3 ENVIRONMENTAL RESOURCES, IMPACTS AND MITIGATION

This chapter describes the potential project impacts from the proposed alternatives on the socioeconomic, cultural, and natural environment.

Desktop analysis and field investigation have verified that the following environmental features do not exist within the project area and are not discussed within this chapter:

- Wild & Scenic Rivers
- Coastal Zones
- National Natural Landmarks
- Section 6(f) Resources
- National Historic Landmarks

Different areas may be discussed within Chapter 3, including a larger project area (shown as the black hatched area on **Figure 3-1**), which was used to define most of the existing conditions within the project area, or a smaller limit of disturbance (LOD) (shown as the black lines outlining the detailed alternatives on **Figure 3-1**), which is the area used to calculate impacts for build alternatives: Alternatives DU Modified, DU-Shift Modified, E Modified and E-Shift Modified as of January 24, 2024.

Limit of Disturbance (LOD) – The impact boundary used to calculate impacts for all resources. Each alternative studied has its own LOD.

These build alternatives were previously described in **Chapter 2.5**. In addition to including the roadway typical section, the LOD also includes the median, shoulders, and cut and fill lines. The project team also included preliminary stormwater control measures and temporary erosion and sediment pollution control features needed during construction. Additionally, near the state line within Pennsylvania potential maintenance facility locations were included. For Alternatives DU Modified and DU-Shift Modified, the facility is located along the southbound lanes, west of the alternatives and for Alternatives E Modified and E-Shift Modified, the facility is located along the northbound lanes, east of the alternatives.

Chapter 3 includes sections for all socioeconomic, cultural, and natural environmental resources present in the project area. Each section details the methodology used to identify the resource, notes the existing conditions of the resource present in the project area, and describes the impact to the resource within the alternatives' LOD and any required mitigation.

3.1 Land Use, Zoning, Planning, & Development

3.1.1 Methodology

County and municipal comprehensive plans and zoning codes often identify land use and development goals. Somerset and Garrett Counties, however, do not have countywide zoning, and none of the project area municipalities have zoning within the project area. County comprehensive plans were evaluated for land use conflicts with the proposed project alternatives. Federal data sources, including the National Land Cover Database (NLCD) and the Census of Agriculture, also supplemented local land use planning documentation to determine potential land use impacts associated with the project.

3.1.2 Existing Conditions

Within the project area, vast areas of forested and agricultural land characterize Somerset County and Garrett County. According to land cover data from the 2021 NLCD, forestland is the predominant regional land use, covering 67.7% of the project area. This is followed by agricultural land, consisting of pasture and cropland, which comprises 21.5% of the project area. Developed land encompasses 7.7% of the project area. **Figure 3-1** and **Table 3-1** include the project area land cover data from the NLCD.

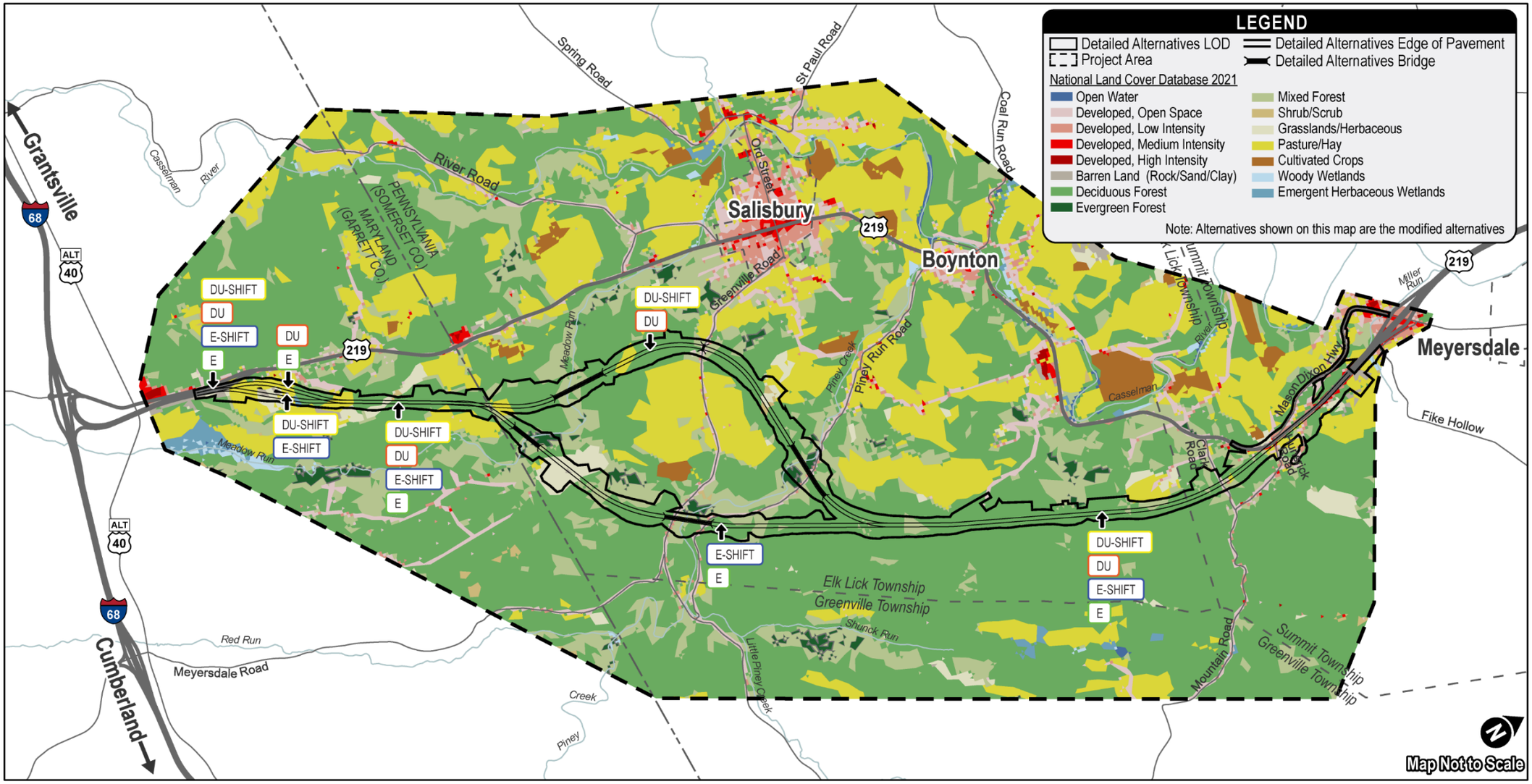


Figure 3-1: National Land Cover Database within Project Area

Concentrated development areas within the Somerset County portion of the project area include the area outside Meyersdale Borough, which includes medium density residential neighborhoods and multiple commercial properties. Salisbury Borough lies fully within the project area and includes medium density neighborhoods and a population of approximately 605 residents. In Garrett County, the area surrounding the proposed U.S. 219 alternatives includes low to medium density residential development. The development density increases (including commercial development) to the south towards I-68.

As evidenced by the NLCD data in **Table 3-1**, agricultural land is prevalent throughout the project area and is fundamental to the character and economy of both counties. The U.S. Department of Agriculture's (USDA) 2022 Census of Agriculture quantifies this importance to the region's economy. Somerset County contains approximately 998 farms totaling close to 200,000 acres. These farms account for over 25% of the land within Somerset County. The average farm size is roughly 198 acres. In Garrett County, there are about 680 farms totaling approximately 95,500 acres. This represents about 23% of the county's land. The average farm size in Garrett County is about 141 acres. The most significant products sold by farmers in both counties in 2022 were milk, grains, and cattle.

One of the purposes of this project involves encouraging economic development in the Appalachian Region, which includes Somerset and Garrett Counties. Local, state, and federal initiatives are in place to encourage this economic growth, especially in Maryland. Garrett County designated the southwest end of the project as a Potential Employment Area, known as the Chestnut Ridge Development Corridor, due to its potential for commercial development. Federal agencies also designated Census Tract 2 in Garrett County as a Federal Opportunity Zone. This includes the western half of the project area within Maryland. The State of Maryland designated the southern end of the project, around existing U.S. 219, and the proposed build alternatives as a Priority Funding Area (PFA). **Figure 2-4** in **Chapter 2.1** shows these areas.

Table 3-1: Project Area Land Cover

Land Cover Type	Percentage of Project Area[1]
Forested	67.7%
Agricultural	21.5%
Developed	7.7%
Shrubland and Grassland	1.8%
Waterways and Wetlands	1.0%
Barren	0.3%

[1]Source: 2021 NLCD

The 2022 Garrett County Comprehensive Plan encourages growth in designated locations while maintaining forested and agricultural land in more sensitive locations. The PFA location and the comprehensive plan highlight this area as a county designated growth area. The plan also states that

Photograph 3-1: Forested and Farmland Areas in Somerset County

the extension of U.S. 219 to Pennsylvania is a top transportation priority for the county, necessary to improve access, reduce travel time, and promote economic development in the area. Furthermore, the plan proposes project area future land uses, including agricultural, residential, and general commercial uses.

Somerset County does not have a countywide comprehensive plan. However, Somerset County adopted the Comprehensive Plan for the Southern Alleghenies Region in 2018. The plan identified municipalities within the project area as having weak or at-risk levels of economic demand and investment, including Salisbury Borough (weak), Elk Lick Township (at-risk), and Summit Township (at-risk). The plan outlined the importance of completing U.S. 219 between Meyersdale and Maryland, with the goal of encouraging new development along the future alignment and developing local infrastructure that businesses require.

Additional information about existing conditions is provided in **Appendix H**, which contains the *Socioeconomic Existing Conditions Report*.

3.1.3 Impacts

The No Build Alternative would not result in any land use impacts or require any property acquisition. The No Build Alternative, however, is not consistent with Somerset County and Garrett County comprehensive planning objectives, as the No Build Alternative would not complete Corridor N of the Appalachian Development Highway System (ADHS), improve U.S. 219, or promote new development.

Table 2-3 in **Chapter 2.5** shows land use impacts associated with the four build alternatives. Permanent conversion to transportation right-of-way would most commonly occur to forestland, followed by agricultural land. Approximate forestland impacts would be 388.8 acres for Alternative E-Shift Modified, 389.8 acres for Alternative E Modified, 431.4 acres for Alternative DU Modified, and 430.0 acres for Alternative DU-Shift Modified. Productive agricultural land impacts would be 40.0 acres for Alternative E-Shift Modified, 38.1 acres for Alternative E Modified, 76.6 acres for Alternative DU Modified, and 76.8 acres for Alternative DU-Shift Modified. **Table 2-3** shows these impacts.

The potentially impacted forestland is privately owned and is generally used for recreation, including hunting and off-roading; production, including lumber or maple syrup; or as part of a residential property. **Chapter 3.13** further discusses the potentially impacted agricultural land.

In summary, all the build alternatives would permanently change existing land uses to transportation uses. The proposed acquired lands for the new highway consist primarily of forest and agricultural lands. These land uses would continue to be the dominant regional land uses following construction of a build alternative.

Additionally, construction of proposed alternatives may result in further development along new or

Photograph 3-2: Forested Area Being Used for Maple Syrup Production

existing transportation corridors in the vicinity of the project. Typically, this type of development occurs at new access/interchanges; however, there are now new access points or interchanges being proposed as part of this project. The Indirect Effects section (**Chapter 3.24**) of this chapter further addresses development potential. The county would control the extent and pace of the development beyond the proposed build alternatives' LOD.

3.1.4 Mitigation

Although the proposed build alternatives follow varying alignments, county and local land use planning and associated development regulations can ensure compatibility with local goals. In Pennsylvania, the Municipalities Planning Code (MPC), effective 1969, enables local communities to develop local ordinances and regulates development to achieve their vision. Additionally, the Commonwealth's Sound Land Use policies and Keystone Principles have established guidelines for public infrastructure and investment.

Maryland enacted the Economic Growth, Resource Protection, and Planning Act of 1992 (the Planning Act) to organize and direct comprehensive planning, regulation, and funding by state, county, and municipal governments. The comprehensive plans establish land use, economic growth, and resource protection priorities within an area. The Planning Act also established an Economic Growth, Resource Protection, and Planning Commission to oversee, study, and report on progress towards vision implementation.

It is not anticipated that any build alternative would create substantial additional development pressure on low growth areas, nor encourage land uses that are not consistent with area plans. It is also anticipated that as the project progresses into final design, land impacts would be refined and minimized to the extent feasible. Refinements could include a reduced limit of disturbance and fewer land impacts as more detailed engineering data is collected.

Within Maryland, the four build alternatives' southern termini would connect to existing U.S. 219 within the PFA. No new access points are proposed as part of this tie in.

3.2 Population & Demographics

3.2.1 Methodology

The 1990-2020 U.S. Decennial Censuses and the 2018-2022 5-Year American Community Survey (ACS) data served as a tool to analyze the current project area's economic conditions. Data from the Appalachian Regional Commission (ARC) also served as a tool to compare Somerset and Garrett Counties to other Appalachian Region counties. ARC regularly evaluates the economic status of Appalachian Region counties to determine which counties are in greater need of ARC funding. ARC classifies counties according to four criteria: distressed, transitional, competitive, and attainment. For the fiscal years 2023 and 2024, the ARC rated Somerset County and Garrett County as transitional counties. Transitional counties are those transitioning between strong and weak economies, and rank between the worst 25% and the best 25% of the nation's counties.

3.2.2 Existing Conditions

Somerset and Garrett Counties have demographic and economic concerns related to a decreasing and aging populations. According to the U.S. Census data, the total population within Somerset and Garrett Counties has declined approximately 5% and 4%, respectively, between 2010 and 2020. Conversely, Pennsylvania and Maryland population has increased by approximately 2% and 7%, respectively.

Furthermore, ACS data indicates that Somerset County's median age is 5.9 years older than Pennsylvania's median age and Garrett County's median age is 8.5 years older than Maryland's median age. Each county's median age has outpaced each state's median age since 2000. Pennsylvania's median age has increased by 2.8 years and Maryland by 3.1 years since 2000. Comparatively, Somerset County's median age has increased by 6.5 years and Garrett County by 9.3 years since 2000. This trend also emerges in the population over the age of 65 in each county which

is significantly greater than the statewide population. Twenty-three percent (23.1%) of Somerset County's population is 65 or older as compared to 18.7% in Pennsylvania. Twenty-three percent (23.0%) of Garrett County's population is 65 or older as compared to 16.0% in Maryland.

Both county unemployment rates are slightly lower than their respective states, as shown in **Table 3-2.** This may be partially attributed to the lower labor force participation rates in each county as compared to statewide levels. The poverty rate in Somerset County is lower than Pennsylvania's poverty rate as well. Garrett County's poverty rate however is higher than the Maryland's overall poverty rate. **Chapter 3.3** examines the poverty and low-income populations within the project area in greater detail. Additionally, median household income, home price, and rent are all significantly lower in Somerset and Garrett Counties as compared to statewide medians.

The population holding a bachelor's degree within Somerset County is 17.2%, and 24.6% in Garrett County. This is approximately half the respective statewide percentages in Pennsylvania (33.8%) and in Maryland (42.2%). The largest industry in both counties is educational services, health care, and social assistance. The next largest industry is manufacturing in Somerset County and construction in Garrett County, followed by retail in both counties. Employment in agriculture, forestry, fishing, hunting, and mining is also significant to the region.

Additional information about existing conditions is provided in **Appendix H**, which contains the *Socioeconomic Existing Conditions Report*.

3.2.3 Impacts

The No Build Alternative would have no direct effect on existing project area populations.

The four build alternatives would involve construction of a new, limited-access expressway. This new expressway would improve north and south project area access. Existing U.S. 219 will be maintained as a local road with each build alternative. Expressway construction would reduce traffic and truck volumes along existing U.S. 219, improving community safety. This holds true for the Borough of Salisbury, where existing U.S. 219 runs through the center of the borough. The four build alternatives would alleviate traffic issues, improve pedestrian and vehicular safety, and reduce traffic noise for residents and businesses within the borough.

The four build alternatives all include eight residential displacements at the north end of the project area. Alternatives DU Modified and DU-Shift Modified also include an additional residential displacement near the center of the project area.

Table 3-2: Demographic Census Data

Demographic Data		Garrett County	Somerset County	MD	PA
2000 Total Population[1]		29,846	80,023	5,296,486	12,281,054
2010 Total Population[1]		30,097	77,742	5,773,552	12,702,379
2020 Total Population[1]		28,806	74,129	6,177,224	13,002,700
Race[2]	White Alone	95.13%	93.14%	47.17%	73.47%
	Black/African American	0.83%	2.51%	29.06%	10.53%
	American Indian & Alaska Native	0.11%	0.07%	0.20%	0.12%
	Asian	0.28%	0.26%	6.77%	3.90%
	Native Hawaiian & Other Pacific Islander	0.01%	0.01%	0.04%	0.02%
	Hispanic or Latino	1.11%	1.40%	11.81%	8.07%
	Some Other Race	0.19%	0.17%	0.57%	0.42%
	Two or More Races	2.34%	2.44%	4.38%	3.47%
Poverty Rate[3]		11.1%	10.8%	9.3%	11.8%
Unemployment Rate[3]		4.6%	5.2%	5.1%	5.4%
Not in Labor Force[3]		41.2%	44.3%	32.8%	37.1%
Median Age[3]		47.6	46.7	39.1	40.8
Median Age, 2000[1]		38.3	40.2	36.0	38.0
Over 65 Years of Age[3]		23.0%	23.1%	16.0%	18.7%
High School Graduate or Higher[3]		90.5%	90.0%	91.0%	91.7%
Bachelor's degree or Higher[3]		24.6%	17.2%	42.2%	33.8%
Total Households[3]		12,448	28,956	2,318,124	5,193,727
Median Household Income[3]		$64,447	$57,357	$98,461	$73,170
Avg. Household Size[3]		2.27	2.40	2.60	2.42
Median Home Price[3]		$220,100	$124,500	$380,500	$226,00
Median Rent[3]		$681	$704	$1,598	$1,110
Home Ownership Rate[3]		80.1%	80.7%	67.5%	69.2%

[1]Data is from the U.S. Census Bureau Decennial Census of the specified year.
[2]Data is from the 2020 Decennial Census.
[3]Data is from the 2018-2022 5-Year American Community Survey (ACS)
Note: Hispanic is an ethnicity and may be included in any of the races. Total percentages are rounded.

All four build alternatives include two commercial displacements near the north end of the project area. **Chapter 3.7** further discusses these impacts.

Property impacts and acquisitions would be scattered along forested, agricultural, or rural residential areas with low population densities. The objective of the four build alternatives is to stimulate project area economic and population growth and reverse negative population trends by facilitating improved mobility for freight and labor. The proposed U.S. 219 highway would not be tolled providing all populations free and equal access.

3.2.4 Mitigation

Preliminary and final design engineering of the preferred alternative would continue to reduce residential and commercial property impacts and restore property access where feasible. Landlocked parcels are anticipated as well as access adjustments. Mitigation measures for displacements would include relocating residences into available and comparable housing and businesses into available and comparable commercial facilities. **Chapter 3.7** provides additional impact information and mitigation associated with displacements.

3.3 Environmental Justice Analysis

3.3.1 Methodology

An environmental justice (EJ) analysis was completed in compliance with Executive Order 12898 (February 11, 1994): Federal Actions to Address EJ in Minority Populations and Low-Income Populations and U.S. Department of Transportation's (USDOT) Order 5610.2(c) on EJ (March 2021). Additionally, this analysis was completed with consideration for Executive Order 14096 - Revitalizing Our Nation's Commitment to Environmental Justice for All.

Furthermore, the analysis was completed in compliance with FHWA Order 6640.23A, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations”.

Executive Order 12898 directs Federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of activities on minority and low-income populations. The Federal Highway Administration (FHWA) Order 6640.23A, *FHWA Actions to Address EJ in Minority Populations and Low-Income Populations* (June 2012), defines these populations as any readily identifiable group of minority and/or low-income persons who live in geographic proximity, and, if circumstances warrant, geographically dispersed/ transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed FHWA program, policy, or activity.

Minority populations include Black or African American, Hispanic or Latino, Asian American, American Indian or Alaskan Native, and Native Hawaiian or Other Pacific Islander. Low-income populations include those households with a median income at or below the U.S. Department of Health and Human Services (HHS) Poverty Guidelines (FHWA Order 6640.23A, June 2012).

USDOT Order 5610.2(c) defines EJ as the fair treatment and meaningful involvement of all people, regardless of race, ethnicity, income, national origin, or educational level, with respect to the development, implementation and enforcement of environmental laws, regulations, and policies. For the purpose of DOT’s EJ Strategy, fair treatment means that no population, due to policy or economic disempowerment, is forced to bear a disproportionate burden of the negative human health and environmental impacts, including social and economic effects, resulting from transportation decisions, programs and policies made, implemented, and enforced at the federal, state, local or tribal level.

Executive Order 14096 builds upon Executive Order 12898 to deepen and improve environmental justice practices within the federal government. The objectives of Executive Order 14096 include better protection for overburdened communities from pollution and environmental harms, strengthened engagement with communities impacted by legacy barriers and injustices, and increased accountability

and transparency in federal environmental justice policy.

The guiding principles followed by the USDOT regarding EJ are:

- To identify and evaluate environmental, public health, and interrelated social and economic effects of FHWA programs, policies, and activities.
- To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations.
- To ensure the full and fair participation by all potentially affected communities in the transportation decision making process.

The FHWA EJ Analysis Process includes:

- Scoping and identification of EJ populations.
- An alternatives analysis and determination on whether benefits and/or adverse effects to EJ populations exist.
    - If adverse effects to EJ populations exist, the process also includes a determination on whether these effects are disproportionately high and adverse.
    - If disproportionately high and adverse effects exist, then the process includes an evaluation of practicable mitigation or avoidance measures.
- Engagement with the public, stakeholders, and EJ populations.

The Maryland EJ Screen Mapper and the Maryland Department of the Environment (MDE) EJ Screening Tool served as tools to evaluate the project area within Garrett County. The PA Department of Environmental Protection (PA DEP) PennEnviroScreen was used to evaluate the project area within Somerset County. Data from U.S. Environmental Protection Agency's (U.S. EPA) EJScreen: Environmental Justice Screening and Mapping Tool helped to analyze the demographic characteristics of the project area, including percentages of low-income individuals and ethnic minorities within the total population.

Data from the 2018-2022 5-Year ACS and 2020 Decennial Census for each block group and census tract within the project area, Somerset and Garrett Counties, and Pennsylvania and Maryland were used to identify EJ low-income and minority population block groups within each county, as shown in **Figure 3-2** and **Figure 3-3**. **Table 3-3** also shows the data from the 2018-2022 5-Year ACS and 2020 Decennial Census.

For the purposes of this document, an EJ population was identified in a block group if the percentage of low-income or minority residents within the block group was greater than the percentage of such residents within the county containing the block

Table 3-3: Environmental Justice Data

Area	ACS/Decennial Data	
	Low-Income[1]	Minority[2]
Maryland (MD)	**9.26%**	**52.83%**
Garrett County, MD	**11.06%**	**4.87%**
Census Tract 2	18.95%	3.58%
Block Group 1	24.47%	3.27%
Census Tract 3	6.14%	3.58%
Block Group 1	7.26%	4.09%
Block Groups Total	**17.22%**	**3.58%**
Pennsylvania (PA)	**11.78%**	**26.53%**
Somerset County, PA	**10.84%**	**6.86%**
Census Tract 213	11.25%	3.60%
Block Group 1	10.20%	3.68%
Census Tract 215	14.71%	2.38%
Block Group 1	8.33%	1.42%
Block Group 2	20.07%	2.94%
Census Tract 217	16.82%	2.63%
Block Group 1	22.95%	1.52%
Block Group 2	12.82%	3.22%
Block Group 3	12.25%	3.37%
Block Groups Total	**14.55%**	**2.74%**
PA/MD Block Groups Total	**15.42%**	**3.02%**

[1]Low-Income (ACS) – Percent of individuals, as identified in 2018-2022 5-Year ACS data, who are at or below the poverty level established by the Department of Health and Human Services and the Census Bureau.
[2] Minority (Decennial Census) – Percent of individuals, as identified in the 2020 Decennial Census, who are black or African American (Amer.), Hispanic, Asian Amer., Amer. Indian/Alaskan Native, Native Hawaiian, and/or Pacific Islander.
*Cells highlighted in red represent block groups with a EJ population

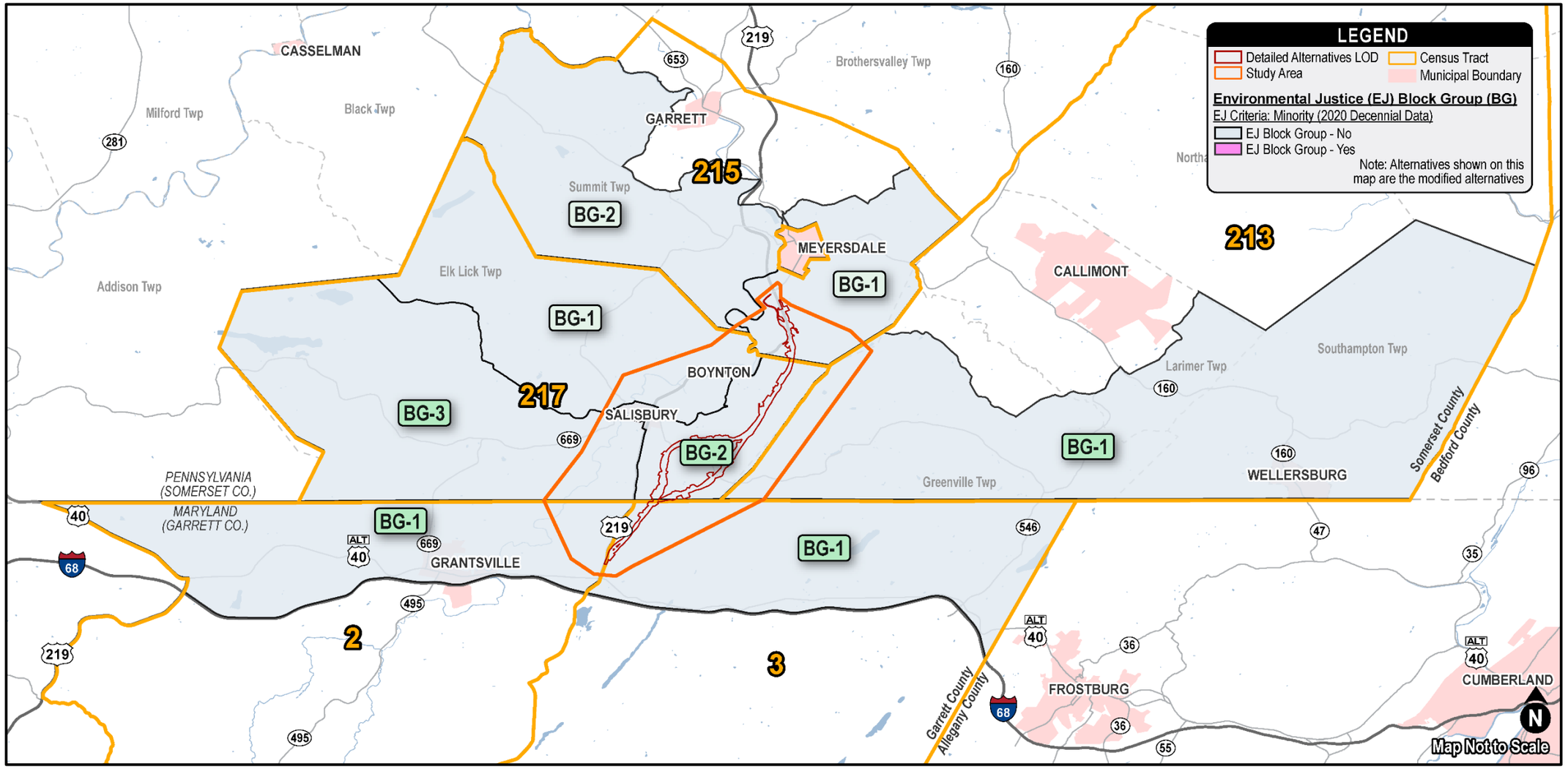


Figure 3-2: Environmental Justice Minority Populations

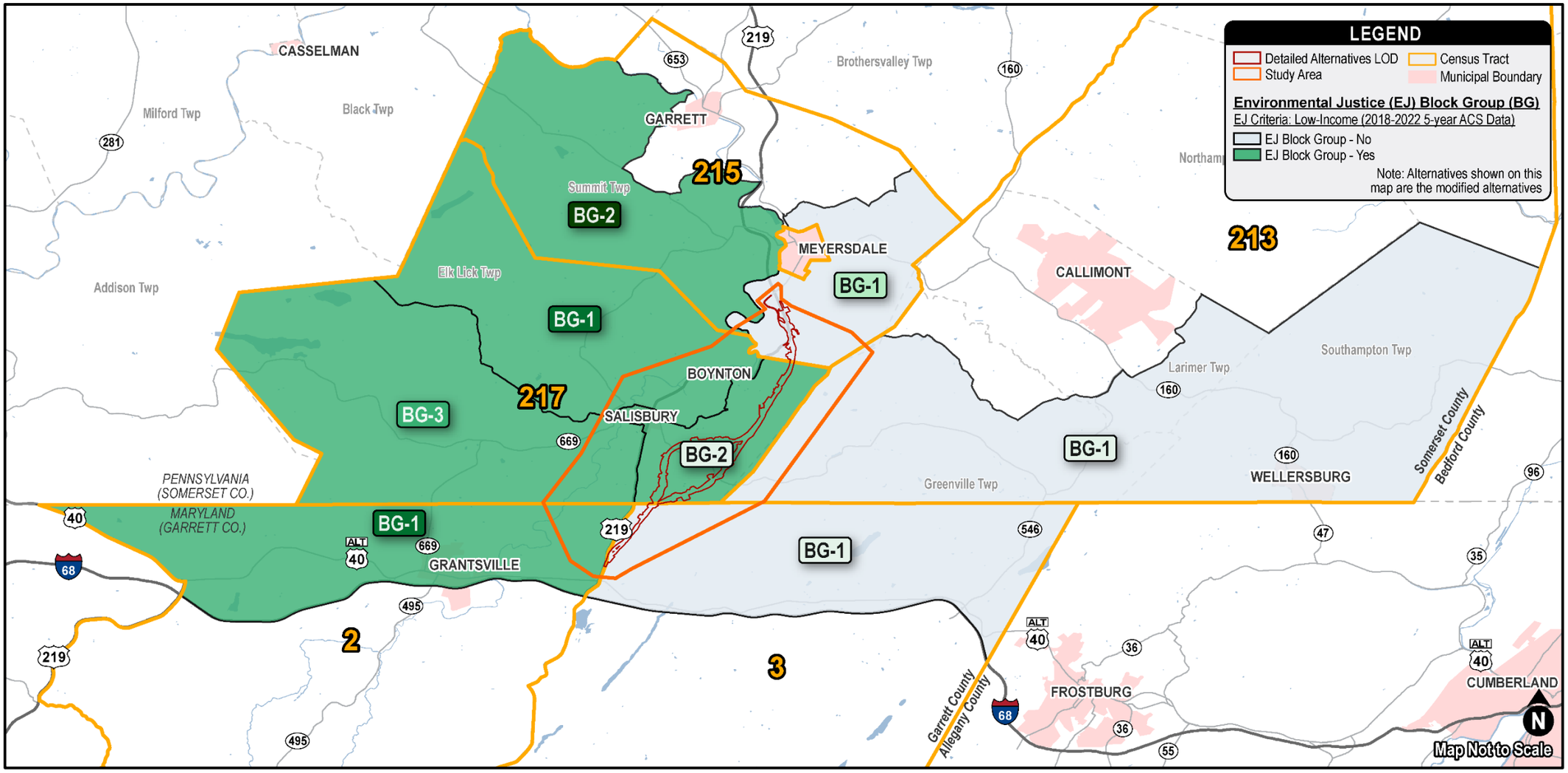


Figure 3-3: Environmental Justice Low-Income Populations

group. This approach was utilized over a "Fifty Percent" analysis, as described in *Promising Practices for EJ Methodologies in NEPA Reviews* (Federal Interagency Working Group on Environmental Justice, 2016), as a Fifty Percent analysis could be dismissive of rural EJ populations. Block groups within rural setting include a much larger area due to the lower population density.

3.3.2 Existing Conditions

A. MD EJ Screen Mapper

In Maryland, Census Tract 2 has an EJScore of 0.40 according to the Maryland EJScreen Mapper. This places the census tract in the 40th percentile statewide for EJ concerns as evaluated by the Mapper's EJScore. The EJScore considers pollution burden, environmental effects, sensitive populations, and socioeconomic factors. Census Tract 3 has an EJScore of 0.42, placing it in the 42nd percentile for EJ concerns, which is higher than 42% of the state.

In Maryland, Census Tract 2 additionally has a low-income population within the 78th percentile statewide. Census Tract 3 has a low-income population placing it in the 70th percentile statewide. This data indicates a potential for low-income EJ populations within the project area. Furthermore, Census Tract 2 has a non-white population in the 1st percentile statewide. Census Tract 3 has a non-white population in the 5th percentile. This data does not indicate the potential for minority EJ populations within the project area.

B. MDE EJ Screening Tool

The MDE EJ Screening Tool corroborates these findings, identifying that Census Tract 2 is in the 80th-90th percentile for poverty statewide and Census Tract 3 is in the 60-70th percentile for poverty. However, the MDE EJ Score, as determined by minority population, poverty rate, and English proficiency, places Census Tract 2 in the 20-30th percentile and Census Tract 3 10-20th percentile statewide for EJ concerns.

C. PennEnviroScreen

The Pennsylvania Environmental Justice Mapping and Screening Tool (PennEnviroScreen) assigns a final EJ score to block groups based on pollution burden and demographic data. A percentile value is then calculated for each block group based on the statewide distribution. PennEnviroScreen indicates that Census Tract 213, Block Group 1, has a score in the 59th percentile. Census Tract 215, Block Group 1, has a score in the 80th percentile. Census Tract 215, Block Group 2, and Census Tract 217, Block Group 1, have a score in the 64th percentile. Census Tract 217, Block Group 2 has a score in the 38th percentile. Census Tract 217, Block Group 3 has a score in the 45th percentile.

Environmental effects, including toxic area emissions, mining, and hazardous waste sites, appear to be a significant contributor the EJ scores within the project area. Sensitive population data, which is related to population health characteristics and diseases, and socioeconomic data are also contributors to higher EJ scores, especially in Census Tract 215, Block Group 1.

D. U.S. EPA EJScreen

According to U.S. EPA EJScreen, a minority population is defined as the percent of individuals who list their racial status as a race other than white alone and/or list their ethnicity as Hispanic or Latino. That is, all people other than non-Hispanic white-alone individuals (according to ACS 5-year estimates).

EJScreen data indicates that 4% of the households within the project area block groups are considered a minority population, which is equivalent to or lower than the minority population percentage within Somerset and Garrett Counties and Pennsylvania and Maryland. Pennsylvania project area block groups have a 6% minority population. This is equivalent to the Somerset County's 6% minority population percentage and significantly lower than Pennsylvania's 24%. Maryland project area block groups have a 1% minority population. EJScreen indicates that all of the block groups within the project area, except for Census Tract 217, Block Group 3, have a minority population percentage lower than their respective county minority population percentage.

EJScreen defines low-income population as the percentage of individuals whose ratio of household income to poverty level in the past 12 months was less than 2. This differs from ACS data and Executive Order 12898, which define low-income populations as households with a median income at or below the U.S. Census Bureau's annual income thresholds and the HHS Poverty Guidelines.

According to EJScreen, 35% of the households within the project area block groups are considered low income, which exceeds the percentage within Somerset and Garrett Counties and Pennsylvania and Maryland. Pennsylvania project area block groups have a 34% low-income population. This is greater than Somerset County's 30% low-income population and Pennsylvania's 28%. Maryland project area block groups have 38% low-income population. This is greater than Garrett County's 33% and Maryland's 22%. Additionally, EJScreen indicates that Census Tract 2, Block Group 1 (45%); Census Tract 215, Block Groups 1 (34%); Census Tract 215, Block Groups 2 (64%); and Census Tract 217, Block Group 3 (33%) have a low-income percentage higher than their respective county.

E. 2020 Decennial Census – Minority Populations

As seen in **Figure 3-2**, the minority population percentages within each block group are relatively consistent across the project area. According to U.S. Census data, the percentage of minority populations ranges only 2.67% among block groups, between 1.42% and 4.09%. The percentage of minorities residing within the project area block groups are not greater than the percentage residing within Somerset and Garrett Counties or Pennsylvania and Maryland.

F. 2018-2022 5-Year ACS - Low-Income Populations

An analysis using 2018-2022 5-Year ACS data was also completed to determine whether the project area population contains a greater number of individuals below the federal poverty threshold. The U.S. Census 2022 poverty threshold was $14,880 for a one-person household, $18,900 for a two-person household, $23,280 for a three-person household, and $29,950 for a four-person household. ACS block group data indicated that 15.42% of the project area population is low-income

In Pennsylvania, the low-income population of the project area's block groups is 14.55%. This is greater than Somerset County's 10.84% and Pennsylvania's 11.78% low-income populations. The low-income population of the Maryland project area block groups is 17.22%. This is greater than Garrett County's 11.06% and Maryland's 9.26% low-income populations. This ACS data shows the percentage of low-income residents within the project area block groups is greater than percentage in the applicable counties.

As shown in **Figure 3-3**, low-income populations are higher on the west side of the project area. In Pennsylvania, low-income populations are concentrated in Census Tract 215, Block Group 2, where the low-income population represents 20.07% of the population, as well as Census Tract 217, Block Group 1, where the low-income population is 22.95%. In Maryland, low-income populations are particularly concentrated in Census Tract 2, Block Group 1, where 24.47% of the population is considered low-income.

G. Findings

For this analysis, it was determined that an EJ population is present if the percentage of the population identified as low-income or a minority residing in a census block group exceeds the percentage of the population identified as low-income or a minority in the respective county.

Therefore, this analysis identifies a low-income EJ population in the project area and does not identify a minority EJ population. However, analysis based on block groups may not identify small clusters and dispersed EJ populations. Outreach conducted to identify these populations is discussed below. Additional information about existing conditions is provided in **Appendix H**, which contains the *Socioeconomic Existing Conditions Report*.

H. Outreach

To date, Pennsylvania Department of

Transportation (PennDOT) and Maryland State Highway Administration (SHA) have held four Community Advisory Committee (CAC) meetings (November 3, 2021, June 2, 2022, November 22, 2023, and April 11, 2024). The CAC is composed of local, county, and state government officials and staff; local business owners; and other community leaders. These meetings allowed the CAC the opportunity to provide input on the preliminary and detailed National Environmental Policy Act (NEPA) alternatives. These meetings delivered no further information regarding existing EJ populations.

The Project Team contacted the planning staff of Somerset County and Garrett County and requested any information related to the presence of EJ populations within the project area, including small clusters or dispersed populations. Somerset and Garrett County responded that they were not aware of any specific EJ populations, small clusters, or dispersed EJ populations. Documentation from Garrett County is attached to the *Socioeconomic Existing Conditions Report*.

Additionally, PennDOT and SHA offered two public officials meeting (June 23, 2022 and November 16, 2023), two open house public meetings (June 23, 2022 and November 16, 2023), and two virtual public meetings (June 27, 2022 and November 21, 2023). The June 2022 public meetings allowed public officials and citizens the same opportunity to comment on the information presented at the CAC meetings and served as the public scoping meeting. These meetings delivered no further information regarding existing EJ populations. The November 2023 public meetings presented detailed alternatives and associated environmental impacts. These meetings delivered no further information regarding existing EJ populations. The presence of EJ populations will continue to be assessed through publication of the Final Environmental Impact Statement (FEIS).

Furthermore, the Project Team met with the CAC four times throughout the NEPA process. The CAC is comprised of members of the community and serve as liaisons between the community and project team. No specific discussions were held regarding environmental justice populations with the CAC. There was never any mention from the CAC about the presence of EJ populations within the project area.

3.3.3 Impacts

The No Build Alternative would have no direct adverse effect on EJ populations within the project area. However, as discussed in **Chapter 1.7**, one of the primary needs for this project is to provide economic stimulus and improve living conditions within the Appalachian Region. ARC studies have shown that investment in the region's highways brings a positive return in terms of transportation efficiency and economic growth, along with improved living standards. The No Build Alternative would not satisfy this project need, which would negatively impact future economic growth in the project area.

In Somerset County, eight residential displacements are proposed within Census Tract 215, Block Group 1 under all of the build alternatives. One additional residential displacement is proposed within Census Tract 217, Block Group 2 under Alternatives DU Modified and DU-Shift Modified. These displacements would not result in a disproportionally high and adverse effect on the low-income population within the project area, as Alternatives E and E-Shift Modified would have no residential displacements within EJ population areas, and Alternatives DU and DU-Shift Modified would have only one displacement out of nine residential displacements within an EJ population area.

Regardless of which build alternative is selected, the project has the potential to improve the economy of Appalachia, and therefore, the living standard of people within the region. These economic improvements could benefit all residents within the vicinity of the project area, including the low-income residents identified in **Chapter 3.3.2**. The proposed U.S. 219 highway would not be tolled, providing all populations free and equal access. **Table 3-4** provides analysis of which alternatives have the potential for adverse effects on environmental health, economic wellbeing, or quality of life of EJ populations.

Table 3-4: Effect of Alternatives on General and EJ Populations

Resource/Impacts	Adverse Effect Associated with Alternative?		Potential for Disproportionally High and Adverse Effect to EJ Population from Build Alternatives?	
	No Build	Build Alternatives		
Air Quality	No	No	No	No significant adverse impact on air quality is anticipated.
Residential Displacements	No	**YES**	No	No displacements within EJ population areas are proposed from Alternatives E/E-Shift Modified, and only one of nine displacements associated with Alternatives DU/DU-Shift Modified is proposed within an EJ population area.
Noise	**YES**	**YES**	No	Alternatives DU/E Modified will impact thirteen total receptors, while Alternatives DU-Shift/E-Shift Modified will impact nine total receptors. The No Build Alternative would impact four receptors due to increasing traffic volumes along existing U.S. 219. The No Build would impact three receptors in an EJ population area in MD, while the build alternatives would impact one or two receptors in an EJ population area in MD. No noise impacts are anticipated to EJ population areas in PA.
Farmland	No	**YES**	**YES**	Impacts associated with the four build alternatives are proposed to the Mast, Showalter, Deal/Miller, and Markowitz farming operations within an EJ population area in PA. PA Act 100 requires Agricultural Lands Condemnation Approval Board (ALCAB) approval for the condemnation of productive agricultural lands and minimization measures. Mitigation measures will be coordinated with ALCAB, as appropriate.
Hazardous Waste and Water Quality	No	**YES**	No	Contaminated areas may within the project area may pose a risk of soil, groundwater, and waterway contamination and chemical exposure during construction. This is not specific to EJ population areas. A waste management plan and/or Phase II/III Environmental Site Assessments (i.e., geophysical survey, soil, and groundwater sampling) will address impacts and the handling and disposal of waste encountered during construction. Construction methods will mitigate the potential for any disproportionately high or adverse effects to EJ populations. Special provisions will be included in the construction contract stating that the contractor will ensure that there are no interruptions in water flow or degradation of water quality caused by construction activities. This includes the water supply from Findley Spring, which is a significant source of water for Salisbury Borough, which is within an EJ population area. Special provisions would also be included to perform water quality tests on residential wells before, during, and after construction to verify that the well water quality and volume has not been negatively impacted by facets of construction. If private wells are determined to be impacted resulting in the loss of water or degradation of water quality, the wells can be replaced or remediated, as appropriate.
Aesthetic Value	No	**YES**	No	Aesthetics near the project area may be temporarily impacted by construction and permanently impacted by the proposed roadway. This is not specific to EJ population areas, and no disproportionate impact to EJ populations is anticipated.
Community Cohesion	**YES**	**YES**	No	The four build alternatives will have limited impacts to cohesion, and cohesion impacts are largely caused by the bisection of Clark Road. This impact to Clark Road is not within an EJ population area.
Economic Vitality and Employment	**YES**	No	No	The four build alternatives have the potential to improve the economy of Appalachia, and therefore, the living standard of people within the region. Two commercial displacements are proposed, outside of EJ population areas.

Table 3-4: Effect of Alternatives on General and EJ Populations (Continued)

Resource/Impacts	Adverse Effect Associated with Alternative?		Potential for Disproportionally High and Adverse Effect to EJ Population from Build Alternatives?	
	No Build	Build Alternatives		
FEMA Floodplains	No	No	No	None of the four build alternatives will result in significant floodplain encroachment per US Department of Transportation Order 5650.2 and do not have the potential to directly increase flooding risks.
Accessibility	**YES**	No	No	The four build alternatives are anticipated to increase accessibility to community facilities and services and commercial areas.
Traffic Congestion	**YES**	No	No	The traffic congestion on the existing U.S. 219 roadway is anticipated to be unacceptable by 2050. All four build alternatives will relieve traffic congestion and maintain an acceptable level of congestion through 2050.
Safety	No	No	No	All four build alternatives will meet the project's purpose and need by promoting freight transportation safety as well as updating deficient roadway areas to AASHTO design standards.
Temporary Impacts	No	**YES**	No	Construction activities associated with the build alternatives could result in disruptions to local residents and the traveling public. These disruptions would be temporary and localized occurring during the construction period. This is not specific to EJ population areas and no disproportionate impact to EJ populations is anticipated as a result of construction mitigation measure. This includes implementation of maintenance and protection of traffic plans and public coordination in advance of roadway closures and detours.
Parks and Recreation	No	No	No	No impacts to parks or recreation facilities are proposed.
Community Facilities	No	No	No	No impacts to community facilities are proposed.
Stormwater Management	No	**YES**	No	The four build alternatives would result in impacts to stormwater runoff within and adjacent to the project area due to affecting existing drainage patterns, adding impervious area, compacting soils, and introducing additional pollutants such as deicing materials, vehicular oils, and thermal pollution. These alterations would produce an increase in peak rate of stormwater runoff, volume of stormwater runoff, and water quality degradation. This is not specific to EJ population areas and no disproportionate impact to EJ populations is anticipated as a result of construction mitigation measures, including implementation of standard erosion and sediment pollution control best management practices.

3.3.4 Mitigation

No displacements to populations or businesses in low-income EJ block groups are anticipated. Additionally, the project is not anticipated to have an adverse effect on environmental health or access to community facilities within the project area. Therefore, no mitigation measures are proposed. The project is anticipated to be a net benefit to low-income populations within the project area. As noted in **Chapter 3.3.3**, the project has the potential to improve the economy and living standard of people within the region.

3.4 Equity

3.4.1 Methodology

Title VI of the Civil Rights Act of 1964 prohibits discrimination on the basis of race, color, or national origin in any federal program or activity. Specifically, 42 USC § 2000d states that "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance."

In January 2021, the Biden Administration issued Executive Order 13985 (EO 13985) "Advancing Racial Equity and Support for Underserved Communities Through the Federal Government." EO 13985 directs Federal agencies to revise policies to account for racial inequities in their implementation. At the same time, the administration also issued EO 14008, "Tackling the Climate Crisis at Home and Abroad." EO 14008 established the Justice40 Initiative, an "all of government approach" that sets a goal of 40 percent of the benefits of certain federal investments to flow to disadvantaged communities. The Justice40 Initiative serves as the basis for equity analysis associated with this project.

Taken together, and in conjunction with other more recent EOs (EO 14091), ("Further Advancing Racial Equity and Support for Underserved Communities Through the Federal Government"), the project team utilized the Climate and Economic Justice Screening Tool (CEJST), which the Council on Environmental Quality (CEQ) developed to comply with the new EOs and Title VI, to identify underserved communities in the US. The tool has an interactive map and uses datasets that are indicators of burdens in eight categories: climate change, energy, health, housing, legacy pollution, transportation, water and wastewater, and workforce development, which collectively define disadvantaged communities. Each of the eight burden categories have their own criteria to meet to be considered disadvantaged.

The USDOT Equitable Transportation Community (ETC) Explorer was also utilized. The ETC Explorer was designed to complement the CEJST and

EO 13985 defines **"equity"** as the consistent and systemic fair, just, and impartial treatment of all individual, including individuals who belong to underserved communities that have been denied such treatment, such as Black, Latino, and Indigenous and Native American persons, Asian Americans and Pacific Islanders and other persons of color; members of religious minorities; lesbian, gay, bisexual, transgender, and queer (LBBTQ+) persons; persons with disabilities; persons who live in rural areas; and persons otherwise and adversely affected by persistent poverty and inequality.

It also defines **"underserved communities"** as populations sharing a particular characteristic, as well as geographic communities, that have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life, as exemplified by the list in the preceding definition of "equity." and civic life, as exemplified by the list in the preceding definition of "equity."

provide additional data regarding transportation disadvantages. This tool identifies disadvantaged communities that would benefit from programs included in the Justice40 Initiative.

3.4.2 Existing Conditions

For the U.S. 219 project area, four of the eight criteria are met within one or more of the census tracts in the project area:

- **Health:** Communities are identified as disadvantaged if they are in census tracts that: are at or above the 90th percentile for asthma or diabetes or heart disease or low life expectancy and are at or above the 65th percentile for low income.
- **Housing:** Communities are identified as disadvantaged if they are in census tracts that: experienced historic underinvestment or are at or above the 90th percentile for the housing cost, lack of green space, lack of indoor plumbing, or lead paint and are at or above the 65th percentile for low income.
- **Legacy Pollution:** Communities are identified as disadvantaged if they are in census tracts that: Have at least one abandoned mine land, formerly used defense sites, are at or above the 90th percentile for proximity to hazardous waste facilities, proximity to Superfund sites (National Priorities List (NPL), or proximity to risk management plan (RMP) facilities and are at or above the 65th percentile for low income.
- **Transportation:** Communities are identified as disadvantaged if they are in census tracts that: are at or above the 90th percentile for diesel particulate matter exposure or transportation barriers or traffic proximity and volume and are at or above the 65th percentile for low income.

There are five census tracts that fall within the project area, three of those are in Somerset County, Pennsylvania and include Census Tracts 213, 215, and 217. The census tracts in Garrett County, Maryland include Census Tracts 2 and 3.

In Pennsylvania, Census Tract 213 and in Maryland Census Tract 3 are considered Not Disadvantaged because they do not meet any burden threshold or at least one associated socioeconomic threshold.

In Pennsylvania, Census Tracts 215 and 217 are identified as disadvantaged and has three burden categories that meet the criteria: housing, legacy pollution, and transportation. They meet housing criteria because they are in the 90th percentile for a share of homes with no kitchen or indoor plumbing. For legacy pollution, there is at least one abandoned mine in this census tract. Lastly, the census tract is above the 90th percentile for transportation barriers. Transportation barriers are defined as the average relative cost and time spent on transportation relative to other census tracts. Both census tracts also meet the threshold for the 65th percentile for low income.

