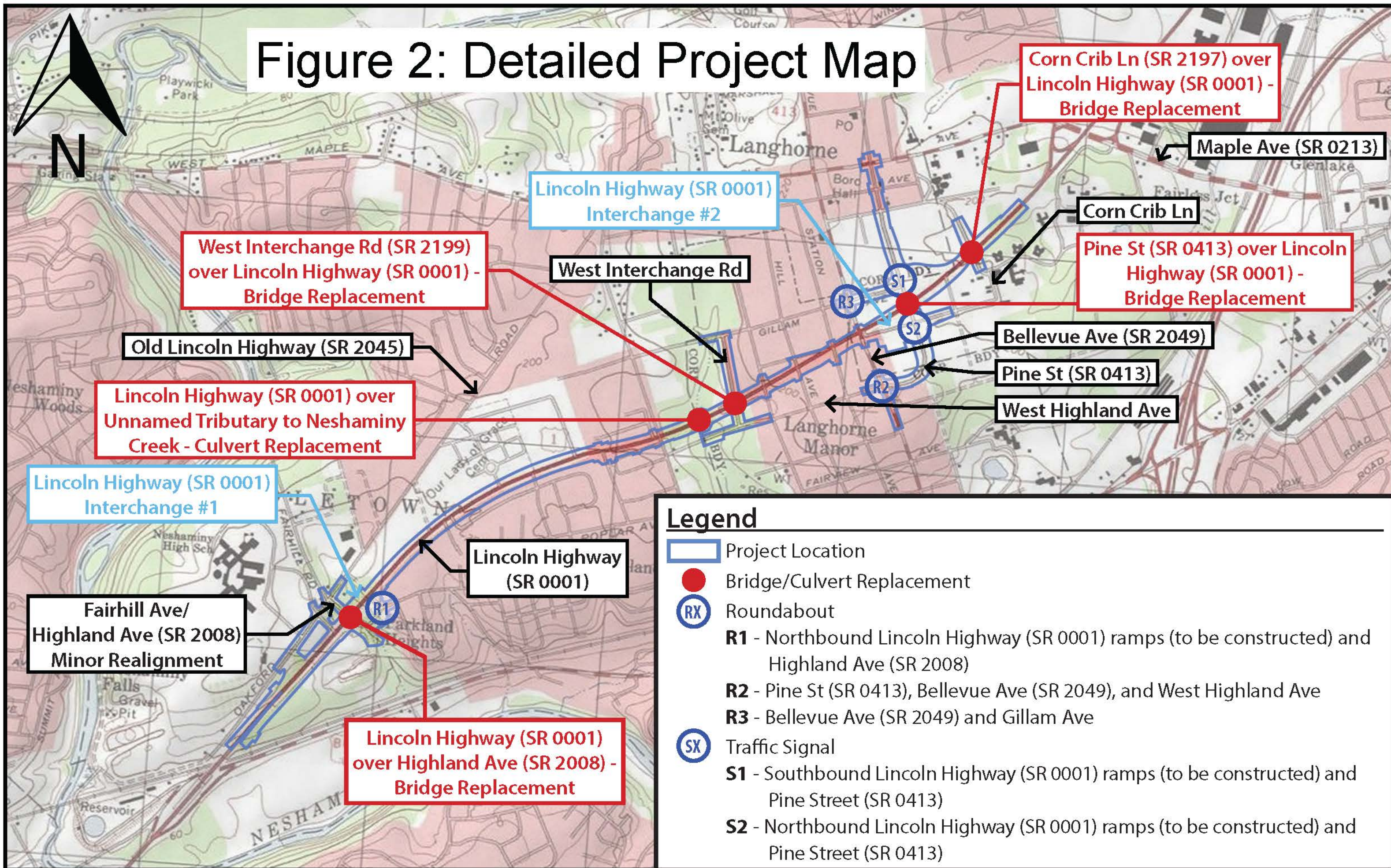
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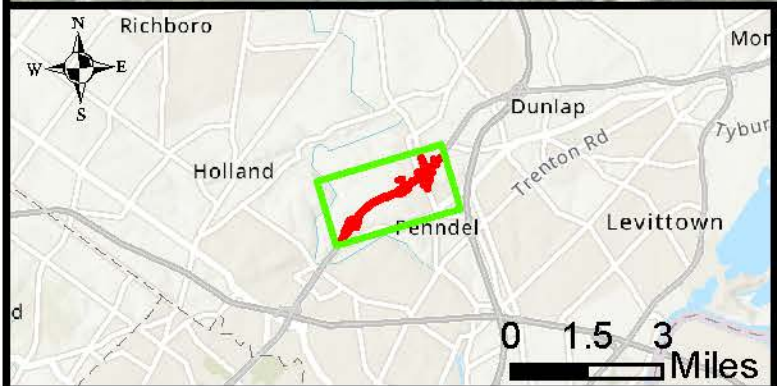


**FIGURE 1:
PROJECT
VICINITY MAP**

SR 0001 SECTION RC3

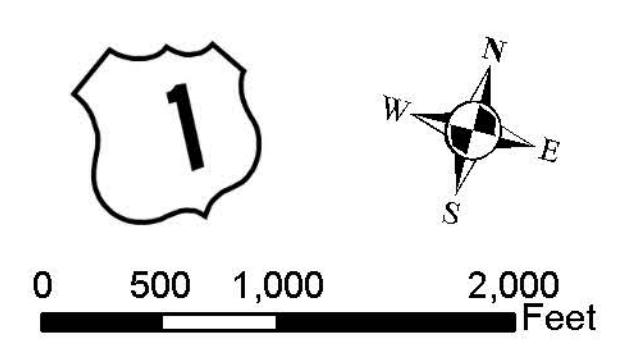
Figure 2: Detailed Project Map





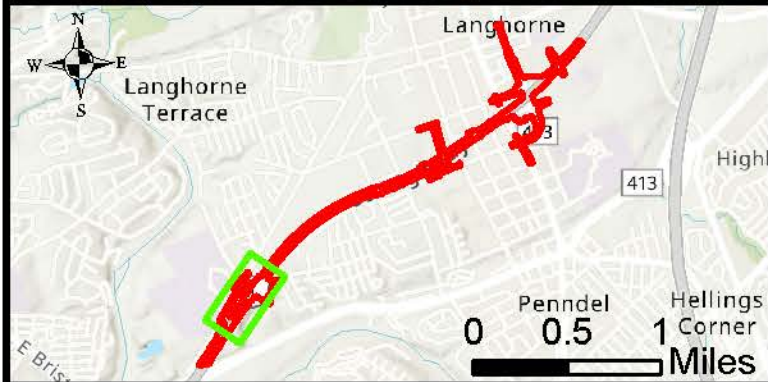
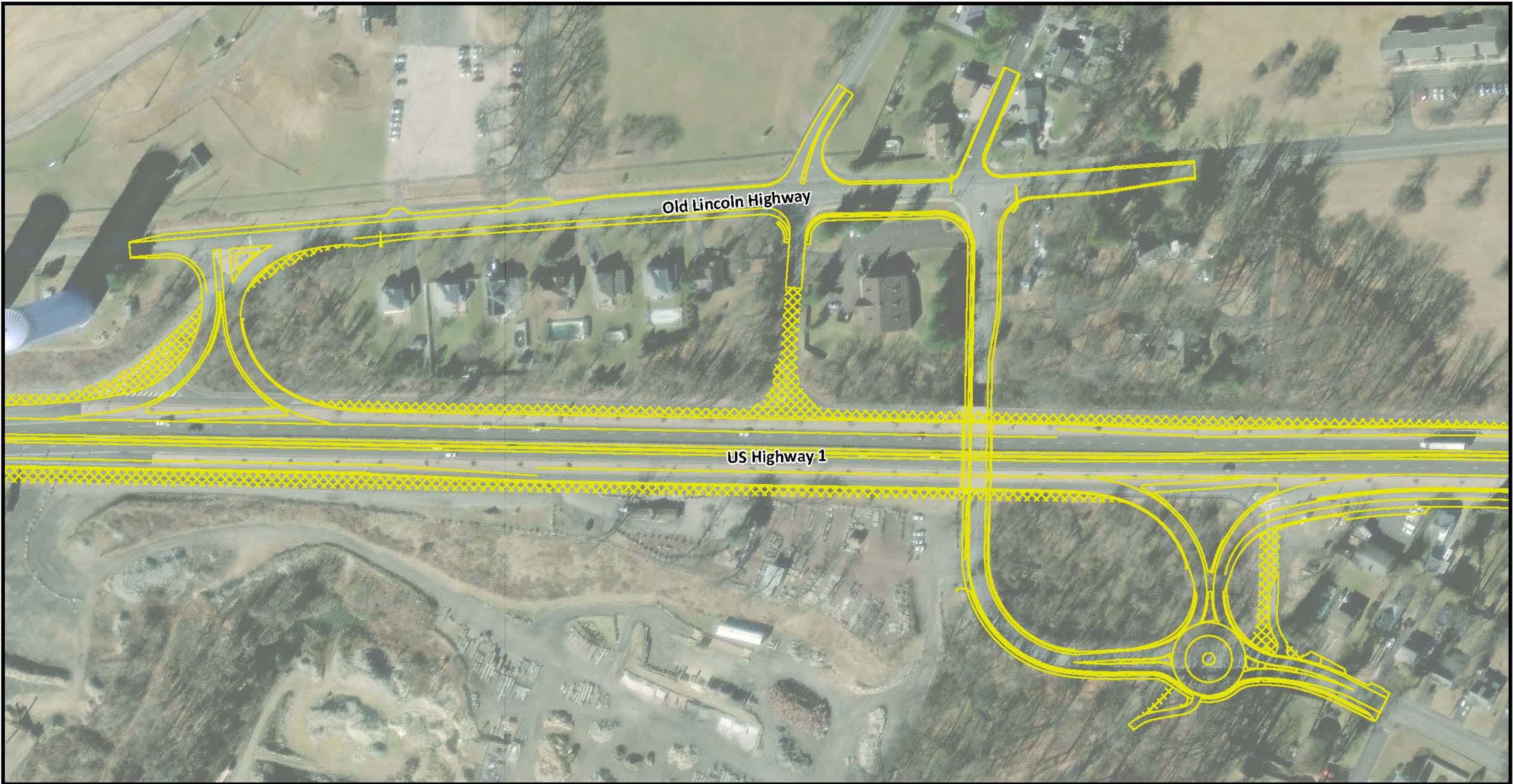
Legend

 RC3 Build Alternative



**FIGURE 3A:
PREFERRED
ALTERNATIVE**

SR 0001 SECTION RC3



Legend

 RC3 Build Alternative

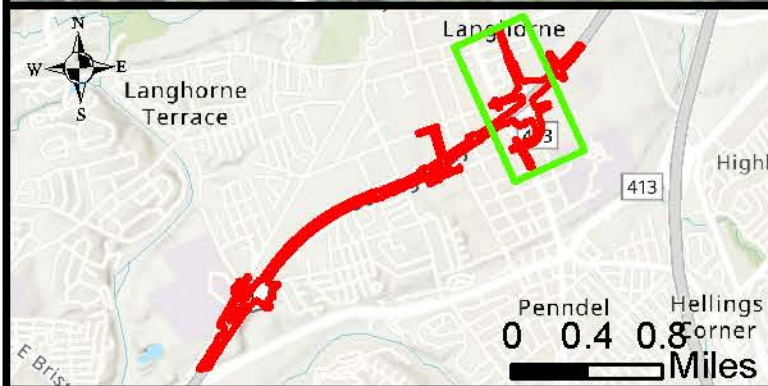
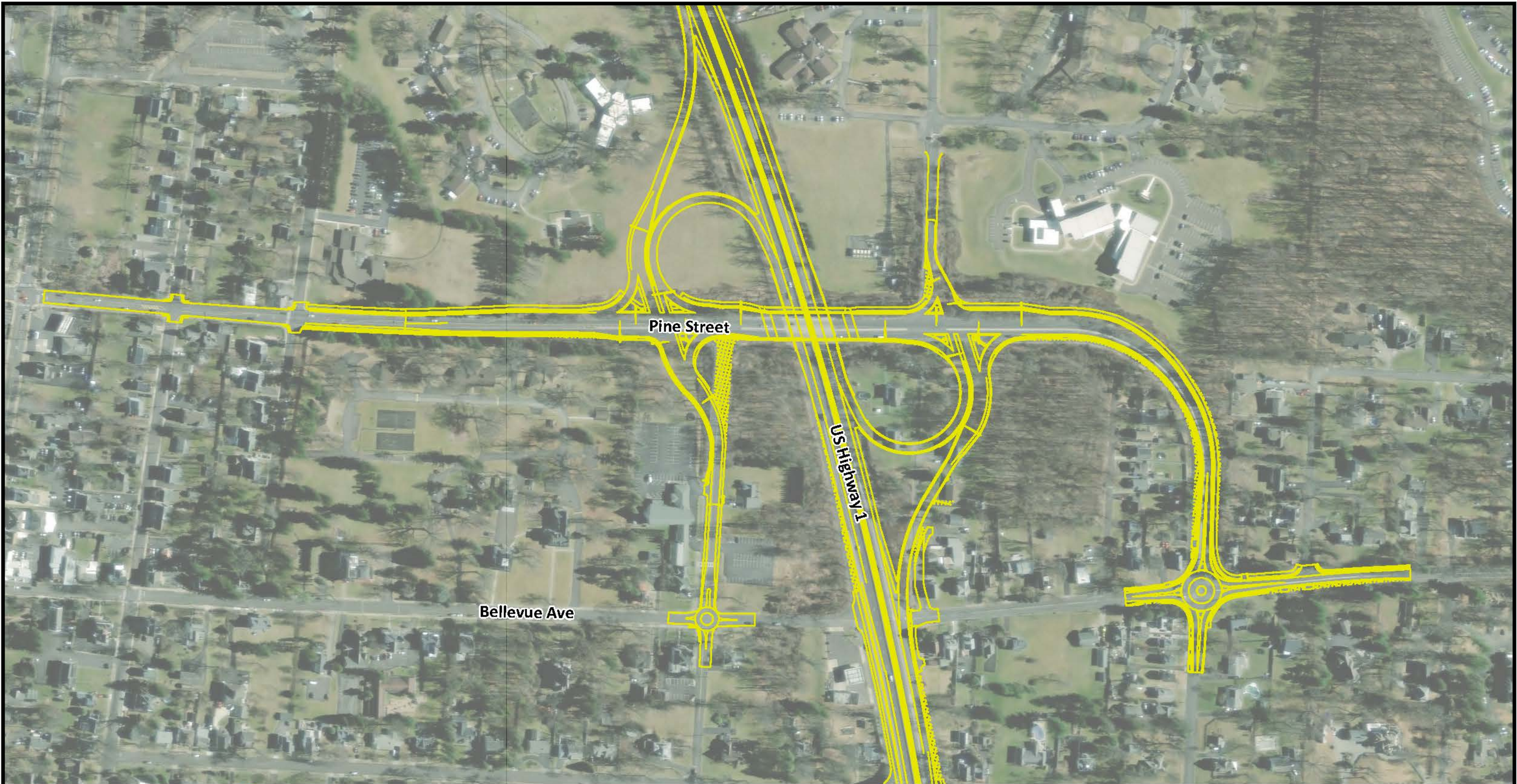




0 75 150 300 Feet

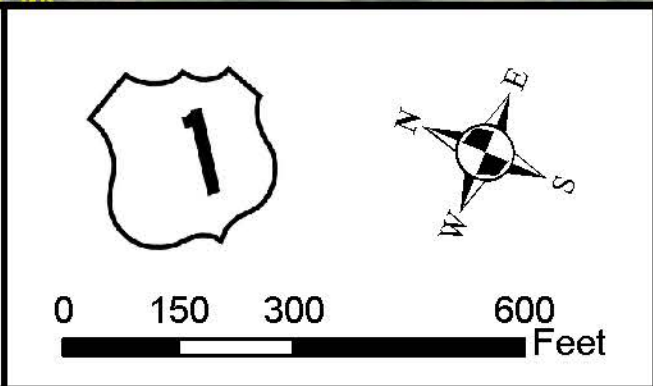
**FIGURE 3B:
PREFERRED
ALTERNATIVE**

SR 0001 SECTION RC3



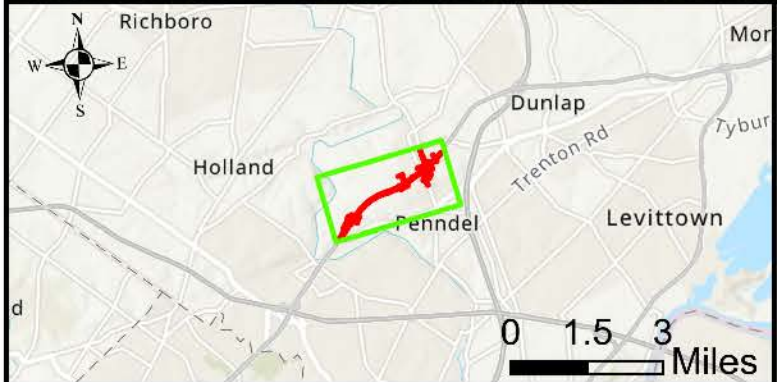
Legend

 RC3 Build Alternative



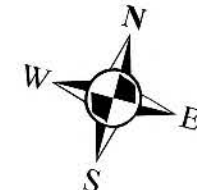
**FIGURE 3C:
PREFERRED
ALTERNATIVE**

SR 0001 SECTION RC3



Legend

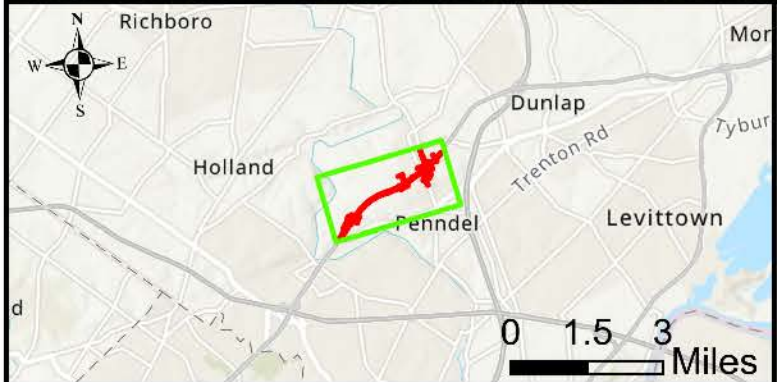
-  Delineated Wetland
-  Project Area



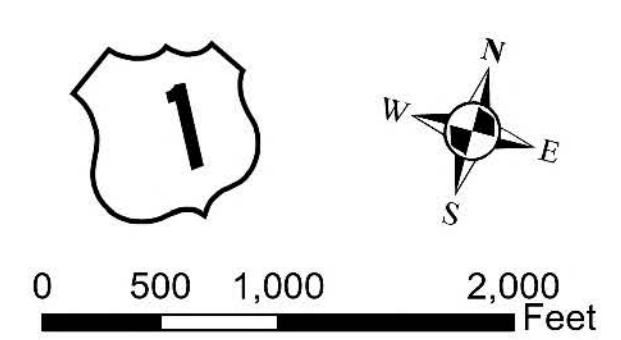
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**FIGURE 5:
WETLAND EXISTING
CONDITIONS**

