

Air Quality Qualitative Analysis
for the
SR 0030 SECTION A10
US CORRIDOR IMPROVEMENTS PROJECT
WESTERN SECTION

January 2024



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**SR 0030 Section A10
US 30 Corridor Improvements
Western Section
MPMS # 32040, # 110900, # 117945
North Huntingdon Township, Westmoreland County
North Versailles Township, Allegheny County**

Air Quality Qualitative Analysis

Project Overview

This project includes reconstruction work on Route 30 for intersection and corridor improvements between SR 48 in North Versailles, Allegheny County (to the west) to Carpenter Lane/Leger Road in North Huntingdon, Westmoreland County (to the east). (Figure 1)

This project will consist of the full depth reconstruction of the Route 30 corridor, as well as improvements to PA 48 and Route 30 utilizing an innovative Restricted Crossing U-turn (RCUT) intersection treatment which would restrict through- and left-turning motorists approaching Route 30 to right-turns only. They would then complete a U-turn movement at a designated median opening before reconnecting with their intended route. The work throughout this corridor is expected to consist of safety improvements ranging from upgraded signing, pavement marking, and delineation to roadway realignment, roadway widening, and the addition of auxiliary lanes at the intersections. A jersey barrier would be put in place as an improved safety measure for the corridor. The jersey barrier would be installed between the west and east bound lanes to minimize left turns within the project limits. Left turns would only be possible at the signalized intersections. Some intersections would include jug-handles to allow traffic to turn around. Jug-handles are proposed approximately every 0.7 miles to accommodate businesses and travelers throughout the corridor. The proposed median and jug handle intersection treatments would eliminate conflict points and potential conflicting maneuvers along this segment of Route 30, thereby improving overall traffic safety.

Pedestrian accommodations are also proposed at several signalized intersections to facilitate the movement of any pedestrians from one side of Route 30 to the other. These may include curb ramps, pedestrian signals, pedestrian push-buttons, or similar treatments as appropriate. Improvements to the existing roadway drainage network would also be implemented.

During the earlier stages of preliminary engineering, it was determined that the project was exempt from air quality evaluations since the project was part of the implementation of a Highway Safety Improvement Program in accordance with 40 CFR 93.126. The project was also identified in the July 2022 Southwestern Pennsylvania Commission (SPC) Air Quality Conformity Determination (Pittsburgh Transportation Management Area) report as being exempt from project level and regional conformity air quality analyses.

After this determination, an additional MPMS number (#117945) became associated with the project and was created to apply for CMAQ funds, which would be utilized to complete the adaptive signal improvement components of the project. The acquisition of the CMAQ funding necessitated the need to conduct an air quality analysis to determine if the project will have any significant adverse impacts within the project corridor.

Methodology

The air quality analysis has been conducted in accordance with PennDOT Publication No. 321, *Project-Level Air Quality Handbook*, and the United States Environmental Protection Agency (EPA) Greenbook which provides detailed information about area National Ambient Air Quality Standards (NAAQS). In addition to the PennDOT Air Quality Handbook and the EPA Greenbook, traffic volumes for the US 30 Design Year Build ADT, truck percentages, and Levels of Service (LOS) thresholds were also utilized for the air quality analysis.

