

**Terrestrial Habitat
Technical Memorandum
for the
State College Area Connector**

August 2025



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List of Acronyms

AMM	Avoidance, Minimization and Mitigation Measures
CNHI	County Natural Heritage Inventory
DOI	Department of the Interior
EIS	Environmental Impact Statement
FHWA	Federal Highway Administration
GIS	Geographic Information System
I	Interstate
IBA	Important Bird Area
LOS	Level of Service
MBTA	Migratory Bird Treaty Act
NEPA	National Environmental Policy Act
NHCH	Natural Heritage Core Habitat
PA	Pennsylvania or Pennsylvania Route
PA DEP	Pennsylvania Department of Environmental Protection
PA DCNR	Pennsylvania Department of Conservation and Natural Resources
PASDA	Pennsylvania Spatial Data Access
PEL	Planning and Environmental Linkage
PFBC	Pennsylvania Fish and Boat Commission
PGC	Pennsylvania Game Commission
PNHP	Pennsylvania Natural Heritage Program
SCAC	State College Area Connector
US	United States
USFWS	US Fish and Wildlife Service
USFWS PAFO	United States Fish and Wildlife Service Pennsylvania Field Office
WPC	Western Pennsylvania Conservancy

1.0 Introduction

1.1 Project History

The State College Area Connector Planning and Environmental Linkages (PEL) Study identified transportation needs within southern Centre County, Pennsylvania in a 70 square mile initial project area. The study evaluated a range of alternatives to determine how the alternatives addressed the Study's purpose and need, balanced impacts on the natural and built environment, addressed traffic concerns within the overall project area, met engineering considerations such as constructability, cost, and considered area planning goals. The PEL Study screened nine corridors to determine the best options to advance for National Environmental Policy Act (NEPA) evaluation and preliminary engineering. Based on the impact analysis, three corridors were identified (US 322-1S, US 322-1OEX and US 322-5) to be advanced as reasonable alternatives, and a specific project area was developed to initiate detailed field investigations and conduct preliminary engineering investigations to address the transportation purpose and needs as part of the NEPA process.

The final PEL Report was published in June 2023 and Federal Highway Administration (FHWA) acknowledged in a letter, dated September 14, 2023, that the PEL Study was consistent with 23 USC Section 168 and 23 CFR 450.212. As a result, the PEL findings provide a starting point for the NEPA studies and preliminary engineering efforts. Additionally, FHWA concurred that an Environmental Impact Statement (EIS) was the proper NEPA classification for the State College Area Connector (SCAC) project.

The PEL Study also identified other transportation projects which did not meet the full purpose and need identified in the PEL but could provide transportation benefits to the project area roadways independently. One such project was a safety study along PA 45 generally from Boal Avenue to PA 144. Subsequent to the PEL completion, additional traffic investigations and analysis and coordination with local officials for the State College Area Connector project determined that the connector road and interior interchange would provide some localized improvements to PA 45. However, it was determined that the connector road and associated interchange was not necessary to address the project's purpose and need, nor did it address corridor wide issues along PA 45. As a result, the proposed interior interchange and local road connection was removed from this State College Area Connector project and will be considered in the independent PA 45 Corridor Improvements project, as appropriate. The State College Area Connector project will advance independently but will not preclude the inclusion of a future interior interchange and local road connection should the independent safety study along PA 45 determine that it would be beneficial in connection with other proposed PA 45 Corridor Improvements project.

Following the PEL Study, the project area was reduced from 70 square miles to approximately 6 square miles to encompass the three alternatives proposed to move forward into preliminary engineering.

1.2 Project Location

The project area is approximately 3,963 acres, extends through the southern portion of Centre County, and traverses Potter and Harris Townships, see **Appendix A, Figure 1 – Project Location Map**. The project area is centered on US 322 which provides local access through the project area and to regional destinations and beyond. US 322, Mount Nittany Expressway at the western end of the project area provides direct access to Interstate 99 (I-99) which, in turn, provides access to nearby I-80. US 322 at Potters Mills provides access south to the Harrisburg area and connects to I-81 and I-83.

1.3 Project Purpose and Need

Project Purpose

The purpose of this 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 Potters Mills and Boalsburg. Additionally, the project will aim to provide a transportation network that meets driver expectations.

Project Needs

- High peak hour traffic volumes cause congestion and result in unacceptable LOS (LOS D [rural only], E, F) on US 322 roadway and intersections.
- Existing roadway configurations and traffic conditions contribute to safety concerns in the project area.
- The roadway network and configuration in the project area lacks continuity and does not meet driver expectations.

2.0 Methods

Data was collected from secondary sources including online resources and mapping from the Pennsylvania Department of Environmental Protection (PA DEP), Pennsylvania Department of Conservation and Natural Resources (PA DCNR), Pennsylvania Spatial Data Access (PASDA), Pennsylvania Audubon, and the Pennsylvania Natural Heritage Program (PNHP). Review of the secondary source data, including review of Geographic Information Systems (GIS) mapping data acquired through the public data access within PASDA and PA DCNR websites, was completed to create map figures used in this report.

Additionally, field data collected as part of the wetland and waterways delineation, botanical surveys, and farmer interviews, were incorporated to field verify land cover / land use and terrestrial habitats including forested/wooded habitat, and PNHP core habitat areas. Moreover, the field reconnaissance of the SCAC project area conducted as part of the wetland and waterway delineation field investigation also include in-the-field screening for potential sinkhole areas and related karst geologic areas. Farmer interviews confirmed agricultural land use and productive agricultural fields within the project area. Review of the field data with the secondary source data served to identify the terrestrial habitats present within the project area.

3.0 Alternatives

The three alternatives that were recommended in the PEL Study to move forward into the NEPA phase of the project were renamed to North, Central and South. Following public and agency involvement, refinements were made to all three alternatives. The alternatives can be seen on Figures 2 and 3 in Appendix A.

3.1 North Alternative

The western end of the alignment would be the same for all three alternatives, from the SR 45 interchange to just east of Mountain View Country Club. At the western end, the existing US 322 would remain in its current location and the new US 322 4-lane highway would be on the south side of the existing US 322. The western end alignment would also include a pedestrian/bicycle trail on the north side of the existing US 322. Just east of Elks Club Road, the alignment would start to move north of the existing US 322 through the Nittany Farm and around the Kuhn Tree Farm. It would continue through the agricultural fields on the north side of US 322, avoiding the commercial area on US 322 in Potter Township. The alignment would return to the existing US 322 alignment through Tusseyville. The eastern end would maintain the existing US 322 as the local access road in its current position and the 4-lane highway alignment would be on the south side of the existing US 322 from approximately Tusseyville to Potters Mills.

3.2 Central Alternative

The western end alignment would be the same for all three alternatives, from the SR 45 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 4-lane highway would be on the south side of the existing US 322. The western end alignment would also include a pedestrian/bicycle trail on the north side of the existing US 322. Just east of the Mountain View Country Club, the alignment would start to move north of the existing US 322 through the Nittany Farm and around the Kuhn tree farm. It would then cross over the existing US 322 and travel through the Potter Township Athletic Complex on the south side of US 322, avoiding the commercial area in Potter Township.

It is noted that at the time of the May 8, 2025 Public Meeting, the Central Alternative was located through the baseball fields within the Potter Township Athletic Complex. As part of the public involvement and follow-up from the public meeting, Potter Township issued a letter (June 23, 2025) to PennDOT raising concern with the proposed impact to the fields and requested PennDOT consider avoidance and minimization of the property. PennDOT shifted the Central Alternative to the south to avoid the baseball fields and will only impact the undeveloped portion of the Potter Township property.

From there, the alignment crosses Sleepy Creek (stream that drains to Tussey Sink) and starts to move north towards the existing US 322. The alignment would return to the existing US 322 alignment near Tusseyville. The eastern end would maintain the existing US 322 as the local access road in its current position and the 4-lane highway alignment would be on the south side of the existing US 322 from approximately Tusseyville to Potters Mills.