SR 0001 SECTION RC3

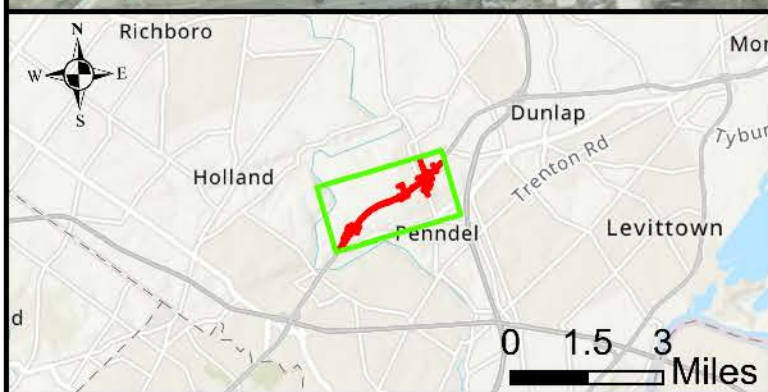
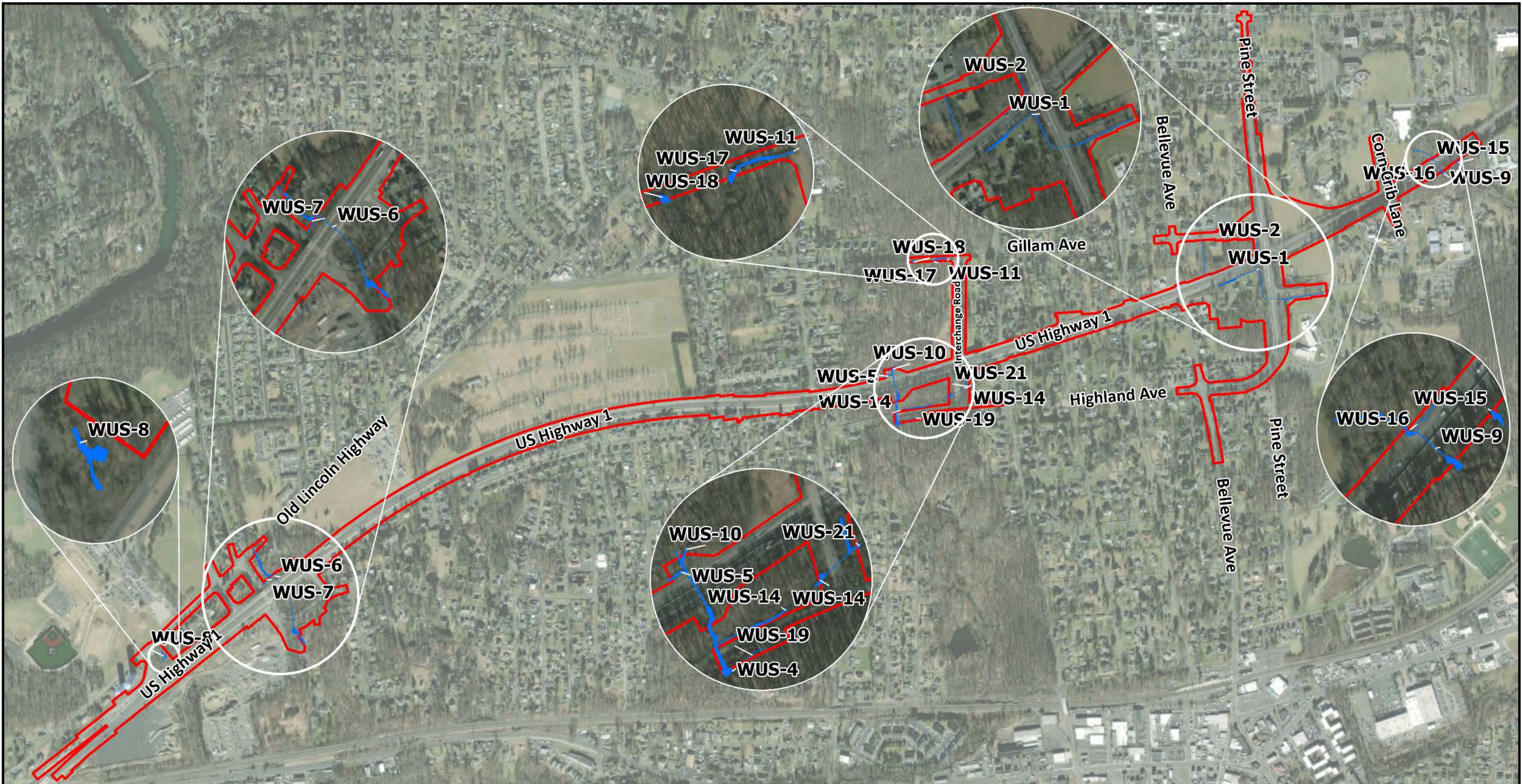


- Legend**
- Delineated Wetland
 - Delineated Wetland (Impacted Portion)
 - Project Area



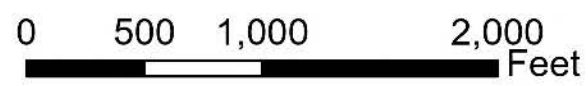
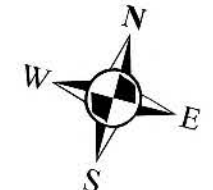
**FIGURE 6:
WETLAND IMPACTS**

SR 0001 SECTION RC3

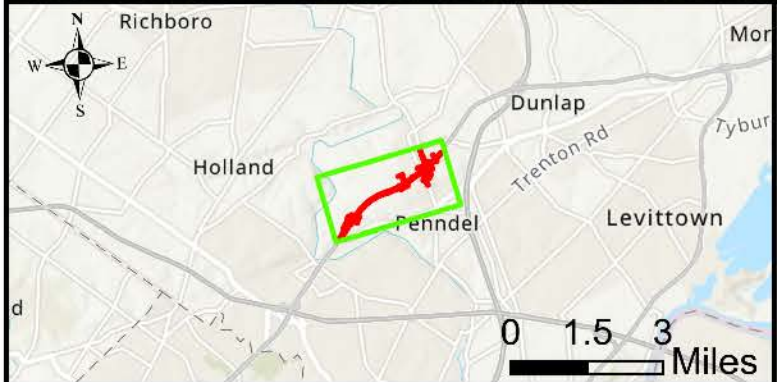
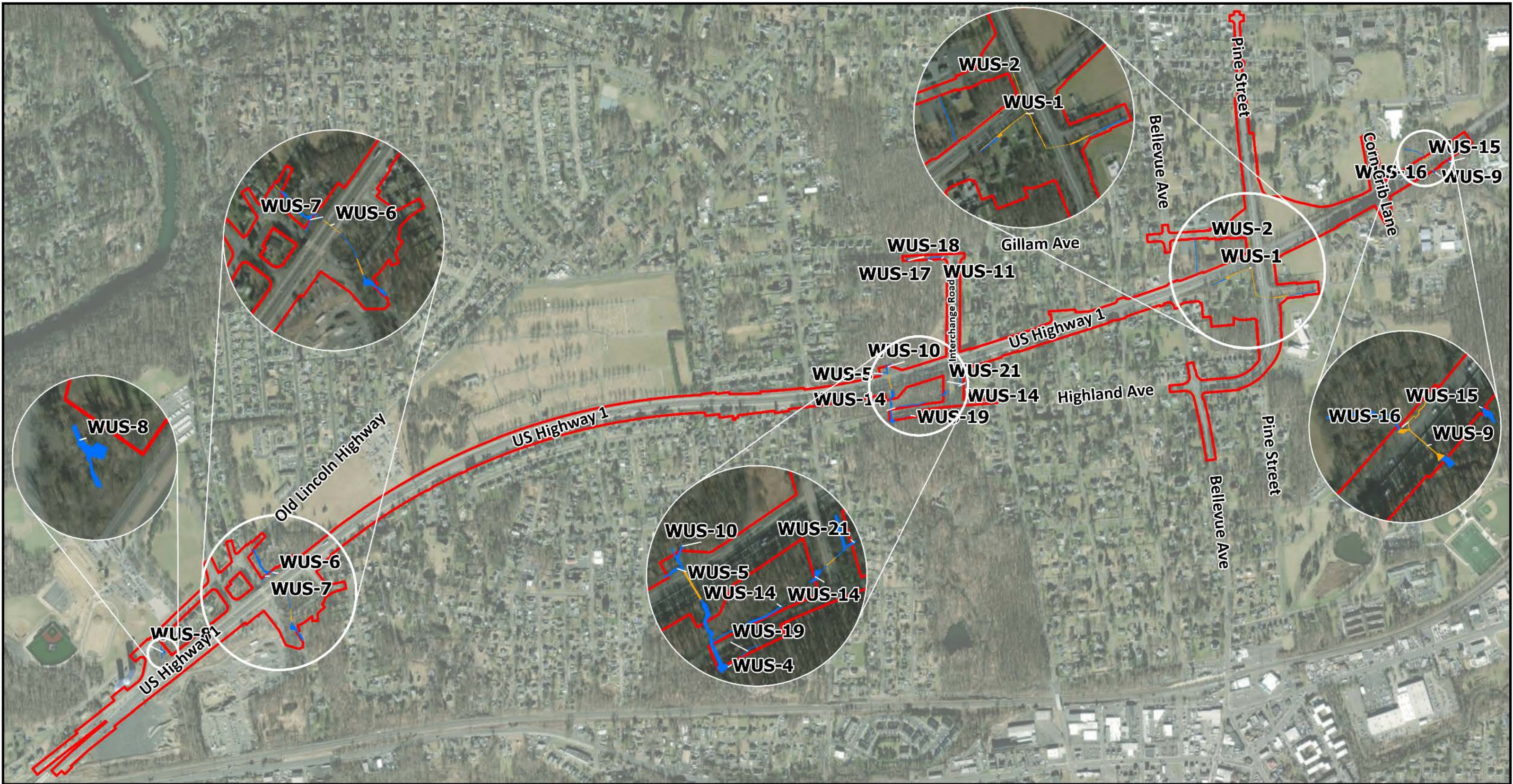


Legend

-  Delineated Stream
-  Project Area

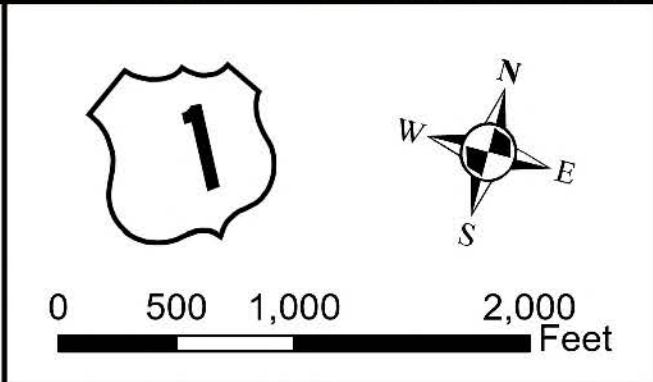


**FIGURE 7:
WATERCOURSE
EXISTING
CONDITIONS**
SR 0001 SECTION RC3



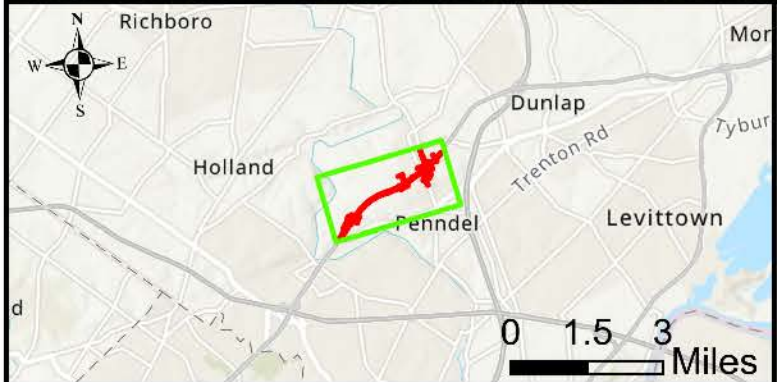
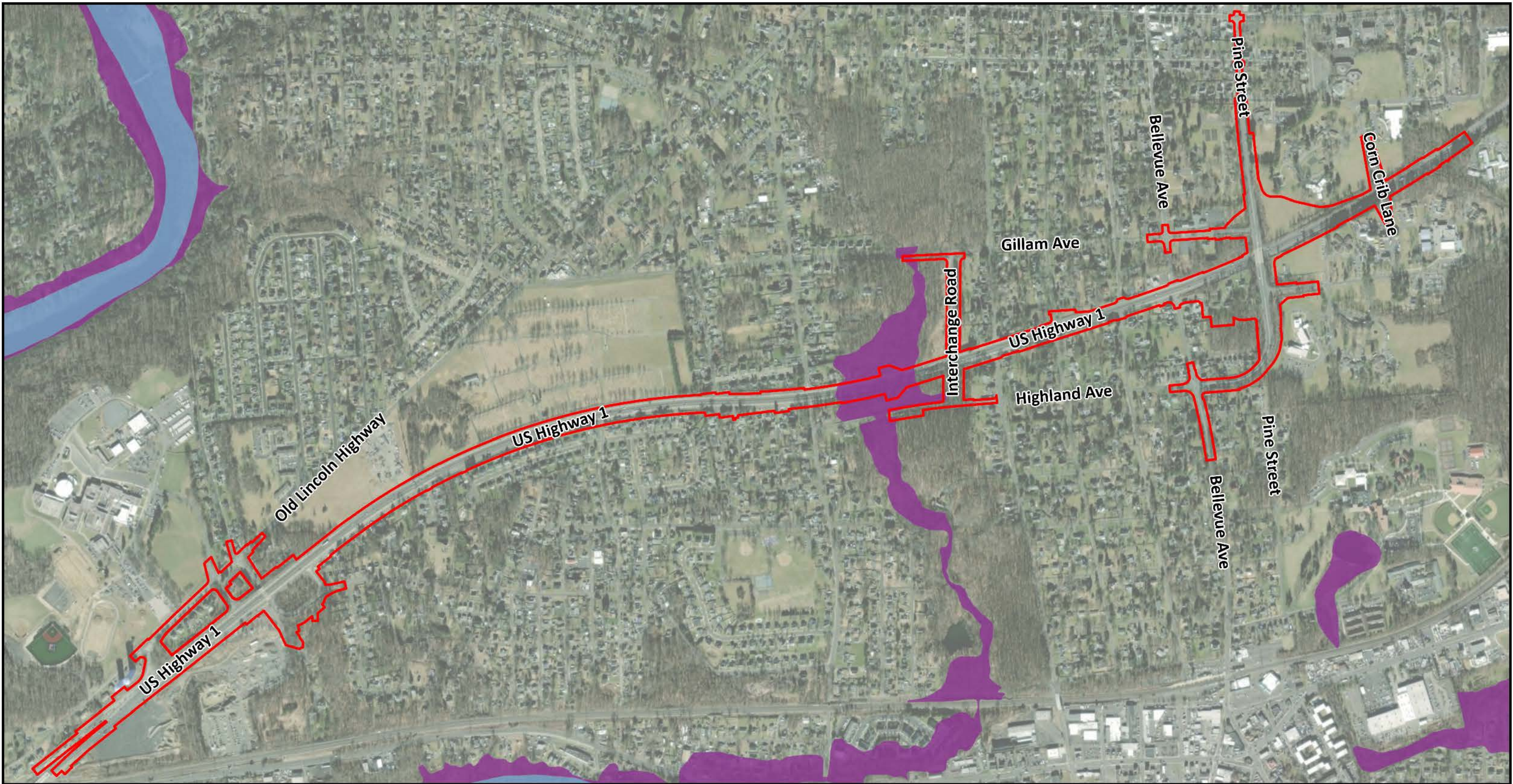
Legend

