

Northeastern Pennsylvania Alliance

NEPA

PIKE COUNTY

SR 2001 / SECTION 405 ALTERNATIVES ANALYSIS



DECEMBER 2025

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EXECUTIVE SUMMARY

This report examines current conditions and recommendations for improving State Route 2001 (SR 2001) in Delaware Township, Pike County.

SR 2001 is functionally classified as a Minor Arterial providing connections for non-local through traffic within the interior of the county, connecting Milford, the county seat, with surrounding areas. SR 2001 runs roughly parallel to US 209, a roadway that – while state-owned – has been under regulatory control by the National Park Service (NPS) since 1983, and closed to commercial truck traffic due to concerns over safety and environmental protection of the Delaware Water Gap National Recreation Area. As such, SR 2001 accommodates a larger share of truck traffic (9%) than what would normally be expected to traverse this roadway. Addressing truck traffic is a top concern of Pike County and area stakeholders.



Over time, the Pennsylvania Department of Transportation (PennDOT) has improved various sections of SR 2001. In 2004, PennDOT completed the preliminary engineering for a proposed reconstruction of a section of SR 2001 from its southern terminus at US 209 near Bushkill to the intersection of SR 739 in Delaware Township. Upon completion of the preliminary engineering and environmental clearance, the reconstruction of SR 2001 was organized into three separate construction sections, as follows:

- **Section 401** began at the southern intersection with US 209 and extended north for approximately 4 miles near the intersection with Little Egypt Road. Final design and construction were completed for this section of SR 2001 by 2015.
- **Section 402** began at the end of Section 401 and extended north for approximately 5.5 miles to the intersection with Rockledge Road. Final design and construction were completed by 2023.
- **Section 405** (the focus of this report) included the remaining 4 miles of SR 2001 from the end of Section 402 to the intersection with SR 739, but did not continue with final design or construction.

Section 405 of SR 2001 remains largely unaddressed due to the challenges associated with the segment: narrow lanes and shoulders, elevation changes, and steep slopes on both sides.

SR 2001 has long been a priority for Pike County, as exemplified through how it has been emphasized in county and regional plans, and in testimony to the State Transportation Commission (STC). The roadway is actively addressed in local infrastructure discussions by the Pike County Road Task Force, as SR 2001 stands out among key road improvements being tracked.

The NEPA MPO conducted this study to explore ways to segment SR 2001 into smaller, more fundable project sizes.

At the regional level, the NEPA Metropolitan Planning Organization (MPO) is responsible for the planning and funding of transportation infrastructure and services within a four-county region that includes Carbon, Monroe, Schuylkill, and Pike. Despite substandard conditions on SR 2001, it has not been a high priority due to competing priorities across the MPO region's nearly 4,900 miles of roadway and 1,031 state-owned bridges. The federal government too has been placing more emphasis on asset management, particularly on the Interstate network, of which PennDOT District 4-0 has over 217 linear miles.

Current estimates for improving SR 2001 to an acceptable operating condition place improvement costs as ranging from \$56 to \$68 million, depending upon specific options chosen. In contrast, the MPO receives approximately \$49.1 million annually for its program. The MPO conducted this study to explore ways to segment the roadway into smaller, more fundable project sizes. This approach aims to make funding improvements more feasible over time.

Key Study Findings and Recommendations

The report addresses key findings and recommendations for addressing SR 2001:

1. **Community Priority:** SR 2001 has been a long-standing priority for Pike County, as documented in county comprehensive plans, regional long-range transportation plans, and in testimony to the State Transportation Commission (STC).
2. **Roadway Segmentation:** The MPO proposes organizing SR 2001 into distinct segments based on traffic patterns, crash data, and community needs. This segmentation allows for targeted improvements that can be prioritized and funded incrementally.
3. **Cost Analysis:** The estimated costs for each segment have been calculated, providing a clear picture of the financial requirements for each phase of the project. This breakdown enables the MPO to align project funding with its annual budget constraints.
4. **Safety Improvements:** The report highlights critical safety enhancements needed for SR 2001, including better signage, the diversion of truck traffic, and eventual reconstruction.

These improvements are essential for improving traffic operations, safety, and roadway conditions.

5. **Interim Projects:** Given the high cost of reconstructing SR 2001, the County and MPO will need to consider delivering interim projects to maintain safety and traffic operations until major reconstruction projects can be funded through the regional TIP. These interim projects are discussed in the following section.

Project Cost Estimates

The MPO's annual budget for roadway improvements is limited, making it crucial to prioritize projects that offer the most significant benefits for the community. The segmented approach to improving SR 2001 allows the MPO to allocate funds more effectively, ensuring that each phase of the project can be completed within the available budget. The report outlines a set of priorities for the corridor that begins with advancing lower-cost projects aimed at improving the intersection of SR 2001 and SR 2004, and diverting trucks from SR 2001 and onto alternative routes such as SR 402. These priorities are followed by more capital-intensive reconstruction projects, that also entail replacing the two bridges within Section 405 that span Hornbecks Creek and Dingmans Creek.



Estimated costs for each proposed project are depicted in the following tables.

Table ES-1: Low-Cost Minor Capital/Safety Improvement Projects

Priority	Description	Present Cost	Funding Eligibility
1	SR 402 Truck Routing Project		HSIP; STP
	Option A (Business 209/SR 1019)	\$10,520,000	
	Option B – Oak Grove Road	\$5,790,000	
2	SR 2001 / 2004 Intersection Advanced Warning Signing Project	\$43,000	HSIP; CRP

Table ES-2: Corridor Reconstruction Projects

Priority	Description	Present Cost	Future Cost	Funding Eligibility
3	Project #1 – SR 2001 Widening & Bridge Replacement (Hornbecks Creek)			
	ALT 1 (8%)	\$10,274,000	\$13,808,000	STP; BRIP; 581; 185/183
	ALT 2 (10%)	\$8,557,000	\$11,500,000	
4	Project #5 – SR 2001 Widening & Reconstruction (SR 2004 to SR 739)	\$15,498,000	\$20,829,000	STP; 581
5	Project #4 – SR 2001 / 2004 Intersection Improvements			
	4-Way Stop	\$6,365,000	\$8,555,000	HSIP; CRP
	Roundabout	\$6,785,000	\$9,119,000	
6	Project #2 – SR 2001 Widening & Reconstruction (T-314 to T-325)	\$12,786,000	\$17,184,000	STP; 581
7	Project #3 – SR 2001 Widening & Bridge Replacement (Dingmans Creek)			
	ALT 1 (8%)	\$22,675,000	\$30,474,000	STP; BRIP; 581; 185/183
	ALT 2 (10%)	\$12,553,000	\$16,871,000	
		Total Cost		
		LOW =	\$55,759,000	\$74,939,000
		HIGH =	\$68,018,000	\$91,414,000

KEY: 185/183 (Bridge Funding); 581 (Highway Capital Funding); BRIP (Bridge Formula Investment Program); CRP (Carbon Reduction Program); HSIP (Highway Safety Improvement Program); STP (Surface Transportation Block Grant Program)

Low-cost projects can be funded by a variety of funding types available to the MPO, including HSIP, STP, and CRP. The larger capital projects for reconstructing SR 2001 are eligible for funding through several funding programs in the region's TIP, most notably the Surface Transportation Program (STP), and the Bridge Formula Investment Program (BRIP). In addition to the formula programs noted in the preceding table, there are also various sources of grant funding that could be leveraged, including the Multimodal Transportation Fund (MTF) – available through PennDOT and the state Department of Economic Development's (DCED) Commonwealth Financing Authority (CFA) – and RAISE grants, which can be used for funding complete reconstruction of regionally significant arterials. PennDOT's Secretary of Transportation also has access to discretionary, or "spike" funding for special needs. The estimates and funding sources provide a strategic framework for the MPO to plan and implement improvements over several years, thereby facilitating the approval of funding for comprehensive enhancements to SR 2001.

Conclusion

The study report underscores the importance of addressing the safety concerns associated with SR 2001 while recognizing the financial constraints faced by the MPO. By segmenting the roadway into smaller projects, the MPO can make incremental improvements that enhance safety and benefit the local community. This approach ensures that the MPO will be able to balance regional priorities while ensuring that SR 2001 remains a vital and safe transportation route into the future.

INTRODUCTION

In 2004, the Pennsylvania Department of Transportation (PennDOT) completed the preliminary engineering for a proposed reconstruction of Section 405 of SR 2001 in Pike County from its southern terminus at US 209 near Bushkill to the intersection of SR 739 in Delaware Township. Upon completion of the preliminary engineering and environmental clearance, the reconstruction of SR 2001 was organized into three separate construction sections:

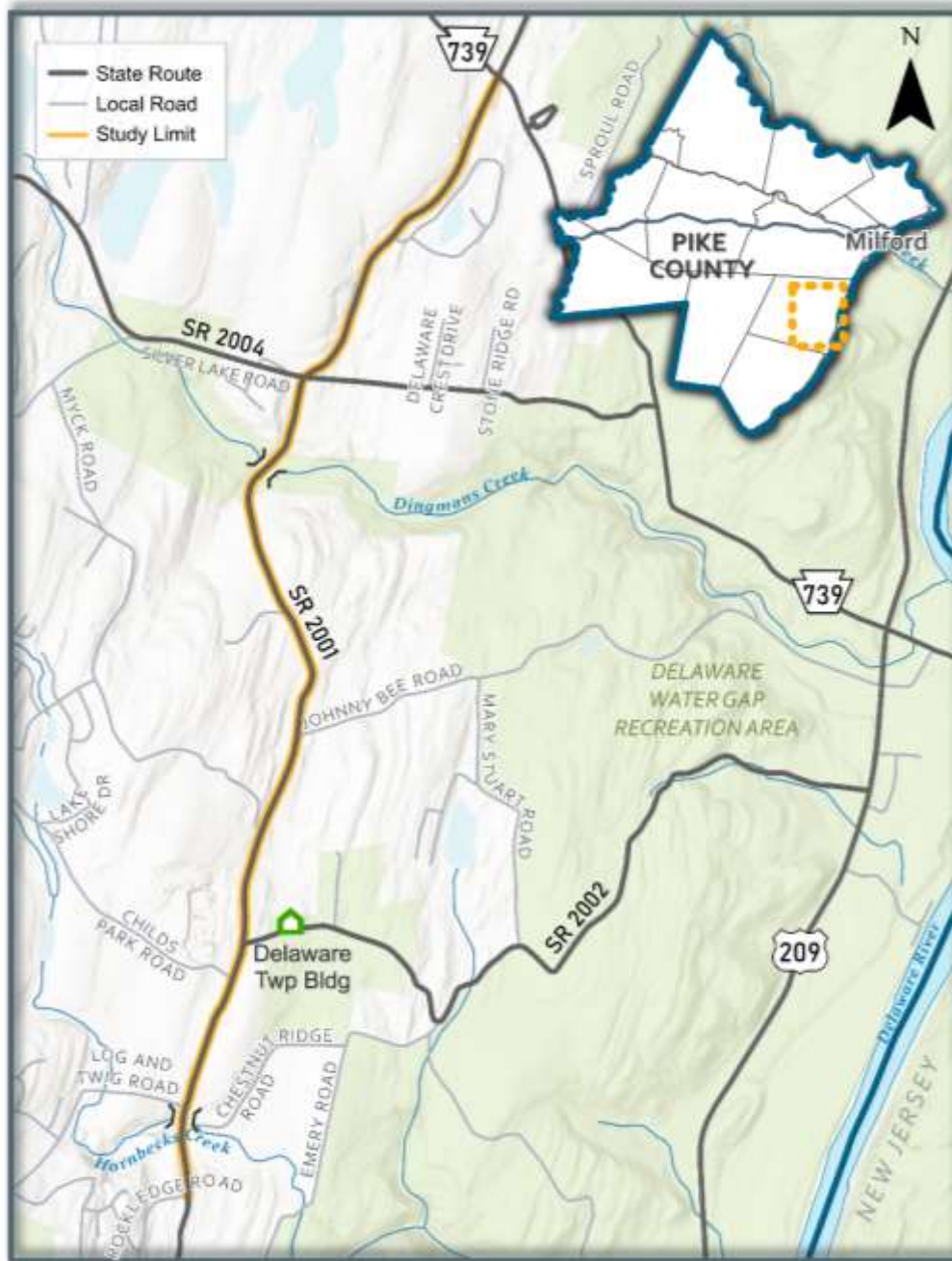
- Section 401 (MPMS 9396) began at the southern intersection with US 209 and extended north for approximately 4 miles near the intersection with Little Egypt Road. Final design and construction were completed for this section of SR 2001 by 2015.
- Section 402 (MPMS 9397) began at the end of Section 401 and extended north for approximately 5.5 miles to the intersection with Rockledge Road. Final design and construction were completed by 2023.
- Section 405 included the remaining 4 miles of SR 2001 from the end of Section 402 to the intersection with SR 739, but did not continue with final design or construction.

Due to the high cost for reconstructing Section 405, Pike County Commissioners met with PennDOT Transportation Secretary Mike Carroll in May 2024 to request planning funds to complete a study to assess SR 2001 and to consider alternatives which could include phasing or smaller, lower-cost improvements. PennDOT coordinated with the NEPA Metropolitan Planning Organization (MPO), and in July 2024 the MPO voted to approve an amendment to its work program with \$350,000 in Supplemental Planning funds to complete a study of the remaining section of SR 2001 to determine alternatives for needed improvements along the roadway.

