Meyersdale to Old Salisbury Rd

Air Quality Memorandum

April 2025

US 6219, Section 050
Transportation Improvement Project
Meyersdale, PA to Old Salisbury Road, MD

pennsylvania
DEPARTMENT OF TRANSPORTATION

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

TABLE OF CONTENTS

1. INTRODUCTION

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. Environmental Protection Agency (EPA) was required to set National Ambient Air Quality Standards (NAAQS) for wide-spread pollutants from numerous and diverse sources considered harmful to public health and the environment. These pollutants include ozone, particulate matter (PM), sulfur dioxide, lead, carbon monoxide (CO), and nitrogen dioxide. The NAAQS compels states to implement additional steps to reduce airborne pollutants and improve local and regional conditions.

2. AFFECTED ENVIRONMENT

Both Somerset County, Pennsylvania and Garrett County, Maryland are in attainment for all criteria pollutants, including ozone (8-hour and 1-hour); PM ≤2.5μ (2.5) and ≤10μ (10), sulfur dioxide, lead, CO, nitrogen dioxide and the multipollutant category. Attainment, means that they consistently stay below the NAAQS for transportation-related pollutants

3. ALTERNATIVES

The proposed Build alternatives include the following:

- Alternative DU Modified
- Alternative DU-Shift Modified
- Alternative E Modified
- Alternative E-Shift Modified

Descriptions of the four Build alternatives including the No-Build alternative are presented below. The location of the four Build alternatives is presented in **Figure 1.**

No Build Alternative

The No Build Alternative involves taking no action, except routine maintenance along U.S. 219. The existing two-lane roadway between Meyersdale, Pennsylvania and Garrett County, Maryland would remain. No new alternatives or additional roadway would be constructed.

Proposed Roadway Layout

Each of the proposed build alternatives DU Modified, DU-Shift Modified, E Modified, and E-Shift Modified, were evaluated with a consistent roadway layout, also known as a typical section. The typical section for each build alternative provides a four-lane divided limited access highway with 12-foot wide travel lanes, 8-foot wide inside shoulders and 10-foot wide outside shoulders. The width of the median between the inside edges of northbound and southbound travel lanes is between 36 to 60 feet. Most of the median within Pennsylvania would be 60 feet wide and would transition down to 36 feet wide in Maryland to match the current roadway typical section. In cut sections, where excavation would be required for construction, a proposed swale is located 15 feet outside the edge of the roadway shoulder.

Common Segment Improvements

The northern three miles in Pennsylvania all follow the same alignment, starting from the existing Meyersdale interchange. In addition to the three miles being on the same alignment, other improvements described below are being proposed. These improvements include upgrades to portions of Mason-Dixon Highway, an extension of Mountain Road from its northern terminus to Fike Hollow Road on the east side of U.S. 219, in addition a cul-de-sac of Hunsrick Road, and cul-de-sacs on the bisected Clark Road are proposed. These improvements are intended to ensure that local traffic has continued access. These improvements are included with all alternatives being considered, other than the No Build Alternative. The scope of these proposed improvements is outlined below and depicted in **Figure 2**. The numbers below correspond to the number on the figure, illustrating the location of the improvement. Stormwater management facilities, which would result in the need for additional right-of-way and environmental impacts, have also been incorporated into the design, as shown on **Figure 2**.