3.3 South Alternative

The western end of the alignment would be the same for all three alternatives, from the SR 45 interchange to just east of Mountain View Country Club. At the western end, the existing US 322 would remain in its current location and the

new US 322 4-lane highway would be on the south side of the existing US 322. The western end alignment would also include a pedestrian/bicycle trail on the north side of the existing US 322. Just east of Elks Club Road, the alignment would start to move south of the existing US 322 through the Tait Farm and along the side of the Tussey Mountain Ridge (Tussey Ridge) behind the neighborhoods and communities along the south side of the existing US 322. It would then cross over Sleepy Creek (stream that drains to Tussey Sink) and start to move north towards the existing US 322. The alignment would return to the existing US 322 alignment near Tusseyville. The eastern end would maintain the existing US 322 as the local access road in its current position and the 4-lane highway alignment would be on the south side of the existing US 322 from approximately Tusseyville to Potters Mills.

4.0 Results

Based on this desktop review of secondary sources, the following terrestrial habitat types were identified within the 3,963-acre project area.

- **Forested/Wooded Habitat** – Forest habitat generally consists of tracts of undeveloped land dominated by dense tree communities or stands. Within the project area, forested or wooded habitat includes large tracts of forest as well as forest remanent patches.
- **State Forest Land Habitat** – State forest land is land that is owned by the Commonwealth of Pennsylvania and managed by PA DCNR Bureau of Forestry for recreation, conservation and economic benefits. State forest land supports a multitude of resources, uses, and values including plant and animal habitat.
- **Productive Agricultural Land** – 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.
- **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.
- **Important Bird Areas (IBAs)** – Sites that 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 to set of criteria maintained by BirdLife International and administered in the United States by the National Audubon Society. To be listed as an IBA, a site must satisfy at least one of the following criteria to support or serve as habitat functions: (A1) Globally Threatened Species, (A2) Restricted-Range Species, (A3) Biome-Restricted Species, and/or (A4) Congregations.
- **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

state of Pennsylvania. PNHP core habitats are managed in partnership between the PA DCNR, Pennsylvania Game Commission (PGC), Pennsylvania Fish and Boat Commission (PFBC), and Western Pennsylvania Conservancy (WPC).

During the course of the desktop review, additional potential habitat concerns were identified for consideration during preliminary engineering design for each alternative:

- **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.

4.1 Land Cover / Land Use

The entirety of the project area occurs in a predominantly rural, highly fragmented landscape located in Penns Valley between Nittany Mountain to the north and the Tussey Ridge to the south. Larger tracts of forested habitat are located primarily in the Nittany Mountain range and the Tussey Ridge in Rothrock State Forest to the south. Agriculture, both active and inactive, and rural residential/developments comprise the majority of the project area. The land uses and land cover types present within the project area are summarized in Table 1 and **Appendix A, Figure 2 – Land Use/Land Cover**.

Table 1. Summary of Project Area Land Use / Land Cover

Land Use/Land Cover Category	Acres Present	Percent of Project Area
Agriculture	2,129.09	54%
Forest	669.68	17%
Residential	489.93	12%
Vacant and Unused Land	259.63	7%
Transportation	192.87	5%
Commercial	84.89	2%
Recreation	66.17	2%
Communications/Industrial/Mixed Use/Public or Semi-Public/Utility/Water/Vacant Structure	71.24	1%
Project Area Total	3,963.50	100%

4.2 Forested/Wooded Habitat

Terrestrial forest habitat (**Appendix A, Figure 3 – Terrestrial Features**) can be found 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 in the two areas of Rothrock State Forest to the south including the Tussey Ridge. Approximately 670 acres of forested/wooded habitat are located within the project area. Individual habitat communities that are present within the forested/wooded habitat include forested slopes, remnant woods, hedgerows, floodplain and riparian wooded areas, forested wetlands, and scrub/shrub wetlands.

Forested slopes are found at higher elevations with a dense canopy and a limited understory. The dominant hardwood community that is present within the forested slopes are white pine, northern red oak, and red maple. Within this community, the canopy is dominated by northern red oak (*Quercus rubra*) and white pine (*Pinus strobus*) with the major associate species being red maple (*Acer rubrum*) and white ash (*Fraxinus americana*). Other common species include shagbark hickory (*Carya ovata*), sweet birch (*Betula lenta*), sugar maple (*Acer saccharum*), eastern hemlock (*Tsuga canadensis*), and black cherry (*Prunus serotina*).

Remnant forests are smaller patches of woods containing native tree, shrub, and herbaceous species but are susceptible to being dominated by invasive species. These smaller patches of woods are predominantly located within agricultural fields and areas developed over time for human use. Within these woods, the dominant species include yellow birch (*Betula alleghaniensis*), pignut hickory (*Carya glabra*), black cherry (*Prunus serotina*), American hophornbeam (*Ostrya virginiana*), black locust (*Robinia pseudoacacia*), and slippery elm (*Ulmus rubra*).

Hedgerow habitat are linear patches of forest that are typically found along agricultural field edges, land boundaries, or along roadways. Dominant species within hedgerows include, black walnut (*Juglans nigra*), black locust (*Robinia pseudoacacia*), box elder (*Acer negundo*), red maple (*Acer rubrum*), Norway maple (*Acer platanoides*), yellow birch (*Betula alleghaniensis*), and eastern redbud (*Cercis canadensis*).

Communities and species present within the forested floodplain and riparian areas, forested wetlands, and scrub/shrub wetland habitats are detailed in the SCAC Wetland and Watercourse Delineation Report.

4.3 State Forest Land Habitat

Rothrock State Forest is present along the southern limit of the project area. Rothrock State Forest contains approximately 9,290 acres of wild and natural areas, 300 miles of trails, camping areas, and other outdoor recreation and hunting resources. In the vicinity of the project area, Rothrock State Forest is located along the northern slope of the Tussey Mountain ridgeline and situated immediately south of the project area. The project alternatives have been designed to avoid Rothrock State Forest.

4.4 Productive Agricultural Land

Productive agriculture land areas (**Appendix A, Figure 3 – Terrestrial Features**) are located throughout the project area. Productive agricultural land areas are important components for not only the production of crops and domesticated livestock, they also serve as habitats for wildlife such as white-tailed deer, game birds, reptiles, and amphibians. 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.

4.5 Karst Geologic Areas

Karst geologic areas are present throughout much of the project area. Point locations for karst geologic areas can be seen in **Appendix A, Figure 3 – Terrestrial Features**. These point locations provided through secondary source information are referenced to possess potential karst geologic features such as sinkholes. No subsurface openings were identified during field surveys and project area reconnaissance within the project area which includes the north, central, and south alternatives.

4.6 Important Bird Areas

IBA's are present within the southern portion of the project area (**Appendix A, Figure 3 – Terrestrial Features**). 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.

Bird species that occur within the project area and in particular IBAs, could potentially include species protected by the Migratory Bird Treaty Act (MBTA). The MBTA prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the DOI and USFWS. The MBTA provides protections for migratory bird species that are native to the United States or United States territories (<https://www.fws.gov/birds/policies-and-regulations/laws-legislations/migratory-bird-treaty-act.php>).

For more information on IBAs, visit the following links: <https://www.birdlife.org/worldwide/programme-additional-info/important-bird-and-biodiversity-areas-ibas> and <https://gis.audubon.org/portal/apps/sites>. Additionally, project information related to bald eagles is addressed in the SCAC Threatened and Endangered Species Technical Memorandum.

4.7 Pennsylvania Natural Heritage Core Habitat

Pennsylvania Natural Heritage Core Habitat (NHCH) refers to 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. PNHP core habitats are not state owned but are managed in partnership between the PA DCNR, PGC, PFBC, and WPC. NHCH types and locations are listed in Table 2. General locations of the resources are illustrated in **Appendix A, Figure 3 – Terrestrial Features**.