Project Limits

The study corridor is defined by SR 2001 from the limit of construction of Section 402 near Rockledge Road as the southern limit to the intersection with SR 739 as the northern limit (Figure 1).

Figure 1: SR 2001 Section 405 Project Limits



State and Regional Transportation Funding Issues

Funding for transportation within Pennsylvania is a critical need for sustaining the economy and way of life. The state's Transportation Revenue Options Commission report (submitted in June 2021) was a high-profile initiative to broaden the state's revenue base for transportation, while the November 2021 passage of the Bipartisan Infrastructure Law (BIL) injected historic amounts of funding into Pennsylvania's transportation planning program. The federal law also created numerous grant programs for MPOs and communities to be able to obtain funding for transportation over and above standard formula funds.

Federal asset management requirements are also seeing PennDOT invest more heavily in its Interstate network, with an investment goal of \$1 billion annually by 2028. This shift has seen the Department move more resources away from the rest of the system and onto the Interstates, which, in the NEPA MPO region, carry more than 35 percent of the region's total traffic.

Additionally, PennDOT District 4-0, the District that provides engineering and maintenance/operations services for the study area, has 184 miles of Interstate (the most linear miles of any PennDOT District), 125 miles of which are over 50 years old. The District has also been focusing on driving down the number of Poor bridges Districtwide to a rate of nine to 10 percent. (In Pike County, the rate is currently 11 percent although rates are much higher in neighboring counties.)

This emphasis is reflected in the Transportation Improvement Program (TIP) of the NEPA MPO, which has been administering transportation funding for the four-county region since its inception in 2013.¹ The composition of the MPO's 2023 TIP was 40 percent bridges. The District runs Bridge Asset Management (BAMS) models and desires to move forward on scenario planning over time to help plan for future TIP updates.

For the 2025 program, the MPO was allotted a fair share highway/bridge base funding allocation of \$197.2 million. While this reflected a 60 percent increase over the 2023 program, it should be noted that many of the improvement needs or project types within the SR 2001 study corridor are not eligible for a few notable funding categories, such as the National Highway Performance Program (NHPP) or the Congestion Mitigation Air Quality (CMAQ) program.²

¹ The MPO region includes the four counties of Carbon, Monroe, Pike, and Schuylkill.

² Financial Guidance documentation released by PennDOT in May 2025 for the 2027 program indicates that the NEPA MPO region's base allocation for roadways and bridges will be \$196.4 million for FFY2027-30, or roughly \$49.1 million a year.

Prior to this study effort, initial PennDOT estimates for reconstructing the 4.14-mile Section 405 of SR 2001 to an acceptable operating condition was \$47 million for all phases, making it a very costly section. To put these estimated costs in perspective, the *entire MPO region* in 2025 was slated to receive \$47.7 million across all project types.

The MPO's current long-range transportation plan (LRTP) has reserved \$4.5 million for preliminary engineering for the corridor in 2029 or 2030 – a fraction of what is needed – and costs will continue to rise over time with inflation. No funding for construction has been identified, as of this writing.



SR 2001 CORRIDOR EXISTING CONDITIONS

A review of literature for the SR 2001 corridor was performed to identify how the roadway has been addressed in other plans, both addressing transportation (condition and performance), as well as surrounding land use and development, and its implications for the corridor’s future.

As one of the County’s top transportation priorities, Section 405 of the SR 2001 corridor has received much attention through planning studies and programs, such as the MPO’s Transportation Improvement Program and PennDOT’s 12-Year Program. The corridor has also been a priority subject in County and municipal plans.

A summary of this documentation is included within this section of the report.

Prior History: 40 Years of Priority

Improvements to SR 2001 has been a top priority of Pike County for many years, dating as far back as the late 1980s, when former Commissioner Margaret Mary Jonas testified to the State Transportation Commission (STC) as part of its biennial program update hearings.

The County has also maintained a countywide comprehensive plan over time with overall statements of the County’s strategic direction. These plans have also called out and cited SR 2001 as a priority for investment. This emphasis has continued to modern-day plans such as “Imagine Pike 2035,”³ as well as in regional transportation plans, such as the NEPA MPO’s 2050 Long-Range Transportation Plan (LRTP).



The County’s 1992 comprehensive plan highlighted SR 2001 as a corridor of concern, particularly its intersection with PA 739. The plan articulated a need for the County to pursue funding for studies of the major roadways serving the County’s growth areas, including SR 2001.

In 2006, the County’s updated comprehensive plan noted that “the Milford-Bushkill project impacts nearly half of the County’s population and is a main arterial for the traveling public. The final sections of this project, south of the SR2001/PA 739 intersection, need immediate attention and funding for implementation and construction.” The plan noted that SR 2001 served large residential communities, such as Birchwood Lakes, Wild Acres, and Pocono Mountain Water

³ Adopted October 16, 2024

Forest as major traffic generators. Other traffic generators affecting SR 2001 include businesses along PA 739, Silver Lake Road (SR 2004) and the Delaware Water Gap National Recreation Area, particularly the Childs Park Area.

Infrastructure Background

SR 2001 between Rockledge Road and PA 739 carries approximately 1,500 vehicles daily. PennDOT's Roadway Management System (RMS) cites that trucks comprise nine percent of this traffic. The roadway also includes two state-owned bridges (> 20 feet in length) as depicted in **Table 3**.

Table 3: Bridge Conditions along SR 2001 Section 405⁴

ID #	Feature Crossed	Overall Condition	Length	Deck Area (SF)	Year Built	ADT	Notes
29964	Dingmans Creek	Fair	35'	892.5	1939	1,405	Underwent rehabilitation in 2023
29963	Hornbecks Creek	Poor	29'	696.0	1936	944	Funds for preliminary engineering are programmed for FY 2027

TIP/TYP Projects

SR 2001 (Milford Road) Project History

In the 1990s, PennDOT developed a plan to reconstruct the SR 2001 corridor through Pike County in four individual sections. The first section was addressed in 1998, followed by the second section in April 2001 and the third (from 2 miles southwest of Minks Pond Road and the intersection with US 209) in July 2009. In the early 2000s, PennDOT explored the reconstruction of the final section in two parts with Section "4A" (from approximately 2.5 miles northeast of the intersection with Bushkill Falls Road [SR 2003] to one mile southwest of Wilson Hill Road [SR 2002]) completed in July 2015 and Section "4B" being resurfaced in July 2019. One final section of SR 2001 between Rockledge Road and PA 739 (also referred to as Section 405) remains to be addressed.

⁴ Traffic counts are being conducted by Pike County in collaboration with Monroe County, June 2025

TIP/TYP Programmed Projects

The NEPA MPO approved its four-year regional Transportation Improvement Program (TIP) for FY 2025-2028 in June 2024. Subsequently, the State Transportation Commission approved and adopted the 2025-2028 Statewide Transportation Improvement Program (STIP) and the broader 12-Year Program (TYP) through FY 2036 in August 2024.

The TYP in the NEPA MPO region includes a total of \$4.5 million in funds programmed for the preliminary engineering phase of the reconstruction of SR 2001 Section 405 in FY 2029. From the outset of this study, PennDOT's Engineering District 4-0 estimated engineering costs were at \$7 million to address critical aspects of project development such as environmental mitigation and clearance (e.g., Section 4(f) and 6(f) impacts), right-of-way acquisition, and utility coordination. Construction costs were estimated at around \$40 million to upgrade the roadway under current design standards (e.g., 12-foot lanes, 8-foot shoulders, replacing two bridges, improving drainage).⁵

At this time, no additional funding has been programmed for future project phases, including final design and construction. Identifying and securing funding for work beyond preliminary engineering continues to be a challenge as asset management principles and federal funding priorities have shifted since the project's inception during the 1990s. Understanding this limited funding environment, Pike County, the NEPA MPO, and PennDOT are committed to exploring additional low-cost improvement strategies to increase safety along the corridor.

In addition to the funds programmed for the corridor's reconstruction, the region's TIP has \$100,000 in state and federal funding programmed for the preliminary engineering phase of the rehabilitation/replacement of the SR 2001 bridge over Hornbecks Creek in FY 2027 (**Figure 2**).



Figure 2: Hornbecks Creek bridge

Current and Forthcoming PennDOT Maintenance Activities

In 2023, maintenance crews seal coated the study corridor to help preserve the pavement until funding becomes available for further phases of the reconstruction projects. In the fall of 2024, the

⁵ Current costs for these projects are estimated to range between \$55.8 and \$68.0 million including engineering costs.

PennDOT District 4-4 county maintenance team addressed drainage concerns near the intersection of SR 2001 and SR 2004 (Silver Lake Road near Sisters' Deli and Convenience Store). This work would reduce safety risk in the wintertime by addressing icy, slippery travel conditions. Additionally, District 4-4 maintenance forces are currently working through design and environmental clearance to complete new guiderail installation, tree canopy daylighting / tree removals, and placing rock protection between Rockledge Road and Chestnut Ridge Road (T-323) to correct slope erosion.

Other Planning Documentation

[NEPA MPO 2050 Long-Range Transportation Plan \(2024\)](#)

The NEPA MPO adopted its 2050 Long-Range Transportation Plan (LRTP) in January 2024. The plan serves as a blueprint to guide transportation planning, programming, and decision-making in Carbon, Monroe, Pike, and Schuylkill counties. Through the LRTP's public engagement process, several concerns were raised from Pike County residents regarding the condition and truck traffic volumes on SR 2001 and the desire to find funding to address corridor deficiencies.

[Imagine Pike 2035 Comprehensive Plan \(2024\)](#)

Pike County recently completed an update of its Comprehensive Plan, titled *Imagine Pike 2035*. The plan addresses five core focus areas including Natural Resources and Recreation, Transportation, Housing, Community Development, and Infrastructure and Utilities. Pike County adopted the plan in October 2024.

Under the plan's Transportation focus area, *Imagine Pike 2035* recommends the County maintain and enhance its existing transportation system. A priority action item in this recommendation includes addressing the reconstruction improvement needs on SR 2001 and PA 739. While not specific to SR 2001, results from the plan's public survey also revealed that "repairing roads and bridges" is also a top priority for Pike County's residents and local communities.

[Delaware Township Comprehensive Plan \(2024\)](#)

Delaware Township updated its comprehensive plan in 2024, which outlines a series of objectives specific to the areas of land use, natural resource protection, energy conservation and sustainability, housing, economic development, community facilities, parks/recreation and open space, cultural resources, and transportation.

Addressing traffic concerns along SR 2001 between PA 739 and Rockledge Road has been a top priority for Delaware Township since 1986. This high priority designation has come from long-standing concerns related to high truck traffic volumes due to commercial vehicle restrictions on

US 209 as well as narrow roadway widths with little shoulder and the area's topography which has resulted in a roadway that features steep grades and sharp curves.

Other concerns and observations documented in the plan related to SR 2001 include:

- Safety and access concerns entering/exiting the Sisters' Corner Deli and Convenience Store parking lot at the intersection of SR 2001 (Milford Road) and SR 2004 (Silver Lake Road)
- SR 2001 (along with PA 739 and Silver Lake Road) are known for their "scenic views and vantage points revealing the Township's natural qualities," making it a draw for travelers.
- The corridor provides access to the Township's municipal complex.
- The Land Use plan outlines an objective to establish PA 739 as the Township's primary commercial corridor, which may have an impact on the function and performance of SR 2001.

The plan's transportation section includes a listing of priority issues and recommendations that the Township aims to implement over the life of the plan. This includes a strategy to "communicate with Pike County and PennDOT about desired improvements to state roads in the Township" and to "Lobby Pike County and PennDOT to include in their planned reconstruction of Routes 2001 and 739, and intersection improvements at PA 739 and Silver Lake Road, and PA 739 and Doolan Road."

