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MD 103 FROM US 29 TO LONG GATE PARKWAY

AIR QUALITY ANALYSIS TECHNICAL REPORT

September 2015

Howard County, Maryland



**U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION**



**MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION**

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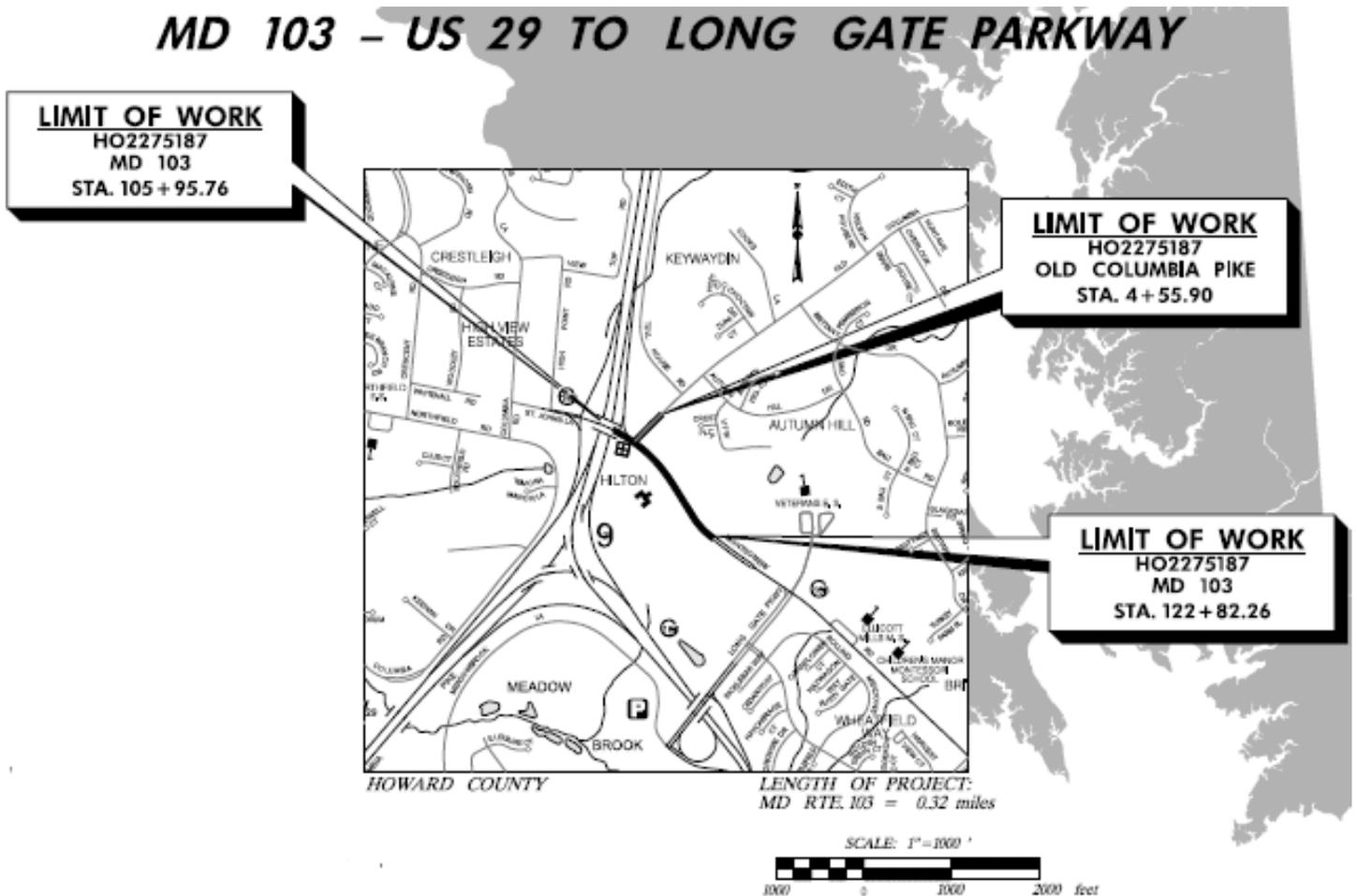
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I. INTRODUCTION

This report presents the results of a review of air quality impacts associated with a proposed auxiliary lane along MD 103 between US 29 and Long Gate Mall and associated improvements in Howard County, Maryland. This study is intended as an evaluation of the project level air quality impacts of the proposed widening and associated improvements. This evaluation is provided to meet the requirements of the Clean Air Act (CAA) and the National Environmental Policy Act (NEPA).

Within the project area, MD 103 is an undivided urban minor arterial running north to south that consists of one lane in both directions. Land use in the vicinity of the MD 103 from US 29 to Long Gate Parkway project is a mix of commercial, institutional, and low density residential. The overall study area extends along MD 103 from the ramp to northbound US 29 to the Long Gate shopping center main entrance for a distance of approximately 0.32 mile (**Figure 1**).

FIGURE 1 – Project Location



The purpose of the MD 103 from US 29 to Long Gate Parkway project is to reduce the likelihood of collisions occurring at the intersection of MD 103 and Old Columbia Pike. Under the existing condition, vehicles traveling north on MD 103 to northbound US 29 often use the right turn only lane as an “exit lane” for the ramp to US 29 northbound. As these vehicles attempt to enter the ramp, they can conflict with vehicles entering the lane from the northbound MD 103 travel lane to turn right at the adjacent Old Columbia Pike intersection. The addition of the proposed northbound auxiliary lane, along with its attendant signage, will significantly reduce the likelihood of these conflicts by

providing vehicles destined for northbound US 29 with a dedicated lane. The purpose will be accomplished by widening the roadway to accommodate bike lanes and a northbound auxiliary lane terminating at the on ramp for northbound US 29. Secondary scope items include stormwater system renovations, sidewalk installation, and associated signage and lighting upgrades. Refer to **Appendix A** for project design details.

II. AIR QUALITY BACKGROUND

The 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 CAA and the Final Transportation Conformity Rule affect the proposed transportation project.

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 EPA has issued Proposed Rules, Guidance Clarifications, and Final Rules concerning the Conformity Determination of fine and coarse particulates (PM_{2.5} and PM₁₀), 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; and
- *Update to the Transportation Conformity Guidance for Quantitative Hot-Spot Analyses in PM_{2.5} and PM₁₀ Nonattainment and Maintenance Areas*, November 2013.

As required by the CAA, 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, accounting 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 CAA 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 re-designated 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 CAA identified 188 air toxics. In 2001 EPA identified a list of 21 Mobile Source Air Toxics (MSATs), and highlighted six of these MSATs as “priority” MSAT.

III. ENVIRONMENTAL ANALYSIS

The MD 103 from US 29 to Long Gate Parkway project is located in Howard County, Maryland, which is included as a part of the Baltimore Metropolitan Statistical Area (MSA). The region has been classified as serious Nonattainment with respect to the 1997 eight-hour ozone standard and maintenance of the 1997 PM_{2.5} standard. The MSA had been Nonattainment for the 1997 PM_{2.5} standard; however, this area was re-designated as Maintenance by the EPA on December 16, 2014. A portion of the MSA, the Baltimore Central Business District (CBD), had been Nonattainment for CO; however, this area has been re-designated as a CO Maintenance Area. This CO Maintenance Area is only the Baltimore CBD and does not extend to Howard County.

Transportation programs and plans must be evaluated for “conformity” to the applicable State Implementation Plan (SIP) provisions before projects can receive Federal funding. Metropolitan Planning Organizations (MPOs) are designated to evaluate projects and develop conforming transportation plans for the assigned MSAs, and to document project and plan conformity with SIP provisions. This is done through the development of Transportation Improvement Programs (TIPs) and Long Range Plans (LRPs). The TIP generally presents the SIP-conforming projects anticipated in an MSA over the next several years while an LRP covers a longer period. On a regional level, a project is considered to be conforming if it is a part of a conforming TIP and LRP.

For the Baltimore region, the Baltimore Regional Transportation Board (BRTB), which is part of the Baltimore Metropolitan Council (BMC), serves as the MPO. Howard County is a member of the BMC. As the MPO, the BRTB develops the TIP and LRP for the region, including Howard County. Furthermore, it performs the related regional conformity analysis. The current LRP, referred to as *Plan It 2035*, was adopted by the BRTB on November 14, 2011. The latest TIP, covering the period 2014 to 2017, was adopted by the BRTB on November 26, 2013.

The proposed project is part of the Areawide Safety And Spot Improvements program, which is an ongoing effort to provide localized improvements to address safety and/or operational issues on State highways. Being areawide, this program occurs throughout the Maryland region. Regionwide projects that improve conditions related to system management and operations are included in the CLRP *Plan It 2035* under the listing of projects with Management and Operations Allocation. The 2014-2017 TIP includes the Areawide Safety And Spot Improvements program under TIP ID 60-9508-19.

IV. ENVIRONMENTAL CONSEQUENCES

In addition to the regional conformity analysis, any federally funded project within a Nonattainment or Maintenance area for CO 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. Although the MD 103 from US 29 to Long Gate Parkway project is not in a CO Nonattainment or Maintenance area subject to the requirements of 40 CFR 93.116 concerning conformity determination, a

qualitative CO assessment has been included. Since Howard County is a Maintenance area for PM_{2.5}, a project-specific PM_{2.5} assessment has been provided.

The closest MDE air monitoring station to the study area that recorded air quality data during years 2012-2014 is located at the Northwest Police Station in Baltimore (City), Maryland. In addition, monitoring data is available at other Maryland monitoring stations including those located at Howard University’s Beltsville Laboratory, Essex, Oldtown Fire Station, and the Glen Burnie Public works Building. All sites are in EPA Region 3. Monitored air quality data within or near the study area for the years 2012-2014 is presented in **Table 2**. Monitoring information is located in **Appendix B**.

