

# state college area **CONNECTOR**



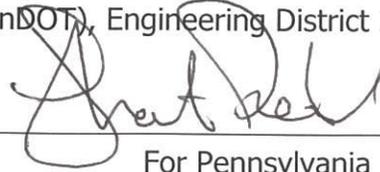
## **State College Area Connector Project Draft Environmental Impact Statement February 2026**

**State College Area Connector Project**  
**DRAFT ENVIRONMENTAL IMPACT STATEMENT**

Submitted pursuant to 42 USC § 4332 (2)(c), and where applicable 49 USC § 303, by the  
US Department of Transportation (USDOT), Federal Highway Administration (FHWA) and  
Pennsylvania Department of Transportation (PennDOT), Engineering District 2-0.



For Federal Highway Administration  
Pennsylvania Division



For Pennsylvania  
Department of Transportation

2/20/2026

Date of Approval

2-19-26

Date of Approval

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The following agencies are cooperating agencies: US Fish and Wildlife Service, US Environmental Protection Agency, US Army Corps of Engineers-Baltimore District, Pennsylvania Department of Environmental Protection, and the Pennsylvania Historical and Museum Commission.

FHWA, in coordination with PennDOT, is soliciting comments on this Draft Environmental Impact Statement (DEIS) that has been prepared to study potential improvements to US 322 from Boalsburg to Potters Mills, Pennsylvania. The project includes the proposed construction of an eight-mile four-lane limited access facility on new alignment from the four-lane section of US 322/Mount Nittany Expressway near PA 45 to US 322 at Potters Mills. This DEIS contains information required by the National Environmental Policy Act of 1969 for major federal actions that significantly affect the quality of the human environment. Persons and agencies who may be interested in or affected by the proposed project are encouraged to comment on the information in this DEIS. All comments received in response to this DEIS will be considered, and any information presented herein may be revised in consideration of the comments. FHWA will issue a single document that consists of the Final Environmental Impact Statement and Record of Decision pursuant to 49 USC § 304a(b) [and 23 USC § 139(n)(2)] unless FHWA determines that statutory criteria or practicability considerations preclude issuance of such a combined document.

Comments on this DEIS are due by April 20, 2026. Electronic comments on this DEIS can be provided via the project website at [www.PennDOT.pa.gov/SCAC](http://www.PennDOT.pa.gov/SCAC). For more ways to comment, see the **Executive Summary - What additional public outreach opportunities will occur for this project, and how can I comment on this DEIS?** section.

## Executive Summary

The Pennsylvania Department of Transportation (PennDOT), with oversight by the Federal Highway Administration (FHWA), prepared this Draft Environmental Impact Statement (DEIS) for the State College Area Connector (Project) project. This DEIS considers alternatives and environmental effects for the implementation of an eight-mile, four-lane limited-access highway from the end of United States Route (US) 322/Mount Nittany Expressway in Boalsburg to the limited-access section of US 322 at Potters Mills in Centre County, Pennsylvania. This DEIS was initiated based on the findings of the State College Area Connector Planning and Environmental Linkages (PEL) Study, completed in September 2023. The PEL Study evaluated a range of alternatives, and through a qualitative and quantitative screening process, identified three Build Alternative corridor options for further National Environmental Policy Act (NEPA) study and establishment of the project area.

Three Build Alternatives (North, Central, and South Alternatives) and the No Build Alternative were advanced for detailed evaluation in this DEIS. Each of the three Build Alternatives meets the identified purpose and needs for transportation improvement, and the No Build Alternative is retained for comparison purposes, even though it does not meet the purpose and needs. Field investigations, data analyses, public outreach, and agency coordination aid in evaluating these alternatives and identifying a Preferred Alternative in this DEIS.

### What is an EIS?

An EIS is prepared by FHWA to comply with FHWA's implementation regulations (23 CFR § 771.123) for major federal actions, which are likely to affect the environment significantly. PennDOT's *Integrated Transportation Development Process* also guided the development of this project. The project development utilized PennDOT's ten-step process, integrating NEPA and Section 404 of the federal Clean Water Act of 1972 (33 USC § 1344). To comply with NEPA, this DEIS was developed in accordance with the NEPA of 1969, as amended (42 USC 4321, *et seq.*); 23 USC 139, FHWA regulations implementing NEPA (23 Code of Federal Regulations [CFR] § 771.101-771.139); *23 CFR § 771 Interim Final Rule* (July 3, 2025); *Fiscal Responsibility Act of 2023 (Public Law No. 118-5, 137 Stat. 10)*; Department of Transportation (DOT) Order 5610.1D DOT's *Procedures for Environmental Impacts* (June 25, 2025); PennDOT Publication No. 10B *Design Manual 1B: Post-TIP NEPA Procedures* (2022); and all applicable federal, state, and local governmental laws and regulations. Additionally, this DEIS is being completed in compliance with 23 CFR § 139, *Efficient Environmental Reviews for Project Decision-making and One Federal Decision*.

This EIS identifies the purpose and needs for an action; considers alternatives to meet the project's purpose and needs; describes the affected environment; analyzes the environmental consequences of the alternatives; and documents agency coordination and public involvement. The EIS process concludes with the selection of an alternative to be carried forward into final design.



An EIS is initiated with agency and public scoping of the proposed project and official issuance of a Notice of Intent (NOI) to Prepare an EIS. For the Project, a scoping meeting was held with resource agencies on June 28, 2023, followed by publication of the NOI in the Federal Register (FR) on July 24, 2024. The first NEPA public scoping meeting was then held on August 15, 2024, and a second public scoping meeting was held on May 8, 2025.

Once the NOI and scoping activities are completed, the DEIS is developed and distributed, providing an opportunity for the public, Tribes and Nations, interest groups, and other agencies to review and submit comments. A combined Final EIS (FEIS)/Record of Decision (ROD) is then created, which may include updates to the data shown in the DEIS. Additionally, the FEIS/ROD will address all substantive comments received during the DEIS public comment period.

## How do I review this DEIS?

This DEIS is designed to provide a summary of the technical investigations completed for the project. At the start of each chapter, an inset provides a summary of all the technical studies completed that support the findings presented in the chapter. The individual technical study reports and technical memoranda are provided in **Appendix L** of this DEIS and can be found on the project website ([www.penndot.pa.gov/SCAC](http://www.penndot.pa.gov/SCAC)), should reviewers want additional detailed information. The following is an overview of what is contained in each chapter of the DEIS.

- **Chapter 1** – Introduction to the project and disclosure of the project purpose and needs
- **Chapter 2** – Identification of alternatives considered and dismissed
- **Chapter 3** – Identification of environmental resources, methods of investigation, potential impacts from the alternatives, and proposed mitigation
- **Chapter 4** – Overview of the public and agency engagement conducted throughout the lifecycle of the Project
- **Chapter 5** – Identification of the Preferred Alternative, description of potential impacts for each of the alternatives, and the rationale behind the identification of the Preferred Alternative

Throughout the DEIS, small figures are included in each chapter to provide context for the subject matter being discussed. Larger sized versions of these figures are also located in the **Figures and Plates** section of this DEIS for easier viewing.

## Who is leading this Project?

FHWA is the lead federal agency responsible for environmental analysis and decision-making under NEPA for the Project, as they oversee the authorization of federal-aid funds to implement the project improvements. PennDOT is the lead state agency responsible for conducting the environmental analysis and preparing the documentation, as it manages federal funds for highway transportation improvements in the Commonwealth of Pennsylvania.



## What other agencies are involved?

During the PEL Study and DEIS development, FHWA and PennDOT conducted extensive outreach and engagement efforts with federal, state, Tribes and Nations, and local agencies, as well as interested stakeholders and the general public. The *Agency Coordination Plan for the State College Area Connector* (July 2024), included within the NOI in **Appendix A**, was prepared at the onset of the project in accordance with 23 USC § 139(g). The plan establishes the role of each involved agency, the proposed project schedule, and expectations for agency input and involvement. The agencies involved include Cooperating and Participating Agencies. Cooperating Agencies are those government and regulatory agencies with jurisdiction by law (e.g., with permitting or land transfer authority) or special expertise with respect to any environmental impact or resource involved in an environmental review. Participating Agencies include any federal, state, local agencies, or Tribes and Nations that could have an interest in the proposed project. The list of Cooperating and Participating Agencies is provided in **Table ES-1**. More information on agency coordination is included in **Chapter 4** of this DEIS.

*Table ES-1: Cooperating and Participating Agency Status for the EIS*

| Cooperating Agency   | Status      |
|--|-------------|
| United States Army Corps of Engineers (USACE)  | Accepted    |
| United States Environmental Protection Agency (EPA)  | Accepted    |
| United States Fish and Wildlife Service (USFWS)  | Accepted    |
| Pennsylvania Department of Environmental Protection (PA DEP) - Northcentral Regional Office                    | Accepted    |
| Pennsylvania Historical and Museum Commission (PHMC)/Pennsylvania State Historic Preservation Office (PA SHPO) | Accepted    |
| National Park Service (NPS)  | Declined    |
| Participating Agency   |             |
| Pennsylvania Fish and Boat Commission (PFBC)   | Accepted    |
| Pennsylvania Department of Conservation and Natural Resources (DCNR)   | Accepted    |
| Pennsylvania Game Commission   | Accepted    |
| Pennsylvania Department of Agriculture   | Accepted    |
| United States Coast Guard  | No response |
| Local Agencies   |             |
| Centre County Conservation District (CCCD)   | Accepted    |
| Centre County Board of Commissioners   | Accepted    |
| Harris Township Board of Supervisors   | Accepted    |
| College Township Council   | Accepted    |
| Centre Hall Borough Council  | No response |
| Potter Township Board of Supervisors   | No response |
| Spring Township Board of Supervisors   | No response |
| Benner Township Board of Supervisors   | No response |



| Federally Recognized Tribes and Nations |             |
|---|-------------|
| Delaware Nation                         | Accepted    |
| Delaware Tribe of Indians               | Accepted    |
| Seneca Nation of Indians                | Accepted    |
| Eastern Shawnee Tribe of Oklahoma       | No response |
| Oneida Nation                           | No response |
| Seneca-Cayuga Nation                    | No response |
| Shawnee Tribe                           | No response |

## What is the history of the Project?

Dating back to the 1970s, many transportation improvement studies and projects have occurred and continue to influence travel within and immediately adjacent to the project area. While many of the transportation projects in the region influenced travel on US 322, the PEL Study provided the foundation to initiate this DEIS. The PEL Study identified preliminary transportation needs within southern Centre County, Pennsylvania, in a 70-square-mile study area. The PEL Study evaluated a range of alternatives to determine how the alternatives addressed the PEL Study's purpose and needs, balanced impacts on the natural and built environment, addressed traffic concerns within the overall study area, met engineering considerations such as constructability and cost, and considered area planning goals. The PEL Study recommended that three Build Alternative corridor options be advanced for further study under NEPA.

The final PEL Report was published in June 2023 and FHWA acknowledged in a letter, dated September 14, 2023, that the PEL Study was consistent with 23 USC § 168 and 23 CFR § 450.212. Additionally, FHWA concurred that an EIS was the proper NEPA classification to evaluate the three PEL Study Build Alternative corridor options for the Project. More information on the history of the project is included in **Chapter 1** of this DEIS.

## What is the purpose of the project, and why is it needed?

The purpose and need statement explains why a project is proposed and what problems it intends to solve. It describes the project's goals (purpose) and the transportation issues or deficiencies (needs) the project will address. This statement provides the basis for developing and assessing possible solutions. The purpose and needs were developed as part of the Pre-NOI/PEL phase of project development. The statements were refined following the PEL study, specifically to address the needs within the US 322 project area.

**Level of Service (LOS)** is a measure of congestion that assesses how well a roadway network operates and meets the needs or expectations of its users. It is expressed as a letter grade with A being the best and F being the worst.



The purpose of the Project is to improve roadway congestion by achieving acceptable Level of Service (LOS) and to address safety issues by reducing the predicted crash frequency along the US 322 corridor between Boalsburg and Potters Mills, Pennsylvania. Additionally, the project will aim to provide a transportation network that meets driver expectations.

The transportation needs identified for the project area are that high peak hour traffic volumes cause congestion and result in unacceptable LOS (LOS D [rural only], E, or F) on US 322 roadways and intersections; the existing roadway configurations and traffic conditions contribute to safety concerns in the project area; and the roadway network and configuration in the project area lacks continuity and does not meet driver expectations.

More information on the project's purpose and needs is included in **Chapter 1** and **Appendix B** of this DEIS.

## **What alternatives were considered and evaluated?**

During the PEL Study, a range of alternatives were identified and screened. A two-phased screening approach was utilized and included qualitative and quantitative assessments. The alternatives initially considered included No Build Alternative, Upgrade Existing Alternative, Transportation Control Measures (TCM) Alternative, Transportation Systems Management (TSM) Alternative, Transit Alternative, and a Build Alternative.

A range of alternatives were evaluated and advanced based on their ability to meet the PEL Study's purpose and needs, and then screened from traffic, environmental, planning, and engineering perspectives. **Figure ES-1** provides an overview of the alternative screening process results at each level of analysis. In summary, the following determinations were made during the screening process:

- TSM, TCM, Transit, and No Build Alternatives were dismissed from further study during the Level 1 Screening for not meeting the PEL Study purpose and needs.
- US 322 Upgrade Existing and Build Alternatives were advanced through Level 2A Screening and into Level 2B Screening for more detailed analysis.
- US 322 Upgrade Existing Alternative was dismissed from further study during the Level 2B traffic screening as it did not improve safety on the overall roadway network; therefore, it did not meet the PEL Study purpose and needs.
- Nine Build Alternatives (six paralleling the US 322 corridor and three paralleling the PA 144 corridor) were evaluated from traffic, environmental, planning, and engineering perspectives, and discipline-specific recommendations were identified (**Figure ES-2**). When balancing the overall traffic, environmental, planning, and engineering data and analyses, the US 322-1OEX, US 322-1S, and US 322-5 Build Alternative corridors were recommended for further engineering and environmental study in the NEPA phase of the transportation project development process. The US 322-1OEX, US 322-1S, and US 322-5 Build Alternative corridors were presented to all resource agencies at the June 28,

2023 Agency Coordination Meeting and received concurrence from the cooperating agencies. FHWA found the planning study was undertaken in a manner consistent with 23 USC § 168 and 23 CFR § 450.12 and agreed that an EIS was the appropriate NEPA classification for future studies.

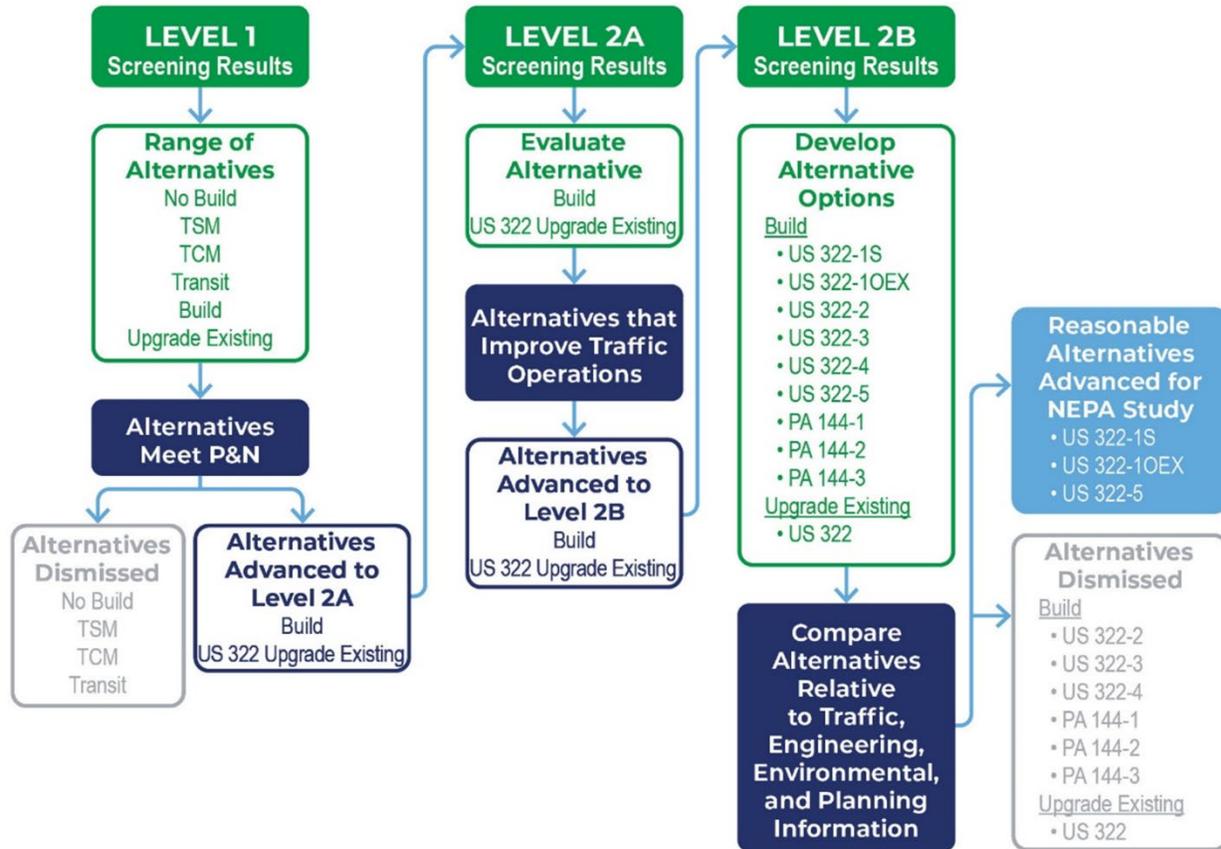


Figure ES-1: PEL Screening Process Results Summary

Prior to the issuance of the NOI, pre-NEPA traffic investigations were conducted and interchange scenarios evaluated. The interchange analysis considered interchange scenarios with the new roadway at PA 45, Potters Mills, and a midpoint interchange with a connection between PA 45 and US 322. The analysis found that the midpoint interchange with the PA 45 Connector could improve traffic operations along a section of PA 45 in Harris Township, but it would not address traffic concerns along PA 45 in Potter Township. Additionally, it was determined that the PA 45 Connector would not affect traffic operations along US 322; therefore, it did not support the project's purpose and needs. The analysis also revealed that a midpoint interchange without a connector road would have a low Average Annual Daily Traffic (AADT) volume of approximately 2,000 vehicles (total cumulative traffic volume for all ramps).

Based on the analysis of the interchange scenarios and coordination with local officials, PennDOT decided to advance the interchange scenario that completes the PA 45

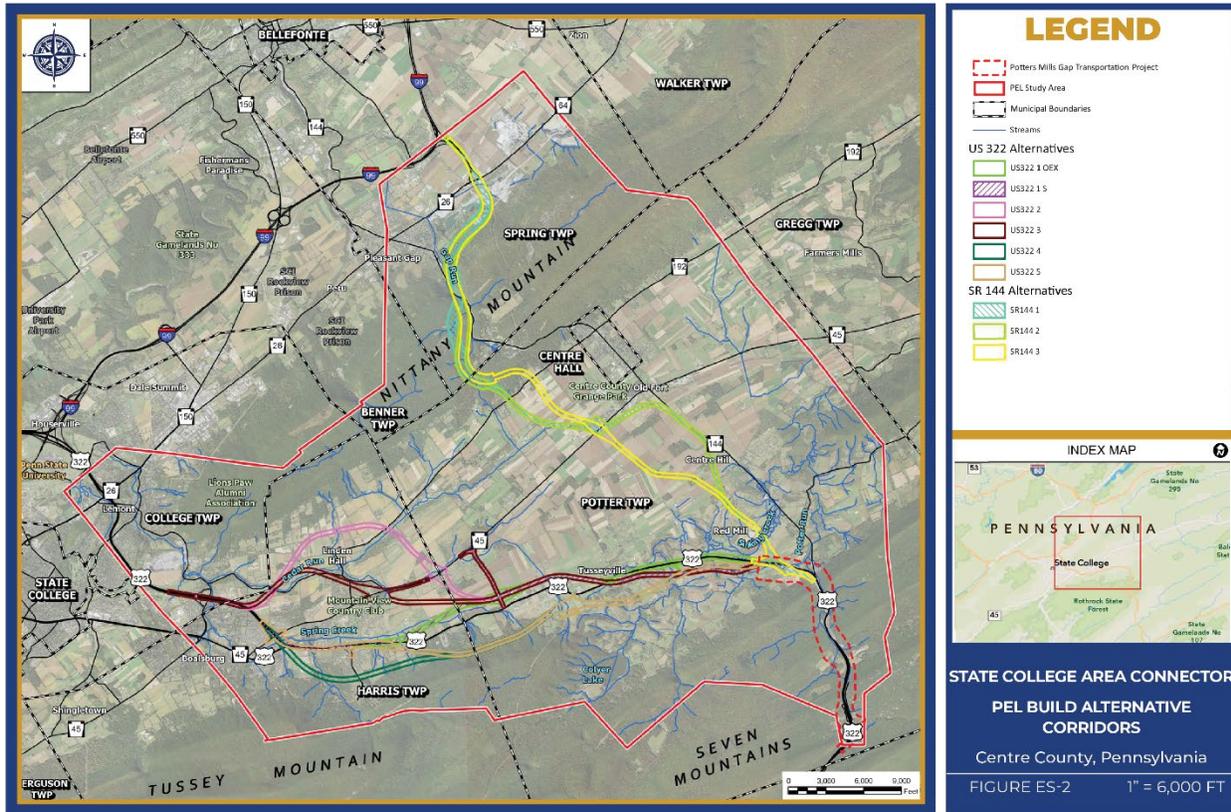


Figure ES-2: PEL Build Alternative Corridors

interchange as a full-access interchange and eliminates the existing Boal Avenue ramps to US 322. In January 2024, PennDOT officially removed the PA 45 Connector and midpoint interchange from further consideration in the Project, as they would not directly support the purpose and need for transportation improvements along the US 322 corridor.

Three Initial Build Alternative options were derived from the three recommended PEL Build Alternatives without a midpoint interchange and connector. The US 322-1OEX PEL Build Alternative was renamed the North Alternative. The US 322-1S PEL Build Alternative was renamed the Central Alternative, and the US 322-5 PEL Build Alternative was renamed the South Alternative. The Initial Build Alternatives were refined to:

- Confirm they meet current design criteria
- Minimize impacts to field-surveyed environmental resources (e.g., farmland, residential and commercial properties, historic properties, wetlands, and streams)
- Address public and resource agency comments
- Update the vertical alignment and revise cut/fill limits
- Identify initial private property access
- Incorporate bridges to maintain local roadway connections
- Include a shared use path along existing US 322 (Boal Avenue) from Boalsburg to Bear Meadows Road



The North, Central, and South Alternatives were presented to local public officials in July 2024, resource agencies in July and October 2024, and the public in August 2024 for review and comment.

After the public and agency review, engineers, planners, and environmental scientists collaborated to adjust and enhance the alternative alignments, leading to the development of the Detailed Build Alternatives for further evaluation. In addition to alternative alignment adjustments, more detailed engineering was developed to:

- Accommodate roadway drainage with the inclusion of stormwater management facilities
- Refine private property access (e.g., driveways)
- Update the vertical alignment and revise cut/fill limits to better balance the earthwork
- Expand bridge lengths to maintain local roadway and driveway connections, minimize impacts to wetland and streams, and encourage wildlife crossing
- Provide gated access and median crossovers to accommodate emergency access and highway maintenance needs of the limited-access facility
- Further balance impacts between field-surveyed environmental resources (e.g., farm operations, residential and commercial properties, historic properties, wetlands, and streams)
- Consider constructability and maintenance of traffic during construction

**Figure ES-3** depicts the three Initial Build Alternative locations relative to the Detailed Build Alternative for the North, Central, and South Alternative alignments. The **Plates** provide engineering details relative to the environmental features.

On May 8, 2025, the Detailed Build Alternatives (e.g., North, Central, and South Alternatives) were presented to the public for review and comment. At this meeting, the Central Alternative was identified as PennDOT's recommended preferred alternative.

Following the May 2025 public presentation of the Detailed Build Alternatives and further environmental analysis, the Central Alternative was shifted to avoid impacting the Potter Township Athletic Complex ball fields, a Section 4(f) property, and minimize impacts to a farm operation. A minor adjustment was also made to the North Alternative related to a stormwater management facility to avoid impacting an historic property that contributes to the Penn Valley/Brush Valley Rural Historic District, a Section 4(f) resource. No changes were made to the South Alternative following the May 2025 presentation to the public. The North, Central, and South Alternatives are fully evaluated in this DEIS. More information on the alternatives is included in **Chapter 2** of this DEIS.

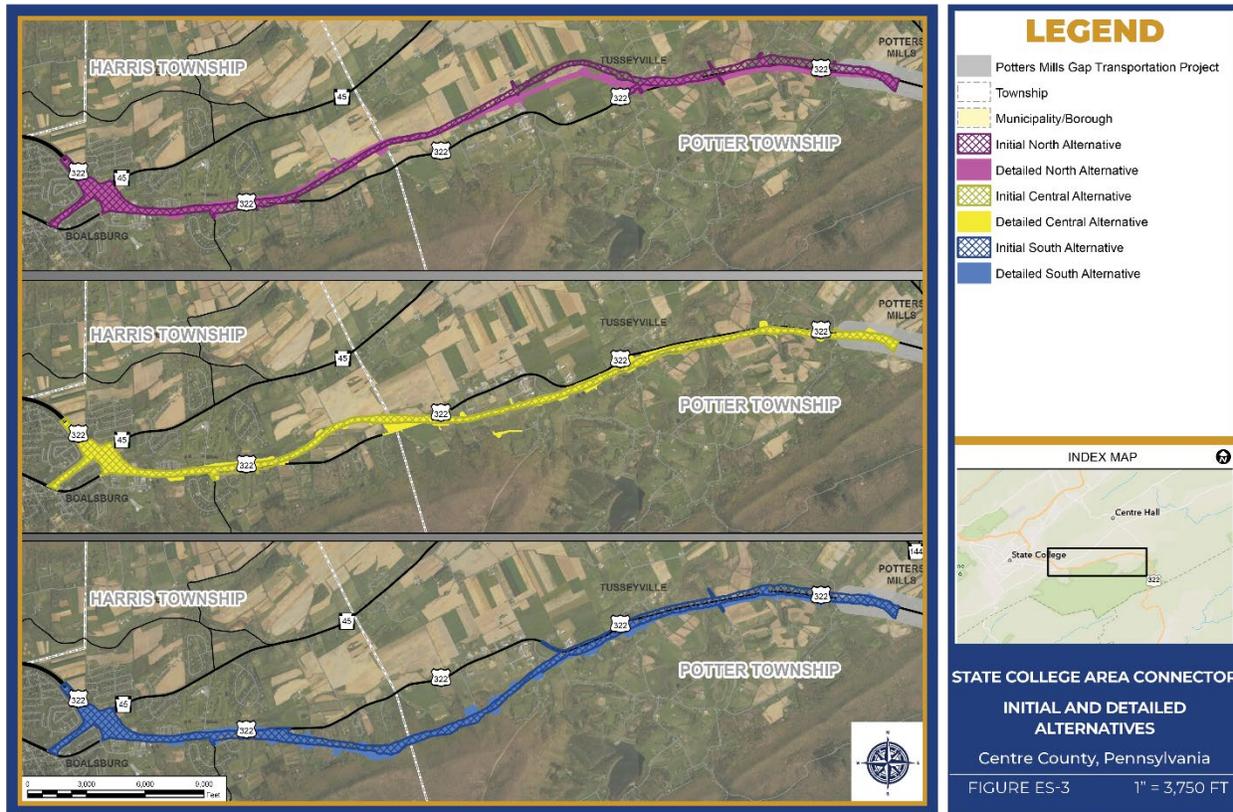


Figure ES-3: Initial and Detailed Alternatives

## What does the limit of disturbance represent?

Following the development of the typical sections, roadway templates were developed to aid in creating the Build Alternative alignments based on the engineering design criteria (e.g., travel lanes, shoulders, median, and side slopes). Grade lines were established to generally follow the existing topography with an attempt to limit the depth of cut and height of fill required. The roadway template was applied to the vertical alignment to determine where the proposed excavation or embankment intersected with the existing ground, to generate a corridor footprint.

The roadway template was initially located along the three PEL Build Alternatives, which were advanced for further study. The design team then worked to shift the alternative alignment to avoid and reduce impacts on key natural, cultural, and socioeconomic resources that were identified and mapped in the field. Resources considered for avoidance and minimization included productive agricultural lands and related farm structures; wetlands; streams; floodplains; residential, commercial, and recreational facilities; historic properties; critical habitat areas; and geologic formations. After avoiding resources and minimizing impacts as much as possible, a 25-foot buffer was added to each side of the alternative, and a conceptual limit of disturbance (LOD) was established. The buffer was determined based on providing sufficient contractor maintenance access from the edge of the earthwork cut or fill lines or around conceptual stormwater basins. A wider buffer (25-50 foot) was used in areas of utility



relocations. The utility buffer was determined based on the existing utilities' widths in the area.

## What are the anticipated impacts of the alternatives?

The North, Central, and South Alternatives have the potential to impact many regulated and other resources throughout the project area. **Table ES-2** summarizes each of the considered Build Alternatives. **Chapter 3** of this DEIS provides additional information on environmental resources and the potential project impacts.

*Table ES-2: Potential Environmental Impacts by Build Alternative*

| Feature   | Build Alternative |             |               |
|---|-------------------|-------------|---------------|
|   | North             | Central     | South         |
| <b>Agriculture</b>  |                   |             |               |
| Productive Agricultural Land, Direct (acres)                                      | <b>142</b>        | 116         | <b>104</b>    |
| Productive Agricultural Land, Estimated Indirect (acres)                          | <b>23</b>         | <b>23</b>   | <b>55</b>     |
| <b>Productive Agricultural Land, Total (acres)</b>                                | <b>165</b>        | <b>139</b>  | 159           |
| Farm Operations Impacted (#)  | <b>20</b>         | 18          | <b>14</b>     |
| Agricultural Conservation Easements (within productive agricultural land) (acres) | <b>18</b>         | 16          | <b>0</b>      |
| Agricultural Security Areas (within productive agricultural land) (acres)         | <b>71</b>         | <b>34</b>   | 38            |
| Clean and Green (within productive agricultural land) (acres)                     | <b>133</b>        | 106         | <b>85</b>     |
| Agricultural Zoning Districts (within productive agricultural land)               | <b>104</b>        | 86          | <b>72</b>     |
| Soil Capability Classes I-IV (within productive agricultural land) (acres)        | <b>137</b>        | 117         | <b>103</b>    |
| <b>Water Resources</b>  |                   |             |               |
| Wetlands (within overall LOD) (acres)   | 25.4              | <b>30.0</b> | <b>17.9</b>   |
| Wetlands (within bridge footprint, presumably not impacted) (acres)               | 10.9              | 15.0        | 9.7           |
| Wetlands (Indirect impacts due to loss of upstream flow) (acres)                  | -                 | -           | <b>3.7</b>    |
| <b>Wetlands Total (acres)</b>   | 14.5              | <b>15.0</b> | <b>11.9</b>   |
| Streams (within overall LOD) (linear ft.)   | <b>5,124</b>      | 9,566       | <b>10,563</b> |
| Streams (within bridge footprint, presumably not impacted) (linear ft.)           | 3,509             | 5,767       | 5,320         |
| Streams (Indirect impacts due to loss of upstream flow) (linear ft.)              | - -               | - -         | <b>3,209</b>  |
| <b>Streams Total (linear ft.)</b>   | <b>1,615</b>      | 3,799       | <b>8,452</b>  |
| Anticipated 100 Yr. Floodplains (acres)   | 14.2              | <b>14.7</b> | <b>12.6</b>   |
| Floodplains (within bridge footprint, presumably not impacted) (acres)            | 9.4               | 10.2        | 8.9           |
| <b>Floodplains Total (acres)</b>  | <b>4.8</b>        | 4.5         | <b>3.7</b>    |
| Floodways   | <b>9.2</b>        | 21.6        | <b>21.9</b>   |



| Feature  |   | Build Alternative              |            |                 |
|--|---|--------------------------------|------------|-----------------|
|  |   | North                          | Central    | South           |
|  | Floodways (within bridge footprint, presumably not impacted) (acres)                  | 4.5                            | 11.6       | 8.0             |
|  | <b>Floodways Total</b> (acres)  | <b>4.7</b>                     | 10         | <b>13.9</b>     |
|  | <b>Terrestrial Habitat</b>  |                                |            |                 |
|  | Forested/Wooded Habitats (acres)  | <b>25</b>                      | 31         | <b>123</b>      |
|  | Important Bird Area (acres)   | <b>0</b>                       | 2          | <b>110</b>      |
|  | Bat Swarming Habitat (forested areas only) (acres)                                    | <b>86</b>                      | <b>74</b>  | 77              |
|  | Clearwater Conservation Easements (acres)   | <b>21</b>                      | <b>37</b>  | 26              |
|  | <b>Geological Resources</b>   |                                |            |                 |
|  | Potential for Encountering Acid Producing Rock (APR)                                  | <b>Very Low</b>                | Low        | <b>High</b>     |
|  | Potential for Encountering Sinkholes  | <b>High</b>                    | Moderate   | <b>Low</b>      |
| <b>Cultural Resources</b>                        | <b>Historic Resources</b>   |                                |            |                 |
|  | National Register Historic Places (NRHP) Eligible Property with Adverse Effect (#)    | <b>6</b>                       | 4          | <b>3</b>        |
|  | Penns Valley/Brush Valley Rural Historic District Contributing Properties (#   acres) | <b>14 263.5</b>                | 16 271.5   | <b>13 307.1</b> |
|  | Tusseyville Historic District Contributing Properties (#   acres)                     | <b>7* 6</b>                    | <b>0 0</b> | <b>0 0</b>      |
|  | Other Individually Eligible Property with Adverse Effect (#)                          | <b>4</b>                       | 3          | <b>2</b>        |
|  | <b>Archaeological Resources</b>   |                                |            |                 |
|  | Known Archaeological Sites (#)  | 4                              | 5          | 5               |
|  | Historic Period Archaeological Sensitivity Area (acres)                               | <b>20</b>                      | 21         | <b>23</b>       |
|  | Statewide Prehistoric/Pre-Contact Model – High Probability Area (acres)               | 107                            | <b>116</b> | <b>75</b>       |
|  | <b>Socioeconomic Resources</b>  | <b>Socioeconomic Resources</b> |            |                 |
| Residential Unit Displacements (#)               |   | <b>22</b>                      | <b>15</b>  | 18              |
| Commercial Displacements (non-ag operations) (#) |   | <b>3</b>                       | <b>2</b>   | <b>2</b>        |
| Visual/Aesthetic Impacts                         |   | High                           | High       | High            |
| Places of Worship (#)                            |   | 1                              | 1          | 1               |
| Parks/Recreation Areas (#   acres)               |   | 0 0                            | <b>1 6</b> | 0 0             |
| Potential Waste Sites (#)                        |   | <b>36</b>                      | 33         | <b>28</b>       |
| Section 4(f) Resources Use (#)                   |   | <b>7</b>                       | 5          | <b>4</b>        |

*Red highlights denote higher impact. Green highlight denotes lower impact.*

*\* These seven resources also contribute to the Penns Valley/Brush Valley Rural Historic District.*

## What is the estimated cost for each of the alternatives?

Preliminary cost estimates, including construction and estimated right-of-way costs for each of the three Build Alternatives, were developed and projected to the construction year. The North Alternative's order-of-magnitude estimated construction cost ranges from \$661 million to \$831 million. The Central Alternative's (Preferred Alternative)

order-of-magnitude estimated construction cost ranges from \$843 million to \$1.06 billion. The South Alternative’s order-of-magnitude estimated construction cost ranges from \$738 million to \$928 million. No improvements would be included with the No Build Alternative, and it would therefore have no cost.

## What is the Preferred Alternative?

The evaluation and preliminary engineering efforts culminated in the identification of a Preferred Alternative. Based on the impact comparison and coordination with FHWA, Tribes and Nations, municipal leaders, resource agencies, consulting parties, and the public, the Central Alternative is recognized as the Preferred Alternative (**Figure ES-4**). This alternative provides the best balance in avoiding and minimizing impacts on natural, cultural, and socioeconomic resources in the project area. Additionally, for those resources that are unavoidable, measures and strategies are identified in this DEIS to mitigate the potential adverse effects. **Table ES-3**, at the end of the **Executive Summary**, provides an overview of the anticipated impacts and mitigation strategies.



Figure ES-4: FHWA Preferred Alternative

## **When would the Project be constructed?**

Before construction can be initiated, the Selected Alternative will be identified in the FEIS/ROD. This alternative will then be carried into final design. Construction of the Selected Alternative is expected to start in 2030 and end in 2035 and is proposed to be phased construction.

The Project is currently advancing with 100% state discretionary funding, though opportunities to utilize federal formula funding or apply for federal discretionary funds will be investigated. The current Centre County Metropolitan Planning Organization's (CCMPO) Transportation Improvement Program (TIP)/Statewide Transportation Improvement Program (STIP) includes final design funding and some funding for utilities and right-of-way acquisition, and the draft 2027 TIP allocation includes additional funding. In accordance with the SAFETEA-LU guidance for major projects, PennDOT will develop a financial plan to document how the Department intends to fund, or secure adequate financing to advance, the project for right-of-way acquisition, utility relocation, and construction. It is anticipated that the financial plan will reflect final design funding being programmed on the TIP/STIP prior to FHWA signing the Record of Decision.

The financial plan will provide reasonable assurance that sufficient financial resources will be available to implement the project as planned. As the State College Area Connector is implemented over several years and involves numerous stages, annual updates to the plan are developed throughout the entire project delivery process. Annual updates will serve as an important planning tool, providing information on actual costs, expenditures, and revenue performance compared to initial estimates, and tracking funding shortfalls, to make necessary financial adjustments to assure the completion of the project.

## **How has the public been involved?**

PennDOT implemented a comprehensive and proactive public and agency engagement program, which has been at the forefront of the PEL Study and EIS development. Throughout the PEL and EIS development, public outreach has taken many forms, including a study/project website, newsletters, stakeholder workshops, pop-up events, and media releases.

Additionally, during the PEL Study, four PEL scoping public meetings were held (October 2020, September 2021, April 2022, and October 2022). After the PEL Study was completed, a NOI to prepare an EIS was published in the FR on July 24, 2024. The NOI provided interested parties with the opportunity to comment on the Project along the US 322 corridor. In total, 32 comments were received on the NOI from the public and resource agencies.

Following the NOI publication and the initiation of the EIS, two EIS scoping public meetings were held. The first meeting was held in August 2024 to present the project-specific purpose and needs and the refined Build Alternatives for public review and

comment. The second scoping public meeting was held in May 2025 to present additional refinement to the Build Alternatives and inform the public of PennDOT's recommended preferred alternative.

## **What additional public outreach opportunities will occur for this project, and how can I comment on this DEIS?**

PennDOT will continue to share updates on the project's website, email notifications to the stakeholder mailing list, and other public outreach methods until the NEPA phase is complete. As outlined in the Notice of Availability (NOA) for this DEIS, there is a 45-day DEIS comment period in accordance with the regulations of 23 CFR § 771.123(k). During the comment period, the document is available for review and comment. The public and agencies should provide written comments to Eric Murnyack, PennDOT Project Manager, PennDOT Engineering District 2-0, 70 PennDOT Drive, Clearfield, Pennsylvania 16830 or Julia Moore, FHWA Senior Environmental Specialist, Federal Highway Administration, Pennsylvania Division Office, 30 North Third Street, Suite 700, Harrisburg, PA 17101.



*Photograph ES-1: 2024 Scoping Public Meeting*

Written comments can also be provided electronically via the project website at [www.PennDOT.pa.gov/SCAC](http://www.PennDOT.pa.gov/SCAC).

A public hearing will be conducted by PennDOT and FHWA to formally present the project information and gather feedback from the public, stakeholders, and agencies on the project during the 45-day comment period. The public will be informed of the hearing date through mailings, social media, newspapers, and the project website. Public or private verbal testimony and comments on the DEIS will be taken during the public hearing. Additional opportunities to comment on the DEIS will be available at the hearing via an electronic comment form on the project website or a written form and left in the comment box. PennDOT and FHWA will address all substantive comments received and include a section on public involvement in the FEIS/ROD. The FEIS/ROD will also record any adjustments made to the DEIS. All comments received during the comment period will be considered by PennDOT and FHWA before finalizing the FEIS/ROD.



Table ES-3: Impacts and Mitigation for the Preferred Alternative (Central Alternative)

| Commitment/Mitigation for Preferred Alternative<br>(Central Alternative)  |
|---|
| <p><b>Land Use &amp; Zoning, Planning, and Development (See Section 3.1)</b></p> <p><b>Impact:</b> Convert land currently designated for residential and agricultural land use to transportation purposes.</p> <p><b>Mitigation:</b> The current LOD for each alternative includes a buffer, as well as a worst-case scenario for stormwater management control features. As the project progresses into final design, it is anticipated that the LOD will be refined by adjusting cut and fill limits and refining stormwater control to aid in minimizing impacts to area land use and zoning.</p>  |
| <p><b>Population &amp; Demographics (See Section 3.2)</b></p> <p><b>Impact:</b> Displacement of 15 residential structures and two businesses.</p> <p><b>Mitigation:</b> Mitigation for displaced structures will consist of fair market value compensation and relocation assistance.</p>   |
| <p><b>Communities &amp; Community Facilities (See Section 3.3)</b></p> <p><b>Impact:</b> Grace Church on Mountain Back Road and Cole Transportation school bus depot adjacent to the Potters Mills interchange would be impacted. In addition, portions of both the Nittany Farm and Kuhn property Clearwater Conservancy conservation easements would be impacted.</p> <p><b>Mitigation:</b> The acquisitions of the Grace Church property and Cole Transportation school bus depot will be conducted in accordance with the <i>Federal Uniform Relocation Assistance and Real Property Acquisitions Policy Act of 1970</i>, as amended; <i>Title VI of the Civil Rights Act of 1964</i>; and the <i>Pennsylvania Eminent Domain Code of 1964</i>. Fair market value will be paid for the acquisitions and relocation assistance will be available. Mitigation will require coordination with the Clearwater Conservancy and the PA DCNR Bureau of Recreation and Conservation for the impacts to the recreation grant-funded conservation easement on the Kuhn property. As design progresses, refinements will be made to the Preferred Alternative to minimize potential impacts. PennDOT will then coordinate an appraisal of the property to document the extent of impact. Coordination will be conducted to determine the payment required to address the loss of the grant-funded easement property. Mitigation will include a fee simple payment for the land acquired from the property owner, less than the calculated payment for lost easement acreage to Clearwater Conservancy.</p> |
| <p><b>Parks &amp; Recreational Facilities (See Section 3.4)</b></p> <p><b>Impact:</b> Six-acre impact on the 29-acre Potter Township Athletic Complex property; however, no developed recreational facilities would be impacted.</p> <p><b>Mitigation:</b> Mitigation for impacts on the Potter Township Athletic Complex will be developed in coordination with Potter Township. Measures will include:</p> <ul style="list-style-type: none"> <li>• A commitment not to use park property as a construction staging area</li> <li>• Pre- and post-construction monitoring of the sewage facility to ensure continued operation, with corrective actions for any negative impacts</li> <li>• Development of an earthen berm for a visual buffer that provides noise reduction.</li> </ul>  |
| <p><b>Displacements (See Section 3.5)</b></p> <p><b>Impact:</b> Displace 15 residential structures, two commercial structures, one place of worship (Grace Church), and two potential agricultural operations.</p> <p><b>Mitigation:</b> Mitigation for displaced structures will consist of fair market value compensation and relocation assistance.</p>  |

### Commitment/Mitigation for Preferred Alternative (Central Alternative)

#### **Above Ground Historic Resources (See Section 3.6)**

**Impact:** Adverse Effect to the Penns Valley/Brush Valley Rural Historic District (RHD) as well as 19 individually eligible historic properties or properties that contribute to the Historic District.

**Mitigation:** Based on coordination efforts, PennDOT, FHWA, PA SHPO, and consulting parties are committed to developing a Design Advisory Committee to assist in the development of context-sensitive design solutions for the Project to minimize impacts on the RHD. PennDOT will also develop a public educational component for the Project to address the history and cultural significance of adversely affected historic resources.

#### **Archaeological Resources (See Section 3.7)**

**Impact:** There are five previously recorded sites within the Central Alternative. Potential impacts will be assessed in greater detail after field studies during final design.

**Mitigation:** If archaeological resources are found during final design and cannot be avoided, Section 106 of the NHPA will be followed. This includes consultation with PA SHPO, Native American Tribes and Nations, and other consulting parties. Mitigation for impacts to NRHP-eligible archaeological resources will be identified after detailed field investigations and determined individually, through consultation, for each eligible archaeological site. A project-specific Programmatic Agreement for cultural resources has been drafted and outlines how the Section 106 process will be followed. This includes deferring archaeological field studies until final design. Archaeological monitoring commitments will consider the use of Tribe and Nation cultural monitors during portions of the archaeological investigations and during construction, where warranted. The use of a qualified historian identified by the Tribes and Nations will be considered to complete research into the Contact and Historic Period Native American diaspora and resettlement across Central Pennsylvania. The draft Programmatic Agreement is included in **Appendix D** for review and comment as part of this DEIS. A final Programmatic Agreement will be developed to address any comments received, and a fully executed Programmatic Agreement will be included in the Final EIS. Implementation of the mitigation commitments from the Programmatic Agreement will be advanced as detailed field investigations are initiated.

#### **Visual/Aesthetics (See Section 3.8)**

**Impact:** There would be impacts to the visible landscape given that the highway would be constructed mostly on fill through the valley; both residential and agricultural properties would be affected, to include the RHD.

**Mitigation:** Mitigation will include further coordination with local officials and affected property owners, particularly those adjacent to the new highway, through final design to identify and implement reasonable mitigation measures. Examples of mitigation 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 might 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

Additionally, the adverse visual impacts on the RHD will be mitigated in accordance with the Programmatic Agreement developed for the above-ground historic resources through context sensitive design, as noted above. The details of the context sensitive design will be determined through final design in coordination with the consulting parties, PA SHPO, and property owners. Additionally, mitigation for the Potter Township Athletic Complex will include an earthen berm for a visual buffer that provides noise reduction for the park.

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Mitigation for visual impacts during construction will also be considered during final design of the preferred alternative. For example, it will be investigated if noise walls and vegetative screenings could be installed in early construction phases where feasible/warranted to screen construction activities from residential properties.

#### Section 4(f) Resources (See Section 3.9)

**Impact:** The Central Alternative would require the use of the following individually eligible resources: Michael Jack Estate; Nease House; and Henry Meyer Farm. The Central Alternative would also require the use of land from the Penns Valley & Brush Valley Rural Historic District, including 125.68 acres, and would require acquisition from 18 contributing resources. The Central Alternative would also require the use of the Potter Township Athletic Complex (six acres); however, would not affect the developed or planned recreational features on the property. The two baseball fields and associated structures and parking area would not be impacted, and the park could continue to function for recreational purposes.

**Mitigation:** Mitigation for the adverse effect to Section 106 historic resources is based on coordination efforts between PennDOT, FHWA, PA SHPO, and consulting parties. Mitigation includes a commitment to develop a Design Advisory Committee to assist in the development of context-sensitive design solutions for the Project to minimize impacts on the RHD. PennDOT will also develop a public educational component for the Project to address the history and cultural significance of area resources. These commitments are included in the project-specific Draft Programmatic Agreement in **Appendix D**.

Mitigation for impacts on the Potter Township Athletic Complex will be developed in coordination with Potter Township. Measures will include:

- A commitment not to use park property as a construction staging area
- Pre- and post-construction monitoring of the sewage facility to ensure continued operation, with corrective actions for any negative impacts
- Development of an earthen berm for a visual buffer that provides noise reduction

#### Air Quality (See Section 3.10)

**Impact:** The localized level of Mobile Source Air Toxins (MSAT) emissions could be higher relative to the No Build Alternative, but this could be offset due to increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). In addition, MSAT emissions will be lower in other locations when traffic shifts away from them. However, on a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than today.

Construction of the Build 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.

**Mitigation:** Based on this air quality analysis and guidance from state and federal agencies, no adverse impact on air quality is anticipated within the project area. Therefore, no mitigation measures are required. Contractors will be expected to 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 with respect to fugitive dust emissions.

#### Noise (See Section 3.11)

**Impact:** Noise impacts were identified within 11 of the 37 Noise Study Areas (NSAs). A total of 33 receptors were identified as having noise levels either approaching/exceeding Noise Abatement



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Criteria (NAC) or experiencing a substantial increase over existing noise levels, with each of these receptors warranting noise abatement consideration.

**Mitigation:** For the 11 NSAs associated with the Central Alternative in which design year build noise impacts were identified, noise barriers to reduce elevated traffic noise levels were evaluated within ten of these NSAs to determine feasibility and reasonableness. A noise barrier was unable to be evaluated for two noise-impacted parcels along Earlstown Road (PA 45) within NSA 9 without prohibiting driveway access to these properties. Noise barriers were determined to be both feasible and reasonable for NSAs 11, 15, and 16. Noise barriers were determined to be feasible but not reasonable for NSAs 14, 17, 22, 23, 24, 32, and 26. During the final design phase of the project, additional noise analyses using more detailed engineering data will be conducted and 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.

**Farmlands (See Section 3.12)**

**Impact:** Impacts 138.7 acres of productive agricultural land, 18 farm operations, and 345 acres of Farmland Protection Policy Act (FPPA) soils.

**Mitigation:** Mitigation for impacts to farmland will include compliance with *the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970*, as amended, and state requirements based on this act, as appropriate, for farmland acquired by the project.

As design progresses, refinements will be made and farmland avoidance and minimization measures will be considered, as well as access. This will include coordination with property owners and farm operators to reduce farmland impacts, provide access to remnant parcels where possible, develop a suitable schedule for detours, and/or provide access during construction, etc.

**Hazardous or Residual Waste Sites (See Section 3.13)**

**Impact:** Thirty-three (33) hazardous waste sites were identified in (24) or adjacent to (nine) the LOD. The majority of the waste sites (12) were related to spills or accidents; six sites were related to current or former gas stations or auto garages with the potential for Underground Storage Tanks (USTs); five sites were related to commercial businesses or maintenance facilities with the potential for use of chemicals and the potential for unreported releases; four sites were related to farms with the potential for herbicide and pesticide application to crops; two sites were related to current or former manufacturing operations; one site was related to dumping; one site was related to a release under the PA DEP Land Recycling Cleanup Program; one site was related to a farm with potential USTs; and one site was related to a farm with sludge application.

**Mitigation:** Phase I, II, and III Environmental Site Assessment studies will be required during final design to further identify the presence of soil and/or groundwater contamination at potential waste sites and develop mitigation and/or remediation measures.

Special provisions will be prepared to ensure the health and safety of workers handling potentially impacted soils and/or groundwater in order to minimize impacts and public health concerns. The special provisions will comply with all local, state, and federal regulatory requirements associated with the handling of such materials.

**Geology, Hydrology, & Groundwater (See Section 3.14)**

**Impact:** The majority of the roadway would be constructed within Limestone bedrock units. Rockfall mitigation measures might be required for steeply cut slopes. There is a medium probability of encountering sink holes along the Central Alternative and potential for subsidence due to sinkhole

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activity. The eastern portion of the proposed alignment would be constructed within the Reedsville shale bedrock units. Shale bedrock from Reedsville formation tends to be soft and degradable and has the potential for some acid producing rock (APR). Based on the Pennsylvania Groundwater Information System (PaGWIS) database, this alternative would impact a total of six water wells that are within the mapped impact zone of the project. Additional water wells not included in the PaGWIS database could be present. Private water wells outside of the limits of disturbance could be impacted by construction due to the possible presence of karst features.

**Mitigation:** Subsurface drilling, testing, and geotechnical analysis will be conducted during final design to determine the need for mitigation. A geotechnical analysis will be completed in accordance with PennDOT Publication 293, *Geotechnical Engineering Manual*. Mitigation for subsidence could consist of removal of loose material within shallow sinkholes and replacement with geotextile and rockfill, low mobility grouting, etc. Structure foundations in karstic conditions will be evaluated and designed for future loss of support due to potential subsidence. Handling and management of any potential APR borrow or waste materials, including temporary or permanent conditions, will be required to be completed in accordance with PennDOT's Publication No. 293, *Geotechnical Engineering Manual*, Chapter 10 pertaining to APR. Impacts to groundwater wells will be investigated further during final design. If impacted wells are not associated with a displaced structure, the potential for drilling a new well on the property will be examined.

#### Soils & Erosion (See Section 3.15)

**Impact:** Impacts include cut and fill construction activities through the formations and soil series and other earthmoving activities.

**Mitigation:** A comprehensive geotechnical and soils testing program will be implemented during final design. Through this testing, soil thicknesses and suitable uses (e.g., construction and embankment materials) will be determined. Erodibility factors will also be determined from the testing program. Total earth disturbance will exceed one acre and require that an engineered Erosion and Sediment Pollution Control Plan be developed, included in the NPDES permit, and submitted for review and approval through PA DEP and Centre County Conservation District. Guidelines provided by PA DEP and USDA-NRCS will be followed for the control of sediment. Additional borings and other subsurface exploration activities will also provide information related to the rock underlying the soil for use in the final design.

#### Stormwater Management (See Section 3.16)

**Impact:** Impacts to stormwater runoff within and adjacent to the project area would affect existing drainage patterns, adding impervious area, compacting soils, and introducing additional pollutants for Total Suspended Solids (TSS), Total Phosphorus (TP), and Total Nitrogen (TN). Impacts also include an increase in the peak rate of stormwater runoff, volume of stormwater runoff, and pollutant runoff.

**Mitigation:** Stormwater runoff generated from the project area will be managed utilizing Post-Construction Stormwater Management (PCSM) Stormwater Control Measures (SCM) including a multitude of structural and non-structural SCMs. SCMs will be located and designed to capture stormwater runoff close to the source (proposed improvement) and avoid alterations to existing drainage patterns and hydrology as much as possible to ensure the waterways and wetlands are not cut off from their respective hydrology with the proposed conditions. Additionally, as the project area is located in a region with known karst topography and sinkholes, alternative measures to prevent infiltration and the movement of groundwater will be evaluated within the proposed SCMs. A Comprehensive PCSM Pollution Control Plan (PCP) will be developed by PennDOT and approved



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by PA DEP through the National Pollution Discharge Elimination Systems (NPDES) individual permit for the project.

**Streams, Rivers, and Other Surface Waters (See Section 3.17)**

**Impact:** Would directly impact 9,566 linear feet of streams and indirect impacts are not anticipated. Bridge spans would reduce the direct impacts by 5,767 linear feet. The net total stream impact (loss) for the Central Alternative would be 3,799 linear feet.

**Mitigation:** Sinking Creek and its unnamed tributaries are anticipated to have an in-stream construction time-of-year restriction for wild trout (October 1 through December 31) and Stocked Trout (February 15 through June 1). Spring Creek and its tributaries are anticipated to have a restriction for Class A mixed brook/brown wild trout (October 1 through April 1).

Impacts to streams will be mitigated through the purchase of mitigation credits from an approved privately owned wetland mitigation bank site. PennDOT District 2-0 has initiated coordination with bank operators within the primary and secondary service areas and has identified that the Babbs Creek mitigation site has adequate capacity to fulfill the credit needs for this project.

**Wetlands (See Section 3.18)**

**Impact:** Would directly impact 30.0 acres of wetlands with no anticipated indirect impacts. The implementation of bridge spans would reduce the direct impacts by 15.0 acres. The net total impact (loss) for the Central Alternative would be 15.0 acres of wetlands.

**Mitigation:** Impact avoidance and minimization measures will be further evaluated as part of the final design phase of the project and Chapter 105 permit process. Mitigation measures to be advanced through final design and permitting to further minimize harm to wetlands will include the evaluation of:

- Bridge design, specifically pier and abutment placements outside of wetlands, height of bridges to maintain openness to support vegetative cover, and restoration of temporary construction impacts
- Cross pipes under fill areas to maintain hydrologic connectivity
- Placement of stormwater management and erosion and sediment control features outside of wetlands

Wetland lost impacts will be mitigated through the purchase of bank credits from an approved bank site. PennDOT District 2-0 has initiated coordination with bank operators within the primary and secondary service areas and have identified that the Babbs Creek mitigation site has adequate capacity to fulfill the credit needs for this project.

**Floodplains (See Section 3.19)**

**Impact:** Would directly impact approximately 14.7 acres of floodplain and 21.6 acres of floodway. The implementation of bridge spans would reduce floodplain impacts by 10.2 acres and floodway impacts by 11.6 acres. The total combined anticipated impact on floodplains and floodways for the Central Alternative would be 14.5 acres.

**Mitigation:** Additional design measures will be evaluated during the final design phase of the Project to further assess avoidance and minimization measures that reduce the total floodplain encroachment impacts on the floodplain/floodway areas. Detailed hydrologic and hydraulic analyses will be conducted during final design for floodplain encroachments. Minimization measures will also include opportunities to avoid placing fill in floodplain/floodway areas and minimize longitudinal floodplain encroachments associated with stormwater management features.



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PennDOT will obtain all necessary state and federal permits for water obstruction and encroachment and will coordinate with the appropriate municipalities to ensure consistency with local floodplain regulations and ordinances. Mitigation for floodplain impacts is not anticipated for this project as and increase the flood elevation in the project area is not expected. 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.

**Vegetation, Wildlife, and Terrestrial Habitat (See Section 3.20)**

**Impact:** Impact to 31 acres of forested/wooded habitat, zero acres of state forest land habitat, 116 acres of productive agricultural land, five karst geological features, two acres of IBAs, and 17 acres of PA Natural Heritage Core Habitat.

**Mitigation:**

- Disturbed areas will be seeded with PennDOT seed mixes that contain native pollinator species to mitigate for habitat loss.
- Vegetative plantings will be evaluated as part of the development of the NPDES stormwater management plan.
- The preliminary engineering and final design phases of the Project will continue to evaluate measures to avoid and minimize impacts to the terrestrial environment.
- The use and design of the proposed bridge crossings along the stream valleys and riparian corridors will evaluate measures to accommodate wildlife passage and habitat connectivity as part of the final design process.
- Mitigation for impacts to farmland will include compliance with the *Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970*, as amended, and state requirements based on this act, as appropriate.

**Rare, Threatened, & Endangered Species (See Section 3.21)**

**Impact:** Impacts 31 acres of forest land (potential migratory birds and potential bat habitat); tree removal does not exceed 20 acres per five miles of alignment (bat habitat); no impacts to the bald eagle; no anticipated impacts to mussel species; no impacts to rare, threatened, or endangered plants.

**Mitigation:**

- Maintain a distance buffer of at least 660 feet (200 meters) between all project activities and the Bald Eagle nest during breeding season. If there is an existing human-made feature (e.g., house, road, dock) similar to the project that is closer than 660 feet and tolerated by the nesting eagles, maintain a distance buffer equal to or greater than the distance separating that tolerated feature and the Bald Eagle nest.
- Maintain a distance buffer of at least 330 feet (100 meters) year-round between all project activities and the Bald Eagle nest outside of breeding season. If a similar activity (i.e., similar in kind and size) is closer than 330 feet and has been tolerated by eagles, the distance buffer will be the same or greater than that of the existing tolerated activity.
- Do not perform disruptive project activities within 660 feet (200 meters) of the Bald Eagle nest during the breeding season. This time-of-year restriction is in addition to the recommended distance buffer. Disruptive activities include, but are not limited to, external construction, excavation, use of heavy equipment, use of loud equipment or machinery, vegetation clearing, earth disturbance, planting, and landscaping.
- Maintain existing landscape buffers that visually screen the activity from the Bald Eagle nest.



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- During the Bald Eagle breeding season (January 1 to July 31), do not perform blasting and other activities that produce extremely loud noises within 0.50-mile (800 meters) of in-use nests. PennDOT may also elect to initiate noise monitoring in this area during the final design phase of the project to determine current ambient noise levels and coordinate with USFWS to determine if a time-of-year restriction on activities is necessary.
- Limit tree clearing to between September 1 and March 31 to avoid conflicts with migratory birds.
- Coordination with the USFWS will continue through construction regarding the presence of the Bald Eagle nest.
- PennDOT's Pollinator Plan will be reviewed to identify appropriate plants for potential seeding and landscaping opportunities that benefit the species as part of the development of the landscaping plans prepared in support of the earth disturbance permitting in final design.
- PFBC asked to be notified nine months before construction so they can perform on-site surveys and mussel translocations during suitable conditions in the area of disturbance. The mussel survey season runs from May 15 to October 1. In addition to mussel surveys and translocations, BMPs, AMMs, and strict E&S controls will likely be required when work occurs in and around Sinking Creek to reduce disturbance to in-stream and riparian areas ecosystems.
- Ensure all contractor employees are aware of the environmental commitments.
- PennDOT will continue to coordinate with DCNR through final design to evaluate avoidance and minimization efforts, as needed, related to protected and special concern plant species within the project area.
- For karst areas, use best management practices, secondary containment measures and other spill prevention to avoid impacts to bat hibernacula. Where practicable, employ a 300-ft buffer for fueling areas from caves, sink holes, losing streams, and springs in karst.
- Direct temporary lighting away from suitable bat habitat during active season.
- Limit tree removal to all that is needed to complete all aspects of the project.
- Avoid tree removal and percussives during the bat pup season (May through July).
- Clearly identify tree removal from tree avoidance areas, using bright protective fencing.
- Conduct tree removal during bat inactive season of November 15 through March 31.
- Conduct structure demolition, removal, and replacement during bat inactive season of November 15 through March 31.
- Compensatory mitigation for loss of forested bat habitat will be coordinated with USFWS as part of the consultation under the Endangered Species Act.

**Construction (See Section 3.22)**

**Impact:** Project construction may increase erosion during construction, disturb soils, and produce construction-related dust, vibration, noise, possible water quality issues, and traffic delays; however, these effects would be temporary.

**Mitigation:** The project's construction and associated earth disturbance will be completed in accordance with the NEPA environmental mitigation commitments and permit conditions outlined in the NPDES permit, Section 404/Chapter 105 permit, and USFWS Pennsylvania Field Office (PAFO) consultation requirements under the Endangered Species Act.

**Air Quality:**

- Contractors will be required to perform all construction activities in accordance with 25 PA Code Article III (Chapters 121-145, *Air Resources*) to ensure adequate control measure are in place.



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- Woody materials should be chipped. Woody material from the roadway area should be “salvaged” as some type of saleable wood product and removed from the construction area rather than burned.
- Use of air pollution control devices on the exhausts of construction vehicles.
- Locate vehicle staging and holding areas away from residential areas to the extent possible.
- The contractor will be under contract guidelines regarding the control of dust. Contract documents that stipulate dust control include the E&S plans and NPDES permit. Dust control is also included in several PennDOT publications (i.e., Pub. 408, Pub. 35, and Pub. 23) which contractors must adhere to. The direct application of water is the most common form of dust suppression used in roadway construction projects. The use of approved dust palliatives, such as calcium chloride, could also be required to control fugitive dust emissions. Winter construction activities sometimes require the use of chemical dust suppression agents.
- PennDOT Construction Managers will monitor dust levels as part of the NPDES permit requirements. Visual site inspections will be performed weekly and post-rain events to document BMPs for dust control. Dust is monitored by visual inspection of opacity, and if it is determined to be a compliance issue, it is logged as a deficiency and results in corrective action with the contractor must address.
- Cover stockpiles during storage and transport, and restoration of vegetation as quickly as possible to prevent windblown dust.
- Provide advanced notice and warning signs to communities that may be impacted by fugitive dust emissions.

**Noise:**

- PennDOT is committed to working with the contractor to minimize construction noise impacts to the extent possible. The contractor shall use only equipment adapted to operate with the least possible noise and shall conduct the work so that annoyance to occupants of nearby property and the general public will be reduced to a minimum. The contractor shall construct noise abatement measures at the initial stages of construction when feasible to protect against construction noise.

**Water Quality:**

- An approved erosion and sedimentation pollution control plan will be implemented to reduce water quality impacts to the receiving streams during construction.
- Prior to construction and during final design activities, PennDOT will undertake a detailed assessment of potentially affected surface waters and individual groundwater wells, including domestic, industrial, institutional, and public water supply to determine background water quality conditions. Sampling will be completed for water supply wells that are located within 0.25-mile of blasting operations. The data collected during this monitoring will be used to assess potential impacts to surface or groundwater resulting from construction. The water quality monitoring plans will be implemented prior to construction, during construction, and for one year post construction.
- The primary goal of monitoring for impacts to domestic wells and public water wells, and associated mitigation measures, is to ensure a continued supply of safe drinking water to affected residents. If impacts occur as a result of construction, PennDOT will ensure the maintenance of water supplies for homes and properties not acquired as part of the right-of-way for the project by any one the following:
  - Providing connections to public water systems;

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- Redrilling existing wells to another water producing zone at a greater depth within the same formation;
- Relocating a well within an adjacent water-producing formation undisturbed by construction activities;
- Providing water treatment; or
- Acquiring the property.

**Blasting:**

- PennDOT will monitor blasting activities during construction to ensure that no impacts occur and, if necessary, address any concerns.
- Any proposed blasting will need to comply with all environmental mitigation commitments and project permit conditions related to protected species and resources.
- In instances where blasting is required, residents of structures and dwellings located within 0.25-mile of proposed blasting operations will be notified, in writing, a minimum of 30 days prior to the start of blasting. The notification will contain a request to enter the property in order to conduct a pre-blasting survey. The pre-blasting surveys will be conducted in accordance with PennDOT Publication No. 408, *Specifications, and the Pre- and Post-Blasting Survey Special Provision*. If no structures occur within 0.25-mile of the proposed blasting operation, a pre-blasting survey will still be conducted on the closest structure(s) located within 0.50-mile of blasting operations (i.e. north, south, east, and west). If no structures lie within 0.50-mile of blasting operations, at least one survey may be performed on the closest structure within one mile. The purpose of a pre-blasting survey is to assess the integrity of existing structures. This information establishes a baseline for future potential damage determinations.
- Water sampling will be completed for water supply wells that are located within 0.25-mile of blasting operations. The data collected during this monitoring will be used to assess potential impacts to groundwater resulting from construction. The groundwater quality monitoring plan will be implemented prior to construction, during construction, and for one year post construction.

**Traffic and Access:**

- During the final design phase, plans will be developed and coordinated with local municipalities and emergency service responders to ensure travel is maintained and delays are minimized to the extent practicable. PennDOT will commit to ongoing coordination during construction to inform emergency service teams about any changes to traffic plans. PennDOT will also inform the local community and traveling public about travel conditions in the area by issuing press releases about travel patterns and utilizing intelligent highway system message boards to alert drivers of travel conditions.

**Construction and Staging:**

- The contractor will be prohibited from using properties that are historic and/or subject to protection under Section 4(f), or productive agricultural lands for construction staging purposes.



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## List of Acronyms

**AADT** – Annual Average Daily Traffic

**AADTT** – Annual Average Daily Truck Traffic

**ACEs** – Agricultural Conservation Easements

**ACS** – American Community Survey

**ALCAB** – Agricultural Land Condemnation Approval Board

**ALPP** – Agricultural Land Preservation Policy

**AMM** – Avoidance, Minimization, Mitigation

**APE** – Area of Potential Effect

**APR** – Acid Producing Rock

**ASA** – Agricultural Security Area

**BIM** – Building Information Model

**BMPs** – Best Management Practices

**CAA** – Clean Air Act

**CATA** – Centre Area Transportation Authority (CATABUS; CATACOMMUTE; CATAGO; CATARIDE)

**CCMPO** – Centre County Metropolitan Planning Organization

**CCOT** – Centre County Office of Transportation

**CCPCDO** – Centre County Planning and Development Office

**CFR** – Code of Federal Regulations

**CO** – Carbon Monoxide

**COG** – Council of Governments

**CPA** – Conservation Planning Activity

**CWA** – Clean Water Act

**CWF** – Cold Water Fish

**dB** – Decibels

**DCNR** – Pennsylvania Department of Conservation and Natural Resources

**DCNR OFMI** – Open-File Miscellaneous Investigation

**DEIS** – Draft Environmental Impact Statements

**DESA** – Dam Safety and Encroachment Act

**DOT** – Department of Transportation

**EIS** – Environmental Impact Statement

**E.O.** – Executive Order

**EPA** – United States Environmental Protection Agency

**ERU** – Equivalent Residential Units

**ESA** – Endangered Species Act

**E&S** – Erosion and Sedimentation

**FR** – Federal Registrar

**FAR** – Farmland Assessment Report

**FCIR** – Farmland Conversion Impact Rating

**FEIS** – Final Environmental Impact Statement

**FEMA** – Federal Emergency Management Agency

**FHWA** – Federal Highway Administration

**FPPA** – Farmland Protection Policy Act

**GIS** – Geographic Information System

**HCM** – Highway Capacity Manual

**HGM** – Hydrogeomorphic

**HQ-CWF** – High Quality- Cold Water Fishes

**HQ-EV** – High Quality- Exceptional Value

**HRSF** – Historic Resource Survey Form

**HSM** – Highway Safety Manual

**HUD** – Housing and Urban Development



**HUC** – Hydrologic Unit Code

**I** – Interstate

**IBA's** – Important Bird Areas

**IIJA** – Infrastructure Investment and Jobs Act

**IPaC** – Information for Planning and Consultation Determination Key

**JPA** – Joint Federal/State Application

**LEDPA** – Least Environmentally Damaging Practicable Alternative

**Leq(h)1** – Equivalent Continuous Sound Level measured over a duration of 1 hour.

**LF** – Linear Feet

**LOD** – Limit of Disturbance

**LOS** – Level of Service

**LRTP** – Centre County Long Range Transportation Plan

**MBTA** – Migratory Bird Treaty Act

**MLS** – Multiple Listing Service

**MPMS #** – Multi-modal Project Management System Number

**MRC** – Managed Release Concept

**MSAT** – Mobile Source Air Toxins

**NAAQS** – National Ambient Air Quality Standards

**NAC** – Noise Abatement Criteria

**NATA** – National Air Toxins Assessment

**NEPA** – National Environmental Policy Act

**NFA** – No Further Action

**NFAAT** – No Further Action At This Time

**NHPA** – National Historic Preservation Act

**NHS** – National Highway System

**NOI** - Notice of Intent

**NPDES** – National Pollutant Discharge Elimination System

**NPS** – National Park Service

**NRCS-CPA** – Natural Resource Conservation Service- Conservation Planning Activity

**NRCS** – Natural Resource Conservation Service

**NRHP** – National Register of Historic Places

**NSA** – Noise Study Area

**NWI** – National Wetlands Inventory

**O&D** – Origin and Destination

**OHWM** – Ordinary High-Water Mark

**PA** – Pennsylvania

**PA DEP** – Pennsylvania Department of Environmental Protection

**PaGWIS** – Pennsylvania Groundwater Information System

**PASDA** – Pennsylvania Spatial Data Access

**PA-SHARE** – Pennsylvania's State Historic and Archaeological Resource Exchange

**PA SHPO** – Pennsylvania State Historic Preservation Officer

**PHMC** – Pennsylvania Historical and Museum Commission

**PBO** – Programmatic Biological Opinion (See USFWS PBO below)

**PEL Study** – Planning and Environmental Linkages

**PCIT** – Pennsylvania Crash Information Tool

**PCSM** – Post Construction Stormwater Management

**PDO** – Property Damage Only

**PEM** – Palustrine Emergent Wetland



**PennDOT** – Pennsylvania Department of Transportation

**PFBC** – Pennsylvania Fish and Boat Commission

**PGC** – Pennsylvania Game Commission

**PM** – Particulate Matter

**PNDI** – Pennsylvania Natural Diversity Inventory

**PNHP** – Pennsylvania Natural Heritage Program

**PWSA** – Preliminary Waste Site Assessment

**RFE** – Reasonably Foreseeable Effects

**RGB** – Regional Growth Boundary

**RHD** – Penns Valley/Brush Valley Rural Historic District

**ROD** – Record of Decision

**SCCCTS** – South Central Centre County Transportation Study

**SCM** – Stormwater Control Measure

**SF/BR** – Square feet per benefited receiver

**Section 4(f)** – USDOT Act- Protected Parks, Recreation Areas, Wildlife and Waterfowl Refuges, and Historic Sites

**SHPO** – State Historic Preservation Office

**SIP** – State Implementation Plan

**SR** – State Route

**TCM** – Transportation Control Measures

**TDM** – Travel Demand Model

**THD** – Tusseyville Historic District

**TIP** - Transportation Improvement Program

**TN** – Total Nitrogen

**TNM** – Traffic Noise Model

**TP** – Total Phosphorus

**TSM** – Transportation System Management

**TSS** – Total Suspended Solids

**US** - United States

**USC** – United States Code

**USACE** – United States Army Corp of Engineers

**USDA** – United States Department of Agriculture

**USFWS** – United States Fish and Wildlife Service

**USFWS PAFO** – United States Fish and Wildlife Service Pennsylvania Field Office

**USFWS PBO** – United States Fish and Wildlife Service Programmatic Biological Opinion

**USGS** – United States Geological Survey

**USTs** – Underground Storage Tanks

**VMT** – Vehicle Miles Traveled

**WPC** – Western Pennsylvania Conservancy

# 1 Project Introduction, Purpose, and Needs

The Pennsylvania Department of Transportation (PennDOT), in cooperation with the Federal Highway Administration (FHWA), prepared this Draft Environmental Impact Statement (DEIS) for the State College Area Connector project (Project). This DEIS:

- Identifies the transportation purpose and needs for the US Route (US) 322 corridor in Centre County from the US 322/Mount Nittany Expressway in Boalsburg to US 322 in Potters Mills
- Develops transportation alternatives
- Evaluates the transportation alternatives relative to impacts and benefits on the natural, cultural, and socioeconomic environment
- Summarizes the public and agency engagement
- Identifies a Preferred Alternative

This DEIS was developed in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended (42 United States Code [USC] § 4321, *et seq.*), 23 USC 139, FHWA regulations implementing NEPA (23 Code of Federal Regulations [CFR] § 771.123), *23 CFR § 771 Interim Final Rule* (July 3, 2025), *Fiscal Responsibility Act of 2023 (Public Law No. 118-5, 137 Stat. 10)*, Department of Transportation (DOT) Order 5610.1D *DOT's Procedures for Environmental Impacts* (June 25, 2025), PennDOT Publication No. 10B, and all applicable federal, state, and local governmental laws and regulations. In accordance with 23 CFR § 771.111(a) and other federal guidance, FHWA published a Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) for this project on July 24, 2024 (**Appendix A**).