Land Use and Development

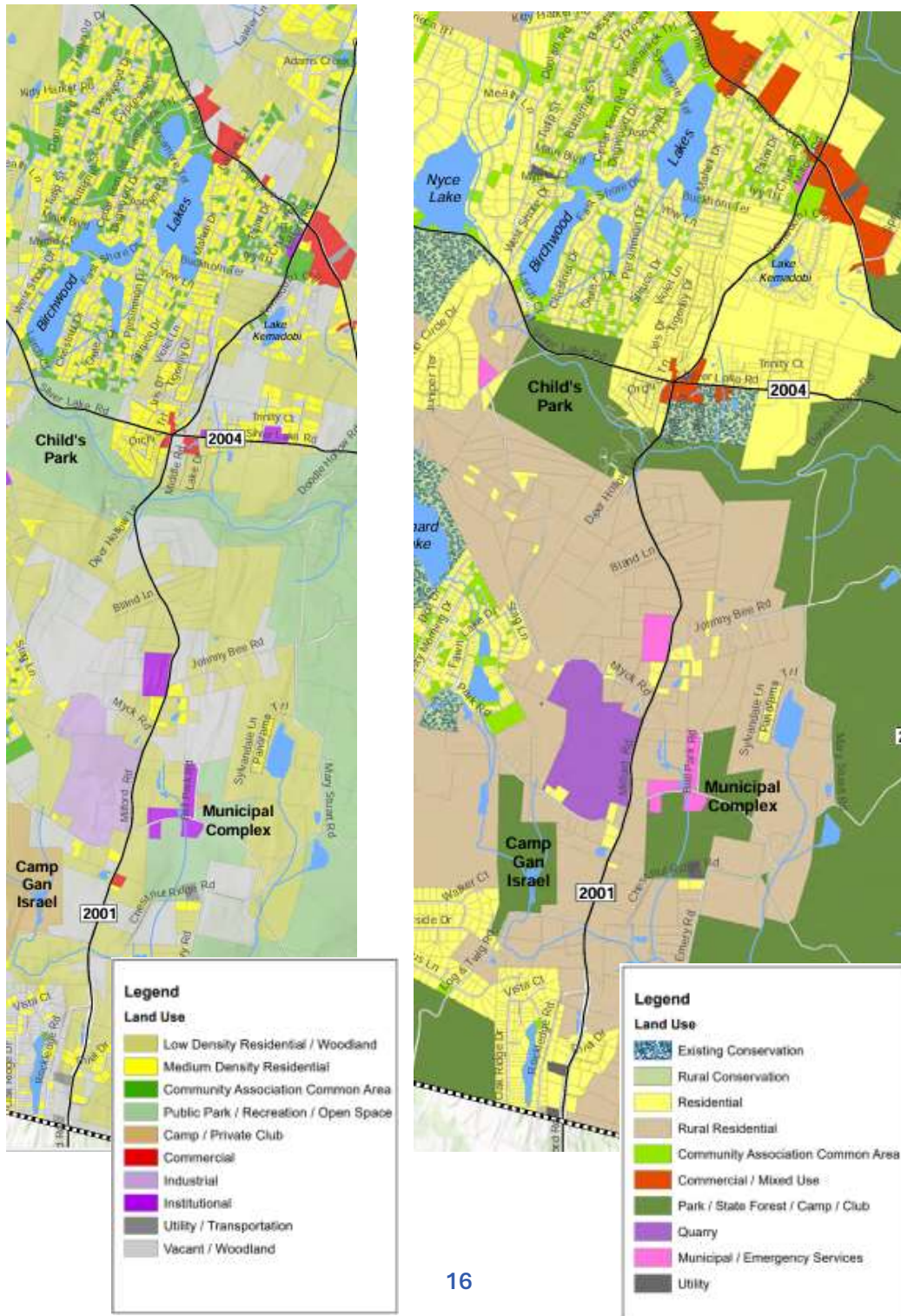
[Delaware Township Comprehensive Plan \(2024\)](#)

As documented in the 2020 Census, Delaware Township is home to 7,453 residents. Historical population trends for the township mirror that of Pike County overall, with the township experiencing significant increases during the 1970s (122.4% growth) and 1980s (136.4% growth). Growth continues to occur; however, at a much slower rate since 2010. The comprehensive plan's demographic analysis indicates that Delaware Township has experienced 0.8% growth between 2010-2020. In terms of future growth, population projections reveal that the township's population is expected grow by 26% to a total of 10,156 people by 2040.

Existing land uses along the study corridor (**Figure 3**) largely consists of low density residential/woodland and vacant/woodland parcels to the south. The Dingmans Ferry Stone Quarry is reflected as the primary industrial use between Park and Myck Roads. There are several areas of commercial use near the corridor's intersections with SR 2004 (Silver Lake Road) and the eastern quadrants of the intersection with PA 739. Medium-density residential uses become more frequent along the corridor between SR 2004 (Silver Lake Road) and PA 739. The plan's future land use

mapping shows the corridor continuing to have a largely “rural residential” character south of SR 2004, with additional residential and commercial buildout between the intersections with SR 2004 and PA 739. The plan’s potential build-out analysis results found much of the study corridor having “rural residential” build-out potential under the township’s current land use policies and ordinances.

Figure 3: Current (Left) and Future Land Use



Delaware Township Zoning Ordinance and Map (2013)

From a zoning perspective, most of the land abutting the study corridor is zoned as “rural residential,” which allows for the primary uses of agriculture, cemeteries, camps, home day care, government facilities, greenhouses/nurseries, parks, places of worship, professional offices, public libraries, fire protection and ambulance services, single-family dwellings, and private community structures. The intent of this district is designed to allow for a broad range of uses that are compatible to the township’s rural character, provide for a variety of housing types to meet the needs of all social and income groups, and to provide for environmental and community protection through the conditional use and special exception processes. As noted above, the Dingmans Ferry Stone Quarry is zoned in the township’s Quarry district. Traveling north, the township’s zoning allows for higher density residential uses where there are currently several private lakefront communities (e.g., Birchwood Lakes). Additionally, commercial zoning is in place at the corridor’s intersections with SR 2004 and PA 739.

Imagine Pike 2035 Comprehensive Plan (2024)

Imagine Pike 2035 notes that the most recent land use map for the County was developed in 2008 and provides the recommendation that the map be updated. However, the plan includes zoning district mapping from Pike County GIS, which also shows the study corridor within a larger “rural residential” district.

In addition to aggregated zoning, *Imagine Pike 2035* also delineates “character areas” to help guide land use, growth, and resource preservation in the County over the next 10 years. These include:

- **Growth Areas:** Areas to be prioritized for infrastructure upgrades, future development, and infill development.
- **Enhancement Areas:** Areas in need of ongoing investment to maintain their existing character.
- **Rural Resource Areas:** Areas to be prioritized for protection and not developed; any development should be low-impact and sensitive to surrounding environmental/natural features.

While the land directly abutting the study corridor falls within a Rural Resource Area, several growth and enhancement areas have been designated nearby. An “innovation center” growth area has been designated in the northeast quadrant of the intersection of SR 2001 and PA 739, which extends to the west along PA 739 and to the north into Dingman Township. The “innovation center” designation is designed for future growth at higher densities and are deemed appropriate for economic development activity. The enhancement areas are located in existing residential

communities with existing sewer infrastructure. To the south of the study area, enhancement areas and “innovation center” growth areas abut the corridor in neighboring Lehman Township.

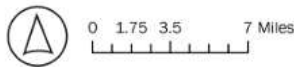
The County’s character areas are shown in **Figure 4**.

Figure 4: Imagine Pike 2035 Character Areas

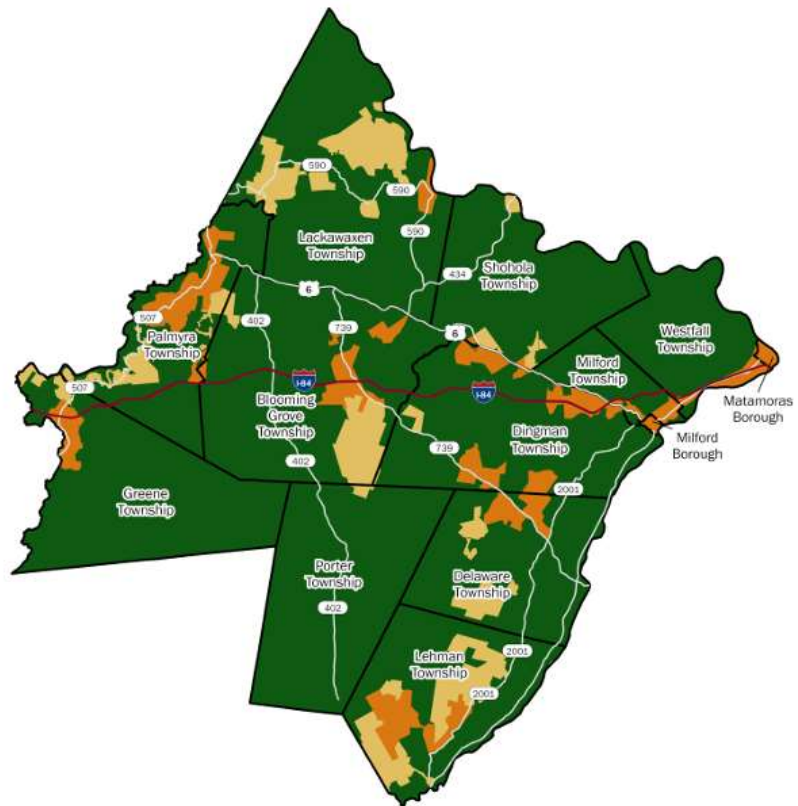
Figure 47: Character Area Group Categories Map

- Growth Areas
- Enhancement Areas
- Rural Resource Areas

Note: There may be sensitive environmental features and water quality considerations that would prohibit development or redevelopment in portions of the Growth Areas on this map.



Source: Michael Baker International (2024)



STAKEHOLDER INTERVIEWS

The project team conducted interviews with the following stakeholders:

- **Delaware Township** – Township officials cited concerns with SR 2001’s offset intersection with Silver Lake Road (SR 2004). Several concerns were raised, including drainage problems, placement of signage, and sight distances (looking right from the northbound approach). An area business at the corner of the intersection also has concerns with any potential improvements encroaching upon its available parking area (particularly with an “innovative intersection” option, or a roundabout).

North of the intersection, it was noted that the public tends to avoid the segment of SR 2001 between Silver Lake Road and PA 739 due to narrow lane widths. Drainage issues have led to hydroplaning and instances of larger commercial vehicle over tracking into the opposite lane. With truck traffic prohibited on US 209 (a route parallel to SR 2001), there is a need for SR 2001 to be better able to accommodate commercial vehicles.



- **Delaware Valley School District** – Officials from the school district noted that the roadway is in need of rehabilitation. The roadway is very narrow for school buses and roadway markings are not always prominent. Buses are long, and require 500 feet on each side of intersection approaches for safe sight distance. Narrow shoulders and low bearing trees and branches are also a risk to school-related traffic. Officials also cited poor drainage as a concern, especially in the wintertime when it freezes over. The school district has three buses that use SR 2001 daily. The District is open to detouring SR 2001 but would need advance notice of detour implementations so the administration can plan for the time when the roadway is closed for repairs or reconstruction.



- **National Park Service** – The project team met with representatives from the NPS to discuss a wide range of issues involving the SR 2001 corridor. The NPS emphasized that there are no commercial vehicles permitted on US 209 unless they are servicing the NPS. The NPS cited commercial vehicle legislation that allows commercial vehicles to use US 209 after purchasing a permit, but that provision expires in 2026. US 209 was transferred from PennDOT to NPS to reduce tractor trailer traffic.

EXISTING AND FUTURE TRAFFIC DEMAND

Traffic and transportation data was collected and analyzed to establish a baseline of existing traffic conditions and patterns within the study area.

Functional Classification

Roadway functional classifications help define the role a corridor plays in the larger roadway network based on their level of mobility and access to adjacent land uses. Within the study limits of Section 405, the SR 2001 corridor is federally classified as a minor arterial highway, carrying high traffic volumes and providing connections to and from US 209 and Milford Borough.

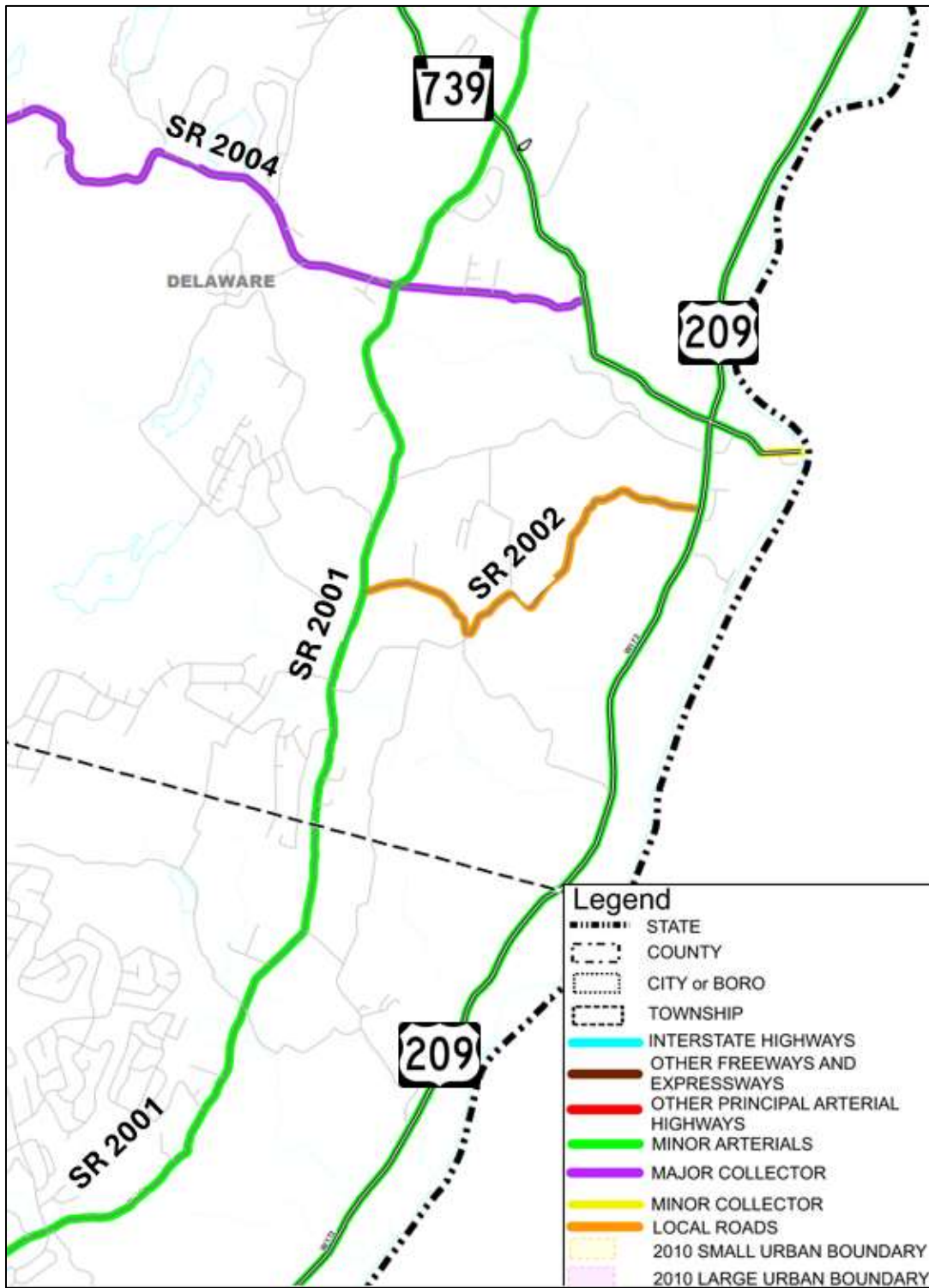
The roadways intersecting with the study corridor consist of both lower-order, state-owned roadways as well as local, township-owned roadways. In terms of classification, SR 739 is considered a minor arterial roadway and Silver Lake Road (SR 2004) is considered a major collector, which is designed to route traffic from local roadways onto arterial routes such as SR 2001 and SR 739. While labeled as a state route, Wilson Hill Road (SR 2002) is functionally classified as a local road

