



COMMUNITY IMPACT ASSESSMENT REPORT

**SR 0001 Section RC3 Improvement Project (MPMS # 93446)
Langhorne and Langhorne Manor Boroughs, and Middletown Township
Bucks County, Pennsylvania**

JMT Project #: 23-00617-001

Submitted to:
PennDOT Engineering District 6-0

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List of Acronyms

ADA	Americans With Disabilities Act
BCEDC	Bucks County Economic Development Corporation
DVRPC	Delaware Valley Regional Planning Commission
EMS	Emergency Medical Services
FHWA	Federal Highway Administration
HUD	US Department of Housing and Urban Development
ISATe	Interchange Safety Analysis Tool
PASDA	Pennsylvania Spatial Data Access
PennDOT	Pennsylvania Department of Transportation
PSI	Potential for Safety Improvement
SEPTA	Southeastern Pennsylvania Transportation Authority
SR	State Route



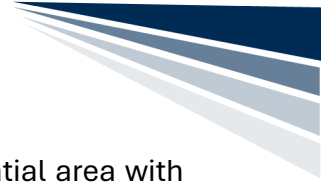
1.0 Introduction

1.1 Project History

This project was originally included as part of the State Route (SR) 0001 Section 03S (MPMS 13549) project, which included reconstruction of approximately 2.82 miles of SR 0001 including four (4) interchanges (Street Road, PA Turnpike, Neshaminy, and Penndel interchanges) and seven (7) bridge replacements. The initial work proposed for the SR 0001, Section RC3 project included one (1) bridge rehabilitation and a double-face guide rail median barrier replacement. In 2011, the Pennsylvania Department of Transportation (PennDOT) expanded the scope to include safety improvements (replacement of the existing raised concrete traffic islands with concrete median barrier, removal of the existing traffic crossovers, and replacement of the West Interchange Road overpass). In 2014, during public involvement for the safety improvement project, the public requested PennDOT to investigate alternative designs based on various concerns. Alternative designs were investigated during 2019 and 2020, including looking at the affected natural, cultural and socioeconomic environment within the study corridor. A virtual public officials' meeting was held on October 1, 2020 to present two alternative design options: Alternative 1 focused on service (frontage) road access modifications with removal of the intermediate slip ramps between SR 0001 and the roads and consolidation of the access to the beginning and end of each service road; Alternative 2 includes the removal of the northbound and southbound service roads and consolidation of access with SR 0001 at two new interchanges: one at SR 0001 and SR 0413 at the northern limit of the project and an interchange at SR 0001 and SR 2008 (Highland Avenue)/SR 2045 (Old Lincoln Highway) at the southern limit of the project. Prior to the meeting, the public officials were provided a questionnaire to complete on the project and the alternatives. Based on the feedback received, the public officials agreed with Alternative 2 (two-interchange alternative). This project (MPMS 93446) is now an independent project within the overall corridor improvement program.

1.2 Project Location

The project is approximately 2.6 miles in length and is located just north of the Lincoln Highway (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 Lincoln Highway (SR 0001), in Langhorne and Langhorne Manor Boroughs, and Middletown Township, Bucks County, Pennsylvania. A two-mile segment of the northbound and southbound service (frontage) roads along Lincoln Highway also occurs within the project limits. See Appendix A- Figure 1 – Project Location Map.



The project is within suburban Bucks County in a densely developed residential area with heavy traffic demand. There are several educational and community facilities in the study area, such as Neshaminy High School, the Woods 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.

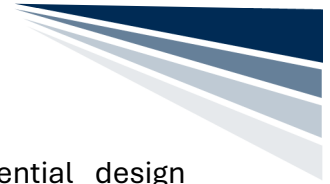
1.3 Project Purpose and Need

The primary purpose of this project is to facilitate safe and efficient travel within and through the project area to meet current and future transportation needs of the area while providing a functional and modern roadway that meets current design criteria and driver expectations.

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

A. SR 0001, Section RC3 roadway configurations and traffic conditions contribute to safety concerns in the project area.

- Acceleration lane does not meet current design criteria for length or gap acceptance (room to safely merge into traffic)
- Lack of inside and outside shoulders for vehicle recovery or refuge
- Vertical curb along a high-speed facility in addition to the lack of shoulders
- Low separator traffic island does not prevent errant vehicles from leaving the roadway
- West Interchange Road (SR 2199) overpass pier columns unprotected in separator traffic island and within the clear zone (bridge pier not protected by barrier or guide rail).
- An analysis utilizing the Interchange Safety Analysis Tool (ISATe) tool was completed for the existing conditions (updated 5-year historic crash data utilizing the Pennsylvania Crash Information Tool and local police crash reports) to evaluate the safety performance of SR 0001 and the service roads within the project area. ISATe can be used as an analytical tool for quantifying potential effects of crashes for decision-making during the planning, design, operations, and maintenance process. It also assists in evaluating how design elements could impact safety. The following methodologies were used to calculate the following within the project area:
 - **Predicted Average Crash Frequency (Baseline)** – estimate of long-term average crash frequency
 - **Expected Average Crash Frequency (Normalized)** – estimate of long-term average crash frequency, calculated based on the observed crash frequency (the project area crash data)
 - **Potential for Safety Improvement (PSI)** – estimates of how much long-term crash frequency can be reduced at a site and is represented as the Expected Average Crash Frequency minus the Predicted Average Crash Frequency. A



positive PSI identifies areas along a roadway where potential design improvements could improve safety.

The ISATe analysis conducted for SR 0001 indicates that when evaluating the roadway by segments that 6 of the 11 segments had an Expected number of crashes is greater than the Predicted number of crashes (i.e., showing a safety need).

For the entire corridor, there are 3.1 more Expected crashes versus Predicted crashes, showing a positive PSI for the corridor. This indicates that there are 6% more crashes occurring within the entire corridor than would be expected based on calculations that did not include existing data. These excess crashes indicate potential safety issues within the corridor.