- Delineated Stream
- Delineated Stream (Impacted Portion)
- Project Area



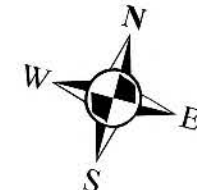
**FIGURE 8:
WATERCOURSE
IMPACTS**

SR 0001 SECTION RC3



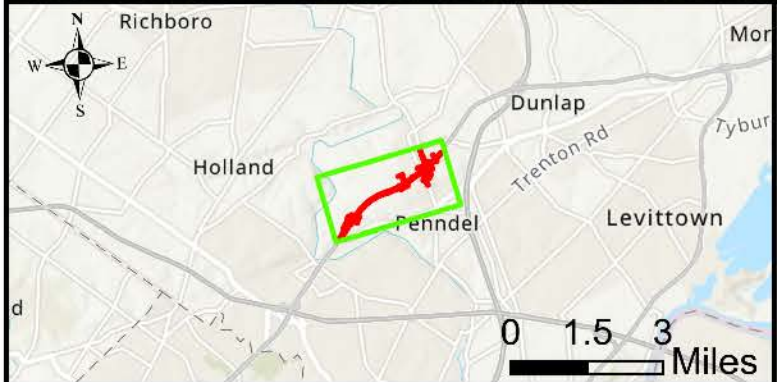
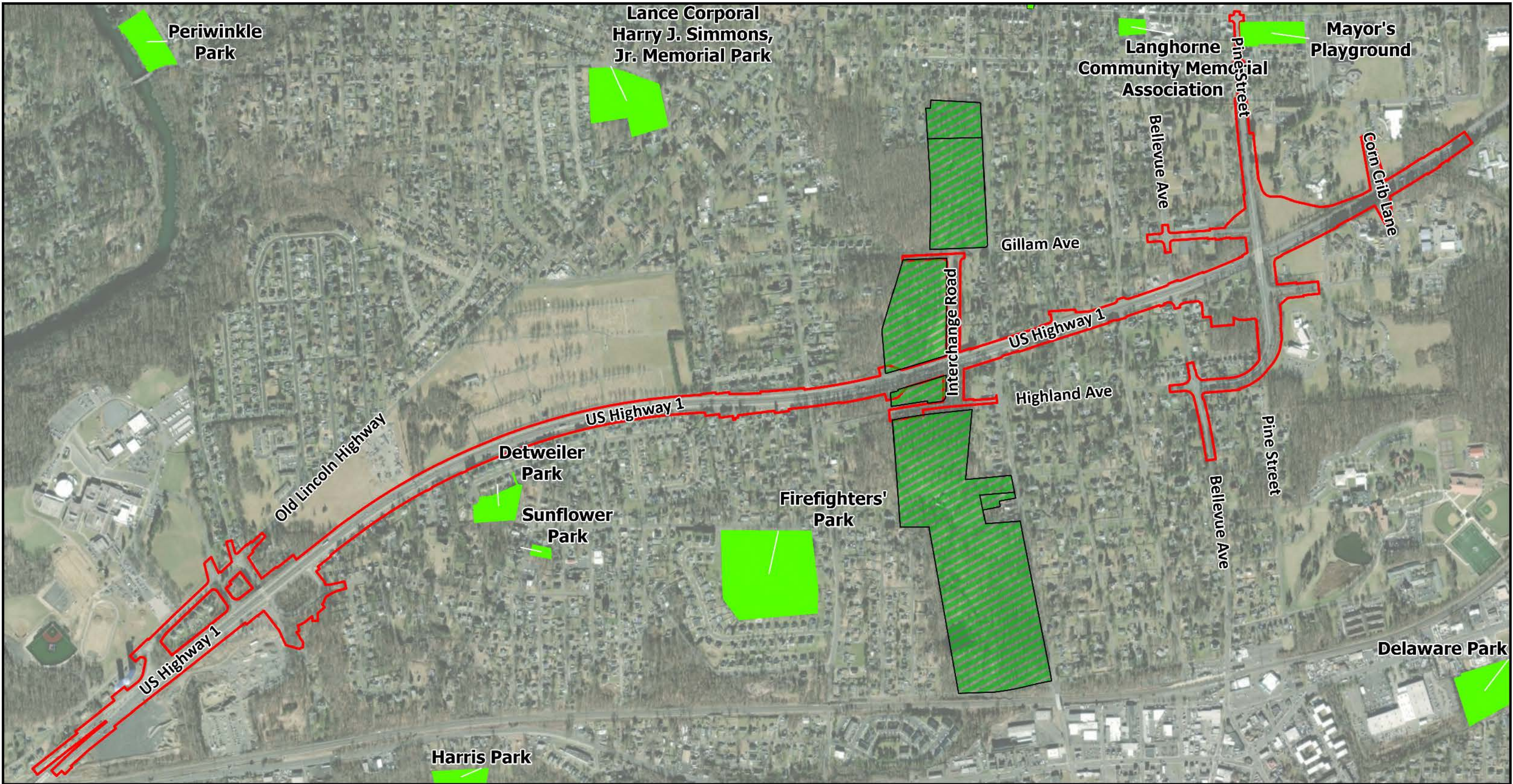
Legend

-  100-Year Floodplain (Zone AE)
-  Regulatory Floodway
-  Project Area



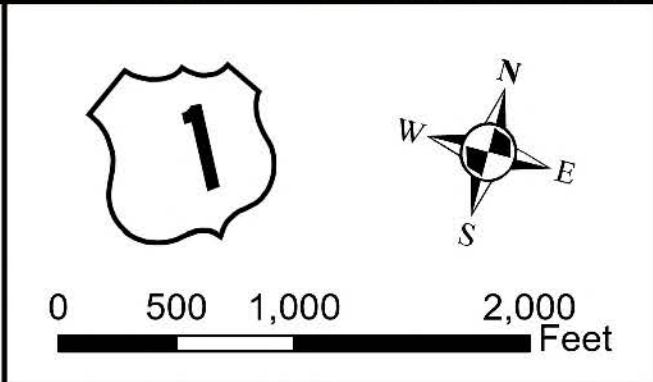
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**FIGURE 9:
FEMA-MAPPED
FLOODPLAINS
AND FLOODWAYS**
SR 0001 SECTION RC3



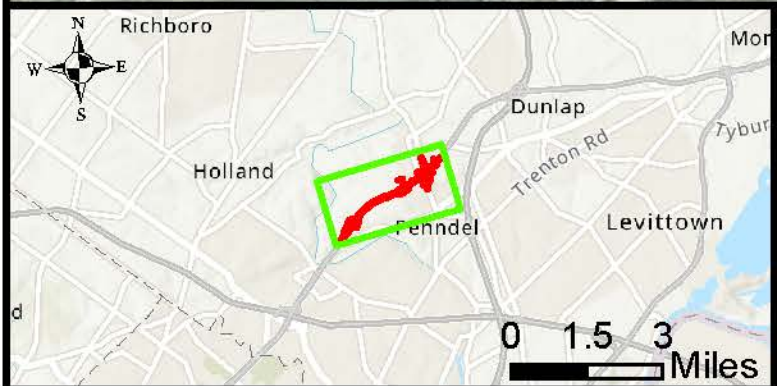
Legend

-  Local Park
-  Conservation Easement Parcel
-  Project Area



**FIGURE 10:
PUBLIC LANDS**

SR 0001 SECTION RC3



Legend

Project Area

Potential Waste Sites - Recommendations

● No Further Action

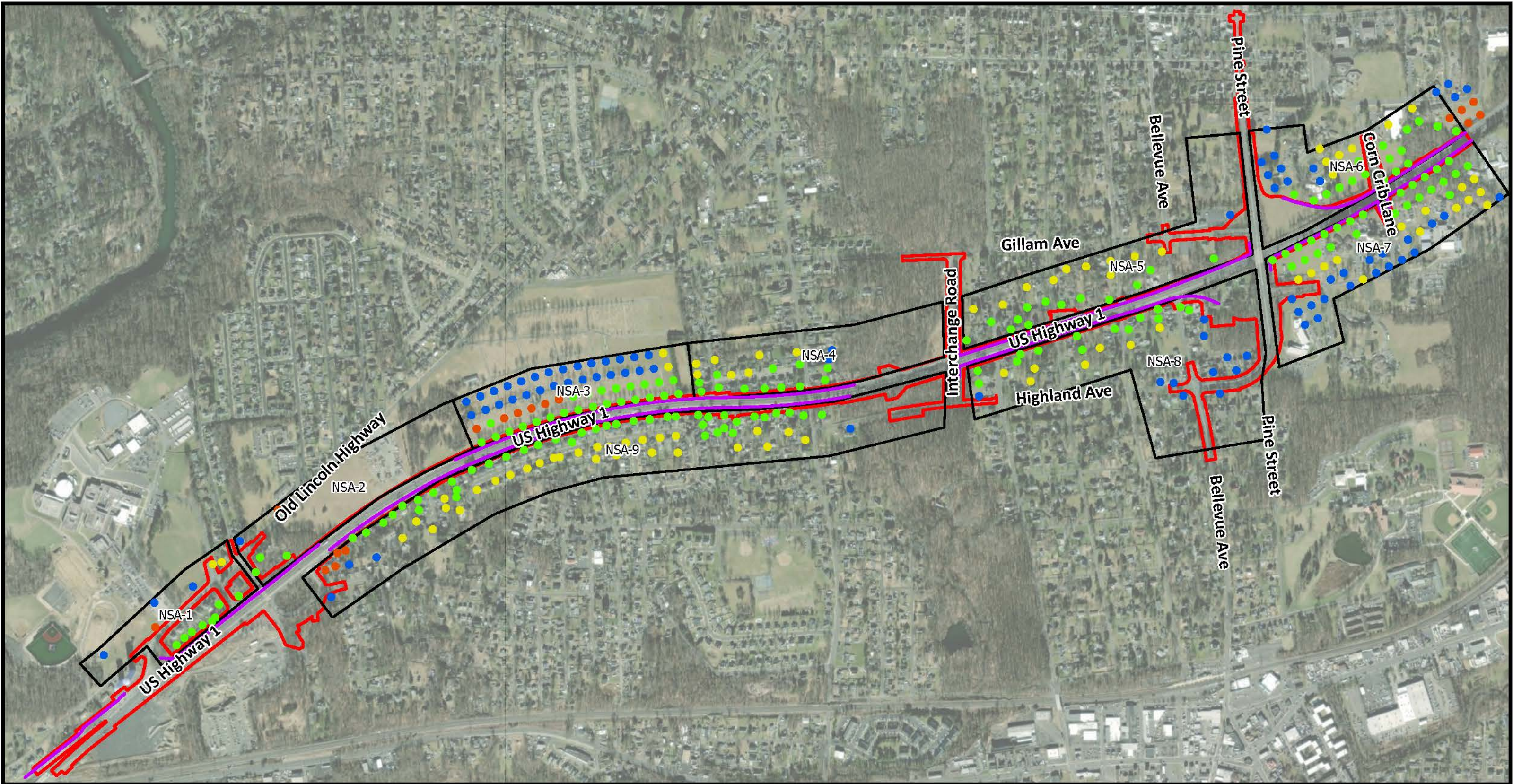
● Further Action May Be Required

● Further Action Required



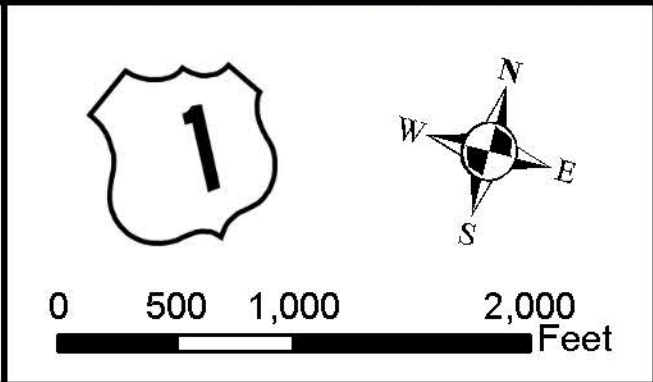
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FIGURE 11: PHASE I ENVIRONMENTAL SITE ASSESSMENT RECOMMENDATIONS
SR 0001 SECTION RC3



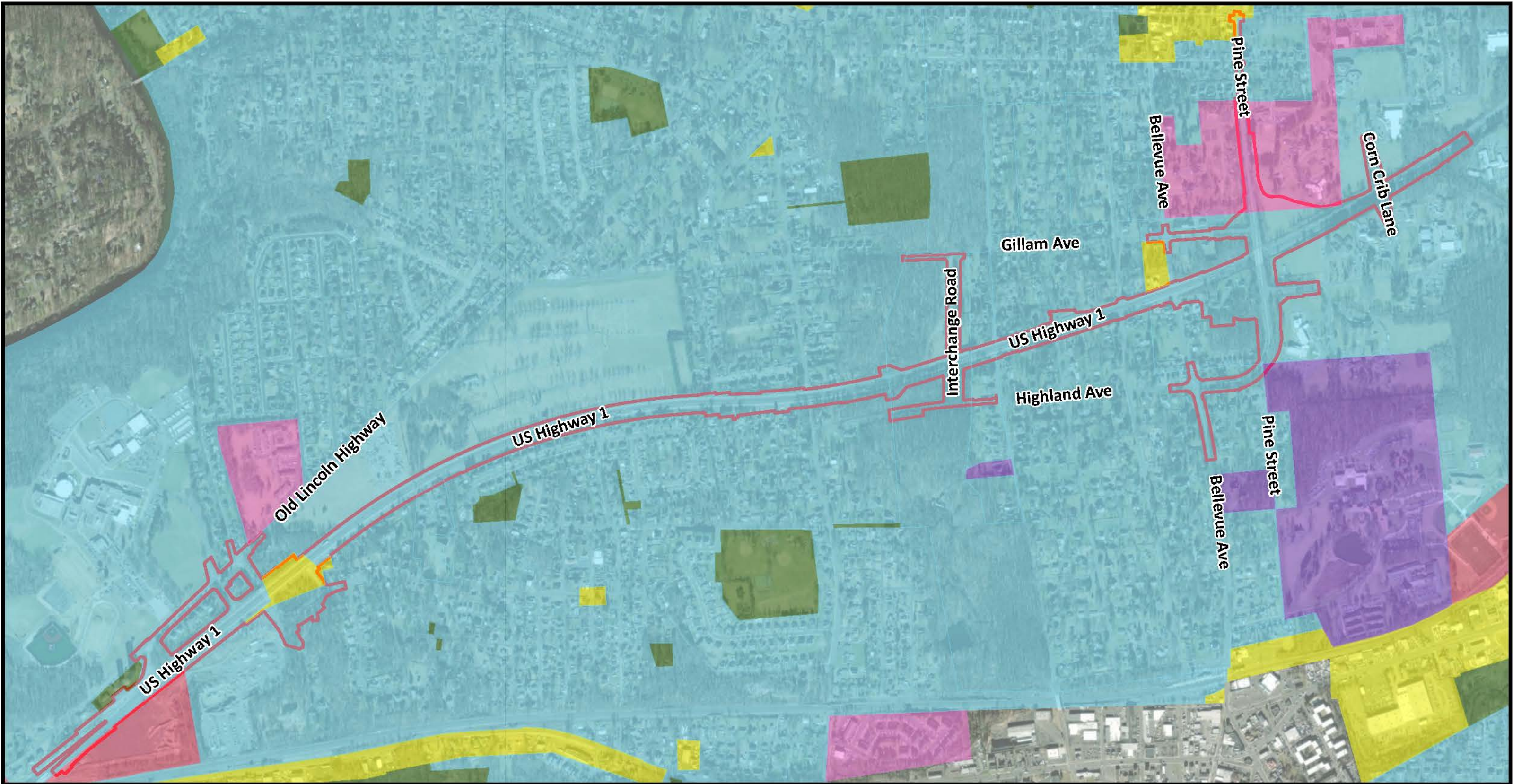
Legend

Proposed Noise Barrier	Noise Receptor
Noise Study Area	Impacted, Benefitted
Project Area	Impacted, Not Benefitted
	Not Impacted, Benefitted
	Not Impacted, Not Benefitted



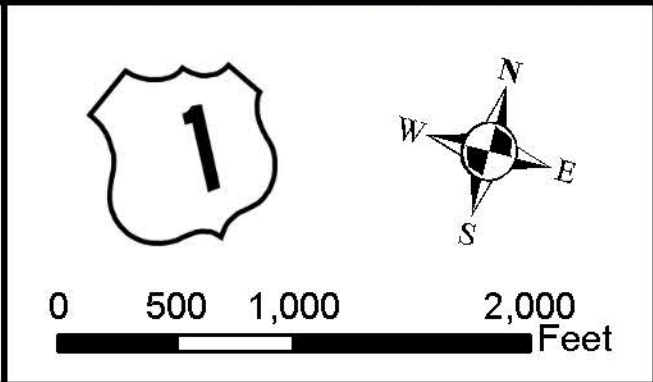
**FIGURE 14:
NOISE STUDY
RESULTS**

SR 0001 SECTION RC3



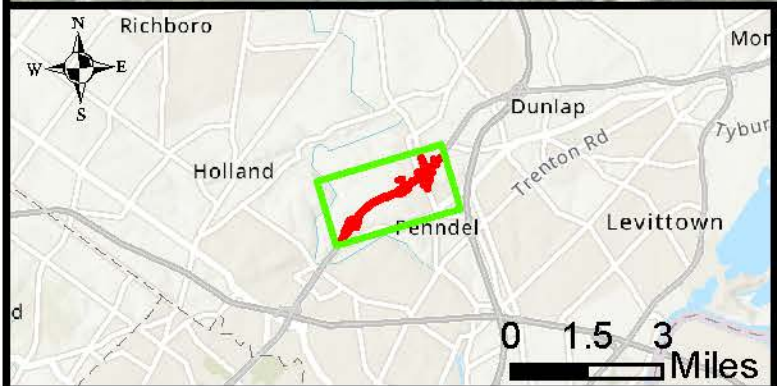
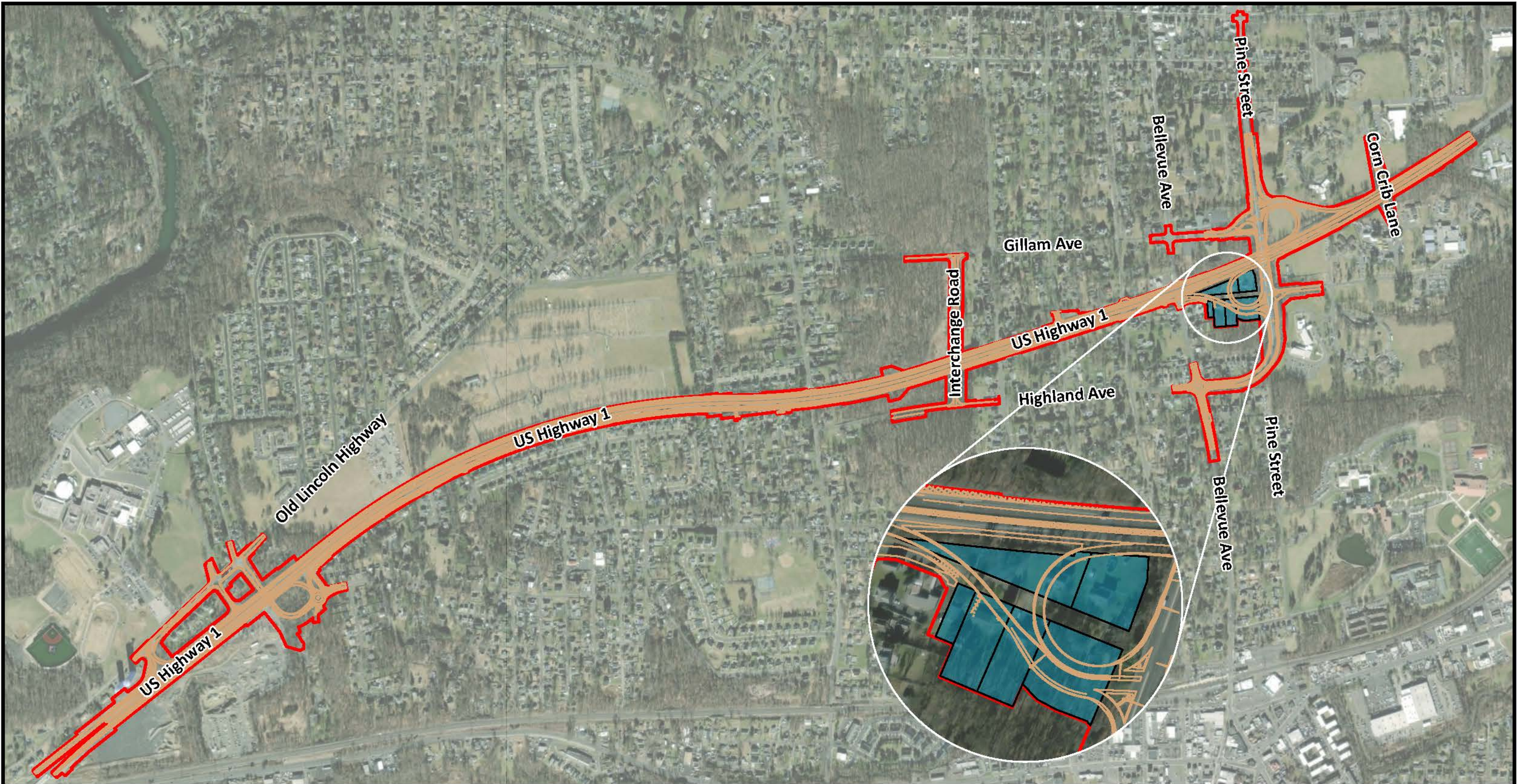
Legend