In Maryland, Census Tract 2 is identified as disadvantaged and has two categories that meet the criteria: legacy pollution and transportation. There is at least one abandoned mine in this census tract, and it is above the 90th percentile for transportation barriers. The census tract is also at or above the 65th percentile for low income. The disadvantaged tracts are depicted on **Figure 3-4.**

Furthermore, according to the USDOT ETC Explorer, Census Tracts 213, 215, 217, 2, and 3 are disadvantaged as it relates to transportation insecurity. Census Tracts 215 and 2 are disadvantaged in the areas of transportation access, transportation cost burden, and traffic safety. Census Tracts 213 and 217 are disadvantaged in the areas of transportation access and traffic safety. Census Tract 3 is disadvantaged in transportation access. Transportation access issues include households that lack a personal vehicle, estimated drive and walk distances to important facilities, and transit access. Transportation cost burden addresses the amount the average household spends on transportation. Traffic safety includes the traffic fatalities within the Census Tract. **Table 3-5** includes data that quantifies transportation burdens in these Census Tracts.

Additionally, this project area is considered underserved. In 1965, Congress declared that the Appalachian Region was lagging the rest of the nation in economic growth and its people have not

shared in the nation's prosperity. As a result, the ARC was established to work with state governments and counties to build community capacity and strengthen economic growth in Appalachia and help the region achieve socioeconomic parity with the nation. The U.S. 219 project area falls within the Appalachian Corridor and U.S. 219 is part of the ADHS. One of ARC's goals centers on building Appalachia's infrastructure to ensure that the residents and businesses of Appalachia have access to reliable, affordable, and resilient infrastructure in order to successfully live and work in the region.

3.4.3 Impacts

While there are communities identified as disadvantaged within the project area for housing, legacy pollution or health criteria, addressing those conditions is outside this scope of this project, however transportation barrier criteria can be addressed. The following impact discussion focuses on transportation and whether the alternatives can address the transportation barrier criteria.

The No Build Alternative would not provide equitable transportation development, because the No Build does not address the project needs discussed in **Chapter 1.7** and the transportation barriers within the project area.

Any of the four build alternatives would provide equitable transportation development to disadvantaged communities within the project area by completing Corridor N of the ADHS and helping to advance completion of the entire ADHS system.

Table 3-5: Transportation Burdens in Project Area Census Tracts

Transportation Burden	Census Tract				
	Pennsylvania			Maryland	
	213	215	217	2	3
Disadvantaged	No	Yes	Yes	Yes	No
Percentage of Households with No Personal Vehicle	5.80%	12.60%	11.80%	5.20%	0.90%
Estimated Drive Distance to Grocery Store	19 Min.	8 Min.	8 Min.	5 Min.	20 Min.
Estimate Drive Distance to Medical Facility	16 Min.	7 Min.	12 Min.	10 Min.	22 Min.
Points of Interest within a 15 Minute Walk	None	None	None	None	None
Estimated Cost of Transportation Per Household	$11,730	$11,021	$11,241	$11,864	$11,951
Estimated Percentage of Household Income Spent on Transportation	15.39%	19.62%	14.65%	17.18%	13.17%
Average Annual Traffic Fatalities per 100k People Between 2016-2020	10.44	4.18	6.19	6.43	0.00
Source: USDOT Equitable Transportation Community (ETC) Explorer (2023)					

The project would reduce transportation related barriers, allow for faster and more reliable travel times, reduce vehicle operation costs, and increase access to labor and business delivery markets. Any of the four build alternatives would increase market access by providing a larger travelshed area to draw upon skilled employees that businesses can attract and serve.

3.4.4 Mitigation

Both Executive Orders 13985 and 14091 instruct Federal agencies to provide equity in decision-making and support communities that have been locked out of opportunity. These include communities known to be considered disadvantaged in the following categories:

- Health
- Housing
- Legacy Pollution
- Transportation
- Low income

Residential displacements proposed by the build alternatives would not result in a disproportionally high and adverse effects on the low-income population within the project area. The project is intended to address the transportation criteria that exists within three of the four census tracts. This project is anticipated to provide a transportation benefit to disadvantaged communities within the project area.

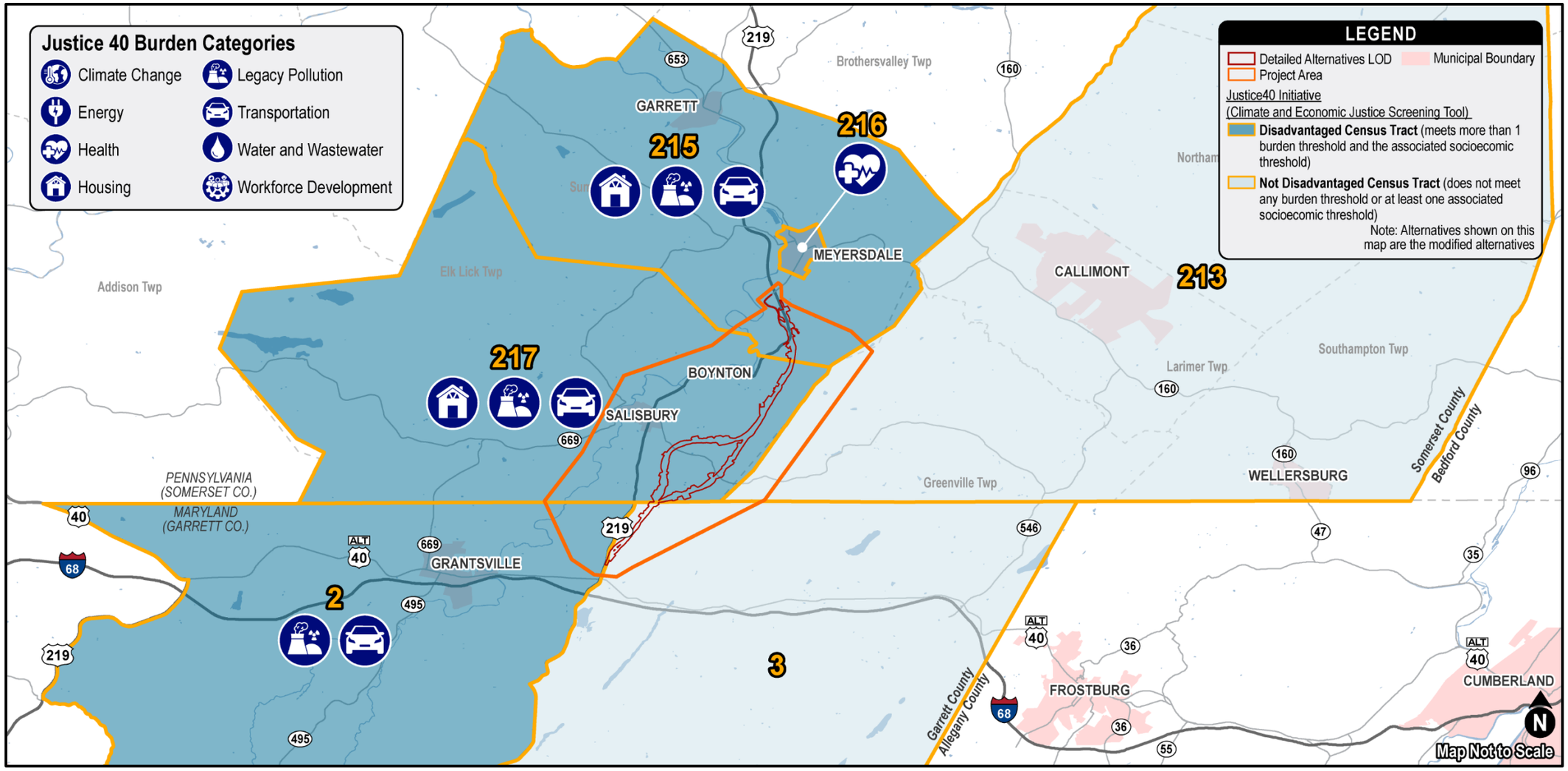


Figure 3-4: Justice40 Disadvantaged and Not Disadvantaged Census Tracts

3.5 Communities & Community Facilities

3.5.1 Methodology

The project team used state and local records, aerial mapping analysis, detailed field studies, and public involvement activities to identify the communities and community facilities present within the project area. Public involvement activities included public meetings, CAC meetings, and coordination with municipalities.

The project team identified Plain Sect communities within the project area. Plain sect communities are groups characterized by a separation from the world and a varying use of modern technologies. This can include Amish and conservative Mennonites. Plain Sect communities typically have unique transportation needs as well. During previous project studies in this area, a meeting was held with Bishop Bennie A. Yoder of the Amish Community in West Salisbury on September 10, 2002. More recently, a telephone conversation occurred with Bishop Paul S. Yoder on October 25, 2023, and meeting on July 5, 2024, reconfirmed that same information from 2002 is still accurate. A summary of the July 5, 2024, meeting is included as an attachment to **Appendix H**. Aerial mapping analysis, Pennsylvania Department of Education records, local news media, site reconnaissance, and public involvement efforts provided information on Plain Sect communities as well.

3.5.2 Existing Conditions

A. Communities

Communities identified within the project area include Summit Township, Elk Lick Township, the unincorporated community of Boynton, and Salisbury Borough. There is no named community that represents the project area within Garrett County, Maryland.

Diffuse populations over a large area characterize rural townships in Pennsylvania, like Summit and Elk Lick. Summit Township has a population (as of 2020) of 2,141 residents within 45.3 square miles, with a population density of 48.2 residents per square mile. Elk Lick Township encompasses 57.7 square miles and a population (as of 2020) of 2,264, averaging 37.6 residents per square mile. Summit Township surrounds Meyersdale Borough at the north end of the project area, and Elk Lick Township surrounds Salisbury Borough near the center of the project area. Residential and commercial areas sprawl outside of these boroughs into each township. The build alternatives are proposed within the southeast side of Summit Township and east side of Elk Lick Township.

The community of Boynton is a small conglomeration of residences and commercial facilities within 0.1 square miles. It includes approximately 144 residents (as of 2020) and is one of the most densely populated areas of Elk Lick Township. The community is located along existing U.S. 219.

Salisbury Borough is the most densely populated area within the project area with a population (as of 2020) of approximately 706 residents within 0.4 square miles. This establishes a population density of 1,843.3 residents per square mile. Existing U.S. 219 runs through the center of the Borough. These communities and their population size are depicted on **Figure 3-5**.

Photograph 3-3: Existing U.S. 219 through Salisbury Borough

B. Community Facilities

These communities rely on various facilities or agencies to provide utilities, education, administration, religious and emergency services. There are several public water supply and wastewater facilities in or near the project area including:

- The Salisbury Borough public water supply, under the authority of the Salisbury Borough Water Works Commission. The Salisbury Borough Water Works Commission currently services properties within the borough only.
- Meyersdale Area Municipal Authority whose service area is adjacent to the north end of the project area.
- Garrett County operates the Chestnut Ridge Collection System for wastewater at the south end of the project area. No water service is currently available in the Chestnut Ridge area (Garrett County, 2014).
- Various private groundwater wells and septic systems are located within the project area, serving rural residents and businesses.

Other major public utilities and facilities currently in the project area include Columbia Gas just north of and parallel to the Pennsylvania/Maryland State Line and a wind farm located at the northeast end of the project area. Six of the turbines are located within the northeast corner of the study area.

Emergency and medical service providers serve many residents located outside of their local area due to the project area's rural nature. Only Salisbury Volunteer Fire Company is located within the project area. All of the other emergency and medical service providers are located outside of the project area. They include:

- Meyersdale Area Ambulance Association
- Northern Garrett County Rescue Squad
- Eastern Garrett County Volunteer Fire Company
- Grantsville Volunteer Fire Department
- Meyersdale Borough Police Department
- Pennsylvania State Police Troop A - Somerset Station
- Maryland State Police Barrack W - Mc Henry

Three public school districts serve the project area include the Salisbury-Elk Lick Schook District, Meyersdale Area School District and Garrett County Public Schools.

Several government offices are located within the project area including municipal buildings, and post offices.

Ten places of worship are located within the project area. There are also six cemeteries and memorials within the project area.

See **Figure 3-5**, for a general overview of resources within the project area. **Chapter 3.6** discusses Parks and Recreational Facilities. Somerset and Garrett Counties offer on-demand public transit services (space-available basis) to all residents. The Community Action Partnership for Somerset County Tableland Services, Inc. operates Somerset County Transportation System (SCTS). SCTS also offers

Photograph 3-4: Wind Farm in Somerset County

regular trips between Salisbury and Meyersdale. Garrett Transit Service (GTS) is a department of Garrett County Community Action Committee. GTS provides transportation throughout Garrett County and other parts of Maryland and neighboring West Virginia.

C. Plain Sect Communities

A review of project information identified two Amish communities—one in the West Salisbury community within Elk Lick Township and one in Pocahontas within Greenville Township, just outside the project area. According to the interviewed Amish Bishops, the Amish occasionally travel between these two communities. From West Salisbury, the Amish tend to travel east through Salisbury, crossing U.S. 219 within the Borough. The likely route beyond Salisbury is Greenville Road, which would take Amish travelers directly to Pocahontas. The length of the trip is approximately nine miles. Amish communities in the area speak and read the English language.

Current aerial analysis and site reconnaissance identified three Plain Sect or Amish churches (or places of worship) in Summit, Elk Lick and Greenville Townships.

Pennsylvania Department of Education records also identified fourteen Amish schools in these townships.

The *Daily American* newspaper profiled various Amish businesses, and the project team identified other businesses in the area using aerial mapping. **Figure 3-6** shows these businesses, Amish places of worship, and Amish schools within the vicinity of the project area.

Project team and resident observations have noted Amish travel along Piney Run Road. The project team discussed the presence of Plain Sect populations in the project vicinity with officials from Elk Lick Township on September 12, 2022. The Township identified an Amish population living along Mountain Road and Clark Road.

Additional information about existing conditions is provided in **Appendix H**, which contains the *Socioeconomic Existing Conditions Report*.

3.5.3 Impacts

The No Build Alternative would have no direct effect on existing communities or community facilities within the project area. The four build alternatives would involve construction of a new, limited-access expressway. This new expressway would improve north and south project area access. Existing U.S. 219 would be maintained as a local road with each of the build alternatives. Expressway construction would reduce traffic and truck volumes along existing U.S. 219, improving community safety. The build alternatives are anticipated to improve community access to schools, police, fire protection, medical treatment, emergency medical services, and recreational resources. Members of the CAC represented some of these essential community services during project development.

Chapter 3.7 discusses impacts to individual residences. The four build alternatives would not bisect any existing communities, nor would the build alternatives adversely impact community facilities. While all four build alternatives would bisect Clark Road, no specific community resides along Clark

Photograph 3-5: Horse and Buggy along Existing U.S. 219 at Salisbury Builders Supply

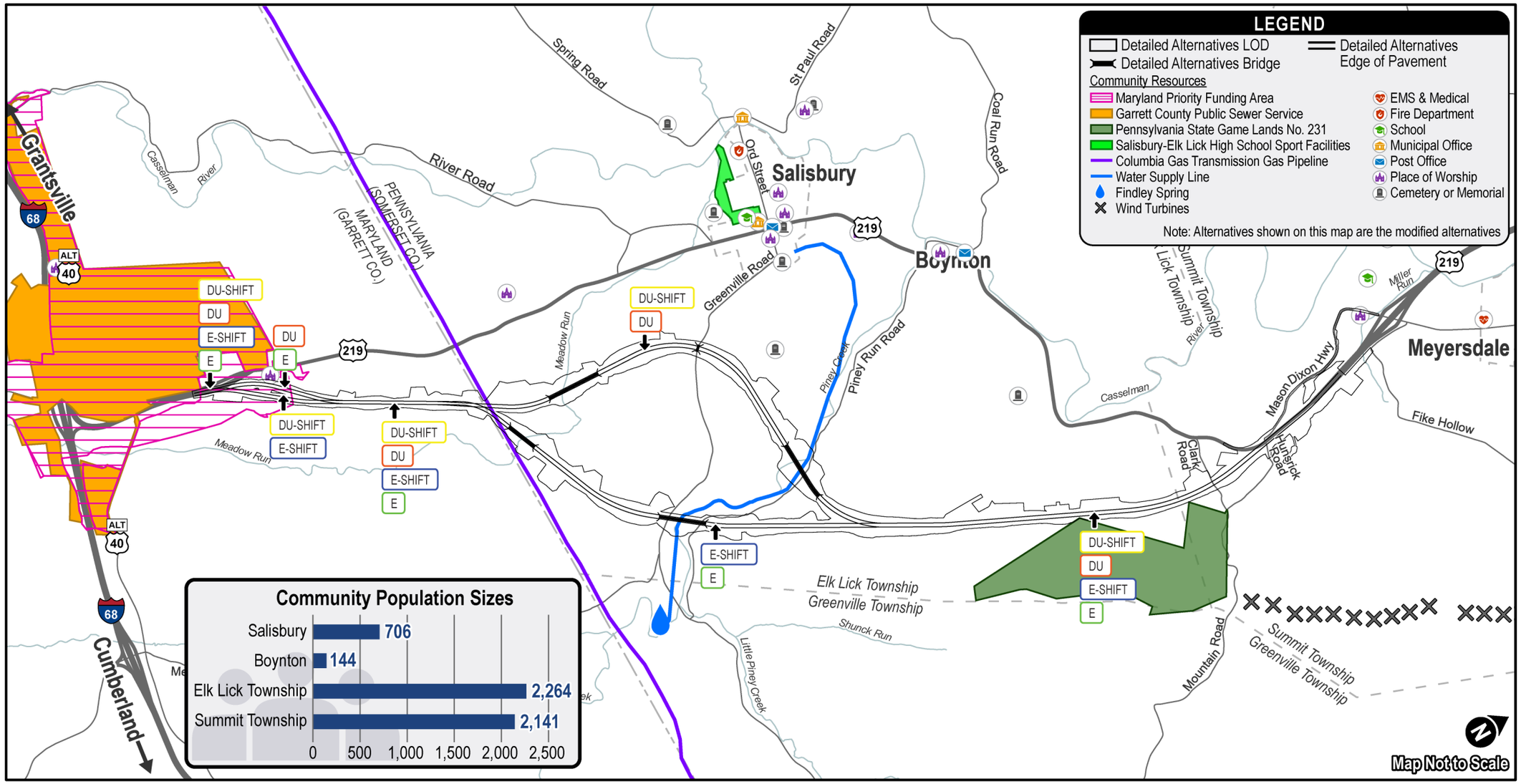


Figure 3-5: Community Resources and Public Facilities

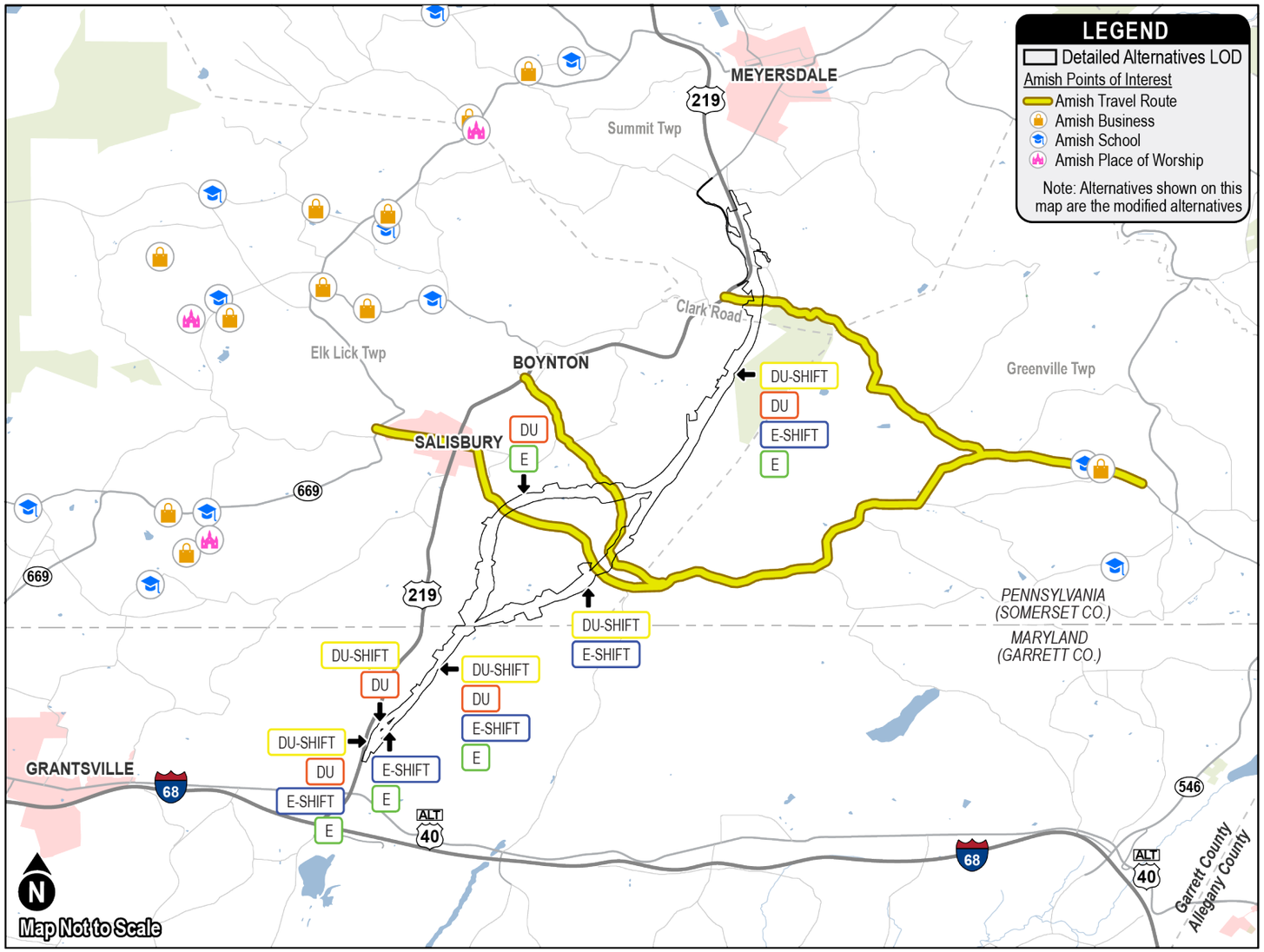


Figure 3-6: Plain Sect Community Resources

Road. Vehicular travel to each side of Clark Road would be provided along the proposed Hunsrick Road Extension, Mountain Road, and existing U.S. 219.

None of the four build alternatives would directly impact pedestrian facilities. However, there are sidewalks in Salisbury and U.S. 219 currently runs through the center of town. With the expected reduction in traffic from existing U.S. 219, the local network could result in safer walking and bicycling within Salisbury.

Elk Lick Township indicated that they anticipate no Plain Sect population travel issues since the project would maintain the existing local roadway network. As shown in **Figure 2-11**, existing U.S. 219 would no longer be directly accessible from Clark Road or Mountain Road because of the build alternatives. The proposed Hunsrick Road Extension, however, would allow Amish travelling along these roads to use Hunsrick Road to reach Mason Dixon Highway and maintain similar east-west travel routes.

This change to the local network was discussed with Bishop Paul S. Yoder and he indicated there were not concerns relative to the proposed changes.

3.5.4 Mitigation

Executive Order 13985 instructs Federal agencies to provide fair treatment to underserved communities, including Plain Sect populations. Plain Sect communities are not anticipated to have travel issues associated with the proposed build alternatives due to the proposed Hunsrick Road Extension, which would allow similar east-west travel routes to be maintained.

Coordination with community service providers (i.e. school districts and emergency service providers) would continue through preliminary engineering, final design and construction to ensure access benefits of the project are maximized for all communities.

3.6 Parks & Recreational Facilities

3.6.1 Methodology

The project team used state and local records, aerial mapping analysis, field investigations, public involvement, and agency coordination to identify parks and recreational facilities in the project area.

Section 4(f) of the USDOT Act of 1966 provides consideration of publicly owned parks and recreation areas. In Pennsylvania, Section 2002 of the Administrative Code of 1929 also applies to activities conducted by PennDOT and includes requirements that serve as a state counterpart to Section 4(f). **Chapter 3.10** provides additional information about Section 4(f) resources within the project area, and **Appendix I** of this document includes a Section 4(f) *De Minimis* Form that also reviews the potential for impacts to Section 4(f)/Section 2002 resources.

Additionally, Section 6(f) of the Land and Water Conservation Act requires that the project team coordinates with the National Park Service on the conversion of lands or facilities acquired with Land and Water Conservation Act funds under the State Assistance program.

3.6.2 Existing Conditions

Existing project area parks and recreational facilities include the Salisbury-Elk Lick High School sports facilities and the Pennsylvania State Game Lands No. 231 (SGL 231), as shown on **Figure 3-5**.

Salisbury-Elk Lick High School sports facilities are located on the west side of Smith Avenue in the Borough of Salisbury. Activities and services include baseball and softball fields, restrooms, a concession stand, a basketball court, a large wooden play area, swings, climbing apparatus, and tennis courts.

SGL 231 is located in the northeastern side of the project area, south of Mountain Road and within Summit, Elk Lick, and Greenville Townships. SGL 231 totals 429 acres and provides wildlife habitat and recreational opportunities for hunters, hikers, wildlife photographers, and birdwatchers.

No other parks or recreational facilities are present within the project area. No lands or facilities acquired with Land and Water Conservation Act

funds (Section 6(f) properties) are located within the project area.

3.6.3 Impacts

No adverse or direct impacts to parks or recreational facilities are anticipated from the No Build Alternative or the four build alternatives.

Constructing a 300-foot long retaining wall, approximately 3.5 feet in height along the east side of northbound U.S. 219, would aid in avoiding impacts from the build alternatives to SGL 231. This wall avoids a potential 1.0-acre cut slope impact to SGL 231. Further refinements to the retaining wall and limits of disturbance are possible during final design.

3.6.4 Mitigation

No direct or temporary impacts to parks or recreational facilities are anticipated, and no mitigation measures are proposed. Constructing a 300-foot long retaining wall would aid in avoiding impacts from the build alternatives to SGL 231. Further avoidance activities would be evaluated in final design as engineering continues. Alignment shifts, profile shifts and bifurcation could be considered to further minimize and avoid PA SGL 231. Coordination with PA Game Commission would continue through final design and construction.

3.7 Displacements

3.7.1 Methodology

Literature searches and coordination with local officials helped the project team gather property data. County property assessment databases and tax maps were used to verify property ownership within the project area and to establish a project property ownership database. This database includes property owner names and addresses, tax map numbers, total acreages, and types of property (residential, commercial, agricultural, mining, etc.). On-site field investigations verified the location of buildings and the type of land use on existing properties.

A property impact analysis was conducted using aerial photography, preliminary engineering designs for the build alternatives, field verification of land use, and geographic information system (GIS) analysis. In addition to cut and fill slope limits, the preliminary impact analysis for acquisitions and displacements considered changes to property use and access. Multiple online real estate search websites helped identify available housing units.

Acquisitions are generally proposed for properties within the proposed alignments of the build alternatives, and for some adjacent properties. Properties proposed for acquisition either contain land necessary for construction of the proposed alignment and its supporting infrastructure or the alignment would impact access to the property and cannot be restored. Depending on the Build Alternative, these properties include residences, commercial properties, forestland, farmland, an antenna tower, or a billboard.

Table 3-6 summarizes potential acquisitions and displacements associated with the proposed build alternatives. Final determination on property acquisition would occur during final design after the preferred alternative has been refined and access issues have been examined further.

Table 3-6: Potential Property Acquisitions and Displacements

Type of Acquisition/ Displacement	No Build	DU Mod.	DU-Shift Mod	E Mod.	E-Shift Mod.
Parcels Intersected by LOD	0	117	114	106	103
Residential Displacements	0	9	9	8	8
Outbuilding Displacements	0	26	25	23	23
Commercial Displacements	0	2	2	2	2
Other Displacements (billboard, antenna tower, and sludge drying bed)	0	2	2	3	3

The No Build Alternative would not require any property acquisition or displacements. Alternative DU-Shift Modified impacts the most parcels of the build alternatives with 117. Alternative E-Shift Modified impacts the least number of parcels with 103. Alternative DU Modified requires the most outbuilding displacements with 26, and Alternatives DU Modified and DU-Shift Modified require the most residential displacements with 9. Alternatives E Modified and E-Shift Modified require 8 residential displacements and 23 outbuilding displacements.

The eight residential displacements required by all build alternatives are located at the north end of the project area. Alternatives DU Modified and DU-Shift Modified also include an additional residential displacement near the center of the project area.

All four build alternatives include two commercial displacements near the north end of the project area.

All four build alternatives require acquisition of an existing billboard along U.S. 219, near the north end of the project area. All build alternatives would impact access to and likely require acquisition of an antenna tower along existing U.S. 219 in Maryland, near the south end of the project area. Alternatives E Modified and E-Shift Modified require displacement and acquisition of a sludge drying bed associated with the Weimer Strip and Auger post mining remediation activities.

Most of the aforementioned residential and commercial property displacements are in Summit Township, Somerset County. One residential displacement is proposed under Alternatives DU Modified and DU-Shift Modified within Elk Lick Township, Somerset County. Property displacements associated with Alternatives DU Modified and DU-Shift Modified would have minor impacts to the tax base within the respective township and school district, and to Somerset County. For example, a property in Summit Township had a total millage of 41.25 in 2023, with a mill rate of 13.36 for Somerset County, 2.63 for Summit Township, and 25.26 for Meyersdale Area School District. This is equivalent to $4,125 lost in yearly real estate taxes for a property with an assessed value of $100,000 per displacement. Additionally, Summit Township and Meyersdale Area School District each have a 0.5% Earned Income Tax rate for residents.

3.7.2 Mitigation

Preliminary and final design engineering would continue to minimize impacts to the residential and commercial properties in the project area. Mitigation measures for displacements include relocating residences into available and comparable housing. If, under normal relocation procedures, available and comparable replacement housing cannot be identified, PennDOT and SHA would provide "Housing of Last Resort" options to ensure that all displaced individuals are properly relocated.

In accordance with the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (49 CFR 24) and PennDOT and SHA's Relocation Assistance Programs, all displaced residential and commercial establishments would be eligible to receive replacement payments. This includes fair market value of real and personal property and moving expenses. Under no circumstances will the project require any business to vacate before the 90-day Notice to Vacate expiration date.

A March 2024 review of available real estate data identified a wide range of properties for sale in the project area. **Table 3-7** shows for any selected build alternative that there is adequate replacement housing available in each price range to cover the

Table 3-7: Number of Properties Available

List Price	Residential	Multi-Family[1]	Farm	Vacant Lot
<$100K	5	1	-	9
$100K-$250K	4	-	-	
$251K-$500K	-	1	-	1
$501K-$1.5M	-	-	1	-
>$1.5M	-	-	2	-

Note: Based on a March 2024 search in the 15558 (Salisbury, PA), 15552 (Meyersdale, PA), and 21536 (Grantsville, MD) zip codes using Zillow, Redfin, Trulia, and Realtor.com.
[1]No Multi-Family Structures are displaced by this project.

potentially displaced properties, as each price range contains more potential replacement housing than would be displaced by any alternative (maximum displacement is nine residences).

Additionally, there are available vacant land parcels for relocating displaced businesses. While it is likely that the properties listed would not be available at the time project property acquisition would commence, this represents an approximation of what is typically available in the area. At present, there are no known factors that would influence the future availability of replacement housing. No person would be displaced until clean, safe, and comparable replacement housing has been made available.

3.8 Historic Architectural Resources

3.8.1 Methodology

Historic architectural resources studies for this project include the development of an above ground historic properties area of potential effects (APE) representing areas of potential direct and indirect effects; identification of resources that are eligible for or listed in the National Register of Historic Places (NRHP); and a determination of the potential effects of the No Build Alternative and four build alternatives on NRHP-eligible and listed historic properties.

Studies were conducted to comply with federal and state cultural resources laws and regulations, including Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulation 36 CFR §800, Section 4(f) of the USDOT Act of 1966 (as amended in 1968), Executive Order 11593 (36 FR 8921, 3 CFR 1971 Comp. P. 154), Archaeological and Historic Preservation Act of 1974, Commonwealth of Pennsylvania State Act No. 1978-273, Maryland Historical Trust (MHT) Act of 1985 as amended, and State Finance and Procurement Article §§ 5A-325 and 5A-326 of the Annotated Code of Maryland.

Additionally, the following handbooks were consulted throughout the process: PennDOT Publication No. 689, *The Transportation Project Development Process: Cultural Resources Handbook* (PennDOT, September 2023) and *Standards and Guidelines for Architectural and Historical Investigations in Maryland* (MHT, 2023).

Section 106 of the NHPA requires coordination with the State Historic Preservation Office (SHPO) with jurisdiction over a historic or potentially historic property. Properties 50 years or older are evaluated to determine whether the properties meet at least one of the four following eligibility criteria and maintain historic integrity:

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

Photograph 3-6: Maryland state historical marker for Little Meadows in Garrett County

PennDOT and SHA have evaluated the project area for the presence of above ground historic properties. Professionals who meet or exceed the qualifications of the Secretary of the Interior's Standard and Guidelines for Archeology and Historic Preservation as specified for their position in 36 CFR §61 performed all technical work for these investigations.

A. Above Ground Historic Properties APE

In November 2022, a preliminary above ground historic properties APE was developed for the project to represent the "geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist" (36 CFR 800.16(d)). In response to changes in the preliminary design of the alternatives, a revised above ground historic properties APE was developed in June 2023. Land with existing roadway infrastructure and new alignments for the improved highway through less developed and heavily forested areas characterizes the APE.

Based on direction from PA SHPO, the above ground historic properties APE, which is large enough to consider both direct and indirect effects, was represented by two separate boundaries (direct and indirect) during the identification studies.

The direct effects to above ground historic properties APE includes 1,147.86 acres and is equivalent to the project's revised preliminary archaeological APE (see Section 3.9 Archaeological Resources). It represents project areas where direct impacts may occur, including the roadway construction, temporary construction easements, and/or stormwater areas. Since the direct effects APE was developed and used as part of the project's eligibility studies, the project's limits of disturbance have been reduced as part of the January 2024 modifications of the alternatives. The indirect effects to above ground historic properties APE encompasses 2,304 acres and accounts for potential visual, audible, and/or atmospheric effects that may extend beyond the direct effects APE.

B. Identification of Above Ground Historic Properties in Pennsylvania

The project team conducted studies for the identification, documentation, and evaluation of historic architectural resources in Pennsylvania in accordance with federal and state regulations. Background research, files from the PA SHPO Pennsylvania's State Historic and Archaeological Resource Exchange (PA-SHARE) database, and field survey informed the resulting *Above Ground Historic Properties Pennsylvania Determination of Eligibility Report* (PennDOT, August 2023), provided in **Appendix J**.

C. Identification of Above Ground Historic Properties in Maryland

The project team conducted identification of above ground historic architectural resources in Maryland in accordance with federal and state regulations. Refer to the *Above Ground Historic Properties Maryland Determination of Eligibility Report* (PennDOT, January 2023), provided in **Appendix K**, for detailed information pertaining to pertinent regulations, investigation methodology, and existing conditions of above ground historic properties in the Maryland portion of the APE.

D. Consulting Party Coordination

The Section 106 process requires lead Federal agencies (e.g., FHWA) to identify and engage a variety of consulting parties, principally including SHPOs and Tribal Historic Preservation Officers (THPOs). The Consulting Parties on the U.S. 219 project include both the Pennsylvania and Maryland SHPOs, tribal governments, and other interested parties, all of whom were kept abreast of the investigations and provided input into the process. The project's Consulting Parties get updates via postings on PennDOT's PATH online cultural resources portal, email notifications, and (as needed) mailings.

The first Consulting Party meeting was a hybrid virtual and in-person meeting held on October 30, 2023, in Salisbury, PA. The meeting presented

information and updates about the project and fostered discussion about both above ground historic properties and archaeological (below ground) resources in the project area. A second Consulting Party meeting was held on April 11, 2024, which discussed the potential effects of the project alternatives on historic architectural resources.

E. Determination of Effects

A combined Determination of Effects report treating resources in both Pennsylvania and Maryland circulated in March 2024. The report evaluated the potential effects of a No Build Alternative and four build alternatives on a total of seven NRHP-eligible resources and one NRHP-listed resource. Refer to the *Above Ground Historic Properties in PA and MD Determination of Effects Report* (PennDOT, March 2024) provided in **Appendix L.**

Both the PA and MD SHPOs have confirmed that the project's FHWA Preferred Alternative, E-Shift Modified, will have No Adverse Effect on the project's identified NRHP-eligible and listed historic resources. Section 106 consultation will continue as project design is refined through the Selected Alternative. The project's cultural resources Programmatic Agreement, included as **Appendix M**, stipulates the process to follow if the project is later determined to have an adverse effect whether through the alteration of the Selected Alternative or the selection of a different alternative. In that case, additional consultation will be necessary to mitigate and resolve the adverse effect.

3.8.2 Existing Conditions

In Pennsylvania, background research and a review of the Pennsylvania SHPO's PA-SHARE database identified 10 previously surveyed resources, including one property that no longer exists. Nine of the properties were evaluated with addendum Historic Resource Survey Forms (HRSFs) to update their physical descriptions and, where applicable, to provide additional information for evaluating significance and NRHP-eligibility. The eligibility survey also identified 25 new historic architectural resources that were at least 45 years old. Seven of the newly identified resources were evaluated with HRSFs. Information from the HRSFs is summarized in **Appendix J**.

The survey resulted in the identification of five NRHP-eligible properties in Pennsylvania. These properties are listed below and shown on **Figure 3-7**:

- S.J. Miller School (2023RE07648)
- Miller Farm/Earnest and Carrie V. Miller Residence (1994RE00436)
- Lowry Farm (2004RE00605)
- Deal Farm/Ambrose Deal Farm (2004RE00606)
- Jacob Glotfelty Barn (1995RE41407)

S.J. Miller School

The S.J. Miller School (2023RE07648) is a Colonial Revival style schoolhouse from 1924 with a partially exposed basement level. The institutional building, which is located at 1464 Shaw Mines Road, features a central pedimented entry, asphalt shingle hipped roof, brick walls, and a rock-faced concrete block basement with few exterior alterations. The school district currently uses the building for storage. The S.J. Miller School was determined to be eligible for listing in the National Register in 2023 under Criterion C for its architectural merit. Its NRHP boundary corresponds to the property tax parcel.

Miller Farm / Earnest and Carrie V. Miller Residence

The Miller Farm, which is also known as the Earnest and Carrie V. Miller Residence (1994RE00436), is a 294-acre farm property with a ca. 1912 American Foursquare farmhouse, a ca. 1883 bank barn that was rebuilt ca. 1920, and assorted historic and non-historic outbuildings. The farm is located at 671 Ernest Miller Road. It was determined to be NRHP-eligible in 1993 (reconfirmed in 2004) under Criterion A for Agriculture and Criterion C for Architecture. The Miller Farm's NRHP boundary represents historic landholdings associated with the farm. The eastern boundary of the property terminates at the edge of former U.S. 219, the Mason Dixon Highway, which was abandoned ca. 1998 with the construction of the U.S. 219

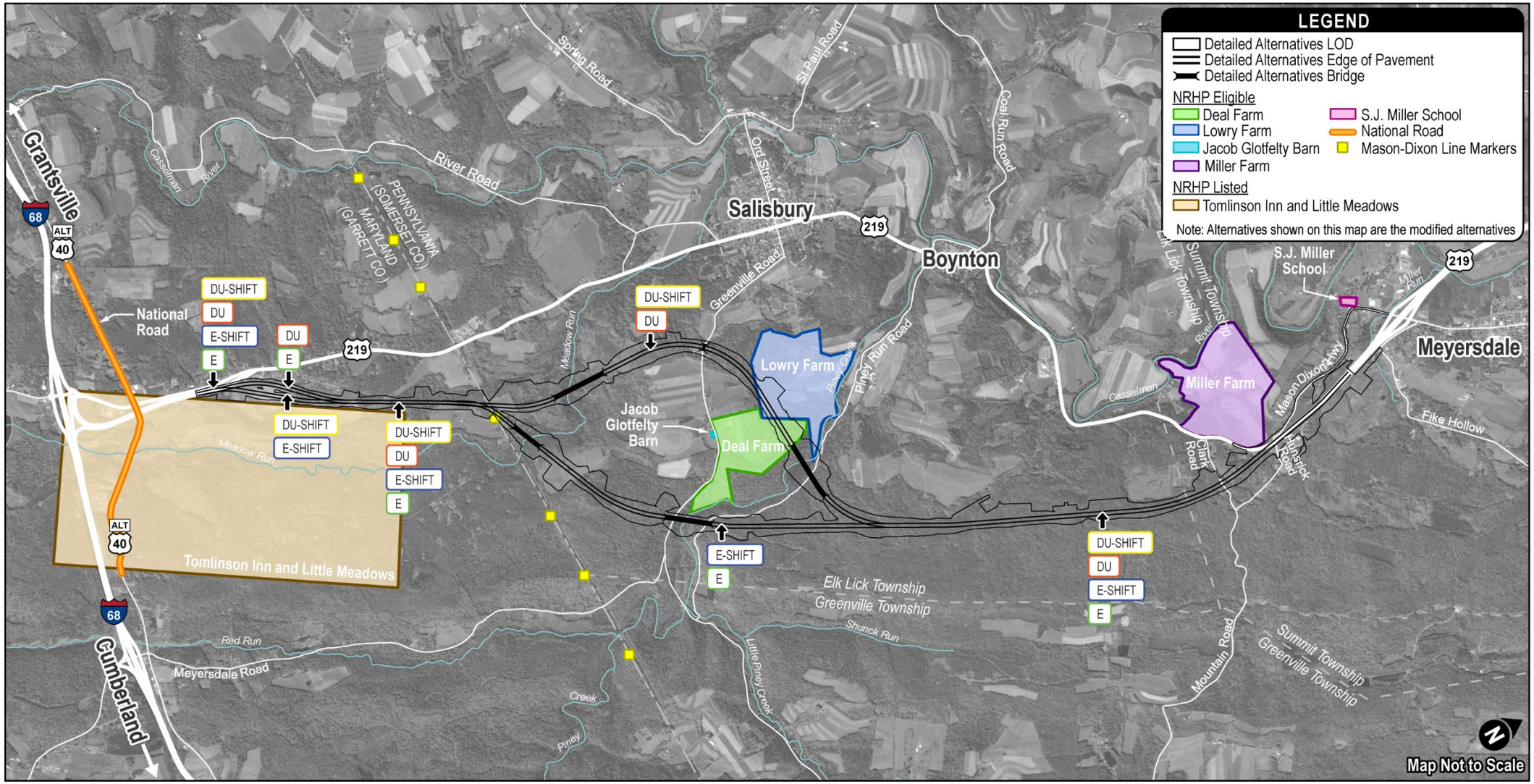


Figure 3-7: Historic Architectural Resources within Project Area

Meyersdale Bypass. As part of this project, the Mason Dixon Highway would be reestablished along its original alignment at the eastern edge of the property.

Lowry Farm

The 166-acre Lowry Farm (2004RE00605) at 761 Engles Mill Road features a ca. 1852 brick farmhouse, a ca. 1869 bank barn, and outbuildings from ca. 1900 through 1960. The Lowry Farm was determined to be NRHP eligible in 2005 under Criterion A for Agriculture and Criterion C for Architecture. Its NRHP boundary was revised to include associated farmland in the current tax parcel. The boundary includes the farmstead, cultivated fields, pastures, and woodlots.

Deal Farm / Ambrose Deal Farm

The Deal Farm, which is also known as the Ambrose Deal Farm (2004RE00606), is a 125-acre farm at 630 Greenville Road that has been agriculturally active from the late nineteenth century to the present. The farm centers on an expanded bank barn from the 1880s and an American Foursquare farmhouse with stone facing from ca. 1935. The Deal Farm was determined to be eligible for the NRHP in 2023 due to its significance under the Allegheny Mountain Part-Time and General Farming historic agricultural region context. Its NRHP boundary corresponds to the current tax parcel and includes the farmstead, cultivated fields, pastures, and woodlots.

Jacob Glotfelty Barn

The Jacob Glotfelty Barn (1995RE41407) at 629 Greenville Road is a log and frame bank barn from 1827 that is prominently sited in an agricultural clearing. It was determined to be eligible for NRHP listing in 2023 under Criterion C in the area of Architecture as a well-preserved example of a double-pen, log Sweitzer barn with three-bay threshing floor arrangement; it is a sizeable example of the form, which is rare in the region. The NRHP boundary of the barn corresponds to the footprint of the building with a modest buffer.

Pennsylvania and Maryland share one NRHP-eligible resource because of its location on the state line. This historic resource is listed below and shown on **Figure 3-7.** Both states include its documentation in their SHPO files:

- Mason-Dixon Line Marker No. 191 (2006RE00149 and G-I-A-189)

Mason-Dixon Line Milestone Marker 191

Mason-Dixon Line Milestone Marker 191 is a boundary marker that surveyors placed during a 1901-1903 resurvey of the Mason-Dixon Line. The marker is an approximately two-foot-tall square stone post with a pyramidal top. There is an “M” carved into its south face, and a “P” on its north face, denoting the Maryland and Pennsylvania sides of the border. The dates 1767 and 1902, for the original survey and resurvey of the Mason-Dixon Line, are carved on its east and west faces. The marker is one of over 240 Mason-Dixon line markers, which include original stones dating from the 1760s, stones dating from the 1901-1903 resurvey, and several twentieth and twenty-first-century replacements. The markers are significant for their association with Mason and Dixon’s groundbreaking surveying techniques and with the line’s subsequent use as the boundary between slave-owning and non-slave-owning states before and during the Civil War. Mason-Dixon Marker No. 191 is located on the Mason-Dixon line approximately 2,500 feet east of Chestnut Ridge Road. The State of Maryland and the Commonwealth of Pennsylvania own the marker itself, but it sits on property owned by Sidney S. and

Photograph 3-7: Jacob Glotfelty Barn

Carolyn S. Markowitz, trustees. Pennsylvania determined the marker eligible for the NRHP in 2006 within a resource group of five similar markers (PA-SHARE No. 2006RE00149). However, Maryland's MEDUSA database shows no eligibility determination as of December 2023. The resource does not have a formal boundary in either PA-SHARE or MEDUSA, but an undated and unattributed addendum in the MEDUSA file includes a recommendation for a boundary of a fifty-foot diameter circle around the monument, encompassing the 1902 marker, the 1760s cairn mound (which could not be identified in 2023), and the immediate setting. The Pennsylvania and Maryland SHPOs both concurred with the fifty-foot diameter boundary in December 2023.

Two historic resources in the Maryland portion of the APE were previously determined eligible or listed in the NRHP. These two historic resources are listed below and shown on **Figure 3-7**:

- Tomlinson Inn and Little Meadows property (G-I-A-012) - NRHP-listed
- The National Road (G-I-A-227) - NRHP-eligible (Alt. U.S. 40 from Steelers Drive to just south of New Germany Road)

Tomlinson Inn and Little Meadows/The National Road

The Tomlinson Inn and Little Meadows (G-I-A-012) property includes a ca. 1818 stone inn, two barns, several smaller outbuildings, and possibly a cemetery. Prior to the construction of the still existing buildings, the unusual natural meadow made a convenient stopping place for soldiers and westward-bound settlers. The construction of the National Road and the Tomlinson Inn reinforced the property's significance as a stopping point on the route known as the "Gateway to the West." The Tomlinson Inn and Little Meadows property was listed on the NRHP in 1973 for significance in the areas of architecture, military history, and transportation. Specifically, the property is significant for its association with the construction of the first federally funded highway (the National Road), westward migration, and as the site of a military camp during the French and Indian War. In addition to the property's historic buildings, several individually significant archaeological sites have been identified within its boundaries, including Braddock's Road (18GA314), Braddock's Little Meadows Encampment (18GA317), and The Tomlinson Inn Site (18GA322). These resources were included in a Little Meadows Archeological district that was identified and determined eligible under Criteria A, B, and D in 2016. The NRHP boundary of the Tomlinson Inn and Little Meadows property includes approximately 1,476 acres and was drawn to encompass the above-ground resources, the archaeological resources, and their unique natural setting.

Photograph 3-8: Mason Dixon Milestone Marker

Photograph 3-9: Barn on the Historic Tomlinson Inn and Little Meadows Property

Desktop research and field survey identified 14 resources in the Maryland portion of the APE that had not been previously surveyed. None of the newly identified resources were recommended eligible for listing in the NRHP. Refer to the *Above Ground Historic Properties Pennsylvania Determination of Eligibility Report* (PennDOT, August 2023) found in **Appendix J,** or the *Above Ground Historic Properties Maryland Determination of Eligibility Report* (PennDOT, January 2023) found in **Appendix K** for detailed information pertaining to the eligibility evaluations of above ground historic properties in Pennsylvania and Maryland.

3.8.3 Impacts

Above Ground Historic Properties in Pennsylvania and Maryland Determination of Effects Report (PennDOT, March 2024), provided in **Appendix L**, evaluated the project's potential to affect historic architectural resources. The report assessed the effects of the four modified alternatives to reduce potential effects on historic architectural resources among other considerations. **Table 3-8** shows the formally evaluated potential project effects of the No Build Alternative and the four build alternatives.

3.8.4 Mitigation

The four build alternatives have already been substantially refined to avoid and/or minimize effects to NRHP-eligible and listed historic architectural properties, where possible. The *Above Ground Historic Properties in Pennsylvania and Maryland Determination of Effects Report* (PennDOT, March 2024), provided in **Appendix L**, evaluated the project's potential to affect historic architectural resources. The report assessed the effects of the four build alternatives on historic architectural resources among other considerations.

If either Alternatives E Modified or Alternative E-Shift Modified is identified as the selected alternative, it is anticipated that the project would have an above ground historic properties Section 106 finding of No Adverse Effect, and no additional mitigation would be necessary.