It should be noted that many of the study area roadways, including SR 2001, were recently reclassified as part of a comprehensive Functional Classification review conducted by the NEPA MPO. Previously, SR 2001 and SR 739 were Major Collectors and became Minor Arterials. SR 2004 was a Minor Collector and became a Major Collector and was added to the Federal Aid System. FHWA final approved these changes in late 2023.⁶

Figure 5 shows the functional classification of state-owned roadways within the study area.

⁶ These distinctions are important as the study process entails proposed design exceptions for SR 2001 based on its current classification, which only recently changed.

Figure 5: Functional Classification



Source: PennDOT Federal Functional Classification Map

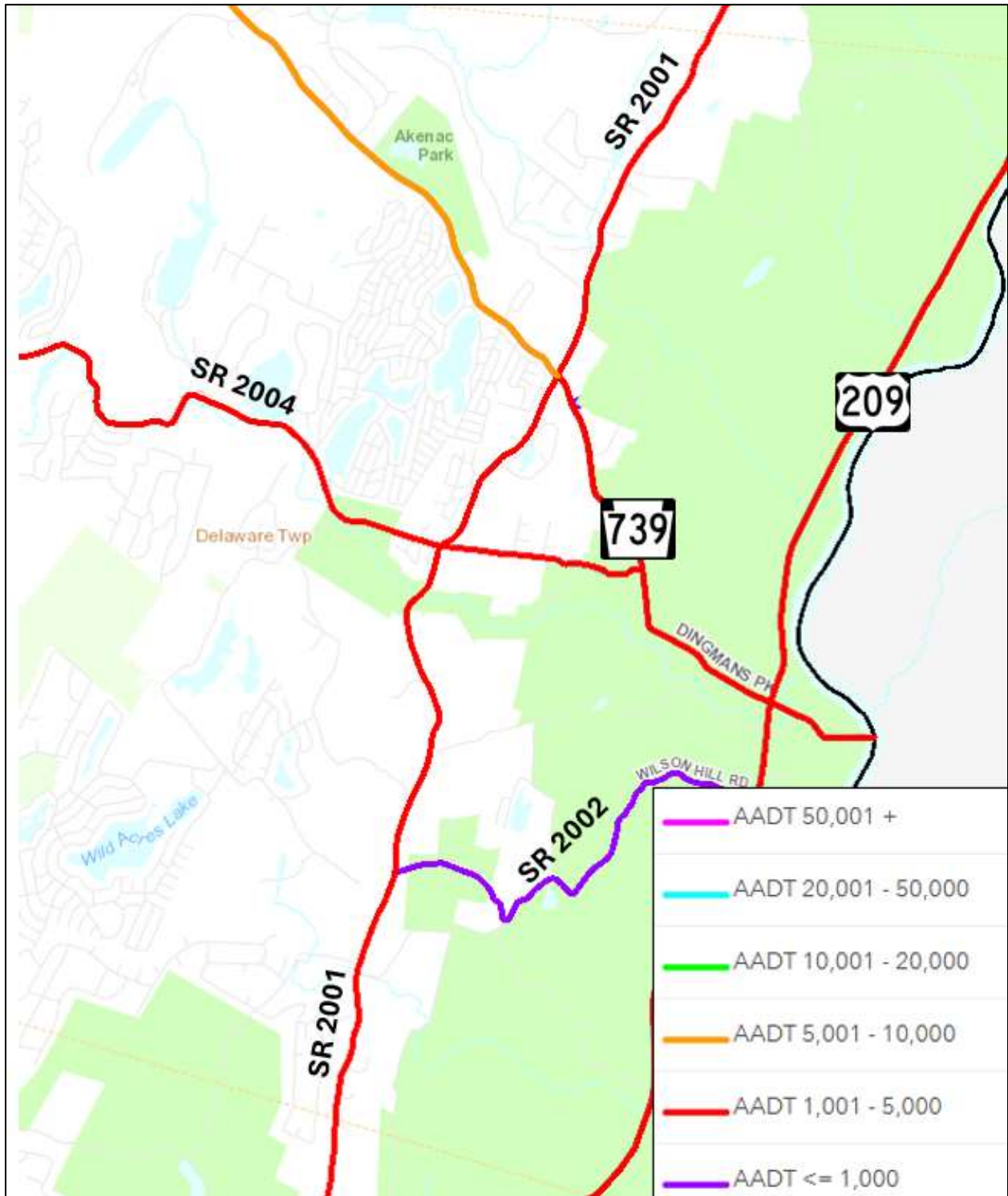
Traffic Volumes and Speed Limits

Within the Section 405 study area, the average daily traffic (ADT) volumes along SR 2001 range from 1,200-3,200+ vehicles per day, with the northern portion of the study corridor (between SR 2004 and SR 739) experiencing the highest daily traffic volumes. Heavy vehicle percentages along the corridor range from 4-9%, with the highest proportion of heavy vehicles located along the section between SR 2002 and SR 2004. The corridor has a posted speed limit of 35 MPH.

Of the intersecting roadways along the corridor, SR 739 experiences the highest amount of daily traffic, with ADTs of approximately 5,000+ vehicles per day. Other routes, like SR 2004 and SR 2002 accommodate 1,000-3,000 vehicles daily.

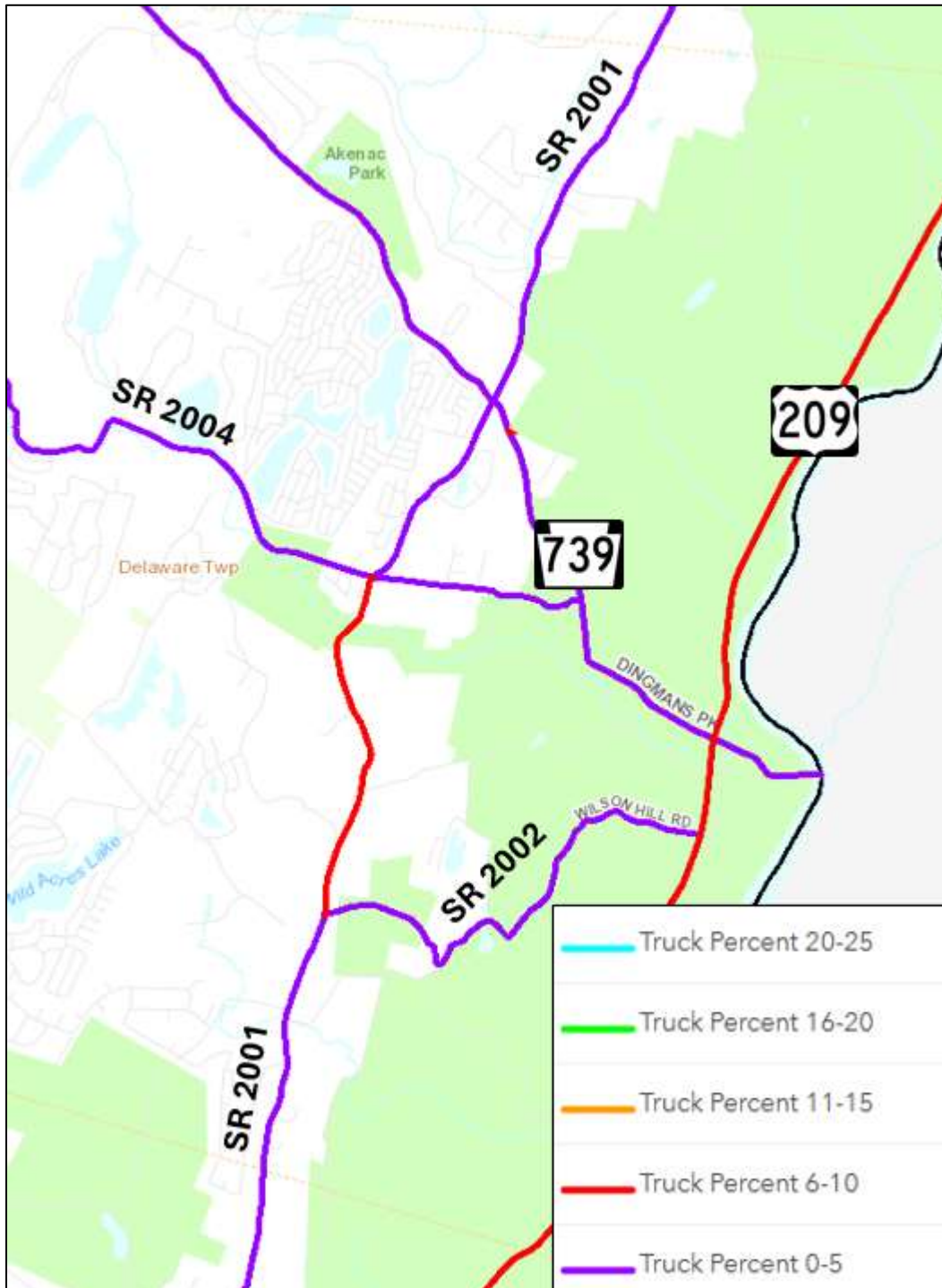
AADT figures are provided in **Figure 6**, while heavy vehicle percentages are provided in **Figure 7**.

Figure 6: Average Daily Traffic



Source: PennDOT Traffic Information Repository (TIRE)

Figure 7: Heavy Vehicle Percentages



Source: PennDOT Traffic Information Repository (TIRe)

Natural, Historical and Cultural Resources

Online databases were queried to provide cursory site context for each of the following topics.

Recreational Resources

Databases were utilized to identify recreational resources within 150 feet of the project area (see Aerial Map for the buffer). These websites included the Pennsylvania Department of Transportation's (PennDOT) One Map, the Pennsylvania Department of Environmental Protection's (PADEP's) eMapPA, and the Pennsylvania Department of Conservation and Natural Resources (DCNR's) Explore PA Local Parks.

One recreational resource was identified within the buffer distance of 150 feet. Delaware Water Gap National Recreation Area crosses the study area along Dingmans Creek at Deep Hollow Lane. The Delaware Water Gap National Recreation Area is a 70,000-acre national recreation area administered by the National Park Service in northwest New Jersey and northeast Pennsylvania, that follows along the Delaware River. This recreational area received funding from the Land and Water Conservation Fund (LWCF) in 1974 and 1979 within the project study area and is both a Section 4(f) resource and Section 6(f) resource. Further coordination under Section 4(f) and Section 6(f) should be anticipated for any impacts to the Delaware Water Gap National Recreation Area.

No other protected federal lands, state parks, state game lands, state forests, conservancies, DCNR Trails, Rails to Trails, United States Bike Routes, Pennsylvania Bike Routes, or local parks were identified within the buffer distance of 150 feet (see Appendix I1-3).

Water Resources

Waterways

The project is located within the Upper Delaware River watershed; Hydrologic Unit Code (HUC) 8 watershed. Runoff within the study area would ultimately drain to the Delaware River. A desktop review of the PADEP's eMapPA, PennDOT's One Map, and the Pennsylvania Fish and Boat Commission's (PFBC's) Trout Stream Geographic Information System (GIS) portal identified three waterways within the study area. Additionally, these sites identified multiple unnamed tributaries surrounding the study area.

Dingmans Creek flows east through the study area just north of Deep Hollow Lane, while Hornbecks Creek flows east in the southern terminus of the study area. Additionally, an unnamed tributary (Trib 20788) of Dingmans Creek flows adjacent to Deep Hollow Lane and SR 2001. These waterways ultimately drain into the Delaware River, approximately 2 miles east of the study area. The PADEP has designated each of these as a high quality-cold water fishery with migratory fish (HQ-CWF, MF). Antidegradation Best Available Combination of Technologies (ABACT) measures may be required for Erosion and Sediment Control and Stormwater Management requirements.