Project Area	Industrial/Utility
Agricultural	Institutional
Commercial	Office
	Residential
	Resource Protection



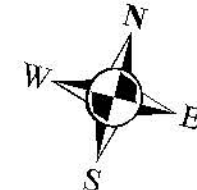
**FIGURE 15:
ZONING**

SR 0001 SECTION RC3



Legend

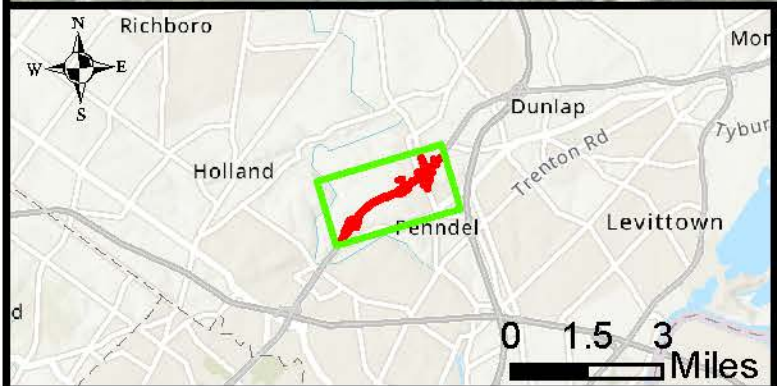
-  RC3 Build Alternative
-  Residential Displacement
-  Project Area



0 500 1,000 2,000 Feet

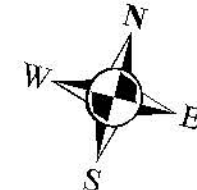
FIGURE 16: RESIDENTIAL DISPLACEMENTS

SR 0001 SECTION RC3



Legend

-  Langhorne Historic District (NRHP Listed)
-  APE



0 500 1,000 2,000 Feet

**FIGURE 17:
HISTORIC
RESOURCES WITHIN
THE APE**
SR 0001 SECTION RC3



Legend

- Langhorne Historic District (NRHP Listed)
- APE

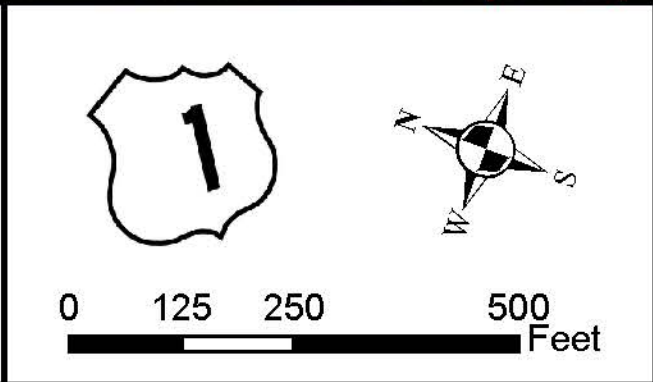
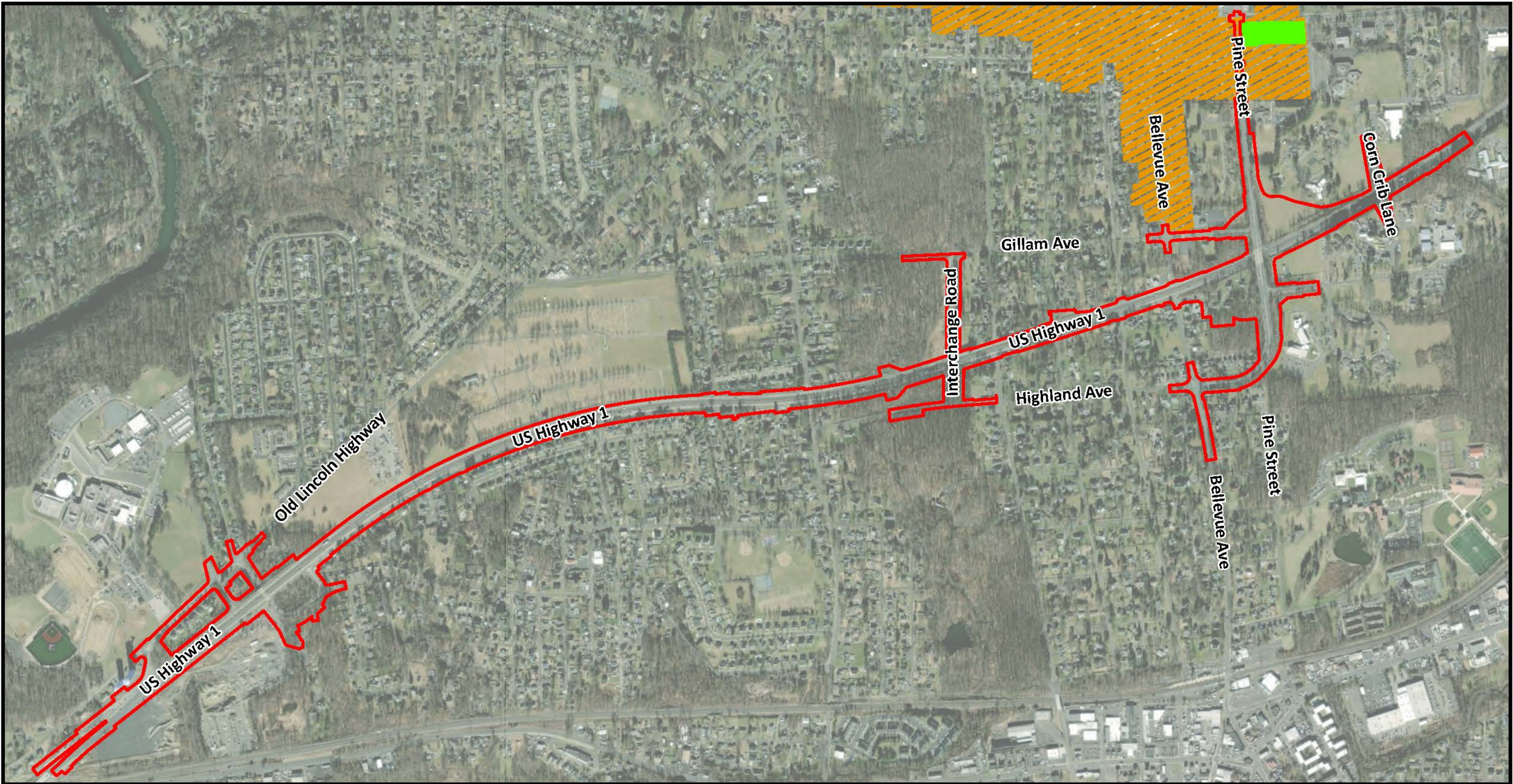
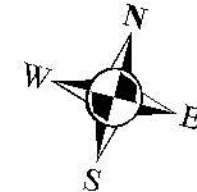


FIGURE 18:
APE WITHIN THE
LANGHORNE
HISTORIC DISTRICT
SR 0001 SECTION RC3



Legend

-  Mayor's Playground
-  Langhorne Historic District
-  Project Area



0 500 1,000 2,000 Feet

**FIGURE 22:
SECTION 4(F)
RESOURCES**

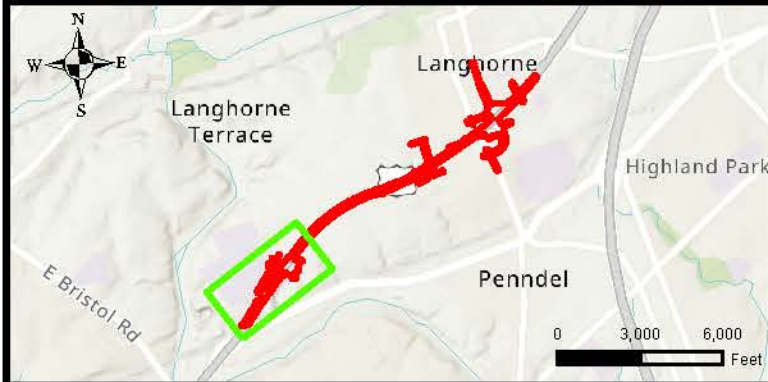
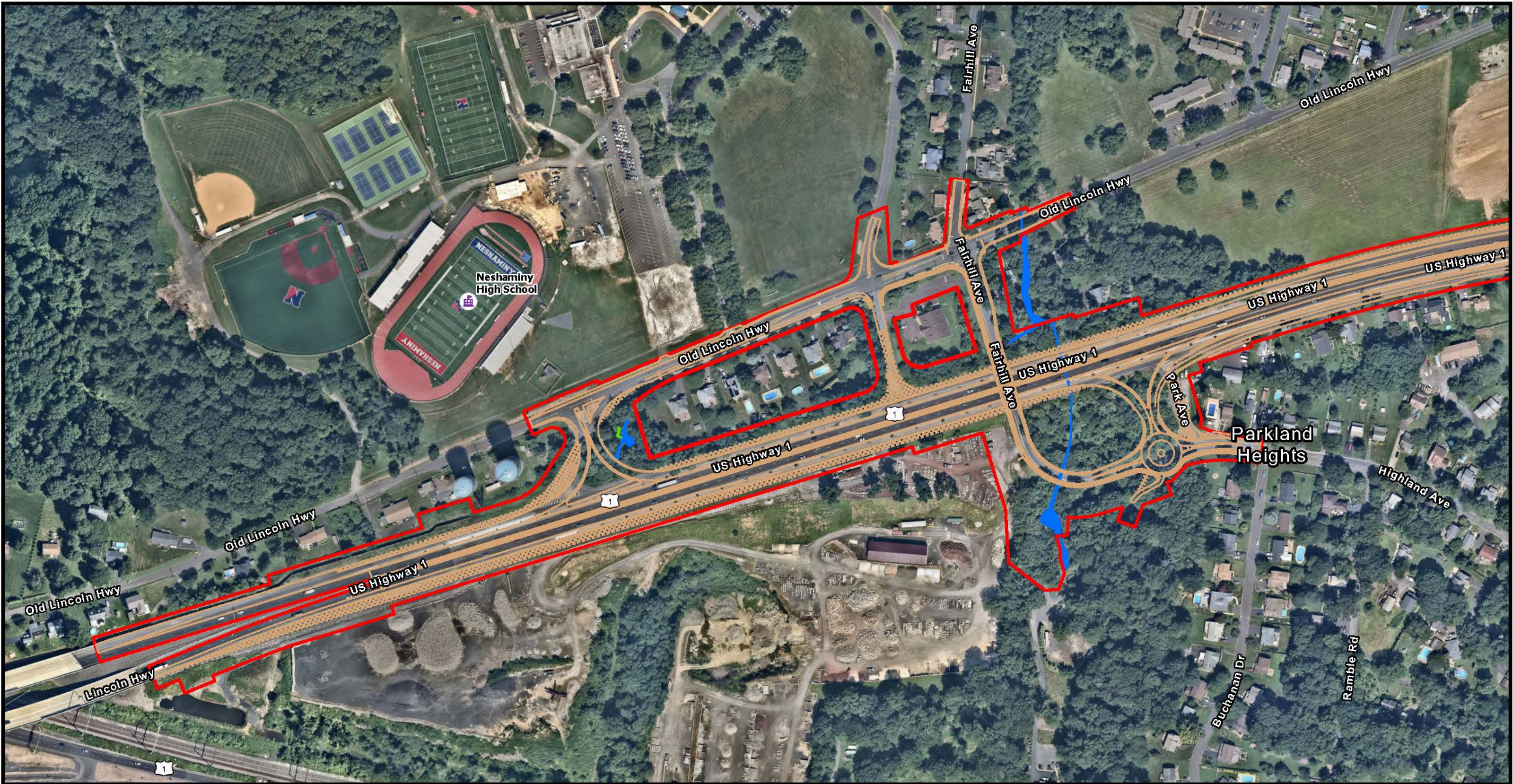
SR 0001 SECTION RC3



Appendix B-2: Environmental Constraints Map

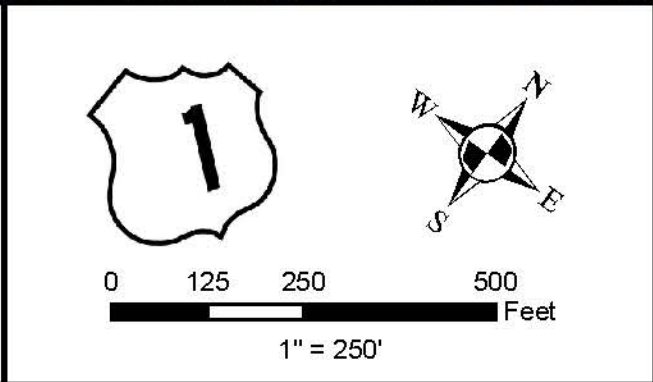


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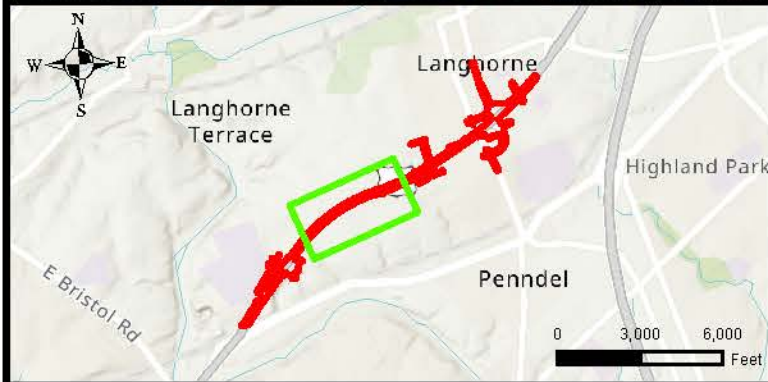
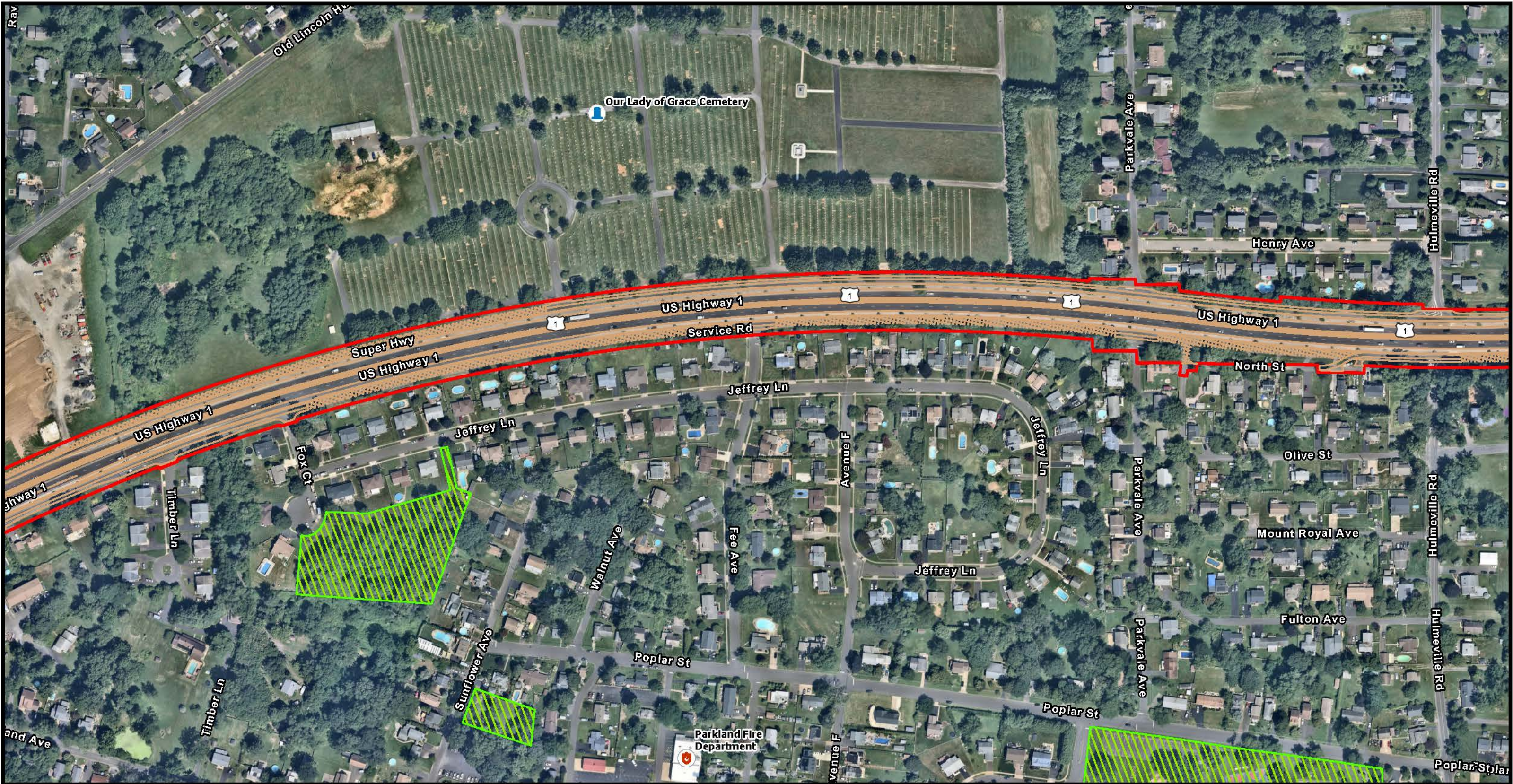
RC3 Build Alternative	Delineated Stream
Project Area	Langhorne Historic District
Local Park	Conservation Easement Parcel
Delineated Wetland	