Results

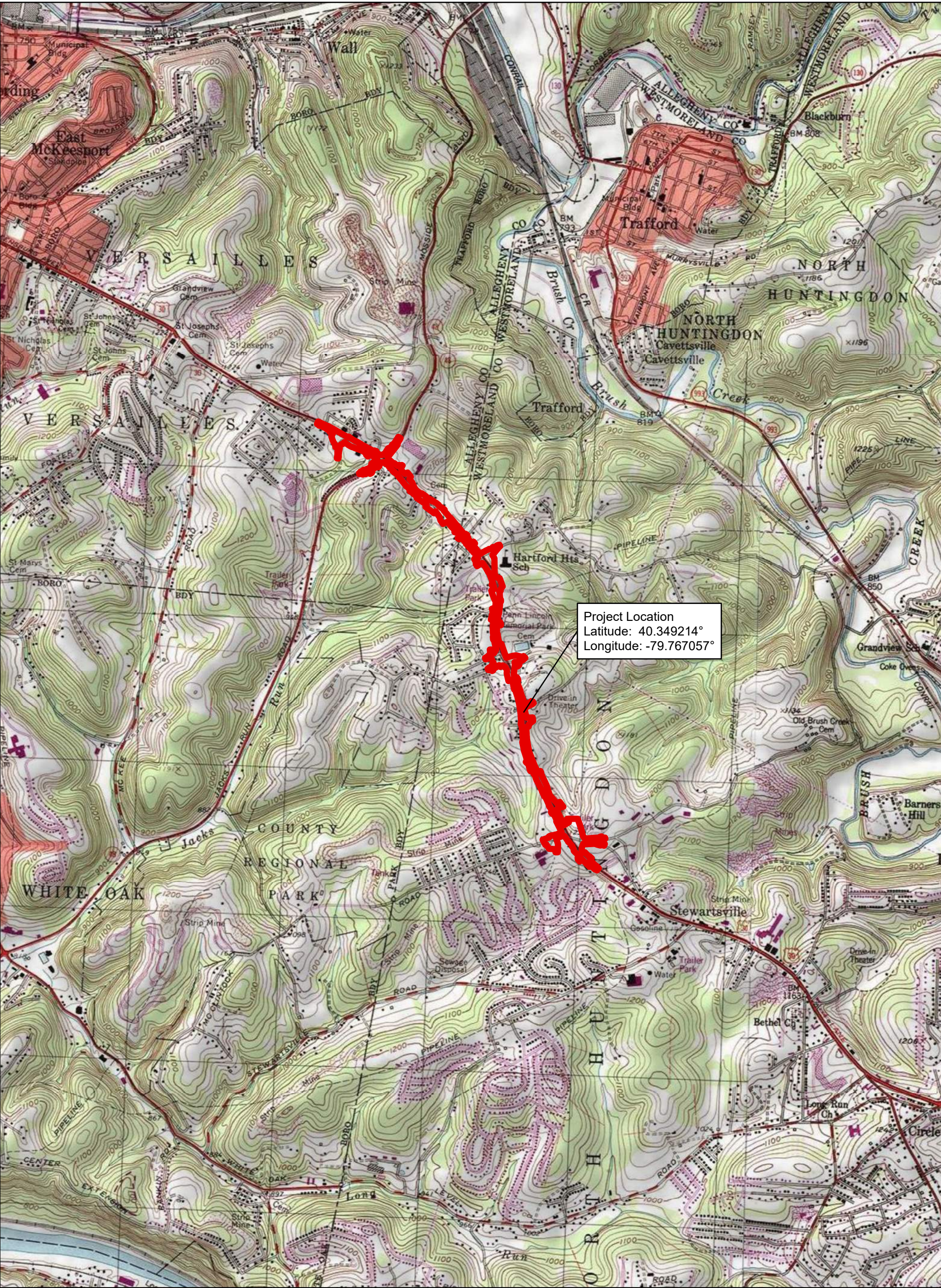
Review of the PennDOT Project-Level Air Quality Handbook and the EPA Greenbook has confirmed that the proposed US 30 Corridor Improvements project is in a county (Allegheny) that has been designated as being in a maintenance area for carbon monoxide (CO) and a non-attainment area for particulate matter (PM-2.5). As a result, a qualitative air quality analysis is required to determine if the project is of air quality concern.

To assess the project in terms of CO, a qualitative analysis was conducted utilizing traffic volumes and level-of-service (LOS) thresholds as identified in Figure 2 (Project-level CO Analysis Scoping Flow chart) within the PennDOT *Project-Level Air Quality Handbook*. The current average daily traffic (ADT) for SR 0030 is 24,957 (Year 2023) and the design year build ADT is projected to be 28,146 (Year 2043). Based off this traffic data, the subject project does not include or directly affect any roadways for which the 20-year forecasted daily volume will exceed the established threshold level of 125,000 vehicles per day. It can therefore be concluded that the project will have no significant adverse impact on air quality because of Carbon Monoxide (CO) emissions.

Assessment of the project in terms of PM-2.5, was conducted in accordance with the PennDOT *Project-Level Air Quality Handbook* PM Screening process. The screening process entails three distinct screening levels. However, a project is not required to go through each screening level. The US 30 Corridor Improvements Western Section project required a Level 2 Screening since the project was not exempt from air quality analysis. Based on PennDOT Level 2 Screening Process (Refer to Figure 3 - Level 2 Project PM Screening Document) this project is not considered to be of air quality concern. The forecasted total Build condition traffic volume for SR 0030 will be less than or equal to 125,000 annual average daily traffic (28,146) and truck volume will be less than 10,000 heavy trucks per day (1,970) in the project vicinity. Furthermore, the project is expected to improve (or not further degrade) LOS and delay for the roadway with the highest number of diesel vehicles in the project vicinity. The current LOS for SR 0030 is LOS F and the design year build is LOS D. The traffic volume data reported above is presented in (Appendix C – Engineering Information) of the Environmental Assessment. The traffic volume data is also included in Figure 4 of this report for reference.