If either Alternative DU Modified or Alternative DU-Shift Modified is identified as the selected alternative, it is anticipated that the project would have an above ground historic properties Section 106 finding of Adverse Effect. In this case, it is likely that language would need to be included in a Programmatic Agreement for the project specifying that additional coordination with the Pennsylvania and Maryland SHPOs, the consulting parties, and

Table 3-8: Section 106 Effects per Modified Alternative

Historic Resource	NRHP Status	No Build	DU Mod.	DU-Shift Mod.	E Mod.	E-Shift Mod.
S.J. Miller School (2023RE07648)	Eligible	No Effect	No Effect	No Effect	No Effect	No Effect
Miller Farm / Earnest and Carrie V. Miller Residence (1994RE00436)	Eligible	No Effect	No Adverse Effect	No Adverse Effect	No Adverse Effect	No Adverse Effect
Lowry Farm (2004RE00605)	Eligible	No Effect	Adverse Effect	Adverse Effect	No Effect	No Effect
Deal Farm / Ambrose Deal Farm (2004RE00606)	Eligible	No Effect	Adverse Effect	Adverse Effect	No Effect	No Effect
Jacob Glotfelty Barn (1995RE41407)	Eligible	No Effect	No Effect	No Effect	No Effect	No Effect
Mason-Dixon Line Marker No. 191 (2006RE00149 and G-I-A-189)	Eligible	No Effect	No Effect	No Effect	No Adverse Effect	No Adverse Effect
Tomlinson Inn and Little Meadows Property (G-I-A-012)	Listed	No Effect	No Adverse Effect	No Adverse Effect	No Adverse Effect	No Adverse Effect
The National Road (G-I-A-227)	Eligible	No Effect	No Effect	No Effect	No Effect	No Effect
Summary of Effects to Above Ground Historic Properties		**No Effect**	**Adverse Effect**	**Adverse Effect**	**No Adverse Effect**	**No Adverse Effect**

the project team is needed to find ways to avoid or further minimize potential project effects or to mitigate and resolve the project's adverse effect. A Programmatic Agreement has been drafted to ensure compliance with the Section 106 Process for archaeological resources, and it is included as **Appendix M**.

3.9 Archaeological Resources

3.9.1 Methodology

Phase IA archaeological reconnaissance has been conducted within the project area (for archaeological resources referred to as the preliminary archaeological APE). The reconnaissance includes geomorphological field investigations, background and archival research, pedestrian archaeological assessment, and the review and/or creation of pre-contact and historic period probability models. The models show areas of archaeological sensitivity (low/no, medium, and high) throughout the preliminary archaeological APE.

For both Pennsylvania and Maryland, the work was designed and conducted to facilitate project compliance with federal legislation regarding cultural resources, including the NHPA, as amended, and in accordance with the Advisory Council on Historic Preservation guidelines (36 CFR §800) that implement the regulation. Professionals who meet or exceed the qualifications of the Secretary of the Interior's Standard and Guidelines for Archeology and Historic Preservation as specified for their position in 36 CFR §61 performed all technical work for these investigations.

A. Pennsylvania

The Phase IA effort in Pennsylvania was conducted to comply with federal and state legislation and guidance regarding cultural resources, including Section 106 of the NHPA; Section 4(f) of the USDOT Act of 1966 as amended; Executive Order 11593 (36 FR 8921, 3 CFR 1971 Comp. P. 154); Pennsylvania State History Code, Title 37; Archaeological protocols and procedures established by PennDOT *P*ublication No. 689, *Cultural Resources Handbook* (PennDOT, 2013); and PA SHPO *Guidelines for Archaeological Investigations in Pennsylvania* (PA SHPO, 2021)

Additionally, the following handbooks were consulted throughout the process: PennDOT Publication No. 689, *The Transportation Project Development Process: Cultural Resources Handbook* (PennDOT, September 2023) and *Standards and Guidelines for Archaeological Investigations in Maryland* (Shaffer and Cole 1994).

Project area background research included the environmental setting, historic use, and historic maps and photographs. Existing data on known archaeological and historic resources in the project vicinity was reviewed. Files were reviewed on PA-SHARE, including archaeological and historic resource surveys, reports, and NRHP files. Historic maps, atlases, and historic aerial photographs of the preliminary archaeological APE were reviewed, as were public documents and county and township histories. Geomorphological investigations determined the location and depths of testable soils and/or disturbances.

A pedestrian survey entailed a verification of surface conditions within the preliminary archaeological APE, including landforms, disturbances, steep slopes, areas of standing water, visible historic features, rock shelters, and areas with the potential to contain intact archaeological resources. A handheld GPS and digital photographs captured surface conditions.

Probability models illustrated the potential for pre-contact and historic period archaeological resources across the preliminary archaeological APE. The pre-contact period probability model used existing Statewide Pre-contact Probability Model data available on PA-SHARE, combined with pedestrian survey data about soils and landforms for which there is the potential of the presence of intact pre-contact period archaeological resources. The historic probability model included a review of known historic sites, historic maps and aerial images for historic buildings (both still existing or no longer existing), and current surface condition data recorded during the pedestrian reconnaissance.

For the Maryland portion of the preliminary archaeological APE, an archival study and archaeological assessment were completed in accordance with Section 106 of the NHPA; Section 4(f) of the USDOT Act of 1966 as amended; Executive Order 11593 (36 FR 8921, 3 CFR 1971 Comp. P. 154); Maryland Historical Trust Act of 1985 as amended; and State Finance and Procurement Article §§ 5A- 325, and 5A-326 of the Annotated Code of Maryland.

Field investigations and reporting were in accordance with the *Maryland Historical Trust's Standards and Guidelines for Archaeological Investigations in Maryland* (Shaffer and Cole 1994). Desktop research, pedestrian reconnaissance, and geomorphological field investigations evaluated historic and prehistoric archaeological potential within the preliminary archaeological APE.

Both Pennsylvania and Maryland SHPOs, and Consulting Parties were kept abreast of the investigations and results and provided input into the process. Refer to the *Archival Study and Archaeological Assessment* (PennDOT, October 2023), included in **Appendix N**, for detailed information pertaining to pertinent regulations, investigation methodology, and existing conditions for the Maryland portion of the preliminary archaeological APE.

3.9.2 Existing Conditions

A. Pennsylvania

Geomorphological investigations were conducted at seven Pennsylvania sites to identify the locations and depths of testable soils, and/or disturbances. These investigations determined that the next stage of archaeological survey is shallow testing methods which involve shovel test pit excavations. Areas of deeply buried or stratified soils are not anticipated within the preliminary archaeological APE.

Background research found that there are seven previously recorded archaeological sites within or partially within the project area. The Turkeyfoot Path, an American Indian path and early historic road, crossed through the project area about 6 miles south of Meyersdale.

The pedestrian survey identified several areas of historic archaeological potential. The survey also verified surface conditions and determined areas that are suitable for Phase IB survey once a selected alternative has been identified. Refer to the *Phase IA Archaeological Reconnaissance and Probability Modeling* (Markosky, July 2023) for detailed information pertaining to archaeological resources in Pennsylvania.

The project area in Pennsylvania includes 941.21 acres and the archaeology probability models determined the following:

Photograph 3-10: Soil core from unplowed upland landforms within APE

Prehistoric Archeological Probability

- High: 71.68 acres (7.62%)
- Moderate: 77.72 acres (8.26%)
- Low: 495.46 acres (52.64%)
- None: 296.35 acres (31.49%)

Historic Archeological Probability

- High: 33.53 acres (3.56%)
- Moderate: 25.53 acres (2.71%)
- Low: 376.09 acres (39.96%)
- None: 506.06 acres (53.77%)

B. Maryland

The investigation of the Maryland portion of the preliminary archaeological APE identified areas of historic archaeological potential. These areas of historic potential have not been subject to archaeological survey, but a field survey is recommended for these areas. It is also possible that small, unmapped extraction camps associated with Maryland's historic coal mining, lumbering, ironmaking, or maple syrup industries may be present on undisturbed portions of the preliminary archaeological APE. Archeological field studies are recommended for these areas.

The Maryland archival study and archaeological assessment determined the following prehistoric archaeological potential.

Prehistoric Archeological Probability

- Moderate to High: 4.89 acres (5.8%)
- Low: 24.22 acres (29.2%)
- None: 53.94 acres (65%)

No alluvial deposits are present within the Maryland section of the preliminary archaeological APE, and there is no potential for deeply buried prehistoric archaeological resources. The archaeological assessment recommends testing those landforms within the APE identified as having low, moderate, and high probability for prehistoric resources. Refer to the *Archival Study and Archaeological Assessment* (PennDOT, October 2023) in **Appendix N** for detailed information on Maryland archaeological resources.

3.9.3 Impacts

Impacts were assessed by overlaying the proposed LOD for each modified build alternative onto the existing Phase IA archaeological reconnaissance and probability assessment results. The opening paragraphs of **Chapter 3** further describes the LOD for the project and **Figure 3.1** illustrates the LOD. **Table 3-9** shows the impacts of each alternative.

The No Build Alternative would have no impact on archaeological resources. Both Alternatives E Modified and E-Shift Modified have significantly less probability to impact archaeological resources than Alternatives DU Modified and DU-Shift Modified. The probability of impacting prehistoric archaeological resources is lowest with Alternative E Modified. The probability of impacting historic archaeological resources is the same for Alternatives E Modified or E-Shift Modified.

3.9.4 Mitigation

A Programmatic Agreement has been drafted to ensure compliance with the Section 106 Process for archaeological resources, and it is included as **Appendix M**. Detailed field investigations to identify

Table 3-9: Impacts to Areas of Archaeological Probability per Alternative for the Project

Archaeological Probability (acres)		No Build	DU Mod.	DU-Shift Mod.	E Mod.	E-Shift Mod.
Prehistoric Probability	High	0	50.0	50.0	48.6	48.6
	Moderate	0	47.6	47.6	30.7	33.0
	Low	0	266.3	266.2	192.1	192.1
Historic Probability	High	0	16.6	16.6	13.9	13.9
	Moderate	0	13.2	13.2	11.7	11.7
	Low	0	227.1	227.1	146.8	146.8
TOTAL		**0**	**620.8**	**620.7**	**443.8**	**446.1**

intact archaeological properties would be conducted within the archaeological APE once a selected alternative is identified. If NRHP-eligible archaeological properties are identified, and it is determined the project would have an Adverse Effect to the properties, then PennDOT would identify mitigation measures in consultation with both Pennsylvania and Maryland SHPOs, Federally Recognized Tribal Nations, and other consulting parties. The Programmatic Agreement ensures that if the project needs any archaeological mitigation measures, they will be appropriately completed.

3.10 Section 4(f) Resources

3.10.1 Methodology

Section 4(f) of the USDOT Act of 1966, as amended (49 USC § 303) and Section 138 of the Federal Aid Highway Act of 1968, states that:

"The Secretary [of Transportation] shall not approve any program or project which requires the use of any publicly owned land from a park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance as determined by the Federal, State, or local officials having jurisdiction thereof, or any land from a historic site of national, state, or local significance as so determined by such officials unless (1) there is no feasible and prudent alternative to the use of such land, and (2) such program includes all possible planning to minimize harm to such park, recreation area, wildlife and waterfowl refuge or historic site resulting from such use."

The Secretary may also approve such a use if FHWA determines that the use of the property will have a *de minimis* (negligible) impact.

Parks, recreational areas, or wildlife and wildfowl refuges are publicly owned lands when federal, state, or local officials officially designate it as such. Designation occurs when the federal, state, or local official(s) with jurisdiction over the land have made a written designation that the land either 1) represents a park, recreation area, or wildlife and waterfowl refuge, or 2) one of its major purposes or functions is for park, recreation, or refuge purposes. Designated public parks in the municipality's preliminary planning documents or comprehensive plans is considered to be a Section 4(f) property.

In order to qualify as a Section 4(f) property, the park, recreation area, or refuge property in question must serve a major recreational or refuge purpose. Incidental, secondary, occasional, or dispersed recreational activities do not constitute a major purpose. Just because a property is a designated park does not guarantee that it serves a major recreation purpose. If there are no visitors and noticeable recreational activities, it may not qualify as a Section 4(f) property.

In addition, for publicly owned land to qualify as a Section 4(f) property, the general public must be permitted visitation at any time when the publicly owned park or recreation area is open.

Section 4(f) does not apply when visitation permits to only a select group and not the general public at large. Select groups could include, but are not limited to, residents of a public housing project; military and their dependents; organized sports teams/leagues; and students, faculty, and alumni of a school, college, or university.

Section 4(f) applies to historic sites that are individually eligible or listed in the NRHP. Historic sites are evaluated and determined eligible for listing in accordance with the requirements and criteria in Section 106 of the NHPA. Unlike parks, recreation areas, and refuges, historic properties can be publicly or privately owned. Historic sites are also afforded Section 4(f) status if they are a contributing element in a NRHP eligible or listed historic district.

Pursuant to 23 CFR § 774.11(e), official(s) with jurisdiction must identify the historic site. For historic sites, the official with jurisdiction is the SHPO, and/or the THPO.

The Section 4(f) boundary for a historic site is its historic boundary as determined during the Section 106 process. The historic boundary may or may not coincide with the property boundary/tax parcel.

The Determination of Eligibility phase of the Section 106 process identified historic and archaeological sites. Section 106 of the NHPA (16 U.S.C. §470f) involves consideration of the effects of Federal projects on historic and archaeological resources. This process is described further in **Chapter 3.8** and **Chapter 3.9**.

Section 4(f) does not apply to NRHP-eligible or listed archaeological sites that are determined to be important chiefly because of potential knowledge gained by data recovery and have minimal value for preservation in place.

The project team contacted the official(s) with jurisdiction over the Section 4(f) resources within the project area. The identification of resources included the review of official management plans and any mapping that shows the location of said resources.

3.10.2 Existing Conditions

The names and descriptions of Section 4(f) resources located within the project area are discussed below and **Figure 3-8** shows their locations. Additional information about historic resources is available in **Chapter 3.8**.

Five NRHP-eligible properties were identified within the LOD in Pennsylvania:

- S.J. Miller School
- Miller Farm/Earnest and Carrie V. Miller Residence
- Lowry Farm
- Deal Farm/Ambrose Deal Farm
- Jacob Glotfelty Barn

Pennsylvania and Maryland both recognized one NRHP-eligible resource within the LOD because of its location on the state line. Each state includes its documentation in their SHPO files:

- Mason-Dixon Line Marker No. 191 (2006RE00149 and G-I-A-189)

Two NRHP-listed or eligible resources were identified within the LOD in Maryland:

- Tomlinson Inn and Little Meadows property (G-I-A-012) NRHP-listed
- The National Road (G-I-A-227) NRHP-eligible (Alt. U.S. 40 from Steelers Drive to just south of New Germany Road)

Additionally, PA SGL 231 is considered a Section 4(f)/Section 2002 resource. State Game Lands in their entirely are treated as Section 4(f)/Section 2002 recreational resources, as per PennDOT Publication No. 349, *Section 4(f)/Section 2002 Handbook* (PennDOT 2018). PA SGL 231 is located in the townships of Summit, Elk Lick, and Greenville in Somerset County and currently has a deeded acreage of 429 acres. This resource is shown on **Figure 3-8**.

3.10.3 Impacts

Section 4(f) considers an impact as a "use." A project can "use" land from a Section 4(f) property in one of three ways: (1) when land is permanently incorporated into a transportation facility, (2) when there is a temporary occupancy of land that is adverse in terms of Section 4(f) purpose as determined by the criteria in 23 CFR 774.13(d), or (3) when there is a constructive use of a Section 4(f) property as determined by the criteria in 23 CFR 774.15.

Throughout the alternatives analysis phase, PennDOT and SHA continued to evaluate modifications to the alternatives to avoid and/or minimize use of Section 4(f) resources. The four build alternatives have been designed to avoid and/or minimize potential use of Section 4(f) resources to the extent possible (see **Chapter 2.5: Refinements of Alternatives**).

Table 3-10 presents a summary of the use of Section 4(f) resources. Only those resources that would result in a use by one or more of the alternatives is included in this table. The No Build Alternative avoids use of all identified Section 4(f) resources. None of the four build alternatives avoid all Section 4(f) resources. However, Alternatives DU Modified and DU-Shift Modified would require the use of two additional Section 4(f) resources. These uses would be considered a greater than *de minimis* Section 4(f) use. Additionally, Alternatives DU

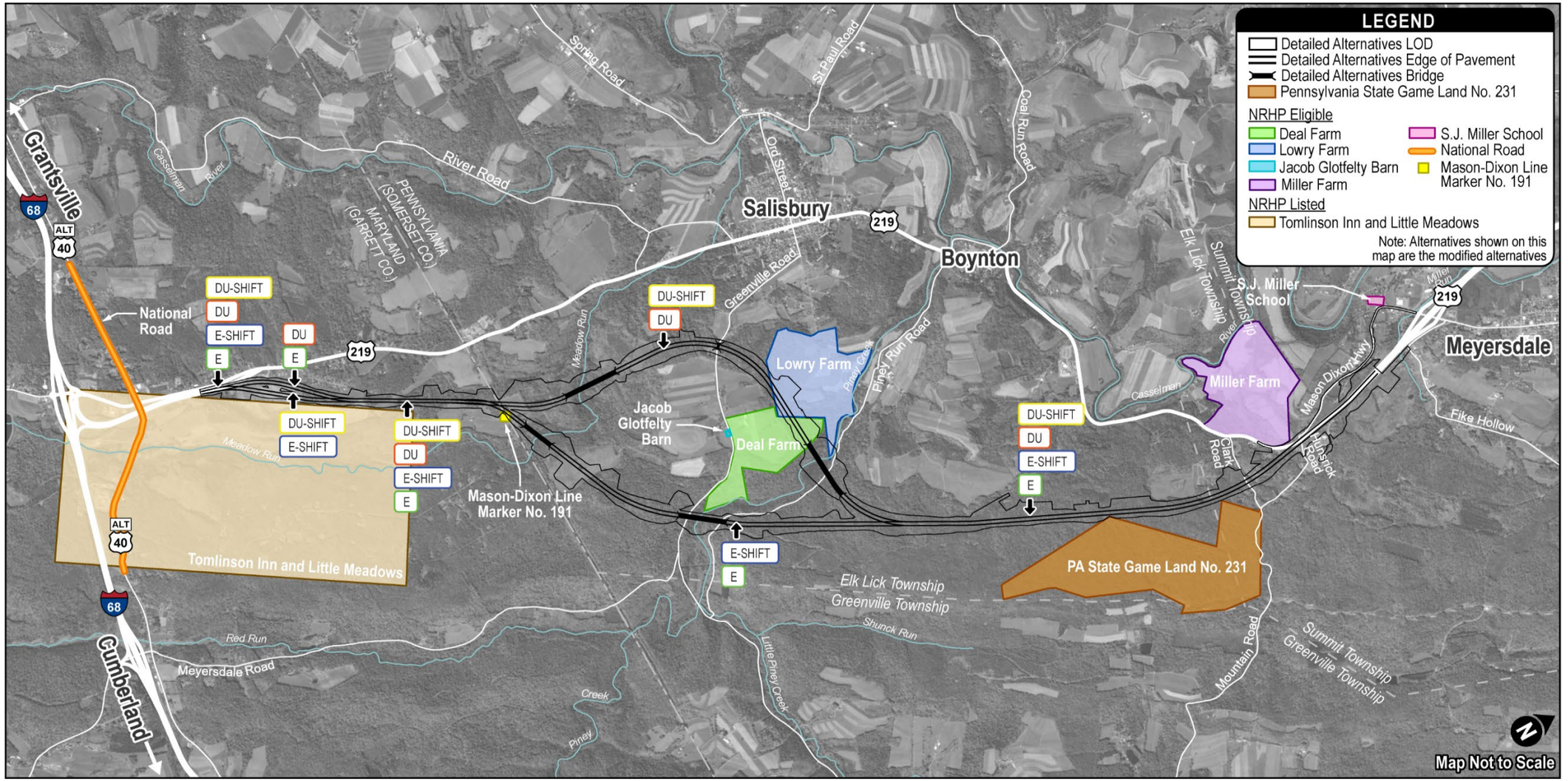


Figure 3-8: Section 4(f) Resources within Project Area

Modified and DU-Shift Modified would result in a Section 106 adverse effect to the Lowry Farm and the Deal Farm/Ambrose Farm. The Pennsylvania SHPO, in accordance with Section 106, agreed that Alternatives DU Modified and DU-Shift Modified would adversely affect the Lowry Farm and the Deal Farm / Ambrose Deal Farm.

All build alternatives result in the use of 0.78 acres along the eastern boundary of the Miller Farm / Earnest and Carrie V. Miller Residence on the west side of U.S. 219, approximately 0.5 miles from the northern limit of the project. The historic boundary of the Miller Farm / Earnest and Carrie V. Miller Residence abuts the former Mason Dixon Highway (Old U.S. 219) right-of-way line. Old U.S. 219 in this area needs to be re-established (and be designated Business U.S. 219) since the new alternatives would eliminate the connection between the Meyersdale Bypass and U.S. 219. The Business U.S. 219 alignment would be reestablished in its original location before construction of the new U.S. 219. Approximately 0.4 miles of roadway would need to be constructed that would connect the Mason Dixon Highway to existing U.S. 219.

Shifting the northern portion of the four alternatives discussed here to the west would result in greater Section 4(f) use of the Miller Farm / Earnest and Carrie V. Miller Residence. Shifting the alignments to the east would result in a Section 4(f) use of SGL 231.

The PA SHPO, in accordance with Section 106, agreed with a no adverse effect determination on the Miller Farm/Earnest and Carrie V. Miller Residence for all four build alternatives; therefore, determination of Section 4(f) *de minimis* use finding has been made in consultation with the FHWA. **Appendix I** contains the draft *Determination of Section 4(f) De Minimis Use/Section 2002 No Adverse Use of Historic Properties Form*.

Alternatives DU Modified and DU-Shift Modified propose 16.2 acres of impacts to the Deal Farm and 23.4 acres of impacts to the Lowry Farm. These impacts are the result of proposed right-of-way acquisition, roadway construction, and stormwater management basins. Since these Section 4(f) properties would be adversely affected under Section 106, a greater than *de minimis* Section 4(f) use would be anticipated if one of these alternatives is selected as the preferred alternative. Alternative E Modified and E-Shift Modified would not incur any physical impact to the Deal Farm or Lowry Farm.

Table 3-10: Summary of the Use of Section 4(f) Resources

Section 4(f) Resources	No Build	DU Mod.	DU-Shift Mod.	E Mod.	E-Shift Mod.
Miller Farm / Earnest and Carrie V. Miller Residence (1994RE00436)	No Use	*De Minimis* Use	*De Minimis* Use	*De Minimis* Use	*De Minimis* Use
Lowry Farm (2004RE00605)	No Use	Use requiring Individual 4(f) Evaluation	Use requiring Individual 4(f) Evaluation	No Use	No Use
Deal Farm / Ambrose Deal Farm (2004RE00606)	No Use	Use requiring Individual 4(f) Evaluation	Use requiring Individual 4(f) Evaluation	No Use	No Use

Photograph 3-11: Barn on the Historic Miller Farm / Earnest and Carrie V. Miller Farm Property

3.10.4 Mitigation

The re-establishment of the former U.S. 219 along its previous alignment at the eastern edge of the Miller Farm is not likely to require mitigation. However, coordination of mitigation is ongoing between PennDOT, SHA, and the PA SHPO and will continue through final design. The design avoided and minimized impacts to other resources to the extent feasible.

Constructing a 300-foot long retaining wall, approximately 3.5 feet in height along the east side of northbound U.S. 219 would avoid impacts from the build alternatives to SGL 231. This wall avoids a potential 1.0-acre cut slope impact to SGL 231. Further refinements to the retaining wall and limits of disturbance are possible during final design.

3.11 Air Quality & Greenhouse Gas Emissions

3.11.1 Methodology

Following the passage of the Clean Air Act of 1963 (CAA), the Air Quality Act of 1967, and the Federal Clean Air Act Amendments of 1990, the U.S. EPA established National Ambient Air Quality Standards (NAAQS) for six criteria pollutants. These pollutants include ozone, particulate matter (PM), sulfur dioxide, lead, carbon monoxide (CO), and nitrogen dioxide.

Air pollution levels in Somerset County, Pennsylvania and Garrett County, Maryland are in attainment, meaning that they consistently stay below the NAAQS for transportation-related pollutants. NEPA requires consideration of air quality impacts and a project-level analysis of CO pollutants and mobile source air toxics (MSAT). A qualitative analysis was conducted for potential CO and MSAT impacts. No qualitative analysis was necessary for PM, because the project area is within a U.S. EPA attainment area for PM standards. This analysis was guided by the PennDOT Publication No. 321, *Project-Level Air Quality Handbook* and MSAT analysis was guided by FHWA's *Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents* (FHWA, 2023).

Increases in atmospheric greenhouse gas (GHG) concentrations from the incremental addition of GHG emissions generated from a vast multitude of individual sources affects climate change. The totality of climate change impacts is not attributable to any single action but a series of actions including actions taken pursuant to decisions of the federal government intensifies it. It is therefore crucial to analyze and consider the potential climate change effects of proposed actions.

The CEQ issued guidance for analyzing GHG and climate change under NEPA on January 9, 2023. The CEQ guidance does not establish specific GHG emission quantities as significantly affecting the

Photograph 3-12: Vehicles Traveling Along Existing U.S. 219

quality of human environment but directs agencies to estimate projected GHG emissions in context with the affected environment.

GHG emission analysis should also consider federal and state GHG reduction goals. On January 10, 2023, the Biden-Harris Administration released the U.S. National Blueprint for Transportation Decarbonization, which lays out a strategy to eliminate transportation GHG emissions by 2050. The strategy focuses on improving community and land use planning, increasing access to efficient travel options, and transitioning to zero emission vehicles. This aligns with The *Long-Term United States Strategy: Pathways to Net-Zero Greenhouse Gas Emissions by 2050* (November 2021). In Pennsylvania, Governor Tom Wolf issued an Executive Order on January 8, 2019, announcing a statewide goal of a 26% GHG emission reduction by 2025 (compared to 2005 emission levels), and an 80% GHG emissions reduction by 2050. On April 8, 2022, the Maryland General Assembly passed the Climate Solutions Now Act, setting an interim goal of a 60% GHG emission reduction by 2031 (compared to 2006 emission levels) and net-zero emissions by 2045.

GHG emission impacts associated with the project were estimated by using the projected Annual Average Daily Traffic (AADT) of the alternatives to determine approximate gasoline consumption. Subsequently, U.S. EPA's *Greenhouse Gas Equivalencies Calculator* was used to determine the metric tons of Carbon Dioxide (CO_2) equivalent emissions released annually based on the AADT. The Institute for Policy Integrity's *Social Cost of GHG Calculator* approximated the social cost associated with GHG emissions. FHWA's *Infrastructure Carbon Estimator* was used to approximate the metric tons of CO_2 equivalent potentially released by the construction of the build alternatives. The social cost of lost forestland was also considered.

3.11.2 Existing Conditions

A. Carbon Monoxide (CO)

CO is a component of motor vehicle exhaust and carbon fuel, and it is released when the fuel is not completely burned. FHWA and PennDOT have developed a project traffic threshold that determines the need for CO quantitative analysis of project impacts. The threshold is a design year AADT of 125,000 vehicles. Traffic analysis for the U.S. 219 Transportation Improvement Project was completed using 2022 traffic counts to determine existing conditions and an assumed linear growth rate of 1.5 percent between 2022 and the project's design year, 2050, to determine 2050 traffic volumes. These traffic volumes fall under the 125,000 AADT threshold specified in PennDOT Publication No. 321, *Project-Level Air Quality Handbook*. The analysis determined that the total AADT of the 2022 base condition is 4,811. The projected total AADT in 2050, the design year, for the build and no build condition is 6,832. This AADT for the build conditions includes traffic traveling along the proposed U.S. 219 alignment and along the existing U.S. 219 within the project area. **Chapter 3.11.3** discusses potential CO impacts.

B. Particulate Matter (PM)

PM is the term used for a mixture of solid particles and liquid droplets found in the air. These particles are a range of sizes, including particles that are less than 2.5 micrometers in diameter (PM2.5) and less than 10 micrometers in diameter (PM10). Sources of PM include vehicle emissions of dust, dirt, soot, smoke, and liquid droplets. The proposed project is located in a U.S. EPA attainment area for PM2.5 and PM10 standards. The project therefore does not require a project-level PM conformity determination. No further project-level air quality analysis for these pollutants is required according to the PM2.5 and PM10 hot-spot analysis requirements established in the March 10, 2006, final transportation conformity rule (71 CFR 12468).

C. Mobile Source Air Toxics (MSATs)

MSATs are hazardous air pollutants with significant contributions from mobile vehicles. These pollutants include benzene and other hydrocarbons such as 1,3-butadiene, formaldehyde, acetaldehyde, acrolein, and naphthalene. FHWA's *Updated Interim Guidance on Mobile Source Air Toxic Analysis in*

NEPA Documents (FHWA, 2023) established a tiered approach with three categories for analyzing MSAT in NEPA documents. The three tiers are: no analysis for projects with no potential for meaningful MSAT effects, qualitative analysis for projects with low potential MSAT effects, and quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects. This project would be considered a project with low potential MSAT effects because the projected design year traffic is less than 140,000 to 150,000 AADT. The roadway proposed by the project is projected to have an AADT of 6,832, significantly below 140,000 to 150,000 AADT, as previously discussed. Qualitative discussion of the project impacts is discussed in **Chapter 3.11.3.B**.

D. Greenhouse Gas (GHG)

As shown in **Figure 3-9**, Pennsylvania released 54.44 million metric tons of transportation related GHG emissions in 2020. Maryland released 25.93 metric tons of transportation related GHG emissions. CO_2 is the principal GHG component which comprised 96.9% of transportation related GHG emitted in Pennsylvania and 96.8% in Maryland. Transportation is the largest source of emissions in Maryland, while it is the third largest in Pennsylvania, behind industrial sources and electric power generation.

3.11.3 Impacts

A. Carbon Monoxide (CO)

Based on the AADT described above, the U.S. 219 project does not include or directly affect any roadways for which the 20-year forecasted daily volume would exceed the threshold level of 125,000 vehicles per day established in PennDOT Publication No. 321, *Project-Level Air Quality Handbook*. Projected AADT associated with the No Build Alternative is also below 125,000 vehicles per day. Therefore, the project would have no significant adverse impact on air quality as a result of CO emissions. This satisfies the qualitative analysis for CO2 based on AADT that is required in PennDOT Publication No. 321, *Project-Level Air Quality Handbook*. U.S. EPA monitoring shows that CO levels in the project area are well below associated standards, and the estimated traffic volumes will remain under 125,000 ADT. While Maryland does not have an established traffic threshold for quantitative analysis of potential CO impacts, coordination with FHWA and SHA indicated the anticipated AADT of the project would have no significant adverse impact on air quality as a result of transportation related CO emissions.

B. Mobile Source Air Toxics (MSATs)

MSAT analysis was guided by FHWA's *Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents* (FHWA, 2023). For

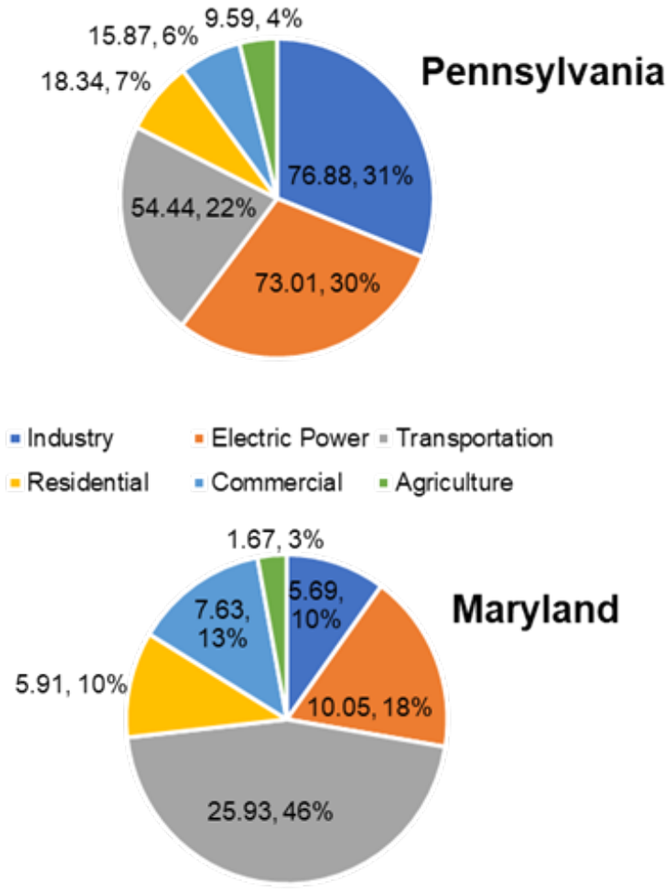


Figure 3-9: Emissions by Economic Sector in PA & MD (Million Metric Tons of CO_2 Equivalent, 2020[1])

[1]U.S. EPA's Inventory of U.S. GHGs Emissions and Sinks by State

the build condition associated with project implementation, the amount of MSATs emitted would be proportional to the vehicle miles traveled (VMT), assuming that other variables such as fleet mix are the same for each build alternative. Indirect effects of the project such as associated access traffic, emissions of evaporative MSAT (e.g., benzene) from parked cars, and emissions of diesel particulate matter from trucks could also cause localized differences in the MSAT.

It is expected that there would be no appreciable difference in projected AADT or overall MSAT emissions among the four build alternatives. As previously discussed, the design year AADT is projected to be the same for the proposed alternatives, with similar proposed roadway lengths for each alternative as well. For all alternatives, emissions are virtually certain to be lower than present levels in the design year of 2050 as a result of the U.S. EPA's national control programs. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. The magnitude of the U.S. EPA-projected reductions however is so great (even after accounting for VMT growth) that MSAT emissions in the project area are likely to be lower in the future than they are today. According to U.S. EPA's *Motor Vehicle Emission Simulator* (MOVES), FHWA estimates that even if VMT increases by 31% from 2020 to 2060, as forecasted nationally, a 76% combined reduction of the total annual MSATs emissions across the country is projected. Because the estimated VMT under each of the proposed build alternatives are nearly the same, varying by approximately five percent, it is expected there would be no appreciable difference in overall MSAT emissions among the various alternatives

Information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with a proposed set of highway alternatives. The uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with the proposed action would influence the outcome of such an assessment, adverse or not. Refer to the *Air Quality Memorandum*, included as **Appendix O**, prepared as part of this project or FHWA's *Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents, Appendix C* (FHWA, 2023) for additional information on incomplete or unavailable information for project specific MSAT health impacts.

C. GHG

GHG Traffic Emissions

GHG emission impacts associated with the project were estimated by using the projected AADT and VMT of the proposed and existing U.S. 219 roadway to determine approximate CO_2 equivalent emissions. This was completed using FHWA's *Infrastructure Carbon Estimator*.

Table 3-11 shows an approximation of GHG released by vehicles travelling along U.S. 219 through the project area in the no build or project

Table 3-11: Approximate Cumulative Traffic GHG Emissions through 2050

Traffic Conditions and Emissions	2022 Base	2050 No Build	2050 Build Alternatives			
			DU Mod.	DU Shift Mod.	E Mod.	E Shift Mod.
Projected AADT	4,811	6,832	6,832	6,832	6,832	6,832
Projected VMT	46,667	66,270	56,706	56,706	53,973	53.973
2050 Cumulative CO2 Equivalent Released (Metric Tons)[1]	N/A	208,515	178,423	178,423	169,823	169,823

[1]According to FHWA Infrastructure Carbon Estimator, based on construction in 2030 and project design year 2050. The 2030 AADT for the No Build and Build Conditions is projected to be 5,389.

build scenarios. The 2022 base condition represents existing traffic conditions, while the 2050 no build and 2050 build conditions represent projected traffic conditions in 2050 based on a linear growth rate. The build conditions include traffic along existing U.S. 219, and the proposed U.S. 219 roadway associated with Alternatives DU, DU-Shift, E, and E-Shift Modified.

While emission increases are associated with any increase in VMT, there is significant uncertainty in the GHG projections related to numerous variables, including roadway length, vehicle types, vehicle speed, routing behaviors, fuel prices, economic and population growth, seasonal temperatures, vehicle technology, and fuel economy. These approximations indicate a 14 to 19% decrease in CO_2 equivalent emissions in the build conditions compared to the no build. This results from a consistent AADT between the two conditions, but a decrease in VMT resulting from a shorter roadway segment length along the proposed U.S. 219 compared to the existing U.S. 219 north-south travel route within the project area. Projected traffic emissions through 2050 associated with Alternatives E Modified and E-Shift Modified are the lowest of the alternatives, with 169,823 metric tons of CO_2 equivalent, as these alternatives have the shortest proposed roadway. The No Build has the highest projected CO_2 equivalent emissions with 208,515 metric tons.

Social Cost of GHG Traffic Emissions

In accordance with U.S. Executive Order 13990, the approximate social costs of GHG emissions associated with the proposed project were calculated. The costs were determined using the Institute for Policy Integrity's *Social Cost of GHG Calculator*, which is based on the Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide (February 2021), issued by the Interagency Working Group on the Social Cost of Greenhouse Gases. The Interagency Working Group utilizes discount rates (DR) of 2.5%, 3%, 5%, or the 95th percentile of simulations (based on a 3% DR). A DR attempts to quantify the costs of emissions at a future date by accounting for inflation and weighing the value of current investments versus future costs. A larger DR decreases future social costs, while a smaller DR increases future social costs.

According to these social cost calculations, as shown in **Table 3-12**, there is a decrease in social costs related to build condition traffic emissions as compared to the no build condition. This parallels the trend from due to the decrease in VMT associated with the build conditions, and traffic social costs for Alternatives DU Modified and DU-Shift Modified are approximately $4.7 million less than the No Build Alternative, and social costs for Alternatives E Modified and E-Shift Modified are approximately $6 million less than the No Build.

Construction and Maintenance GHG Emissions

Similarly, FHWA's *Infrastructure Carbon Estimator* approximated the social costs associated with

Table 3-12: Approximate Social Cost of Cumulative Traffic GHG Emissions

Conditions	2050 No Build	2050 Build Alternatives			
		DU Mod.	DU Shift Mod.	E Mod.	E Shift Mod.
Social Cost with 5% Discount Rate (DR)[2]	$3,012,827	$2,578,028	$2,578,028	$2,453,767	$2,453,767
Social Cost with 3% DR[2]	$10,785,726	$9,229,175	$9,229,175	$8,784,329	$8,784,329
Social Cost with 2.5% DR[2]	$16,088,848	$13,766,973	$13,766,973	$13,103,404	$13,103,404
Social Cost based on 95th Percentile[2]	$32,605,149	$27,899,712	$27,899,712	$26,554,944	$26,554,944

[1]According to U.S. EPA's Greenhouse Gas Equivalencies Calculator, rounded to nearest whole number for use with the Institute for Policy Integrity's Social Cost of GHG Calculator.
[2]According to the Institute for Policy Integrity's Social Cost of GHG Calculator and Interagency Working Group on the Social Cost of Greenhouse Gases estimates, based on analysis in 2024 and emission in 2030.

construction and operations/maintenance of the build alternatives through the full roadway lifespan. The *Infrastructure Carbon Estimator* provides lifecycle estimates of energy and GHG emissions based on national emission and energy use factors for materials and construction activities.

According to this estimator tool, the construction and maintenance of the new roadway associated with the build alternatives would result in the emission of approximately 14,617 to 15,357 metric tons of CO_2 equivalent, as shown in **Table 3-13**. Alternatives E Modified and E-Shift Modified have lower construction and maintenance emissions than Alternatives DU Modified and DU-Shift Modified as a result of the shorter proposed roadway associated with Alternatives E Modified and E-Shift Modified. Approximately one-third of these emissions results from maintenance/operations of the roadway, approximately one-third of the emissions results from production of construction materials, and approximately one-third of the emissions results from construction and transportation of materials for construction purposes.

Social Cost of GHG Construction and Maintenance Emissions

The Institute for Policy Integrity's *Social Cost of GHG Calculator* was used to calculate the social cost of the GHG construction and maintenance emissions. **Table 3-14** details the social cost of

Table 3-13: Approximate GHG Emissions Associated with Construction and Maintenance

Activity and Estimated Emissions in Metric Tons	Build Alternatives			
	DU Mod.	DU Shift Mod.	E Mod.	E Shift Mod.
Total Proposed Lane Miles	33.2	33.2	31.6	31.6
CO_2 Equivalent -Construction[1]	4,506	4,506	4,289	4,289
CO_2 Equivalent - Construction Materials[1]	5,161	5,161	4,912	4,912
CO_2 Equivalent - Construction Transportation[1]	730	730	694	694
CO_2 Equivalent - Maintenance for Full Roadway Lifespan[1]	4,961	4,961	4,722	4,722
Total CO_2 Equivalent from Construction and Maintenance[1]	**15,357**	**15,357**	**14,617**	**14,617**

[1]According to the FHWA Infrastructure Carbon Estimator.

Table 3-14: Approximate Social Cost Associated with Construction and Maintenance

Conditions and Social Cost	Build Alternatives			
	DU Mod.	DU Shift Mod.	E Mod.	E Shift Mod.
Social Cost with 5% DR[2]	$207,496	$207,496	$197,484	$197,484
Social Cost with 3% DR[2]	$764,111	$764,111	$727,243	$727,243
Social Cost with 2.5% DR[2]	$1,146,813	$1,146,813	$1,091,478	$1,091,478
Social Cost based on 95th Percentile[2]	$2,321,196	$2,321,196	$2,209,196	$2,209,196

[1]According to the FHWA Infrastructure Carbon Estimator.
[2]According to the Institute for Policy Integrity's Social Cost of GHG Calculator and Interagency Working Group on the Social Cost of Greenhouse Gases estimates, based on analysis in 2024, construction emissions in 2030, and maintenance emissions in 2040.

these construction and maintenance emissions, which ranges from $207,496 to $2,321,196 for Alternatives DU Modified and DU-Shift Modified and $197,484 to $2,209,196 for Alternatives E and E-Shift Modified, depending on the discount rate.

Forestland Impacts and Social Cost

Construction of the proposed project would also impact forestland. Consequently, these forestland impacts would affect carbon sequestration and the social cost of the project. The amount of forestland impacted by the project would vary depending on the alternative selected, ranging from 388.8 acres to 431.4 acres.

Table 3-15 shows the forestland impacted and the social cost for each alternative according to the Institute for Policy Integrity's *Social Cost of GHG Calculator*. Of the four build alternatives, Alternatives E and E-Shift Modified would have the lowest approximate social cost related to impacted forestland, ranging from $70,506 to $846,007, and Alternative DU Modified would have highest approximate social cost, ranging from $78,066 to $936,756, depending on the discount rate utilized.

Cumulative GHG Emissions and Social Cost

The total GHG impact from the proposed project through 2050 was summarized in **Table 3-16**, accounting for traffic, construction, maintenance, and forestland loss. This analysis indicates that the alternative with the highest estimated GHG

Table 3-15: Approximate Cumulative Social Cost of Impacted Forestland through 2050

Cumulative Social Cost through 2050	DU Mod.	DU-Shift Mod.	E Mod.	E-Shift Mod.
Forestland Impacted (acres)	431.4	430.0	389.7	388.8
Annual Approximate CO2 Sequestration Impacted2 (metric tons)[1]	320	319	289	289
Social Cost through 2050 with 5% DR2	$78,066	$77,824	$70,506	$70,506
Social Cost through 2050 with 3% DR2	$306,266	$305,308	$276,595	$276,595
Social Cost through 2050 with 2.5% DR2	$466,106	$464,648	$420,952	$420,952
Social Cost through 2050 based on 95th Percentile[2]	$936,756	$933,827	$846,007	$846,007

[1]Assuming 0.5 metric tons of carbon sequestration per hectare of forestland per year (Mendelsohn, Sedjo, and Sohngen, 2012). For every 1 metric ton of carbon stored annually, approximately 3.67 metric tons of CO2 are sequestered per year.
[2]According to the Institute for Policy Integrity's Social Cost of GHG Calculator. Social cost was calculated based on analysis in 2024 and annual impact between 2030, when construction is scheduled to begin, and 2050.

Table 3-16: Cumulative GHG Impacts through 2050

Activity and CO_2 Equivalent Impact in Metric Tons through 2050	2050 No Build	2050 Build Alternatives			
		DU Mod.	DU Shift Mod.	E Mod.	E Shift Mod.
Traffic[1]	208,515	178,423	178,423	169,823	169,823
Construction of Proposed Roadway[1]	0	10,397	10,397	9,895	9,895
Maintenance of Proposed Roadway[1]	0	4,961	4,961	4,722	4,722
Forestland and Carbon Sequestration Loss	0	6,400	6,380	5,780	5,780
Total CO_2 Equivalent Impact	**208,515**	**200,181**	**200,161**	**190,220**	**190,220**

emissions is the No Build Alternative, which totals 208,515 metric tons. This results from the longer roadway segment and higher VMT of the no build. Alternatives E Modified and E-Shift Modified have the lowest estimated GHG emissions with 190,220 metric tons, resulting from the shortest proposed roadway segment and smallest forestland impacts.

Table 3-17 provides a summary of cumulative social costs through 2050 from the proposed project and associated GHG impacts. The No Build Alternative is projected to have the highest social cost, from $3,012,827 to $32,605,149, depending on the discount rate utilized. Alternatives E Modified and E-Shift Modified have the lowest social cost, ranging from $2,721,757 to $29,610,147.

D. Climate Change

Increased greenhouse gas emissions and a reduction in forestland area contributes to climate change. Greenhouse gases trap heat and can lead

Table 3-17: Cumulative Social Costs Resulting from GHG Impacts through 2050

Activity and Social Cost through 2050	2050 No Build	2050 Build Alternatives				Activity and Social Cost through 2050	2050 No Build	2050 Build Alternatives			
		DU Mod.	DU Shift Mod.	E Mod.	E Shift Mod.			DU Mod.	DU Shift Mod.	E Mod.	E Shift Mod.
Using 5% DR						**Using 2.5% DR**					
Traffic	$3,012,827	$2,578,028	$2,578,028	$2,453,767	$2,453,767	Traffic	$16,088,848	$13,766,973	$13,766,973	$13,103,404	$13,103,404
Construction of Proposed Roadway	$0	$150,226	$150,226	$142,973	$142,973	Construction of Proposed Roadway	$0	$802,224	$802,224	$763,490	$763,490
Maintenance of Proposed Roadway	$0	$57,270	$57,270	$54,511	$54,511	Maintenance of Proposed Roadway	$0	$344,589	$344,589	$327,988	$327,988
Forestland and Carbon Sequestration Loss	$0	$78,066	$77,824	$70,506	$70,506	Forestland and Carbon Sequestration Loss	$0	$466,106	$464,648	$420,952	$420,952
Total Social Cost	**$3,012,827**	**$2,863,590**	**$2,863,348**	**$2,721,757**	**$2,721,757**	**Total Social Cost**	**$16,088,848**	**$15,379,892**	**$15,378,434**	**$14,615,834**	**$14,615,834**
Using 3% DR						**Based on 95th Percentile**					
Traffic	$10,785,726	$9,229,175	$9,229,175	$8,784,329	$8,784,329	Traffic	$32,605,149	$27,899,712	$27,899,712	$26,554,944	$26,554,944
Construction of Proposed Roadway	$0	$537,799	$537,799	$511,833	$511,833	Construction of Proposed Roadway	$0	$1,625,762	$1,625,762	$1,547,265	$1,547,265
Maintenance of Proposed Roadway	$0	$226,312	$226,312	$215,410	$215,410	Maintenance of Proposed Roadway	$0	$695,434	$695,434	$661,931	$661,931
Forestland and Carbon Sequestration Loss	$0	$306,266	$305,308	$276,595	$276,595	Forestland and Carbon Sequestration Loss	$0	$936,756	$933,827	$846,007	$846,007
Total Social Cost	**$10,785,726**	**$10,299,552**	**$10,298,594**	**$9,788,167**	**$9,788,167**	**Total Social Cost**	**$32,605,149**	**$31,157,664**	**$31,154,735**	**$29,610,147**	**$29,610,147**

to global warming and other climate impacts. Forestland sequesters carbon, acting as a carbon sink, and forestland loss can lead to a release of CO_2 and a larger effect on climate change. Climate change within the project area is anticipated to result in changing temperature patterns and increased rainfall. Climate change impacts on the project area are further discussed in **Chapter 3.27**.

E. Construction

Construction activities may generate temporary increases in MSAT emissions or other pollutants through construction vehicles and equipment exhaust. Construction could also temporarily impact air quality due to particulate matter in the air, in the form of dust, resulting from blasting, earthmoving activities, or movement of equipment over dirt roads. However, air quality impacts resulting from roadway construction activities are typically not a concern when contractors utilize appropriate control measures.

In Pennsylvania and Maryland, contractors must perform all construction activities in accordance with 25 PA Code Article III (Chapters 121-145, Air Resources) or 26 MD Code Subtitle 11 (Chapters 1-41, Air Quality) to ensure adequate control measures are in place. The use of approved dust palliatives such as calcium chloride or water will be required to control dust emissions. Methods for reducing impacts to existing air quality may also include covering of stockpiles during storage or transport, and restoration of vegetation as quickly as possible to prevent windblown dust. It's also important to provide advance notice and warning signs to communities that may be impacted by blasting activities.

Additional information about the air quality analysis is provided in **Appendix O**, which contains the *Air Quality Memorandum*.

3.11.4 Mitigation

Based on this air quality analysis and guidance from state and Federal agencies, no significant adverse impact on air quality or GHG emissions is anticipated within the project area as a result of the proposed build alternatives. While temporary and permanent tree and vegetation removal is necessary for construction, tree planting and revegetation is proposed to the extent possible to mitigate greenhouse gas impacts.

Furthermore, Maryland adopted the Greenhouse Gas Emissions Reduction Act (GGRA), which requires statewide GHG emissions to be reduced by 40 percent from 2006 levels by 2030. MDOT and SHA aim to reduce GHG emissions through encouraging technologies that consume less fossil fuel, reducing congested travel, and offering alternatives to carbon intensive transportation methods.

In January 2019, Executive Order 2019-01 was signed, which stated that Pennsylvania shall strive to reduce net GHG emissions by 80 percent from 2005 levels by 2050. PennDOT encourages electric and low-emission vehicle usage, and Pennsylvania has developed the Electric Vehicle Roadmap and the Drive Electric PA Coalition to encourage electric vehicle adoption.

3.12 Noise

3.12.1 Methodology

Roadway construction at a new location or even improvements to the existing transportation network may cause negative impacts to noise sensitive receptors located adjacent to the project area. For this reason, FHWA, PennDOT and SHA have established noise analysis methodologies and noise level criteria to assess potential noise impacts associated with the construction and use of transportation projects. A traffic noise impact occurs on a project when predicted build noise levels approach (within one A-weighted decibels [dB(A)]), meet or exceed the applicable Noise Abatement Criteria (NAC) listed in **Table 3-18**, or when the predicted noise levels are substantially higher (10 dB(A) or greater) than the existing noise level.

A *Preliminary Engineering Noise Report*, located in **Appendix P**, was completed using the methodology described in PennDOT Publication No. 24, *Project Level Highway Traffic Noise Handbook* (PennDOT, November 2019), SHA *Highway Noise Abatement*

Planning and Engineering Guidelines (April 2020) and FHWA criteria as described in *Title 23 of the Code of Federal Regulations Part 772* (23 CFR 772). As defined in 23 CFR, Part 772, this project is classified as a Type I project for noise analysis as it includes the construction of a highway on a new alignment. The objective of the *Preliminary Engineering Noise Report* is to provide an overview of the existing and future noise environment and predict the potential effects the project would have on the noise environment.