The Project has been identified in a variety of recent regional plans, including the designation as a high-priority project in the *Centre County Long Range Transportation Plan 2050* (September 2020) (LRTP). It is also included in the *2023-2026 Centre County Transportation Improvement Program* and the *2023 Statewide Transportation Improvement Program* (TIP), with TIP allocating \$15 million in discretionary funds for the project. These funds are designated for the preliminary engineering and final design phases. The project is identified as a Multi-Modal Project Management System Number (MPMS No.) 112784 in the *2021 Pennsylvania 12-Year Program* (August 2020) and as a

Information in this chapter is supported by the following documents:

- *Purpose and Need Statement for State College Area Connector Planning and Environmental Linkage Study* (February 2021)
- *State College Area Connector Planning and Environmental Linkages Study* (June 2023)
- *Purpose and Need Statement for State College Area Connector Project* (July 2024)
- *State College Area Connector Project 2023 Traffic/Safety Data Update Technical Memorandum* (July 2025)



Project Delivery - Key Project in the *Fiscal Year 2022-2024 Centre County Unified Planning Work Program*. Local Planning initiatives related to the project area include the *Centre County Comprehensive Plan Phase I* (2003) and *Phase II Implementation Strategies* (2016 to 2020); the *Centre Region Comprehensive Plan* (November 2013); the *Penns Valley Region Comprehensive Plan* (adopted January 2006); and the *Nittany Valley Region Comprehensive Plan* (adopted September 2004); and *Plan Update 2020-2030* (adopted October/November 2019).

This chapter introduces the project and describes its purpose and needs, which were initially identified in a Planning and Environmental Linkages (PEL) study and subsequently refined to address specific conditions along the US 322 corridor for this DEIS. The purpose and needs along US 322 were developed by FHWA and PennDOT in coordination with project stakeholders, including federal, state, and local agencies, as well as the public, during scoping activities. The purpose and needs statement was available for public review at public meetings and on the Project website (<https://www.PennDOT.pa.gov/SCAC>). The full purpose and needs document is included as **Appendix B**.

## 1.1 Project Setting/Background

Pennsylvania occupies a strategic geographic position, with interstate highways traversing the state and supporting national and international trade routes. Centre County is centrally located within the Commonwealth and has direct access to Interstate 80 (I-80)—part of the Primary Highway Freight System and the National Highway Freight Network—as well as Interstate 99 (I-99). The County’s location makes its roadway network critical for interstate, statewide, and regional traffic and commerce, while also accommodating local travel (**Figure 1-1**).

US 322 serves many roles within the project area. It is classified as a principal arterial, meaning its primary purpose is to facilitate regional traffic movement rather than solely local travel. At the intrastate level, the US 322 corridor provides a key connection between cities to the east and west of Centre County through its linkage with I-80. Locally, US 322 functions as a major access route to the State College area, connecting the County’s primary economic center and Pennsylvania State University’s main campus. It also provides access to adjacent land developments, supplementing the limited local street network (**Figure 1-2**).

## 1.2 Project Description

The proposed project provides an eight-mile, four-lane divided, limited-access highway between the terminus of the limited-access US 322/Mount Nittany Expressway in Boalsburg and the terminus of the limited-access portion of US 322 at Potters Mills in Centre County. Completion of the Project will provide the missing link of a four-lane highway that extends from the interstate connections in the Harrisburg area (e.g., I-83, I-81, and I-76) to I-80 via I-99. The project would improve safety and mobility for local, regional, and interstate travelers (**Figure 1-2**).



### 1.3 Project History

Numerous transportation improvement studies and projects, dating back to the 1970s, have been implemented and continue to influence travel within and adjacent to the project area. **Table 1-1** presents a history of important regional and local projects completed that influenced travel on the US 322 corridor. While all of these projects influenced travel on US 322, the *State College Area Connector Planning and Environmental Linkages Study* (PEL Study) provided the foundation for initiating this DEIS. It identified transportation needs within southern Centre County, focusing on a 70-square-mile initial study area. The study evaluated a range of alternatives to determine how the alternatives addressed the PEL Study's purpose and needs, balanced impacts on the natural and built environment, addressed traffic concerns within the overall study area, met engineering considerations such as constructability and cost, and considered area planning goals. **Chapter 2** provides more information on the PEL alternatives development and evaluation.

The final PEL Study was published in June 2023, and FHWA acknowledged in a letter dated September 14, 2023, that the PEL Report was consistent with 23 USC § 168 and 23 CFR § 450.212. Additionally, FHWA concurred that an EIS was the proper NEPA classification for the Project.

### 1.4 Project Area

The project area (**Figure 1-2**), based on the PEL Study results, was defined to support detailed field work and preliminary engineering efforts aimed at addressing transportation needs along US 322 as part of the NEPA process. It encompasses approximately six square miles (3,963 acres) and extends through the southern portion of Centre County, traversing Harris and Potter Townships. The project area is centered on US 322, which provides local access and connects to regional destinations via the Mount Nittany Expressway at the western end (which links to I-99 and ultimately to I-80). On the eastern end, US 322 at Potters Mills provides access south to the Harrisburg area with connections to I-76, I-81, and I-83.

### 1.5 Traffic and Operational Analysis

Traffic and safety analyses were conducted for the roadway network within the traffic study area, which accounted for local trips to or from State College, Centre Hall, Pleasant Gap, Potters Mills, and Boalsburg. All trips outside of these areas were considered regional traffic. Traffic volume projections were developed utilizing origin and destination (O&D) data, the Centre County *Regional Travel Demand Model* (TDM), and traffic volume count data collected for the project.



Table 1-1: Past Studies and Improvements that Influenced US 322 Travel

| Project  | Activity                            | Timeframe         |
|--|-------------------------------------|-------------------|
| I-80 completed in Pennsylvania   | Regional Roadway                    | 1970              |
| I-99 completed to I-80   | Regional Roadway                    | 2008              |
| South Central Centre County Transportation Study (SCCCTS) to evaluate new limited-access roadway in the area. This project was stopped in 2004 due to a statewide transportation funding shortfall.  | Study                               | 1998              |
| Intersection improvements at US 322 and PA 144 intersection and left-turn lanes at the US 322 and Mountain Back Road intersection  | Safety Improvement/<br>Construction | 2006              |
| Added turn lane and intersection improvements at US 322 and Bear Meadows Road intersection   | Safety Improvement/<br>Construction | 2007              |
| Added vehicle spacing pavement marking "dots" and signage along US 322: <ul style="list-style-type: none"> <li>• Elks Club Road to Sharer Road</li> <li>• Iron Horse Lane to Wagner Road</li> <li>• Dogtown Road to Tusseyville Road (closed)</li> </ul> | Safety Improvement/<br>Construction | Summer<br>2009    |
| Added Centerline and Edgeline Rumble Strips along US 322 (Elks Club Road to Potters Mills)   | Safety Improvement/<br>Construction | Summer<br>2010    |
| Removed passing zones at select sections of US 322 east of Elks Club Road and west of Dogtown Road   | Safety Improvement/<br>Construction | Summer<br>2011    |
| Added intersection warning pavement markings at US 322 and Cider Press Road intersection   | Safety Improvement/<br>Construction | Summer<br>2011    |
| Added center turn lane along US 322 (Iron Horse Lane to Wagner Road)   | Safety Improvement/<br>Construction | Fall 2014         |
| Adjusted S-curve alignment and profile along US 322 (vicinity of Wagner Road and Taylor Hill Road intersections)   | Safety Improvement/<br>Construction | Fall 2014         |
| Constructed a new bridge over US 322 in area of Sand Mountain Road   | Construction                        | September<br>2015 |
| Data Refresh of SCCCTS traffic   | Study                               | 2019              |
| "Potters Mills Gap" a new four-lane roadway section along US 322 from the Sand Mountain Road intersection, ending west at a new interchange at the PA 144/US 322 intersection  | Construction                        | July 2021         |
| State College Area Connector Planning and Environmental Linkages Study   | Study                               | 2023              |
| Safety Project to address lane merge issues along US 322/Mount Nittany expressway  | Safety Improvement/<br>Construction | 2025              |



### 1.5.1 Origin-Destination

An Origin and Destination (O&D) study was conducted as part of the *Traffic Analysis Technical Memorandum for the State College Area Connector PEL Study (February 2023)* and was utilized to support the travel analysis for this DEIS. Along US 322, the O&D analysis indicates that heavy trucks primarily make regional (through) trips, defined as trips that both start and end outside the traffic study area (**Table 1-2**). Medium trucks, typically used for deliveries, follow a similar pattern; however, 35% of medium trucks make commuter trips, defined as trips that start or end within the traffic study area. In contrast, 74% of passenger vehicles primarily complete commuter or local trips.

*Table 1-2: Origin-Destination Summary*

| Type of Vehicle    | Trip Types                                      |   |                                |
|--------------------|---|---|--------------------------------|
|                    | Local Traffic Trips Starting and Ending Locally | Commuter Traffic Trips Starting or Ending Locally | Regional Traffic Through Trips |
| Heavy Trucks       | 0%  | 11%   | 89%                            |
| Medium Trucks      | 1%  | 35%   | 64%                            |
| Passenger Vehicles | 4%  | 70%   | 26%                            |

### 1.5.2 Traffic Volumes

Traffic volume projections were developed during the PEL Study and updated with post-COVID traffic volumes to develop 2023 traffic levels on the roadway network. The updated traffic counts were based on data collected in fall 2022 through spring 2023. The counts included 24-hour, 12-hour, eight-hour, and/or six-hour data collection at 45 locations along US 322, PA 45, SR 3014 (Business Route 322/S. Atherton Street/Boal Avenue), and SR 3010 (Warner Boulevard/Boalsburg Road). The Centre County Regional TDM, updated as part of the South Central Centre County Transportation Study (SCCCTS) Data Refresh, was used to develop the No Build Design Year (2050) traffic projections. The TDM also accounts for planned and programmed transportation improvements, including the I-99/I-80 High-Speed and I-80 Local Access Interchange (SR 0080, Sections B18 and A18) and the I-99/US 322 Waddle Road Interchange Expansion, as well as anticipated future land use changes, regional travel patterns, transit service, and commercial/freight forecasts.

Annual Average Daily Traffic (AADT) along US 322 is projected to increase between 32% and 52% by 2050, while Annual Average Daily Truck Traffic (AADTT) is projected to increase between 25% and 36% over the same period. Existing traffic volumes along US 322 range from 9,400 to 14,900 vehicles per day (AADT), with trucks comprising 24% to 34% of traffic. By the Design Year (2050), AADT along the same segments is projected to increase to between 13,650 and 22,700 vehicles per day.

**Table 1-3** provides the AADT and AADTT volumes for both Existing Conditions Year (2023) and Design Year (2050) along various sections of US 322 within the project area.

Table 1-3: Traffic Volume Summary

| Roadway | Segment                  |                                      | Existing Conditions (Year 2023) |             | Design Year (2050) |             | Percent Change |       |
|---------|--------------------------|--------------------------------------|---------------------------------|-------------|--------------------|-------------|----------------|-------|
|         | From                     | To                                   | AADT                            | AADTT       | AADT               | AADTT       | Total          | Truck |
| US 322  | Mount Nittany Expressway | PA 45                                | 14,900                          | 3,600 (24%) | 22,700             | 4,500 (20%) | 52%            | 25%   |
|         | PA 45                    | Boal Avenue                          | 9,400                           | 3,200 (34%) | 13,650             | 4,000 (29%) | 45%            | 25%   |
|         | Boal Avenue              | Elks Club Road                       | 13,800                          | 3,300 (24%) | 18,350             | 4,200 (23%) | 33%            | 27%   |
|         | Elks Club Road           | Neff Road                            | 13,200                          | 3,200 (24%) | 17,400             | 4,200 (24%) | 32%            | 31%   |
|         | Neff Road                | Red Mill Road/<br>Mountain Back Road | 12,000                          | 3,100 (26%) | 17,400             | 4,200 (24%) | 45%            | 36%   |

Notes: AADT = Annual Average Daily Traffic, AADTT = Annual Average Daily Truck Traffic (% Trucks), and Growth Rate = 2023-2050 Annual Growth Rate (linear)

### 1.5.3 Level of Service

Level of Service (LOS) is a quantitative performance measure that represents the quality of service being provided along a roadway or at an intersection. The specific metrics used to determine LOS are referred to as service measures. The Highway Capacity Manual (HCM) defines six levels of service, ranging from A to F. LOS A represents the best operating conditions from a traveler’s perspective, and LOS F represents the worst (**Figure 1-3**). Current traffic engineering study guidelines, policies, and procedures contained in PennDOT Publication No. 282, *Highway Occupancy Permit Operations Manual, Appendix A, Policies and Procedures for Transportation Impact Studies Related to Highway Occupancy Permits* (2024), define the acceptable intersection LOS requirements for a traffic impact study. In rural areas, LOS A through C is considered acceptable, while LOS D

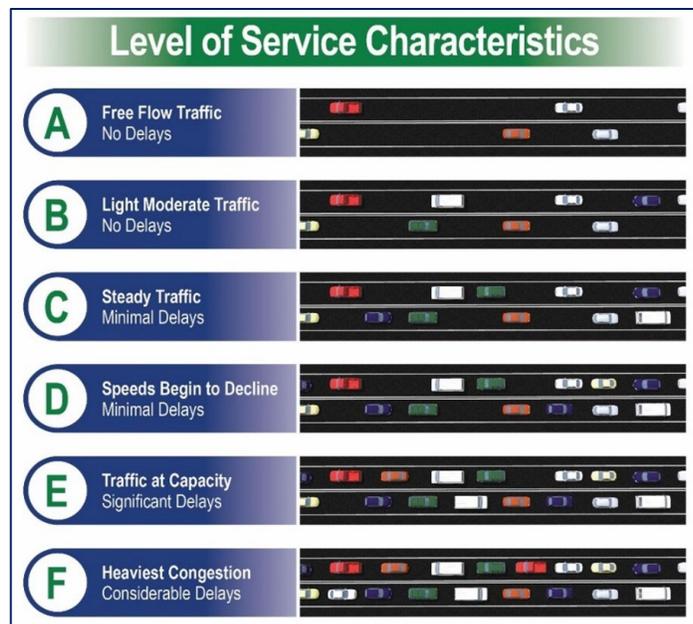


Figure 1-3: Level of Service Characteristics



through F is considered unacceptable. In urbanized areas, LOS A through D is considered acceptable, and LOS E and F are considered unacceptable. Within the project area, most of the roadways and intersections in Harris Township (i.e., in the vicinity of Boalsburg) are located within an urbanized area and have a LOS target of D. The section of US 322 extending from 500 feet west of the Elks Club Road/Bear Meadows Road intersection to the eastern project boundary—which includes a small portion of Harris Township and all of Potter Township—is classified as a rural area and has a LOS target of C.

The LOS analysis for peak hour traffic was performed for signalized and unsignalized intersections, two-lane roadway segments, multi-lane roadway segments, freeway segments, and ramp segments. **Figure 1-4** and **Figure 1-5** illustrate the LOS for the Existing Conditions (2023) and Design Year (2050), respectively. In the Existing Conditions (2023) scenario, the project area intersections primarily operate at acceptable levels of service, except for the unsignalized intersection of US 322 and Elks Club Road/Bear Meadows Road, which operates at an unacceptable LOS during the peak hour time periods. The roadway analysis revealed that the two-lane roadway portion of US 322, from the end of the four-lane Mount Nittany Expressway to the Bear Meadows Road/Elks Club Road intersection and from the Harris/Potter Township line to the four-lane US 322 section at Potters Mills, currently operates at an unacceptable LOS. Average travel speeds are up to 15% less than the posted speed limit in some portions of the LOS-deficient roadway.

In the Design Year (2050) scenario, capacity and operations are expected to continue to deteriorate. Unsignalized intersections along US 322 are projected to experience significant delays during the morning and evening peak hours, operating at an unacceptable LOS. The eastbound off-ramp approach of US 322 is also expected to operate at an unacceptable LOS. By 2050, the entire two-lane section of US 322 is projected to operate below acceptable LOS standards. Along the entire corridor, average travel speeds are anticipated to be 15% less than the posted speed limit.

In summary, US 322 serves as the main travel route for local, regional, and interstate traffic, including trucks. By 2050, the entire corridor is projected to operate at unacceptable LOS (E or F), with some key unsignalized intersections reaching LOS F. Intersections with side streets are also expected to experience unacceptable congestion and delays, which can exacerbate safety concerns. As congestion and delays increase, motorists tend to accept smaller gaps for turning movements, raising the likelihood of crashes. Overall, increasing traffic volumes are expected to result in worsening congestion, a mix of local and through traffic, and growing safety risks.

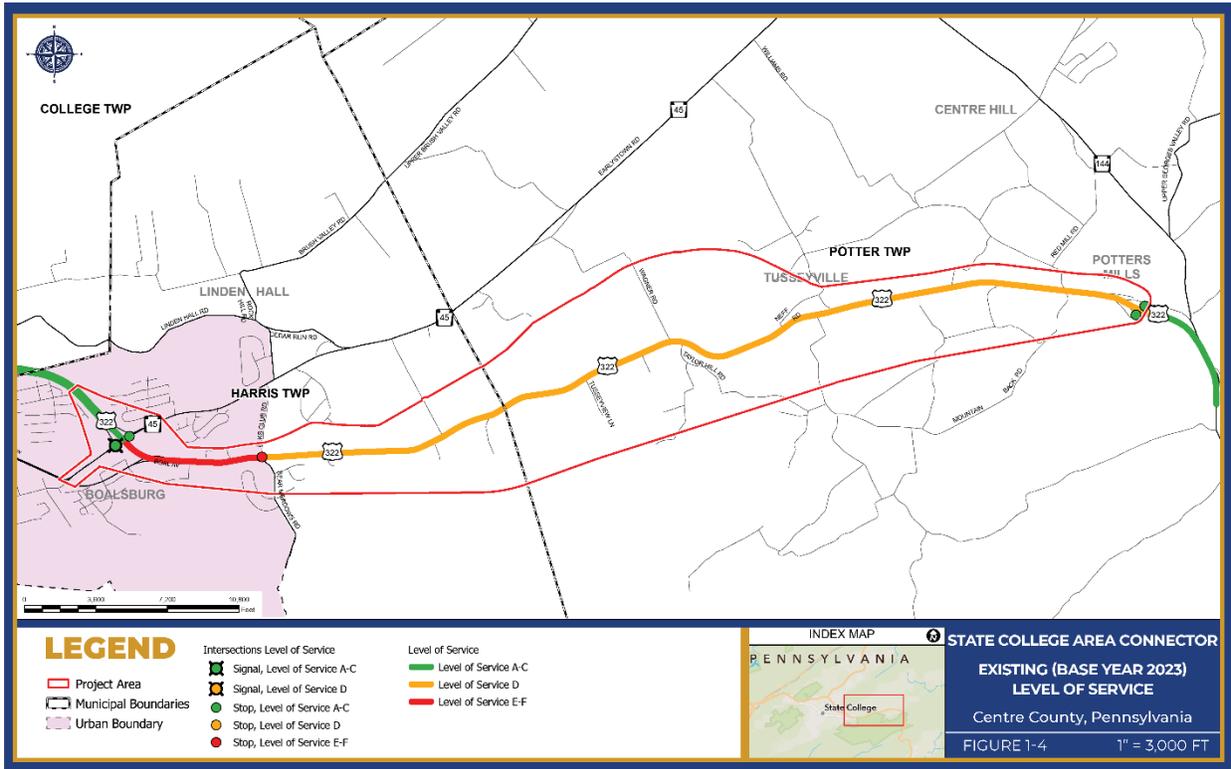


Figure 1-4: Existing (Base Year 2023) Level of Service

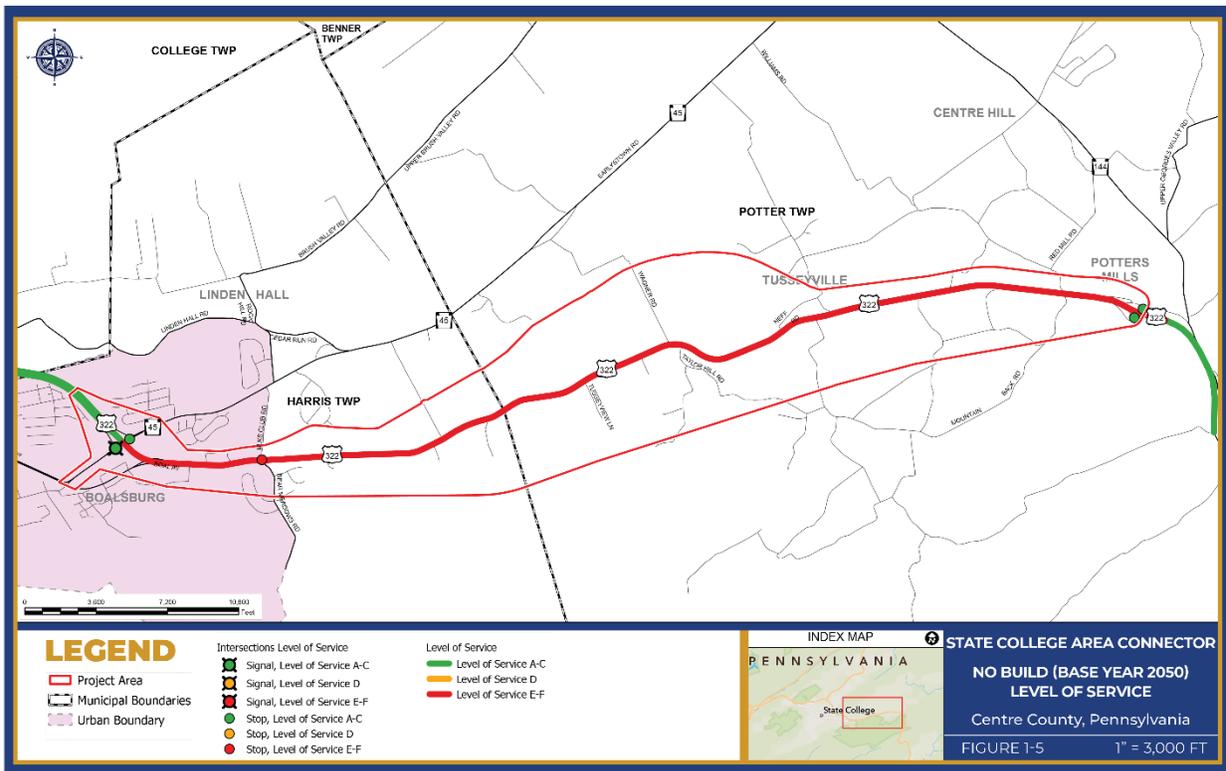


Figure 1-5: No Build (Base Year 2050) Level of Service



### 1.5.4 Safety Analysis

An analysis of US 322 was conducted to identify potential safety concerns along the existing roadway. The analysis included a five-year crash summary to document the number, types, and concentrations of crashes. Following the crash history review, a Highway Safety Manual (HSM) analysis was performed using PennDOT’s HSM Safety Analysis Tool for the segment of US 322 from Potters Mills Gap to the PA 45 interchange. This analysis assessed the current and projected safety performance of US 322 within the project area to identify existing and potential safety concerns along the corridor.

**Crash Summary:** The analysis included a five-year crash summary to document the number, types, and concentrations of crashes. Crash data from January 2017 through December 2023 was obtained from PennDOT’s Open Data Portal, through the Pennsylvania Crash Information Tool (PCIT), and analyzed for US 322 within the project area (PennDOT, 2023). As shown in **Table 1-4**, a total of 144 reportable crashes were documented during this five-year period, including three fatal crashes, 60 injury crashes, and 81 property damage-only (PDO) crashes. The analysis revealed crashes were generally scattered along US 322 with a concentration at the unsignalized intersections of US 322 at Elks Club Road/Bear Meadows Road, Neff Road, and Red Mill Road/Mountain Back Road (**Figure 1-6**).

*Table 1-4: US 322 Crash Frequency<sup>1</sup> by Severity*

| Roadway | PDO <sup>2</sup> | Injury   | Fatal  | Total      |
|---------|------------------|----------|--------|------------|
| US 322  | 81 (56%)         | 60 (42%) | 3 (2%) | 144 (100%) |

<sup>1</sup> Crash frequency represents number of crashes (5-year total) involving injuries or fatalities and not the number of injuries or fatalities.

<sup>2</sup> PDO: Property Damage Only (no injuries)

The analysis of crash types along US 322 indicated that the most frequent crashes were rear-end collisions (42 crashes; 29%) and hit-fixed-object crashes (40 crashes; 28%). These crash types are generally associated with a mix of local and through traffic, uncontrolled access along the corridor, and varying vehicle speeds. The analysis also showed that the majority of crashes involved passenger vehicles (112 crashes; 78%), while heavy vehicles (trucks or buses) were involved in approximately 19% of all crashes.

**Highway Safety Analysis:** The HSM provided an analytical tool to quantify potential along the US 322 corridor based on design elements such as roadway geometry, traffic volumes, intersection type and number, and other factors. The HSM analysis for US 322 indicated that certain roadway segments and intersections are expected to

**Predicted crashes** are identified by evaluating the existing roadway conditions, including intersection types, average traffic volumes, and other characteristics, to predict a roadway’s crash frequency.

**Expected crashes** are identified by evaluating existing roadway conditions, including intersection types, average traffic volumes, and other characteristics, along with the five-year crash data, to forecast a roadway’s expected crash frequency.

experience more crashes than predicted, based on traffic volumes, design characteristics, and crash history. This difference between expected and predicted crash frequencies

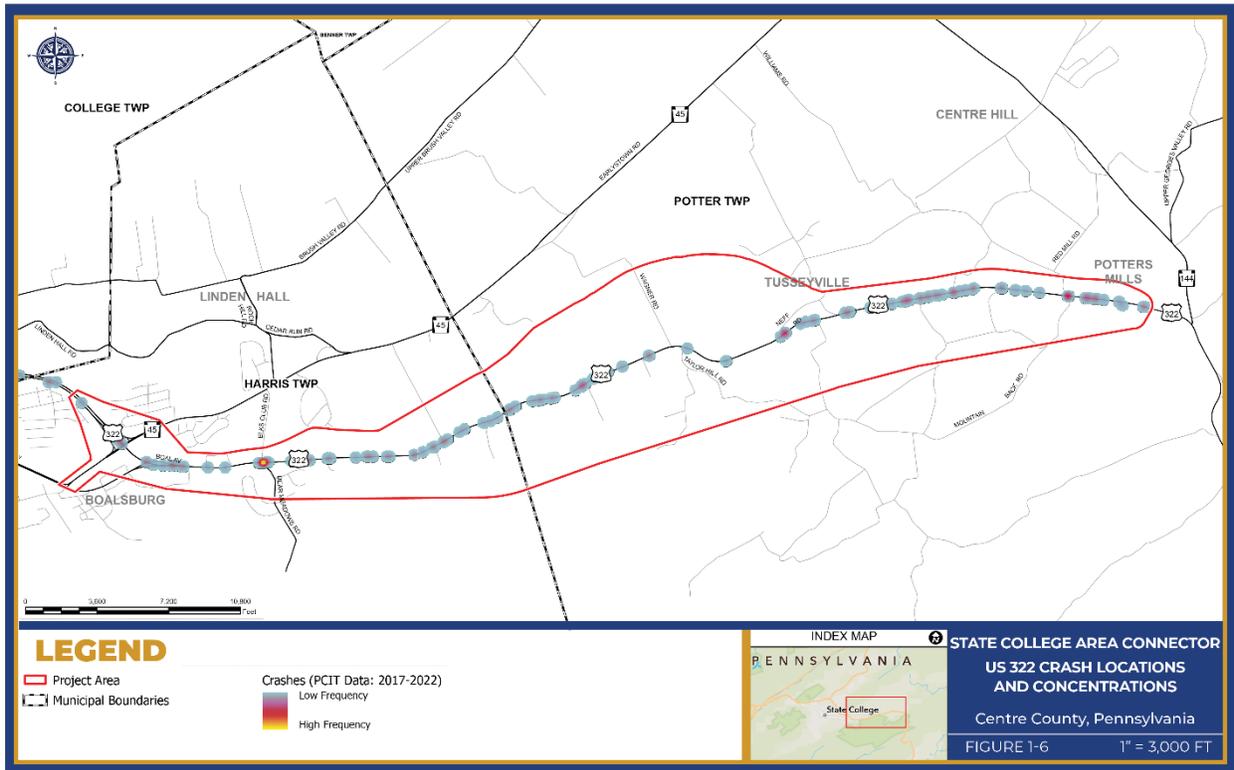


Figure 1-6: US 322 Crash Locations and Concentrations

highlights the need for safety improvements along the existing corridor. These areas are shown in **Figure 1-7** and listed below:

- From west of Elks Club Road/Bear Meadows Road near Jacks Mill Road to Tussey View Lane
- From Taylor Hill Road to Red Mill Road/Mountain Back Road

On average, the number of crashes is predicted to increase by 16% from 2021 to the Design Year (2050). These predicted increases in crashes, paired with increased congestion, may exacerbate the crash frequencies experienced within the project area.

## 1.6 Project Purpose

The purpose of this project is to improve roadway congestion by achieving acceptable LOS and to address safety issues by reducing the predicted crash frequency along the US 322 corridor between Boalsburg and Potters Mills. Additionally, the project will aim to provide a transportation network that meets driver expectations.

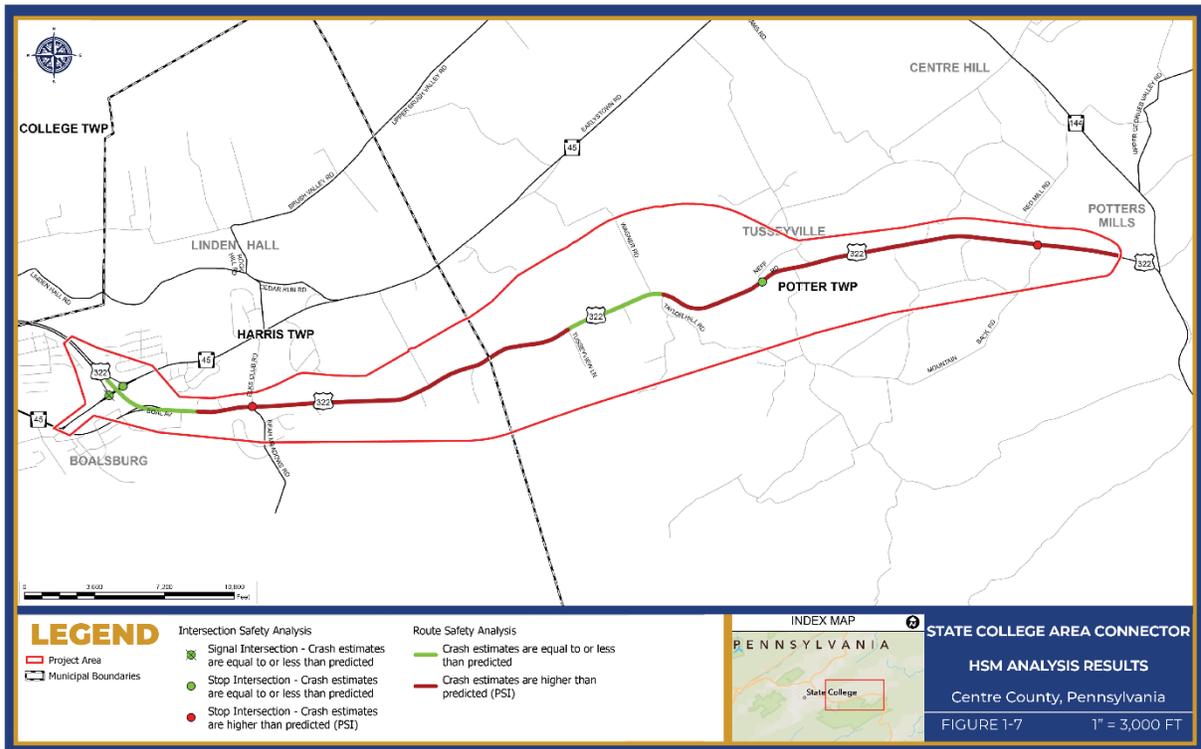


Figure 1-7: HSM Analysis Results

## 1.7 Project Needs

Within the project area, transportation challenges include high congestion, potential safety concerns along the roadway network, and roadways with changing configurations that can affect driver experience. The following section summarizes the identified safety issues and project needs, along with supporting documentation.

- **High peak hour traffic volumes cause congestion and result in unacceptable LOS on US 322 roadways and intersections.**
  - US 322 serves as the main travel route for local, regional, and interstate traffic, including trucks, within the project area. Currently, during peak hours, US 322 between the US 322 Mount Nittany Expressway and the Mountain Back Road/Red Mill Road intersection (just west of Potters Mills) operates at a LOS D or E. The 2050 peak hour traffic volumes are anticipated to increase 41% which will increase congestion and worsen the LOS along the US 322 corridor. In 2050, LOS E is still anticipated for the entire US 322 corridor from the Mount Nittany Expressway to Potters Mills Gap, and travel speed will be further decreased with an average travel speed 15% less than the posted speed limit.
  - Unsignalized intersections along US 322 are anticipated to operate at unacceptable LOS (LOS D, E, or F) due to high volumes of traffic along the uncontrolled main roadway, which limit the availability of gaps in traffic for making turning movements.



- US 322 averages three times more truck traffic within the project area in comparison to other similar roadways statewide, and truck traffic is expected to increase by 27% along the corridor by 2050. The additional truck traffic increases overall congestion and contributes to unacceptable LOS.
- ***Existing roadway configurations and traffic conditions contribute to safety concerns in the project area.***
  - Crashes were identified along a majority of the US 322 corridor with some concentrations at unsignalized intersections (e.g., Elks Club Road/Bear Meadows Road, Neff Road, and Red Mill Road/Mountain Back Road). Additionally, between 2017 and 2021, nearly 19% of all crashes along US 322 were caused by heavy vehicles.
  - The HSM analysis results indicate the potential for safety improvements along a majority of the US 322 corridor and at unsignalized intersections through the project area. Increasing traffic along US 322 has reduced the number of gaps available for side street and driveway traffic attempting to enter or exit US 322. This causes drivers to make turning movements outside of their comfort zone, which contributes to crashes at side streets and driveway intersections. Additionally, the large percentage of through traffic exacerbates the issue as these drivers may be unfamiliar with the roadway characteristics.
- ***The roadway network and configuration in the project area lacks continuity and does not meet driver expectations.***
  - US 322 is on the National Highway System and is classified as a principal arterial that is intended to provide long-distance connections. US 322, adjacent to the project area (near both Potters Mills and Boalsburg), is a four-lane, limited-access, divided highway facility with exit and entrance ramps to provide access to the local roadway network. This type of roadway is conducive to higher travel speeds and supports regional and interstate travel patterns. These adjacent sections of US 322 feed traffic into the project area, where US 322 is currently a two-lane, non-divided highway with unrestricted access to driveways and intersecting roadways. The abrupt change in roadway configuration and characteristics creates a roadway network that lacks continuity of facility type and function.
  - Within the project area, US 322 serves local, regional, and interstate traffic (including truck and commuter traffic). The road also services other travel modes, including farm equipment traffic and bicycle traffic. The change in the roadway cross-section at both ends of the corridor creates inconsistencies which may not meet driver expectations, particularly for regional and interstate traffic. The potential for additional uncontrolled access points along US 322 would continue to degrade roadway continuity along the corridor and create additional locations for conflicts that could result in additional crashes.

## 2 Alternatives

An alternative development and evaluation process, conducted in accordance with NEPA, as administered by FHWA (23 CFR § 771.101 – 771.139), defined and analyzed a broad range of reasonable transportation alternatives in southern Centre County, Pennsylvania. Alternatives were developed, analyzed, and advanced or dismissed based on their ability to meet the project's purpose and needs, impact on environmental resources, and input from the resource agencies, public, and local officials.

The following summarizes the alternatives' development and analysis in more detail and provides the rationale for dismissing alternatives from further consideration or carrying them forward for more detailed study.

### 2.1 State College Area Connector Planning and Environmental Linkages Study

The PEL Study identified transportation needs within southern Centre County, Pennsylvania, in a 70-square-mile initial study area. The study evaluated a range of alternatives to determine how the alternatives addressed the study's purpose and needs, balanced impacts on the natural and built environment, addressed traffic concerns within the overall study area, met engineering considerations such as constructability, cost, and considered area planning goals.

More information on the alternatives development and evaluation can be found in the following documents:

- *Alternative Analysis and Screening Report for the State College Area Connector Planning and Environmental Linkages Study* (February 2023)
- *State College Area Connector Planning and Environmental Linkages Study* (June 2023)
- *State College Area Connector Project Engineering Technical Memorandum* (July 2025)
- *State College Area Connector Project 2023 Traffic/Safety Data Update Technical Memorandum* (July 2025)
- *State College Area Connector Project Pre-NEPA Activities (Interchange Access Concepts & Analysis) Technical Memorandum* (July 2025)
- *State College Area Connector Project DEIS Alternatives Traffic and Safety Analysis Technical Memorandum* (July 2025)

### 2.1.1 PEL Range of Alternatives

**Table 2-1** outlines the six alternative concepts considered in the PEL screening process.

*Table 2-1: PEL Range of Alternatives*

| Alternative Concept                                 | Alternative Concept Definition   |
|---|--|
| No Build Alternative                                | Consisted of taking no action to improve the transportation facilities within the PEL Study area, except for regional projects “committed” as a programmed project in the current Centre County Metropolitan Planning Organization’s (CCMPO) <i>Centre County Long 2050 LRTP</i> and the <i>2023- 2026 Transportation Improvement Program (TIP)</i> .  |
| Upgrade Existing Alternative                        | Widened and improved existing US 322 to a four-lane barrier-separated roadway that would allow left turns at select intersections.   |
| Transportation Control Measures (TCM) Alternative   | Provided measures that focused on reducing the volume of vehicles on the transportation network. This strategy included area-wide programs as well as corridor-specific strategies. Roadway-oriented TCM (e.g., HOV lanes, park-and-rides, and active transportation facilities) were considered along key study area roadways: US 322, PA 45, and PA 144. Program-oriented measures (e.g., TDM programs, rideshare/van pools) were considered within the overall study area.  |
| Transportation Systems Management (TSM) Alternative | Included identifying transportation strategies that focus on operational improvements to preserve and even improve the performance of the existing transportation network without additional capacity. Roadway-oriented TSM (e.g., intersection improvements and incident and special event management) strategies were considered along the key study area roadways: US 322, PA 45, and PA 144. Program-oriented TSM strategies (e.g., freight management, real-time traveler information) were considered within the overall study area. |
| Transit Alternative                                 | Included consideration of new fixed bus routes that extend through the study area. Potential bus routes included using PA 26, PA 45, US 322, and PA 144 throughout the study area. Included adding a new CATABUS fixed route that extends from the CATABUS storage at 2081 West Whitehall Road in State College to the Centre Hall area.   |
| Build Alternative                                   | Provided a four-lane limited access highway on new alignment.  |

### 2.1.2 PEL Alternative Screening

A two-step, qualitative and quantitative screening process was used to systematically evaluate each alternative’s ability to meet the identified study purpose and needs, minimize environmental impacts, meet required engineering and constructability criteria, and address study goals. During this screening process, any alternative determined not to meet the study’s purpose and needs was dismissed from further consideration as a viable improvement alternative (**Figure 2-1**).

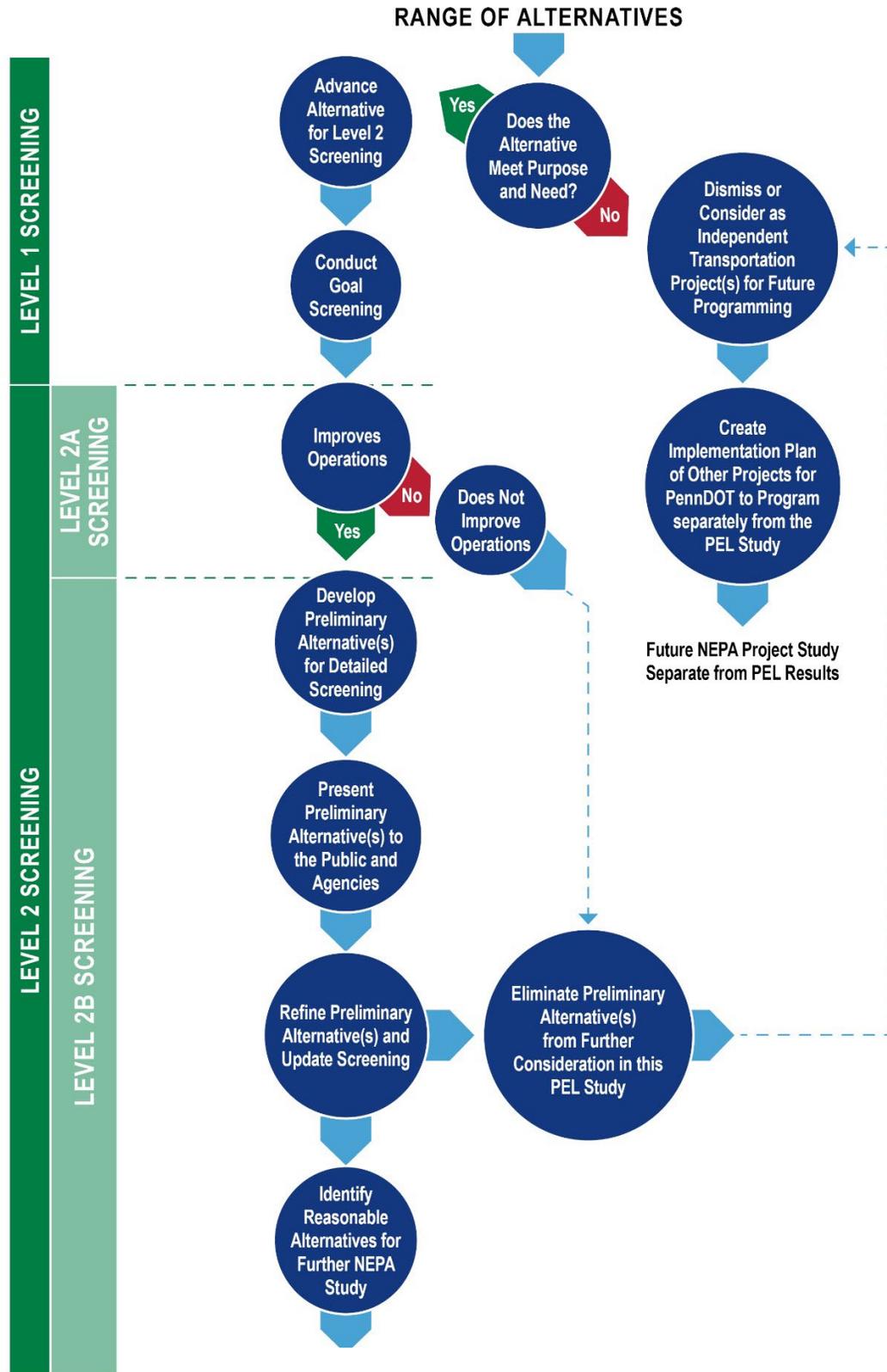


Figure 2-1: PEL Alternative Screening Process

**Level 1 Screening:** Level 1 screening used a qualitative assessment to determine if an alternative concept would meet the study's needs. The screening was a series of yes/no questions to determine if the alternative concept alone could meet the transportation needs. The needs screening questions are outlined in **Table 2-2**. If the alternative concept answers were "yes" to all screening questions, the alternative was found to meet the transportation needs and was advanced for a goals screening. As directed in 23 USC § 168 and 23 CFR § 450.212, 23 CFR § 771.123(c), and FHWA's Technical Advisory 6640.8a, **Table 2-2** documents why four PEL Study alternatives were dismissed from further study as they would not meet transportation purpose and needs. **Table 2-2** also documents why the Build Alternative and Upgrade Existing Alternative were advanced for more detailed development and evaluation in the PEL Study Level 2 Screening. For more information on the detailed screening results, see the *Alternative Analysis and Screening Report for the State College Area Connector Planning and Environmental Linkages Study* (February 2023) and the *State College Area Connector Planning and Environmental Linkages Study* (June 2023).

**Level 2 Screening:** Level 2 Screening was divided into two parts:

#### ***Level 2A Screening***

The Level 2A screening developed representative corridors for an Upgrade Existing Alternative and two Build Alternatives, US 322 Build Alternative and PA 144 Build Alternative. These three Level 2A alternatives are illustrated in **Figure 2-2**. For the planning-level traffic analysis required to complete the Level 2A Screening, alternatives were assumed to provide a straight-line connection between the identified logical termini, without regard for engineering criteria or environmental constraints. This level of the investigation provided sufficient detail to evaluate future traffic volumes and patterns on the transportation network and to consider their impact on key study-area roadways.

Upgrade Existing Alternative – This alternative consisted of a four-lane barrier-divided highway with access limited to right turns in and out, and local streets and driveways with full access limited to select locations along the US 322 corridor. The logical termini utilized for this alternative extended from US 322 near Boalsburg (Mount Nittany Expressway) to the limited-access portion of US 322 at Potters Mills (**Figure 2-2**). The Upgrade Existing Alternative allowed the highway to remain predominantly on the existing US 322 alignment. The Level 2A screening showed that the Upgrade Existing Alternative would result in a migration of traffic to the upgraded portion of US 322, but the remainder of the roadway network would see a reduction in overall traffic volumes (16% of total traffic [AADT] and 25% in truck traffic [AADTT]). As a result, the Upgrade Existing Alternative improved overall study area traffic operations and would meet the congestion purpose and need based on the planning-level traffic analysis. This alternative was advanced Level 2B screening.



Table 2-2: Level 1 Alternative Screening Needs Assessment Results

| Alternative Considered | Needs Criteria    | Would Alternative Meet Need Criteria | Advance for Level 2 Screening | Rationale for Advancement Recommendation   |
|------------------------|-------------------|--------------------------------------|-------------------------------|--|
| No Build               | Congestion        | No                                   | No                            | No Build Alternative would not meet the transportation purpose and needs as the current roadway network would remain unchanged, and traffic volumes would continue to rise, resulting in worse congestion and decreased safety. Additionally, driver expectations would not be fulfilled. While it was dismissed in the PEL Study, it will be carried on in the NEPA study for comparison purposes.  |
|                        | Safety            | No                                   |                               |  |
|                        | System Continuity | No                                   |                               |  |
| Upgrade Existing       | Congestion        | Yes                                  | Yes                           | The Upgrade Existing Alternative was determined to meet the purpose and needs and was advanced for further development and study. This alternative was found to provide: <ul style="list-style-type: none"> <li>• Sufficient roadway capacity to accommodate future travel demand.</li> <li>• Improved safety with widened shoulders, minimized conflict points by restricting left turns, and limiting cross traffic to key locations.</li> <li>• Aligns with driver expectations by keeping regional through traffic moving and limiting stops to specific areas.</li> </ul> |
|                        | Safety            | Yes                                  |                               |  |
|                        | System Continuity | Yes                                  |                               |  |
| TCM                    | Congestion        | No                                   | No                            | The TCM Alternative was dismissed because it would not meet the project's transportation purpose and needs. Its measures would not sufficiently address future travel demand or provide the continuous travel experience expected along US 322.  |
|                        | Safety            | Yes                                  |                               |  |
|                        | System Continuity | No                                   |                               |  |
| TSM                    | Congestion        | No                                   | No                            | The TSM Alternative was dismissed because it would not meet the project's transportation purpose and needs. Although its strategies could provide minor operational improvements through physical enhancements and traffic-reduction programs, the alternative would not adequately accommodate future travel demand or provide the continuous travel experience expected by drivers.  |
|                        | Safety            | Yes                                  |                               |  |
|                        | System Continuity | No                                   |                               |  |
| Transit                | Congestion        | No                                   | No                            | The Transit Alternative was dismissed because it would not meet the project's transportation purpose and needs. Although increased transit use could reduce some vehicle trips, much of the traffic in the corridor is traveling to destinations outside the study area or consists of truck traffic, neither of which would shift to public transit.  |
|                        | Safety            | No                                   |                               |  |
|                        | System Continuity | No                                   |                               |  |
| Build                  | Congestion        | Yes                                  | Yes                           | The Build Alternative was determined to meet the purpose and needs and was advanced for further development and study. This alternative was found to: <ul style="list-style-type: none"> <li>• Increase network capacity to meet future travel demand.</li> <li>• Enhance safety by diverting through traffic from local roads and reducing conflicts.</li> <li>• Meet driver expectations by maintaining regional through traffic flow and limiting stops to designated locations.</li> </ul>   |
|                        | Safety            | Yes                                  |                               |  |
|                        | System Continuity | Yes                                  |                               |  |

The Build Alternative consisted of a four-lane, divided, limited-access highway. Two Build Alternative options were developed. The first Build Alternative (US 322 Build Alternative) connected the identified logical termini of the limited-access portion of US 322 near Boalsburg (Mount Nittany Expressway) to the limited-access portion of US 322 at Potters Mills. The second Build Alternative (PA 144 Build Alternative) connected the identified logical termini of US 322 at Potters Mills and I-99 north of Pleasant Gap (**Figure 2-2**). Detailed engineering design was not developed for the Level 2A screening, nor were intermediate interchanges included in this planning-level analysis. The Build Alternative Level 2A Screening documented a 47% reduction in AADT, a 70% reduction in AADTT for the US 322 Build Alternative, and a 33% reduction in AADT, and a 60% reduction in AADTT for the PA 144 Build Alternative on key roadways within the study area. As a result, the US 322 and PA 144 Build Alternative corridors improved the overall study area traffic operations and continued to meet the purpose and needs based on the planning-level analysis. Therefore, the US 322 and PA 144 Build Alternatives were advanced for further development and Level 2B screening.

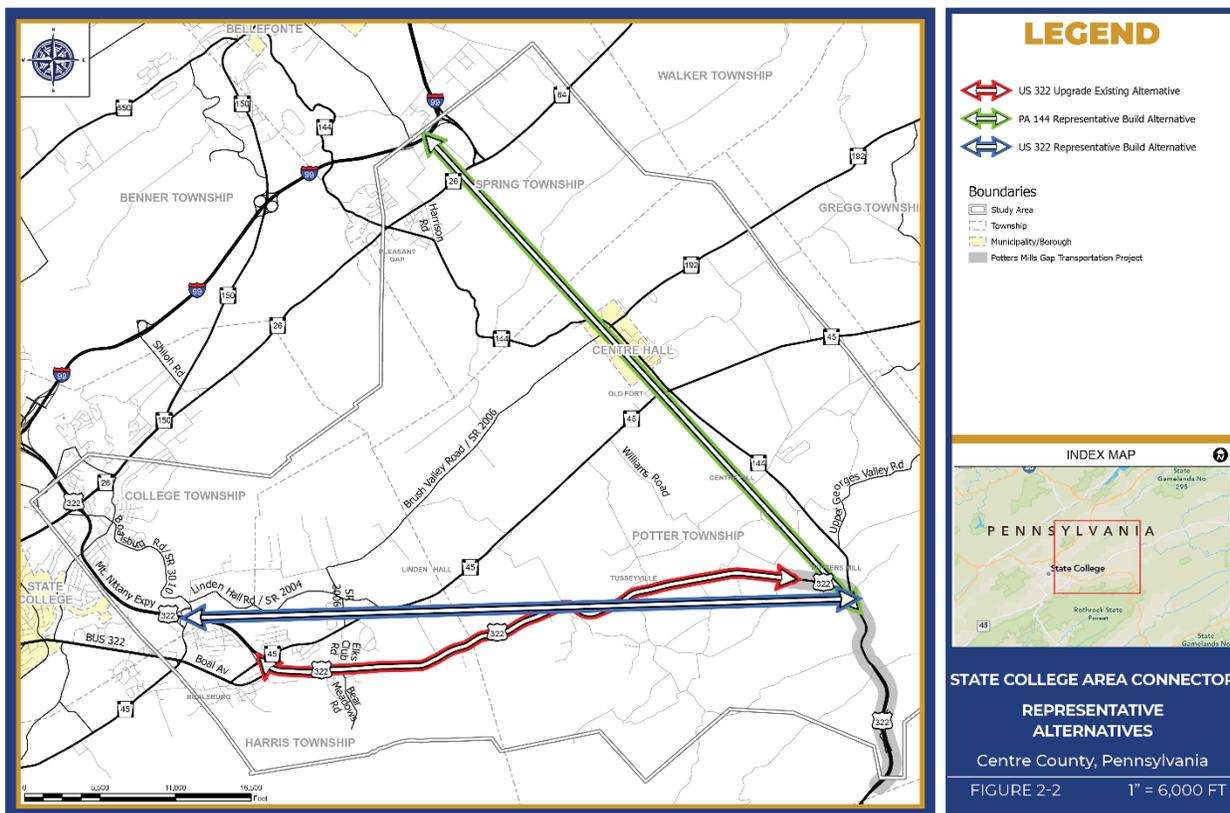


Figure 2-2: Representative Alternatives (PEL Level 2A)

## Level 2B Screening

The Level 2B screening included consideration of the Upgrade Existing Alternative and nine Build Alternatives (six along US 322 and three along PA 144). The alternatives are depicted in **Figure 2-3** and **Figure 2-4**. The Upgrade Existing and Build Alternatives were developed to evaluate the potential environmental impacts and traffic influences. The Upgrade Existing and Build Alternatives locations were initially developed by considering previous study corridors and creating new corridors that met current engineering design standards and included shifts to avoid and minimize impacts on critical environmental resources. The nine Build Alternatives also included a midpoint interchange to evaluate traffic operations.

**Traffic Analysis:** A quantitative traffic analysis determined traffic volumes, LOS, and safety projections using HSM analysis (i.e., predicted crash frequencies) for the Upgrade Existing Alternative, the nine Build Alternatives, and the local roadway network. The traffic analysis indicated that the Upgrade Existing Alternative, while improving traffic flow, would decrease future roadway safety due to higher predicted crash frequencies. The higher crash frequency is a result of the increases in future traffic volumes (2050), roadway design (e.g., hills/valleys and curves), and unrestricted access (e.g., driveways and local roads) increasing the number conflict points along the roadway, thus increasing the potential for crashes. As a result, the Upgrade Existing

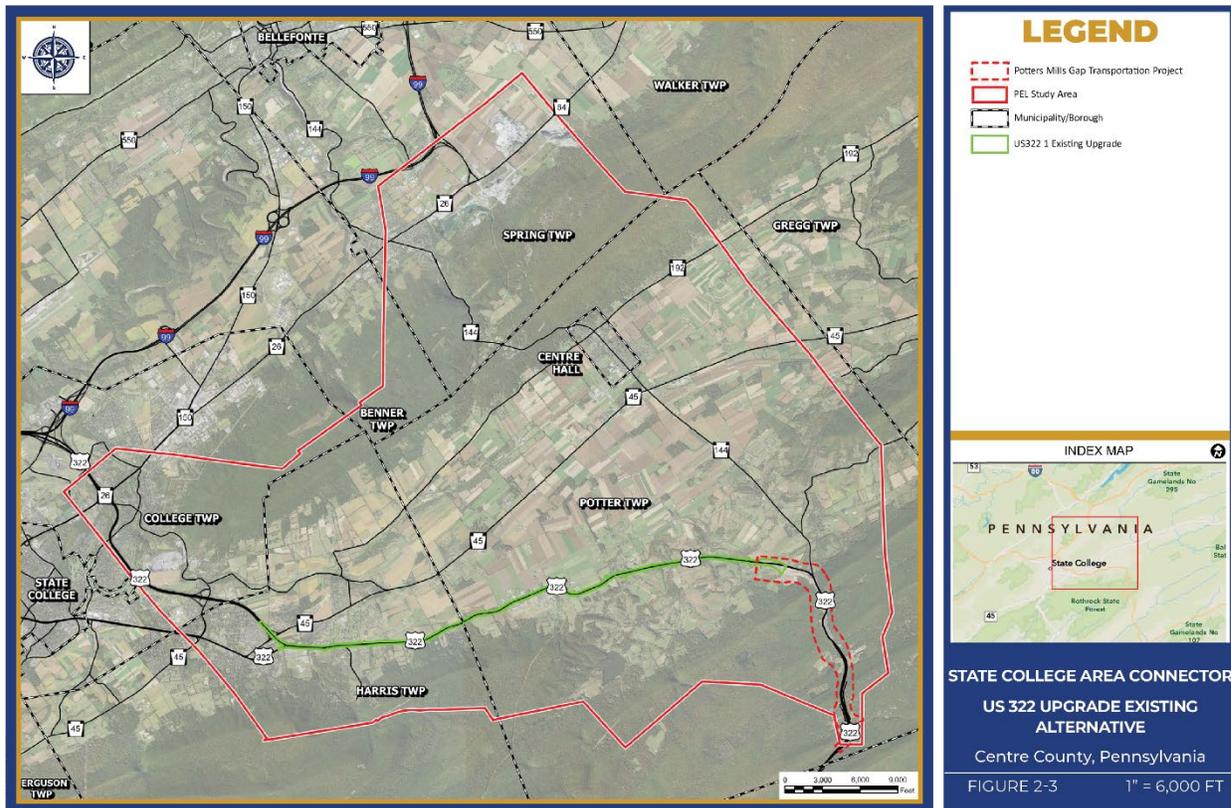


Figure 2-3: US 322 Upgrade Existing Alternative

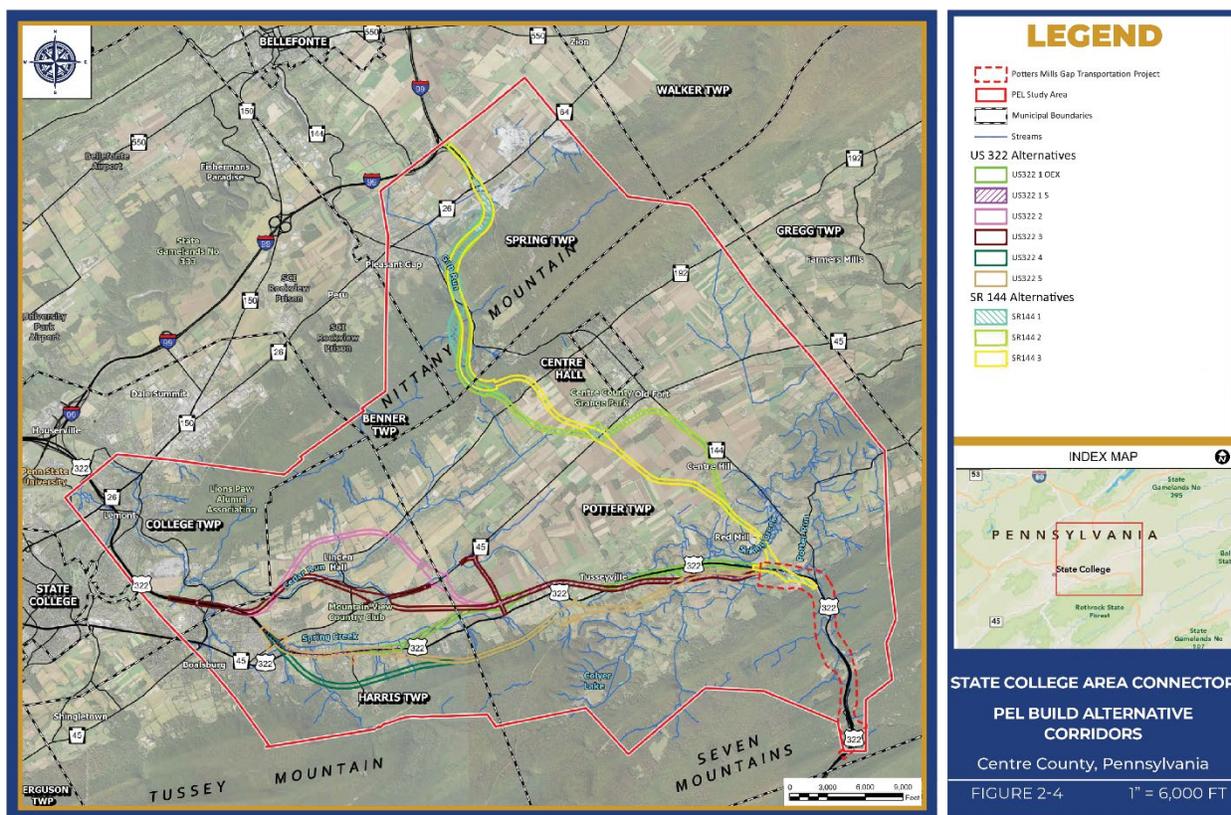


Figure 2-4: PEL Build Alternative Corridors

Alternative would not meet the transportation purpose and needs to improve safety. The Upgrade Existing Alternative was dismissed from further development and evaluation. The nine Build Alternatives were found to improve congestion, safety on the network, and meet driver expectations; therefore, they would all meet the PEL Study’s purpose and needs and were advanced for further study.

**Environmental/Planning/Engineering Analysis:** The nine Build Alternatives were investigated from an environmental, planning, and engineering perspective. Environmental analysis documented the natural, cultural, and socioeconomic resources; planning analysis evaluated how each alternative met the study goals, local transportation and land use planning, transportation mobility, best engineering practices, and environmental stewardship; and the engineering perspective considered constructability and cost. The following alternatives were dismissed from further consideration:

- US 322-2 Build Alternative (**Figure 2-4**) would have higher comparative impacts on key study area resources compared to other US 322 Build Alternatives including: the highest impacts to agricultural resources (361 acres of productive agriculture, 193 acres ASAs, and 246 acres zoned agriculture), greater impact to the Penns Valley/Brush Valley Rural Historic District (a Section 106 resource – 372 acres), the highest impact to the



combined bat swarming areas for threatened and endangered species, and 21 residential displacements. Comparatively, it was found to extend farther away from the existing US 322 corridor, which was not desirable from a planning perspective, while having a higher comparative cost. It was determined that this alternative did not provide sufficient benefit to balance the potential higher impacts. As a result, it was dismissed from further study.

- US 322-3 Build Alternative (**Figure 2-4**) would have higher impacts on key study area resources compared to the other US 322 Build Alternatives including: agricultural resources (313 acres of productive agriculture, 39 acres of conservation easements, and 212 acres zoned agriculture), greater impact to the Penns Valley/Brush Valley Rural Historic District (a Section 106 resource – 331 acres), impact to the combined bat swarming areas for threatened and endangered species, and highest number of residential displacements at 29. Comparatively, it was found to extend farther away from the existing US 322 corridor, which was not desirable from a planning perspective, while having the highest comparative cost. It was determined that this alternative did not provide sufficient benefit to balance the potential higher impacts. As a result, it was dismissed from further study.
- US 322-4 Build Alternative (**Figure 2-4**) would have higher comparative impacts on key study area resources compared to the other US 322 Build Alternatives including: regulated Waters of the US (6 acres of wetlands and 9,124 linear feet of CWF-HQ/ CWF streams), displace four commercial facilities, greater impact to the Penns Valley/Brush Valley Rural Historic District (a Section 106 resource – 301 acres), and have the highest impact on the Rothrock State Forest and Stone Mountain Important Bird area (125 acres). This alternative would also impact the only remaining industrially zoned land in Harris Township and displace existing businesses with no potential to relocate within the Township. This alternative would also impact amenities at Harvest Fields, a privately owned community facility, which raised substantial community concerns. It was determined that this alternative did not provide sufficient benefit to balance the potential higher impacts. As a result, it was dismissed from further study.
- PA 144 Build Alternative (**Figure 2-4**) corridors follow similar alignments and are all being dismissed from further study as a family of alternatives. This family of alternatives would have higher comparative impacts on key study area resources including: higher potential impacts on Waters of the US (six to eight acres), impact the public water supply well protection zone area for Centre Hall Borough and Potter Township (103 to 130 acres), highest impacts on bat swarming habitat (248 to 269 acres) and be in close proximity to two known bat caves. These alternatives would be impactful to productive agricultural lands (268 to 294 acres), including Agricultural Security Areas (165 to 183 acres), and conservation easements (37 to 40

acres). In addition to the environmental impacts, these alternatives would also impact the Centre Airpark, a local airport, to varying degrees. The PA 144 Build Alternative corridors also have higher cost estimates. Overall, when comparing these alternatives against other US 322 Build Alternative corridors, the PA 144 Build Alternative corridors do not provide sufficient benefit to balance the potential impacts. Therefore, PA 144 Build Alternative corridors (PA 144-1, PA 144-2, and PA 144-3) were dismissed from further study.

When balancing the overall traffic, environmental, planning, and engineering data and analyses, the US 322-10EX, US 322-1S, and US 322-5 Build Alternative corridors were recommended for further engineering and environmental study in the NEPA phase of the transportation project development process.

**PEL Alternatives Summary:** Consistent with 23 USC § 168 and 23 CFR § 450.212, 23 CFR § 771.123(c), and FHWA’s Technical Advisory 6640.8a, an alternative screening process was developed to evaluate a range of six transportation alternatives to address the identified purpose and needs. **Figure 2-5** provides an overview of the entire alternative screening process results at each level of analysis. During the Level 1 screening, the No Build, TSM, TCM, and Transit alternatives were dismissed from further study because they would not fully meet all three identified transportation

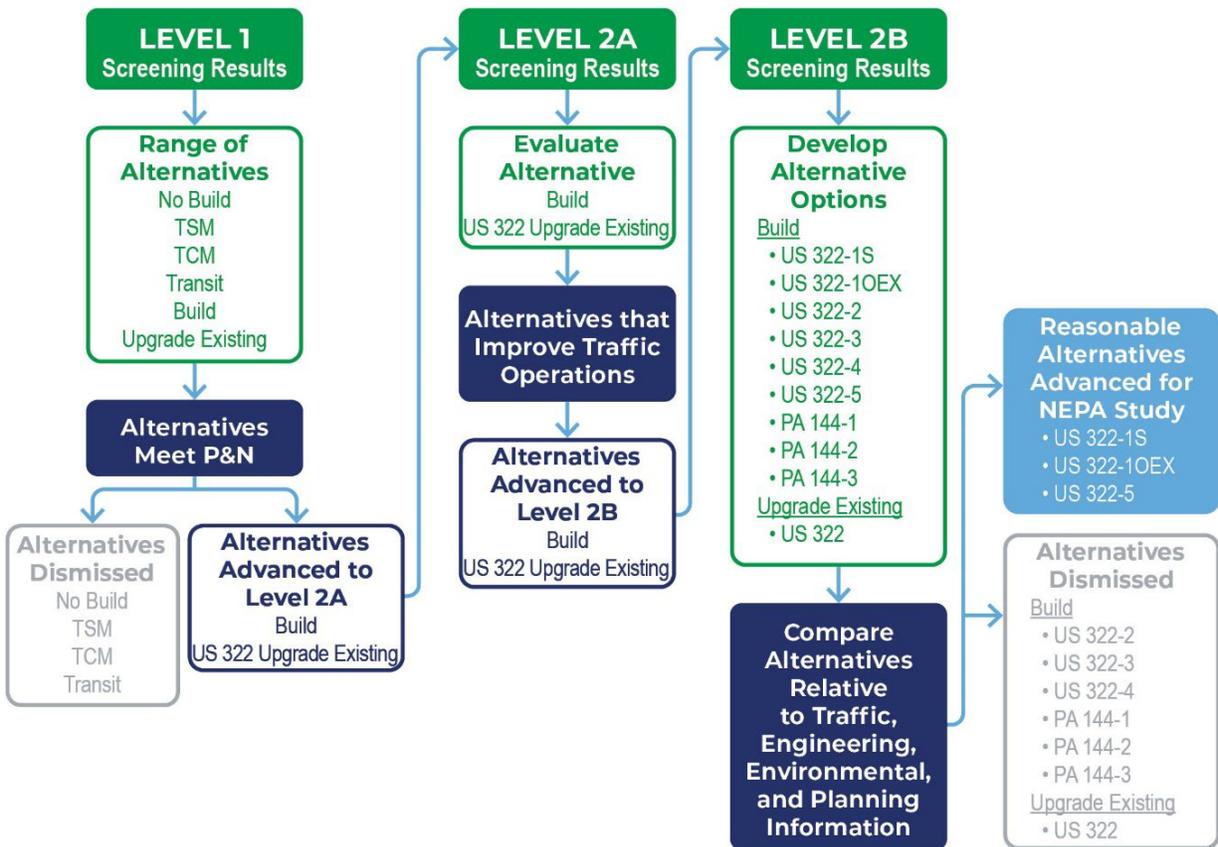


Figure 2-5: PEL Screening Process Results Summary

needs. During Level 2 screening, one Upgrade Existing Alternative and nine Build Alternative corridors were developed. The Upgrade Existing Alternative was dismissed from further study as it would reduce the safety on the roadway network. The nine Build Alternatives were further evaluated. While all the alternative corridors would meet the purpose and needs, six (US 322-2, US 322-3, US 322-4, PA 144-1, PA 144-2, PA 144-3) were dismissed from further study because they had higher environmental impacts and did not provide sufficient benefit to offset those impacts. US 322-1OEX, US 322-1S, and US 322 5 Build Alternative corridors were recommended for further engineering and environmental study in the NEPA phase of the transportation project development process, as they would meet the purpose and needs and provide the best balance from an overall traffic, environmental, planning, and engineering perspectives. The PEL Study results and the recommendation to advance the US 322-1OEX, US 322-1S, and US 322-5 Build Alternative corridors were presented to the resource agencies at the June 28, 2023, Agency Coordination Meeting and received concurrence from the cooperating agencies. In a letter dated September 12, 2024, FHWA found that the "...planning study was undertaken in a manner consistent with 23 USC § 168 and 23 CFR § 450.212."

