

To submit comments on this report please use the contact information below:

Ms. Shannon Slick, Project Manager, Office of Highway Development

Email: sslick@sha.state.md.us

Address: SHA Highway Design Division, Mail Stop C-102, 707 North Calvert Street, Baltimore, MD 21202

Ms. Chrissy Brandt, SHA Environmental Manager

Email: cbrandt@sha.state.md.us

Address: SHA Environmental Planning Division, Mail Stop C-301, 707 North Calvert Street, Baltimore, MD 21202

MD 108 (OLNEY LAYTONSVILLE ROAD)
FROM WEST OF MUNCASTER ROAD TO EAST
OF BROOKEVILLE ROAD

AIR QUALITY ANALYSIS
TECHNICAL REPORT

October 23, 2013

Montgomery County, Maryland



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION



MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

TABLE OF CONTENTS

| | |
|--|----|
| I. INTRODUCTION | 1 |
| II. AIR QUALITY BACKGROUND | 2 |
| III. ENVIRONMENTAL ANALYSIS | 4 |
| IV. ENVIRONMENTAL CONSEQUENCES | 5 |
| 1. Carbon Monoxide (CO) Assessment | 6 |
| 2. Particulate Matter (PM _{2.5}) Assessment | 7 |
| 3. MSAT Assessment..... | 9 |
| 4. Greenhouse Gas Assessment | 10 |
| 5. Construction Impacts..... | 11 |
| V. AGENCY COORDINATION / INTERAGENCY CONSULTATION | 11 |
| APPENDICES | |
| Appendix A: Monitored Ambient Air Quality Data 2010-2012 | |
| Appendix B: Traffic Data | |
| Appendix C: Interagency Consultation Correspondence | |
| Appendix D: Project Mapping | |
| LIST OF TABLES | |
| TABLE 1: National Ambient Air Quality Standards (NAAQS)..... | 3 |
| TABLE 2: Ambient Air Quality Monitoring Data 2010-2012..... | 5 |
| TABLE 3: Traffic Data..... | 6 |
| TABLE 4: Traffic Operation Summary | 6 |
| LIST OF FIGURES | |
| FIGURE 1: Project Area | 1 |
| FIGURE 2: National MSAT Emission Trends 1999-2050..... | 10 |

project runs along the Blue Mash Golf Course, to the north of MD 108, and Mt Zion Park is located east of Brookeville Rd. The overall study area is approximately 0.52 mile in length.

II. AIR QUALITY BACKGROUND

The Clean Air Act (CAA) Amendments of 1990 and the Final Transportation Conformity Rule [40 CFR Parts 51 and 93] direct the U.S. Environmental Protection Agency (EPA) to implement environmental policies and regulations that will ensure acceptable levels of air quality. Both the Clean Air Act and the Final Transportation Conformity Rule affect proposed transportation projects.

According to the CAA Title I, Section 176 (c) 2; *“No federal agency may approve, accept, or fund any transportation plan, program, or project unless such plan, program, or project has been found to conform to any applicable State Implementation Plan (SIP) in effect under this act.”* The Final Conformity Rule defines conformity as; *“Conformity to an implementation plan’s purpose of eliminating or reducing the severity and number of violations of the National Ambient Air Quality Standards (NAAQS) and achieving expeditious attainment of such standards; and that such activities will not:*

- *Cause or contribute to any new violation of any NAAQS in any area;*
- *Increase the frequency or severity of any existing violation of any NAAQS in any area; or*
- *Delay timely attainment of any NAAQS or any required interim emission reductions or other milestones in any area.”*

To comply with the CAA, the Environmental Protection Agency (EPA) has issued Proposed Rules, Guidance Clarifications, and Final Rules concerning the Conformity Determination of fine and coarse particulates (PM_{2.5} and PM₁₀); and Draft and Final Rules concerning quantitative analysis of CO and PM_{2.5}, and guidance on analysis of Mobile Source Air Toxics (MSATs). Following is a summary of recent rules and clarifications:

Transportation Conformity Rule PM_{2.5} and PM₁₀ Amendments; March 10, 2006
Final PM Qualitative Guidance Clarification; June 12, 2009
Final PM Conformity Rule; March 10, 2010
Draft Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM_{2.5} and PM₁₀ Nonattainment and Maintenance Areas; May 26, 2010
Final Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM_{2.5} and PM₁₀ Nonattainment and Maintenance Areas; December 20, 2010.
Final Transportation Conformity Guidance for Quantitative Hot-spot Analyses in CO Nonattainment and Maintenance Areas; December 2010
Transportation Conformity Rule Restructuring Amendments; March 2012
Transportation Conformity Regulations as of April 2012
Interim Guidance Update on MSAT Analysis in NEPA; December 6, 2012
Revised Air Quality Standards for Particle Pollution, Annual PM_{2.5} NAAQS; December 14, 2012

As required by the Clean Air Act, National Ambient Air Quality Standards (NAAQS) have been established for six major air pollutants. These pollutants, known as criteria pollutants, are carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM₁₀& PM_{2.5}), sulfur dioxide (SO₂), and lead (pb). These federal standards are summarized in **Table 1**. The "primary" standards have been established to protect the public health. The "secondary" standards are intended to protect the nation's welfare, and they account for air pollutant effects on soil, water, visibility, materials, vegetation, and other aspects of the general welfare.

**TABLE 1
NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS)**

| Pollutant | Primary/ Secondary | Primary Standards | | Form |
|--|-----------------------|------------------------|-------------------------|---|
| | | Level | Averaging Time | |
| Carbon Monoxide 76 FR 54294 | Primary | 9 ppm | 8-hour | Not to be exceeded more than once per year |
| | | 35 ppm | 1-hour | |
| Lead 73 FR 669964 | Primary and Secondary | 0.15 µg/m ³ | Rolling 3-Month Average | Not to be exceeded |
| Nitrogen Dioxide 75 FR 6464 | Primary | 100 ppb | 1-hour | 98 th percentile, averaged over 3 years |
| | Primary and Secondary | 53 ppb | Annual | Annual Mean |
| Particulate Matter (PM ₁₀) 71 FR 61144 | Primary and Secondary | 150 µg/m | 24-hour | Not to be exceeded more than once per year on average over 3 years |
| Particulate Matter (PM _{2.5}) 71 FR 61144 | Primary | 12 µg/m ³ | Annual | Annual mean averaged over 3 years |
| | Secondary | 15 µg/m ³ | Annual | Annual mean averaged over 3 years |
| | Primary and Secondary | 35 µg/m ³ | 24-hour | 98 th percentile, averaged over 3 years |
| Ozone 73 FR 16436 | Primary and Secondary | 0.075 ppm | 8-hour | Annual fourth highest daily maximum 8-hour concentration, averaged over 3 years |
| Sulfur Dioxide 75 FR 35520 | Primary | 75 ppb | 1-hour | Not to be exceeded more than once per year |
| | Secondary | 0.5 ppm | 3-hour | |

Section 107 of the 1977 Clean Air Act Amendment requires that EPA publish a list of all geographic areas in compliance with the NAAQS, as well as those areas not in compliance with the NAAQS. The designation of an area is made on a pollutant-by-pollutant basis. EPA's area designations consist of: Attainment, Unclassified, Maintenance, and Nonattainment. Ambient air quality is monitored through a network of stations to determine conditions throughout the country. EPA reviews the monitoring data, and areas where air pollution levels persistently exceed the NAAQS may be designated "nonattainment" for one or more pollutants. After a nonattainment area improves conditions to meet the standard for a pollutant, it is redesignated as a maintenance area. Typically these designations are applied to entire counties or groups of counties.

In addition to the criteria pollutants for which there are NAAQS, EPA also regulates air toxics. Toxic air pollutants are those pollutants known or suspected to cause cancer or other serious health effects. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes), area sources (e.g., dry cleaners), and stationary sources (e.g., factories or refineries). The Clean Air Act (CAA) identified 188 air toxics. In 2001 EPA identified a list of 21 Mobile Source Air Toxics (MSAT), and highlighted six of these MSATs as “priority” MSAT.

Gases that trap heat in the atmosphere are often referred to as greenhouse gases (GHG). Greenhouse gases are necessary to life, as we know it, because they keep the planet’s surface warmer than it otherwise would be. This is referred to as the Greenhouse Effect. As concentrations of greenhouse gases are increasing, the Earth’s temperature appears to be increasing. The principal greenhouse gases that enter the atmosphere because of human activities include carbon dioxide, methane, nitrous oxide, and fluorinated gases.

III. ENVIRONMENTAL ANALYSIS

The MD 108 improvement project from west of Muncaster Rd to east of Brookeville Rd is located in Montgomery County, Maryland, which is included as a part of the Washington, DC-MD-VA Metropolitan Statistical Area (MSA). The region has been classified as marginal nonattainment with respect to the 2008 eight-hour ozone standard and nonattainment of the 1997 fine particulate (PM_{2.5}) annual standard. A portion of the MSA, election districts 4, 7 and 13 in Montgomery County, had been nonattainment for carbon monoxide; however, this area has been re-designated as a CO Maintenance Area. This project is on the border of election districts 1 and 8, and therefore is not in the nonattainment area for carbon monoxide (CO).

Transportation programs and plans must be evaluated for “conformity” to the applicable State Implementation Plan (SIP) provisions before projects can receive Federal funding. In addition, they must be in the current Constrained Long Range Plan (CLRP) and Transportation Improvement Program (TIP). A TIP generally presents projects anticipated over the next several years while the CLRP covers a longer period. A Metropolitan Planning Organization (MPO) is designated to develop the TIP and CLRP for a region, and to document their conformity with SIP provisions. For the Washington, DC MSA region, the National Capital Region Transportation Planning Board (NCRTPB), which is part of the Metropolitan Washington Council of Governments (MWCOG), serves as the MPO for the MSA.

As the MPO, NCRTPB develops the TIP and CLRP for the region, including Montgomery County. Furthermore, it performs the related regional conformity analysis. Updates to the CLRP, referred to as the *2013 National Capital Region’s Financially Constrained Long-Range Transportation Plan*, were approved by NCRTPB on July 17, 2013. The latest TIP, covering the period FY 2013 to 2018, was also approved by NCRTPB on July 17, 2013. An updated regional conformity analysis covering both the TIP and CLRP was also approved on July 17, 2013.

At a regional level, a project is considered to be conforming if it is a part of a conforming TIP and CLRP. The proposed project is included in the Air Quality Conformity Inputs to the CLRP and the FY 2013-2018 TIP as a system preservation project specifically for safety and spot improvements, Project ID 3084, for the Washington Metropolitan Region.

IV. ENVIRONMENTAL CONSEQUENCES

In addition to the regional conformity analysis, any Federally funded project within a nonattainment or maintenance area for carbon monoxide or particulate matter must be analyzed at the project-level. At the project level, the pollutants could possibly have localized (“hot-spot”) levels above the criteria. To satisfy the NEPA air quality assessment purpose, it has been common to analyze project-level CO conditions. The MD 108 improvement project from west of Muncaster Rd to east of Brookeville Rd is not in a CO nonattainment area; therefore, a qualitative CO assessment has been included. Since Montgomery County is a nonattainment area for PM_{2.5}, a project-specific PM_{2.5} assessment has also been provided.

The Division of Air Quality, within the Maryland Department of the Environment is responsible for implementing and enforcing regulations to ensure that the air that Maryland citizens breathe is clean and healthful. This mission is accomplished through several methods, including air pollution monitoring. The MDE CO air monitoring stations nearest to the study area are located at the Howard University Laboratory in Beltsville, Maryland and the NARSTO (North American Research Strategy for Tropospheric Ozone) site in Arendtsville, Pennsylvania. The MDE PM_{2.5} air monitoring stations nearest to the study area are located at 18530 Roxbury Road in Hagerstown, Maryland and the Lathrop E. Smith Environmental Education Center in Rockville, Maryland. These sites are in EPA Region 3. Monitored air quality data within or near the study area for the years 2010-2012 is presented in **Table 2**. For details of monitored data see Appendix A.