None of these waterways are designated as Exceptional Value (EV) waters, United States Army Corps of Engineers (USACE) or Coast Guard-designated navigable waterways, or federal or state scenic rivers. Dingmans Creek and Hornbecks Creek are classified by the PFBC as Wild Trout streams that support the natural reproduction of trout. Wild Trout streams require an in-stream construction restriction from October 1st through December 31st. All tributaries to Wild Trout streams, including Tributary 20788 within the vicinity of the project area, are subject to the in-stream restriction as well. Additionally, Dingmans Creek is designated as a Stocked Trout stream within the vicinity of the project area between the limits of Deer Leap Falls and Dingmans Falls. Stocked Trout streams require an in-stream construction restriction from February 15th through June 1st.

Wetlands

A review of the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) identified two freshwater (palustrine) forested wetlands within the buffer distance of 150 feet from the project area. The NWI shows a large assortment of freshwater (palustrine) forested and freshwater (palustrine) emergent wetlands surrounding the project area. In addition to the wetlands identified on the NWI, a review of aerial imagery shows a high potential for other previously unidentified wetlands within the study area.

A review of the Natural Resources Conservation Service (NRCS) Web Soil Survey for Pike County identified soils with moderate, minor, and non-hydric components within the study area.

It is recommended that a wetland professional perform a wetland and waterway identification and delineation via field view and further desktop analysis.

Floodplains

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map, the study area is mainly mapped within Zone X (unshaded) (Area of Minimal Flood Hazard). However, the areas located along Dingmans Creek and Hornbecks Creek are within Zone A (1 percent annual chance floodplain).

Hazardous Waste

Databases were queried to identify potential Recognized Environmental Conditions (RECs), underground and aboveground storage tanks, Envirofacts facilities, and other relevant release data within the study area. The term REC is used to identify properties with certain types of releases or potential for environmental impairment. The databases queried included PennDOT's One Map, PADEP's eMapPA, PADEP's Environmental Site Assessment (ESA) Search, and the Environmental Protection Agency's (EPA's) NEPAssist site.

Starting at the northern end of the study area, three active underground storage tanks are located within the buffer of 150 feet at Arnold's Country Mini Mart at the intersection of Route 739 and SR 2001. These consist of two 8,000-gallon gasoline tanks, and a 2,000-gallon diesel tank. Additionally, one Land Recycling Cleanup Location that affected groundwater and soil is located along the border of the buffer in a residential property at the intersection of Silver Lake Road and SR 2001.

Wrenches Garage, an automobile garage and towing business, is located at the intersection of SR 2001 and Route 739 within the project area. Additionally, a previously used automobile repair shop is located approximately 0.13 miles south of Park Road along SR 2001. As automobile repair and service locations, there is a possibility of contamination from previous hazardous waste leaks from routine automobile maintenance and repair. Several hazardous waste facilities, including three Land Recycling Cleanup Locations, one inactive underground storage tank, one air pollution facility, and one active quarry were identified in the project vicinity, but not within the 150-foot buffer (see Appendix I4-6).

Section 106

Above-Ground Properties

A review of the Pennsylvania State Historic Preservation Office's (PA SHPO) Pennsylvania State Historic and Archaeological Resource Exchange (PA-SHARE) identified 18 previously recorded, aboveground, historic-age (> 50 years) properties within the project corridor. Of those, all 18 have been determined to be not eligible for the National Register of Historic Places (NRHP) (**Table 4**).

Table 4 - Previously Recorded Aboveground Properties within the Project Corridor

ID Number	Type	Name	Address	NRHP Status
2002RE02864	Aboveground Resource	Arnold Property	Route 739/SR 2001	Not Eligible
2002RE00673	Aboveground Resource	Bethany & Dingmans Choice Turnpike	Route 739	Not Eligible
2002RE02284	Aboveground Resource	Boyle Property	SR 2001	Not Eligible
2002RE02868	Aboveground Resource	Albright House	SR 2001	Not Eligible
2002RE01285	Aboveground Resource	Zologa House	SR 2001	Not Eligible

ID Number	Type	Name	Address	NRHP Status
2002RE01906	Aboveground Resource	Sheridan Property	SR 2001	Not Eligible
2002RE01907	Aboveground Resource	Cole School	SR 2001	Not Eligible
2002RE00677	Aboveground Resource	Deily House	SR 2001	Not Eligible
2002RE00956	Aboveground Resource	Solis House	SR 2001	Not Eligible
2002RE00957	Aboveground Resource	Livingstone Cabin	SR 2001	Not Eligible
2004RE12173	Aboveground Resource	N/A: Bridge	SR 2001; 0.4 Mile South of SR 2004	Not Eligible
2002RE00961	Aboveground Resource	Cooper-Bland House	1087 Milford Road	Not Eligible
2002RE01668	Aboveground Resource	Steele House	SR 2001	Not Eligible
2002RE00958	Aboveground Resource	Defederico Barn	SR 2001	Not Eligible
2002RE01286	Aboveground Resource	Zeller and Berkman House	SR 2001	Not Eligible
2002RE00959	Aboveground Resource	Center School	SR 2001	Not Eligible
2002RE00294	Aboveground Resource	Muttee House	SR 2001	Not Eligible

ID Number	Type	Name	Address	NRHP Status
2002RE02286	Aboveground Resource	Dan's Automotive	SR 2001	Not Eligible
2004RE01405	Aboveground Resource	N/A: Bridge	SR 2001; 0.6 Mile South of SR 2002	Not Eligible

Archaeological Sites

The entire length of the current SR 2001 project between Route 739 and the southern terminus of the project near Rockledge Road was included in a prior Phase I archaeological survey in 2004 that resulted in the discovery of four archaeological sites within or adjacent to the SR 2001 roadway at that time. These sites include three nineteenth century domestic occupations recorded as sites 36PI194, 36PI213, and 36PI215 that were recommended as not eligible for the NRHP. The fourth site, 36PI220, was identified as a Pre-Contact lithic scatter with a minor nineteenth century component and was recommended for additional archaeological investigation to evaluate the site's eligibility for the NRHP.

In addition to the presence of archaeological sites within or adjacent to the SR 2001 project area, PA-SHARE indicates that there are an additional nine previously recorded archaeological sites within a one-mile radius of the SR 2001 study corridor. This includes eight historic aged domestic sites that include dwelling and outbuilding remains, two mills, and a 1930s-era roadbed associated with the Civilian Conservation Corps. The historic domestic sites generally date from the late-eighteenth century through the mid-twentieth century. One additional Pre-Contact site was also recorded within one mile of the SR 2001 project area.

Threatened and Endangered Species

A review of the Pennsylvania Natural Diversity Inventory (PNDI) database was conducted on June 26, 2025 (Project Search ID: PNDI-843427). The PNDI records indicated that no known impacts to threatened and endangered species and/or special concern species and resources under the jurisdiction of the PFBC were identified. The PFBC determination is valid for 2 years, until June 26, 2027. The PNDI records indicate potential impacts to species under the jurisdiction of the Pennsylvania Game Commission (PGC), the DCNR, and the USFWS.

Potential impacts to species under the jurisdiction of both the PGC and USFWS may occur as a result of this project. The PGC defers comments on potential impacts to the USFWS, so no further coordination with the PGC is required at this time. Further coordination with the DCNR is anticipated to determine the need for botanical studies for the Eastern Buckmoth (*Hemileuca*

maia). The Eastern Buckmoth is a special concern species with a survey window for one brood between September and December. Additionally, there are potential impacts for species under the jurisdiction of the USFWS. To coordinate with the USFWS as design progresses, the online USFWS Information for Planning and Conservation (IPaC) tool will need to be run to determine specific impacts and species information for potentially impacted species under the jurisdiction of the USFWS. IPaC is a project planning tool which streamlines the USFWS environmental review process by providing an official species list containing a list of species and critical habitat that should be considered under Section 7 of the Endangered Species Act (ESA). The preliminary PNDI endangered species database query is included as Appendix I.

Other Permitting

Additional environmental permits regulated by Sections 401 and 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, and Chapters 92A, 102, and 105 of the Pennsylvania Code may be required specifically for impacts to wetlands, waterways, and floodways, and for earth disturbances greater than one acre or installation of new outfalls.

Documentation under the National Environmental Policy Act (NEPA) should be discussed with funding partners.

As the project footprint is refined, early coordination with applicable federal, state, and local agencies is recommended to ensure the appropriate permit(s) and types of permit(s) are selected for the project.

Safety Evaluation

Reportable crash data for a five-year period (2019-2023), obtained from PennDOT's Crash Information Tool (PCIT), was reviewed across the study area's road network to identify any trends and safety "hot spots". In the five-year period, the SR 2001 study corridor experienced 29 reportable crashes with two crashes resulting in fatalities and two in suspected serious injuries. Along the corridor the most common crash types were hit fixed objects (72% of all crashes), angle (10% of all crashes), and head on (7% of all crashes). Common contributing driver actions included driving too fast for conditions (31% of all crashes) and affected by physical conditions (17% of all crashes). 45% of the total crashes (13) took place under dark conditions, where little to no illumination is present along the corridor.

Most of the crashes involving hit fixed objects occurred along curved/reverse curved road segments. One fatal crash took place along Segment 0220 Offset 0898 north of Johnny Bee Road and involved a vehicle speeding while negotiating the curve, hitting a tree and overturning. The other fatal crash took place along Segment 0260 Offset 0977 north of Kemadobi Drive and involved a vehicle negotiating a curve and hitting another vehicle head on.

Two sections of the corridor experienced a higher number of crashes. Between Segment 0190 Offset 1020 and Segment 0200 Offset 0000 (between Rockledge Road and Wilson Hill Road) there were a total of 9 segment crashes, all of which were hit fixed object crashes. Two of these crashes resulted in overturns/rollovers. Between Segment 0260 Offset 0230 and Segment 0260 Offset 0977 (between Kemadobi Drive and SR 739) there were a total of 6 segment crashes, including one fatal head on crash taking place along the reverse curve.

Highway Safety Network Screening

All intersections and segments along SR 2001 within the study area were reviewed using the 2021 PennDOT highway safety network screening results, available in PCIT, to determine the excess predicted average crash frequencies at these locations. The excess predicted average crash frequency takes the observed crash frequency of a site and adjusts it based on the variance in the crash data. The average crash counts for a site's reference population is then compared to the average frequency of crashes for the reference population. This method produces a more accurate way of determining crash frequency, with a positive excess value indicating a site experiences a higher crash frequency than typical, while a negative excess value indicates a site experiences a lower crash frequency than typical.

For the roadways and intersections accounted for in the 2021 Highway Safety Network Screening, no intersections were identified and the following corridor segment was found to have excess crash values:

- Segment 0230 Offset 720 to Segment 0240 Offset 721 (along the reverse curve south of SR 2004)

This corridor segment was found to have a positive excess crash value of 0.03, which is considered minor.

SR 2001 CORRIDOR DEVELOPMENT PLAN - PROJECTS

Low-Cost Minor Capital / Safety Improvement Projects

Truck Routing Project Options (Monroe / Pike Counties)

As noted previously, addressing truck traffic on SR 2001 between Rockledge Road and SR 739 through Delaware Township has been identified as one of the top concerns by local stakeholders. The narrow roadway width with little to no shoulders, steep grades, and sharp curves through this section of the SR 2001 corridor, result in large trucks tracking across the double yellow lane line and into opposing traffic. Current traffic statistics indicate that the truck percentage for this section of SR 2001 is as high as 9%, which is significant given the facility's narrow width and

winding nature. It is believed that this high utilization rate of truck traffic is a byproduct of the existing truck restrictions along US 209.

The section of US 209 (Federal Road) between Bushkill and Milford boroughs in Pike County lies almost entirely within the Delaware Water Gap National Recreation Area and is restricted to non-permitted commercial truck traffic. **Figure 8** shows existing truck signage along US 209 just prior to its intersection with SR 2001 directing northbound commercial vehicles to exit US 209 onto SR 2001 (Bushkill Falls Road). SR 2001 from US 209 to its intersection with SR 2003 is not restricted to large commercial vehicles, but SR 2003 has a 10-ton weight restriction for its entire length starting at this intersection to its terminous at SR 402 due to pavement limitations.

Until recently, SR 2001, starting at its intersection with SR 2003 to its intersection with SR 2004, also had a seasonal weight restriction due to pavement limitations. This restriction was lifted in 2024 when the roadway was resurfaced by maintenance forces. Otherwise, a restriction for trucks with trailers over 45 ft in length is in place for SR 2001 from its intersection with SR 2003 to SR 2004.