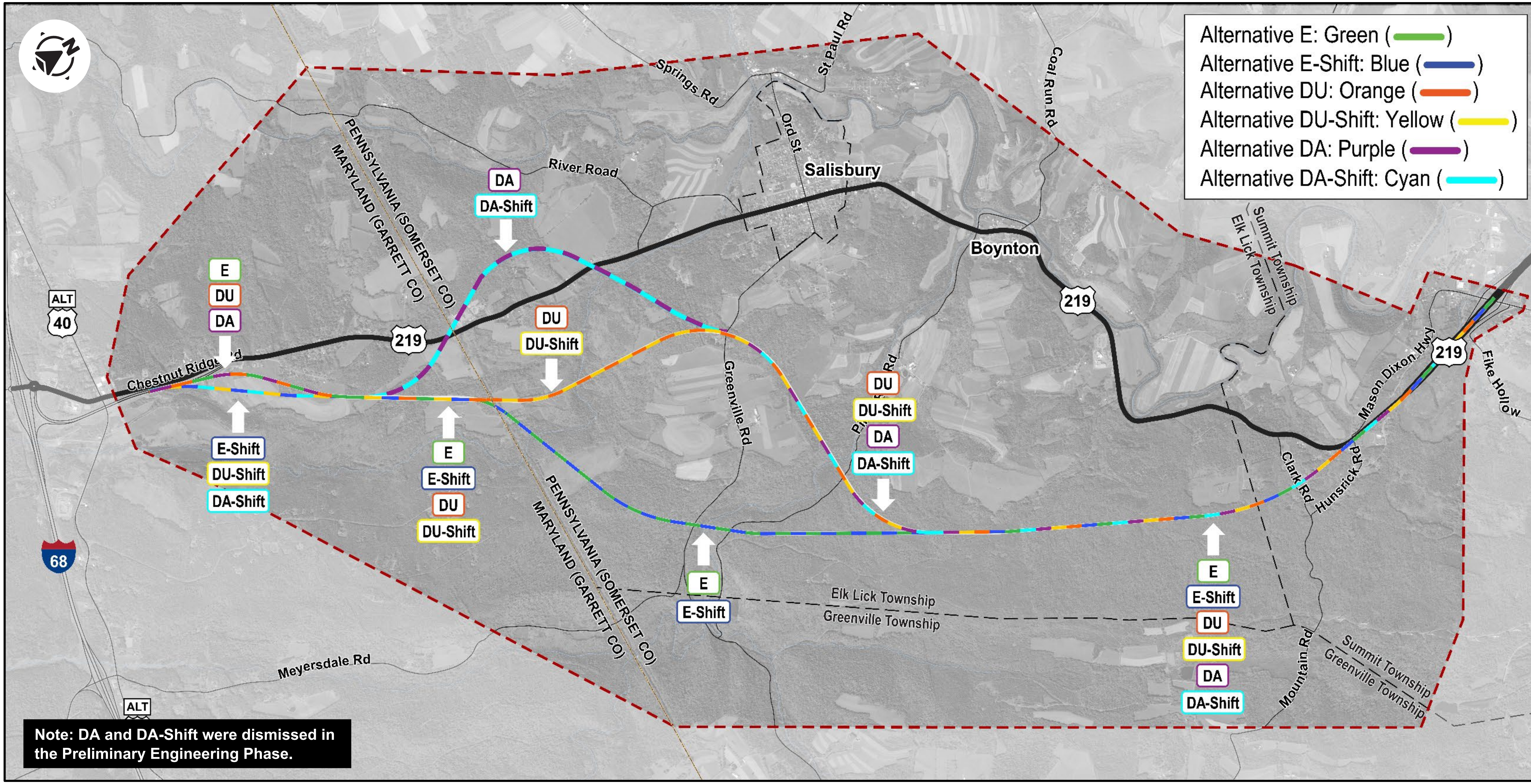
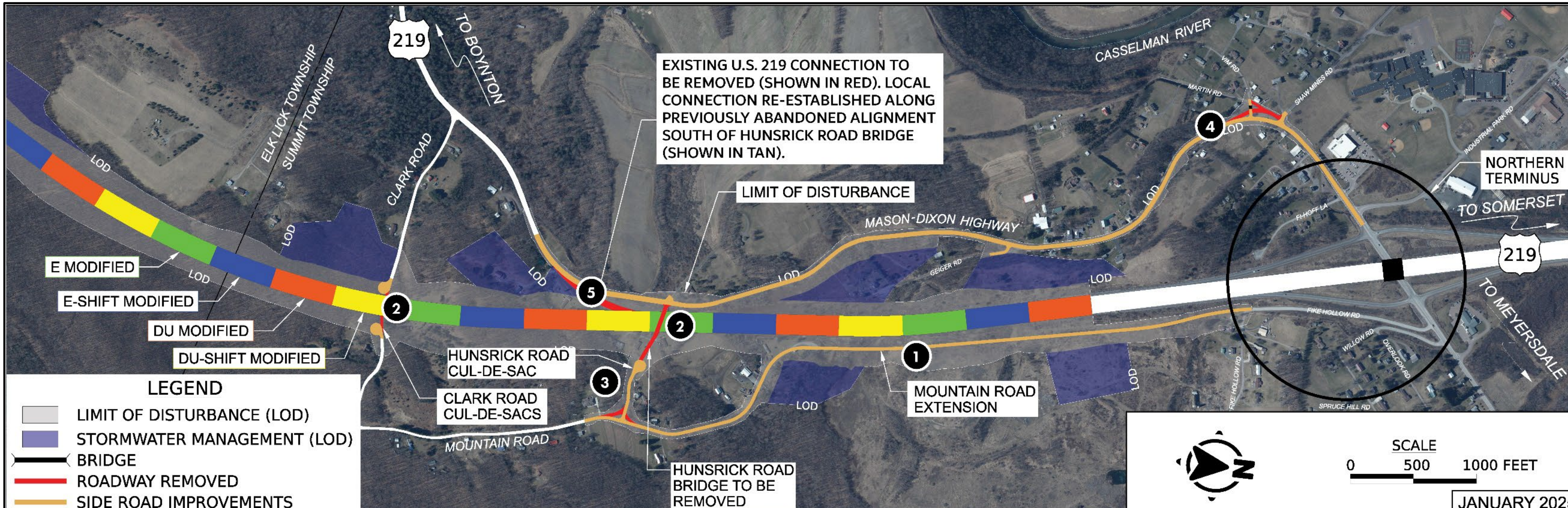