**APPENDIX B-1:
ENVIRONMENTAL
CONSTRAINTS**

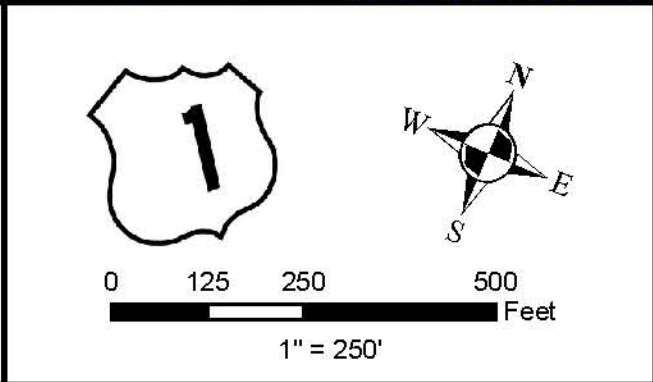
S.R. 0001 SECTION RC3

MIDDLETOWN TOWNSHIP, AND LANGHORNE
MANOR AND LANGHORNE BOROUGH, PA
BUCKS COUNTY, PA



Legend

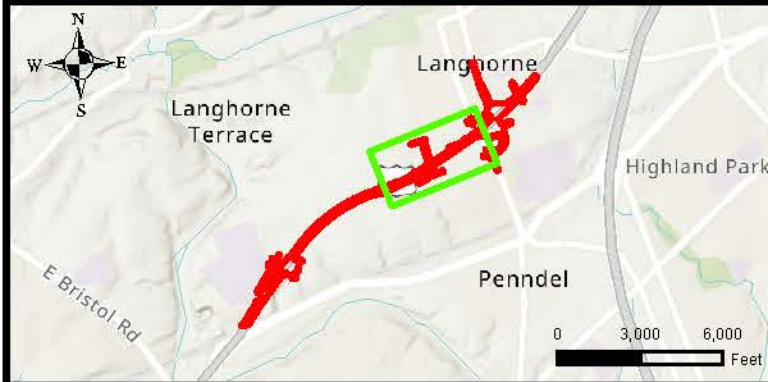
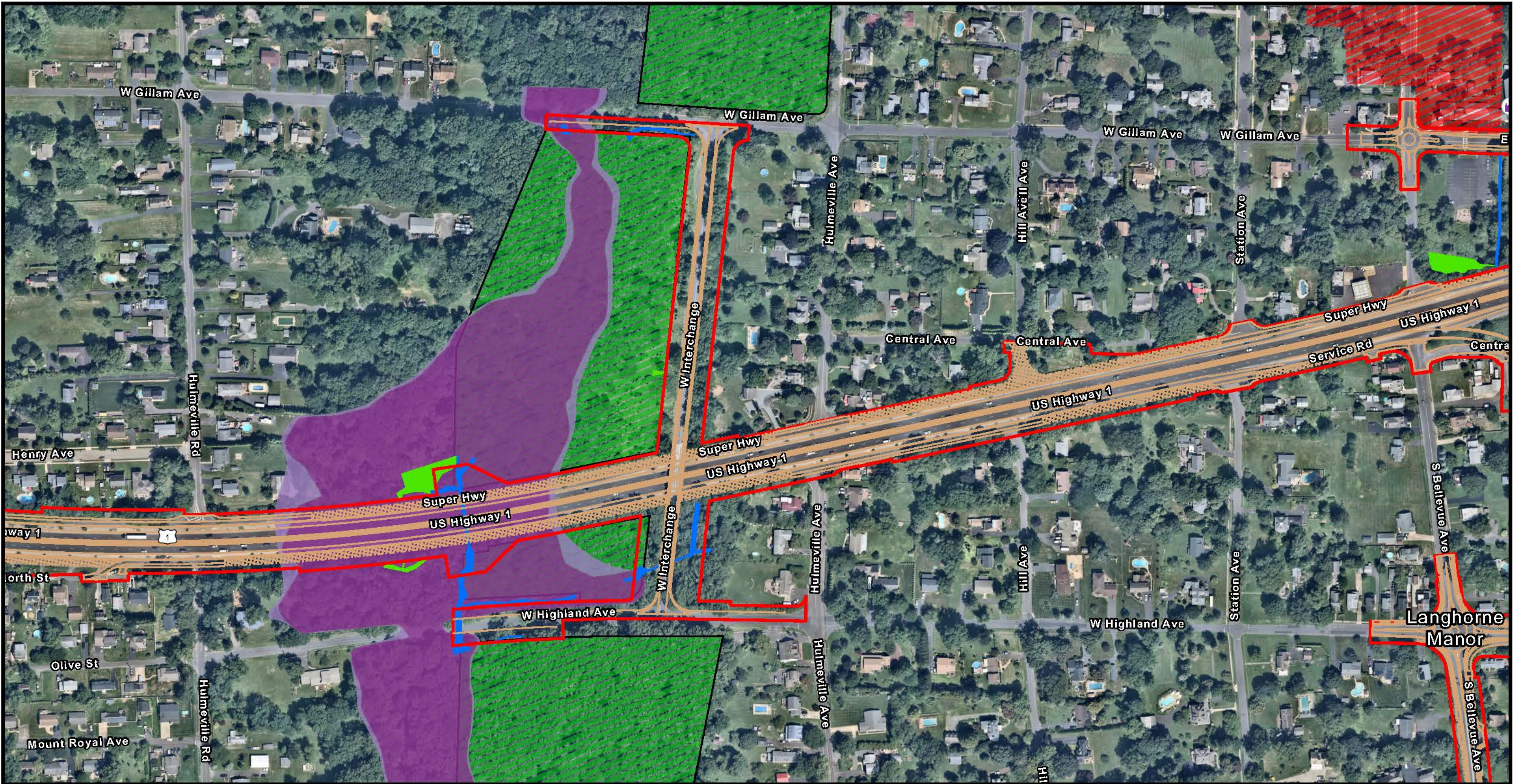
RC3 Build Alternative	Langhorne Historic District
Project Area	Conservation Easement Parcel
Local Park	0.2% Annual Chance Flood Hazard
Delineated Wetland	Fire Station
Delineated Stream	Cemetery



**APPENDIX B-2:
ENVIRONMENTAL
CONSTRAINTS**

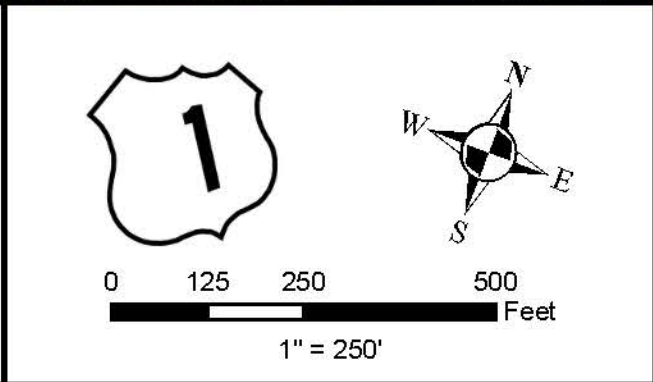
S.R. 0001 SECTION RC3

MIDDLETOWN TOWNSHIP, AND LANGHORNE
MANOR AND LANGHORNE BOROUGHS,
BUCKS COUNTY, PA



Legend

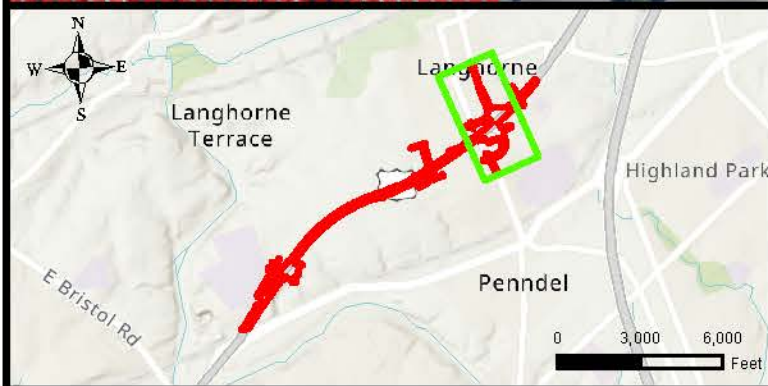
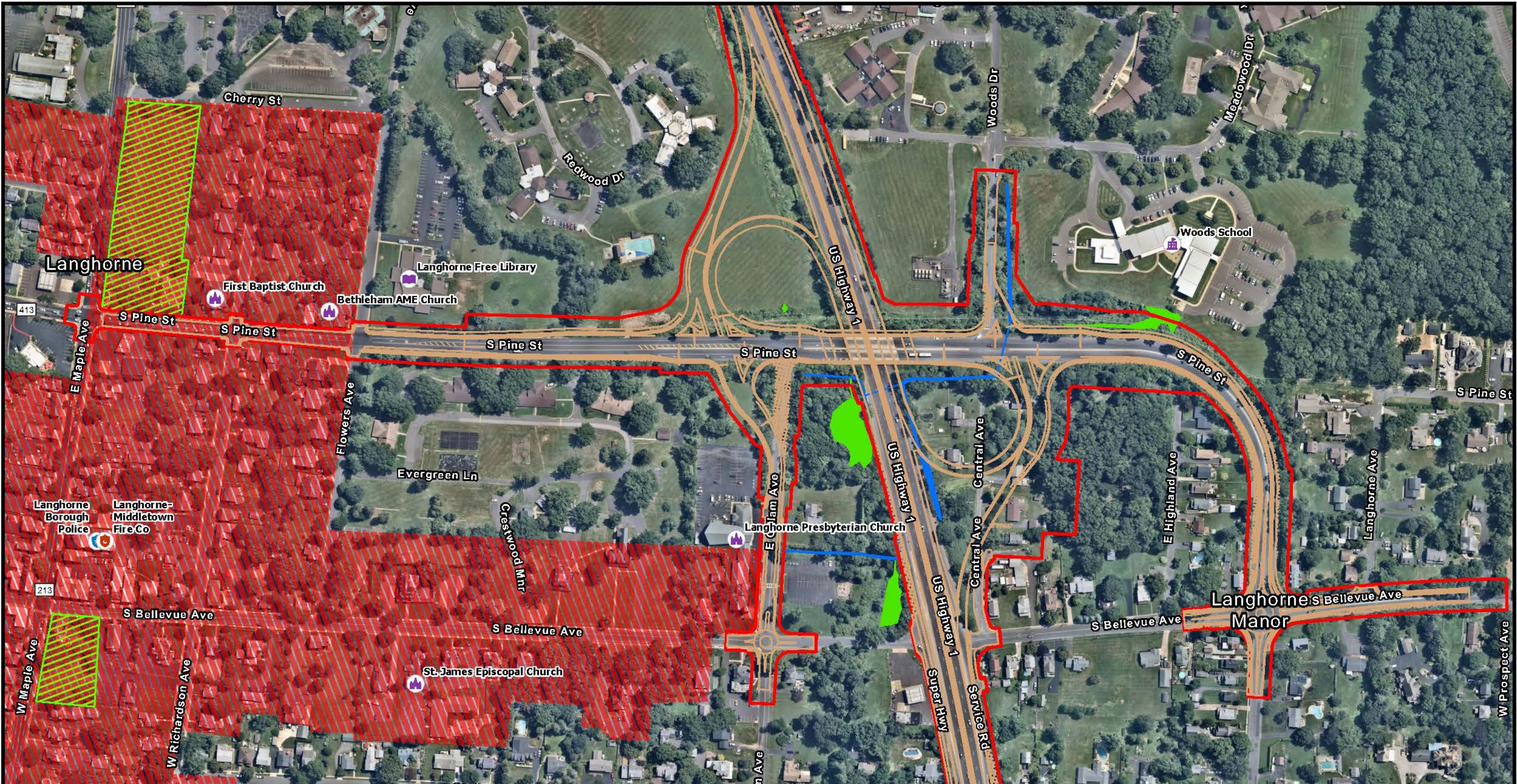
RC3 Build Alternative	Conservation Easement Parcel
Project Area	0.2% Annual Chance Flood Hazard
Local Park	1% Annual Chance Flood Hazard
Delineated Wetland	Church
Delineated Stream	
Langhorne Historic District	



**APPENDIX B-3:
ENVIRONMENTAL
CONSTRAINTS**

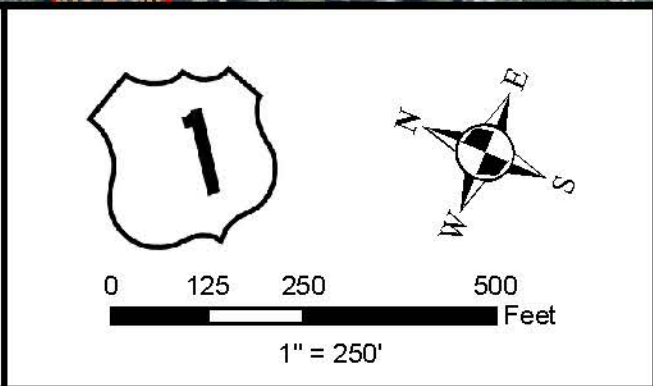
S.R. 0001 SECTION RC3

MIDDLETOWN TOWNSHIP, AND LANGHORNE
MANOR AND LANGHORNE BOROUGHS,
BUCKS COUNTY, PA



Legend

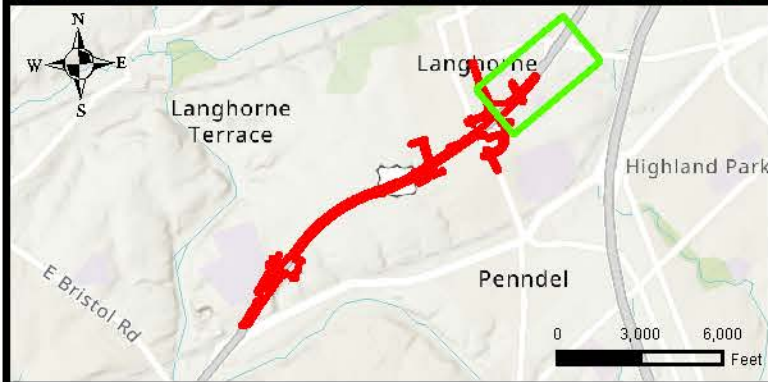
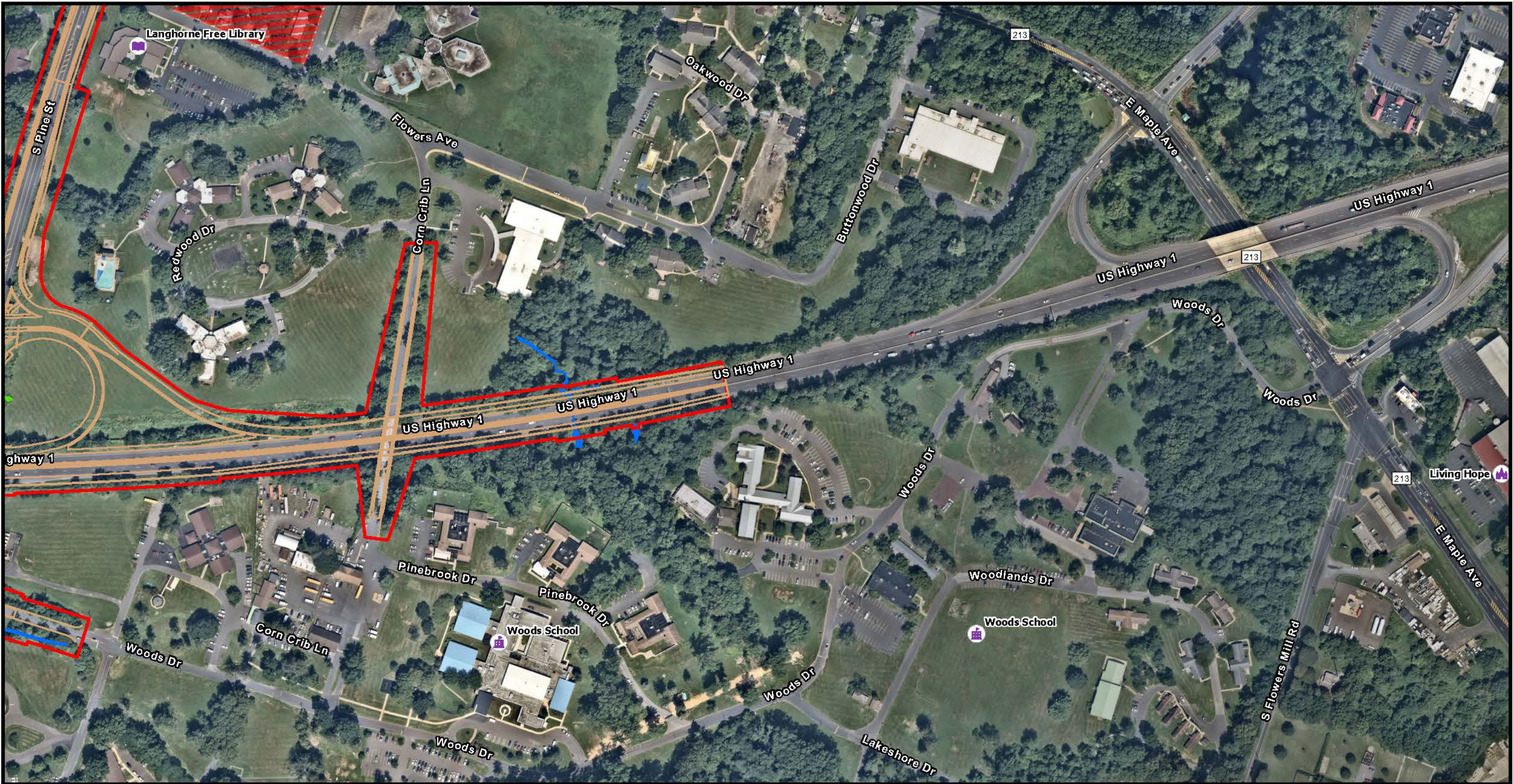
RC3 Build Alternative	Conservation Easement Parcel
Project Area	Police Station
Local Park	Fire Station
Delineated Wetland	Church
Delineated Stream	Library
Langhorne Historic District	