TABLE 2

| Ambient Air Quality Data 2010-2012 | | | | | | | | |
|---|-------------------|-------------------|---|-------------|-------------|---|-------------|-------------|
| | | | Site 42-001-0001 Arendtsville Adams County, PA | | | Site 24-033-0030 12003 Old Baltimore Pike Beltsville, Maryland | | |
| | | | 2010 | 2011 | 2012 | 2010 | 2011 | 2012 |
| Carbon Monoxide (CO) [ppm] | 1-Hour | Maximum | 0.8 | 0.7 | 0.8 | 1.5 | 1.7 | 1.3 |
| | | 2nd Maximum | 0.7 | 0.2 | 0.7 | 1.3 | 1.3 | 1.2 |
| | | # of Exceedances | 0 | 0 | 0 | 0 | 0 | 0 |
| | 8-Hour | Maximum | 0.5 | 0.3 | 0.7 | 1 | 1.1 | 1.2 |
| | | 2nd Maximum | 0.4 | 0.3 | 0.6 | 1 | 0.8 | 0.9 |
| | | # of Exceedances | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | Site 24-043-0009 18530 Roxbury Road Hagerstown, Maryland | | | Site 24-031-3001 5110 Meadows Lane Rockville, Maryland | | |
| | | | 2010 | 2011 | 2012 | 2010 | 2011 | 2012 |
| Particulate Matter [ug/m ³] | PM _{2.5} | 98th Pct. 24-Hour | 31 | 28 | 27 | 28 | 25 | 23 |
| | | # of Exceedances | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Mean Annual | 12.6* | 11.5 | 10.8 | 11.1 | 10.9 | 10.3 |
| | | # of Exceedances | 0 | 0 | 0 | 0 | 0 | 0 |

*Exceeds the primary annual PM_{2.5} NAAQS of 12 µg/m³

1. Carbon Monoxide (CO) Assessment

As mentioned, a portion of the Washington, DC-MD-VA Metropolitan Statistical Area (MSA) is considered to be a moderate maintenance area in terms of carbon monoxide (CO). This maintenance area only encompasses Election Districts 4, 7 and 13 in Montgomery County and Election Districts 2, 6, 12, 16, 17 and 18 in Prince George's County. The project area is in Montgomery County, on the border of Election Districts 1 and 8. There has not been a local violation of the CO standard since 1988. Code of Federal Regulations Title 40, Part 93-Subpart A (40CFR93A) implements section 176(c) of the Clean Air Act (CAA), as amended (42 U.S.C. 7401 *et seq.*). Paragraph 40CFR93.102 (b): *Geographic Applicability* states that the provisions of the subpart apply in all nonattainment and maintenance areas for transportation-related criteria pollutants for which the area is designated nonattainment or has a maintenance plan. Since the study area is not in a CO nonattainment or maintenance area, a project level hot-spot conformity determination in conformance with 40 CFR 93.116 is not required. Therefore, a qualitative assessment considering local factors in conformance with 40 CFR 93.123(a)(2)(ii) is provided hereinafter.

As shown in Table 2, the maximum 1-hour monitored CO concentration between 2010 and 2012 is 1.7 ppm at MDE site 24-0330030 in 2011, located in Beltsville, Maryland. This concentration is only 4.9 percent of the 1-hour CO NAAQS of 35.0 ppm. The maximum 8-hour monitored CO concentration between 2010 and 2012 is 1.2 ppm at this same site in 2012, which is only 13.3 percent of the 8-hour NAAQS of 9.0 ppm.

A review of data provided, including traffic data and operational analysis summarized in Tables 3 and 4 (see Appendix B for details), demonstrates that the MD 108 improvement project from west of Muncaster Rd to east of Brookeville Rd increases Level of Service (LOS) during peak hours and does not result in significant traffic volumes, or changes in vehicle mix or other factors that would cause an increase in CO emissions relative to the No-Build conditions. This project has been designed to improve intersection operation, rather than increase roadway capacity; therefore, there is no noticeable change expected in the No-Build and Build traffic volumes or vehicle mix.

**TABLE 3
TRAFFIC DATA FOR MD 108 AT MUNCASTER ROAD**

| Scenario | 2013 ADT | 2013 Truck Percentage | 2013 # of Trucks | 2033 ADT | 2033 Truck Percentage | 2033 # of Trucks |
|----------|----------|-----------------------|------------------|----------|-----------------------|------------------|
| No Build | 19,750 | 6% | 1,185 | 24,100 | 6% | 1,446 |
| Build | 19,750 | 6% | 1,185 | 24,100 | 6% | 1,446 |

**TABLE 4
TRAFFIC OPERATION SUMMARY**

| Intersection | Peak Hour | 2013 Existing | | 2033 No-Build | | 2033 Build | |
|-------------------------|-----------|---------------|------|---------------|------|------------|------|
| | | LOS | V/C | LOS | V/C | LOS | V/C |
| MD 108 @ Muncaster Road | AM | E | 0.99 | F | 1.23 | E | 0.89 |
| | PM | B | 0.69 | C | 0.96 | C | 0.84 |

In conclusion, because the data in Table 2 demonstrates monitored CO concentrations are a small percentage of the CO NAAQS, data in **Table 3** demonstrates the vehicle mix will not be altered by the project, and traffic operation data in **Table 4** displays improved LOS with Build conditions, this project will not cause or contribute to a new violation of the CO NAAQS.

2. Particulate Matter (PM_{2.5}) Assessment

The project is located in Montgomery County, which is in the Washington DC-MD-VA Fine Particulate Matter (PM_{2.5}) nonattainment Area. This area was designated as nonattainment for PM_{2.5} based on 1997 NAAQS on January 5, 2005 by EPA. This designation became effective on April 5, 2005, 90 days after EPA's published action in the Federal Register. Transportation conformity for the PM_{2.5} standards applied on April 5, 2006, after the one-year grace period provided by the Clean Air Act. On November 13, 2009 EPA designated nonattainment areas based on the 2006 24-hour PM_{2.5} NAAQS. The Washington DC-MD-VA region was not designated as nonattainment for the 2006 standard, therefore the designations based on the 1997 NAAQS remain in effect.

On March 10, 2006, EPA issued amendments to the Transportation Conformity Rule to address localized impacts of particulate matter: "*PM_{2.5} and PM₁₀ Hot-Spot Analyses in Project-level Transportation Conformity Determinations for the New PM_{2.5} and Existing PM₁₀ National Ambient Air Quality Standards*" (71 FR 12468). These rule amendments require the assessment of localized air quality impacts of Federally funded or approved transportation projects in PM₁₀ and PM_{2.5} nonattainment and maintenance areas. On December 20, 2010, EPA issued "*Final Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM_{2.5} and PM₁₀ Nonattainment and Maintenance Areas*", (75 FR 79370), which helps state and local agencies complete quantitative PM_{2.5} and PM₁₀ hot-spot analyses for project-level transportation conformity determinations of certain highway and transit projects. This guidance included a two-year grace period until December 20, 2012. Because this project was commenced prior to the end of the grace period, a quantitative analysis is not required for this project.

Projects that require hotspot analysis for PM_{2.5} are those that are *Projects of Air Quality Concern* as enumerated in 40 CFR 93.123(b)(1):

- (i) *New highway projects that have a significant number of diesel vehicles, and expanded projects that have a significant increase in the number of diesel vehicles;*
- (ii) *Projects affecting intersections that are at Level-of-Service D, E, or F with a significant number of diesel vehicles, or those that will change to Level-of-Service D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project;*
- (iii) *New bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location;*
- (iv) *Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location; and*
- (v) *Projects in or affecting locations, areas, or categories of sites which are identified in the PM₁₀ or PM_{2.5} applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violations.*

As discussed in the examples of the preamble to the March 10, 2006 Final Rule for PM_{2.5} and PM₁₀ Hot-Spot Analyses in Project-Level Transportation Conformity Determinations (71 FR 12491), for projects involving the expansion of an existing highway, 40 CFR 93.123(b)(1)(i) has been interpreted as applying only to projects that would involve a significant increase in the number of diesel transit buses and diesel trucks on the existing facility.

Determination as to whether the MD 108 improvement project from west of Muncaster Rd to east of Brookeville Rd is a *Project of Air Quality Concern* will be finalized by Interagency Consultation. To assist with the Interagency Consultation process, SHA has prepared the following assessment of the proposed improvements:

- The MD 108 improvement project from west of Muncaster Rd to east of Brookeville Rd is considered under the following paragraphs of 40 CFR 93:
 - 40 CFR 92.123(b)(1)(i), as amended, which includes “*New highway projects that have a significant number of diesel vehicles, and expanded projects that have a significant increase in the number of diesel vehicles.*”
 - 40 CFR 92.123(b)(1)(ii), as amended, which includes “*Projects affecting intersections that are at LOS D, E, or F with a significant number of diesel vehicles, or those that will change to LOS D, E, or F because of increased traffic volumes from a significant number of diesel vehicles **related to the project***”.
- The proposed improvements do not meet the criteria set forth in 40 CFR 93.123(b)(1)(i) to be considered a project of “air quality concern” based on the following considerations:
 - The project consists of widening of MD 108 along the westbound side within the project limits in order to add an additional eastbound through lane and bicycle compatible shoulder. The width of the widening will range between five and 23 feet and the through lane width will be 11 feet with a six foot shoulder.
 - As shown in **Table 3**, MD 108 at Muncaster Rd does not serve a significant number of vehicles; nor will there be a significant increase in trucks between the No-Build and Build conditions. From **Table 3** the combined truck percentage along MD 108 at the intersection is projected to remain at 6% even with 2033 Build conditions. The expected number of trucks in both Build and No-Build conditions in 2033 is 1,440.
 - The construction will not result in meaningful changes between No-Build and Build traffic volumes or vehicle mix. A review of the traffic data demonstrates that there will not be a “significant” increase in the number of trucks.
- The proposed improvements do not meet the criteria set forth in 40 CFR 93.123(b)(1)(ii) to be considered a project of “air quality concern”.
 - As shown in **Table 4**, while the MD 108 improvement project from west of Muncaster Rd to east of Brookeville Rd affects an intersection that has LOS E and will change to LOS F in the No-Build conditions, the Build conditions will increase intersection LOS.
 - The project does not meet the requirement that the change in LOS is caused by an increase in diesel vehicles “**related to the project**” since there is no change in vehicle mix as shown in **Table 3**.
 - Compared to the No-Build configuration, the proposed Build alternative provides benefits during both peak hours. Refer to Appendix B for additional information.
- A review of the traffic data discussed above demonstrates that there will not be a “significant” increase in the number of trucks from the No-Build condition to the Build. This project has been designed to improve intersection operation along MD 108 within the project limits, rather than increase corridor capacity; therefore, there is no noticeable change expected in the No-Build and Build traffic volumes or vehicle mix.
- Section 176(c) of the Clean Air Act and the Federal Conformity Rule require that transportation plans and programs conform to the intent of the air quality state implementation plan (SIP) through a regional emissions analysis in PM_{2.5} nonattainment areas. The National Capital Regional Transportation Planning Board (NCRTPB) serves as the Metropolitan Planning Organization (MPO), and therefore it is responsible for the regional

conformity determination.

- The currently approved NC RTPB Constrained Long Range Plan (CLRP), referred to as the *2013 Constrained Long Range Plan*, and the *2013-2018 Transportation Improvement Program* (TIP), have been determined to conform to the requirements of the Clean Air Act Amendments of 1990. These represent the currently conforming CLRP and TIP in accordance with 40 CFR 93.114. The proposed project is included in the July 17, 2013 Updates to the 2013 CLRP and the FY 2013 to 2018 TIP (Project ID 3084).
- The current conformity determination is consistent with the final conformity rule found in 40 CFR Parts 51 and 93. Conformity to the requirements of the Clean Air Act Amendments of 1990 means that the transportation activity will not cause new air quality violations, worsen existing violations, or delay timely attainment of the relevant NAAQS.
- Based on review and analysis as discussed above, it is determined that the proposed MD 108 improvement project from west of Muncaster Rd to east of Brookeville Rd in Frederick County will meet the Clean Air Act and 40 CFR 93.109 requirements for Fine Particulate Matter – PM_{2.5}. These requirements are met without a hot-spot analysis because the project has not been found to be a project of air quality concern as defined under 40 CFR 93.123(b)(1). The project will not cause or contribute to a new violation of the PM_{2.5} NAAQS, or increase the frequency or severity of an existing violation.

3. MSAT Assessment

The Federal Highway Administration (FHWA) *Guidance Update on Mobile Source Air Toxic Analysis in NEPA* requires an assessment of Mobile Source Air Toxics (MSAT) under specific conditions. The EPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers. These seven MSATs are: acrolein; benzene; 1,3-butadiene; diesel exhaust (organic gases and diesel particulate matter); formaldehyde; naphthalene; and polycyclic organic matter. Since the projected No-Build and Build traffic volumes and vehicle mixes are substantially the same, as reflected in **Table 3**, the project will have no meaningful impacts on traffic volumes or vehicle mixes. Therefore in accordance with the above referenced FHWA guidance, the project would be considered a **Project with No Meaningful Potential MSAT Effects**.