The noise analysis included noise monitoring and noise model validation of existing conditions at representative noise-sensitive land uses, noise modeling of existing and future (No-Build and Build) conditions using FHWA's *Traffic Noise Model v2.5* (FHWA TNM®), hereafter referred to as simply "TNM", an assessment of future noise impacts, and where warranted, an evaluation of potential noise abatement measures. Refer to the *Preliminary Engineering Noise Report* located in **Appendix P** for details of the noise analysis as the following provides a summary of the report.

3.12.2 Existing Conditions

Existing noise level measurements are required to establish the basis of impact analysis, and to provide a snapshot of the typical project area existing noise levels. These measurements also validate the TNM model against field observed conditions. This ensures the accuracy and reliability of the modeled predicted future noise conditions for the proposed build alternatives.

A. Site Selection and Noise Monitoring

The identification of Noise Study Areas (NSAs) and the selection of noise monitored and modeled locations were conducted to represent all the project area existing noise source(s). Based on field reconnaissance and desktop mapping, the identified active land uses along the four build alternatives consist mostly of residential properties and two places of worship, defined as FHWA/ PennDOT/SHA activity categories B and C land uses. The industrial, agricultural, and undeveloped fields along the project alternatives are considered activity categories F and G land uses, which do not have an established NSA. **Table 3-18** from 23 CFR, Part 772 provides a description of each activity category.

Table 3-18: Noise Abatement Criteria (NAC) Hourly A Weighted Sound Level – Decibels [dB(A)]

Activity Category	Activity Criteria[1] Leq(h)[2]	PennDOT Approach Criteria	MD SHA Approach Criteria	Evaluation Location	Description of Activity Category
A	57	56	56	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67	66	66	Exterior	Residential
C[3]	67	66	66	Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, daycare centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D[3]	52	51	51	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E[3/4]	72	71	71	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F.
F	--	--	--	--	Agriculture, airports, bus yards, emergency services, industrial, logging maintenance facilities, manufacturing, mining, rail yards, retail facilities, shipyards, utilities (water resources, water treatment, electrical), and warehousing.
G	--	--	--	--	Undeveloped lands that are not permitted

[1]The Leq(h) Activity Criteria values are for impact determination only and are not design standards for noise abatement measures.
[2]The equivalent steady-state sound level which in a stated period of time contains the same acoustic energy as the time-varying sound level during the same time period, with Leq(h) being the hourly value of Leq.
[3]Includes undeveloped lands permitted for this activity category (PennDOT)
[4]Includes undeveloped lands permitted for this activity category (SHA)

There are 20 NSAs identified along the four build alternatives. These NSAs are grouped by common areas and land uses influenced by similar noise sources and levels, traffic mix and speed, and topographic features. These areas are used to evaluate traffic noise impacts and potential noise abatement measures and to assess the feasibility and reasonableness of possible noise abatement measures. A receptor is a point within the NSA that represents an area where frequent human outdoor activity occurs. The majority of receptors in the project area represent residential (Activity Category B) land uses.

The 20 NSAs identified along the four build alternatives are presented on **Figure 3-10** for Pennsylvania and **Figure 3-11** for Maryland. In Pennsylvania, 15 NSAs, 6a thru 19 were identified. In Maryland, five NSAs, 1 thru 5 were identified.

Refer to the *Preliminary Engineering Noise Report* located in **Appendix P** for detailed descriptions of the NSAs, specifically Section 4.1 and more detailed maps, specifically in Appendix A of that report.

Within the 20 NSAs, existing noise levels were monitored or predicted at 99 noise-sensitive receptor locations (34 monitored and modeled sites and 65 modeled only sites) to identify existing acoustical conditions (see **Figure 3-10** and **Figure 3-11**). Of the 99 noise-sensitive receptor locations, 69 are located in Pennsylvania and 30 in Maryland.

Refer the *Preliminary Engineering Noise Report* located in **Appendix P** for more detailed maps of the noise-sensitive receptor locations, specifically Appendix A. Noise receptor locations are also depicted in **Appendix Q**.

Of the 34 noise-sensitive receptors selected for monitoring, five are long-term monitoring sites (24-hours). Long-term noise monitoring was conducted for one receptor site in Pennsylvania to establish a baseline for receptors where traffic is not the dominant contributing acoustical characteristics. Long-term noise monitoring was conducted at four receptor sites in Maryland to establish the loudest-hour Leq(h) for the existing condition which is used to normalize the Leq of corresponding short-term measurements where existing noise levels are not dominated by road noise and where TNM cannot predict the existing noise levels.

The remaining 29 noise-sensitive receptors selected for monitoring are short-term monitoring sites. Short-term monitoring was conducted for 20-minute periods. Individual 1-minute intervals were recorded to filter out events not representative of the existing noise environment or non-traffic-related events (e.g., barking dogs, aircrafts, and lawn equipment) during the monitoring session.

Monitored existing noise levels in Pennsylvania range from 40 dB(A) Leq(h) to 60 dB(A) Leq(h). Measured existing noise levels in Maryland range from 40 dB(A) Leq(h) to 69 dB(A) Leq(h). As expected, measured noise levels were greatest at those receptors in close proximity to existing U.S. 219, Mason Dixon Highway, and Chestnut Ridge Road. Refer to the *Preliminary Engineering Noise Report* located in **Appendix P** for a full list of the monitoring results of the 34 noise-sensitive receptors selected for monitoring, specifically Section 4.2.

B. Model Validation and Existing Conditions

The model validation process confirms the model's ability to reproduce the measured noise level under specific measured conditions. This comparison ensures that reported changes in noise levels between existing and future conditions are due to changes in traffic conditions and not due to discrepancies between monitoring and modeled conditions.

A TNM model was developed for both Pennsylvania and Maryland. These models included all pertinent roadways, terrain, and structural elements needed to adequately characterize the project area's existing noise environment. The model was validated by using the noise levels and traffic data collected at each monitoring site. Both PennDOT and SHA recognize a difference of +/-3 decibels between the monitored and modeled levels as acceptable, since this is the limit of change detectable by typical human hearing.

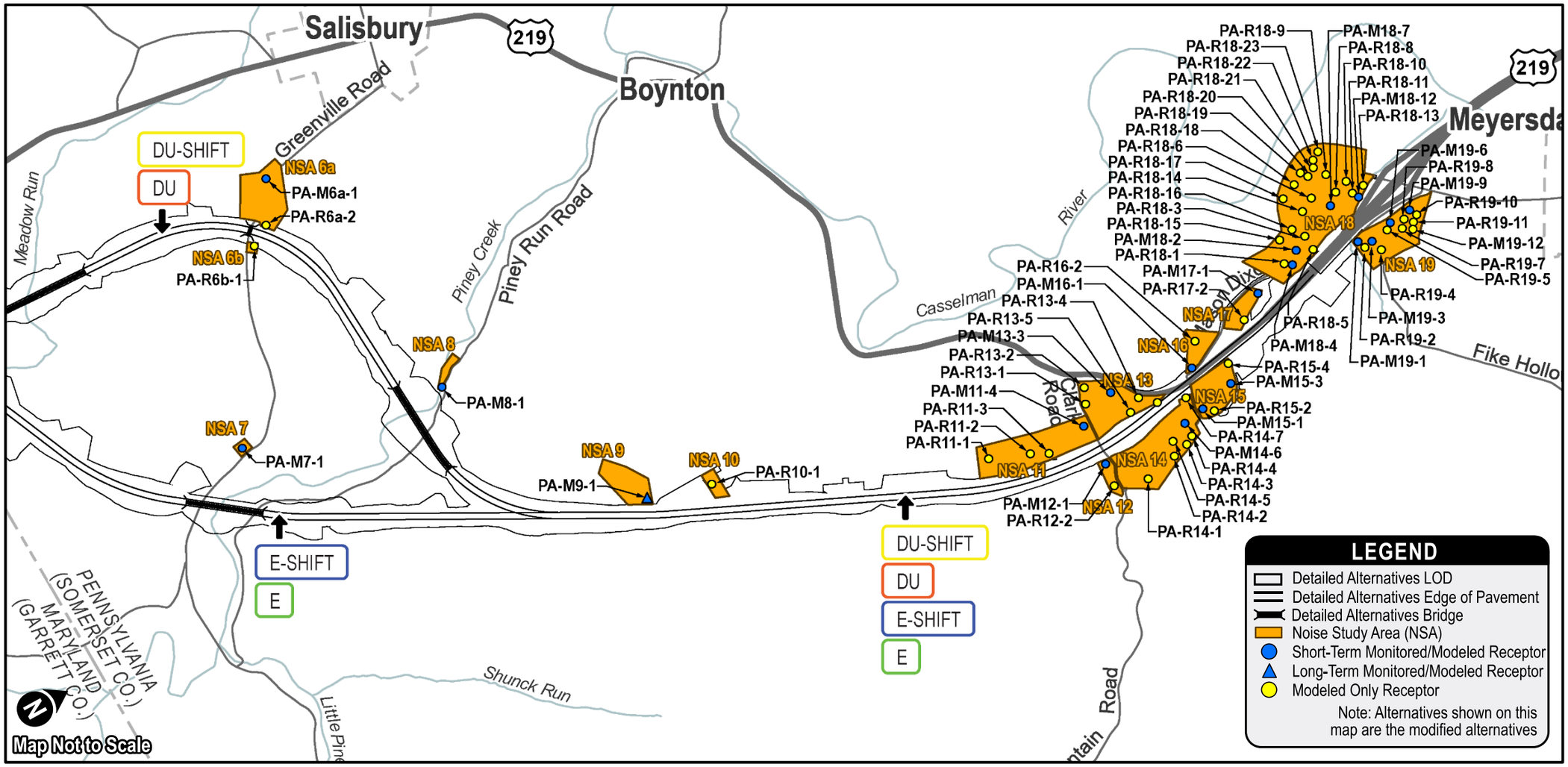


Figure 3-10: Noise-Sensitive Receptor and NSA Locations in Pennsylvania

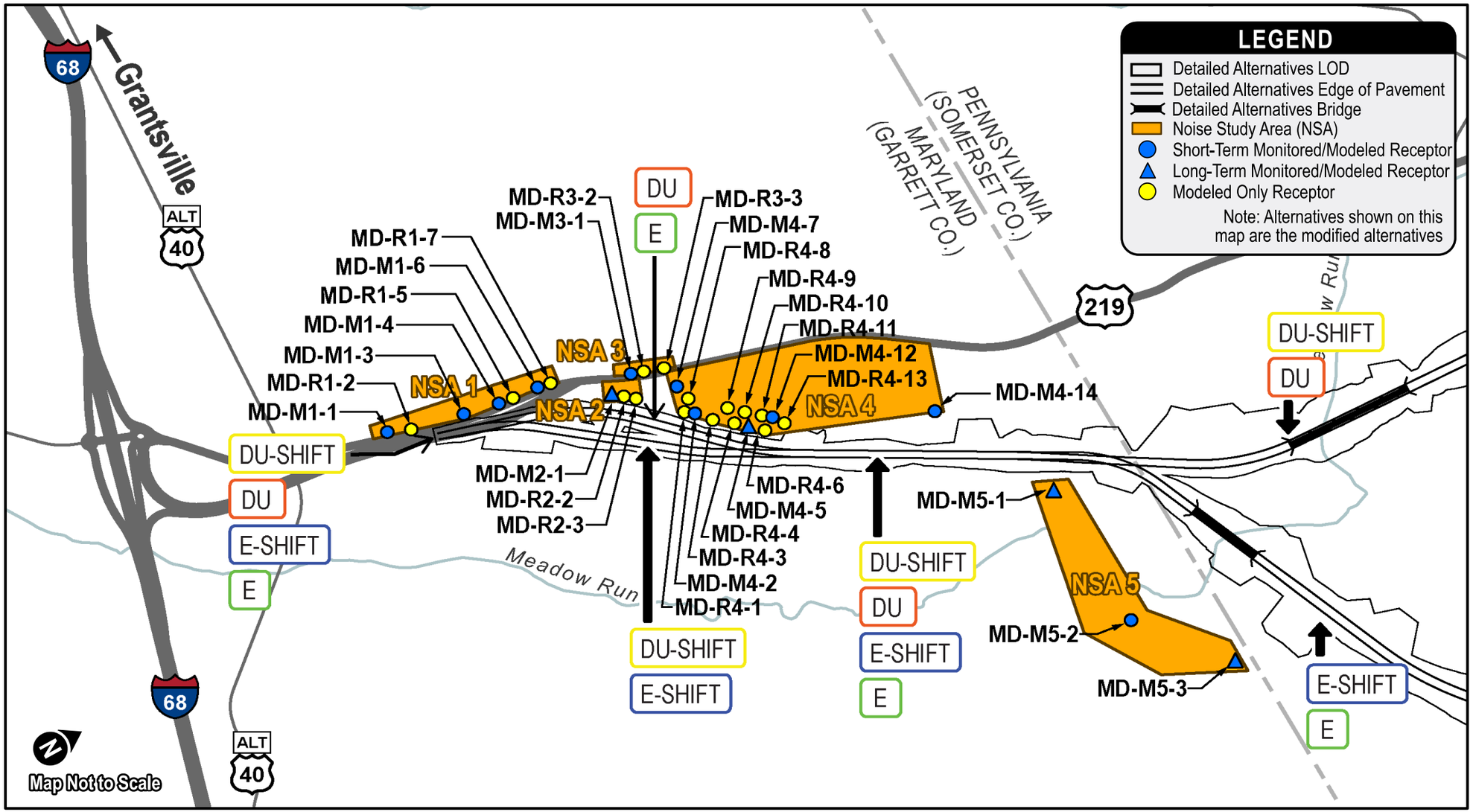


Figure 3-11: Noise-Sensitive Receptor and NSA Locations in Maryland

Out of the 34 monitoring sites 20 (12 in Pennsylvania and 8 in Maryland) validated within +/- 3 decibels of the modeled TNM 2.5 noise levels. The validation procedure is not applicable for the remaining 14 monitoring sites since the existing noise environment is not dominated by an existing highway traffic noise source or during monitoring there were no occurrences of vehicles driving on the adjacent roadway. Per PennDOT *Pub 24 Section 2.5.3 Model Validation Limitations*, a TNM model is not capable of accurately determining existing noise levels where highway traffic noise is not the dominant contributing acoustical characteristic. Refer to the *Preliminary Engineering Noise Report* located in **Appendix P** for detailed results of the TNM validation process, specifically Section 4.3.

Following model validation, an existing conditions worst-case noise model was developed comparing existing worst-case noise levels to 2050 design year noise levels. For all modeled receptors, exterior noise levels under existing conditions (2022) are predicted to range from 40 dB(A) Leq(h) to 59 dB(A) Leq(h) in Pennsylvania and 40 dB(A) Leq(h) to 68 dB(A) Leq(h) in Maryland. See **Table 3-19** for a summary of the existing worst case scenario noise levels which are grouped by NSA and provided as a range. Refer to the *Preliminary Engineering Noise Report* located in **Appendix P** for detailed existing noise levels by receptor in each NSA, specifically Section 5.0.

3.12.3 Impacts

Future worst-case noise levels are predicted for both the No Build and build conditions to determine the effects of the project on the traffic noise levels at each of the 20 NSAs. Design year 2050 traffic was incorporated into the validated TNM model for both the No Build (existing conditions) and build conditions. The four build alternatives do not follow the same alignment, therefore, each of the build alternatives has some unique adjacent receptors that could be impacted by the proposed alternative.

Both PennDOT and SHA have determined that a traffic noise impact is present if a future design year noise level approaches or exceeds the defined NAC for the corresponding Land Use Activity Category and or the future design year noise levels substantially increase by 10 dB(A) or more above existing noise levels.

As shown in **Table 3-19**, two impacts from Existing Year (2022) traffic noise levels were identified in NSA 3 located in Maryland due to equaling or exceeding the NAC (66 dB(A) for residential land uses). The Existing Year noise levels can be attributed to the proximity of the noise sensitive receptors to Chestnut Ridge Road. There are only four identified impacted receptors for the Design Year 2050 No Build due to predicted noise levels approaching or exceeding the NAC (66 dB(A) for residential land uses). These impacted receptors occur in NSAs 1 and 3 located in Maryland. Mitigation was not evaluated for these impacted receptors because No Build noise levels are used for comparison to existing and Build noise levels associated with the project.

As shown in **Table 3-19**, thirteen Design Year 2050 Build noise level impacts were identified for Alternatives DU Modified and E Modified, with eight receptors in Pennsylvania (NSAs 12, 13, 14 and 18) and five in Maryland (NSAs 1 and 4). These impacts are associated with predicted noise levels approaching or exceeding the NAC (66 dB(A) for residential land uses) or substantially exceeding existing noise levels by 10 dB(A) or more.

As shown in **Table 3-19**, nine noise impacts were identified for DU-Shift Modified and E-Shift Modified, with eight in Pennsylvania (NSAs 12, 13, 14 and 18) and one in Maryland (NSA 1). These impacts are associated with predicted noise levels approaching or exceeding the NAC (66 dB(A) for residential land uses) or substantially exceeding existing noise levels by 10 dB(A) or more.

Noise abatement consideration is not warranted for NSAs 2, 3, 5-11, 15,16, 17 and 19 since no predicted future noise impacts were identified for the four build alternatives.

NSAs 1 and 18 have predicted future noise levels equaling or exceeding the NAC (66 dB(A) for residential land uses) or substantially exceeding existing noise levels by 10 dB(A) or more. While

abatement is warranted, mitigation is not feasible due to driveway and roadway access. Any noise barrier built for NSAs 1 and 18 would need to be terminated at each driveway due to sight distance and safety requirements. These breaks in the noise barrier would create pathways for traffic noise from the adjacent road to pass through, hindering the barrier's effectiveness. Therefore, abatement was not further studied for these NSAs.

NSAs 4 and 12, 13 and 14 have predicted noise levels substantially exceeding existing noise levels by 10 dB(A) or more, therefore, noise abatement is warranted at NSA 4 in Maryland for predicted noise impacts from Alternatives DU Modified and E Modified and at NSAs 12, 13 and 14 in Pennsylvania for predicted noise impacts from all four build alternatives.

Refer to the *Preliminary Engineering Noise Report* located in **Appendix P** for more detailed noise impacts by receptor in each NSA, specifically Section 5.0.

3.12.4 Mitigation

For preliminary noise analysis purposes noise barriers were considered to be the only feasible form of noise mitigation but earth noise berms, traffic

management measures, alternation of horizontal and vertical alignment and acquisition of real property or interests therein (predominately

Table 3-19: 2022 Existing and Proposed Worst-Case Traffic Noise Level Summary

1	2	3		4	5	6					7				
NSA	LU Cat.	No. of Receptors per NSA		2023 Measured Noise Level [dB(A)]	2022 Existing Worst-Case Traffic Noise Level [dB(A)]	2050 PM Peak Hour Predicted Noise Levels [dB(A)]					Summary of Impacted Receptors Per NSA by Project Alternative				
		Measured/ Modeled	Modeled Only			No Build	DU Mod.	E Mod.	DU-Shift Mod.	E-Shift Mod.	No Build	DU Mod.	E Mod.	DU-Shift Mod.	E-Shift Mod.
Pennsylvania															
6a	B	1	1	54	54	54	54	54	54	54	0	0	0	0	0
6b	B	0	1	-	54	54	54	54	54	54	0	0	0	0	0
7	B	1	0	45	45	45	45	50	45	50	0	0	0	0	0
8	B	1	0	56	56	56	56	56	56	56	0	0	0	0	0
9	B	1	0	46	46	46	49	49	49	49	0	0	0	0	0
10	B	0	1	-	46	46	49	49	49	49	0	0	0	0	0
11	B	1	3	40	40	40	42-48	42-48	42-48	42-48	0	0	0	0	0
12	B	1	1	41	41	41	54-44	54-44	54-44	54-44	0	1[2]	1[2]	1[2]	1[2]
13	B	1	5	52	40-57	43-59	43-60	43-60	43-60	43-60	0	1[2]	1[2]	1[2]	1[2]
14	B	1	6	44	41-48	41-50	43-60	43-60	43-60	43-60	0	1[2]	1[2]	1[2]	1[2]
15	B	2	2	53-54	50-54	51-54	54-58	54-58	54-58	54-58	0	0	0	0	0
16	B	1	1	60	50-58	55-60	54-64	54-64	54-64	54-64	0	0	0	0	0
17	B	1	1	50	50-52	50-54	51-54	51-54	51-54	51-54	0	0	0	0	0
18	B/C	4	19	49-56	39-59	41-60	43-70	43-70	43-70	43-70	0	5[1,2]	5[1,2]	5[1,2]	5[1,2]
19	B	4	8	52-54	41-54	42-57	43-56	42-56	43-56	42-56	0	0	0	0	0
Maryland															
1	B	4	3	59-64	61-64	62-66	63-66	63-66	63-66	63-66	1[1]	2[1]	2[1]	1[1]	1[1]
2	B/C	1	2	51	49-55	51-56	53-55	53-55	49-53	49-53	0	0	0	0	0
3	B	1	2	69	65-68	66-69	62-65	62-65	62-65	62-65	3[1]	0	0	0	0
4	B	5	9	35-55	44-56	41-57	46-55	46-55	42-55	42-55	0	3[2]	3[2]	0	0
5	B	3	0	42-47	42-47	42-47	43-53	46-54	43-53	46-54	0	0	0	0	0
TOTAL Impacted Receptors Per NSA by Project Alternative											**4**	**13**	**13**	**9**	**9**

1) Receptor(s) impacted due to predicted noise levels approach or exceed the Noise Abatement Criteria (66 dB(A) for residential land uses).
2) Receptor(s) impacted due to predicted noise levels substantially exceeding existing noise levels by 10 dB(A) or more.

unimproved property) to serve as a buffer zone to preempt development which would be adversely impacted by traffic noise.

Preliminary noise barriers were evaluated for the four NSAs warranting noise abatement consideration with the build alternatives. FHWA, PennDOT and SHA require that feasible and reasonable noise abatement measures be considered and evaluated for the benefit of predicted build-condition traffic noise impacts.

The assessment of noise abatement feasibility, in general, focuses on whether it is physically possible to build an abatement measure (i.e. noise barrier) that achieves a minimally acceptable level of noise reduction. Barrier feasibility considers three primary factors: acoustics (PennDOT requires barriers to achieve a 5 dB(A) noise reduction at 50% of the impacted receptors, SHA requires barriers to achieve a 5 dB(A) noise reduction at 70% of the impacted receptors), safety & access, and site constraints.

The assessment of noise abatement reasonableness, in general, focuses on whether it is practical to build an abatement measure. Barrier reasonableness considers three primary factors: viewpoints, design goal (PennDOT requires barriers to achieve a 7 dB(A) noise reduction for at least 1 impacted receptor, SHA requires barriers to achieve a 7 dB(A) noise reduction for at least three or 50% of the impacted receptors), and cost effectiveness (PennDOT threshold is 2,000 square feet per benefited receptor, SHA threshold is 700-2,700 square feet per benefited receptor depending on the scope of the project).

The preliminary noise barriers analyzed for NSAs 4 and 12, 13 and 14 were determined feasible but not reasonable per PennDOT's and SHA's traffic noise policy due to failing the cost per benefitted receptor criteria. Therefore, the preliminary noise barriers are not recommended for further consideration. **Table 3-20** presents a summary of these preliminary barriers for the build alternatives. Refer to the *Preliminary Engineering Noise Report* located in **Appendix P** for detailed description of the preliminary noise barriers analyzed, specifically Section 6.2.

Additional noise analyses using more detailed engineering data would be conducted during the final design stage of the project and documented in the *Final Design Noise Report*. The final design noise analysis would refine the noise modeling effort and verify abatement warrants, feasibility, and reasonableness. Only if noise abatement is warranted, feasible, and reasonable, this effort would then include coordination with the affected public to define the desires of the benefited communities.

Table 3-20: Summary of Preliminary Noise Barrier Systems

NSA	Modified Build Alternatives	Number of Impacted Receptors[1]	Total Number of Benefited Receptors[2]	Preliminary Barrier Length (FT)	Height above Ground from TNM (FT)	Square Footage of Preliminary Barrier (SF)	SF/BR[3] (Square Footage per Benefited Receptor)	Feasible? / Reasonable?
NSA 4 (MD)	DU & E	3	3	1,004	16-21 (avg. 19.16)	18,850	6,283	Yes / No
NSA 12 (PA)	DU, DU-Shift, E & E-Shift	1	1	825	27-30 (avg. 28.73)	23,699	23,699	Yes / No
NSA 13 (PA)[4]	DU, DU-Shift, E & E-Shift	1	1	600	30	18,000	18,000	Yes / No
NSA 14 (PA)[4]	DU, DU-Shift, E & E-Shift	2	2	830	1-14 (avg. 13)	10,790	5,810	Yes / No

1. An impacted receptor is an individual receptor unit that has a future design year noise level that approaches or exceeds the NAC and/or that experiences a substantial noise level increase of 10 dB(A) or more above existing noise levels.
2. PennDOT and SHA define a benefited receptor an impacted or non-impacted receptor receiving a 5 dB(A) or greater insertion loss.
3. PennDOT maximum SF/BR = 2,000 and SHA maximum SF/BR = 2,700.
4. Based on preliminary engineering a retaining wall would be required to construct and maintain the preliminary noise barriers for NSAs 13 and 14. The square foot cost does not consider the retaining wall square footage and associated costs.

3.13 Farmlands

3.13.1 Methodology

PennDOT and the SHA have studied the farmlands in the project area in accordance with applicable state and federal regulations, including farmland soils pursuant to the Farmland Protection Policy Act (FPPA), 7 USC §4201; Productive Agricultural Land (PAL) pursuant to PA Act 1979-100; prime agricultural land pursuant to 4 Pa Code Chapter 7, §7.301 et seq., Agricultural Land Preservation Policy (ALPP); and land enrolled in the USDA Conservation Reserve Program (CRP) and Conservation Reserve Enhancement Program (CREP).

While Maryland does not have statewide farmland protection policies, they have a statewide farmland preservation program and a statewide preferential tax assessment program for farmland and farm properties. Additionally, the Maryland Agricultural Land Preservation Foundation purchases agricultural preservation easements that restrict development on prime farmland and woodland.

Generally, farmland investigations included field surveys, farmer interviews, review of county tax parcel data, and coordination with local and county agricultural land preservation boards.

Refer to the *Agricultural Resources Existing Conditions Memorandum* in **Appendix R** for detailed information pertaining to pertinent regulations, methodology, and existing conditions of agricultural properties.

3.13.2 Existing Conditions

A. FPPA Farmland Soils

The FPPA protects soils designated by the USDA as prime farmland soils, unique farmland soils, farmland soil of statewide importance, and farmland soil of local importance. The FPPA does not require these farmland soils to be in active agricultural use for protection. FPPA is a federal program and applies to both Pennsylvania and Maryland. The act requires Federal agencies to consider alternatives that could lessen adverse effects on farmland, and ensure federal actions are compatible with state and local government farmland protection programs and policies. The FPPA requires a Farmland Conversion Impact Rating Form be prepared. The prepared *Farmland Conversion Impact Rating Form* is in **Appendix S**. Additional information about existing conditions is provided in **Appendix R**, which contains the *Agricultural Resources Existing Conditions Memorandum*. **Figure 3-12** shows the FPPA soils. There are no Unique Farmland Soils or Soils of Local Importance present within the project area.

B. Active Farmland and Farm Operations

As described in detail in the *Agricultural Resources Existing Conditions Memorandum* (PennDOT, July 2023), there are 13 individual farm operations within the project area as described in **Table 3-21**. Refer to **Figure 3-13** for a map depicting location of farmland and farm operations.

Table 3-21: Active Farmland & Farm Operations

ID#	Operation	Owner	Operation Type
1	Grube	Dennis & Kathy Grube	Livestock
2	Bittner	Dennis & Kathy Grube	Sugar Maple
3	Stern	Brandon M. Stern	Hay/Horse
4	Stutzman	James C. Stutzman et al	Crops/ Livestock
5	Yoder	Charles E. & Lois I. Clevenger	Crops
6	Mast	William & Sylvia Mast, Saundra Banker, & others	Crops/ Livestock/ Sugar Maple
7	Showalter	Michael D. & Patricia Ann Showalter	Hay/Horses
8	Deal/Miller	Myron Deal & Jennifer Miller Jerry L. & Jayne K. Deal	Crops/ Livestock/ Sugar Maple
9	Markowitz	Sidney S. & Carolyn S. Markowitz Revocable Trust	Crops
10	Carey	Maust-Snyder Linda Lif Int, Palmer Charles W Rem	Crops
11	Garlitz Brothers	Richard J. & Marsha McKenzie	Crops
12	Camp	Richard D. & Eileen R. Yoder	Crops
13	Merrill	John D. & Sandra S. Hershberger et al	Crops

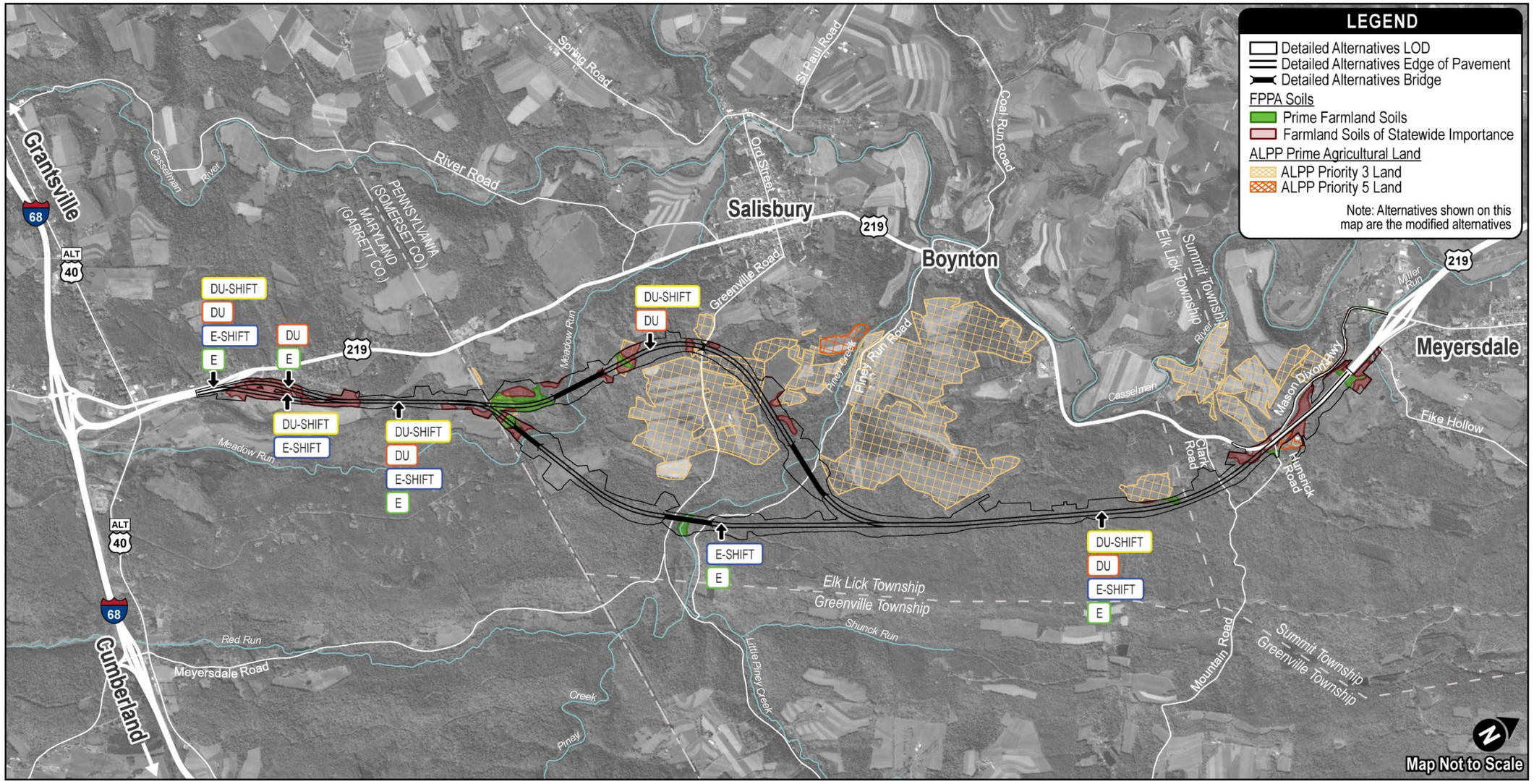


Figure 3-12: FPPA Soils and ALPP Prime Agricultural Land

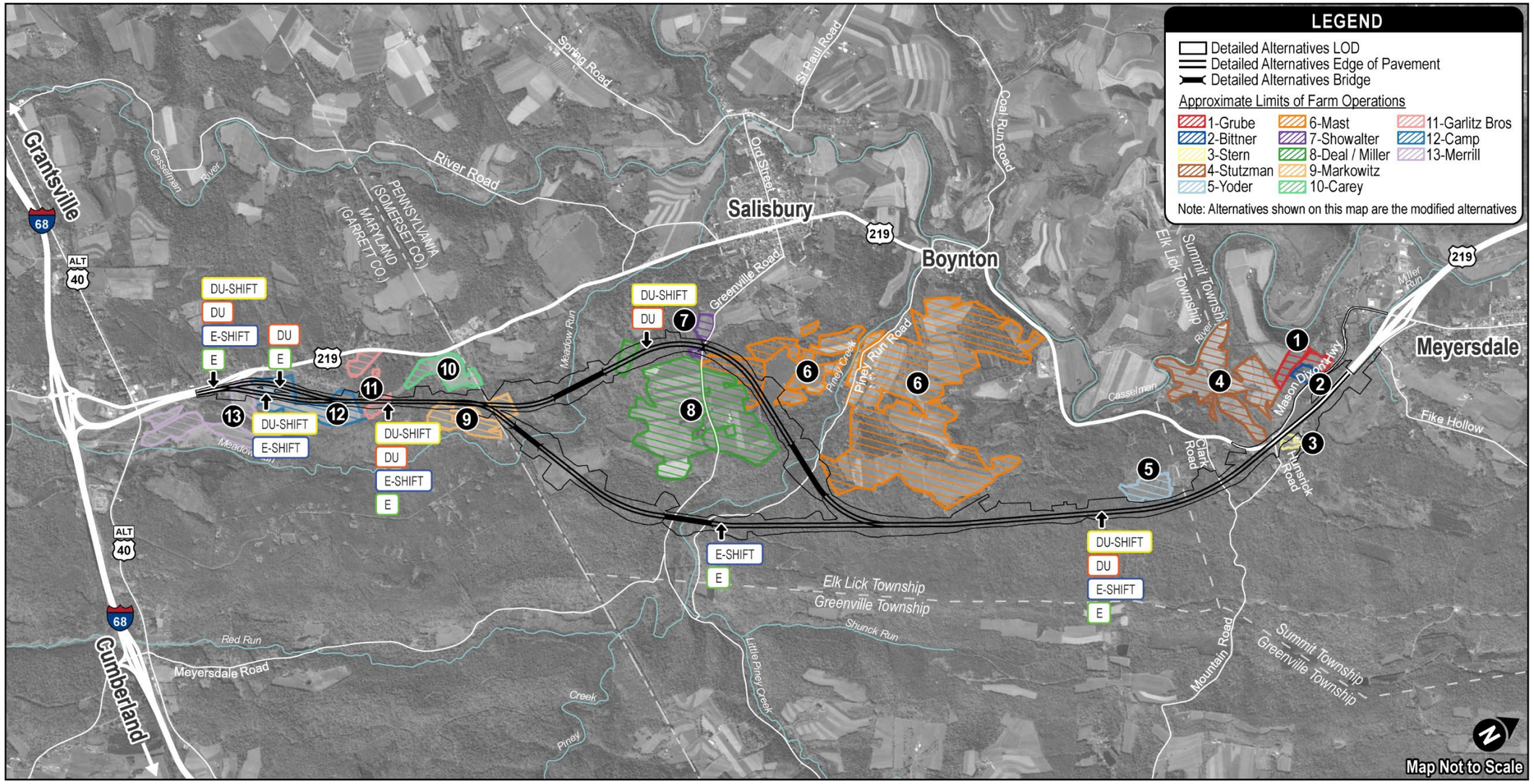


Figure 3-13: Productive Farmland and Farmland Operations

C. Preserved Farmland

There are no preserved farms or agricultural easements located within the project area.

D. Preferential Tax Assessment Parcels

According to Somerset County data, each of the Pennsylvania farm operations in the project area have parcels enrolled in Clean and Green preferential tax assessment program. PA Act 319, known as Clean and Green, bases property taxes on land use values rather than fair market values. This often results in a tax savings for farmland owners.

Maryland may grant farmland the Agricultural Use Assessment. This assessment appraises farmland according to its current use, and not according to the actual market value which, in many instances, would be substantially higher. Based on Maryland state tax records, all the farm operations within the project area have parcels enrolled in the Agricultural Use Assessment.

E. Agricultural Zoning

None of the municipalities in the project area have adopted zoning regulations pertaining to agricultural properties.

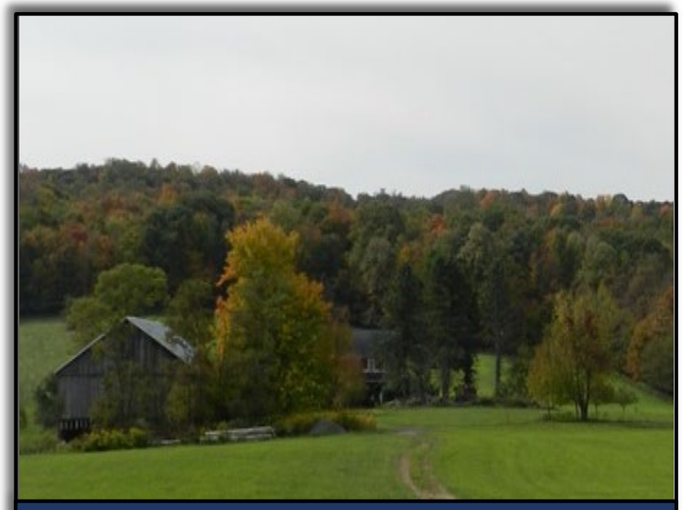
F. Prime Agricultural Land – Pennsylvania Only

The ALPP defines Prime Agricultural Land as land currently in active agricultural use (not including the growing of timber) which has been devoted to active agricultural use for the preceding three years and falls into one of the following five priorities:

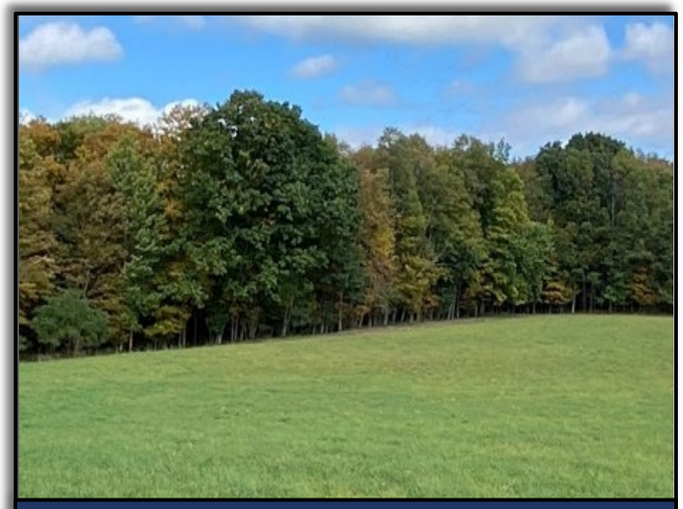
- Priority 1: Preserved farmland
- Priority 2: Agricultural Security Areas (ASAs)
- Priority 3: Farmland enrolled in preferential tax assessments
- Priority 4: Farmland planned for agricultural use and subject to effective agricultural zoning
- Priority 5: Farmland classified as unique farmland or capability classes I, II, III, or IV land

G. Productive Agricultural Land (PA Act 1979-100) – Pennsylvania Only

PA Act 1979-100 (also known as Act 100) established the Agricultural Lands Condemnation Approval Board (ALCAB) which has approval authority for the condemnation of productive agricultural land for new highway projects. PennDOT defines PAL as “any land used for production, for commercial purposes of livestock, and livestock products. Agricultural production includes the processing or retail marketing of such crops, livestock, or livestock products if more than 50 percent of such processed or merchandised products are produced by the farm operator.



Photograph 3-13: Farmland at the Markowitz Operation in Somerset County



Photograph 3-14: Maust Farm Property in Somerset County

PennDOT policy also considers barns and other agricultural buildings, land lying fallow due to crop rotation, and subsistence farms where the farm operator has land in agricultural production for his own 'subsistence' use rather than primarily for commercial purposes, as "PAL" (PennDOT Publication No. 324*, The Agricultural Resources Evaluation Handbook*, PennDOT 2016). Note, because Act 100 is a Pennsylvania law, it is not applicable to the portion of the project area in Maryland. There are approximately 50 acres of PAL in the Pennsylvania portion of the project area.

Table 3-22: Impacts to Farmland Resources – Pennsylvania Only

Farmland Resources (acres)	No Build	DU Mod.	DU Shift Mod.	E Mod.	E Shift Mod.
Primary Agricultural Land – Pennsylvania[1]					
Priority 3 (Preferential Tax Assessment)	0	40.28	40.28	1.94	1.94
Priority 5 (Capability Class I, II, III, and IV land)	0	1.72	1.72	1.72	1.72
Productive Agricultural Land – Pennsylvania					
Productive Agricultural Land	0	41.99	41.99	3.67	3.67

[1]No Priority 1, Priority 2, or Priority 4 land is present in the project area. Regarding Priority 5, there are no unique farmland soils present in the project area.

3.13.3 Impacts

Impacts were assessed by overlaying the LOD for each alternative with the existing agricultural resources. **Table 3-22** summarizes impacts to the prime agricultural land located within the Pennsylvania portion of the project area.

Table 3-23 identifies impacts to overall farmland resources. **Table 3-24** identifies impacts to farmlands as per Pennsylvania regulations and policy.

Regarding FPPA Farmland Soils, a completed *NRCS Farmland Conversion Impact Rating Form* is included in **Appendix S**. Part VI of the form is the Corridor Assessment Criteria with points assigned to each alternative based on criteria such as the farm size, area, farm investments, indirect impacts, etc. in each build alternative LOD. The assessment concluded, with concurrence from the Natural Resources Conservation Service (NRCS), the project would not impact NRCS interests (i.e. farmland soils). Further farmland soil avoidance alternatives are not warranted.

As noted in the tables, there are no impacts from the No Build Alternative. Alternatives DU Modified and DU-Shift Modified are very similar to each other, and Alternatives E Modified and E-Shift Modified are also similar to each other. Alternatives DU Modified and DU-Shift Modified impacts to farmland are about twice the amount of impact compared to Alternatives E Modified and E-Shift Modified. This is mainly due to the placement of the alignments of Alternatives E Modified and E-Shift Modified to the east along Meadow Mountain, thereby avoiding

Table 3-23: Impacts to Prime Agricultural Land Priority Areas

Farmland Resource (acres)	No Build	DU Mod.	DU-Shift Mod.	E Mod.	E-Shift Mod.
FPPA Farmland Soils					
Prime Farmland Soils	0	32.92	32.92	19.92	19.92
Farmland Soils of Statewide Importance	0	102.88	102.90	82.00	81.88
Active Farmland and Farm Operations					
Active Farmland (acres)	0	76.62	76.88	37.86	38.07
Farm Operations (#)	0	9	9	6	6
Preferential Tax Assessment Parcels					
Preferential Tax Assessment Parcels	0	74.39	74.65	35.84	36.05

productive agricultural land in Pennsylvania. Impacts to farmlands in Maryland are very similar between all the alternatives. In addition, short-term dust and emissions from construction could temporarily hinder crop growth and livestock.

Table 3-25 identifies both direct and indirect impact to the farm operations. Indirect impacts are those remaining portions of farm fields that are too small to farm or have become inaccessible due to the project. The indirect impact to farmland for each alternative is more than 100 acres, except for Alternative E-Shift Modified, which has the least indirect impacts, at 92.11 acres.

Overall, Alternative E-Shift Modified would result in the least amount of impact on farm operations in the project area. Additional refinements would be made to the Selected Alternative during final design. The project team would work with farmers to minimize farmland impacts and provide access to remnant parcels where possible.

For Pennsylvania farmland impacts, if the project will require the condemnation of productive agricultural land, then the ALCAB will review the project, as required by PA Act 100. PA Act 100 requires ALCAB approval for the condemnation of agricultural lands for highways unless the property acquisition is within the existing highway exemption. This would include the development of a Farmland Assessment Report to outline farmland impacts and minimization measures for the Selected Alternative.

Table 3-24: Impacts to Farmland Resources

ALPP Prime Agricultural Land Priority Areas	Pennsylvania Project Area (Acres)
Priority 1: Preserved Farmland	0
Priority 2: Agricultural Security Areas	0
Priority 3: Farmland Preferential Tax Assessment	45.16
Priority 4: Planned Agricultural Use or Zoning	0
Priority 5: Unique Farmland or Capability Class I, II, III, and IV land	5.06

3.13.4 Mitigation

Mitigation for farmland impacts would include compliance with the Federal Uniform Relocation Assistance and Real Property Acquisition Act Policies, and state requirements based on this act, as appropriate, for farmland acquired by the project.

Table 3-25: Active Farmland & Farm Operations Direct & Indirect Impacts

ID#	Operation	No Build	DU Mod. (acres)		DU-Shift Mod. (acres)		E Mod. (acres)		E-Shift Mod. (acres)	
			Direct	Indirect	Direct	Indirect	Direct	Indirect	Direct	Indirect
1	Grube	0	0	0	0	0	0	0	0	0
2	Bittner	0	0.08	0	0.08	0	0.08	0	0.08	0
3	Stern	0	1.72	0	1.72	0	1.72	0	1.72	0
4	Stutzman	0	0	0	0	0	0	0	0	0
5	Yoder	0	0	0	0	0	0	0	0	0
6	Mast	0	23.44	11.48	23.44	11.48	0	0	0	0
7	Showalter	0	1.13	0.72	1.13	0.72	0	0	0	0
8	Deal/Miller	0	8.86	2.28	8.86	2.28	0	0	0	0
9	Markowitz*	0	11.12	37.52	11.12	37.52	5.62	43.02	5.62	43.02
10	Carey*	0	0	0	0	0	0	0	0	0
11	Garlitz Brothers*	0	3.54	3.03	3.45	3.03	3.68	3.03	3.68	3.03
12	Camp*	0	20.06	49.51	20.07	37.14	20.09	49.48	19.99	37.22
13	Merrill*	0	6.67	9.15	7.02	8.8	6.67	9.15	6.98	8.84
	TOTAL	**0**	**76.62**	**113.69**	**76.88**	**100.97**	**37.86**	**104.68**	**38.07**	**92.11**

*These operations are located in Maryland. The Markowitz Operation has parcels in both Pennsylvania and Maryland.

3.14 Hazardous or Residual Waste Sites

3.14.1 Methodology

A Phase I Environmental Site Assessment (ESA), included in **Appendix T**, was conducted in accordance with PennDOT Publication No. 281, *The Transportation Project Development Process: Waste Site Evaluation Procedures Handbook* (PennDOT, May 2019) to identify potential Areas of Concern (AOC) within the project area. Several potential areas of environmentally regulated substance release(s), referred to as AOC, were identified within the project area and along the proposed build alternatives.

The Phase I ESA investigation report, dated January 17, 2024, included a review of current federal and state environmental databases provided by Environmental Data Resources, Inc. (EDR), PA DEP and MDE records review related to properties within or adjacent to the build alternatives, a physical settings review of the project area, review of historical aerial photographs and topographic maps, and a site reconnaissance. Interviews were attempted with individuals associated with property within the project area. The purpose of the interviews was to obtain information indicating environmental concerns associated with the proposed alternatives.

3.14.2 Existing Conditions

The project area is mostly rural with residential and small commercial facilities, large areas of forested land, and farmland. Several portions of the project area have been farmland since at least 1939 through present. Portions of all build alternatives have historically been used for mining activities from at least 1958 through 1974 or later and abandoned mine land (AML) is present within and adjacent to the build alternatives alignments in the northern portion of the project area. Refer to **Figure 3-14** for the location of historic mining activities within the project area.

3.14.3 Impacts

The findings of the Phase I ESA investigation identified potential impacts to each alternative. Based on the review of environmental databases and records review, and the findings from the site reconnaissance, the following is a summary of the potential impacts to each alternative. The impacts are generally divided into No Build Alternative, mining impacts, and hazardous waste/petroleum impacts. Refer to **Figure 3-14** and **Figure 3-15** for the locations of the AOC, or impacts, identified by the assessment.

A. No Build Alternative

The No Build Alternative would not result in the construction of roadways and would have no impact on hazardous waste sites or AOC.