TABLE 2 – Ambient Air Quality Monitoring Data 2012-2014

			Site 245100040 Oldtown Fire Station Baltimore MD			Site 240330030 HU-Beltsville Beltsville MD			Site 240053001 Essex Essex MD		
			2012	2013	2014	2012	2013	2014	2012	2013	2014
Carbon Monoxide (CO) [ppm]	1- Hour	1st Maximum	2.5	2.4	1.7	1.3	1	1.5	2.3	2.4	2.4
		2nd Maximum	2.5	2	1.6	1.2	0.9	1	2.1	2.2	1.8
		Actual Exceedances	0	0	0	0	0	0	0	0	0
	8- Hour	1st Maximum	2.1	1.6	1.3	1.2	0.9	0.9	1.6	1.6	1.4
		2nd Maximum	1.6	1.3	1	0.9	0.9	0.8	1.6	1.4	1.3
		Actual Exceedances	0	0	0	0	0	0	0	0	0
			Site 245100007 Northwest Police Station Baltimore MD			Site 245100040 Oldtown Fire Station Baltimore MD			Site 240031003 Public Works Bldng. Glen Burnie MD		
			2012	2013	2014	2012	2013	2014	2012	2013	2014
Particulate Matter (PM _{2.5}) [ug/m ³]	Annual	Weighted Annual Mean	9.3	8.6	8.5	10	9.1	9.2	10.2	9.1	9.1
	24- Hour	98th Percentile	22	20	20	23	23	21	23	22	23

1. Carbon Monoxide (CO) Assessment

A portion of the Baltimore MSA is considered to be a Maintenance area in terms of CO. This Maintenance area only encompasses the CBD of Baltimore City, which previously had been in Nonattainment. Howard County is not included in this Maintenance area, and therefore is not located within a CO Nonattainment or a Maintenance area. There has not been a local violation of the CO standard since 1988. Code of Federal Regulations Title 40, Part 93, Subpart A (40 CFR 93A) implements section 176(c) of the CAA as amended (42 U.S.C. 7401 *et seq.*). Paragraph 40 CFR 93.102 (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 hot-spot conformity determination in conformance with 40 CFR 93.116 is not required, and a qualitative assessment that considers local factors is provided hereinafter.

As shown in **Table 2**, the maximum 1-hour monitored CO concentration of 2.5 ppm occurred in 2012

at Site 245100040, located at the Oldtown Fire Station in Baltimore, Maryland. This concentration is only 7.1 percent of the 1-hour CO NAAQS of 35.0 ppm. The maximum 8-hour monitored CO concentration of 2.1 ppm occurred in the same year at the same site, which is only 23.3 percent of the 8-hour NAAQS of 9.0 ppm.

As shown in **Table 3**, significant changes to traffic volumes and/or vehicle mix are not predicted to occur because of this project (see **Appendix C** for details). The MD 103 from US 29 to Long Gate Parkway project 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.

TABLE 3 – Traffic Data: MD 103 from US 29 to Long Gate Parkway

Condition	Existing 2012	No-Build 2032	Build 2032
ADT	29,700	37,700	37,700
Percent Trucks	5	5	5
Daily Truck Volumes	1,485	1,885	1,885

In conclusion, because the data presented in **Table 2** demonstrates monitored CO concentrations in the project area are a small percentage of the CO NAAQS, and the data in **Table 3** demonstrates the improvements will not result in significant increases in traffic volumes or changes in vehicle mix relative to the No-Build conditions, the construction of the bike lanes and a northbound auxiliary lane along MD 103 and associated improvements 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 Howard County, which is in the Baltimore, MD, Fine Particulate Matter (PM_{2.5}) Maintenance Area. This area was designated as Nonattainment for PM_{2.5} 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 CAA. This area was re-designated as Maintenance by the EPA on December 16, 2014. On November 13, 2009 EPA designated Nonattainment areas based on the 2006 24-hour PM_{2.5} NAAQS. The Baltimore 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.

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 103 from US 29 to Long Gate Parkway project 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 103 from US 29 to Long Gate Parkway project is considered under the following paragraph 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.”*
- 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 proposed project involves widening the roadway to accommodate bike lanes and a northbound auxiliary lane terminating at the on ramp for northbound US 29. Secondary scope items include stormwater system renovations, sidewalk installation, and associated signage and lighting upgrades.
 - As shown in **Table 3**, MD 103 does not carry a significant number of trucks; nor will there be a significant increase in trucks. For the 2032 No-Build conditions, the total MD 103 ADT volume is 37,700 vehicles and the total average daily number of trucks is 1,885 from US 29 to Long Gate Parkway. For the 2032 Build conditions, the MD 103 ADT volume is 37,700 vehicles and the average daily number of trucks is 1,885 from US 29 to Long Gate Parkway.
 - Depicted truck percentages represent the amount of light, medium and heavy truck activity along a given roadway segment. Unless predicated by significant land use changes (heavy truck generators), existing truck percentages are used as the primary factor in determining future percentages. The Build condition will significantly reduce the likelihood of conflicts between vehicles traveling north on MD 103 for northbound US 29 and vehicles entering the ramp from the northbound MD 103 travel lane by providing vehicles destined for northbound US 29 with a dedicated lane, but will not necessarily induce new truck traffic origin-destination patterns.

- A review of the traffic data demonstrates that there will not be a "significant" increase in the number of trucks from the No-Build condition to the Build. The Build condition will improve safety and operation of the roadway, but will not necessarily induce new truck origin-destination patterns.

Based on review and analysis as discussed above, it is determined that the proposed auxiliary lane along MD 103 from the Long Gate Shopping Center main entrance to US 29 in Howard County will meet the CAA 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. Regional Conformity Determination

Section 176(c) of the CAA and the Federal Conformity Rule require that transportation plans and programs conform to the intent of the air quality SIP through a regional emissions analysis in PM_{2.5} Nonattainment areas. The BRTB serves as the MPO, and therefore it is responsible for the regional conformity determination.

- The currently approved BRTB LRP, referred to as *Plan It 2035*, and the 2014-2017 TIP have been determined to conform to the requirements of the CAA Amendments of 1990. These represent the currently conforming LRP and TIP in accordance with 40 CFR 93.114. The MD 103 from US 29 to Long Gate Parkway project is included as TIP ID 60-9508-19 in the 2014-2017 TIP.
- 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 CAA 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.

4. 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 (MSATs) 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 are 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**.

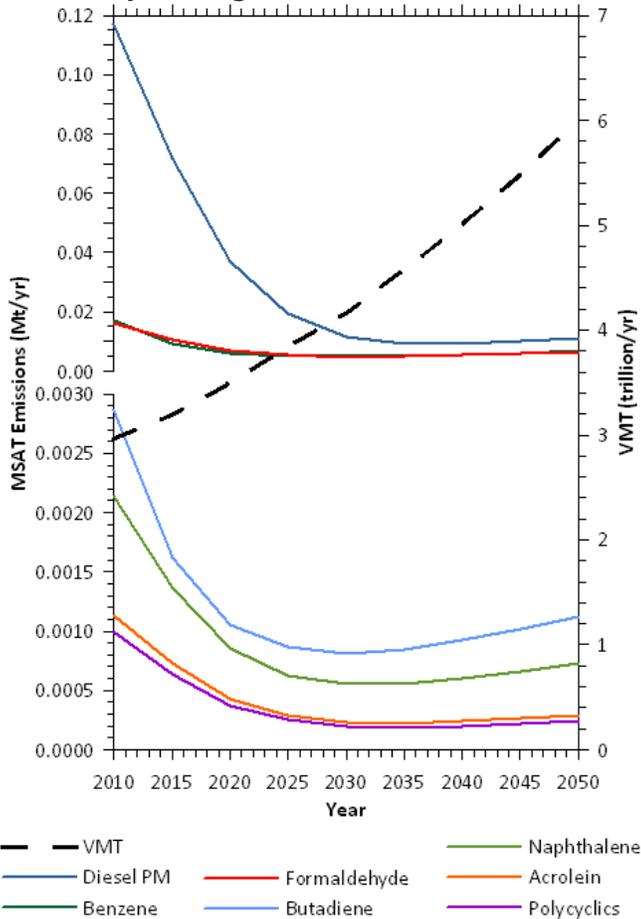
The purpose of the MD 103 from US 29 to Long Gate Parkway project is to reduce the likelihood of collisions occurring at the intersection of MD 103 and Old Columbia Pike. Under the existing condition, vehicles traveling north on MD 103 for northbound US 29 often use the right turn only lane to Old Columbia Pike as an "exit lane" for the northbound US 29 ramp. As these vehicles attempt to enter the on ramp, they can collide with vehicles entering the turn lane from the northbound MD 103 travel lane. The addition of the proposed northbound auxiliary lane, along with its attendant signage, will significantly reduce the likelihood of these collisions by providing vehicles destined for northbound US 29 with a dedicated lane.

This project has been determined to generate minimal air quality impacts for CAA criteria pollutants and has not been linked with any special MSAT concerns. As such, this project will not result in

substantial 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 (**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 from 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.

5. Greenhouse Gas Assessment

Maryland’s Greenhouse Gas Emission Reduction Act of 2009 (GGRA) requires the State to develop and implement a GGRA Plan (the Plan) to reduce greenhouse gas (GHG) emissions 25 percent from the 2006 baseline by 2020. The Plan was published October 2013 and puts the State on track to achieve the 25 percent GHG reduction required by the law. Initiatives outlined in the Plan also will help with restoration of the Chesapeake Bay, improving air quality and improving water quality throughout the State. Currently there are no Federal requirements for consideration of GHG impacts

in transportation planning, however the Maryland Department of Transportation (MDOT), in response to the GGRA, is exploring and implementing transportation and land use strategies to reduce GHG emissions programmatically as described in the Plan.

The general GHG reduction strategies presented for the transportation sector in the Plan include: Transportation Technologies such as vehicle emission and fuel standards, on-road technologies and low emission vehicle initiatives; Public Transportation Initiatives; Pricing Initiatives; GHG Emission Impact evaluation of Major New Transportation Projects; and Bike and Pedestrian Initiatives.