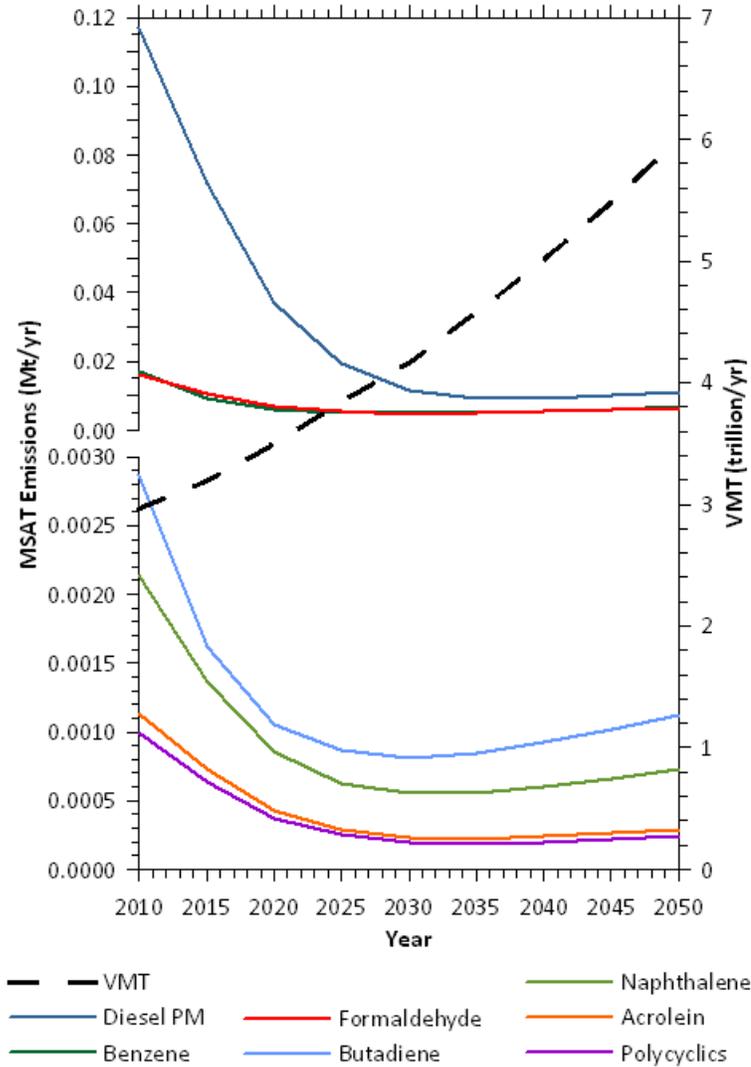
The purpose of this project is to improve intersection operation along MD 108 within the project limits. Work consists of widening of MD 108 along the westbound side within the project limits in order to add an additional eastbound through lane and bicycle compatible shoulder. The widening will range between a width of five and 23 feet and the through lane width will be 11 feet with a six foot shoulder.

This project has been determined to generate minimal air quality impacts for CAAA criteria pollutants and has not been linked with any special MSAT concerns. As such, this project will not result in changes in traffic volumes, vehicle mix, basic project location, or any other factor that would cause an increase in MSAT impacts of the project from that of the No-Build alternative.

Moreover, EPA regulations for vehicle engines and fuels will cause overall MSAT emissions to decline significantly over the next several decades. Based on regulations now in effect, an analysis of national trends with EPA's MOVES model forecasts a combined reduction of over 80 percent in the total annual emission rate for the priority MSAT from 2010 to 2050 while vehicle-miles of travel

are projected to increase by over 100 percent (see **Figure 2**). This will both reduce the background level of MSAT as well as the possibility of even minor MSAT emissions from this project.

**FIGURE 2:
NATIONAL MSAT EMISSION TRENDS 1999 - 2050
FOR VEHICLES OPERATING ON ROADWAYS
USING EPA'S MOVES2010b MODEL**



Note: Trends for specific locations may be different, depending on locally derived information representing vehicle-miles travelled, vehicle speeds, vehicle mix, fuels, emission control programs, meteorology, and other factors.
Source: EPA MOVES2010b model runs conducted during May - June 2012 by FHWA.

4. Greenhouse Gas Assessment

From a NEPA perspective, it is analytically problematic to conduct a project level cumulative effects analysis of greenhouse gas emissions on a global-scale problem. Also, while Criteria Pollutant emissions last in the atmosphere for months, CO₂ emissions remain in the atmosphere far longer - over 100 years - and therefore require a much more sustained, intergenerational effort. Finally, due to the interactions between elements of the transportation system as a whole, project-level

emissions analyses would be less informative than ones conducted at regional, state, or national levels. Because of these concerns, FHWA concluded that the CO₂ emissions cannot be usefully evaluated in the same way that other vehicle emissions are addressed. However, it can be stated that estimates of CO₂ emissions, a primary factor in greenhouse gases, are based on the amount of direct energy required. The direct energy values represent the energy required for vehicle propulsion. This energy is a function of traffic characteristics such as volume, speed, distance traveled, vehicle mix, and thermal value of the fuel being used. A review of traffic data for the project reveals that, because there will not be a significant change in traffic volumes from the No-Build to Build conditions, CO₂ emission burdens will most likely result in almost no change as compared to the existing conditions.

In 2009, Maryland Governor Martin O'Malley and the Maryland General Assembly passed the Greenhouse Gas Emission Reduction Act of 2009 (GGRA). The law requires the State to develop and implement a Plan (the GGRA Plan or the Plan) to reduce greenhouse gas (GHG) emissions 25 percent from a 2006 baseline by 2020. The Greenhouse Gas Emissions Reduction Act Plan was published July 25, 2013. The Plan puts the State on track to achieve the 25 percent GHG reduction required by the law while also creating jobs and improving Maryland's economy. Initiatives outlined in the Plan also will help with other environmental priorities, including restoration of the Chesapeake Bay, improving air quality and other critical energy and national security issues.

5. Construction Impacts

The construction phase of the proposed project has the potential to impact the local ambient air quality by generating fugitive dust through activities such as demolition and materials handling. The State Highway Administration has addressed this possibility by establishing "Specifications for Construction and Materials" which specifies procedures to be followed by contractors involved in site work. The Maryland Air and Radiation Management Administration was consulted to determine the adequacy of the "Specifications" in terms of satisfying the requirements of the "Regulations Governing the Control of Air Pollution in the State of Maryland". The Maryland Air and Radiation Management Administration found the specifications to be consistent with the requirements of these regulations. Therefore, during the construction period, all appropriate measures (Code of Maryland Regulations 10.18.06.03 D) would be incorporated to minimize the impact of the proposed transportation improvements on the air quality of the area. Mobile source emissions can also be minimized during construction by not permitting idling delivery trucks or other equipment during periods of unloading or other non-active use. The existing number of traffic lanes should be maintained during construction, to the maximum extent possible, and construction schedules should be planned in a manner that will not create traffic disruption and increase air pollutants. Application of these measures will ensure that construction impact of the project is insignificant.

V. AGENCY COORDINATION / INTERAGENCY CONSULTATION

By email dated September 24, 2013, copies of this air quality analysis will be circulated to the Federal Highway Administration (FHWA), the Environmental Protection Agency (EPA), the Maryland Department of the Environment (MDE), and the MWCOG (NCRTPB) for a 15-day Interagency Consultation review and comment period. Response emails were received from EPA, MWCOG, MDE and FHWA. Each of these agencies agreed the project is not a project of air quality concern and does not require a hot-spot analysis. FHWA noted a typographic error that has been corrected. This Air Quality Analysis will be placed on SHA's website for a 15 day public review and comment period. Refer to Appendix C for Interagency Consultation emails.

APPENDIX

- A: MONITORED AMBIENT AIR QUALITY DATA 2010-2012**
- B: TRAFFIC DATA**
- C: INTERAGENCY CONSULTATION CORRESPONDENCE**
- D: PROJECT MAPPING**

APPENDIX A: MONITORED AMBIENT AIR QUALITY DATA 2010-2012

Monitor Values Report

Geographic Area: Prince Georges County, MD

Pollutant: CO

Year: 2010

Exceptional Events: Included (if any)

Duration Description=1 HOUR

| Duration Description | Obs | First Max | Second Max | Actual Exc | Exc Events | Monitor Number | Site ID | Address | City | County | State | EPA Region |
|----------------------|------|-----------|------------|------------|------------|----------------|-----------|---|------------|-----------------|-------|------------|
| 1 HOUR | 8107 | 1.5 | 1.3 | 0 | None | 1 | 240330030 | Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike | Beltsville | Prince George's | MD | 03 |

Get detailed information about this report, including column descriptions, at http://www.epa.gov/airquality/airdata/ad_about_reports.html#mon

AirData reports are produced from a direct query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated daily by state, local, and tribal organizations who own and submit the data. Please contact the appropriate air quality monitoring agency to report any data problems.

<http://www.epa.gov/airquality/airdata/ad_contacts.html>

Readers are cautioned not to rank order geographic areas based on AirData reports. Air pollution levels measured at a particular monitoring site are not necessarily representative of the air quality for an entire county or urban area.

This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site-level statistics may differ from the monitor-level statistics upon which this report is based.

Source: U.S. EPA AirData <<http://www.epa.gov/airdata>>

Generated: April 15, 2013

Monitor Values Report

Geographic Area: Prince Georges County, MD

Pollutant: CO

Year: 2010

Exceptional Events: Included (if any)

Duration Description=8-HR RUN AVG END HOUR

| Duration Description | Obs | First Max | Second Max | Actual Exc | Exc Events | Monitor Number | Site ID | Address | City | County | State | EPA Region |
|-----------------------|------|-----------|------------|------------|------------|----------------|-----------|---|------------|-----------------|-------|------------|
| 8-HR RUN AVG END HOUR | 8103 | 1 | 1 | 0 | None | 1 | 240330030 | Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike | Beltsville | Prince George's | MD | 03 |

Get detailed information about this report, including column descriptions, at http://www.epa.gov/airquality/airdata/ad_about_reports.html#mon

AirData reports are produced from a direct query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated daily by state, local, and tribal organizations who own and submit the data. Please contact the appropriate air quality monitoring agency to report any data problems.

<http://www.epa.gov/airquality/airdata/ad_contacts.html>

Readers are cautioned not to rank order geographic areas based on AirData reports. Air pollution levels measured at a particular monitoring site are not necessarily representative of the air quality for an entire county or urban area.

This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site-level statistics may differ from the monitor-level statistics upon which this report is based.

Source: U.S. EPA AirData <<http://www.epa.gov/airdata>>

Generated: April 15, 2013

Monitor Values Report

Geographic Area: Prince Georges County, MD

Pollutant: CO

Year: 2011

Exceptional Events: Included (if any)

Duration Description=1 HOUR

| Duration Description | Obs | First Max | Second Max | Actual Exc | Exc Events | Monitor Number | Site ID | Address | City | County | State | EPA Region |
|----------------------|------|-----------|------------|------------|------------|----------------|-----------|---|------------|-----------------|-------|------------|
| 1 HOUR | 8183 | 1.7 | 1.3 | 0 | None | 1 | 240330030 | Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike | Beltsville | Prince George's | MD | 03 |

Get detailed information about this report, including column descriptions, at http://www.epa.gov/airquality/airdata/ad_about_reports.html#mon

AirData reports are produced from a direct query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated daily by state, local, and tribal organizations who own and submit the data. Please contact the appropriate air quality monitoring agency to report any data problems.

<http://www.epa.gov/airquality/airdata/ad_contacts.html>

Readers are cautioned not to rank order geographic areas based on AirData reports. Air pollution levels measured at a particular monitoring site are not necessarily representative of the air quality for an entire county or urban area.

This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site-level statistics may differ from the monitor-level statistics upon which this report is based.

Source: U.S. EPA AirData <<http://www.epa.gov/airdata>>

Generated: April 15, 2013

Monitor Values Report

Geographic Area: Prince Georges County, MD

Pollutant: CO

Year: 2011

Exceptional Events: Included (if any)

Duration Description=8-HR RUN AVG END HOUR

| Duration Description | Obs | First Max | Second Max | Actual Exc | Exc Events | Monitor Number | Site ID | Address | City | County | State | EPA Region |
|-----------------------|------|-----------|------------|------------|------------|----------------|-----------|---|------------|-----------------|-------|------------|
| 8-HR RUN AVG END HOUR | 8145 | 1.1 | 0.8 | 0 | None | 1 | 240330030 | Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike | Beltsville | Prince George's | MD | 03 |

Get detailed information about this report, including column descriptions, at http://www.epa.gov/airquality/airdata/ad_about_reports.html#mon

AirData reports are produced from a direct query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated daily by state, local, and tribal organizations who own and submit the data. Please contact the appropriate air quality monitoring agency to report any data problems.