Overall, based off the analyses conducted above, it is anticipated that the US 30 Corridor Improvements Western Section project will not adversely impact project-level air quality levels.

Figures



Project Location
Latitude: 40.349214°
Longitude: -79.767057°

	<p>Environmental Footprint</p>	<p>US 30 Corridor Improvements - Western Section Pennsylvania Department of Transportation (District 12-0)</p>	<p>Figure 1 Project Location Map</p>
	<p>Feet 0 5001,000</p>	<p>North Versailles and North Huntingdon Townships Westmoreland and Allegheny Counties <i>Topography Source: National Geographic Society (NGS)</i></p>	

Figure 2: Project-level CO Analysis Scoping Flow Chart

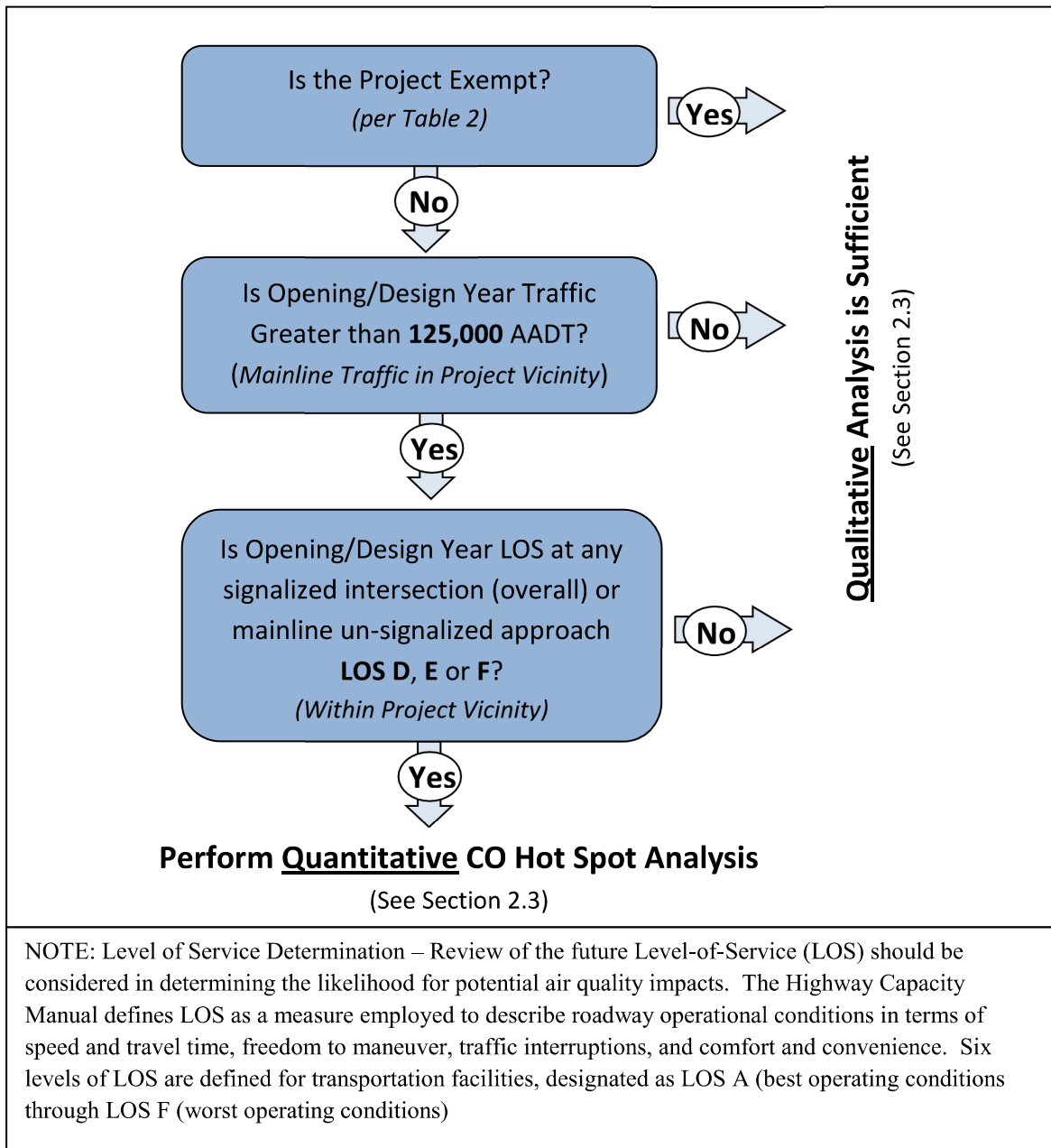


Figure 3: Level 2 Project PM Screening Process

Project Type	Level 2 Screening Evaluation Criteria			
Highway Capacity Expansion	Is the design year <u>total</u> Build condition traffic volume $\leq 125,000$ annual average daily traffic (AADT) and <u>truck</u> volume $\leq 10,000$ heavy trucks per day in the project vicinity ¹ ?			
	YES		NO	
	Not a Project of AQ Concern		Does the project cause a $\leq 6,250$ and ≤ 500 increase in total and truck volume respectively between Build and No Build conditions ² ?	
			YES	NO
			Not a Project of AQ Concern	Level 3 ICG Screening Required
Intersection (Channelization, Circles, Roundabouts, Signalization) or Interchange Reconfiguration	Does the above criteria for the "Highway Capacity Expansion" project type identify this project as "Not a Project of AQ Concern" ?			
	YES		NO	
	Is the project expected to improve (or not further degrade) LOS and delay for the roadway with the highest number of diesel vehicles in the project vicinity ³ ?		Level 3 ICG Screening Required	
	YES	NO		
	Not a Project of AQ Concern	Level 3 ICG Screening Required		
New Highway, Expressway, or Interchange Construction	Is the design year <u>total</u> traffic volume $\leq 125,000$ AADT and <u>truck</u> volume $\leq 10,000$ trucks per day in the project vicinity ⁴ ?			
	YES		NO	
	Does the project include new ramps or other improvements to connect a highway to a major freight, bus, or intermodal terminal ?		Level 3 ICG Screening Required	
	YES	NO		
	Level 3 ICG Screening Required	Not a Project of AQ Concern		