Much like environmental habitats, Maryland's transportation system is a network of interdependent elements and the interactions and synergy between each part impact the transportation system as a whole. GHG emissions from major transportation projects need to be considered as part of the planning process and recognition needs to be made that all projects may not reduce GHG emissions but as a whole the network needs to focus on reductions. Consequently project-level emissions analyses are less informative than analysis conducted at the regional, state, and national scale. EPA has not identified NAAQS for GHGs, but has finalized standards and adopted regulations to enable the production of a new generation of clean vehicles along with implementing cleaner fuel standard regulations to achieve significant reductions of GHG emissions.

The State Highway Administration (SHA) continues to strive for improved operations and system efficiency through improved operations which typically goes hand in hand with GHG reductions. System operations improvements such as improved signal timing, roundabouts, reduced vehicle idling, congestion pricing and reduction, smoothing traffic flow, eliminating bottlenecks and encouraging eco-driving are incorporated into many SHA projects. Environmental benefits and consequences are considered on all projects prior to implementation.

6. 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. SHA 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 26.11.06.03 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. INTERAGENCY CONSULTATION / PUBLIC INVOLVEMENT

Copies of this air quality analysis were circulated to FHWA, EPA, the Maryland Department of the Environment (MDE), and BRTB for a 15-day Interagency Consultation review and comment period. FHWA, EPA, and MDE concurred that the project does not require a hot-spot analysis (**Appendix D**). This Air Quality Analysis will be placed on SHA's website for a 15-day public review and comment period.

APPENDIX

A: PLANS

B: MONITORED AMBIENT AIR QUALITY DATA 2012-2014

C: TRAFFIC DATA

D: INTERAGENCY CONSULTATION COORDINATION

APPENDIX A: PLANS



Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
PLANS OF PROPOSED HIGHWAY
S.H.A. CONTRACT NO. HO2275187
FEDERAL AID PROJECT NO.
MD 103 - US 29 TO LONG GATE PARKWAY

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47-50	SG-01 TO SG-04	SIGNALIZATION PLANS
51-53	SG-05 TO SG-07	INTERCONNECT PLANS
54-61	SN-1 TO SN-11	SIGNING AND PAVEMENT MARKING PLANS

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 # 14-SF-0048

ALL STORMWATER MANAGEMENT FACILITIES CONSTRUCTED FOR CONTRACT NO. HO2275187 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, COMPLETE PERMANENT OR TEMPORARY STABILIZATION WITHIN THREE (3) CALENDAR 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 (7) AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

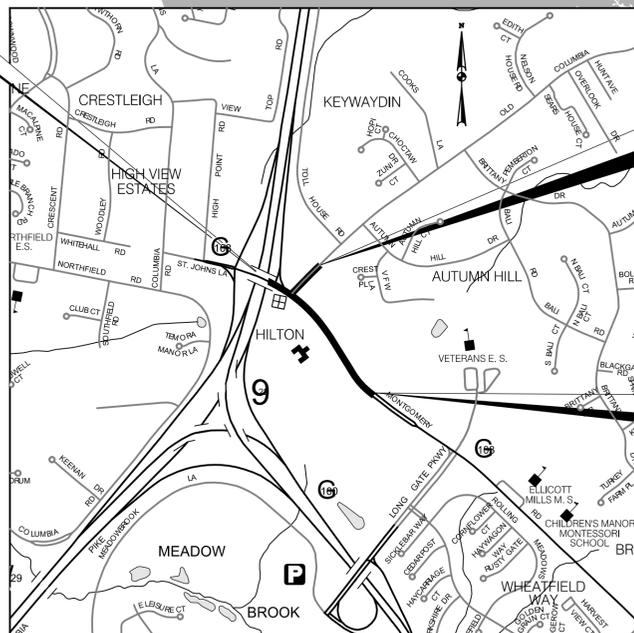
OWNERS / DEVELOPERS CERTIFICATION :

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.

LIMIT OF WORK
HO2275187
MD 103
STA. 105 + 95.76

LIMIT OF WORK
HO2275187
OLD COLUMBIA PIKE
STA. 4 + 55.90

LIMIT OF WORK
HO2275187
MD 103
STA. 122 + 82.26

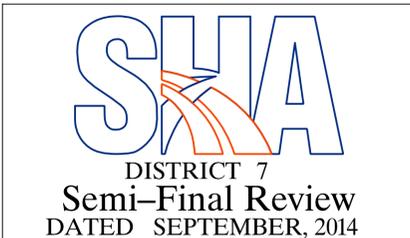


LENGTH OF PROJECT:
 MD RTE. 103 = 0.32 miles

SCALE: 1" = 1000'



HORIZONTAL DATUM	NAD 83 /91
VERTICAL DATUM	NAVD 88



DESIGN DESIGNATION	
ROADWAY	MD 103
CONTROLS / YEARS	2012 2032
AVERAGE DAILY TRAFFIC (A.D.T.)	29,700 37,700
DESIGN HOURLY VOLUME (D.H.V.)	8% 8%
DIRECTIONAL DISTRIBUTION	50% 50%
% TRUCKS - A.D.T.	5% 5%
% TRUCKS - D.H.V.	5% 5%
DESIGN SPEED M.P.H.	45 MPH
FUNCTIONAL CLASSIFICATION	URBAN MINOR ARTERIAL
CONTROL OF ACCESS	NONE
INTENSITY OF DEVELOPMENT	SUBURBAN
TERRAIN	ROLLING
ANTICIPATED POSTED SPEED	40 MPH

REVISIONS	
NOTE: See Sheet No. 2 for List of Revised Sheet Numbers	

R-O-W PLAT NUMBERS	SURVEY BOOK NUMBERS
11121 11122 11123 11124 26306 27524 36896 34373	31497



REVIEWED AND APPROVAL RECOMMENDED _____ DATE _____

DISTRICT ENGINEER

APPROVAL RECOMMENDED _____ DATE _____

DIRECTOR, OFFICE OF HIGHWAY DEVELOPMENT

APPROVED _____ DATE _____

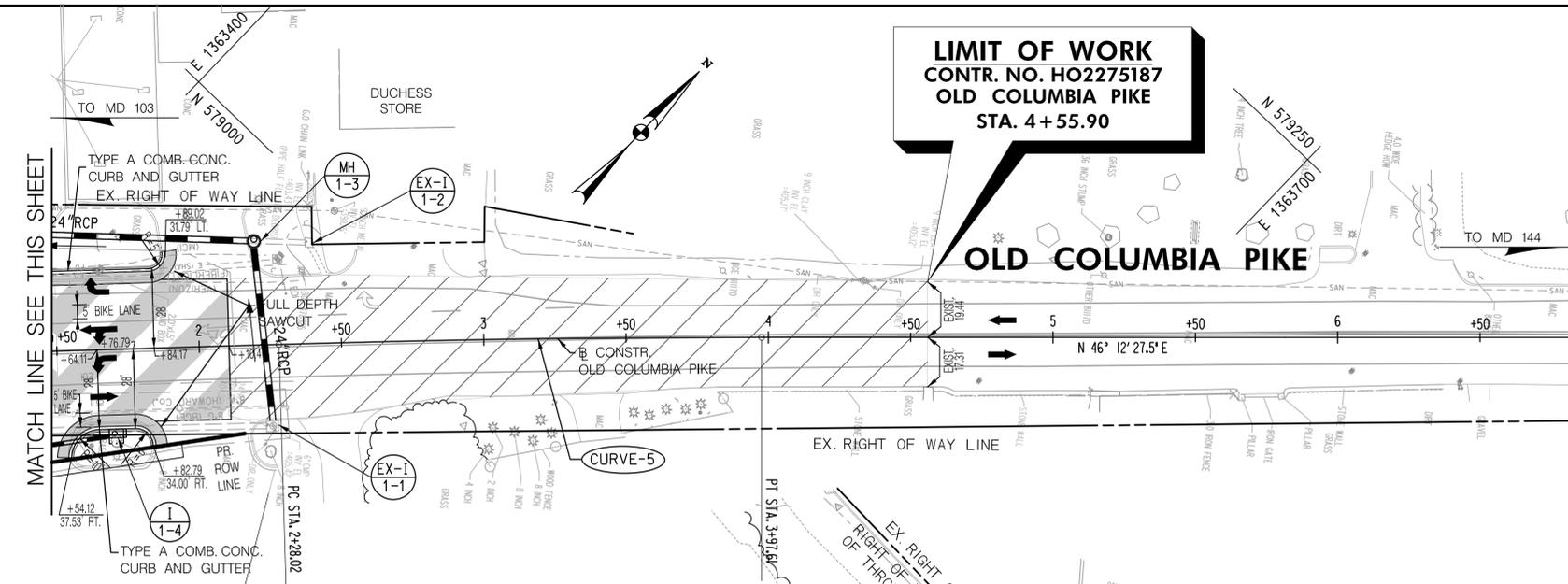
DEPUTY ADMINISTRATOR / CHIEF ENGINEER FOR PLANNING, ENGINEERING, REAL ESTATE AND ENVIRONMENT

DRILL HOLES

DRILL HOLES

DRILL HOLES

BY: CYUSYPCCHUK



PEDESTRIAN RAMP SCHEDULE		
STATION	*OFFSET	REMARKS
108+27.88, MD 103	38.12' RT.	MSHA STD. 655.12
108+69.37, MD 103	38.12' RT.	MSHA STD. 655.12
108+97.45, MD 103	25.41' RT.	MSHA STD. 655.12
109+01.69, MD 103	68.97' LT.	MSHA STD. 655.12
1+10.38, OLD COL. PIKE	32.34' RT.	MSHA STD. 655.12