<http://www.epa.gov/airquality/airdata/ad_contacts.html>

Readers are cautioned not to rank order geographic areas based on AirData reports. Air pollution levels measured at a particular monitoring site are not necessarily representative of the air quality for an entire county or urban area.

This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site-level statistics may differ from the monitor-level statistics upon which this report is based.

Source: U.S. EPA AirData <<http://www.epa.gov/airdata>>

Generated: April 15, 2013

Monitor Values Report

Geographic Area: Prince Georges County, MD

Pollutant: CO

Year: 2012

Exceptional Events: Included (if any)

Duration Description=1 HOUR

| Duration Description | Obs | First Max | Second Max | Actual Exc | Exc Events | Monitor Number | Site ID | Address | City | County | State | EPA Region |
|----------------------|------|-----------|------------|------------|------------|----------------|-----------|---|------------|-----------------|-------|------------|
| 1 HOUR | 8571 | 1.3 | 1.2 | 0 | None | 1 | 240330030 | Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike | Beltsville | Prince George's | MD | 03 |

Get detailed information about this report, including column descriptions, at http://www.epa.gov/airquality/airdata/ad_about_reports.html#mon

AirData reports are produced from a direct query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated daily by state, local, and tribal organizations who own and submit the data. Please contact the appropriate air quality monitoring agency to report any data problems.

<http://www.epa.gov/airquality/airdata/ad_contacts.html>

Readers are cautioned not to rank order geographic areas based on AirData reports. Air pollution levels measured at a particular monitoring site are not necessarily representative of the air quality for an entire county or urban area.

This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site-level statistics may differ from the monitor-level statistics upon which this report is based.

Source: U.S. EPA AirData <<http://www.epa.gov/airdata>>

Generated: April 15, 2013

Monitor Values Report

Geographic Area: Prince Georges County, MD

Pollutant: CO

Year: 2012

Exceptional Events: Included (if any)

Duration Description=8-HR RUN AVG END HOUR

| Duration Description | Obs | First Max | Second Max | Actual Exc | Exc Events | Monitor Number | Site ID | Address | City | County | State | EPA Region |
|-----------------------|------|-----------|------------|------------|------------|----------------|-----------|---|------------|-----------------|-------|------------|
| 8-HR RUN AVG END HOUR | 8651 | 1.2 | 0.9 | 0 | None | 1 | 240330030 | Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike | Beltsville | Prince George's | MD | 03 |

Get detailed information about this report, including column descriptions, at http://www.epa.gov/airquality/airdata/ad_about_reports.html#mon

AirData reports are produced from a direct query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated daily by state, local, and tribal organizations who own and submit the data. Please contact the appropriate air quality monitoring agency to report any data problems.

http://www.epa.gov/airquality/airdata/ad_contacts.html

Readers are cautioned not to rank order geographic areas based on AirData reports. Air pollution levels measured at a particular monitoring site are not necessarily representative of the air quality for an entire county or urban area.

This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site-level statistics may differ from the monitor-level statistics upon which this report is based.

Source: U.S. EPA AirData <http://www.epa.gov/airdata>

Generated: April 15, 2013

Monitor Values Report

Geographic Area: Adams County, PA

Pollutant: CO

Year: 2010

Exceptional Events: Included (if any)

Duration Description=1 HOUR

| Duration Description | Obs | First Max | Second Max | Actual Exc | Exc Events | Monitor Number | Site ID | Address | City | County | State | EPA Region |
|----------------------|------|-----------|------------|------------|------------|----------------|-----------|----------------------------|---------------|--------|-------|------------|
| 1 HOUR | 5109 | 0.8 | 0.7 | 0 | None | 1 | 420010001 | Narsto Site - Arendtsville | Not in a city | Adams | PA | 03 |

Get detailed information about this report, including column descriptions, at http://www.epa.gov/airquality/airdata/ad_about_reports.html#mon

AirData reports are produced from a direct query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated daily by state, local, and tribal organizations who own and submit the data. Please contact the appropriate air quality monitoring agency to report any data problems.

<http://www.epa.gov/airquality/airdata/ad_contacts.html>

Readers are cautioned not to rank order geographic areas based on AirData reports. Air pollution levels measured at a particular monitoring site are not necessarily representative of the air quality for an entire county or urban area.

This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site-level statistics may differ from the monitor-level statistics upon which this report is based.

Source: U.S. EPA AirData <<http://www.epa.gov/airdata>>

Generated: April 15, 2013

Monitor Values Report

Geographic Area: Adams County, PA

Pollutant: CO

Year: 2010

Exceptional Events: Included (if any)

Duration Description=8-HR RUN AVG END HOUR

| Duration Description | Obs | First Max | Second Max | Actual Exc | Exc Events | Monitor Number | Site ID | Address | City | County | State | EPA Region |
|-----------------------|------|-----------|------------|------------|------------|----------------|-----------|----------------------------|---------------|--------|-------|------------|
| 8-HR RUN AVG END HOUR | 5108 | 0.5 | 0.4 | 0 | None | 1 | 420010001 | Narsto Site - Arendtsville | Not in a city | Adams | PA | 03 |

Get detailed information about this report, including column descriptions, at http://www.epa.gov/airquality/airdata/ad_about_reports.html#mon

AirData reports are produced from a direct query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated daily by state, local, and tribal organizations who own and submit the data. Please contact the appropriate air quality monitoring agency to report any data problems.

<http://www.epa.gov/airquality/airdata/ad_contacts.html>

Readers are cautioned not to rank order geographic areas based on AirData reports. Air pollution levels measured at a particular monitoring site are not necessarily representative of the air quality for an entire county or urban area.

This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site-level statistics may differ from the monitor-level statistics upon which this report is based.

Source: U.S. EPA AirData <<http://www.epa.gov/airdata>>

Generated: April 15, 2013

Monitor Values Report

Geographic Area: Adams County, PA

Pollutant: CO

Year: 2011

Exceptional Events: Included (if any)

Duration Description=1 HOUR

| Duration Description | Obs | First Max | Second Max | Actual Exc | Exc Events | Monitor Number | Site ID | Address | City | County | State | EPA Region |
|----------------------|------|-----------|------------|------------|------------|----------------|-----------|----------------------------|---------------|--------|-------|------------|
| 1 HOUR | 5372 | 0.7 | 0.2 | 0 | None | 1 | 420010001 | Narsto Site - Arendtsville | Not in a city | Adams | PA | 03 |

Get detailed information about this report, including column descriptions, at http://www.epa.gov/airquality/airdata/ad_about_reports.html#mon

AirData reports are produced from a direct query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated daily by state, local, and tribal organizations who own and submit the data. Please contact the appropriate air quality monitoring agency to report any data problems.

<http://www.epa.gov/airquality/airdata/ad_contacts.html>

Readers are cautioned not to rank order geographic areas based on AirData reports. Air pollution levels measured at a particular monitoring site are not necessarily representative of the air quality for an entire county or urban area.

This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site-level statistics may differ from the monitor-level statistics upon which this report is based.

Source: U.S. EPA AirData <<http://www.epa.gov/airdata>>

Generated: April 15, 2013

Monitor Values Report

Geographic Area: Adams County, PA

Pollutant: CO

Year: 2011

Exceptional Events: Included (if any)

Duration Description=8-HR RUN AVG END HOUR

| Duration Description | Obs | First Max | Second Max | Actual Exc | Exc Events | Monitor Number | Site ID | Address | City | County | State | EPA Region |
|-----------------------|------|-----------|------------|------------|------------|----------------|-----------|----------------------------|---------------|--------|-------|------------|
| 8-HR RUN AVG END HOUR | 5360 | 0.3 | 0.3 | 0 | None | 1 | 420010001 | Narsto Site - Arendtsville | Not in a city | Adams | PA | 03 |

Get detailed information about this report, including column descriptions, at http://www.epa.gov/airquality/airdata/ad_about_reports.html#mon

AirData reports are produced from a direct query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated daily by state, local, and tribal organizations who own and submit the data. Please contact the appropriate air quality monitoring agency to report any data problems.

<http://www.epa.gov/airquality/airdata/ad_contacts.html>

Readers are cautioned not to rank order geographic areas based on AirData reports. Air pollution levels measured at a particular monitoring site are not necessarily representative of the air quality for an entire county or urban area.

This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site-level statistics may differ from the monitor-level statistics upon which this report is based.

Source: U.S. EPA AirData <<http://www.epa.gov/airdata>>

Generated: April 15, 2013

Monitor Values Report

Geographic Area: Adams County, PA

Pollutant: CO

Year: 2012

Exceptional Events: Included (if any)

Duration Description=1 HOUR

| Duration Description | Obs | First Max | Second Max | Actual Exc | Exc Events | Monitor Number | Site ID | Address | City | County | State | EPA Region |
|----------------------|------|-----------|------------|------------|------------|----------------|-----------|----------------------------|---------------|--------|-------|------------|
| 1 HOUR | 6361 | 0.8 | 0.7 | 0 | None | 1 | 420010001 | Narsto Site - Arendtsville | Not in a city | Adams | PA | 03 |

Get detailed information about this report, including column descriptions, at http://www.epa.gov/airquality/airdata/ad_about_reports.html#mon

AirData reports are produced from a direct query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated daily by state, local, and tribal organizations who own and submit the data. Please contact the appropriate air quality monitoring agency to report any data problems.

<http://www.epa.gov/airquality/airdata/ad_contacts.html>

Readers are cautioned not to rank order geographic areas based on AirData reports. Air pollution levels measured at a particular monitoring site are not necessarily representative of the air quality for an entire county or urban area.

This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site-level statistics may differ from the monitor-level statistics upon which this report is based.

Source: U.S. EPA AirData <<http://www.epa.gov/airdata>>

Generated: April 15, 2013

Monitor Values Report

Geographic Area: Adams County, PA

Pollutant: CO

Year: 2012

Exceptional Events: Included (if any)

Duration Description=8-HR RUN AVG END HOUR

| Duration Description | Obs | First Max | Second Max | Actual Exc | Exc Events | Monitor Number | Site ID | Address | City | County | State | EPA Region |
|-----------------------|------|-----------|------------|------------|------------|----------------|-----------|----------------------------|---------------|--------|-------|------------|
| 8-HR RUN AVG END HOUR | 6358 | 0.7 | 0.6 | 0 | None | 1 | 420010001 | Narsto Site - Arendtsville | Not in a city | Adams | PA | 03 |

Get detailed information about this report, including column descriptions, at http://www.epa.gov/airquality/airdata/ad_about_reports.html#mon

AirData reports are produced from a direct query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated daily by state, local, and tribal organizations who own and submit the data. Please contact the appropriate air quality monitoring agency to report any data problems.

<http://www.epa.gov/airquality/airdata/ad_contacts.html>

Readers are cautioned not to rank order geographic areas based on AirData reports. Air pollution levels measured at a particular monitoring site are not necessarily representative of the air quality for an entire county or urban area.

This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site-level statistics may differ from the monitor-level statistics upon which this report is based.

Source: U.S. EPA AirData <<http://www.epa.gov/airdata>>

Generated: April 15, 2013

Monitor Values Report

Geographic Area: Washington County, MD

Pollutant: PM2.5

Year: 2010

Exceptional Events: Included (if any)

Duration Description=24 HOUR

| Duration Description | Obs | First Max | Second Max | Third Max | Fourth Max | 98th Percentile | Weighted Annual Mean | Exc Events | Monitor Number | Site ID | Address | City | County | State | EPA Region |
|----------------------|-----|-----------|------------|-----------|------------|-----------------|----------------------|------------|----------------|-----------|--------------------|------------|------------|-------|------------|
| 24 HOUR | 58 | 30.2 | 21.2 | 20.3 | 19.5 | 21 | 10.5 | None | 1 | 240430009 | 18530 Roxbury Road | Hagerstown | Washington | MD | 03 |

Get detailed information about this report, including column descriptions, at http://www.epa.gov/airquality/airdata/ad_about_reports.html#mon

AirData reports are produced from a direct query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated daily by state, local, and tribal organizations who own and submit the data. Please contact the appropriate air quality monitoring agency to report any data problems.

<http://www.epa.gov/airquality/airdata/ad_contacts.html>

Readers are cautioned not to rank order geographic areas based on AirData reports. Air pollution levels measured at a particular monitoring site are not necessarily representative of the air quality for an entire county or urban area.