Expanded Intermodal or Transit Facility for Rail, Bus, or Truck	Is the existing facility <u>not</u> regionally significant under 40CFR 93.101 ⁵ or does the expanded facility have ≤ 10 buses/trucks in peak hour (of that facility) ⁶ ?			
	YES		NO	
	Not a Project of AQ Concern	Will the facility involve a $\geq 25\%$ increase in peak diesel bus/truck arrivals between Build and No Build conditions ⁷ ?		
		YES		NO
		Will the facility expansion include $> 80\%$ non-diesel vehicles (CNG, Hybrid, etc.) ⁸ ?		
		YES	NO	
		Not a Project of AQ Concern	Level 3 ICG Screening Required	Not a Project of AQ Concern
New Intermodal or Transit Facility For Rail, Bus, or Truck	Is the facility considered to be a "regionally significant project" under 40 CFR 93.101 ⁵ ?			
	YES		NO	
	Level 3 ICG Screening Required		Not a Project of AQ Concern	
Other Project Types	Level 3 ICG Screening Required			

Figure 3 Footnotes:

- (1) In Appendix B of November 2015 EPA Guidance (EPA-420-B-15-084), examples are provided that indicate the most likely projects that would be covered by 40 CFR 93.123(b)(1) and require a PM_{2.5} or PM₁₀ hot-spot analysis. This includes a project on a new highway or expressway that serves a significant volume of diesel

Figure 4: Traffic Volume Data

ENVIRONMENTAL ASSESSMENT US 30 CORRIDOR IMPROVEMENTS – WESTERN SECTION

Design Criteria

Roadway Description: SR 0030

Functional Classification: Principal Arterial

☒ Urban ☐ Rural

Current ADT: 11,440 (2021)

Design Year No-Build / Build ADT, as well as Current / Design Year Build LOS, is only necessary when PM2.5 hot spot analysis is required.

If PM2.5 hot spot analysis is not needed (see exempt project list in Air Quality Handbook, Pub #321), "N/A" can be entered for these values.

Design Year No-Build ADT: 28,146 (2043)

Current LOS: F

Design Year Build ADT: 28,146

Design Year Build LOS: D

DHV: 2252

Truck %: 7

D (Directional Distribution) %: 53

Design Speed: 40 mi/h

Posted Speed: 40 mi/h

Required Minimum Widths

Lane Width: 11 ft

Shoulder Width: 8-12 ft

Bridge Curb-to-Curb: NA ft

Design Exception Required?

☐ Yes ☒ No

If "Yes", explain.

Typology: Regional Arterial – Suburban Corridor

Topography: ☐ Level ☒ Rolling ☐ Mountainous

Proposed Design Criteria: New and Reconstruction