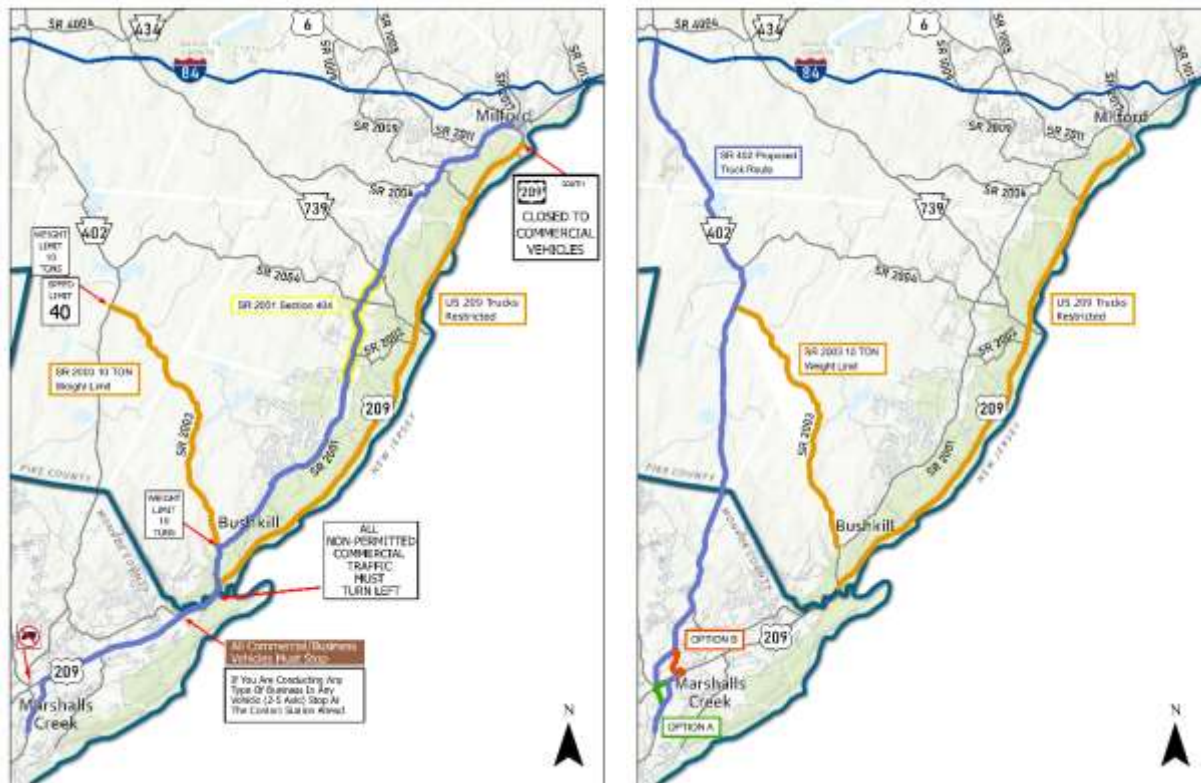
Given the commercial vehicle restrictions noted along US 209, SR 2003 and SR 2001, the only other viable northbound route for truck traffic originating from I-80 traveling on US 209 to I-84 is SR 402. SR 402 is a viable truck route for the majority of its length and already realizes 8% truck traffic from SR 1006 through Monroe County, with shares increasing to 12% through Pike County near I-84. But, due to lack of clear truck route signage directing trucks to use SR 402 and a “trucks with trailer over 45-feet in length” restriction located at the SR 402 / SR 2012 intersection in Marshalls Creek, most truckers using US 209 through Monroe and Pike counties are left unaware of the commercial restriction on US 209 until they enter into the Delaware Water Gap Recreation Area at Bushkill, approximately 8 miles north of Marshalls Creek.



Two options (Options A and B as shown in **Figure 8**) to establish a primary truck route by redirecting truck traffic headed northbound on US 209 onto SR 402 (Resica Falls Road) near Marshalls Creek are included as a possible low cost safety improvement that could be completed to divert trucks and reduce commercial vehicle traffic on the SR 2001 corridor.⁷

⁷ Not included in the study analysis was a third option that would have involved the original plan for constructing a four-lane bypass of Marshalls Creek from US 209 to PA 402. This option was not further evaluated due to environmental constraints and concerns that halted the project in 2004.

Figure 8: Current SR 402 Truck Routing Signage (Left) and Proposed SR 402 Truck Routing Signage Options (Right)



Option A – Business 209

Project limits and Design Considerations

Proposed truck route Option A shown in **Figure 9** proposes the utilization of SR 402 at Marshalls Creek. Truck redirection can be done by routing US 209 northbound trucks to exit US 209 at the roundabout intersection with SR 1019 (Seven Bridge Rd) in Smithfield Township, Monroe County, PA. Trucks would head north onto US Business 209, then west onto SR 402, and continue north toward Resica Falls. Installation of truck alert and routing signage would be proposed to clearly define the route from US 209 to SR 402. This option would require improvements to the intersections of US

Figure 9: Option A



Business 209 / SR 402 (location C) and SR 402 / SR 1007 (location D) to accommodate the turning movements of large combination trucks. Proposed improvements would include widening shoulders, moving stop bars, and updating signal poles to meet current signal and ADA standards. Additionally, the SR 402 and SR 1007 three-way stop-controlled intersection would need to be realigned to improve safety.

The proposed realignment of the three-way stop at the SR 402 / SR 1007 intersection shifts SR 402 west to improve the intersection skew angle. This shift would require the acquisition and demolition of the existing Marshalls Creek Fire Company building, which currently extends into the existing road right-of-way and lies within 4 feet of the edge of pavement, creating safety concerns, sight-distance issues and restricting truck movements. By removing the building and realigning the intersection, sight distances would be improved and truck tracking concerns eliminated. The Willis Repair Shop's entrance directly across from the fire house would also need to be relocated.

An additional consideration for Option A includes the condition of two structures which carry SR 402 over two tributaries of Marshalls Creek in this area. Both structures are currently in Fair condition but were constructed in 1940. They each have a Condition Rating of 5.

Utility / ROW and MPT Considerations

Aerial utilities are present within the anticipated project limits but are not expected to be impacted by the proposed improvements. Several stormwater inlets and pipes may be impacted and therefore need to be replaced.

Required right-of-way, temporary construction easements, and the relocation of at least one commercial property would be needed to facilitate construction. Construction of the proposed improvements could be completed utilizing short-term traffic control measures (flagging).

Cost Estimate

The cost to engineer and reconstruct the SR 402 three-way stop intersection as well as install the truck route signage and complete the turning movement improvements proposed under option A are estimated at \$10.5 million using 2025 unit prices for materials.

The Truck Route Option A proposed improvement concept and preliminary cost estimate can be found in **Appendix A**.

Recommendation

The study report recommends dismissing Option A as a viable alternative for future consideration, given prior work PennDOT has done to remove commercial vehicle traffic from the area, notably the realignment of US 209 around the village of Marshalls Creek in 2012.⁸

Option B – Oak Grove Road

Project limits and Design Considerations

Option B shown in **Figure 10**, reroutes trucks from US 209 to SR 402 via the local road network. This option proposes the adoption of Oak Grove Road (T-530) as a state route in Middle Smithfield Township, Monroe County.

The Oak Grove Road corridor (1.2 miles) connects US 209 to SR 402 east of Marshalls Creek and provides adequate lane and shoulder widths to accommodate combination trucks. There is one bridge located within the Oak Grove Road corridor. This bridge over Pond Creek along with a sizable portion of the Oak Grove Road corridor were built as part of the Marshalls Creek Park and Ride Project completed in 2009 by PennDOT under ECMS project number 65422. Additionally, access to the park and ride lot (SR 9401) also constructed under this project is provided via Oak Grove Road. To facilitate truck turning movements it is anticipated that minor improvements at the Oak Grove / US 209 (location F) would be required as well as reconstruction and widening of the Oak Grove intersection with SR 402 (location G).

Figure 10: Option B



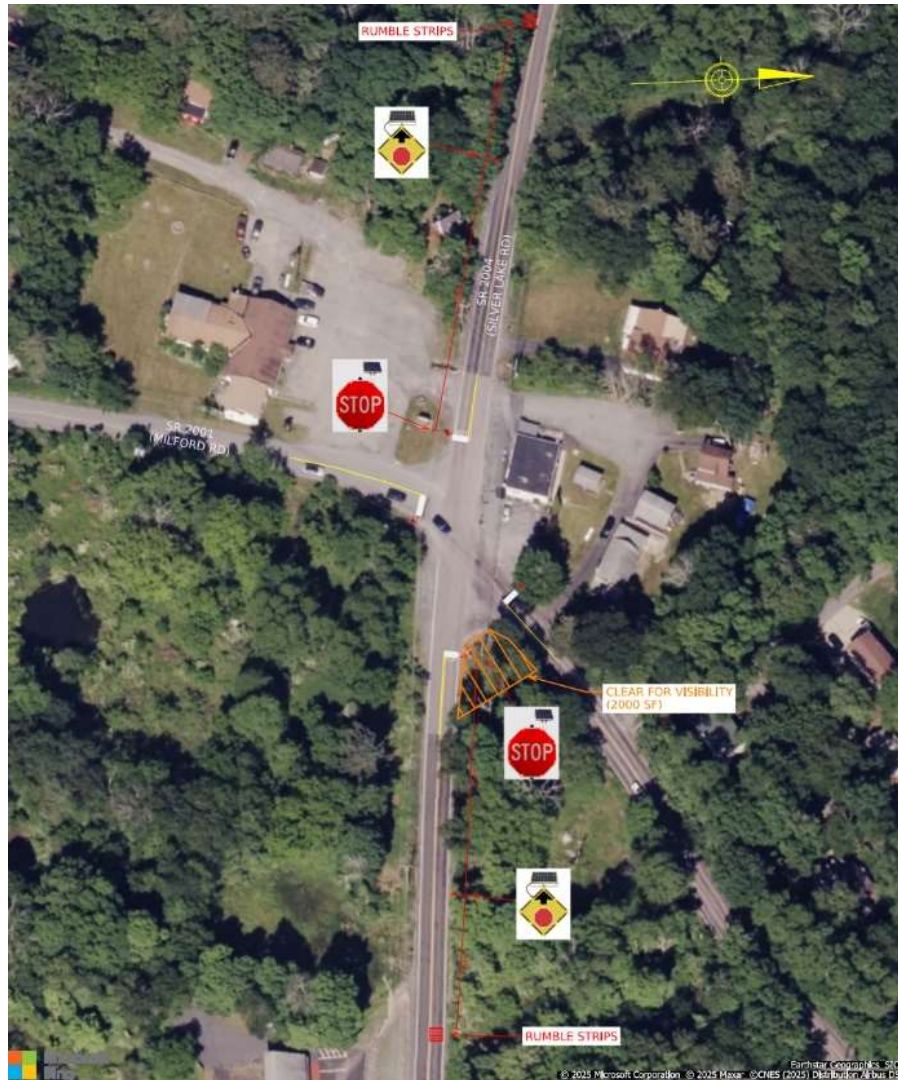
Utility / ROW and MPT Considerations

Minimal utility relocations are anticipated to complete the proposed Option B intersection improvements. PennDOT owns the property around the SR 402 and Oak Grove Rd intersection (**Figure 11**); therefore, no right-of-way would need to be acquired to facilitate construction which could be completed utilizing short term traffic control measures (flagging).

⁸ The recommendation is driven by feedback received from PennDOT District 5-0 through a June 23, 2025 meeting with the study team to discuss truck routing options through the area surrounding Marshalls Creek.

signs, and flashing stop signs are cost effective devices that can be utilized to improve drivers' attention. Clearing the vegetation in the northeast quadrant would also be proposed to improve the intersection sight distance (**Figure 12**).

Figure 12: SR 2001 / SR 2004 Intersection Interim Advanced Warning Signing Project



Utility / ROW and MPT Considerations

Flashing signs can either be solar powered or direct wired. It's anticipated that construction of the proposed intersection improvements would have minimal to no impact to existing utilities or right-of-way and could be completed utilizing short-term traffic control measures (flagging).

Cost Estimate

The estimated cost to engineer and construct these advanced warning measures is \$43,000.

The proposed SR 2001 / 2004 intersection low-cost safety improvement concept and preliminary cost estimate can be found in **Appendix B**.

Corridor Reconstruction Projects

Overall Corridor and Individual Project Development

The SR 2001 (Milford Road) Section 405 corridor from Rockledge Road to SR 739 (Dingmans Turnpike) is 4.1 miles long. Its roadway functional classification is a rural minor arterial with a posted speed of 35 mph. The terrain is rural, wooded, and mountainous. The average daily traffic (ADT) of the corridor is 1400 with a truck percentage of 9%. The ADT increases to 3,300 north of the SR 2004 (Silver Lake Rd) intersection. The existing corridor features 9-foot lanes, negligible shoulders, sharp horizontal reverse curves with the minimum horizontal curve radius at 150 feet, and steep vertical grades up to a maximum of 15%. To bring the corridor up to current design standards for its rural arterial classification, the roadway needs to be reconstructed to feature 12-foot lanes and 8-foot shoulders, minimum horizontal curve radius of 500 feet, and maximum vertical grades of 8%. To meet the current funding limitations, the overall 4.1-mile project corridor has been separated into five smaller, more fundable individual projects as shown in **Figure 13**.