**APPENDIX B-4:
ENVIRONMENTAL
CONSTRAINTS**

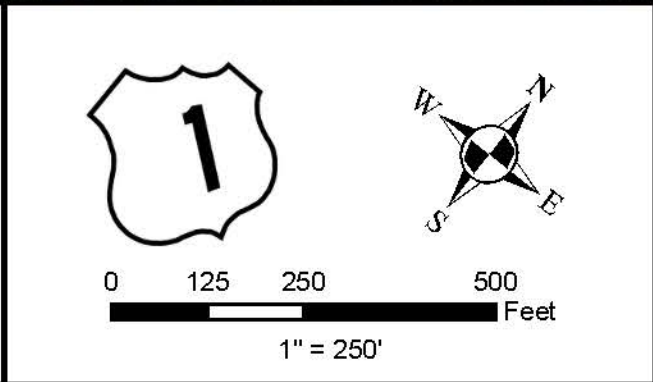
S.R. 0001 SECTION RC3

MIDDLETOWN TOWNSHIP, AND LANGHORNE
MANOR AND LANGHORNE BOROUGHS,
BUCKS COUNTY, PA



Legend

RC3 Build Alternative	Langhorne Historic District
Project Area	Conservation Easement Parcel
Local Park	School
Delineated Wetland	Church
Delineated Stream	Library



**APPENDIX B-5:
ENVIRONMENTAL
CONSTRAINTS**

S.R. 0001 SECTION RC3

MIDDLETOWN TOWNSHIP, AND LANGHORNE
MANOR AND LANGHORNE BOROUGHS,
BUCKS COUNTY, PA



Appendix C: Threatened and Endangered Species Coordination



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1. PROJECT INFORMATION

Project Name: **SR 0001 Group 03S Section RC3 Project**

Date of Review: **7/2/2025 08:18:39 AM**

Project Category: **Transportation, Roads, Widening, adding lanes with disturbance beyond existing shoulders
WTH drainage pipe replacements**

Project Area: **199.21 acres**

County(s): **Bucks**

Township/Municipality(s): **Langhorne Borough; Langhorne Manor Borough; Middletown Township**

ZIP Code:

Quadrangle Name(s): **LANGHORNE**

Watersheds HUC 8: **Crosswicks-Neshaminy**

Watersheds HUC 12: **Core Creek-Neshaminy Creek; Mill Creek-Silver Lake**

Decimal Degrees: **40.164853, -74.927557**

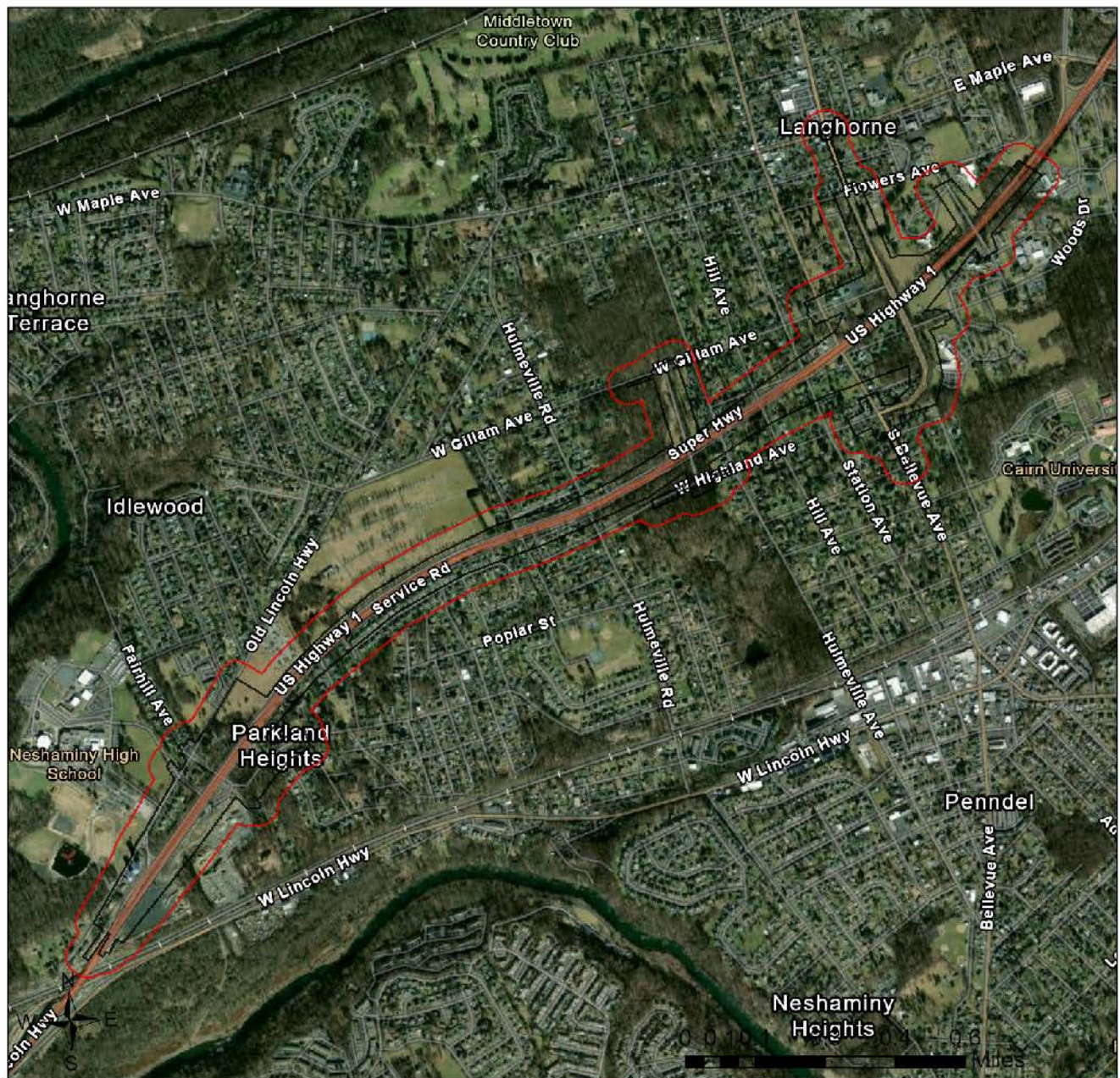
Degrees Minutes Seconds: **40° 9' 53.4711" N, 74° 55' 39.2050" W**

2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	Potential Impact	FURTHER REVIEW IS REQUIRED, See Agency Response
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate there may be potential impacts to threatened and endangered and/or special concern species and resources within the project area. If the response above indicates "No Further Review Required" no additional communication with the respective agency is required. If the response is "Further Review Required" or "See Agency Response," refer to the appropriate agency comments below. Please see the DEP Information Section of this receipt if a PA Department of Environmental Protection Permit is required.

SR 0001 Group 03S Section RC3 Project

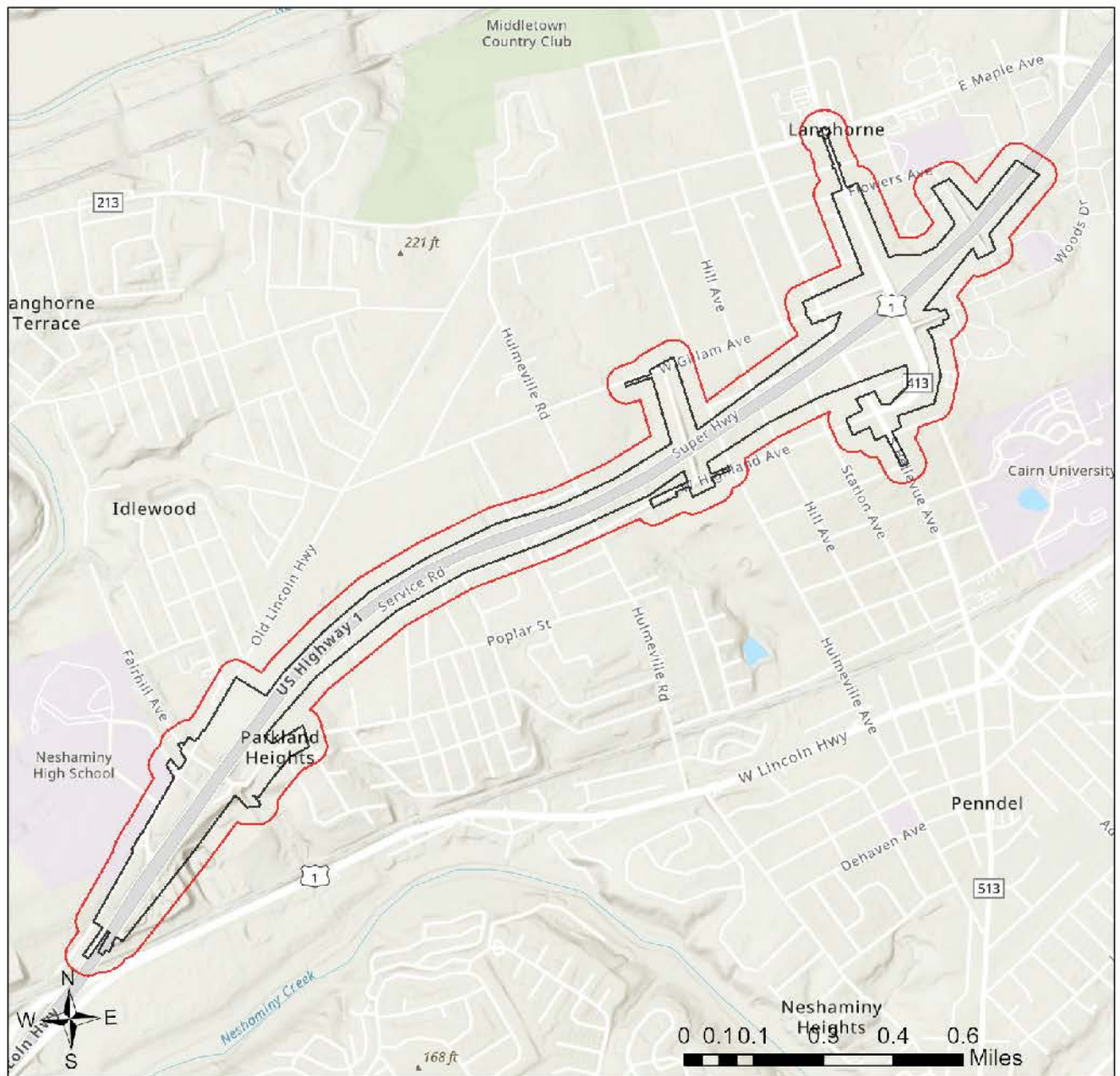


- Buffered Project Boundary
- Project Boundary



Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community
Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

SR 0001 Group 03S Section RC3 Project



- Buffered Project Boundary
- Project Boundary



Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community
Sources: Esri, Maxar, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA,

RESPONSE TO QUESTION(S) ASKED

Q1: The proposed project is in the range of the Indiana bat. Describe how the project will affect bat habitat (forests, woodlots and trees) and indicate what measures will be taken in consideration of this. Round acreages up to the nearest acre (e.g., 0.2 acres = 1 acre).

Your answer is: The project will affect 1 to 39 acres of forests, woodlots and trees.

Q2: Aquatic habitat (stream, river, lake, pond, etc.) is located on or adjacent to the subject property and project activities (including discharge) may occur within 300 feet of these habitats?

Your answer is: Yes

Q3: Is tree removal, tree cutting or forest clearing of 40 acres or more necessary to implement all aspects of this project?

Your answer is: No

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jurisdictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission

RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources

RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission

RESPONSE:

Further review of this project is necessary to resolve the potential impact(s). Please send project information to this agency for review (see WHAT TO SEND).

PFBC Species: (Note: The Pennsylvania Conservation Explorer tool is a primary screening tool, and a desktop review may reveal more or fewer species than what is listed below.)

Scientific Name	Common Name	Current Status
Sensitive Species**		Threatened

U.S. Fish and Wildlife Service

RESPONSE:

No impacts to **federally** listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq. is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

* Special Concern Species or Resource - Plant or animal species classified as rare, tentatively undetermined or candidate as well as other taxa of conservation concern, significant natural communities, special concern populations (plants or animals) and unique geologic features.

** Sensitive Species - Species identified by the jurisdictional agency as collectible, having economic value, or being susceptible to decline as a result of visitation.

WHAT TO SEND TO JURISDICTIONAL AGENCIES

If project information was requested by one or more of the agencies above, upload* or email the following information to the agency(s) (see AGENCY CONTACT INFORMATION). Instructions for uploading project materials can be found [here](#). This option provides the applicant with the convenience of sending project materials to a single location accessible to all three state agencies (but not USFWS).

*If information was requested by USFWS, applicants must email, or mail, project information to IR1_ESPenn@fws.gov to initiate a review. USFWS will not accept uploaded project materials.

Check-list of Minimum Materials to be submitted:

____ Project narrative with a description of the overall project, the work to be performed, current physical characteristics of the site and acreage to be impacted.

____ A map with the project boundary and/or a basic site plan (particularly showing the relationship of the project to the physical features such as wetlands, streams, ponds, rock outcrops, etc.)

In addition to the materials listed above, USFWS REQUIRES the following

____ **SIGNED** copy of a Final Project Environmental Review Receipt

The inclusion of the following information may expedite the review process.

____ Color photos keyed to the basic site plan (i.e. showing on the site plan where and in what direction each photo was taken and the date of the photos)

____ Information about the presence and location of wetlands in the project area, and how this was determined (e.g., by a qualified wetlands biologist), if wetlands are present in the project area, provide project plans showing the location of all project features, as well as wetlands and streams.

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. Two review options are available to permit applicants for handling PNDI coordination in conjunction with DEP's permit review process involving either T&E Species or species of special concern. Under sequential review, the permit applicant performs a PNDI screening and completes all coordination with the appropriate jurisdictional agencies prior to submitting the permit application. The applicant will include with its application, both a PNDI receipt and/or a clearance letter from the jurisdictional agency if the PNDI Receipt shows a Potential Impact to a species or the applicant chooses to obtain letters directly from the jurisdictional agencies. Under concurrent review, DEP, where feasible, will allow technical review of the permit to occur concurrently with the T&E species consultation with the jurisdictional agency. The applicant must still supply a copy of the PNDI Receipt with its permit application. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. The applicant and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at <https://conservationexplorer.dcnr.pa.gov/content/resources>.

5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources

Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552
Harrisburg, PA 17105-8552
Email: RA-HeritageReview@pa.gov

PA Fish and Boat Commission

Division of Environmental Services
595 E. Rolling Ridge Dr., Bellefonte, PA 16823
Email: RA-FBPACENOTIFY@pa.gov

U.S. Fish and Wildlife Service

Pennsylvania Field Office
Endangered Species Section
110 Radnor Rd; Suite 101
State College, PA 16801
Email: IR1_ESPenn@fws.gov
NO Faxes Please

PA Game Commission

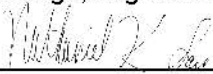
Bureau of Wildlife Management
Division of Environmental Review
2001 Elmerton Avenue, Harrisburg, PA 17110-9797
Email: RA-PGC_PNDI@pa.gov
NO Faxes Please

7. PROJECT CONTACT INFORMATION

Name: Nathaniel Saxe
Company/Business Name: Johnson, Mirmiran, and Thompson, Inc.
Address: 220 St. Charles Way, Suite 200
City, State, Zip: York, PA 17402
Phone: (717) 741-6253 Fax: ()
Email: nsaxe@jmt.com

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.


applicant/project proponent signature

7/2/2025

date



August 8, 2025

IN REPLY REFER TO

SIR# 56082

JMT

Craig Nein

220 St. Charles Way

York, Pennsylvania 17402

**RE: Species Impact Review (SIR) – Rare, Candidate, Threatened and Endangered Species
PNDI Search No. 723293_3
SR0001 Roadway Improvements
Langhorne Manor Borough, Langhorne Borough, Middletown Township: BUCKS County**

Dear Craig Nein:

This responds to your inquiry about a Pennsylvania Natural Diversity Inventory (PNDI) Internet Database search “potential conflict” or a threatened and endangered species impact review. These projects are screened for potential conflicts with rare, candidate, threatened or endangered species under Pennsylvania Fish and Boat Commission jurisdiction (fish, reptiles, amphibians, aquatic invertebrates only) using the Pennsylvania Natural Diversity Inventory (PNDI) database and our own files. These species of special concern are listed under the Endangered Species Act of 1973, the Wild Resource Conservation Act, and the Pennsylvania Fish and Boat Code (Chapter 75), or the Wildlife Code.