For more information on the PEL alternative screening and associated results, see the *Alternative Analysis and Screening Report for the State College Area Connector Planning and Environmental Linkages Study* (February 2023) and the *State College Area Connector Planning and Environmental Linkages Study* (June 2023).

### **2.1.3 Alternatives for Advancement into NEPA**

The following provides a high-level overview of the three PEL Build Alternative corridors that have been advanced for further development in the NEPA project development phase. The three advanced alternatives are shown in **Figure 2-6**.

**US 322 - 1OEX Build Alternative Corridor:** US 322-1OEX was based on US 322-1S but adjusted to maximize the use of the existing US 322 right-of-way (**Figure 2-6**). It had logical termini at US 322 (Mount Nittany Expressway) in Boalsburg and US 322 at Potters Mills. US 322-1OEX began at the existing US 322 interchange with PA 45 near Boalsburg and followed the existing US 322 corridor to a point east of the Elks Club Road/Bear Meadows Road intersection. A new roadway section for a Local 322 roadway was provided in this area on the north side of the limited access highway to connect the local road network. Additionally, a proposed pedestrian/bicycle trail would extend through this section of the project to enhance multimodal connectivity to residential and recreational areas. US 322-1OEX then shifted off the existing US 322 to the north until it crossed US 322 near Neff Road in Tusseyville. An interchange with a connector road between PA 45 and US 322 was proposed near Iron Horse Lane. Near Neff Road, US 322-1OEX followed the existing US 322 to the recently constructed US 322 interchange at Potters Mills, including a new section for Local 322 to maintain access for properties adjacent to the new limited access facility. US 322-1OEX would be 8.3 miles long.

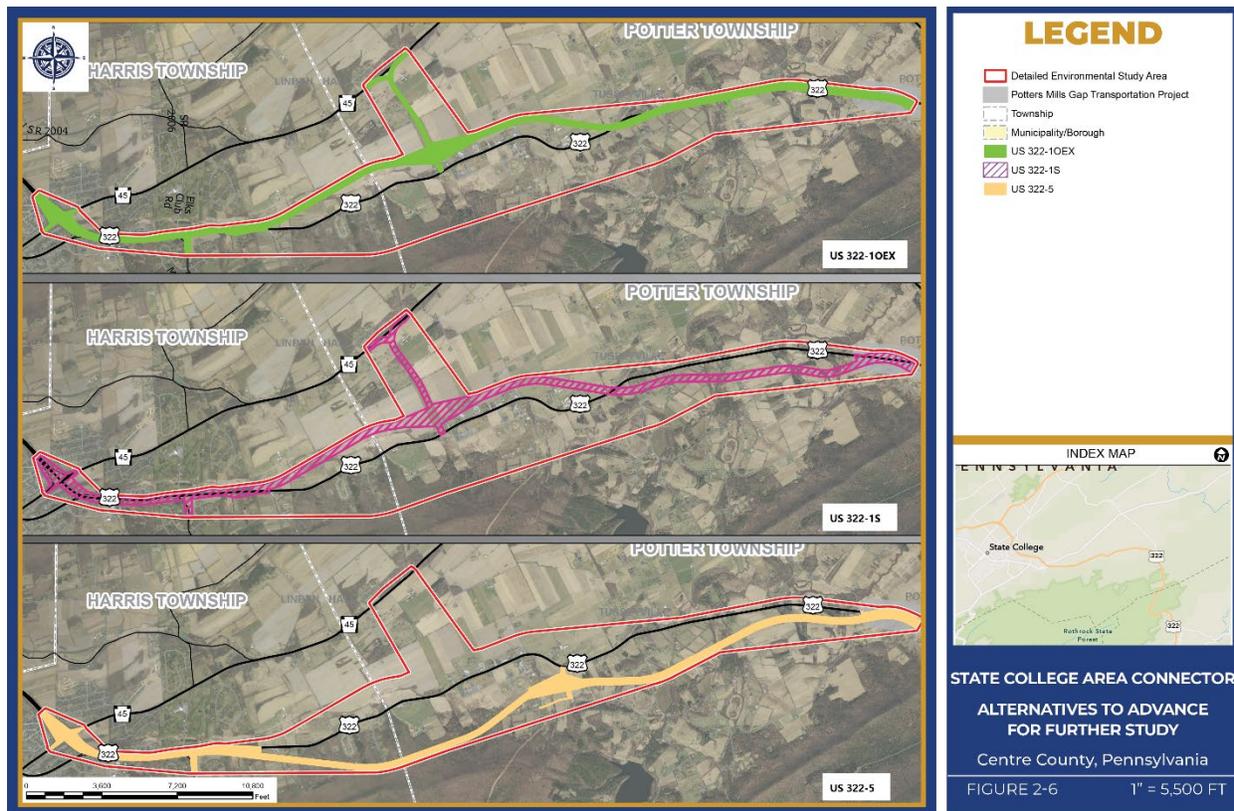


Figure 2-6: Alternatives to Advance for Further Study

**US 322-1S Build Alternative Corridor:** US 322-1S had logical termini at US 322 (Mount Nittany Expressway) in Boalsburg and US 322 at Potters Mills (**Figure 2-6**). US 322-1S began at the existing US 322 interchange with PA 45 near Boalsburg and followed the existing US 322 corridor to a point east of the Elks Club Road/Bear Meadows Road intersection. A new roadway section for a Local 322 roadway was provided in this area on the north side of the limited access highway to enhance connectivity to the local road network. Additionally, a proposed pedestrian/bicycle trail would extend through this section of the project to enhance multimodal connectivity to these residential and recreational areas. US 322-1S then shifted off the existing US 322 corridor to the north until it crossed to the south of US 322 near Neff Road in Tusseyville. An interchange with a connector road between PA 45 and US 322 was proposed near Iron Horse Lane. The alternative would parallel US 322 on the south side before connecting to the recently constructed US 322/PA 144 interchange at Potters Mills. The Build Alternative US 322-1S would span 8.3 miles.

**US 322-5 Build Alternative Corridor:** US 322-5 had logical termini at US 322 (Mount Nittany Expressway) in Boalsburg and US 322 at Potters Mills (**Figure 2-6**). US 322-5 began at the current US 322 interchange with PA 45 near Boalsburg and followed the existing US 322 corridor to a point east of the Elks Club Road/Bear Meadows Road intersection. A new roadway section for a Local 322 roadway on the north side of the limited access highway provided a connection to the local road network. Additionally, a

proposed pedestrian/bicycle trail would extend through this section of the project to enhance multimodal connectivity to these residential and recreational areas. US 322-5 then turned southeast off the existing US 332 corridor near Tait Road and continued east along the lower slope of Tussey Mountain, paralleling the US 322 corridor. An interchange was proposed near Taylor Hill Road connecting to the existing US 322 corridor. The corridor then paralleled US 322 to the south, crossing over Church Hill Road, Dogtown Road, and Red Mill Road, and connected to the recently constructed US 322/PA 144 interchange at Potters Mills. US 322-5 would be 8.4 miles long.

## **2.2 Pre-NEPA Alternative Development**

Prior to the issuance of the NOI, pre-NEPA traffic investigations were conducted and interchange scenarios evaluated. The interchange analysis considered interchange scenarios with the new roadway at PA 45, US 322 at Potters Mills, and a midpoint interchange with a connection between PA 45 and US 322 in Harris and Potter Townships.

### **2.2.1 Build Interchange Scenario Concepts**

During the PEL Study, concerns were expressed regarding the inclusion of the midpoint interchange and associated PA 45 Connector. The key concern was that this connection would increase the ongoing safety issues arising from the altered traffic patterns along PA 45 in Potter Township. To further investigate and determine feasible interchange access modifications, PennDOT conducted a fatal flaw traffic analysis of various interchange scenario concepts. Interchange scenario concepts included interchanges at the western end (Oak Hall Interchange [SR 3010], PA 45, and Business Route 322 [SR 3014]) and the eastern end, as well as an interchange located near the midpoint of each alternative (Midpoint Interchange). Concepts for each of these interchange areas were considered and evaluated. Detailed information regarding the interchange analysis can be found in the *State College Area Connector Project Pre-NEPA Activities (Interchange Access Concepts & Analysis) Technical Memorandum* (July 2025).

**Western Terminus Interchange Access:** Three interchange configurations were initially considered at PA 45 on the western end of the project. These configurations consisted of:

- Completing the existing PA 45 interchange as a full-access interchange by providing a westbound off-ramp and an eastbound on-ramp, and removing the existing Boal Avenue (SR 3014) partial interchange
- Maintaining the existing PA 45 partial interchange, remove the existing Boal Avenue (SR 3014) partial interchange, and utilize the proposed midpoint interchange for full access
- Removing the existing PA 45 and Boal Avenue (SR 3014) partial interchanges and utilize the proposed midpoint interchange for full access

Traffic volume projections were developed for each of the western interchange scenarios using the 2023 traffic counts and the TDM, and a fatal flaw traffic analysis was conducted that evaluated changes in AADT volumes on key area roadways and at

the Oak Hall (SR 3010) and PA 45 interchanges. The analysis showed that the PA 45 full-access interchange scenario would result in minimal changes to traffic volumes/patterns (compared to the No Build conditions), while more substantive changes in traffic patterns and increased traffic volumes on Warner Boulevard would occur with the other two interchange scenarios. The PA 45 full-access interchange scenario was advanced for further evaluation into NEPA.

**Eastern Terminus Interchange Access:** Some modifications at the eastern end of the project would be necessary to tie in the limited-access roadway with the newly constructed US 322 Interchange at Potters Mills and provide the necessary local east-west roadway access in this area. The following three scenarios were considered for the local road connections in the Potters Mills area.

- Reconfiguring of the existing Potters Mills interchange westbound ramps roundabout into a five-leg roundabout
- Replacing of the newly constructed Potters Mills interchange westbound ramps and associated roundabout with a traditional T-intersection
- Maintaining existing Potters Mills interchange and tie new ramps to the existing roundabout with connection to a local 322 roadway from the westbound ramp

Evaluation of these scenarios showed all the concepts were feasible; however, some operational concerns were noted with the traditional T-intersection due to the close spacing between the westbound ramp's intersection and the intersection with the local 322 roadway. In addition, with no noted operational or safety deficiency with the existing configuration, it did not seem economically prudent to modify the recently constructed existing roundabout. Therefore, it was decided to advance the project by keeping the existing interchange configuration and modifying the existing roundabout to provide ramp and local access.

**Midpoint Interchange:** The three PA 45 interchange scenarios mentioned above were evaluated both with and without the midpoint interchange. The fatal flaw analysis indicated that the PA 45 Connector could positively impact traffic operations along a section of PA 45 in Harris Township, but it would not address existing traffic concerns along PA 45 in Potter Township. Additionally, it was determined that the PA 45 Connector would not affect or benefit traffic operations along US 322; therefore, it was determined unnecessary to meet the project's purpose and needs. Additionally, the analysis revealed that a midpoint interchange without a connector road would have a low AADT volume of approximately 2,000 vehicles (all ramps) while increasing environmental impacts (historic resources and productive agricultural lands).

The interchange scenarios and the results of the fatal flaw analysis were presented to Harris and Potter Townships in August 2023. Based on the analysis of the interchange scenarios and coordination with local officials, it was decided to advance the scenario that completes the PA 45 interchange as a full-access interchange and eliminates the existing Boal Avenue ramps to US 322. In January 2024, PennDOT officially removed the PA 45 Connector and midpoint interchange from further consideration in the Project, as they would not directly support the purpose and needs for transportation

improvements along the US 322 corridor. Elected officials were informed, public notification was provided through a press release, and the removal was documented in the NOI to prepare an EIS.

## **2.3 EIS Alternative Development**

The EIS project initiated alternative development based on the recommended PEL Build Alternative corridors, which were refined and presented in the NOI. The following sections outline the evolution of the EIS Alternatives from Initial Build Alternatives, which were presented to the public and agencies in 2024; to Detailed Build Alternatives, which were refined and presented to the public and agencies in early 2025; to EIS Build Alternatives, which were refined and are presented for evaluation in this DEIS.

### **2.3.1 Logical Termini and Independent Utility**

To start the alternative analysis, the logical termini identified were reevaluated to confirm that the current project would:

- Connect logical termini and be of sufficient length to address environmental matters on a broad scope;
- Have independent utility or independent significance, i.e., be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made; and
- Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements (23 CFR § 771.111(f)).

For the Project, the logical terminus in the western portion of the project area is US 322 (Mount Nittany Expressway) and in the eastern portion of the project area the logical terminus is US 322 (Potters Mills Gap). US 322 is a four-lane limited-access highway at both endpoints that provides high capacity and efficient traffic conveyance. The project area between the endpoints offers sufficient length (approximately eight miles) to identify and evaluate environmental impacts fully. Both termini roadways were also found to operate at an acceptable LOS and could accommodate additional future traffic (**Figure 1-5**). The project has independent utility as it will be usable and represents a reasonable expenditure, even if no other transportation improvements are made in the area.

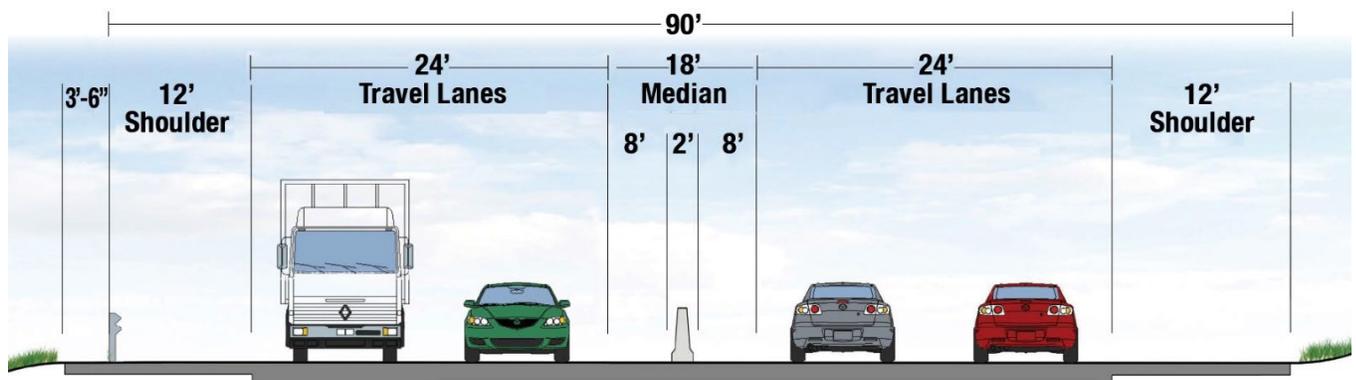
### **2.3.2 EIS Preliminary Alternative Development**

**No Build Alternative:** The No Build Alternative involves taking no action to improve the transportation facilities within the US 322 corridor, except for projects “committed” as a programmed project in the current CCMPO’s LRTP and the TIP. This alternative would maintain the highway in its current configuration and could include routine maintenance and repairs. No additional improvements would take place along US 322 between Boalsburg and Potters Mills. Although the No Build Alternative would not address the project’s purpose and needs, and was therefore dismissed from further consideration, it was retained for comparison purposes.

**Initial Build Alternatives:** Three Initial Build Alternative options were derived from the three recommended PEL Build Alternatives. The US 322-10EX PEL Build Alternative was renamed the North Alternative. The US 322-1S PEL Build Alternative was renamed the Central Alternative, and the US 322-5 PEL Build Alternative was renamed the South Alternative. The Initial Build Alternatives were refined to:

- Confirm they meet current design criteria
- Minimize impacts to field-surveyed environmental resources (e.g., farmland, residential and commercial properties, historic properties, wetlands, and streams)
- Address public and resource agency comments
- Update the vertical alignment and revise cut/fill limits
- Identify initial private property access
- Incorporate bridges to maintain local roadway connections
- Include a shared use path along existing US 322 (Boal Avenue) from Boalsburg to Bear Meadows Road

Typical sections used in the development of the Initial Build Alternative provided two 12-foot-wide travel lanes in each direction, 12-foot-wide outside shoulders, eight-foot-wide median shoulders, and a two-foot median barrier to provide positive separation of opposing directions. Median widths varied based on location. An 18-foot-wide median (with a two-foot median barrier) was used in the highly constrained areas: on the western end of the project from the tie-in with the Mount Nittany Expressway to east of Bear Meadows Road, and on the eastern end of the project from near Dogtown Road to the tie-in to Potters Mills Gap (PMG) Interchange (**Figure 2-7**). A 36-foot median was used in the central part of the project area from east of Bear Meadows Road to near Dogtown Road (**Figure 2-8**).



*Figure 2-7: Build Alternative Typical Section (18-foot median, not to scale)*

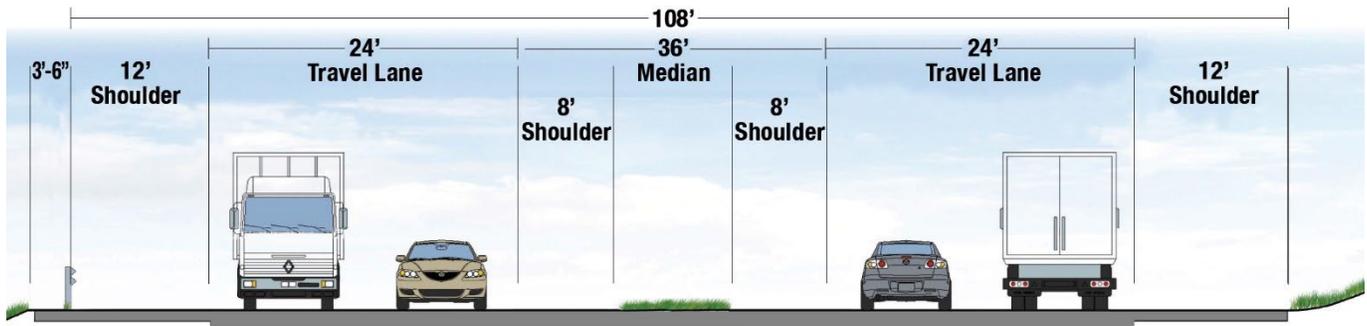


Figure 2-8: Build Alternative Typical Section (36-foot median, not to scale)

### **North Alternative**

The North Alternative had three key alignment modifications from the PEL Build Alternatives that minimized impacts to farm operations and historic resources including:

- A shift through the middle portion of the alignment to stay farther north of existing US 322 to minimize impacts to farm fields before reconnecting with the US 322 corridor closer to Tusseyville.
- A shift of the alternative to the north side of existing US 322 to minimize farmland impacts along the south side of the existing US 322 corridor from east of the Tusseyville area to Potters Mills.
- The removal of the midpoint interchange and the PA 45 Connector road minimizing impacts to productive agricultural land and historic resources.

Comparison between the US 322-10EX PEL Build Alternative and the Initial North Alternative can be found in **Figure 2-9**.

### **Central Alternative**

The Central Alternative had three key alignment modifications from the PEL Alternatives that minimized impacts to farm operations and historic resources including:

- A shift from north of existing US 322 near the Harris/Potter Township line to cross over and run parallel on the south side of US 322 through the Potter Township Athletic Complex before rejoining the original PEL Build Alternative near Tusseyville. This modification was developed to minimize impacts on farming operations and based on coordination with local officials.
- A shift of the alternative to the north side of existing US 322 corridor to minimize farmland impacts along the south side of the existing US 322 corridor from east of the Tusseyville area to Potters Mills.
- The removal of the midpoint interchange and the PA 45 Connector road minimizing impacts to productive agricultural land and historic resources.

Comparisons between the US 322-1S PEL Build Alternative and the Initial Central Alternative can be found in **Figure 2-9**.

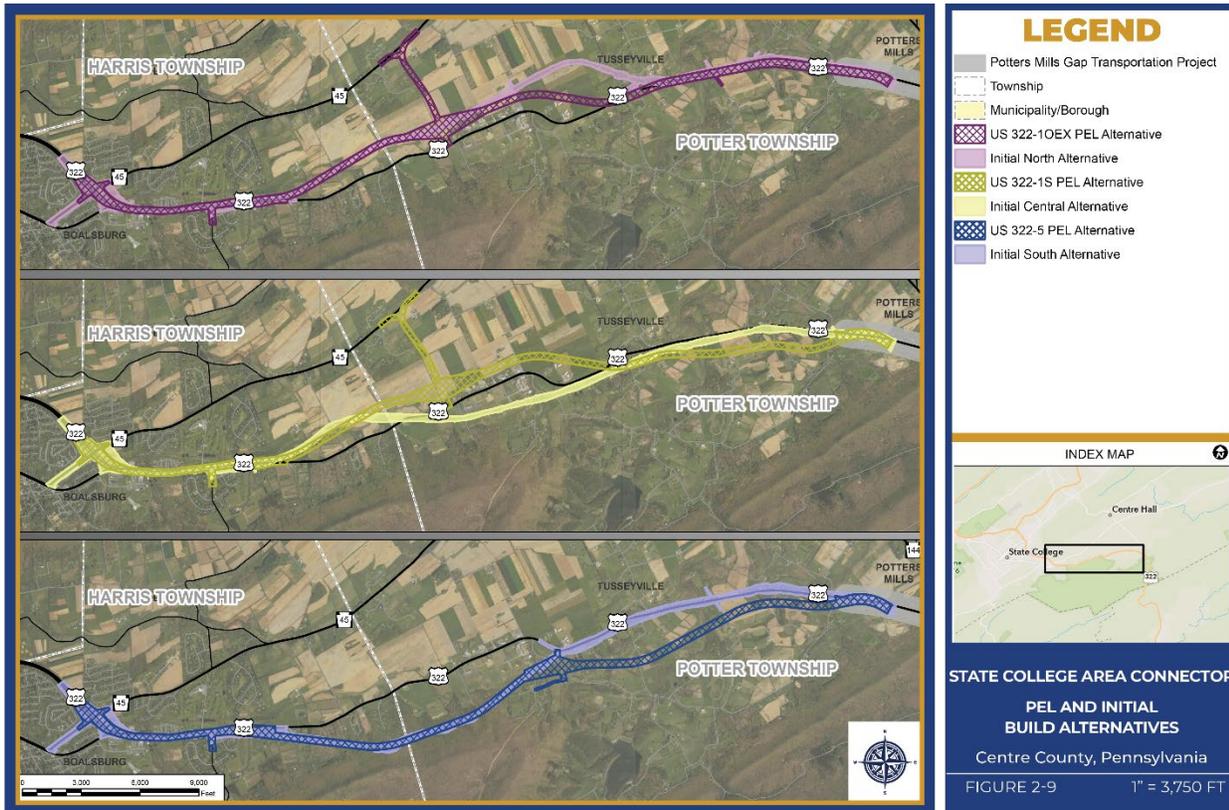


Figure 2-9: PEL and Initial Build Alternatives

### **South Alternative**

The South Alternative had two key alignment modifications from the PEL Build Alternatives that minimized impacts to farm operations and historic resources including:

- Shift in the alternative to the north to better utilize the existing US 322 corridor footprint to minimize farmland and historic resource impacts south of the existing US 322, extending from east of the Tusseyville area to Potters Mills.
- The removal of the midpoint interchange minimizing impacts to productive agricultural land and historic resources.

Comparisons between the US 322-5 PEL Build Alternative and the Initial South Alternative can be found in **Figure 2-9**.

The three Initial Build Alternatives were found to meet the project's purpose and needs. The North, Central, and South Alternatives were presented to local public officials in July 2024, resource agencies in July and October 2024, and the public in August 2024 for review and comment.

**Detailed Build Alternatives:** After the public and agency review of the Initial Build Alternatives, engineers, planners, and environmental scientists collaborated and adjusted the alternative alignments, leading to the development of the Detailed Build

Alternatives for further evaluation. In addition to alternative alignment adjustments, more detailed engineering was developed to:

- Accommodate roadway drainage with the inclusion of stormwater management facilities
- Refine private property access (e.g., driveways)
- Update the vertical alignment and revise cut/fill limits to better balance the earthwork
- Bridge lengths to maintain local roadway and driveway connections, minimize impacts to wetlands and streams, and encourage wildlife crossing
- Provide gated access and median crossovers to accommodate emergency access and highway maintenance needs of the limited-access facility
- Further balance impacts between field-surveyed environmental resources (e.g., farm operations, residential and commercial properties, historic structures, wetlands, and streams)
- Consider constructability and maintenance of traffic during construction

### ***Common Eastern Section Alternative Alignment Shift***

After the August 2024 public meeting, alternative alignment refinements were made based on public comments and field verifications, aiming to avoid and further minimize effects on critical resources. This process ultimately led to a common alignment on the eastern end, from just west of Dogtown Road to the US 322 interchange at Potters Mills. Streamlining the eastern end to a single alignment for all alternatives strikes the best balance of impacts on area resources. These adjustments shifted the mainline alignment southward, closely paralleling the existing US 322 corridor, similar to the Central Alternative alignment. Local access was moved northward to align with the existing US 322 corridor at Red Mill Road and extend to the US 322 westbound ramp at Skyview Drive. By utilizing much of the current US 322 for local access on the eastern end, impacts to wetlands were minimized, as was the need for new structures through the wetland areas along the relocated US 322. New mainline structures were introduced to support side roads and driveway access while minimizing impacts to wetlands. High-level maps illustrating the changes between the Initial and Detailed Build Alternatives are shown in **Figure 2-10**.

### ***North Alternative***

The North Alternative had one key alignment modification from the Initial Build Alternatives, in addition to the eastern alignment shift. In the Tusseyville area, the North Alternative was moved south and west to traverse a different section of a farm operation. This shift was made to minimize the number of residential impacts in the Tusseyville area and to the homes located off Swan Lane, and to minimize the effects on the Tusseyville Historic District. High-level maps illustrating the changes between the Initial and Detailed Build Alternatives are shown in **Figure 2-10**.

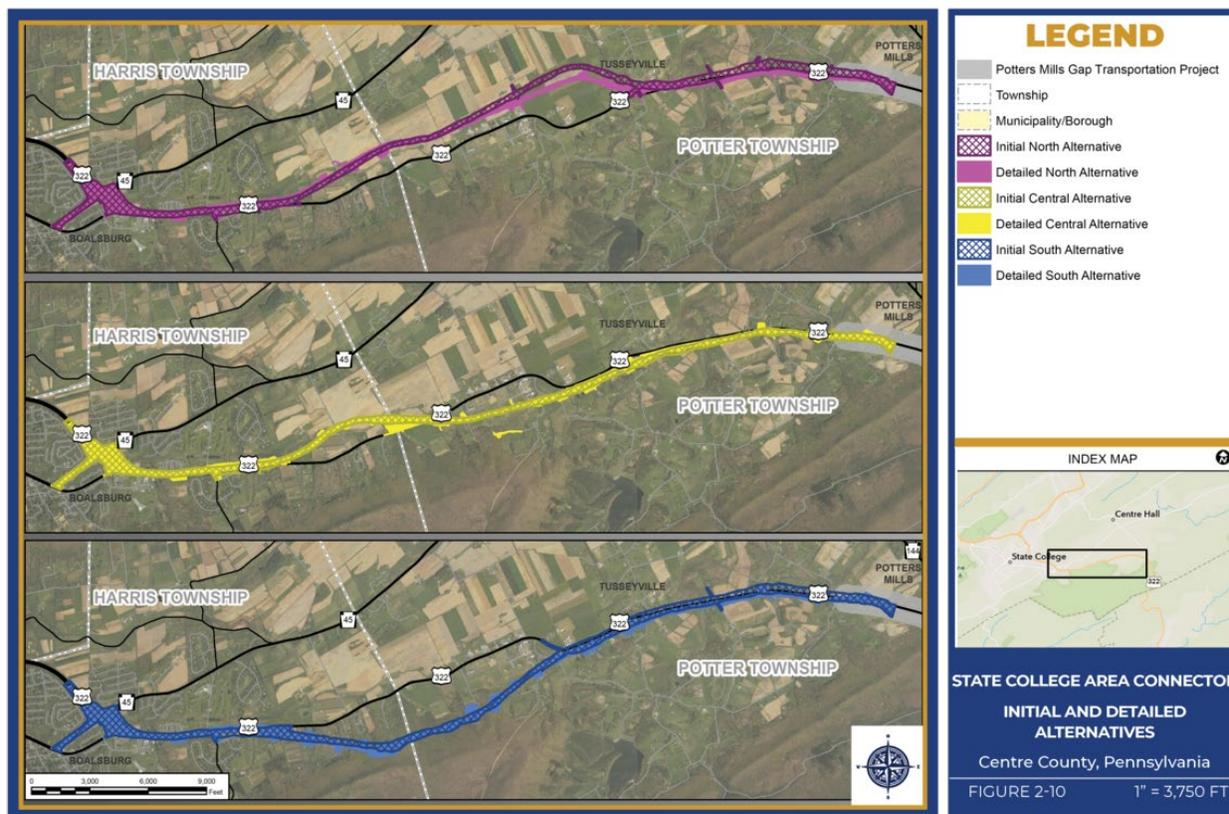


Figure 2-10: Initial and Detailed Alternatives

### Central Alternative

The Central Alternative had one key alignment modification from the Initial Build Alternatives, in addition to the eastern alignment shift. At the Harris/Potter Township line, a permanent realignment of Local 322 was made. The realignment allows the bridge structure over Local 322 to be moved and built offline which improves constructability and better facilitates traffic flow during construction. High-level maps illustrating the changes between the Initial and Detailed Build Alternatives are shown in **Figure 2-10**.

### South Alternative

The South Alternative featured one major alignment modification compared to the Initial Build Alternatives, in addition to the eastern alignment shift. Just west of Tusseyville, the South Alternative was shifted southward to preserve the existing US 322 corridor for local traffic, thereby eliminating impacts on a farm operation that contributes to the Penns Valley/Brush Valley Rural Historic District. High-level maps illustrating the changes between the Initial and Detailed Build Alternatives are shown in **Figure 2-10**.

The three Detailed Build Alternatives were found to meet the project's purpose and needs. PennDOT recommended the Central Alternative as its preferred alternative based on the balancing of the natural, cultural, and socioeconomic impacts. The North, Central, and South Alternatives and associated impacts were presented to resource

agencies in April 2025 and to the local public officials and the public in May 2025 for review and comment.

**EIS Build Alternatives:** Following the May 2025 public presentation of the Detailed Build Alternatives and further environmental analysis and coordination, the Central Alternative was shifted to minimize impacts to the Potter Township Athletic Complex by avoiding impacts to the ball fields, a Section 4(f) property, and minimizing impacts on a farm operation. A minor adjustment was also made to the North Alternative at Wagner Road to adjust a stormwater management facility to avoid impacting a historic property that contributes to the Penn Valley/Brush Valley Rural Historic District, a Section 4(f) resource. No changes were made to the South Alternative following the May 2025 presentation to the public.

The North, Central, and South Alternatives are fully evaluated in this EIS. **Figure 2-11** outlines the changes in the alternatives. More information on the environmental analysis is located in **Chapter 3**, and a summary table of impacts can be found in **Chapter 5 – Table 5-1**.

### EIS Build Alternative Traffic and Safety Analyses:

#### *Projected Traffic Volumes*

The four-lane limited access US 322 roadway, between the PA 45 interchange and the US 322 interchange at Potters Mills, will remain the same for the North, Central, and

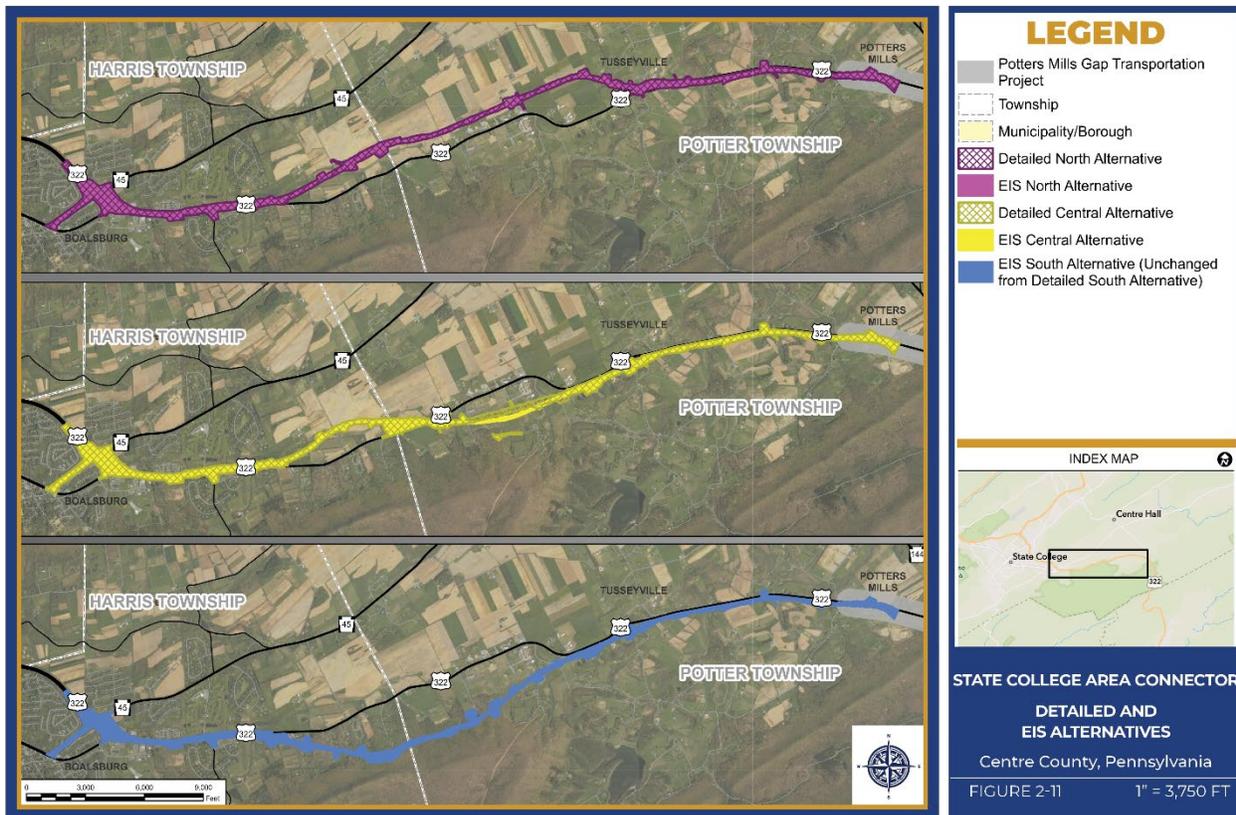


Figure 2-11: Detailed and EIS Alternatives



South Alternatives. Although the areas of reconstruction and relocation of the existing two-lane US 322 roadway differ among the alternatives, there are no significant changes in traffic access and circulation within the project area. As a result, a representative Build Alternative was utilized for the traffic analysis.

AADT volumes were established for the area roadways and intersections. **Table 2-3** presents the Year 2050 No Build and Build AADT volumes.

*Table 2-3: Traffic Volume Projections for Design Year (2050) No Build and Build Scenario*

| Roadway   | Segment                  |                                  | AADT Volume (% trucks)        |                         |
|-----------|--------------------------|----------------------------------|-------------------------------|-------------------------|
|           | From                     | To                               | Year 2050 No Build            | Year 2050 Build         |
| US 322    | SR 3010 (Oak Hall) I/C*  | PA 45 I/C                        | <b>22,700</b> (20%)           | <b>26,200</b> (20%)     |
|           | PA 45 I/C                | PMG I/C                          | <b>13,650-18,350</b> (23-29%) | <b>26,400</b> (24%)     |
|           | Potters Mills I/C        | Sand Mt. Rd. I/C                 | <b>23,900</b> (22%)           | <b>23,900</b> (22%)     |
| PA 45     | Warner Blvd/Boalsburg Rd | Bus Rte* 322                     | <b>13,350</b> (3%)            | <b>13,500</b> (3%)      |
|           | Bus Rte 322              | US 322 I/C Ramps<br>Local 322    | <b>8,400</b> (4%)             | <b>11,200</b> (3%)      |
|           | US 322 I/C Ramps         | Connector Rd                     | <b>10,450</b> (5%)            | <b>12,400</b> (5%)      |
|           | Local 322 Connector Rd   | Indian Hill Rd                   | <b>10,450</b> (5%)            | <b>9,800</b> (5%)       |
| Boal Ave. | PA 45                    | US 322/Local 322                 | <b>7,850</b> (4%)             | <b>3,400</b> (5%)       |
| Local 322 | PA 45                    | Elks Club Rd                     | <b>18,350</b> (23%)           | <b>3,400</b> (5%)       |
|           | Elks Club Rd             | Wagner Rd/<br>Taylor Hill Rd     | <b>17,400</b> (24%)           | <b>2,000-2,400</b> (5%) |
|           | Wagner Rd/Taylor Hill Rd | Mountain Back Rd/<br>Red Mill Rd | <b>17,400</b> (24%)           | <b>1,000</b> (5%)       |

\*I/C = Interchange, Rte = Route, Local 322 is the existing US 322 roadway corridor

**Design Year (2050) Operational Analyses** – LOS capacity analyses were conducted for the intersections and roadways for the Year 2050 Build traffic volumes. The results show that all roadway segments (**Table 2-4**), the new limited access roadway (**Figure 2-12**), and project area intersections (**Table 2-5**) operate at acceptable LOS for the Build scenario in the Design Year.

### **HSM Analyses**

An HSM analysis was performed for each EIS Build Alternative using PennDOT’s HSM Safety Analysis Tool. The objective of this analysis was to evaluate if there would be differences in safety among the Build Alternatives (e.g., would one Build Alternative be safer than another?), as well as to evaluate safety impacts on the existing or Local 322 roadway. As shown in **Table 2-6**, the Year 2050 HSM analysis indicated that:

- There are no anticipated differences in safety among the three Build Alternatives (i.e., predicted crash frequency of each Build Alternative is the same).
- All the Build Alternatives would improve safety on the existing or Local 322 roadway, indicated by substantial predicted crash frequency decreases of 70% in all types of crashes and 80% in fatal and injury crashes.



Table 2-4: Roadway/Ramp Segment LOS for Design Year 2050 No Build and Build Scenarios

| Roadway/<br>Ramp                              | From         | Segment<br>To    | Facility Type | Design Year (2050)<br>No Build |         | Design Year (2050)<br>Build |         |
|---|--------------|------------------|---------------|--------------------------------|---------|-----------------------------|---------|
|   |              |                  |               | Morning                        | Evening | Morning                     | Evening |
| <b>TWO-LANE HIGHWAY</b>                       |              |                  |               |                                |         |                             |         |
| US 322  | Boal Ave     | Elks Club Rd     | 2-Lane Urban  | D                              | E*      | C                           | C       |
|   | Elks Club Rd | Neff Rd          | 2-Lane Rural  | D*                             | D*      | B                           | B       |
|   | Neff Rd      | Mountain Back Rd | 2-Lane Rural  | D*                             | D*      | A                           | A       |
| <b>PROPOSED US 322 LIMITED ACCESS ROADWAY</b> |              |                  |               |                                |         |                             |         |
| US 322<br>Mainline                            | SR 3010 I/C  | PA 45 I/C        | Basic Freeway | B                              | B       | B                           | A       |
|   | PA 45 I/C    | PMG I/C          | Basic Freeway | -                              | -       | B                           | B       |
|   | PMG I/C      | Sand Mtn Rd I/C  | Basic Freeway | A                              | A       | B                           | B       |
| PA 45 I/C<br>Ramps                            | EB Off Ramp  |                  | Ramp Diverge  | A                              | B       | A                           | B       |
|   | EB On Ramp   |                  | Ramp Merge    | -                              | -       | A                           | B       |
|   | WB On Ramp   |                  | Ramp Merge    | A                              | A       | A                           | A       |
|   | WB Off Ramp  |                  | Ramp Diverge  | -                              | -       | A                           | A       |
| PMG I/C<br>Ramps                              | EB Off Ramp  |                  | Ramp Diverge  | A                              | B       | A                           | B       |
|   | EB On Ramp   |                  | Ramp Merge    | A                              | A       | A                           | B       |
|   | WB On Ramp   |                  | Ramp Merge    | B                              | A       | B                           | B       |
|   | WB Off Ramp  |                  | Ramp Diverge  | A                              | A       | A                           | A       |

\* - Unacceptable LOS

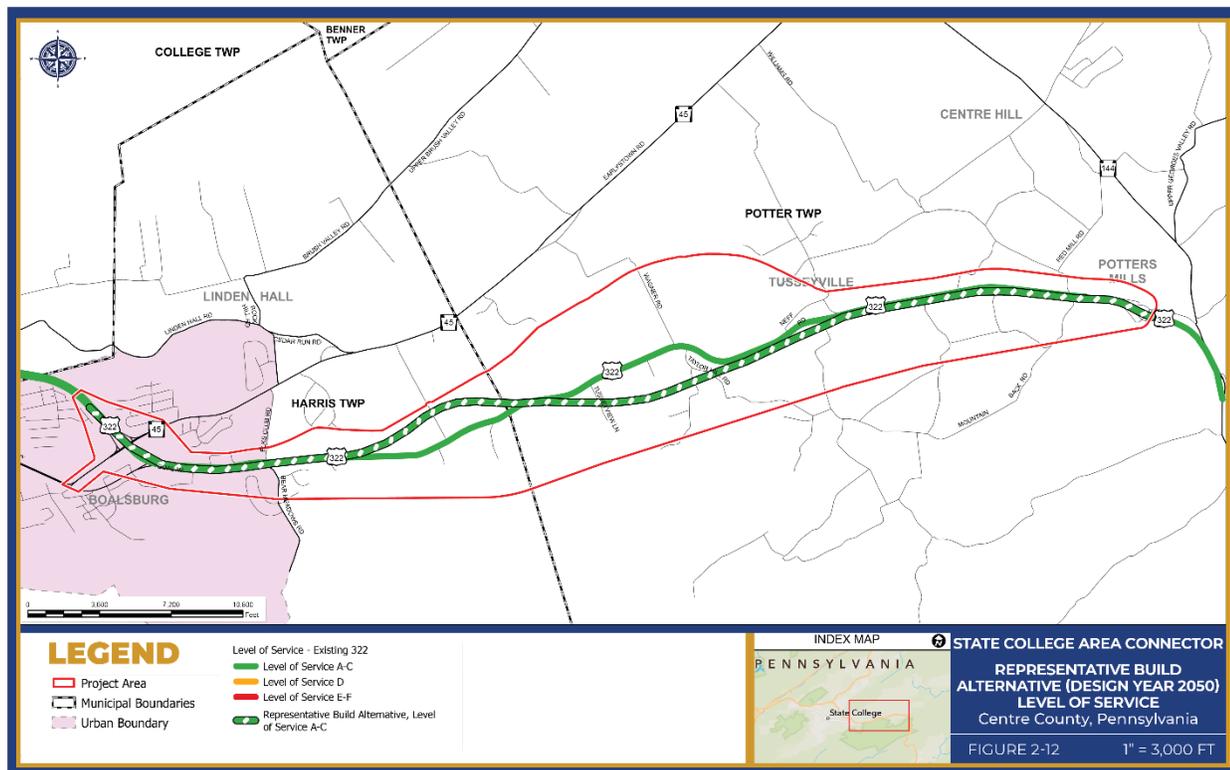


Figure 2-12: Representative Build Alternative (Design Year 2050) Level of Service



Table 2-5: Intersection LOS for Design Year 2050 No Build and Build Scenarios

| Intersection                            | Design Year (2050)<br>No Build                       |           | Design Year (2050)<br>Build |         |
|---|--|-----------|-----------------------------|---------|
|   | Morning  | Evening   | Morning                     | Evening |
|   | Bus Rt 322 (Boal Ave) & PA 45 (Earlstown Rd)-Main St | A         | A                           | A       |
| Bus Rt 322 (Boal Ave) & Discovery Dr    | A  | A         | A                           | A       |
| PA 45 & US 322 EB Ramp                  | A  | C         | B                           | B       |
| PA 45 & US 322 WB Ramp                  | a  | a         | B                           | B       |
| PA 45 & Local 322 Connector Rd          | -  | -         | b                           | a       |
| Old Rt 322 Connector Rd & Boal Ave      | -  | -         | b                           | a       |
| US 322 & Elks Club Road-Bear Meadows Rd | <b>f*</b>  | <b>f*</b> | a                           | b       |
| US 322 & Wagner Rd                      | <b>d*</b>  | <b>f*</b> | a                           | a       |
| US 322 & Taylor Hill Rd                 | <b>e*</b>  | <b>f*</b> | a                           | a       |
| US 322 & Neff Rd                        | c  | c         | a                           | a       |
| US 322 & Church Hill Rd                 | <b>d*</b>  | <b>e*</b> | a                           | a       |
| US 322 & Dogtown Rd                     | c  | c         | a                           | a       |
| US 322 & Red Mill Rd-Mountain Back Rd   | <b>d*</b>  | <b>f*</b> | a                           | a       |
| Local 322 & US 322 EB Ramps             | b  | b         | a                           | b       |
| Local 322 & US 322 WB Off-ramp          | a  | a         | a                           | a       |
| Local 322 & PA 144                      | a  | b         | b                           | b       |
| Local 322 & US 322 WB On-ramp (PMG)     | -  | -         | a                           | a       |

A – Signalized Intersection LOS, a – Unsignalized LOS, \* – Unacceptable LOS

Table 2-6: DEIS Alternatives and No Build Alternative HSM Analysis Results

| Roadway Facility  | Predicted Number of Crashes<br>(Design Year 2050) |                   |                     |                   |
|---|---|-------------------|---------------------|-------------------|
|   | No Build Alternative                              | North Alternative | Central Alternative | South Alternative |
| <b>Predicted Crash Frequency (All crashes)</b>                |   |                   |                     |                   |
| Local 322*  | 38  | 11                | 11                  | 11                |
| New US 322  | -   | 30                | 30                  | 30                |
| <b>Predicted Crash Frequency (Fatal &amp; Injury crashes)</b> |   |                   |                     |                   |
| Local 322*  | 30  | 6                 | 6                   | 6                 |
| New US 322  | -   | 13                | 13                  | 13                |

\* Includes Local 322, new local connection, and Boal Avenue



## 2.4 Alternatives Advanced in the DEIS

The North, Central, and South Alternatives, as developed above, were advanced for detailed investigation in this DEIS as part of the NEPA process. The following provides a description of each alternative that is evaluated in this DEIS. The **Plates** section of this DEIS illustrates the engineering components in relation to the environmental features.

**North Alternative:** The western end alignment would be the same for all three alternatives, from PA 45 (Earlstown Road) interchange to just east of the Mountain View Country Club. At the western end, the existing US 322 would remain in its current location, and the new US 322 four-lane highway would be located on the south side of the existing US 322. Utilizing the existing US 322 corridor and associated right-of-way through the western end of the project area minimizes impacts to the heavily developed residential and recreational areas of Harris Township. Additionally, a proposed pedestrian/bicycle trail would extend through this section of the project to enhance multimodal connectivity to these residential and recreational areas. Just east of Elks Club Road, the three Build Alternatives diverge from one another, and the North Alternative turns north of US 322, extending through a portion of Nittany Farms and around the Kuhns Tree Farm and through the Huber Farm. The shift north avoids the base of operations for Kuhns and Tait Farms, minimizes impacts to the Huber operation, and avoids the Potter Township commercial district along US 322. The alignment then shifts southward, minimizing impacts to the Tusseyville community/historic district and Kerr farm operation to return to the existing US 322 corridor. Just east of Tusseyville, the three Build Alternative alignments converge and follow the same alignment to Potters Mills. Through this area, the alternatives generally maintain existing US 322 as a local access road, and provide the new four-lane highway on the south side of the existing US 322. Utilizing the existing US 322 corridor and associated right-of-way through the eastern end of the project area minimizes impacts to area farmlands and extensive wetlands and floodplain complexes. The North Alternative was developed to specifically minimize impacts on natural resources, such as wetlands, Spring Creek headwaters and tributaries, forested areas, important bird areas, and potential acid-bearing rock geologic formations.

**Central Alternative:** The Central Alternative follows the same alignment as the North Alternative from PA 45 (Earlstown Road) interchange to just east of Elks Club Road, where the three Build Alternatives diverge from one another. At this point, the Central Alternative turns northward, similar to the North Alternative, through the Nittany Farms and around the Kuhns Tree Farm, and cuts southward towards the US 322 corridor through the Huber Farm. It then crosses over the existing US 322 corridor and extends south through an undeveloped portion of the Potter Township Athletic Complex, and avoids the Potter Township commercial district. From there, the alignment crosses Sleepy Creek (a stream that drains to Tussey Sink) and turns north towards the existing US 322 corridor, avoiding the Tusseyville community/historic district, where it joins the North Alternative on the existing US 322 corridor alignment to Potters Mills.



The Central Alternative was developed to minimize and balance impacts on natural resources to the extent possible for wetlands and the Spring Creek headwaters, forested areas, and important bird areas, in addition to historic resources, farmlands, and potential acid-bearing rock geologic formations.

**South Alternative:** The South Alternative follows the same alignment as the North and Central Alternatives from the PA 45 (Earlstown Road) interchange to just east of the Mountain View Country Club. At this point, the South Alternative would extend southward through the Tait Farm and along the base of Tussey Mountain behind the neighborhoods and communities along the existing US 322 corridor. It would then cross over Sleepy Creek (stream that drains to Tussey Sink) and turn north towards the existing US 322 corridor, avoiding the Tusseyville community/historic district, where it would join the North and Central Alternatives on the existing US 322 corridor alignment to Potters Mills. South Alternative was developed to minimize impacts specifically to farmlands and historic resources.

More details on the alternatives' resource-specific impacts and proposed mitigation are in **Chapter 3**. The **Plates** show the alternatives relative to area environmental resources: North Alternative - **Plates A1-A18** and **Plates D1-D18**; Central Alternative - **Plates B1-B18** and **Plates E1-E18**; and South Alternative - **Plates C1-C18** and **Plates F1-F18**. The alternative comparison and rationale for advancing or dismissing alternatives are in **Chapter 5**, with a summary table of impacts in **Chapter 5 – Table 5-1**.

### 3 Environmental Resources, Impacts, and Mitigation

This chapter outlines the potential direct and indirect impacts (reasonably foreseeable effects) of the No Build Alternative and the Build Alternatives (North, Central, and South Alternatives) on the socioeconomic, cultural, and natural environments, in accordance with NEPA, FHWA implementing regulations (23 CFR § 771), Section 139 (23 USC 139), and the Fiscal Responsibility Act of 2023 (Pub. L. No. 118-5, 137 Stat 10). Technical memoranda and reports related to the here have been prepared and can be found in **Appendix L**.

Desktop analysis and field reconnaissance confirmed that the following environmental features are not present within the project area and are not addressed in this chapter:

- Wild and Scenic Rivers
- Coastal Zones
- National Natural Landmarks
- Wildlife Sanctuaries
- Wilderness, Natural, and Wild Areas
- Section 6(f) Resources
- National Historic Landmarks
- Unique Geologic Features
- Stafford Act Properties

Small maps are included in this chapter depicting area environmental resources. Larger size versions of the maps can be found in the **Figures** section of this DEIS. Additionally, the **Plates** section of this DEIS contains the key environmental features with

More project information on environmental resources can be found in the following documents located in **Appendix L**:

- *Air Quality Analysis Technical Memorandum* (August 2025)
- *Botanical Survey Report* (September 2025)
- *Addendum – Botanical Survey Report* (January 2026)
- *Community Impact Assessment Technical Memorandum* (January 2026)
- *Determination of Effects Report* (April 2025)
- *Determination of Effects Report Addendum I* (May 2025)
- *Determination of Effects Report Addendum II* (July 2025)
- *Environmental Resources Impact Summary Technical Memorandum* (November 2025)
- *Farmland Technical Memorandum* (January 2026)
- *Floodplain Technical Memorandum* (November 2025)
- *Geotechnical Reconnaissance Summary* (August 2025)
- *Hazardous and Residual Waste Technical Memorandum* (August 2025)
- *Draft Individual Section 4(f) Evaluation* (February 2026)
- *Preliminary Design Noise Report* (September 2025)
- *Terrestrial Technical Memorandum* (August 2025)
- *Threatened and Endangered Species Technical Memorandum* (August 2025)
- *Wetland and Watercourse Identification and Delineation Report* (April 2025)
- *Wetland and Watercourse Impacts Technical Memorandum* (January 2026)



the engineering design for the Build Alternatives (North, Central, and South Alternatives). The Agricultural and Natural Resources can be found for the North Alternative on **Plates A1-A18**, Central Alternative on **Plates B1-B18**, and South Alternative on **Plates C1-C18**. The Above Ground Historic and Socioeconomic Resources can be found for the North Alternative on **Plates D1-D18**, Central Alternative on **Plates E1-E18**, and South Alternative on **Plates F1-F18**. Resource information can also be viewed on the WebMAP on the project’s website (<https://www.PennDOT.pa.gov/SCAC>).

### 3.1 Land Use, Zoning, Planning, & Development

#### 3.1.1 Methodology

Data was gathered from secondary sources such as the Centre County Planning and Community Development Office (CCPCDO) and Pennsylvania Spatial Data Access (PASDA). Additionally, field reconnaissance and public outreach were conducted to verify information from these sources. A review of county and municipal websites, along with various community planning documents, was also conducted.

#### 3.1.2 Existing Conditions

Centre County is divided into seven planning regions. The project area lies within the Penns Valley and the Centre regions. The Penns Valley Region includes Potter Township, and the Centre Region includes Harris Township. Existing land use in the project area consists of a mix of agricultural, forest, residential, vacant or unused land, transportation, commercial, recreational, and other land use, as summarized in **Table 3-1** and shown in **Figure 3-1**.

*Table 3-1: Existing Land Use*

| Land Use  | Percent of Project Area |
|---|-------------------------|
| Agriculture   | 54%                     |
| Forest  | 17%                     |
| Residential   | 12%                     |
| Vacant and Unused Land  | 7%                      |
| Transportation  | 5%                      |
| Commercial  | 2%                      |
| Recreation  | 2%                      |
| Other: Communications/Industrial/Mixed Use/Public or Semi-Public/Utility/Water/Vacant Structure | 1%                      |

Potter and Harris Townships have adopted zoning ordinances. Current zoning in the project area includes Agricultural, Commercial, Open Space, Forest, Industrial, General Residential, Rural Commercial, Rural Residential, and Village as summarized in **Table 3-2** and shown in **Figure 3-2**.

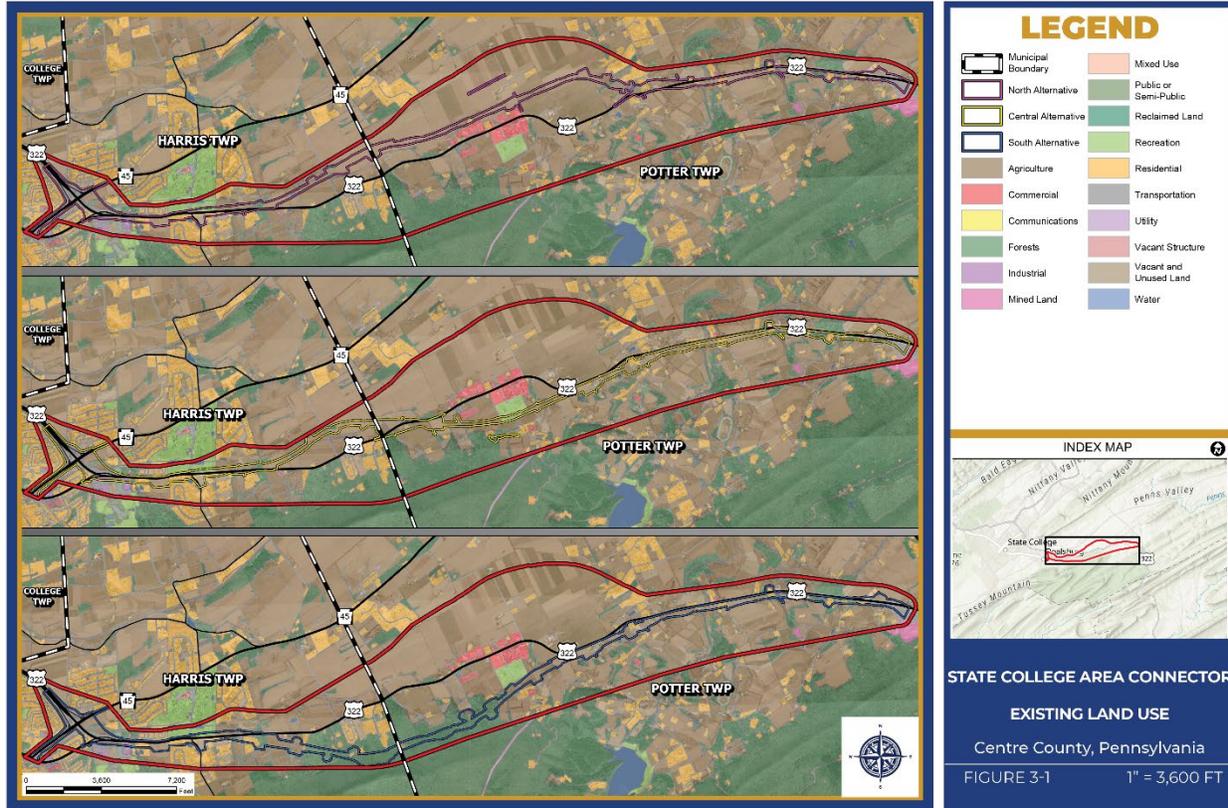


Figure 3-1: Existing Land Use

Table 3-2: Zoning

| Zoning                                  | Percent of Project Area |
|---|-------------------------|
| Prime Agricultural District             | 41%                     |
| Rural Residential                       | 22%                     |
| Agricultural                            | 14%                     |
| Commercial – Industrial, Planned, Rural | 6%                      |
| Residential                             | 6%                      |
| Agricultural Residential                | 5%                      |
| Natural Areas                           | 2%                      |
| Open Space/Forest                       | 2%                      |
| Commercial, General                     | <1%                     |
| Commercial, Village                     | <1%                     |
| General Industrial                      | <1%                     |
| Village                                 | <1%                     |

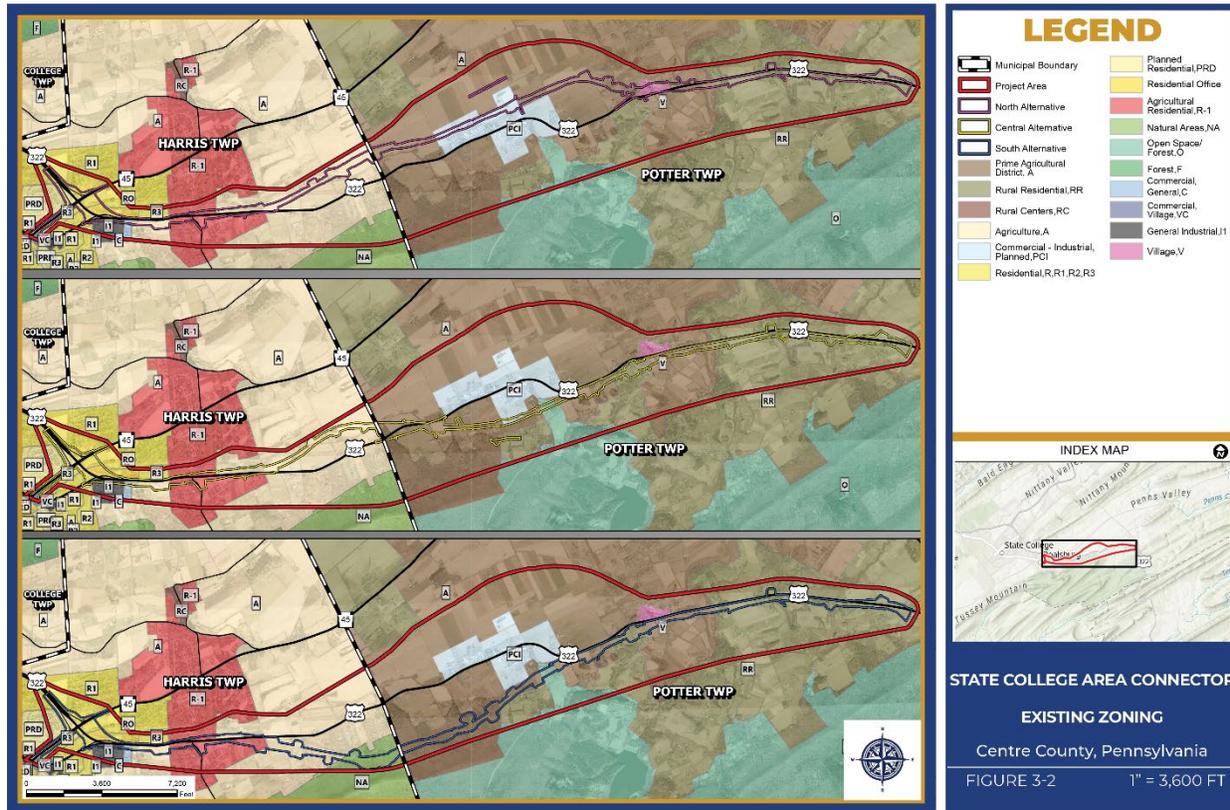


Figure 3-2: Existing Zoning

Most of Potter Township is zoned as Agricultural. The second largest zoning type in the township is Open Space/Forest and includes First Mountain and Tussey Mountain to the south of the project area. Large parts of the township are zoned Rural Residential. A small area along US 322 between Tussey View Lane and Taylor Hill Road has been designated as Planned Commercial-Industrial. In addition, Tusseyville (along US 322 in the center of the township) is designated as Village. The goals and intent of the Potter Township zoning ordinance are to support the community development objectives of the Penns Valley Region, including preserving the rural nature of the region and limiting growth that may result from improvements to the US 322 corridor. Potter Township does not currently have any proposed zoning changes or updates.

Harris Township zoning in the project area is mainly designated as Agricultural, Agricultural Residential, Natural Areas, Residential, and Industrial/Commercial. The Natural Areas zoning district lies south of the project area, covering Tussey Mountain. The Agricultural zoning districts consist of lands within the valley along US 322. The Boalsburg area is designated as Residential, with a small area along US 322 designated as Industrial/Commercial. In March 2022, Harris Township approved a rural rezoning plan that divided the rural parts of the township into four zoning districts: Natural Areas, Agricultural Areas, Agricultural Residential Areas, and Rural Centers. The Natural Areas district covers primarily steep slopes and other environmental constraints along the southern forested ridge of the township. These areas have very low development



densities, and zoning aims to preserve their natural character. The Agricultural Areas district mainly includes existing agricultural properties and parcels large enough for agricultural uses, mostly outside the Centre Region's designated Regional Growth Boundary (RGB). The Agricultural Residential district features a mix of smaller agricultural lots and residential properties under ten acres. In areas currently developed as large-lot residential zones, future residential development would be allowed at similar densities.

Future land use and development in the project area, as shown in the Centre Region and Penns Valley regional comprehensive plans, are affected by the proximity to the State College area and Pennsylvania State University, investments in agricultural preservation, the Centre Region RGB, and sewer service areas. The job and educational opportunities provided by Pennsylvania State University, along with the relatively high quality of living, make the County (and the project area) appealing for planned development. The population, employment, and households are expected to increase in the project area (See **Section 3.2** for more information).

Centre County maintains an active preservation program for protecting farmland from development. This effort includes Agricultural Security Areas (ASA), established by local municipalities to provide benefits to farmers that ensure the viability of their operations, but it also includes Agricultural Conservation Easements (ACEs) that preserve the land for farming uses in perpetuity. In Centre County, there are three entities that purchase ACEs (development rights): Centre County Farmland Trust (private, non-profit), Centre County Agricultural Land Preservation Board (public), and Clearwater Conservancy (private, non-profit).

The Centre Region created the RGB to guide the approval process for public sewer service extensions and influence where development occurs. The adopted RGB extends into the western part of the project area, including residential subdivisions along US 322 in Harris Township, such as Huntridge Manor subdivision and Laurel Hills. Only about 18% of the project area is within the RGB, and public sewer service is limited.

The Penns Valley Region's "community vision" is to preserve the region's natural and cultural resources. The Penns Valley Comprehensive Plan sets community planning goals to guide development and help the region maintain its rural character. It includes a strategy for a new road that will allow vehicles to enter and move through the region quickly and efficiently, with controlled access points. The plan also aims to support growth and development in a compact, dispersed manner that reflects the region's historical development patterns. Currently, one new subdivision is proposed in Potter Township within the project area. The plan features seven large single-family residential lots on Taylor Hill Road, where the current land use is agricultural.

The Centre County Planning Office set goals to protect agricultural, natural, historic, and cultural resources. These goals include providing safe, sanitary, and affordable housing in environmentally suitable areas, as well as identifying and encouraging economic development efforts to maintain and expand a diverse economic base.



The Centre County LRTP outlines eight goals to improve the management and operation of the transportation system. These goals focus on enhancing safety, security, integration, connectivity, and expanding accessibility and mobility options for people and freight, preserving the existing transportation system to support planned growth and development areas, protecting the environment and maintaining air quality, and promoting economic vitality.

### **3.1.3 Impacts**

**No Build Alternative:** The No Build Alternative would not cause any land use impacts or require property acquisition. However, it would be inconsistent with Centre County's LRTP, which includes goals for enhancing transportation safety, improving connectivity, and complementing growth. It would also be inconsistent with the Penns Valley Region's "community vision" to maintain the character of the valley by conveying vehicles into and through the region quickly and efficiently with strictly controlled points of local access.

**All Build Alternatives:** The three Build Alternatives would avoid the Potter Township Planned Commercial-Industrial area as well as Harris Township's Industrial/Commercial area, which allows planned economic growth to continue in the designated zoned areas. Any alternative selected would convert land currently designated for residential and agricultural land use to transportation purposes.

All the Build Alternatives are limited-access roadways with no new interchanges in the corridor, which is consistent with local planning initiatives to maintain a rural agricultural valley. Future development within the project area will be controlled by local zoning and land use planning. It is not anticipated that any Build Alternative would create substantial added development pressure on rural areas, nor encourage land uses that are not consistent with area plans. Development in Harris Township is limited by the established RGB and limited in Potter Township by the lack of public water and sewer.

### **3.1.4 Mitigation**

The current LOD for each alternative includes a buffer and a worst-case scenario for stormwater management control features. As the project progresses into final design, it is anticipated that the LOD will be refined by adjusting cut and fill limits and refining stormwater control to aid in minimizing impacts to area land use and zoning.

## **3.2 Population and Demographics**

### **3.2.1 Methodology**

Population and demographic data for the project area were gathered from the US Census Bureau's 2023 American Community Survey (ACS) Five-year Estimates, the CCPCDO 2023 Census Profile, and the Rural Pennsylvania Population Projections 2020-2050.



### 3.2.2 Existing Conditions

Analysis of US Census Data shows that the population in Centre County has been steadily growing over the past 30 years (**Table 3-3**). According to the Center for Rural Pennsylvania Population Projections 2020-2050, the population in Centre County is expected to reach 177,459 by 2050, which is an 11% increase from 2020. From 1990 to 2020, the population in Centre County increased by 26%. This is greater than the population growth rate that the state of Pennsylvania experienced (9%) but less than the US population growth of 33%. Given that the expected population growth between 2020 and 2050 is only 11%, the population growth in Centre County is anticipated to slow down over the next 25 years. Approximately 54% of the population in Centre County is part of the labor force, while 46% are not. In 2024, 2.4% of Centre County's labor force was unemployed.

Table 3-3: Census Data

| Data Category   |  | Centre County | Pennsylvania  | USA         |
|---|--|---------------|---------------|-------------|
| Population  | 1990                                     | 125,155       | 11,881,643    | 248,709,873 |
|   | 2000                                     | 135,830       | 12,281,054    | 281,421,906 |
|   | 2010                                     | 153,990       | 12,709,630    | 309,349,689 |
|   | 2020                                     | 158,172       | 13,002,700    | 331,449,281 |
| Race <sup>1</sup>                                       | White Alone                              | 87.6%         | 79.6%         | 72.0%       |
|   | Black or African American                | 3.8%          | 11.4%         | 12.8%       |
|   | American Indian & Alaska Native          | 0.1%          | 0.2%          | 0.9%        |
|   | Asian                                    | 6.1%          | 3.5%          | 5.7%        |
|   | Native Hawaiian & Other Pacific Islander | 0%            | 0%            | 0.2%        |
|   | Pacific Islander                         | 0.6%          | 2.6%          | 5.0%        |
|   | Some other Race/Two or More Races        | 1.8%          | 2.6%          | 3.4%        |
|   | Hispanic/Latino <sup>1</sup>             | 3.9%          | 9.4%          | 20.0%       |
| Non-Hispanic/Latino <sup>1</sup>                        | 96.1%                                    | 90.6%         | 80.0%         |             |
| Poverty Rate <sup>1</sup>                               | 18.7%                                    | 12.0%         | 12.5%         |             |
| Median Age <sup>1</sup>                                 | 34                                       | 41            | 39.2          |             |
| Foreign Born <sup>1</sup>                               | 8.1%                                     | 8.0%          | 14.3%         |             |
| Language other than English Spoken at Home <sup>1</sup> | 13.2%                                    | 13%           | 22.5%         |             |
| High School Graduate or Higher <sup>1</sup>             | 94.3%                                    | 91.0%         | 88.6%         |             |
| Bachelor's Degree or Higher <sup>1</sup>                | 47.6%                                    | 35.3%         | 36.2%         |             |
| Total Households <sup>1</sup>                           | 58,201                                   | 5,119,249     | 122,802,852   |             |
| Median Household Income <sup>1</sup>                    | \$69,101                                 | \$73,824      | \$77,719      |             |
| Median Home Price <sup>1</sup>                          | \$325,146                                | \$269,878     | \$240,500     |             |
| Average Rent <sup>1</sup>                               | \$1,198/month                            | \$1,197/month | \$1,406/month |             |
| Home Ownership Rate <sup>1</sup>                        | 59%                                      | 69.5%         | 65.2%         |             |

<sup>1</sup> American Community Survey, Five-year estimates (2023)

According to the Centre Region Comprehensive Plan, homeownership and rental housing are becoming more expensive for both current and new residents in the Centre Region. This is mainly because income levels are not keeping up with housing costs. Additionally, over the past several decades, new residential developments in the Centre



Region have primarily consisted of single-family homes built in traditional suburban and rural subdivisions. As shown in **Table 3-3**, the average home price in Centre County in 2024 was \$325,146, which is higher than the average home price for Pennsylvania at \$269,878.