Figure 1: Project Study Area and Build Alternatives



This figure presents five changes that will occur in the northern portion of this study area in addition to the new alignment. Those changes are represented by numbers 1 through 5 and the description contained to the right.

As the alignment in this area is the same for all four Build Alternatives being studied, colored dashes were used to represent each one. The corresponding color for each Build Alternative is shown to the right.

1. Extension of Mountain Road
2. Clark Road bisected and Hunsrick Road Bridge Eliminated
3. Cul-de-sac on Hunsrick Road
4. Upgrade Mason-Dixon Highway
5. Existing U.S. 219 Connection to be removed, local connection re-established along previously abandoned alignment

Alternative E Modified: Green ( )
Alternative E-Shift Modified: Blue ( )
Alternative DU Modified: Orange ( )
Alternative DU-Shift Modified: Yellow ( )

Figure 2: Additional Improvements in Northern Portion of Study Area

1. **Mountain Road Extension**

As a result of the Hunsrick Road Bridge removal, a new roadway would be constructed: the Mountain Road Extension. This new roadway would connect existing Mountain Road (T-824) with Fike Hollow Road (T-363) and would parallel the new U.S. 219 alternative along the eastern side. This new connector roadway would provide access from Mountain Road to U.S. Business Route 219 (SR 2047) near the Meyersdale Interchange. The proposed typical section for the Mountain Road Extension includes two 9-foot travel lanes and 2-foot outside shoulders. The design speed is anticipated to be 25 miles per hour.

2. **Clark Road**

Clark Road (T-353) extends west from Mountain Road (T-824) to existing U.S. 219. Due to topographical and geometric constraints, providing a grade separated crossing of a new U.S. 219 alternative proposed under this study was not practical. It was determined Clark Road should be bisected where it crosses a new alternative of U.S. 219 proposed under this study. A cul-de-sac would be placed at each end of the roadway where it intersects the U.S. 219 right-of-way. The eastern side of Clark Road would maintain access to U.S. Business 219 near the Meyersdale interchange via Mountain Road, the Mountain Road Extension, and Fike Hollow Road.

3. **Hunsrick Road**

Improvements made to tie a new U.S. 219 alternative into existing U.S. 219 require the removal of the existing Hunsrick Road Bridge (SR 2102). Due to geometric and intersection sight distance constraints at the intersection of Hunsrick Road (T -355) and Mason-Dixon Highway (T-355), it was determined that the Hunsrick Road Bridge would not be replaced and Hunsrick Road would terminate on the east side of U.S. 219.

Hunsrick Road currently extends northwest from the intersection with Mountain Road to the Hunsrick Road Bridge. With the removal of the Hunsrick Road Bridge and proposed improvements associated with the Mountain Road Extension, a cul-de-sac would be placed at the northern end of Hunsrick Road. The intersection of Mountain Road with Hunsrick Road would be realigned and maintained. Access to property along Chipmonk Lane would be maintained from Mason-Dixon Highway.