Table 2. Natural Heritage Core Habitat

Resource Name	Resource Description
Sinking Creek Wetland #2	Floodplain forest in riparian zone of Sinking Creek
Sinking Creek Wetland #3	Floodplain forest in riparian zone of Sinking Creek
Sinking Creek Wetland #1	Mosaic of wetland communities along Sinking Creek including a Hemlock palustrine forest natural community

4.8 Additional Potential Habitat Concerns

Additional potential concerns that could arise through the preliminary engineering process include:

- Pollinator Habitat:** Pollinator habitat and its associated species represent important components to ecosystems in the production of fruit and vegetable crops. Quality pollinator habitats provide flowers where adult insects can gather food and grow food for their young. Pollinator habitats also provide safe shelter for nesting and overwintering insects that burrow in soils, snags and fallen logs, and grassy plains. Examples of quality pollinator habitats include backyard gardens, old fields, wetland complexes, forest glades, shady woodlands, and floodplains. Each habitat will support a unique combination of flowering plants that appeal to diverse groups of pollinators. It is estimated that 75% of flowering plants and crops are pollinator dependent (Pennsylvania Department of Transportation Pollinator Habitat Plan). Species typically identified as pollinators are bees and monarch butterflies. Additional project information related to pollinator habitat is addressed in the SCAC Threatened and Endangered Species Technical Memorandum.
- 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. Invasive species were identified within the project area. A list of invasive species, along with their ranking based on the DCNR Invasive Species List, is shown in Table 3. Best Management Practices (BMP's) to address invasive species can be incorporated into the design and construction of proposed transportation improvements to address these concerns (Pennsylvania Department of Transportation Invasive Species Best Management Practices, 2014). Identification of existing invasive species habitats and efforts to manage them during construction and to proactively control invasive species through the development of landscaping plans using native plant species for proposed transportation improvements will be addressed as part of the preliminary engineering design effort for the project.

Table 3. Invasive Species Identified within the Project Area

Scientific Name	Common Name	Rank
Tree Species		
<i>Acer platanoides</i>	Norway Maple	2
<i>Pyrus calleryana</i>	Callery Pear	2
Shrub Species		

Scientific Name	Common Name	Rank
<i>Berberis thunbergii</i>	Japanese Barberry	1
<i>Elaeagnus angustifolia</i>	Russian Olive	2
<i>Elaeagnus umbellata</i>	Autumn Olive	2
<i>Ligustrum vulgare</i>	Common Privet	2
<i>Lonicera maackii</i>	Amur Honeysuckle	1
<i>Lonicera morrowii</i>	Morrow's Honeysuckle	1
<i>Lonicera tatarica</i>	Tartarian Honeysuckle	1
<i>Rhamnus cathartica</i>	Common Buckhorn	1
<i>Rosa multiflora</i>	Multiflora Rose	1
Herbaceous Species		
<i>Alliaria petiolata</i>	Garlic Mustard	1
<i>Artemisia vulgaris</i>	Mugwort	3
<i>Centaurea stoebe</i>	Spotted Knapweed	2
<i>Chelidonium majus</i>	Greater Celandine	2
<i>Cirsium arvense</i>	Canada Thistle	2
<i>Cirsium vulgare</i>	Bull Thistle	2
<i>Conium maculatum</i>	Poison Hemlock	1
<i>Hesperis matronalis</i>	Dames Rocket	2
<i>Iris pseudacorus</i>	Yellow Flag Iris	2
<i>Lysimachia nummularia</i>	Moneywort	3
<i>Microstegium vimineum</i>	Japanese Stiltgrass	1
<i>Pastinaca sativa</i>	Wild Parsnip	2
<i>Perilla frutescens</i>	Beefsteak Plant	2
<i>Phalaris arundinacea</i>	Reed Canary Grass	2
<i>Securigera varia</i>	Crownvetch	2
<i>Stellaria media</i>	Common Chickweed	3
<i>Typha angustifolia</i>	Narrow-leaved Cattail	1
Vine Species		
<i>Celastrus orbiculatus</i>	Oriental Bittersweet	1
<i>Hedera helix</i>	English Ivy	3
<i>Lonicera japonica</i>	Japanese Honeysuckle	1
<i>Persicaria perfoliate</i>	Mile-a-Minute	1
<i>Vinca minor</i>	Common Periwinkle	3
<p>Note: Invasive plant species have been ranked in terms of the threat they pose to native plant communities. Each rank is defined below:</p> <p>Rank 1 – Severe Threat. Exotic plant species that possess characteristics of invasive species and spread easily into native plant communities and displace native vegetation</p> <p>Rank 2 – Significant Threat. Exotic plant species that possess characteristics of invasive species but are not presently considered to spread as easily and aggressively into native plant communities as those listed in Rank 1</p> <p>Rank 3 – Lesser Threat. Exotic plant species that spread in or near disturbed areas, and are not presently considered a major threat to undisturbed native plant communities.</p>		

In addition to the vegetative species listed in Table 3, Centre County is identified as a Quarantined county with respect to the Spotted Lantern Fly (*Lycorma delicatula*). According to the Pennsylvania Department of Agriculture, the spotted lanternfly is characterized as an invasive planthopper native to Asia that was first discovered in PA in Berks County in 2014. The lanternfly feeds on sap from many different plants and there are concerns with the species preference for plants important to PA's economy, including fruit bearing species. The stress from the lanternfly's feeding damage can stress plants which can lead to decreased health or death. There were no observations or reports of vegetative species impacted by the Spotted Lantern Fly in the project area.

- **Wildlife Crossings and Habitat Connectivity:** Habitat connectivity and how wildlife travel between fragmented habitats is an important component to the terrestrial environment. AMM's strategies are planned as part of the design process to address habitat connectivity concerns and to reduce human-wildlife conflicts (i.e. wildlife-car collisions). Wildlife crossings are structures that allow animals to cross human-made barriers between one habitat fragment and another. Crossings such as bridges, underpass tunnels, viaducts, overpasses (wildlife bridges for large wildlife), amphibian tunnels, and culverts (smaller mammals) (Publication 13M (DM-2), Chapter 20 – Wildlife Crossings, 2012) all represent mitigation strategies to address wildlife crossings and habitat connectivity. There are numerous stream valley areas within both the Sinking Creek and Spring Creek watersheds that serve as natural areas for wildlife movements. Previous tracking studies for bear and deer have been completed by the PGC. Locations where concentrations of large mammal crossing activity were reviewed as part of the project development process. Numerous bridge crossings over the different stream valley locations have been incorporated into the project design in an effort to avoid and minimize impacts to the aquatic / floodplain resources but also to accommodate wildlife passage. The proposed bridge crossings within the three alternatives along with station locations and wetland /stream resources being spanned are summarized in Table 4 and detailed in the SCAC Wetland and Watercourse Impact Technical Memorandum.

5.0 Alternatives Effects to Terrestrial Habitat

5.1 Avoidance Measures for All Alternatives

- AMM's strategies are planned as part of the design process to address habitat connectivity concerns and to reduce human-wildlife conflicts. Wildlife crossings are structures that allow animals to cross human-made barriers between one habitat fragment and another. Crossings such as bridges, underpass tunnels, viaducts, overpasses (wildlife bridges for large wildlife), amphibian tunnels, and culverts (smaller mammals) (Publication 13M (DM-2), Chapter 20 – Wildlife Crossings, 2012) all represent mitigation strategies to address wildlife crossings and habitat connectivity. Locations where concentrations of large mammal crossing activity were reviewed as part of the project development process. Numerous bridge crossings over the different stream valley locations have been incorporated into the project design in an effort to avoid and minimize impacts to the aquatic / floodplain resources but also to accommodate wildlife passage. The proposed bridge crossings within the three alternatives along with station locations and wetland /stream resources being spanned are summarized in Table 4 and detailed in the SCAC Wetland and Watercourse Impact Technical Memorandum.