B. SR 0001, Section RC3 does not meet current design standards.

The following areas along the Section RC3 project corridor do not meet current design standards:

- West Interchange Road (SR 2199) bridge over Lincoln Highway (SR 0001) has a vertical clearance of 14'-5 ¾" (posted 14'-2") rather than the required minimum clearance of 16'-6".
- Pine Street (SR 0413) bridge over Lincoln Highway (SR 0001) has a vertical clearance of 14'-2 ¼" (posted 13'-11") rather than the required minimum clearance of 16'-6".
- Lincoln Highway (SR 0001) mainline travel lanes in the service road corridor have 1'-0" shoulder rather than the required 10'-0" shoulder or the preferred 12'-0" shoulder.
- Lincoln Highway (SR 0001) mainline travel lanes, north of the service road corridor, has shoulders that range from 7.5' to 8' in the northbound direction and 6.3' to 8' in the southbound direction rather than the required 10'-0" shoulder or the suggested 12'-0" shoulder.
- Lincoln Highway (SR 0001) existing median width is 4'-0" rather than the minimum required width of 10'-0".
- Lincoln Highway (SR 0001) existing left (median) shoulder width is 1'-0" rather than the minimum required width of 4'-0".
- Lincoln Highway (SR 0001) has vertical curbs throughout the service road corridor as part of the median and design standards dictate that "...vertical curbs should not be used along freeways or other high-speed roadways."
- Service Road ramp acceleration lanes onto Lincoln Highway (SR 0001) do not provide minimum design lengths to allow vehicles to reach merging travel speeds.
- Portions of northbound (925') and southbound (910') Lincoln Highway (SR 0001) have a vertical grade of 0.45% rather than the minimum vertical grade of 0.5%.



- Lincoln Highway (SR 0001) sight distance near just south of the West Interchange Road (SR 2199) overpass (Sta. 229+60 per as-built stationing) is only 404' where the required minimum sight distance should be 570'.
- Lincoln Highway (SR 0001) curves from just north of Park Avenue to just south of the West Interchange Road (SR 2199) overpass has as low as 1.75% roadway bank rather than the required 2.70%.
- The West Interchange Road (SR 2199) bridge pier columns, located in the Lincoln Highway (SR 0001) raised island, are unprotected from vehicular traffic within the mainline and service road clear zone.

C. SR 0001, Section RC3 network and configuration in the project area lacks continuity and does not meet driver expectations.

- The SR 0001 roadway sections north and south of SR 0001 Section 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 Section RC3 service road section (below) lacks full width paved shoulders and introduces full height curb concrete traffic islands offset one foot from the mainline travel lanes with cut-through acceleration and deceleration lanes for intermediate access. The service road section is not typical of a limited access freeway; therefore, driver expectations are not met when traveling through SR 0001 Section RC3.

2.0 Data Collection

Data was collected from secondary sources including Pennsylvania Spatial Data Access (PASDA), Bucks County Maps & Data Portal, Bucks County Economic Development Corporation (BCEDC), and Delaware Valley Regional Planning Commission (DVRPC). Additionally, field reconnaissance and outreach to the Bucks County Planning Commission were conducted to verify secondary source information. Appendix B provides a list of the data sources and references used for the compilation and assessment of data for this technical memorandum. A review was conducted of county and municipal websites.



3.0 Existing Conditions

3.1 Existing Land Use

The entirety of the project area takes place within Bucks County, which is under the planning jurisdiction of the Bucks County Planning Commission. It intersects with Middletown Township, Langhorne Borough, and Langhorne Manor Borough. Existing land use in the project area is predominantly Transportation, Residential, Wooded, Institutional, Undeveloped, or Commercial. Land uses are summarized in Table 1 and shown in Appendix A, Figure 3 – Existing Land Use.

Table 1. Land Use

Land Use	Percent of Project Area
Transportation	49.71%
Residential	18.59%
Wooded	14.40%
Institutional	9.95%
Undeveloped	3.60%
Commercial	1.53%
Utility	0.89%
Recreation	0.70%
Mining	0.45%
Industrial	0.17%

Source: DVRPC

This project intersects several parcels of land enrolled in conservation easements. The parcel immediately north of SR 0001 and the service roads is an 11-acre Heritage Conservancy Conservation Easement with closed access. The parcel is bound by SR 0001 and the service roads to the south, Gillam Avenue to the north, West Interchange Road to the east, and forested and residential land to the west. The parcel located immediately to the south is a 2-acre Heritage Conservancy Conservation Easement with closed access. The parcel is bound by SR 0001 and the service roads to the north, West Highland Avenue to the south, West Interchange Road to the east and forested and residential land to the west. The parcels are part of a larger conservation corridor (totaling approximately 100-acres) which extends further north and south of the identified parcels. Based on conversation with officials from Middletown Township, the land is owned, managed, and maintained per the Conservancy lien (ensuring the land remains undeveloped) with the Township. These parcels can be seen on Figure 4 in Appendix A.



3.2 Zoning

Existing zoning in the project area is illustrated in Appendix A, Figure 5 - Existing Zoning. Middletown Township, Langhorne Borough, and Langhorne Manor Borough have all adopted zoning ordinances. Current zoning in the project area primarily consists of Residential, Office, and Commercial zones.

Table 2. Zoning

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%

Current zoning shows a vast majority of the project area is zoned as residential. Given that the area is majorly comprised of improved lands or unimproved lands in easement, it is not anticipated that significant changes to zoning will occur during the course of the project.

3.3 Future Land Use

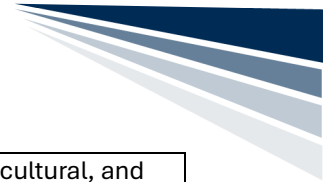
The Delaware Valley Regional Planning Commission, Bucks County Planning Commission, Middletown Township Planning Commission, Langhorne Borough Planning Commission, or Langhorne Manor Borough Planning Commission have not indicated specific future land uses that deviate from the existing land uses.