4. **Mason-Dixon Highway**

The Mason-Dixon Highway (T-355) would be improved between Hunsrick Road and the U.S. 219 Meyersdale Interchange in accordance with PennDOT's Resurfacing, Restoration, and Rehabilitation (3R) design criteria, using a design speed transition from 55 mph to 35 mph. The upgrades are roughly 1.3-miles in length, starting near Hunsrick Road and ending at the U.S. 219 Meyersdale Interchange.

Prior to the opening of the Meyersdale Bypass, Mason-Dixon Highway carried U.S. 219. After the Meyersdale Bypass opened, PennDOT transferred ownership and maintenance of Mason-Dixon Highway to Summit Township. Following completion of a new U.S. 219 alternative proposed under this study, ownership of Mason-Dixon Highway is to be transferred back to PennDOT as part of re-routed traffic patterns in the area.

5. **Existing U.S. 219 Connection to be Removed**

Existing U.S. 219 would be severed, and a local connection would be re-established immediately south of the existing Hunsrick Road bridge along the previously abandoned roadway alignment. This new roadway would become Business U.S. 219.

Alternative DU

The Alternative DU alignment was developed by combining suggestions from the U.S. Fish and Wildlife Service (USFWS) with an alternative identified during former 2001 National Environmental Policy Act (NEPA) efforts. USFWS suggested an alternative to avoid the mountain slope/ridge in Pennsylvania and reduce potential impacts to terrestrial wildlife. Alternative DU begins at the southern end of the Meyersdale Bypass, proceeding in a southerly direction to just south of the Mast Farm, where it heads westward toward existing U.S. 219. The alternative crosses between the Deal and Mast Farms, then turns south, crossing Greenville Road, just south of Salisbury, Pennsylvania, and continuing south towards the Mason-Dixon Line. As it crosses the Mason-Dixon Line, it proceeds southwest and ties into the newly constructed section of U.S. 219 in Maryland.

Alternative DU-Shift

Alternative DU-Shift resulted from combining Alternative DU with Alternative E-Shift to move the alternative further away from residences along Old Salisbury Road. Alternative DU-Shift mimics the alternative of Alternative DU from Meyersdale until south of the Mason-Dixon Line, where the alternative is shifted eastward and away from Old Salisbury Road.

Alternative E

The Alternative E alignment was suggested during former 2001 NEPA efforts to avoid farmland in Pennsylvania and avoid residential areas along existing U.S. 219. Alternative E starts at the southern end of the Meyersdale Bypass and proceeds in a southerly direction along the face of Meadow Mountain. At the Pennsylvania/Maryland border, Alternative E would extend in a southwesterly direction, east of the existing U.S. 219.

Alternative E-Shift

The alignment for Alternative E-Shift was suggested by residents along Old Salisbury Road during former 2001 NEPA efforts and involves shifting Alternative E further away from the residences on Old Salisbury Road. Alternative E-Shift follows Alternative E, with the exception of a small shift in Maryland, slightly eastward, away from the homes along Old Salisbury Road. Alternative E does not directly impact the homes along Old Salisbury Road; however, residents requested an evaluation of a slightly eastward shift to move the alternative further from their homes. The trade-off is that Alternative E-Shift bisects a farm field that is only slightly impacted by Alternative E. This shifted section is the same as the shifted section of Alternative DU-Shift.

4. NAAQS POLLUTANTS

The National Environmental Policy Act (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).

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.

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. Additional information from the analysis is included in **Table 1**.

Table 1: U.S.219 Base and Projected Traffic Conditions (2022-2050)[1]

Conditions	AADT of Existing Alignment	Projected AADT of Proposed Alignment	Total AADT
2022 Base	4,811	N/A	4,811
2050 No Build	6,832	N/A	6,832
2050 Build	3,269	3,563	6,832

[1]Traffic volumes are for roadway segment(s) between Ord Street and Clark Road.

There are currently no areas in Pennsylvania that are in "nonattainment" status for the CO NAAQS. Recent monitor readings across the state are well below the standards and are expected to remain that way in the future. Since the 1990s, significant improvements in vehicle emissions technology, stricter vehicle emission standards, and improved fuel quality have greatly reduced transportation's impact on CO. PennDOT has determined that most transportation projects will not worsen CO emissions, especially those that support traffic volumes lower than 125,000 vehicles per day. 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 *and Build Alternatives are* 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 CO that is required in PennDOT Publication No. 321, *Project-Level Air Quality Handbook*. 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.