Table 4. Proposed Bridge Crossings

Bridge Station (location)	North	Central	South	Description
123	X	X	X	Bridge spans S-LTZ-035-PER (Spring Creek).
147	X	X	X	Bridge spans S-LTZ-077-PER (Galbraith Gap Run)
171 – 178	X	X	X	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	Bridge spans S-LTZ-073-PER and parts of WL-LTZ-143-PEM at Somerset Drive
217 - 225	X	X		Bridge spans portions of WL-LTZ-067-PEM and S-LTZ-070-INT at Nittany Farm
243 - 249	X	X		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		Bridge spans S-LTZ-035-PER (Spring Creek) and its floodplain wetlands, north of existing US 322
306 - 312		X		Bridge spans S-LTZ-035-PER (Spring Creek), S-LTZ-045-PER, and adjacent floodplain wetlands west of Tussey View Lane and south of existing US 322
320 – 323			X	Bridge spans S-LTZ-035-PER (Spring Creek), S-LTZ-040-PER, S-LTZ-041-PER, and floodplain wetlands
349 – 361		X		Bridge spans S-LTZ-025-PER (Sleepy Creek), S-LTZ-028-PER, and adjacent wetlands at Tussey Sink
356 - 366			X	Bridge spans S-LTZ-025-PER (Sleepy Creek) and WL-LTZ-052-PEM at Tussey Sink
384 – 391		X	X	Bridge spans upper reaches of Sinking Creek, S-LTZ-023-PER
404 – 410	X			Bridge spans Neff Pond, including S-LTZ-023-PER and WL-LTZ-043-POW, north of existing US 322
436 – 451	X	X	X	Bridge crossing spans Darlington Sinking Creek stream valley area, S-LTZ-001-PER & WL-LTZ-040-PEM, south of US 322

Bridge Station (location)	North	Central	South	Description
474 – 479	X	X	X	Bridge spans twin pond area, WL-LTZ-028-POW, south of existing US 322
502 – 513	X	X	X	Bridge spans the PEM and POW wetland system, conveying hydrology through existing US 322 and fueling S-LTZ-010-PER north of the highway. Bridge spans the wetland floodplain along Sinking Creek at “Maggie’s Dip”, south of existing US 322

5.2 North Alternative – Potential Impacts to Terrestrial Habitat

The North Alternative’s potential limit of disturbance area encompasses approximately 421 acres.

Table 5. North Alternative Terrestrial Habitat Impact Summary

Terrestrial Habitat Type	Acres Impacted
Forested/Wooded Habitat (acres)	25
State Forest Land Habitat (acres)	0
Productive Agricultural Land (acres)	142
Karst Geologic Areas (# features)	20
Important Bird Areas (acres)	0
PA Natural Heritage Core Habitat (acres)	17

5.3 Central Alternative – Potential Impacts to Terrestrial Habitat

The Central Alternative’s potential limit of disturbance area encompasses approximately 424 acres.

Table 6. Central Alternative Terrestrial Habitat Impact Summary

Terrestrial Habitat Type	Acres Impacted
Forested/Wooded Habitat (acres)	31
State Forest Land Habitat (acres)	0
Productive Agricultural Land (acres)	116
Karst Geologic Areas (# features)	5
Important Bird Areas (acres)	2
PA Natural Heritage Core Habitat (acres)	17

5.4 South Alternative – Potential Impacts to Terrestrial Habitat

The South Alternative’s potential limit of disturbance area encompasses approximately 470 areas.

Table 7. South Alternative Terrestrial Habitat Impact Summary.

Terrestrial Habitat Type	Impacts
Forested/Wooded Habitat (acres)	123
State Forest Land Habitat (acres)	0
Productive Agricultural Land (acres)	104
Karst Geologic Areas (# features)	2
Important Bird Areas (acres)	110
PA Natural Heritage Core Habitat (acres)	17

6.0 Summary

Terrestrial habitat resources are present throughout the project area as described in this memorandum. Table 1 summarizes the terrestrial habitat types and the approximate acreage found within the project area. Based upon its location along the lower portion of the Tussey Ridge, the South Alternative impacts more terrestrial resources, including forest land and IBA's. The Central and North Alternatives avoid the Tussey Ridge; thereby reducing forest land impacts, but the North Alternative does result in the highest impact to agricultural lands.

The terrestrial habitat resources identified within the project area are considered to be sensitive in nature and have the potential to support numerous species of plants and animals. Sensitive habitats of note include IBAs and NHCHs. These specific sensitive ecosystems are home to various species of plants and animals having specific habitat needs and requirements.

In addition to the aforementioned sensitive habitats present in the project area, habitats containing pollinator plants and animals, invasive species, and wildlife crossing areas have been identified as potential concerns for the project. The preliminary engineering and final design phases of the project will continue to evaluate measures to avoid and minimize impacts to the terrestrial environment.

7.0 Preparers

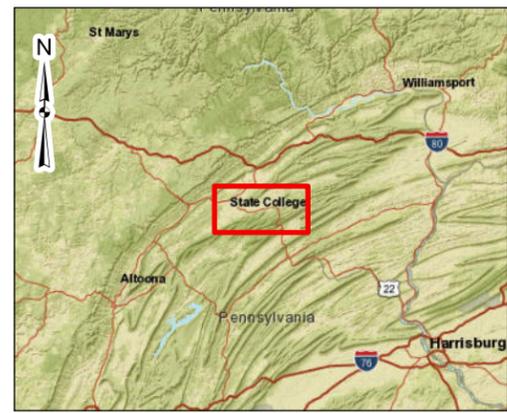
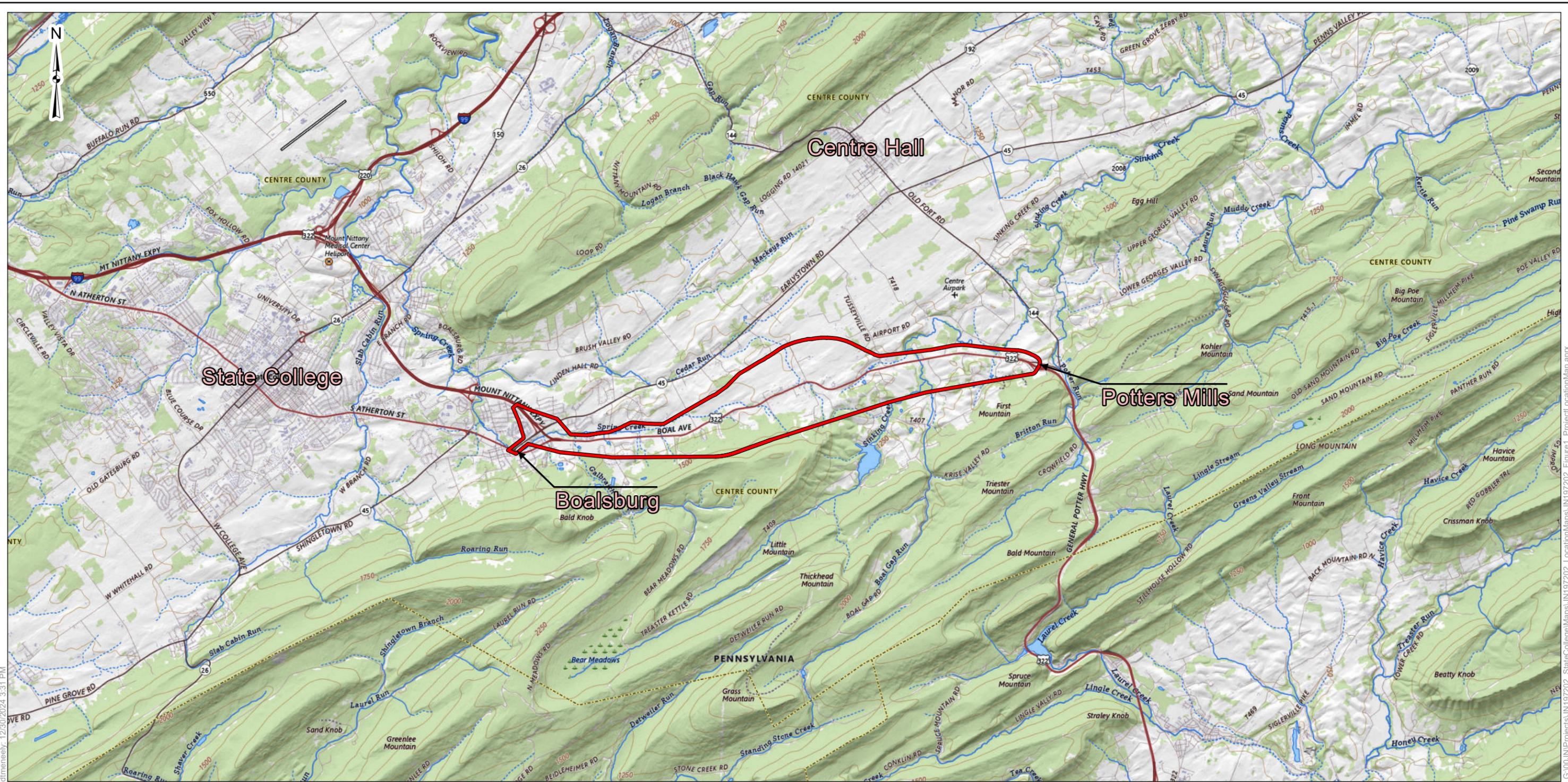
Emma Shuey, Field Scientist, Skelly and Loy, Inc., A Terracon Company