3.4 Planning Initiatives

Table 3 lists various existing planning documents for Bucks County and municipalities in the project area and identifies the goals and visions related to transportation and development in each document. Please note that Langhorne Manor Borough does not presently have a municipal comprehensive plan.

Table 3. Planning Initiatives

Planning Document	Goals, Visions, Plans for the Project Area
Bucks2040 Vision Plan	Plan Principals: Equity - The just and fair inclusion into a society in which all can participate, prosper, and reach their full potential. Sustainability - Meeting the needs of the present generation without compromising the ability of future generations to meet their own needs. Resilience - The ability of a community to anticipate risk, limit impact, and build capacity to face change in an uncertain world.



	Health and Well-Being - The social, economic, environmental, cultural, and political conditions people need to thrive. Land use: Suburban Center - These areas are boroughs located within Suburban Areas. These centers have unique history, character, and sense of place and serve as regional centers, providing goods, services, and jobs for people throughout the county. Development and redevelopment in Suburban Centers should continue to include compact and efficient development, a mixture of uses, a variety of transportation options (including transit), walkable neighborhoods, distinctive communities with a strong sense of place, and a range of housing opportunities. Suburban Area - These areas are made up of the post-World War II suburbs of lower Bucks, central Bucks suburbs, and the Perkasie/Sellersville and Quakertown areas of upper Bucks County. New development should be steered towards underutilized sites (e.g., brownfields or vacant shopping centers), should be compact and built where existing infrastructure is adequate, and be designed with an emphasis on access control, streetscape appearance, pedestrian travel and safety. Rural/Mixed Area - These areas contain the rural character that many people identify Bucks County with. Land use consists of primarily rural residential and agricultural uses along with significant areas of natural resources. Infrastructure is not fully developed in these areas (especially public sewer service) and is not expected to expand into these areas, making significant development unlikely. Development and redevelopment here should be focused toward serving local needs rather than regional needs. Natural Area - These areas include greenway corridors, recreation areas, preserved farmland, significant water bodies, and conservation landscapes as identified in the Natural Areas Inventory of Bucks County, 2011. These features are indispensable to the county's quality of life, providing essential services such as flood control, pollution remediation, water supply, and species habitat.
Middletown Borough 2020 Comprehensive Plan	An implementable framework outlining short-term goals for the municipality. Emphasizes a desire for development to be more dynamic than the post-war suburbanization patterns that have created the current conditions.
Langhorne Borough Comprehensive Plan (2013)	Land Use Goal: Maintain a balance among residential, commercial, open spaces and institutional/nonprofit services and uses to encourage a sustainable community. Objectives • Provide for various land uses within neighborhoods that are consistent with the village scale, historic character and streetscapes of those neighborhoods. • Provide for a scale and intensity of development within the Borough that is consistent with the capacity of its infrastructure. • Retain areas of mixed residential and nonresidential land use in the town center. • Encourage connectivity and walkability among land uses and between neighborhoods.



3.5 Economics, Employment, and Business Conditions

Analysis of US Census Data determined that the population in Bucks County has been steadily increasing over the past 30 years. Population is expected to increase by 1.6% from 2024 to 2029. Jobs are anticipated to increase by around 1.6% from 2024 to 2029.

Top employers in Bucks County include Giant Food Stores, Central Bucks School District, Doylestown Hospital, Bucks County Government, Wal-Mart Associates, Northtec, Saint Mary Medical Center, Grand View Health, Pennsbury School District, and Woods Services. The largest industries in Bucks County are Health Care and Social Assistance, Retail Trade, Manufacturing, Government, and Accommodation and Food Services. The top growing industries are Health Care and Social Assistance, and Transportation and Warehousing.

According to the American Community Survey, 2023 Estimates, the average commute time for Bucks County workers was 29.8 minutes, with 64% of commuters working within their County. Notably, 17.6% of workers in the County work from home. As of December 2024, the unemployment rate for Bucks County was 2.86%.

According to the Bucks2040 Vision Plan, house prices are rising due to a shortage of housing units, particularly a shortage of entry-level housing. The vision/comprehensive plan identifies the need to modify zoning to allow for the construction of additional attainable housing in the county. The average home price in Bucks County was \$450,900. This is greater than the average home price for the state of Pennsylvania at \$259,900.

3.5.1 Community Cohesion

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 (See Table 4).



Table 4. 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 ¹	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 ¹		6.7%	12%	12.5%
Median Age ¹		44.3	41.1	39.2
Foreign Born ¹		10.9%	8.0%	14.3%
Language other than English Spoken at Home ¹		14.9%	13.0%	22.5%
High School Graduate or Higher ¹		95.7%	92.2%	89.8%
Bachelor's Degree or Higher ¹		44.2%	35.3%	36.2%
Total Households ¹		245,587	5,324,209	126,817,580
Median Household Income ¹		\$107,221	\$73,824	\$77,719
Median Home Price ¹		\$450,900	\$259,900	\$340,200
Average Rent ¹		\$1,612	\$1,197	\$1,406
Home Ownership Rate ¹		77.6%	69.5%	65.2%

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

3.6 Community Facilities and Services

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. These resources can be seen on Figure 6 found in Appendix A.

3.6.1 Fire, Emergency Management System (EMS), Police, and Medical Facilities

The project area is serviced by the Langhorne Borough Police, Langhorne Manor Police, Parkland Fire Department, Langhorne-Middletown Fire Company, Trevoise Fire Company Sub Station, and Penndel-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.

3.6.2 Places of Worship and Cemeteries

Places of worship are considered community facilities because they often serve as important community resources and gathering places for the community. In addition, they can provide a critical conduit for contacting and reaching out to traditionally underserved populations and can be used to obtain feedback from these communities to address their needs. Several churches are located within close proximity to the project area as seen in Figure 6 in Appendix A. A cemetery occurs near the southern portion of the project area adjacent to SR 0001. No direct impacts to places of worship are anticipated with this project.

3.6.3 Parks and Recreation Areas

One local park, the Borough of Langhorne's Mayor's Playground is located adjacent to the project area. This project is not anticipated to impact this facility or impact the ability to access beyond construction.