On January 20, 2025, President Trump signed Executive Order (E.O.) 14148 - *Initial Rescissions of Harmful Executive Orders and Actions* and E.O. 14154 – *Unleashing American Energy*. This action revoked E.O. 14096 – *Revitalizing Our Nation’s Commitment to Environmental Justice for All* (April 21, 2023). Subsequently on January 21, 2025, President Trump signed E.O. 14173 – *Ending Illegal Discrimination and Restoring Merit-Based Opportunity*. This E.O. revoked E.O. 12898 – *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (February 11, 1994). On February 25, 2025, the Council on Environmental Quality (CEQ) published an Interim Final Rule removing the CEQ’s NEPA implementing regulations, effective April 11, 2025 (90 FR 10610). As a result of these actions, all federal environmental justice requirements are revoked and no longer apply to the federal environmental review process. FHWA, FTA, and FRA’s Joint NEPA regulations (23 CFR § 771) and the agencies Interim Final Guidance on “*Section 139 Environmental Review Process: Efficient Environmental Reviews for Project Decision making and One Federal Decision*” (December 17, 2024) do not require an environmental justice analysis. Accordingly, no analysis of environmental justice is included in this DEIS. Any purported environmental justice impacts will not be considered in the federal decision. Social, economic, and community impacts will continue to be disclosed where applicable in accordance with 23 CFR § 771.

As a result of E.O. 14148, E.O. 14154, E.O. 14173, and the removal of the CEQ’s regulations, all federal environmental justice requirements are revoked and no longer applicable to the federal environmental review process. Accordingly, this DEIS does not consider public comments regarding environmental justice.

### 3.2.3 Impacts

**No Build Alternative:** The No Build Alternative would not impact the local population and demographics.

**All Build Alternatives:** All three Build Alternatives would require the displacement of residential and commercial structures (**Table 3-4**). However, the Build Alternatives would not affect overall regional or local population numbers or trends.

*Table 3-4: Residential and Commercial Displacements*

| Resource                            | Build Alternative |         |       |
|-------------------------------------|-------------------|---------|-------|
|                                     | North             | Central | South |
| Residential Structure Displacements | 22                | 15      | 18    |
| Commercial Structure Displacements  | 3                 | 2       | 2     |



### 3.2.4 Mitigation

As the project advances into final design, the extent of right-of-way 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 *Federal 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.

## 3.3 Communities and Community Facilities

### 3.3.1 Methodology

Data was collected from secondary sources such as the CCPCDO and PASDA. Additionally, field reconnaissance and public outreach were conducted to verify information from these sources. A review of county and municipal websites, along with numerous community planning documents, was also performed.

### 3.3.2 Existing Conditions

Several neighborhoods, communities, and subdivisions exist within the project area, as listed in **Table 3-5** and shown in **Figure 3-3**. Three Section 8/US Department of Housing and Urban Development (HUD)-subsidized housing complexes are located in the western part of the project area in Harris Township, including Centre Estates, Huntington Park, and Ashworth Woods (**Figure 3-3**). Section 8 is a federally funded rental assistance program aimed at low- and very low-income households. The program is managed by the Centre County Housing Authority within the project area. Under the Section 8 program, HUD pays landlords the difference between 30% of the family's adjusted gross income and the area's approved fair market rent. HUD also offers housing-related programming and funding. The Centre County Housing Authority neither owns nor operates any public housing complexes within the project area. Community facilities and services within the project area include public services facilities (e.g., libraries, police/emergency support services or facilities), places of worship, cemeteries, and public transit/transportation support facilities. Park and recreational facilities are discussed in **Section 3.4**.

The Harris Township maintenance facility, the PennDOT maintenance facility at the western end of the project area, and the Cole Transportation bus garage at the eastern end are identified as community facilities and services. Cole Transportation is a privately owned school bus and charter bus company that currently provides buses for the Penns Valley School District.

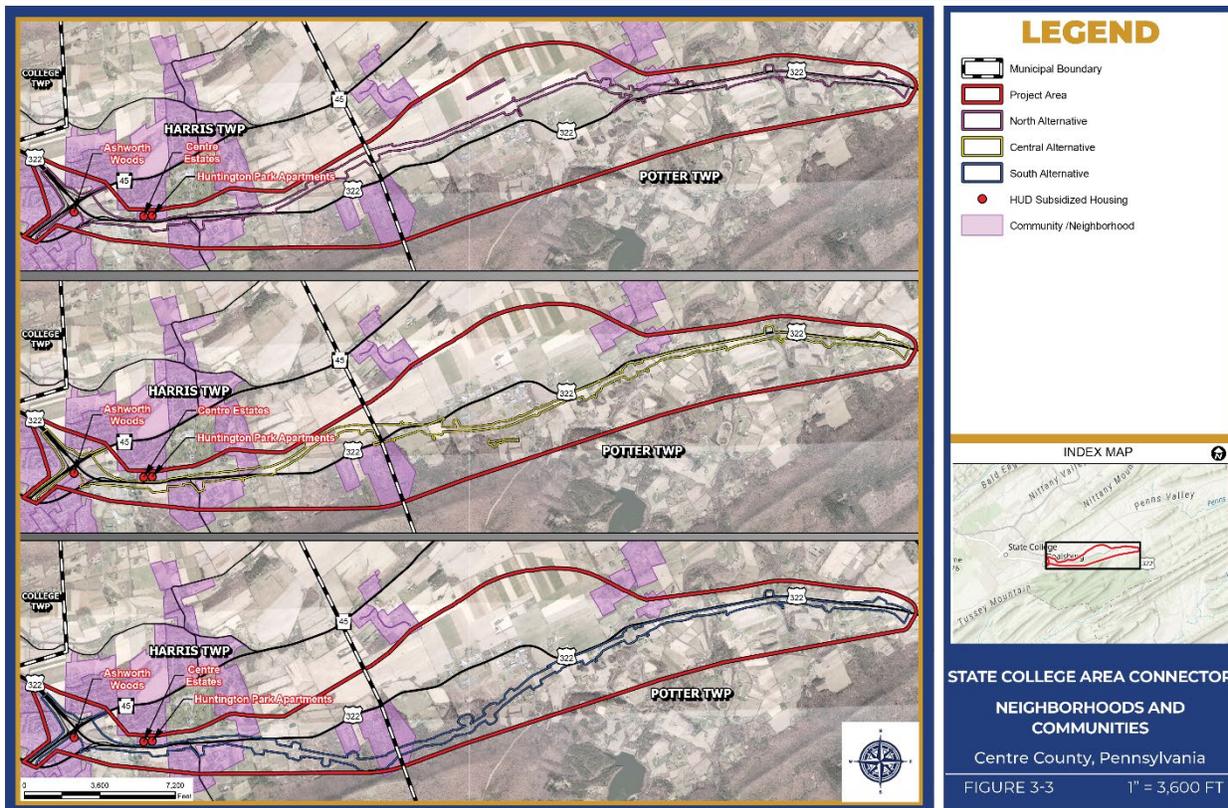
The State College Police Department and the Pennsylvania State Police serve the project area. The Centre Hall Fire Company, Boalsburg Fire Company, Penns Valley Emergency Medical Services, and Centre Life Link also provide emergency services throughout the area. Mount Nittany Medical Center, the main hospital in the region, is

located outside the project area in State College Borough. There are no fire, police, or emergency medical stations within the project area.

A few churches (e.g., Grace Church, Calvary Harvest Fields, and Emmanuel Union UCC Church) are spread throughout the project area. Several cemeteries are also located within the area, most of which are associated with local churches (**Figure 3-4 and Plates D1-D18, E1-E18, and F1-F18**).

*Table 3-5: Neighborhoods, Communities, and Subdivisions in the Project Area*

| Municipality    | Neighborhood, Community, Subdivision  |
|-----------------|---|
| Potter Township | Tusseyville<br>Swan Lane Subdivision  |
| Harris Township | Laurel Meadow<br>Nittany Grove<br>Huntridge Manor<br>Laurel Hills<br>Bear Meadow Village<br>Elksview Townhomes<br>Huntington Park (Section 8/HUD Subsidized)<br>Centre Estates (Section 8/HUD Subsidized)<br>Brookside<br>Ashworth Woods (Section 8/HUD Subsidized)<br>Willowbrook<br>Liberty Hill<br>Kaywood |



*Figure 3-3: Neighborhoods and Communities*

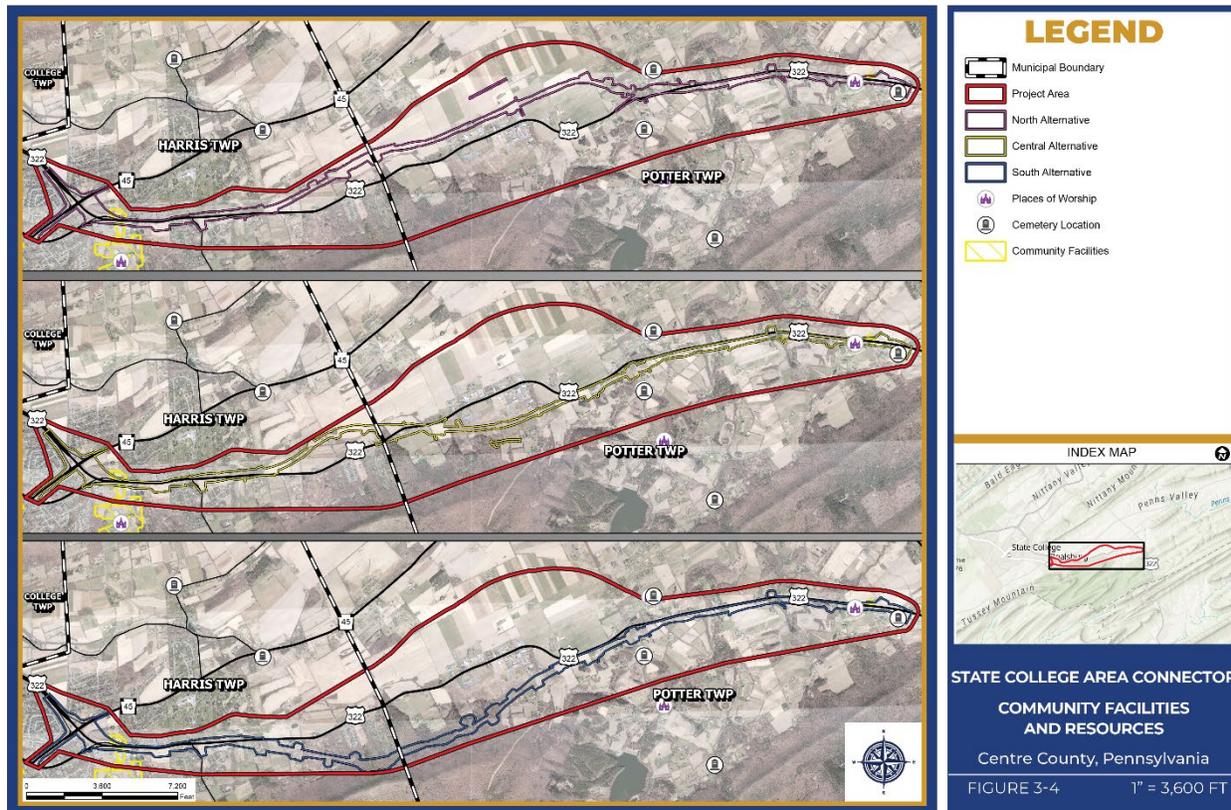


Figure 3-4: Community Facilities and Resources

Public transit in Centre County is mainly operated by the Centre Area Transportation Authority (CATA), with additional on-demand ride services provided by the Centre County Office of Transportation (CCOT). No passenger rail service exists within the county. The nearest Amtrak station is in the Borough of Lewistown, over 18 miles south of Potters Mills and outside the project area. This station is on the primary Pennsylvanian Amtrak route that runs along the southern part of the state, connecting Philadelphia and Pittsburgh. Intercity bus services are all based in the State College area and include Greyhound, Fullington Trailways, and Megabus. These bus companies offer daily intercity routes connecting to urban areas outside the county, primarily serving the large student population of Pennsylvania State University rather than daily commuter trips. A bus offers a daily connection between the train station and State College.

CATA is a joint municipal authority comprising State College Borough and College, Ferguson, Harris, and Patton Townships. CATA operates public transportation within these municipalities. The CATA Board of Directors also contracts with Spring Township for services. CATA offers the following services:

- CATABUS – a fixed-route bus service operated by CATA. CATABUS fixed route service no longer extends into Boalsburg or to Tussey Mountain as of 2024. People residing in the Boalsburg service area can call and schedule a CATAGO!



ride to the nearest bus stop on the Atherton Street Connector Route. Additionally, there are no CATABUS bus stops or routes within the project area.

- CATAGO! – a microservice operated by CATA. CATAGO! service provides on-demand transit for Boalsburg and other areas outside the project area. Trip reservations can be made through the CATAGO! app during the scheduled service hours, Monday through Saturday.
- CATARIDE – a shared ride/demand-responsive service that CATA subcontracts for these services. This is an origin-destination transportation for persons 60 and over and persons whose disabilities prevent their use of the CATABUS system.
- CATA COMMUTE – is a ridesharing service (e.g., carpool and vanpool) for individuals whose trip either begins or ends in Centre County. This program serves users traveling to and from Centre County and 11 surrounding counties: Bedford, Blair, Cambria, Clearfield, Clinton, Huntington, Indiana, Juniata, Lycoming, Mifflin, and Somerset. CATA administers these services, which are a decentralized, volunteer driver model program.

The CCOT is a department of Centre County Government that operates a shared ride, demand-responsive transit system providing door-to-door services. All trips must have both an origin and destination within Centre County and/or select out-of-county destinations. CCOT service is available to anyone with travel needs, but free fares are available for those age 60 or older and those eligible under certain special programs. For most of the project area, the CCOT service is the only transit service available and often serves as a lifeline service for members of the public, particularly elderly residents.

The Clearwater Conservancy has conservation easements on two properties in the project area. The Clearwater Conservancy is a non-profit organization whose mission is to conserve and restore natural resources through land conservation, water resources stewardship, and environmental outreach across central Pennsylvania. Properties with conservation easements within the project area include Nittany Farms and Tussey View (Kuhn property). The easement on Nittany Farms is specific to conservation of productive agricultural land, and the easement on the Kuhn property is for the conservation of water resources, forest and woodland, wildlife, scenic resources, and sustainable land uses. The Kuhn property easement is open to the public for passive recreation as detailed in the conservation easement agreement. Clearwater Conservancy utilized a "Growing Greener 2" recreation grant (an overarching initiative that includes Keystone and Environmental Stewardship Fund) from the PA DCNR for the acquisition of development rights for the property and encumbrance of the conservation easement. The recreation grant also appears to have been used for the acquisition of a 71.12-acre parcel south of the Kuhn property that was deeded to the PA DCNR Bureau of Forestry to be part of the Rothrock State Forest.



### 3.3.3 Impacts

**No Build Alternative:** The No Build Alternative would not impact any communities or community facilities or services.

**All Build Alternatives:** The three Build Alternatives would impact the Grace Church on Mountain Back Road and the Cole Transportation school bus depot adjacent to the Potters Mills interchange. All three alternatives would avoid the Section 8/HUD-subsidized housing complexes in Harris Township, the Calvary Harvest Fields Church and recreational area, all cemeteries, the Harris Township maintenance facility, and the PennDOT maintenance facility. The three alternatives would not impact public transit routes or existing bicycle and pedestrian facilities. **Table 3-6** outlines the potential community and community facility impacts.

*Table 3-6: Community/Community Facility Impacts*

| Resource                                   | Build Alternative |         |       |
|--|-------------------|---------|-------|
|  | North             | Central | South |
| Section 8/HUD Subsidized Housing Complexes | 0                 | 0       | 0     |
| Places of Worship                          | 1                 | 1       | 1     |
| Community Facilities/Services              | 1                 | 1       | 1     |
| Neighborhoods/Communities                  | 2                 | 0       | 1     |
| Public Transit                             | 0                 | 0       | 0     |

**North Alternative:** The North Alternative would affect the Tusseyville community. Tusseyville is a small unincorporated community (zoned as a “Village”) in Potter Township. The community consists of a small collection of older homes and the Emmanuel Union Church and Cemetery on Neff and Tusseyville Roads surrounded by agricultural properties. The North Alternative would also impact properties within the Swan Lane subdivision just northwest of Tusseyville. The North Alternative would not affect the ability of any of the communities to access area facilities and services; however, it would impact almost half of the residential properties in the Tusseyville community and would change the look and feel of the area for the remaining residents. The existing US 322 corridor will generally remain as a local two-lane roadway with access to side roads. The North Alternative was designed to bridge side roads so access can be maintained, except on Neff Road in Tusseyville where many of the structures would be displaced.

The North Alternative would impact 21 acres of the Nittany Farm Clearwater Conservancy conservation easement and would not impact the Kuhn property conservation easement.

**Central Alternative:** The Central Alternative would not affect any neighborhoods, subdivisions, or communities and would not affect the ability of any of the communities to access area facilities and services. The US 322 corridor will generally remain as a



local two-lane roadway with access to side roads. The Central Alternative was designed to bridge side roads so access can be maintained.

The Central Alternative would impact approximately 19.7 acres of the Nittany Farm Clearwater Conservancy conservation easement and approximately 17.3 acres of the 189.25-acre Kuhn property Clearwater Conservancy conservation easement.

**South Alternative:** The South Alternative would impact at least one property within the Laurel Meadow development on the south side of US 322 but would not divide or sever any neighborhoods, subdivisions, or communities. The South Alternative would not affect the ability of any of the communities to access area facilities and services. The existing US 322 corridor will generally remain as a local two-lane roadway with access to side roads. The South Alternative was designed to bridge side roads so access can be maintained.

The South Alternative would not impact the Nittany Farm Clearwater Conservancy conservation easement but would impact approximately 26.0 acres of the 189.25-acre Kuhn property Clearwater Conservancy conservation easement.

### **3.3.4 Mitigation**

The acquisitions of the Grace Church property and Cole Transportation school bus depot will be conducted in accordance with the *Federal 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 and relocation assistance will be available.

The Central and South Alternatives will require coordination with the Clearwater Conservancy and the PA DCNR Bureau of Recreation and Conservation for the impacts to the recreation grant-funded conservation easement on the Kuhn property. As the design advances, PennDOT will continue to refine the alternatives to minimize potential impacts. Following any refinements, PennDOT will coordinate an appraisal of the property and document the extent of impact. Coordination will be conducted to determine the payment required to address the loss of the grant-funded easement property. Mitigation would include a fee simple payment for the land acquired from the property owner, less than the calculated payment for lost easement acreage to Clearwater Conservancy. Fair market value is calculated based on highest and best use. Clearwater Conservancy will be responsible for paying back the recreation grant for the partial loss of the conservation easement.

## **3.4 Parks and Recreational Facilities**

### **3.4.1 Methodology**

Data was gathered from secondary sources, including the CCPCDO and PASDA. Furthermore, field reconnaissance and public outreach efforts were carried out to verify information from these sources. A review of county and municipal websites, along with various community planning documents, was also conducted.

### 3.4.2 Existing Conditions

There are two parks, planned bike trails, and a privately owned golf course located within or partially within the project area. There are other recreational opportunities in the vicinity for the community to use. The Potter Township Athletic Complex and Eugene Fasick Memorial Park are the two parks that lie or partially lie within the project area. Potter Township Athletic Complex consists of a 29-acre parcel with two baseball fields, which lies in the central portion of the project area on Summer Lane south of the existing US 322 (**Figure 3-5 and Plates E10 and F10**).

The Eugene Fasick Memorial Park is partially within the project area along Spring Creek and behind the apartment and townhome communities on the western end of the project area.

Mountain bike trails were created at the Calvary Harvest Fields Church property by the Nittany Mountain Bike Association, a local mountain bike advocacy non-profit, and the Calvary Harvest Fields Church. Additionally, Earlystown Road from the US 322 interchange to the Huntridge Manor subdivision is recommended as bikeway corridor "Hh". A bikeway corridor would include a designated bike lane or shared lane markings on the road. Pedestrian facilities are currently absent in the rest of the project area due to the rural nature of the region. However, the Centre Region Council of Governments (COG) developed the *Centre Region Bike Plan* (Bike Plan), which was adopted on December 15, 2015, and amended on March 28, 2022. The Bike Plan outlines future

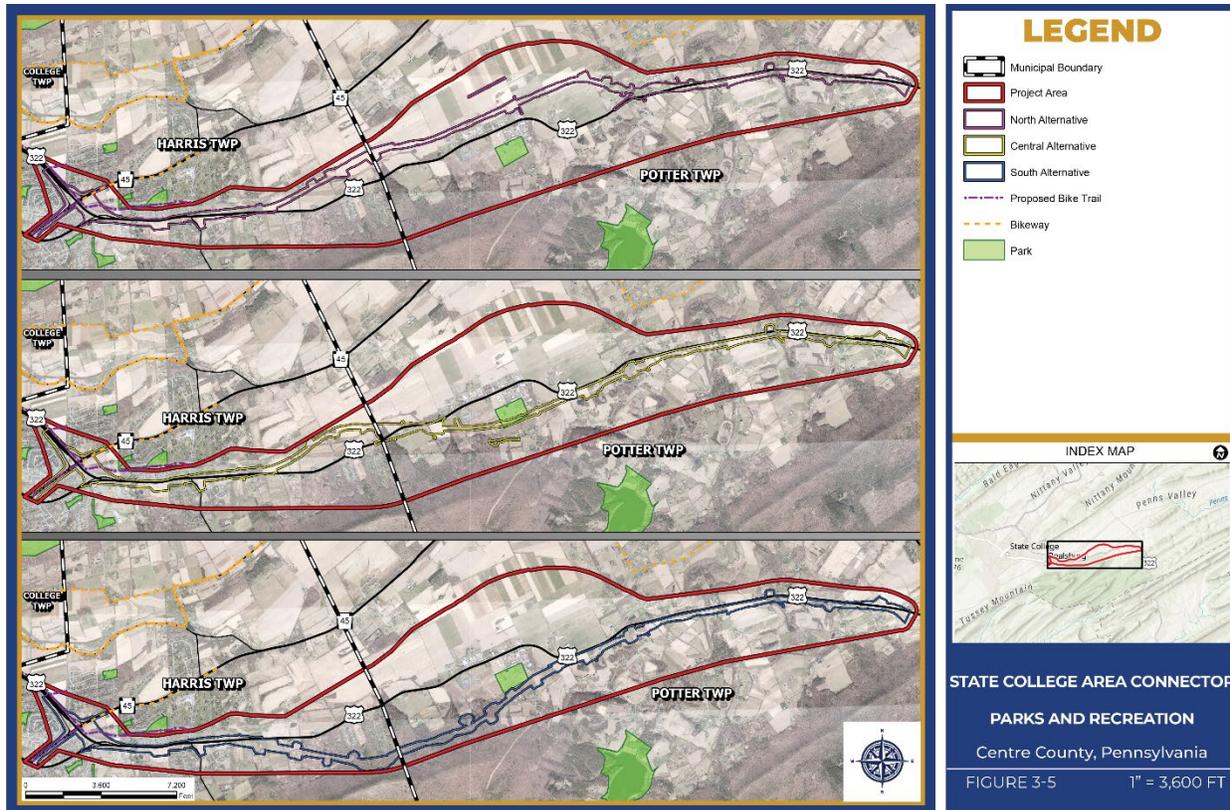


Figure 3-5: Parks and Recreation

connections and initiatives to expand the current network within the project area and includes recommendations to create a bike trail from Elks Club Road along Spring Creek to Earlystown Road (PA 45), from the US 322 and Earlystown Road interchange to Boal Avenue, and from Earlystown Road to Oak Hall Regional Park.

### 3.4.3 Impacts

**No Build Alternative:** The No Build Alternative would not impact any parks or recreation areas.

**North Alternative:** The North Alternative would not impact any parks or recreational facilities.

**Central Alternative:** The Central Alternative would impact approximately six acres of the 29-acre parcel containing the Potter Township Athletic Complex; however, the impacted portion of the property would be on the south side, where there are no planned or developed recreational facilities. As outlined in **Section 3.11**, noise levels would increase at the park location. The two baseball fields and associated structures, parking area, and sewage facilities would not be impacted (**Plates E10 and E11**). Additionally, the Central Alternative would not affect access to the park facility. The remaining identified park or recreational properties would not be impacted by the Central Alternative.

**South Alternative:** The South Alternative would not impact any parks or recreational facilities.

### 3.4.4 Mitigation

Mitigation for the Central Alternative's impact on the Potter Township Athletic Complex will be developed in coordination with Potter Township. Measures will include:

- A commitment not to use park property as a construction staging area
- Pre- and post-construction monitoring of the sewage facility to ensure continued operation, with corrective actions for any negative impacts
- Development of an earthen berm for a visual buffer that provides noise reduction

## 3.5 Displacements

### 3.5.1 Methodology

A Geographical Information Systems (GIS) building layer was created from aerial imagery and field reconnaissance to identify residential and commercial buildings, as well as community facilities. Existing land use and zoning from Centre County were also used to determine individual parcel uses.

The tax assessment value for each property identified as a potential displacement was multiplied by the Department of Revenue common level ratio for Centre County of 5.85 to calculate the estimated market value. A review of Multiple Listing Service (MLS) listings in the area was conducted to determine the availability of replacement housing. It is important to note that, while this replacement housing methodology is widely accepted for environmental studies, it is highly variable and changes frequently as



houses are sold and new houses are put on the market. As such, the replacement housing identified at any point in time is meant to be reflective of the local real estate sales trend and should not be interpreted as an exact count of future available housing units.

### 3.5.2 Existing Conditions

Approximately 530 residential properties (non-agricultural), 26 commercial properties, 40 agricultural properties, and five community facility properties exist within the project area.

### 3.5.3 Impacts

**No Build Alternative:** The No Build Alternative would not cause the displacement of any structures.

**All Build Alternatives:** All three Build Alternatives would require the displacement of residential and commercial structures, as well as the Grace Church located adjacent to the existing Potters Mills interchange at the eastern end of the project area. Potential displacements are identified in **Table 3-7** and depicted on **Plates D1-D18, Plates E1-E18, and Plates F1-F18**. **Table 3-8** depicts the market value of the potential residential displacements.

*Table 3-7: Potential Displacements*

| Resource   | Build Alternative |         |       |
|--|-------------------|---------|-------|
|  | North             | Central | South |
| Parcels intersected by LOD   | 134               | 116     | 128   |
| Residential Structure Displacements  | 22                | 15      | 18    |
| Commercial Structure Displacements   | 3                 | 2       | 2     |
| Community Facility Displacements   | 1                 | 1       | 1     |
| Potential Agricultural Properties (extent of the farm impacted directly and/or indirectly to render the property potentially unusable) | 2                 | 2       | 4     |

*Table 3-8: Market Value of Potential Residential Displacements*

| Market Value          | Number of Residential Displacements |         |       |
|-----------------------|-------------------------------------|---------|-------|
|                       | North                               | Central | South |
| <\$100,000            | 3                                   | 0       | 0     |
| \$100,000 - \$250,000 | 13                                  | 7       | 6     |
| \$251,000 - \$500,000 | 4                                   | 7       | 9     |
| \$501,000 – \$1.5M    | 2                                   | 1       | 3     |
| >\$1.5M               | 0                                   | 0       | 0     |



**North Alternative:** The North Alternative would have the greatest impact on residential properties and would require the displacement of 22 homes. Commercial displacements would include the Cole Transportation bus garage on Skyview Drive, a storage unit facility on US 322 near Cider Press Road, and a proposed market or food stand building on the north side of US 322 in Tusseyville.

The North Alternative would also:

- Displace the Houtz’s house and barn, as well as pastureland at 273 Annabel Lane. The Houtz operation is 8.5 acres total, including 3.5 acres they own at 273 Annabel Lane and five acres they rent from an adjacent property owner. They raise two to four beef cattle per year and cut hay on the rented five-acre property for the beef cattle. Their 3.5-acre property contains a house, barn, and pasture.
- Eliminate the Fohringer’s pastureland and proposed farm market building (commercial acquisition noted in **Table 3-7**) at 58 Tusseyville Road. The Fohringer property is 4.7 acres and includes about 1.2 acres of pastureland that is used to raise pigs and beef cows as well as structures for raising rabbits, chickens, and ducks. The house on the property would not be impacted.

For the purpose of this evaluation, it is assumed that the extent of proposed impacts to the Houtz and Fohringer farm operations would displace them. Confirmation of the displacement will occur as the project design is advanced, and right-of-way needs are confirmed. Potential displacements are identified on **Plates D1-D18**.

**Central Alternative:** The Central Alternative would result in 15 residential displacements, which is the fewest of all three Build Alternatives. Commercial displacements would include the Cole Transportation bus garage on Skyview Drive and a storage unit facility on US 322 near Cider Press Road.

The Central Alternative would also:

- Displace the Houtz’s house and barn, as well as pastureland at 273 Annabel Lane. The Houtz operation is 8.5 acres total, including 3.5 acres they own at 273 Annabel Lane and five acres they rent from an adjacent property owner. They raise two to four beef cattle per year and cut hay on the rented five-acre property for the beef cattle. Their 3.5-acre property contains a house, barn, and pasture.
- Displace the Stoner’s house, barn, and all outbuildings, along with all existing pastureland at 2214 General Potter Highway. The remaining hay field could have an indirect impact if access to the rest of the property is not feasible. The Stoner property is 17 acres, approximately seven acres of which is pastureland and structures and ten acres are hay field.

For the purpose of this evaluation, it is assumed that the extent of proposed impacts to the Houtz and Stoner farm operations would displace them. Confirmation of the displacement will occur as the project design is advanced, and right-of-way needs are confirmed. Potential displacements are identified on **Plates E1-E18**.



**South Alternative:** The South Alternative would result in 18 residential displacements. Commercial displacements would include the Cole Transportation bus garage on Skyview Drive and a storage unit facility on US 322 near Cider Press Road.

The South Alternative would also:

- Displace the Houtz's house and barn, as well as pastureland at 273 Annabel Lane. The Houtz operation is 8.5 acres total, including 3.5 acres they own at 273 Annabel Lane and five acres they rent from an adjacent property owner. They raise two to four beef cattle per year and cut hay on the rented five-acre property for the beef cattle. Their 3.5-acre property contains a house, barn, and pasture.
- Displace the Stoner's house, barn, and all outbuildings would also be displaced, along with all existing pastureland at 2214 General Potter Highway. The remaining hay field could be indirectly impacted if access to the rest of the property is not feasible. The Stoner property is 17 acres, approximately seven acres of which is pastureland and structures and ten acres are hay field.
- Displace most of the Allegar's pasture and hay fields and separate the barns and structures from the remaining field remnants at 110 Tussey Sink Road. The Allegar operation is 130 acres total, including 30 acres they own at 110 Tussey Sink Road and 100 acres they rent at two other properties. Their property at 110 Tussey Sink Road contains a house, several barns, and pastureland where they board, train and sell horses. The additional acreage they rent is for hay.
- Bisect the Tait operation at 121 Tait Road, displacing some of their buildings, Christmas tree fields, and vegetable fields. The Tait operation is 131 acres total, all of which they own at 121 Tait Road. The property contains two houses, a barn, a retail store, green houses, vegetable fields and Christmas tree fields.

For the purpose of this evaluation, it is assumed that the extent of proposed impacts to the Houtz, Stoner, Allegar, and Tait farm operations would displace them. Confirmation of the displacement will occur as the project design is advanced, and right-of-way needs are confirmed. Potential displacements are identified on **Plates F1-F18**.

### **3.5.4 Mitigation**

All property acquisitions will be conducted in accordance with the *Federal 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. Based on a review of MLS listings in the area in May and June 2025, there are many equivalent residential properties currently available in Harris and Potter Townships. Finding replacement properties for the agricultural property impacts may be more difficult in the immediate area; however, should be achievable within the surrounding zip codes. See **Table 3-9** and **Table 3-10** for available properties and their price ranges.



*Table 3-9: Properties Available by Price Range within Harris and Potter Townships*

| List Price    | Residential | Commercial | Farm | Vacant Lot |
|---------------|-------------|------------|------|------------|
| <\$100k       | 0           | 0          | 0    | 0          |
| \$101k-\$250k | 2           | 0          | 0    | 13         |
| \$251k-\$500k | 5           | 0          | 0    | 4          |
| \$501k-\$1.5M | 14          | 4          | 4    | 6          |
| >\$1.5M       | 2           | 0          | 2    | 1          |

*Zillow MLS listings were accessed May and June 2025.*

*Table 3-10: Properties Available by Price Range in Adjacent Zip Codes*

| List Price    | Residential | Commercial | Farm | Vacant Lot |
|---------------|-------------|------------|------|------------|
| <\$100k       | 4           | 0          | 0    | 21         |
| \$101k-\$250k | 12          | 0          | 0    | 9          |
| \$251k-\$500k | 72          | 1          | 0    | 4          |
| \$501k-\$1.5M | 76          | 1          | 3    | 4          |
| >\$1.5M       | 4           | 0          | 1    | 4          |

*Zip codes evaluated included: 16801, 16875, 16823, 16803, 16804, 16805, 16851, 16865, 16870*

*Zillow MLS listings were accessed May and June 2025.*

The farm properties available in Harris and Potter Townships and surrounding zip codes are described below (Zillow MLS listings were accessed May and June 2025).

- 17-acre property with no buildings or other improvements that has been most recently used as a hay field. Could potentially be developed with a house, barn and pastures or remain crop fields.
- 130-acre property with no buildings or other improvements that has been most recently used as a hay field. Could potentially be developed with a house, barn and pastures or remain crop fields.
- 33-acre property with a home, barn, and pastures.
- 12-acre property with a home and barn. This property does not currently have any crop fields or pastures but has the space for pastures to be added.
- 17-acre property with no buildings or other improvements that has been most recently used as a corn field. Could potentially be developed with a house, barn, and pastures or remain crop fields.
- 87-acre property with a home, multiple barns, pastures, and crop fields.
- 12-acre property with a home and open space that could be used as pasture or crop fields. Could potentially be developed with a barn or other outbuildings.
- 12-acre property with home and barn. This property does not currently have any crop fields or pastures but has the space for pastures to be added.
- 15-acre property with a home. This property could potentially be developed with a barn and pastures.
- 65-acre property with a home and crop fields.



Replacement properties for the Houtz, Fohringer, and Stoner operations would most likely be available, given that they are all smaller-scale operations, mostly for subsistence. The Tait and Allegar operations would be more difficult to replace (potentially displaced by the South Alternative only). There are currently no Christmas tree farms for sale in the surrounding area. One of the larger properties listed above could be purchased for the Tait's; however, they would have to plant all new trees which take years to grow to a sellable size. The Allegar operation contains multiple horse barns and riding arenas, which none of the properties currently on the market have. One of the larger properties listed above could be purchased for the Allegar's; however, they would have to construct new barns, pastures, and arenas before their business could continue.

## **3.6 Above Ground Historic Resources**

### **3.6.1 Methodology**

The Project is subject to the requirements of Section 106 of the *National Historic Preservation Act (NHPA) of 1966*, as amended, and the regulations of 36 CFR § 800. This law requires federal agencies to consider the effects of their undertakings on historic properties. As defined in the NHPA, 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, including artifacts, records, and material remains related to such a property or resource."<sup>1</sup> The NHPA clarifies that the term eligible for inclusion in the National Register of Historic Places (NRHP) means any historic resource that has been listed in the NRHP or determined officially eligible for listing in the NRHP. To be eligible for listing, a historic resource must typically be 50 years of age or older, 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
- Criterion D: Significant for information about the past (Primarily archaeology)

In support of Section 106 compliance efforts, PennDOT, in cooperation with the FHWA and in coordination with the CCMPO, completed a PEL Study that included a reconnaissance-level survey of above ground historic resources conducted in the PEL Study area. This involved documenting properties 50 years of age or older and identifying known and potentially historic architectural resources. The results of the survey, which included a desktop analysis and limited field reconnaissance, were published in 2021.

As part of the preliminary engineering phase, assessment of above ground historic resources involved the identification of an Area of Potential Effects (APE), identification of eligible historic properties, a determination of effects, and identification of potential mitigation.

Historic resource identification, reporting, and determinations of effects were conducted and issued in accordance with federal and state laws that protect significant historic and cultural resources and PennDOT’s Publication No. 689, *Cultural Resources Handbook* (2023). Details regarding the identification and effects to historic resources are provided in the Historic Resource Survey Forms (HRSFs) and *Determination of Effects Report for Above Ground Resources (Appendix L)*.

The APE, as defined by 36 CFR § 800.16.d, is “the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist.” Through coordination with the Pennsylvania State Historic Preservation Officer (PA SHPO) and consulting parties, the APE for the Project was defined as a 500-foot buffer around the LOD for each of the three Build Alternatives.

### 3.6.2 Existing Conditions

Background research and a review of the PA SHPO’s Pennsylvania’s Historic & Archaeological Resources Exchange (PA-SHARE) database initially identified 69 historic resources within the project area. After the field survey, formation of the three Build Alternatives, and establishment of the APE, the lead agencies determined that there are 57 total recorded historic resources within the APE which are listed in or eligible for the NRHP, either individually or as a contributing resource to an eligible historic district.

**Figure 3-6** identifies historic resources in the project area.

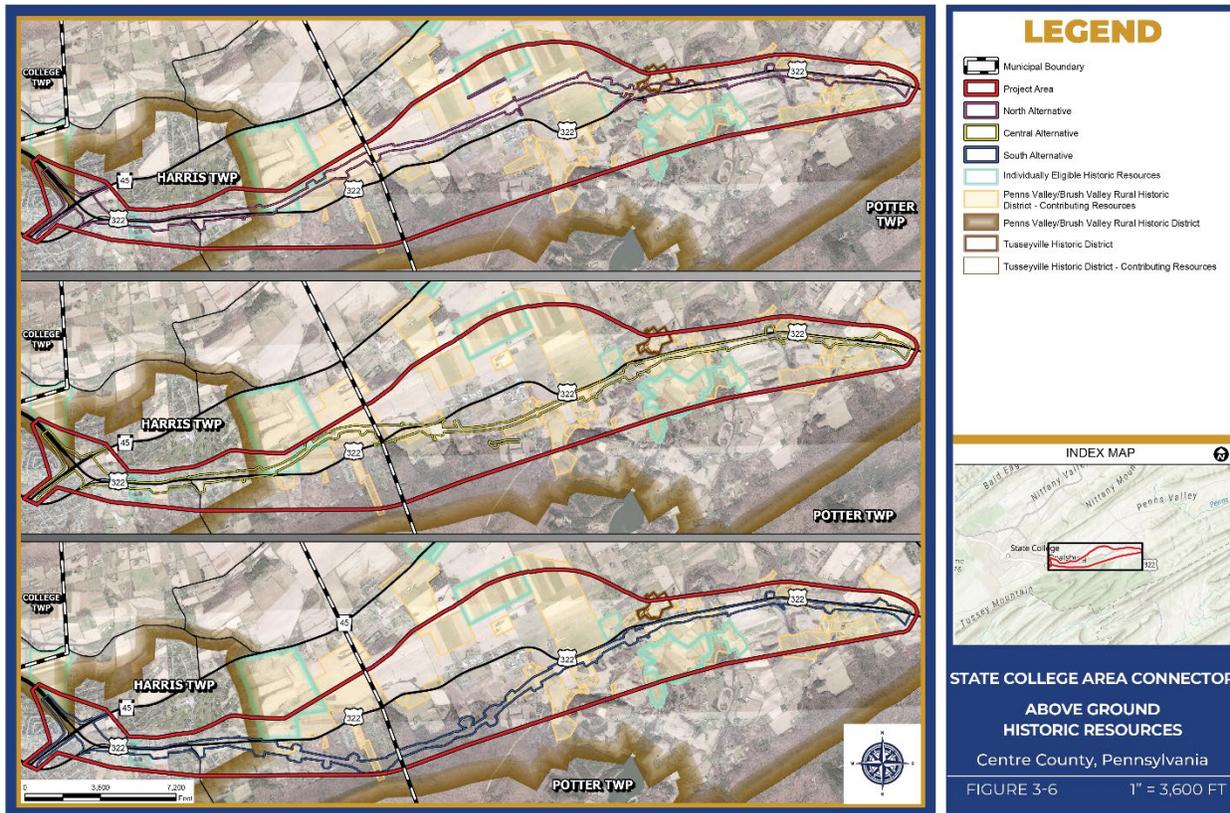


Figure 3-6: Above Ground Historic Resources



### 3.6.3 Impacts

**No Build Alternative:** The No Build Alternative would not adversely affect any of the historic properties.

**All Build Alternatives:** As defined in 36 CFR § 800.16, an “effect” is an alteration to the characteristics of a historic property qualifying it for inclusion in or eligible for the National Register. Based on the definitions and guidance in 36 CFR § 800.5 and § 800.16, it was determined that all three Build Alternatives would have the potential to adversely affect historic resources. The PA SHPO concurred with the lead agencies' overall determination of adverse effect for the Project via letter on May 13, 2025. **Table 3-11** provides a summary of the effect determinations for the eligible resources for each of the Build Alternatives. **Table 3-12** documents the contributing resources associated with the Penns Valley/Brush Valley Rural Historic District (RHD) and the Tusseyville Historic District (THD).

The *Determination of Effects Report for Above Ground Resources* and the project's technical files contain detailed determinations of effects for each individual historic resource related to the three Build Alternatives and completed survey forms.

*Table 3-11: Determinations of Effects for Eligible Historic Resources*

| Map Key ID* /<br>PA SHPO ID     | Resource Name   | Build Alternatives |                |                   |
|---------------------------------|---|--------------------|----------------|-------------------|
|                                 |   | North              | Central        | South             |
| -- 2002RE02814                  | Penns Valley/Brush Valley Rural Historic District (RHD) | Adverse Effect     | Adverse Effect | Adverse Effect    |
| -- 2024RE00580<br>(2023RE06860) | Village of Tusseyville Historic District (THD)          | Adverse Effect     | No Effect      | No Effect         |
| A/2023RE06503                   | Tressler-Meyer Farm                                     | No Effect          | No Effect      | No Effect         |
| B/1981RE00409                   | Michael Jack Estate                                     | Adverse Effect     | Adverse Effect | Adverse Effect    |
| C/2023RE06505                   | Nease House   | Adverse Effect     | Adverse Effect | Adverse Effect    |
| D/2023RE06502                   | Henry Meyer Farm  | Adverse Effect     | Adverse Effect | No Adverse Effect |
| Q/2023RE06547                   | Wagner-Homan Farm                                       | No Adverse Effect  | Not in APE     | Not in APE        |
| BB/2023RE06532                  | Joseph Jordan Farm                                      | Adverse Effect     | No Effect      | No Effect         |
| HH/2023RE06534                  | Frederick Seltzer Farm                                  | Not in APE         | No Effect      | No Effect         |
| PP/2023RE06563                  | Jacob Keller Farm                                       | No Effect          | No Effect      | No Effect         |
| AB/2013RE01590                  | Old Lewistown Pike Cemetery                             | No Effect          | No Effect      | No Effect         |

\* Figures showing the specific location of each resource are located in Appendix C.



Table 3-12: Determinations of Effects for Historic Resources that Contribute to a Historic District

| Map Key ID<br>/PA SHPO ID            | Resource Name               | Build Alternatives |                   |                   |
|--------------------------------------|-----------------------------|--------------------|-------------------|-------------------|
|                                      |                             | North              | Central           | South             |
| <b>Penns Valley/Brush Valley RHD</b> |                             |                    |                   |                   |
| A/2023RE06503                        | Tressler-Meyer Farm         | No Effect          | No Effect         | No Effect         |
| D/2023RE06502                        | Henry Meyer Farm            | Adverse Effect     | Adverse Effect    | No Adverse Effect |
| E/2023RE06506                        | Tait Farm                   | No Effect          | No Effect         | Adverse Effect    |
| F/2023RE06507                        | Kuhns Tree Farm             | Adverse Effect     | Adverse Effect    | No Effect         |
| G/2023RE06508                        | 2114 Boal Avenue            | Not in APE         | Not in APE        | No Effect         |
| H/2023RE06510                        | 2296 Boal Avenue            | Not in APE         | Not in APE        | Adverse Effect    |
| I/2023RE06515                        | North Side Boal Avenue      | Adverse Effect     | Adverse Effect    | Not in APE        |
| K/2023RE06512                        | 126 Vernon Way              | Not in APE         | Adverse Effect    | Not in APE        |
| L/2023RE06511                        | 120 Vernon Way              | Not in APE         | Adverse Effect    | Not in APE        |
| M/2023RE06514                        | John Brisbin Farmstead      | No Effect          | No Adverse Effect | Not in APE        |
| N/2023RE06549                        | 131 Stave Mill Road         | No Adverse Effect  | Not in APE        | Not in APE        |
| Q/2023RE06547                        | Wagner-Homan Farm           | No Adverse Effect  | Not in APE        | Not in APE        |
| R/2023RE06546                        | 163 Wagner Road             | No Adverse Effect  | Not in APE        | Not in APE        |
| S/2023RE06516                        | Tusseysink Schoolhouse      | No Effect          | Not in APE        | Not in APE        |
| T/2023RE06539                        | Ruble Family Farm           | Not in APE         | Adverse Effect    | Adverse Effect    |
| U/2023RE06517                        | 166 Taylor Hill Road        | Not in APE         | Adverse Effect    | Adverse Effect    |
| X/2023RE06538                        | 207 Taylor Hill Road        | Not in APE         | Adverse Effect    | Adverse Effect    |
| Y/2023RE06573                        | Spangler-Runkle House       | Not in APE         | Adverse Effect    | Adverse Effect    |
| Z/2023RE06572                        | 2214 General Potter Highway | Not in APE         | Adverse Effect    | Adverse Effect    |
| AA/2023RE06574                       | 2165 General Potter Highway | Adverse Effect     | No Effect         | No Effect         |
| BB/2023RE06532                       | Joseph Jordan Farm          | Adverse Effect     | No Effect         | No Effect         |
| DD/2023RE06531                       | 136 Neff Road               | Adverse Effect     | No Effect         | No Effect         |
| HH/2023RE06534                       | Frederick Seltzer Farm      | Not in APE         | No Effect         | No Effect         |
| II/2023RE06530                       | Lawrence Grossman Farm      | Adverse Effect     | Adverse Effect    | Adverse Effect    |
| JJ/2023RE06571                       | Fisher-Fortney Farm         | No Adverse Effect  | No Effect         | No Effect         |
| KK/2023RE06569                       | 105 Addleman Circle         | Adverse Effect     | No Effect         | No Effect         |
| LL/2023RE06568                       | 109 Addleman Circle         | Adverse Effect     | No Effect         | No Effect         |



| Map Key ID<br>/PA SHPO ID  | Resource Name                                    | Build Alternatives |                   |                   |
|--|--|--------------------|-------------------|-------------------|
|  |  | North              | Central           | South             |
| MM/2023RE06567   | 2414 General Potter Highway                      | Adverse Effect     | Adverse Effect    | Adverse Effect    |
| NN/2023RE06564   | 105 Young Lane                                   | No Effect          | No Effect         | No Effect         |
| OO/2023RE06560   | Michael Ulrich Farmstead                         | Adverse Effect     | Adverse Effect    | Adverse Effect    |
| PP/2023RE06563   | Jacob Keller Farm                                | No Effect          | No Effect         | No Effect         |
| QQ/2023RE06552   | 159 Cider Press Road                             | No Effect          | No Effect         | No Effect         |
| RR/2023RE06553   | 2571 General Potter Highway                      | No Effect          | No Effect         | No Effect         |
| SS/2023RE06641   | 2601 General Potter Highway                      | No Effect          | No Effect         | No Effect         |
| TT/2023RE06555   | 2606 General Potter Highway                      | Adverse Effect     | Adverse Effect    | Adverse Effect    |
| UU/2023RE06557   | 2668 General Potter Highway                      | Adverse Effect     | Adverse Effect    | Adverse Effect    |
| VV/2023RE06500   | 397 Mountain Back Road                           | No Effect          | No Effect         | No Effect         |
| XX/2023RE06498   | Samuel Royer Farmstead                           | Adverse Effect     | Adverse Effect    | Adverse Effect    |
| YY/2023RE06580   | 127 Zuck Road                                    | No Effect          | No Effect         | No Effect         |
| ZZ/2023RE06496   | Miller Farm                                      | No Adverse Effect  | No Adverse Effect | No Adverse Effect |
| AB/2013RE01590   | Old Lewistown Pike Cemetery                      | No Effect          | No Effect         | No Effect         |
| <b>Penns Valley/Brush Valley RHD and Tusseyville Historic District</b> |  |                    |                   |                   |
| T1/2023RE06525   | Wm W. Love House                                 | No Effect          | Not in APE        | Not in APE        |
| T2/2023RE06524   | Jacob Strohm House                               | Adverse Effect     | No Effect         | No Effect         |
| T3/2023RE06523   | John Lichty House                                | Adverse Effect     | No Effect         | No Effect         |
| T4/2023RE06522   | S.M. Swartz House                                | No Effect          | Not in APE        | Not in APE        |
| T5/2023RE06521   | Swartz General Store/<br>Tusseyville Post Office | No Effect          | Not in APE        | Not in APE        |
| T6/2023RE06737   | James Moyer House                                | No Effect          | Not in APE        | Not in APE        |
| T7/2023RE06526   | Henry Rossman House                              | Adverse Effect     | No Effect         | No Effect         |
| T8/2023RE06527   | F. D. Hosterman Tenant House                     | Adverse Effect     | No Effect         | No Effect         |
| T9/2023RE06528   | George and Myra Ishler House                     | Adverse Effect     | No Effect         | No Effect         |
| T10/2023RE06529  | Maggie Love House                                | Adverse Effect     | No Effect         | No Effect         |



| Map Key ID<br>/PA SHPO ID | Resource Name         | Build Alternatives |            |            |
|---------------------------|-----------------------|--------------------|------------|------------|
|                           |                       | North              | Central    | South      |
| T12/2023RE06518           | Emmanuel Union Church | No Effect          | Not in APE | Not in APE |
| T14/2023RE06520           | Jonas From Farm       | Adverse Effect     | No Effect  | No Effect  |

\* Figures showing the specific location of each resource are located in **Appendix C**.

### 3.6.4 Mitigation

FHWA’s policy regarding mitigation is that it, “...represents a reasonable public expenditure after considering the impacts of the action and the benefits of the proposed mitigation measures.” A summary of Section 106 effects and a discussion of mitigation and mitigation opportunities were presented at a Consulting Party Meeting on June 16, 2025. A second Consulting Party Meeting was held on August 26, 2025, to further discuss possible mitigation options with the consulting parties. Based on coordination efforts, PennDOT, FHWA, PA SHPO, and consulting parties are committed to developing a Design Advisory Committee to assist in the development of context-sensitive design solutions for the Project to minimize impacts on the RHD. PennDOT will also develop a public educational component for the Project to address the history and cultural significance of adversely affected historic resources. These commitments are included in the project-specific Draft Programmatic Agreement included in **Appendix D** for review and comment as part of this DEIS. A final Programmatic Agreement will be developed to address any comments received, and a fully executed Programmatic Agreement will be included in the Final EIS. Implementation of the mitigation commitments from the Programmatic Agreement will be advanced in tandem with final design activities.

## 3.7 Archaeological Resources

### 3.7.1 Methodology

The statewide *Pre-Contact Probability Model*, PA SHPO’s online PA-SHARE website, historic maps, and historic aerials were used to identify the potential presence of archaeological resources. Archaeological background research was designed and conducted to facilitate project compliance with federal legislation regarding cultural resources, including the NHPA, and federal regulations at 36 CFR § 800. Professionals who meet or exceed the qualifications of the Secretary of the Interior’s *Standards and Guidelines for Archaeology and Historic Preservation* as specified in 36 CFR § 61 performed all technical work for these investigations.

### 3.7.2 Existing Conditions

Eighteen (18) known or recorded archaeological sites exist within the project area. The statewide *Pre-Contact Probability Model* shows that most of the project area has a medium to high potential for pre-contact archaeological resources.

### 3.7.3 Impacts

**No Build Alternative:** The No Build Alternative would not impact any known archaeological resources.



**Build Alternatives:** The three Build Alternatives would impact known archaeological sites; however, some sites are no longer present. **Table 3-13** below lists the sites within each alternative. Impacts on archaeological resources will be evaluated in more detail following field studies during final design. Additionally, **Table 3-14** summarizes the extent of the historic period archaeologically sensitive areas and the Pre-contact Model high probability areas within each of the Build Alternatives.

*Table 3-13: Archaeological Sites within the Build Alternatives*

| Description of Site  | Build Alternative |          |          |
|--|-------------------|----------|----------|
|  | North             | Central  | South    |
| Pre-contact site, was almost certainly destroyed during the construction of a retail business at this location several years ago | 36CE0244          | 36CE0244 | 36CE0244 |
| Pre-contact site has been destroyed according to the PHMC records on PA-Share  | 36CE0230          | 36CE0230 | 36CE0230 |
| Pre-contact site, appears to be extant, located in an agriculture field on aerial photos   | 36CE0251          | 36CE0251 | 36CE0251 |
| Pre-contact surface scatter site of unknown integrity and unknown significance   | 36CE0257          | 36CE0257 | 36CE0257 |
| Historic farmstead, appears to be extant   |                   | 36CE0528 | 36CE0528 |

*Table 3-14: Predictive Model Areas by Alternative*

| Archaeological Consideration                                | Build Alternative |         |       |
|---|-------------------|---------|-------|
|   | North             | Central | South |
| Historic Period Archaeological Sensitivity Area (acres)     | 20                | 21      | 23    |
| Statewide Pre-Contact Model – High Probability Area (acres) | 107               | 116     | 75    |

### 3.7.4 Mitigation

A project-specific Programmatic Agreement for cultural resources has been drafted and outlines how the Section 106 process will be followed. This includes deferring archaeological field studies until final design for the Selected Alternative only. If archaeological resources are found during final design and cannot be avoided, Section 106 of the NHPA will be followed. This includes consultation with PA SHPO, Native American Tribes and Nations, and other consulting parties on site eligibility and project effects. Mitigation for impacts to NRHP-eligible archaeological resources will be identified after detailed field investigations and determined individually, through consultation, for each eligible archaeological site. Archaeological monitoring commitments will consider the use of Tribe and Nation cultural monitors during portions of the archaeological investigations and during construction, where warranted. The use of a qualified historian identified by the Tribes and Nations will be considered to complete research into the Contact and Historic Period Native American diaspora and resettlement across Central Pennsylvania. The draft Programmatic Agreement is included in **Appendix D** for review and comment as part of this DEIS. A final Programmatic Agreement will be developed to address any comments received, and a

fully executed Programmatic Agreement will be included in the Final EIS. Implementation of the mitigation commitments from the Programmatic Agreement will be advanced as detailed field investigations are initiated on the Selected Alternative.

## **3.8 Visual/Aesthetics**

### **3.8.1 Methodology**

A visual impact analysis evaluates how a proposed project will alter the landscape's appearance for the public. The analysis involves establishing the project's visual character, defining the area of visual effect, analyzing visual quality, and proposing mitigation measures to reduce negative impacts. For this project, Building Information Model (BIM) technology from Autodesk 2024 software and PennDOT's Autodesk State Work Kit were used to develop an interactive three-dimensional (3D) model that incorporates engineering design for all three Build Alternatives. Photographs were taken at five key locations within the project area, then, the 3D model was used to create images for these locations with the Build Alternatives superimposed.

### **3.8.2 Existing Conditions**

The current visual setting of the project area is a rural agricultural valley at the base of the Tussey Mountain ridge. The existing US 322 corridor crosses rolling terrain through the valley, passing by historic farms, rural residential areas, and three major watersheds, including Sinking Creek, Sleepy Creek, and Spring Creek. There is a commercial area in the middle of the project area and at the western end near Boalsburg. Residential developments are spread throughout the valley but are more concentrated at the western end in Harris Township. Most of the corridor falls within the Penns Valley/Brush Valley Rural Historic District, except for the more developed western section. The Tusseyville Historic District is also within the corridor, east of the commercial zone in the middle. The mix of rural historic agricultural landscapes with various stream valleys and rural residential areas shapes the visual environment of the project setting.

Of particular concern are those living in identifiable neighborhoods, other concentrated residential areas, and within historic districts. To prevent or reduce impacts on the local environment, these areas have been included in the visual quality assessment.

According to public input gathered for the project, neighborhoods within the overall project area (e.g., Bear Meadows and Tusseyville) have expressed concerns about the visual changes associated with the project. The visual renderings are provided in

**Appendix E.**

### **3.8.3 Impacts**

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

**North Alternative:** From the Potters Mills interchange to Tusseyville, only properties directly next to the existing US 322 corridor that would not be displaced are expected to



have viewshed impacts, since the new highway would parallel the existing US 322 corridor.

At the eastern end of the corridor, adjacent to the Potters Mills interchange, approximately six residential properties (two on the north side, four on the south side of the highway: Stations 500 – 530, **Plate D17**) would have a view of the bridge proposed over Mountain Back Road and the Sinking Creek tributaries and wetlands. Currently, the existing US 322 corridor follows the rolling terrain and is at-grade with most of the properties. The new bridge would be a new feature in the viewshed of these properties, given the height of the bridge (approximately 20 feet above the ground).

Moving west, the five residential properties on the north side of the existing US 322 corridor between the bridge over Mountain Back Road and Cider Press Road (Stations 500 – 465, **Plates D16-17**) would have a view of the new highway looking south across the existing US 322. In this area, the highway would be in a cut condition and would be slightly lower in elevation than the existing US 322 corridor. The view of the mountains to the south would not be completely obstructed for these properties; however, the viewshed would include the existing US 322 corridor and the new highway.

From Cider Press Road west, where US 322 crosses Sinking Creek, another bridge is proposed across Sinking Creek (Stations 455 – 435, **Plate D15**). The viewshed of the residential property on the south side of US 322, near the bridge, would be impacted. Although the current viewshed includes the existing US 322 corridor, the new highway bridge would be slightly higher in elevation than the existing roadway and would be closer to the residential property. The two properties on the north side of US 322 in this area would also be impacted and would have a view of the new highway beyond the existing US 322 corridor, where currently there are farm fields, pastures, and residential properties.

The North Alternative would visually impact those agricultural and residential properties in Tusseyville that would not be displaced (approximately 11 properties). Currently, Tusseyville is somewhat screened from US 322 by vegetation and topography; however, the new highway would be elevated through this area, making it more visible. Approximately five residential and agricultural properties in the Swan Lane development northwest of Tusseyville would be impacted visually. The highway would be at-grade and/or on fill adjacent to this development, and the viewshed from these properties would be impacted.

As the North Alternative moves west through the agricultural fields on the north side of the Potter Township commercial area, it would mostly be on fill except in the area of Wagner Road where it will be in a cut condition so Wagner Road can cross over the highway. It would impact the viewshed of the five residential properties on Wagner Road and Dove Lane north of the proposed highway. It would also impact the viewshed of the approximately eight properties on the south side of US 322 (Stations 220 – 305,



**Plates D7, D8, and D9**) that have views of the farm fields to the north. Further west, many properties on the south side of US 322 in the residential neighborhoods (e.g., Laurel Meadow, Nittany Grove, and Tussey Terrace Circle) are surrounded by trees and vegetation, and should not be visually impacted.

The western end of the corridor is more densely developed with residential neighborhoods. The view from properties in the Laurel Hills, Bear Meadows, Elkview Townhomes, Willowbrook Estates, Huntington Park, and Centre Estates communities adjacent to the existing US 322 would be impacted (Stations 145 – 205, **Plates D4, D5, and D6**). The new highway would be on fill through this area and would be higher in elevation than the existing US 322 corridor. As a result, impacts to residential properties beyond those that are directly adjacent to the existing US 322 would be expected. Approximately 25 single-family residences would be impacted visually at the western end of the corridor, and approximately 65 apartment units and townhomes.

The residential communities adjacent to the existing PA 45 interchange, such as Liberty Hill and Kaywood, would not experience a significant change in the area's viewshed, given that an interchange and a four-lane highway already exist in this area. Ashworth Woods and the Brookside neighborhood (Stations 115–125, Plate D3) have an existing vegetative buffer and fill slope that shields them from the existing US 322 corridor, which would remain. In summary, the North Alternative is anticipated to have a visual impact on 134 properties.

**Central Alternative:** Visual impacts from the Central Alternative would be the same as the North Alternative at the eastern and western ends of the project area.

Near Tusseyville, the properties on the south side of US 322 would likely experience the most changes to their viewshed (Stations 380 – 410, **Plates E13 and E14**). The Tusseyville community has some existing vegetative screening from US 322; however, the residential properties on the south side of US 322 that would not be displaced would be much closer to the new highway. The properties on the south side are also at a lower elevation than the existing US 322 corridor, situated in a small valley, so the highway would require fill in this area.

The Central Alternative would have a visual impact to one agricultural property and approximately six residential properties on Tussey Sink Road and Zerby Road, as well as an impact to the Potter Township Athletic Complex. A new 20-foot bridge is proposed over Tussey Sink Road (Stations 350 – 360, **Plate E11**); however, the highway would be almost at-grade behind the Potter Township Athletic Complex.

Where the Central Alternative crosses over existing US 322 and stays north of US 322, visual impacts would be anticipated for the approximately eight residential properties on the south side of US 322 (Stations 220 – 305, **Plates E6, E7, E8, and E9**) that have views of the farm fields to the north. Further west, many properties on the south side of US 322 in Laurel Meadow, Nittany Grove, and Tussey Terrace Circle are surrounded by trees and vegetation, and should not be visually impacted. In summary, the Central Alternative is anticipated to have a visual impact on 119 properties.



**South Alternative:** The South Alternative would have the same visual impacts as the Central Alternative on the eastern end, extending to approximately Station 350 near Tussey Sink Road.

As the South Alternative starts to diverge away from the existing US 322 corridor near the Potter Township commercial area, it moves up to the side of the Tussey Mountain ridge. Any property in the valley with a view of the ridge would be visually impacted, as would the properties on the lower slopes of the ridge where the highway would be above them (at least 30 properties). Extensive tree clearing/excavation would be necessary for the construction of the highway and would significantly changing the appearance of the ridgetside and the viewshed of properties in the valley.

Impacts at the western end of the South Alternative would be the same as the North and Central Alternatives. In summary, the South Alternative is anticipated to have a visual impact on 141 properties.

**Impacts Summary:** All three Build Alternatives would have high visual impacts. Impacts would be the same at the eastern and western ends of the corridor, where all the Build Alternatives are on the same alignment. The eastern and western ends are adjacent to the existing US 322 corridor to minimize overall impacts.

The North Alternative impacts the Tusseyville community, which is also a historic district. The visual quality of the Tusseyville Historic District (THD) would be impacted, given that many of the properties/structures that contribute to the district would be displaced, and a highway would run through the middle of the district. The North Alternative's location, which traverses farm fields in the middle section of the corridor, impacts the visual aesthetics of the Penns Valley/Brush Valley Rural Historic District, as it is located within farmland that contributes to the historic district. The highway would be higher than the surrounding landscape through this area and more visible to surrounding properties.

The Central Alternative has a less visual impact compared to the North and South Alternatives, as it generally remains closer to the existing US 322 corridor. In the middle portion of the project area, the Central Alternative traverses the undeveloped/unimproved portion of the Potter Township Athletic Complex and passes through a mix of scrub-shrub land and farmlands.

The South Alternative has greater visual impacts in the middle section of the corridor, where it would be located along the Tussey Mountain Ridge and visible from many viewpoints in the valley. Additionally, tree removal and roadway excavation along the ridge side would be required to construct the South Alternative, amplifying the visual impact to the valley.

### **3.8.4 Mitigation**

Construction of any of the Build Alternatives would result in a visual change to the landscape. PennDOT will coordinate further with local officials and affected property owners, particularly those adjacent to the new highway, through final design to identify

and implement reasonable mitigation measures. Examples of mitigation measures include:

- Vegetative screenings such as tree and shrub plantings
- Bridge designs (color/texture/materials) that will blend into the landscape
- Filter views of bridge piers with clusters of planted trees if they do not cause additional displacements or create hazards for errant vehicles
- Tint/color retaining walls and noise barriers to better blend into the landscape

Additionally, the adverse visual impacts from any of the three Build Alternatives on the Penns Valley/Brush Valley Rural Historic District will be mitigated in accordance with the Programmatic Agreement developed for the above-ground historic resources through context sensitive design. Additionally, adverse visual impacts from the North Alternative on the Tusseyville Historic District will be mitigated in accordance with the Programmatic Agreement developed for the above-ground historic resources through context sensitive design. The details of the context-sensitive design will be determined through final design in coordination with the consulting parties, PA SHPO, and property owners. Additionally, mitigation for the Central Alternative's impact to the Potter Township Athletic Complex will include an earthen berm for a visual buffer between the baseball fields and the Central Alternative. The earthen berm will also provide some noise reduction for the park.

## **3.9 Section 4(f) Resources**

### **3.9.1 Methodology**

Secondary source information was reviewed, and field reconnaissance and agency/public coordination were completed to identify potential Section 4(f) resources within the project area. Section 4(f) resources, as defined under the USDOT regulations, include publicly owned parks, recreation areas, wildlife and waterfowl refuges, or land from a historic site of national, state, or local significance. A Draft Individual Section 4(f) document was completed for this Project (**Appendix F**).

### **3.9.2 Existing Conditions**

Fifteen (15) Section 4(f) resources exist within the project area. These Section 4(f) resources include two NRHP-eligible historic districts (Penns Valley/Brush Valley Rural Historic District and Tusseyville Historic District), 12 individually NRHP-eligible historic properties, and one public park/recreation area (Potter Township Athletic Complex) (**Figures 3-5 and 3-6**). No wildlife/waterfowl refuges, wild and scenic rivers, or state game lands were identified within the project area. Regarding the NRHP-eligible historic districts, it is important to note that ten out of 12 of the individually NRHP-eligible historic properties have also been identified as contributing resources to one or both of the historic districts. This is in addition to 55 contributing resources in the Rural Historic District and 15 resources that contribute to both the Rural Historic District and the Tusseyville Historic District.



### 3.9.3 Impacts

**No Build Alternative:** The No Build Alternative would not require the use of lands from any Section 4(f) resources.

**North Alternative:** The North Alternative would require the use of the following individually eligible historic resources: Michael Jack Estate; Nease House; Henry Meyer Farm; Wagner-Homan Farm; and Joseph Jordan Farm. The North Alternative would also require the use of land from the Penns Valley/Brush Valley Rural Historic District, including 114.37 acres, and would require acquisition from 26 contributing resources. This alternative would also require the use of land from the Tusseyville Historic District, including 5.73 acres, which includes acquisition from seven contributing resources that also contribute to the Penns Valley/Brush Valley Rural Historic District. See **Table 3-15** for details.

**Central Alternative:** The Central Alternative would require the use of the following individually eligible resources: Michael Jack Estate; Nease House; and Henry Meyer Farm. The Central Alternative would also require the use of land from the Penns Valley/Brush Valley Rural Historic District, including 125.68 acres, and would require acquisition from 18 contributing resources. The Central Alternative would also require the use of the Potter Township Athletic Complex (six acres); however, would not affect the developed or planned recreational features on the property. The two baseball fields and associated structures and parking area would not be impacted, and the park could continue to function for recreational purposes. See **Table 3-15** for details.

**South Alternative:** The South Alternative would require the use of two individually eligible resources: Michael Jack Estate and Nease House. The South Alternative would also require the use of land from Penns Valley/Brush Valley Rural Historic District, including 83.42 acres, and would require acquisition from 15 contributing resources. See **Table 3-15** for details.

### 3.9.4 Mitigation

Efforts have been made to avoid and minimize effects to Section 4(f) resources. Section 4(f) mitigation would be required for any of the three Build Alternatives. Based on coordination efforts, PennDOT, FHWA, PA SHPO, and consulting parties are committed to developing a Design Advisory Committee to assist in the development of context-sensitive design solutions for the Project to minimize impacts on the RHD. PennDOT will also develop a public educational component for the Project to address the history and cultural significance of adversely affected historic resources. These commitments are included in the project-specific Draft Programmatic Agreement included in **Appendix D** for review and comment as part of this DEIS. A final Programmatic Agreement will be developed to address any comments received, and a fully executed Programmatic Agreement will be included in the Final EIS. Implementation of the mitigation commitments from the Programmatic Agreement will be advanced in tandem with final design activities.