James A. Sinclair, Senior Scientist, Skelly and Loy, Inc., A Terracon Company

Paul DeAngelo, Senior Principal, Skelly and Loy, Inc., A Terracon Company

Samantha Hockenberry, Senior Scientist, Skelly and Loy, Inc., A Terracon Company

APPENDIX A - FIGURES



Legend
 Project Location

DATA SOURCE(S):
 USGS Quadrangle - Centre Hall and State College, Pennsylvania 2023



Project No.: JN197202
 Date: December 2024
 Drawn By: DTM
 Reviewed By: BSR

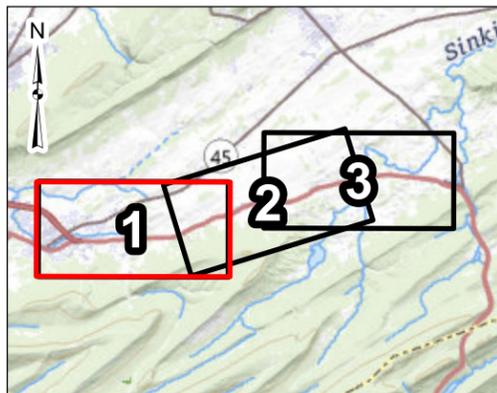
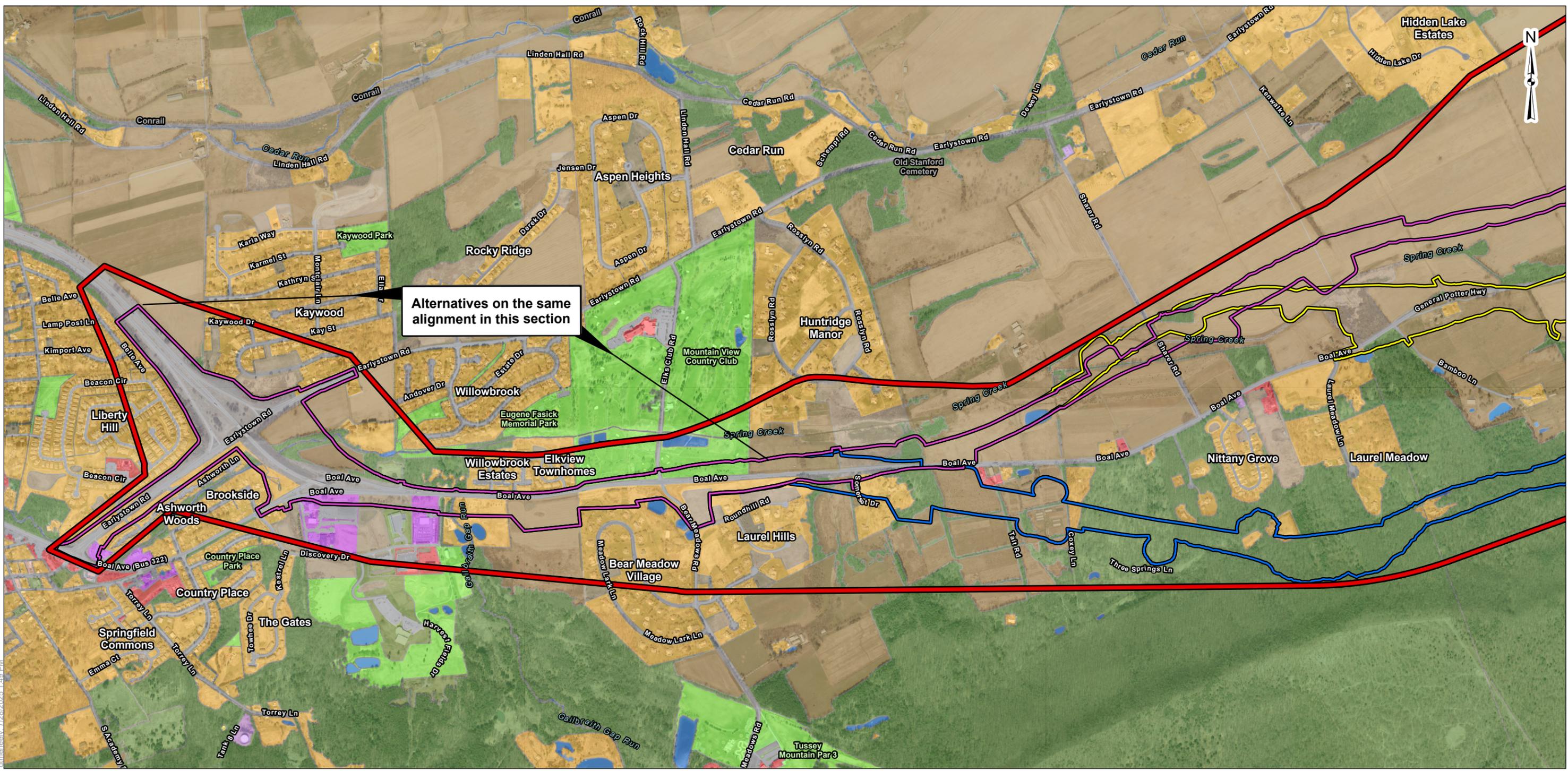
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Project Location Map
 State College Area Connector Project
 Centre County, Pennsylvania

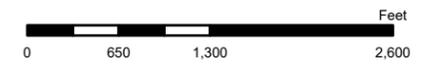
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Legend			
	Project Area		Residential
	North Alternative		Forests
	Central Alternative		Industrial
	South Alternative		Mixed Use
	Agriculture		Utility
	Commercial		Vacant Structure
	Public or Semi-Public		Vacant and Unused Land
	Recreation		Water