This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site-level statistics may differ from the monitor-level statistics upon which this report is based.

Source: U.S. EPA AirData <<http://www.epa.gov/airdata>>

Generated: April 15, 2013

Monitor Values Report

Geographic Area: Washington County, MD

Pollutant: PM2.5

Year: 2010

Exceptional Events: Included (if any)

Duration Description=24-HR BLK AVG

| Duration Description | Obs | First Max | Second Max | Third Max | Fourth Max | 98th Percentile | Weighted Annual Mean | Exc Events | Monitor Number | Site ID | Address | City | County | State | EPA Region |
|----------------------|-----|-----------|------------|-----------|------------|-----------------|----------------------|------------|----------------|-----------|--------------------|------------|------------|-------|------------|
| 24-HR BLK AVG | 161 | 39 | 36.8 | 34.1 | 31 | 31 | 12.6 | None | 3 | 240430009 | 18530 Roxbury Road | Hagerstown | Washington | MD | 03 |

Get detailed information about this report, including column descriptions, at http://www.epa.gov/airquality/airdata/ad_about_reports.html#mon

AirData reports are produced from a direct query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated daily by state, local, and tribal organizations who own and submit the data. Please contact the appropriate air quality monitoring agency to report any data problems.

<http://www.epa.gov/airquality/airdata/ad_contacts.html>

Readers are cautioned not to rank order geographic areas based on AirData reports. Air pollution levels measured at a particular monitoring site are not necessarily representative of the air quality for an entire county or urban area.

This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site-level statistics may differ from the monitor-level statistics upon which this report is based.

Source: U.S. EPA AirData <<http://www.epa.gov/airdata>>

Generated: April 15, 2013

Monitor Values Report

Geographic Area: Washington County, MD

Pollutant: PM2.5

Year: 2011

Exceptional Events: Included (if any)

Duration Description=24-HR BLK AVG

| Duration Description | Obs | First Max | Second Max | Third Max | Fourth Max | 98th Percentile | Weighted Annual Mean | Exc Events | Monitor Number | Site ID | Address | City | County | State | EPA Region |
|----------------------|-----|-----------|------------|-----------|------------|-----------------|----------------------|------------|----------------|-----------|--------------------|------------|------------|-------|------------|
| 24-HR BLK AVG | 340 | 34.7 | 32.6 | 32.5 | 31.7 | 28 | 11.5 | None | 3 | 240430009 | 18530 Roxbury Road | Hagerstown | Washington | MD | 03 |

Get detailed information about this report, including column descriptions, at http://www.epa.gov/airquality/airdata/ad_about_reports.html#mon

AirData reports are produced from a direct query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated daily by state, local, and tribal organizations who own and submit the data. Please contact the appropriate air quality monitoring agency to report any data problems.

<http://www.epa.gov/airquality/airdata/ad_contacts.html>

Readers are cautioned not to rank order geographic areas based on AirData reports. Air pollution levels measured at a particular monitoring site are not necessarily representative of the air quality for an entire county or urban area.

This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site-level statistics may differ from the monitor-level statistics upon which this report is based.

Source: U.S. EPA AirData <<http://www.epa.gov/airdata>>

Generated: April 15, 2013

Monitor Values Report

Geographic Area: Washington County, MD

Pollutant: PM2.5

Year: 2012

Exceptional Events: Included (if any)

Duration Description=24-HR BLK AVG

| Duration Description | Obs | First Max | Second Max | Third Max | Fourth Max | 98th Percentile | Weighted Annual Mean | Exc Events | Monitor Number | Site ID | Address | City | County | State | EPA Region |
|----------------------|-----|-----------|------------|-----------|------------|-----------------|----------------------|------------|----------------|-----------|--------------------|------------|------------|-------|------------|
| 24-HR BLK AVG | 349 | 38.3 | 31.8 | 29.3 | 29 | 27 | 10.8 | None | 3 | 240430009 | 18530 Roxbury Road | Hagerstown | Washington | MD | 03 |

Get detailed information about this report, including column descriptions, at http://www.epa.gov/airquality/airdata/ad_about_reports.html#mon

AirData reports are produced from a direct query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated daily by state, local, and tribal organizations who own and submit the data. Please contact the appropriate air quality monitoring agency to report any data problems.

<http://www.epa.gov/airquality/airdata/ad_contacts.html>

Readers are cautioned not to rank order geographic areas based on AirData reports. Air pollution levels measured at a particular monitoring site are not necessarily representative of the air quality for an entire county or urban area.

This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site-level statistics may differ from the monitor-level statistics upon which this report is based.

Source: U.S. EPA AirData <<http://www.epa.gov/airdata>>

Generated: April 15, 2013

Monitor Values Report

Geographic Area: Montgomery County, MD

Pollutant: PM2.5

Year: 2010

Exceptional Events: Included (if any)

Duration Description=24 HOUR

| Duration Description | Obs | First Max | Second Max | Third Max | Fourth Max | 98th Percentile | Weighted Annual Mean | Exc Events | Monitor Number | Site ID | Address | City | County | State | EPA Region |
|----------------------|-----|-----------|------------|-----------|------------|-----------------|----------------------|------------|----------------|-----------|---|-----------|------------|-------|------------|
| 24 HOUR | 50 | 18.6 | 17.7 | 17.2 | 16.9 | 19 | 9.1 | None | 1 | 240313001 | Lathrop E. Smith Environmental Education Center, 5110 Meadowside Lane | Rockville | Montgomery | MD | 03 |

Get detailed information about this report, including column descriptions, at http://www.epa.gov/airquality/airdata/ad_about_reports.html#mon

AirData reports are produced from a direct query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated daily by state, local, and tribal organizations who own and submit the data. Please contact the appropriate air quality monitoring agency to report any data problems.

<http://www.epa.gov/airquality/airdata/ad_contacts.html>

Readers are cautioned not to rank order geographic areas based on AirData reports. Air pollution levels measured at a particular monitoring site are not necessarily representative of the air quality for an entire county or urban area.

This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site-level statistics may differ from the monitor-level statistics upon which this report is based.

Source: U.S. EPA AirData <<http://www.epa.gov/airdata>>

Generated: April 15, 2013

Monitor Values Report

Geographic Area: Montgomery County, MD

Pollutant: PM2.5

Year: 2010

Exceptional Events: Included (if any)

Duration Description=24-HR BLK AVG

| Duration Description | Obs | First Max | Second Max | Third Max | Fourth Max | 98th Percentile | Weighted Annual Mean | Exc Events | Monitor Number | Site ID | Address | City | County | State | EPA Region |
|----------------------|-----|-----------|------------|-----------|------------|-----------------|----------------------|------------|----------------|-----------|---|-----------|------------|-------|------------|
| 24-HR BLK AVG | 352 | 35.8 | 33.8 | 33.1 | 29.6 | 28 | 11.1 | None | 3 | 240313001 | Lathrop E. Smith Environmental Education Center, 5110 Meadowside Lane | Rockville | Montgomery | MD | 03 |

Get detailed information about this report, including column descriptions, at http://www.epa.gov/airquality/airdata/ad_about_reports.html#mon

AirData reports are produced from a direct query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated daily by state, local, and tribal organizations who own and submit the data. Please contact the appropriate air quality monitoring agency to report any data problems. http://www.epa.gov/airquality/airdata/ad_contacts.html

Readers are cautioned not to rank order geographic areas based on AirData reports. Air pollution levels measured at a particular monitoring site are not necessarily representative of the air quality for an entire county or urban area.

This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site-level statistics may differ from the monitor-level statistics upon which this report is based.

Source: U.S. EPA AirData <http://www.epa.gov/airdata>
Generated: April 15, 2013

Monitor Values Report

Geographic Area: Montgomery County, MD

Pollutant: PM2.5

Year: 2011

Exceptional Events: Included (if any)

Duration Description=24-HR BLK AVG

| Duration Description | Obs | First Max | Second Max | Third Max | Fourth Max | 98th Percentile | Weighted Annual Mean | Exc Events | Monitor Number | Site ID | Address | City | County | State | EPA Region |
|----------------------|-----|-----------|------------|-----------|------------|-----------------|----------------------|------------|----------------|-----------|---|-----------|------------|-------|------------|
| 24-HR BLK AVG | 331 | 31.8 | 30.5 | 30.2 | 29.9 | 25 | 10.9 | None | 3 | 240313001 | Lathrop E. Smith Environmental Education Center, 5110 Meadowside Lane | Rockville | Montgomery | MD | 03 |

Get detailed information about this report, including column descriptions, at http://www.epa.gov/airquality/airdata/ad_about_reports.html#mon

AirData reports are produced from a direct query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated daily by state, local, and tribal organizations who own and submit the data. Please contact the appropriate air quality monitoring agency to report any data problems.

<http://www.epa.gov/airquality/airdata/ad_contacts.html>

Readers are cautioned not to rank order geographic areas based on AirData reports. Air pollution levels measured at a particular monitoring site are not necessarily representative of the air quality for an entire county or urban area.

This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site-level statistics may differ from the monitor-level statistics upon which this report is based.

Source: U.S. EPA AirData <<http://www.epa.gov/airdata>>

Generated: April 15, 2013

Monitor Values Report

Geographic Area: Montgomery County, MD

Pollutant: PM2.5

Year: 2012

Exceptional Events: Included (if any)

Duration Description=24-HR BLK AVG

| Duration Description | Obs | First Max | Second Max | Third Max | Fourth Max | 98th Percentile | Weighted Annual Mean | Exc Events | Monitor Number | Site ID | Address | City | County | State | EPA Region |
|----------------------|-----|-----------|------------|-----------|------------|-----------------|----------------------|------------|----------------|-----------|---|-----------|------------|-------|------------|
| 24-HR BLK AVG | 356 | 33.1 | 30.2 | 29 | 25 | 23 | 10.3 | None | 3 | 240313001 | Lathrop E. Smith Environmental Education Center, 5110 Meadowside Lane | Rockville | Montgomery | MD | 03 |

Get detailed information about this report, including column descriptions, at http://www.epa.gov/airquality/airdata/ad_about_reports.html#mon

AirData reports are produced from a direct query of the AQS Data Mart. The data represent the best and most recent information available to EPA from state agencies. However, some values may be absent due to incomplete reporting, and some values may change due to quality assurance activities. The AQS database is updated daily by state, local, and tribal organizations who own and submit the data. Please contact the appropriate air quality monitoring agency to report any data problems.

<http://www.epa.gov/airquality/airdata/ad_contacts.html>

Readers are cautioned not to rank order geographic areas based on AirData reports. Air pollution levels measured at a particular monitoring site are not necessarily representative of the air quality for an entire county or urban area.

This report is based on monitor-level summary statistics. Air quality standards for some pollutants (PM2.5 and Pb) allow for combining data from multiple monitors into a site-level summary statistic that can be compared to the standard. In those cases, the site-level statistics may differ from the monitor-level statistics upon which this report is based.

Source: U.S. EPA AirData <<http://www.epa.gov/airdata>>

Generated: April 15, 2013

APPENDIX B: TRAFFIC DATA

Martin O'Malley, Governor
Anthony G. Brown, Lt. Governor



James T. Smith, Jr., Secretary
Melinda B. Peters, Administrator

MEMORANDUM

TO: Mr. Joseph Kresslein, Assistant Division Chief
Environmental Planning Division
Office of Planning and Preliminary Engineering

ATTN: Ms. Chrissy Brandt
Project Manager

FROM: Morteza Tadayon, Chief
Data Services Engineering Division
Office of Planning and Preliminary Engineering

DATE: September 17, 2013

SUBJECT: MD 108 at Muncaster Road
Montgomery County
Project No.: MO672A21
Title Sheet/Loadometer Data

In response to your recent request for updated traffic information and loadometer data for the above project, we offer the following:

MD 108 at Muncaster Road

| | <u>2013</u> | <u>2033</u> |
|---------------------------------|-------------|-------------|
| Average Daily Traffic (ADT) | 19,750 | 24,100 |
| Design Hour Volume (DHV) | 10% | 10% |
| Directional Distribution of DHV | 50% | 50% |
| Percent Trucks – ADT | 6% | 6% |
| Percent Trucks – DHV | 5% | 5% |

Loadometer Data:

| | ADT | 2A | 3D | 2S1 | 2S2 | 3S2 | 3S3 | Total |
|-------------|------------|-----------|-----------|------------|------------|------------|------------|--------------|
| 2013 | 19,750 | 868 | 132 | 21 | 84 | 73 | 7 | 1,185 |
| 2033 | 24,100 | 1,059 | 161 | 25 | 102 | 90 | 9 | 1,446 |

We suggest using Weigh-in-Motion Station **5010-88** for this location.