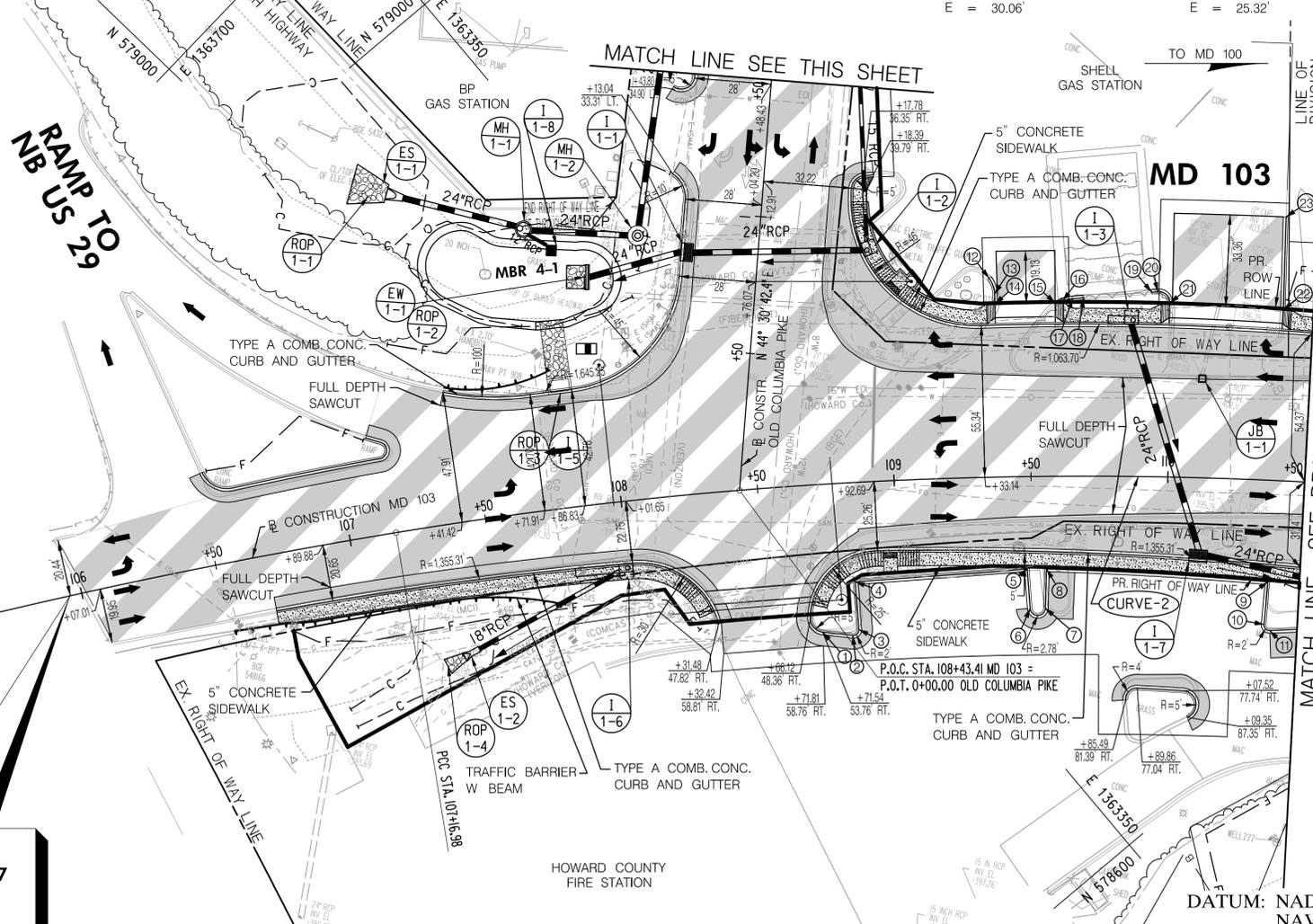
*OFFSET IS LOCATED ON THE CURB FLOW LINE AT THE MIDPOINT OF THE RAMP

OLD COLUMBIA PIKE CURVE DATA CURVE - 5	
Δ	$1^{\circ}-41'-45.12''$ RT
D_c	$1^{\circ}-00'-00.00''$
R	$5,729.58'$
T	$84.80'$
L	$169.59'$
E	$0.63'$

MD 103 CURVE DATA CURVE - 1		MD 103 CURVE DATA CURVE - 2	
Δ	$18^{\circ}-59'-42.07''$ RT	Δ	$20^{\circ}-34'-23.05''$ RT
D_c	$2^{\circ}-38'-57.55''$	D_c	$3^{\circ}-41'-47.41''$
R	$2,162.66'$	R	$1,550.00'$
T	$361.81'$	T	$281.31'$
L	$716.98'$	L	$556.56'$
E	$30.06'$	E	$25.32'$

TYPE D CURB & GUTTER SCHEDULE				
POINT NO.	BASELINE	STATION	OFFSET	ELEVATION
1	MD 103	108+70.37	53.69' RT	X
2	MD 103	108+81.70	55.58' RT	X
3	MD 103	108+84.11	53.57' RT	X
4	MD 103	108+83.76	36.13' RT	X
5	MD 103	109+48.17	33.60' RT	X
6	MD 103	109+49.07	48.03' RT	X
7	MD 103	109+54.80	47.96' RT	X
8	MD 103	109+55.35	33.71' RT	X
9	MD 103	110+38.17	36.97' RT	X
10	MD 103	110+37.46	52.58' RT	X
11	MD 103	110+39.70	54.66' RT	X
12	MD 103	109+36.27	72.50' LT	X
13	MD 103	109+38.06	66.76' LT	X
14	MD 103	109+38.09	63.06' LT	X
15	MD 103	109+59.25	63.18' LT	X
16	MD 103	109+61.90	63.88' LT	X
17	MD 103	109+65.45	64.65' LT	X
18	MD 103	109+69.28	64.98' LT	X
19	MD 103	109+93.08	67.23' LT	X
20	MD 103	109+95.27	67.46' LT	X
21	MD 103	109+99.49	63.42' LT	X
22	MD 103	110+39.41	62.32' LT	X
23	MD 103	110+38.92	96.10' LT	X

STANDARD ENTRANCE CONSTRUCTION COMMERCIAL METHOD NO. 1	
1 EA.	MD 103 - STATION 109+49, LT. (22' WIDE)
1 EA.	MD 103 - STATION 110+19, LT. (41' WIDE)



FOR DRAINAGE STRUCTURE SCHEDULES AND DRAINAGE PIPE SCHEDULES SEE SHEETS 24-26 OF 61

LIMIT OF WORK
 CONTR. NO. HO2275187
 MD 103
 STA. 105 + 95.76

TRAFFIC BARRIER THRIE BEAM ANCHORAGE TO VERTICAL FACE
 1 EA. MD 103 - STATION 106+52 TO STATION 106+76, RT.

QUANTITY NOTES	
STANDARD TYPE A COMB. CURB AND GUTTER, 1 FOOT GUTTER PAN, 8 INCH DEPTH	
47 L.F.	MD 103 - STATION 107+41 TO STATION 107+87, LT.
62 L.F.	MD 103 - NORTHWEST CURB RETURN, LT.
78 L.F.	MD 103 - NORTHEAST CURB RETURN, LT.
121 L.F.	MD 103 - STATION 109+33 TO STATION 110+50, LT.
131 L.F.	MD 103 - STATION 106+69 TO STATION 108+02, RT.
42 L.F.	MD 103 - SOUTHWEST CURB RETURN, RT.
46 L.F.	MD 103 - SOUTHEAST CURB RETURN, RT.
155 L.F.	MD 103 - STATION 108+93 TO STATION 110+50, RT.
39 L.F.	OLD COLUMBIA PIKE - STATION 0+76 TO STATION 1+13, LT.
53 L.F.	OLD COLUMBIA PIKE - STATION 1+44 TO STATION 1+89, LT.
10 L.F.	OLD COLUMBIA PIKE - STATION 1+13 TO STATION 1+8, RT.
38 L.F.	OLD COLUMBIA PIKE - STATION 1+54 TO STATION 1+83, RT.

STANDARD TYPE A CURB 8 INCH X 16 INCH	
50 L.F.	MD 103 - STATION 108+95 TO STATION 109+17, LT.

5 INCH CONCRETE SIDEWALK	
415 S.F.	OC/MO 103 - STATION 1+18 RT. TO STATION 109+38, LT.
192 S.F.	MD 103 - STATION 109+63 TO STATION 109+97, LT.
45 S.F.	MD 103 - STATION 110+44 TO STATION 110+50, LT.
731 S.F.	MD 103 - STATION 106+90 TO STATION 108+31, RT.
1,074 S.F.	MD 103 - STATION 108+66 TO STATION 110+50, RT.

DETECTABLE WARNING SURFACE	
10 S.F.	MD 103 - STATION 109+01.69, LT.
10 S.F.	MD 103 - STATION 108+97.45, RT.

6 INCH PLAIN CEMENT CONCRETE PAVEMENT MIX 7	
21 S.Y.	MD 103 - STATION 109+38 TO STATION 109+63, LT.
36 S.Y.	MD 103 - STATION 109+97 TO STATION 110+44, LT.

REMOVAL AND DISPOSAL OF EXISTING TRAFFIC BARRIER W BEAM	
75 L.F.	MD 103 - STATION 106+86 TO STATION 107+62, RT.

TRAFFIC BARRIER W BEAM USING 6 FOOT POST	
59 L.F.	MD 103 - STATION 106+76 TO STATION 107+35, RT.

TYPE G TRAFFIC BARRIER END TREATMENT	
1 EA.	MD 103 - STATION 107+35 TO STATION 107+75, RT.
1 EA.	MD 103 - STATION 107+43 TO STATION 107+83, LT.

GRINDING HMA PAVEMENT 0 INCH TO 2 INCH	
2,984 S.Y.	MD 103 - STATION 105+95 TO STATION 110+50, LT. AND RT.
46 S.Y.	MD 103 - STATION 109+41 TO STATION 109+60, LT. (SHELL EXIT)
152 S.Y.	MD 103 - STATION 110+00 TO STATION 110+41, LT. (SHELL ENT.)
1,840 S.Y.	OLD COLUMBIA PIKE - STATION 0+76 TO STATION 4+56, LT. AND RT.