3.6.4 Bicycle and Pedestrian Facilities

Planning documents for Bucks County and municipalities within the project area emphasize efforts to expand alternative transportation options. The design of the project is consistent with zoning regulations and adds multiple bicycle and pedestrian facilities, improving the overall walkability and bikeability of the project area, especially along SR 0413 (Pine Street). A sidewalk and a 10-foot wide sidepath are being proposed along SR 0413, connecting to existing sidewalk at both the northern and southern limits of SR 0413. The sidepath will accommodate both bikes and pedestrians. A new sidewalk is also being extended along Gillam Avenue to connect to its existing sidewalk located in front of the Langhorne Presbyterian Church. At the southern end of the project, the existing sidewalk will be replaced and extended to tie to existing sidewalk along SR 2008 (Highland Avenue) and SR 2045 (Old Lincoln Highway). There is also the potential for a trail to be added within the existing service road's footprint for up to an overall 4-mile-long loop (at the discretion of the respective municipalities). Americans with Disabilities Act (ADA) ramp upgrades, crosswalks, signing, and pedestrian signals are incorporated into the design of the corridor where applicable.

3.6.5 Public Transit

Public transit in Bucks County is primarily provided by the Southeastern Pennsylvania Transportation Authority, or SEPTA. A SEPTA-operated passenger train on the West Trenton



Regional Rail Line serves the immediate project area. This rail line passes just south of the project area. Rail service is not expected to be impacted by the project. Additionally, a SEPTA bus route passes through portions of the project area.

There are existing bus stops along both sides of SR 0413 (Pine Street) located near the intersections with Bellevue Avenue, Woods Drive, Flowers Avenue, Richardson Avenue and Maple Avenue. No formal bus shelters are currently found at these bus stops. All bus stops will remain open/available through the duration of the project; however, adjustments in the exact locations of these stops could occur. Signage will be maintained notifying riders of the bus stop locations throughout construction. Final bus stop locations and any necessary temporary locations will be coordinated with SEPTA during final design.

3.7 Public Outreach

Multiple public outreach activities were conducted for the project and are listed in Table 5. Early feedback from the public included concerns about noise impacts, pedestrian and cyclist safety, changes to traffic along SR 0001, and increased traffic through the municipal service roads. This feedback was implemented through review of alternatives that analyzed various traffic pattern alternatives, looked at options to minimize noise impacts, reviewed options for increasing pedestrian/cyclist accommodations (sidewalks/sidepaths), and reviewed traffic calming measures during the alternatives analysis phase of the project.



Table 5. Public Outreach

Meeting Type	Date	Location	Attendees	Comments Received
Public Meeting	May 29, 2014	Middletown Township 3 Municipal Way Langhorne, PA 19047	51 (36 from general public)	25 Comments
Town Hall Meeting	September 29, 2014	Middletown Township 3 Municipal Way Langhorne, PA 19047	21 (9 from general public)	18 Questions
Public Presentation	June 7, 2021	Virtual	124 views	83 comment responses received
Public Meeting	April 23, 2025	Virtual	168 live attendees, 27 viewers of online recording	147 questions

3.8 Stakeholder Outreach

In addition to public outreach activities, multiple stakeholder-specific outreach events were conducted for the project and are listed in Table 6.

Table 6. Stakeholder Meetings

Stakeholder Party	Date	Location	Attendees	Comments/Questions Received
Public Officials Meeting	October 1, 2020	Virtual	12	30
Public Officials Meeting	May 27, 2021	Virtual	21	8
Public Officials Meeting	November 22, 2021	Virtual	33	34
Public Officials Meeting	October 20, 2022	Virtual	36	14
Public Officials Meeting	February 27, 2025	Virtual	23	3

SR 0001, Section RC3
Community Impact Assessment



Public Officials Meeting	April 9, 2025	Virtual	20	19
Meeting with BAME Church	March 22, 2022	Virtual	3	5
Meeting with Langhorne Borough	September 15, 2021	Virtual	20	7
Meeting with Langhorne Borough	September 13, 2024	In-Person	7	6
Meeting with Our Lady of Grace Cemetery	March 23, 2021	Virtual	7	8
Meeting with Woods Services	June 14, 2022	In-Person	8	3
Meeting with Woods Services	June 11, 2025	Virtual	4	10
Meeting with Neshaminy School District	April 20, 2022	Virtual	10	8
Meeting with Neshaminy School District	May 23, 2025	Virtual	5	7
Consulting Party Meeting	June 12, 2025	In-Person	36	29



4.0 Alternatives

The initial purpose of the SR 0001 Section RC3 project was to improve safety on the SR 0001 mainline while maintaining adequate access and limiting impacts to the adjacent local roadways and communities. The original alternatives analysis study for the project, the US Route 1 Frontage Road Corridor Study, was completed in March 2011 and identified limited safety improvements for the project corridor. The proposed safety improvements included the addition of full width outside shoulders for the SR 0001 mainline and replacement of the raised concrete islands separating the mainline from the service roads with concrete median barrier. The existing slip ramps were also identified as a safety concern because their acceleration and deceleration lanes do not meet current design standards; however, providing adequate acceleration and deceleration lane lengths in addition to full width mainline shoulders would have substantial right-of-way impacts. As a result, several of the intermediate slip ramps between the SR 0001 mainline and service roads were proposed to be closed.

A Design Field View for the proposed improvements was submitted in June 2013 and a Design Field View Meeting was held in August 2013. During the spring and fall of 2014, public meetings were held for the project to discuss the potential improvements. A number of concerns with the proposed design were raised during that public outreach effort:

- Closure of intermediate slip ramps on the service roads would require traffic to travel the entirety of service roads and potentially result in speeding.
- Emergency responders had concerns regarding replacement of the concrete separator islands with concrete barrier which would limit access and potentially impact response time.
- Closure of the intermediate slip ramps on the service roads would lead to traffic using the adjacent local road network as bypass / cut-through routes during incidents on SR 0001.
- Concern that traffic noise mitigation was not included in the project improvements.