Project No.: JN197202
 Date: July 2025
 Drawn By: DTM
 Reviewed By: ARL

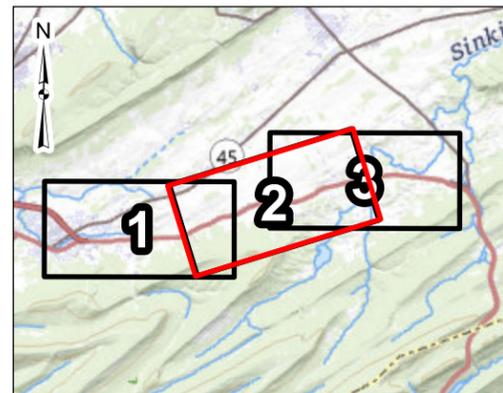
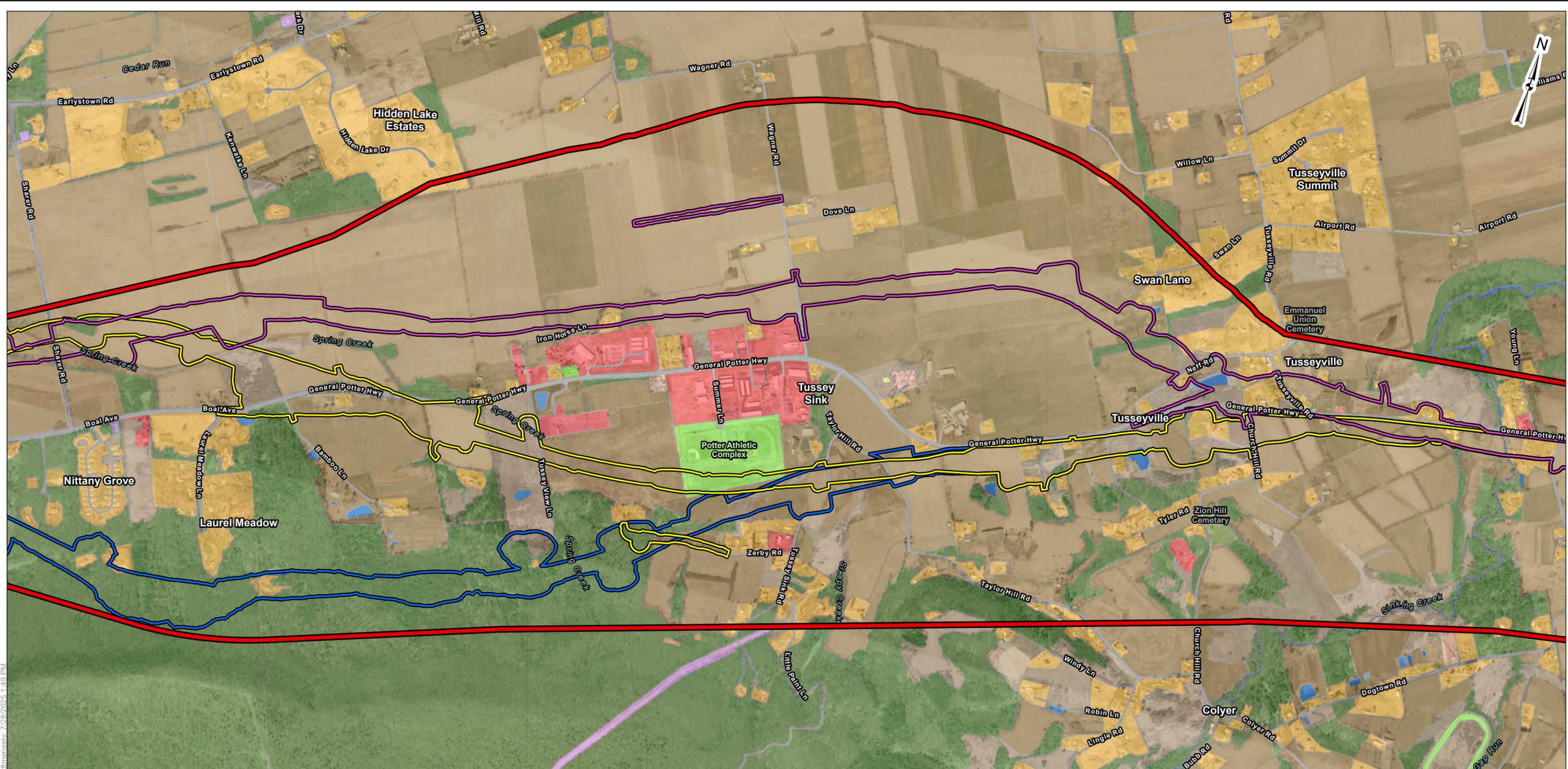
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Project Area Land Use
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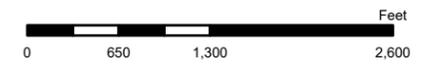
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Legend					
	Project Area		Communications		Transportation
	North Alternative		Forests		Utility
	Central Alternative		Mixed Use		Vacant and Unused Land
	South Alternative		Public or Semi-Public		Water
	Agriculture		Recreation		
	Commercial		Residential		



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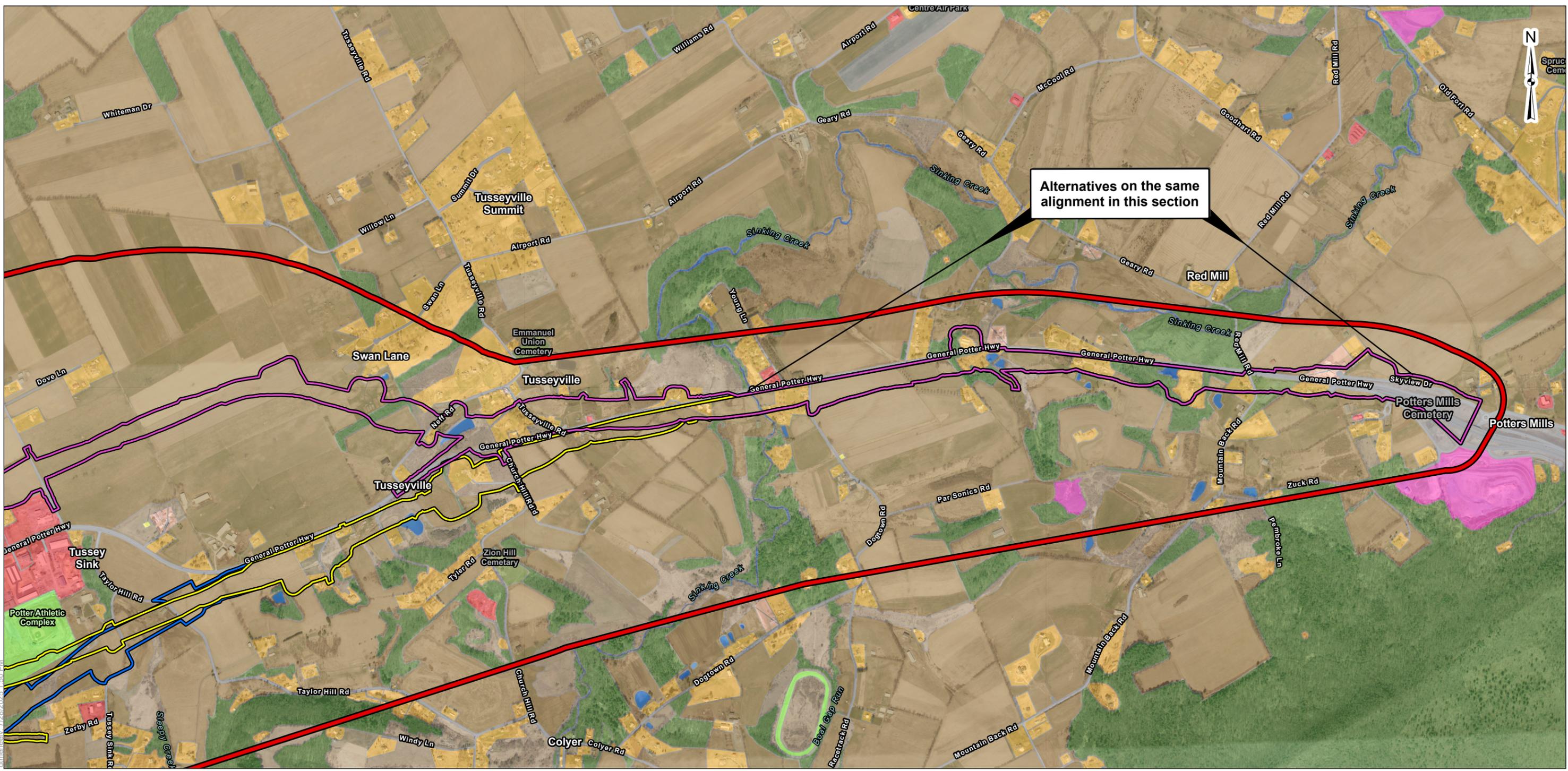
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Project Area Land Use
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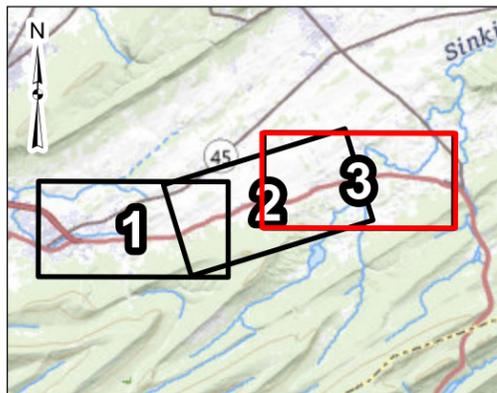
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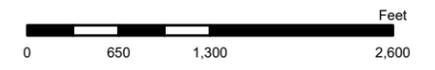
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Alternatives on the same alignment in this section



Legend			
	Project Area		Residential
	North Alternative		Forests
	Central Alternative		Mined Land
	South Alternative		Vacant and Unused Land
	Agriculture		Water
	Commercial		Recreation
	Communications		Transportation
	Forests		
	Mined Land		
	Mixed Use		
	Public or Semi-Public		