Photograph 3-15: Abandoned Mine Land in Somerset County

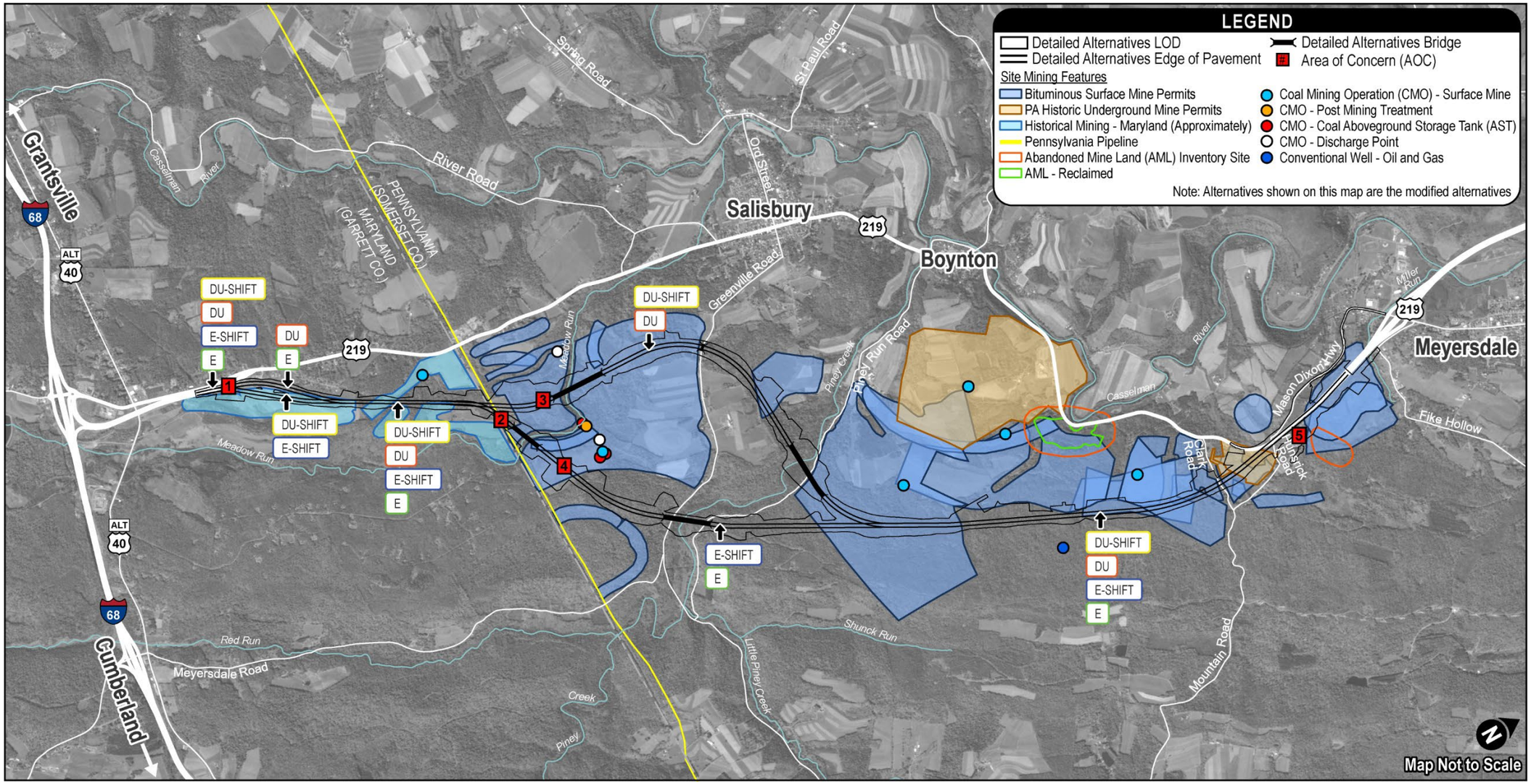


Figure 3-14: Historic Mining Features within Project Area

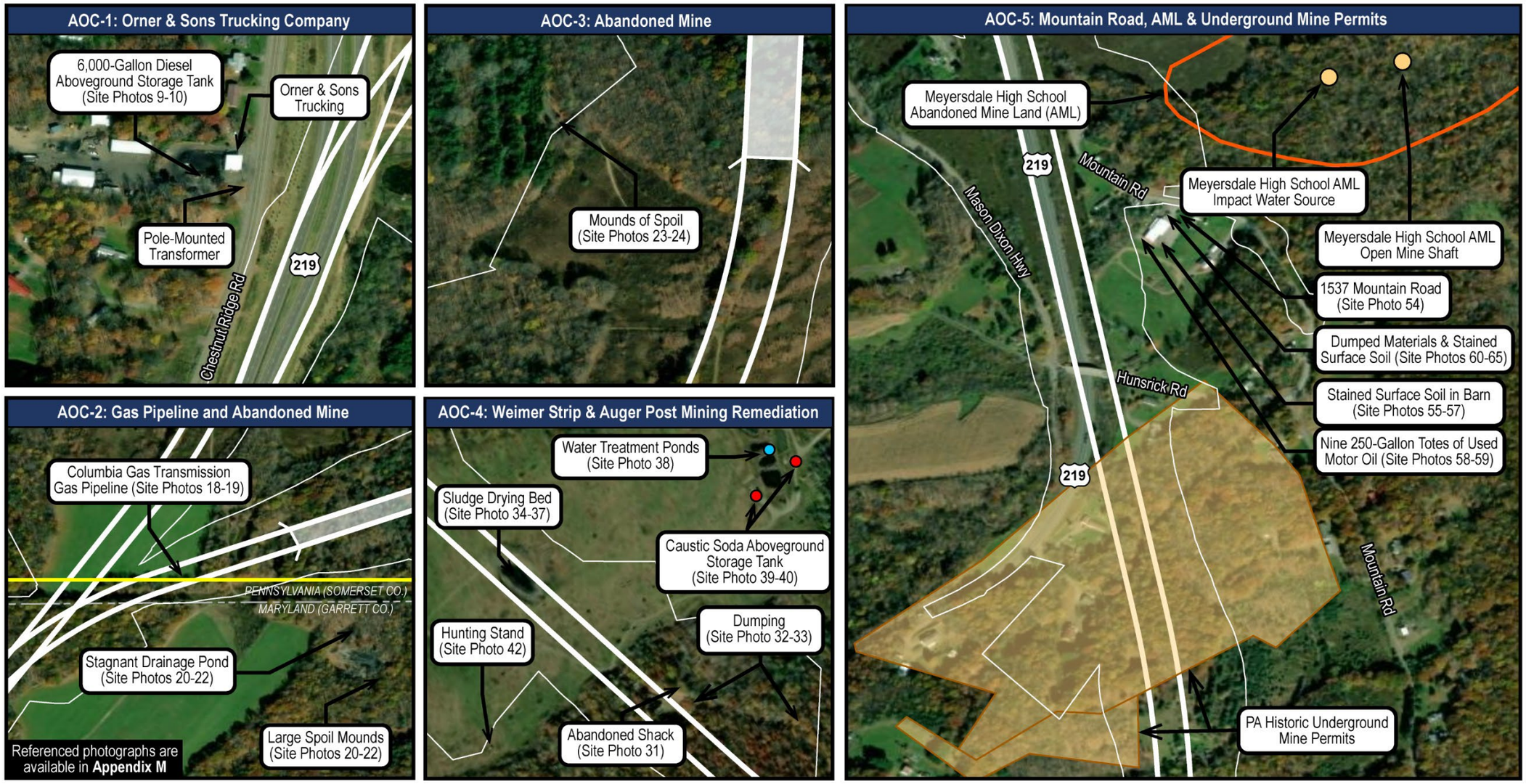


Figure 3-15: Phase I ESA Areas of Concern

B. Abandoned Mine Land Residual Waste

Numerous surface and underground mining permits, and historical mining are within and adjacent to all build alternatives. The possibility of residual waste from mining activities would impact all build alternatives.

According to the PA DEP eMapPA database, AML is present within and adjacent to the east of the common northern portion of all build alternatives. Within this AML are an “impacted water source” and an “open mine shaft”, located approximately 0.10 and 0.16 miles east of the common portion of the build alternatives and northeast of Mountain Road. The AML identified within and adjacent to this section of the build alternatives and the possible presence of subsurface mining features within this section would impact all build alternatives. Surface and underground abandoned mines, and associated spoil and refuse piles, may produce an ongoing source of acid mine drainage and toxic heavy metals that can have long-term impacts on soil, surface water, and groundwater. Elevated concentrations of metals and erosion caused by disturbed land and unprotected slopes may be found in AML areas. Excavation in the project area may encounter heavy metal contamination and areas of eroded and unstable land associated with AML.

Two locations of significant mounds of spoils, assumedly associated with abandoned mines, were identified at the site reconnaissance. Mounds of spoils were situated adjacent to the southeast of Alternatives E Modified and E-Shift Modified, just south of the Pennsylvania/Maryland state line.

A large, stagnant pond was located near the mounds. Mounds of spoils were also observed adjacent and to the west of Alternatives DU Modified and DU-Shift Modified, roughly 0.78 miles north of the Pennsylvania/Maryland state line. The mounds of spoils reside within documented historic mining locations and/or permitted areas and would impact all build alternatives.

During the site reconnaissance, stained surface soil was within a sludge drying bed within Alternatives E Modified and E-Shift Modified. According to information obtained from PA DEP, the sludge drying bed is part of a nearby active water treatment operation and is located in the footprint of the historic Weimer Strip and Auger mine. Multiple treatment lagoons and two caustic soda aboveground storage tanks associated with the water treatment operation were adjacent to the north of Alternatives E Modified and E-Shift Modified. The sludge drying bed associated with the nearby active water treatment operation and the possibility of residual waste from mining activities is impacted by Alternatives E Modified and E-Shift Modified. The sludge drying bed within these build alternatives would need to be moved or avoided.

Photograph 3-16: Weimer Strip & Auger Post Mining Remediation Sludge Drying Bed

C. Hazardous/Residual Waste Petroleum Impacts

The presence of stained surface soil; dumping of 55-gallon drums, metals, and auto parts; a 1,000-gal diesel aboveground storage tank (AST); and several 250-gallon totes of varying levels of used motor oil were observed during site reconnaissance at the 1537 Mountain Road property within the common northern portion of the four build alternatives. The build alternatives impact the presence of stained surface soil and dumping within this section.

Historical releases of petroleum products and stained surface soil were reported at the Orner & Sons Trucking Inc. property at 3641 Chestnut Ridge Road, about 800 feet north of the southern terminus of the four build alternatives. The property is located on the east side of Chestnut Ridge Road. A 6,000-gallon diesel AST was also at the property during the site reconnaissance. All build alternatives impact the proximity of potential subsurface excavations adjacent to known historical releases of petroleum products and observed stained surface soil areas.

A buried gas pipeline is within all build alternatives. This pipeline is located in Pennsylvania approximately 0.01 miles north of the Pennsylvania/Maryland state line and all build alternatives would traverse over the line. The project team would need to further investigate the depth of the pipeline to determine if it could be avoided.

Dumping of wooden and metal debris, including an empty 55-gallon drum, was observed just northeast of the sludge drying bed (1,100 feet) within Alternatives E Modified and E-Shift Modified. The location is approximately 0.55 miles to the southwest of Greenville Road. Alternatives E Modified and E-Shift Modified impact the dumped debris and material.

An abandoned gas well, located approximately 0.13 miles to the east of the common northern portion of all build alternatives, was an AOC within the project area. None of the four build alternatives impact this feature. If the property of the abandoned gas well becomes part of the anticipated LOD, further due diligence would be required.

D. Conclusion

If not properly evaluated and mitigated prior to construction, abandoned mine land and associated residual wastes can have detrimental effects to natural resources and worker safety during construction. Petroleum and other hazardous wastes pose similar environmental and health risks. Soil, groundwater, or waterway contamination and chemical exposure of construction personnel or nearby residents can result from the mismanagement of polluted soils, water, or other construction debris.

3.14.4 Mitigation

Table 3-26 provides a summary of the Phase I ESA recommendations for each identified AOC. A waste management plan and/or a Phase II/III ESA (i.e., geophysical survey, soil, and groundwater sampling) would include assessment of potential impacts and the handling and disposal of waste encountered during construction within the preferred alternative. Undocumented hazardous waste sites or contaminants encountered during construction

Table 3-26: Summary of Phase I ESA Recommendations

AOC #	AOC Name	Alternative Impacted	Recommendation
AOC-1	Orner & Sons Trucking	DU Modified and E Modified	Waste Management Plan and/or Phase II/III ESA
AOC-2	Gas Pipeline/ Abandoned Mine	All Four Build Alternatives	Geophysical Survey with Contingent Phase II/III ESA
AOC-3	Abandoned Mine	DU Modified/ DU-Shift Modified	Waste Management Plan and/or Phase II/III ESA
AOC-4	Weimer Strip & Auger Post Mining Remediation	E Modified/ E-Shift Modified	Waste Management Plan and/or Phase II/III ESA
AOC-5	Mountain Road, AML & Underground Mining Permits	All Four Build Alternatives	Waste Management Plan, Geophysical Survey, and/or Phase II/III ESA

would be managed and remediated in accordance with applicable federal, state, and local requirements.

3.15 Geology, Hydrology, & Groundwater

3.15.1 Methodology

The methodology used in the collection of data consisted of the following:

- Background geologic research on the geology of Somerset County, Pennsylvania and Garrett County, Maryland
- Discussions with state agencies including PA DEP and MDE
- Conversations with local residents
- Subsurface exploration consisting of preliminary geotechnical test borings with soil sampling, rock coring, and ground water readings

Additional geotechnical information is available in **Appendix U**, which contains the *Geotechnical Alternatives Analysis Report*.

3.15.2 Existing Conditions

The project area is situated within the Allegheny Mountain section of the Appalachian Plateau physiographic province and lies on the eastern limb of the Berlin syncline. The bedrock beneath the project site dips towards the Casselman River Valley at a rate of 1200± feet per mile (or 13-degree dip) and is divided into six groups and formations based on their lithologic characteristics.

Table 3-27 identifies the estimated thickness in descending order of the groups and formations present in the project area.

The Casselman and Glenshaw Formations make up the Conemaugh Group and are similar in character, containing thin, non-persistent coals, and discontinuous limestones or calcareous zones. The formations also contain red beds, which are composed of red shales and claystones that are associated with landslides throughout the region. The main difference is that the Glenshaw Formation contains greater amounts of red beds and persistent coal beds than the Casselman Formation. All build alternatives encounter the Casselman and Glenshaw Formations at the northern terminus of the project in Pennsylvania and southern terminus of the project in Maryland. Alternatives DU Modified and DU-Shift Modified also encounter the Conemaugh Group of rocks along the western limits of the project site when they are separate from Alternatives E Modified and E-Shift Modified.

The Allegheny Group is comprised predominantly of shale, siltstone, and sandstone; however, the most notable feature in this group is the multiple economically mineable coal beds. All build alternatives would cross through the Allegheny Group along the northern segment of the project prior to the split; Alternatives DU Modified and DU-Shift Modified would cross through this group on the southern ridge overlooking Piney Creek; and Alternatives E Modified and E-Shift Modified would cross this group as they approach the northern ridge overlooking Meadow Run.

The Pottsville Group consists of thin, economically unimportant coal and shale beds “sandwiched” between relatively thick sandstone and conglomerate members. The sandstone and conglomerate members range in thickness from 10 feet to greater than 80 feet where they locally coalesce. The rocks of the Pottsville Group would have little to no impact on Alternatives DU Modified and DU-Shift Modified, as this group is found higher up along the side of Allegheny Mountain. The Pottsville Group can mainly be found along the ridges in the Piney Creek valley along Alternatives E Modified and E-Shift Modified.

Table 3-27: Estimated Thickness of Formation and Groups

Formation/Group	Estimated Thickness
Casselman Formation	500 Feet
Glenshaw Formation	375 Feet
Allegheny Group	280 Feet
Pottsville Group	200 Feet
Mauch Chunk Formation	200 Feet
Loyalhanna Limestone (Greenbrier in Maryland)	50 Feet

The Mauch Chunk Formation is composed of red and green mottled shale and claystone, and greenish gray sandstones and siltstones, with minor amounts of limestone. The underlying Loyalhanna (Pennsylvania)/Greenbrier (Maryland) Formation is a reddish sandy limestone approximately 50 feet thick. These formations would only be encountered along Alternatives E Modified and E-Shift Modified in the lower elevations of the Piney Creek valley.

The greatest ground water yields are from sandstones and limestones, which have greater permeability than shales, siltstones, and claystones. Fractures created during folding of the bedrock during the mountain building process is responsible for most of the permeability in the sandstone and limestone. Recharge to the bedrock water-bearing zones is by infiltration into joint systems. Most of the residential wells within the project area penetrate the Casselman and Glenshaw Formations and have yields ranging from 4 gallons per minute (gpm) to 90 gpm. The Allegheny Group contains several sandstone members that yield from 50 gpm to 150 gpm, while the Pottsville Group strata yield from 40 gpm to greater than 300 gpm. The Pottsville Group is an important aquifer but reportedly produces hard water. Water may contain excessive iron and hydrogen sulfide. The Mauch Chunk Formation is the most valuable water-bearing formation, yielding as much as 1000 gpm of good quality water. Water-bearing units lying at depths greater than 100 feet below drainage may be saline or brackish.

A flowing artesian spring (Findley Spring) located approximately 3.5 miles to the southeast supplies groundwater to the Borough of Salisbury. The spring flows from the Loyalhanna limestone on the steep, east flank of the Berlin Syncline (Allegheny Mountain). A pipeline along the Piney Creek valley carries the water to an underground reservoir located in Salisbury. Findley Spring maintains a constant flow of 90 gpm; and the water is high quality, with the only treatment being chlorination. Seeps also occur in other rock types in the project area. However, flow is not consistent; and water quality is reportedly poor.

Many of the residents who live in the project area are dependent on private wells for their sole source of potable water.

The Sole Source Aquifer (SSA) Program (authorized by Section 1424(c) of the Safe Drinking Water Act) allows communities to petition the U.S. EPA for protection when a community is dependent on a single source of drinking water. There are no sole source aquifers within the project area.

3.15.3 Impacts

Geologic features within the project area would remain undisturbed if the No Build Alternative is selected. All build alternatives are anticipated to encounter similar geologic conditions, and therefore, no constructability or design advantage was identified for any of the build alternatives with respect to local geology. However, geologic features would impact potential construction methods.

Photograph 3-17: Findley Spring outside of the Borough of Salisbury

Sandstones, siltstones, and limestones are moderately resistant to weathering; however, claystone, shale, and coal can be deeply and extensively weathered. Joints are poorly to moderately well formed, vertical to sub-vertical, and open. Moderate to steep natural slopes are stable except where red beds occur. Cut slope stability is

good to fair; however, disintegration of claystones and shales under resistant sandstones and siltstones results in rock falls, slumps, and landslides. This can pose a threat to residents or motorists and impact surrounding buildings, roadways, utilities, and natural habitat.

Excavations into the rocks within the project area exhibit a potential for exposing acid bearing rock that can have damaging long-term effects to all build alternatives. The source of acidity (iron sulfides) is typically depositional, although structural features may enhance the occurrence of sulfides. Sulfide materials are typically associated with coal-bearing rocks, some underclays, and black carbonaceous shales. The Allegheny Group has the highest potential for acid bearing rock; however, all other formations, except the Mauch Chunk and Loyalhanna, have at least some potential for acid bearing rock. If not properly mitigated, exposed acid bearing rock and acid rock drainage can also be harmful to aquatic habitat and contaminate drinking waters supplies.

Springs and seeps reside where ground water discharges to the surface along fractures, bedding planes, between two rock types of differing permeability, and where a significant change in slope truncates the water table. Seeps and springs are abundant across all build alternatives, particularly as they traverse along the flank of Allegheny Mountain in the Pottsville Group just before they split, and in Alternatives E Modified and E-Shift Modified just after the split. Ground water and seeps may indicate a variation in bedrock lithology such as permeable sandstone resting on impervious clay. Cuts performed in this geologic environment may truncate springs and create a potential slide susceptible scenario.

Surface and deep mining of coal and clay in some areas altered the normal flow paths of the ground water. In addition, undermining of water-bearing units has resulted in dewatering at some locations, while proximity to mined areas has degraded water quality in others. Excavations or borings may encounter artesian conditions or truncate water bearing zones, disrupting the local hydrogeology and impacting the private wells of the local residents. The magnitude of the impact would depend on the depth of the proposed cuts, rock type, and the degree of interconnectivity of the fractures.

3.15.4 Mitigation

The future boring programs for preliminary engineering and final design would follow the guidelines set forth in Table 3.2.4-1 and Table 3.2.4-2 of PennDOT Publication No. 293, *Geotechnical Engineering Manual* (PennDOT, 2022). Roadway borings in preliminary engineering would be located every 500± to 1,000± feet while roadway borings for final design would be located every 300± feet. Additional borings would be drilled at locations of deep cuts and high fills during both phases. Individual boring programs would be completed during final design for the two proposed structures over Piney Creek and Meadow Run and would consist of a minimum of two borings per substructure unit. Additional borings for smaller structures such as culverts and retaining walls would likely be included, but locations of these structures have not been finalized at this time.

Roadway borings at embankments would extend a depth of two-times the embankment height unless competent material with sufficient thickness is encountered. Roadway borings in the cuts would extend ten feet below the proposed subgrade elevation. Finally, roadway borings at grade would extend to a depth of five feet below subgrade.

At this time, it is assumed that the Piney Creek and Meadow Run structure foundations would consist of spread footings on bedrock or piles bearing on/in bedrock. In this instance, the borings would extend to a depth of ten feet below bottom of footing or pile tip elevation unless claystone is encountered, in which case the boring would be extended an additional ten feet into bedrock.

Future boring programs would likely include supplemental borings for acid bearing rock. The number of borings would be based on the minimum boring requirements shown on Table 10.5.1-1 of the PennDOT Publication No. 293, *Geotechnical Engineering Manual* (PennDOT, 2022).

Detailed soil and rock slope stability analyses using site specific information would be conducted to determine a slope ratio that ensures an acceptable factor of safety is achieved. Benching on the cut slopes may reduce the potential for rock falls encroaching on the constructed roadway. If benching or flattening of the rock cuts cannot be achieved, other appropriate measures such as rock fall collection zones at the toe of the cut, rock removal (scaling, trimming), or rock reinforcement with mesh may be designed.

Alkaline materials or a surface barrier that limit exposure to oxygen can treat acid bearing rock exposed on cut slopes. Excavated acid bearing rock can be treated with alkaline materials or encapsulated in roadway embankments placed above the ground water table. Additional Acid Base Accounting (ABA) tests would be performed on rock samples obtained from future test borings to better determine the extent of acid bearing rock along the selected alternative and the appropriate treatments.

Piezometers would be set in several test borings along the selected build alternative to measure and continuously monitor the ground water level and to collect samples for testing to identify potential impacts and to assist in design of positive mitigation measures. Intercepting springs during construction is highly likely and would require the construction of drainage swales, rock blankets, and finger drains to convey water away from the cut slopes. Properly sized stormwater management basins would also be required.

Special provisions would be included in the contract stating that the contractor would coordinate with the Borough of Salisbury to ensure that there are no interruptions in water flow or degradation of water quality caused by construction activities. Temporary rerouting of the water supply from Findley Spring may be required if construction along the selected alternative interferes with the water supply line located within the Piney Creek valley. Special provisions would also be included to perform water quality tests (pH, Sulfate Content, Chloride Content, Minimum Resistivity) and sounding to static water level on residential wells before, during, and after construction to verify that the well water quality and volume has not been negatively impacted by facets of construction, such as acid mine drainage and dewatering the water bearing zone. If private wells are determined to be impacted resulting in the loss of water or degradation of water quality, the wells can be replaced or remediated, as appropriate.

3.16 Mining

3.16.1 Methodology

The methodology used in the collection of data consisted of conducting background geologic research on the coal resources of Somerset County, Pennsylvania and Garrett County, Maryland. Additionally, discussions occurred with state agencies including PA DEP and MDE, particularly the Bureau of Abandoned Mine Reclamation (PA), Office of Surface Mining (PA), Bureau of Mining Programs (PA), Bureau of District Mining Operations (PA), and Bureau of Mines (MD) and

Photograph 3-18: Acid Mine Drainage

local residents. Finally, subsurface exploration consisting of preliminary geotechnical test borings strategically located in known deep and surface mine permitted areas were completed.

3.16.2 Existing Conditions

The project area has been extensively mined for coal using both deep and surface mining methods (see **Figure 3-14**). Thirteen coal seams are known to have been mined in the project area.

The most coal mining and currently active coal permits are located west of the Casselman River valley. The Berlin Syncline houses coal from the Monongahela Group rocks, notably the Pittsburgh coal, which has been mined on and off since the early 1900s. The current project area lies east of the Casselman River where the Allegheny Group coals are present. The Allegheny Group coals consist of (from top to bottom) Upper Freeport, Lower Freeport, Upper Kittanning, Middle Kittanning, Lower Kittanning, Clarion, and Brookville coals. The Upper Freeport through the Lower Kittanning coals have been extensively strip mined and reclaimed. The current build alternatives follow the western flank of Allegheny Mountain and are located upslope of most of the previously permitted areas.

No active deep or surface coal mine operations are known to exist near the current build alternatives. Some active surface mine permits are in place for ongoing water treatment facilities.

In addition to coal mining, the Wymps Gap limestone was historically mined adjacent to Piney Creek and used for agricultural lime. However, there are no known active limestone quarries in the project area. At least 15 limestone beds are present in the project area that may be suitable for use as concrete aggregate, road metal, road base, and riprap.

Sandstone has also been quarried near the project area for use as building stone or crushed for aggregate. A small sandstone quarry was observed during the field reconnaissance on Meadow Mountain within a private residential community, the Highlands. It appears that the sandstone is used on a local basis only. Although both flint and plastic clays have been mined near the project area, there are no reports of active mining.

3.16.3 Impacts

There is no impact to surface or deep mining permitted areas with the No Build Alternative.

The greatest impacts from a mining standpoint occur at the northern end of the project area where all build alternatives include a large swath of land that has been both deep mined and strip mined. Looking at the build alternatives individually, (**see Table 3-28**), it can be concluded that the surface mine permitted areas would have a greater impact on Alternatives DU Modified and DU-Shift Modified when compared to Alternatives E Modified and E-Shift Modified, while the impact on all build alternatives from the deep mining permitted area would be relatively similar.

The geotechnical impact from the deep mining includes the potential for mine related subsidence beneath the proposed roadway. The primary geotechnical impact from the strip (surface) mining includes the potential for excessive settlement of thick, unconsolidated (greater than 100± feet) mine spoil, particularly when high fill embankments are constructed over these areas. Cut slopes constructed through the surface mine spoil are more subject to erosion and slope failure due to the lack of cohesion within this material. Additionally, the surface mine spoil is more likely to be contaminated by acid mine drainage which presents the potential for a corrosive environment.

At the northern end of the project, all build alternatives cross adjacent surface mine and deep mine permitted properties. The cut made for all build alternatives will encounter surface mine spoils and a mine highwall prior to exposing the abandoned

Table 3-28: Extents of Surface and Deep Mining Permitted Areas

Permitted Mining Areas (acres)	No Build	DU Mod.	DU-Shift Mod.	E Mod.	E-Shift Mod.
Surface Mine Boundaries	0	319.7	319.6	212.7	212.7
Deep Mine Boundaries	0	22.9	22.9	23.0	23.0

deep mine near proposed finished grade. It is likely that any water trapped within this mine will be contaminated by acid mine drainage.

3.16.4 Mitigation

In areas where the overburden above the deep mine is relatively thin, concern for future mine subsidence can be mitigated by means of deep mine grouting.

Methods such as deep dynamic compaction, stone columns, or pre-loading can mitigate settlement of thick unconsolidated strip mine spoils beneath roadways and embankments. Properly sized rock toes and bonding benches can be incorporated in sidehill fills while flatter slope ratios can be used for cut slopes to make sure an acceptable factor of safety can be achieved.

Acid mine drainage would be collected and treated following all environmental regulations. Corrosive soils can be mitigated by the same means as acid bearing rock (as discussed in **Chapter 3.15.4**).

3.17 Soils & Erosion

3.17.1 Methodology

The methodology used in the collection of data consisted of a review of background geologic research on the geology of Somerset County, Pennsylvania and Garrett County, Maryland, geotechnical field reconnaissance; and subsurface exploration consisting of preliminary geotechnical test borings with soil sampling, rock coring, and ground water readings. Soil surveys from the USDA NRCS were also reviewed.

3.17.2 Existing Conditions

Three naturally occurring soil types exist within the project area: residual, alluvial, and colluvial soils. Residual soils are a product of the weathering of the underlying bedrock and generally reflect the texture and characteristics of the parent rock. Soils weathered from shales, claystones, and limestones are generally fine-grained clays and silts, while sandstones and sandy shales decompose to form predominantly sandy to gravelly soils. The thickness of residual soils would vary generally from about 5± feet to 20± feet, though occasionally deep weathered soil cover overlying less competent claystone/clayshale can be expected.

Often, upper 3 to 5 feet of soil cover is fine-grained regardless of the parent rock because of extensive weathering and decomposition. Similarly, the lower part of most residual soils contains an increasing percentage of coarse-grained particles. The consistency or relative density of residual soils generally increases with depth. Clays and silts have low strength and moderate compressibility. Sandy and gravelly soils have moderate shear strength and low to moderate compressibility.

Alluvial soils are formed by the erosion, transportation, and decomposition of soil and rock along floodplains and consist of uncemented deposits of sand, gravel, silts, and clays. Extensive alluvial deposits are along the Casselman River and its tributaries. Smaller creeks may contain narrow bands of alluvium as well.

Colluvial soils originate from residual soils and are formed by the downslope migration of soils under gravity, ground water migration, and surface water runoff.

Review of the available soil surveys indicated the following general soil types present: Rayne-Gilpin-Wharton-Cavode and Hazelton-Cookport (Pennsylvania) and Dekalb-Gilpin-Cookport association (Maryland). All the soil types have similar properties and would equally impact all build alternatives. An in-depth description of the soil types is available in **Appendix U**.

3.17.3 Impacts

Soils would not have an impact on the No Build Alternative, and no erosion impacts are associated with the No Build.

Clay horizons associated with the various coal beds may reach a thickness of 15 feet to 40± feet. If exposed in road cuts, the clay horizons would be highly susceptible to erosion, have a high potential for landslides, and would require flatter slopes.

These clay horizons would have a bigger impact on Alternatives DU Modified and DU-Shift Modified as cut slopes along these alternatives would be made through the Conemaugh group rocks. Clays also have low shear strength and moderate compressibility and would require special subgrade treatment if exposed immediately below the roadway grades.

Cuts made into coarser soils, such as those derived from the sandstone bedrock of the Pottsville group rocks which Alternatives E Modified and E-Shift Modified track through, would be more stable than cuts made into fine-grained soils and would have a higher factor of safety or may be cut at steeper slopes for the same factor of safety. Similarly, fill embankments comprised of coarser soils may be constructed on steeper slopes with a sufficient factor of safety. Settlement of embankments due to consolidation of residual soils under the weight of fill or post-construction consolidation of fill under self-mass would be smaller and faster in coarse soils compared to fine-grained soils.

Due to proximity of alluvial soils to the streams, ground water is generally shallow, making these deposits soft with low shear strength and high compressibility, especially if they are fine-grained. Site topography is such that these deposits would rarely lie directly under the pavement. General fill would be placed in the narrow gullies to achieve the roadway grades.

The downslope movement of the colluvial soils leads to the development of shear planes. As a result, these soils require relatively flat cut slopes. Colluvial soils are usually moderately to highly compressible. Colluvial soils would have a larger impact on Alternatives E Modified and E-Shift Modified as thick colluvial zones comprised of large sandstone float from the sandstone outcrops along Allegheny Mountain have been documented both through field reconnaissance and preliminary test borings.

In addition to the natural soils, human-made fill and strip mine spoil (as discussed in **Chapter 3.15**) also occur throughout the project area.

Unconsolidated thick deposits of man-made fill, colluvial soils, or strip mine spoils present potential settlement problems and may be subject to extensive surface erosion and potential slope stability problems in cut and fill areas.

3.17.4 Mitigation

Special subgrade treatment for low strength clays exposed immediately below roadway grades may involve undercutting and backfilling with more suitable material, base reinforcement with geogrids, or surficial treatment with moisture resistant solutions. When incorporated in fill embankments, their mixing with better materials or selective placement may be suggested.

Soft alluvial soils encountered in narrow gullies at the base of fill embankments may have to be removed and replaced with coarser material either as rock toe or rock base.

The same means that mitigate strip mine spoils, can mitigate settlement of embankments due to consolidation of thick colluvial and man-made fill deposits (as discussed in **Chapter 3.15.4**).

Cuts and sidehill fills through these same soils would require similar mitigation as the strip mine spoils (as also discussed in **Chapter 3.15.4**).

Implementing standard erosion and sediment pollution control (E&SPC) best management practices (BMPs) in accordance with the *PA DEP Erosion and Sediment Pollution Control Program Manual*, 25 PA Code Chapter 102 Erosion and Sediment Control, Code of Maryland Regulations (COMAR) 26.17.01 Erosion and Sediment Control, and the *Maryland Standards and Specifications for Soil Erosion and Sediment Control* would mitigate erosion and sediment pollution during construction. E&SPC BMPs implemented may include but not limited to compost filter sock, silt fence, pumped water filter bags, drainage inlet protection, rolled erosion control products, sediment traps and basins, rock armoring, flocculants, natural vegetation for both temporary and permanent stabilization, and construction sequencing to limit exposed earth. National Pollution Discharge Elimination System

(NPDES) permits would authorize earth disturbance required for construction in both Pennsylvania and Maryland. E&SPC BMPs would be designed in coordination with the Post Construction Stormwater Management (PCSM) plan to ensure that temporary BMPs such as sediment traps and basins can be converted to permanent stormwater management BMPs with minimal disturbance to the features constructed. Furthermore, areas subject to PCSM infiltration BMPs shall have compaction minimized during construction to promote infiltration of stormwater. Refer to **Chapter 3.18** for further information on Stormwater Management design.

Additional test borings would be drilled along the preferred alternative and at all major cut slopes and fill embankments to better evaluate any soft soil or slope stability related issues, respectively.

3.18 Stormwater Management

3.18.1 Methodology

The Pennsylvania Code (25 Pa. Code Chapter 102.8 PCSM Requirements) and COMAR 26.17.02 (Stormwater Management) provide the regulatory framework of requirements to manage post construction stormwater due to changes in land cover. Changes in land use cover due to development may result in increases to peak rate of stormwater runoff, increases in volume of stormwater runoff and degradation of water quality. The *Pennsylvania Stormwater Best Management Practices Manual* and *Maryland Stormwater Design Manual, Volumes I and II* provide design guidelines for various Stormwater Control Measures (SCMs), also referred to as BMPs, to effectively manage stormwater runoff changes as a result of land cover changes. A combination of SCMs/BMPs would be implemented to ensure stormwater is managed appropriately in accordance with the regulations to protect adjacent wetland and waterway resources.

3.18.2 Existing Conditions

The project area consists of forested land and agricultural fields. Existing road infrastructure consisting of a divided four-lane roadway is located at the build alternatives tie-in locations to the north and south. Currently, stormwater runoff within most of the project area is unmanaged, given the nature of the existing land cover. Runoff from forested areas and agricultural areas flows naturally to streams and wetlands located throughout the project site. Stormwater runoff encountered along existing roadways is conveyed by roadside channels, pipes, and inlets to stormwater management facilities, if present, or to nearby streams and wetlands.

3.18.3 Impacts

The No Build Alternative would result in no changes to existing stormwater runoff within the project area. All build alternatives would result in impacts to stormwater runoff within and adjacent to the project area due to affecting existing drainage patterns, adding impervious area, compacting soils, and introducing additional pollutants such as deicing materials, vehicular oils, and thermal pollution. These alterations produce an increase in peak rate of stormwater runoff, volume of stormwater runoff and water quality degradation that needs to be mitigated.

3.18.4 Mitigation

Stormwater generated from the project area would be managed utilizing a multitude of structural and non-structural SCMs/BMPs that implement peak rate control, volume control and water quality improvements. These SCMs/BMPs may include:

- Detention basins,
- Infiltration basins and/or trenches,
- Bioretention and/or Microbioretention,
- Constructed Wetlands and/or Submerged Gravel Wetlands,
- Amended soil to improve absorption and water quality,
- Managed Release Concept (MRC) basins for areas with poor infiltration,
- Level spreaders,
- Bioswales/Vegetated swales,
- Vegetated filter strips,
- Disconnection from storm sewers,

- Revegetation/reforestation, and
- Minimization of disturbed areas

These stormwater control features are intended to maximize infiltration to improve water quality, reduce rate of runoff to pre-project conditions and reduce volume of runoff from impervious surfaces. Additionally, runoff flowing from impervious surfaces can exhibit increased temperatures during warmer months, known as thermal pollution which can degrade adjacent wetlands and waterways. The SCMs/BMPs would aid in reducing thermal pollution by providing shade, detention time, and infiltration of runoff, in conjunction with vegetated channels where practical.

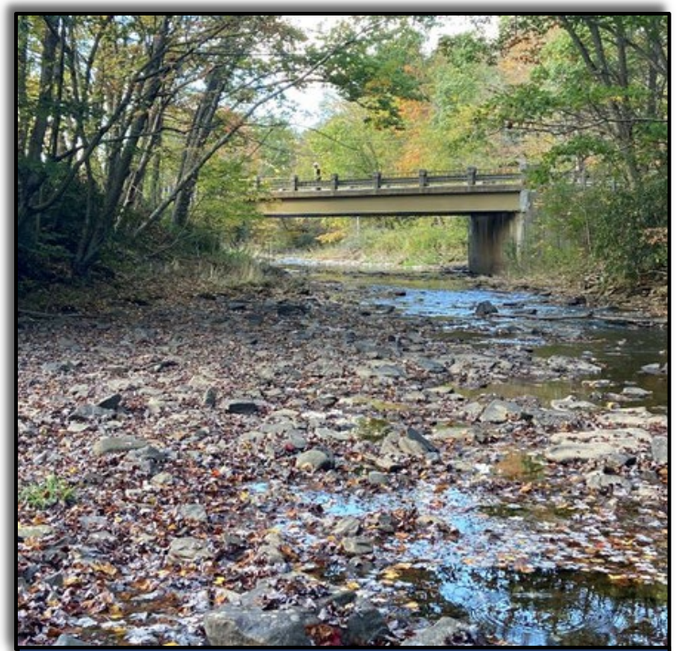
3.19 Waterways, Watersheds, Surface Water Quality & Aquatic Biota

3.19.1 Methodology

U.S. Geological Survey (USGS) maps, National Wetlands Inventory (NWI) maps, FEMA floodplain data, the city/county soil survey, and field reconnaissance identified surface waterways and watersheds. Per U.S. Army Corps of Engineers (USACE) guidance, stream limits were flagged and surveyed at the observed ordinary high-water mark (OHWM), which is a line on the shore established by the fluctuations of water and identified by physical characteristics, including soil impressions or changes, vegetation changes, and the presence of leaf litter and detritus. MDE also uses the OHWM to determine stream boundaries and PA DEP uses the top of bank as the stream boundary. For streams identified in the project area, the OHWM was often the same as the top of bank.

Investigations were also performed in accordance with 25 Pa. Code Chapter 105 and COMAR standards 26.17 and 26.23. The field investigation was performed from spring 2022 through fall 2023. See **Appendix Q** for the locations of the delineated streams.

Pennsylvania Chapter 93 Designated Water Uses (PA Code, Title 25, Chapter 93) and the COMAR Stream Segment Designations (COMAR 26.08.02.08) were reviewed for stream use class. The Pennsylvania Fish and Boat Commission (PFBC) trout classifications were reviewed for Pennsylvania streams. *Keystone Canoeing: A Guide to Canoeable Waters of Eastern Pennsylvania* (Gertler, 2004) identified any recreational navigable streams within the project area in Pennsylvania. The MDE Maryland Tier II High Quality Waters Map and MDE Maryland Trout Stocking Activities Map were reviewed. Field identified streams were assessed based on the qualitative components of the U.S. EPA Bioassessment Protocols for Physical Characterization. Waters of the U.S. were classified based on the 2023 “waters of the United States”



Photograph 3-19: Piney Creek near Greenville Road

[1]U.S. Environmental Protection Agency & U.S. Army Corps of Engineers. (2024). Waters of the United States: Rapanos v. United States & Carabell v. United States. Retrieved from EPA website

definition[1]. Relatively permanent waters were categorized as intermittent or perennial.

Designated uses for MD streams are found in COMAR 26.08.02.08

Refer to the *Aquatic Resources Report* (PennDOT, December 2023) in **Appendix V** for detailed information regarding pertinent regulations, investigative methodology, and existing conditions of the aquatic resources. Note, the *Aquatic Resources Report* identified resources in a larger project area and the Environmental Impact Statement (EIS) is focused on the LOD for the alternatives studied in detail, therefore, there are minor differences in the total length of surface waterway resources.

3.19.2 Existing Conditions

The Pennsylvania portion of the project area is located within the Tub Mill Run-Casselman River, Little Piney Creek-Piney Creek, and Miller Run-Casselman River watersheds, which are within the larger Youghiogheny River watershed. Meadow Run, Miller Run, Piney Creek, and other tributaries to the Casselman River flow through the project area. The Pennsylvania Chapter 93 Designated Use for the Casselman River and unnamed tributaries to the Casselman River from Coxes Creek to its mouth is Warm Water Fishes (WWF). Unnamed tributaries to the Casselman River from its source to Coxes Creek are classified as Cold Water Fishes (CWF). Meadow Run, Piney Creek, and Miller Run also have designated uses for CWF.

According to the Pennsylvania 303(d) List of Impaired Waterways, Meadow Run, Piney Run, and Miller Run are Category 2, "Supporting" for Streams Aquatic Life Use. Casselman River, and several unnamed tributaries to Casselman River (S2 and S7) are Category 5, "Impaired" for Streams Aquatic Life Use due to acid mine drainage (AMD) and metals. In addition, AMD was observed in streams S3 and S56 during the field investigations.

In Pennsylvania, Piney Creek is a Wild Trout Water and a Stocked Trout Water per the PFBC. This classification includes the basin and any unnamed tributaries to Piney Creek. Wild fingerling trout were identified in Meadow Run during a PFBC field survey in 2023; therefore Meadow Run would also be considered a Wild Trout Water for the purposes of this project. A portion of Piney Run outside of the project area is classified as a Wilderness Trout Stream. No PFBC designated Class A Wild Trout Waters or Wilderness Trout Waters are located within the project area.

The Maryland portion of the project area is located within the Casselman River watershed. Tributaries to Meadow Run and Casselman River cross the project area. The Maryland Surface Water Use Designation for streams within the project area is Use I, pursuant to which they are protected for "Water Contact Recreation and Protection of Nontidal Warmwater Aquatic Life" (COMAR 26.08.02.08). According to the Maryland Tier II High Quality Waters map, the project area is not within a Tier II High Quality watershed (MDE, continuously updated). According to the Maryland 303(d) List of Impaired Waterways, the Casselman River watershed is listed as Category 4a – impaired, total maximum daily load (TMDL) complete for pH (acid

Photograph 3-20: Casselman River near Salisbury Borough

mine drainage) and Category 5 – impaired, TMDL needed for ions (Chlorides). The streams within the project area in Maryland are not trout waters.

None of the stream segments within the project area are federal or state wild or scenic rivers. None of the streams are recreationally navigable. The Casselman River is a recreationally navigable river but is not within the project area.

Refer to the *Aquatic Resources Report* (December 2023) in **Appendix V** for detailed information pertaining to the existing conditions of waterways and watersheds. Note, those streams identified in the *Aquatic Resources Report* as both perennial and intermittent are counted here as only perennial. **Table 3-29** summarizes the number of existing waterways in the project area. See **Figure 3-16** for locations of waterways in the project area.

3.19.3 Impacts

Impacts were assessed using GIS by overlaying the LOD for each alternative onto the existing surface waterway resources. See **Table 3-30** for waterway impacts per alternative in each state. The No Build Alternative would have no direct impacts to waterways. As noted in **Table 3-30**, impacts between Alternatives DU Modified and DU-Shift Modified are very similar, while impacts for Alternatives E Modified and E-Shift Modified are similar. In Pennsylvania, Alternatives E Modified and E-Shift Modified have higher perennial and lower intermittent stream impacts compared to the Alternatives DU Modified and DU-Shift Modified. Alternatives E Modified and E-Shift Modified have fewer impacts to Wild Trout Waters and Stocked Trout Waters than Alternatives DU Modified and DU-Shift Modified.

Impacts in Maryland are almost identical among all the build alternatives. Alternatives DU Modified and DU-Shift Modified impact an additional 38-53 linear feet of waterways compared to Alternatives E Modified and E-Shift Modified.

Alternative E-Shift Modified is the FHWA Preferred Alternative. This alternative does result in the same impact waterway impact totals as Alternative E Modified and has less impacts than Alternatives D Modified and D-Shift Modified.

Table 3-29: Existing Waterways in Project Area

Stream Type (#)	Pennsylvania	Maryland
Perennial Streams	51	2
Intermittent Streams	21	8
TOTAL	72	10
PFBC Designations (#)		
Wild Trout Streams[1]	26	N/A
Trout Stocked Streams[1]	15	N/A
TOTAL	41	N/A

[1]PFBC designation only applies to Pennsylvania waterways.

3.19.4 Mitigation

Impacts to waterways would require that PennDOT and SHA receive provisional notification for a Section 404 Permit from the Pittsburgh District of USACE (in coordination with the Baltimore District), PA DEP, and MDE, contingent on receiving a Section 401 Water Quality Certification from the PA DEP and MDE.

Table 3-30: Waterway Impacts per Alternative

Stream Type (Linear Feet)	No Build	DU Mod.	DU-Shift Mod.	E Mod.	E-Shift Mod.
Pennsylvania Streams/Channels[1]					
Perennial	0	15,225	15,225	15,767	15,767
Intermittent	0	4,672	4,672	2,564	2,564
Wild Trout[2]	0	6,808	6,808	3,831	3,831
Trout Stocked[3]	0	2,979	2,979	2,367	2,367
Maryland Stream/Channels[1]					
Perennial[4]	0	1,433	1,433	1,433	1,433
Intermittent[4]	0	3,466	3,481	3,428	3,428
TOTAL (PA/MD)	0	24,769	24,811	23,192	23,192

[1]Only the surface channels of streams are included in the waterway impacts.
[2]Construction timing restrictions would apply to these Wild Trout Waters and their tributaries. In-stream work is not allowed between October 1 and December 31, per PFBC. These lengths are not included in the total calculation as they were accounted for in the Perennial or Intermittent totals.
[3]Construction timing restrictions would apply to these Trout Stocked Waters and their tributaries. In-stream work is not allowed between February 15 and June 1, per PFBC. These lengths are not included in the total calculation as they were accounted for in the Perennial or Intermittent totals.
[4]In-stream work may not be conducted in Maryland Use I waters during the period of March 1 to June 15, inclusive, during any year (COMAR 26.08.02.11). This restriction applies to all streams in the Maryland portion of the project area.

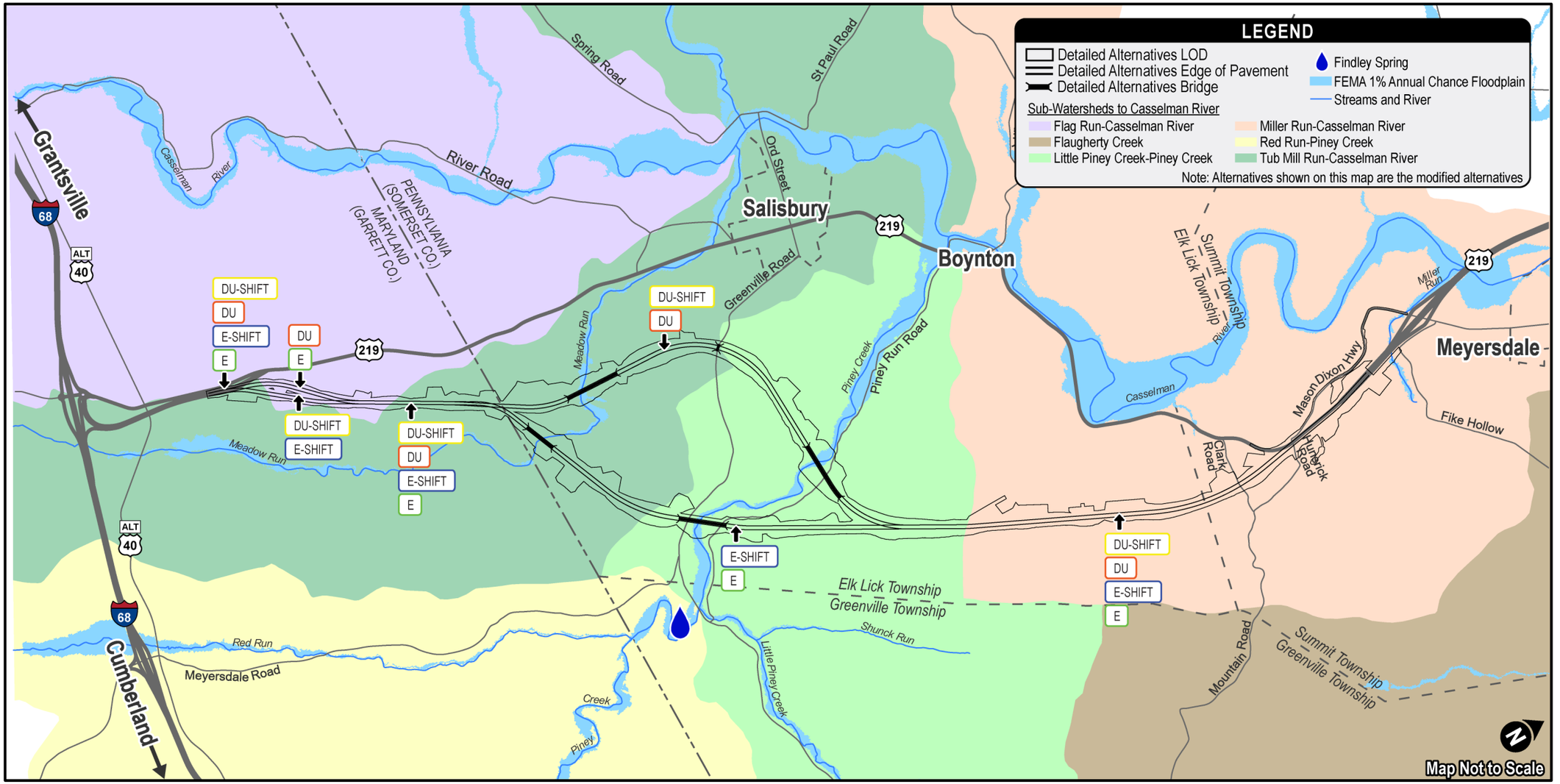


Figure 3-16: Water Resources

The Section 404 Permit and Section 401 Water Quality Certification would address avoidance and minimization to Waters of the US, along with the plan to compensate for unavoidable impacts. Additionally, Pennsylvania and Maryland have state regulations governing waterway encroachments and alterations, including Pa. Code Title 25, Chapter 105 in Pennsylvania and Title 5 in Maryland, that require project review by state environmental agencies. Typically, permits under these regulations would be issued jointly, alongside the Section 404 Permit. However, in Pennsylvania, PennDOT would request a Section 401 Water Quality Certification in conjunction with the Section 404 Permit and would apply for a Chapter 105 Permit during final design.

As the project progresses into final design, the team would endeavor to avoid and minimize stream impacts to the maximum extent practicable. In addition, permanent impact totals would likely decrease, as the detailed design may enable reclassification of some impacts from permanent to temporary.

Construction timing restrictions would apply to Wild Trout Waters and Stocked Trout Waters and their tributaries in Pennsylvania. These streams include Piney Creek and its tributaries and Meadow Run. The PFBC restricts in-stream work between the dates of February 15 and June 1, inclusive, for Stocked Trout Waters and restricts in-stream work between the dates of October 1 and December 31, inclusive, for Wild Trout Waters.

In Maryland, all streams are Use I. In-stream work may not occur within Use I waters during the period of March 1 to June 15, inclusive, during any year (COMAR 26.08.02.11).

The following design and construction activities would be evaluated during preliminary engineering and final design to minimize potential impacts to waterways:

- Design access roads and channel spanning structures using culverts, open channels, and diversions that will pass both low and high water flows, accommodate fluctuating water levels, and maintain water circulation.
- Minimize placement of fill in streams and minimize in-stream disturbance activities during construction. Construct bridges and culverts during low-flow conditions.
- Minimize the length and width of stream impacts at each proposed stream crossing.
- To the extent practicable, each perennial watercourse intersected by the proposed highway will be culverted directly through the roadway embankment and discharged into its original channel, downslope of the roadway.
- Provide protection to waters outside of the area of direct disturbance using compost filter sock or silt fence and other measures.