As a result of the concerns raised, PennDOT initiated an Interchange Alternatives Analysis Study for the project to review additional access improvement alternatives for the corridor including, but not limited to, the addition of a full access direct connect interchange with SR 0413 and a southern interchange in the vicinity of Highland Avenue should the decision be made to remove the frontage road system completely from SR 0001. This alternative analysis



was presented at a virtual public officials update meeting to gather feedback from the local agency representatives (Bucks County, Langhorne Manor Borough, Middletown Township, local politicians). Feedback from this meeting was reviewed and evaluated and from this, PennDOT and the design team recommended the advancement of a build alternative that included the partial cloverleaf interchange at SR 0001 and SR 0413 and proposed mainline improvements of SR 0001.

As this project involves improvements to existing roadway, only “Build” and “No-Build” Alternatives were considered. Following public and agency involvement, refinements were made to the Build Alternative, which is displayed on all resource figures referenced in Appendix A.

4.1 No-Build Alternative

The No-Build Alternative would not propose any improvements to the existing SR 0001 highway corridor. The No Build Alternative would leave the service roads in place and maintain the cross-over access roads throughout the corridor that provide entrance/exit points from the roadway that are not consistent with the interchange areas found throughout the sections of SR 0001 to the east and to the west. This alternative would not improve the existing highway to meet current design criteria set forth by PennDOT and Federal Highway Administration (FHWA).

4.2 Build Alternative

The Build 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 miles north of the Corn Crib Lane (SR 2197) bridge over Lincoln Highway (SR 0001). This part includes the 2-mile segment of the northbound and southbound service (frontage) roads. See Figure 2 in Appendix A for the location of the proposed improvements within the project study corridor.

The proposed improvements include the construction of two Lincoln Highway (SR 0001) mainline interchanges:

- The first Lincoln Highway (SR 0001) interchange will be in the area of the bridge carrying Lincoln Highway (SR 0001) over Highland Avenue (SR 2008) near the southern end of the project. This interchange 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 Lincoln Highway (SR 0001) interchange will be in the area of the Pine Street (SR 0413) bridge over Lincoln Highway (SR 0001) near the northern end of the project. This interchange 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 interchanges, access between the northbound and southbound service roads and Lincoln Highway (SR 0001) 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 the service roads will be removed, and side roads will be terminated with cul-de-sacs.

The project also includes the 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)
- Lincoln Highway (SR 0001) over Highland Avenue (SR 2008)

One box culvert will be replaced:

- Lincoln Highway (SR 0001) over an unnamed tributary to Neshaminy Creek

Additionally, the project includes improvements at three intersections within the project corridor where roundabouts will be constructed.

- Roundabout intersection locations:
 - 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

The following two intersections will be signalized:

- 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)



The following existing signalized intersection will have minor realignments to the approaches:

- Highland Avenue (SR 2008), Old Lincoln Highway (SR 2045) and Fairhill Avenue

Traffic calming improvements are being assessed for the project at the following locations:

- Pine Street (SR 0413) between Flowers Avenue and Maple Avenue (SR 0213)
 - Improvements being assessed include curb bulb-outs, median islands/refuges, and flashing beacons.
- Gillam Avenue between Bellevue Avenue (SR 2049) and Pine Street (SR 0413)
 - Improvements being assessed include a mini-roundabout, curb bulb-outs, median islands/refuges, flashing beacons, and raised crosswalk/speed table.

The anticipated traffic calming improvements along Pine Street (SR 0413) will be between the existing curblines of the roadways plus potentially within the adjacent existing sidewalk limits (e.g., replace sections of sidewalk and construct new ADA ramps, if needed).

5.0 Alternative Impact Analysis

5.1 No Build Alternative

The No Build Alternative would not have a direct impact on the communities or facilities within the project corridor, but it would also not meet the purpose and need of the project to facilitate safe and efficient travel within the project area to meet current and future transportation needs while creating a functional and modern roadway that meets current design criteria and driver expectations.

5.2 Build Alternative

The Build Alternative would have an impact to residential properties and would require the displacement of 6 residential structures. These displacements occur within Langhorne Manor Borough, so there is an effect on a portion of the neighborhood within Langhorne Manor Borough for the placement of the interchange at SR 0001/SR 0413.

The Build Alternative would not affect the community's ability to travel through and around the area to required facilities and services, nor would it impact any parks or recreation areas within the project area.



5.3 Summary

Overall, the Build Alternative has more impact on properties and resources within the project corridor compared to the No Build Alternative. The No Build would maintain the travel corridor as is and would not change traffic patterns for traveling motorists and would not have any impact on community services and facilities. The Build Alternative would require residential displacements in order to complete the proposed improvements, but would avoid impacting places of worship, park and recreation areas, and community facilities and services. See Table 7 below for a summary of impacts for the No Build and Build Alternative.

Table 7. Alternatives Impact Summary

Resource	No Build Alternative	Build Alternative
Residential Displacements	0	6
Places of Worship	0	0
Parks/Recreation Areas	0	0
Community Facilities/Services	0	0
Neighborhoods/Communities	0	1
Public Transit/Bicycle and Pedestrian Facilities	0	0
Heritage Conservancy Conservation Easement	0	0