STANDARD TYPE D COMB. CURB AND GUTTER, 1 FOOT GUTTER PAN, 8 INCH DEPTH	
242 L.F.	MD 103 - STATION 108+70 TO STATION 110+50, RT. (FIRE STATION LOT)
37 L.F.	MD 103 - STATION 109+85 TO STATION 110+09, RT. (FIRE STATION LOT)
10 L.F.	MD 103 - STATION 109+36 TO STATION 109+38, LT. (SHELL LOT)
8 L.F.	MD 103 - STATION 109+62 TO STATION 109+69, LT. (SHELL LOT)
9 L.F.	MD 103 - STATION 109+93 TO STATION 110+00, LT. (SHELL LOT)
34 L.F.	MD 103 - STATION 110+39 TO STATION 110+39, LT. (SHELL LOT)

SHA STATE OF MARYLAND
 DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION
 DISTRICT 7

MD 103 - US 29 TO LONG GATE PARKWAY
 INTERSECTION IMPROVEMENTS

ROADWAY LEGEND	CROSS REFERENCE	R / W PLAT NUMBER	REVISIONS
FULL DEPTH CONSTRUCTION	ITEM SHEET NOS.		
GRINDING, VARIABLE DEPTH WEDGE/LEVEL, AND RESURFACING	TYPICAL SHEETS..... 3-6		
GRINDING AND RESURFACING	SWM PLANS AND DETAILS..... 8-14		
CONCRETE SIDEWALK/PERMEABLE CONC. PAVEMENT	GEOMETRIC LAYOUT SHEETS..... 15		
	ROADWAY PLAN SHEETS..... 16-18		
	ROADWAY PROFILE SHEETS..... 19-20		
	PIPE & DRAINAGE SCHEDULE..... 21-26		
	TRAFFIC CONTROL SHEETS..... 27-34		
	EROSION & SEDIMENT CONTROL..... 36-46		
	SIGNALIZATION PLANS..... 47-53		
	SIGNING & MARKING PLANS..... 54-61		

ROADWAY PLAN			
SCALE	1" = 30'	DATE	SEPT., 2014
DESIGNED BY	MJC	COUNTY	HOWARD
DRAWN BY	CEO	LOGMILE	
CHECKED BY	SMU	HORIZONTAL SCALE	
F.A.P. NO.	SEE TITLE SHEET	VERTICAL SCALE	
DRAWING NO.	PS-01	OF	03
		SHEET NO.	16 OF 61

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WHITNEY BAILEY COX & MAGNANI, LLC
 849 Fairmount Ave. Suite 100 Baltimore, MD 21286
 Tel. 410-512-4500 Fax. 410-324-4100
 www.wbcm.com

WBCM
 ARCHITECTURE ENGINEERING CONSTRUCTION

BY: cyusypchuk

MD 103
CURVE DATA
CURVE - 2
Δ = 20°-34'-23.05" RT
Dc = 3°-41'-47.41"
R = 1,550.00'
T = 281.31'
L = 556.56'
E = 25.32'

MD 103
CURVE DATA
CURVE - 3
Δ = 6°-59'-06.33" RT
Dc = 2°-29'-47.57"
R = 2,295.00'
T = 140.07'
L = 279.79'
E = 4.27'

SPUR A
CURVE DATA
CURVE - 6
Δ = 100°-09'-44.98" RT
Dc = 114°-35'-29.61"
R = 50.00'
T = 59.76'
L = 87.41'
E = 27.92'

TYPE D CURB & GUTTER SCHEDULE				
POINT NO.	BASELINE	STATION	OFFSET	ELEVATION
1	MD 103	110+57.17	53.17' RT	X
2	MD 103	110+58.14	63.13' RT	X
3	MD 103	110+56.25	81.40' LT	X
4	MD 103	110+58.17	78.85' LT	X
5	MD 103	110+61.29	69.86' LT	X
6	MD 103	110+61.48	61.68' LT	X
7	MD 103	111+00.11	60.21' LT	X
8	MD 103	110+99.84	70.06' LT	X
9	MD 103	111+01.65	77.80' LT	X
10	MD 103	111+03.60	81.47' LT	X
11	MD 103	111+32.07	58.60' LT	X
12	MD 103	111+33.81	62.51' LT	X
13	MD 103	111+68.28	56.37' LT	X
14	MD 103	111+69.85	60.27' LT	X
15	MD 103	112+52.82	52.81' LT	X
16	MD 103	112+49.16	59.79' LT	X
17	MD 103	112+89.01	52.67' LT	X
18	MD 103	112+85.52	60.68' LT	X

QUANTITY NOTES

STANDARD TYPE A COMB. CURB AND GUTTER, 1 FOOT GUTTER PAN, 8 INCH DEPTH	
18 L.F.	MD 103 - STATION 110+50 TO STATION 110+62, LT.
42 L.F.	MD 103 - STATION 110+00 TO STATION 111+32, LT.
108 L.F.	MD 103 - STATION 111+68 TO STATION 112+53, RT.
340 L.F.	MD 103 - STATION 112+85 TO STATION 115+82, LT.
63 L.F.	MD 103 - STATION 116+05 TO STATION 116+10, LT. MEDIAN
146 L.F.	MD 103 - STATION 116+34 TO STATION 117+50, LT.
78 L.F.	MD 103 - STATION 110+50 TO STATION 111+29, RT.
126 L.F.	MD 103 - STATION 111+53 TO STATION 112+81, RT.
311 L.F.	MD 103 - STATION 113+06 TO STATION 115+95, RT.
34 L.F.	MD 103 - STATION 116+16 TO STATION 116+32, RT.
118 L.F.	ENT. A - STATION 50+00 TO STATION 51+14, LT.
126 L.F.	MD 103 - STATION 116+68 TO STATION 117+07, RT. MEDIAN
112 L.F.	ENT. A - STATION 50+15 TO STATION 50+79, RT.

MONOLITHIC CONCRETE MEDIAN 4 FEET 0 INCH WIDE TPE A-1	
25 L.F.	MD 103 - STATION 117+25 TO STATION 117+50, RT.

MONOLITHIC CONCRETE MEDIAN VARIABLE WIDTH TYPE A-1, 4 FEET 0 INCH TO 6 FEET 0 INCH	
18 L.F.	MD 103 - STATION 117+07 TO STATION 117+25, RT.

5 INCH CONCRETE SIDEWALK	
61 S.F.	MD 103 - STATION 110+50 TO STATION 110+62, LT.
152 S.F.	MD 103 - STATION 111+00 TO STATION 111+32, LT.
440 S.F.	MD 103 - STATION 111+68 TO STATION 112+49, LT.
444 S.F.	MD 103 - STATION 112+90 TO STATION 113+62, LT.
442 S.F.	MD 103 - STATION 115+45 TO STATION 115+81, LT.
290 S.F.	MD 103 - STATION 116+34 TO STATION 116+49, LT.
194 S.F.	MD 103 - STATION 110+50 TO STATION 110+92, RT.
716 S.F.	MD 103 - STATION 111+27 TO STATION 112+79, RT.
1,364 S.F.	MD 103 - STATION 113+08 TO STATION 115+91, RT.
344 S.F.	ENT. A - STATION 50+58 TO STATION 51+15, LT.
522 S.F.	ENT. A - STATION 50+78 TO STATION 50+78, RT.

DETECTABLE WARNING SURFACE	
10 S.F.	MD 103 - STATION 115+76, LT.
10 S.F.	MD 103 - STATION 116+41, LT.
10 S.F.	ENT. A - STATION 50+63, LT.
10 S.F.	ENT. A - STATION 50+63, RT.

GRINDING HMA PAVEMENT 0 INCH TO 2 INCH	
5,260 S.Y.	MD 103 - STATION 110+50 TO STATION 117+50, LT. AND RT.
98 S.Y.	MD 103 - STATION 110+57 TO STATION 111+04, LT. (VALVOLINE ENT.)
305 S.Y.	ENT. A - STATION 50+00 TO STATION 51+10, LT. AND RT.

STANDARD TYPE D COMB. CURB AND GUTTER, 1 FOOT GUTTER PAN, 8 INCH DEPTH	
17 L.F.	MD 103 - STATION 110+50 TO STATION 110+58, RT. (FIRE STATION LOT)
491 L.F.	MD 103 - STATION 111+28 TO STATION 112+71, RT. (ARMORY)
450 L.F.	MD 103 - STATION 111+53 TO STATION 112+82, RT. (ARMORY)
82 L.F.	MD 103 - STATION 111+22 TO STATION 111+24, RT. (ARMORY ISLAND)
82 L.F.	MD 103 - STATION 112+24 TO STATION 112+28, RT. (ARMORY ISLAND)
11 L.F.	MD 103 - STATION 113+06 TO STATION 113+07, RT.
21 L.F.	MD 103 - STATION 110+56 TO STATION 110+62, LT. (VALVOLINE LOT)
22 L.F.	MD 103 - STATION 111+00 TO STATION 111+04, LT. (VALVOLINE LOT)
4 L.F.	MD 103 - STATION 111+32 TO STATION 111+34, LT. (EXXON LOT)
4 L.F.	MD 103 - STATION 111+68 TO STATION 111+70, LT. (EXXON LOT)
8 L.F.	MD 103 - STATION 112+49 TO STATION 112+53, LT. (EXXON LOT)
9 L.F.	MD 103 - STATION 112+86 TO STATION 112+89, LT. (EXXON LOT)

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
DISTRICT 7

MD 103 - US 29 TO LONG GATE PARKWAY
INTERSECTION IMPROVEMENTS

ROADWAY PLAN			
SCALE	1" = 30'	DATE	SEPT., 2014
DESIGNED BY	MJC	COUNTY	HOWARD
DRAWN BY	CEO	LOGMILE	
CHECKED BY	SMU	HORIZONTAL SCALE	
F.A.P. NO.	SEE TITLE SHEET	VERTICAL SCALE	
DRAWING NO.	PS-02	OF	03
SHEET NO.	17	OF	61