Compensatory mitigation is required for unavoidable permanent impacts to streams. Compensatory mitigation would be state specific. PennDOT would compensate for stream impacts occurring within Pennsylvania and SHA would compensate for stream impacts occurring in Maryland. Federal and state permitting processes would coordinate and approve specific compensatory stream mitigation.

During final design, PennDOT and SHA would seek to further avoid and minimize impacts to streams. Efforts to minimize stream impacts could include crossing streams at right angles and using retaining walls in areas of cut or fill. In-kind stream relocations would be constructed where practicable to reduce the total compensatory stream mitigation required.

In Pennsylvania, PennDOT would purchase credits from an approved private mitigation bank. Maryland does not have a private mitigation bank that can service the impacts related to the project. SHA would develop a permittee responsible mitigation (PRM) plan. Specific mitigation would be detailed in the FEIS.

3.20 Wetlands

3.20.1 Methodology

Wetland delineations used the criteria outlined in the USACE *Wetlands Delineation Manual* (Environmental Laboratory, 1987) and the *Regional Supplement to the USACE Wetland Delineation Manual: Eastern Mountains and Piedmont Region*

(Environmental Laboratory, 2012). This methodology included the background review of USGS maps, NWI maps, FEMA floodplain data, and the city/county soil survey. Wetlands Functions and Values were identified using The Highway Methodology Workbook Supplement in accordance with the USACE Descriptive Method for Wetlands.

Refer to the *Aquatic Resources Report* (PennDOT, December 2023) in **Appendix V** for detailed information regarding pertinent regulations, investigation methodology, and existing conditions of wetlands. Note, the *Aquatic Resources Report* identified resources in a larger project area and the EIS is focused on the LOD for the alternatives studied in detail, therefore, there are minor differences in the calculated areas of wetland resources.

3.20.2 Existing Conditions

The field investigation took place from Spring 2022 through Fall 2023. **Table 3-31** shows a summary of wetlands identified within the project area. See **Appendix Q** for maps depicting the locations of delineated wetlands. Refer to the *Aquatic Resources Report* in **Appendix V** for detailed information pertaining to each wetland resource.

The primary functions of wetlands in the project area include groundwater recharge/discharge, sediment/toxicant retention, wildlife habitat, nutrient removal, and flood flow alteration. Additional details can be found in the *Aquatic Resources Report* in **Appendix V**.

PFBC designates Piney Run and its tributaries as Trout Stocked Waters and Wild Trout Waters. Wild fingerling trout were identified in Meadow Run during a PFBC field survey, and Meadow Run will be considered a Wild Trout Water for the purposes of this project.

In accordance with 25 Pa. Code, Chapter 105.17(1)(iii), wetlands located in or along the floodplain of the reach of a Wild Trout Water and wetlands within the floodplain of a tributary to a Wild Trout Water, are Exceptional Value (EV) Wetlands. In addition, 25 Pa. Code, Chapter 105.17(1)(iv) categorizes wetlands located along an existing public or private drinking water supply, including both surface water and groundwater sources, that maintain the quality or quantity of the drinking water supply, as EV wetlands. Of the 85 wetlands in the Pennsylvania portion of the project area, 37 are considered EV wetlands based on these criteria.

In Maryland, the project is subject to the Code of Maryland Regulations (COMAR) 26.17 and 26.23. COMAR 26.17 presents the regulations for erosion and sediment control and stormwater management to reduce and manage stormwater runoff necessary to decrease stream erosion, pollution, and flooding. COMAR 26.23 is known as the Maryland Nontidal Wetlands Act. These regulations require permits for activities that disturb the nontidal wetland area and/or the associated 25-foot wetland buffer or the 100-foot wetland buffer area for wetlands of special state concern. Three vernal pools are located within the Maryland portion of the project area. These wetlands provide significant wildlife habitat as they are often used by amphibians in the spring.

3.20.3 Impacts

Impacts were assessed using GIS by overlaying the LOD for each alternative onto the existing wetland resources. See **Table 3-32** for impacts per alternative in each state. **Table 3-33** shows the impacts to the Pennsylvania Exceptional Value Wetlands per alternative.

In Pennsylvania, the impacts from DU Modified and DU Shift Modified are very similar, as are E Modified and E Shift Modified. The main difference is that Alternatives DU Modified and DU-Shift Modified have 10.57 acres of wetland impacts, compared to

Table 3-31: Existing Wetlands in Project Area

Wetlands (#)	PEM	PEM/ PFO	PFO	PFO/ PSS	PSS	POW	Total
Pennsylvania	46	1	21	1	15	1	**85**
Maryland	7	0	6	0	0	N/A	**13**
TOTAL	**53**	**1**	**27**	**1**	**15**	**1**	**98**

PEM= Palustrine Emergent, PFO= Palustrine Forested, PSS= Palustrine Scrub-Shrub, POW= Palustrine with Open Water

Alternatives E Modified and E-Shift Modified, which have 9.34 acres of impacts. The Alternatives DU Modified and DU-Shift Modified impacts are higher mainly due to the westerly alignment through the floodplains of Meadow Run and its tributaries. In addition, because Meadow Run is considered a Wild Trout Water, Alternatives DU Modified and DU-Shift Modified have greater impacts to Exceptional Value wetlands than Alternatives E Modified and E-Shift Modified.

In Maryland, the paths of the four build alternatives are very similar. However, at the southern limit, just south of Old Salisbury Road, Alternatives DU-Shift Modified and E-Shift Modified are located further to the east, before the tie in with the existing U.S. 219. This shift minimizes the impacts to Wetland WP026, thus reducing overall wetland impacts associated with the shift alternatives.

Overall, Alternative E-Shift Modified has the fewest impacts to wetlands (9.94 acres) and exceptional value wetlands (3.59 acres). Alternative E-Shift Modified is the FHWA Preferred Alternative.

3.20.4 Mitigation

At this point in the design process, the LOD is conservative to allow for flexibility as the project design continues to progress. It is expected that the LOD will become smaller and permanent impact totals will likely decrease. Once final impact numbers are determined, PennDOT would complete a functional assessment of impacted wetlands in Pennsylvania, prior to applying for a PA DEP Water Obstruction and Encroachment Permit.

Compensatory mitigation is required for unavoidable permanent impacts to wetlands. Compensatory wetland mitigation would be state specific. PennDOT would mitigate wetland impacts occurring in Pennsylvania and SHA would mitigate wetland impacts occurring in Maryland. Specific compensatory wetland mitigation would be coordinated and approved through the federal and state permitting processes.

Photograph 3-21: Wetland Identified in Garrett County

Table 3-32: Pennsylvania Exceptional Value Wetland Impacts per Alternative

EV Wetlands (Acres)	No Build	DU Mod.	DU-Shift Mod.	E Mod.	E-Shift Mod.
Exceptional Value Wetlands[1]	0	5.03	5.03	3.59	3.59

[1]Applies to Pennsylvania wetlands only, per 25 Pa. Code, Chapter 105.17(1)(iii), (iv)

Table 3-33: Wetland Impacts per Alternative

Wetland Type (Acres)[1]	No Build	DU Mod.	DU-Shift Mod.	E Mod.	E-Shift Mod.
Pennsylvania					
PEM	0	2.21	2.21	1.46	1.46
PFO	0	4.55	4.55	4.20	4.20
PEM/PFO	0	0.54	0.54	0.54	0.54
PSS	0	1.31	1.31	1.17	1.17
PFO/PSS	0	1.96	1.96	1.96	1.96
POW	0	0	0	0.01	0.01
Pennsylvania Total	**0**	**10.57**	**10.57**	**9.34**	**9.34**
Maryland[2]					
PEM	0	0.59	0.45	0.59	0.45
PFO	0	0.14	0.15	0.14	0.15
PSS	0	0	0	0	0
Maryland Total	**0**	**0.73**	**0.60**	**0.73**	**0.60**
TOTAL (PA/MD)	**0**	**11.30**	**11.17**	**10.07**	**9.94**

[1]PEM – palustrine emergent, PFO – palustrine forested, PSS – palustrine scrub/shrub, POW – palustrine open water [2]POW is not a recognized wetland type in Maryland

In Pennsylvania, PennDOT intends to purchase credits from an approved private wetland mitigation bank. Maryland does not have a private wetland mitigation bank that can service the impacts related to the project; SHA would develop a PRM plan.

Specific mitigation would be detailed in the FEIS.

3.21 Floodplains

3.21.1 Methodology

The USDOT Order 5650.2, entitled "Floodplain Management and Protection," prescribes policies and procedures for ensuring that proper consideration is given to the avoidance and mitigation of floodplain impacts. The Order defines "significant floodplain encroachment" as an encroachment resulting in one or more of the following construction or flood-related effects:

- A considerable probability of loss of human life;
- Likely future damage associated with the encroachment that could be substantial in cost or extent, including interruption of service on or loss of a vital transportation facility; and
- A notable adverse impact on natural and beneficial floodplain values.

The Order further defines natural and beneficial floodplain values to include, but not limited to natural moderation of floods, water quality maintenance, groundwater recharge, fish, wildlife, plants, open space, natural beauty, scientific study, outdoor recreation, agriculture, aquaculture, and forestry.

Furthermore, 25 PA Code Chapter 106 Floodplain Management contains planning and development regulations regarding floodplains. These regulations apply to highways obstructions or other obstructions.

Federal Emergency Management Agency (FEMA) flood data was reviewed to identify and map floodplains within the project area (FEMA Panel No. 24023C0080D, 42111C0567D, 42111C0570D, 42111C0705D, and 42111C0710D).

3.21.2 Existing Conditions

The recorded 1% annual chance floodplains in the project area include Miller Run and Piney Creek in Pennsylvania, and Meadow Run and the Casselman River in both Pennsylvania and Maryland. The 1% annual chance floodplain refers to the areas along or adjacent to a stream or body of water that are capable of storing or conveying floodwaters during a 1% annual chance storm. The 1% annual chance storm is a rainfall event that statistically has a 1% chance of occurring in any given year. The approximate locations of the 1% annual chance floodplains of all major streams have been identified for the project area, as shown in **Table 3-34**.

The floodplain of Miller Run is small and is confined by existing U.S. 219. The floodplain extends from the Casselman River, along U.S. 219 and turns eastward, going under U.S. 219, just south of the ramps to the Meyersdale Interchange. Piney Creek is wide throughout the project area corridor; however, a valley through the Engles Milll area confines this floodplain, just west of its confluence with the Casselman River.

Meadow Run originates near the base of Meadow Mountain in Maryland and flows northwest into Pennsylvania, staying south of Greenville Road and the Borough of Salisbury. Meadow Run has a small

Photograph 3-22: Floodplain of Meadow Run

floodplain in Maryland, extending no further than 50 feet on either side but then expands in Pennsylvania and measures 381 feet in some places. The Casselman River has a wide floodplain throughout the project area, in some cases, extending to 1,000 feet wide. The floodplain in this area mainly traverses through agricultural fields.

3.21.3 Impacts

The No Build Alternative would consist of taking no action to improve the existing transportation facilities; therefore, it is not anticipated to impact any of the four FEMA 1% annual chance floodplains within the project area.

None of the build alternatives would result in a significant floodplain encroachment per DOT Order 5650.2. All four build alternatives would have a very minor impact to the Miller Run FEMA floodplain and an impact to the Piney Creek FEMA floodplain. Alternatives DU Modified and DU-Shift Modified would also have an impact to the Meadow Run floodplain. The impact to Miller Run is the result of the roadway reconfiguration to provide local access at the northern end of the project and would be associated with all four build alternatives. The vertical clearance over Piney Creek would be approximately 185 feet. All build alternatives would span Piney Creek to the east of existing U.S. 219, just south of Piney Run Road. The bridge in this location would cross both Piney Run Road and Piney Creek.

Alternatives DU Modified and DU-Shift Modified cross Piney Creek in the same location, about 2,200 feet from where Alternatives DU Modified and DU-Shift Modified split from Alternatives E Modified and E-Shift Modified and head east towards existing U.S. 219. Alternatives E Modified and E-Shift Modified cross over Piney Creek at the same location just north of Greenville Road, as shown in **Table 3-34** The span arrangement of the bridge may be able to reduce the impact even further or possibly eliminate it. This assumption is based on the fact that the floodplain in the area of the bridge crossings is small due to the steep topography of the area. With any one of the four build alternatives, there may be a pier located in proximity to the floodplain, but it would be well outside of the over bank areas.

All four build alternatives equally impact the Miller Run 1% annual chance floodplain located at the northern end of the project area. All four build alternatives are common in this portion of the project and would impact 0.6 acres of the Miller Run floodplain as shown in **Table 3-34**. Alternatives DU Modified and DU-Shift Modified impact 4.6 acres of the Meadow Run floodplain while Alternatives E Modified and E-Shift Modified have no impact to the Meadow Run floodplain. Alternatives E Modified and E-Shift Modified would impact approximately 4.1 acres of Piney Creek FEMA floodplain, and Alternatives DU Modified and DU-Shift Modified would have a greater impact of 7.1 acres to Piney Creek floodplains. **Table 3-34** for a breakdown of impacts to FEMA 1 % Annual Chance Floodplain by Alternative.

None of the four build alternatives would impact the Casselman River floodplain.

Given the proposed vertical clearances of each alternative, no impacts to the Casselman River or Meadow Run floodplains are anticipated. Minor impacts to the Piney Creek floodplain could occur depending on the final placement of pier locations. These impacts would be authorized under 25 PA Code Chapter 106 through the joint Section 404/PA Chapter 105 Permit process.

Table 3-34: Impacts to FEMA 1% Annual Chance Floodplain by Alternative

Floodplain	No Build	DU Mod.	DU-Shift Mod.	E Mod.	E-Shift Mod.
Miller Run Hectares (acres)	0.0 (0.0)	0.24 (0.6)	0.24 (0.6)	0.24 (0.6)	0.24 (0.6)
Piney Creek Hectares (acres)	0.0 (0.0)	2.87 (7.1)	2.87 (7.1)	1.66 (4.1)	1.66 (4.1)
Meadow Run Hectares (acres)	0.0 (0.0)	1.86 (4.6)	1.86 (4.6)	0.0 (0.0)	0.0 (0.0)
TOTAL Impacts Hectares (acres)	**0.0 (0.0)**	**4.97 (12.3)**	**4.97 (12.3)**	**1.9 (4.7)**	**1.9 (4.7)**

3.21.4 Mitigation

Alternative E-Shift Modified is the FHWA Preferred Alternatives and efforts to minimize and avoid impacts to FEMA 1% annual chance floodplains will continue throughout the final design process. Impact minimization efforts may include design refinements and resulting reductions in the proposed limit of disturbance, hydrologic and hydraulic modeling to identify flood risk and determine the type and size of proposed infrastructure, and stormwater management and impoundment. During final design and prior to construction, permitting procedures would be instituted in accordance with PA DEP, MDE, and USACE. All action taken with respect to construction would conform to Executive Order 11988 (Floodplain Management).

3.22 Vegetation, Terrestrial Habitat, & Terrestrial Wildlife

The Vegetation, Terrestrial Habitat, and Wildlife investigation consisted of classifying the project area using the Anderson and Fike methods following Pennsylvania and Maryland guidance and accepted methodologies. Detailed Terrestrial Habitat use can be found in the *Terrestrial Habitat Assessment Report* (PennDOT, July 2023), in **Appendix W**. The wildlife investigation consisted of identification of well used wildlife trails, scat, etc. The information collected will be used for locating any potential wildlife crossings. A detailed inventory of invasive vegetation was not completed, however numerous common invasive species were observed.

3.22.1 Methodology

A. Anderson Method

Pennsylvania and Maryland - *A Land Use and Land Cover Classification System for Use with Remote Sensor Data* (Anderson, et. al. 1976) (Anderson) assisted in classifying habitat units in the project area. The Anderson Method allows for classification to four levels of detail, Level I being the least detailed and Level IV being the most detailed. The target of this study was to classify terrestrial habitat in the project area to a Level III.

This method begins with an identification of land cover types within the project area utilizing readily available aerial photography. This study used the ESRI World Imagery aerial photography dated October 24, 2022. Land cover types were classified to Level II utilizing aerial photography and a draft Anderson terrestrial habitat map was created. This map was utilized by field crews for ground truthing. Field crews then walked the project area to confirm the Level II classifications and further classify the habitats within the project area to a Level III classification. Field work occurred on numerous days between the spring of 2022 and spring of 2023. The results of the field investigations and land cover classifications were then used to develop final Level III Anderson mapping.

B. Fike Method

The second part of the terrestrial habitat assessment used the *Terrestrial and Palustrine Plant Communities of Pennsylvania* (Fike, 1999) method. Utilizing the methodologies described in this classification method, different plant communities were identified within the project area. The Fike method divides the state into eleven Ecological Regions of Pennsylvania. The project area is located within the Western Allegheny Mountains region. Global Positioning Survey (GPS) survey technology with sub-meter accuracy recorded the differing plant communities on hard copy field maps. Finally, each area received a specific habitat type appropriate for the region.

C. Pennsylvania

The project area has a history of vehicle collisions with deer as shown in **Figure 3-17** below. Additionally, the existing U.S. 219 is the western boundary for the PA Game Commission Chronic Wasting Disease (CWD) Disease Management Area (DMA) 2, as depicted in **Figure 3-18**. During field reconnaissance, any highly used wildlife trails, scat, etc., which were observed, were surveyed with GPS. To better help evaluate the best potential wildlife crossing areas, only highly used wildlife trails were delineated.

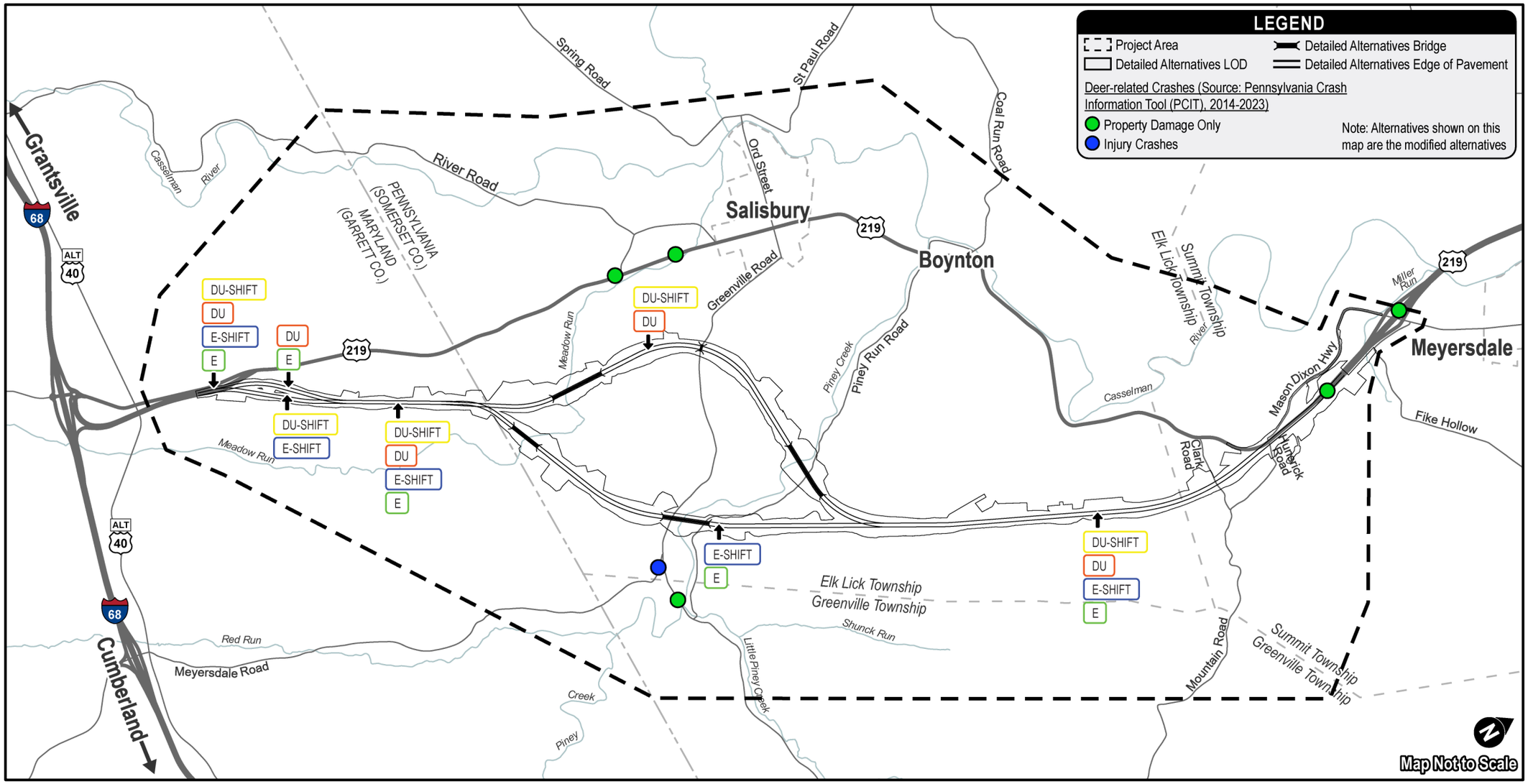


Figure 3-17: Deer-related Crashes within Study Area

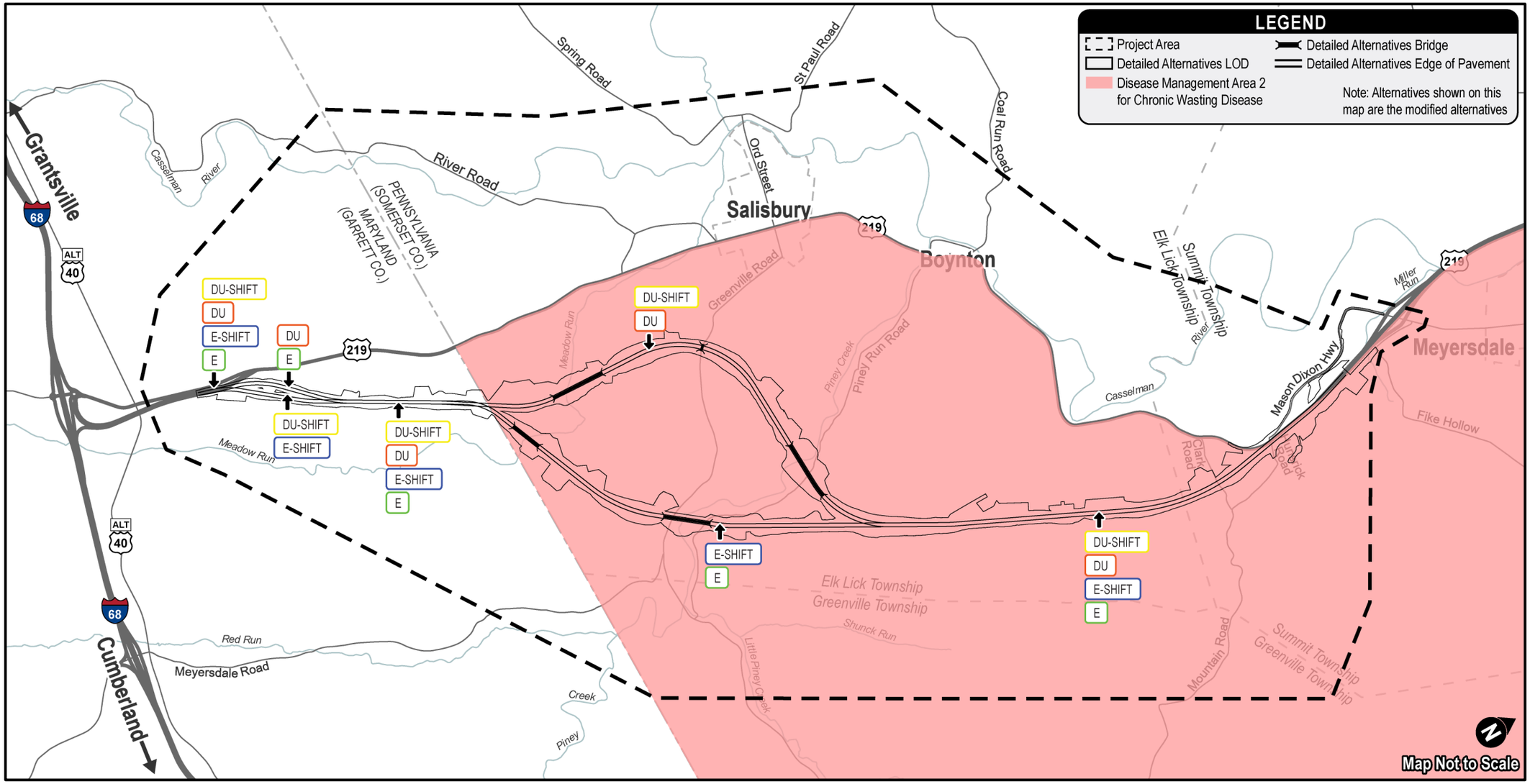


Figure 3-18: Chronic Wasting Disease Management Area

D. Maryland

Specimen trees, defined as trees having a diameter at breast height (DBH) greater than or equal to 30-inches, and champion trees, defined as trees within 75% or more of the diameter of the current state champion tree, were identified in the field, measured using a DBH tape, and located and mapped using a GPS receiver.

Targeted Ecological Areas (TEAs) are lands and watersheds of high ecological value and the Maryland Department of Natural Resources (MD DNR) identifies them as conservation priorities for natural resource protection. These areas which include Green Infrastructure (GI) hubs and corridors when appropriate, represent the most ecologically valuable areas in the State.

Photograph 3-23: Forest Habitat Near Piney Creek

Maryland's Watershed Resources Registry (WRR) interactive mapping tool aided in the identification of TEAs and GI hubs and corridors. Layers reviewed included protected lands, priority conservation areas, nature's network, and biota.

The presence of protected lands was investigated through the Maryland iMAP ArcGIS Online for Maryland, Maryland Protected Lands – Forest Conservation Act Easements dataset and the MD DNR and Maryland Environmental Resources and Land Information Network (MERLIN) online GIS system. No protected lands were identified.

Forest Interior Dwelling Species (FIDS) are regulated as a protected resource within the Chesapeake Bay Critical Area (Critical Area) (COMAR 27.01.09.04). Although there are no Critical Areas within or near the project area, and FIDS are not specifically regulated outside of the Critical Area, MD DNR encourages avoidance of impacts to FIDS habitat throughout the state. FIDS habitat includes documented FIDS breeding areas within existing riparian forests that are at least 300 feet in width and that occur adjacent to streams, wetlands, and other forest areas used as breeding areas by FIDS. Potential FIDS habitat was identified using GIS data obtained from the MERLIN mapping system, Living Resources layer. This layer identifies potential FIDS habitat that is the result of modeling depicting where FIDS habitat might occur based on certain criteria but has not been field tested.

Following the identification and mapping of potential FIDS habitats, the areas were evaluated using ArcGIS to determine if the project area contained forests of at least 50 acres in size with 10 or more acres of forest interior habitat (i.e., forest greater than 300 feet from the nearest forest edge).

3.22.2 Existing Conditions

A. Pennsylvania

The completion of the Anderson Method determined that 19 Anderson Level III habitat types are located within the project area. **Table 3-35** provides a summary of the total acreage of each habitat type. **Figure 3-18** also depicts these habitat types. The completion of the Fike Method determined that nine Fike habitat types are located within the project area. **Table 3-36** provides a summary of the total acreage of each Fike habitat within the project area. Additionally, **Figure 3-19** depicts the habitat types.

B. Maryland

The completion of the Anderson Method determined that seven Anderson Level III habitat types are located within the project area. **Table 3-37** summarizes the total acreage of each Anderson habitat type within the project area. **Figure 3-18** depicts these habitat types.

A total of 31 trees of specimen size reside within the project area during field reconnaissance. None of these trees are champion trees or are within 75 percent of the state champion tree for a given species. **Table 3-38** summarizes the specimen trees identified and located on the Anderson Terrestrial Habitat Mapping (**Appendix W**). A total of six different species reside in the project area and the largest tree found was a sugar maple with a 48-inch DBH measurement.

Small portions of TEAs and GI hubs and corridors are present within the project area. A large TEA is present east of existing U.S. 219, with a small portion of it crossing U.S. 219 and extending into the western portion of the project area along Old

Salisbury Road. A large GI hub associated with Meadow Run and Meadow Mountain is present to the east of the project area with a small finger of the GI hub extending into the project area. There is also a GI corridor mapped between the northern limit of Old Salisbury Road and U.S. 219. The corridor connects the GI hub to the east of the project with a GI hub west of U.S. 219. These TEAs and GI hubs are depicted in the *Terrestrial Habitat Assessment Report*, *Appendix L*, contained in **Appendix W** of this document.

Two small areas of FIDS habitat were within the project area. Both areas are in the northern portion of the Maryland section, north of Old Salisbury Road. FIDS Area #1 is located just south of the Pennsylvania/Maryland line and the FIDS habitat consists of approximately 1.0 acre of deciduous forestland. FIDS Area #2 is located approximately 700 feet to the south and the FIDS habitat consists

Table 3-35: Anderson Land Use/Land Cover Type Summary (Pennsylvania)

Level I Habitat Type	Level II Habitat Type	Level III Habitat Type	Acres
1. Urban or Built-up Land	11. Residential	111. Single Family Units	37.8
	14. Transportation, Communications, and Utilities	141. Highway ROW	51.3
		145. Roadway ROW	13.2
		151. Commercial Complex	1.9
	17. Other Urban or Built-up Land	171. Sediment Pond (Water Control Structure)	0.7
2. Agricultural Land	21. Cropland and Pasture	212. Pastureland	2.2
		213. Hayfield	12.9
3. Rangeland	31. Herbaceous Rangeland	312. Early Succession Old Field	46.1
	33. Mixed Rangeland	331. Moderate- Dense	17.2
		332. Grazed or Thin	40.2
4. Forest Land	41. Deciduous Forest Land	415. Mature Stage, Shrub Moderate- Dense	178.1
		416. Mature Stage, Shrub Grazed or Shrub Sparse.	141.3
	42. Evergreen Forest Land	425. Mature Stage, Shrub Moderate- Dense	11.4
	43. Mixed Forest Land	435. Mature Stage, Shrub Moderate- Dense	217.6
		436. Mature Stage, Shrub Grazed or Shrub Sparse	116.4
5. Water	51. Streams and Canals	511. Streams	11.9
7. Barren Land	75. Strip Mines, Quarries, and Gravel Pits	751. Strip Mine Total	21.7
	76. Transitional Areas	761. Fill Slope Total	1.6
NA	Wetland	Wetland	17.5
		TOTAL	**941.1**

Table 3-36: Fike Classifications (Pennsylvania)

Fike Habitat Type	Acres
Aspen/ Gray (Paper) Birch Forest	1.2
Dry Oak- Heath Forest	49.8
Dry Oak- Mixed Hardwood Forest	152.4
Hemlock- Northern Hardwood Forest	51.3
NA (No Fike Category)[1]	258.9
Red Maple Terrestrial Forest	190.3
Red Maple Terrestrial/Red Oak- Mixed Hardwood Forest	69.4
Red Oak- Mixed Hardwood Forest	150.3
Wetland	17.5
TOTAL	**941.1**

[1]NA indicates that no applicable Fike Habitat category is available for these areas.

of approximately 8.0 acres of deciduous forestland. Logging and mining activities in the mid to late 1900s disturbed both of these areas. Early mid successional forest habitat currently dominates the areas.

MD DNR analysis also suggests that the forested area on or adjacent to the project area contains Forest Interior Dwelling Bird habitat. This habitat supports populations of Forest Interior Dwelling Bird Species, which are declining in Maryland.

C. Wildlife

The evaluation of potential wildlife crossings in the Pennsylvania section revealed a widespread variety of species and concentrations throughout the project area. Wildlife use of the Pennsylvania portion of the project area is evident from observation of individuals and scat as well as through the observation of wildlife trails. Deer, bear, rabbit, fox, coyote, and raccoon tracks were the dominant species tracks observed during field work.

Table 3-37: Anderson Land Use/Land Cover Type Summary (Maryland)

Level I Habitat Type	Level II Habitat Type	Level III Habitat Type	Acres
1. Urban or Built-up Land	11. Residential	111. Single Family Units	3.1
	14. Transportation, Communications, and Utilities	141. Highway ROW	19.9
		145. Roadway ROW	0.0
		151. Commercial Complex	0.8
	17. Other Urban or Built-up Land	171. Sediment Pond (Water Control Structure)	0.0
2. Agricultural Land	21. Cropland and Pasture	212. Pastureland	47.9
		213. Hayfield	30.7
3. Rangeland	31. Herbaceous Rangeland	312. Early Succession Old Field	0.8
	33. Mixed Rangeland	331. Moderate- Dense	1.6
		332. Grazed or Thin	0.0
4. Forest Land	41. Deciduous Forest Land	415. Mature Stage, Shrub Moderate- Dense	19.4
		416. Mature Stage, Shrub Grazed or Shrub Sparse.	52.1
	42. Evergreen Forest Land	425. Mature Stage, Shrub Moderate- Dense	1.9
	43. Mixed Forest Land	435. Mature Stage, Shrub Moderate- Dense	0.0
		436. Mature Stage, Shrub Grazed or Shrub Sparse	0.7
5. Water	51. Streams and Canals	511. Streams	1.0
7. Barren Land	75. Strip Mines, Quarries, and Gravel Pits	751. Strip Mine Total	0.0
	76. Transitional Areas	761. Fill Slope Total	0.0
NA	Wetland	Wetland	1.7
		TOTAL	**181.5**

Wildlife sightings within the Maryland portion of the project area included deer, raccoons, squirrels, chipmunks, newts, frogs, and various bird species.

Large portions of the Pennsylvania project area are open forest, and the concentration of wildlife trails is sporadic in these areas. Trails appear in confining areas such as rhododendron stands, steep valleys or along field edges only to dissipate as the trails return to open forests. **Appendix W** presents the location of the heaviest wildlife trails. The findings indicate that the potential for wildlife collisions exists within the project area.

Given the dense forestland and presence of SGL 231 in Pennsylvania, a concerted effort would be made to provide wildlife crossings in the Pennsylvania portion of the project area where appropriate (for example along established game trails identified by the project team during field work). The large bridges spanning the Meadow Run and

Table 3-38: Specimen Trees in Maryland

Common Name	Scientific Name	# of Specimen (≥30” DBH)
Red Maple	Acer rubrum	4
Sugar Maple	Acer saccharum	13
Black Cherry	Prunus serotina	5
Northern Red Oak	Quercus rubra	6
American Basswood	Tilia americana	1
Cucumber Tree	Magnolia acuminata	2
	TOTAL	**31**

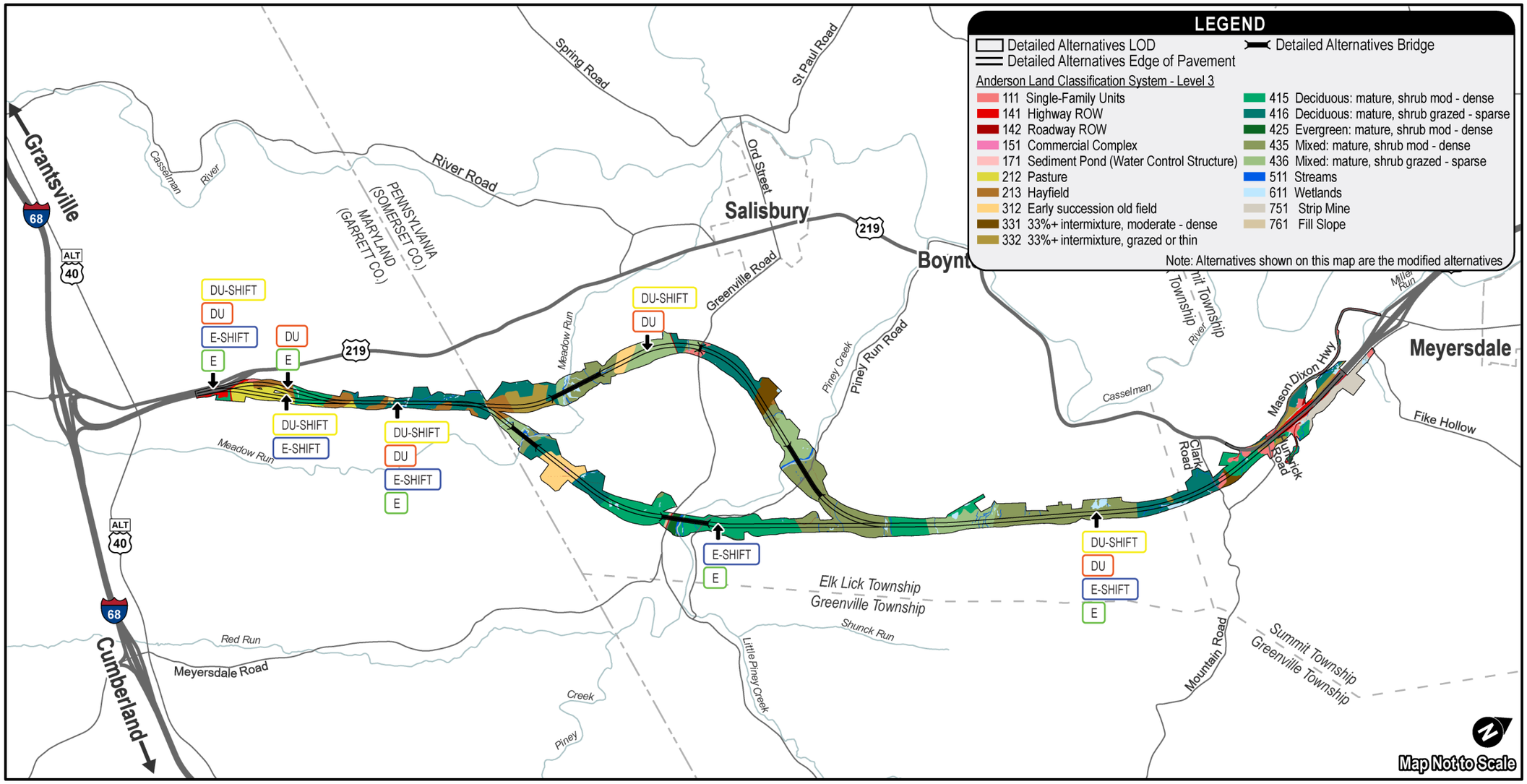


Figure 3-19: Anderson Land Use Classifications within Alternatives

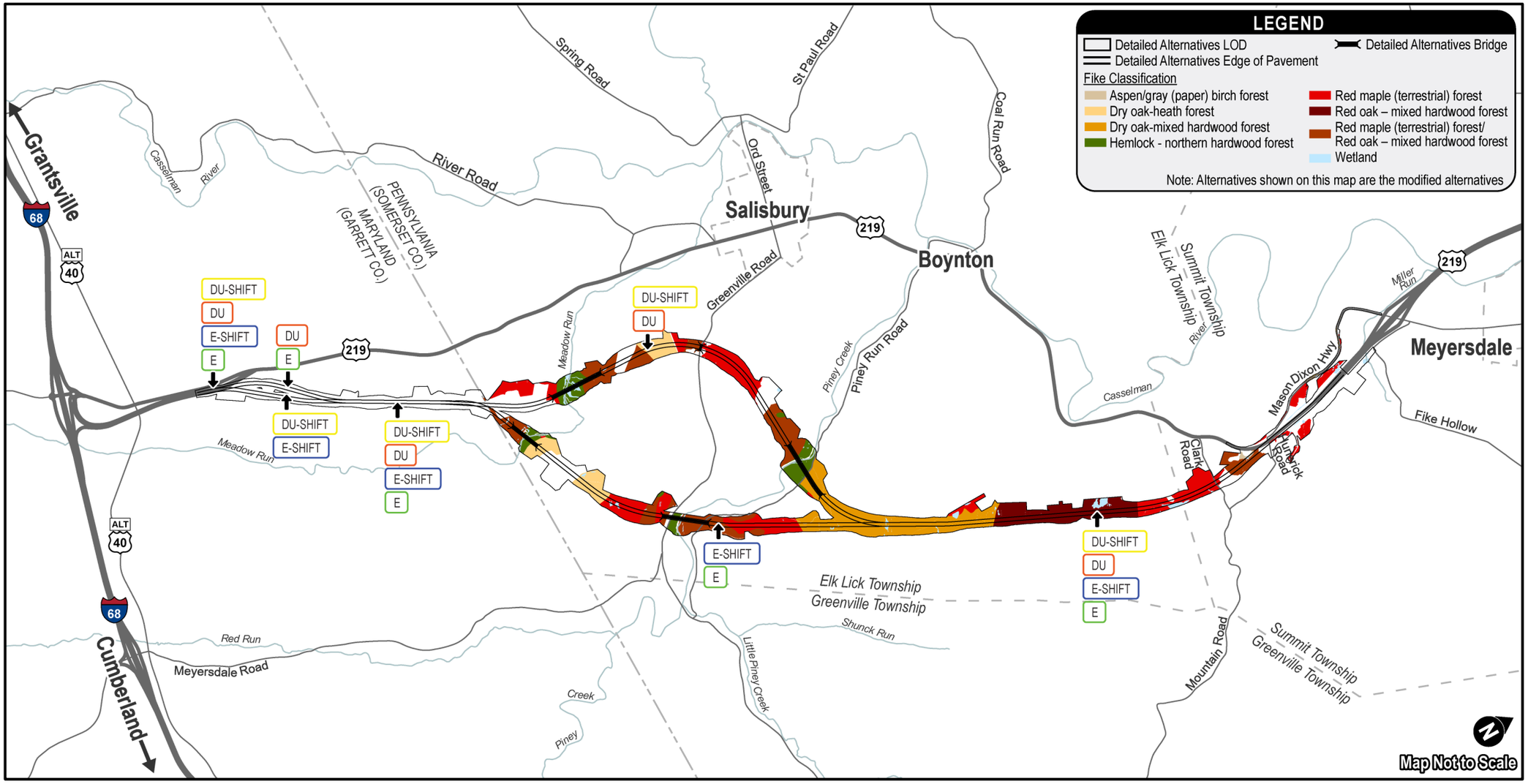


Figure 3-20: Fike Classifications within Alternatives

Piney Creek Valleys would also function as wildlife crossings. Because no game trails were identified within the Maryland portion of the project area and the terrain is not conducive to a structure no wildlife crossing are being investigated within Maryland.

3.22.3 Impacts

The No Build Alternative would consist of taking no action to improve the existing transportation facilities. Therefore, it is not anticipated to impact vegetation, habitat, or wildlife within the project area. Various terrestrial land uses will be impacted within the proposed project area.

A. Pennsylvania

The largest land use impact in Pennsylvania will be forestland. Forestland impacts including deciduous forest land, evergreen forestland and mixed-use forestland make up 664.8 acres across all four build alternatives. All build alternatives have similar potential forest land impacts, with Alternatives E Modified and E-Shift Modified having the lowest impacts, as they affect the smallest area of forest land. The second largest land use type impact in Pennsylvania is urban or built up land, which makes up 104.9 acres across all four build alternatives. Impacts to agricultural land include 15.1 acres across all four build alternatives.

B. Maryland

The largest land use impact in Maryland will be agriculture. Agricultural land makes up 78.6 acres across all four build alternatives. Forestland in Maryland makes up 74.1 acres across all four build alternatives. Urban or built up land makes up 50.9 acres across all four build alternatives.

C. Cumulative

The largest land use among all build alternatives across the entire project is forestland. All build alternatives would have similar forestland impacts. Depending on the final design, the Alternative DU Modified alternative would impact 431.4 total acres of forestland, Alternative DU-Shift Modified would impact 430 acres of forest land, Alternative E Modified would impact 389.7 acres, and Alternative E-Shift Modified would impact 388.8 acres. As such, forestland impacts will be the largest land use impacted by the project.

The second largest land use across the project area is farmland. The Alternative DU Modified would impact 53.5 acres of Productive Cropland/ Pasture, Alternative DU-Shift Modified would impact 53.7 acres, Alternative E Modified would impact 37.8 acres, and Alternative E-Shift Modified would impact 38.0 acres. Additional detail on farmland impacts can be found in Section 3.13.

Urban or built up land comprise 104.9 acres of all build alternatives in Pennsylvania and 23 acres in Maryland. Displacements will likely occur as the result of each alternative. Alternatives DU Modified and DU-Shift Modified would result in 9 displacements each. Alternatives E Modified and E-Shift Modified would result in 8 displacements each.

Impacts associated with wetlands and waterways are summarized in Sections 3.20 and 3.19 respectfully. Cumulative impacts to Terrestrial and Aquatic Habitats are summarized in **Table 3-39.**

3.22.4 Mitigation

Coordination of mitigation is ongoing between PennDOT, SHA, and the respective agencies. These mitigation efforts include, but are not limited to, following approved E&SPC plans which include native seed mixes and plantings. The usage of these native seed mixes would help to prevent the spread and establishment of invasive species. The project team would utilize best management practices from the PennDOT Publication No. 756, *Invasive Species Best Management Practices* (PennDOT, 2014).

Additionally, wildlife crossings will be considered at locations to be determined along the alignment in order to facilitate safe wildlife crossing and to prevent collisions. PennDOT will continue to evaluate the use and locations of wildlife crossings in the design phase and will coordinate with U.S. Fish and Wildlife Service (USFWS), Pennsylvania Game Commission (PGC) and the PFBC to ensure that habitat connectivity is maintained as much as possible. The project team has committed to

incorporating at least one wildlife crossing into the project however the exact location(s) have not been established at this time. The location(s) for the wildlife crossing will be determined once a selected alternative has been identified. The proposed large bridges spanning the Piney Creek and Meadow Run valleys will act as wildlife crossings. Following selection of an alternative and anticipated design modifications to the roadway alignment (possible reductions to the median width and consideration of bifurcating the northbound and southbound lanes) in order to reduce the limit of disturbance, the location of the crossings will be evaluated by the design team and coordinated with the appropriate state and Federal agencies. The location, frequency and type of crossings will be coordinated. The area near State Game Land 231 is one logical location for a crossing in which the Pennsylvania Game Commission will be consulted. Other logical locations to consider crossings are where streams will cross the roadway. These areas will be evaluated to determine if these can be enhanced to facilitate wildlife crossings for large mammals, as well as smaller mammals and reptiles. The details of these mitigation efforts would be finalized in final design and will follow guidance from PennDOT Publication No. 13M, *Design Manual Part 2 Highway Design– March 2015 Edition* (PennDOT, 2024).

Table 3-39: Terrestrial and Aquatic Habitat Impacts

Terrestrial and Aquatic Resources	DU Mod	DU-Shift Mod	E-Mod	E-Shift Mod.
Forestland (acres)	**431.4**	**430**	**389.7**	**388.8**
Deciduous Forestland	185.6	184.2	245.8	244.8
Evergreen Forestland	0	0	3.8	3.8
Mixed Forestland	245.8	245.8	140.2	140.2
Farmland				
Productive Cropland/ Pasture (acres)	53.5	53.7	37.8	38.0
Maple Sugar Production Forest (acres)	23.1	23.1	0.1	0.1
Productive Farms (#)	9	9	6	6
Prime Farmland Soils (acres)	32.9	32.9	19.9	19.9
Soils of Statewide Importance (acres)	102.9	102.9	82.0	81.9
Preferential Tax Assessment (acres)	74.92	75.18	36.14	36.36
Other				
FEMA 1% Annual Chance Floodplain (acres)	12.3	12.3	4.7	4.7
Potential Bat Hibernacula (#)	3	3	0	0
Wetland (acres)	**11.30**	**11.17**	**10.07**	**9.94**
PEM	2.80	2.66	2.05	1.91
PEM/PFO	0.54	0.54	0.54	0.54
PFO	4.69	4.70	4.34	4.35
PFO/PSS	1.96	1.96	1.96	1.96
PSS	1.31	1.31	1.17	1.17
POW	0	0	0.01	0.01
Streams (linear feet)	**24,796**	**24,811**	**23,192**	**23,192**
Perennial Streams	16,658	16,658	17,200	17,200
Intermittent Stream	8,138	8,153	5,992	5,992

In Maryland, the Maryland Reforestation Law regulates project impacts to forests. Before in-kind forest replacement is considered, every reasonable effort must be made to minimize the cutting or clearing of trees. When prudent minimization efforts have been considered and one acre or more of forest clearing is still required, replacement of the forests must occur on a one-to-one basis. SHA would need to locate state or publicly owned land of equivalent size to be reforested. If no state or publicly owned land is available, SHA would pay into the MD DNR Reforestation Fund.

Photograph 3-24: Tree Plantings Along U.S. 219 in Garrett County

Acre-for-acre reforestation either within the immediate project right-of-way, within other SHA-owned land, or payment into the MD DNR Reforestation Fund would mitigate unavoidable impacts to forest resources. Reforestation plans would be coordinated by SHA's Landscape Operations Division, and a MD DNR Reforestation Site Review form would be prepared during final design.

3.23 Rare, Threatened, & Endangered Species

3.23.1 Methodology

Multi-agency coordination has identified federally and state-listed rare, threatened, and endangered (RT&E) species known to be present within the project area and, if necessary, develop alternative, conservation, or avoidance measures for the protection of identified RT&E resources. Federal and state regulations such as the Endangered Species Act (ESA) of 1973, which establishes protections for threatened or endangered fish, wildlife, and plants, regulates RT&E species. Coordination for federally protected RT&E resources is ongoing through the USFWS-Pennsylvania and Chesapeake Bay Field Offices. State-level interagency coordination for RT&E species within the project area involved the following resource agencies: PFBC, PGC, Pennsylvania Department of Conservation of Natural Resources (DCNR), Maryland Department of Natural Resources - Wildlife and Heritage Service, and the Maryland Department of Natural Resources - Environmental Review Program. Refer to the *Rare, Threatened and Endangered Species Report* (PennDOT, November 2023), included in **Appendix X**, for detailed information pertaining to RT&E findings for the project area.

A. State Coordination - Pennsylvania

The Pennsylvania Natural Diversity Inventory (PNDI) environmental review request for the project area initiated RT&E species resource agency coordination in Pennsylvania. State and Federal agencies responsible for the management and protection of species listed as endangered, threatened, and special concern species and resources within Pennsylvania include PGC, PFBC, DCNR, and USFWS Pennsylvania Field Office. A PNDI environmental review utilizing the Pennsylvania Conservation Explorer (PACE) web tool was completed on August 11, 2021 (PNDI-738552) and updated on May 12, 2023 (PNDI-786952) due to minor modifications to alternatives. **Appendix X** contains copies of PNDI-738552 and PNDI-786952 review receipts, in addition to relevant resource agency correspondence.