Mitigation for the Central Alternative’s impact on the Potter Township Athletic Complex will be developed in coordination with Potter Township. Measures will include:

- A commitment not to use park property as a construction staging area
- Pre- and post-construction monitoring of the sewage facility to ensure continued operation, with corrective actions for any negative impacts
- Development of an earthen berm for a visual buffer that provides noise reduction

Table 3-15: Section 4(f) Resource Use per Alternative

| Map Key Id* | Resource Name (size in acres*)                                      | Eligibility                                     | Build Alternatives Section 4(f) Use   |  |  |
|-------------|---|---|---|--|--|
|             |   |   | North   | Central  | South  |
| --          | <b>Penns Valley/ Brush Valley RHD (97,821 acres)</b>                | <b>Eligible</b>                                 | <b>Use of 114.37 acres, including the acquisition of property from 26 contributing resources</b>  | <b>Use of 125.68 acres, including the acquisition of property from 18 contributing resources</b> | <b>Use of 83.42 acres, including the acquisition of property from 15 contributing resources</b>  |
| --          | <b>Village of Tusseyville Historic District (THD) (29.71 acres)</b> | <b>Eligible</b>                                 | <b>Use of 5.73 acres, including the acquisition of property from seven contributing resources</b> | <b>No Use</b>  | <b>No Use</b>  |
| <b>A</b>    | <b>Tressler-Meyer Farm (97.48 acres)</b>                            | <b>Individually Eligible Contributes to RHD</b> | <b>No Use</b>   | <b>No Use</b>  | <b>No Use</b>  |
| <b>B</b>    | <b>Michael Jack Estate (3.86 acres)</b>                             | <b>Individually Eligible</b>                    | <b>Use of 0.33-acre; no building demolitions</b>  | <b>Use of 0.33-acre; no building demolitions</b>   | <b>Use of 0.33-acre; no building demolitions</b>   |
| <b>C</b>    | <b>Nease House (12.28 acres)</b>                                    | <b>Individually Eligible</b>                    | <b>Use of 4.48 acres; no building demolitions</b>   | <b>Use of 4.48 acres; no building demolitions</b>  | <b>Use of 4.48 acres; no building demolitions</b>  |
| <b>D</b>    | <b>Henry Meyer Farm (285.78 acres)</b>                              | <b>Individually Eligible Contributes to RHD</b> | <b>Use of 18.02 acres; no building demolitions</b>  | <b>Use of 20.06 acres; no building demolitions</b>   | <b>Use of 0.09 acres; no building demolitions (PHMC/SHPO concurred with a no adverse effect to the resource – qualifies as a Section 4(f) de minimis impact)</b> |



| Map Key Id* | Resource Name (size in acres*)            | Eligibility                                     | Build Alternatives - Section 4(f) Use  |  |  |
|-------------|---|---|--|--|--|
|             |   |   | North  | Central  | South                                      |
| E           | Tait Farm (11.12 acres)                   | Contributes to RHD                              | No Use   | No Use   | Use of 5.23 acres; no building demolitions |
| F           | Kuhns Tree Farm (44.00 acres)             | Contributes to RHD                              | Use of 5.66 acres; no building demolitions   | Use of 3.94 acres; no building demolitions   | No Use                                     |
| G           | 2114 Boal Avenue (2.00 acres)             | Contributes to RHD                              | No Use   | No Use   | No Use                                     |
| H           | 2296 Boal Avenue (24.92 acres)            | Contributes to RHD                              | No Use   | No Use   | Use of 4.50 acres; no building demolitions |
| I           | North Side Boal Avenue (183.16 acres)     | Contributes to RHD                              | Use of 30.85 acres; no building demolitions  | Use of 30.18 acres; no building demolitions  | No Use                                     |
| <b>J</b>    | <b>Peter Ruble Farmstead (7.00 acres)</b> | <b>Individually Eligible Contributes to RHD</b> | <b>No Use</b>  | <b>No Use</b>  | <b>No Use</b>                              |
| K           | 126 Vernon Way (0.48-acre)                | Contributes to RHD                              | No Use   | Use of the entire property including the demolition of the residence   | No Use                                     |
| L           | 120 Vernon Way (18.12 acres)              | Contributes to RHD                              | No Use   | Use of 11.28 acres; including the demolition of the residence  | No Use                                     |
| M           | John Brisbin Farmstead (7.30 acres)       | Contributes to RHD                              | No Use   | Use: 0.11-acre of impact; no building demolitions (PHMC/SHPO concurred with a no adverse effect to the resource – qualifies as a Section 4(f) de minimis impact) | No Use                                     |
| N           | 131 Stave Mill Road (177.72 acres)        | Contributes to RHD                              | Use: 0.08-acre of impact; no building demolitions (PHMC/SHPO concurred with a no adverse effect to the resource – qualifies as a Section 4(f) de minimis impact) | No Use   | No Use                                     |



| Map Key Id* | Resource Name (size in acres*)         | Eligibility                                     | Build Alternatives - Section 4(f) Use  |   |   |
|-------------|--|---|--|---|---|
|             |  |   | North  | Central   | South   |
| O           | 2215 Earlystown Road (8.97 acres)      | Contributes to RHD                              | No Use   | No Use  | No Use  |
| <b>P</b>    | <b>Durst Farm (96.00 acres)</b>        | <b>Individually Eligible Contributes to RHD</b> | <b>No Use</b>  | <b>No Use</b>   | <b>No Use</b>   |
| <b>Q</b>    | <b>Wagner-Homan Farm (147.9 acres)</b> | <b>Individually Eligible Contributes to RHD</b> | <b>Use: 2.95 acres of impact; no building demolitions (PHMC/SHPO concurred with a no adverse effect to the resource – qualifies as a Section 4(f) de minimis impact)</b> | <b>No Use</b>   | <b>No Use</b>   |
| R           | 163 Wagner Road (15.19 acres)          | Contributes to RHD                              | Use: 0.10-acre of impact: no building demolitions (PHMC/SHPO concurred with a no adverse effect to the resource – qualifies as a Section 4(f) de minimis impact)         | No Use  | No Use  |
| S           | Tusseysink Schoolhouse (0.88-acre)     | Contributes to RHD                              | No Use   | No Use  | No Use  |
| T           | Ruble Family Farm (30.00 acres)        | Contributes to RHD                              | No Use   | Use of 4.91 acres; no building demolitions  | Use of 16.59 acres; no building demolitions   |
| U           | 166 Taylor Hill Road (69.40 acres)     | Contributes to RHD                              | No Use   | Use of 4.10 acres; including the demolition of 5 non-contributing buildings (i.e., a barn, silo, 2 stables, and a loafing shed) | Use of 5.88 acres; including the demolition of 5 non-contributing buildings (i.e., a barn, silo, 2 stables, and a loafing shed) |
| V           | 234 Taylor Hill Road (5.21 acres)      | Contributes to RHD                              | No Use   | No Use  | No Use  |



| Map Key Id* | Resource Name (size in acres*)                    | Eligibility                                     | Build Alternatives - Section 4(f) Use                        |  |  |
|-------------|---|---|--|--|--|
|             |   |   | North  | Central  | South  |
| W           | Love, O (2.13 acres)                              | Contributes to RHD                              | No Use   | No Use   | No Use   |
| X           | 207 Taylor Hill Road (34.07 acres)                | Contributes to RHD                              | No Use   | Use of 8.22 acres; no building demolitions                           | Use of 8.22 acres; no building demolitions                           |
| Y           | Spangler-Runkle House (2.50 acres)                | Contributes to RHD                              | No Use   | Use of the entire property including the demolition of the residence | Use of the entire property including the demolition of the residence |
| Z           | 2214 General Potter Highway (0.73-acre)           | Contributes to RHD                              | No Use   | Use of the entire property including the demolition of the residence | Use of the entire property including the demolition of the residence |
| AA          | 2165 General Potter Highway (240.00 acres)        | Contributes to RHD                              | Use of 16.31 acres; no building demolition                   | No Use   | No Use   |
| <b>BB</b>   | <b>Joseph Jordan Farm (22.00 acres)</b>           | <b>Individually Eligible Contributes to RHD</b> | <b>Use of 3.96 acres; no building demolition</b>             | <b>No Use</b>  | <b>No Use</b>  |
| CC          | Boal, William (2.27 acres)                        | Contributes to RHD                              | No Use   | No Use   | No Use   |
| DD          | 136 Neff Road (7.26 acres)                        | Contributes to RHD                              | Use of 4.56 acres; including the demolition of the residence | No Use   | No Use   |
| EE          | Evangelical Church (1.88 acres)                   | Contributes to RHD                              | No Use   | No Use   | No Use   |
| <b>FF</b>   | <b>Bethany Church &amp; Cemetery (3.38 acres)</b> | <b>Individually Eligible Contributes to RHD</b> | <b>No Use</b>  | <b>No Use</b>  | <b>No Use</b>  |
| GG          | Kerr, Rev. D., Estate, Site (4.36 acres)          | Contributes to RHD                              | No Use   | No Use   | No Use   |
| <b>HH</b>   | <b>Frederick Seltzer Farm (150.65 acres)</b>      | <b>Individually Eligible Contributes to RHD</b> | <b>No Use</b>  | <b>No Use</b>  | <b>No Use</b>  |



| Map Key Id* | Resource Name (size in acres*)           | Eligibility        | Build Alternatives - Section 4(f) Use   |   |   |
|-------------|--|--------------------|---|---|---|
|             |  |                    | North   | Central   | South   |
| II          | Lawrence Grossman Farm (85.50 acres)     | Contributes to RHD | Use of 5.75 acres; including the demolition of 2 contributing barns   | Use of 20.06 acres; including the demolition of 7 contributing buildings (i.e., the residence, a workshop/shed, 2 outbuildings, a smokehouse, and 2 barns) and 3 non-contributing buildings (i.e., 2 machine sheds and a corn crib) | Use of 20.06 acres; including the demolition of 7 contributing buildings (i.e., the residence, a workshop/shed, 2 outbuildings, a smokehouse, and 2 barns) and 3 non-contributing buildings (i.e., 2 machine sheds and a corn crib) |
| JJ          | Fisher-Fortney Farm (2.93 acres)         | Contributes to RHD | Use: 0.20-acre of impact including the demolition of a non-contributing garage (PHMC/SHPO concurred with a no adverse effect to the resource – qualifies as a Section 4(f) de minimis impact) | No Use  | No Use  |
| KK          | 105 Addleman Circle (0.50-acre)          | Contributes to RHD | Use of 0.39-acre; including the demolition of the residence   | No Use  | No Use  |
| LL          | 109 Addleman Circle (6.50 acres)         | Contributes to RHD | Use of 0.73-acre; including the demolition of the residence   | No Use  | No Use  |
| MM          | 2414 General Potter Highway (4.86 acres) | Contributes to RHD | Use of 4.05 acres; including the demolition of 2 contributing buildings (i.e., the residence and the barn) and 2 non-contributing buildings (i.e., a garage and workshop)                     | Use of 4.05 acres; including the demolition of 2 contributing buildings (i.e., the residence and the barn) and 2 non-contributing buildings (i.e., a garage and workshop)   | Use of 4.05 acres; including the demolition of 2 contributing buildings (i.e., the residence and the barn) and 2 non-contributing buildings (i.e., a garage and workshop)   |
| NN          | 105 Young Lane (0.61-acre)               | Contributes to RHD | No Use  | No Use  | No Use  |



| Map Key Id* | Resource Name (size in acres*)           | Eligibility                                     | Build Alternatives - Section 4(f) Use  |  |  |
|-------------|--|---|--|--|--|
|             |  |   | North  | Central  | South  |
| OO          | Michael Ulrich Farmstead (1.50 acres)    | Contributes to RHD                              | Use of 1.49 acres; including the demolition of 2 contributing buildings (i.e., the residence and the garage) and 1 non-contributing buildings (i.e., a horse stable) | Use of 1.49 acres; including the demolition of 2 contributing buildings (i.e., the residence and the garage) and 1 non-contributing buildings (i.e., a horse stable) | Use of 1.49 acres; including the demolition of 2 contributing buildings (i.e., the residence and the garage) and 1 non-contributing buildings (i.e., a horse stable) |
| <b>PP</b>   | <b>Jacob Keller Farm (30.44 acres)</b>   | <b>Individually Eligible Contributes to RHD</b> | <b>No Use</b>  | <b>No Use</b>  | <b>No Use</b>  |
| QQ          | 159 Cider Press Road (8.00 acres)        | Contributes to RHD                              | No Use   | No Use   | No Use   |
| RR          | 2571 General Potter Highway (6.75 acres) | Contributes to RHD                              | No Use   | No Use   | No Use   |
| SS          | 2601 General Potter Highway (9.00 acres) | Contributes to RHD                              | No Use   | No Use   | No Use   |
| TT          | 2606 General Potter Highway (5.03 acres) | Contributes to RHD                              | Use of 4.86 acres; including the demolition of 1 contributing building (i.e., the residence) and 2 non-contributing buildings (i.e., a garage and outbuilding)       | Use of 4.86 acres; including the demolition of 1 contributing building (i.e., the residence) and 2 non-contributing buildings (i.e., a garage and outbuilding)       | Use of 4.86 acres; including the demolition of 1 contributing building (i.e., the residence) and 2 non-contributing buildings (i.e., a garage and outbuilding)       |
| UU          | 2668 General Potter Highway (9.00 acres) | Contributes to RHD                              | Use of 4.88 acres; including the demolition of 1 contributing building (i.e., the residence) and 3 non-contributing buildings (i.e., a garage and 2 outbuildings)    | Use of 4.88 acres; including the demolition of 1 contributing building (i.e., the residence) and 3 non-contributing buildings (i.e., a garage and 2 outbuildings)    | Use of 4.88 acres; including the demolition of 1 contributing building (i.e., the residence) and 3 non-contributing buildings (i.e., a garage and 2 outbuildings)    |
| VV          | 397 Mountain Back Road (9.61 acres)      | Contributes to RHD                              | No Use   | No Use   | No Use   |



| Map Key Id* | Resource Name (size in acres*)                           | Eligibility                                     | Build Alternatives - Section 4(f) Use  |  |  |
|-------------|--|---|--|--|--|
|             |  |   | North  | Central  | South  |
| WW          | Thomas J. Stiver Farm (56.68 acres)                      | Contributes to RHD                              | No Use   | No Use   | No Use   |
| XX          | Samuel Royer Farmstead (12.71 acres)                     | Contributes to RHD                              | Use of 0.82-acre; no building demolitions  | Use of 0.82-acre; no building demolitions  | Use of 0.82-acre; no building demolitions  |
| YY          | 127 Zuck Road (29.42 acres)                              | Contributes to RHD                              | No Use   | No Use   | No Use   |
| ZZ          | Miller Farm (71.17 acres)                                | Contributes to RHD                              | Use of 3.19 acres; no building demolitions (PHMC/SHPO concurred with a no adverse effect to the resource – qualifies as a Section 4(f) <i>de minimis</i> impact) | Use of 3.19 acres; no building demolitions (PHMC/SHPO concurred with a no adverse effect to the resource – qualifies as a Section 4(f) <i>de minimis</i> impact) | Use of 3.19 acres; no building demolitions (PHMC/SHPO concurred with a no adverse effect to the resource – qualifies as a Section 4(f) <i>de minimis</i> impact) |
| <b>AB</b>   | <b>Old Lewistown Pike Cemetery (0.13-acre)</b>           | <b>Individually Eligible Contributes to RHD</b> | <b>No Use</b>  | <b>No Use</b>  | <b>No Use</b>  |
| T1          | Wm W. Love House (0.45-acre)                             | Contributes to RHD and THD                      | No Use   | No Use   | No Use   |
| T2          | Jacob Strohm House (1.72 acres)                          | Contributes to RHD And THD                      | Use of 0.35-acre; no building demolitions  | No Use   | No Use   |
| T3          | John Lichty House (0.47-acre)                            | Contributes to RHD and THD                      | Use of 0.14-acre; including the demolition of 2 contributing buildings (i.e., the residence and an outhouse)   | No Use   | No Use   |
| T4          | S.M. Swartz House (0.22-acre)                            | Contributes to RHD and THD                      | No Use   | No Use   | No Use   |
| T5          | Swartz General Store/Tusseyville Post Office (0.22-acre) | Contributes to RHD and THD                      | No Use   | No Use   | No Use   |
| T6          | James Moyer House (0.41-acre)                            | Contributes to RHD and THD                      | No Use   | No Use   | No Use   |



| Map Key Id* | Resource Name (size in acres*)                 | Eligibility                | Build Alternatives - Section 4(f) Use                                |   |        |
|-------------|--|----------------------------|--|---|--------|
|             |  |                            | North  | Central   | South  |
| T7          | Henry Rossman House (0.94-acre)                | Contributes to RHD and THD | Use of the entire property including the demolition of the residence | No Use  | No Use |
| T8          | F.D. Hosterman Tenant House (0.32-acre)        | Contributes to RHD and THD | Use of the entire property including the demolition of the residence | No Use  | No Use |
| T9          | George and Myra Ishler House (0.32-acre)       | Contributes to RHD and THD | Use of the entire property including the demolition of the residence | No Use  | No Use |
| T10         | Maggie Love House (0.28-acre)                  | Contributes to RHD and THD | Use of the entire property including the demolition of the residence | No Use  | No Use |
| T11         | Emmanuel Union Church School (0.51-acre)       | Contributes to RHD and THD | No Use   | No Use  | No Use |
| T12         | Emmanuel Union Church (2.16 acres)             | Contributes to RHD and THD | No Use   | No Use  | No Use |
| T13         | Emmanuel Union Cemetery (2.29 acres)           | Contributes to RHD and THD | No Use   | No Use  | No Use |
| T14         | Jonas From Farm (19.55 acres)                  | Contributes to RHD and THD | Use of 3.38 acres; no building demolitions                           | No Use  | No Use |
| N/A         | Potter Township Athletic Complex (29.00 acres) | N/A                        | No Use   | 5.95-acre impact of 29.0-acre park property. Impact area does not contain planned or developed recreational features. | No Use |

**NOTE: Bold text** indicates eligible or individually eligible resources.

Figures showing the specific location of each of the historic resources are located in **Appendix C**.

\* Acreages based on historic parcel, with the exception of the Athletic Complex.

## 3.10 Air Quality

### 3.10.1 Methodology

Under the *Clean Air Act of 1963* (CAA), the *Air Quality Act of 1967*, and the *Federal Clean Air Act Amendments of 1990*, the US EPA established National Ambient Air Quality Standards (NAAQS) for six criteria air pollutants that are considered harmful to public health and welfare: carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), ozone (O<sub>3</sub>), respirable Particulate Matter (PM) (both PM<sub>2.5</sub> and PM<sub>10</sub>), and lead (Pb). As



shown in **Table 3-16**, there are currently two types of standards: Primary Standards that are designed to protect public health (including the health of "sensitive" populations such as asthmatics, children, and the elderly) and Secondary Standards that are meant to protect public welfare (e.g., against damage to crops, vegetation, buildings, and animals). Federal actions must not cause or contribute to any new violation of any standard, increase the frequency or severity of existing violations, or delay the timely attainment of any standard or required interim milestone.

If the air quality in a geographic region meets the national standard, EPA designates it as an attainment area. Regions that do not meet the national standard are designated as non-attainment areas. When EPA designates an area as non-attainment, the CAA requires the state to develop and implement a State Implementation Plan (SIP), which outlines how the state will achieve air quality that meets the NAAQS within the deadlines set by the CAA, and then create a plan to maintain attainment once achieved. Areas that were previously non-attainment but now meet the standard, with an EPA-approved plan to sustain it, are designated as maintenance areas.

Pennsylvania has developed a SIP that outlines regulations, control measures, and strategies to ensure compliance with NAAQS. Transportation conformity under the CAA applies to federally funded transportation projects in areas that have violated one or more of the NAAQS in EPA-designated non-attainment or maintenance areas. Federal actions in areas that are in attainment with criteria pollutants are not subject to the conformity rule. The statewide transportation conformity SIP for Pennsylvania was approved by EPA on June 29, 2009.

Since Centre County is currently classified as a maintenance area under the 1997 eight-hour ozone standard, ozone is assessed as part of the CCMPO regional conformity analysis conducted through the TIP and LRTP processes to meet federal transportation conformity rule requirements (40 CFR Parts 51 and 93). Inclusion in the TIP shows that the Project has been considered and included as part of an approved Regional Conformity Analysis. The 2025-2028 Centre County TIP was adopted by CCMPO on June 25, 2024 and approved by the USDOT on September 27, 2024. With this approval, FHWA, in concurrence with EPA, has determined that the conformity determinations for the FY 2025-2028 TIPs in all nonattainment and maintenance areas of the Commonwealth adequately address and meet the requirements as specified in the Transportation Conformity Rule [40 CFR Part 93], ensuring that federal activities do not cause or contribute to new violations of the NAAQS; do not cause additional or worsen existing violations of or contribute to new violations of the NAAQS; and ensure that attainment of the NAAQS is not delayed. The air quality conformity determination approval for these regions will reset the four-year conformity timeclock to begin on September 27, 2024. This project is referenced as MPMS 112784 on the approved FY 2025-2028 Centre County TIP. As this project is included on the approved TIP and has been determined to conform to the SIP, no further analysis is required for the 1997 eight-hour ozone standard.



Table 3-16: National Ambient Air Quality Standards

| Pollutant                           |                   | Primary/Secondary     | Average Time            | Level  | Form  |
|-------------------------------------|-------------------|-----------------------|-------------------------|--|---|
| Carbon Monoxide (CO)                |                   | primary               | 8 hours<br>1 hour       | 9 ppm<br>35 ppm                              | Not to exceed more than once per year   |
| Lead (Pb)                           |                   | primary and secondary | Rolling 3 month average | 0.15 $\mu\text{g}/\text{m}^3$ <sup>(1)</sup> | Not to be exceeded  |
| Nitrogen Dioxide (NO <sub>2</sub> ) |                   | primary               | 1 hour                  | 100 ppb                                      | 98 <sup>th</sup> percentile of 1-hour daily maximum concentrations, averaged over 3 years |
|                                     |                   | primary and secondary | 1 year                  | 53 ppb <sup>(2)</sup>                        | Annual mean   |
| Ozone (O <sub>3</sub> )             |                   | primary and secondary | 8 hours                 | 0.070 ppm <sup>(3)</sup>                     | Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years           |
| Particle Pollution (PM)             | PM <sub>2.5</sub> | primary               | 1 year                  | 12 $\mu\text{g}/\text{m}^3$                  | Annual Mean, averaged over 3 years  |
|                                     |                   | secondary             | 1 year                  | 15 $\mu\text{g}/\text{m}^3$                  | Annual Mean, averaged over 3 years  |
|                                     | PM <sub>10</sub>  | primary and secondary | 24 hours                | 35 $\mu\text{g}/\text{m}^3$                  | 98 <sup>th</sup> percentile, averaged over 3 years  |
|                                     |                   | primary and secondary | 24 hours                | 150 $\mu\text{g}/\text{m}^3$                 | Not to exceed more than once per year on average over 3 years                             |
| Sulfur Dioxide (SO <sub>2</sub> )   |                   | primary               | 1 hour                  | 75 ppb <sup>(4)</sup>                        | 99 <sup>th</sup> percentile of 1-hour daily maximum concentrations, averaged over 3 years |
|                                     |                   | secondary             | 3 hours                 | 0.5 ppm                                      | Not to exceed more than once per year   |

Units of measure for the standards are parts per million (ppm) by volume, parts per billion (ppb) by volume, and micrograms per cubic meter of air ( $\mu\text{g}/\text{m}^3$ ).

(1) In areas designated nonattainment for the Pb standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5  $\mu\text{g}/\text{m}^3$  as a calendar quarter average) also remain in effect.

(2) The level of the annual NO<sub>2</sub> standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of clearer comparison to the 1-hour standard level.

(3) Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) O<sub>3</sub> standards are not revoked and remain in effect for designated areas. Additionally, some areas may have certain continuing implementation obligations under the prior revoked 1-hour (1979) and 8-hour (1997) O<sub>3</sub> standards.

(4) The previous SO<sub>2</sub> standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas:

(1) Any area for which it is not yet one year since the effective date of designation under the current (2010) standards, and

(2) any area for which an implementation plan providing for attainment of the current (2010) standard has not been submitted and approved and which is designated nonattainment under the previous SO<sub>2</sub> standards or is not meeting the requirements of a SIP call under the previous SO<sub>2</sub> standards (40 CFR 50.4(3)). A SIP call is an EPA action requiring a state to resubmit all or part of its State Implementation Plan to demonstrate attainment of the required NAAQS.

Source: EPA Web Site: <https://www.epa.gov/criteria-air-pollutants/naaqs-table>



On January 20, 2025, President Trump signed E.O. 14148 – *Initial Rescissions of Harmful Executive Orders and Actions* and E.O. 14154 – *Unleashing American Energy*. The EOs revoked E.O. 13990 – *Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis* (January 20, 2021) and E.O. 14008 – *Tackling the Climate Crisis at Home and Abroad* (January 27, 2021). Subsequently, on January 29, 2025, Secretary Duffy signed a Memorandum for Secretarial Offices and Heads of Operating Administrations – *Implementation of Executive Orders Addressing Energy, Climate Change, Diversity, and Gender*. On February 25, 2025, the CEQ published an Interim Final Rule removing the CEQ’s NEPA implementing regulations, effective April 11, 2025 (90 FR 10610). As a result of these actions, FHWA will not include greenhouse gas emissions and climate change analyses in the federal environmental review process. Any purported greenhouse gas emissions and climate change impacts will not be considered in the federal decision. Accordingly, no greenhouse gas emissions or climate change analyses are included in this DEIS.

### **3.10.2 Existing Conditions**

A project-level air quality analysis was conducted to evaluate potential air quality impacts according to PennDOT’s Publication No. 321, *Project-Level Air Quality Handbook* (2017). The pollutants considered for this analysis include carbon monoxide (CO), particulate matter (PM<sub>2.5</sub>/PM<sub>10</sub>), and mobile source air toxics (MSATs). Additional guidance for assessing MSATs is provided through FHWA’s *Updated Interim Guidance on Mobile Source Air Toxic Analysis* in NEPA Documents, issued January 18, 2023.

**Carbon Monoxide (CO):** NEPA project air quality analyses have typically focused on CO as the primary indicator for vehicular-induced pollution. A CO project-level air quality analysis is performed to ensure that new or worsened violations of the NAAQS will not occur as a result of the proposed project. There are currently no areas in Pennsylvania that are in “nonattainment” status for the CO National Ambient Air Quality Standards (NAAQS). Recent monitor readings across the state are well below the standards and are expected to remain that way in the future, as per data presented in the PA DEP’s “Air Quality Index Reports” webpage (<https://www.pa.gov/agencies/dep/programs-and-services/air/bureau-of-air-quality/monitoring-topics/air-quality-index>) and the EPA’s “Carbon Monoxide Trends” webpage (<https://www.epa.gov/air-trends/carbon-monoxide-trends>). Since the 1990s, significant improvements in vehicle emissions technology, stricter vehicle emission standards, and improved fuel quality have greatly reduced transportation’s impact on CO. PennDOT has determined that most transportation projects will not worsen CO emissions. Although project-level analyses will likely continue to evaluate CO levels associated with transportation improvement projects, PennDOT has developed thresholds used to determine whether a quantitative CO analysis is required for an individual project, including whether the subject project does not include or directly affect any roadways for which the 20-year forecasted daily volume will exceed the established threshold level of 125,000 vehicles per day, or AADT. The current maximum AADT within the existing US 322 corridor is 15,800 vehicles per day, based on 2023



traffic data. For design year 2050 no build, the maximum AADT within the US 322 corridor is projected to be 23,900. For design year 2050 build, the maximum AADT within the US 322 corridor is projected to be 29,800. This 2050 build AADT includes both the AADT associated with any of the proposed alternatives along with the AADT along the existing US 322 which would remain to provide local access. Because the current and projected traffic volumes are below 125,000 AADT, a quantitative CO analysis is not warranted in accordance with PennDOT's *Project-Level Air Quality Handbook* (2017).

**Particulate Matter (PM):** The Project is in an attainment area for the PM<sub>2.5</sub> and PM<sub>10</sub> standards; therefore, it does not require a project-level conformity determination. According to the PM<sub>2.5</sub> and PM<sub>10</sub> hot-spot analysis requirements established on March 10, 2006, *Final Transportation Conformity Rule* (71 FR 12468), no further project-level air quality analysis for these pollutants is necessary.

**Mobile Source Air Toxics:** FHWA most recently updated its guidance for the assessment of MSATs in the NEPA process for highway projects in 2023. The updated guidance states that "EPA identified nine compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers or contributors and non-cancer hazard contributors from the 2011 National Air Toxics Assessment (NATA). These are 1,3-butadiene, acetaldehyde, acrolein, benzene, diesel particulate matter (diesel PM), ethylbenzene, formaldehyde, naphthalene, and polycyclic organic matter." It also specifies three possible categories or tiers of analysis, namely:

- 1) Tier 1: projects with no meaningful potential MSAT effects or exempt projects (for which MSAT analyses are not required)
- 2) Tier 2: projects with low potential MSAT effects (requiring only qualitative analyses)
- 3) Tier 3: projects with higher potential MSAT effects (requiring quantitative analyses)

As this Project involves an EIS and is not exempt, it does not qualify as a Tier 1 project under FHWA MSAT Guidance. It also does not meet the criteria for a Tier 3 project in FHWA guidance, as total traffic is forecast to reach only 29,800 AADT for the Design Year Build scenario, which is well below the 140,000 to 150,000 AADT criteria specified in FHWA guidance for Tier 3 projects (i.e., projects for which quantitative analyses for MSATs would be required). Additionally, this Project does not involve the creation or alteration of a major intermodal freight facility that has the potential to concentrate high levels of diesel particulate matter in a single location.

This Project may therefore be categorized as a Tier 2 project (i.e., one with "Low Potential MSAT Effects"). Projects in this category are addressed with a qualitative analysis, which as FHWA guidance states provides a basis for identifying and comparing potential differences for MSAT emissions, if any, from the various alternatives. The qualitative assessment presented below follows FHWA guidance. It 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/mobile\\_source\\_air\\_toxics/msatemissions.cfm](https://www.fhwa.dot.gov/environment/air_quality/air_toxics/research_and_analysis/mobile_source_air_toxics/msatemissions.cfm).

For each of the three Build Alternatives and the No Build Alternative, the amount of MSATs emitted is proportional to vehicle miles traveled (VMT), assuming that other variables such as fleet mix are the same for each alternative. The VMT estimated for any of the Build Alternatives, therefore, may be slightly higher than that for the No Build Alternative because the new roadway attracts rerouted trips from elsewhere in the transportation network. This increase in VMT could lead to higher MSAT emissions for the Build Alternative along the roadway corridor, along with a corresponding decrease in MSAT emissions along the parallel routes. The emissions increase would be offset somewhat by lower MSAT emission rates due to increased speeds; according to EPA's MOVES3 model, emissions of all the priority MSATs decrease as speed increases.

### **3.10.3 Impacts**

**No Build Alternative:** The No Build Alternative will have no adverse impact on air quality as a result of CO emissions.

**Build Alternatives:** The Build Alternatives will have no adverse impact on air quality as reduced traffic congestion reduces CO emissions. The localized level of MSAT emissions for the Build Alternatives could be higher relative to the No Build Alternative, but this could be offset due to increases in speeds and reductions in congestion (which are associated with lower MSAT emissions). In addition, MSAT emissions will be lower in other locations when traffic shifts away from them. However, on a regional basis, EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time, cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be lower than today.

Construction of any of the three Build Alternatives 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 typically not a concern provided that contractors utilize appropriate control measures.

### **3.10.4 Mitigation**

Based on this air quality analysis and guidance from state and federal agencies, none of the proposed Build Alternatives are anticipated to adversely impact air quality within the project area. Therefore, no mitigation measures are required. Contractors will be expected to 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 with respect to fugitive dust emissions.

## **3.11 Noise**

### **3.11.1 Methodology**

Roadway construction of a highway on a new location or roadway improvements to an existing transportation network may cause negative impacts to noise sensitive receptors



located adjacent to the project area. For this reason, FHWA and PennDOT have established noise analysis methodologies and noise level criteria to assess potential noise impacts associated with the construction and use of transportation projects. A traffic noise impact occurs on a project when predicted Build noise levels approach (within one A-weighted decibels [dB(A)]), meet or exceed the applicable Noise Abatement Criteria (NAC) listed in **Table 3-17**, or when the predicted noise levels are substantially higher (10 dB(A) or greater) than the existing noise level.

The *State College Area Connector Preliminary Design Noise Analysis Report* (September 2025) was completed using the methodology described in PennDOT Publication No. 24, *Project Level Highway Traffic Noise Handbook* (May 2019) and FHWA regulations as described in 23 CFR § 772. Per 23 CFR § 772, this Project is classified as a Type I project; therefore, it requires a noise analysis as it includes the construction of a highway on a new alignment. The objective of the *Preliminary Design Noise Analysis Report* (September 2025) is to provide an overview of the existing and future noise environment and predict the potential effects the Project would have on the noise environment.

Table 3-17: Noise Abatement Criteria - Hourly A-Weighted Sound Level in Decibels [dB(A)]

| Activity Category | Leq(h)* <sup>1</sup> | 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 <sup>2</sup>    | 67 (Exterior)        | Residential   |
| C <sup>2</sup>    | 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 non-profit 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 non-profit institutional structures, radio studios, recording studios, schools, and television studios  |
| E <sup>2</sup>    | 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.   |

<sup>1</sup>Impact thresholds should not be used as design standards for noise abatement purposes.

<sup>2</sup>Includes undeveloped lands permitted for this activity category

\* LEG(h)1 – Equivalent Continuous Sound Level measured over the duration of an hour

Source: 23 CFR § 772



The noise analysis involved the measurement of existing noise levels and noise model validation of existing conditions at representative noise-sensitive land uses, noise modeling of existing (2023) and design year (2050) noise conditions (No Build and Build), 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<sup>®</sup>), hereafter referred to as simply "TNM". For the NEPA phase of the project, the design year Build condition consisted of the three Build Alternatives. Specific details of the noise analysis are provided in the *Preliminary Design Noise Analysis Report* (September 2025) (**Appendix L**); a summary of the project's noise analysis is provided below.

### **3.11.2 Existing Conditions**

**Noise Monitoring and Model Validation:** Measurement of existing noise levels is required for several reasons. For the project noise analysis, existing noise level monitoring was conducted to validate the TNM at locations currently influenced by existing highway traffic noise sources. Monitoring was also conducted to determine existing noise levels in areas remote from existing noise sources or in other areas where noise model validation cannot be performed. TNM model validation ensures the accuracy and reliability of the model predicted future noise conditions for the Build Alternatives.

Short-term noise monitoring of 15 minutes in duration was conducted at 50 locations throughout the project location in the fall of 2023 and spring of 2024 (**Figure 3-7**). These short-term monitoring locations represent noise-sensitive land uses that may be influenced by existing noise levels and by future design year conditions. The measured sound levels in the study area ranged from 38 dB(A) to 72 dB(A). Existing traffic noise levels that approach/exceed the NAC were measured at seven of the short-term monitoring locations. All of these locations were residential land uses adjacent to US 322, with the areas of frequent human outdoor use within approximately 100 feet or less of the edge of pavement. Traffic noise from US 322 was audible at all the monitoring sites, with it being the dominant source of noise at a majority of the locations. At several of the sites, US 322 traffic noise was a minor component of the overall acoustic environment based on the distance between the roadway and the site, with other more local noise sources, such as agricultural activity and wildlife (birds, insects), providing equal or greater acoustic contributions.

An existing conditions TNM model was developed which included all pertinent roadways, terrain, and structural elements needed to adequately characterize the project area's existing noise environment. The model was validated by using the noise levels and traffic data collected at each monitoring site. PennDOT recognizes a difference of  $\pm 3$  dB(A) or less between the monitored and modeled levels as acceptable, since this is the limit of change detectable by typical human hearing.

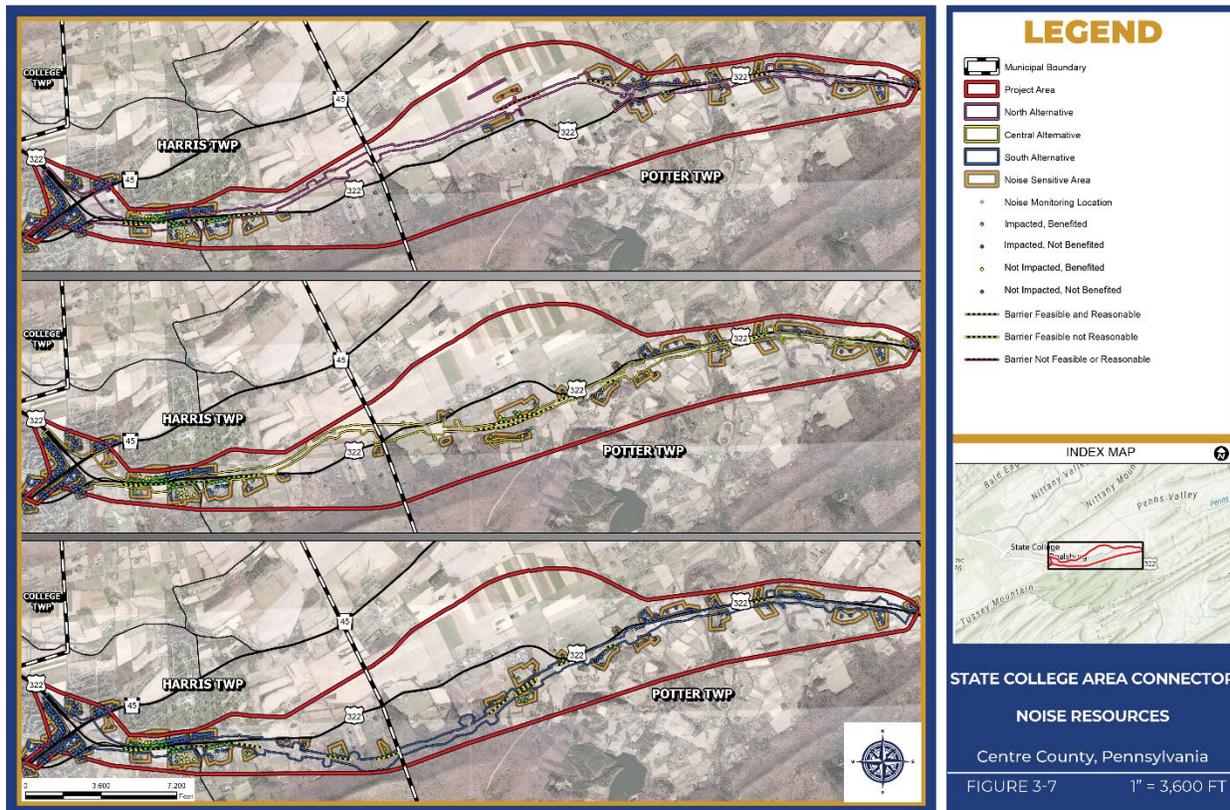


Figure 3-7: Noise Resources

Noise levels at 47 of the 50 monitored locations were significantly influenced enough by traffic noise from US 322 (and PA 45) such that traffic noise was able to be accurately modeled within the acceptable  $\pm 3$  dB(A) range. The validation procedure is not applicable for the remaining three monitoring sites as existing traffic noise is not a large enough component in their respective acoustic environments to be accurately modeled. Noise-sensitive land uses were identified and grouped into 56 unique NSAs with respect to the three proposed Build Alternatives to facilitate the analysis. As all three Build Alternatives share a common alignment at both the western end of the Project and at the eastern end where the Project will tie into the existing four-lane sections of US 322, 24 of these NSAs are common to all three Build Alternatives. Starting at the western end of the project area, NSAs 1 through 16 are common to the western portions of all three Build Alternatives. In the east, NSAs 30 through 37 are common to the eastern portions of all three Build Alternatives. NSAs 24 through NSA 29 are common to both the Central and South Alternatives, while the remaining 26 NSAs are unique to one of the three Build Alternatives.

For calculation of the existing loudest-hour noise levels within each NSA, additional noise receptor locations to represent all noise-sensitive land uses within each NSA are modeled to provide a comprehensive basis of comparison for the analysis of noise impacts between the existing and future project conditions. Using the appropriate loudest-hour traffic data for the existing condition, existing traffic noise levels were



predicted for all of the receptor locations. Within the 37 NSAs that correspond to the Central Alternative, noise levels at 263 noise receptors (representing 498 equivalent residential units [ERU]) were predicted to range from 40 dB(A) to 73 dB(A) for the existing condition. Within the 37 NSAs that correspond to the North Alternative, noise levels at 247 noise receptors (representing 480 ERU) were predicted to range from 42 dB(A) to 74 dB(A) for the existing condition. Within the 38 NSAs that correspond to the South Alternative, noise levels at 258 noise receptors (representing 491 ERU) were predicted to range from 39 dB(A) to 73 dB(A) for the existing condition.

### **3.11.3 Impacts**

Future loudest-hour traffic noise levels were predicted for both the No Build and Build design year (2050) conditions to determine the effects of the Project on the traffic noise levels within each of the NSAs. The 2050 Build noise levels were predicted by incorporating the projected design year loudest-hour traffic volumes and compositions into these three 2050 Build models. In addition to the three 2050 Build noise models, a 2050 No Build noise model was constructed for comparison purposes. The 2050 No Build noise levels were predicted by incorporating projected 2050 No Build loudest-hour traffic volumes and compositions into the existing conditions noise model.

**No Build Alternative:** The No Build Alternative is a representation of the existing roadway network that accounts for natural traffic growth through the design year of the project. The No Build noise model considers design year traffic projections on the existing roadway network with no project-related improvements in place. All receptors for which traffic noise levels were predicted to approach/exceed the NAC in the existing condition will also approach/exceed the NAC in the No Build condition, along with additional receptors that would also approach/exceed the NAC as a result of the increased traffic volumes and louder noise levels associated with the No Build condition. The receptors that are predicted to approach/exceed the NAC in the No Build condition are not considered impacts, as the No Build condition is only evaluated for purposes of comparison with the existing and Build conditions in accordance with NEPA requirements.

**North Alternative:** Within the 37 NSAs that correspond to the North Alternative, design year Build loudest-hour traffic noise levels at 247 noise receptors (representing 480 ERU) were predicted and compared to the FHWA/PennDOT NAC to determine noise impacts.

- Noise impacts were identified within ten of the 37 NSAs.
- A total of 28 receptors (representing 64 ERU) were identified as having noise levels either approaching/exceeding NAC or experiencing a substantial increase over existing noise levels, with each of these receptors warranting noise abatement consideration.
- The design year Build loudest-hour traffic noise levels associated with the North Alternative were predicted to range from 44 dB(A) to 73 dB(A). In areas where the North Alternative is in close proximity to the existing US 322, NSAs/receptors predicted to experience elevated traffic noise levels for the design year Build

condition are currently exposed to elevated traffic noise levels from US 322. In the central portion of the project area where the three alternatives diverge from the existing US 322, NSAs/receptors that do not currently experience elevated traffic noise levels will experience substantial changes to their noise environment commensurate to their proximity to the proposed alternative.

- The design year No Build loudest-hour traffic noise levels for NSAs associated with the North Alternative were predicted to range from 43 dB(A) to 75 dB(A). As the No Build Alternative utilizes the existing US 322 roadway network, NSAs/receptors not in close proximity to the existing US 322 are not predicted to experience substantial changes to their noise environment.

**Central Alternative:** Within the 37 NSAs that correspond to the Central Alternative, design year Build loudest-hour traffic noise levels at 263 noise receptors (representing 498 ERU) were predicted and compared to the FHWA/PennDOT NAC to determine noise impacts.

- Noise impacts were identified within 11 of the 37 NSAs.
- A total of 33 receptors (representing 70 ERU) were identified as having noise levels either approaching/exceeding NAC or experiencing a substantial increase over existing noise levels, with each of these receptors warranting noise abatement consideration.
- The design year Build loudest-hour traffic noise levels associated with the Central Alternative were predicted to range from 44 dB(A) to 71 dB(A). In areas where the Central Alternative is in close proximity to the existing US 322 corridor, NSAs/receptors predicted to experience elevated traffic noise levels for the design year Build condition are currently exposed to elevated traffic noise levels from US 322. In the central portion of the project area where the 3 alternatives diverge from the existing US 322 corridor, NSAs/receptors that do not currently experience elevated traffic noise levels will experience substantial changes to their noise environment commensurate to their proximity to the proposed Central Alternative.
- The design year No Build loudest-hour traffic noise levels for NSAs associated with the Central Alternative were predicted to range from 43 dB(A) to 74 dB(A). As the No Build Alternative utilizes the existing US 322 roadway network, NSAs/receptors not in close proximity to the US 322 corridor are not predicted to experience substantial changes to their noise environment.

**South Alternative:** Within the 38 NSAs that correspond to the South Alternative, design year Build loudest-hour traffic noise levels at 258 noise receptors (representing 491 ERU) were predicted and compared to the FHWA/PennDOT NAC to determine noise impacts.

- Noise impacts were identified within 14 of the 38 NSAs.
- A total of 37 receptors (representing 73 ERU) were identified as having noise levels either approaching/exceeding NAC or experiencing a substantial increase

over existing noise levels, with each of these receptors warranting noise abatement consideration.

- The design year Build loudest-hour traffic noise levels associated with the South Alternative were predicted to range from 44 dB(A) to 71 dB(A). In areas where the South Alternative is in close proximity to the existing US 322 corridor, NSAs/receptors predicted to experience elevated traffic noise levels for the design year Build condition are currently exposed to elevated traffic noise levels from US 322. In the central portion of the project area where the 3 alternatives diverge from the existing US 322 corridor, NSAs/receptors that do not currently experience elevated traffic noise levels will experience substantial changes to their noise environment commensurate to their proximity to the proposed Alternative.
- The design year No Build loudest-hour traffic noise levels for NSAs associated with the South Alternative were predicted to range from 41 dB(A) to 73 dB(A). As the No Build Alternative utilizes the existing US 322 roadway network, NSAs/receptors not in close proximity to the US 322 corridor are not predicted to experience substantial changes to their noise environment.

**Table 3-18** compares the three Build Alternatives and summarizes all predicted traffic noise level ranges for the existing year, the design year No Build, and the design year Build conditions. Refer to the *Preliminary Design Noise Analysis Report* (September 2025) for detailed documentation of all predicted loudest-hour noise levels for the design year.

**Appendix G** provides figures and tables from the report documenting the NSA/noise receptor locations and sound level impact tables.

*Table 3-18: Comparison of Alternatives*

| Noise Level Characteristics   | Build Alternative |         |         |
|---|-------------------|---------|---------|
|   | North             | Central | South   |
| # of NSAs   | 37                | 37      | 38      |
| # of receptors/equivalent residential units                                   | 247/480           | 263/498 | 258/491 |
| 2023 Existing Conditions range of predicted noise levels [dB(A)]              | 42-74             | 40-73   | 39-73   |
| # of impacted NSAs (2050 Design Year Build)                                   | 10                | 11      | 14      |
| # of impacted receptors/equivalent residential units (2050 Design Year Build) | 28/64             | 33/70   | 37/73   |
| 2050 Design Year Build range of predicted noise levels [dB(A)]                | 44-73             | 44-71   | 44-71   |
| 2050 Design Year No Build range of predicted noise levels [dB(A)]             | 43-75             | 43-74   | 41-73   |
| # of NSAs with Feasible & Reasonable Noise Abatement                          | 3                 | 3       | 3       |



### 3.11.4 Mitigation

When design year Build traffic noise levels are predicted to approach, meet, or exceed NAC or experience a substantial increase over existing noise levels at identified receptors, noise abatement consideration is warranted for those receptors. As part of the noise abatement evaluation, state and federal guidelines suggest a range of mitigation measures that should be considered. Although noise barriers or earthen berms are the most common response to an identified impact, other approaches can be effective under certain circumstances.

Traffic-control measures (e.g., speed restrictions, prohibitions for certain vehicle types during certain periods of the day), alteration of horizontal or vertical alignments, acquisition of land as a buffer, and soundproofing of public use or non-profit institutional structures can be considered alternative abatement measures. Due to the nature of this improvement project along with the type of affected land use, these alternative abatement considerations are not feasible or practical. Traffic-control measures are not practical due to the high volume of vehicles using this roadway. Alignment modifications are not feasible due to right-of-way constraints, nor is the acquisition of land to act as a buffer since noise-sensitive land uses are located adjacent to the highway and therefore land to act as a buffer does not exist. The impacts have been predicted to affect outdoor uses; therefore, soundproofing would not provide any benefit for exterior conditions.

Once the areas where noise abatement should be considered have been identified, the next steps in the mitigation evaluation are to determine if noise abatement is feasible and if it is reasonable.

The assessment of noise abatement feasibility generally focuses on whether it is physically possible to build an abatement measure, such as a noise barrier, that achieves a minimally acceptable level of noise reduction. Barrier feasibility considers three main factors: acoustic effectiveness (PennDOT requires barriers to achieve a 5 dB(A) noise reduction at 50% of the impacted receptors), safety and access, and site constraints like utilities and drainage.

The assessment of noise abatement reasonableness generally focuses on whether it is practical to implement an abatement measure. Barrier reasonableness considers three main factors: the viewpoints of affected residents, design goals (PennDOT requires barriers to provide a minimum of 7 dB(A) noise reduction for at least one impacted receptor), and cost effectiveness. PennDOT uses a reasonableness criterion of 2,000 square feet per benefited receptor (SF/BR).

**North Alternative:** For the ten NSAs associated with the North Alternative in which design year Build noise impacts were identified, noise barriers to reduce elevated traffic noise levels were evaluated within nine of these NSAs to determine feasibility and reasonableness. A noise barrier was unable to be evaluated for two noise-impacted parcels along Earlstown Road (PA 45) within NSA 9 without prohibiting driveway access to these properties. Noise barriers were determined to be both feasible and

reasonable for NSAs 11, 15, and 16. **Plates D3-D6** show feasible and reasonable barrier locations. Noise barriers were determined to be feasible but not reasonable for NSAs 14, 17, 32, 41, and 48. The proposed barrier design for these locations would exceed the cost benefit criterion of 2,000 SF/BR. A noise barrier was determined to be not feasible for NSA 39.

**Central Alternative:** For the 11 NSAs associated with the Central Alternative where design year Build noise impacts were identified, noise barriers were evaluated within ten of these NSAs to assess the feasibility and reasonableness of barriers. A noise barrier could not be evaluated for two noise-impacted parcels along Earlstown Road (PA 45) within NSA 9 because it would prohibit driveway access to these properties. Noise barriers were found to be both feasible and reasonable for NSAs 11, 15, and 16. **Plates E3-E6** show feasible and reasonable barrier locations. Noise barriers were determined to be feasible but not reasonable for NSAs 14, 17, 22, 23, 24, 26, and 32. The proposed barrier design for these locations would exceed the cost benefit criterion of 2,000 SF/BR.

**South Alternative:** For the 14 NSAs associated with the South Alternative in which design year Build noise impacts were identified, noise barriers to reduce elevated traffic noise levels were evaluated within 13 of these NSAs to determine feasibility and reasonableness. A noise barrier was unable to be evaluated for two noise-impacted parcels along Earlstown Road (PA 45) within NSA 9 without prohibiting driveway access to these properties. Noise barriers were determined to be both feasible and reasonable for NSAs 11, 15, and 16. **Plates F3-F5** show feasible and reasonable barrier locations. Noise barriers were determined to be feasible but not reasonable for NSAs 14, 17, 24, 26, 32, 50, 51, 52, 53, and 54. The proposed barrier design for these locations would exceed the cost benefit criterion of 2,000 SF/BR.

Although the mitigation evaluation for each of the three Build Alternatives considered a mix of common and unique noise barrier assessments, the only noise abatement designs that were found to be both feasible and reasonable were for NSAs 11, 15 and 16, which are common to all three Build Alternatives.

NSA 11 is comprised of 22 Activity Category B noise receptors representing 91 residential units within the multifamily Centre Estates apartments, Huntington Park apartments, Elksview Townhomes development, and the NRHP-eligible Michael Jack Estate. Design year 2050 Build traffic noise levels at 45 residential units within NSA 11 are predicted to approach and exceed the FHWA/PennDOT NAC of 67 dB(A) with modeled noise levels ranging from 66 dB(A) to 69 dB(A). A 2,590-foot-long, 16-foot-tall (average) noise barrier is 41,430 ft<sup>2</sup> and provides the required noise reduction of ≥5 dB(A) for all the noise-impacted receptors. This noise barrier also meets the design goal of providing a 7 dB(A) noise reduction for at least one benefited receptor. This optimized noise barrier benefits a total of 89 residential units, equating to 466 ft<sup>2</sup>/BR; this is less than the 2,000 ft<sup>2</sup>/BR reasonableness threshold specified by PennDOT guidance, resulting in a noise barrier that is feasible and reasonable.



NSA 15 is comprised of 14 Activity Category B noise receptors representing 16 single family residential parcels along Meadow Lark Lane and Bear Meadows Road within the Bear Meadow Village development. Design year 2050 Build traffic noise levels at four residential units within NSA 15 are predicted to approach and exceed the FHWA/PennDOT NAC of 67 dB(A) with modeled noise levels ranging from 66 dB(A) to 69 dB(A).

NSA 16 is comprised of 14 Activity Category B noise receptors representing 14 single family residential parcels along Roundhill Road and Banner Way within the Laurel Hills development. Design year 2050 Build traffic noise levels at six residential units within NSA 16 are predicted to exceed the FHWA/PennDOT NAC of 67 dB(A) with modeled noise levels ranging from 68 dB(A) to 71 dB(A).

A single noise barrier was evaluated for both NSA 15 and 16. A 3,483-foot-long, 13-foot-tall (average) noise barrier is 39,771 ft<sup>2</sup> and provides the required noise reduction of ≥5 dB(A) for all the noise-impacted receptors within NSA 15 and NSA 16. This noise barrier also meets the design goal of providing a 7 dB(A) noise reduction for at least one benefited receptor. This optimized noise barrier benefits a total of 20 equivalent residential units, equating to 1,989 ft<sup>2</sup>/BR; this is less than the 2,000 ft<sup>2</sup>/BR reasonableness threshold specified by PennDOT guidance, resulting in a noise barrier that is feasible and reasonable. **Table 3-19** presents a summary of the results of the barrier analyses. **Plates D3-D6, E3-E6, and F3-F5** show feasible and reasonable barrier locations.

Table 3-19: Noise Barrier Analysis Summary

| Noise Study Area/B arrier # | # of Noise Impacted Equivalent Residential Units (ERU) | Noise Barrier Length (ft) | Average Noise Barrier Height (ft) | Noise Barrier Area (ft <sup>2</sup> ) | Number of Benefitting Equivalent Residential Units (ERU) | SF/BR (Square Feet per Benefitted ERU) | Feasible/ Reasonable |
|-----------------------------|--|---------------------------|-----------------------------------|---------------------------------------|--|--|----------------------|
| NSA 9                       | 2  | NA                        | NA                                | NA                                    | NA   | NA                                     | No/No                |
| <b>NSA 11</b>               | <b>45</b>  | <b>2,590</b>              | <b>16</b>                         | <b>41,430</b>                         | <b>89</b>  | <b>466</b>                             | <b>Yes/Yes</b>       |
| NSA 14                      | 1  | 1,106                     | 12                                | 13,274                                | 1  | 13,274                                 | Yes/No               |
| NSA 15                      | 4  | 1,670                     | 12                                | 18,198                                | 8  | 2,275                                  | Yes/No               |
| NSA 16                      | 6  | 1,374                     | 10                                | 14,379                                | 5  | 2,876                                  | Yes/No               |
| <b>NSA 15/16</b>            | <b>10</b>  | <b>3,483</b>              | <b>13</b>                         | <b>39,771</b>                         | <b>20</b>  | <b>1,989</b>                           | <b>Yes/Yes</b>       |
| NSA 17 (C,N)                | 1  | 1,106                     | 16                                | 17,290                                | 1  | 17,290                                 | Yes/No               |
| NSA 17 (S)                  | 2  | 1,283                     | 20                                | 25,662                                | 2  | 12,831                                 | Yes/No               |
| NSA 22 (C)                  | 2  | 4,158                     | 21                                | 87,104                                | 2  | 43,552                                 | Yes/No               |



| Noise Study Area/B arrier # | # of Noise Impacted Equivalent Residential Units (ERU) | Noise Barrier Length (ft) | Average Noise Barrier Height (ft) | Noise Barrier Area (ft <sup>2</sup> ) | Number of Benefitting Equivalent Residential Units (ERU) | SF/BR (Square Feet per Benefitted ERU) | Feasible/ Reasonable |
|-----------------------------|--|---------------------------|-----------------------------------|---------------------------------------|--|--|----------------------|
| NSA 23 (C)                  | 6.2  | 2,216                     | 20                                | 44,076                                | 7.4  | 5,937                                  | Yes/No               |
| NSA 24 (C,S)                | 1  | 896                       | 24                                | 21,509                                | 1  | 21,509                                 | Yes/No               |
| NSA 26 (C,S)                | 1  | 812                       | 15                                | 12,388                                | 1  | 12,388                                 | Yes/No               |
| NSA 32                      | 1  | 1,002                     | 24                                | 24,052                                | 1  | 24,052                                 | Yes/No               |
| NSA 39 (N)                  | 2  | 2,211                     | 24                                | 53,064                                | 0  | NA                                     | No/No                |
| NSA 41 (N)                  | 1  | 1,542                     | 24                                | 37,000                                | 1  | 37,000                                 | Yes/No               |
| NSA 48 (N)                  | 1  | 400                       | 12                                | 4,800                                 | 1  | 4,800                                  | Yes/No               |
| NSA 50 (S)                  | 2  | 1,396                     | 15                                | 20,746                                | 2  | 10,373                                 | Yes/No               |
| NSA 51 (S)                  | 1  | 1,191                     | 24                                | 28,583                                | 1  | 28,583                                 | Yes/No               |
| NSA 52 (S)                  | 1  | 1,308                     | 16                                | 20,930                                | 1  | 20,930                                 | Yes/No               |
| NSA 53 (S)                  | 3.7  | 1,406                     | 24                                | 33,733                                | 3.7  | 9,117                                  | Yes/No               |
| NSA 54 (S)                  | 5  | 1594                      | 15                                | 23,917                                | 5  | 4,783                                  | Yes/No               |

*Red indicates where a barrier is anticipated.*

*N – North Alternative C-Central Alternative S- South Alternative*

During the final design phase of the project, additional noise analyses using more detailed engineering data will be conducted and documented in the *Final Design Noise Report*. This 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.

## 3.12 Farmlands

### 3.12.1 Methodology

Farmland legislation applicable to this Project is referenced below.

- PA Act 100 of 1979
- PA Act 43 of 1981, *Agricultural Area Security Law*, as amended
- 4 PA Code Chapter 7 § 7.301 et seq., *Agricultural Land Preservation Policy (ALPP)*
- PA Act 515 of 1966, *Covenant for Preservation*
- PA Act 319 of 1974, *Farmland and Forest Land Assessment Act*
- 7 USC § 4201, *Farmland Protection Policy Act 1981 (FPPA)*, as amended

Data collection for the farmland assessment was performed in accordance with PennDOT Publication No. 324 *Agricultural Resources Evaluation Handbook* (2016) and was conducted in two stages: preliminary data collection, which consisted of secondary source review, and detailed data collection, which involved more extensive coordination with the farm operators.

The following sources were used to obtain information regarding government programs, tax incentive programs, conservation easement programs, zoning, and soil information:

- **Centre County Agricultural Land Preservation Board**  
The Centre County Agricultural Preservation Board was contacted via telephone and email to obtain the most current agricultural preservation and agricultural security area data for the County.
- **Centre County GIS Open Data**  
The Centre County GIS Open Data website was used to download zoning information and tax incentive program parcel data.
- **WeConservePA (Formerly Pennsylvania Land Trust Association)**  
PA Conserved Land online mapping tool was evaluated to identify conserved lands within and adjacent to the project area, including County Farm Easements and Conservation Easements, Land Trust Lands, and Local Parks and Open Space.
- **Pennsylvania Department of Agriculture**  
Online databases from the Pennsylvania Department of Agriculture were evaluated to obtain general agricultural data for the state, county, and township. This information included the historic patterns of agriculture and the most recent agricultural census information pertaining to farm size and production.
- **US Department of Agriculture (USDA) – Natural Resources Conservation Service (NRCS)**  
Web-based soil maps, along with soil use classifications, were obtained from the USDA. This information provided the farmland classifications (Prime, Statewide Important, Unique, Locally Important) and capability classifications (I, II, III, IV) for the agricultural parcels identified in the project area.

Consultation with the Centre County Agricultural Land Preservation Board, Pennsylvania Department of Agriculture, and the USDA NRCS was conducted throughout the alternative development and impact analysis. Owners of project area properties that have potential agricultural production were interviewed. Agricultural landowners verified property ownership and the productivity status of their land. If productive agricultural land was farmed by an operator or operators rather than the current landowner, those operators were also interviewed. Summaries of the farm operations are available in the *Farmland Technical Memorandum* (January 2026) (**Appendix L**).

### **3.12.2 Existing Conditions**

Thirty-eight (38) different agricultural operations were identified within the project area. Approximately 1,456 acres of productive agricultural land, and all five categories of ALPP protected resources exist within the project area. Preserved farmland (agricultural conservation easements) was identified on four parcels and is preserved either through Centre County's Purchase of Agricultural Conservation Easements Program (PACE), Clearwater Conservancy, or Centre County Farmland Trust. The agricultural resources within the project area include:

- 216 acres of Preserved Farmland (Agricultural Conservation Easements)
- 829 acres of Agricultural Security Areas
- 1,373 acres enrolled in Clean and Green preferential tax assessment
- 1,096 acres Agricultural zoning
- 1,420 acres of Soil Capability Classes I-IV

**Figure 3-8** provides an overview of the agricultural resources in the project area.

### **3.12.3 Impacts**

**No Build Alternative:** The No Build Alternative would not impact any productive or Prime Agricultural Land, FPPA soils, or agricultural operations.

**Build Alternatives:** All three Build Alternatives would impact productive agricultural land, ALPP Prime Agricultural Land, FPPA Soils and agricultural operations. **Table 3-20** summarizes the total impacts on agricultural resources for each ALPP Prime Agricultural Land priority category, providing a measure of the magnitude of these impacts.

The North, Central, and South Alternatives would impact both prime and statewide important farmland soils. A *Farmland Conversion Impact Rating (FCIR) Form (NRCS-Conservation Planning Activity [CPA]-106)* was completed in accordance with FPPA regulations (7 CFR § 658) and PennDOT Publication No. 324 *Agricultural Resources Evaluation Handbook* (2016). If the NRCS-CPA-106 total rating is greater than 160 points, then the FPPA would require that alternatives be considered to reduce, avoid, or mitigate for the conversion of farmland. FPPA Soil impacts and FCIR scores for each alternative are listed in **Table 3-21**.

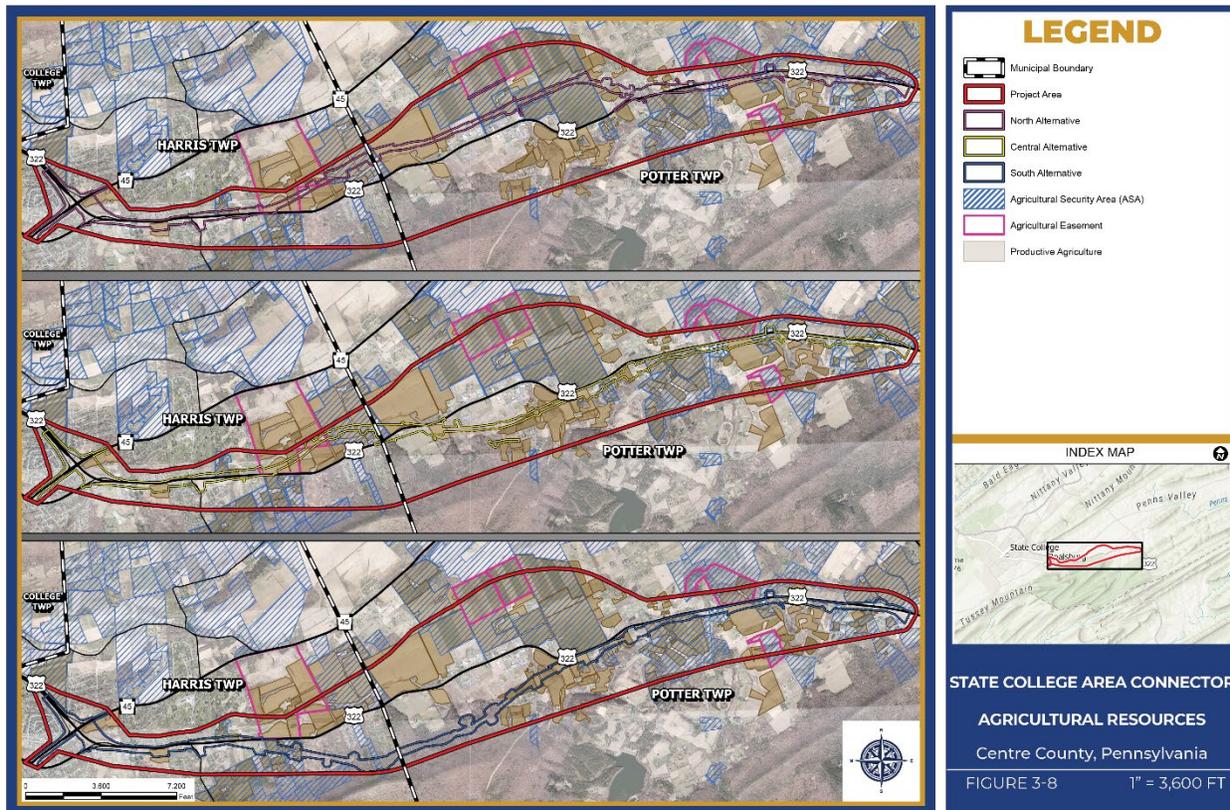


Figure 3-8: Agricultural Resources

Table 3-20: Agricultural Resource Impacts for Each ALPP Category

| Agricultural Resources (acres)  | Build Alternative |         |       |
|---|-------------------|---------|-------|
|   | North             | Central | South |
| Productive Agricultural Land (Direct)                                     | 142               | 116     | 104   |
| Productive Agricultural Land (Indirect)                                   | 23                | 23      | 55    |
| Productive Agricultural Land (total)                                      | 165               | 139     | 159   |
| Agricultural Conservation Easements (within productive agricultural land) | 18                | 16      | 0     |
| Agricultural Security Areas (within productive agricultural land)         | 71                | 34      | 38    |
| Clean and Green (within productive agricultural land)                     | 133               | 106     | 85    |
| Agricultural zoning (within productive agricultural land)                 | 104               | 86      | 72    |
| Soil Capability Classes I-IV (within productive agricultural land)        | 137               | 117     | 103   |



Table 3-21: FPPA Soil Impacts

| FPPA Soils                            | Alternative |         |       |
|---------------------------------------|-------------|---------|-------|
|                                       | North       | Central | South |
| Prime Farmland Soils (acres)          | 195         | 175     | 132   |
| Soils of Statewide Importance (acres) | 155         | 170     | 160   |
| Total FPPA Soil Impacts (acres)       | 350         | 345     | 292   |
| FCIR Score                            | 151         | 127     | 114   |

Since the FCIR scores for all three Build Alternatives are less than 160, no further coordination is necessary with the NRCS.

**Table 3-22** lists the farm operations impacted by the three Build Alternatives and defines the direct and estimated indirect acres of impacts to productive agricultural land per operation.

**North Alternative:** The North Alternative would have the greatest direct impacts to productive agricultural land, as well as the greatest impacts to properties with agricultural conservation easements (18 acres) and within agricultural security areas (71 acres). It would split the large cropland parcels on the north side of the existing US 322 corridor through the valley and result in notable impacts to the following operations.

- The Kerr (operator 27) operation would be split in half. A culvert could be provided under the highway; however, the operator indicated the removal of 22.5 acres from the pastureland and crop fields would not provide enough pastureland for a third herd of cows and would reduce the number of crops produced and used to feed the cows. The operator needs to maintain a specific herd size in order to keep their contract with Whole Foods. The operator also needs to maintain a certain acreage per cow for the Whole Foods contract and nutrient management requirements.
- All of the Fohringer’s (operator 39) pastureland would be eliminated as well as a proposed farm market building.
- The Darlington’s (operator 17) barn adjacent to US 322 would be displaced.
- The Houtz’s (operator 2) house and barn would be displaced as well as some of the pastureland.

**Central Alternative:** The Central Alternative would have less direct impacts on productive agricultural land than the North Alternative, but more direct impacts than the South Alternative. It would also have less impact on properties with agricultural conservation easements (16 acres) and agricultural security areas (34 acres) than the North Alternative. The following operations would have notable impacts from the Central Alternative.



Table 3-22: Productive Agricultural Impacts by Farm Operation

| Operator<br>(Operator No.)                                      | Total<br>Operation<br>Size<br>(acres) | North Alternative<br>(acres) |                       | Central<br>Alternative<br>(acres) |                       | South Alternative<br>(acres) |                       |
|---|---------------------------------------|------------------------------|-----------------------|-----------------------------------|-----------------------|------------------------------|-----------------------|
|   |                                       | Direct                       | Estimated<br>Indirect | Direct                            | Estimated<br>Indirect | Direct                       | Estimated<br>Indirect |
| Meyer (8)   | 1,150.0                               | 5.4                          | -                     | 5.4                               | -                     | 5.4                          | -                     |
| Bickle/Campbell (5)   | 800.0                                 | 7.0                          | 5.3                   | 7.0                               | 5.3                   | 7.0                          | 5.3                   |
| Immel (24)  | 27.0                                  | 4.7                          | -                     | 4.7                               | -                     | 4.5                          | -                     |
| Tait (19)   | 131.0                                 | -                            | -                     | -                                 | -                     | 16.3                         | 23.8                  |
| Banker (Kuhns) (9)  | 30.0                                  | 2.2                          | -                     | 0.4                               | -                     | -                            | -                     |
| Wolfe (32)  | 4,200.0                               | 15.2                         | -                     | 15.9                              | -                     | -                            | -                     |
| Huber (20)  | 227.0                                 | 21.5                         | -                     | 11.3                              | -                     | -                            | -                     |
| Hamsher (12)  | 400.0                                 | -                            | -                     | 7.7                               | 4.0                   | -                            | -                     |
| Irvin (33)  | 1,110.0                               | 18.3                         | -                     | 7.2                               | -                     | -                            | -                     |
| Allegar (10)  | 130.0                                 | -                            | -                     | 16.7                              | -                     | 29.1                         | 11.9                  |
| Tanis (14)  | 320.0                                 | 17.8                         | 12.7                  | -                                 | -                     | -                            | -                     |
| Homan (4)   | 148.0                                 | 2.9                          | -                     | -                                 | -                     | -                            | -                     |
| Kerr (27)   | 330.0                                 | 22.4                         | -                     | -                                 | -                     | -                            | -                     |
| Sands (36)  | 70.0                                  | 2.9                          | 2.9                   | -                                 | -                     | -                            | -                     |
| Stoner (35)   | 17.0                                  | -                            | -                     | 2.0                               | 5.9                   | 2.0                          | 5.9                   |
| Smith (13)  | 10.0                                  | -                            | -                     | 6.3                               | 3.5                   | 6.3                          | 3.5                   |
| Houser (40)   | 33.0                                  | 0.1                          | -                     | -                                 | -                     | -                            | -                     |
| Fohringer (39)  | 4.7                                   | 1.2                          | -                     | -                                 | -                     | -                            | -                     |
| Darlington (17)   | 250.0                                 | 3.3                          | -                     | 12.8                              | -                     | 12.8                         | -                     |
| C. Cole (3)   | 370.0                                 | 8.2                          | -                     | 11.8                              | 2.5                   | 14.2                         | 2.6                   |
| Rimmey (31)   | 82.0                                  | 4.6                          | -                     | 1.9                               | -                     | 1.9                          | -                     |
| Wells (1)   | 500.0                                 | 1.4                          | -                     | 1.4                               | -                     | 1.4                          | -                     |
| Houtz (2)   | 8.5                                   | 0.1                          | 1.9                   | 0.1                               | 1.9                   | 0.1                          | 1.9                   |
| P. Cole (26)  | 34.0                                  | 0.9                          | -                     | 0.9                               | -                     | 0.8                          | -                     |
| Marquardt (25)  | 800.0                                 | 2.1                          | -                     | 2.1                               | -                     | 2.0                          | -                     |
| Total acres of<br>impacts to<br>productive<br>agricultural land |                                       | 142.2                        | 22.8                  | 115.6                             | 23.1                  | 103.8                        | 54.9                  |
|   |                                       |                              | 165.0                 |                                   | 138.7                 |                              | 158.7                 |



- Impact some of the Allegar’s (operator 10) pastureland and hay fields and would separate the remaining buildings from the pastureland and hay fields.
- Displace the Stoner’s (operator 35) house, barn, and all outbuildings and eliminate the existing pastureland. The remaining hay field could have an indirect impact if access to the remainder of the property is not feasible.
- The Smith’s (operator 13) would lose almost all of the cropland and would most likely not be able to farm the remaining cropland.
- The Darlington’s (operator 17) house and barn adjacent to US 322 would be displaced.
- The Houtz’s (operator 2) house and barn would be displaced as well as some of the pastureland.