6.0 Preparers

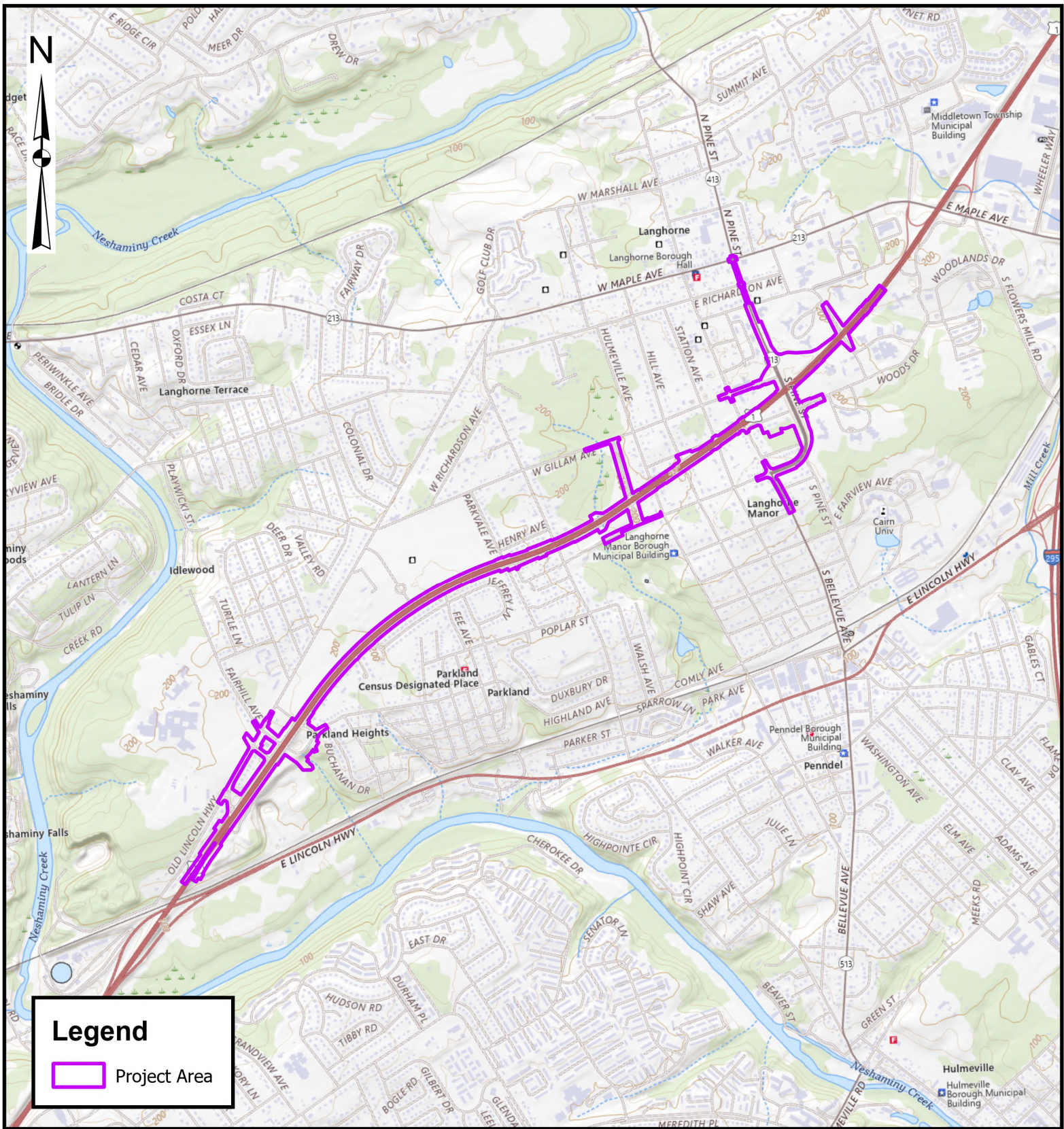
Nathaniel K. Saxe, Environmental Scientist, JMT, Inc.

Michael Kenawell, Environmental Manager, JMT, Inc.

Ken Yerges, PE, Project Manager, JMT, Inc.



Appendix A: Figures



0 1,400 2,800 5,600 Feet

1" = 2,000'