My telephone number/toll-free number is _____
Maryland Relay Service for Impaired Hearing or Speech 1.800.735.2258 Statewide Toll Free

Mr. Joseph Kresslein
Page Two

The FHWA Vehicle Classification Data for this project was based on the following:

| FHWA Class | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | Total |
|-------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|-----------|-----------|-----------|--------------|
| 2013 ADT | 18 | 15,191 | 3,356 | 115 | 753 | 124 | 8 | 105 | 73 | 7 | 0 | 0 | 0 | 19,750 |
| 2013 DHV | 1 | 1,592 | 291 | 8 | 62 | 7 | 0 | 10 | 3 | 1 | 0 | 0 | 0 | 1,975 |
| 2033 ADT | 24 | 18,198 | 4,432 | 140 | 919 | 151 | 10 | 127 | 90 | 9 | 0 | 0 | 0 | 24,100 |
| 2033 DHV | 1 | 1,887 | 411 | 9 | 76 | 9 | 0 | 12 | 4 | 1 | 0 | 0 | 0 | 2,410 |

An electronic copy of the loadometer output sheets will be forwarded to the Pavement and Geotechnical Division along with this memorandum.

If you have any questions or concerns, please contact the writer at 410-545-5644 or Lisa Shemer, Assistant Division Chief, Data Services Engineering Division at 410-545-5640.

By: 
Tanya M. King, P.E.
Travel Forecasting and Analysis
Data Services Engineering Division

cc: Mr. Vachel Davis
Mr. Paulo DeSousa
Mr. Subrat Mahapatra
Ms. Anyesha Mookherjee

MEMORANDUM

TO: Mr. Dennis German, Chief
Community Design Division
Office of Highway Development

ATTN: Ms. Shannon Slick

FROM: Morteza Tadayon, Chief
Data Services Engineering Division
Office of Planning and Preliminary Engineering

DATE: August 6, 2013

SUBJECT: Montgomery County
MD 108 at Muncaster Rd
Capacity Analysis

Purpose:

This memorandum is in response to your recent request for a summary of the Capacity and Storage Length Analyses performed for MD 108 at Muncaster Rd and a Storage Length Analysis for MD 108 at Brookeville Rd. The proposed improvement is that another lane will be added to MD 108 EB to the west of Muncaster Rd and to the east of Brookeville Rd.

Methodology:

Recent 12-hour turning movement counts were used and existing intersection geometric information was obtained from recent aerial photographs and the proposed intersection geometric information was provided by the Office of Highway Development's (OHD) Community Design Division. The above information was utilized to perform the capacity, and storage length analyses.

Capacity Analyses:

The existing peak hour turning movements were forecasted to develop the design year (2013) and future year (2033) peak hour turning movements. The capacity analyses were performed using micro-simulation traffic software, Synchro/SimTraffic. Capacity analyses were performed for the existing and future year no-build and build conditions. The overall intersection capacity analyses results are presented in Tables 1 and 2 below:

Table 1: Overall Intersection Capacity Analysis – Year 2013

| Synchro | | | | | | |
|-----------------|-----------------|------|-----|-----------------|------|-----|
| | AM Peak Hour | | | PM Peak Hour | | |
| | Delay (sec/veh) | v/c | LOS | Delay (sec/veh) | v/c | LOS |
| No-Build | 70.0 | 0.99 | E | 17.5 | 0.69 | B |
| Build | 27.5 | 0.67 | C | 24.4 | 0.67 | C |

Table 2: Overall Intersection Capacity Analysis – Year 2033

| Synchro | | | | | | |
|-----------------|-----------------|------|-----|-----------------|------|-----|
| | AM Peak Hour | | | PM Peak Hour | | |
| | Delay (sec/veh) | v/c | LOS | Delay (sec/veh) | v/c | LOS |
| No-Build | 138.5 | 1.23 | F | 32.9 | 0.96 | C |
| Build | 61.1 | 0.89 | E | 28.9 | 0.84 | C |

The results in the above two tables indicate that the proposed improvement will improve overall intersection operations during the AM peak hour in the design and future year and the PM peak hours in the future years.

Storage Length Analysis:

In addition to the capacity analysis, the adequacy of the existing left and right turn storage was analyzed. This analysis was performed using both SHA’s queuing methodology and the microscopic traffic simulation software, Synchro/SimTraffic. The results of the analysis are presented in Tables 3 below:

Table 3: Build Option Storage Length Analysis – Year 2013

| | Existing Storage (ft) | SimTraffic Estimated 95th Queue Length (ft) | | | | | | | |
|---|-----------------------|---|-----|------------|-----|---------------|-----|------------|-----|
| | | 2013 Existing | | 2013 Build | | 2033 No Build | | 2033 Build | |
| | | AM | PM | AM | PM | AM | PM | AM | PM |
| MD 108 WB Left onto Muncaster Rd | 285 | 353 | 104 | 294 | 258 | 325 | 372 | 361 | 280 |
| MD 108 EB Left onto Brookeville Rd | 180 | 58 | 66 | 71 | 79 | 88 | 105 | 90 | 134 |

The build queues are based on the assumption that the signal at MD 108 at Muncaster Rd was optimized. The result in the above table indicates that the two left turn existing storage bays are adequate to accommodate their projected design and future year queues.

The queue for MD 108 WB Left onto Muncaster Rd exceeds the existing storage length now and in the future. The existing storage lengths of MD 108 WB left onto Muncaster Rd and MD 108 EB left onto Brookeville is 465 feet (this does not include the taper) is the entire link length on MD 108 between Brookeville Rd and Muncaster Rd. It is recommended that the MD 108 WB

Left onto Muncaster Rd Storage Length be extended to 360 and the MD 108 EB Left onto Brookeville Rd be shortened to 135 to accommodate the queues.

If we can be of any further assistance, please feel free to contact the writer at 410-545-5643 or Ms. Lisa Shemer, Assistant Division Chief for the Travel Forecasting and Analysis Division, at 410-545-5640.

If you have any questions or concerns, please contact the writer at 410-545-5644 or Lisa Shemer, Assistant Division Chief, Data Services Engineering Division at 410-545-5640.

By: _____

Tanya M. King, P.E.
Travel Forecasting and Analysis
Data Services Engineering Division

Attachments

cc: Mr. Subrat Mahapatra
Ms. Anyesha Mookherjee

DRAFT

APPENDIX C: INTERAGENCY CONSULTATION CORRESPONDENCE

Shawn Burnett

From: Jeanette.Mar@dot.gov
Sent: Wednesday, October 09, 2013 10:33 AM
To: CBrandt@sha.state.md.us; bhug@mde.state.md.us; McCurdy.Alaina@epa.gov; Rudnick.Barbara@epamail.epa.gov; becoat.gregory@epa.gov; Khadr.Asrah@epa.gov; mrutkowski@mde.state.md.us; jrohlf@mwcog.org
Cc: Shawn Burnett; Nicole M. Hebert
Subject: RE: MD 108 at Muncaster Road - Air Quality Interagency Consultation

Hi Chrissy:

I concur that the MD 108 at Muncaster Road project meets the requirements of the CAA and 40 CFR 93 and does not need an additional quantitative hot-spot analysis.

I have one minor editorial comment on page 2, please change "Mobile Air Source Toxics" to "Mobile Source Air Toxics".

Thanks!

Jeanette

Jeanette Mar
Environmental Program Manager
FHWA - DelMar Division
10 South Howard Street, Suite 2450
Baltimore, MD 21201
phone (410) 779-7152
fax (410) 962-4054

From: Christina Brandt [mailto:CBrandt@sha.state.md.us]
Sent: Tuesday, September 24, 2013 2:18 PM
To: 'bhug@mde.state.md.us'; Mar, Jeanette (FHWA); 'McCurdy.Alaina@epa.gov'; 'Rudnick.Barbara@epamail.epa.gov'; 'Becoat, gregory'; 'Khadr, Asrah'; 'mrutkowski@mde.state.md.us'; 'jrohlf@mwcog.org'
Cc: 'Shawn Burnett'; 'Nicole M. Hebert'
Subject: MD 108 at Muncaster Road - Air Quality Interagency Consultation

Good Afternoon,

Attached is the PM2.5 Conformity Determination for the MD 108 at Muncaster Road project located in Montgomery County, Maryland.

SHA is requesting concurrence that this project meets the requirements of the Clean Air Act and 40 CFR 93 without an additional quantitative hot-spot analysis.

The project is included in the FY 2013-2018 TIP as Project ID 3084.

Please review and provide concurrence/comments prior to October 8, 2013.

Thank you,

10/23/2013

Chrissy

Christina Brandt

Environmental Manager

OPPE-Environmental Planning Division

MD State Highway Administration

707 North Calvert Street, Mail Stop C-301

Baltimore, MD 21202

Phone: 410-545-2874

E-mail: cbrandt@sha.state.md.us



Maryland now features 511 traveler information!
Call 511 or visit: www.md511.org



Please consider the environment before printing this email

LEGAL DISCLAIMER - The information contained in this communication (including any attachments) may be confidential and legally privileged. This email may not serve as a contractual agreement unless explicit written agreement for this purpose has been made. If you are not the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this communication or any of its contents is strictly prohibited. If you have received this communication in error, please re-send this communication to the sender indicating that it was received in error and delete the original message and any copy of it from your computer system.

Shawn Burnett

From: Christina Brandt [CBrandt@sha.state.md.us]
Sent: Monday, October 21, 2013 10:47 AM
To: Nicole M. Hebert; Shawn Burnett
Subject: FW: MD 108 at Muncaster Road - Air Quality Interagency Consultation

From: Khadr, Asrah [mailto:Khadr.Asrah@epa.gov]
Sent: Monday, October 21, 2013 9:39 AM
To: Christina Brandt
Cc: McCurdy, Alaina; Rudnick, Barbara; Becoat, gregory
Subject: RE: MD 108 at Muncaster Road - Air Quality Interagency Consultation

EPA concurs with SHA's recommendation that this project does not require a quantitative hot-spot analysis.

Asrah Khadr, Environmental Engineer, EIT
U.S. Environmental Protection Agency, Region III
Air Protection Division
Office of Air Program Planning
1650 Arch Street
Philadelphia, PA 19103
Phone: 215-814-2071

From: Christina Brandt [mailto:CBrandt@sha.state.md.us]
Sent: Monday, October 21, 2013 8:40 AM
To: 'mrutkowski@mde.state.md.us'; 'jrohlf@mwcog.org'; Khadr, Asrah
Subject: FW: MD 108 at Muncaster Road - Air Quality Interagency Consultation

Good Morning,

I'm just following up on the attached report. Please let me know if you concur or have comments.

Thank you!

Chrissy

From: Christina Brandt
Sent: Tuesday, September 24, 2013 2:18 PM
To: 'bhug@mde.state.md.us'; 'jeanette.mar@dot.gov'; 'McCurdy.Alaina@epa.gov'; 'Rudnick.Barbara@epamail.epa.gov'; 'Becoat, gregory'; 'Khadr, Asrah'; 'mrutkowski@mde.state.md.us'; 'jrohlf@mwcog.org'
Cc: 'Shawn Burnett'; 'Nicole M. Hebert'
Subject: MD 108 at Muncaster Road - Air Quality Interagency Consultation

Good Afternoon,

Attached is the PM2.5 Conformity Determination for the MD 108 at Muncaster Road project located in Montgomery County, Maryland.

SHA is requesting concurrence that this project meets the requirements of the Clean Air Act and 40 CFR 93

without an additional quantitative hot-spot analysis.

The project is included in the FY 2013-2018 TIP as Project ID 3084.

Please review and provide concurrence/comments prior to October 8, 2013.

Thank you,

Chrissy

Christina Brandt

Environmental Manager

OPPE-Environmental Planning Division

MD State Highway Administration

707 North Calvert Street, Mail Stop C-301

Baltimore, MD 21202

Phone: 410-545-2874

E-mail: cbrandt@sha.state.md.us



Maryland now features 511 traveler information!
Call 511 or visit: www.md511.org



Please consider the environment before printing this email

LEGAL DISCLAIMER - The information contained in this communication (including any attachments) may be confidential and legally privileged. This email may not serve as a contractual agreement unless explicit written agreement for this purpose has been made. If you are not the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this communication or any of its contents is strictly prohibited. If you have received this communication in error, please re-send this communication to the sender indicating that it was received in error and delete the original message and any copy of it from your computer system.