STANDARD ENTRANCE CONSTRUCTION
COMMERCIAL METHOD NO. 1

1 EA.	MD 103 - STATION 110+81, LT. (40' WIDE)
1 EA.	MD 103 - STATION 111+50, LT. (37' WIDE)
1 EA.	MD 103 - STATION 112+71, LT. (37' WIDE)
1 EA.	MD 103 - STATION 111+40, RT. (24' WIDE)
1 EA.	MD 103 - STATION 112+95, RT. (24' WIDE)

PEDESTRIAN RAMP SCHEDULE

STATION	•OFFSET	REMARKS
115+92.36, MD 103	39.91' RT.	MDSA STD. 655.12
50+84.00, ENT. A	18.96' LT.	MDSA STD. 655.12
50+64.02, ENT. A	26.95' RT.	MDSA STD. 655.12
115+75.37, MD 103	54.17' LT.	MDSA STD. 655.11
116+40.36, MD 103	53.38' LT.	MDSA STD. 655.11
50+84.00, ENT. A	2.00' LT.	MDSA STD. 655.21
50+81.07, ENT. A	8.86' LT.	MDSA STD. 655.21
116+24.96, MD 103	38.90' RT.	SEE DETAIL 1 SHEET 7 OF 61

*OFFSET IS LOCATED ON THE CURB FLOW LINE AT THE MIDPOINT OF THE RAMP

ROADWAY LEGEND	CROSS REFERENCE	R / W PLAT NUMBER	REVISIONS
FULL DEPTH CONSTRUCTION	ITEM	SHEET NOS.	
GRINDING, VARIABLE DEPTH WEDGE/LEVEL, AND RESURFACING	TYPICAL SHEETS	3-6	
CONCRETE SIDEWALK/PERMEABLE CONC. PAVEMENT	SWM PLANS AND DETAILS	9-14	
	GEOMETRIC LAYOUT SHEETS	15	
	ROADWAY PLAN SHEETS	16-18	
	ROADWAY PROFILE SHEETS	19-20	
	PIPE & DRAINAGE SCHEDULE	21-26	
	TRAFFIC CONTROL SHEETS	27-34	
	EROSION & SEDIMENT CONTROL	36-46	
	SIGNALIZATION PLANS	47-63	
	SIGNING & MARKING PLANS	64-61	

LIMIT OF WORK
CONTR. NO. HO2275187
LONG GATE ENT. A
STA. 49+85.93

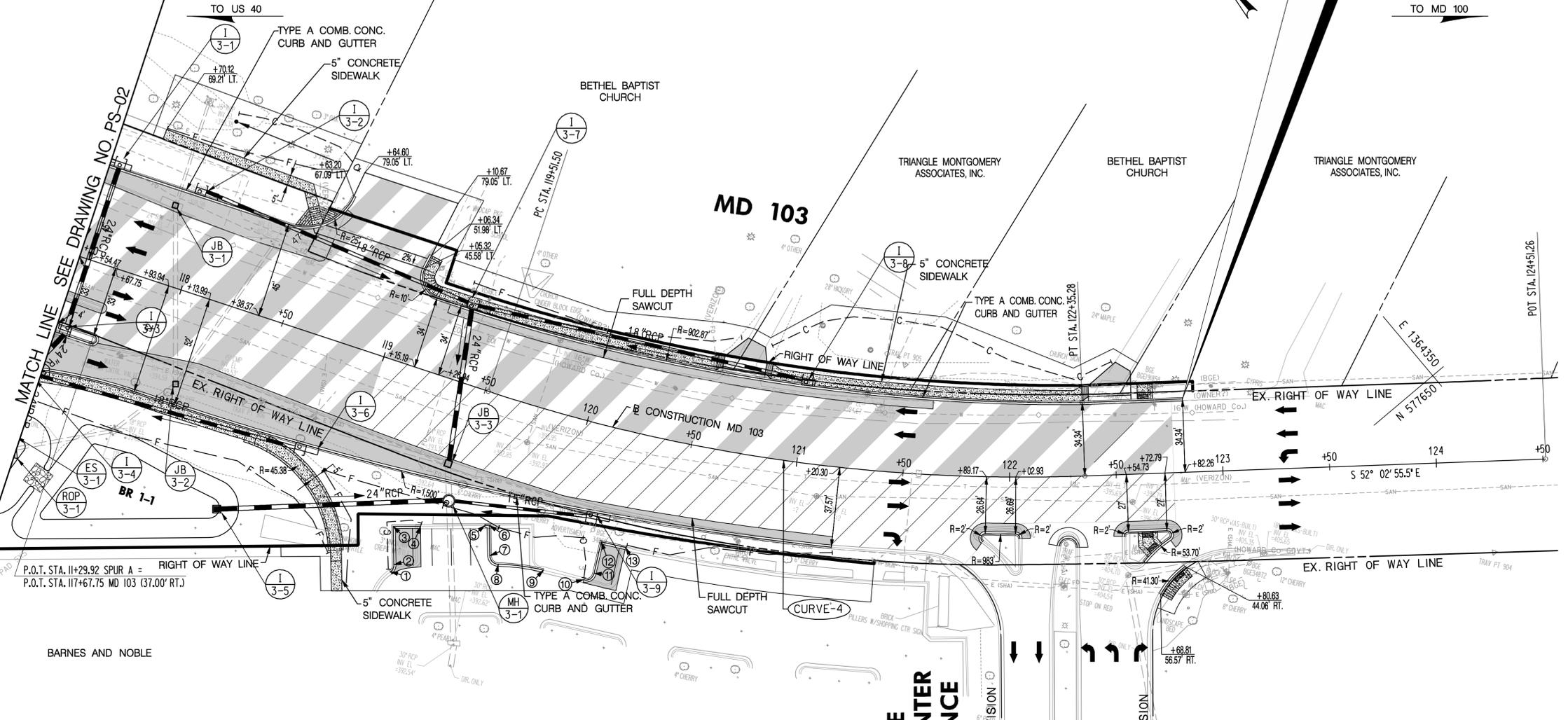
DATUM: NAD 8391 Horizontal
NAVD 88 Vertical



FOR DRAINAGE STRUCTURE SCHEDULES AND DRAINAGE PIPE SCHEDULES SEE SHEETS 24-26 OF 61

LIMIT OF WORK
CONTR. NO. HO2275187
MD 103
STA. 122+82.26

MD 103
 CURVE DATA
 CURVE - 4
 $\Delta = 20^{\circ}-19'-28.01''$ LT.
 $D_c = 7^{\circ}-09'-43.10''$
 $R = 800.00'$
 $T = 143.40'$
 $L = 283.78'$
 $E = 12.75'$



QUANTITY NOTES

STANDARD TYPE A COMB. CURB AND GUTTER, 1 FOOT GUTTER PAN, 8 INCH DEPTH	
125 L.F.	MD 103 - STATION 117+50 TO STATION 118+63, LT.
372 L.F.	MD 103 - STATION 119+05 TO STATION 122+82, LT.
380 L.F.	MD 103 - STATION 117+50 TO STATION 122+00, RT.
22 L.F.	MD 103 - STATION 121+88 TO STATION 122+05, RT. ISLAND
13 L.F.	MD 103 - STATION 122+23 TO STATION 122+31, RT. MEDIAN
43 L.F.	MD 103 - STATION 122+53 TO STATION 122+62, RT. ISLAND
16 L.F.	MD 103 - STATION 122+69 TO STATION 122+81, RT.
MONOLITHIC CONCRETE MEDIAN 4 FEET 0 INCH WIDE TPE A-1	
20 L.F.	MD 103 - STATION 117+50 TO STATION 117+70, RT.
5 INCH CONCRETE SIDEWALK	
401 S.F.	MD 103 - STATION 117+90 TO STATION 118+59, LT.
715 S.F.	MD 103 - STATION 119+06 TO STATION 122+55, LT.
737 S.F.	MD 103 - STATION 120+82 TO STATION 122+35, LT.
49 S.F.	MD 103 - STATION 122+61 TO STATION 122+68, LT.
1,104 S.F.	MD 103 - STATION 117+50 TO STATION 119+16, RT.
80 L.F.	MD 103 - STATION 122+69 TO STATION 122+81, RT.
DETECTABLE WARNING SURFACE	
10 S.F.	MD 103 - STATION 122+64, LT.
10 S.F.	MD 103 - STATION 122+64, RT. ISLAND
10 S.F.	MD 103 - STATION 122+64, RT. ISLAND
10 S.F.	MD 103 - STATION 122+77, RT.
6 INCH PLAIN CEMENT CONCRETE PAVEMENT MIX 7	
21 S.Y.	MD 103 - STATION 120+55 TO STATION 120+82, LT.
21 S.Y.	MD 103 - STATION 122+35 TO STATION 122+61, LT.
GRINDING HMA PAVEMENT 0 INCH TO 2 INCH	
3,970 S.Y.	MD 103 - STATION 117+50 TO STATION 122+77, LT. AND RT.
STANDARD TYPE D COMB. CURB AND GUTTER, 1 FOOT GUTTER PAN, 8 INCH DEPTH	
35 L.F.	MD 103 - STATION 119+34 TO STATION 119+41, RT.
44 L.F.	MD 103 - STATION 119+68 TO STATION 119+98, RT.
33 L.F.	MD 103 - STATION 120+16 TO STATION 120+30, RT.
STANDARD ENTRANCE CONSTRUCTION COMMERCIAL METHOD NO. 1	
1 EA.	MD 103 - STATION 120+68, LT. (20' WIDE)
1 EA.	MD 103 - STATION 122+48, LT. (20' WIDE)