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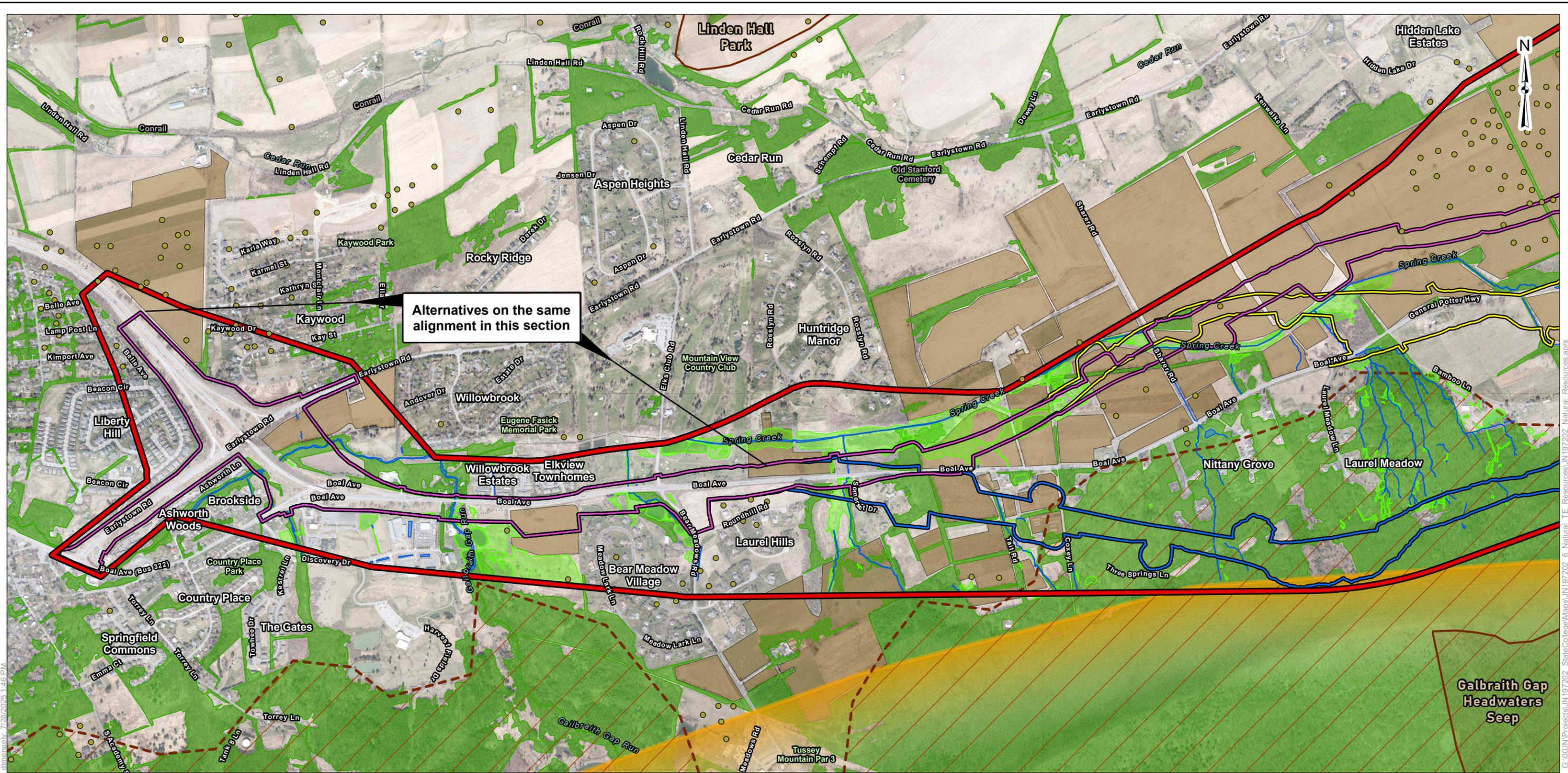
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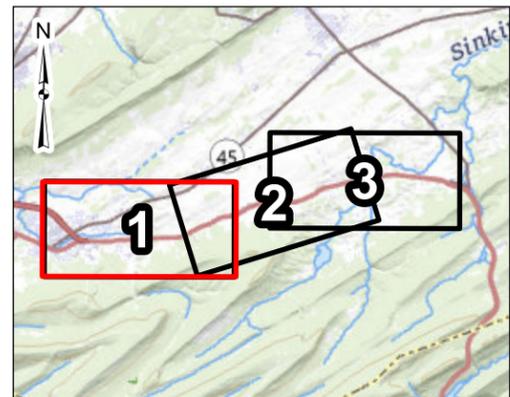
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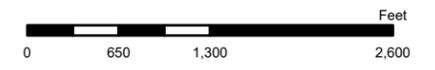
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Alternatives on the same alignment in this section



- Legend**
- Project Area
 - North Alternative
 - Central Alternative
 - South Alternative
 - Karst Geologic Area
 - Greater Tussey Mountain Important Bird Area
 - Rothrock State Forest (part) and Stone Mountain Important Bird Area
 - Pennsylvania Natural Heritage Core Habitat (with Map ID)
 - Watercourse
 - Wetland
 - Productive Agricultural Land
 - Forested/Wooded Habitat