**South Alternative:** The South Alternative would have the least acreage of direct impacts to productive agricultural land; however, it would have the greatest estimated indirect impacts and the most impacts to bases of operation. It would not impact any properties with agricultural conservation easements but would impact 38 acres of properties in agricultural security areas. Below is a list of operations that would be notably impacted by the South Alternative.

- The Tait (operator 19) operation would be split in half, displacing some of the buildings and Christmas tree and vegetable fields. This could result in indirect impacts to the remaining acreage and essentially prevent the Tait’s from continuing to operate the property.
- Eliminate most of the Allegar’s (operator 10) pastureland and all of the hay fields.
- Displace the Stoner’s (operator 35) house, barn, and all outbuildings and eliminate the existing pastureland. The remaining hay field could have an indirect impact if access to the remainder of the property is not feasible.
- The Smiths (operator 13) would lose almost all of the cropland due to direct impacts.
- Darlington’s (operator 17) house and barn adjacent to US 322 would be displaced.
- The Houtz’s (operator 2) house and barn would be displaced as well as some of the pastureland.

### 3.12.4 Mitigation

Mitigation for impacts to farmland will include compliance with *the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970*, as amended, and state requirements based on this act, as appropriate, including relocation assistance for farmland acquired by the project. An evaluation of available replacement farm properties in the area is detailed in **Section 3.5 Displacements**.

During final design, the selected alternative will be refined, and farmland avoidance and minimization measures will be considered as well as access. This will include coordination with property owners and farm operators to reduce farmland impacts, provide access to remnant parcels where possible, develop a suitable schedule for

detours, and/or provide access during construction, etc. This process will be documented in the *Farmland Assessment Report* for the Selected Alternative, if applicable, and in the project technical files.

## **3.13 Hazardous or Residual Waste Sites**

### **3.13.1 Methodology**

Hazardous waste sites are regulated by the *Resource Conservation and Recovery Act* and the *Comprehensive, Environmental Response, Compensation, and Liability Act*. A Preliminary Waste Site Assessment (PWSA) was completed to identify properties of concern and included a cursory desktop review of readily available federal (EPA Region 3) and state (PA DEP) databases and online information; historical sources (topographic maps, aerial photographs, and previous highway plans); limited interviews with appropriate state (PA DEP), local agencies and some property owners; and a visual inspection of the project area.

### **3.13.2 Existing Conditions**

A total of 55 potential hazardous waste sites were identified within the project area. These potential waste sites are summarized in the *Hazardous Waste Technical Memorandum* (August 2025) in **Appendix L** and can be seen in **Figure 3-9**. The majority of the identified sites are commercial properties/businesses that have the potential for using hazardous materials, generating hazardous wastes, unknown hazardous materials and/or waste handling practices, or previous unknown business uses. There are no superfund sites or properties within or adjacent to the project area, and only one Activity and Use Limitations site was identified within the project area. Activity and Use Limitations are legal, site-specific restrictions or obligations placed on a property due to residual environmental contamination. Activity and Use Limitations may require the need to keep certain engineering controls in place or restrict what can be done on a property to protect public health. The specific details of an Activity and Use Limitations need to be considered if one were to be impacted.

### **3.13.3 Impacts**

**No Build Alternative:** The No Build Alternative would not impact any hazardous waste sites.

**Build Alternatives:** All three Build Alternatives would impact hazardous waste sites and would require further studies in the final design for some sites, as summarized in **Table 3-23**. Impacts include potential waste sites that are within the alternatives' limits of disturbance and those adjacent to the limits of disturbance with the potential to impact the project based on current or historic site uses/concerns.

**North Alternative:** The North Alternative would impact 25 potential hazardous waste sites. Additionally, there are 11 potential hazardous waste sites adjacent to the alternative.

**Central Alternative:** The Central Alternative would impact 24 potential hazardous waste sites. Additionally, there are nine potential hazardous waste sites adjacent to the alternative.

**South Alternative:** The South Alternative would impact 21 potential hazardous waste sites. Additionally, there are seven potential hazardous waste sites adjacent to the alternative.

A release of contaminants, whether uncontrolled, unreported, or reported, associated with past or current operations at identified hazardous waste sites may result in surface or subsurface impacts and potential human health risks. Information for the potentially hazardous waste sites impacted by each alternative is further discussed in Table 1 of the *Hazardous and Residual Waste Technical Memorandum* (August 2025) in **Appendix L**.

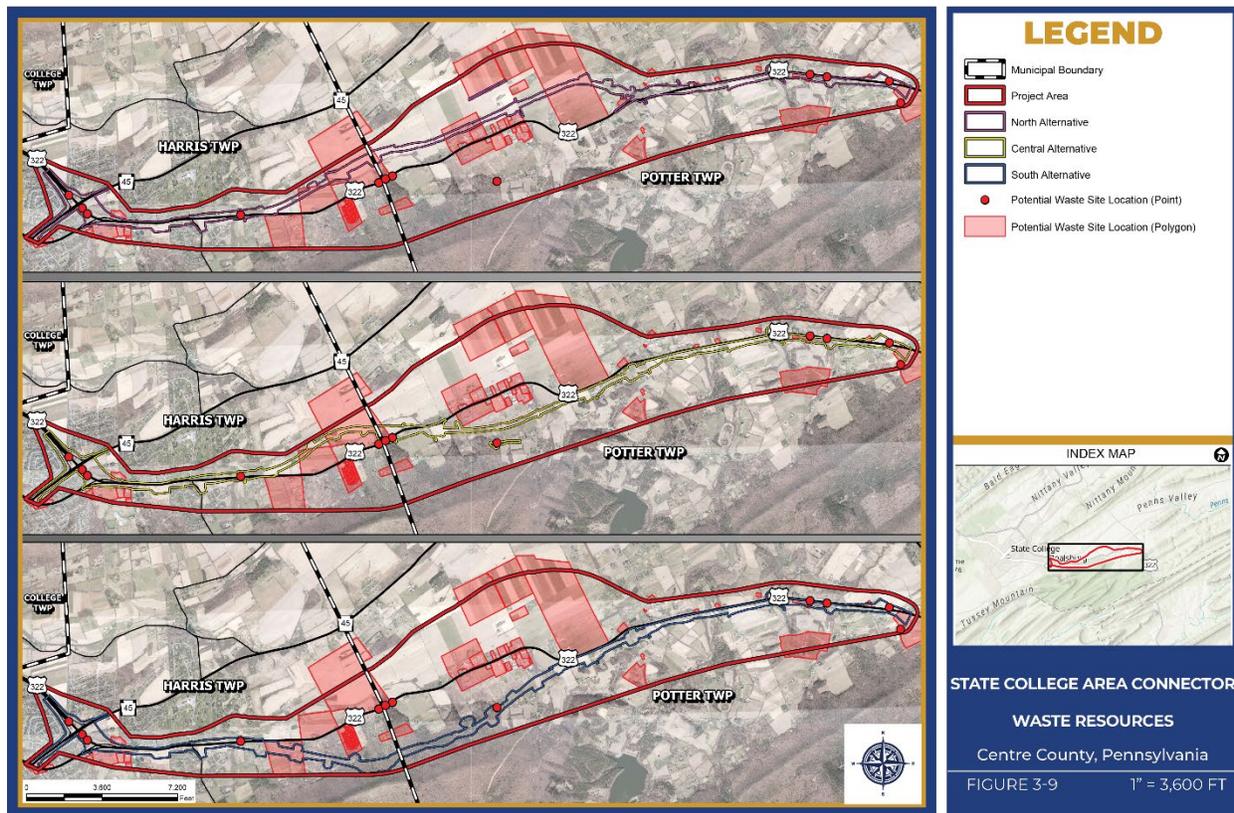


Figure 3-9: Waste Resources

### 3.13.4 Mitigation

Recommendations for further action at each individual site are listed in **Appendix H**. The recommendations are based on the concerns listed for each site and potential impacts (engineering design) from each of the three Build Alternatives. Sites with "No Further Action" recommendations have limited to no risk to the project/public. Sites with "No Further Action at this Time" recommendations could pose a risk to the public based on the site concerns, but will not be impacted. Sites with "Phase I ESA and



Table 3-23: Waste Site Impact Summary

| Build Alternative  | Number of Waste Sites Within   Adjacent to LOD | Recommendations                    |        |     |
|--|--|------------------------------------|--------|-----|
|  |  | Phase I and Possibly Phase II/III* | NFAATT | NFA |
| North  | 25 11  | 12                                 | 19     | 5   |
| <p>The majority of the waste sites (11) were related to commercial businesses or maintenance facilities with potential for use of chemicals and the potential for unreported releases; six were related to current or former gas stations or auto garages with the potential for underground storage tanks (USTs); nine sites were related to spills or accidents; four sites were related to farms with the potential for herbicide and pesticide application to crops; two sites were related to current or former manufacturing operations; two sites were related to farms with potential USTs; one site was related to a release under the PA DEP Land Recycling Cleanup Program; and one site was related to a property with unknown previous commercial use. These recommendations are based on primary and/or secondary data sources pertaining to the current and/or historical operational use, storage, and disposal of environmentally sensitive materials. These recommendations should be re-evaluated once engineering designs are further developed.</p> |  |                                    |        |     |
| Central  | 24 9   | 15                                 | 12     | 6   |
| <p>The majority of the waste sites (12) were related to spills or accidents; six sites were related to current or former gas stations or auto garages with the potential for USTs; five sites were related to commercial businesses or maintenance facilities with the potential for use of chemicals and the potential for unreported releases; four sites were related to farms with the potential for herbicide and pesticide application to crops; two sites were related to current or former manufacturing operations; one site was related to dumping; one site was related to a release under the PA DEP Land Recycling Cleanup Program; one site was related to a farm with potential UST; and one site was related to a farm with sludge application. These recommendations are based on primary and/or secondary data sources pertaining to the current and/or historical operational use, storage, and disposal of environmentally sensitive materials. These recommendations should be re-evaluated once engineering designs are further developed.</p>     |  |                                    |        |     |
| South  | 21 7   | 12                                 | 11     | 5   |
| <p>The majority of the waste sites (nine) were related to spills or accidents; six sites were related to current or former gas stations or auto garages with the potential for USTs; five sites were related to commercial businesses or maintenance facilities with the potential for use of chemicals and the potential for unreported releases; two sites were related to current or former manufacturing operations; one site was related to a farm with the potential for herbicide and pesticide application to crops; one site was related to a farm with potential USTs; one site was related to farm sludge application; one site was related to dumping; and two sites were related a release under the PA DEP, Land Recycling Cleanup Program. These recommendations are based on primary and/or secondary data sources pertaining to the current and/or historical operational use, storage, and disposal of environmentally sensitive materials. These recommendations should be re-evaluated once engineering designs are further developed.</p>           |  |                                    |        |     |

NFA – No Further Action; NFAATT – No Further Action at this Time  
\*Refers to Phase I, II, and III Environmental Site Assessments

Possibly Phase II/III ESA" recommendations have current or historic uses that warrant further investigation to determine if mitigation/remediation measures are needed. Recommendations will be updated in final design as the engineering for the Preferred Alternative is refined.

Phase I, II, and III Environmental Site Assessment (ESA) studies would be required during final design for any of the three Build Alternatives to further identify the presence of soil and/or groundwater contamination at potential hazardous waste sites and develop mitigation and/or remediation measures. Phase I ESAs involve additional secondary source and records reviews, interviews with property owners, PA DEP staff, etc. Phase II ESAs involve geophysical investigations and/or minimally intrusive soil, sediment and water sampling. Phase III ESAs involve intrusive investigation of soil and potentially groundwater to confirm the release of regulated substances.

All three Build Alternatives would require similar investigations during final design and mitigation. Special provisions will be prepared to ensure the health and safety of those workers handling potentially impacted soils and/or groundwater in order to minimize impacts and public health concerns. The special provisions will comply with all local, state, and federal regulatory requirements associated with the handling of such materials. These provisions will address and resolve any issues raised by the public and government agencies identified for the potential hazardous waste sites impacted by the Preferred Alternative.

## **3.14 Geology, Hydrology, & Groundwater**

### **3.14.1 Methodology**

Published geologic information of the project region, as well as site reconnaissance within the project area, were utilized to establish the geologic setting. No subsurface drilling, testing, or geotechnical analyses have been completed to date.

### **3.14.2 Existing Conditions**

**Bedrock Geology:** The project area is located within the Ridge and Valley Province in the Appalachian Mountain Section. The Appalachian Mountain Section is generally characterized by long, narrow ridges and broad to narrow valleys with some karst topography. The local relief is described as moderate to very high (ranging from approximately 600 feet to greater than 1,000 feet). The dominant geological structure in this province consists of open and closed plunging folds with narrow hinges and planar limbs. The origin of the topography is fluvial erosion, solution of carbonate rocks, and periglacial mass wasting.

The bedrock within the project area is expected to belong to Ordovician-aged formations including Reedsville (shale), Coburn (limestone), Benner (limestone), Bellefonte (dolomite with some sandstone and chert), and the Bald Eagle (sandstone) (**Figure 3-10**).

Two anticlines (Penns-Valley and Penns-Valley Narrows anticlines) and two synclines (Brush Mountain and Harris synclines) trending northeast-southwest are mapped within

the project area. Bedrock is expected to be dipping in northwest or southeast directions within the project area depending on its location with respect to the anticline or syncline locations. A mapped fault is located approximately in the middle of the project area trending northeast-southwest and dipping towards the southeast.

Karst related features are present throughout portions of the project area, predominantly in the valley section of the project area along the existing US 322 corridor. All of the bedrock formations within the project area except the Reedsville and Bald Eagle Formation have or can have karst related features. The highest density of mapped karst related features is located near the middle of the project area between Sharer Road and Tusseyville Road. Water well information reports from PaGWIS also noted the presence of voids in some areas.

Based on the geologic formations within the project area, there are no mineable coal seams in any of these bedrock formations within the project area. Based on the oil and gas data, from PASDA, PA DEP, no oil/gas wells within the project area were identified. Based on PA DCNR open file miscellaneous investigation (DCNR OFMI) 05-01.1, "Geologic Units Containing Potentially Significant Acid-Producing Sulfide Minerals", dark shales in the Ridge and Valley region should be considered to have the potential to produce acid producing rock (APR). Dark shales such as the Reedsville Formation have historically been known to be a source of APR. The Bald Eagle Formation is also known to be a source of APR.

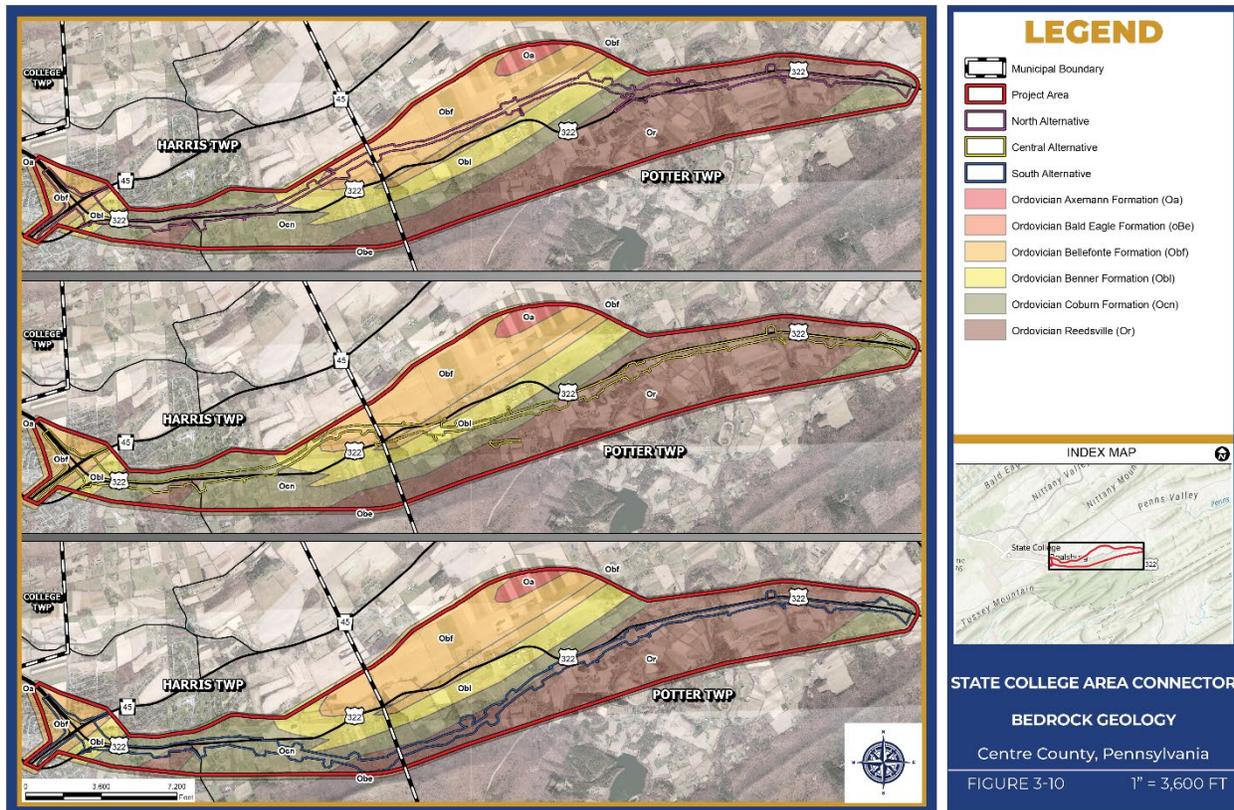


Figure 3-10: Bedrock Geology

**Soils:** The soils within the project area are anticipated to consist of residuum within the valley and some alluvium around drainage areas. Residual soils can vary in depth based on the weathering of the underlying limestone and dolomite bedrock. Colluvium over residuum is anticipated in the southern portion of the project area along the base of the Tussey Mountain ridge. Based on water well data in the vicinity, the depth to bedrock ranges from two feet to 140 feet. The deep bedrock is likely associated with the weathering of limestone and dolomite bedrock within the project area.

**Hydrogeologic Conditions:** Groundwater within the project area is contained in unconfined or perched aquifers that are controlled or recharged by infiltration or influenced by running streams. Groundwater flow within the project area is expected to be controlled by the geologic structure and influenced by the type of bedrock. Generally, groundwater flow is expected to flow down toward the syncline's axis and towards the limbs of the anticline's axis within the project area. Water flow within bedrock is dependent on its natural porosity as well as on the connectivity of its joint systems. Due to the presence of limestone and dolomite bedrock within the project area, secondary porosity may be present from karst features that can alter typical groundwater flow. A fault is also mapped within the project area so fractures could also impact groundwater flow. Interconnections of karst features and fractures can result in localized flow paths and changes of the water table elevations or create groundwater springs. Wherever the groundwater table intersects the ground surface, seeps or springs are observed. Registered water wells within the project area reported various depths to groundwater for production and use.

### **3.14.3 Impacts**

**No Build Alternative:** The No Build Alternative would not impact any geologic or hydrologic resources.

**North Alternative:** The majority of this alternative would be constructed within limestone bedrock units. Embankment stability would be controlled by the residual soils of the limestone bedrock, mainly clayey soils with potentially higher water content. Cut slopes would be controlled by the bedrock unit's orientations as well as the level of weathering and jointing expressed along the proposed cut surface. Rockfall mitigation measures might be required for steeply cut slopes. There is a high probability of encountering sinkholes along the North Alternative and potential for subsidence due to sinkhole activity.

The eastern portion of the alternative would be constructed within the Reedsville shale bedrock units. Shale bedrock from Reedsville Formation tends to be soft and degradable. Embankments constructed using this shale could experience excessive settlements. Due to the degradable nature of the shale bedrock, flatter cut slopes are expected within the Reedsville Formation. Where cuts are proposed within Reedsville Shale Formation, treatments for potential APR will need to be considered for the cut face as well as for the excavated material. However, there is a very low probability of encountering APR.



Based on the PaGWIS database, this alternative would impact a total of five water wells that are within the mapped impact zone of the project. Additional water wells not included in the PaGWIS database could be present and will be identified during final design. Private water wells outside of the limits of disturbance could be impacted by construction due to the possible presence of karst features.

**Central Alternative:** The majority of the roadway would be constructed within limestone bedrock units. Embankment stability would be controlled by the residual soils of the limestone bedrock, mainly clayey soils with potentially higher water content. Cut slopes would be controlled by the bedrock unit's orientations as well as the level of weathering and jointing expressed along the proposed cut surface. Rockfall mitigation measures might be required for steeply cut slopes. There is a moderate probability of encountering sinkholes along the Central Alternative and potential for subsidence due to sinkhole activity.

The eastern portion of the alternative would be constructed within the Reedsville shale bedrock units. Shale bedrock from Reedsville Formation tends to be soft and degradable. Embankments constructed using this shale could experience excessive settlements. Due to the degradable nature of the shale bedrock, flatter cut slopes are expected within the Reedsville Formation. For cut slopes proposed within Reedsville Shale Formation, treatments for potential APR will need to be considered for the cut face as well as for the excavated material. However, there is a low probability of encountering APR.

Based on the PaGWIS database, this alignment alternative would impact a total of six water wells that are within the mapped impact zone of the project. Additional water wells not included in the PaGWIS database could be present and will be identified during final design. Private water wells outside of the limits of disturbance could be impacted by construction due to the possible presence of karst features.

**South Alternative:** The majority of this alternative would be constructed within the Reedsville Shale bedrock units. The north-facing cut slope across from Sharer Road has the potential of encountering the Bald Eagle Formation. The potential to encounter vein pyrite is higher in the Bald Eagle Formation. If vein pyrite is encountered, cost of handling, treatment, and disposal could be significant. Embankment stability would be controlled by the residual soils of the shale bedrock, mainly clayey soils with potentially higher water content. Cut slope design is controlled by the degradable nature of the shale; hence, flatter cut slopes are expected. Treatments for potential APR will need to be considered for the cut face, as well as for the excavated material. There is a high probability of encountering APR.

The western portion of the alternative would be constructed within limestone bedrock units; however, the South Alternative has the lowest potential for encountering karst features. Embankment stability would be controlled by the residual soils of the limestone bedrock, mainly clayey soils with potentially higher water content. Cut slopes would be controlled by the bedrock unit's orientations as well as the level of weathering

and jointing expressed along the proposed cut surface. Rockfall mitigation measures might be required for steeply cut slopes.

Based on the PaGWIS database, this alignment alternative would impact a total of five water wells that are within the mapped impact zone of the project. Additional water wells not included in the PaGWIS database could be present and will be identified during final design.

### **3.14.4 Mitigation**

Subsurface drilling, testing, and geotechnical analysis would need to be conducted for any of the three Build Alternatives to determine the need for mitigation. A geotechnical analysis would be completed in accordance with PennDOT Publication No. 293, *Geotechnical Engineering Manual*. Mitigation for subsidence could consist of removal of loose material within shallow sinkholes and replacement with geotextile and rockfill, low mobility grouting, etc. Structure foundations in karstic conditions will be evaluated and designed for future loss of support due to potential subsidence.

Handling and management of any potential APR borrow or waste materials, including temporary or permanent conditions, will be required to be completed in accordance with PennDOT's Publication No. 293, *Geotechnical Engineering Manual*, Chapter 10, pertaining to APR.

Impacts to groundwater wells will be investigated further during final design. If impacted wells are not associated with a displaced structure, the potential for drilling a new well on the property will be examined.

## **3.15 Soils and Erosion**

### **3.15.1 Methodology**

Published soils information of the project area and site reconnaissance were utilized to establish the soils setting. No subsurface drilling, testing, or geotechnical analysis has been completed to date.

### **3.15.2 Existing Conditions**

The soils within the project area are anticipated to consist of residuum within the valley and some alluvium around drainage areas. Residual soils can vary in depth based on the weathering of the underlying limestone and dolomite bedrock. Colluvium over residuum is anticipated in the southern portion of the project area along the base of the Tussey Mountain ridge.

The USDA-NRCS Web Soil Survey and Soil Survey Geographic Database (SSURGO) were used to identify the mapped soil units within the project area. Hydric ratings (major hydric soils) and hydric classification-presence (non-hydric soils which contain hydric inclusions) data were obtained through both the Web Soil Survey and the SSURGO sources and cross-referenced for consistency. The datasets revealed that there were 11 major hydric soils as well as 17 non-hydric soils that contain hydric inclusions in the project area (**Table 3-24**) and are generally not suitable for use in highway construction.



Table 3-24: Mapped Soil Summary

| Map Unit Symbol | Map Unit Name   | Hydric | Hydric Inclusions |
|-----------------|---|--------|-------------------|
| An              | Andover channery silt loam, 0 to 8 percent slopes           | Yes    | No                |
| AnC             | Andover channery silt loam, 8 to 15 percent slopes          | Yes    | No                |
| AoB             | Andover very stony loam, 0 to 8 percent slopes              | Yes    | No                |
| AoC             | Andover very stony loam, 8 to 15 percent slopes             | Yes    | No                |
| At              | Atkins silt loam, 0 to 3 percent slopes, frequently flooded | Yes    | No                |
| BkB             | Berks channery silt loam, 3 to 8 percent slopes             | No     | Markes            |
| BkC             | Berks channery silt loam, 8 to 15 percent slopes            | No     | Markes            |
| BkD             | Berks channery silt loam, 15 to 25 percent slopes           | No     | Markes            |
| BmF             | Berks and Weikert soils, 25 to 70 percent slopes            | No     | No                |
| BrA             | Brinkerton silt loam, 0 to 3 percent slopes                 | Yes    | Atkins            |
| BrB             | Brinkerton silt loam, 3 to 8 percent slopes                 | Yes    | Atkins            |
| BrC             | Brinkerton silt loam, 8 to 15 percent slopes                | Yes    | Markes            |
| BuB             | Buchanan channery loam, 3 to 8 percent slopes               | No     | Andover           |
| BuC             | Buchanan channery loam, 8 to 15 percent slopes              | No     | Andover           |
| BxB             | Buchanan channery loam, 0 to 8 percent slopes, rubbly       | No     | Andover           |
| BxD             | Buchanan channery loam, 8 to 25 percent slopes, rubbly      | No     | Andover           |
| CkA             | Clarksburg silt loam, 0 to 3 percent slopes                 | No     | Thorndale         |
| CkB             | Clarksburg silt loam, 3 to 8 percent slopes                 | No     | Thorndale         |
| Du              | Dunning silty clay loam                                     | Yes    | Melvin            |
| EdB             | Edom silt loam, 2 to 8 percent slopes                       | No     | No                |
| EdC             | Edom silt loam, 8 to 15 percent slopes                      | No     | No                |
| EdD             | Edom silt loam, 15 to 25 percent slopes                     | No     | No                |
| ErB             | Ernest channery silt loam, 3 to 8 percent slopes            | No     | Brinkerton        |
| ErC             | Ernest channery silt loam, 8 to 15 percent slopes           | No     | Brinkerton        |
| HaA             | Hagerstown silt loam, 0 to 3 percent slopes                 | No     | No                |
| HaB             | Hagerstown silt loam, 3 to 8 percent slopes                 | No     | No                |
| HaC             | Hagerstown silt loam, 8 to 15 percent slopes                | No     | No                |
| HcB             | Hagerstown silty clay loam, 3 to 8 percent slopes           | No     | No                |
| HcC             | Hagerstown silty clay loam, 8 to 15 percent slopes          | No     | No                |
| HcD             | Hagerstown silty clay loam, 15 to 25 percent slopes         | No     | No                |
| HSD             | Hazleton extremely stony sandy loam, moderately steep       | No     | No                |
| HTF             | Hazleton-Dekalb association, very steep                     | No     | No                |
| HuA             | Hublersburg silt loam, 0 to 3 percent slopes                | No     | No                |
| HuB             | Hublersburg silt loam, 3 to 8 percent slopes                | No     | No                |
| HuD             | Hublersburg silt loam, 15 to 25 percent slopes              | No     | No                |
| LaB             | Laidig channery loam, 3 to 8 percent slopes                 | No     | No                |
| LaC             | Laidig channery loam, 8 to 15 percent slopes                | No     | No                |
| LcD             | Laidig extremely stony loam, 8 to 25 percent slopes         | No     | No                |



| Map Unit Symbol | Map Unit Name   | Hydric | Hydric Inclusions |
|-----------------|---|--------|-------------------|
| LDF             | Laidig extremely stony loam, steep                      | No     | No                |
| Lx              | Lindside soils  | No     | Melvin            |
| Mm              | Melvin silt loam  | Yes    | No                |
| MnB             | Millheim silt loam, 2 to 8 percent slopes               | No     | No                |
| MnC             | Millheim silt loam, 8 to 15 percent slopes              | No     | No                |
| MnD             | Millheim silt loam, 15 to 25 percent slopes             | No     | No                |
| MuA             | Murrill channery silt loam, 0 to 3 percent slopes       | No     | No                |
| MuB             | Murrill channery silt loam, 3 to 8 percent slopes       | No     | No                |
| MuC             | Murrill channery silt loam, 8 to 15 percent slopes      | No     | No                |
| No              | Nolin silt loam, local alluvium, 0 to 5 percent slopes  | No     | Melvin            |
| OhB             | Opequon-Hagerstown complex, 3 to 8 percent slopes       | No     | No                |
| OhC             | Opequon-Hagerstown complex, 8 to 15 percent slopes      | No     | No                |
| OhD             | Opequon-Hagerstown complex, 15 to 25 percent slopes     | No     | No                |
| ORF             | Opequon-Hagerstown complex, steep                       | No     | No                |
| OxB             | Opequon-Rock outcrop complex, 0 to 8 percent slopes     | No     | No                |
| OxD             | Opequon-Rock outcrop complex, 8 to 25 percent slopes    | No     | No                |
| Ph              | Philo loam, 0 to 3 percent slopes, occasionally flooded | No     | Atkins            |
| Pk              | Philo and Atkins very stony soils                       | No     | Atkins, Dunning   |
| Pu              | Purdy silt loam   | Yes    | Brinkerton        |
| QU              | Quarry  | No     | No                |
| Ru              | Rubble land   | No     | No                |
| Ty              | Tyler silt loam   | No     | Purdy             |
| URB             | Urban land-Hagerstown complex, gently sloping           | No     | No                |
| W               | Water   | No     | No                |
| WeC             | Weikert shaly silt loam, 5 to 15 percent slopes         | No     | Markes            |

### 3.15.3 Impacts

**No Build Alternative:** The No Build Alternative would not impact any soils or cause additional soil erosion.

**Build Alternatives:** All three Build Alternatives require earth disturbance associated with the construction activities through the identified formations and soils listed in **Table 3-24**. The profiles for the North and Central Alternatives follow the existing terrain; therefore, there are limited areas of deep excavation, which helps minimize earth disturbance. The resulting earth disturbance is 421 acres and 424 acres, respectively. The South Alternative has deeper and wider cut areas (468 acres of earth disturbance), associated with the excavation required along the Tussey Ridge, resulting in a larger area of disturbance.



### **3.15.4 Mitigation**

A comprehensive geotechnical and soils testing program will be implemented on the Selected Alternative during the final design phase to determine the actual physical characteristics of the soils to be disturbed. Through this testing, soil thicknesses and suitable uses (e.g., construction and embankment materials) will be determined. Erodibility factors will also be determined from the testing program.

Total earth disturbance will exceed one acre and will require that an engineered Erosion and Sediment Pollution Control Plan be developed, included in the NPDES permit, and submitted for review and approval through PA DEP and Centre County Conservation District. Guidelines provided by PA DEP and USDA-NRCS will be followed for the control of sediment. Additional borings and other subsurface exploration activities will also provide information related to the rock underlying the soil for use in the final design.

## **3.16 Stormwater Management**

### **3.16.1 Methodology**

The Pennsylvania Code (25 PA Code, Chapter 102.8 *PCSM Requirements*) provides the regulatory framework of requirements to manage post construction stormwater values for volume, rate, and water quality, due to changes in land cover, flow paths, and/or contributing drainage areas. The Pennsylvania *Stormwater Best Management Practices Manual* provides design guidelines for various stormwater control measures (SCM), to effectively capture and manage changes to stormwater runoff resulting from new development and construction activities. A combination of SCMs will be designed and constructed to ensure the resultant increase in volume, rate, and pollutant runoff from the Project will be mitigated and managed appropriately in accordance with the regulations to ensure the health and integrity of adjacent wetlands and watersheds are maintained both during and after construction.

### **3.16.2 Existing Conditions**

The project area consists primarily of agricultural fields, rolling terrain with meadow and lightly wooded/brush cover, and an existing two-lane highway running along commercial, residential, and farmstead properties with multiple High-Quality Exceptional Value (HQ-EV) wetlands and waterways located along the corridor. PennDOT has two existing stormwater control measures along the existing US 322 corridor at Bear Meadows Road and in Potters Mills associated with the Potter Mills Gap transportation project. Stormwater runoff from these facilities is conveyed by roadside channels, pipes, and inlets to stormwater management facilities or to nearby streams and wetlands. Stormwater runoff from the remainder of the US 322 corridor, surrounding properties, and contributing watersheds is unmanaged. Runoff from the contributing areas within the project area and agricultural areas flows naturally to streams and wetlands located throughout the project site.

### 3.16.3 Impacts

**No Build Alternative:** The No Build Alternative would result in no changes to existing stormwater runoff within the project area, however, with the forecasted increase to the ADT along the corridor, the No Build Alternative would see a degradation to the water quality of the adjacent streams, wetlands, and waterways due to the lack of any SCMs and increases in pollutant runoff for Total Suspended Solids (TSS), as well as minor increases for Total Phosphorous (TP) and Total Nitrogen (TN) from the increasing traffic volumes.

**Build Alternatives:** Each of the Build Alternatives results in impacts to stormwater runoff within and adjacent to the project area due to affecting existing drainage patterns, adding impervious area, compacting soils, and introducing additional pollutants for TSS, TP, and TN. Each Build Alternative produces an increase in the peak rate of stormwater runoff, volume of stormwater runoff, and pollutant runoff that need to be mitigated through the engineered design of PCSM SCMs. Because the implementation of PCSM SCMs will be required through the NPDES permit process, project-related stormwater runoff impacts to groundwater, streams, or other water resources are not anticipated.

### 3.16.4 Mitigation

Stormwater runoff generated from the project will be managed to address peak rate control, volume control, and water quality improvements. As the project area is located within HQ-EV waterways and wetlands, it will be imperative to capture stormwater runoff as close to the source (proposed improvements) as practicable to ensure stormwater runoff is controlled and treated to remove pollutants and maintain the HQ-EV waterways. Stormwater controls will be designed to maintain the existing hydrology and drainage areas to these waterways and wetlands to the maximum extent practicable. They will be located and designed to avoid alterations to existing drainage patterns and hydrology as much as possible to ensure the waterways and wetlands are not cutoff from their respective hydrology with the proposed construction. Additionally, as the project area is located in a region with known karst topography and sinkholes, alternative measures to prevent infiltration and the movement of groundwater will be evaluated. Some of the measures include non-infiltrative practices known as a Managed Release Concept (MRC), which utilize alternative methods to slowly release runoff volume from stormwater facilities without infiltrating into the surrounding groundwater. Potential types of stormwater control measures may include:

- Minimization of disturbed areas
- Detention basins
  - Utilized in areas where increases in peak rate must be mitigated
- Bioswales/Vegetated swales
  - Used in conjunction with larger infiltration basins or bioretention facilities.  
○ Located along the roadway corridor off of the shoulder to capture

- stormwater runoff as close to the runoff source as possible and convey the runoff downstream to larger basins
- Will be designed as MRC for areas with poor infiltration and/or the presence of karst topography
- Infiltration basins and/or trenches
  - Will be investigated first, however, may not be permitted due to geotechnical constraints
- Bioretention and/or Microbioretention basins
  - Will be designed as MRC for areas with poor infiltration and/or the presence of karst topography
- Amended soil to improve infiltration and water quality
  - Can be used in combination with bioswales and vegetated swales to maximize volume and water quality treatment
- Constructed Wetlands
- Vegetated filter strips
- Revegetation/reforestation

Proposed stormwater control measures are intended to improve water quality while managing the increase to peak rates and volume of runoff from the increase to impervious surfaces within the corridor. Additionally, runoff flowing from impervious surfaces can exhibit increased temperatures during warmer months, known as thermal pollution which can degrade adjacent wetlands and waterways. The stormwater control measures will aid in reducing thermal pollution by providing shade, detention time, and evapotranspiration and/or infiltration of runoff.

A comprehensive stormwater management plan will be developed by PennDOT and approved by PA DEP through the NPDES authorization process for the project. Due to the area of disturbance and the special protections afforded to the waters and wetlands within the project area, an Individual NPDES Permit authorization will be needed for stormwater management for the project.

## **3.17 Streams, Rivers, and Other Surface Waters**

### **3.17.1 Methodology**

The watercourse investigation included both secondary source and on-site reviews. The secondary source investigation consisted of reviewing the following existing information: United States Geological Survey (USGS) mapping (Centre Hall, State College); USFWS National Wetland Inventory (NWI) mapping; Centre County Soil Survey; readily available (internet) aerial photography; PA DEP eMapPA online application; Federal Emergency Management Agency (FEMA) Flood Map Service Center; USDA – NRCS's Web Soil Survey; and the Pennsylvania County Listing of Hydric Soils. The on-site watercourse investigation was conducted as part of the wetland delineation study efforts. Watercourses were identified and delineated in accordance with the PA DEP Chapter 105 definition for regulated watercourses and the USACE's regulatory

guidance for relatively permanent waters and the identification of an ordinary high-water mark (OHWM).

### 3.17.2 Existing Conditions

The project area contains two primary drainage basins: Sinking Creek (east) and Spring Creek (west). The approximate divide of the drainages is located between Summer Lane (Potter Township Athletic Complex) and Taylor Hill Road. Sleepy Creek is located between these two roadways and is associated with the Tussey Sink and does not directly connect to either Sinking Creek or Spring Creek via a surface water connection.

There are 104 watercourses located within the project area. The extent of the watercourses includes over 100,000 linear feet of watercourse channels, with over 60,000 linear feet in Spring Creek and over 27,000 linear feet in Sinking Creek (**Table 3-25**). Watercourses can be seen in **Figure 3-11**. The following table provides a distribution of the types of watercourses through the project area.

According to PA Code, Title 25, Chapter 93.9L, watercourses identified within the Sinking Creek portion of the project area have protected water uses for Cold Water and Migratory Fishes (CWF, MF) and watercourses within the Spring Creek portion of the project area have protected water uses for High-Quality Cold Water and Migratory Fishes (HQ-CWF, MF).

Sinking Creek and its tributaries are identified as streams that support the natural reproduction of trout (i.e., wild trout streams). Additionally, Sinking Creek is identified as a Stocked Trout Water through the project area. Sinking Creek is the main stream/drainage area in the eastern portion of the project area. The upper reaches of Sinking Creek (S-LTZ-023) are a perennial stream approximately 4 feet in width that supports riffle, pool, and run habitat with a silt/sand substrate. The mainstem (S-LTZ-001) at Station 436-451 is a perennial stream approximately 10-30 feet in width that supports riffle/run habitat with a silt, gravel, and cobble substrate. The main tributary to Sinking Creek at Station 502-513 (S-BPH-001) is a perennial stream approximately four – ten feet in width that supports riffle/run habitat with a silt, gravel, and cobble substrate.

*Table 3-25: Watercourse Existing Conditions*

|                     | <b>Total<br/>(Linear Feet)</b> | <b>Spring Creek<br/>Drainage<br/>(Linear Feet)</b> | <b>Sinking Creek<br/>Drainage<br/>(Linear Feet)</b> | <b>Sleepy Creek<br/>Drainage<br/>(Linear Feet)</b> |
|---------------------|--------------------------------|--|---|--|
| Total <sup>1+</sup> | 100,458.9                      | 63,567.7   | 27,694.1  | 9,197.2  |
| Ephemeral           | 3,665.8                        | 2,152.2  | 666.7   | 847.0  |
| Intermittent        | 18,120.0                       | 14,634.6   | 2,691.7   | 793.7  |
| Perennial           | 78,673.1                       | 46,780.9   | 24,335.7  | 7,556.6  |

*1: Linear feet calculations rounded to 0.1-place. Minor discrepancies within characteristic fields do not exceed 0.2 linear foot.  
+: Several Watercourses possess multiple flow regimes.*

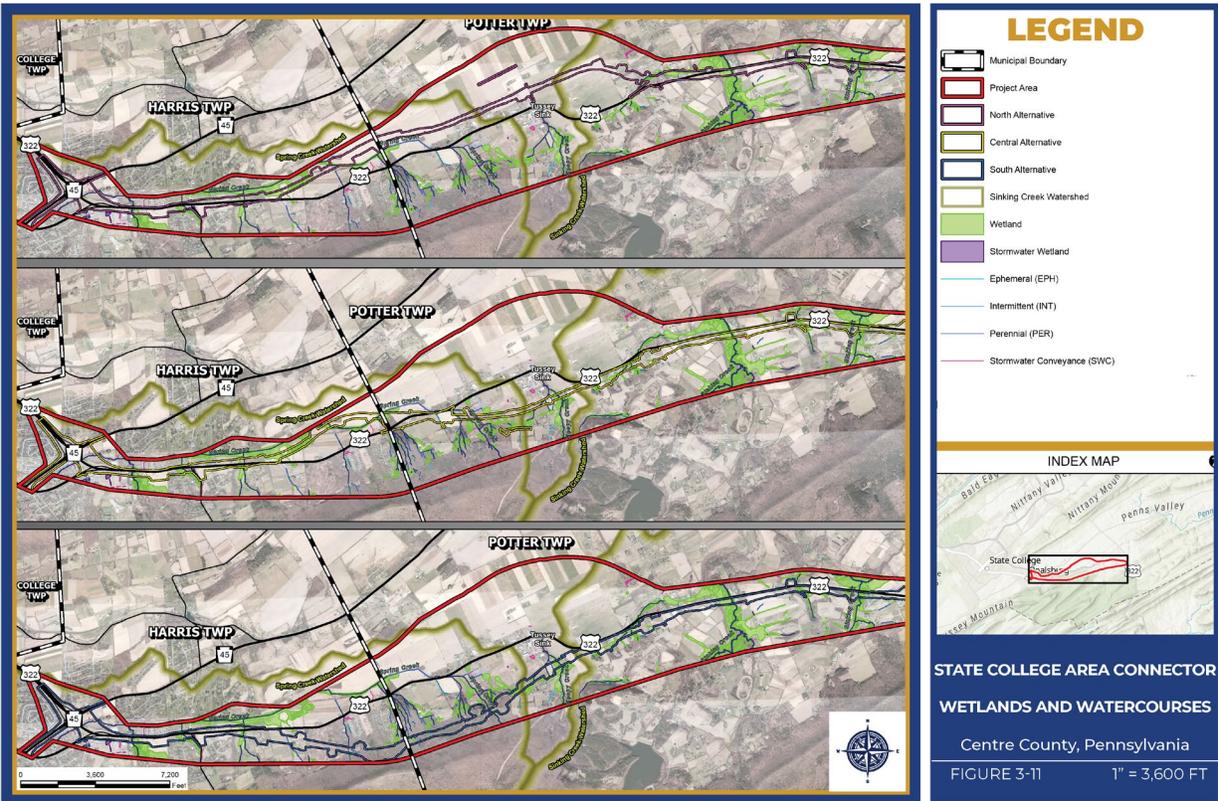


Figure 3-11: Wetland and Watercourses

Spring Creek and its unnamed tributaries are identified as streams that support the natural reproduction of trout (i.e., wild trout streams). Spring Creek is also designated as a Class A Wild Trout Stream. The PFBC 2009 stream report for Spring Creek states that Spring Creek receives significant groundwater contributions that provide a stable source of cold, fertile water. These conditions are also noted by the PFBC to provide ideal conditions for wild trout populations. The 2009 PFBC report also comments that the total biomass of brown trout, including the number of quality-size fish, make Spring Creek one of the best Class A wild trout streams in Pennsylvania. Communication with the PFBC in 2025 indicates that Spring Creek continues to support the water quality and trout conditions as described in the 2009 report.

Spring Creek is the main stream/drainage area in the western portion of the project area. The upper reaches of Spring Creek (S-LTZ-035 & S-LTZ-045) are perennial streams that originate from the Tussey Ridge. These are first order channels that support riffle/run habitat with a silt and gravel substrate. North of US Route 322, Spring Creek (S-LTZ-035) supports intermittent/perennial flow with riffle, run, and pool habitat with a silt, gravel, and cobble substrate. The downstream section (Nittany Farm downstream to PA 45) of Spring Creek (S-LTZ-035) supports perennial flow with riffle/run/pool habitat with a silt, gravel, and cobble substrate.

### 3.17.3 Impacts

**Types of Impacts/Regulated Activities:** The Project includes total, direct, indirect, and bridge impacts. Each of these impact types is considered a PA Chapter 105 Encroachment and may be considered a *Clean Water Act Section 404* discharge of dredge or fill material, and will be permitted accordingly. Consistent with both Chapter 105 and Section 404 guidelines, design measures have been developed to avoid and/or minimize impacts, including the use of bridges to span wetlands, watercourses, and floodways. The bridge structure spanning these resources is accounted for as a regulated activity, as a Chapter 105 Encroachment (i.e. a permanent structure/facility), but the use of a bridge to span wetland/watercourse resources is considered as a mitigation measure to avoid and minimize direct or indirect impacts and is not considered to result in the permanent loss of resource or function which would require compensatory mitigation.

Each type of impact/regulated activity is described as follows:

- Total Direct Impacts include those wetlands and watercourses that are located within an alternative's limit-of-disturbance.
- Direct loss impacts (i.e., Total Net Direct Loss impacts) to wetlands and watercourses are those that are located within an alternative's limit-of-disturbance and are anticipated to be permanently disturbed through direct filling or excavation due to construction.
- Indirect loss impacts to wetlands and watercourses are those that are adjacent to or in proximity to an alternative's limit-of-disturbance, and the proposed filling or excavation could negatively affect the hydrology and or functions of the resource.
- Bridge span minimization impacts to wetlands and watercourses are those that may be exposed to disturbance during construction but are anticipated to be restored. The wetlands and watercourses proposed to be spanned may be exposed to temporary impacts associated with the construction of the bridge structure. Upon completion of the bridge construction, the encroachments to wetlands and watercourses within the limit-of-disturbance would be restored.

The stream impacts for each alternative are provided in the following table, **Table 3-26**. The impacts are presented in both linear feet and square feet.

**No Build Alternative:** The No Build Alternative would not have impacts to any streams, rivers, or other surface waters associated with the construction of a new roadway. The existing US 322 corridor will remain in place to provide local access.

**North Alternative:** The net total stream impact (loss) for the North Alternative would be 1,615 linear feet and 18,877 square feet. The North Alternative would impact the least number of streams, as the area between Sharer Road and Tusseyville consists of extensive agricultural fields containing no streams (i.e., stream avoidance).



Table 3-26: Stream Impacts Per Alternative

|                               | Build Alternative |             |             |             |             |             |
|-------------------------------|-------------------|-------------|-------------|-------------|-------------|-------------|
|                               | North             |             | Central     |             | South       |             |
|                               | Linear Feet       | Square Feet | Linear Feet | Square Feet | Linear Feet | Square Feet |
| Total Direct Impacts          | 5,124             | 57,924      | 9,566       | 141,779     | 10,563      | 85,771      |
| Total Indirect Impacts        | 0                 | 0           | 0           | 0           | 3,209       | 17,712      |
| Bridge Span Minimization      | -3,509            | -39,047     | -5,767      | -113,457    | -5,320      | -53,221     |
| Total Net Direct Loss Impacts | 1,615             | 18,877      | 3,799       | 28,322      | 8,452       | 50,262      |

Most of the profile of the proposed alternative is along the existing terrain and therefore, there are limited areas of deep excavation that could interfere with stream flow/recharge. Bridge crossings would be incorporated for most of the stream valley locations to avoid and minimize impacts. The bridge spans will maintain the riffle/run/pool habitats and flow patterns through the crossing areas. The bridge crossings will preserve the passage of aquatic organisms, including naturally reproducing trout populations, throughout the project area.

For the streams outside of the bridge crossings, stream loss impacts are accounted for with those resources that would be directly impacted by the construction of the alternative. These encroachments would include direct grading (i.e., fill or excavation) that would result in habitat loss and culvert/pipe crossings, where stream functions would be altered. The direct culvert/pipe encroachment would be considered to alter the existing riffle, run, pool habitat and loss of aquatic habitat; however, the culvert and pipe crossings would maintain stream flow through the alternative to avoid indirect hydrologic impacts and accommodate passage of aquatic species. The direct loss of stream resource/habitat would include 1,019 linear feet of perennial stream and 596 linear feet of intermittent stream.

**Central Alternative:** The net total stream impact (loss) for the Central Alternative would be 3,799 linear feet and 28,322 square feet. Most of the profile of the proposed alternative is along the existing terrain, and therefore, there are limited areas of deep excavation that could interfere with stream flow/recharge. Bridge crossings would be incorporated for most of the stream valley locations to avoid and minimize impacts. The bridge spans will maintain the riffle/run/pool habitats and flow patterns through the crossing areas. Additionally, the bridge crossings will ensure passage of aquatic organisms, including the naturally reproducing populations of trout, is maintained through the project area.

For the streams outside of the bridge crossings, stream loss impacts account for streams that would be directly impacted by the construction of the alternative. These encroachments would include direct grading (i.e., fill or excavation) that would result in habitat loss and culvert or pipe crossings, where stream functions would be altered. The



direct culvert/pipe encroachment would be considered to alter the existing riffle, run, pool habitat and loss of aquatic habitat; however, the culvert and pipe crossings would maintain stream flow through the alternative to avoid indirect hydrologic impacts and accommodate passage of aquatic species. The direct loss of stream resource/habitat would include 2,688 linear feet of perennial stream and 1,111 linear feet of intermittent stream.

**South Alternative:** The net total stream impact (loss) from the South Alternative would be 8,452 linear feet and 50,262 square feet. This alternative would impact the highest number of streams. Bridge crossings would be incorporated for most of the stream valley locations to avoid and minimize impacts. However, for the areas outside of the bridge crossings, stream loss impacts account for streams that would be directly impacted by the construction of the alternative. These encroachments would include direct grading (i.e., fill or excavation) that would result in habitat loss and culvert or pipe crossings, where stream functions would be altered. The direct culvert/pipe encroachment would be considered to alter the existing riffle, run, pool habitat and loss of aquatic habitat; however, the culvert and pipe crossings would maintain stream flow through the alternative to avoid indirect hydrologic impacts and accommodate passage of aquatic species.

For the section of the alternative that traverses the Tussey Ridge, additional stream impact concerns are anticipated based upon the following.

- The preliminary engineering design of the South Alternative requires substantial depths of cut ranging from five to 180 feet, as it traverses approximately 1.5 miles along the lower portion of the Tussey Ridge. Most of the cross sections of these cut areas include cuts on both the upslope and downslope side of the alignment.
- To maintain the hydrologic pattern and distribution of the streams on the ridge side, the upslope hydrology would need to be collected off the cut face and conveyed underneath the alignment and daylighted through the downslope cut area. This would result in an increase in the impacts to downslope waters and wetlands.
- Intercepting the discharge and recharge area immediately upslope of many of the waters is anticipated to indirectly impact those waters immediately downslope and within 200 feet of the alternative due to a loss or reduction in hydrology.
- The creation of the large cut slopes along the ridge has the potential to change the characteristics of the existing recharge/discharge area as it relates to water quality. The existing hillside is forested which provides shade cover for the existing headwater streams and wetlands. The extensive planned excavation would open a 1.5-mile section with open cut slopes. This would present the opportunity for increased solar exposure to the cut slopes and increase the potential for thermal impacts. Spring Creek is designated by the PFBC from its mouth upstream to its headwaters as a stream that supports a population of



naturally reproducing trout. The addition of thermal influences to the numerous small headwater streams presents the potential for the reduction in the overall water quality of Spring Creek.

- The extent and depth of cuts along the ridge immediately upslope of the discharge of the headwater spring fed streams and wetlands represents a concern for the South Alternative. Significant hydrogeologic testing would be needed to further identify and model the groundwater recharge and discharge characteristics in this specific area in order to reduce and/or eliminate the potential concerns downstream from impacts to the headwaters of Spring Creek.
- The South Alternative cuts through the Reedsville and Bald Eagle Formations along Tussey Ridge. Reedsville and Bald Eagle are non-karst formations, consisting of shales and sandstones. As referenced in **Section 3.14.3**, the eastern segment for all three Build Alternatives traverses through the Reedsville Formation; however, west of Tusseyville, the South Alternative veers to the south of the Potter Township Athletic Complex and onto the base of the Tussey Ridge.
- Based upon its position on the ridge side and depths of cut through the Reedsville and Bald Eagle Formations, the South Alternative has a higher potential for encountering APR. The construction of the Potter Mills Gap section of US 322 located to the east of the project area, encountered APR in the excavation through the Reedsville Formation and the I-99 project encountered APR in the Bald Eagle Formation with the rock cuts at Skytop. The presence of the Reedsville and Bald Eagle Formations coupled with the proposed depths of cut, represents a potential concern for the South Alternative, associated with encountering APR.
- Encountering APR creates a new opportunity for introducing acidic drainage and runoff to the receiving streams. Acidic drainage can degrade water quality and aquatic habitats.

The direct loss of stream resource/habitat would include 3,062 linear feet of perennial stream and 2,181 linear feet of intermittent stream. There would be an indirect impact to 3,209 linear feet of downslope streams associated with the large excavation. A total of 8,452 linear feet of streams would be impacted.

#### **3.17.4 Mitigation**

Sinking Creek and its unnamed tributaries are anticipated to have an in-stream construction time-of-year restriction for wild trout (October 1 through December 31) and Stocked Trout (February 15 through June 1). Spring Creek and its tributaries are anticipated to have a restriction for Class A mixed brook/brown wild trout (October 1 through April 1).

Impact avoidance and minimization measures will be further evaluated as part of the final design phase of the project. For the bridge crossings, pier/endwall placement will be detailed in final design to ensure each stream crossing avoids and minimizes stream



impacts and maintains existing flow patterns and aquatic passage through each crossing location.

The stream loss areas will be further evaluated in final design to size the proposed culvert/pipe crossings to maintain the hydrologic conditions and to provide aquatic passage for aquatic organisms. Additionally, the direct fill and excavation encroachments will be evaluated for the potential for stream relocation, if practicable. Stream impacts will be mitigated through the purchase of compensatory bank credits from an approved bank site. PennDOT District 2-0 has initiated coordination with bank operators within the primary and secondary service areas and has identified that the Babbs Creek mitigation site has adequate capacity to fulfill the credit needs for this project. Mitigation banks are wetland, stream, or other aquatic resource areas that have been restored, established, enhanced, or preserved for the purpose of providing compensation for unavoidable impacts to aquatic resources permitted under Section 404 and/or Chapter 105. The USACE's 2008 mitigation rule established a preferential hierarchy for providing compensatory mitigation for unavoidable impacts to special aquatic sites (i.e., wetlands). The hierarchy identified the following preferential mechanisms for mitigation, including mitigation banks, in-lieu fee programs, and permittee responsible. Mitigation banks are regional ecological systems created by a bank sponsor to produce credits that are available for sale to permit applicants to offset unavoidable project impacts. The number of credits is determined by project and coordinated through the 404/105 permitting process with regulatory agencies (USACE and PA DEP).

Significant geological testing will be needed for the South Alternative to further identify, characterize, and even eliminate the potential concerns for encountering APR. Encountering APR would represent a water quality concern that could result in a reduction in the water quality and aquatic habitats of Spring Creek.

## **3.18 Wetlands**

### **3.18.1 Methodology**

The wetland investigation included both secondary source and on-site reviews. The secondary source investigation consisted of reviewing the following existing information: USGS mapping (Centre Hall, State College); USFWS NWI mapping; Centre County Soil Survey; readily available (internet) aerial photography; PA DEP eMapPA online application; FEMA Flood Map Service Center; USDA – NRCS's Web Soil Survey; and the Pennsylvania County Listing of Hydric Soils.

The on-site wetland and watercourse investigation was conducted using the Routine On-Site Wetland Delineation Method described in the USACE's *Wetland Delineation Manual, Technical Report Y-87-1* (1987) and the Regional Supplement to the USACE's *Wetland Delineation Manual: Eastern Mountains and Piedmont* (2012). Wetlands were identified pursuant to 33 CFR 328.3(c) Definition of Waters of the United States and PA Code Title 25, Chapter 105. If present, wetlands identified were classified in accordance with the USFWS' Classification of *Wetlands and Deepwater Habitats of the United States*

(Cowardin, et al., 1979). Dominant vegetation, soil characteristics, and indicators of hydrology were evaluated for potential wetland and upland habitat in the project area.

### **3.18.2 Existing Conditions**

Two hundred eighteen (218) wetlands were delineated within the project area (**Figure 3-11**). The results of the wetland and watercourse delineation study and functional assessment are detailed in the *Wetland and Watercourse Identification and Delineation Report* (April 2025) (**Appendix L**). The Project wetlands were characterized by vegetative components (i.e., Cowardin Classification) and by function, including completion of the PA DEP Rapid Assessment Protocol and USACE's New England functional Descriptive Method protocol. Delineated wetlands were determined to include a wide range of vegetative and hydrogeomorphic classes. As part of the Functional and Rapid Assessments, the wetlands were generally grouped into the following categories: large floodplain systems (greater than or equal to 0.50-acre), small floodplain benches (less than 0.50-acre), ponds, hillside/headwater seeps, mesic/farmland wetlands, and depressional wetlands. The depressional wetlands were identified as resources that were isolated from (not connected to) other aquatic resources. **Table 3-27** summarizes the distribution of the different types of wetlands delineated in each watershed within the project area.

Wetlands delineated along the Spring Creek and Sinking Creek floodplains are considered exceptional value wetlands given the Class A Wild Trout and Naturally Reproducing Trout (wild trout) designations of the creeks, in accordance with PA DEP Chapter 105.17 regulations. Sleepy Creek does not have any wild trout designations; therefore, wetlands delineated along the Sleepy Creek floodplain are not considered exceptional value.

### **3.18.3 Impacts**

#### **Types of Impacts/Regulated Activities**

The Project includes total, direct, indirect and bridge impacts. Each type of impact is summarized as follows and consistent as previously explained for Streams in **Section 3.17**.

- Total Direct impacts include those wetlands that are located within an alternative's limits of disturbance.
- Direct loss impacts (i.e., Total Net Direct Loss impacts) to wetlands are those that are located within an alternative's limits of disturbance and are anticipated to be permanently disturbed through direct filling or excavation due to construction.
- Indirect loss impacts to wetlands are those that are adjacent to or in proximity to an alternative's limits of disturbance, and the proposed filling or excavation could negatively affect the hydrology and/or functions of the resource.
- Bridge span minimization impacts to wetlands (and watercourses) are those that may be exposed to disturbance during construction but are anticipated to be restored. The wetlands proposed to be spanned may be exposed to temporary



impacts associated with the construction of the bridge structure. Upon completion of the bridge construction, the encroachments to wetlands within the limits of disturbance would be restored.

The wetland impacts for each alternative are provided in **Table 3-28**. The impacts are presented in acres.

*Table 3-27: Wetland Existing Conditions*

| Characteristic  | Total | Spring Creek | Sinking Creek | Tussey Sink (Sleepy Creek) |
|---|-------|--------------|---------------|----------------------------|
| Total Size (acres)  |       |              |               |                            |
| <0.1 acre   | 3.0   | 1.9          | 1.0           | 0.1                        |
| 0.1-0.5 acres   | 10.0  | 6.7          | 2.7           | 0.6                        |
| 0.5-1.0 acres   | 13.2  | 6.7          | 6.5           | N/A                        |
| >1.0 acres  | 255.3 | 92.9         | 147.8         | 14.6                       |
| Vegetative (several wetlands possess multiple strata) (acres)               |       |              |               |                            |
| Palustrine Emergent (PEM)   | 208.6 | 80.1         | 113.7         | 14.8                       |
| Palustrine Shrub Scrub (PSS)  | 43.5  | 13.9         | 29.5          | 0.1                        |
| Palustrine Forested (PFO)   | 9.4   | 2.2          | 6.8           | 0.4                        |
| Palustrine Open Water (POW)   | 20.0  | 12.0         | 8.0           | N/A                        |
| HGM <sup>1</sup> (several wetlands possess multiple HGM categories) (acres) |       |              |               |                            |
| Large Floodplain  | 229.5 | 77.5         | 140.7         | 11.3                       |
| Small Floodplain  | 4.3   | 2.3          | 1.5           | 0.5                        |
| Hillside/Headwater Seeps  | 23.1  | 15.7         | 5.2           | 2.2                        |
| Depressional  | 1.0   | 0.7          | 0.3           | N/A                        |
| Mesic/Farmland  | 3.6   | 0.1          | 2.3           | 1.2                        |
| Pond  | 20.0  | 11.9         | 8.1           | N/A                        |
| Exceptional Value (acres)   |       |              |               |                            |
|   | 251.9 | 89.4         | 162.5         | N/A                        |

<sup>1</sup>HGM – Hydrogeomorphic

Table 3-28: Wetland Impacts

|  | <b>Build Alternative</b> |                        |                      |
|--|--------------------------|------------------------|----------------------|
|  | <b>North (acres)</b>     | <b>Central (acres)</b> | <b>South (acres)</b> |
| Total Direct Impact                                  | 25.4                     | 30.0                   | 17.9                 |
| Primary Characteristics of Impacted Wetlands (acres) |                          |                        |                      |
| Size - >1.0 acres                                    | 94% (23.8 ac)            | 92% (28.1 ac)          | 81% (14.6 ac)        |
| Vegetative – PEM                                     | 76% (19.7 ac)            | 82% (24.8 ac)          | 81% (14.6 ac)        |
| HGM – Large Floodplain                               | 81% (20.6 ac)            | 77% (23.5 ac)          | 66% (11.9 ac)        |
| HGM - Hillside                                       | 3% (0.8 ac)              | 9% (2.8 ac)            | 21% (3.8 ac)         |
| Exceptional Value                                    | 98% (24.9 ac)            | 77% (23.4 ac)          | 83% (14.9 ac)        |
| Spring Creek Drainage Basin                          |                          |                        |                      |
| Total Direct Impact                                  | 12.7                     | 18.5                   | 4.6                  |
| Sinking Creek Drainage Basin                         |                          |                        |                      |
| Total Direct Impact                                  | 12.7                     | 11.1                   | 11.1                 |
| Tussey Sink (Sleepy Creek) Drainage Basin            |                          |                        |                      |
| Total Direct Impact                                  | N/A                      | 0.8                    | 2.2                  |
| Total Direct Impact                                  | 25.4                     | 30.0                   | 17.9                 |
| Total Indirect Impact                                | 0.0                      | 0.0                    | 3.7                  |
| Bridge Span Minimization                             | -10.9                    | -15.0                  | -9.7                 |
| Total Direct Net Impacts                             | 14.5                     | 15.0                   | 11.9                 |
| APR Concerns   | Low                      | Low                    | High                 |
| Thermal and Water Quality/<br>Quantity Concerns      | Low                      | Low                    | High                 |

**No Build Alternative:** The No Build Alternative would not have any impacts to wetlands.

**North Alternative:** The net total wetland impact (loss) that would result from filling and excavation encroachment activities associated with the construction of the North Alternative would be 14.5 acres. This alternative would impact the least number of wetlands of all three Build Alternatives.

- Bridge crossings are planned for most of the stream valley locations to avoid and minimize impacts. The majority of the wetlands along the stream valley crossings are palustrine emergent systems. The bridge spans will maintain the existing wetland functions and values including floodflow alteration, sediment stabilization, groundwater recharge/discharge, sediment/toxicant retention, nutrient removal, production export, and wildlife habitat.



- Most of the wetland impacts would occur to large Palustrine Emergent (PEM) floodplain wetlands.
- Wetland impacts are approximately a 50/50 split between the Sinking Creek and Spring Creek drainage basins.
- For the wetland areas outside of the proposed bridge crossings, encroachments would include direct grading (fill or excavation) and pipe crossings, where wetland functions would be altered. The pipe crossing would be arranged to maintain hydrologic connections to maintain existing flow patterns and avoid/minimize indirect impacts.
- Lost functions and values from direct fill/excavation impacts include: floodflow alteration, sediment stabilization, groundwater recharge/discharge, sediment/toxicant retention, nutrient removal, production export, and wildlife habitat.

**Central Alternative:** The net total wetland impact (loss) associated with the direct fill and excavation encroachments for the construction of the Central Alternative would be the highest at 15.0 acres of wetlands.

- Most of the wetland impacts would occur to large PEM floodplain wetlands.
- Bridge crossings are planned for most of the stream valley locations to avoid and minimize impacts. The majority of the wetlands along the stream valley crossing are palustrine emergent systems. The bridge spans will maintain the existing wetland functions and values including floodflow alteration, sediment stabilization, groundwater recharge/discharge, sediment/toxicant retention, nutrient removal, production export, and wildlife habitat.
- For the wetland areas outside of the proposed bridge crossings, encroachments would include direct grading (fill or excavation) and pipe crossings, where wetland functions would be altered. The pipe crossing would be arranged to maintain hydrologic connections to maintain existing flow patterns and avoid/minimize indirect impacts.
- Most of the wetland impacts and crossings would occur in the Spring Creek drainage basin; but the crossings are in a downstream location (downslope of the headwater discharge area of Spring Creek) and minimize indirect hydrologic impacts to the downstream wetlands and watercourses.
- Lost functions and values from direct fill/excavation impacts include: floodflow alteration, sediment stabilization, groundwater recharge/discharge, sediment/toxicant retention, nutrient removal, production export, and wildlife habitat.

**South Alternative:** The net total wetland impact (loss) associated with the fill and excavation encroachments for the construction of the South Alternative would be 11.9 acres.

- Most direct impacts would occur to wetlands within the Sinking Creek drainage basin, while the most indirect impacts to wetlands would occur in the Spring Creek drainage basin.



- Lost functions and values from direct fill/excavation impacts include: floodflow alteration, sediment stabilization, groundwater recharge/discharge, sediment/toxicant retention, nutrient removal, production export, and wildlife habitat.
- To maintain the hydrologic pattern and distribution of the streams and hillside wetlands on the ridge side to the south, the upslope hydrology would need to be collected off the cut face and conveyed underneath the alignment and daylighted through the downslope cut area. This would result in an increase in the impacts to downslope waters and wetlands.
- Additionally, with intercepting the discharge and recharge area immediately upslope of many of the wetlands and waters, it is anticipated that those “clusters” of wetlands and waters immediately downslope or within 200 feet of the alternative could be indirectly impacted due to a loss or reduction in hydrology.
- Intercepting the discharge and recharge area and altering the hydrologic condition of the hillside wetlands could result in a reduction in the effectiveness of the functions and values of these wetlands including groundwater recharge/discharge and wildlife habitat.
- The extent and depth of cuts along the ridge immediately upslope of the discharge of the headwater spring fed streams and wetlands represents a concern for the South Alternative. Significant hydrogeologic testing would be needed to further identify and model the groundwater recharge and discharge characteristics in this specific area in order to reduce and/or eliminate the potential concerns downstream from impacts to the headwaters of Spring Creek.

As referenced in **Section 3.14.3**, the eastern segment for all three Build Alternatives traverses through the Reedsville Formation; however, west of Tusseyville, the South Alternative veers to the south of the Potter Township Athletic Complex and onto the base of the Tussey Ridge. The South Alternative cuts through the Reedsville and Bald Eagle Formations along the Tussey Ridge. Reedsville and Bald Eagle are non-karst formations, consisting of shales and sandstones.

- Based upon its position on the ridge side and depths of cut through the Reedsville and Bald Eagle Formations, the South Alternative has a higher potential for encountering APR. The construction of the Potter Mills Gap section of US 322 located to the east of the project area, encountered APR in the excavation through the Reedsville Formation and the I-99 project encountered APR in the Bald Eagle Formation with the rock cuts at Skytop. The presence of the Reedsville and Bald Eagle Formations coupled with the proposed depths of cut, represents a potential concern for the South Alternative, associated with encountering APR.
- Encountering APR creates a new opportunity for introducing acidic drainage and runoff to the receiving wetlands. Acidic drainage can degrade water quality and palustrine/aquatic habitats.



Wetland impacts per alternative are summarized in **Table 3-28**.

**Impact Summary:** There are numerous wetland resources across the project area with large PEM floodplain wetlands being the most abundant and widely distributed. The North and Central Alternatives would have higher wetland impacts when compared to the South Alternative; however, there are concerns with indirect impacts from the South Alternative. The proposed excavation along the Tussey Ridge is anticipated to result in indirect impacts to approximately 4 acres of downslope wetlands. Of the 11.9 acres of wetland loss identified for the South Alternative, approximately 7.5 acres (3.8 acres direct and 3.7 acres indirect) are associated with hillside type wetlands, which are a more limited resource when compared to the extent of floodplain wetlands within the project area. There is an additional concern with the potential impact associated with the large excavation and alteration to the existing recharge and discharge zones of the wetlands along the ridge which could result in additional thermal, water quality, and water quantity impacts to downslope wetlands. Although the direct impacts would be slightly higher for the North and Central Alternatives, the direct loss could be mitigated, and there is a lower potential to disrupt the water quality and functions, as well as the values, of the remaining/adjacent wetlands.

### **3.18.4 Mitigation**

Impact avoidance and minimization measures will be further evaluated as part of the final design phase of the project and Chapter 105 permit process. Mitigation measures to be advanced through final design and permitting to further minimize harm to wetlands will include the evaluation of:

- Bridge design – pier and abutment placements outside of wetlands, height of bridges to maintain openness to support vegetative cover, restoration of temporary construction impacts
- Cross pipes under fill areas to maintain hydrologic connectivity
- Placement of stormwater management and erosion and sedimentation control features outside of wetlands

Wetland loss impacts will be mitigated through the purchase of compensatory bank credits from an approved bank site. PennDOT District 2-0 has initiated coordination with bank operators within the primary and secondary service areas and has identified that the Babbs Creek mitigation site has adequate capacity to fulfill the credit needs for this project. Mitigation banks are wetland, stream, or other aquatic resource areas that have been restored, established, enhanced, or preserved for the purpose of providing compensation for unavoidable impacts to aquatic resources permitted under Section 404 and/or Chapter 105. The USACE's 2008 mitigation rule established a preferential hierarchy for providing compensatory mitigation for unavoidable impacts to special aquatic sites (i.e., wetlands). The hierarchy identified the following preferential mechanisms for mitigation including mitigation banks, in-lieu fee programs, and permittee responsible. Mitigation banks are regional ecological systems created by a bank sponsor to produce credits that are available for sale to permit applicants to off-

set unavoidable project impacts. The number of credits is determined by project and coordinated through the 404/105 permitting process with regulatory agencies (USACE and PA DEP).