TYPE D CURB & GUTTER SCHEDULE

POINT NO.	BASELINE	STATION	OFFSET	ELEVATION
1	MD 103	119+34.36	94.51' RT	X
2	MD 103	119+34.89	90.85' RT	X
3	MD 103	119+29.00	73.93' RT	X
4	MD 103	119+41.07	69.81' RT	X
5	MD 103	119+68.42	60.23' RT	X
6	MD 103	119+70.20	59.63' RT	X
7	MD 103	119+74.19	73.17' RT	X
8	MD 103	119+78.64	75.83' RT	X
9	MD 103	119+97.94	72.80' RT	X
10	MD 103	120+15.79	72.55' RT	X
11	MD 103	120+19.47	68.49' RT	X
12	MD 103	120+19.30	53.41' RT	X
13	MD 103	120+30.31	53.35' RT	X

PEDESTRIAN RAMP SCHEDULE

STATION	•OFFSET	REMARKS
119+05.63, MD 103	47.54' LT.	MDSHA STD. 655.J2
122+76.54, MD 103	47.27' RT.	MDSHA STD. 655.J2
118+51.62, MD 103	48.80' LT.	MDSHA STD. 655.II
122+63.76, MD 103	27.00' RT.	MDSHA STD. 655.21
122+66.80, MD 103	35.82' RT.	MDSHA STD. 655.21
122+63.76, MD 103	34.34' LT.	SEE DETAIL 2 SHEET 7 OF 61

*OFFSET IS LOCATED ON THE CURB FLOW LINE AT THE MIDPOINT OF THE RAMP

ROADWAY LEGEND	CROSS REFERENCE	R / W PLAT NUMBER	REVISIONS
FULL DEPTH CONSTRUCTION	ITEM SHEET NOS.		
GRINDING, VARIABLE DEPTH WEDGE/LEVEL, AND RESURFACING	TYPICAL SHEETS.....		
GRINDING AND RESURFACING	SWM PLANS AND DETAILS.....		
CONCRETE SIDEWALK/PERMEABLE CONC. PAVEMENT	GEOMETRIC LAYOUT SHEETS.....		
	ROADWAY PLAN SHEETS.....		
	ROADWAY PROFILE SHEETS.....		
	PIPE & DRAINAGE SCHEDULE.....		
	TRAFFIC CONTROL SHEETS.....		
	EROSION & SEDIMENT CONTROL.....		
	SIGNALIZATION PLANS.....		
	SIGNING & MARKING PLANS.....		

FOR DRAINAGE STRUCTURE SCHEDULES AND DRAINAGE PIPE SCHEDULES SEE SHEETS 24-26 OF 61

DATUM: NAD 8391 Horizontal
 NAVD 88 Vertical

SHA STATE OF MARYLAND
 DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION
 DISTRICT 7

MD 103 - US 29 TO LONG GATE PARKWAY
 INTERSECTION IMPROVEMENTS

ROADWAY PLAN

SCALE 1" = 30' DATE SEPT., 2014 CONTRACT NO. HO2275187

DESIGNED BY MJC COUNTY HOWARD
 DRAWN BY CEO LOGMILE
 CHECKED BY SMU HORIZONTAL SCALE
 F.A.P. NO. SEE TITLE SHEET VERTICAL SCALE

DRAWING NO. PS-03 OF 03 SHEET NO. 18 OF 61

WHITNEY BAILEY COX & MAGNANI, LLC
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 Tel. 410-512-4500 Fax. 410-524-4100
 www.wbcm.com

WBCM
 ARCHITECTURE ENGINEERING CONSTRUCTION

APPENDIX B: MONITORED AMBIENT AIR QUALITY DATA 2012-2014

Monitor Values Report

Geographic Area: Maryland

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	8485	2.3	2.1	0	None	1	240053001	600 Dorsey Avenue	Essex	Baltimore	MD	03
1 HOUR	5921	0.3	0.3	0	None	1	240190004	University Of Maryland For Environmental And Estuarine Studies	Not in a city	Dorchester	MD	03
1 HOUR	8182	1.8	0.8	0	None	1	240230002	Piney Run, Frostburg Reservoir, Finzel	Grantsville	Garrett	MD	03
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
1 HOUR	8626	2.5	2.5	0	None	1	245100040	Oldtown Fire Station, 1100 Hillen Street	Baltimore	Baltimore (City)	MD	03

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

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

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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: June 2, 2015

Monitor Values Report

Geographic Area: Maryland

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	8554	1.6	1.6	0	None	1	240053001	600 Dorsey Avenue	Essex	Baltimore	MD	03
8-HR RUN AVG END HOUR	6011	0.3	0.3	0	None	1	240190004	University Of Maryland For Environmental And Estuarine Studies	Not in a city	Dorchester	MD	03
8-HR RUN AVG END HOUR	8210	0.4	0.4	0	None	1	240230002	Piney Run, Frostburg Reservoir, Finzel	Grantsville	Garrett	MD	03
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
8-HR RUN AVG END HOUR	8713	2.1	1.6	0	None	1	245100040	Oldtown Fire Station, 1100 Hillen Street	Baltimore	Baltimore (City)	MD	03

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

Generated: June 2, 2015

Monitor Values Report

Geographic Area: Maryland

Pollutant: CO

Year: 2013

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	8716	2.4	2.2	0	None	1	240053001	600 Dorsey Avenue	Essex	Baltimore	MD	03
1 HOUR	8477	1	0.4	0	None	1	240190004	University Of Maryland For Environmental And Estuarine Studies	Not in a city	Dorchester	MD	03
1 HOUR	8626	0.5	0.4	0	None	1	240230002	Piney Run, Frostburg Reservoir, Finzel	Grantsville	Garrett	MD	03
1 HOUR	8689	1	0.9	0	None	1	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
1 HOUR	8359	2.4	2	0	None	1	245100040	Oldtown Fire Station, 1100 Hillen Street	Baltimore	Baltimore (City)	MD	03

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

Generated: June 2, 2015

Monitor Values Report

Geographic Area: Maryland

Pollutant: CO

Year: 2013

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	8755	1.6	1.4	0	None	1	240053001	600 Dorsey Avenue	Essex	Baltimore	MD	03
8-HR RUN AVG END HOUR	8526	0.3	0.3	0	None	1	240190004	University Of Maryland For Environmental And Estuarine Studies	Not in a city	Dorchester	MD	03
8-HR RUN AVG END HOUR	8701	0.3	0.3	0	None	1	240230002	Piney Run, Frostburg Reservoir, Finzel	Grantsville	Garrett	MD	03
8-HR RUN AVG END HOUR	8698	0.9	0.9	0	None	1	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
8-HR RUN AVG END HOUR	8373	1.6	1.3	0	None	1	245100040	Oldtown Fire Station, 1100 Hillen Street	Baltimore	Baltimore (City)	MD	03

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

Generated: June 2, 2015

Monitor Values Report

Geographic Area: Maryland

Pollutant: CO

Year: 2014

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	8460	2.4	1.8	0	None	1	240053001	600 Dorsey Avenue	Essex	Baltimore	MD	03
1 HOUR	8196	0.4	0.4	0	None	1	240190004	University Of Maryland For Environmental And Estuarine Studies	Not in a city	Dorchester	MD	03
1 HOUR	8104	0.4	0.3	0	None	1	240230002	Piney Run, Frostburg Reservoir, Finzel	Grantsville	Garrett	MD	03
1 HOUR	6248	1.1	0.9	0	None	1	240270006	Interstate 95 South Welocme Center	North Laurel	Howard	MD	03
1 HOUR	6989	1.5	1	0	None	1	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
1 HOUR	8533	1.7	1.6	0	None	1	245100040	Oldtown Fire Station, 1100 Hillen Street	Baltimore	Baltimore (City)	MD	03

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

Generated: June 2, 2015

Monitor Values Report

Geographic Area: Maryland

Pollutant: CO

Year: 2014

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	8476	1.4	1.3	0	None	1	240053001	600 Dorsey Avenue	Essex	Baltimore	MD	03
8-HR RUN AVG END HOUR	8233	0.4	0.3	0	None	1	240190004	University Of Maryland For Environmental And Estuarine Studies	Not in a city	Dorchester	MD	03
8-HR RUN AVG END HOUR	8068	0.3	0.3	0	None	1	240230002	Piney Run, Frostburg Reservoir, Finzel	Grantsville	Garrett	MD	03
8-HR RUN AVG END HOUR	6293	0.9	0.8	0	None	1	240270006	Interstate 95 South Welocme Center	North Laurel	Howard	MD	03
8-HR RUN AVG END HOUR	6988	0.9	0.8	0	None	1	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
8-HR RUN AVG END HOUR	8555	1.3	1	0	None	1	245100040	Oldtown Fire Station, 1100 Hillen Street	Baltimore	Baltimore (City)	MD	03

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

Generated: June 2, 2015

Monitor Values Report

Geographic Area: Maryland

Pollutant: PM2.5

Year: 2012

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	119	30.1	23.4	23	21.7	23	10.2	None	1	240031003	Anne Arundel Co. Public Works Bldg. 7409 Baltimore Annapolis Blvd.	Glen Burnie	Anne Arundel	MD	03
24 HOUR	112	29.5	22.6	21.5	18.3	22	8.9	None	1	240051007	Padonia Elementary School, 9834 Greenside Drive	Cockeysville	Baltimore	MD	03
24 HOUR	41	21	18	16.8	13.7	21	9.1	None	2	240051007	Padonia Elementary School, 9834 Greenside Drive	Cockeysville	Baltimore	MD	03
24 HOUR	116	28.2	25.5	24.7	23.6	25	10.7	None	1	240053001	600 Dorsey Avenue	Essex	Baltimore	MD	03
24 HOUR	121	25	22.3	21.7	20.8	22	8.5	None	1	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
24 HOUR	43	25	22.1	15.4	13.9	25	8.3	None	2	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
24 HOUR	97	24.7	23.8	15	14.7	24	7.8	None	1	240338003	Pg County Equestrian Center, 14900 Pennsylvania Ave.	Greater Upper Marlboro	Prince George's	MD	03
24 HOUR	35	14.8	14.7	14.2	12.6	15	7.8	None	2	240338003	Pg County Equestrian Center, 14900 Pennsylvania Ave.	Greater Upper Marlboro	Prince George's	MD	03
24 HOUR	121	23.8	22.5	22.1	21.8	22	9.3	None	1	245100007	Northwest Police Station, 5271 Reistertown Road	Baltimore	Baltimore (City)	MD	03
24 HOUR	111	23.7	22.6	22.5	20	23	9.6	None	1	245100008	Baltimore City Fire Dept.-Truck Company 20; 5714 Eastern Avenue	Baltimore	Baltimore (City)	MD	03
24 HOUR	304	26.3	25.5	24.4	23.7	23	10	None	1	245100040	Oldtown Fire Station, 1100 Hillen Street	Baltimore	Baltimore (City)	MD	03