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 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 (40 CFR 93).

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 U*pdated 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 and as identified in **Table 1**. Therefore, the project would be considered a project with low potential MSAT effects.

For 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. Reasonably foreseeable 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 5%, it is expected there would be no appreciable difference in overall MSAT emissions among the various alternatives.

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.

Incomplete/Unavailable Information for Project-Specific MSAT Analysis

In FHWA's view, 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 outcome of such an assessment, adverse or not, would be influenced more by 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 a proposed action.

The U.S. EPA is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. They are the lead authority for administering the Clean Air Act and its amendments and have specific statutory obligations with respect to hazardous air pollutants and MSAT. The U.S. EPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. They maintain the Integrated Risk Information System (IRIS), which is "a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects" (EPA, https://www.epa.gov/iris/). Each report contains assessments of non-cancerous and cancerous effects for individual compounds and quantitative estimates of risk levels from lifetime oral and inhalation exposures with uncertainty spanning perhaps an order of magnitude.

Other organizations are also active in the research and analyses of the human health effects of MSAT, including the Health Effects Institute (HEI). A number of HEI studies are summarized in Appendix D of FHWA's *Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents*. Among the adverse health effects linked to MSAT compounds at high exposures are: cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations (HEI Special Report 16, https://www.healtheffects.org/publication/mobile-source-air-toxics-critical-review-literature-exposure-and-health-effects) or in the future as vehicle emissions substantially decrease.

The methodologies for forecasting health impacts include emissions modeling; dispersion modeling; exposure modeling; and then final determination of health impacts – each step in the process building on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70 year) assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that time frame, since such information is unavailable.

It is particularly difficult to reliably forecast 70-year lifetime MSAT concentrations and exposure near roadways; to determine the portion of time that people are actually exposed at a specific location; and to establish the extent attributable to a proposed action, especially given that some of the information needed is unavailable.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by HEI (Special Report 16, https://www.healtheffects.org/publication/mobile-source-air-toxicscritical-review-literature-exposure-and-health-effects). As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. The EPA states that with respect to diesel engine exhaust, "[t]he absence of adequate data to develop a sufficiently confident dose-response relationship from the epidemiologic studies has prevented the estimation of inhalation carcinogenic risk.” (EPA IRIS database, Diesel Engine Exhaust, Section II.C. https://iris.epa.gov/static/pdfs/0642_summary.pdf).

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the EPA as provided by the Clean Air Act to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires EPA to determine an “acceptable” level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than 1 in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the U.S. Court of Appeals for the District of Columbia Circuit upheld EPA’s approach to addressing risk in its two-step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than deemed acceptable (https://www.cadc.uscourts.gov/internet/opinions.nsf/284E23FFE079CD598525780000 5 0C9DA/$file/07-1053-1120274.pdf).

Because of the limitations in the methodologies for forecasting health impacts described, any predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits, such as reducing traffic congestion, accident rates, and fatalities plus improved access for emergency response, that are better suited for quantitative analysis.

5. REFERENCES

Federal Highway Administration. (January 2023). Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents. Retrieved from https://www.fhwa.dot.gov/Environment/air_quality/air_toxics/policy_and_guidance/nmsatetrends.cfm

Federal Highway Administration. (November 2022). Highway Statistics Series: Table VM-1 - Highway Statistics 2021. Retrieved from https://www.fhwa.dot.gov/policyinformation/statistics/2021/vm1.cfm

Maryland Department of Transportation State Highway Administration, Office of Planning and Preliminary Engineering. (December 2022). U.S. 219 Study: Meyersdale to I-68 Analysis of Regional Travel Demand.

Pennsylvania Department of Transportation. (October 2017). Publication No. 321: Project-Level Air Quality Handbook. Retrieved from https://www.dot.state.pa.us/public/pubsforms/Publications/PUB%20321.pdf

US Environmental Protection Agency. (April 2025). Latest Version of MOtor Vehicle Emission Simulator (MOVES). Retrieved from https://www.epa.gov/moves/latest-version-motor-vehicle-emission-simulator-moves

US Environmental Protection Agency. (March 2023). Nonattainment Areas for Criteria Pollutants. Retrieved from https://www.epa.gov/green-book