## **3.19 Floodplains**

### **3.19.1 Methodology**

Executive Order (E.O.) 11988, *Floodplain Management* establishes measures to avoid and minimize impacts associated with flooding including flood loss, risks to human safety, health and welfare, and additionally, to restore and preserve the natural and beneficial values of floodplains. Under E.O. 11988, a floodplain is defined as the low lying, relatively flat area adjoining waters that are subject to a one percent or greater chance of flooding in any given year. The Federal Emergency Management Agency (FEMA) is the regulatory agency that manages the identification and activities that affect certain floodplains (FEMA floodplains). At the state level, the Pennsylvania Department of Environmental Protection (PA DEP) is the regulatory authority under PA Code Title 25, Chapter 105, *Dam Safety and Waterway Management*, and Chapter 106, *Floodplain Management*, regulations. Chapter 105 and 106 regulations afford protection to floodplains that include both the floodway and floodplain fringe. Under Chapter 106, the floodway is defined as the channel of the watercourse and those portions of the adjoining floodplains which are reasonably required to carry and discharge the 100-year flood. The floodplain fringe is the area located outside of the floodway and within the floodplain.

PADEP Chapter 105 regulations indicate that floodways are determined through either FEMA mapping or in the absence of any FEMA determined floodway along a watercourse, the floodway is assumed to extend 50 feet landward from the top of each streambank. Additionally, per the Chapter 106 Rules and Regulations, additional permit requirements are placed upon the Commonwealth (i.e., PennDOT) for activities, structures or an assembly of materials on the floodplain which may impede, retard, or change flood flows. With encroachment activities and structures within the floodway portion of the overall floodplain already regulated under Chapter 105, the Chapter 106 requirements provide protection to the floodway fringe area. Therefore, in areas that are mapped as FEMA floodplains, the entire floodplain is considered regulated under PA state regulations.

Data was collected from secondary sources, including FEMA 100-year floodplain mapping, to identify mapped floodplain and/or floodway areas. In an area where no FEMA maps or studies have defined the boundary of the floodplain or floodway, assumed floodways were mapped to extend from the stream top of bank to 50 feet landward, in accordance with DEP regulations.

### **3.19.2 Existing Conditions**

**Floodplains:** FEMA 100-year floodplains were identified for 11 streams out of 104 delineated streams, including Sinking Creek, Boal Gap Run, Spring Creek, and Galbraith Gap Run. The total area of 100-year FEMA floodplains (Zone A and Zone AE) mapped

within the project area is approximately 186 acres (**Figure 3-12**). There are no FEMA Regulated Floodways mapped within the project area. The mapped FEMA floodplain areas are considered to represent both the limits of the floodway and floodplain of the respective stream (Zone A and Zone AE).

**Floodways:** For the intermittent and/or perennial streams that did not have a mapped FEMA floodplain, each stream was assigned the assumed 50-foot floodway designation (from each stream bank), per PA DEP regulations. The 50-foot assumed floodway is considered to represent both the floodway and floodplain for those respective streams. In total, approximately 177 acres of floodway exist within the project area (**Figure 3-12**).

### 3.19.3 Impacts

The floodplain and floodway impacts for each alternative are presented in **Tables 3-29** and **3-30**, including the total area of floodplain and floodway within the limit of disturbance for each alternative, the area avoided through bridging and the area of impact (i.e., loss). The No Build Alternative will result in no impacts to the existing floodplains and floodways.

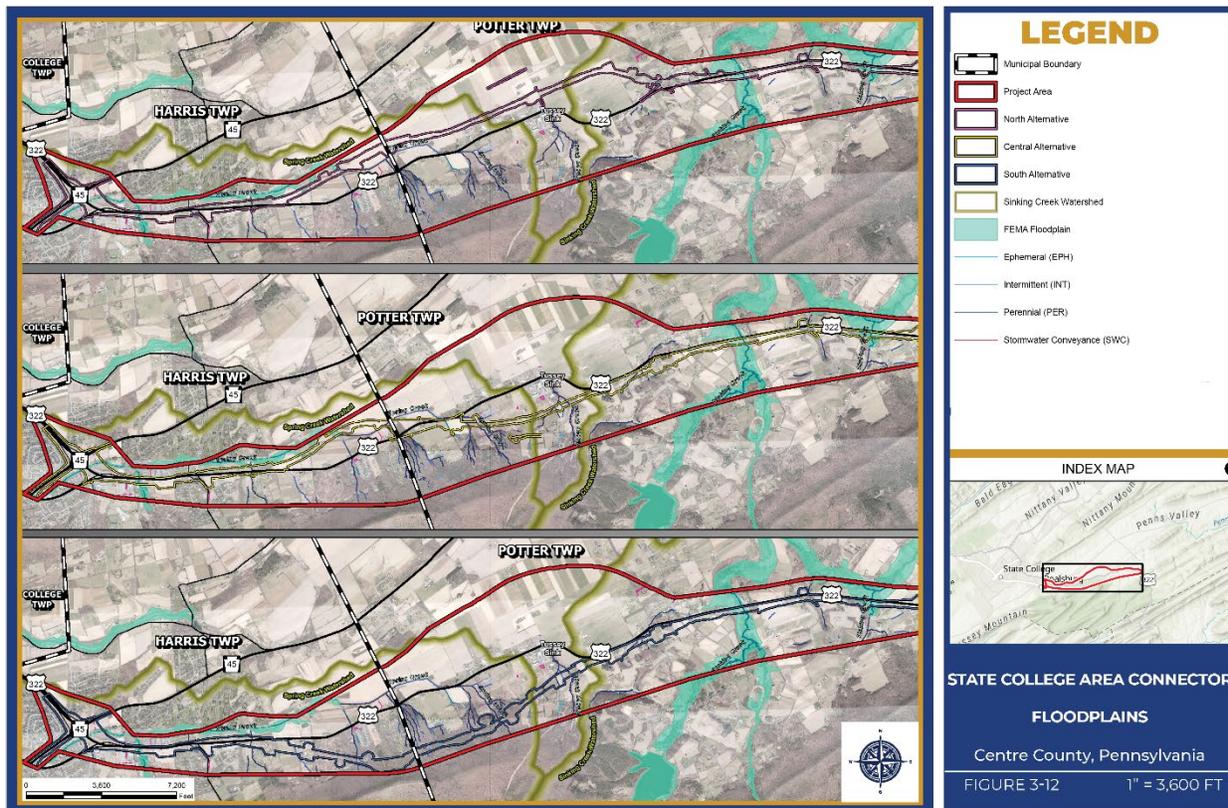


Figure 3-12: Floodplains



Table 3-29: Floodplain Impacts

| Alternative | Total Impacted Floodplain             | Avoided Floodplain (bridges)          | Anticipated Floodplain Impact        |
|-------------|---------------------------------------|---------------------------------------|--------------------------------------|
| North       | 619,549.0 square feet<br>(14.2 acres) | 409,464.0 square feet<br>(9.4 acres)  | 210,085.0 square feet<br>(4.8 acres) |
| Central     | 640,332.0 square feet<br>(14.7 acres) | 446,180.8 square feet<br>(10.2 acres) | 194,151.2 square feet<br>(4.5 acres) |
| South       | 552,180.4 square feet<br>(12.6 acres) | 385,940.2 square feet<br>(8.9 acres)  | 166,240.2 square feet<br>(3.7 acres) |

Table 3-30: Floodway Impacts

| Alternative | Total Impacted Floodway               | Avoided Floodway (bridges)            | Anticipated Floodway Impact           |
|-------------|---------------------------------------|---------------------------------------|---------------------------------------|
| North       | 400,752.0 square feet<br>(9.2 acres)  | 196,020.0 square feet<br>(4.5 acres)  | 204,732.0 square feet<br>(4.7 acres)  |
| Central     | 940,896.0 square feet<br>(21.6 acres) | 505,296.0 square feet<br>(11.6 acres) | 435,600.0 square feet<br>(10.0 acres) |
| South       | 953,964.0 square feet<br>(21.9 acres) | 348,480.0 square feet<br>(8.0 acres)  | 605,484.0 square feet<br>(13.9 acres) |

The Build Alternatives will result in unavoidable impacts to floodplains/floodways associated with construction fills and stream encroachments. The locations of the Build Alternatives are positioned to avoid many of the extensive riparian wetland and watercourse resources located throughout the Sinking Creek and Spring Creek drainage basins. Numerous bridge crossings were also incorporated into the design of the Build Alternatives to further avoid and minimize impacts (**Table 3-29** and **Table 3-30**).

**Evaluation of Flooding Potential:** The *Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol* (RAP) provides guidance for assessing the condition of riverine aquatic resources for the purposes of meeting regulatory requirements contained in PA Code, Title 25, Chapter 105. As part of that protocol, there is guidance to determine the Riparian Zone of Influence, through different methods including:

- Hydrologic Modeling Analysis to determine the 100-year storm event elevations; or
- 100-year FEMA floodplain mapping; or
- In FEMA unmapped areas, estimate the flood prone area by determining the elevation that corresponds to twice the maximum depth of the bankfull channel as taken from the established bankfull stage.

Hydrologic Modeling will be completed as part of the final design and Chapter 105 permitting process for the Selected Alternative. To provide additional information pertaining to the extent of potential flooding at each of the proposed bridge crossings for all three Build Alternatives, the following evaluation was conducted:

- In FEMA mapped floodplains, the extent and elevation of the FEMA floodplain was compared to the approximate bottom of the proposed bridge to determine



the potential for encroachment and backwater flooding, with respect to the adjacent properties.

- In the FEMA unmapped areas, the flood prone area, including depth and width, was determined following the *Level 2 RAP for Riverine Conditions* as described above. In addition, the USGS StreamStats program was accessed to determine the drainage characteristics for each proposed bridge crossing. StreamStats provides the necessary data for determining the flood prone depth and width, specifically each stream’s bankfull depth. Twice the bankfull depth provides the approximate elevation of the flood prone area at each crossing. The purpose of determining the flood prone area was to determine an approximate flood elevation at each crossing utilizing the USGS StreamStats instead of an assumed elevation.

**Table 3-31** outlines the bankfull depth and flood prone depth for each crossing. The approximated flood prone depth was then compared to the height of the proposed bridge structure to characterize whether the proposed bridge design accommodated an adequate level of freeboard (i.e., open capacity to allow flood waters) to maintain the existing flow patterns and avoid flooding impacts to the adjacent properties.

Table 3-31: Bridge Spans

| Bridge Station (location) | N | C | S | L (ft) | W (ft) | H (ft) | Bnk (ft) | Fp (ft) | Fb (ft) | Description   |
|---------------------------|---|---|---|--------|--------|--------|----------|---------|---------|---|
| 123                       | X | X | X | 531    | 35     | 54     | 1.25     | 2.5     | 51.5    | Bridge spans S-LTZ-035-PER (Spring Creek).  |
| 147                       | X | X | X | 531    | 35     | 11     | 1.5      | 3.0     | 9.5     | Bridge spans S-LTZ-077-PER (Galbraith Gap Run)  |
| 171 – 178                 | X | X | X | 600    | 100    | 42     | 0.22     | 0.44    | 41.58   | Bridge spans S-LTZ-038-PER and WL-LTZ-147 downstream of the series of ponds along Bear Meadows Road   |
| 197 – 202                 | X | X | X | 288    | 94     | 35     | 0.36     | 0.72    | 34.28   | Bridge spans S-LTZ-073-PER and parts of WL-LTZ-143-PEM at Somerset Drive  |
| 217 – 225                 | X | X |   | 773    | 100    | 23     | 0.18     | 0.36    | 22.64   | Bridge spans portions of WL-LTZ-067-PEM and S-LTZ-070-INT at Nittany Farm   |
| 243 – 249                 | X | X |   | 417    | 120    | 23     | 0.65     | 1.3     | 21.7    | Bridge spans S-LTZ-035-PER (Spring Creek) and its floodplain wetlands, north of existing US 322 and in proximity to Sharer Road.  |
| 267 – 275                 |   | X |   | 800    | 120    | 26     | 0.5      | 1.0     | 25      | Bridge spans S-LTZ-035-PER (Spring Creek) and its floodplain wetlands, north of existing US 322.  |
| 306 – 312                 |   | X |   | 694    | 120    | 9      | 0.38     | 0.76    | 8.24    | Bridge span S-LTZ-035-PER (Spring Creek) is 9 feet high. Bridge spans the streams and adjacent floodplain wetlands west of Tussey View Lane and south of existing US 322. |



| Bridge Station (location) | N | C | S | L (ft) | W (ft) | H (ft) | Bnk (ft) | Fp (ft) | Fb (ft) | Description   |
|---------------------------|---|---|---|--------|--------|--------|----------|---------|---------|---|
| 306 – 312                 |   | X |   | 694    | 120    | 5      | 0.2      | 0.4     | 4.6     | At S-LTZ-045-PER, the bridge span is 5 feet high. S-LTZ-045-PER is a very small stream with a drainage area of 70 acres.  |
| 320 – 323                 |   |   | X | 320    | 112    | 9      | 0.2      | 0.4     | 8.6     | Bridge spans S-LTZ-035-PER (Spring Creek), S-LTZ-040-PER, S-LTZ-041-PER, and floodplain wetlands  |
| 349 – 361                 |   | X |   | 1,165  | 120    | 35     | 0.65     | 1.3     | 33.7    | Bridge span of Sleepy Creek (S-LTZ-025-PER), S-LTZ-095-PER, S-LTZ-028-PER, S-LTZ-027-INT, and adjacent wetlands at Tussey Sink.   |
| 356 – 366                 |   |   | X | 1,025  | 112    | 58     | 0.65     | 1.3     | 56.7    | Bridge spans S-LTZ-025-PER (Sleepy Creek) and WL-LTZ-052-PEM at Tussey Sink.  |
| 384 – 391                 |   | X | X | 550    | 120    | 28     | 0.56     | 1.1     | 26.9    | Bridge spans upper reaches of Sinking Creek, S-LTZ-023-PER.   |
| 404 – 410                 | X |   |   | 736    | 117    | 23     | 0.56     | 1.1     | 21.9    | Bridge spans Neff Pond, including S-LTZ-023-PER and WL-LTZ-043-POW, north of existing US 322.   |
| 436 – 451                 | X | X | X | 1,437  | 100    | 45     | 2.1      | 4.2     | 41.8    | Bridge crossing spans Darlington Sinking Creek stream valley area, S-LTZ-001-PER & WL-LTZ-040-PEM, south of US 322.   |
| 474 – 479                 | X | X | X | 391    | 100    | 30     | 0.43     | 0.86    | 29.14   | Bridge spans twin pond area, WL-LTZ-028-POW, south of existing US 322.  |
| 502 – 513                 | X | X | X | 918    | 100    | 23     | 0.5      | 1.0     | 22      | Bridge spans the PEM and POW wetland system and stream S-BPH-001-PER, conveying hydrology through existing US 322 and fueling Sinking Creek north of the highway. Bridge spans the wetland floodplain along UNT to Sinking Creek at "Maggie's Dip", south of existing US 322. |

Station location is provided on project mapping in Floodplain Technical Memorandum; N: North Alternative; C: Central Alternative; S: South Alternative; L: Bridge Length; W: Bridge Width; H: Bridge Height (low chord above stream (top of bank)); Bnk: Bankfull Height; Fp: Flood Prone Height; Fb: Freeboard (difference between bridge height and flood prone height)

The evaluation of the potential floodplain impacts is best illustrated when evaluating the alternatives by segments: east, middle, and west.

**East Segment** (from the Potters Mills Gap Interchange to the eastern limit of the Tusseyville Historic District): The three Build Alternatives all share the same alignment, which is located immediately south of existing US 322 to avoid the Natural Heritage areas north of US 322 at Maggies Dip and east of Tusseyville, Tusseyville Historic District, and the farming operations to the south.

There are three bridge crossings proposed in this area, including:

- Station 502 – 513 (**Plates A17, B17, and C17**) over an unnamed tributary to Sinking Creek at Maggies Dip over Mountain Back/Red Mill Roads,

- Station 474 – 479 (**Plates A16, B16, and C16**) over an unnamed tributary to Sinking Creek across from Torna Storage, and
- Station 436 – 451 (**Plates A17, B15, and C15**) west of Dogtown Road over Sinking Creek.

Each of these bridge structures is planned to extend across the floodplain.

The area upstream of these three crossings is primarily farmlands, forest, and residential properties. The landscape is primarily undeveloped, and the natural riparian wetlands and floodplains provide temporary storage of the runoff events. Because the proposed bridge crossings are planned to span the floodplain areas, adverse impacts to the flooding patterns are not anticipated. The proposed bridges are higher than the existing topography and the bottom of the proposed bridge is not anticipated to affect the 100-year flood event. It is acknowledged that each bridge will require minimal encroachment to the floodplain associated with pier/endwall placement and construction activities. Pier/endwall placements will be further evaluated as part of the final design and permitting process to ensure each stream crossing avoids potential flooding to the surrounding properties. **Figure 3-13** provides a representation of the proposed crossing at Station 502 – 513 (overview shown on **Plates A17, B17, and C17**) along with the mapped FEMA floodplain, openness of the crossing, freeboard relation from the bridge to the floodplain, and distance to the closest building upstream of the crossing.

**Middle Segment** (from the eastern limit of the Tusseyville Historic District to the Tait Farm): Each of the three Build Alternatives follow independent alignments through the middle portion of the project area. Each is described as follows.

**North Alternative** – traverses north of existing US 322 through Tusseyville and includes a bridge crossing over an existing pond feature adjacent to Neff Road

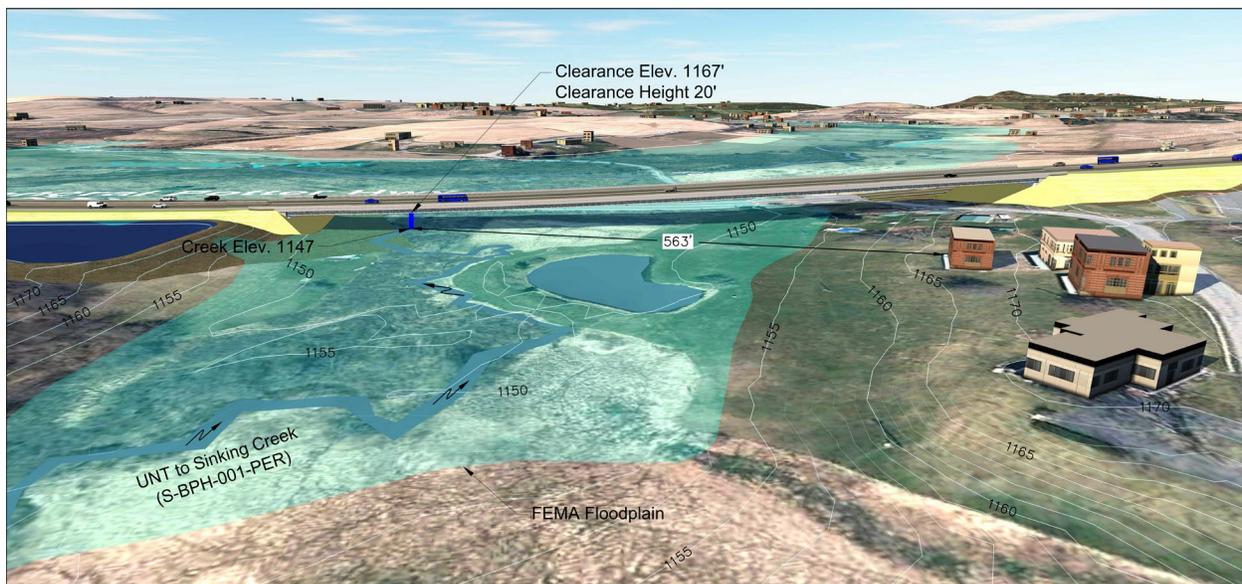


Figure 3-13: Proposed Crossing at Station 502 - 513 for UNT to Sinking Creek near Mountain Back Road (looking downstream)



(Station 404 – 410 [**Plate A13**]). The North Alternative encroaches upon the tributary to Sinking Creek and may require a relocation of the stream channel to the north. This has the potential for additional flooding to properties north within the Tusseyville area because the roadway embankment parallels the floodplain to the south.

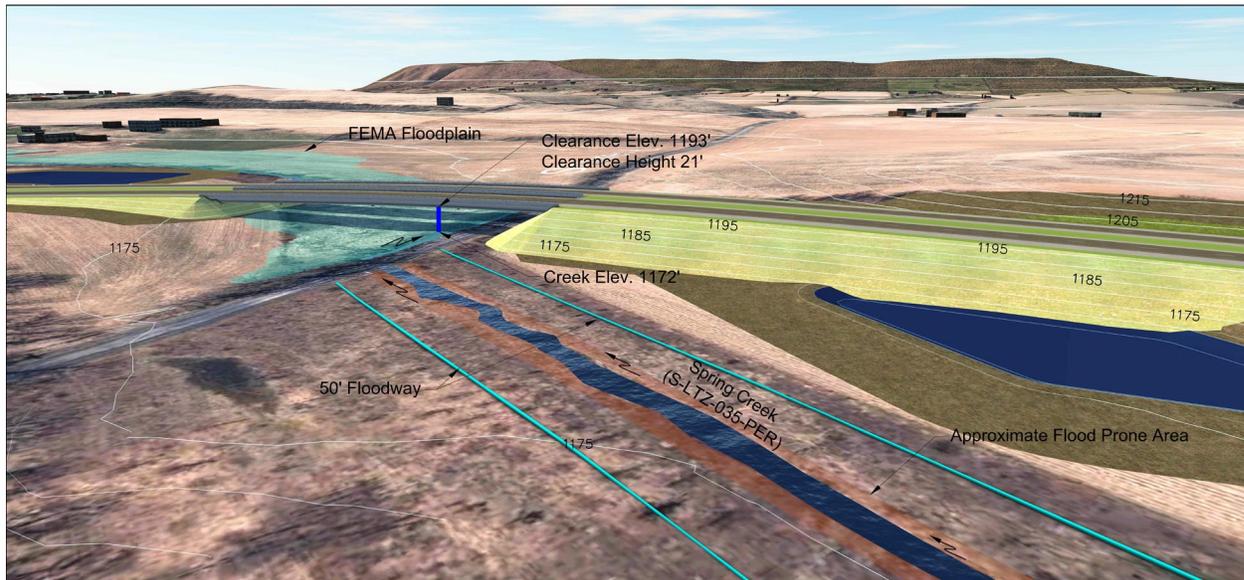
From Tusseyville west to Sharer Road, there are no stream crossings along the North Alternative; therefore, there would be no impacts on floodplains.

In the Sharer Road area, the North Alternative encroaches upon the FEMA floodplain mapped along Spring Creek. Measures will be taken during final design to evaluate the additional avoidance and minimization for the stormwater management facilities to reduce encroachment to the floodplain. A bridge is planned to carry the North Alternative over Sharer Road and Spring Creek (Station 243 – 249 [**Plate A8**]). This would help maintain the existing flow patterns and reduce backwater flooding in the area. From Sharer Road, the North Alternative is positioned south of Spring Creek and its mapped FEMA floodplain.

**Central Alternative** – near Tusseyville, the alternative traverses south of existing US 322 and includes a bridge crossing over Sleepy Creek (Station 349 – 361 [**Plate B10**]). The proposed bridge is approximately 1,165 feet in length and will span the floodplain/floodway of the stream. Downstream, Sleepy Creek is located within a relatively narrow forested ravine, and the bridge crossing will be designed to maintain the existing flow patterns through the area. After Sleepy Creek, the Central Alternative extends around the southern side of the Potter Athletic Complex and through the Clearwater Conservancy Conservation Easement (162 Tussey View Lane). The position through the conservation easement area includes crossing over first order tributaries to Spring Creek. A bridge is planned to span the Spring Creek streams (Station 306 – 312 [**Plate B9**]). The bridge would be approximately 600 feet in length and is planned to accommodate the base and flood flows for Spring Creek.

North of US 322, the Central Alternative crosses Spring Creek east of Sharer Road (Station 267 – 275 [**Plate B8**]) and at/west of Sharer Road (Station 243 – 249). Measures would be taken during final design to evaluate the additional avoidance and minimization for the stormwater management facilities to reduce encroachment on the floodplain. A bridge is planned to carry the Central Alternative over Sharer Road and Spring Creek (Station 243 – 249). This will help maintain the existing flow patterns and reduce backwater flooding in the area. From Sharer Road, the Central Alternative is positioned south of Spring Creek and its mapped FEMA floodplain. **Figure 3-14** provides a representation of the proposed crossing at Station 243 – 249 (overview shown on **Plate B7**).

**Figure 3-14** illustrates the proposed crossing over Spring Creek and the mapped FEMA floodplain along with the openness of the crossing and the freeboard relation from the bridge to the floodplain. It also illustrates the extent of the assumed floodway upstream of Sharer Road and the anticipated flood



*Figure 3-14: Proposed Crossing at Station 243 - 249 for Spring Creek at Sharer Road (looking downstream)*

prone area from the information provided in **Table 3-29**.

A bridge crossing will be designed at Nittany Farm across from the Tait Farm (Station 217 – 225 [**Plate B6**]) to accommodate the confluence with an unnamed tributary to Spring Creek (S-LTZ-070-INT).

**South Alternative** – is located south of the existing US 322 corridor and would include a bridge crossing over Sleepy Creek (Station 356 – 366 (**Plate C11**)). The proposed bridge would be approximately 1,000 feet in length and will span the floodplain/floodway of the stream. Downstream, Sleepy Creek is located within a relatively narrow forested ravine, and the bridge crossing will be designed to maintain the existing flow patterns and flooding through the area. After crossing Sleepy Creek, the alternative avoids the US 322 commercial area in Potter Township, the Potter Township Athletic Complex, and would be positioned along the Tussey Ridge through the middle of the Clearwater Conservancy Conservation Easement. The location of the South Alternative along the Tussey Ridge would involve substantial excavation and cuts through the headwaters of Spring Creek. Though this position in the headwaters may limit the broader floodplain encroachments, the proposed excavation has the potential to adversely affect the headwater discharge hydrology for Spring Creek.

**West Segment** (from the Tait Farm west to the Mount Nittany Expressway interchange): The three Build Alternatives all share the same alignment in this segment, which is located immediately south of existing US 322 to avoid the residential



communities along US 322, the Harris Township industrial zoned lands; and the Section 8 apartment complexes on the north side of existing US 322 including Centre Estates and Huntington Park Apartments.

The bridge crossings planned in this area include those near Somerset Drive, Bear Meadows Road, Galbraith Gap Run, and Spring Creek at the Mount Nittany Interchange. Each of these structures are planned to accommodate the flood flows of the respective streams. The area upstream of these crossings is a mix of residential properties, forested areas, and open space. Much of the riparian areas along the stream channels support wetlands and the floodplains that provide temporary storage of the runoff events. Because the proposed crossings are planned to span the floodplain area/accommodate the flood flows, adverse impacts to the flooding patterns are not anticipated. The proposed crossings are higher in elevation than the existing topography, and the structures are not anticipated to affect the potential for backwater flooding. The proposed interchange area at the western end of the Build Alternatives is located at the existing PA 45 interchange to limit encroachment to the adjacent properties and avoid and minimize impacts to Spring Creek and its floodplain.

For the floodplain and floodway areas associated with the smaller streams outside of the proposed bridge crossings, each alternative would have net total floodplain and floodway impacts, as reported in **Table 3-30**. The net floodplain and floodway impact encroachments would include direct grading (i.e., fill or excavation) and culvert/pipe crossings, where floodplain/floodway functions would be altered. The culvert/pipe crossing would be properly sized in accordance with PennDOT's design manual and PA DEP Chapter 105 requirements to maintain existing stream flow patterns, pass the appropriate design storm flows and avoid backwater flooding.

**Flooding Evaluation Summary:** Each Build Alternative was designed to minimize floodplain/floodway encroachments. The distribution of bridge structures along each alternative helps reduce the risk for potential flooding impacts by maintaining, to the greatest extent practicable, the natural and beneficial floodplain functions. The crossings are positioned perpendicular, to the extent practicable, to the stream flow to minimize encroachment and to help maintain the existing riparian flow patterns within both the Sinking Creek and Spring Creek watersheds. The use of bridge spans provides the opportunity for maintaining and sustaining the natural floodplain functions within the Spring and Sinking Creek watersheds. With the use of the proposed bridges, the North and Central Alternatives would have lower floodplain/floodway impacts in comparison to the South Alternative. The Project will have no significant floodplain encroachment or result in potential flood risks or flood loss in accordance with the E.O. 11988, PA DEP Title 25, Chapter 105 and 106 regulations and 23 CFR Part 650, Subpart A, Section 650.

### **3.19.4 Mitigation**

Additional design measures will be evaluated during the final design phase of the Project to further assess avoidance and minimization measures that reduce the total floodplain encroachment impacts on the floodplain/floodway areas. In accordance with

23 CFR Part 650.115 and 650.117 and PA DEP Chapter 105 requirements, detailed hydrologic and hydraulic analyses will be conducted during final design for floodplain encroachments associated with the Selected 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. Flood risks will be avoided in accordance with state and federal regulations. Minimization measures will also include opportunities to avoid placing fill in floodplain/floodway areas and minimize longitudinal floodplain encroachments associated with stormwater management features.

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

## **3.20 Vegetation, Wildlife, and Terrestrial Habitat**

### **3.20.1 Methodology**

Data was collected from secondary sources including online resources and mapping from the PA DEP, DCNR, PASDA, Audubon Mid-Atlantic, and the Pennsylvania Natural Heritage Program (PNHP). Review of the secondary source data, also included review of GIS mapping data acquired through the public data access within PASDA and DCNR websites.

### **3.20.2 Existing Conditions**

Based on this desktop review of secondary sources, the following terrestrial habitat types were identified within the project area (**Figure 3-15**).

- **Forested/Wooded Habitat** – Forest habitat generally consists of tracts of undeveloped land dominated by dense tree communities or stands. Habitat is present throughout the project area in varying acreages ranging between larger open forest habitat to smaller woodlots and wooded fence rows located in highly fragmented agriculture and residential development landscapes. Larger tracts of forested/wooded habitat can be found at the two areas of Rothrock State Forest to the south including the Tussey Ridge. Approximately 670 acres of forested/wooded habitat is located within the project area. Individual components of the forested/wooded habitat were not able to be obtained through GIS data. However, it can be assumed that deciduous, coniferous, and scrub/shrub lands are present in the forested/wooded areas of the project area.
- **State Forest Land Habitat** – State Forest land is land that is owned by the Commonwealth of Pennsylvania and managed by DCNR Bureau of Forestry for

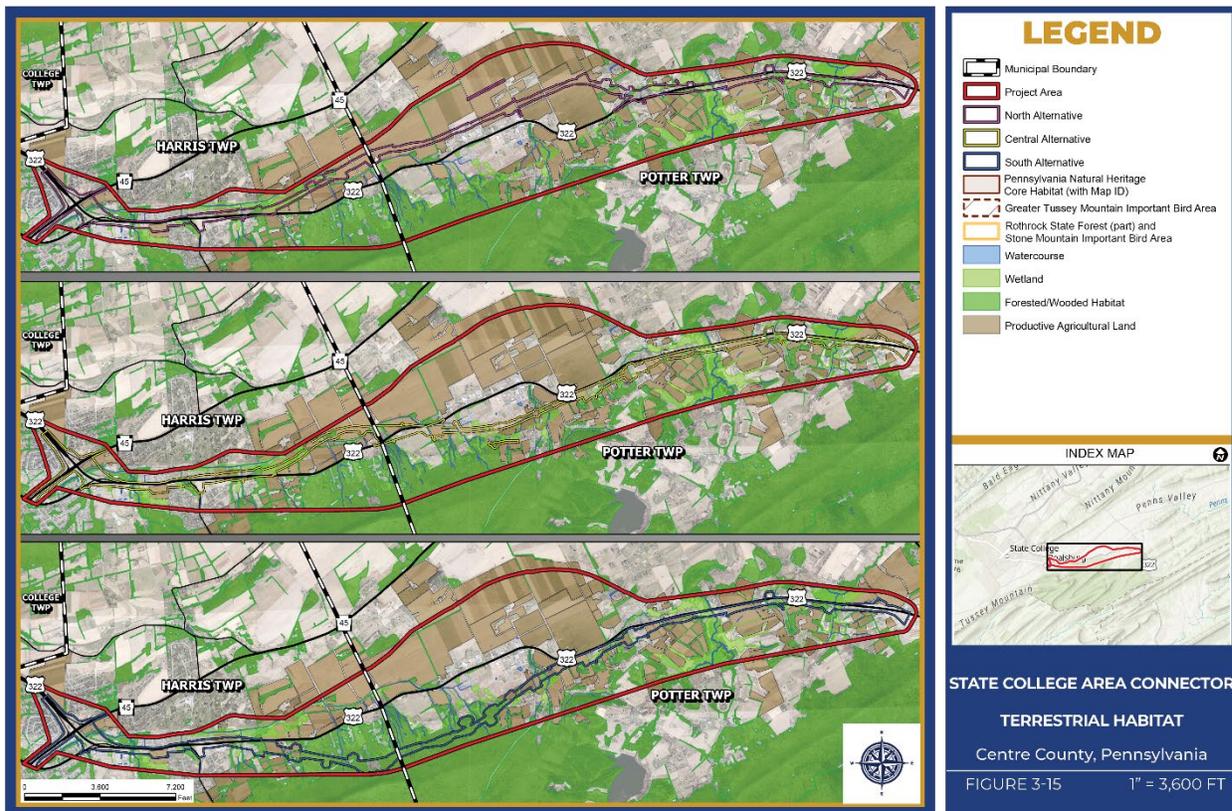


Figure 3-15: Terrestrial Habitat

recreation, conservation and economic benefits. State forest land supports a multitude of resources, uses, and values including plant and animal habitat. Rothrock State Forest is present to the south of the South Alternative.

- Productive Agricultural Land – Productive agricultural land is land managed through agricultural practices to grow crops, raise livestock, and/or produce fiber. Productive agricultural land can include cropland for row crops, pasture for raising livestock, and temporarily fallow land used for hay production or forage. Productive agricultural land acreage within the project area is estimated at approximately 2,129 acres and includes farm operations, conservation easements, agricultural security areas, Clean and Green areas, agricultural zoning districts and areas of soil capability classes I-IV.
- Karst Geologic Areas – Karst is a geologic landscape formed from the dissolution of soluble carbonate rocks such as limestone and dolomite, which creates fractures or fissures within the bedrock. Water can act as a de-clogging agent and flush karstic drains open, creating sinkholes. Karst geologic areas often include caves, sinkholes, springs, and surface streams that disappear underground. Natural caves can serve as potential overwintering habitat and hibernacula for bat species. Calcareous soils and spring/seeps contribute to conditions that support unique plant communities in wetlands and forests. Karst geological areas are present throughout much of the project area. Specific point locations are known to possess potential karst geological features such as



sinkholes. No subsurface openings were identified during field surveys and reconnaissance within the project area which includes the North, Central, and South Alternatives.

- Important Bird Areas (IBAs) – These sites are vital for the conservation of birds and other wildlife. The goal of IBAs is to protect and manage these areas so that bird populations can continue to thrive. IBAs are determined by an internationally agreed-upon set of criteria maintained by BirdLife International and administered in the US by the National Audubon Society. IBA's are present within the southern portion of the project area. Rothrock State Forest (and beyond the state forest limits) is a designated IBA and is located to the south and east of US 322 in both Centre and Mifflin Counties. The Rothrock State Forest (part) and Stone Mountain IBA are approximately 89,736 acres in total acreage with a small portion of the IBA falling within the project area. The Greater Tussey Mountain IBA overlaps the Rothrock State Forest (part) and Stone Mountain IBA and extends further into the project area. These IBAs contain designated wild and natural areas and are recognized for spring Golden Eagle migration, migrant raptors, and unfragmented forest important for interior forest dwelling species.
- Pennsylvania Natural Heritage Core Habitat – Areas containing plant or animal species of concern at the state or federal levels, exemplary natural communities, or exceptional native diversity. Core habitats delineate essential habitat that cannot absorb significant levels of activity without substantial impact to the elements of concern. These areas are prioritized based upon their ecological qualities and are provided with recommendations regarding their management and protection. Natural Heritage Areas are not owned by the Commonwealth of Pennsylvania. PNHP core habitats are managed in partnership between the DCNR, Pennsylvania Game Commission (PGC), PFBC, and Western Pennsylvania Conservancy (WPC). Three Natural Core Habitat Areas were identified along Sinking Creek.

During the course of the desktop review, additional potential habitat concerns were identified for consideration:

- Pollinator Habitat – Pollinator habitat and its associated species represent important components to ecosystems in the production of fruit and vegetable crops. Species typically identified as pollinators include a diversity of bees, butterflies, and moths.
- Invasive Species – Invasive plant and animal species represent a threat to native plant and animal ecosystems. Invasive species can be introduced either intentionally or unintentionally and can change the ecological structure of the native resources that they invade.
- Wildlife Crossings and Habitat Connectivity – Habitat connectivity and how wildlife travel between fragmented habitats is an important component to the terrestrial environment. Wildlife crossings and habitat connectivity are ways to link habitats and reduce the risk of collisions between wildlife and vehicles. These



efforts can help protect wildlife, facilitate wildlife movement, improve highway safety, and promote biodiversity.

### 3.20.3 Impacts

**No Build Alternative:** The No Build Alternative would not have any impact on existing habitat or vegetation; however, it also would not allow for invasive species removal/management and/or planting/revegetating with native and pollinator species.

**North Alternative:** The North Alternative's potential limit of disturbance encompasses approximately 421 acres. No impacts to state forest land or IBAs are anticipated. Minor impacts on forest/wooded habitat, natural heritage core habitat, and karst geologic areas are anticipated. Impacts on productive agricultural land are anticipated.

Invasive species are present throughout the project area. Standard avoidance and mitigation measures will be implemented to avoid the spread or introduction of invasive species. Pollinator and wildlife habitats are present throughout the project area.

Impacts on these resources are unavoidable; however, the project designs have been evaluated for the potential to minimize and restore habitat where possible throughout construction. **Table 3-32** provides an overview of the anticipated impacts on terrestrial habitat. Additionally, bridges are planned along the alignment at the different stream crossings to avoid and minimize impacts to the riparian corridors and maintain habitat connectivity through the project area.

**Central Alternative:** The Central Alternative's potential limit of disturbance encompasses approximately 424 acres. No impacts to state forest land are anticipated. Minor impacts to forest/wooded habitat, natural heritage core habitat, IBAs, and karst geologic areas are anticipated. Impacts on productive agricultural land are anticipated.

Invasive species are present throughout the project area. Standard avoidance and mitigation measures will be implemented to avoid the spread or introduction of invasive species. Pollinator and wildlife habitats are present throughout the project area.

Impacts to these resources are unavoidable; however, the project designs have been evaluated for the potential to minimize and restore habitat where possible throughout construction. **Table 3-32** provides an overview of the anticipated impacts on terrestrial habitat. Additionally, bridges are planned along the alignment at the different stream crossings to avoid and minimize impacts to the riparian corridors and maintain habitat connectivity through the project area.

**South Alternative:** The South Alternative's potential limit of disturbance encompasses approximately 470 areas. No impacts to state forest land are anticipated. Minor impacts to natural heritage core habitat and karst geologic areas are anticipated. Impacts to productive agricultural land, forested/wooded habitat, and IBAs are anticipated. **Table 3-32** provides an overview of the anticipated impacts to terrestrial habitat.

Invasive species are present throughout the project area. Standard avoidance and mitigation measures will be implemented to prevent the spread or introduction of invasive species. Pollinator and wildlife habitats are also present throughout the project area. Impacts on these resources are unavoidable; however, the project designs have



been evaluated for the potential to minimize and restore habitat where possible throughout construction. The position along the Tussey ridge will impact 123 acres of forest habitat, and the proposed excavation and depths of cut will disrupt the habitat connectivity along ridgetside. In the areas of the stream valleys to the east and west of the Tussey ridge, bridges are planned along the alignment at the different stream crossings to minimize impacts to the riparian corridors and maintain habitat connectivity through the project area.

Table 3-32: Terrestrial Habitat Impacts

| Habitat                                  | Build Alternative |         |       |
|--|-------------------|---------|-------|
|  | North             | Central | South |
| Forested/Wooded Habitat (acres)          | 25                | 31      | 123   |
| State Forest Land Habitat (acres)        | 0                 | 0       | 0     |
| Productive Agricultural Land (acres)     | 142               | 116     | 104   |
| Karst Geological Areas (# of features)   | 20                | 5       | 2     |
| Important Bird Areas (acres)             | 0                 | 2       | 110   |
| PA Natural Heritage Core Habitat (acres) | 17                | 17      | 17    |

### 3.20.4 Mitigation

Mitigation measures for all three Build Alternatives are required, including the following:

- Disturbed areas will be seeded with PennDOT seed mixes, which contain native pollinator species to mitigate for habitat loss.
- Vegetative plantings will be evaluated as part of the development of the NPDES stormwater management plan.
- The preliminary engineering and final design phases of the Project will continue to evaluate measures to avoid and minimize impacts to the terrestrial environment.
- The proposed bridge crossings along the stream valleys and riparian corridors will be evaluated to include measures that encourage and accommodate wildlife passage and habitat connectivity. Potential wildlife crossing will be coordinated with the appropriate resource agencies.
- Mitigation for impacts to farmland will include compliance with *the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970*, as amended, and state requirements based on this act, as appropriate, including relocation assistance for farmland acquired by the project. An evaluation of available replacement farm properties in the area is detailed in **Section 3.5 Displacements**.

## 3.21 Rare, Threatened, and Endangered Species

### 3.21.1 Methodology

The Pennsylvania Natural Diversity Inventory (PNDI) screening database was initially accessed for the project area on March 27, 2024. An update to the PNDI was completed on October 29, 2024, to reflect updates to the project. In the August 22, 2024 letter from the USFWS to the FHWA on the project's NOI (**Appendix A**), the USFWS identified concerns with protected bats, migratory birds, bald and golden eagles, pollinator habitat, and wetlands and streams.

An update to the PNDI (PNDI #728938) was conducted on January 8, 2025. Further review was conducted by the DCNR and PFBC, and response letters were received on January 10, 2025, indicating the potential presence of specific plant and aquatic species in the project area.

USFWS Information for Planning and Consultation (IPaC) reviews were conducted following the results of the PNDI. IPaC reviews for all three Build Alternatives were conducted in July 2025. An IPaC Species List was completed for the Project to determine potential concerns with federally listed species. The IPaC Species List includes federally listed bat species, bird species covered by the Migratory Bird Treaty Act (MBTA), and the monarch butterfly (proposed to be federally listed).

### 3.21.2 Existing Conditions

Based on the regulatory screening for threatened and endangered species and species of special concern, the following are addressed as follows:

- Bird Species: Bald Eagle and Migratory Birds
- Plant Species: Handsome Sedge, Roundleaf Serviceberry, Declined Trillium, Hemlock Palustrine Forest
- Aquatic Species: Triangle floater (mussel)
- Mammal Species: Indiana bat, northern long-eared bat, and tricolored bat
- Pollinator habitat including Monarch butterfly

**General Habitat:** The project area is characterized by a mix of agricultural fields, forest land, wetlands, stream valleys, and old-growth fields. There is no listed critical habitat for threatened and endangered species in the area.

**Bird Species-Bald Eagle:** The USFWS bald eagle (*Haliaeetus leucocephalus*) mapping tool was used to review known bald eagle nesting locations in Centre County using (<https://gis-fws.opendata.arcgis.com/maps/791e4054bab84a0aa0afe08d9d16a4cb/about>). The tool identified known nesting sites in both Benner and Gregg Townships, with no known nesting sites identified within the project area. However, a local report of bald eagle nesting activity was noted within the project area. A field view was conducted and verified the nest location. The nest information was provided to the USFWS PA Field Office (PAFO) for tracking purposes. Bald eagle and the golden eagle (*Aquila chrysaetos*) are species protected under the MBTA and the *Bald and Golden Eagle*



*Protection Act.* Both laws prohibit killing, selling or otherwise harming eagles, their nests, or eggs.

**Bird Species-Migratory Birds:** In the August 22, 2024, letter from the USFWS to the FHWA on the project’s NOI (**Appendix A**), the USFWS identified the following species protected under the MBTA and summarized in **Table 3-33**.

The USFWS letter also recommended the following conservation measures:

- Where disturbance is necessary, clear natural or semi-natural habitats (e.g., forests, woodlots, reverting fields, shrubby areas) and perform maintenance activities (e.g., mowing) between September 1 and March 31, which is outside the nesting season for most native bird species. Without undertaking specific analysis of breeding species and their respective nesting seasons on the project site, implementation of this seasonal restriction will avoid a take of most breeding birds, their nests, and their young (i.e., eggs, hatchlings, fledglings).
- Minimize land and vegetation disturbance during project design and construction. To reduce habitat fragmentation, co-locate roads, fences, lay down areas, staging areas, and other infrastructure in or immediately adjacent to already-disturbed areas (e.g., existing roads, pipelines, agricultural fields) and cluster development features (e.g., buildings, roads) as opposed to distributing them throughout land parcels. Where this is not possible, minimize roads, fences, and other infrastructure.

*Table 3-33: Migratory Bird Species Identified as a Potential Concern*

| Scientific Name                      | Common Name            | Breeding Season               |
|--------------------------------------|------------------------|-------------------------------|
| <i>Haliaeetus leucocephalus</i>      | Bald Eagle             | September 1 through August 31 |
| <i>Coccyzus erythrophthalmus</i>     | Black-billed Cuckoo    | May 15 through October 10     |
| <i>Poecile atricapillus praticus</i> | Black-capped Chickadee | April 10 through July 31      |
| <i>Dolichonyx oryzivorus</i>         | Bobolink               | May 20 through July 31        |
| <i>Cardellina canadensis</i>         | Canada Warbler         | May 20 through August 10      |
| <i>Chaetura pelagica</i>             | Chimney Swift          | March 15 through August 25    |
| <i>Antrostomus vociferus</i>         | Eastern Whip-poor-will | May 1 through August 20       |
| <i>Aquila chrysaetos</i>             | Golden Eagle           | Breeds elsewhere              |
| <i>Vermivora chrysoptera</i>         | Golden-winged Warbler  | May 1 through July 21         |
| <i>Aegolius acadicus</i>             | Northern Saw-whet Owl  | March 1 through July 31       |
| <i>Melanerpes erythrocephalus</i>    | Red-headed Woodpecker  | May 10 through September 10   |
| <i>Euphagus carolinus</i>            | Rusty Blackbird        | Breeds elsewhere              |
| <i>Hylocichla mustelina</i>          | Wood Thrush            | May 10 through August 10      |



- Avoid permanent habitat alterations in areas where birds are highly concentrated. Examples of high concentration areas for birds are wetlands, state or federal refuges, Audubon IBAs, private duck clubs, staging areas, rookeries, leks, roosts, and riparian areas. Avoid establishing sizable structures along known bird migration pathways or known daily movement flyways (e.g., between roosting and feeding areas).
- To conserve area-sensitive species, avoid fragmenting large, contiguous tracts of wildlife habitat, especially if habitat cannot be fully restored after construction. Maintain contiguous habitat corridors to facilitate wildlife dispersal. Where practicable, locate construction activities, infrastructure, and manufactured structures (e.g., buildings, cell towers, roads, parking lots) on lands already altered or cultivated, and away from areas of intact/healthy native habitats. If not feasible, select fragmented or degraded habitats over relatively intact areas.
- Develop a habitat restoration plan that avoids or minimizes negative impacts on birds, and creates functional habitat for a variety of bird species. Use only plant species that are native to the local area for revegetation of the project area.

Based upon these recommendations, PennDOT proposes to limit tree clearing to occur between September 1 and March 31. The Central and North Alternatives accommodate the USFWS recommended conservation measures based upon positioning. These alternatives are positioned across the project area landscape to minimize land and vegetation disturbance, avoid fragmentation, avoid permanent habitat alterations in areas where birds are highly concentrated (i.e., the IBAs), and avoid large contiguous tracts of wildlife habitat.

The South Alternative traverses the lower portion of the Tussey Ridge and has the highest forested impacts and impacts on IBAs.

**Plant Species:** DCNR issued a review letter on January 10, 2025, in response to PNDI #782938. The review letter identified three plant species of special concern (SSC) and one natural community under the jurisdiction of DCNR as potential concerns identified within or in the vicinity of the project area. The plant SSC are listed in **Table 3-34** and the natural community is listed in **Table 3-35**.

*Table 3-34: Plant Species of Special Concern*

| Common Name            | Scientific Name                | Current Status           | Proposed Status | Survey Season   |
|------------------------|--------------------------------|--------------------------|-----------------|---|
| Handsome Sedge         | <i>Carex formosa</i> *         | PA Endangered            | No Change       | Flowers/Fruits: May to June                                   |
| Roundleaf Serviceberry | <i>Amelanchier sanguinea</i> * | Tentatively Undetermined | PA Endangered   | Flowers: mid-April to late-May;<br>Fruits: June to early-July |
| Declined Trillium      | <i>Trillium flexipes</i> *     | Tentatively Undetermined | PA Threatened   | Flowers: late April to early-May                              |

\*Indicates species documented within the project area.

Table 3-35: Natural Communities

| Name                      | Description   |
|---------------------------|---|
| Hemlock Palustrine Forest | Riparian corridor along Sinking Creek, site includes wetlands as well as immediately adjacent lands |

Handsome Sedge (*Carex formosa*) grows in mesic to dry calcareous woods. Roundleaf Serviceberry (*Amelanchier sanguinea*) is a deciduous shrub or small tree that often grows in clumps. This species prefers open woods and rocky slopes and barrens as habitat. Declined Trillium (*Trillium flexipes*), also known as Bent Trillium, is a spring ephemeral wildflower, meaning it blooms early in the spring before the forest canopy fully emerges, taking advantage of the sunlight that filters through the trees. Declined Trillium grows in dry to mesic, shaded woodlands with rich loamy soils. Field studies for Handsome Sedge, Roundleaf Serviceberry, and Declined Trillium were conducted in the spring of 2025. Hemlock Palustrine Forest is considered a unique forest community that occurs on saturated soils in basins or depressions on the fringe of inundated areas or in backwater areas along rivers. According to the PNHP Conservation Explorer online system, PA DCNR identified an expansive Palustrine Hemlock Forest community that begins downstream of Colyer Lake and follows the riparian corridor along Sinking Creek before transitioning to maintained lawn and open fields approximately 650 feet upstream of US 322. The project area encompasses approximately 50 acres of this Palustrine Hemlock Forested community. The wetland and watercourse delineation field investigation conducted in 2023 identified the riparian area along Sinking Creek as a mosaic of palustrine scrub-shrub (PSS), palustrine emergent (PEM), and palustrine forested (PFO) wetland complex features.

Following the spring 2025 field studies for the plants listed above, the DCNR requested information related to seven non-target species of concern/interest (**Table 3-36**).

Table 3-36: Non-Target Species of Concern/Interest

| Common Name                          | Scientific Name                              | Current Status  | Proposed Status |
|--------------------------------------|--|-----------------|-----------------|
| Balsam Fir                           | <i>Abies balsamea</i>                        | PA Watchlist*   | None            |
| Short Hair Sedge<br>var. brevicrinis | <i>Carex crinite</i> var. <i>brevicrinis</i> | Endangered      | No Change       |
| Wood fern                            | <i>Dryopteris campyloptera</i>               | Endangered      | No Change       |
| Tamarack                             | <i>Larix laricina</i>                        | PA Watchlist*   | None            |
| Red Mulberry                         | <i>Morus rubra</i>                           | Special Concern | Threatened      |
| Short -leaf Pine                     | <i>Pinus echinata</i>                        | Special Concern | Threatened      |
| Kidney-leaved<br>White Violet        | <i>Viola renifolia</i>                       | Special Concern | Endangered      |

\*PA Watchlist – List of invasive species, rare/threatened native species, or "at-risk" medicinal plants managed by DCNR.



**Aquatic Species:** PFBC response to PNDI #782938, dated January 10, 2025, identified SSC to be potentially present in the project area. PFBC identified the triangle floater (*Alasmidonta undulata*) freshwater mussel as the SSC and that this species of freshwater mussel may be potentially present due to suitable habitat within the Sinking Creek watershed which is located in the project area.

PFBC requested that they be notified nine months prior to construction so that they can perform on-site surveys and mussel translocations in the area of disturbance during suitable conditions. The mussel survey season begins May 15 and concludes October 1. In addition to mussel surveys and translocations, BMPs, avoidance and minimization measures, and strict Erosion and Sedimentation (E&S) measures will likely be required to minimize disturbance to in-stream and riparian areas along Sinking Creek during construction.

**Mammal Species:** The PNDI #728928 screening conducted on January 8, 2025, identified potential threatened and endangered mammal species (Indiana Bat, northern long-eared bat, and tricolored bat) and habitat presence in or adjacent to the project area. Species identified as potential concerns for the project area are listed in **Table 3-37**.

Table 3-37: Mammal Species

| Scientific Name                 | Common Name             | Listing Status |
|---------------------------------|-------------------------|----------------|
| <i>Myotis sodalis</i> *         | Indiana Bat             | FE, SE         |
| <i>Myotis septentrionalis</i> * | Northern Long-eared bat | FE, SE         |
| <i>Perimyotis subflavus</i> *   | Tricolored bat          | PFE, SE        |

FE – Federally Endangered; PFE – Proposed Federally Endangered; SE – State Endangered

\**Myotis sodalis*, and *Myotis septentrionalis* are federally listed species. *Perimyotis subflavus* is a proposed federally listed species. The PGC defers comment on these species to USFWS.

In addition to the IPaC review, the USFWS identified concerns with protected bats and their habitats with respect to the project area in their August 2024 letter to FHWA, including presence of hibernacula, spring staging and fall swarming habitat, suitable summer habitat, potential demolition to existing structures, karst features, and presence of rocky habitat.

**Hibernacula:** Historic records for Indiana and northern long-eared bats indicate that there are known bat hibernacula located outside of the project area. The first historic hibernaculum is located to the northwest of the project area to the south of East College Avenue (SR 0026) and to the east of Decibel Road. The second is located between Pleasant Gap and Centre Hall, with the third known hibernaculum located to the east of Centre Hall. A fourth known hibernaculum is located approximately 9.5 miles south of the project area in Mifflin County. All known hibernacula are located outside the project area.

**Roosting/Swarming Habitat:** Per USFWS and PGC guidance, five-mile buffer areas were mapped around the known hibernacula to identify the spring staging/fall swarming habitat. **Figure 3-16** illustrates fall swarming habitat for Indiana and

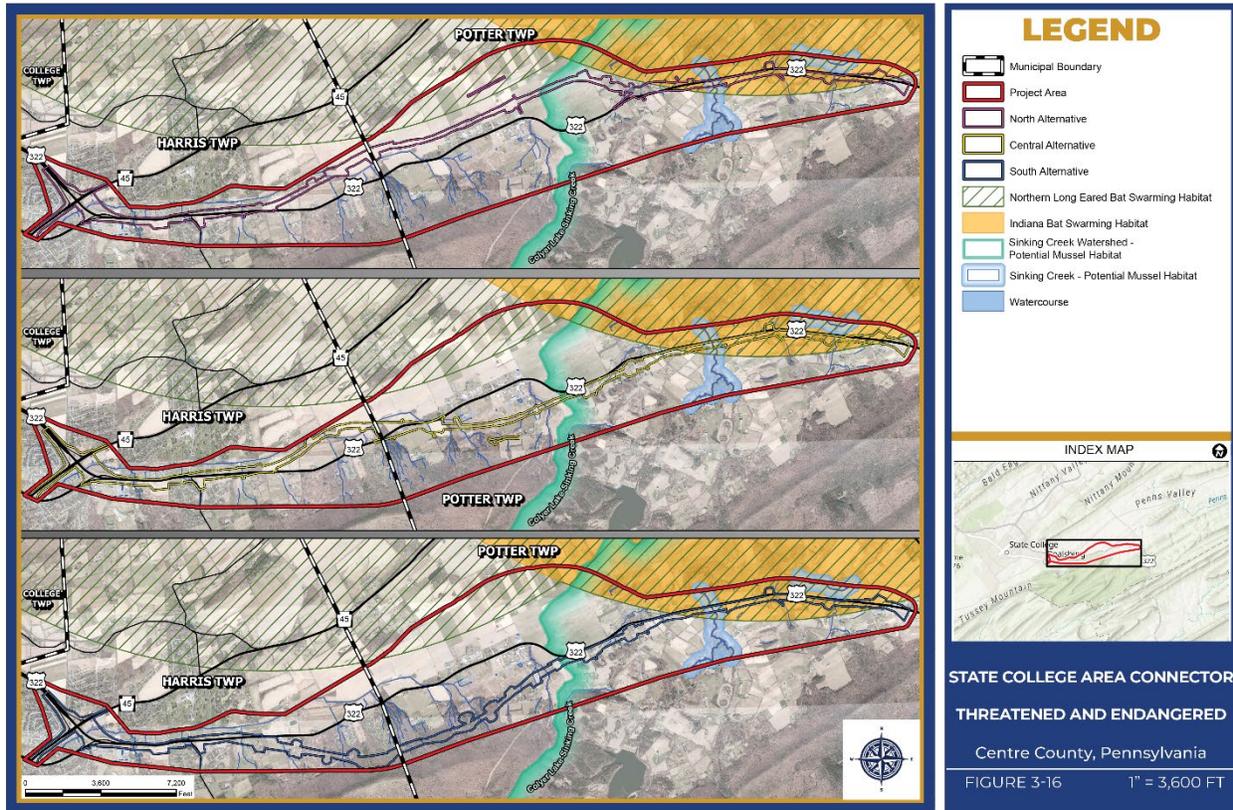


Figure 3-16: Threatened and Endangered

northern long-eared bats around winter bat colony habitats. Spring staging habitat describes the habitat close to their winter hibernacula prior to exiting the hibernacula after the winter months. Fall swarming habitat describes the habitat close to their winter hibernacula prior to entering the hibernacula for the winter months. Summer roost/maternity habitat describes the area in which bats may spend the months feeding and giving birth to pups.

For federal bat species listed in **Table 3-37**, summer roost/maternity habitat/fall swarming habitat were identified within the project area through a combination of qualitative assessment during the wetland and watercourse effort and through species-specific assessments conducted during 2024. The results of the field efforts did not identify any openings, portals, or existing bat hibernacula within the project area. Additionally, there is no federally designated critical habitat for bats or rocky habitat features identified within the project area.

Each of the three Build Alternatives is located, at least in part, within a swarming buffer of historic hibernaculum with known occurrences of at least one threatened and/or endangered bat species. Potential summer roost and/or fall swarming habitat is present and buffers surrounding the known bat hibernacula encompass much of the project area. The IPaC screening was completed for all three Build Alternatives to determine if consultation could be conducted through the use of the USFWS's Programmatic Biological Opinion/Conference Opinion (PBO) for Transportation Projects in the Range

of the Indiana bat, northern long-eared bat, and tricolored bat (dated December 13, 2024).

**Pollinator Habitat:** The August 2024 USFWS letter identified Pollinator Habitat as a concern for the project. The letter also referenced that:

*"PennDOT, with the support of FHWA, in 2019, developed their Voluntary Pre-Listing Pollinator Conservation Program. The Program is voluntary, non-regulatory, and proactive for the conservation of pollinator species of special concern, including the monarch, regal fritillary, and frosted elfin butterflies; and the yellow-banded bumblebee. PennDOT's intent of developing the Program included implementing conservation actions that may preclude the need to list these pollinator species of concern under the Endangered Species Act (Act). If, in the future, the Service determines that these species do require protection under the Act, PennDOT's commitments through the Program enable them to provide advanced credits to offset impacts to these four species of special concern, which would result from transportation-related actions (USFWS August 2024)."*

Based upon their letter, the USFWS recommended that FHWA and PennDOT implement conservation efforts to increase habitat for the pollinator species, including the four species listed above. Principle conservation approaches that hold the greatest potential for pollinator habitat increases include, but are not limited to:

- Increasing implementation of conservation mowing seasons and methods
- Promoting milkweed and nectar producing plant growth
- Implementing specific planted pollinator sites
- Using seed mixes that are native to Pennsylvania on roadside and right-of-way plantings

PennDOT has developed a Pollinator Habitat Plan

(<https://www.pa.gov/agencies/penndot/programs-and-doing-business/environment/pollinator-habitat-plan>) to promote this conservation effort. To

address the USFWS request, PennDOT's Pollinator Habitat Plan will be reviewed to identify appropriate plants for potential seeding and landscaping opportunities that benefit the species as part of the development of the landscaping plans prepared in support of the earth disturbance permitting in final design.

### **3.21.3 Impacts**

**No Build Alternative:** The No Build Alternative would not have any impact on threatened or endangered species.

**Build Alternatives:** The potential impacts on threatened and endangered species and species of concern are summarized in **Table 3-38** and described below. The general habitats impacted by each alternative are presented in the following table.



Table 3-38: Habitat Impact Summary

| Terrestrial Habitat Type - Impacts     | Build Alternative |         |       |
|--|-------------------|---------|-------|
|  | North             | Central | South |
| Forested/Wooded Habitat (acres)        | 25                | 31      | 123   |
| Potential Bat Swarming Habitat (acres) | 89                | 74      | 77    |
| Productive Agricultural Land (acres)   | 142               | 116     | 104   |
| Karst Geologic Areas (# features)      | 20                | 5       | 2     |
| Important Bird Areas (acres)           | 0                 | 2       | 110   |
| Wetland loss (acres)                   | 14.5              | 15.0    | 11.9  |
| Stream loss (linear feet)              | 1,615             | 3,799   | 8,452 |

**USFWS – Migratory Birds:** The North and Central Alternatives are positioned across the project area landscape to minimize land and vegetation disturbance, avoid fragmentation, avoid permanent habitat alterations in areas where birds are highly concentrated (i.e., IBAs), and avoid large contiguous tracts of wildlife habitat. The North Alternative impacts 25 acres of forest land and the Central Alternative impacts 31 acres of forest land and two acres of IBAs. In contrast, the South Alternative impacts 123 acres of forest land and 110 acres of IBAs. Due to the higher impacts to forest land and IBAs, the South Alternative would have a greater impact to migratory birds. Direct impacts to birds will be avoided and minimized through time of year restrictions for tree clearing.

**USFWS – Bald Eagle:** The identified bald eagle nest within the project area is approximately 1,400 linear feet south of the Build Alternatives. The Central and South Alternatives are basically on the same alignment in the general area of the bald eagle nest. The North Alternative is slightly north of the Central and South Alternatives in this area, and consequently, even further north away from the bald eagle nest. Direct and indirect impacts are not anticipated from any alternative with the implementation of appropriate avoidance, minimization, and mitigation measures.

The proposed alternatives are in close proximity to existing US 322 and there are no plans to disturb the existing landscape buffers between the nest and the alternatives (maintain the existing 1,400 feet and the existing vegetative buffer). It is assumed that the construction of the project alternative will be able to be seen from the eagle nest at the top of the tree at its position at the top of the hill, just as existing 322 can be seen as well.

During the Bald Eagle breeding season (January 1 to July 31), there are time-of-year restrictions to avoid performing blasting and other activities that produce extremely loud noises within 0.50-mile (800 meters) of in-use nests. PennDOT may also elect to initiate noise monitoring in this area during the final design phase of the Project to determine current ambient noise levels and coordinate with USFWS to determine if a time-of year restriction on activities is necessary.



**USFWS – Pollinator Habitat:** Pollinator habitats can generally include residential gardens, old fields, wetland complexes, forested lands, and floodplains. Native Pollinator habitat is limited across the project area due to the extent of tilled cropland and invasive species. The North Alternative impacts the most agricultural lands, while the South Alternative impacts the most forested lands. Bridges have been incorporated into the project design of each alternative to avoid and minimize impacts to the numerous stream/wetland/floodplain complexes across the project area.

**PFBC – Protected Mussel Species (Triangle Floater):** PFBC identified a potential concern for mussel species, including the Triangle Floater, in the Sinking Creek drainage basin. In the Sinking Creek drainage basin of the project area, the North, Central, and South Alternatives are primarily all located on the same alignment and bridges are planned for the main stream crossings. The bridge spans are planned to extend across the floodplain to avoid and minimize stream impacts and the in-stream biota.

**DCNR – Plant Species:** Field studies for Handsome Sedge, Roundleaf Serviceberry and Declined Trillium were conducted in the spring of 2025. None of these species were identified during field investigations; therefore, no impacts are anticipated for the project. The Hemlock Palustrine Forest habitat is located upstream and downstream of the proposed Sinking Creek bridge crossing that is included in the design for all three Build Alternatives. The habitat under the proposed bridge crossing downstream of the Hemlock Palustrine Forest consists of palustrine emergent wetland floodplain and not forested; therefore, impacts are not anticipated.

Field studies in the fall of 2025 for the additional non-target species requested by DCNR resulted in the following findings:

- Balsam Fir (PA Watchlist) – One individual tree (planted by property owner) identified; would be impacted by the North Alternative.
- Short Hair Sedge var. brevicrinis (Endangered) – Not identified within the project area.
- Wood Fern (Endangered) – Three occurrences of small populations on one property were identified. Would be impacted by the South Alternative.
- Tamarack (PA Watchlist) – One occurrence consisting of one tree and one occurrence consisting of approximately 30 or more individual trees was documented. All three Build Alternatives would impact the occurrence with 30 or more trees.
- Red Mulberry (Special Concern) – One individual tree identified; would be impacted by the South Alternative.
- Short-leaf Pine (Special Concern) – One occurrence consisting of two individual trees was identified. All three Build Alternatives would impact the occurrence.
- Kidney-leaved White Violet (Special Concern) – One occurrence consisting of a small population (<ten individuals) was identified. All three Build Alternatives would impact the occurrence.

**USFWS – Indiana bat, northern long-eared bat, and tricolored bat:** Following project screening in the IPaC system for all three Build Alternatives, it was determined by the results of those reviews that the PBO can be used for project consultation for the North and Central Alternatives. Both the North and Central Alternatives would result in a may affect, likely to adversely affect determination for the Indiana bat, northern long-eared bat, and proposed tricolored bat due to habitat loss. The North Alternative would impact 25 acres of forest land and 89 acres of potential swarming habitat. The Central Alternative would impact 31 acres of forest land and 74 acres of potential swarming habitat. Tree removal for the North and Central Alternatives does not exceed 20 acres of trees per five miles of alignment indicated in the IPaC review. PennDOT Engineering District 2-0 has committed to limit activities causing disturbance to roosting bats, including use of percussives and all tree removal, to be performed within the appropriate time-of-year restriction time frames (November 15 through March 31) to avoid and minimize impacts to protected bats.

The South Alternative would require a large amount of forest impact and rock/hillside removal due to the location on the ridge side. The South Alternative would impact 123 acres of forest land and 77 acres of potential swarming habitat. Due to the anticipated forest loss and extensive construction, including percussive activities, a Biological Assessment (BA) would be needed to further evaluate the advancement of the South Alternative with respect to potential effects to protected bat species. The PBO cannot be used to advance the South Alternative.

Consultation with the USFWS remains on-going with the submission of the Project through the IPaC system, including consultation for the Indiana Bat, Northern Long-eared Bat and Tricolored Bat. Additionally, should the tri-colored bat become formally listed as threatened or endangered, the project consultation has already considered and adopted the applicable avoidance and minimization measures for the protection of the tri-colored bat through the IPaC process. USFWS consultation concurrence will be required and obtained as part of the Project approval process to advance prior to FHWA's issuance of the FEIS/ROD and permitting.

### **3.21.4 Mitigation**

All three Build Alternatives will require the following mitigation measures to address threatened and endangered species impacts.

#### **Bald Eagle:**

- Maintain a distance buffer of at least 660 feet (200 meters) between all project activities and the Bald Eagle nest. If there is an existing human-made feature (e.g., house, road, dock) similar to the Project that is closer than 660 feet and tolerated by the nesting eagles, maintain a distance buffer equal to or greater than the distance separating that tolerated feature and the Bald Eagle nest.
- Maintain a distance buffer of at least 330 feet (100 meters) year-round between all project activities and the Bald Eagle nest. If a similar activity (i.e., similar in kind and size) is closer than 330 feet and has been tolerated by eagles, the

distance buffer will be the same or greater than that of the existing tolerated activity.

- Do not perform disruptive project activities within 660 feet (200 meters) of the Bald Eagle nest during the breeding season. This time-of-year restriction is in addition to the recommended distance buffer. Disruptive activities include, but are not limited to, external construction, excavation, use of heavy equipment, use of loud equipment or machinery, vegetation clearing, earth disturbance, planting, and landscaping.
- Maintain existing landscape buffers that visually screen the activity from the Bald Eagle nest.
- During the Bald Eagle breeding season (January 1 to July 31), do not perform blasting and other activities that produce extremely loud noises within 0.50-mile (800 meters) of in-use nests. PennDOT may also elect to initiate noise monitoring in this area during the final design phase of the Project to determine current ambient noise levels and coordinate with USFWS to determine if a time-of-year restriction on activities is necessary.
- Coordination with the USFWS will continue through construction regarding the presence of the Bald Eagle nest.

#### **Migratory Birds:**

- Limit tree clearing to occur between September 1 and March 31 to avoid conflicts with migratory birds.

#### **Pollinator Species:**

- PennDOT's Pollinator Plan (<https://www.pa.gov/agencies/penndot/programs-and-doing-business/environment/pollinator-habitat-plan>) will be reviewed to identify appropriate plants for potential seeding and landscaping opportunities that benefit the species as part of the development of the landscaping plans prepared in support of the earth disturbance permitting in final design.

#### **Mussels:**

- PFBC asked to be notified nine months before construction so they can perform on-site surveys and mussel translocations during suitable conditions in the area of disturbance. The mussel survey season runs from May 15 to October 1. In addition to mussel surveys and translocations, BMPs, avoidance and minimization measures, and strict E&S controls will likely be required when work occurs in and around Sinking Creek to reduce disturbance to in-stream and riparian areas ecosystems.
- Should the PFBC mussel survey identify any federally threatened or endangered species, the USFWS will be notified as part of project consultation regarding protected species and PennDOT will work with the PFBC to develop a mussel relocation plan for the protected mussels.

**Plants:**

- PennDOT will continue to coordinate with DCNR through final design to evaluate avoidance and minimization efforts, as needed, related to protected and special concern plant species within the project area.

**Bats:**

- Ensure all contractor employees are aware of the environmental commitments.
- For karst areas, use best management practices, secondary containment measures and other spill prevention to avoid impacts to hibernacula (none present in project area). Where practicable, employ a 300-ft buffer for fueling areas from caves, sink holes, losing streams, and springs in karst.
- Direct temporary lighting away from suitable bat habitat during active season.
- Limit tree removal to all that is needed to complete all aspects of the project.
- Avoid tree removal and percussives during the pup season (May through July).
- Clearly identify tree removal from tree avoidance areas, using bright protective fencing.
- Conduct tree removal during bat inactive season of November 15 through March 31.
- Conduct structure demolition, removal, replacement during bat inactive season of November 15 through March 31.
- Compensatory mitigation for loss of forested bat habitat will be coordinated with the USFWS as part of consultation requirements under the Endangered Species Act.

Should any new species or previously undocumented populations of threatened or endangered species be discovered during final design or construction, consultation with the appropriate resource agencies will be reinitiated.

### **3.22 Construction Impacts**

The construction of a four-lane limited-access highway on new alignment is a major construction project and has the potential for construction impacts. The No Build Alternative would not have construction impacts. Construction impacts from any of the three Build Alternatives are anticipated to be temporary in nature. The construction of the Project and the associated earth disturbance will need to be completed in accordance with the Section 106 and NEPA environmental mitigation commitments and permit conditions outlined in the project’s NPDES permit, Section 404/Chapter 105 permits, and USFWS PAFO consultation under the *Endangered Species Act*.