Maryland now features 511 traveler information!
Call 511 or visit: www.md511.org

Shawn Burnett

From: Christina Brandt [CBrandt@sha.state.md.us]
Sent: Monday, October 21, 2013 10:47 AM
To: Nicole M. Hebert
Cc: Shawn Burnett
Subject: FW: MD 108 at Muncaster Road - Air Quality Interagency Consultation

From: Joan Rohlfs [mailto:jrohlfs@mwkog.org]
Sent: Monday, October 21, 2013 8:56 AM
To: Christina Brandt; 'mrutkowski@mde.state.md.us'; 'Khadr, Asrah'
Subject: RE: MD 108 at Muncaster Road - Air Quality Interagency Consultation

I concur with the report results.

Joan Rohlfs
Environmental Resources Program Director
Metropolitan Washington Council of Governments
777 North Capitol St., NE
Washington, D.C. 20002-4239
Tel: 202-962-3358
Fax: 202-962-3203

From: Christina Brandt [<mailto:CBrandt@sha.state.md.us>]
Sent: Monday, October 21, 2013 8:40 AM
To: 'mrutkowski@mde.state.md.us'; Joan Rohlfs; 'Khadr, Asrah'
Subject: FW: MD 108 at Muncaster Road - Air Quality Interagency Consultation

Good Morning,

I'm just following up on the attached report. Please let me know if you concur or have comments.

Thank you!

Chrissy

From: Christina Brandt
Sent: Tuesday, September 24, 2013 2:18 PM
To: 'bhug@mde.state.md.us'; 'jeanette.mar@dot.gov'; 'McCurdy.Alaina@epa.gov'; 'Rudnick.Barbara@epamail.epa.gov'; 'Becoat, gregory'; 'Khadr, Asrah'; 'mrutkowski@mde.state.md.us'; 'jrohlfs@mwkog.org'
Cc: 'Shawn Burnett'; 'Nicole M. Hebert'
Subject: MD 108 at Muncaster Road - Air Quality Interagency Consultation

Good Afternoon,

Attached is the PM2.5 Conformity Determination for the MD 108 at Muncaster Road project located in Montgomery County, Maryland.

SHA is requesting concurrence that this project meets the requirements of the Clean Air Act and 40 CFR 93

10/23/2013

without an additional quantitative hot-spot analysis.

The project is included in the FY 2013-2018 TIP as Project ID 3084.

Please review and provide concurrence/comments prior to October 8, 2013.

Thank you,

Chrissy

Christina Brandt

Environmental Manager

OPPE-Environmental Planning Division

MD State Highway Administration

707 North Calvert Street, Mail Stop C-301

Baltimore, MD 21202

Phone: 410-545-2874

E-mail: cbrandt@sha.state.md.us



Maryland now features 511 traveler information!
Call 511 or visit: www.md511.org



Please consider the environment before printing this email

LEGAL DISCLAIMER - The information contained in this communication (including any attachments) may be confidential and legally privileged. This email may not serve as a contractual agreement unless explicit written agreement for this purpose has been made. If you are not the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this communication or any of its contents is strictly prohibited. If you have received this communication in error, please re-send this communication to the sender indicating that it was received in error and delete the original message and any copy of it from your computer system.



Maryland now features 511 traveler information!
Call 511 or visit: www.md511.org

Shawn Burnett

From: Christina Brandt [CBrandt@sha.state.md.us]
Sent: Wednesday, October 23, 2013 9:23 AM
To: Shawn Burnett
Cc: Nicole M. Hebert
Subject: FW: FW: MD 108 at Muncaster Road - Air Quality Interagency Consultation
MDE concurrence.

From: Molly Berger -MDE- [mailto:molly.berger@maryland.gov]
Sent: Wednesday, October 23, 2013 9:20 AM
To: Christina Brandt
Subject: Fwd: FW: MD 108 at Muncaster Road - Air Quality Interagency Consultation

Chrissy,

MDE is fine with the MD 108 Analysis.

Thanks,

Molly Berger

Molly Berger

Natural Resource Planner

Air Quality Planning Program, ARMA

Maryland Department of the Environment

1800 Washington Blvd.

Baltimore MD 21230

Phone: 410.537.3234

Email: molly.berger@maryland.gov

----- Forwarded message -----

From: **Mary Jane Rutkowski -MDE-** <maryjane.rutkowski@maryland.gov>
Date: Mon, Oct 21, 2013 at 9:36 AM
Subject: Fwd: FW: MD 108 at Muncaster Road - Air Quality Interagency Consultation
To: Molly Berger -MDE- <molly.berger@maryland.gov>

10/23/2013

Cc: Diane Franks -MDE- <diane.franks@maryland.gov>, Brian Hug -MDE- <brian.hug@maryland.gov>, Roger Thunell -MDE- <roger.thunell@maryland.gov>

Hi Molly

I received this email for review from the State Highway Administration. Because the project is in Montgomery County, part of the Metropolitan Washington Council of Governments, I believe you should be the person to review. Please let me know if you have any questions.

----- Forwarded message -----

From: **Christina Brandt** <CBrandt@sha.state.md.us>

Date: Mon, Oct 21, 2013 at 8:40 AM

Subject: FW: MD 108 at Muncaster Road - Air Quality Interagency Consultation

To: "mrutkowski@mde.state.md.us" <mrutkowski@mde.state.md.us>, "jrohlf@mwcog.org" <jrohlf@mwcog.org>, "Khadr, Asrah" <Khadr.Asrah@epa.gov>

Good Morning,

I'm just following up on the attached report. Please let me know if you concur or have comments.

Thank you!

Chrissy

From: Christina Brandt

Sent: Tuesday, September 24, 2013 2:18 PM

To: 'bhug@mde.state.md.us'; 'jeanette.mar@dot.gov'; 'McCurdy.Alaina@epa.gov'; 'Rudnick.Barbara@epamail.epa.gov'; 'Becoat, gregory'; 'Khadr, Asrah'; 'mrutkowski@mde.state.md.us'; 'jrohlf@mwcog.org'

Cc: 'Shawn Burnett'; 'Nicole M. Hebert'

Subject: MD 108 at Muncaster Road - Air Quality Interagency Consultation

Good Afternoon,

Attached is the PM2.5 Conformity Determination for the MD 108 at Muncaster Road project located in Montgomery County, Maryland.

SHA is requesting concurrence that this project meets the requirements of the Clean Air Act and 40 CFR 93 without an additional quantitative hot-spot analysis.

The project is included in the FY 2013-2018 TIP as Project ID 3084.

Please review and provide concurrence/comments prior to October 8, 2013.

Thank you,

Chrissy

Christina Brandt

Environmental Manager

10/23/2013

OPPE-Environmental Planning Division

MD State Highway Administration

707 North Calvert Street, Mail Stop C-301

Baltimore, MD 21202

Phone: [410-545-2874](tel:410-545-2874)

E-mail: cbrandt@sha.state.md.us



Maryland now features 511 traveler information!
Call 511 or visit: www.md511.org



Please consider the environment before printing this email

LEGAL DISCLAIMER - The information contained in this communication (including any attachments) may be confidential and legally privileged. This email may not serve as a contractual agreement unless explicit written agreement for this purpose has been made. If you are not the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this communication or any of its contents is strictly prohibited. If you have received this communication in error, please re-send this communication to the sender indicating that it was received in error and delete the original message and any copy of it from your computer system.

--

Mary Jane Rutkowski

Natural Resources Planner

Air and Radiation Management Administration

Maryland Department of the Environment

1800 Washington Boulevard

Baltimore, Maryland 21230

[\(410\) 537-4163](tel:4105374163)

--

Molly Berger

APPENDIX D: PROJECT MAPPING



INDEX OF SHEETS
SEE SHEET 2

Maryland Department of Transportation STATE HIGHWAY ADMINISTRATION PLANS OF PROPOSED HIGHWAY S.H.A. CONTRACT NO. MO6725187 FEDERAL AID PROJECT NO. PENDING MD 108 (OLNEY LAYTONSVILLE ROAD) FROM WEST OF MUNCASTER ROAD TO EAST OF BROOKEVILLE ROAD

AASHTO DESIGN CRITERIA

THIS PROJECT WAS DESIGNED IN ACCORDANCE WITH THE 2001 PUBLICATION OF AASHTO'S "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS."

STANDARD SPECIFICATIONS BOOK, BOOK OF STANDARDS AND MUTCD

ALL WORK ON THIS PROJECT SHALL CONFORM TO: THE MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATIONS SPECIFICATIONS ENTITLED STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS DATED JULY 2008 REVISIONS THEREOF OR ADDITIONS THERETO; THE SPECIAL PROVISIONS INCLUDED IN THE INVITATION FOR BIDS BOOK; THE ADMINISTRATIONS BOOK OF STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES AND THE LATEST MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

RIGHT OF WAY

RIGHT OF WAY AND EASEMENT LINES SHOWN ON THESE PLANS ARE FOR ASSISTANCE IN INTERPRETING THE PLANS. THEY ARE NOT OFFICIAL. FOR OFFICIAL FEE RIGHT OF WAY AND EASEMENT INFORMATION, SEE APPROPRIATE RIGHT OF WAY PLATS.

UTILITIES

THE LOCATION OF UTILITIES SHOWN ON THE PLANS ARE FOR INFORMATION AND GUIDANCE ONLY. NO GUARANTEE IS MADE OF THE ACCURACY OF SAID LOCATIONS.

COMPLETENESS OF DOCUMENTS

THE STATE HIGHWAY ADMINISTRATION SHALL ONLY BE RESPONSIBLE FOR THE COMPLETENESS OF DOCUMENTS OBTAINED DIRECTLY FROM THE STATE HIGHWAY ADMINISTRATION'S CASHIER'S OFFICE. FAILURE TO ATTACH ADDENDA MAY CAUSE THE BID TO BE IRREGULAR.

ADA COMPLIANCE

THE DESIGN OF THIS PROJECT HAS INCORPORATED FACILITIES FOR THE ELDERLY AND HANDICAPPED IN COMPLIANCE WITH THE STATE AND FEDERAL LEGISLATION

ENVIRONMENTAL INFORMATION

MDE # ##-XX-####

ALL STORMWATER MANAGEMENT FACILITIES CONSTRUCTED FOR CONTRACT NO. MO6725187 SHALL BE INSPECTED AND MAINTAINED IN ACCORDANCE WITH THE STATE HIGHWAY ADMINISTRATIONS BEST MANAGEMENT PRACTICES (BMP) INSPECTION AND REMEDIATION PROGRAM.

SEDIMENT AND EROSION CONTROL REGULATIONS WILL BE STRICTLY ENFORCED DURING CONSTRUCTION.

STANDARD STABILIZATION NOTE :

FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN THREE (3) CALENDER DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1), AND SEVEN DAYS (7) AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

OWNERS / DEVELOPERS CERTIFICATION :

I / WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION AND/OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I HEREBY AUTHORIZE THE RIGHT OF ENTRY FOR PERIODIC ON-SITE EVALUATION BY STATE OF MARYLAND, DEPARTMENT OF THE ENVIRONMENT, COMPLIANCE INSPECTORS.