SOURCE: USGS
CREATED BY: NKS



FIGURE 1: PROJECT LOCATION MAP

S.R. 0001 SECTION RC3

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

DATE: JULY 2025

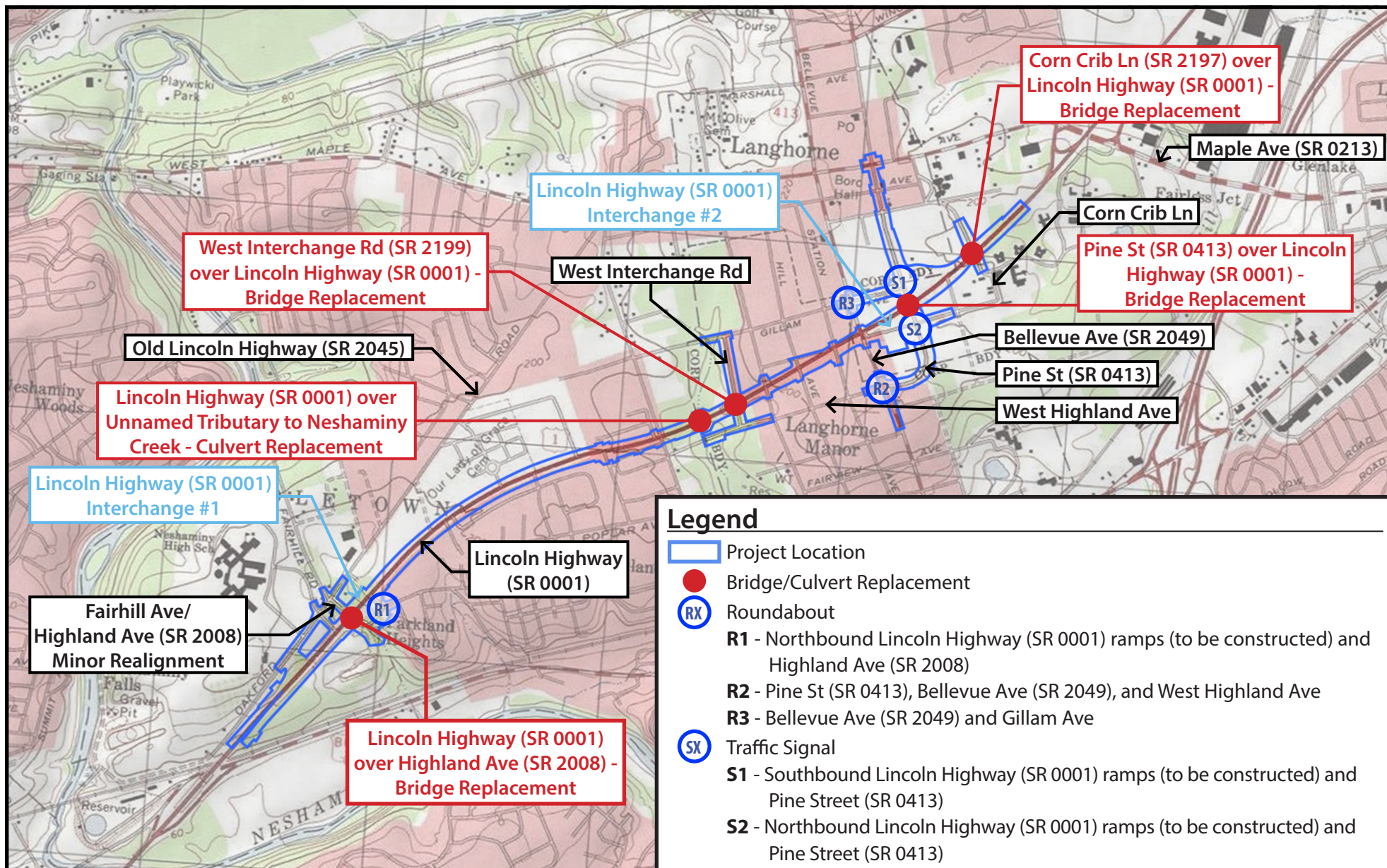


Figure 2: S.R. 0001 Section RC3 Detailed Project Location Map

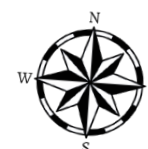
Middletown Township, Langhorne Borough, and Langhorne Manor Borough

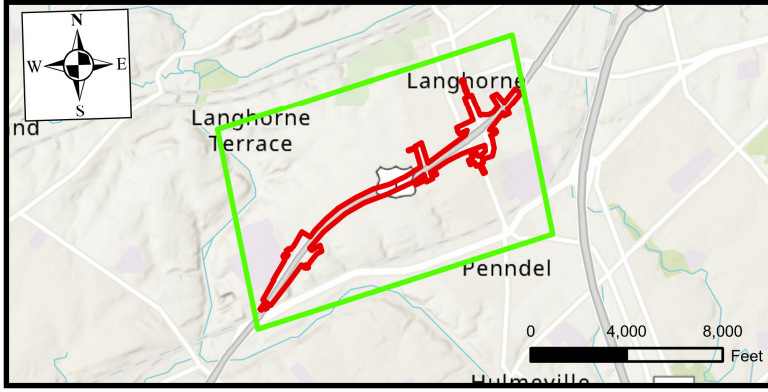
Bucks County, PA

Scale = 1: 24,000



July 2025





Legend

Project Area	Institutional	Transportation
Commercial	Mining	Undeveloped
Industrial	Recreation	Utility
	Residential	Wooded

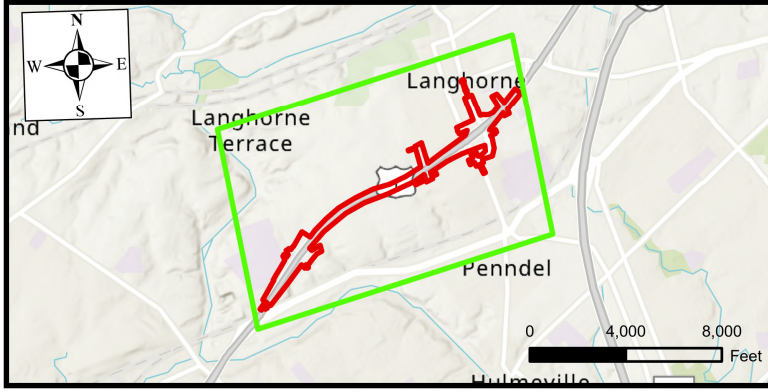
CREATED BY: NKS
SOURCE: ESRI

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Feet
1" = 1,000'