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Source: U.S. EPA AirData <<http://www.epa.gov/airdata>>
Generated: June 2, 2015

Monitor Values Report

Geographic Area: Maryland

Pollutant: PM2.5

Year: 2013

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	116	30.4	26.3	22.1	20.2	22	9.1	None	1	240031003	Anne Arundel Co. Public Works Bldg. 7409 Baltimore Annapolis Blvd.	Glen Burnie	Anne Arundel	MD	03
24 HOUR	111	26.5	24.7	19.9	19.7	20	8.5	None	1	240051007	Padonia Elementary School, 9834 Greenside Drive	Cockeysville	Baltimore	MD	03
24 HOUR	53	26.9	20	17.9	17.8	20	8.5	None	2	240051007	Padonia Elementary School, 9834 Greenside Drive	Cockeysville	Baltimore	MD	03
24 HOUR	113	35.2	29.4	26.8	23.4	27	9.5	None	1	240053001	600 Dorsey Avenue	Essex	Baltimore	MD	03
24 HOUR	121	22.2	20.1	18.6	17.5	19	7.8	None	1	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
24 HOUR	32	21.7	18.5	16.4	12.7	22	8.2	None	2	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
24 HOUR	106	23.5	20.4	17.2	15.5	17	7.5	None	1	240338003	Pg County Equestrian Center, 14900 Pennsylvania Ave.	Greater Upper Marlboro	Prince George's	MD	03
24 HOUR	50	16.6	15	15	14.7	17	7.9	None	2	240338003	Pg County Equestrian Center, 14900 Pennsylvania Ave.	Greater Upper Marlboro	Prince George's	MD	03
24 HOUR	116	28.6	27	20.4	18.8	20	8.6	None	1	245100007	Northwest Police Station, 5271 Reistertown Road	Baltimore	Baltimore (City)	MD	03
24 HOUR	114	32	28.7	24.3	22.8	24	9.4	None	1	245100008	Baltimore City Fire Dept.-Truck Company 20; 5714 Eastern Avenue	Baltimore	Baltimore (City)	MD	03
24 HOUR	303	34.6	29.8	29.7	27.7	23	9.1	None	1	245100040	Oldtown Fire Station, 1100 Hillen Street	Baltimore	Baltimore (City)	MD	03

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Source: U.S. EPA AirData <<http://www.epa.gov/airdata>>
Generated: June 2, 2015

Monitor Values Report

Geographic Area: Maryland

Pollutant: PM2.5

Year: 2014

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	120	24.1	23	22.9	22.5	23	9.1	None	1	240031003	Anne Arundel Co. Public Works Bldg. 7409 Baltimore Annapolis Blvd.	Glen Burnie	Anne Arundel	MD	03
24 HOUR	115	23	21.4	20.8	20.6	21	8.9	None	1	240051007	Padonia Elementary School, 9834 Greenside Drive	Cockeysville	Baltimore	MD	03
24 HOUR	58	21.4	21.2	19	16.2	21	7.7	None	2	240051007	Padonia Elementary School, 9834 Greenside Drive	Cockeysville	Baltimore	MD	03
24 HOUR	110	25.9	23.3	21.6	21.3	22	9.7	None	1	240053001	600 Dorsey Avenue	Essex	Baltimore	MD	03
24 HOUR	119	22	18.1	17.4	16.2	17	7.8	None	1	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
24 HOUR	29	13.9	13	12.9	10.7	14	6.7	None	2	240330030	Howard University'S Beltsville Laboratory, 12003 Old Baltimore Pike	Beltsville	Prince George's	MD	03
24 HOUR	115	20.4	17.1	15.4	14	15	7.8	None	1	240338003	Pg County Equestrian Center, 14900 Pennsylvania Ave.	Greater Upper Marlboro	Prince George's	MD	03
24 HOUR	57	17.3	15.9	13.2	13.1	16	7.1	None	2	240338003	Pg County Equestrian Center, 14900 Pennsylvania Ave.	Greater Upper Marlboro	Prince George's	MD	03
24 HOUR	122	22.4	20.9	20.3	19.7	20	8.5	None	1	245100007	Northwest Police Station, 5271 Reistertown Road	Baltimore	Baltimore (City)	MD	03
24 HOUR	110	23.7	22.1	22	21.2	22	9.3	None	1	245100008	Baltimore City Fire Dept.-Truck Company 20; 5714 Eastern Avenue	Baltimore	Baltimore (City)	MD	03
24 HOUR	322	30.4	27.4	26.4	26.1	21	9.2	None	1	245100040	Oldtown Fire Station, 1100 Hillen Street	Baltimore	Baltimore (City)	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: June 2, 2015

APPENDIX C: TRAFFIC DATA



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

Darrell B. Mobley, Acting Secretary
Melinda B. Peters, Administrator

MARYLAND DEPARTMENT OF TRANSPORTATION

MEMORANDUM

TO: Mr. Mark Crampton
Assistant District Engineer - Project Development
District 7

ATTN: Mr. John Jenkins

FROM: Morteza Tadayon, Chief
Travel Forecasting and Analysis Division
Office of Planning and Preliminary Engineering

DATE: November 16, 2012

SUBJECT: MD 103 – US 29 to Long Gate Parkway
Howard County
Project No.: HO2275187
Title Sheet/Loadometer Data

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

MD 103- US 29 to Long Gate Parkway

	<u>2012</u>	<u>2032</u>
Average Daily Traffic (ADT)	29,700	37,700
Design Hour Volume (DHV)	8%	8%
Directional Distribution of DHV	50%	50%
Percent Trucks – ADT	5%	5%
Percent Trucks – DHV	5%	5%

Loadometer Data:

	ADT	2A	3D	2S1	2S2	3S2	3S3	Total
2012	29,700	1,193	69	37	149	27	10	1,485
2032	37,700	1,514	88	47	190	34	12	1,885

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

Mr. Mark Crampton
Page Two

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

FHWA Class	4	5	6	7	8	9	10	11	12	13
Total Trucks	302	919	63	8	191	27	4	2	0	4
Peak Hour Volume	25	73	13	0	19	2	0	1	0	0

An electronic copy of the loadometer output sheets will be sent to the Office of Materials Technology - Pavement and Geotechnical Division. If you have any questions or concerns, please contact Derek Gunn at 410-545-5642 or Lisa Shemer, Assistant Division Chief, Travel Forecasting and Analysis Division at 410-545-5640.

By:



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

cc: Mr. John Concannon
Mr. Vachel Davis
Mr. Paulo DeSousa
Mr. Derek Gunn

APPENDIX D: INTERAGENCY CONSULTATION

Nicole M. Hebert

From: joy.liang@dot.gov
Sent: Monday, August 31, 2015 4:17 PM
To: brian.hug@maryland.gov; Khadr.Asrah@epa.gov
Cc: CBrandt@sha.state.md.us; alexandra.krempasanka@maryland.gov; McCurdy.Alaina@epa.gov; Rudnick.Barbara@epa.gov; becoat.gregory@epa.gov; Jeanette.Mar@dot.gov; stomlinson@baltometro.org; Shawn Burnett; Nicole M. Hebert
Subject: RE: MD 103 Improvement Project - Air Quality Interagency Consultation

Good afternoon,

FHWA also concurs with SHA's recommendation that a quantitative hot-spot analysis is not needed for this project.

Thank you for the opportunity to review.

Joy

From: Brian Hug -MDE- [<mailto:brian.hug@maryland.gov>]
Sent: Thursday, August 27, 2015 1:44 PM
To: Khadr, Asrah
Cc: Christina Brandt; Alexandra Krempasanka -MDE-; McCurdy, Alaina; Rudnick, Barbara; Becoat, gregory; Mar, Jeanette (FHWA); Liang, Joy (FHWA); Sara Tomlinson; Shawn Burnett; Nicole M. Hebert
Subject: Re: MD 103 Improvement Project - Air Quality Interagency Consultation

Mde does as well

On Thursday, August 27, 2015, Khadr, Asrah <Khadr.Asrah@epa.gov> wrote:

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: Thursday, August 13, 2015 11:13 AM

To: 'Brian Hug -MDE-'; 'Alexandra Kremupasanka -MDE-'; McCurdy, Alaina; Rudnick, Barbara; Becoat, gregory; Khadr, Asrah; Jeanette.Mar@dot.gov; joy.liang@dot.gov; 'Sara Tomlinson'
Cc: 'Shawn Burnett'; 'Nicole M. Hebert'
Subject: MD 103 Improvement Project - Air Quality Interagency Consultation

Good Morning,

Attached is the Draft Air Quality Technical Report for improvements to MD 103 from US 29 to Long Gate Parkway in Howard 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 2014-2017 TIP includes the project under TIP ID 60-9508-19 (Areawide Safety and Spot Improvements).

Please review and provide concurrence/comments prior to August 27, 2015. Please let me know if you have any questions.

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



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Brian J. Hug
Deputy Program Manager
Air Quality Planning Program
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore, Maryland 21230
410 537 4125