An element occurrence of a rare, candidate, threatened, or endangered species under our jurisdiction is known from the vicinity of the proposed project. However, given the nature of the proposed project, the immediate location, or the current status of the nearby element occurrence(s), no adverse impacts are expected to the species of special concern.

This response represents the most up-to-date summary of the PNDI data and our files and is valid for two (2) years from the date of this letter. An absence of recorded species information does not necessarily imply species absence. Our data files and the PNDI system are continuously being updated with species occurrence information. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered, and consultation shall be re-initiated.

If you have any questions regarding this review, please contact Joshua Wisor at 814-359-5135 or jowisor@pa.gov and refer to the SIR # 56082. Thank you for your cooperation and attention to this important matter of species conservation and habitat protection.

Sincerely,



Joshua Wisor, Fisheries Biologist
Watershed Analysis Section

HAS//JMW/dn



Appendix D: Section 106 PA SHPO Concurrence



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Pennsylvania State Historic Preservation Office
PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION

October 22, 2025

Sent Via PA-SHARE

RE: ER Project # 2022PR03560.011, U.S. 1 Section RC3 Improvement Project, Federal Highway Administration, Middletown Township, Bucks County

Dear Submitter,

Thank you for submitting information concerning the above referenced project. The Pennsylvania State Historic Preservation Office (PA SHPO) reviews projects in accordance with state and federal laws. Section 106 of the National Historic Preservation Act of 1966, and the implementing regulations (36 CFR Part 800) of the Advisory Council on Historic Preservation, is the primary federal legislation. The Environmental Rights amendment, Article 1, Section 27 of the Pennsylvania Constitution and the Pennsylvania History Code, 37 Pa. Cons. Stat. Section 500 et seq. (1988) is the primary state legislation. These laws include consideration of the project's potential effects on both historic and archaeological resources.

Above Ground Resources

No Above Ground Concerns - Environmental Review - No Adverse Effect - Above Ground

Based on the information received and available within our files, we concur with the agency that the proposed project will have No Adverse Effect on the following historic properties: Langhorne Historic District (Resource # 1985RE00546). Should the scope of the project change and/or should you be made aware of historic property concerns, you will need to reinstitute consultation with our office using PA-SHARE.

For questions concerning above ground resources, please contact Tyra Guyton at tyguyton@pa.gov.

Archaeological Resources

For questions concerning archaeological resources, please contact Sara-Ladd Manley at samanley@pa.gov.

Sincerely,

Barbara Frederick
Environmental Review Division Manager



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Appendix E: Section 4(f) Checklists

E-1: Section 4(f) Non-Applicability/No Use Checklist – Langhorne Historic District

E-2: Section 4(f) Non-Applicability/No Use Checklist – Mayor’s Playground



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**Appendix E-1: Section 4(f) Non-Applicability/No Use Checklist
Langhorne Historic District**



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Section 4(f) Non-Applicability/No Use

May 2014 Version

County:	Bucks	State Route:	0001	Section:	RC3
Project Name:	SR 0001 Section RC3 Improvements	FPN:	974522254	MPMS:	93446

SELECT ONE: ☐ **EIS** ☒ **EA** ☐ **CE** ☐ **EER** ☐ **ED**

PROJECT DESCRIPTION:

(Provide a concise but thorough description of the proposed action.)

The Pennsylvania Department of Transportation (PennDOT) is proposing reconstruction and widening of multiple areas along State Route (SR) 0001, also known as Lincoln Highway, in Langhorne and Langhorne Manor Boroughs, and Middletown Township, Bucks County, Pennsylvania. The proposed project is 2.6 miles in length and will include the parallel service (frontage) road, from just north of the SR 0001 bridge over Business Route 1 (SR 2037) / CSX / SEPTA to approximately 0.2 miles north of the Corn Crib Lane (SR 2197) bridge over SR 0001. See the attached **Project Location Map**.

The following improvements are proposed:

- The construction of a main lane interchange along Lincoln Highway (SR 0001) in vicinity of the bridge carrying Lincoln Highway (SR 0001) over Highland Avenue (SR 2008) near the southern end of the project.
- The construction of a section main lane interchange along Lincoln Highway (SR 0001) in the vicinity of the Pine Street (SR 0413) bridge over Lincoln Highway (SR 0001) near the northern end of the project.
- Removal of the access between the northbound and southbound frontage roads and Lincoln Highway (SR 0001) due to the addition of interchanges.
- Replacement of four bridges: West Interchange Road (SR 2199) over Lincoln Highway (SR 0001), Corn Crib Lane (SR 2197) over Lincoln Highway (SR 0001), Pine Street (SR 0413) over Lincoln Highway (SR 0001), and Lincoln Highway (SR 0001) over Highland Avenue (SR 2008).
- Replacement of the box culvert at Lincoln Highway (SR 0001) over Unnamed Tributary to Neshaminy Creek.
- Addition of three roundabout intersections: 1) Northbound Lincoln Highway (SR 0001) ramps (to be constructed) and Highland Avenue (SR 2008), 2) Pine Street (SR 0413), Bellevue Avenue (SR 2049), and West Highland Avenue, and 3) Bellevue Avenue (SR 2049) and Gillam Avenue.
- Signalization of Northbound Lincoln Highway (SR 0001) ramps (to be constructed) and Pine Street (SR 0413).
- Signalization of Southbound Lincoln Highway (SR 0001) ramps (to be constructed) and Pine Street (SR 0413).

Section 4(f) Non-Applicability/No Use

May 2014 Version

County:	Bucks	State Route:	0001	Section:	RC3
Project Name:	SR 0001 Section RC3 Improvements	FPN:	974522254	MPMS:	93446

- Minor realignments to the approaches of Highland Avenue (SR 2008), Old Lincoln Highway (SR 2045), and Fairhill Avenue.
- Traffic calming improvements at Pine Street (SR 0413) between Flowers Avenue and Maple Avenue (SR 0213).
- Traffic calming improvements at Gillam Avenue between Bellevue Avenue (SR2049) and Pine Street (SR 0413).
- Construction of stormwater management facilities.

See attached Project Plan Set. Sheets 79-81 of 170 show the location of traffic calming improvements along Pine Street (SR 0413) between Flowers Avenue and Maple Avenue (SR 0213) that are within the boundary of the Langhorne Historic District. Sheets 83-84 of 170 show the location of traffic calming improvements along Gillam Avenue within or adjacent to the Langhorne Historic District, including a mini roundabout at Bellevue Avenue (SR 2049) and Gillam Avenue.

IDENTIFICATION OF SECTION 4(f) PROPERTY:

(List the property and provide a description of the property as per Chapter 6 of the *Section 4(f)/Section 2002 Handbook*. Attach a map, photo(s), etc. as appropriate.)

The Langhorne Historic District is a 185-acre historic district, located in Langhorne Borough, that encompasses or is adjacent to a portion of the project area. The portions of the project area within the historic district boundary include Pine Street (SR 0413) between Flowers Avenue and Maple Avenue (SR 0213) and the north side of Gillam Avenue at the intersection with Bellevue Avenue (SR 2049). The Langhorne Historic District was listed on the National Register of Historic Places (NRHP) in 1987 and is significant under Criterion A in the areas of Commerce and Transportation and Criterion C for Architecture. It contains 252 contributing buildings, one (1) contributing site (a cemetery), and 51 non-contributing buildings. The APE is adjacent to four contributing buildings.

OFFICIAL WITH JURISDICTION OVER SECTION 4(f) PROPERTY:

1. Identify agency with jurisdiction:
Pennsylvania Historical and Museum Commission
State Historic Preservation Office
Commonwealth Keystone Building, Second Floor
400 North Street
Harrisburg, PA 17120
Phone: (717) 787-3362.

Section 4(f) Non-Applicability/No Use

May 2014 Version

County:	Bucks	State Route:	0001	Section:	RC3
Project Name:	SR 0001 Section RC3 Improvements	FPN:	974522254	MPMS:	93446

2. Name and title of contact person at agency:
Tyra Guyton – Transportation Special Initiatives Specialist

DETERMINATION OF NON-APPLICABILITY:

PennDOT has the autonomy to decide the applicability of Section 4(f) protection. However, per the *Section 4(f)/Section 2002 Handbook*, PennDOT is advised to consult with FHWA with questionable circumstances by completing the appropriate forms or through other means of correspondence.

Indicate which of the following apply (More than one may be applicable, indicate all that apply):
(*Requires concurrence by the official with jurisdiction over the Section 4(f) property.) Provide additional information regarding each checked item.

- ☒ 1. The project area includes a Section 4(f) property but results in no permanent incorporation or conversion of land into a transportation facility, no temporary occupancy, or does not result in a constructive use as determined by FHWA.

No contributing resources within the Langhorne Historic District will be demolished, relocated, or physically altered as part of the undertaking. No property will be acquired from any of the contributing properties to the historic district as permanent right of way for the project. No temporary construction easements are required for the proposed improvements. No tall structures are proposed that would dominate the existing streetscape or 2.5-story residential buildings that comprise the majority of the district. No new roadways will be introduced that would alter the visual character of the district or its surroundings. The proposed pedestrian improvements in the district are modest in nature and will not alter or diminish the integrity of the district to the extent that it can no longer convey significance under Criterion A in the areas of Commerce and Transportation and Criterion C for Architecture. The district will retain its historic setting, streetscape character, and sufficient integrity to convey significance. Therefore, based on the criteria for adverse effect in 36 CFR 800.5 and the definition of effect provided in 36 CFR 800.16, PennDOT determined the project will result in No Adverse Effect to Historic Properties regarding the Langhorne Historic District. PennDOT submitted these findings to consulting parties, including the PA-SHPO, and requested concurrence with a **No Adverse Effect** finding for the Langhorne Historic District. The PA SHPO concurred with a **No Adverse Effect** finding on October 22, 2025. See attached SHPO response letter.

- ☐ *2. The project is a bike or walkway project sponsored by the officials with jurisdiction over the Section 4(f) property [Negative Declaration applies]. (**Note:** does not require FHWA signature).

[Click here to enter text.](#)

Section 4(f) Non-Applicability/No Use

May 2014 Version

County:	Bucks	State Route:	0001	Section:	RC3
Project Name:	SR 0001 Section RC3 Improvements	FPN:	974522254	MPMS:	93446

- ☐ *3. The project involves permanent acquisition of land within the boundaries of a historic district, but the land to be used does not contribute to the characteristics that make the district eligible for the *National Register* or has been determined to be part of a non-contributing element.

[Click here to enter text.](#)

- ☐ *4. The project involves a multiple-use facility (state, federal, National Forest, large municipal-owned land, etc.) but does not impact an area that is managed for/functions specifically as a Section 4(f) property.

[Click here to enter text.](#)

- ☐ *5. The project involves an aerial crossing of a Section 4(f) property, but it does not impact the qualifying characteristics of the property, or it does not result in the conversion of land into a transportation facility, such as placement of a bridge over a historic railroad yard.

[Click here to enter text.](#)

Section 4(f) Non-Applicability/No Use

May 2014 Version

County:	Bucks	State Route:	0001	Section:	RC3
Project Name:	SR 0001 Section RC3 Improvements	FPN:	974522254	MPMS:	93446

- ☐ *6. The project involves activities within the existing transportation right-of-way and would not result in proximity impacts that would substantially impair the features, activities, or attributes that make the property eligible for protection under Section 4(f).

[Click here to enter text.](#)

- ☐ *7. The project involves underground activities such as tie-backs, horizontal borings, etc. and does not impact the qualifying characteristics of the Section 4(f) property or involve archaeology that warrants preservation in place.

[Click here to enter text.](#)

- ☐ *8. The project involves the restoration, rehabilitation, or maintenance of transportation facilities that are on or eligible for the *National Register* and would not adversely affect the historic qualities of the facility that caused it to be on or eligible for listing.

[Click here to enter text.](#)

- ☐ *9. The project involves a transportation enhancement or is a mitigation project where the use of the Section 4(f) property is solely for the purpose of preserving or enhancing the activities, features, or attributes that qualify the property for Section 4(f) protection.

[Click here to enter text.](#)

- ☐ *10. The project involves improvements to the interstate system, but does not require the use of any interstate elements formally designated by FHWA for Section 4(f) protection on the basis of national or exceptional historic significance.

[Click here to enter text.](#)

- ☐ *11. The project involves certain trails, paths, bikeways, and sidewalks where (1) the trail-related project is funded under the Recreational Trails Program (23 U.S.C. 206(h)(2)); (2) the trail is a national historic trail designated under the National Trails System Act (with the exception of segments that are historic sites) (16 U.S.C. 1241-1251); (3) the trail/path/bikeway/sidewalk occupies a transportation facility right-of-way and can be maintained somewhere within that right-of-way; or (4) the trail/path/bikeway/sidewalk is part of the local transportation system and functions primarily for transportation.

[Click here to enter text.](#)



On Behalf of the Federal Highway
Administration—Pennsylvania Division Office

Section 4(f) Non-Applicability/No Use

May 2014 Version

County:	Bucks	State Route:	0001	Section:	RC3
Project Name:	SR 0001 Section RC3 Improvements	FPN:	974522254	MPMS:	93446

Provide additional information regarding each checked item:

[Click here to enter text.](#)

Section 4(f) Non-Applicability/No Use

May 2014 Version

County:	Bucks	State Route:	0001	Section:	RC3
Project Name:	SR 0001 Section RC3 Improvements	FPN:	974522254	MPMS:	93446

SUMMARY AND DETERMINATION:

The proposed action will not involve temporary or permanent incorporation or conversion of Section 4(f) land into a transportation facility, including construction easements and/or staging, therefore the proposed action does not constitute a use within the meaning of Section 4(f).

Section 4(f) Property: The Langhorne Historic District

Official with Jurisdiction:
Pennsylvania Historical and Museum Commission
State Historic Preservation Office
Commonwealth Keystone Building, Second Floor
400 North Street
Harrisburg, PA 17120

Date: 10/22/2025

(Optional: other documentation such as attached letters or meeting minutes may be used in replacement of signing this page)

Other documentation is included in the following Attachment:

See attached concurrence letter from the PHMC SHPO noting the project will have a No Adverse Effect on the Langhorne Historic District.

Name and Organization of Preparer: Thomas Wilson, JMT, Inc.

Date: 10/22/2025

Project Manager:



Date: 10/24/2025

Environmental Manager: Keith Highlands

Digitally signed by Keith Highlands
Date: 2025.10.24 13:24:25 -04'00'

Date:

PennDOT, BOPD:

Ghiyath Saloum

Digitally signed by Ghiyath Saloum
Date: 2025.10.24 13:31:40 -04'00'

Date:

FHWA:

MICHELLE LYNN
GODDARD

Digitally signed by MICHELLE LYNN
GODDARD
Date: 2025.10.24 15:07:08 -04'00'

Date:

Section 4(f) Non-Applicability/No Use

May 2014 Version

County:	Bucks	State Route:	0001	Section:	RC3
Project Name:	SR 0001 Section RC3 Improvements	FPN:	974522254	MPMS:	93446

List Section 4(f) environmental commitments associated with this non-applicability/no use that are part of this project:

No contributing resources within the Langhorne Historic District will be demolished, relocated, or physically altered as part of the undertaking. No property will be acquired from any of the contributing properties to the historic district as permanent right of way for the project. No permanent impacts to the Langhorne Historic District will occur. All proposed work within or adjacent to the district boundary will occur within the transportation right-of-way. Access to the Langhorne Historic District will not be interrupted aside from temporary traffic detours.

Typical attachments for this form include, but are not limited to:

- Project location map
- Map of affected Section 4(f) property and other Section 4(f) property(ies) in the project vicinity
- Photographs of the Section 4(f) property
- Project plan sheet
- Correspondence with the official with jurisdiction
- Public involvement information



**Appendix E-2: Section 4(f) Non-Applicability/No Use Checklist
Mayor's Playground**



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Section 4(f) Non-Applicability/No Use

May 2014 Version

County:	Bucks	State Route:	0001	Section:	RC3
Project Name:	SR 0001 Section RC3 Improvements	FPN:	974522254	MPMS:	93446

SELECT ONE: ☐ EIS ☒ EA ☐ CE ☐ EER ☐ ED

PROJECT DESCRIPTION:

(Provide a concise but thorough description of the proposed action.)

The Pennsylvania Department of Transportation (PennDOT) is proposing reconstruction and widening of multiple areas along State Route (SR) 0001, also known as Lincoln Highway, in Langhorne and Langhorne Manor Boroughs, and Middletown Township, Bucks County, Pennsylvania. The proposed project is 2.6 miles in length and will include the parallel service (frontage) road, from just north of the SR 0001 bridge over Business Route 1 (SR 2037) / CSX / SEPTA to approximately 0.2 miles north of the Corn Crib Lane (SR 2197) bridge over SR 0001. See the attached **Project Location Map**.

The following improvements are proposed:

- The construction of a main lane interchange along Lincoln Highway (SR 0001) in vicinity of the bridge carrying Lincoln Highway (SR 0001) over Highland Avenue (SR 2008) near the southern end of the project.
- The construction of a section main lane interchange along Lincoln Highway (SR 0001) in the vicinity of the Pine Street (SR 0413) bridge over Lincoln Highway (SR 0001) near the northern end of the project.
- Removal of the access between the northbound and southbound frontage roads and Lincoln Highway (SR 0001) due to the addition of interchanges.
- Replacement of four bridges: West Interchange Road (SR 2199) over Lincoln Highway (SR 0001), Corn Crib Lane (SR 2197) over Lincoln Highway (SR 0001), Pine Street (SR 0413) over Lincoln Highway (SR 0001), and Lincoln Highway (SR 0001) over Highland Avenue (SR 2008).
- Replacement of the box culvert at Lincoln Highway (SR 0001) over Unnamed Tributary to Neshaminy Creek.
- Addition of three roundabout intersections: 1) Northbound Lincoln Highway (SR 0001) ramps (to be constructed) and Highland Avenue (SR 2008), 2) Pine Street (SR 0413), Bellevue Avenue (SR 2049), and West Highland Avenue, and 3) Bellevue Avenue (SR 2049) and Gillam Avenue.
- Signalization of Northbound Lincoln Highway (SR 0001) ramps (to be constructed) and Pine Street (SR 0413).
- Signalization of Southbound Lincoln Highway (SR 0001) ramps (to be constructed) and Pine Street (SR 0413).