A MD DNR Environmental Review request for the project area in 2021 and again in 2023 initiated RT&E species resource agency coordination in Maryland. State and Federal agencies responsible

for the management and protection of species listed as endangered, threatened, in need of special conservation include the MD DNR Wildlife and Heritage Service and USWFS Chesapeake Bay Field Office. **Appendix X** contains copies of all correspondence with the Maryland resource agencies.

B. Federal Coordination - USFWS Pennsylvania and Chesapeake Bay Field Offices

Coordination on federally listed RT&E species with the USFWS initially started in May 2002 with a request for information on species within the project area and recommendations for seasonal tree-cutting restrictions. Over the years in coordination with the USFWS, it was determined that formal consultation under Section 7 of the ESA is required because the Proposed Action may affect and is likely to adversely affect federally listed bat species. Additional studies were conducted for bat roosting and hibernacula as described in **Chapter 3.23.2**. In August 2023, USFWS formally recommended a new Biological Assessment that is compliant with Section (a)(2) of the ESA. A Biological Assessment, for U.S. 6219, Section 050 has been prepared and submitted to the USFWS offices along with a request from FHWA to initiate formal consultation. (PennDOT, 2024). The Biological Assessment, included as **Appendix Y**, covers the Indiana bat (*Myotis sodalis* – federally endangered), the northern long-eared bat (*Myotis septentrionalis* – federally endangered) and the tricolored bat (*Perimyotis subflavus* – proposed federally endangered).

3.23.2 Existing Conditions

A. Pennsylvania

Potential conflicts with species under the jurisdiction of PGC, PFBC, and USFWS-Pennsylvania Field Office exist within the project area. All RT&E species with a historic range within the state limits of Pennsylvania of the project area include:

- Indiana bat (*Myotis sodalis*) | Federally Endangered | Mammal
- Northern Long-eared Bat (*Myotis septentrionalis*) | Federally Endangered | Mammal
- Little Brown Bat (*Myotis lucifugus)* | State Endangered | Mammal Species
- Eastern Small-footed Bat (*Myotis leibii*) | State Threatened | Mammal
- Tricolored Bat (*Perimyotis subflavus*) | Proposed Federally Endangered | State Endangered | Mammal
- Long Nosed Sucker (*Catostomus Catostomus*) | State Endangered | Fish

The PGC noted that a significant winter bat hibernaculum (Special Concern) is known to be located in close proximity to the project area. The following surveys and assessments were conducted to confirm the presence of RT&E bat species:

Photograph 3-25: Northern Long-Eared Bat Identified within Project Area

Photograph 3-26: Tricolored Bat Identified within Project Area

- Habitat and Use Assessment – Fall 2005
- Mist Netting – Summer 2014
- Habitat and Use Assessment – Fall 2014
- Trapping – Fall 2014
- Trapping – Fall 2022
- Acoustic Monitoring – Summer 2022
- Hibernacula Assessment – Spring 2023
- Trapping/Acoustic Monitoring – Fall 2023

B. Maryland

According to MD DNR, three geographical areas within the project area are known to support RT&E species and species in need of conservation. These three geographic areas, identified by MD DNR as Sensitive Species Project Review Areas (SSPRAs), include parts of the Casselman River, Meadow Mountain, and a segment of Piney Creek. In the western part of the project area, the Casselman River is known to support 13 species listed as rare, threatened, endangered, or in need of conservation, and three species currently on the watchlist. Within the area of Meadow Mountain which encompasses the project area, records exist for two species listed as rare, and one species currently on the watchlist. In the eastern part of the project area, a segment of Piney Creek is known to support six species listed as rare, threatened, and in need of conservation. Refer to **Appendix X** for the complete listing of RT&E species known to exist within the project area as identified by MD DNR.

Three streams having classifications of Use Class I or Use Class III exist within the project area, as defined by MDE. Use Class I streams represent waterways that support water contact recreation and nontidal warm water aquatic life. Use Class III identifies nontidal cold water streams. Use Class I and Use Class III streams within the project area include:

- Meadow Run (Use Class I)
- Unnamed Tributary to Casselman River (Use Class I)
- Unnamed Tributary to Casselman River (Use Class III).

Consultation with USFWS-Chesapeake Bay Field Office resulted in an official species list, confirming the potential presence of two federally endangered species within the project area. RT&E species listed on the official species list include:

- Indiana bat (*Myotis sodalis*) | Federally Endangered | Mammal
- Northern long-eared bat (*Myotis septentrionalis*) | Federally Endangered | Mammal

3.23.3 Impacts

The No Build Alternative would not result in any project-related construction and would therefore not directly impact threatened, endangered, or special status species or their habitat.

The Biological Assessment has determined that the proposed action “may affect, likely to adversely affect” the Indiana bat, northern long-eared bat, or tricolored bat. Additional details regarding the analysis are in the Biological Assessment in **Appendix Y**.

None of the four build alternatives would have a direct or indirect effect on a known large mine-cave hibernaculum within the project area.

Alternatives DU Modified and DU-Shift Modified would directly affect three known hibernacula. No threatened or endangered federal or state species were found during the studies at these hibernacula. No known hibernacula are directly affected with Alternatives E Modified and E-Shift Modified.

All four build alternatives would permanently impact less than 2% of the total forested land within a 5-mile radius (29,809 acres) of the Proposed Action Area that is potentially used by the protected bat species.

All four build alternatives would permanently affect 17% of the potential roosting habitat (forest habitat) in the Proposed Action Area.

No known maternity roosts exist in the Proposed Action Area, but those areas most likely to possess maternity roost trees have been avoided to the fullest extent possible.

None of the four build alternatives would have a direct effect on any identified rocky habitats.

All four build alternatives may affect hibernating northern long-eared bats, Indiana bats, and tricolored bats from blasting, pile driving, and other ground-disturbing activities.

The proposed bridges over Piney Creek with any of the build alternatives would provide a more than adequate travel corridor under the structure for bats to travel between the large known mine-cave and foraging areas, thus reducing the potential for adverse effects due to roadkill. No lighting is proposed along new roadway.

A. Pennsylvania

The four build alternatives avoid impacts to SGL 231; therefore, no further coordination with PGC related to SGL 231 is required.

The four build alternatives would bridge known habitat associated with the longnose sucker, specifically Meadow Run and Piney Creek. The locations of new bridges, piers, causeways, and staging areas are currently unspecified at this phase of preliminary design. However, the build alternatives would avoid pier and fill placement and the staging of materials within habitat known to support the longnose sucker. Coordination between PFBC and PennDOT is ongoing to conduct field investigations and surveys to evaluate Meadow Run and Piney Creek for the presence or absence of the longnose sucker.

B. Maryland

The four build alternatives through Maryland would avoid the Casselman River and Piney Creek and would only cross through the Meadow Mountain area. RT&E species identified within the Meadow Mountain area include:

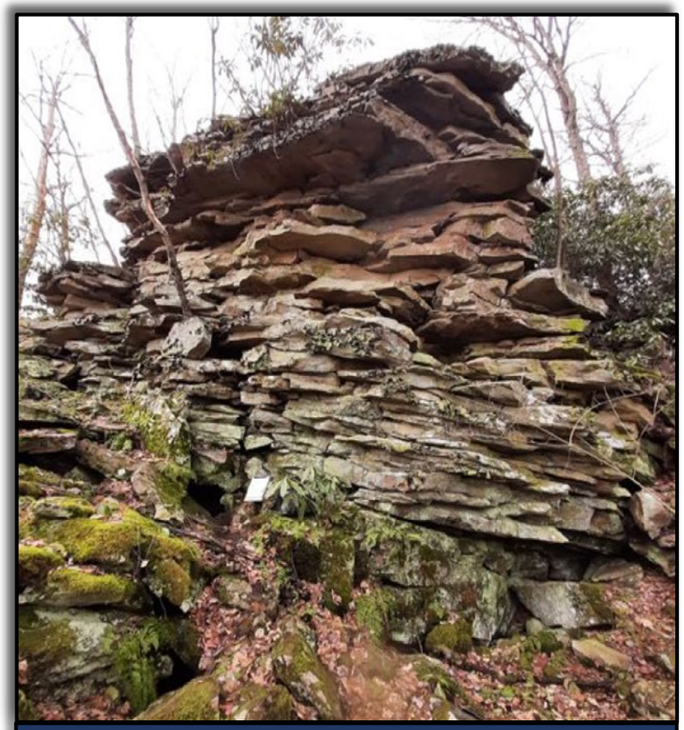
- Linear-leaved Willowherb (*Epilobium leptophyllum*) | Rare | Plant
- Alder Flycatcher (*Empidonax alnorum*) | Rare (breeding) | Bird
- North American Porcupine (*Erethizon dorsatum*) | Watchlist | Mammal

Additionally, the build alternatives would avoid bridging streams classified as Use Class I and Use Class III by MDE; therefore, in-stream restrictions are not applicable based on the current design.

C. Cumulative Effects

The following definition only applies to Section 7 analysis and should not be confused with the broader use of the term as it relates to NEPA or other environmental laws. Cumulative effects are those effects of future state or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation. All build alternatives are anticipated to result in minimal cumulative effects, based on the best available data.

At this time, the only known development is a park and ride lot proposed by SHA to be constructed at the northeast corner of U.S. 40 Alt., U.S. 219 and Business 219. The 35-space park and ride lot on 0.79 acres is situated north of U.S. 40 Alt. and between Business 219 northbound lanes and U.S. 219 Southbound lanes. Plans for this park and ride are included in **Appendix Z**.



Photograph 3-27: Potential Bat Hibernaculum Identified in Somerset County

This park and ride lot, in combination with the U.S. 219 project, would not jeopardize any threatened or endangered species within the proposed action area. The park and ride lot location is currently a gravel lot, offering no habitat.

3.23.4 Mitigation

A. Pennsylvania

The 2024 Biological Assessment proposed numerous mitigation measures to compensate for the impacts to protected bat species. These measures will be finalized based on consultation with the USFWS and the PCG. Final mitigation measures will be included in the FEIS/ Record of Decision (ROD).

Pertaining to the longnose sucker, the design of avoidance measures would be evaluated and provided to PFBC for their review upon finalization of the ongoing field investigations. E&SPC BMPs would be implemented to control sedimentation and minimize habitat impacts. Additionally, stormwater management would be designed to ensure that discharge into streams would minimize elevated stream temperatures, as requested by PFBC.

B. Maryland

MD DNR requires sediment and erosion controls with supplemental measures and maximizing stormwater infiltration to avoid degrading wetland areas supporting rare species along Meadow Run. For projects involving the use of grout, mortar, or concrete in or near the stream channel, caution should also be used to avoid significant instream pH changes on-site and downstream of the project area. Project design should maintain or enhance fish passage through the project area, particularly during low flow periods. Additionally, the conservation of Forest Interior Dwelling Bird Species habitat is strongly encouraged.

In accordance with Maryland's Reforestation laws, this project is proposing to replace approximately 72 acres in an acre-for-acre replacement. All four build alternatives have proximate alignments through Maryland and would impact similar amounts of forestland within the state.

Coordination with state resource agencies, USFWS, PennDOT, and SHA is ongoing and would be needed to finalize mitigation measures required for the project.

3.24 Indirect Effects

3.24.1 Methodology

The NEPA and the CEQ regulations implementing NEPA require the examination of the direct and indirect impacts of a project (40 CFR § 1508.25 [c]). The CEQ defines these impacts as follows:

- Direct effects are caused by the action and occur at the same time and place as the action.
- Indirect effects are caused by the action and occur later in time or are farther removed in distance but are still reasonably foreseeable.

Indirect effects are often called "but for" because they would not or could not occur without the construction of the project. An indirect effects analysis assesses impacts ranging from growth-related effects to physical environmental effects.

The resources considered in the indirect effects analysis are those that would be directly impacted by the proposed build alternatives in addition to indirectly impacted natural, cultural, and socioeconomic resources. This Indirect Effects analysis was conducted in accordance with PennDOT Publication No. 640, *Indirect and Cumulative Effects Desk Reference*.

The discussion of significance addresses how potential effects would impede or help advance the local, county, regional, or state goals. The assessment will identify if the potential effect would be substantial enough to further impair or the resource to irretrievable levels or to the point that mitigation is required.

Indirect effects attributable to a build alternative include land use changes and associated impacts on environmental resources. Indirect effects also include other potential impacts caused by a build alternative, such as future degradation of streams or wetlands due to sedimentation, runoff, or changes in

hydrology. Estimation of future impacts must focus on reasonably foreseeable actions; those that are likely to occur or probable, rather than those that are merely possible.

This project proposes a limited access facility on new alignment to better accommodate through traffic. The project termini would not provide direct access to adjacent parcels since there are no interchanges or intersections proposed at either end.

The project has the potential to induce and facilitate regional growth by improving system linkage and providing infrastructure that supports economic development. The potential for the four build alternatives to induce growth or substantial land use changes in the surrounding area is moderate based on review of local comprehensive plans.

Development that may result indirectly from increased access provided by this project is subject to the established approval process of the appropriate county government. The Somerset County Subdivision and Land Development Ordinance was adopted in 2022 by the Somerset County Commissioners to regulate subdivision and land development within Somerset County. The Somerset County Planning Commission is delegated the authority to administer and enforce all provisions of this ordinance.

Similarly, the Garrett County Code of Ordinances directs the Planning and Land Management Division and Permits and Inspection Division of the Department of Community Development to administer requirements for development.

Moderate potential exists for the project to result in indirect effects from encroachment alterations. **Table 3-40** summarizes proposed direct impacts of the build alternatives.

The *Indirect and Cumulative Effects Report* for the project is included as **Appendix AA.**

A. Study Area Boundaries for Indirect Effects

The indirect and cumulative effects (ICE) geographical boundaries for natural environmental, cultural, and socioeconomic resources are based on sub-boundaries including U.S. Census block groups, subwatersheds, and transportation data. These boundaries accommodate the build alternatives and land use goals that may interact with them. The boundaries also include any other reasonably foreseeable projects or actions in the vicinity.

U.S. Census block group (BG) boundaries served as tools to develop the socioeconomic resources ICE study area boundary (**Figure 3-21**) to represent the socioeconomic resources potentially indirectly and cumulatively affected.

The natural resources ICE study area boundary is sized to capture potential direct effects and indirect downstream effects of the build alternatives. As shown in **Figure 3-22** six watershed boundaries served as models to assess ICE to natural environmental resources:

- Flag Run-Casselman River
- Tub Mill Run-Casselman River
- Red Run-Piney Creek
- Little Piney Creek-Piney Creek
- Miller Run-Casselman River
- Flaughtery Creek.

The cultural resources ICE study area boundary (see **Figure 3-23**) includes the area of potential effects within which indirect and cumulative effects to cultural resources could occur from visual, audible, and atmospheric elements that could diminish the integrity of cultural resources. Section 106 of the NHPA compliance considers indirect and cumulative effects as well as direct effects to historic properties.

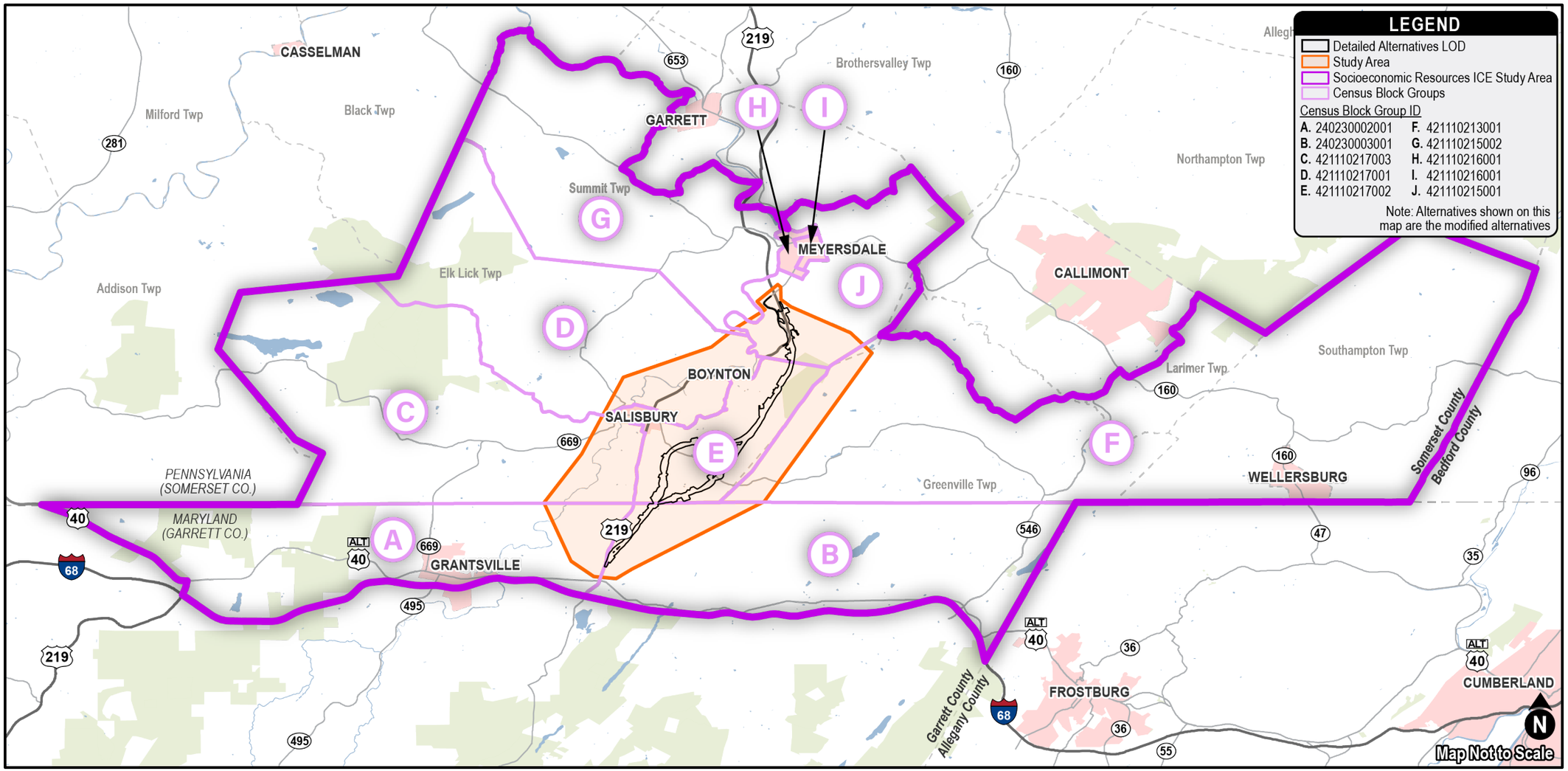


Figure 3-21: Socioeconomic Resources ICE Study Area

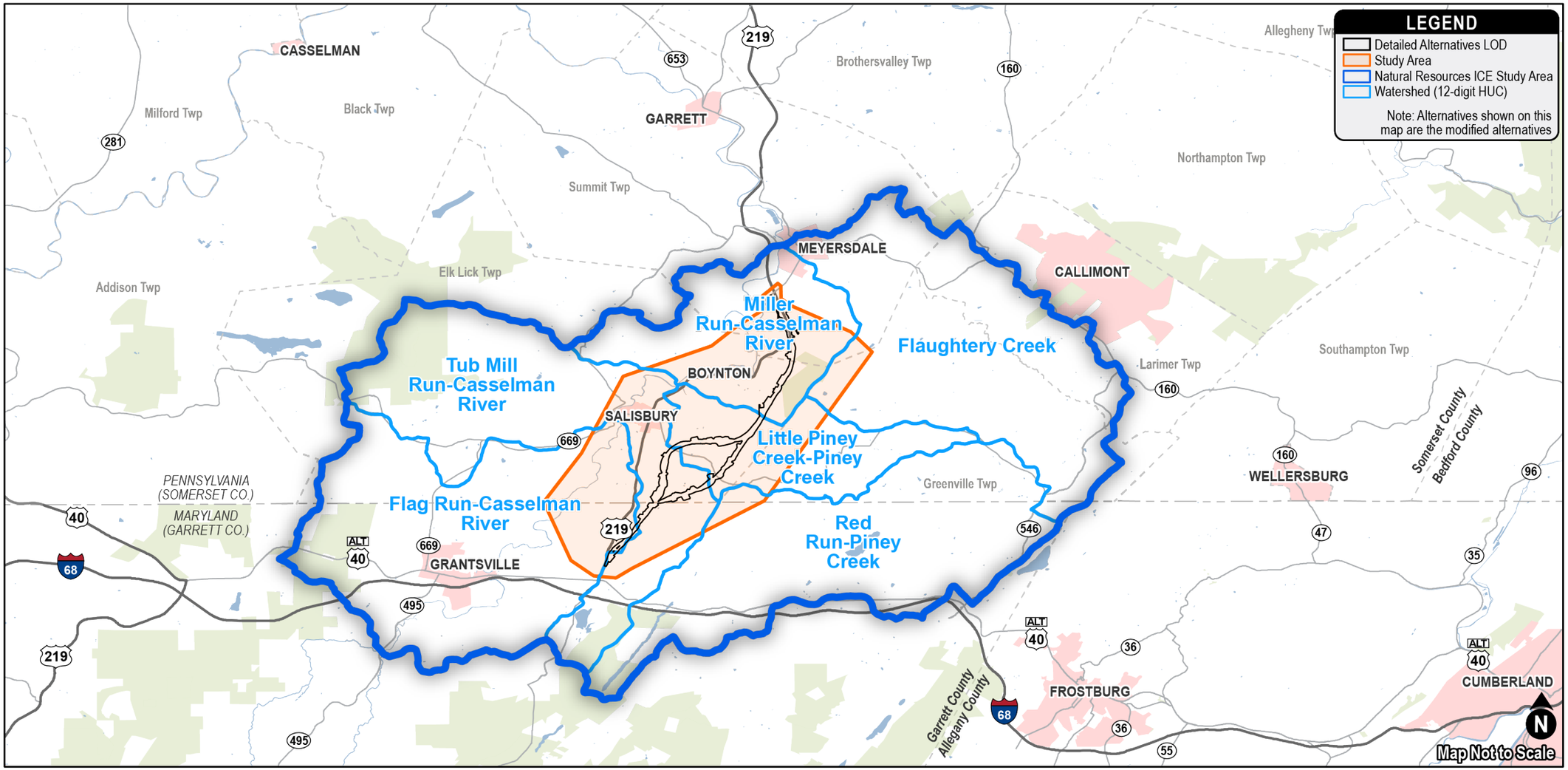


Figure 3-22: Natural Resources ICE Study Area

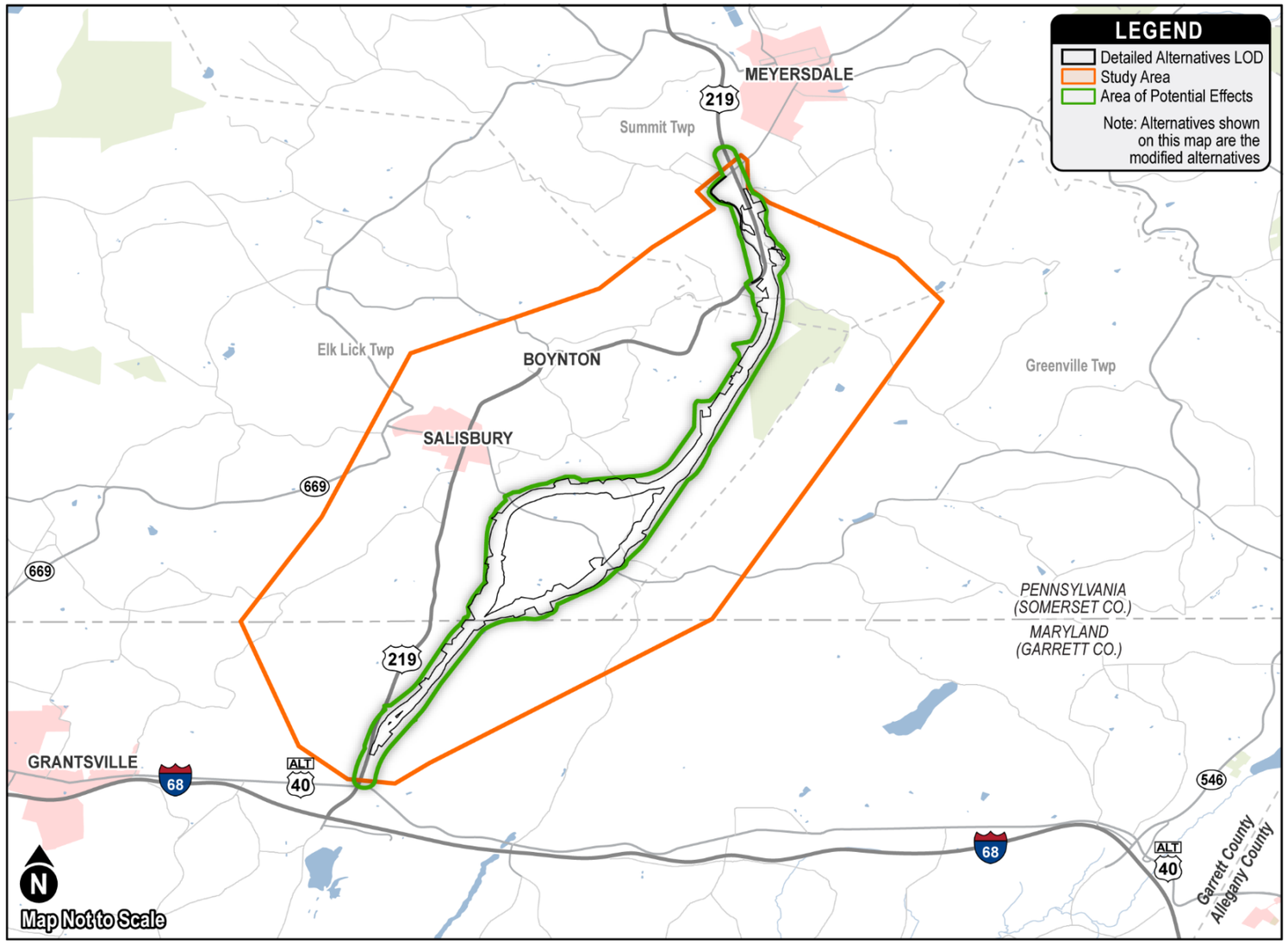


Figure 3-23: Cultural Resources ICE Study Area

3.24.2 Existing Conditions

A. Land Use

Between 1946 and 1982, many commercial buildings and residences served the needs of motorists near the junction of Chestnut Ridge Road and U.S. 40. The 1991 completion of I-68 and the 1998 completion of the Meyersdale Bypass increased accessibility to the area and encouraged new development.

Concentrated areas of development within the Somerset County portion of the study area include the area outside Meyersdale Borough, the unincorporated community of Boynton, and Salisbury. A low-density residential area is between Salisbury and the Pennsylvania-Maryland border. In Garrett County, the U.S. 219 corridor includes medium density residential development and commercial development is present near I-68.

Agricultural land is prevalent throughout the study area and is essential to the economy of both counties. In Somerset County approximately 1,150 farms totaling over 200,000 acres account for over one-quarter of the land. In Garrett County, about 700 farms totaling approximately 90,000 acres represent about one-fifth of the land.

Local, state, and federal governments have existing initiatives to encourage economic growth. Garrett County designated the Chestnut Ridge area as a Potential Employment Area. The northernmost mile

Table 3-40: Summary of Direct Impacts

Resource	No Build	DU Mod.	DU-Shift Mod.	E Mod.	E-Shift Mod.
Socioeconomic Resources					
Parcels Intersected by LOD (#)	0	117	114	106	103
Displacements (#) (Residential/Commercial)	0/0	9/2	9/2	8/2	8/2
Impacted Noise Receptors	4	13	9	13	9
Cultural Resources					
Historic Resources (#/acres)	0/0	3/40.2	3/40.2	1/0.78	1/0.78
Archaeology (acres)	0	620.8	620.7	443.8	446.1
Natural Resources					
Forestland	0	431.4	430.0	389.7	388.8
Active Farmland (acres)	0	53.5	53.7	37.8	38.0
Maple Sugar Production Forest (acres)	0	23.1	23.1	0.1	0.1
Productive Farms (#)	0	9	9	6	6
Prime Farmland Soils (acres)	0	32.9	32.9	19.9	19.9
Soils of Statewide Importance (acres)	0	102.9	102.9	82.0	81.9
Preferential Tax Assessment – Total (acres)	0	74.9	75.2	36.1	36.4
FEMA 1% Annual Chance Floodplain (acres)	0	12.3	12.3	4.7	4.7
Potential Bat Hibernacula (#)	0	3	3	0	0
Wetland (acres)	0	11.30	11.17	10.07	9.94
Streams (lf)	0	24,796	24,811	23,192	23,192

of U.S. 219 in Maryland is not within a Garrett County-designated PFA as pertains to Maryland's Smart Growth Law and may not qualify for certain state funding.

B. Land Use Plans and Policies

The 2022 Garrett County Comprehensive Plan encourages growth in designated growth locations, while maintaining forested and agricultural land. The plan also states that the U.S. 219 project is needed to improve access, reduce travel time, and promote economic development. Furthermore, the plan proposes future land uses, including agricultural resource, suburban residential, town residential, and general commercial uses.

The Grantsville Comprehensive Plan encourages growth within appropriate areas while minimizing sprawl and natural resource impacts. The Garrett County Comprehensive Plan reflects areas that Grantsville identifies for future annexation primarily within PFAs. Maryland Smart Growth policy defines PFAs as existing communities and places designated by local governments indicating where they want state investment to support future growth. Near U.S. 40, the area west of U.S. 219, including the Chestnut Ridge Development Corridor, is within a Garrett County PFA.

Somerset County adopted The Comprehensive Plan for the Southern Alleghenies Region in 2018. County priorities include the completion of U.S. 219 to encourage new business and workforce development along a future new alignment.

C. Environmental Justice

The U.S. EPA EJScreen Version 2.2 served as a tool to analyze the demographic characteristics of the socioeconomic resources ICE study area.

Minority Populations - Minority populations within the socioeconomic resources ICE study area census BGs (excluding BG 421110217003 with 22%) are lower than the percentage of minority populations within each county and state and are relatively consistent. The minority population of the socioeconomic resources ICE study area census BGs within Pennsylvania totals 5%, compared to 6% in Somerset County or 24% in Pennsylvania, and the minority population of the socioeconomic resources ICE study area census BGs within Maryland totals 1%, Garrett County's 4% or Maryland's 49%.

Low-Income - The percent of low-income households within the socioeconomic resources ICE study area is 36%, exceeding the percentage in both counties and both states. The BGs within Pennsylvania have 37% low-income population, surpassing 33% in Somerset County, 28% in all of Pennsylvania. ICE study area BGs within Maryland have 38% low-income population, which is greater than 33% in Garrett County, and 22% in all of Maryland. The percent of low-income residents within the study area block groups is therefore meaningfully greater than that of both counties and both states.

3.24.3 Impacts

A. Potential for Project Related Growth Effects

Potential indirect impacts include project-related induced growth impacts. Increased runoff may impact water quality, temperature, sedimentation, and downstream erosion. Forest habitat may be fragmented or altered by future growth. Any development would also be subject to all mitigation requirements including stormwater management and buffer creation.

The four build alternatives may have potential to change land development patterns. Garrett County included both Grantsville and the Chestnut Ridge Development Corridor (CRDC) within a PFA (see **Figure 3-24**). The *Town of Grantsville 2009 Comprehensive Plan* highlights both areas. Although not approved, Grantsville is currently updating its Comprehensive Plan and is considering extending water service from Grantsville eastward toward the CRDC.

Within the PFA and the CRDC is the proposed Casselman Farm development which could bring an eight lot, 160-acre industrial park, accessed from U.S. 219, and a 33-lot residential development (see **Figure 3-24**). Although planned, construction is not scheduled. Related to this development is the

evaluation of a potential connection from any of the build alternatives. This potential future connection is not part of this project, but its need has been coordinated with Garrett County. This connection is being evaluated as a potential future indirect impact that could occur after construction of improved U.S. 219. Alternatives DU-Shift Modified and E-Shift Modified may accommodate a compressed interchange.

Figure 3-25 shows a concept of an Alternative DU Modified and E Modified at-grade intersection and a conceptual Alternative DU-Shift Modified and E-Shift Modified compressed interchange that could be considered if future development and traffic warrant.

The following section addresses potential new development in this area. However, development in this area has not been approved and should in no way be considered imminent. For illustrative purposes only, environmental resources within undeveloped parcels that theoretically could undergo future development are shown in **Figure 3-26**.

The Grantsville CRDC and Garrett County identification of a PFA enveloping the development corridor indicates the desire to stimulate economic growth in this area. Areas currently undeveloped have been highlighted as potential areas where future development has the possibility to be considered by property owners. These areas have been highlighted in attempt to identify potentially affected environmental resources within these parcels. For study purposes, a 1-mile radius was drawn around the I-68 interchange as an indicator of land parcels most likely having the greatest development attraction. **Figure 3-26** shows this one-mile radius in relation to:

- The Garrett County PFA
- Casselman Farms Development
- Current undeveloped land tracts within a 1-mile radius around the I-68 interchange
- Location of a potential future at-grade intersection connection to existing U.S. 219 with Alternatives DU Modified and E Modified

Location of a potential future at-grade intersection or grade separated interchange to existing U.S. 219 with Alternatives DU-Shift Modified and E-Shift Modified.

The historic Little Meadows property and the Savage River State Forest are also contained within the 1-mile potential development radius around the I-68 interchange and afford protections preventing or limiting future development. Also, within the 1-mile radius are active farmland, residences, Meadow Run, and Little Meadow Lake.

B. Potential for Encroachment Alteration Effects

Encroachment alteration effects are physical, chemical, or biological changes in the environment that occur as a result of the project but are separate in time or distance from the direct effects. The following sections discuss the potential for the project to result in encroachment effects. The resources considered for potential encroachment impacts are based on the direct impacts described in **Table 3-40**.

With the No Build Alternative, no new U.S. 219 connection from Meyersdale to I-68 would be constructed, and the existing two-lane alignment of U.S. 219 would remain. The No Build Alternative would experience lower levels of service in 2050, and increased congestion could result in noise and air impacts and adverse indirect effects from relocations to reduce transportation-related costs.

Socioeconomic Resources

Community Facilities and Services - While there may be temporary disruptions to travel patterns during construction, there would be no long-term disruption to access as most of the community facilities and services within the Socioeconomic Resources ICE Study Area are located in the towns of Grantsville, Salisbury and Meyersdale which are far removed from the four build alternatives. Indirect impacts to community facilities and services are not expected.

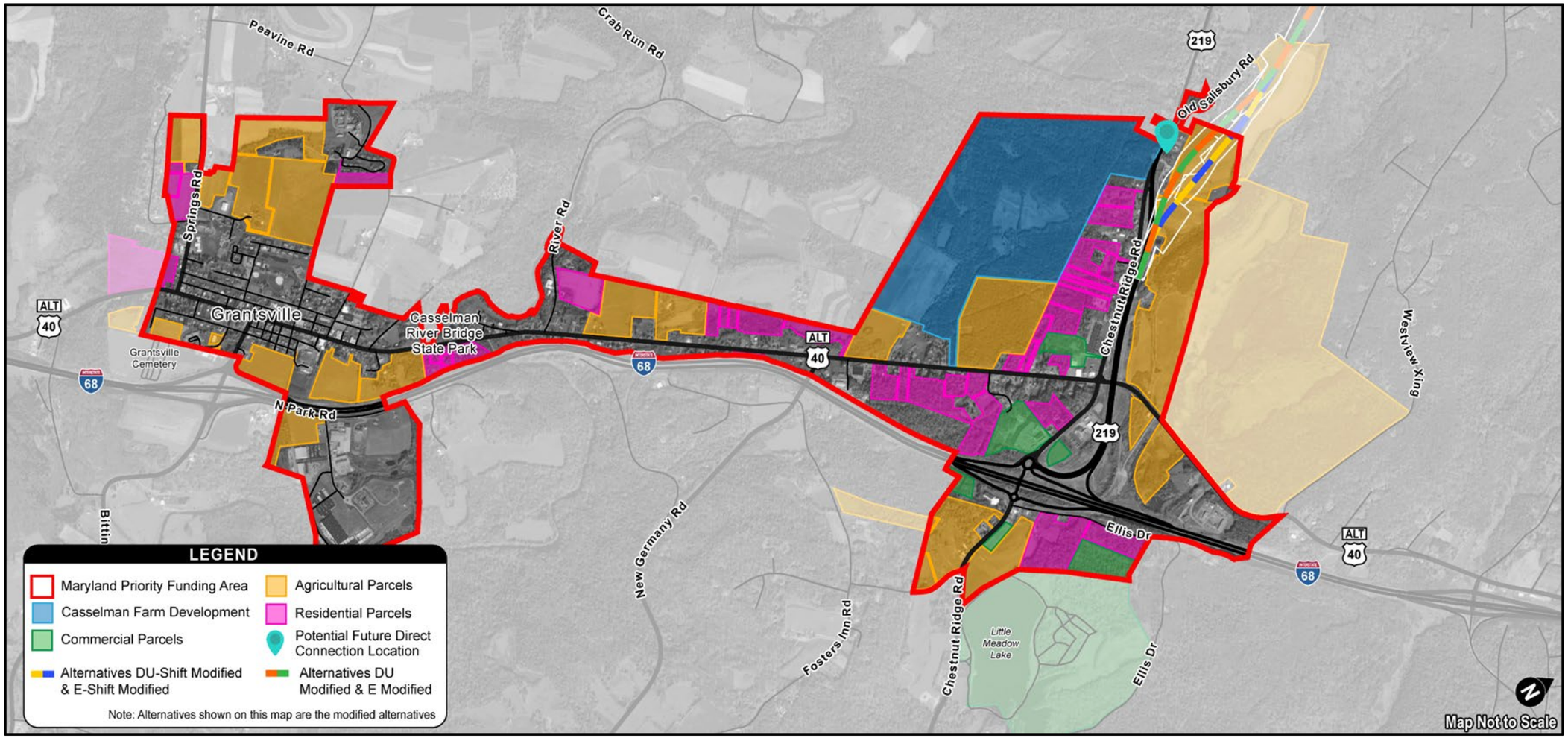


Figure 3-24: Map of Maryland PFA in Relation to Casselman Farm and the CRDC

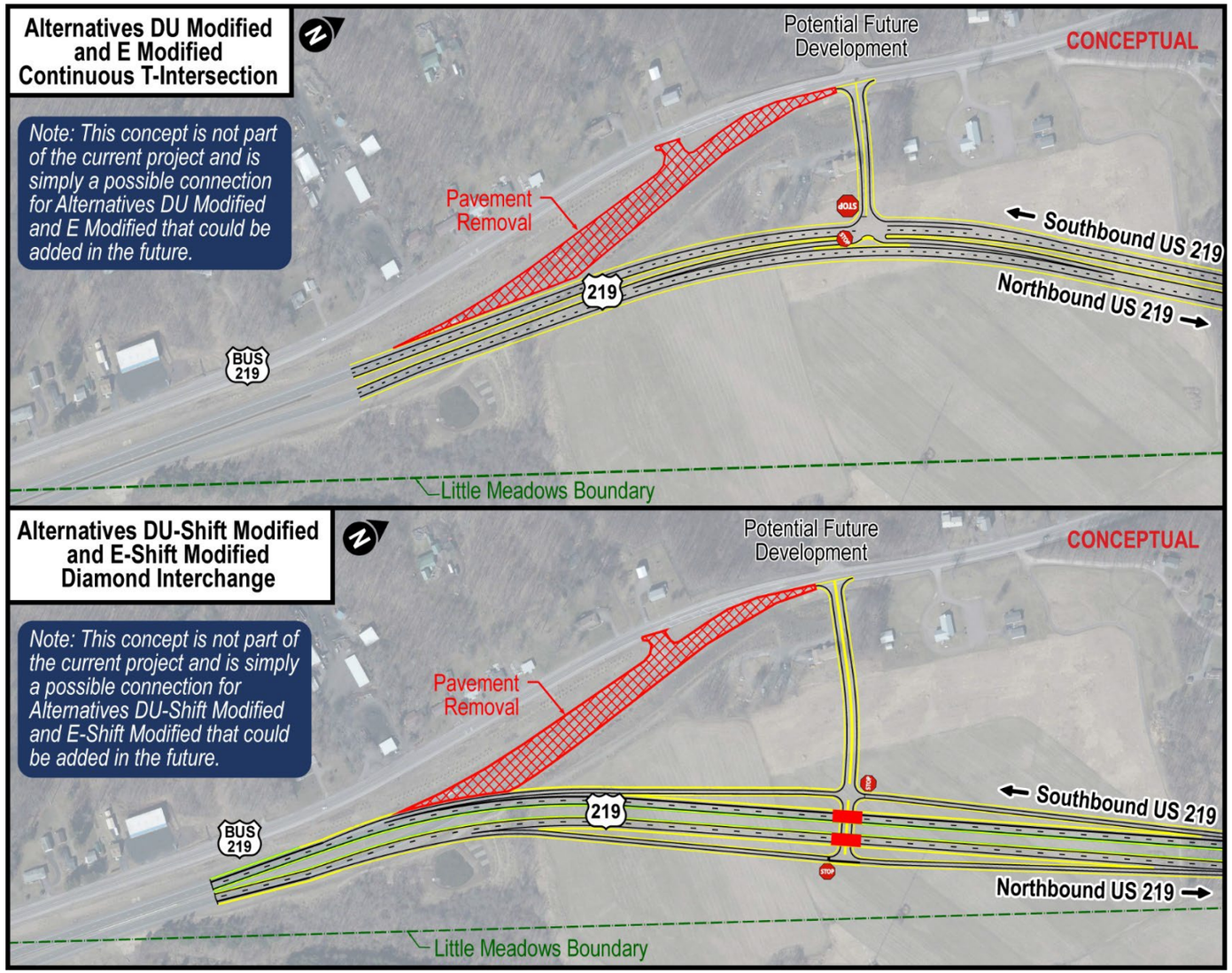


Figure 3-25: Conceptual Direct Connections in Maryland

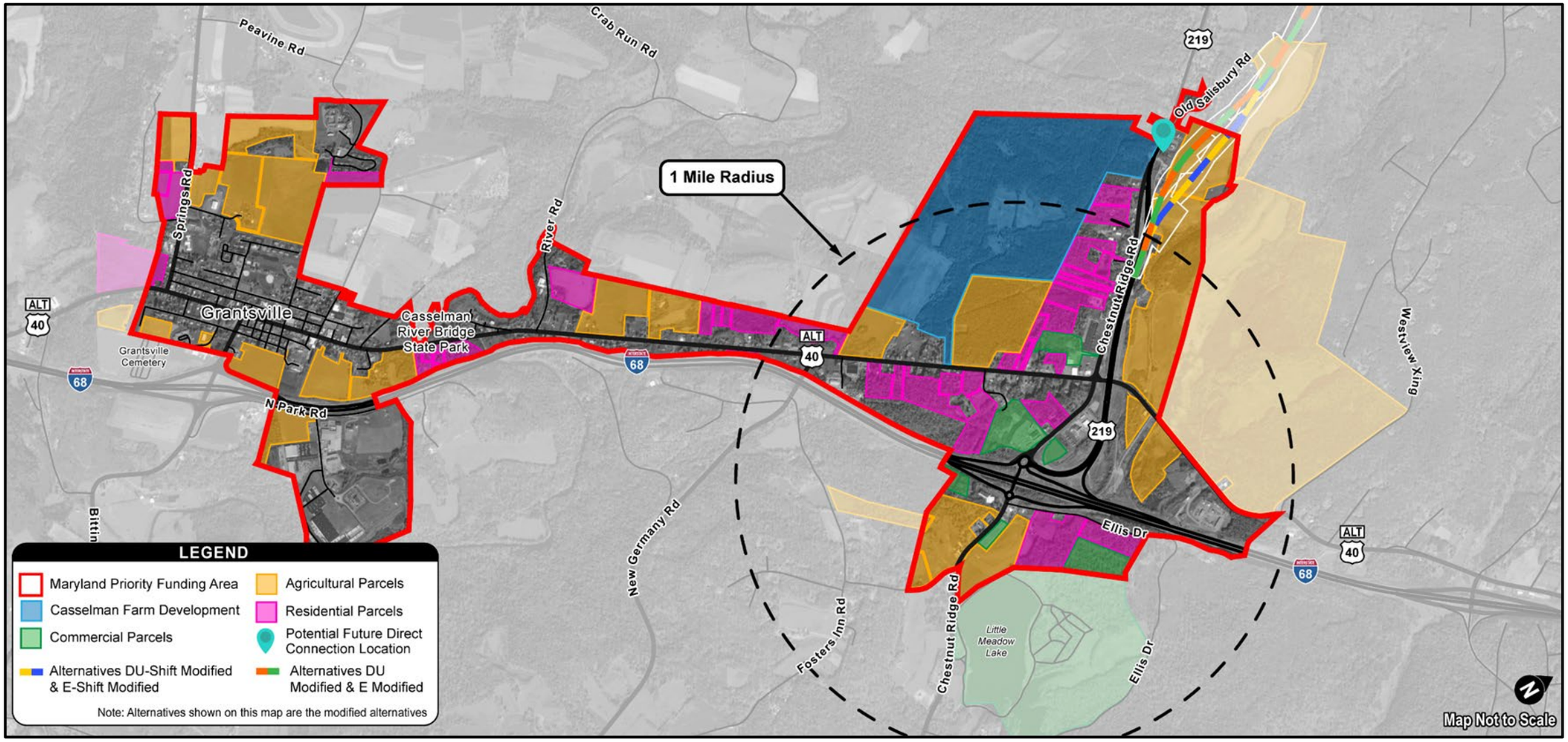


Figure 3-26: Parcels Around the I-68 Interchange with the Greatest Development Attraction

Parks and Recreational Facilities - None of the four build alternatives would impact Pennsylvania SGL 231. The four build alternatives are not likely to change the use of the State Game Land and would therefore not cause indirect effects.

Land Use, Property, and Right-of-Way - Each build alternative would convert land used for residential and commercial uses to transportation right-of-way. It is anticipated that DU Modified and DU-Shift Modified would affect nine (9) residential and 2 commercial displacements and E Modified and E-Shift Modified would cause eight (8) residential and two (2) commercial displacements. Alternative DU Modified would impact 117 parcels and Alternative DU-Shift Modified would impact 114. Alternative E Modified impacts 106 parcels and Alternative E-Shift Modified impacts 103. Proposed temporary and permanent right-of-way acquisition would not change overall land use in the area; therefore, direct impacts to socioeconomic resources would be limited, minimizing the potential for substantial indirect effects. Each build alternative would also not divide any communities. While there may be temporary disruptions to travel patterns there would be no long-term disruption to access. The project is not anticipated to result in any encroachment alteration effects to existing land uses.

Population and Housing - Each build alternative would result in residential relocations with Alternatives DU Modified and DU-Shift Modified involving nine (9) residential displacements and Alternatives E Modified and E-Shift Modified resulting in eight (8) residential displacements. The indirect impact would likely be short-term as ample comparable housing opportunities are available throughout the ICE study area.

The U.S. 219 project would result in increased economic opportunity and connectivity providing improved access to labor markets in the region. The proposed new U.S. 219 would not be tolled, and all populations would have free and equal access. Therefore, a disproportionately high or adverse indirect impact is not anticipated on EJ communities.

In the socioeconomic resources ICE study area there are a high percent of low-income populations and a low percent of minority populations. The low number of potential residential relocations located in the BGs with low-income populations does not result in a disproportionately high and adverse effect to EJ populations from the build alternatives.

Each build alternative would result in slight splitting of existing residential areas. The socioeconomic resources ICE study area largely consists of forested and agricultural land, with concentrated areas of low to medium density development outside Meyersdale, within Salisbury, within the unincorporated community of Boynton, and in northern Garrett County along existing U.S. 219. The indirect impact to community cohesion would be minimal because of the lack of fragmentation proposed as a direct effect of this project.

Noise - Each build alternative may impact noise levels for sensitive receptors to varying degrees depending on where the receptors are located. Modeling of future traffic noise assesses indirect impacts of traffic noise. Noise analysis uses traffic volumes that include the future users attracted to the proposed action. Receptors are identified for undeveloped land and undeveloped land permitted for development. Therefore, the noise levels predicted by traffic modeling already incorporate anticipated indirect traffic noise impacts and would be analyzed and mitigated for as a direct impact.

Air Quality - Somerset County, Pennsylvania and Garrett County, Maryland are in attainment for all transportation-related pollutants. Therefore, regional and project-level conformity determination under the CAA is not required. Air quality analysis includes modeling future traffic conditions of the alternatives. The *U.S. 219 Project Air Quality Memorandum* (PennDOT, 2023a) addresses the indirect effects of air quality.

Economic Resources - Each build alternative may potentially have a positive impact on business in the socioeconomic resources ICE study area. Improved system linkage would provide safe, efficient access and infrastructure to support economic development within designated growth areas which could cause

indirect effects. Additionally, employment increase could be expected due to short-term construction and long-term road maintenance.

Visual and Aesthetic - Each build alternative would likely result in visual and aesthetic impacts. The existing rural character of the landscape would be transformed by the proposed U.S. 219 alignment which includes a four-lane divided highway with 12' wide travel lanes, 8' wide inside shoulders, and 10' wide outside shoulders. Potential changes in vegetation patterns over time in areas cleared for road construction and areas of cut and fill slopes could result in minimal to moderate impacts to the visual landscape.

Natural Environmental Resources

No construction or changes to the natural environment would occur with implementation of the No Build Alternative. Therefore, no project-related encroachment impacts to natural resources in the natural resources ICE study area would occur.

Water Resources - The four build alternatives may potentially result in short and long term minor adverse degradation of water resources. Each build alternative would potentially directly affect wetlands and streams. Alternatives DU Modified and DU-Shift Modified would impact approximately 11.17-11.30 acres of wetlands and Alternatives E Modified and E-Shift Modified would impact approximately 9.94-10.07 acres of wetlands. Alternatives DU Modified and DU-Shift Modified would impact 24,796-24,811 linear feet of streams. Alternatives E Modified and E-Shift Modified would have 23,192 linear feet of stream impacts.

Construction of the four build alternatives could result in runoff of vehicle pollutants into streams located in and downstream of the direct impacts area, indirectly impacting water quality and aquatic habits. Roadway runoff can lead to the degradation of nearby terrestrial and aquatic habitat through deposition of sediments or contamination from chemical pollutants. This can change the macrobenthic community structure and composition, which in turn may affect the fish and amphibian populations that rely on them as a food source, as well as the birds and aquatic mammals that prey on the fish and amphibians. Water quality and wetland impacts also have the potential to negatively impact bat species and other species which rely on water resources. Runoff could also pick up more sediment from disturbed soils during construction that could be deposited downstream, temporarily reducing water quality. Installation of stormwater management facilities would limit potential impacts.