DRILL HOLES

DRILL HOLES

DRILL HOLES

BY: SSLICK - COMMUNITY DESIGN DIVISION

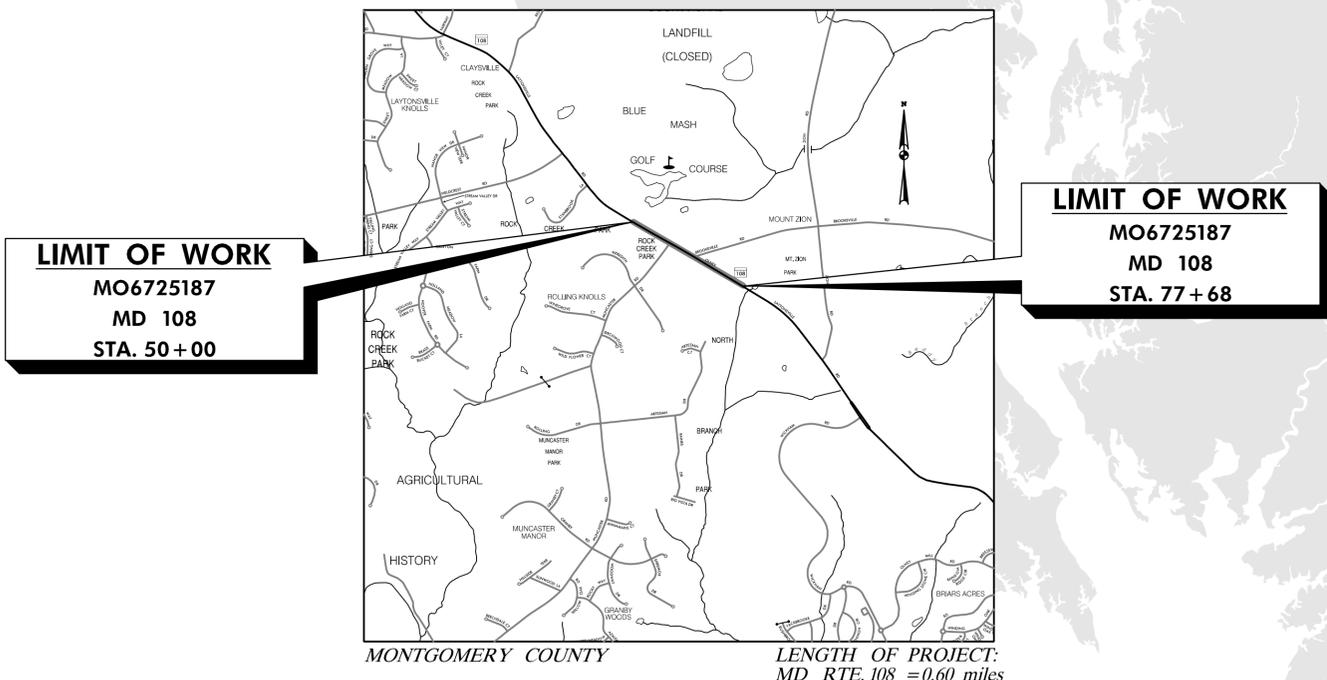


Table with 2 columns: DATUM, VALUE. Rows: HORIZONTAL DATUM (NAD 83 /91), VERTICAL DATUM (NAVD 88)

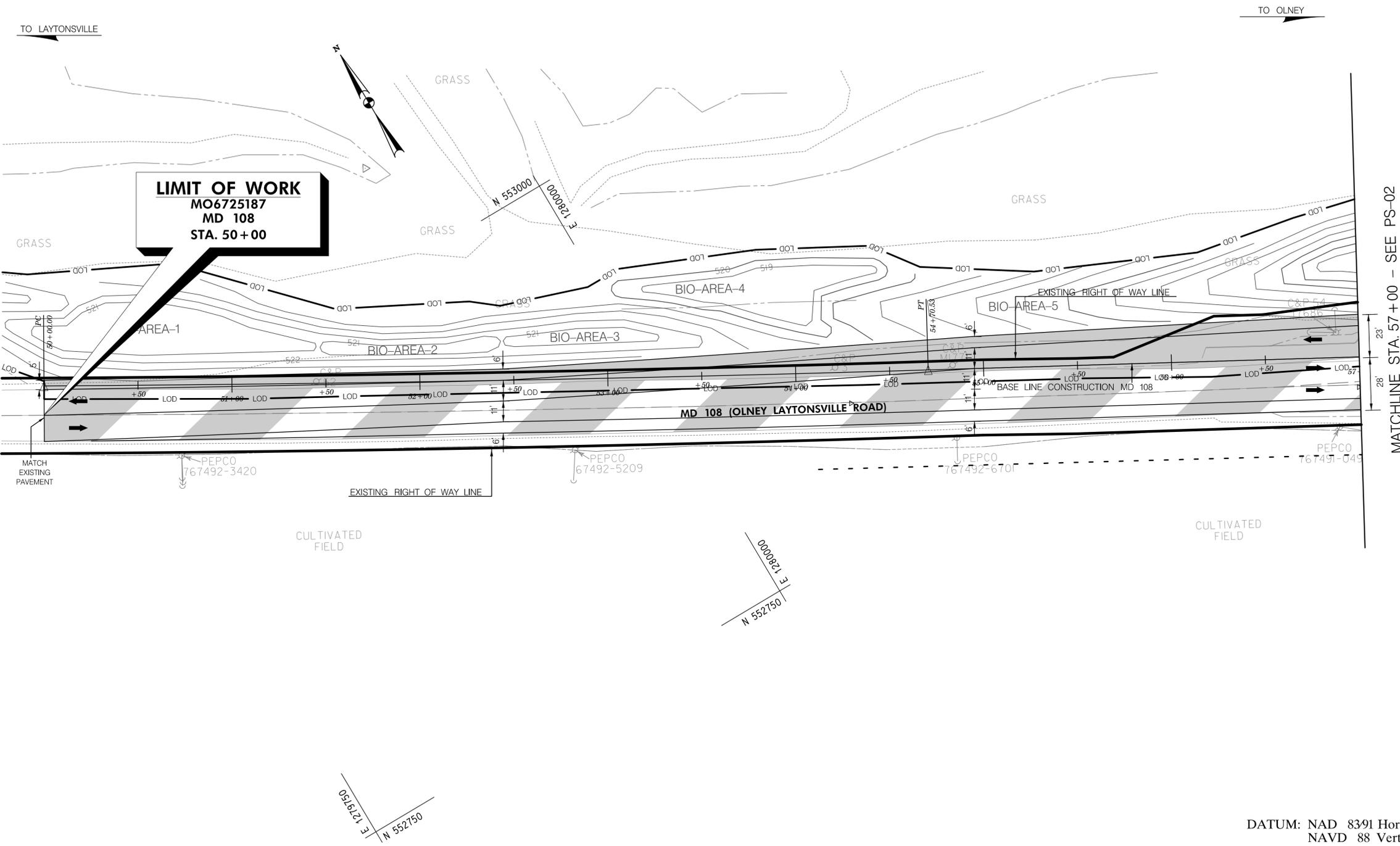


DESIGN DESIGNATION table with columns: ROADWAY, CONTROLS / YEARS, AVERAGE DAILY TRAFFIC (A.D.T.), DESIGN HOURLY VOLUME (D.H.V.), DIRECTIONAL DISTRIBUTION, % TRUCKS - A.D.T., % TRUCKS - D.H.V., DESIGN SPEED M. P. H., FUNCTIONAL CLASSIFICATION, CONTROL OF ACCESS, INTENSITY OF DEVELOPMENT, TERRAIN, ANTICIPATED POSTED SPEED.

REVISIONS table with columns: REVISIONS, NOTE. Includes text: See Sheet No. 2 for List of Revised Sheet Numbers

Table with 2 columns: R-O-W PLAT NUMBERS, SURVEY BOOK NUMBERS

Approval and signature blocks for District Engineer, Director Office of Highway Development, and Deputy Administrator / Chief Engineer for Planning, Engineering, Real Estate and Environment.



QUANTITIES UNDER CONSTRUCTION

SHA STATE OF MARYLAND
 DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION
 COMMUNITY DESIGN DIVISION

MD 108 (OLNEY LAYTONSVILLE ROAD)
 FROM WEST OF MUNCASTER ROAD TO EAST OF BROOKVILLE ROAD

DATUM: NAD 8391 Horizontal
NAVD 88 Vertical

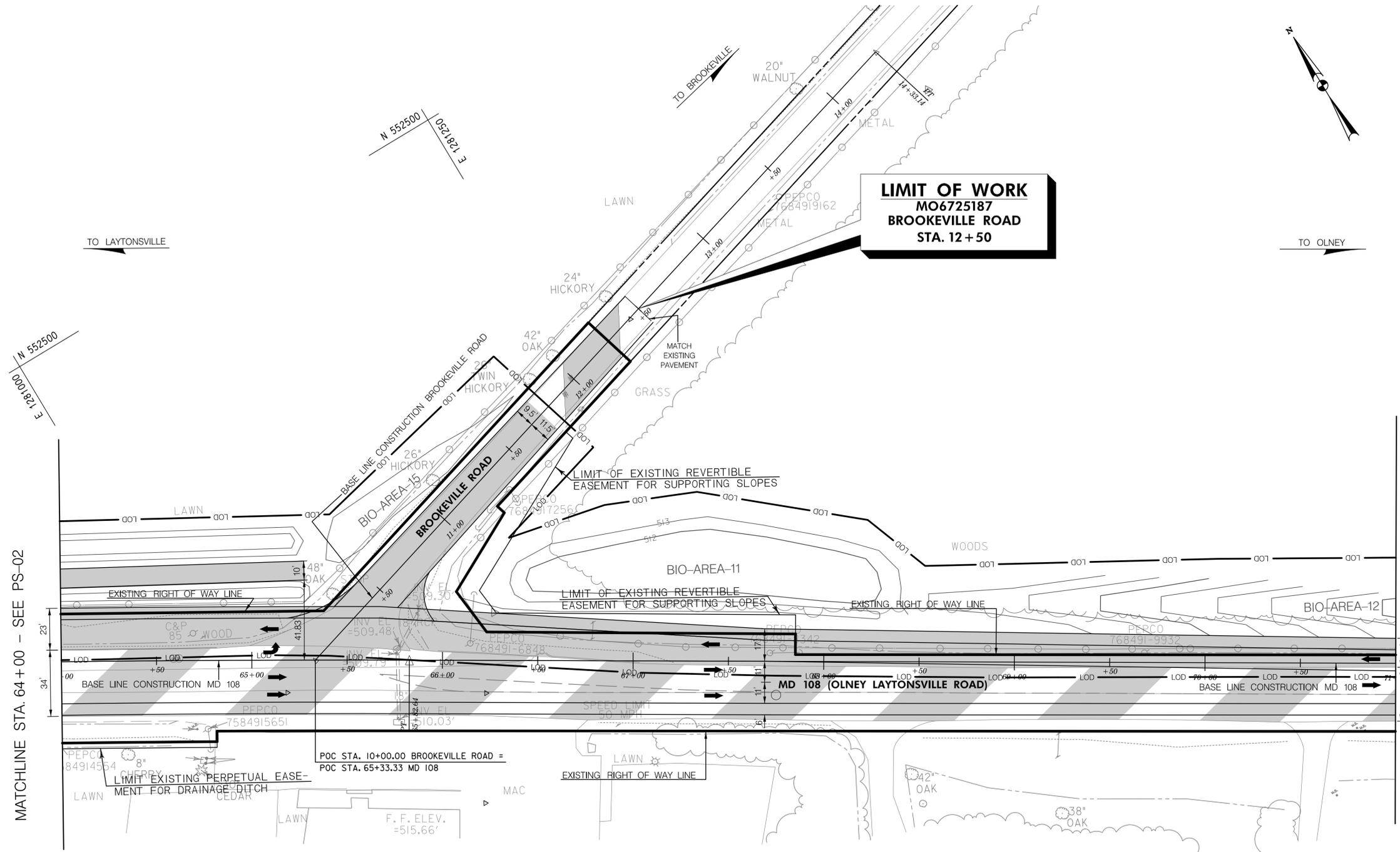
| ROADWAY LEGEND |
|---------------------------|
| FULL DEPTH RECONSTRUCTION |
| HMA RESURFACING |

| REVISIONS |
|-----------|
| |

| ROADWAY PLAN | |
|----------------------------|--|
| SCALE 1" = 30' | ADVERTISED DATE _____ CONTRACT NO. MO6725187 |
| DESIGNED BY CDD | COUNTY MONTGOMERY |
| DRAWN BY CDD | LOGMILE _____ |
| CHECKED BY CDD | |
| F.A.P. NO. SEE TITLE SHEET | |
| DRAWING NO. PS-01 | OF 04 SHEET NO. OF |

BY: sslick - Community Design Division

QUANTITIES UNDER CONSTRUCTION



MATCHLINE STA. 64+00 - SEE PS-02

MATCHLINE STA. 71+00 - SEE PS-04

DATUM: NAD 8391 Horizontal
NAVD 88 Vertical


 STATE OF MARYLAND
 DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION
 COMMUNITY DESIGN DIVISION
 MD 108 (OLNEY LAYTONSVILLE ROAD)
 FROM WEST OF MUNCASTER ROAD TO EAST OF BROOKVILLE ROAD

| ROADWAY LEGEND | |
|---|---------------------------|
|  | FULL DEPTH RECONSTRUCTION |
|  | HMA RESURFACING |

| REVISIONS | |
|-----------|--|
| | |

| ROADWAY PLAN | | | |
|----------------|-----------------|--------------|-----------------|
| SCALE 1" = 30' | ADVERTISED DATE | CONTRACT NO. | MO6725187 |
| DESIGNED BY | CDD | COUNTY | MONTGOMERY |
| DRAWN BY | CDD | LOGMILE | |
| CHECKED BY | CDD | F.A.P. NO. | SEE TITLE SHEET |
| DRAWING NO. | PS-03 | OF | 04 |
| SHEET NO. | | OF | |

BY: sslick - Community Design Division