Section 4(f) Non-Applicability/No Use

May 2014 Version

County:	Bucks	State Route:	0001	Section:	RC3
Project Name:	SR 0001 Section RC3 Improvements	FPN:	974522254	MPMS:	93446

- Minor realignments to the approaches of Highland Avenue (SR 2008), Old Lincoln Highway (SR 2045), and Fairhill Avenue.
- Traffic calming improvements at Pine Street (SR 0413) between Flowers Avenue and Maple Avenue (SR 0213).
- Traffic calming improvements at Gillam Avenue between Bellevue Avenue (SR 2049) and Pine Street (SR 0413).
- Construction of stormwater management facilities.

See attached **Project Plan Set**. Sheet 81 of 170 shows the location of the improvements located along Pine Street (SR 0413) near the intersection of Maple Avenue (SR 0213). This sheet shows the location of the Mayor's Playground park in relation to the proposed improvements.

IDENTIFICATION OF SECTION 4(f) PROPERTY:

(List the property and provide a description of the property as per Chapter 6 of the *Section 4(f)/Section 2002 Handbook*. Attach a map, photo(s), etc. as appropriate.)

The Mayor's Playground is a public park located along the northeast portion of the project corridor. The park lies on the southeast corner of Pine Street and E. Maple Avenue and the eastern side of the park is located along Cherry Street. The park is a multi-use public park owned and operated by Langhorne Borough and sits on 3.5 acres. The Mayor's Playground is currently used by the public for community events and both active and passive recreation activities.

See the attached **Section 4(f) Resources Map and Photographs**.

OFFICIAL WITH JURISDICTION OVER SECTION 4(f) PROPERTY:

1. Identify agency with jurisdiction:
Parks and Recreation – Langhorne Borough
144 E Maple Ave
Langhorne, PA 19047
(215) 757-1272
2. Name and title of contact person at agency:
Mary Zimmerman, Langhorne Borough Manager

Section 4(f) Non-Applicability/No Use

May 2014 Version

County:	Bucks	State Route:	0001	Section:	RC3
Project Name:	SR 0001 Section RC3 Improvements	FPN:	974522254	MPMS:	93446

DETERMINATION OF NON-APPLICABILITY:

PennDOT has the autonomy to decide the applicability of Section 4(f) protection. However, per the *Section 4(f)/Section 2002 Handbook*, PennDOT is advised to consult with FHWA with questionable circumstances by completing the appropriate forms or through other means of correspondence.

Indicate which of the following apply (More than one may be applicable, indicate all that apply):
(*Requires concurrence by the official with jurisdiction over the Section 4(f) property.) Provide additional information regarding each checked item.

- ☒ 1. The project area includes a Section 4(f) property but results in no permanent incorporation or conversion of land into a transportation facility, no temporary occupancy, or does not result in a constructive use as determined by FHWA.

No temporary impacts to the Mayor's Playground will occur because of this project. However, project plans/construction specifications will include strict directives to not allow project staging within the vicinity of Mayor's Playground to prevent any accidental impacts to the park. These specifications will be developed during final design for the project.

- ☐ *2. The project is a bike or walkway project sponsored by the officials with jurisdiction over the Section 4(f) property [Negative Declaration applies]. (*Note:* does not require FHWA signature).

[Click here to enter text.](#)

- ☐ *3. The project involves permanent acquisition of land within the boundaries of a historic district, but the land to be used does not contribute to the characteristics that make the district eligible for the *National Register* or has been determined to be part of a non-contributing element.

[Click here to enter text.](#)

- ☐ *4. The project involves a multiple-use facility (state, federal, National Forest, large municipal-owned land, etc.) but does not impact an area that is managed for/functions specifically as a Section 4(f) property.

[Click here to enter text.](#)

- ☐ *5. The project involves an aerial crossing of a Section 4(f) property, but it does not impact the qualifying characteristics of the property, or it does not result in the conversion of land into a transportation facility, such as placement of a bridge over a historic railroad yard.

[Click here to enter text.](#)

Section 4(f) Non-Applicability/No Use

May 2014 Version

County:	Bucks	State Route:	0001	Section:	RC3
Project Name:	SR 0001 Section RC3 Improvements	FPN:	974522254	MPMS:	93446

- ☐ *6. The project involves activities within the existing transportation right-of-way and would not result in proximity impacts that would substantially impair the features, activities, or attributes that make the property eligible for protection under Section 4(f).

[Click here to enter text.](#)

- ☐ *7. The project involves underground activities such as tie-backs, horizontal borings, etc. and does not impact the qualifying characteristics of the Section 4(f) property or involve archaeology that warrants preservation in place.

[Click here to enter text.](#)

- ☐ *8. The project involves the restoration, rehabilitation, or maintenance of transportation facilities that are on or eligible for the *National Register* and would not adversely affect the historic qualities of the facility that caused it to be on or eligible for listing.

[Click here to enter text.](#)

- ☐ *9. The project involves a transportation enhancement or is a mitigation project where the use of the Section 4(f) property is solely for the purpose of preserving or enhancing the activities, features, or attributes that qualify the property for Section 4(f) protection.

[Click here to enter text.](#)

- ☐ *10. The project involves improvements to the interstate system, but does not require the use of any interstate elements formally designated by FHWA for Section 4(f) protection on the basis of national or exceptional historic significance.

[Click here to enter text.](#)

- ☐ *11. The project involves certain trails, paths, bikeways, and sidewalks where (1) the trail-related project is funded under the Recreational Trails Program (23 U.S.C. 206(h)(2)); (2) the trail is a national historic trail designated under the National Trails System Act (with the exception of segments that are historic sites) (16 U.S.C. 1241-1251); (3) the trail/path/bikeway/sidewalk occupies a transportation facility right-of-way and can be maintained somewhere within that right-of-way; or (4) the trail/path/bikeway/sidewalk is part of the local transportation system and functions primarily for transportation.

[Click here to enter text.](#)

Section 4(f) Non-Applicability/No Use

May 2014 Version

County:	Bucks	State Route:	0001	Section:	RC3
Project Name:	SR 0001 Section RC3 Improvements	FPN:	974522254	MPMS:	93446

Provide additional information regarding each checked item:

[Click here to enter text.](#)

Section 4(f) Non-Applicability/No Use

May 2014 Version

County:	Bucks	State Route:	0001	Section:	RC3
Project Name:	SR 0001 Section RC3 Improvements	FPN:	974522254	MPMS:	93446

SUMMARY AND DETERMINATION:

The proposed action will not involve temporary or permanent incorporation or conversion of Section 4(f) land into a transportation facility, including construction easements and/or staging, therefore the proposed action does not constitute a use within the meaning of Section 4(f).

Section 4(f) Property: The Mayor's Playground

Official with Jurisdiction:
Parks and Recreation – Langhorne Borough
114 E Maple Avenue,
Langhorne, PA 19047

Date: [Click here to enter a date.](#)

(Optional: other documentation such as attached letters or meeting minutes may be used in replacement of signing this page)
Other documentation is included in the following Attachment:
N/A

Name and Organization of Preparer: Robert Burke, JMT, Inc.

Date: 8/8/2025

Project Manager:

Sally Harker

Date: 08/13/2025

Environmental Manager: Keith Highlands

Digitally signed by Keith
Highlands
Date: 2025.08.27 10:39:43 -04'00'

Date:

PennDOT, BOPD:

Ghiyath Saloum

Digitally signed by Ghiyath Saloum
Date: 2025.08.27 13:05:16 -04'00'

Date:

FHWA:

MICHELLE LYNN
GODDARD

Digitally signed by MICHELLE
LYNN GODDARD
Date: 2025.09.10 16:10:59 -04'00'

Date:

Section 4(f) Non-Applicability/No Use

May 2014 Version

County:	Bucks	State Route:	0001	Section:	RC3
Project Name:	SR 0001 Section RC3 Improvements	FPN:	974522254	MPMS:	93446

List Section 4(f) environmental commitments associated with this non-applicability/no use that are part of this project:

No temporary or permanent impacts to the Mayor's Playground will occur as a result of this project. All proposed work within the vicinity of the parks will occur within the transportation right-of-way. Access to Mayor's Playground park will not be interrupted and the park will remain open during construction.

Typical attachments for this form include, but are not limited to:

- Project location map
- Map of affected Section 4(f) property and other Section 4(f) property(ies) in the project vicinity
- Photographs of the Section 4(f) property
- Project plan sheet
- Correspondence with the official with jurisdiction
- Public involvement information



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Appendix F: Technical Support Data Index



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Appendix F: Technical Support Data Index

- **Design – Engineering**
 - SR 0001, Section RC3 Project Purpose and Need Statement August 2025
 - SR 0001 Section RC3 US 1 Improvement Project Traffic and Safety Analysis Update Report September 2025
 - U.S. 1 Frontage Road Traffic Assessment Technical Memorandum July 2012
 - **Natural Resources**
 - Aquatic Resource Identification & Delineation Report January 2025
 - PNDI Receipt (PNDI-723293) July 2, 2025
 - PNDI Coordination Response Letters with PFBC August 2025.
 - Coastal Zone Consistency Concurrence October 23, 2025
 - **Cultural resources**
 - Determination of Effects Technical Memorandum September 2025
 - Abbreviates Historic Resource Survey Forms 2024-2025
 - Consulting Party Meeting Minutes
 - PA-SHPO Concurrence October 2025
 - **Socioeconomic Resources**
 - A Phase I Environmental Site Assessment (ESA) October 2021
 - Phase I Environmental Site Assessment Addendum September 2022
 - Phase I ESA Recommendations Review July 2025
 - Air Quality Technical Memorandum August 2025
 - Preliminary Technical Noise Report October 2022
 - Preliminary Engineering Noise Report Addendum Memo April 2025
 - Community Impact Assessment Report August 2025
 - **Section 4(f) Resources**
 - Section 4(f) Non-Applicability/No Use Checklist October 2025 (for Historic Properties)
 - Section 4(f) Non-Applicability/No Use Checklist September 2025 (for Mayor's Playground)
 - **Project Website**
 - <https://us1bucks.com/section-rc3/>
 - **NEPA Scoping Document**
 - MPMS 93446 Route 1 Frontage Road Corridor CE Scoping Document February 2021
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Appendix G: Distribution List



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Appendix G: Distribution List

Agencies	Contact Name	Mailing Address
Federal Agencies		
Advisory Council on Historic Preservation	Eastern Office of Review Attn: Preservation Specialist	1100 Pennsylvania Avenue, NW Suite 809 Washington, DC 20004
Federal Emergency Management Agency	Mitigation Division	One Independence Mall, Sixth Floor Philadelphia, PA 19106
Federal Highway Administration, Pennsylvania Division Office	Michelle Goddard	Pennsylvania Division Federal Highway Administration 30 North Third Street, Suite 700 Harrisburg, PA 17101
U.S. Army Corps of Engineers, Philadelphia District	Nik Tranchik	1650 Arch Street Philadelphia, PA 19103
U.S. Department of Housing and Human Services	Pennsylvania State Field Office Attn: Environmental Officer	801 Market Street, 12 th Floor The Strawbridge Building Philadelphia, PA 19107
U.S. Environmental Protection Agency, Region 3	Timothy Witman	U.S. Environmental Protection Agency, Region 3 Four Penn Center 1600 JFK Boulevard Philadelphia, PA 19103-2029
U.S. Fish and Wildlife Service, Pennsylvania Field Office	Sze Wing Yu	110 Radnor Road, Suite 101 State College, PA 16803
Federally Recognized Tribes		
Absentee-Shawnee Tribe of Indians of Oklahoma	John Johnson, Governor	2025 S. Gordon Cooper Drive Shawnee, OK 74801
Delaware Nation, Oklahoma	Deborah Dotson, Tribal President	P.O. Box 825 31064 State Highway 281 Bldg. 100 Anadarko, OK 73005



Agencies	Contact Name	Mailing Address
Delaware Tribe of Indians	Brad Killscrow, Chief	5100 Tuxedo Boulevard Bartlesville, OK 74006
Eastern Shawnee Tribe of Oklahoma	Glenna Wallace, Chief	P.O. Box 350 Seneca, MO 64865
Shawnee Tribe	Cassie Harper, Tribal Administrator	P.O. Box 189 29 South Highway 69A Miami, OK 74355
Stockbridge Munsee Community, Wisconsin	Shannon Holsey, Tribal President	N8476 MohHeConNuck Road Bowler, WI 54416
State Agencies		
PA Department of Community and Economic Development	Policy Office Attn: Melissa Wright, Director	400 North Street 4 th Floor Harrisburg, PA 17120
PA Department of Conservation and Natural Resources – Division of Conservation Science and Ecological Services	Greg Podniesinski	400 Market Street Rachel Carson State Office Building 6 th Floor Harrisburg, PA 17101
PA Department of Conservation and Natural Resources – Bureau of Recreation and Conservation	Ashley Rebert	400 Market Street Rachel Carson State Office Building 5 th Floor Harrisburg, PA 17101
PA Department of Environmental Protection	Attn: Office of Policy	400 Market Street Rachel Carson State Office Building 15 th Floor Harrisburg, PA 17101
PA Department of Environmental Protection – Southeast Regional Office	Ranjana Chopra Sharp, P.E.	2 East Main Street Norristown, PA 19401



Agency	Contact Name	Mailing Address
Pennsylvania Department of Transportation	Sibty Hasan, P.E.	Pennsylvania Department of Transportation Engineering District 6-0 7000 Geerdes Boulevard King of Prussia, PA 19406
PA Fish and Boat Commission	Josh Wisor	595 East Rolling Ridge Drive Bellefonte, PA 16823
PA Game Commission – Division of Environmental Planning and Habitat Protection	Matthew Lovallo	2001 Elmerton Avenue Harrisburg, PA 17110-9797
PA Governor's Office of Policy and Planning		506 Finance Building Harrisburg, PA 17120
PA Historical and Museum Commission, State Historic Preservation Office	Andrea MacDonald	400 North Street Keystone Building, 2nd Floor NW Harrisburg, PA 17120
PA Public Utility Commission (PUC)	Utility Office Attn: Administrator	400 North Street Keystone Building Harrisburg, PA 17120
Local Agencies		
Middletown Township	Mike Ksiazek, Chairperson	Board of Supervisors 3 Municipal Way Langhorne, PA 19047
Langhorne Manor Borough	Robert Byrne, Mayor	618 Hulmeville Avenue, Langhorne, PA 19047
Langhorne Borough	Joe Taylor, Mayor	114 E Maple Avenue, Langhorne Borough, PA 19047
Bucks County Planning Commission	Eleanor Breslin, Chair	1260 Almshouse Road Doylestown, PA 18901



Agency	Contact Name	Mailing Address
Delaware Valley Regional Planning Commission	Gregory Krykewycz, Director of Transportation Planning	190 N. Independence Mall West 8 th Floor Philadelphia, PA 19106
State and Local Representatives		
Pennsylvania House of Representatives	Joe Hogan	Honorable Joe Hogan State Representative, 142 nd Legislative District 325 West Lincoln Highway Penn del, PA 19047
Pennsylvania Senate	Frank Farry	Honorable Frank Farry State Senator, 6 th District 370 East Maple Avenue, Suite 203 Langhorne, PA 19047
United States Congress	Brian Fitzpatrick	Honorable Brian Fitzpatrick U.S. Congressman, 1 st Congressional District 271 Cannon House Office Building Washington, DC 20515
United States Senate	John Fetterman	Honorable John Fetterman U.S. Senator 142 Russell Senate Office Building Washington, DC 20510
United States Senate	David McCormick	Honorable David McCormick U.S. Senator 702 Hart Senate Office Building Washington, DC 20510



Appendix H: List of Preparers



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Appendix H: List of Preparers

**U.S. Department of Transportation
Federal Highway Administration –
Pennsylvania Division**

Michelle Goddard, AICP – Team
Leader, Environment.

Kevin Harrison, P.E. – Sr.
Transportation Engineer

Jennifer Crobak, AICP – Director of
Planning, Environment and Finance

**Pennsylvania Department of
Transportation – Central Office /
Bureau of Design & Delivery**

Ghiyath “Keith” Saloum, P.E. - Project
Development Engineer & VE
Coordinator

Nicole L. Auken - Environmental
Planning Manager

Drew Ames, Chief - Environmental
Policy and Development Division

Colin Siesholtz - Environmental
Planner

Erin Wiley Moyers - Environmental
Planning Supervisor

**Pennsylvania Department of
Transportation – District 6-0**

Timothy S. Stevenson, P.E. - Design
Portfolio Manager

Sibty Hasan, P.E., PMP - Portfolio
Manager and Plans Engineer

Keith L. Highlands, P.E. - District
Environmental Manager

Monica Harrower – District
Architectural Historian

Russ Stevenson, Sr. Architectural
Historian - Consultant PM for Cultural
Resources

Mark Radatti - Environmental
Specialist/Assistant EM

David Fischer - Environmental
Specialist/ Assistant EM

Mike Lenert – Consultant Cultural
Resource Professional / Archaeology

JMT

Ken Yerges, P.E. – Project Manager

Michael Kenawell – Environmental
Project Manager

Jared Patrick, P.E., ENV SP – Sr.
Highway Engineer

Amy Altimare – Sr. NEPA Specialist
Craig Nein – Biologist

Nathaniel Saxe – Biologist

Thomas Wilson – Sr. Architectural
Historian

Nicholas Arnhold – Sr. Archaeologist
Lori Cole, AICP – QA/QC Manager

Andrew Donaldson – QA/QC

Dana Welter, P.E. – Right-of-Way
Specialist

Kristin Aiosa, QP – Sr. Environmental
Scientist

Brad Heilman – Graphics

Aimee DiStefano – Graphics

Dariam Encarnacion – Document
Production

Navarro and Wright

Nathaniel Weinstock - Air Quality and
Acoustical Group Leader



Kyle N. Brubaker, CNRP - Senior
Environmental Specialist &
Environmental Group Leader