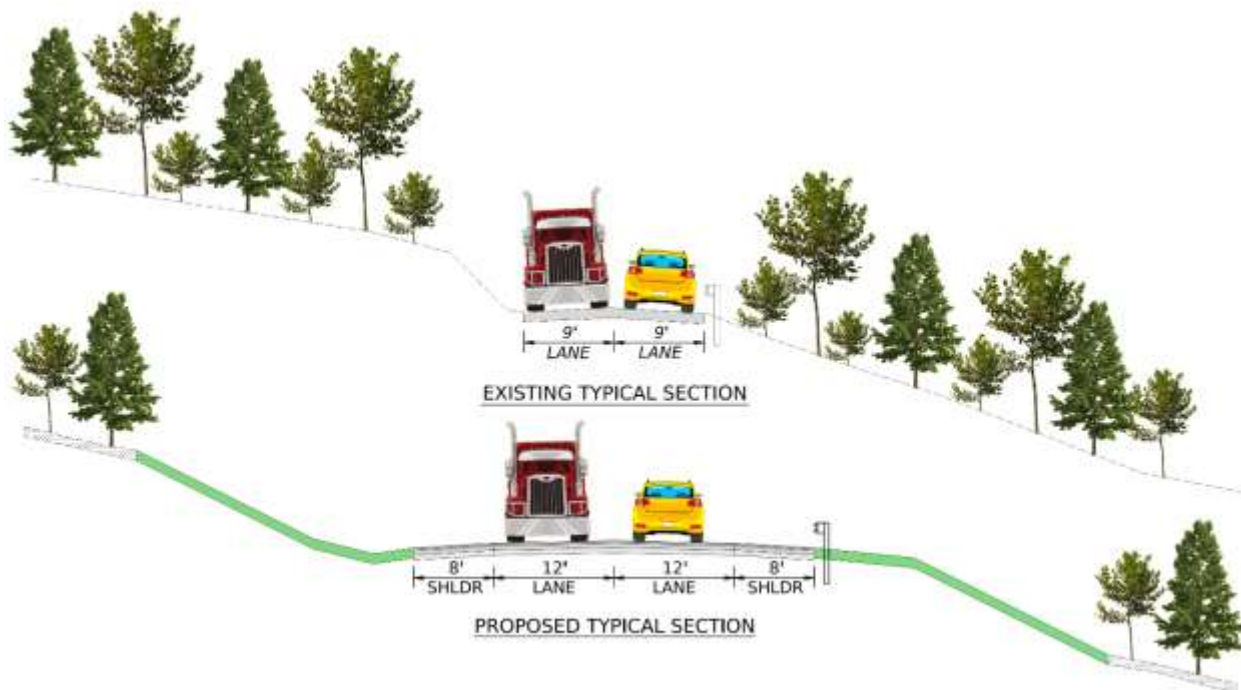
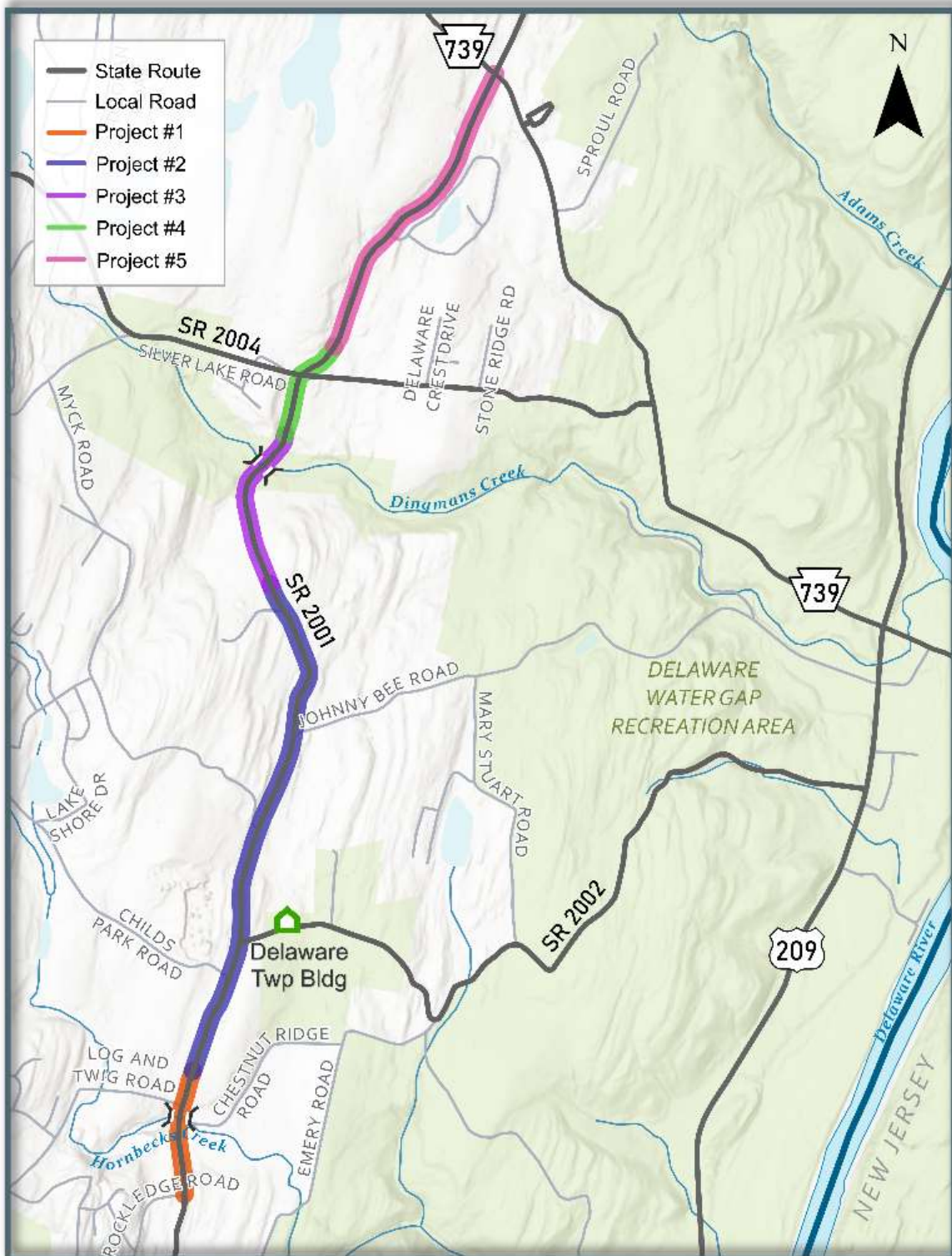
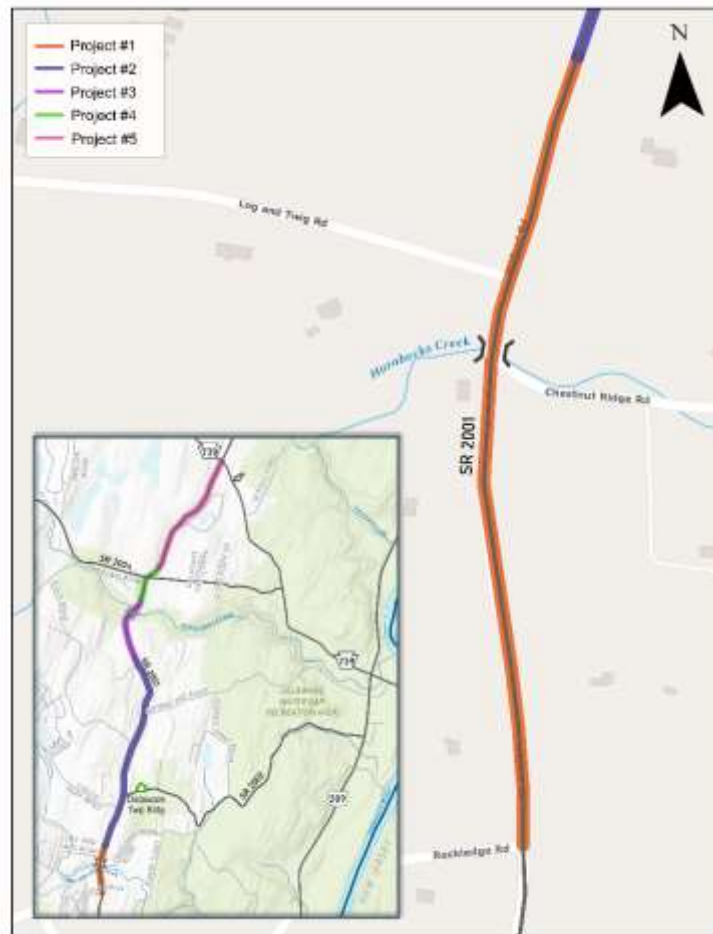


Figure 13: SR 2001 Corridor Proposed Reconstruction Contracts, project limits



Project #1 - SR 2001 Widening & Bridge Replacement Project (Hornbecks Creek) Project limits and Design Considerations

Figure 14: Project #1



Project #1 includes approximately 2,700 feet of roadway widening / reconstruction and the replacement of the SR 2001 bridge over Hornbecks Creek. Project limits are from Rockledge Road to 1,300 feet north of Log & Twig Road (T-314). Two alternatives were developed for this project.

Alternative 1 uses a maximum vertical grade of 8% which meets current design criteria for the roadway classification of SR 2001. The existing Hornbecks Creek bridge, built in 1936, is a 29-foot single span, 24-foot wide concrete slab structure. The existing bridge is in poor overall condition and is currently programmed for replacement. This alternative proposes replacing the existing bridge with a 100-ft span, 43-foot wide structure with integral abutments. The fill and bridge structure required to meet the 8% max grade would have a significant impact to surrounding environmental features and adjacent residential property resulting in relocation of one property owner and a stream relocation of the adjacent unnamed tributary to Hornbecks Creek. The

intersection of SR 2001 and Chestnut Ridge Road (T-323) would need to be relocated to improve the intersection skew angle, and the Log & Twig Road (T-314) intersection would need to be reconstructed to meet the proposed SR 2001 profile elevation. A stormwater management basin would need to be constructed as part of the project to control the increased stormwater runoff anticipated due to the additional impervious area from widening the roadway.

Figure 15: Intersection of SR 2001 with Chestnut Ridge Road (T-323) by Hornbecks Creek/Bridge



Alternative 2 proposes a maximum vertical grade of 10% which would require design exception approval by PennDOT. Proposing a 10% grade more closely matches the existing condition minimizing impacts to adjacent property owners and environmental resources. Access to the adjacent residential property can be maintained and the adjacent unnamed tributary to Hornbecks Creek would not need to be relocated as part of Alternative 2. Additionally, 10% vertical grades were proposed on recently reconstructed adjacent sections of SR 2001, therefore it's anticipated that receiving a design exception from PennDOT is possible. Alternative 2 would propose a 50-ft span, 43-foot wide structure with full-height abutments. The Chestnut Ridge Road (T-323) and Log & Twig Road (T-314) intersection reconstructions and stormwater management basin would still need to be completed as a part of this alternative.

Utility / ROW and MPT Considerations

Aerial utilities run parallel to the roadway and will require permanent relocation to accommodate the proposed improvements. Minimal to no underground utility impacts are expected by the proposed improvements as it appears most of the homes in the area are serviced by wells and septic systems and no gas pipeline crossings or gas line appurtenances in the roadway have been visualized.

The acquisition of required right-of-way, temporary construction easements, and a proposed channel easement to relocate the existing waterways are anticipated to construct Project #1. If the 8% profile alternative is selected, it is anticipated that one residential property would be adversely impacted by the project requiring relocation services.

Staged construction of this section of SR 2001 would add significant costs to the project and slow construction, therefore the proposed improvements are anticipated to be completed under full detour. The proposed 22.1-mile-long detour route shown in **Appendix H** utilizes SR 2003 (Bushkill Falls Rd) to SR 402 to SR 2004 (Silver Lake Rd). Local traffic through the work zone would be controlled utilizing one lane short-term flagging operations.

Cost Estimate

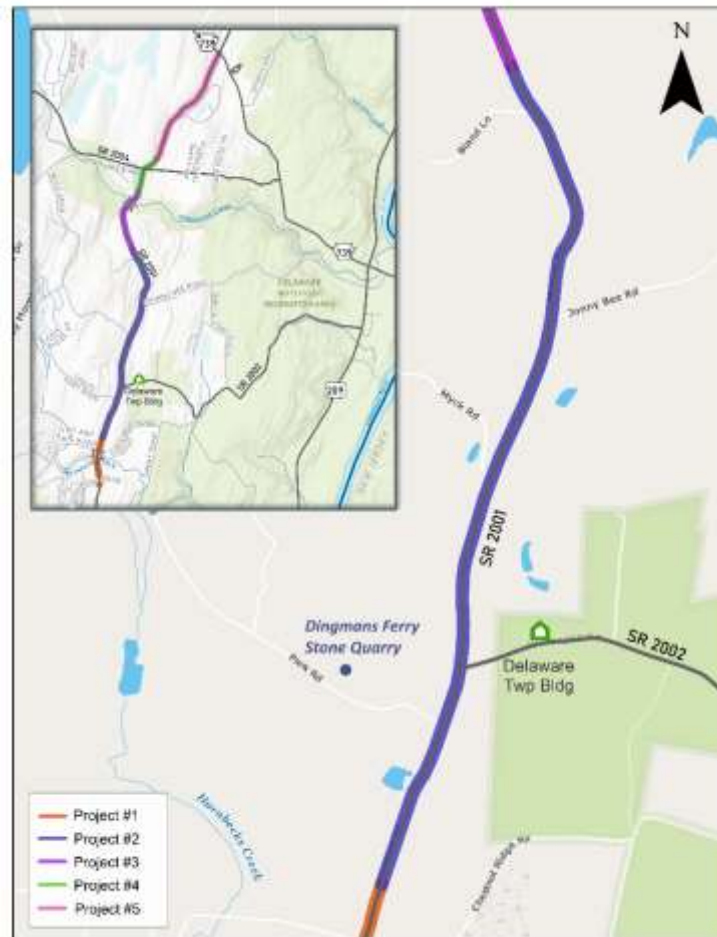
Costs to design and construct this section of SR 2001 are estimated to range from \$8.6 million (Alt 2) to \$10.3 million (Alt 1) using 2025 unit prices for materials.