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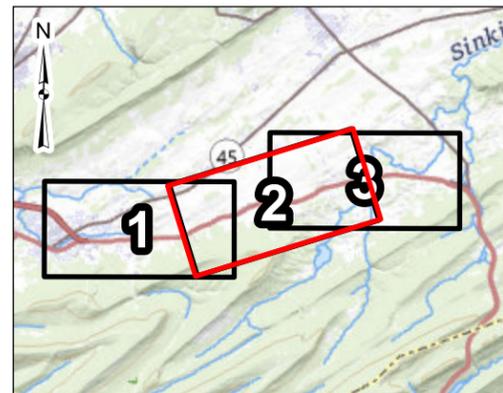
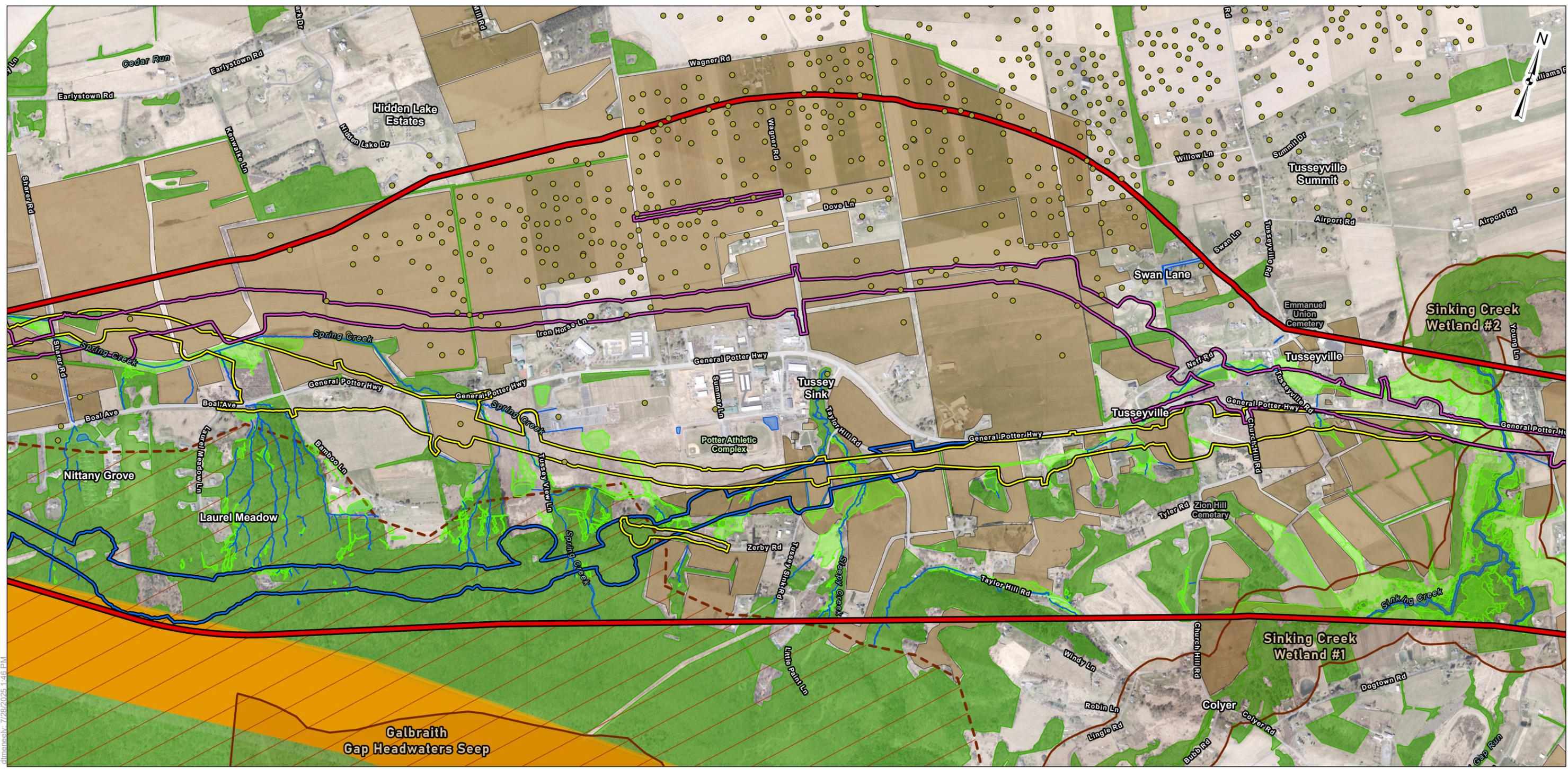
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Terrestrial Features
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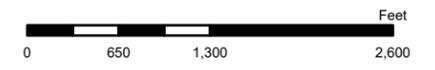
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- Legend**
- Project Area
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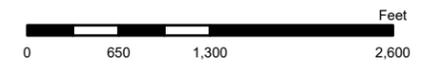
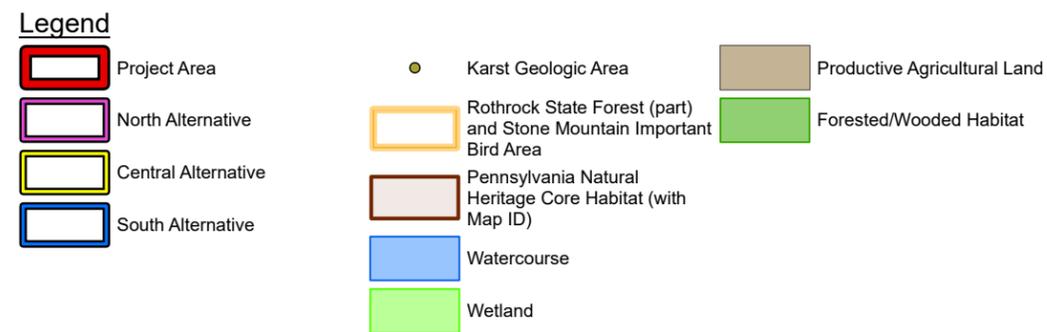
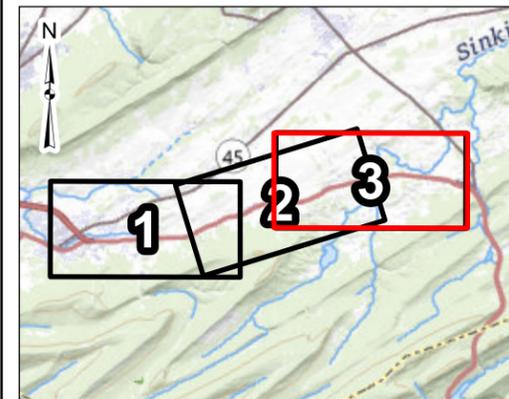
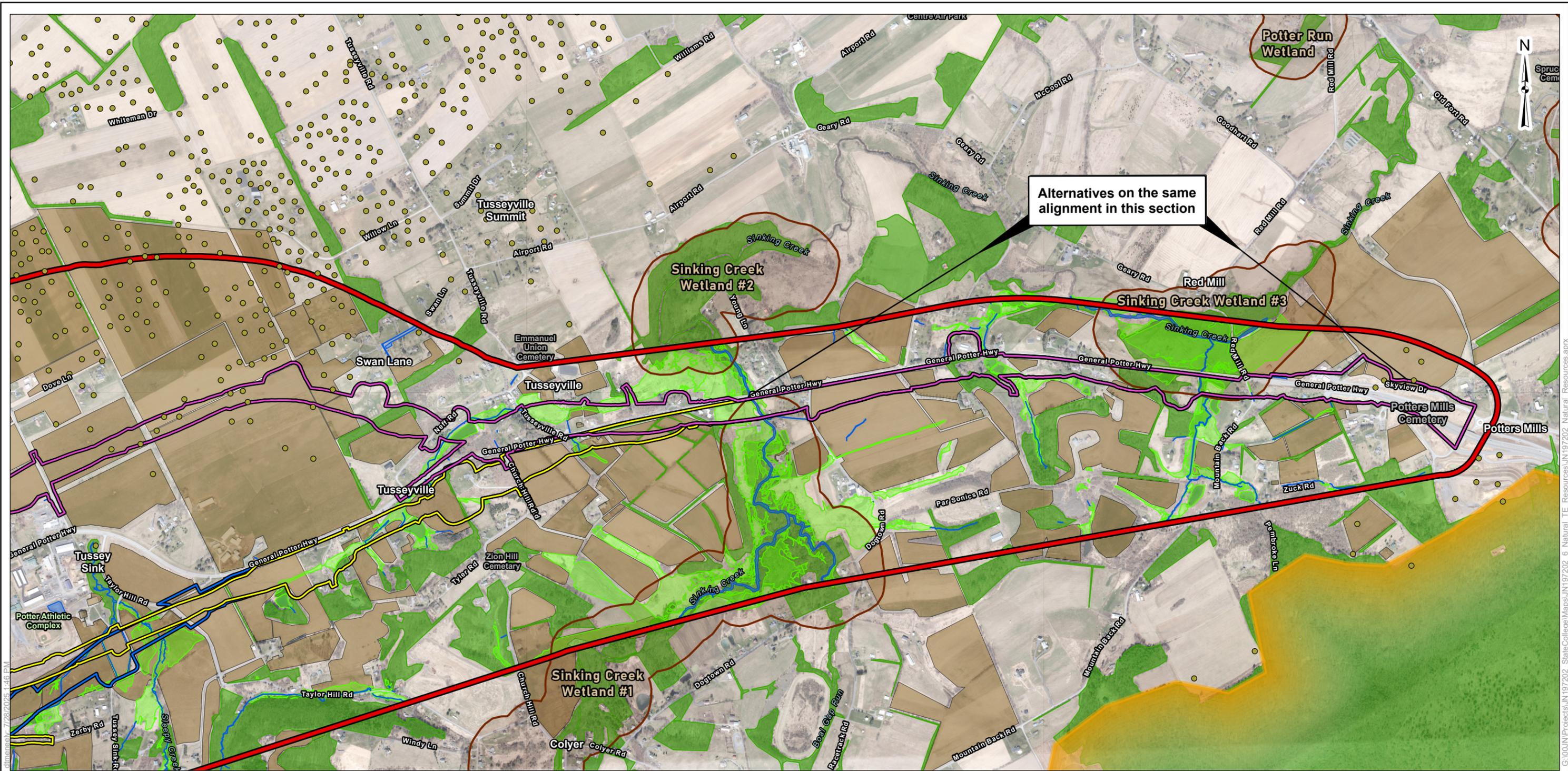
Terrestrial Features

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Figure 3
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APPENDIX B – REFERENCES

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 January 2025.
https://www.fws.gov/northeast/pafo/bald_eagle_map.html
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GIS Data Sources

Layer Name	Source	Date
Forested/Wooded Habitat	S&L	2024
State Forest	PASDA/DCNR	2025
Productive Agriculture Land	S&L	2025
Karst Geologic Areas	DCNR	2025
Important Bird Areas	National Audubon Society Open Data	2025
Natural Heritage Inventory	PNHP	2025