This section identifies potential impacts arising from the physical construction of the new highway. Although project construction may temporarily increase erosion, disturb soils, and produce construction-related vibration and noise, these effects would be temporary. Once construction is complete, impacts to soils, geology, groundwater, or noise/air nuisances to nearby properties/residences are not anticipated.

Typical construction impacts for a large highway project such as this Project are outlined in the following sections.

### 3.22.1 Impacts

**Air Quality:** Potential air quality impacts associated with roadway construction are generally the result of one of three distinct construction activities.

- Direct exhaust emissions from the construction equipment
- Dust generated by vehicle movements within the construction area
- Wood smoke associated with open burning of grubbed woody material

Potential impacts to air quality during construction are anticipated to be the same for all three Build Alternatives. Dust associated with highway construction is a common construction concern that has effectively been addressed by PennDOT and its construction contractors. Additionally, excessive wood smoke associated with the open burning of woody grubbed material (tress, stumps, roots, etc.) can result in unwanted air quality impacts.

**Noise:** A variety of noise generation sources are common in roadway construction projects. These include the following:

- Routine operation of heavy construction equipment
- Use of power hammering equipment to set piles, break rock, and concrete pavement
- Sawing of existing pavement
- Operation of drilling equipment (pre-split and shot charge holes, etc.)
- Blasting of rock

Potential noise impacts during construction are expected to be generally the same for the North and Central Alternatives. Potential noise impacts for the South Alternative would be greater due to the extent of rock blasting needed on the ridge side in the middle section of the corridor. Construction noise impacts can be mitigated to some degree by limiting construction activities to daylight hours. However, this contract limitation can lengthen the overall construction schedule.

**Water Quality:** Heavy construction and surface disturbances associated with a highway project may affect surface and groundwater. Potential impacts to water quality during construction are anticipated to be generally the same for the North and Central Alternatives. Potential impacts to water quality during construction of the South Alternative would be greater due to the intersection of many headwater streams along the ridge.

**Blasting:** Construction of the proposed roadway may require drilling and blasting to remove rock where conventional excavation is not feasible. No blasting-related impacts are anticipated for any of the three Build Alternatives. East of Tusseyville, where all three Build Alternatives share a common alignment, some blasting may be required to support planned excavation. West of Tusseyville, the North and Central Alternatives could require limited, localized blasting but would primarily involve fill embankments. In contrast, the South Alternative would require substantially greater excavation—and therefore a higher potential need for blasting—because its alignment is situated farther into the hillside.

**Traffic and Access:** During construction of any of the Build Alternatives, the existing two-lane US 322 roadway will be open to traffic. Short-term detours or lanes closures may be needed during certain phases of construction. A maintenance and protection of traffic plan will be developed during final design and will be coordinated with local emergency services and Harris and Potter Townships. The potential for travel delays will occur as travel speeds are reduced to provide worker and driver safety through construction zones. These impacts will be temporary in nature and cause minor inconveniences to the local community and traveling public.

**Construction Staging:** Construction staging for all three Build Alternatives will not impact historic properties, Section 4(f) properties, and productive agricultural.

### **3.22.2 Mitigation**

#### **Air Quality:**

- Contractors will be required to 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 contractor will be under contract guidelines regarding the control of dust. Contract documents that stipulate dust control include the E&S plans and the NPDES permit. Dust control is also included in several PennDOT Publications (Pub.) that contractors must adhere to, including Pub. 408, *Specifications*; Pub. 35, *Qualified Products List for Construction*; and Pub. 23, *Maintenance Manual*. The direct application of water is the most common form of dust suppression used in roadway construction projects. The use of approved dust palliatives, such as calcium chloride, could also be required to control fugitive dust emissions. Winter construction activities sometimes require the use of chemical dust suppression agents.
- The PennDOT Construction Managers will monitor dust levels as part of the NPDES permit requirements. Visual site inspections are performed weekly and post-rain events to document BMPs for dust control. Dust is monitored by visual inspection of opacity, and if it is determined to be a compliance issue, it is logged as a deficiency and results in corrective action which the contractor must address.
- Cover stockpiles during storage and transport, and restoration of vegetation as quickly as possible to prevent windblown dust.
- Provide advance notice and warning signs to communities that may be impacted by fugitive dust emissions.
- Woody materials should be chipped. Woody material from the roadway area should be "salvaged" as some type of saleable wood product and removed from the construction area rather than burned.
- Use air pollution control devices on the exhausts of construction vehicles.
- The contractor will be directed to locate vehicle staging and holding areas away from residential areas to the extent possible.



### **Noise:**

- PennDOT is committed to working with the contractor to minimize construction noise impacts to the extent possible. The contractor shall use only equipment adapted to operate with the least possible noise and shall conduct the work so that annoyance to occupants of nearby property and the general public will be reduced to a minimum. The contractor shall construct noise abatement measures at the initial stages of construction when feasible to protect against construction noise.

### **Water Quality:**

- An approved erosion and sedimentation pollution control plan will be implemented to reduce water quality impacts to the receiving streams during construction.
- PennDOT will undertake a detailed assessment of potentially affected surface waters and individual groundwater wells, including domestic, industrial, institutional, and public water supply to determine background water quality conditions. Sampling will be completed for water supply wells that are located within 0.25-mile of blasting operations. The data collected during this monitoring will be used to assess potential impacts to surface or groundwater resulting from construction. The water quality monitoring plans will be implemented prior to construction, during construction, and for one year post construction.
- The primary goal of monitoring for impacts to domestic wells and public water wells, and associated mitigation measures, is to ensure a continued supply of safe drinking water to affected residents. If impacts occur as a result of construction, PennDOT will ensure the maintenance of water supplies for homes and properties not acquired as part of the right-of-way for the project by any one the following:
  - Providing connections to public water systems;
  - Redrilling existing wells to another water producing zone at a greater depth within the same formation;
  - Relocating a well within an adjacent water-producing formation undisturbed by construction activities;
  - Providing water treatment; or
  - Acquiring the property.

### **Blasting:**

- PennDOT will monitor blasting activities during construction to ensure that no impacts occur and, if necessary, address any concerns.
- Any proposed blasting will need to comply with all environmental mitigation commitments and project permit conditions related to protected species and resources.



- In instances where blasting is required, residents of structures and dwellings located within 0.25-mile of proposed blasting operations will be notified, in writing, a minimum of 30 days prior to the start of blasting. The notification will contain a request to enter the property in order to conduct a pre-blasting survey. The pre-blasting surveys will be conducted in accordance with PennDOT Publication No. 408, *Specifications, and the Pre- and Post-Blasting Survey Special Provision*. If no structures occur within 0.25-mile of the proposed blasting operation, a pre-blasting survey will still be conducted on the closest structure(s) located within 0.50-mile of blasting operations (i.e. north, south, east, and west). If no structures lie within 0.50-mile of blasting operations, at least one survey may be performed on the closest structure within one mile. The purpose of a pre-blasting survey is to assess the integrity of existing structures. This information establishes a baseline for future potential damage determinations.
- Water sampling will be completed for water supply wells that are located within 0.25-mile of blasting operations. The data collected during this monitoring will be used to assess potential impacts to groundwater resulting from construction. The groundwater quality monitoring plan will be implemented prior to construction, during constructions, and for one year post construction.

**Traffic and Access:**

- During the final design phase, plans will be developed and coordinated with local municipalities and emergency service responders to ensure travel is maintained and delays are minimized to the extent practicable. PennDOT will commit to ongoing coordination during construction to inform emergency service teams about any changes to traffic plans. PennDOT will also inform the local community and traveling public about travel conditions in the area by issuing press releases on travel patterns and using intelligent highway system message boards to alert drivers to travel conditions.

**Construction and Staging:**

- The contractor will be prohibited from using properties that are historic and/or subject to protection under Section 4(f), or productive agricultural lands.

### **3.23 Local Short-term Uses and the Maintenance and Enhancement of Long-term Productivity**

All of the Build Alternatives would improve the traffic and safety of US 322 and would allow for consistency in system continuity with the four-lane limited access sections of US 322 to the east and west. The improvement in the traffic and safety, as well as the consistency in system continuity, would enhance long-term productivity. These long-term benefits would occur at the expense of short-term construction impacts in the

immediate vicinity of the project. These short-term effects would include dust, erosion, increased siltation and turbidity in affected streams, localized noise and air pollution, and minor traffic delays. With proper controls, they would not have a lasting effect on the environment.

The long-term productivity goals are consistent with the area's comprehensive plans and LRTP. Implementation of the LRTP and SIP are based on state/local comprehensive planning.

### **3.24 Irreversible and Irretrievable Commitments**

Advancing the proposed action to construction requires a wide range of natural, physical, human, and fiscal resources. Construction of the four-lane highway would be considered an irreversible conversion of the designated land (including residential, business, agricultural, and forest land) for long-term use as a highway facility. However, if a greater need arises for use of the land or if the highway facility is no longer needed, the land could be converted to another use. At this point, a conversion to a use other than a highway facility is neither anticipated nor targeted.

Construction of the Project is anticipated to require considerable materials, including soil, rock, concrete, asphalt, and steel, along with required equipment and labor. The materials may require additional preparation and/or fabrication as part of the construction process. It is anticipated that these materials will be available, and their use for this Project is not anticipated to limit or adversely affect the continued availability for other future projects. The investment in the construction of this project will require a significant one-time expenditure of state and federal funds, which are not anticipated to be retrievable.

It is acknowledged that the construction of the Project will require a significant commitment of resources intended to benefit the local, regional, and state public welfare through improvements to the proposed transportation system. The benefits of the improved transportation facility, including the improved accessibility, safety, and continuity, are anticipated to outweigh the commitment of the identified resources.

### **3.25 Permits, Approvals and Authorizations Required**

FHWA is the project's lead federal agency and is working closely with PennDOT (the lead state agency) to complete the EIS studies. Additionally, the USACE must take federal action to approve the *Clean Water Act* Section 404 Permit necessary for project implementation. Therefore, prior to approval of the Section 404 Permit, it is anticipated that the USACE will adopt the EIS and Record of Decision (ROD) to ensure its compliance with NEPA.

The project's Cooperating Agencies include EPA, USACE, USFWS, and PA DEP.

Other agencies with regulatory or management jurisdiction over sensitive resources were invited as the project's Participating Agencies, (e.g., PFBC, DCNR, PGC, and PA



SHPO). A complete list of Participating Agencies can be found in **Chapter 4, Table 4-1**.

Permits and authorizations include the following.

- *Clean Water Act Section 404* Permit and *Section 401 Water Quality Certification* – FHWA and PennDOT are working closely with the Baltimore District of USACE and PA DEP in issuing a provisional notification for a Section 404 Permit for the USACE’s identified Least Environmentally Damaging Practicable Alternative (LEDPA). This notification is to be issued 90 days from FHWA’s Final Environmental Impact Statement (EIS) and ROD approval. The provisional notification indicates that PA DEP must provide a Section 401 Conditional Water Quality Certification prior to the USACE issuing its Proffered Section 404 Permit. The Water Quality Certification would address avoidance and minimization to Waters of the US, along with the plan to mitigate unavoidable impacts.
- *Dam Safety and Encroachment Act (DSEA)* Permit – The DSEA requires a permit when constructing an encroachment in streams and wetlands. The permit is issued by PA DEP and subject to the regulations at 25 PA Code Chapter 105.
- *Clean Water Act Section 402 National Pollutant Discharge Elimination System* – The NPDES permit program, created under the Clean Water Act, addresses water pollution by regulating point source pollution, including from construction sites. NPDES permit will be required for construction earth disturbance. The PennDOT will acquire an Individual NPDES/Chapter 102 permit from PA DEP.
- Section 4(f) – *Section 4(f) of the USDOT Act of 1966* requires that it be demonstrated that no feasible and prudent alternatives exist to avoid using land from publicly owned parks, recreation areas, wildlife and waterfowl refuges, and properties either listed or potentially eligible for listing on the NRHP. In Pennsylvania, Section 2002 of the Administrative Code of 1929 also applies to activities conducted by PennDOT and includes requirements that serve as a state counterpart to Section 4(f). All three Build Alternatives require a Section 4(f) Evaluation for the use of property from historic and/or public recreational resources.
- Section 7 of the *Endangered Species Act* – A Programmatic Biological Opinion could be utilized for the North and Central Alternatives in accordance with Section 7 of the *Endangered Species Act* for the project’s “may affect, likely to adversely affect” determination regarding protected bat species. The South Alternative would require a Biological Assessment. Federal agencies are required to consult with the USFWS to ensure that actions they fund, authorize, permit, or carry out will not jeopardize the continued existence of any listed species. The appropriate consultation will be completed prior to the FEIS/ROD.
- Section 106 of the *National Historic Preservation Act* – All three Build Alternatives result in an Adverse Effect on multiple above ground historic resources. Additionally, areas of medium-to-high potential for archaeological resources would be evaluated prior to construction of a Build Alternative. A Section 106



Programmatic Agreement is being developed between FHWA, PennDOT, and the PHMC. The executed Programmatic Agreement will include commitments to complete archaeology, as well as mitigation measures to resolve adverse effects on above ground historic resources. The draft Programmatic Agreement is included **Appendix D**. The final Programmatic Agreement will be developed to address any comments received, and a fully executed Programmatic Agreement will be included in the Final EIS. Implementation of the mitigation commitments from the Programmatic Agreement will be advanced in tandem with final design activities.

- Pennsylvania Acts 100 and 43 – The Pennsylvania Department of Agriculture oversees farmland protection for productive farmlands and farmlands located in ASAs impacted by state funded projects. The selected alternative would be designed to minimize farmland impacts in accordance with state regulations and guidance. PennDOT would continue coordination with the Pennsylvania Department of Agriculture throughout the Project and into final design and construction. It is anticipated this Project will be seeking ALCAB approval; however, the need for an ALCAB hearing will depend on the right-of-way negotiations with the productive agriculture property owners.

## 4 Outreach

PennDOT has implemented a comprehensive and proactive public and agency engagement program, which has been at the forefront throughout the PEL and EIS development for the Project.

The current EIS project began in July 2024 and was based on the PEL Study conducted from 2020 to 2023. The following chapter summarizes the public and agency outreach conducted during the PEL Study and as part of the current EIS process and includes outreach events, meetings, activities, and materials used throughout the Project's lifecycle.

### 4.1 Coordination Plan

23 USC 139(g) and 23 CFR § 771.123 (b)(2) require the FHWA to establish a plan for coordinating public and agency participation in and comments on the environmental review process within 90 days of publishing the NOI (**Appendix A**). According to PennDOT Publication No. 10B, *Design Manual Part 1B: Post-TIP NEPA Procedures* (2022), the coordination plan must be shared with the public and with participating agencies to inform them about what to expect and ensure that any disputes arise as early as possible.

Three plans were prepared to address the Project engagement. A *Public and Agency Coordination Plan for the State College Area Connector Planning and Environmental Linkage Study* (November 2021) was developed as part of the PEL process and two plans were prepared for the EIS process, one coordination plan for the agency outreach and one for the public outreach. The purpose of these coordination plans was to facilitate and document interaction with the public, stakeholders, Tribes and Nations, and federal and state resource agencies. The plans also informed the public and resource agencies about how coordination would be

More information on the public engagement activities can be found in the following documents:

- *Virtual Public Meeting Summary Report for the State College Area Connector Planning and Environmental Linkage Study* (February 2021)
- *Open House Public Meeting Summary Report for the State College Area Connector Planning and Environmental Linkage Study [September 2021 Open House]* (April 2022)
- *Open House Public Meeting Summary Report for the State College Area Connector Planning and Environmental Linkage Study [April 2022 Open House]* (October 2022)
- *October 2022 Open House Public Meeting Summary Report for the State College Area Connector Planning and Environmental Linkages Study* (February 2023)
- *State College Area Connector Project August 2024 Public Open House Meeting* (February 2025)
- *State College Area Connector Project May 2025 Public Open House Meeting* (July 2025)

carried out and how feedback would be collected. The EIS public and agency plans were provided as part of the NOI in July 2024 (**Appendix A**).

#### 4.1.1 PEL Coordination Plan

The PEL Study utilized the *Public and Agency Coordination Plan* (November 2021) to provide robust outreach throughout the study. The plan:

- Identified the overall public involvement/agency coordination approach
- Identified interested and affected stakeholders (e.g., elected/ local officials, institutions, civic and neighborhood associations, industry, community/business organizations, and the general public) and outlined expectations for their involvement
- Identified the federal lead, cooperating, and participating agencies
- Established strategies to achieve the goals of the public involvement and agency coordination program
- Identified specific tools and techniques to support the coordination strategies
- Determined the timing and format for the public involvement
- Determined the timing and format for agency involvement and collaboration
- Established protocol for concurrence and coordination efforts with cooperating agencies

Public and agency involvement was integral to and continuous throughout the PEL Study.

#### 4.1.2 EIS Coordination Plans

The *Agency Coordination Plan* and the *Public Involvement Coordination Plan* provided a framework for guiding the outreach efforts consistent with NEPA and related laws. The plans are designed to facilitate and document structured, meaningful engagement with federal and state resource agencies, Tribes and Nations, and the public; define the timing and methods of coordination; and establish processes for receiving and incorporating feedback.



Photograph 4-1: Public Open House Meeting

The *Public Involvement Coordination Plan for the State College Area Connector* (**Appendix A**) outlined the following key objectives:

- Hold an open dialogue with interested citizens
- Allow the public to help develop solutions for their community
- Assess the public's reaction to the proposed project



- Integrate public views and preferences into decision-making and document their consideration
- Provide a meaningful way to gain input into what is essential to the community
- Avoid, minimize, and mitigate environmental consequences, and disclose the environmental effects and potential mitigation of a proposed action
- Ensure targeted and thoughtful coordination and outreach with communities

The plan also outlined the past and future meetings, workshops, briefings, hearings, and other outreach media (e.g., website, social media, newsletters, etc.) throughout the entire EIS process.

The *Agency Coordination Plan for the State College Area Connector (Appendix A)* identified the lead, cooperating, and participating agencies; the agency contacts; coordination points; and anticipated schedule. **Table 4-1** identifies the cooperating and participating agency status for the EIS.

## 4.2 Agency Coordination

### 4.2.1 PEL Study Agency Coordination

During the PEL Study, 11 agency coordination meetings, two field visits, and one Cooperating Agency-only meeting were conducted. **Table 4-2** summarizes the meetings, field visit dates, and an overview of the meetings held during the PEL Study.

*Table 4-1: Cooperating and Participating Agency Status for the EIS*

| Cooperating Agency   | Status      |
|--|-------------|
| United States Army Corps of Engineers (USACE)  | Accepted    |
| United States Environmental Protection Agency (EPA)  | Accepted    |
| United States Fish and Wildlife Service (USFWS)  | Accepted    |
| Pennsylvania Department of Environmental Protection (PA DEP)<br>- Northcentral Regional Office                 | Accepted    |
| Pennsylvania Historical and Museum Commission (PHMC)/Pennsylvania State Historic Preservation Office (PA SHPO) | Accepted    |
| National Park Service (NPS)  | Declined    |
| Participating Agency   | Status      |
| Pennsylvania Fish and Boat Commission (PFBC)   | Accepted    |
| Pennsylvania Department of Conservation and Natural Resources (DCNR)   | Accepted    |
| Pennsylvania Game Commission   | Accepted    |
| Pennsylvania Department of Agriculture   | Accepted    |
| United States Coast Guard  | No response |
| Local Agency   | Status      |
| Centre County Conservation District (CCCD)   | Accepted    |
| Centre County Board of Commissioners   | Accepted    |



|  |               |
|--|---------------|
| Harris Township Board of Supervisors           | Accepted      |
| College Township Council                       | Accepted      |
| <b>Local Agency</b>                            | <b>Status</b> |
| Centre Hall Borough Council                    | No response   |
| Potter Township Board of Supervisors           | No response   |
| Spring Township Board of Supervisors           | No response   |
| Benner Township Board of Supervisors           | No response   |
| <b>Federally Recognized Tribes and Nations</b> | <b>Status</b> |
| Delaware Nation                                | Accepted      |
| Delaware Tribe of Indians                      | Accepted      |
| Seneca Nation of Indians                       | Accepted      |
| Eastern Shawnee Tribe of Oklahoma              | No response   |
| Oneida Nation                                  | No response   |
| Seneca-Cayuga Nation                           | No response   |
| Shawnee Tribe                                  | No response   |

*Table 4-2: PEL Agency Coordination Meeting and Field View Summary*

| Date              | Meeting Summary  |
|-------------------|--|
| February 26, 2020 | PennDOT introduced the agencies to the PEL Study, discussed the benefits and components of a PEL Study, and noted the Project would follow Executive Order (E.O.) 13807, "One Federal Decision."   |
| July 22, 2020     | The Project team presented: the goals and objectives for the PEL Study process, an overview of the study area for data collection, transportation needs, the range of alternatives to be considered, the alternative screening process, and the coordination plan and specific agency involvement.   |
| November 6, 2020  | PennDOT held a specific meeting with the cooperating agencies to review the coordination plan and explained how the consensus/concurrence process would work for the PEL Study. The PEL Process and schedule were also provided.   |
| December 9, 2020  | PennDOT reviewed recent stakeholder meetings conducted for the PEL Study and confirmed the cooperating and participating agency status for the PEL and NEPA studies. PennDOT discussed the revised draft coordination plan, the consensus process, and the information obtained from the Virtual Public Meeting. PennDOT requested concurrence on the purpose and needs from the cooperating agencies. |
| May 26, 2021      | PennDOT presented the approved study purpose and needs, updates to the coordination plan, the range of alternatives, and the proposed alternative screening process. PennDOT requested consensus on the range of alternatives from the cooperating agencies. The environmental features were reviewed with the agencies.   |
| August 25, 2021   | PennDOT presented the initial results of the Level 1 and Level 2A alternative screening process and noted that only Build and Upgrade Alternatives would meet the purpose and needs. Preliminary Upgrade and Build Alternative corridors, potential environmental impacts, and   |



| Date              | Meeting Summary   |
|-------------------|---|
|                   | traffic operations were summarized. Other future project concepts, public engagement, and next steps for the study were also discussed.   |
| December 8, 2021  | PennDOT summarized the September 2021 public meeting and provided an overview of the resulting environmental, engineering, and traffic data and analysis refinements. Technical memoranda for the study and coordination plan schedule changes were discussed.  |
| March 23, 2022    | PennDOT provided an update on the environmental mapping, traffic analysis, and Build Alternative corridors.   |
| May 25, 2022      | PennDOT provided an overview of the April 2022 public meeting, including key concerns, the range of alternatives, and screening process findings.   |
| July 19, 2022     | PennDOT hosted a field view for the cooperating agencies, during which the alternative locations, their environmental impacts, and associated concerns were discussed. A discussion on potential mitigation concepts was also initiated.  |
| August 1, 2022    | PennDOT conducted a field view with EPA. The alternative locations, their environmental impacts, and associated concerns were discussed during the field view. A potential mitigation concept discussion was continued.   |
| August 24, 2022   | PennDOT reviewed the alternative screening process and discussed each alternative's potential impacts and benefits. Identified and requested which alternative corridors to advance for further development and evaluation in NEPA.   |
| February 22, 2023 | PennDOT provided an overview of the October 2022 public meeting and the key concerns. The Draft PEL Report and associated comments were discussed. PennDOT initiated discussion regarding conducting detailed field investigations in advance of the NEPA process.  |
| June 28, 2023     | PennDOT provided an overview of the Draft PEL Report comments and presented the Final PEL Study Report along with the recommended alternatives to advance for further study. Requested concurrence to advance the recommended alternatives for further development and evaluation in NEPA. Initiated virtual scoping for the EIS by presenting the study methodologies for the various resources. |

### 4.2.2 Pre-NEPA Agency Coordination

In January 2024, an agency meeting was held to present an updated traffic analysis which resulted in changes to the PEL Study alternatives recommended for further development and evaluation. A refinement to the purpose and needs specific to the US 322 corridor was also presented. The *Agency Coordination Plan* for the EIS was reviewed along with the proposed NEPA process and anticipated schedule.

On August 20, 2024, a letter was received from the United States (US) Environmental Protection Agency (EPA) acknowledging its involvement in the pre-NEPA studies and affirming its commitment to continue providing comments. These comments will address both general NEPA compliance for the EIS and specific matters related to EPA’s responsibilities under Section 309 of the Clean Air Act (CAA) and Sections 402(d) and 404(b), (c), and (q) of the Clean Water Act (CWA). The EPA indicated that it had no new comments at the time the letter was issued.

### 4.2.3 EIS Agency Coordination

**Table 4-3** summarizes the agency meetings, field views, coordination activities, and provides an overview of the agency events completed and anticipated during the EIS preparation.

*Table 4-3: EIS Agency Coordination Meeting and Field View Summary*

| Date              | Meeting Summary  |
|-------------------|--|
| July 24, 2024     | PennDOT provided a project update, presented the refined alternatives and associated impacts, and discussed public outreach, publication of the NOI, and the overall anticipated schedule.   |
| Oct. 1, 2024      | PennDOT hosted a field view for the cooperating agencies. The alternative locations, environmental impacts, key concerns with the proposed alternatives, and potential mitigation were discussed.                                  |
| April 23, 2025    | PennDOT provided a recap of the August 2024 public meeting and field view, presented the refined alternatives and associated impacts, and discussed public outreach, publication of the NOI, and the overall anticipated schedule. |
| June 20, 2025     | A meeting was held with USACE and PADEP to review the permit process and anticipated schedule.   |
| <i>March 2026</i> | <i>Provide a project update and present an overview of the DEIS document and discuss the public hearing.</i>   |
| <i>May 2026</i>   | <i>Provide a project update, including changes to the project resulting from comments received on the DEIS.</i>  |
| <i>June 2026</i>  | <i>Provide an overview of the FEIS/ROD.</i>  |

*Italic text in the table represents anticipated agency coordination milestone meetings.*

## 4.3 Public Outreach

### 4.3.1 PEL Public Outreach

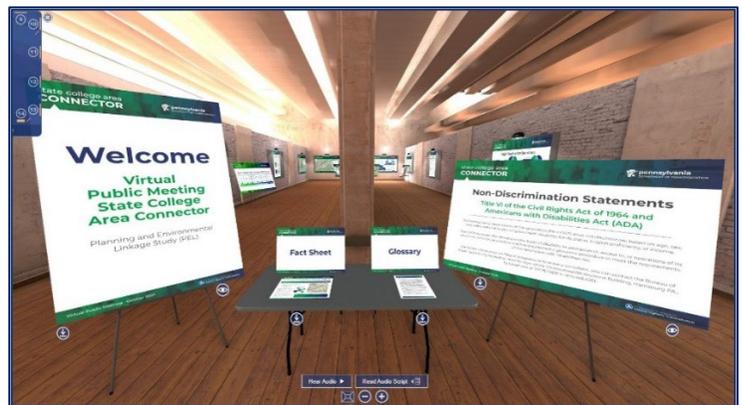
**Public Meetings:** Four public meetings were held during the PEL Study.

#### ***Virtual Public Meeting - October 2020***

The October 2020 public meeting was held virtually on the study website. The virtual meeting room was visited 358 times, and 30 comment forms were received from meeting visitors.

#### ***Open House Public Meeting - September 2021***

The September 2021 public meetings were held at Harris Township on September 21st and 22nd. The meetings introduced the PEL Study process, presented the range of alternatives, described the alternative



*Figure 4-1: October 2020 Virtual Meeting Lobby*

screening process and preliminary environmental and traffic analyses, and solicited public feedback. The meeting had 859 attendees and the comment period generated 417 comment letters, emails, and forms.

### ***Open House Public Meeting – April 2022***

The April 2022 public meetings were held on April 5th in Boalsburg and April 6th in Centre Hall. The meetings provided an update on the PEL Study environmental data collection efforts, traffic analyses, Upgrade Existing and Build Alternative corridor refinements, and solicited public feedback. A video summarizing key study changes since the September 2021 meetings was shown at the meeting. The meeting had 859 attendees and generated 148 comment letters, emails, and forms during the comment period.

### ***Open House Public Meeting – October 2022***

The October 2022 public meetings were held on October 19th and 20th in Harris Township. The meetings included an open house, project presentation, and question-and-answer session. There were 502 attendees, and they generated 417 comment letters, emails, and forms during the comment period.

**Public Official Coordination: Table 4-4** provides an overview of the coordination efforts with public officials during the PEL Study.

### **Other Public Outreach:**

#### ***Stakeholder and Interested Parties Workshops***

Local community and stakeholder workshops were conducted upon request. Publicly available study information was shared and discussed during the workshops and input was collected. The information gathered contributed to



*Photograph 4-2: September 2021 Public Meeting*



*Photograph 4-3: April 2022 Public Meeting Open House*



*Photograph 4-4: October 2022 Public Meeting Presentation*



resource identification, alternative refinement, impact assessment, and potential mitigation consideration. Meeting summaries were included in the PEL Study Report.

Table 4-4: Public Official PEL Coordination Summary

| Date          | Entity   | Information Presented  |
|---------------|--|--|
| Aug. 10, 2020 | Harris Township Board of Supervisors   | <ul style="list-style-type: none"> <li>• Introduction to the PEL Study</li> </ul>  |
| Aug. 13, 2020 | Meeting Centre Hall Borough Council  | <ul style="list-style-type: none"> <li>• Explanation PEL studies</li> </ul>  |
| Aug. 17, 2020 | Potter Township Board of Supervisors   | <ul style="list-style-type: none"> <li>• PEL Study process</li> </ul>  |
| Aug. 20, 2020 | College Township Council   | <ul style="list-style-type: none"> <li>• Draft Public and Agency Coordination Plan and ways to engage in the study</li> </ul>  |
| Sept. 3, 2020 | Benner Township Council  |  |
| Sept. 8, 2020 | Spring Township Supervisors  |  |
| Nov. 24, 2020 | Centre County Commissioners  | <ul style="list-style-type: none"> <li>• PEL Study next steps</li> </ul>   |
| May 10, 2021  | Harris Township Board of Supervisors   | <ul style="list-style-type: none"> <li>• Overview of the October 2020 Virtual Public Meeting</li> </ul>  |
| May 13, 2021  | Centre Hall Borough Council  |  |
| May 17, 2021  | Potter Township Board of Supervisors   | <ul style="list-style-type: none"> <li>• Purpose and needs study</li> </ul>  |
| May 20, 2021  | College Township Council   | <ul style="list-style-type: none"> <li>• WebMap</li> <li>• Range of alternatives</li> <li>• Alternative screening process</li> <li>• Key environmental features</li> <li>• PEL Study schedule</li> </ul>   |
| July 13, 2021 | Potter Township Planning Commission  | <ul style="list-style-type: none"> <li>• Overview of the October/November 2020 Virtual Public Meeting</li> <li>• Purpose and needs</li> <li>• Range of alternatives</li> <li>• Alternative screening process</li> </ul>  |
| Aug. 31, 2021 | Harris Township, College Township, State College Borough   | <ul style="list-style-type: none"> <li>• Provided advanced viewing of September 2021 public meeting materials</li> </ul>   |
| Feb. 14, 2022 | Harris Township/Potter Township  | <ul style="list-style-type: none"> <li>• Goal of the PEL Study</li> <li>• Environmental and traffic updates</li> <li>• Build Alternative updates</li> <li>• PEL Study next steps</li> </ul>  |
| Mar. 30, 2022 | College Township, Harris Township, Patton Township, Potter Township, Mifflin County, Centre County   | <ul style="list-style-type: none"> <li>• Provided advanced viewing of April 2022 public meeting materials</li> </ul>   |
| Sept. 7, 2022 | College Township, Harris Township, Patton Township, Potter Township, Mifflin County, Centre County, State College Borough, Ferguson Township | <ul style="list-style-type: none"> <li>• Provided advanced viewing of September 2022 public meeting materials</li> </ul>   |
| Mar. 7, 2023  | Harris Township, Potter Township   | <ul style="list-style-type: none"> <li>• Reviewed recommended PEL alternatives</li> <li>• Reviewed interchange options at US 322/PA 45</li> <li>• Reviewed interchange options at Potters Mills</li> <li>• Reviewed access and local road connections</li> <li>• Discussed PA 45 speeds</li> </ul> |
| Aug. 7, 2023  | Potter Township Supervisors  | <ul style="list-style-type: none"> <li>• Presented final PEL Study</li> </ul>  |

| Date          | Entity                          | Information Presented   |
|---------------|---------------------------------|---|
| Aug. 14, 2023 | Harris Township Supervisors     | <ul style="list-style-type: none"> <li>Introduced NEPA Phase process</li> <li>Presented final PEL Study</li> <li>Introduced NEPA process</li> </ul>   |
| Aug. 28, 2023 | Harris Township/Potter Township | <ul style="list-style-type: none"> <li>Reviewed corridor alternatives and typical sections</li> <li>Reviewed interchange and traffic scenarios</li> <li>Reviewed access and local road connections</li> <li>Discussed multimodal opportunities</li> </ul> |

***Plain Sect Community***

Due to limited or no internet access, targeted outreach was made to the local Plain Sect (Amish) community. Three Amish church districts are adjacent to the study area: West Penns Valley Church District, West Brush Valley Church District, and Nittany Valley Church District. Paper copies of the meeting notifications, study newsletters, and flyers were distributed to each church district.

***Centre County Metropolitan Planning Organization (CCMPO)***

CCMPO provides planning and programming funding authority for regional transportation projects. Since September 2020, the Project has been a standing agenda item on the CCMPO’s Coordinating and Technical Committees meeting agendas to provide study updates and receive local input.

***Grange Fair***

PennDOT hosted a booth at the 2021 Centre County Grange Fair to share information about the PEL Study. The booth was present from August 21st to 28th during regular fair hours.



*Photograph 4-5: State College Area Connector Booth at the Grange Fair*

**4.3.2 Pre-NEPA Outreach**

Local outreach continued following the PEL Study completion (September 2023) and prior to the publication of the NOI (July 2024). This outreach included periodic stakeholder coordination as summarized in **Table 4-5**.



Table 4-5: Local Official Pre-NEPA Meeting Summary

| Date          | Entity                          | Information Presented   |
|---------------|---------------------------------|---|
| Jan. 17, 2024 | Harris Township/Potter Township | <ul style="list-style-type: none"> <li>• Provided a PEL overview</li> <li>• Discussed traffic update and resulting changes to PEL alternatives (PA 45 Connector and midpoint interchange)</li> <li>• Discussed independent study for PA 45</li> </ul> |
| June 12, 2024 | Harris Township                 | <ul style="list-style-type: none"> <li>• Discussed proposed US 322/PA 45 interchange design</li> <li>• Discussed multimodal opportunities</li> </ul>  |

### 4.3.3 EIS Scoping Public Outreach

**Public Meetings:** Two scoping public meetings were held during the EIS study.

#### ***Open House Public Meeting – August 2024***

The public meeting for August 2024 took place in Harris Township on August 15th. This meeting introduced the EIS scoping phase of project development, which is an early and open process aimed at determining the range of issues to analyze in an EIS. This included identifying important issues and excluding those that were determined not to influence the alternative decision process. The meeting presented three Build Alternatives (North, Central, and South), the purpose and needs, detailed environmental mapping, and potential resource effects. A total of 398 attendees participated, generating 162 comment letters, emails, and forms during the comment period.

#### ***Open House Public Meeting – May 2025***

The May 2025 public meeting was held in Harris Township on May 8th. The meeting provided refined alternative alignments to the North, Central, and South Alternatives presented at the August 2024 meeting. This included PennDOT’s recommended preferred alternative, potential environmental effects, and solicited public comments. The meeting also included a visualization video of the proposed alternatives (**Figure 4-2**). It attracted 425 attendees and generated 99 comment letters, emails, and forms during the comment period.

**Public Official Coordination:** **Table 4-6** provides an overview of the coordination effort with public officials during the EIS scoping.

**Other Public Outreach:** Consistent with outreach methods established as part of the PEL process, EIS outreach also included stakeholder and interested party workshops, coordination of public meetings with the Plain Sect Community, and continued inclusion as a standing agenda item on the CCMPO’s Coordinating and Technical Committee meeting agendas. PennDOT also displayed updated project information and mapping at the 2025 Grange Fair.



Figure 4-2: Sample of Visualization Video from May 2025 Public Meeting

Table 4-6: Local Official EIS Meeting Summary

| Date          | Entity   | Information Presented  |
|---------------|--|--|
| July 31, 2024 | Harris Township, Potter Township, Patton Township, State College Borough, Centre County, College Township, | <ul style="list-style-type: none"> <li>Provided advance viewing of August 2024 public meeting materials</li> </ul> |
| May 8, 2025   | Harris Township, Potter Township, Patton Township, Centre County, College Township                         | <ul style="list-style-type: none"> <li>Provided advance viewing of May 2025 public meeting materials</li> </ul>    |

### 4.3.4 Public Hearing

Following the issuance of the Notice of Availability, this DEIS has a 45-day comment period. During this time, a public hearing will be held to present the DEIS findings, including results of the preliminary engineering, environmental analysis, and the Preferred Alternative. This hearing is scheduled to occur no sooner than 15 days and no later than 30 days after the publication of the DEIS for public and agency review. If necessary, the hearing may span multiple days. It is anticipated to take place in early 2026 and be advertised in the newspaper at 30 days, and again two weeks prior to the event. Attendees can provide written and/or oral comments during the public hearing. Oral comments can be provided either publicly or privately and will be documented by stenographers. All hearing materials will be accessible virtually, along with instructions on how to submit written comments. The event will adhere to PennDOT Publication No. 295, *Project Level Public Involvement Handbook*.

## 4.3.5 Other Outreach Methods

Other outreach methods utilized during the PEL, Pre-NEPA, and initial EIS process to provide the public and agencies with information are outlined below. These methods will continue to be utilized as the Project advances through the conclusion of the NEPA phase of project development and into final design, right-of-way acquisition, and construction, as appropriate.

**Website:** A study-specific website ([www.PennDOT.PA.gov/SCAC](http://www.PennDOT.PA.gov/SCAC)) was created to keep the public informed (**Figure 4-3**). The website was launched as part of the PEL process and remains active throughout the EIS lifecycle. It offers the PEL Report, DEIS, and related 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. Project related information was updated during development of the EIS and will continue to evolve as the Project progresses.

A key feature of the website was the WebMap, an interactive map showcasing natural, cultural, and socio-economic data along with the study alternatives. WebMap information will be updated throughout the lifecycle of the Project.

All feedback and any associated responses provided via the website will be included in the Project record, as appropriate.

**Press Releases:** Throughout the project's lifecycle, PennDOT issued 18 press releases providing updates on the PEL and EIS studies. All the press releases are housed on the website <https://www.pa.gov/agencies/pennDOT/projects-near-you/district-2-projects/state-college-area-connector/resources.html>. Future press releases will be

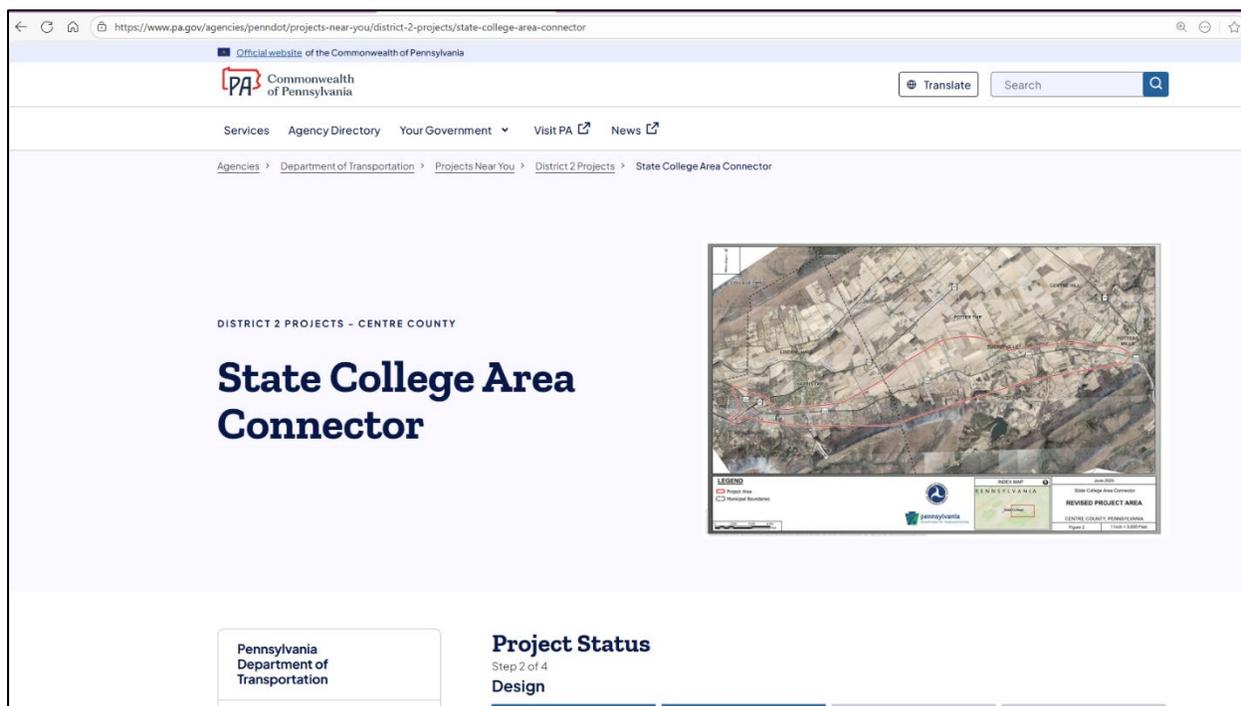


Figure 4-3: State College Area Connector Website



uploaded to the website, as appropriate, to notify the public of specific project information.

**Social Media:** PennDOT has used its existing PennDOT X (*formerly Twitter*) social media account to publicize project information. This provides members of the public who follow PennDOT’s social media account to view project information and post their comments on this platform.

**Newsletters:** Four newsletters were prepared and disseminated to the electronic mailing list generated from the website. **Table 4-7** outlines the newsletters’ timing and content. Future newsletters will be considered for distribution at major Project milestones.

*Table 4-7: Newsletter Summary*

| Newsletter Summary |  |
|--------------------|--|
| Summer 2021        | <ul style="list-style-type: none"> <li>• Explained what a PEL Study is.</li> <li>• Explained the transportation development and PEL processes.</li> <li>• Summarized the virtual public meeting.</li> <li>• Documented the purpose and needs.</li> <li>• Introduced the WebMap.</li> </ul> |
| Spring 2022        | <ul style="list-style-type: none"> <li>• Provided origin and destination traffic data, environmental data collection, and engineering summaries.</li> <li>• Outlined next steps for the PEL Study.</li> </ul>  |
| Spring 2024        | <ul style="list-style-type: none"> <li>• Explained the transition between the PEL Study to the EIS.</li> <li>• Included information about the schedule.</li> <li>• Documented the removal of the PA 45 Connector and midpoint interchange from the project.</li> </ul>                     |
| Summer 2025        | <ul style="list-style-type: none"> <li>• Presented alternative refinements to the North and Central Alternatives.</li> <li>• Provided an update on the project schedule and set hearing expectations.</li> <li>• Provided an update on other PennDOT projects.</li> </ul>                  |

**Media:** PennDOT promoted widespread dissemination of information by engaging reporters, soliciting media coverage, and coordinating special events.

**Public Meeting Notifications:** Notifications for all past public meetings included:

- Newspaper advertisements
- Direct mail invitations (e.g., letters and Every Door Direct mailer)
- Electronic invitations
- Social media
- Targeted media relations
- Flyer postings at local businesses and other establishments

Any future meetings or hearings will utilize similar notification processes, as appropriate.

## 4.4 Section 404 Permit

This Project utilizes a merged NEPA/Section 404 process in which the final environmental document serves as both the NEPA decision-making document for the



Section 404 permit application. The USACE published its Public Notice of PennDOT’s submission of the SCAC project 404-permit application package on October 22, 2025 for which the public had the opportunity to comment to USACE on the Section 404 permit application.

## 4.5 Section 106 Coordination

Section 106 of the NHPA requires federal agencies to assess how their projects could affect historic properties. This process includes consulting with various parties to identify, evaluate, and mitigate potential adverse effects on historic properties. As part of the Section 106 process, PennDOT and FHWA used the *Pennsylvania Transportation and Heritage (PATH)* website to post project information related to all Section 106 studies, as appropriate. This information is accessible for public review throughout the duration of the Project. Additionally, on August 17, 2020, and March 27, 2023, PennDOT invited over 50 individuals and organizations with an interest in historic resources in the area to serve as official Section 106 consulting parties. To date, there are 25 registered consulting parties for the project. **Table 4-8** summarizes the consulting party meetings held for this project.

*Table 4-8: Summary of the Consulting Party Meetings*

| Meeting Date  | Meeting Type                    | Agenda  |
|---------------|---------------------------------|---|
| Aug. 24, 2024 | In Person                       | The presentation introduced the project, environmental considerations, schedule, individually eligible resources, historic districts and contributing resources, and archaeological resources. It also provided an overview of the consulting party roles and responsibilities and set expectations. The meeting included an open discussion to address questions and solicit comments.   |
| June 16, 2025 | In Person                       | The presentation included a discussion of the project and the Recommended Preferred Alternative, an overview of cultural resources and associated investigations, a review of the determination of effects report findings, and an overview of the concept of mitigation as it relates to Section 106 compliance, along with a discussion of the next steps. The meeting included an open discussion to address questions and solicit comments.   |
| Aug.26, 2025  | In Person with a Virtual Option | The presentation included a discussion of the project and recent shifts to the alternatives, including the Recommended Preferred Alternative, an overview of cultural resources and associated investigations, a review of the determination of effects report findings, and a review of possible mitigation measures to address the project’s adverse effect on above ground historic resources. The meeting then included an open discussion about different mitigation concepts to identify specific mitigation to move forward for the project. |

A summary of Section 106 effects and a discussion of mitigation and mitigation opportunities were presented at a Consulting Party Meeting on June 16, 2025. Based on coordination efforts, PennDOT, FHWA, PA SHPO, and consulting parties are committed to developing a Design Advisory Committee to assist in the development of context-



sensitive design solutions for the Project to minimize impacts on the RHD. PennDOT will also develop a public educational component for the Project to address the history and cultural significance of adversely affected historic resources. These commitments are included in the project-specific Draft Programmatic Agreement included in **Appendix D** for review and comment as part of this DEIS. A final Programmatic Agreement will be developed to address any comments received, and a fully executed Programmatic Agreement will be included in the Final EIS. Implementation of the mitigation commitments from the Programmatic Agreement will be advanced in tandem with final design activities.

## 4.6 Tribes and Nations Consultation

PennDOT and FHWA Pennsylvania Division have identified seven federally recognized Tribes and Nations with ancestral ties to Pennsylvania and a potential interest in transportation projects within the state. In accordance with federal requirements (e.g., NEPA, NHPA of 1966, *American Indian Religious Freedom Act of 1978*, and *Native American Graves Protection and Repatriation Act of 1990*), FHWA maintains a government-to-government relationship with these Tribes and Nations. To facilitate this process, FHWA has delegated routine, project-specific consultation responsibilities to PennDOT.

PennDOT's role includes initiating project-specific consultation, sharing relevant documentation and information, and determining each Tribe's or Nation's level of interest in a given project. This consultation ensures that tribal perspectives are considered in planning and decision-making, particularly regarding cultural resources and historic preservation. PennDOT has initiated consultation with the following Tribes and Nations that have ancestral ties to the region:

- Delaware Nation
- Eastern Shawnee Tribe of Oklahoma
- Oneida Nation
- Seneca Nation of Indians
- Seneca-Cayuga Nation
- Shawnee Tribe
- Delaware Tribe of Indians

As part of the PEL and NEPA phases, PennDOT and FHWA invited seven federally recognized Tribes and Nations to serve as participating agencies. The Delaware Nation, Delaware Tribe of Indians, and Seneca Nation of Indians accepted participating agency status (**Table 4-1**) and were included in 11 agency coordination meetings (ACMs) documented in **Table 4-2**.

During these ACMs, Tribes and Nations provided comments on the study and requested electronic files related to project alternatives for review alongside their proprietary datasets. In addition to ACM participation, PennDOT conducted separate consultation meetings with Tribes and Nations during the NEPA phase to discuss project-specific NEPA concerns as well as cultural resource considerations under Section 106. This DEIS



was also provided to the Tribes and Nations for review and comment. A summary of the consultation meetings, held as of November 2025, is provided in **Table 4-9**.

*Table 4-9: Summary of Tribes and Nations Consultation Meetings*

| Meeting Date   | Tribe/Nation Attendees  | Topics Discussed  |
|----------------|---|---|
| Sept. 23, 2024 | Shawnee Tribe<br>Delaware Tribe of Indians<br>Seneca-Cayuga Nation                  | Kick-off consultation, project status, alternative discussions which the Delaware Tribe noted a preference for alternatives that minimizes farmland impacts, potential environmental impacts, project schedule, and next steps.   |
| Oct. 29, 2024  | Delaware Tribe of Indians<br>Delaware Nation  | Updates from prior meeting, purpose and needs, and mapping requests. Delaware Tribe re-iterated their prior statements about avoiding farmland impacts and stated a preference for the South Alternative, with the caveat that more information is needed about stream impacts.   |
| Nov. 26, 2024  | Shawnee Tribe<br>Delaware Tribe of Indians<br>Seneca-Cayuga Nation                  | Project update, inclusion of tribal researcher, development of Programmatic Agreement, and discussion of no-collect surveys.  |
| Jan. 8, 2025   | Shawnee Tribe<br>Delaware Tribe of Indians<br>Seneca-Cayuga Nation                  | Introduction of Seneca-Cayuga Nation to project, Tribe and Nation historian roles, tribal monitoring plans, Seneca-Cayuga preference for the treatment of artifacts. PennDOT/FHWA discussed the Delaware Tribe's preference for the South Alternative, noting that this alignment has more stream impacts and potential for acid-bearing rock. FHWA noted that the team was developing a probability model for acid-bearing rock. |
| Feb. 10, 2025  | Shawnee Tribe<br>Delaware Tribe of Indians<br>Seneca-Cayuga Nation                  | Project update, Draft Programmatic Agreement update, tribal monitoring proposal for FHWA, Tribe and Nation historian proposal for FHWA, consultation required with PHMC/SHPO regarding artifact treatment.  |
| Mar. 10, 2025  | Shawnee Tribe,<br>Delaware Tribe of Indians   | Project updates, Section 106 updates, no-collect survey update.   |
| Mar. 18, 2025  | Delaware Nation   | Follow-up to discuss information from the March 10, 2025 meeting.   |
| Apr. 21, 2025  | Delaware Tribe, Delaware Nation, Shawnee Tribe, Seneca-Cayuga Nation, Seneca Nation | Alternative refinement, potential environmental impacts, identification of the recommended preferred alternative – Central Alternative, potential Tribe and Nation monitoring proposals for archaeology, tribal historian, and programmatic agreement discussions.  |
| May 16, 2025   | Shawnee Tribe, Seneca-Cayuga Nation, Delaware Tribe, Delaware Nation                | Project schedule updates, and Tribe and Nation historian/monitoring.  |
| Oct. 24, 2025  | Delaware Nation, Shawnee Tribe  | Programmatic Agreement status update, DEIS schedule review, discussion on how PennDOT will coordinate with the Tribes and Nations during the archaeology  |



| Meeting Date | Tribe/Nation Attendees | Topics Discussed   |
|--------------|------------------------|--|
|              |                        | investigations, discussion on which Tribes and Nations want to participate in Cultural Sensitivity Training. |

Through coordination efforts, a draft project-specific Programmatic Agreement for cultural resources was drafted that outlines how the Section 106 process will be followed. This includes deferring archaeological field studies until final design for the Selected Alternative. Archaeological monitoring commitments will consider the use of Tribe and Nation cultural monitors during portions of the archaeological investigations and during construction, where warranted. The use of a qualified historian identified by the Tribes and Nations will be considered to complete research into the Contact and Historic Period Native American diaspora and resettlement across Central Pennsylvania. The draft Programmatic Agreement is included in **Appendix D** for review and comment as part of this DEIS. A final Programmatic Agreement will be developed to address any comments received, and a fully executed Programmatic Agreement will be included in the Final EIS. Specific mitigation for impacts to NRHP-eligible archaeological resources will be identified after detailed field investigations and determined individually, through consultation, for each eligible archaeological site.

## 5 Preferred Alternative

The alternative development and analysis effort started in the PEL Study and continued in this DEIS. The analysis was guided by the need to improve roadway congestion and address safety issues along the US 322 corridor between Boalsburg and Potters Mills, while providing a transportation network that meets driver expectations.

*More project information on the environmental impact and justification for the preferred alternative can be found in the following documents located in the project's technical files:*

- *Environmental Impacts Summary Technical Memorandum (November 2025)*

The evaluation process for the Project included the following steps:

- Establishing engineering parameters.
- Evaluating the alternative's ability to meet the project's purpose and needs.
- Assessing the alternative's environmental impacts.
- Developing preliminary Build Alternatives.
- Considering agency and public comments.
- Revising alternatives to address public and agency concerns.
- Conducting detailed alternatives analysis and evaluating the alternatives environmental impacts and the ability to mitigate adverse impacts.
- Identifying a Preferred Alternative.

None of the Build Alternatives evaluated would fully avoid impacts on regulated resources. The following summarizes the rationale for the identification of a Preferred Alternative.

### 5.1 Alternative Comparison

Numerous environmental resources are present within the project area, as outlined in **Chapter 3**. The extent of the many resources, including farmlands, wetlands, watercourses, and forested land, is further represented by their richness, diversity, and evenness across the project area. The evaluation of potential impacts for the different project alternatives needs to consider those state and federal laws and regulatory programs that afford protections to specific resources. The key laws and regulations include:

- **Agricultural/Farmland** – Protected under PA Act 100 of 1979; PA Act 43 of 1981, *Agricultural Area Security Law*, as amended; 4 PA Code Chapter 7 § 7.301 et seq., ALPP; PA Act 515 of 1966, *Covenant for Preservation*; PA Act 319 of 1974, *Farmland and Forest Land Assessment Act*; 7 USC § 4201, FPPA of 1981, as amended. The condemnation via eminent domain of productive agricultural land in Pennsylvania requires approval by ALCAB.



- **Streams and wetlands** – Protected under Section 404 of the *Clean Water Act* (CWA) and the PA *Dam Safety and Encroachment Act* and its supporting regulations at 25 PA Code Chapter 105.
- **Species** – Protected under Section 7 of the *Endangered Species Act* (ESA), *Migratory Bird Treaty Act*, PA *Game and Wildlife Code*, the PA *Fish and Boat Code*, and the PA *Conservation of Natural Wild Plants Code*.
- **Public parks, recreation areas, historic properties** – Protected by Section 4(f) of the USDOT Act of 1966 and PA Act 120, Section 2002.
- **Cultural Resources** – Protected by Section 106 of the *National Historic Preservation Act*.

The North, Central, and South Alternatives have the potential to impact numerous regulated and other resources in the project area. As shown in the impact summary outlined in **Table 5-1**, the North, Central, and South Alternatives each have different potential impacts on various environmental resources. **Table 5-2** provides an overview of the advantages and disadvantages of each of the considered Build Alternatives.

Table 5-1: Potential Environmental Impacts by Build Alternative

|                   |   | Build Alternative |            |        |
|-------------------|---|-------------------|------------|--------|
|                   |   | North             | Central    | South  |
| Natural Resources | <b>Agriculture</b>  |                   |            |        |
|                   | Productive Agricultural Land, Direct (acres)                                      | 142               | 116        | 104    |
|                   | Productive Agricultural Land, Estimated Indirect (acres)                          | 23                | 23         | 55     |
|                   | <b>Productive Agricultural Land, Total (acres)</b>                                | <b>165</b>        | <b>139</b> | 159    |
|                   | Farm Operations Impacted (#)  | 20                | 18         | 14     |
|                   | Agricultural Conservation Easements (within productive agricultural land) (acres) | 18                | 16         | 0      |
|                   | Agricultural Security Areas (within productive agricultural land) (acres)         | 71                | 34         | 38     |
|                   | Clean and Green (within productive agricultural land) (acres)                     | 133               | 106        | 85     |
|                   | Agricultural Zoning Districts (within productive agricultural land)               | 104               | 86         | 72     |
|                   | Soil Capability Classes I-IV (within productive agricultural land) (acres)        | 137               | 117        | 103    |
|                   | <b>Water Resources</b>  |                   |            |        |
|                   | Wetlands (within overall LOD) (acres)   | 25.4              | 30.0       | 17.9   |
|                   | Wetlands (within bridge footprint, presumably not impacted) (acres)               | 10.9              | 15.0       | 9.7    |
|                   | Wetlands (Indirect impacts due to loss of upstream flow) (acres)                  | -                 | -          | 3.7    |
|                   | <b>Wetlands Total (acres)</b>   | 14.5              | 15.0       | 11.9   |
|                   | Streams (within overall LOD) (linear ft.)   | 5,124             | 9,566      | 10,563 |
|                   | Streams (within bridge footprint, presumably not impacted) (linear ft.)           | 3,509             | 5,767      | 5,320  |



| Feature   | Build Alternative |             |                 |
|---|-------------------|-------------|-----------------|
|   | North             | Central     | South           |
| Streams (Indirect impacts due to loss of upstream flow) (linear ft.)                  | - -               | - -         | <b>3,209</b>    |
| <b>Streams Total (linear ft.)</b>   | <b>1,615</b>      | 3,799       | <b>8,452</b>    |
| Anticipated 100 Yr. Floodplains (acres)   | 14.2              | <b>14.7</b> | <b>12.6</b>     |
| Floodplains (within bridge footprint, presumably not impacted) (acres)                | 9.4               | <b>10.2</b> | <b>8.9</b>      |
| <b>Floodplains Total (acres)</b>  | <b>4.8</b>        | 4.5         | <b>3.7</b>      |
| Floodways   | <b>9.2</b>        | 21.6        | <b>21.9</b>     |
| Floodways (within bridge footprint, presumably not impacted) (acres)                  | 4.5               | 11.6        | 8.0             |
| <b>Floodways Total (acres)</b>  | <b>4.7</b>        | 10          | <b>13.9</b>     |
| <b>Terrestrial Habitat</b>  |                   |             |                 |
| Forested/Wooded Habitats (acres)  | <b>25</b>         | 31          | <b>123</b>      |
| Important Bird Area (acres)   | <b>0</b>          | 2           | <b>110</b>      |
| Bat Swarming Habitat (forested areas only) (acres)                                    | <b>86</b>         | <b>74</b>   | 77              |
| Clearwater Conservation Easements (acres)   | <b>21</b>         | <b>37</b>   | 26              |
| <b>Geological Resources</b>   |                   |             |                 |
| Potential for Encountering Acid Producing Rock (APR)                                  | <b>Very Low</b>   | Low         | <b>High</b>     |
| Potential for Encountering Sinkholes  | <b>High</b>       | Moderate    | <b>Low</b>      |
| <b>Historic Resources</b>   |                   |             |                 |
| National Register Historic Places (NRHP) Eligible Property with Adverse Effect (#)    | <b>6</b>          | 4           | <b>3</b>        |
| Penns Valley/Brush Valley Rural Historic District Contributing Properties (#   acres) | <b>14 263.5</b>   | 16 271.5    | <b>13 307.1</b> |
| Tusseyville Historic District Contributing Properties (#   acres)                     | <b>7* 6</b>       | <b>0 0</b>  | <b>0 0</b>      |
| Other Individually Eligible Property with Adverse Effect (#)                          | <b>4</b>          | 3           | <b>2</b>        |
| <b>Archaeological Resources</b>   |                   |             |                 |
| Known Archaeological Sites (#)  | 4                 | 5           | 5               |
| Historic Period Archaeological Sensitivity Area (acres)                               | <b>20</b>         | 21          | <b>23</b>       |
| Statewide Prehistoric/Pre-Contact Model – High Probability Area (acres)               | 107               | <b>116</b>  | <b>75</b>       |
| <b>Socioeconomic Resources</b>  |                   |             |                 |
| Residential Unit Displacements (#)  | <b>22</b>         | <b>15</b>   | 18              |
| Commercial Displacements (non-ag operations) (#)                                      | <b>3</b>          | <b>2</b>    | <b>2</b>        |
| Visual/Aesthetic Impacts  | High              | High        | High            |
| Places of Worship (#)   | 1                 | 1           | 1               |
| Parks/Recreation Areas (#   acres)  | 0 0               | <b>1 6</b>  | 0 0             |
| Potential Waste Sites (#)   | <b>36</b>         | 33          | <b>28</b>       |
| Section 4(f) Resources Use (#)  | <b>7</b>          | 5           | <b>4</b>        |

Red highlights denote higher impact. Green highlight denotes lower impact.

\* These seven resources also contribute to the Penns Valley/Brush Valley Rural Historic District.



Table 5-2: Build Alternative Advantages and Disadvantages

| <b>North Alternative</b>   |   |
|----------------------------|---|
| Advantages                 | <ul style="list-style-type: none"> <li>• Avoids headwaters of Spring Creek</li> <li>• Avoids Spring Creek tributaries</li> <li>• Avoids the (Stone Mountain and Greater Tussey Mountain) Important Bird Areas</li> <li>• Minimizes impacts to protected bat species</li> <li>• Low potential for encountering APR</li> </ul>  |
| Disadvantages              | <ul style="list-style-type: none"> <li>• Highest impact to productive agricultural land and farm operations</li> <li>• Highest potential for impacting karst features</li> <li>• Most residential displacements of all three Build Alternatives</li> <li>• Bisects the Tusseyville Community</li> <li>• Use of the most Section 106 historic properties of all three Build Alternatives</li> <li>• Adverse Effect to the Tusseyville Historic District</li> <li>• Adverse Effect to the Penns Valley/Brush Valley Rural Historic District</li> </ul>  |
| <b>Central Alternative</b> |   |
| Advantages                 | <ul style="list-style-type: none"> <li>• Avoids headwaters of Spring Creek</li> <li>• Minimizes impact on Important Bird Areas</li> <li>• Minimizes impacts to protected bat species</li> <li>• Least residential displacements of all three Build Alternatives</li> <li>• Least impact to productive agricultural land (when considering both direct and indirect impacts)</li> <li>• Avoids an adverse effect to the Tusseyville Historic District</li> <li>• Lower number of Section 106 historic properties adversely affected</li> <li>• Low potential for encountering APR</li> </ul>   |
| Disadvantages              | <ul style="list-style-type: none"> <li>• Higher wetland and stream impacts</li> <li>• Impact Potter Township Athletic Complex property</li> <li>• Adverse Effect to the Penns Valley/Brush Valley Rural Historic District</li> <li>• The number of streams impacts falls between the other two Build Alternatives</li> </ul>  |
| <b>South Alternative</b>   |   |
| Advantages                 | <ul style="list-style-type: none"> <li>• Least wetland impacts of all three Build Alternatives</li> <li>• Least direct impacts to productive agricultural land; however, high estimated indirect impacts</li> <li>• Avoids an adverse effect to the Tusseyville Historic District</li> <li>• Lowest number of Section 106 historic properties adversely affected</li> </ul>   |
| Disadvantages              | <ul style="list-style-type: none"> <li>• Highest overall impacts to streams of all three Build Alternatives</li> <li>• High impacts to the headwaters of Spring Creek</li> <li>• High impacts to the Important Bird Areas</li> <li>• High impacts to forest land</li> <li>• Higher impact to protected bat species based on forest and Important Bird Area impacts</li> <li>• Adverse Effect to the Penns Valley/Brush Valley Rural Historic District</li> <li>• Requires nearly 1.5 miles of cut along Tussey Mountain ridge with a depth ranging from five to 180 feet. Most of the cross sections show cuts on the upslope and downslope side of the alignment. Geologic formation in this area has the highest potential for encountering APR which would represent a water quality concern that could result in a reduction in the water quality to the Spring Creek watershed.</li> <li>• Would result in changes to the natural drainage pattern; water management for the upslope hydrology would need to be collected off the cut face and conveyed</li> </ul> |



**South Alternative**

Disadvantages  
(continued)

underneath the alignment and daylighted through the downslope cut area. This would result in an increase in the impacts to downslope waters and wetlands.

- Intercepting the discharge and recharge area immediately upslope of many of the wetlands and waters is anticipated to indirectly affect wetlands and waters immediately downslope and within 200 feet of the alternative due to a loss or reduction in hydrology.
- Intercepting the discharge and recharge area and altering the hydrologic condition of the hillside wetlands could also result in a reduction in the effectiveness of the functions and values of these wetlands including groundwater recharge/discharge and wildlife habitat.
- The creation of the large cut slopes along the ridge has the potential to change the characteristics of the existing recharge/discharge area as it relates to water quality. The existing hillside is forested which provides shade cover for the existing headwater streams and wetlands. The extensive planned excavation would open a 1.5-mile section with open cut slopes. This would present the opportunity for increased solar exposure to the cut slopes and increase the potential for thermal impacts. Spring Creek is designated by the PFBC from its mouth upstream to its headwaters as a stream that supports a population of naturally reproducing trout, as well as a Class A Trout Stream. The addition of thermal influences to the numerous small headwater streams presents the potential for a reduction in the overall water quality of Spring Creek. The extent and depth of cuts along the ridge immediately upslope of the discharge of the headwater spring-fed streams and wetlands are also a concern. Significant hydrogeologic testing would be needed to further identify and model the groundwater recharge and discharge characteristics in this specific area to reduce and/or eliminate the potential concerns downstream from impacts to the headwaters of Spring Creek.
- The regulatory resource agencies, such as USACE, USFWS, and PA DEP, expressed concern because of the amount of forest loss; effects to headwater streams and wetlands downstream such as potential loss of flow and thermal impacts; and potential for APR. DCNR also expressed concerns regarding potential impacts to the headwaters.

## 5.2 Alternatives Not Recommended

### 5.2.1 No Build Alternative

The No Build Alternative is included in the environmental impact analysis as a baseline for comparing all considered alternatives. It is not designated as the Preferred Alternative because it would not fulfill the purpose and needs to reduce congestion, enhance safety, and satisfy driver expectations.

### 5.2.2 Build Alternative

Each of the Build Alternatives (North, Central, and South) developed and evaluated in this environmental impact analysis would meet the identified purpose and needs for transportation improvements in the project area. The North and South Alternatives were not identified as the Preferred Alternative, as they had greater overall environmental impacts on regulated resources and had greater disadvantages when compared to the Central Alternative (**Table 5-1** and **Table 5-2**).



**North Alternative:** The North Alternative is not identified as the Preferred Alternative because it would result in greater combined impacts on the natural, cultural, and socioeconomic resources of the project area. Specifically, the North Alternative would have:

- The highest impacts on productive agricultural land at 142 acres versus 116 acres for the Central Alternative and would not meet the ALCAB burden of proof
- The highest number of farm operations impacted at 20
- The most residential displacements at 22, with three commercial displacements compared to 15 and two for the Central Alternative, respectively
- The most impacts to historic resources (six) compared to the Central (four) and the South (three) Alternatives
- Adverse effect to the RHD
- An adverse effect to the THD that the Central Alternative avoids
- Displaces half of the residential properties in the Tusseyville community
- An adverse effect on 21 contributing resources to the RHD, of which 14 contribute only to the RHD and seven contribute to both the THD/RHD. This is compared to the Central Alternative, which has an adverse effect on 16 contributing resources for the RHD.

The preliminary cost for the North Alternative is estimated to be between \$661 to \$831 million, depending on the assessed inflation rate.

**South Alternative:** The South Alternative is not identified as the Preferred Alternative as it would result in greater combined impacts to natural resources. Specifically, the South Alternative would have:

- Highest overall impacts to streams at 8,452 linear feet compared to 3,799 linear feet for the Central Alternative
- High impacts to the headwaters of Spring Creek compared to the Central Alternative
- High impacts to the Important Bird Areas at 110 acres compared to two acres for the Central Alternative
- Highest impacts to forest land at 123 acres compared to 31 acres for the Central Alternative
- Higher potential impact to protected bat species based on forest and IBA impacts
- High potential for encountering APR
- Higher potential for encountering water quality concerns from construction (APR and thermal increase)
- Higher potential for indirect hydrologic impacts to streams and wetlands from construction
- Regulatory agencies expressed concerns with potential impacts from APR, hydrologic, and indirect impacts to regulatory resources

The preliminary cost for the South Alternative is estimated to be between \$738 to \$928 million, depending on the assessed inflation rate.

### 5.3 Preferred Alternative (Central Alternative)

The evaluation and preliminary engineering efforts culminated in the identification of a Preferred Alternative. Based on the impact comparison and coordination with FHWA, municipal leaders, resource agencies, consulting parties, and the public, the Central Alternative was recognized as the Preferred Alternative because it provides the best balance in avoiding and minimizing impacts to natural, cultural, and socioeconomic resources in the project area (**Figure 5-1** for overview and **Plates B1-B18 and E1-E18** for detailed mapping). Additionally, for those resources that are unavoidable, measures and strategies were identified to mitigate the potential adverse effects.



Figure 5-1: Preferred Alternative

The Central Alternative is being identified as the environmentally preferable alternative and provides the following differentiating advantages over the North and South Alternatives:

- Provides the best overall balance of impacts for all resources
- Avoids the headwaters of Spring Creek
- Avoids an adverse effect on the THD
- Minimizes impact on the IBAs to two acres
- Minimizes impact to productive agricultural land at 116 acres
- Minimizes effects on protected bat species based on forest and Important Bird Area impacts
- Only adversely affects 16 contributing resources in the RHD



- Low potential for encountering APR
- Least number of displacements with 15 residential and two commercial displacements

**Table 5-1** provides an overview of the identified impacts resulting from the Central Alternatives.

The preliminary cost for the Central Alternative is estimated to be between \$843 million \$1.06 billion, depending on the assessed inflation rate. The Project is currently advancing with 100% state discretionary funding, though opportunities to utilize federal formula funding or apply for federal discretionary funds will be investigated. The current CCMPO's Transportation Improvement Program (TIP)/Statewide Transportation Improvement Program (STIP) includes final design funding and some funding for utilities and right-of-way acquisition, and the draft 2027 TIP allocation includes additional funding. In accordance with the SAFETEA-LU guidance for major projects, PennDOT will develop a financial plan to document how the Department intends to fund, or secure adequate financing to advance, the project for right-of-way acquisition, utility relocation, and construction. It is anticipated that the financial plan will reflect final design funding being programmed on the TIP/STIP prior to FHWA signing the Record of Decision.

The financial plan will provide reasonable assurance that sufficient financial resources will be available to implement the project as planned. As the State College Area Connector is implemented over several years and involves numerous stages, annual updates to the plan are developed throughout the entire project delivery process. Annual updates will serve as an important planning tool, providing information on actual costs, expenditures, and revenue performance compared to initial estimates, and tracking funding shortfalls, to make necessary financial adjustments to assure the completion of the project.

## 5.4 Summary

Overall, the North Alternative would have a more significant impact on productive agricultural lands and Section 106 historic resources. In contrast, the South Alternative would result in greater direct and indirect effects on water resources, including stream length and specifically the headwaters of Spring Creek. Additionally, the South Alternative poses higher potential impacts on protected bat species and carries a greater risk of encountering APR. Furthermore, state and federal resource agencies have expressed concern regarding the overall effects of this alternative on natural resources. Although the Central Alternative still impacts regulated and other resources in the area, it offers the best overall balance of impacts and is recognized as the Preferred Alternative.