Project #1's preliminary design concepts and associated cost estimates can be found in **Appendix C**.

Project #2 - SR 2001 Widening & Reconstruction Project (T-314 to T-325)

Project limits and Design Considerations

Figure 16: Project #2



Project #2, shown in **Figure 16**, entails approximately 8,000 feet of roadway widening and reconstruction along SR 2001 (Milford Road) from 1300 ft north of Log & Twig Road (T-314) to Bland Lane. One stormwater basin would need to be constructed as a part of this project as well as trench drains to mitigate the additional stormwater runoff due to the additional impervious area from widening the roadway. Intersections with Park Road (T-344), Wilson Hill Road (SR 2002), Myck Road (T-346), and Johnny B Road (T-325) would need to be reconstructed to accommodate the proposed profile grade adjustments to SR 2001.

Utility / ROW and MPT Considerations

Aerial utilities run parallel to the roadway and will require permanent relocation to accommodate the proposed improvements. Minimal to no underground utility impacts are expected by the

proposed improvements as it appears most of the homes in the area are serviced by wells and septic systems and no gas pipeline crossings or gas line appurtenances in the roadway have been visualized.

Acquisition of required right-of-way and temporary construction easements are anticipated to construct Project #2. Additionally, it's anticipated that one residential property would be adversely impacted by this project requiring relocation services.

Staged construction of this section of SR 2001 would add significant costs to the project and slow construction, therefore the improvements are proposed to be completed utilizing a detour of all through traffic. Through traffic would be diverted to a 22.1-mile detour shown in **Appendix H** utilizing SR2003 (Bushkill Falls Rd) to SR402 to SR 2004 (Silver Lake Rd). Local traffic through the work zone would be controlled utilizing one lane short-term flagging operations.

Cost Estimate

Costs to design and construct this section of SR 2001 are estimated at \$12.8 million using 2025 unit prices for materials.

Project #2's preliminary design concept and cost estimate can be found in **Appendix D**.

tributary to Dingmans Creek and significant land acquisition from the Delaware Water Gap Recreation Area, a 4F federal environmental resource. Two stormwater management basins would need to be constructed as part of the project to control the increased stormwater runoff anticipated due to the additional impervious area from widening the roadway.

Alternative 2 proposes a maximum vertical grade of 10% which would require design exception approval by PennDOT. Proposing a 10% grade more closely matches the existing condition minimizing impacts to adjacent environmental resources. The adjacent unnamed tributary to Dingmans Creek would not need to be relocated and significantly less property acquisition from the Delaware Water Gap Recreation Area would be required. Additionally, 10% vertical grades were proposed on adjacent sections of SR 2001 that have been reconstructed in recent years; therefore, it's anticipated that receiving a design exception from PennDOT is possible. The proposed structure for this alternative would be a 54-ft wide, 95-ft long concrete arch culvert under approximately 20-ft of fill. The stormwater management basins would still be required for this alternative.

Utility / ROW and MPT Considerations

Aerial utilities run parallel to the roadway and will require permanent relocation to accommodate the proposed improvements. Minimal to no underground utility impacts are expected by the proposed improvements as it appears most of the homes in the area are serviced by wells and septic systems and no gas pipeline crossings or gas line appurtenances in the roadway have been visualized.

The acquisition of required right-of-way, temporary construction easements, and a proposed channel easement to relocate the existing stream are anticipated to construct Project #3.

Staged construction of this section of SR 2001 would add significant costs to the project and slow construction, therefore the proposed improvements are anticipated to be completed under full detour. The proposed 22.1-mile-long detour route shown in **Appendix H** utilizes SR 2003 (Bushkill Falls Rd) to SR 402 to SR 2004 (Silver Lake Rd). Local traffic through the work zone would be controlled utilizing one lane short-term flagging operations.

Cost Estimate

Costs to design and construct this section of SR 2001 are estimated to range from \$12.6 million (Alt 2) to \$22.7 million (Alt 1) using 2025 unit prices for materials.

Project #3's preliminary design concepts and associated cost estimates can be found in **Appendix E**.

Project #4 - SR 2001 / 2004 Intersection Improvements Project

Project limits and Design Considerations

Figure 18: Project #4



Project #4 includes approximately 2,000 feet of roadway widening / reconstruction along SR 2001 and intersection improvements at its intersection with SR 2004 (Silver Lake Road). Project limits are 900 ft south to 1100 ft north of the SR 2001 / 2004 intersection. Two intersection alternatives were studied for this project, an improved four-way stop and an oval roundabout design (**Figure 18**).

Alternative 1 is a reconstructed four-way stop intersection. The intersection would be re-aligned to an 80-degree skew angle to bring the intersection up to current geometric requirements. A right-turn lane would be added for westbound traffic on SR 2004 (Silver Lake Road) to head northbound on SR 2001 to accommodate design vehicle turning movements. The private road, Rosewood Road, is unpermitted and is too close to the intersection causing safety issues. The proposed improvements include closing this unpermitted entrance and providing access to the affected

properties by extending Dillion Road to connect to SR 2001. Access and parking to Sisters Corner Deli & Convenience Store will be impacted by the proposed design and construction. An access to the business meeting current standards cannot be provided and may result in the need to relocate the business.

Alternative 2 proposes the construction of an oval roundabout intersection with a 65-degree skew angle. The roundabout provides improved safety and traffic flow, better sight distance, and reduces the amount of excavation required to construction SR 2001 north of the intersection. The convenience store and Rosewood Road would both still be impacted by the roundabout alternative resulting in the need to close the unpermitted entrance by extending Dillion Road and relocation of the buisness.

Utility / ROW and MPT Considerations

Aerial utilities run parallel to the roadway and will require permanent relocation to accommodate the proposed improvements. Minimal to no underground utility impacts are expected by the proposed improvements as it appears most of the homes in the area are serviced by wells and septic systems and no gas pipeline crossings or gas line appurtenances in the roadway have been visualized.

Acquisition of required right-of-way, temporary construction easements, and a private access easement are anticipated to complete construction of the proposed improvements. Both alternatives proposed for Project #4 anticipate adverse impacts to seven residential properties and one commercial business which would require relocation services.

Staged construction of this section of SR 2001 would add significant costs to the project and slow construction, therefore the improvements are anticipated to be completed under full detour. The proposed 2.5-mile-long detour shown in **Appendix H** would use SR 2004 (Silver Lake Rd) to SR 739. Local traffic through the work zone would be controlled using one lane short-term flagging operations.

Cost Estimate

Costs to design and construct this section of SR 2001 are estimated to range from \$6.4 million (Alt 1) to \$6.8 million (Alt 2) using 2025 unit prices for materials.

Project #4's preliminary design concepts and associated cost estimates can be found in **Appendix F**.

Project #5 - SR 2001 Widening & Reconstruction Project (SR 2004 to SR 739) Project limits and Design Considerations

Figure 19: Project #5



Project #5 entails approximately 5,100 feet of roadway widening and reconstruction. Retaining walls are proposed along SR 2001 to limit impacts to Highland Acres Road and an adjacent business parking lot. SR 2001's intersections with Highland Acres Road and Kemadobi Lane would need to be reconstructed to accommodate the proposed profile grade adjustments to SR 2001 (Figure 19).

Utility / ROW and MPT Considerations

Aerial utilities run parallel to the roadway and will require permanent relocation to accommodate the proposed improvements. Minimal to no underground utility impacts are expected by the proposed improvements as it appears most of the homes in the area are serviced by wells and

septic systems and no gas pipeline crossings or gas line appurtenances in the roadway have been visualized.

Acquisition of required right-of-way and temporary construction easements are anticipated to construct Project #5. Additionally, it is anticipated that two residential properties and one commercial business would be adversely impacted by this project requiring relocation services.

Staged construction of this section of SR 2001 would add significant costs to the project and slow construction. Therefore, the improvements are anticipated to be completed under full detour. The proposed 2.5-mile-long detour shown in **Appendix H** would utilize SR 2004 (Silver Lake Rd) to SR 739. Local traffic through the work zone would be controlled utilizing one lane short-term flagging operations.

Cost Estimate

Costs to design and construct this section of SR 2001 are estimated at \$15.5 million.

Project #5's preliminary design concept and cost estimate can be found in **Appendix G**.

SR 2001 CORRIDOR DEVELOPMENT PLAN - PROJECT PHASING / FUNDING

Phasing / Cost Considerations

Recommended Project Phasing

As noted throughout this report, addressing truck traffic on existing SR 2001 between Rockledge Road and SR 739 through Delaware Township has been identified as one of the top concerns by local stakeholders followed by safety concerns for the section of SR 2001 from the SR 2001 / 2004 intersection to its intersection with SR 739. Additionally, the structure over Hornbecks Creek has reached its life expectancy and is currently on the TIP. Giving consideration to these concerns and anticipated costs for each project, the recommended prioritization of the low cost safety improvements and five overall construction projects are shown in **Figure 20** as funding becomes available.

Figure 20: SR 2001-405 Corridor Development – Project Phasing/Costs

PRIORITY	Low-Cost Minor Capital / Safety Improvement Projects	PRESENT COST				
1	SR 402 Truck Routing Project	OPTION A - Business 209 / SR 1019	\$10,520,000			
		OPTION B - Oak Grove Rd	\$5,790,000			
2	SR 2001 / 2004 Intersection Interim Advanced Warning Signing Project	\$43,000				
Plus 3% for 10 yrs						
PRIORITY	CORRIDOR RECONSTRUCTION PROJECTS			PRESENT COST	FUTURE COST	
3	Project #1 - SR 2001 Widening & Bridge Replacement Project (Hornbecks Creek)					
				ALT1 (8%)	\$10,274,000	\$13,808,000
				ALT2 (10%)	\$8,557,000	\$11,500,000
	Project #1 Timeline					
	Preliminary Engineering*	Final Design**	Construction	Total Project Duration		
	3 years	2 years	2 Seasons	7 years		
*Anticipated duration for Environmental Clearance (1 year for CE1b) after preferred option is selected and Safety Review approved (approx. 2 years).						
**Based on permitting (approx. 6 months assuming a JPA and NPDES) & ROW acquisition durations (anticipated to take 1.5 years to accommodate relocation services for one parcel if 8% profile is required and access cannot be provided).						
4	Project #5 - SR 2001 Widening & Reconstruction Project (SR 2004 to SR 739)			PRESENT COST	FUTURE COST	
				\$15,498,000	\$20,829,000	
	Project #5 Timeline					
		Preliminary Engineering	Final Design*	Construction	Total Project Duration	
	2.5 years	2.5 years	3 Seasons	8 years		
*Based on permitting (approx. 6 months assuming a JPA and NPDES) & ROW acquisition durations (anticipated to take 2 years to accommodate relocation services for 2 parcels if access cannot be provided due to grades as well as the large number of parcels affected).						
5	Project #4 - SR 2001 / 2004 Intersection Improvements Project			PRESENT COST	FUTURE COST	
				4-WAY STOP	\$6,365,000	\$8,555,000
				ROUNDABOUT	\$6,785,000	\$9,119,000
	Project #4 Timeline					
	Preliminary Engineering*	Final Design**	Construction	Total Project Duration		
	3 years	2.5 years	2 Seasons	7.5 years		
*Anticipated duration for Environmental Clearance (1 year for CE1b) after preferred option is selected and Safety Review approved (approx. 2 years).						
**Based on permitting (approx. 6 months assuming a JPA and NPDES) & ROW acquisition durations (anticipated to take 2 years to accommodate business relocation services if required).						
6	Project #2 - SR 2001 Widening & Reconstruction Project (T-314 to T-325)			PRESENT COST	FUTURE COST	
				\$12,786,000	\$17,184,000	
	Project #2 Timeline					
		Preliminary Engineering	Final Design*	Construction	Total Project Duration	
	2.5 years	2.5 years	3 Seasons	8 years		
*Based on permitting (approx. 6 months assuming a JPA and NPDES) & ROW acquisition durations (anticipated to take 2 years to accommodate relocation services if required and large number of parcels affected).						
7	Project #3 - SR 2001 Widening & Bridge Replacement Project (Dingmans Creek)			PRESENT COST	FUTURE COST	
				ALT1 (8%)	\$22,675,000	\$30,474,000
				ALT2 (10%)	\$12,553,000	\$16,871,000
	Project #3 Timeline					
	Preliminary Engineering*	Final Design**	Construction	Total Project Duration		
	4 years	3 years	2 Seasons	9 years		
*Anticipated duration for PE & Environmental Clearance is approx 4 years (assuming a Level 2 CE) due to project affecting NPS / 6f						
** Based on permitting (approx. 1 year assuming a JPA and NPDES) & ROW acquisition durations (anticipated to take 2 years due to property impacts to the NPS).						
			TOTAL	PRESENT COST	FUTURE COST	
			LOW =	\$55,759,000	\$74,939,000	
			HIGH =	\$68,018,000	\$91,414,000	

APPENDICES