Potential indirect effects that may occur to wetlands in the natural resources ICE study area include influx of surface water and sediments, fragmentation of a wetland from a contiguous wetland complex, loss of recharge area, or changes in local drainage patterns. These indirect effects can alter wetland functions such as habitat, plant community, and carbon cycling. Direct impacts from filling, grading, removal of vegetation roadway construction, and changes in water levels and drainage patterns could result in loss of all wetland functions within the immediate footprint of the impact and indirectly contribute to habitat fragmentation effects described below. Indirect impacts are not anticipated to be substantial and wetland impacts are subject to federal and state mitigation requirements.

Culvert extensions would be designed to connect the waters located within the natural resources ICE study area to those running parallel to the outside of the roadway. All four build alternatives could alter upstream and downstream hydrologic flow, which sometimes subsequently may cause erosion and ecosystem-level disruptions. Reduced flow, clogged streams, and weakened habitat could indirectly affect aquatic life movement, breeding and nursery, and feeding. Indirect impacts are not anticipated to be substantial if restoration efforts and proper-designed crossings are implemented.

Less shade from trees due to a reduction in riparian canopy cover could indirectly raise water temperature, oxygen levels, and plant growth, affecting nutrients and aquatic life near the improvements potentially indirectly impacting sensitive species and habitat.

Construction activities could potentially lead to erosion, sedimentation, and accidental spills of hazardous materials from equipment likely impacting streams and wetlands outside the right-of-way limits and result in encroachment alteration effects. However, adhering to established spill prevention and erosion and sediment control protocols would mitigate these risks and minimize potential impacts on natural resources.

Floodplains - Each build alternative would potentially directly affect FEMA designated 1% annual chance floodplains for Meadow Run and Piney Run. Alternatives DU Modified and DU-Shift Modified would impact approximately 12.3 acres of 1% annual chance floodplains and Alternatives E Modified and E-Shift Modified would impact approximately 4.7 acres of 1% annual chance floodplains. Construction of the U.S. 219 project could result in an encroachment alteration effect if it alters existing drainage and flood flows.

Terrestrial Habitat - Forested land makes up the majority of the land use within the natural resources ICE study area. Each build alternative would directly impact forested habitat which could lead to some forest fragmentation. Fragmentation creates more edge habitat and has the potential to create barriers to wildlife movement which could result in disruption of foraging, breeding/nesting, and migration, increased mortality due to roadway construction and operation, changes in wildlife behavior and reduced biological diversity. Inadvertent introduction of invasive species via construction machinery could lead to permanent vegetation, habitat, or wildlife composition changes. Project encroachment impacts to terrestrial habitat are not anticipated to be substantial.

Threatened and Endangered Species - Threatened and Endangered species face similar potential impacts as described for terrestrial habitat, but their unique life history traits make them less resilient to habitat changes and invasive competition. According to the *U.S. 6219 Section 050 Project Rare, Threatened and Endangered Species Technical Memorandum* (PennDOT, 2023) there are two federally endangered bat species, one state-endangered (PA) bat species, and two species and one hibernaculum of special state (PA) concern. The USFWS indicated that federally listed, and proposed-listed bat species are known to occur in the project area, and based on review of the proposed project, these bat species are likely to be adversely affected. Habitat loss could indirectly impact these protected species.

Also, according to the *U.S. 6219 Section 050 Project Rare, Threatened and Endangered Species Technical Memorandum* (PennDOT, 2023), there are one Maryland-endangered species, two Maryland rare species, and one Maryland watchlist species likely present in the Meadow Mountain area. In Pennsylvania, there are two state listed threatened and endangered species in the vicinity of the project area. The PFBC indicated there are no direct adverse impacts anticipated from the project. The water quality indirect effects resulting from construction of impervious surface in the potential LOD of the four build alternatives could negatively affect the aquatic habitat present in the natural resources ICE study area. Increased runoff, carrying pollutants and sediment, can indirectly harm aquatic habitat through increased sedimentation and reduced water quality. Project encroachment impacts could result from habitat disturbances and losses that occur in wetlands, uplands, or waterways, but are not anticipated to be substantial.

Productive Agricultural Land

According to the U.S. *6219 Section 050 Project Agricultural Resources Existing Conditions Memorandum* (PennDOT, 2023c) there are thirteen active farmland and farm operations within or abutting the LOD of all four build alternatives. These active farmlands include lamb farming, maple trees used for maple syrup production, dairy farming, beef cattle, and crop production. Each build alternative would potentially directly affect productive agricultural land (any land used for production, for commercial purposes of livestock, and livestock products) by converting the farmland to transportation right-of-way. This conversion would involve the potential split of several active farmlands.

Alternatives DU Modified and DU-Shift Modified would each impact approximately 53.7 acres of productive cropland and pasture. Alternative E Modified would impact 38 acres and Alternative E-Shift Modified would impact 39.9 acres of productive cropland and pasture. For maple sugar production, Alternatives DU Modified and DU-Shift Modified would each impact 23.1 acres and Alternatives E Modified and E-Shift Modified would each impact 0.1 acre. Alternatives DU Modified and DU-Shift Modified would each impact nine (9) of the thirteen (13) productive farms while Alternatives E Modified and E-Shift Modified would impact six (6) of the thirteen (13) productive farms.

Although the conversion of productive agricultural land to transportation right-of-way is a one-time occurrence, encroachment impacts to productive agricultural land could include the way farmers need to farm the land later in time. For example, fragmentation from U.S. 219 project could result in remnant sections outside the construction footprint that are no longer suitable for some agricultural uses. Typically, these remnant fields are difficult for farm equipment to access resulting in additional expenses.

Prime and Statewide Important Farmland Soils - Prime and statewide important farmland soils face similar impacts as described for productive agricultural land, but the FPPA does not require farmland soils to be in active agricultural use. The NCRS enacted this rule to minimize the extent to which federal programs can contribute to the conversion of agricultural land to nonagricultural uses. According to the *U.S. 6219 Section 050 Project Agricultural Resources Existing Conditions Memorandum* (PennDOT, 2023c) there are a total of 237.9 acres of FPPA soils in the LOD for all four build alternatives.

In the project area, there are 54.3 acres of prime farmland soils in Pennsylvania and 0 acres in Maryland. Alternatives DU Modified and DU-Shift Modified would impact 32.9 acres of prime farmland soils and Alternatives E Modified and E-Shift Modified would impact 19.9 acres.

Within the project area, 101.8 acres of soils of statewide importance are in Pennsylvania and 75.5 acres in Maryland. Alternatives DU Modified and DU-Shift Modified would impact 102.9 acres of soils of statewide importance, Alternatives E Modified and E-Shift Modified would each impact approximately 82 acres of soils of statewide importance.

Although the conversion of prime and statewide important farmland soils to transportation right-of-way is a one-time occurrence, encroachment impacts to productive agricultural land could include the way farmers need to farm the land later in time. Short-term dust and emissions from construction could temporarily diminish soil quality.

Cultural Resources

The No Build Alternative would have no direct physical impact on archaeological resources or historic sites and districts as no construction would occur for the U.S. 219 project. No indirect effects would occur to cultural resources.

Historic Sites and Districts - All effects, including indirect effects, of each build alternative to historic sites and districts are considered under Section 106 of the NHPA. Indirect effects considered in the Section 106 consultation include visual, audible, and atmospheric elements that could diminish the integrity of historic properties. Therefore, indirect effects are included in the Determinations of Effect of the seven (7) above ground historic resources identified.

Archaeological Resources - All effects, including indirect effects, of each build alternative to archaeological resources, are considered under Section 106 of the NHPA. Indirect effects considered in the Section 106 consultation include visual, audible, and atmospheric elements that could diminish the integrity of historic properties. A Phase IA Archaeological Reconnaissance and Predictive Modeling has been conducted for the U.S. 219 project APE. The total preliminary archaeological APE for both Pennsylvania and Maryland totals 1,147.73 acres and these areas were then broken up into prehistoric and historic probability. Alternatives DU Modified and DU-Shift

Modified have the greatest potential impact to archaeology and Alternatives E Modified and E-Shift Modified have the lowest. Additional archaeology testing would be completed once a preferred alternative has been identified. A Section 106 Programmatic Agreement has been drafted for the project detailing out the specifics of the archaeology to occur during final design, prior to construction.

3.24.4 Mitigation

The No Build Alternative would not result in indirect impacts to any resource. Therefore, the assessment for indirect effects significance and mitigation is not required for the No Build Alternative. The following sections assess the significance of the indirect impacts from the four build alternatives. It also identifies potential solutions or mitigation measures PennDOT, SHA, and other agencies could consider to minimize the direct impacts.

A. Impacts Related to Project Related Growth

Each build alternative would complete ADHS Corridor N. This would potentially facilitate or induce development in the U.S. 219 project area by improving travel times for potential new employees working within the U.S. 219 Corridor. The construction of any of the alternatives between I-68 and the Meyersdale Interchange would provide both improved access and increased capacity to the CRDC. Potential for new development in this area could impact environmental resources located within currently undeveloped parcels that could potentially be developed in the future. It should be noted that development within these parcels is not imminent.

Communities within the ICE study areas have staff, departments, and comprehensive planning documents in place to direct the amount, type, and density of development. Similarly, regulatory agencies would enforce any mitigation requirements caused by project related growth.

B. Impacts Related to Potential Encroachment Alternative Effects

Socioeconomic Resources

Community Facilities and Services - The four build alternatives would likely increase accessibility to community facilities and services and indirectly provide opportunity for additional services to be established. Businesses along existing US 219 primarily provide services to local residents. The majority of traffic on existing US 219 is pass-through. Similarly, future traffic on any build alternative is also anticipated to be pass-through. Reduced through-traffic volume of trucks and vehicles may provide easier local access to the existing businesses. Therefore, there would be little economic impact on existing businesses with any of the limited-access build alternatives.

Parks and Recreational Facilities - The build alternatives would likely not have any direct effects to parks and recreational facilities, however indirect effects to Pennsylvania SGL 231 will occur. Because the new highway is located just to the west of the game lands, access from the west by hunters and wildlife will be limited. Additionally, road noise would reduce the overall enjoyment of the game lands in addition to disturbing wildlife.

Land Use, Property, and Right-of-Way - Each build alternative would convert land currently in residential, commercial, and agricultural use to transportation right-of-way. Other than these direct impacts, proposed temporary and permanent right-of-way acquisition would not indirectly or cumulatively affect the context of the project area or the general land use in the area. Therefore, direct impacts to socioeconomic resources would be limited, minimizing the potential for substantial indirect effects. Mitigation for all agricultural impacts would include compliance with the Federal Uniform Relocation Assistance and Real Property Acquisition Act Policies, and state requirements based on this act, as appropriate, for agricultural land impacted by the project.

Population and Housing - Each build alternative would result in residential relocations. The indirect impact to residences would likely be short-term as fair market value would be offered to all property owners and a great deal of vacant land is available for the use of potential relocation.

Noise - The build alternatives may impact noise levels for sensitive receptors depending on location. Future traffic noise levels predicted by traffic modeling incorporate anticipated indirect traffic noise impacts which are analyzed and mitigated as direct impact.

Air Quality - Indirect effects to air quality are not anticipated from the build alternatives. Any indirect effects to air quality would be regulated by Pennsylvania and Maryland State Implementation Plans, inventories, and other reports which document how the states would attain and maintain the National Ambient Air Quality Standards.

Economic Resources - Short-term construction and detour effects on businesses may occur from the four build alternatives. Temporary indirect economic impacts associated with detours would be minimized through advance public notice and flexible schedules.

Visual and Aesthetic - Each build alternative would likely result in visual and aesthetic impacts. Potential changes in vegetation patterns over time in areas cleared for road construction and areas of cut and fill slopes could result in impacts to the visual landscape. To omit, minimize or balance the effect of the build alternatives, mitigation efforts could include adding context sensitive design elements that make disturbances to the landscape less impactive.

Natural Environmental Resources

Water Resources – Direct impacts to water resources are shown in **Table 3-40**. The build alternatives may potentially result in minor adverse degradation of water resources due to roadway runoff of pollutants flowing into water bodies in the natural resources ICE study area. The PA DEP and MDE, and the USACE regulate water resources. These agencies will regulate indirect impacts which incorporate mitigation into the permit process. Mitigation for impacts to water resources generally consists of three components: avoidance, minimization, and compensation. Additionally, as applicable, stormwater management facilities would be required to treat runoff before it enters waterways, thus minimizing any degradation of water resources.

Floodplains - Each build alternative would potentially directly affect 1% annual chance floodplains and could result in encroachment alteration effect if drainage patterns and flood flows are altered. Development near floodplains is subject to local floodplain management policies, such as subdivision and land development regulations.

Terrestrial Habitat - Each build alternative would potentially induce forest fragmentation indirectly resulting in disruption of foraging, breeding/nesting, and migration, increased mortality due to roadway construction and operation, changes in wildlife behavior, and reduced biological diversity. Proper location and minimization of construction staging areas and access roads in sensitive habitats would reduce temporary impacts. To prevent the spread of invasive species during construction, contractors would adhere to PennDOT and SHA specifications and any applicable regulations.

Threatened and Endangered Species - Direct loss of threatened or endangered species is not expected as a result of the project. However, threatened, and endangered species are less resilient to habitat changes and invasive competition. Appropriate resources and permitting agencies will regulate any potential indirect effect to habitat resulting from the build alternatives. For example, habitat for the Indiana Bat, Tricolored Bat, and Northern Long-eared Bat is regulated by the USFWS which, if required, could implement specific conservation and avoidance measures.

Productive Agricultural Land - Although conversion of productive agricultural land, including forests used for maple syrup operations, to transportation use is a one-time occurrence, encroachment impacts to productive agricultural land could change farming and syrup harvesting methods. As incentive to preserve agricultural land both states have parcels enrolled in preferential tax assessment programs, allowing tax based on use rather than prevailing market value. Subsequently, financial compensation and replacement land used in mitigation would be evaluated as such.

Prime and Statewide Important Farmland Soils - Prime farmland soils and soils of statewide importance face similar impacts as described for productive agricultural land, but the Federal Farmland Protection Policy Act does not require farmland soils to be in active agricultural use. Although the conversion of these soils to transportation right-of-way is a one-time occurrence, encroachment impacts could include the way farmers need to farm the land. Any mitigation would be a private transaction agreement of the current and future landowners.

Cultural Resources

Indirect impacts to archaeological sites are not anticipated. Indirect impacts to NRHP-eligible and listed above ground historic resources could include new elements that may diminish the integrity of a NRHP resource. Section 106 of the NHPA describes that the Federal agency (FHWA) determines how historic properties might be affected by the project and whether any effects, including indirect or cumulative, would be considered adverse. State historic preservation offices and local agencies will regulate indirect effects to historic properties not directly impacted by the four build alternatives.

3.25 Cumulative Effects

3.25.1 Methodology

The NEPA and CEQ regulations implementing NEPA require the examination of the cumulative impacts of a project (40 CFR § 1508.25 [c]). The CEQ defines cumulative effects as impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Cumulative impacts include the total of all impacts, direct and indirect, experienced by a particular resource that have occurred, are occurring, and would likely occur as a result of any action or influence, including effects of a federal activity (U.S. EPA, 1999).

Resources considered in the cumulative effects analysis include those directly impacted by the project and those currently in poor health or at risk even if project impacts are relatively small.

The ICE study area geographic boundaries for resources include:

- Socioeconomic Resources: Based on U.S. Census block group boundaries
- Natural Resources: Based on watershed hydrologic units
- Cultural Resources- SHPO - approved APE.

Analysis of cumulative effects must consider past, present, and reasonably foreseeable future actions. The past limit of 1991 is based on the completion date of I-68 and the resulting increased accessibility to/from the U.S. 219 corridor and subsequently to/from the Pennsylvania Turnpike and I-68 via U.S. 219. The future limit is the 2050 design year for the project. The 1991-2050 timeframe is long enough for cumulative impacts to unfold, but not so far into the future that impacts become difficult to reasonably anticipate.

A. Past Actions

Since I-68 was completed in 1991, conversion of land to low density residential and commercial uses has slightly changed the amount of agricultural and forested land. Past actions since 1991 considered include:

- Meyersdale Bypass, 1998: Landscape and local road patterns were changed, and part of the Mason Dixon Highway was rerouted.
- U.S. 6219 Section 020: This project was completed in 2019 and is approximately 11 miles of new, limited-access, four lane highway for U.S. 219 in Somerset County from the northern terminus of the four-lane Meyersdale Bypass to the southern end of the existing U.S. 219 four-lane in Somerset, PA.
- U.S. 219 from I-68 to Old Salisbury Road: This project was completed in 2021 and consisted of a new 1.4 mile four-lane divided highway east of existing U.S. 219 (now

Chestnut Ridge Road) as well as modification of the existing I-68 interchange.

- Keyser's Ridge Business Park, 2006: 240-acre industrial park located in Garrett County just off the I-68 corridor along U.S. 40.
- Northern Garrett Industrial Park: 110-acre industrial park along I-68 at Exit 19.

B. Natural Resources Trends

Natural resources trends provide an overview of conditions. **Table 3-41** shows the 1992 to 2022 natural resources land cover trends within the natural resources ICE study area.

Water Resources – The Casselman River watershed encompasses the natural resources ICE study area. The PA DEP identifies high impairment of aquatic life due to abandoned mine drainage. The Maryland portion of the watershed is experiencing pH impairment issues associated with acid mine drainage from abandoned mine lands or episodic atmospheric deposition.

The NLCD shows that wetland areas increased by 46%, likely attributable to the Clean Water Act which requires restoration, creation, or enhancement of other wetlands as compensation for unavoidable wetland impact.

In the early 1980s, Pennsylvania net wetland acreage began increasing, as awareness of wetland benefits increased. The 1980 enactment and enforcement of a new Chapter 105 in Pennsylvania was also instrumental. The Maryland Nontidal Wetlands Act of 1989 ensures no net loss by requiring wetland mitigation. The expanding private mitigation banking industry has assisted in increasing wetland totals in both states.

Terrestrial Habitat – The natural resources ICE study area largely consists of forested land. Historically, growth in both Somerset and Garrett counties has been slow, with effects to terrestrial habitat being the clearing of forested land for farming, strip mining and low-density development along U.S. 219. The NLCD shows forested land decreased approximately 8% between 1992 and 2022, attributable to an increase in developed land.

Farmland and Prime and Statewide Important Farmland Soils – Shown in **Table 3-42** is an overview of farmland from 1992 to 2017 for Somerset and Garrett Counties. Although farms in both counties increased, the acres of farmland decreased. The NLCD shows that farmland within the Natural Resources ICE Study Area decreased approximately 13% between 1992 and 2022.

C. Socioeconomic Trends

This section describes the socioeconomic trends based on existing and readily available data. These trends provide an overview of the socioeconomic conditions within the socioeconomic resources ICE study area in addition to identifying the potential influence on growth and land use.

Table 3-41: Natural Resources Land Cover within the Natural Resources ICE Study Area

Land Cover Type	1992 (acres)	2002 (acres)	2012 (acres)	2022 (acres)	1992-2022 Change (acres)	1992-2022 % Change
Barren Land	706.3	856.7	818.9	462.1	-244.2	-35%
Forest	52,364.4	48,180.3	48,049.5	48,104.2	-4,260.2	-8%
Shrub/Scrub	N/A	335.4	581.8	493.9	N/A	N/A
Grassland/Herbaceous	N/A	1,124.4	1,071.1	1,438.9	N/A	N/A
Agriculture	24,606.4	21,792.9	21,604.8	21,479.1	-3,127.3	-13%
Wetlands	418.5	525.1	538.2	612.9	194.4	46%
Open Water	258.2	307.6	270.4	246.4	-11.8	-5%

Source: Multi-Resolution Land Characteristics Consortium National Land Cover Database

Population – **Table 3-43** shows population changes between 1920 and 2022 for Somerset and Garrett counties which both experienced greatest growth from 1970 to 1980. Between 2010 and 2022, both counties have steadily lost population with a growth rate of -3.0%.

Somerset and Garrett Counties both have decreasing populations. **Table 3-44** shows the projected population for both counties through 2045.

Somerset County is projected to experience a decline in population with a growth rate of -2.7%. Garrett County is projected to experience a slight increase in population with a growth rate of 1.5%.

Housing - The census BGs in the socioeconomic resources ICE study area have a population of 11,532 with an estimated 5,518 housing units and an 83% occupancy rate.

Employment – **Table 3-45** shows that unemployment rates from 1990 to 2022 in each county were higher than their respective states. Unemployment rates grew between 2008 and 2015 and in 2020. In 2022 unemployment rates dropped between 3% and 6% for both counties and states. According to the Maryland Department of Planning, employment in Garrett County between 2020 and 2030 is expected to increase 6.2%. Somerset County is in the Southern Alleghenies Workforce Development Area (WDA) and according to the Pennsylvania Department of Labor and Industry, a

Table 3-42: County Farmland Trends from 1992 to 2017

Item	1992	2002	2012	2017	1992-2017 Change	1992-2017 % Change
Somerset County, PA						
Number of farms	973	1,194	1,140	1,152	+179	+18%
Land in farms (acres)	219,933	223,323	214,581	219,046	-887	-0.4%
Average size of farm (acres)	226	187	188	190	-36	-16
Garrett County, MD						
Number of farms	634	634	667	707	+73	+12%
Land in farms (acres)	110,699	101,444	95,197	90,375	-20,324	-18%
Average size of farm (acres)	175	160	112	128	-47	-27%

Source: USDA

Table 3-43: Historic Population Size

Location	1920	1930	1940	1950	1960	1970	1980	1990	2000	2010	2020	2022
Somerset County, PA	82,112	80,764	84,957	81,813	77,450	76,037	81,243	78,218	80,023	77,742	74,129	73,407
Growth %	--	-2%	5%	-4%	-5%	-2%	7%	-4%	2%	-3%	-5%	-1%
Garrett County, MD	19,678	19,908	21,981	21,259	20,420	21,476	26,498	28,138	29,838	30,097	28,806	28,548
Growth %	--	1%	10%	-3%	-4%	5%	23%	6%	6%	1%	-4%	-1%

Sources: 1) Maryland Department of Planning. 2023. "Population by Age and Sex for Maryland's Jurisdictions, 1790-2010." planning.maryland.gov 2) Somerset County Government. 2016 "Somerset County Demographics Profile 2016"

Table 3-44: Population Projection (2010 to 2045)

Location	2010	2015	2020	2025	2030	2035	2040	2045
Somerset County, PA	77,742	75,937	77,020	72,772	71,573	70,187	68,632	67,079
Growth %	--	-2.32%	1.43%	-5.52%	-1.65%	-1.94%	-2.22%	-2.26%
Garrett County, MD	30,097	29,600	28,806	29,700	30,250	30,510	30,760	31,000
Growth %	--	-1.65%	-2.68%	3.10%	1.85%	0.86%	0.82%	0.78%

Sources: 1) Maryland Department of Planning, Projections and State Data Center, December 2020 2) Pennsylvania State Data Center for the Center for Rural Pennsylvania

2.8% growth in employment within Southern Alleghenies WDA is projected.

The largest industries in both counties and within the socioeconomic resources ICE study area are educational services, health care, and social assistance. The next largest industries are construction in Garrett County and manufacturing in Somerset County.

D. Present and Reasonably Foreseeable Future Actions

For the cumulative effects analyses, PennDOT Publication No. 640 defines reasonably foreseeable actions as probable, not merely possible. Currently there are no transportation or development actions occurring or approved development plans that would likely contribute to cumulative effects on resources directly affected by the project. A concept plan for the Casselman Farm development has been submitted to the Town of Grantsville. If officially approved, this development would have the potential to contribute cumulative effects on resources affected by the project. Additionally, per the *Garrett County Water and Sewer Master Plan* (amended 2023), the CRDC and surrounding areas are designated for future water service.

Table 3-45: Unemployment Rates (Annual Average)

Location	1990	2000	2010	2020	2022
Somerset County, PA	7.2%	5.3%	9.3%	9.3%	5.4%
Garrett County, MD	9.4%	5.2%	8.9%	6.4%	3.5%
Pennsylvania	5.5%	4.2%	8.2%	8.9%	4.4%
Maryland	4.5%	3.6%	7.7%	6.5%	3.2%

Source: Bureau of Labor Statistics, U.S. Department of Labor

3.25.2 Impacts

A. Socioeconomic Resources

No Build Alternative

The No Build Alternative does not impact resources so is not included in analysis of cumulative effects.

Build Alternatives

Land use within the socioeconomic resources ICE study area has not changed substantially over time. Low intensity development within the Study Area increased approximately 6% (1,531 acres in 2022) from 2002 to 2022. High intensity development (commercial/industrial) increased approximately 75% (132 acres in 2022). Build alternatives would increase accessibility to community facilities and services and indirectly provide opportunity for additional services.

While the Town of Grantsville has not formalized a plan for the Casselman Farms Development, the vision is to create a mixed-use development center to create jobs and housing. This development is not dependent on the U.S. 219 project. Any potential minimal increase in population from the Casselman Farms Development may create additional demands on community facilities, services, health and emergency services, and utilities. A minimal increase in traffic volume would occur; however, the project would improve local access and safety. The development would have a beneficial economic impact. The four build alternatives, in combination with reasonably foreseeable development, may result in minor cumulative effects to socioeconomic resources.

B. Natural Environmental Resources

No Build Alternative

No study-related impacts would occur from the No Build Alternative. Therefore, no cumulative effects to natural resources would occur.

Build Alternatives

Water Resources - Cumulative impacts to wetlands may result from the project in combination with the Casselman Farms Development. However, as previously discussed in Section 3.25.2, numerous current federal and state regulations require the minimization and off-set of impacts through compensatory mitigation, therefore any impact would likely be minor. Cumulative effects on wetlands are anticipated to be minor due to required permits and adherence to protective measures.

Cumulative impacts to surface water may result from the project in combination with planned development. However, any impact would likely be negligible since impervious surface in the natural

resources ICE study area is minimal. Cumulative adverse effects on stream and water quality would be related to the continued conversion of existing forest and agricultural lands to residential or urban land uses. The Casselman Farms Development could increase impervious surfaces potentially resulting in increased stormwater flows, flooding, erosion, and sediment deposition.

The implementation of erosion and sediment control plans, best management practices, and water quality monitoring permits, minimizes potential impacts on streams from the project and planned development. Consequently, cumulative effects on streams would be minor.

Floodplains - Other disturbances to impacted floodplains may result from the potential Casselman Farms Development. Both Somerset and Garrett counties participate in the National Flood Insurance Program (NFIP), requiring developments to comply with floodplain regulations. Additionally, Pennsylvania Code Title 12, Chapter 113 and COMAR 26.17.04.03 require coordination prior to altering the 1% annual chance floodplain. Implementation of these regulations is integral to floodplain stability throughout the study area. Cumulative impacts to floodplains are expected be minor due to existing regulations.

Terrestrial Habitat - Primary effects to terrestrial habitat have been the clearing of forested land for farming, mining, low-density residential and commercial development along U.S. 219. The proposed Casselman Farms Development would convert agricultural and forested land into developed land, resulting in additional loss of habitat for terrestrial species, potential forest fragmentation and creation of edge habitat.

Cumulative effects to terrestrial habitat areas may occur, however, as discussed previously in Section 3.22, state, and local regulations aimed at minimizing forest loss reduce the potential for significant cumulative impacts. In Garrett County, the Maryland Reforestation Law 5-103 requires an acre-for-acre replacement of forest removed during road construction. In Pennsylvania the Department of Conservation and Natural Resources Bureau of Forestry ensures long-term health of forests. Overall cumulative effects on terrestrial resources would be minor.

Threatened and Endangered Species - Other terrestrial habitat impacts combined with those direct impacts of the four build alternatives could potentially cause cumulative impacts to threatened or endangered species. Impacts to forest habitat would potentially occur, however, over 48,000 acres of forestland would remain in the natural resources ICE study area.

Since protective measures outlined in federal and state regulations would minimize any cumulative impacts to habitats and protected species, cumulative effects on threatened and endangered species such as Indiana bat, tricolored bat and northern long-eared bat are anticipated to be minor.

Farmland and Prime and Statewide Important Farmland Soils - Cumulative impacts to farmland include the total of all farmland impacts, direct and indirect, that have occurred, are occurring, and would likely occur as a result of any action. Mitigation of farmland impacts would be based on environmental regulations and state/local land use policies. Stringent local polices to stem conversion of farmland would assist in avoiding, minimizing, and compensating any cumulative impacts to agriculture. Cumulative effects on farmland and farmland resources would be minor.

Cultural Resources - No study-related impacts would occur from the No Build Alternative. Regulations requiring determination of effects to these require consideration of cumulative effects from other past, present, and future actions to cultural resources.

C. Summary of Cumulative Effects

The potential cumulative effects on the socioeconomic, natural, and historic resources would be minor. **Table 3-46** summarizes the potential cumulative effects.

D. Conclusion

Past and present actions have shaped the current state of land use and socioeconomic, natural, and cultural resources within the respective ICE Study Areas. These actions have been both beneficial and adverse to land use, socioeconomic, natural, and cultural resources within the ICE study areas.

The four build alternatives would have different levels of direct impact on land use, and on socioeconomic, natural, and cultural resources within the ICE study areas.

No planned developments are dependent on the completion of improved U.S. 219. However, the improvements to system linkage and reduced travel times would support potential future development in the project area. The proposed improvements are not anticipated to immediately induce new unplanned development that would affect changes in the current or planned land use, or population growth rate. However, the four build alternatives could cause minor indirect impacts including new elements affecting visual quality of the natural and cultural environments, right-of-way acquisitions of community or agricultural resources, commercial and residential displacements, increased runoff and sedimentation, altered hydrology, and introduction of non-native plant species.

The minor direct and indirect impacts of the U.S. 219 project in combination with impacts from past,

Table 3-46: Summary of Potential Cumulative Effects

Resource	1992-2022 Trends in ICE Study Area	Summary
Streams	• Increased pH • Open Water area decreased 5%	• Erosion and sediment control plans, best management practices, and water quality monitoring permits, effectively minimize potential cumulative effect on streams.
Wetlands	• Wetlands area increased 46%	• Enforcement of the 1980 Chapter 105 in Pennsylvania and the 1989 Maryland Nontidal Wetlands Act ensure no net loss by requiring wetland mitigation. • Private mitigation banking industry is increasing wetlands, resulting in no expected cumulative wetland effects.
Forest	• Forest decreased 8%	• Development decreased forested land; • However over 48,000 acres of forest remain and minor cumulative effects from fragmentation are anticipated.
Floodplain	• FEMA 1% annual chance floodplains are stabilized. • Implementation of regulations in 1980 (PA) and 1987 (MD) is integral in the stability of floodplains.	• Other disturbances to the impacted FEMA 1% annual chance floodplains are stabilized could result from the potential Casselman Farms Development. • Cumulative impacts to floodplains are expected be minor due to existing federal, state, and local regulations, participation in NFIP, and stormwater management controls.
Farmland, Prime and Statewide Important Farmland Soils	• Farmland decreased 13%	• Primarily residential development has decreased farmland and farmland soils. • Mitigation for farmland impacts is regulated by land use policies at both the state and local levels. Minor cumulative effects to farmland are likely.
Terrestrial Habitat	• Forest habitat decreased 8%	• Each state has reforestation programs ensuring long term forest viability. Overall cumulative effects on terrestrial resources would be minor.
Threatened / Endangered Species	• Clearing of habitat has been slow but steady	• Since protective measures in federal and state regulations would minimize any cumulative impacts to habitats and protected species, cumulative effects on threatened and endangered species such as Indiana bat and northern long-eared bat are anticipated to be minor
Residential / Commercial Displacements	• Housing and commercial developments have increased	• Casselman Farms will likely be mixed use offering both residential and commercial opportunities. Therefore, cumulative effects would be minor.

present, and reasonably foreseeable future projects would result in minor cumulative effects. Although the four build alternatives would have minor impacts to socioeconomic resources, coupled with past, present, and future projects, the overall cumulative effects should be beneficial to socioeconomic resources.

The cumulative effects to natural resources would be minor and limited to the project area. The cumulative effects from Alternatives DU Modified and DU-Shift Modified to historic resources would be moderate. The adherence to regulatory requirements would result in minimizing or avoiding the minor indirect and cumulative effects of the build alternatives, and the cumulative effects of other present and reasonably foreseeable projects, on natural and cultural resources in the project area.

3.26 Construction Impacts

3.26.1 No Build Alternative

The No Build Alternative would not have any associated construction impacts.

3.26.2 Build Alternatives

Construction activities associated with any of the four proposed build alternatives could result in disruptions to local residents and the traveling public. These disruptions would be temporary and localized occurring during the construction period. Construction would be performed to comply with applicable federal, state and local laws regarding safety, health and sanitation.

3.26.3 Conclusion/Mitigation

A. Traffic and Access

Construction of the proposed project would require temporary road closures and reduced speed work zones. The temporary road closures and short-term traffic delays anticipated to result from any of the build alternatives would cause minor inconveniences to local residents and the traveling public. These delays could result in decreased access and potential increased response time for emergency service providers during construction work hours.

Maintenance and protection of traffic plans would be developed during final design to mitigate access impacts and to minimize delays throughout the project area. These plans would include appropriate signs and pavement markings. Access to all businesses and residences would be maintained through construction. Advanced coordination with emergency service providers, municipalities, school districts, Plain Sect populations, and the general public would occur to give notice of traffic and detour information.

Other potential highway construction impacts to transportation system operations include construction of bridges over or under existing facilities such as the proposed structure removal of the Hunsrick Road Bridge over U.S. 219 and the upgrade and additional local access network at the northern end of the project.

B. Water Quality

Clearing and grubbing of existing vegetation and earthwork would be required for any of the build alternatives. Exposed soils would result in the potential increase for soil erosion and sedimentation to nearby streams and/or wetlands. The increase in soils erosion and sedimentation in the streams or wetlands could lead to a temporary impact on aquatic biota. The implementation of proper soil erosion and sedimentation control measures would control soil erosion and sedimentation. An E&SPC plan would be prepared for review in accordance with NPDES requirements. Some of the soil erosion and sedimentation control measures could include:

- Use of silt barrier fence
- Use of temporary stormwater sedimentation ponds
- Use of proper material for temporary stream crossings
- Diverting stormwater originating off-site away from construction areas
- Designate equipment fueling and service areas away from aquatic habitats to minimize the damage potential from accidental petrochemical spills
- Approval of stormwater management plans.

C. Air and Noise Impacts

The construction phase of the project would temporarily impact existing air quality due to particulate matter in the air in the form of windblown dust resulting from earthmoving activities. The use of approved dust palliatives such as calcium chloride or water are required to control windblown dust emissions. These impacts are expected to be relatively short in duration at any one location along the corridor and air pollutant emissions would be small in comparison to the motor vehicle emissions. Methods for reducing impacts to existing air quality include:

- Covering of stockpiles during storage or transport, and
- Restoration of vegetation as quickly as possible to prevent windblown dust.

Land uses that are sensitive to vehicular noise would also be sensitive to construction noise. Although highway construction is a short-term phenomenon, it can cause significant noise impacts. The extent and severity of the noise impact would depend upon the phase of construction (blasting activities) and the noise characteristics of the construction equipment in use (e.g. heavy construction equipment, equipment used to break rock and concrete pavement). Construction would have a direct impact on the receptors located close to the construction site and would have an indirect impact on receptors located near roadways where traffic flow characteristics are altered due to re-routing of vehicles from the construction area. Generally, sensitive land uses situated within a 100 to 200 foot radius of construction operations may encounter varying durations and intensities of noise impact, with potential noise levels ranging from 75 to 85 decibels, contingent upon the specific nature of the construction activity, the type of equipment employed, and the relative proximity.

To minimize the impact associated with construction noise, several mitigation measures can be implemented.

- Contractors shall exercise proper maintenance of construction equipment to minimize noise emissions due to inefficiently tuned engines, poorly lubricated moving parts, poor to ineffective muffling/exhaust systems, etc.;
- Provision of temporary noise barriers;
- Varying the construction activity areas to redistribute noise events;
- Restricting activity (e.g. blasting activities) to times during the day that are considered to be less noise-sensitive; and
- Public involvement and financial incentives to contractors.

Noise impacts from blasting activities is a short phenomenon but can cause significant noise impacts on sensitive receptors. To reduce the potential impacts from blasting activities it is necessary to implement appropriate measures before, during, and after the operation. This includes selecting explosives, blasting patterns, and initiation systems that optimize blast efficiency and minimize noise. Blasting Mats which are commonly used as blankets for blasting activities to control and confine debris can provide a degree of noise attenuation from the blast. These mats are typically made with layers of used tires cabled together. However, blasting mats do not mitigate vibration, which is usually more of a concern than noise. It's also important to provide advance notice and warning signs to affected communities.

D. Utilities

Pennsylvania Act 38 and Maryland's MISS Utility requires notification of excavators, designers, or any person preparing to disturb the earth's surface to coordinate and locate all utilities within the limits of work. Therefore, coordination would be undertaken for any relocation or grade adjustments (manholes, inlets, etc.) that may be required. Preliminary identification of utilities include:

- Columbia Gas of PA, Inc.
- Columbia Gas Transmission Corporation
- Garrett County Roads Department
- Garrett County Sanitary Commission
- Salisbury Commission of Water Works
- First Energy Corporation

- Somerset Rural Electric Cooperative, Inc.
- Verizon North
- Adelphia Communications
- Garrett Borough/Garrett Water Authority
- MCI
- Meyersdale Municipal Authority
- Allegheny Power/Utiliquest
- Level 3 Communications
- Somerfield Cable TV
- Texas Eastern Transmission
- Frontiervision L.P.

3.27 Climate Change Impacts

FHWA Order 5520 establishes FHWA policy on preparedness and resilience to climate change and extreme weather events. It encourages development, evaluation, and implementation of risk-based and cost-effective strategies to minimize extreme weather risks and protect critical infrastructure using the best available science, technology, and information. Climate change within the project area could lead to shifting seasons, changing temperature patterns, and increased rainfall.

Nationally, a higher percentage of precipitation has come in the form of intense single-day events in recent years. According to the U.S. EPA, the prevalence of extreme single-day precipitation events remained fairly steady between 1910-1990 but has risen substantially since. Nationwide, nine of the top ten years for extreme one-day precipitation events have occurred since 1996. Additionally, precipitation in the contiguous 48 states has increased at a rate of 0.2 inches per decade since 1901. This trend is expected to continue, and the frequency of flooding events generally coincides with the frequency of heavy rainfall events. The Mid-Atlantic Regional Integrated Sciences and Assessments (MARISA) team predicts that annual rainfall within Somerset and Garrett Counties will likely increase by an average of 2 to 3 inches over the next 30-50 years.

PennDOT and SHA are actively working to strengthen their state transportation resilience to climate change and extreme weather events. Resilience is a goal of PennDOT's 2045 Long-Range Transportation Plan, and PennDOT emphasizes the need to employ resiliency measures/actions to ensure long-term system stability and to evaluate projects for their expected climate change and resiliency implications. SHA's Climate Risk and Resiliency Program promotes education and climate data sharing among transportation shareholders and integrates the consideration of resilience into transportation decision making. Furthermore, the SHA uses the Program to build an understanding of the vulnerability of statewide transportation infrastructure to climate risk and the potential mitigation options that are available.

Flooding poses potential risks within the project area. The area consists of mountains and hills, and runoff from these elevated areas can lead to flash flooding of streams. Heavy rain can overwhelm drainage systems, disrupting roads and damaging property. Higher water tables can also lead to septic backups and spread groundwater pollution. During the design of the build alternatives, PennDOT and SHA considered impacts to floodplains, evaluated drainage infrastructure necessary to mitigate heavy rainfall events, and considered potential flooding impacts to proposed roadway and bridge locations. PennDOT and SHA policies related to stormwater management, hydrology, and hydraulic analysis aim to reduce the frequency and extent of downstream flooding, soil erosion, sedimentation, and water pollution. In the event of severe weather requiring evacuation, the proposed U.S. 219 would serve as an important route for emergency response personnel and the evacuation of citizens.

3.28 Irreversible & Irretrievable Commitment of Resources

The construction of any build alternative would involve a commitment of a range of natural, physical, human, and fiscal resources. Considerable amounts of fossil fuels, labor, and highway construction materials would be irretrievably expended for the

construction of any build alternative. In addition to the necessary construction materials, fuels and labor required to manufacture these construction materials would be irretrievably lost. These construction materials are not in short supply and their use would not have an adverse effect upon the continued availability of these resources.

The build alternatives would require the commitment of land to new highway construction, which is considered an irreversible commitment during the time period that the land is used for a highway facility.

Any of the build alternatives would also require an irretrievable commitment of state and federal funds for right-of-way acquisition, materials, construction, and mitigation activities. Funds for annual maintenance would also be required. The loss of tax revenue from private land taken for highway use would be an irretrievable loss for Somerset and Garrett County.

The commitment of these resources is based on the concept that residents in the immediate area, state, and region would benefit by the improved quality of the transportation system. These benefits would consist of improved traffic flow, increased safety, accident reduction, travel time reduction, and increased potential for economic development through improved system linkage.

3.29 Short-Term Uses versus Long-Term Productivity

All four build alternatives would improve the existing geometric deficiencies that exist particularly north of Salisbury, PA and allow for consistency in system continuity with the adjoining four-lane limited access roadways to the north (Meyersdale Bypass) and the southern 1.4-mile section in Garrett County Maryland, that intersects with I-68. The improvement in the geometric deficiencies and the consistency in system continuity would enhance the long-term area productivity.

These long-term benefits would occur at the expense of short-term construction impacts in the immediate vicinity of the project. These short-term effects would include dust, erosion, increased siltation and turbidity in affected streams, localized noise and air pollution, residential and business displacements, and minor traffic delays. With proper controls, they would not have a lasting effect on the environment.

The long-term productivity goals are consistent with the area's comprehensive plans. Southern Alleghenies adopted their Comprehensive Plan in 2018 and the plan supports the completion of U.S. 219 between Meyersdale and Maryland. Garrett County adopted the Garrett County Comprehensive Plan in November 2022. Their plan cites U.S. 219 N Extension to the Pennsylvania State Line as its top priority. The plan has included the following, “Garrett County and the Town of Grantsville requests continued funding for preliminary engineering and right-of-way acquisition for the for the last mile of U.S. 219 North connecting Chestnut Ridge Road to the Pennsylvania Line. This project would improve access, reduce travel time, and for freight and passenger vehicles, and promote economic development in Western Maryland.”

3.30 Permits, Approvals, & Authorizations Required

FHWA is the project’s lead Federal agency and is working closely with PennDOT, (the lead state agency) and SHA, who are working in tandem to develop and complete the EIS studies. These agencies have worked together to engage the appropriate federal, state, and local agencies to streamline both NEPA and permit approvals.

Additionally, USACE must take federal action to approve the Clean Water Act Section 404 Permit necessary for project implementation. Therefore, prior to approval of the Section 404 Permit, USACE must adopt the EIS and Record of Decision to comply with NEPA.

PennDOT, in line with FHWA requested certain agencies to become cooperating or participating study agencies based on their technical expertise, NEPA review and permitting roles. The following

describes these roles.

The project's Cooperating Agencies were invited based on their key role in federal authorization decisions in addition to having specialized technical expertise to share and help guide the project team. These agencies include the:

- U.S. EPA
- USACE (Pittsburgh Division leading, with Baltimore Division partnering)
- USFWS
- PA DEP
- MDE

These agencies' role include:

- NEPA process participation throughout the study
- Participation in the DEIS scoping process (as described in § 1501.9)
- On lead agency request, assume responsibility for developing information and preparing environmental analyses, including EIS portions for which the cooperating agency has specialized expertise
- On lead agency request, making staff available to enhance the lead agency's interdisciplinary capabilities
- Requesting lead agencies to fund authorization and permit requirements in their budget requests
- Consulting with the lead agency in developing and meeting the study schedule (§ 1501.7(i)), and elevating as soon as practicable, to the senior agency official of the lead agency any issues relating to purpose and need, alternatives, or other issues that may affect any agencies' ability to meet the schedule
- Meeting the lead agency's schedule for providing comments and limiting comments to those matters for which it has jurisdiction by law or special expertise concerning any environmental issue
- Jointly issuing environmental document with the lead agency, to the maximum extent practicable.

Other key agencies with project area regulatory or management jurisdiction over sensitive resources were invited as the project's Participating Agencies. These agencies include the:

- PFBC
- PA DCNR
- PGC
- PA SHPO
- Maryland Department of Planning
- MHT
- MD DNR

These agencies' roles include:

- Identifying, as early as practicable, any issues of concern regarding potential natural, cultural, or human environment impacts
- Providing meaningful and early input on relevant issues such as the study purpose and needs, the range of alternatives to be considered, and the methodologies and level of detail required in the alternatives' analysis
- Participating in coordination meetings and field reviews with other environmental resource agencies, as appropriate
- Adhering to timeframes for reviewing and commenting on administrative copies of environmental documentation and final EIS.

The project team has coordinated with both the Pennsylvania and Maryland Cooperating and Participating agencies through PennDOT's Standing Monthly Agency Coordination Meetings (ACM) and has met with agencies at key study points, including:

- Purpose & Need
- Review of Planning and Environmental Linkage (PEL) Alternatives Studied and Dismissed
- DEIS Virtual Field Scoping Meeting
- Development of Preliminary Alternatives and Impacts
- Draft Public Open House Materials and Results

- Detailed Alternatives and Impacts
- Alternative Section 4(f) Avoidance and Minimization Modifications
- Other resource-specific coordination

The following is a summary of key EIS Permit and Authorizations.

Clean Water Act Section 404 Permit and Section 401 Water Quality Certification – FHWA, PennDOT, and SHA are working closely with the Pittsburgh District of USACE (in coordination with the Baltimore District), PA DEP, and MDE in issuing a provisional notification for a Section 404 Permit for the USACE's identified Least Environmentally Damaging Practicable Alternative (LEDPA). This notification is to be issued 90-Days from FHWA FEIS and Record of Decision approval. The provisional notification indicates that PA DEP and MDE must provide a Section 401 Conditional Water Quality Certification prior to USACE issuing its Proffered Section 404 Permit. The Water Quality Certification would address avoidance and minimization to Waters of the US, along with the plan to mitigate unavoidable impacts.

To help inform the Section 404 permit, consideration was given to a list of 20 public interest factors. This analysis considered the foreseeable impacts the FHWA Preferred Alternative, E-Shift Modified, would have. The benefits and detriments to these public interest factors were evaluated and documented. This analysis is contained in **Appendix AB**.

Additionally, Pennsylvania and Maryland have state regulations governing waterway and wetland encroachments and alterations, including Title 25 Chapter 105 in Pennsylvania and Title 5 in Maryland, that require project review by state environmental agencies. Permits under these regulations would be issued jointly, alongside the Section 404 Permit.

Clean Water Act National Pollutant Discharge Elimination System – The NPDES permit program, created under the Clean Water Act, addresses water pollution by regulating point source pollution, including from construction sites. NPDES permit authorization will be required for construction earth disturbance in both Pennsylvania and Maryland. The project team will acquire a NPDES/Chapter 102 permit authorization from PA DEP and NPDES/ COMAR 26.08.04 permit authorization from MDE prior to construction.

Section 4(f) – Section 4(f) of the USDOT Act of 1966 requires that it be demonstrated that no feasible and prudent alternatives exist to avoid using land from publicly owned parks, recreation areas, wildlife and waterfowl refuges and properties either listed or potentially eligible for listing on the NHRP. In Pennsylvania, Section 2002 of the Administrative Code of 1929 also applies to activities conducted by PennDOT and includes requirements that serve as a state counterpart to Section 4(f). Alternatives E Modified and E-Shift Modified effectively are Section 4(f) Avoidance Alternatives to Alternatives DU Modified and DU-Shift Modified except a *de minimis* use finding of the historic Miller Farm / Earnest and Carrie V. Miller Residence (Section 106 No Adverse Effect) located in the northern portion of the project area.

Section 7 of the Endangered Species Act – A Biological Assessment was prepared in accordance with Section 7 of the Endangered Species Act for the project's "may affect, likely to adversely affect" determination. Federal agencies are required to consult with the USFWS to ensure that actional they fund, authorize, permit or carry out will not jeopardize the continued existence of any listed species. In response, the USFWS prepares a biological opinion to analyze the effect of the proposed action to the listed species, and the conclusion of the biological opinion states whether FHWA has ensured the project is not likely to jeopardize the continued existence of the Indiana bat, northern long-eared bat or tricolored bat and/or result in the destruction or adverse modification of critical habitat.

Section 106 of the National Historic Preservation Act – Construction of Alternative E Modified and E-Shift Modified are anticipated to result in a No Adverse Effect to one historic property at the

northern end of the project. Construction of Alternative DU Modified or DU-Shift Modified is anticipated to result in an Adverse Effect to two historic properties. Additionally, areas of medium-to-high potential for archaeological resources would be evaluated prior to construction of a build alternative. A Section 106 Programmatic Agreement has been prepared between PennDOT, SHA, Pennsylvania Historical and Museum Commission, and MHT regarding archaeological resources that are identified prior to construction, or archaeological resources discovered during construction.

FHWA Act of 1970, 23 USC 109(h) – Requires that Federal projects be developed in best overall public interest, considering the need for safe/efficient transportation, public services, & costs of eliminating or minimizing human environmental effects. The Preferred Alternative would be the least environmentally impactive Alternative and complies with 23 USC 109(h).

Pennsylvania Acts 100 and 43 – The Pennsylvania Department of Agriculture oversees farmland protection for productive farmlands and farmlands located in ASAs impacted by state funded projects. The Preferred Alternative would be designed to minimize farmland impacts in accordance with state regulations and guidance. PennDOT would continue coordination with the Pennsylvania Department of Agriculture throughout the project and into final design and construction and determine whether construction of the Preferred Alternative would require presentation before the ALCAB.

2009 Smart & Sustainable Growth Act – This Maryland law requires infrastructure investment to be focused on county designated PFAs under the auspices of the Maryland Department of Planning. Coordination between SHA and Maryland Department of Planning (MDP) is on-going regarding whether a Smart Growth Exception is required for the Preferred Alternative, since part of the build alternatives lie outside of a designated PFA.

Floodplains – PA Code Title 12, Chapter 113 and MD COMAR 26.17.04.03 specify that construction in nontidal waters and floodplains requires PA DEP or MDE permits respectively, prior to changing in any manner the course, current, or cross section of a stream or body of water including any changes to the 1% annual chance floodplain of free-flowing streams.

Maryland Reforestation Law 5-103 – The MD DNR administers the Maryland Reforestation Law and requires an acre for acre replacement for any forest removed during road construction. Potential forest impacts have been identified and the final design of the FHWA's Selected Alternative would address mitigation, should a build alternative be selected.

Maryland Environmental Policy Act (MEPA) – The Environmental Assessment Form (EAF) is a requirement of the Maryland Environmental Policy Act and Maryland Department of Transportation Order 11.01.06.02. The EAF is included as **Appendix AC**.

Existing US 219 connection to be removed (shown in red). Local connection re-established along previously abandoned alignment south of Hunsrick Road Bridge (shown in tan).