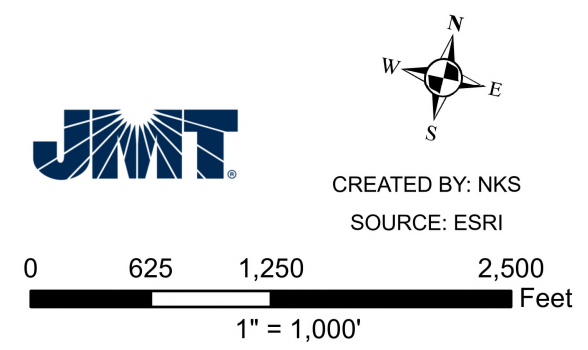
FIGURE 3: EXISITING LAND USE

S.R. 0001 SECTION RC3

LANGHORNE AND LANGHORNE MANOR
BOROUGH, AND MIDDLETOWN TOWNSHIP,
BUCKS COUNTY, PA
DATE: JULY 2025



- Legend**
-  Project Area
 -  Conservation Easement Parcel

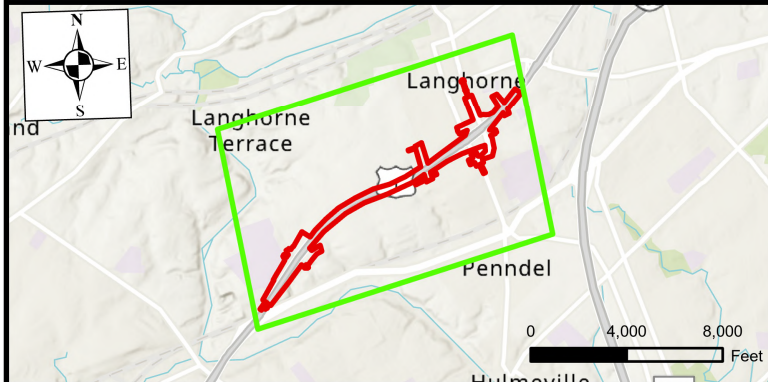


**FIGURE 4:
CONSERVATION
EASEMENTS**

S.R. 0001 SECTION RC3

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

DATE: JULY 2025



Legend

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

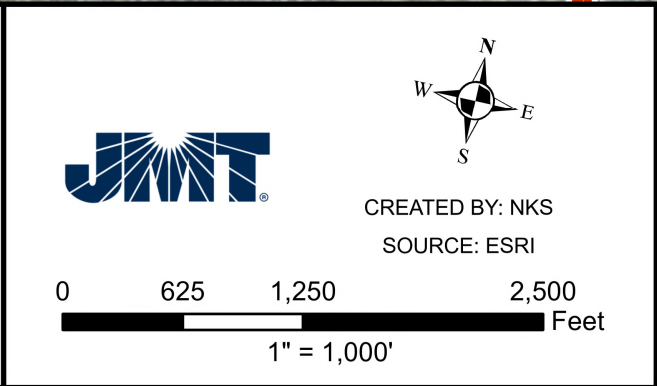
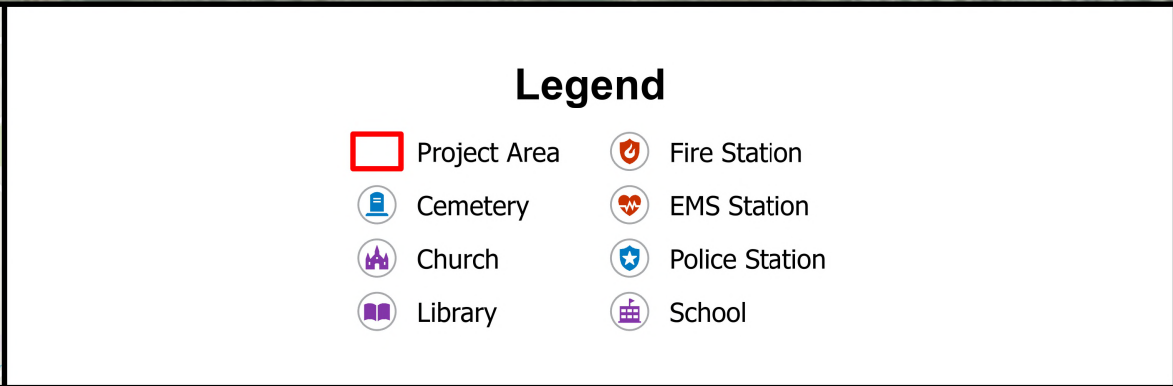
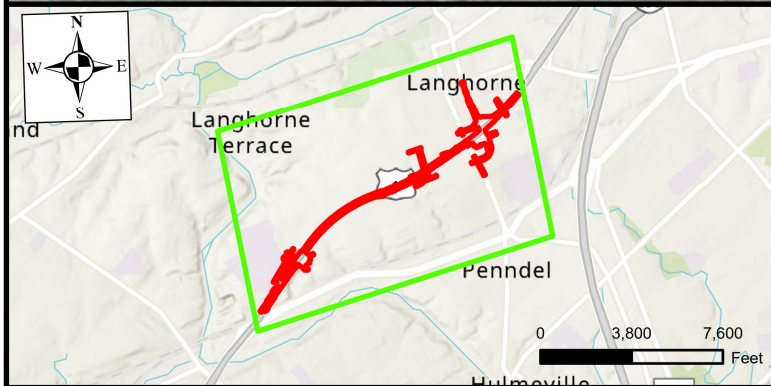
CREATED BY: NKS
SOURCE: ESRI

0 625 1,250 2,500
Feet
1" = 1,000'

FIGURE 5: EXISTING ZONING

S.R. 0001 SECTION RC3

LANGHORNE AND LANGHORNE MANOR
BOROUGH, AND MIDDLETOWN TOWNSHIP,
BUCKS COUNTY, PA
DATE: JULY 2025





Appendix B: References



References

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Middletown Township Planning Commission.
<https://www.middletownbucks.org/Government/Boards-Commissions/Planning-Commission>. Accessed June 2025.

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Langhorne Manor Borough Planning Commission. <https://langhornemanor.org/boards-commissions/planning-commission-2/>. Accessed June 2025.

Bucks County Economic Overview, Q1 2025. 2025. Bucks County Workforce Development Board, Inc.

Delaware Valley Regional Planning Commission. <https://www.dvrpc.org/>. Accessed June 2025.

U.S. Census Bureau American Community Survey 2023 Data.
<https://www.census.gov/programs-surveys/acs>. Accessed June 2025.

U.S. Department of Housing and Urban Development. <https://www.hud.gov/>. Accessed June 2025.



GIS Data Sources

Data Layer	Source	Date
Census Bureau Block Groups, Pennsylvania	TIGER/Line Shapefiles, US Census Bureau	2024
Bucks County Municipal Zoning	Bucks County GIS Portal, Bucks County Planning Commission	2025
Land Use	Delaware Valley Regional Planning Commission Data Center	2023
Langhorne Historic District	PA-SHARE	2022
Conservation Easement	Bucks County GIS Portal, Bucks County Planning Commission	2025
SEPTA Bus Routes, SEPTA Train Lines	SEPTA GIS Data Hub	2017
Bucks County Municipal Parks	Pennsylvania Spatial Data Access, Bucks County	2023
Bucks County EMS Regional Councils	Pennsylvania Spatial Data Access, Pennsylvania Department of Health	2022
Pennsylvania Bike Routes	Pennsylvania Spatial Data Access, Pennsylvania Department of Transportation	2024
Bucks County – Police Departments	Pennsylvania Spatial Data Access, Bucks County	2023
Bucks County – Fire Stations	Pennsylvania Spatial Data Access, Bucks County	2023
Bucks County – Rescue Squads	Pennsylvania Spatial Data Access, Bucks County	2023
Bucks County – Schools	Pennsylvania Spatial Data Access, Bucks County	2023
Social Locations	Shapefile by JMT	2025
Woods School	Shapefile by JMT	2025