CHESAPEAKE
BAY CROSSING STUDY
TIER 1 NEPA

AIR QUALITY TECHNICAL REPORT

Maryland
Transportation
Authority

JANUARY 2021

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1.0 INTRODUCTION

1.1 Project Description

The Maryland Transportation Authority (MDTA), in coordination with the Federal Highway Administration (FHWA) is preparing a Tier 1 Environmental Impact Statement (EIS) in accordance with the National Environmental Policy Act (NEPA) for the Chesapeake Bay Crossing Study: Tier 1 NEPA (Bay Crossing Study). The purpose of the Bay Crossing Study is to consider corridors for providing additional traffic capacity and access across the Chesapeake Bay in order to improve mobility, travel reliability and safety at the existing Governor William Preston Lane Jr. Memorial (Bay) Bridge. Evaluation of any potential new crossing corridor will include an assessment of existing and potentially expanded transportation infrastructure needed to support additional capacity, improve travel times, and accommodate maintenance activities, while considering financial viability and environmental responsibility. The Tier 1 study initiates the NEPA process with the goal of narrowing the scale and scope of this complex project prior to more detailed analysis in a future Tier 2 NEPA analysis. The Tier 1 study area includes the entire length of the Chesapeake Bay in Maryland, extending nearly 100 miles from the northern part of the Chesapeake Bay near Havre de Grace, Maryland south to near Point Lookout, Maryland (**Figure 1-1**).

Comprehensive screening of 14 corridors throughout the Chesapeake Bay resulted in the identification of three Corridor Alternatives Retained for Analysis (CARA) known as Corridor 6, Corridor 7, and Corridor 8. The focus of this technical report is to supplement the Tier 1 EIS by exploring anticipated air quality analysis requirements for each CARA, as well as differences in potential air quality impacts between the CARA, with consideration of the No-Build Alternative. Further evaluation will be conducted during a future Tier 2 NEPA analysis if a Preferred Corridor Alternative is identified at the conclusion of the Tier 1 study.

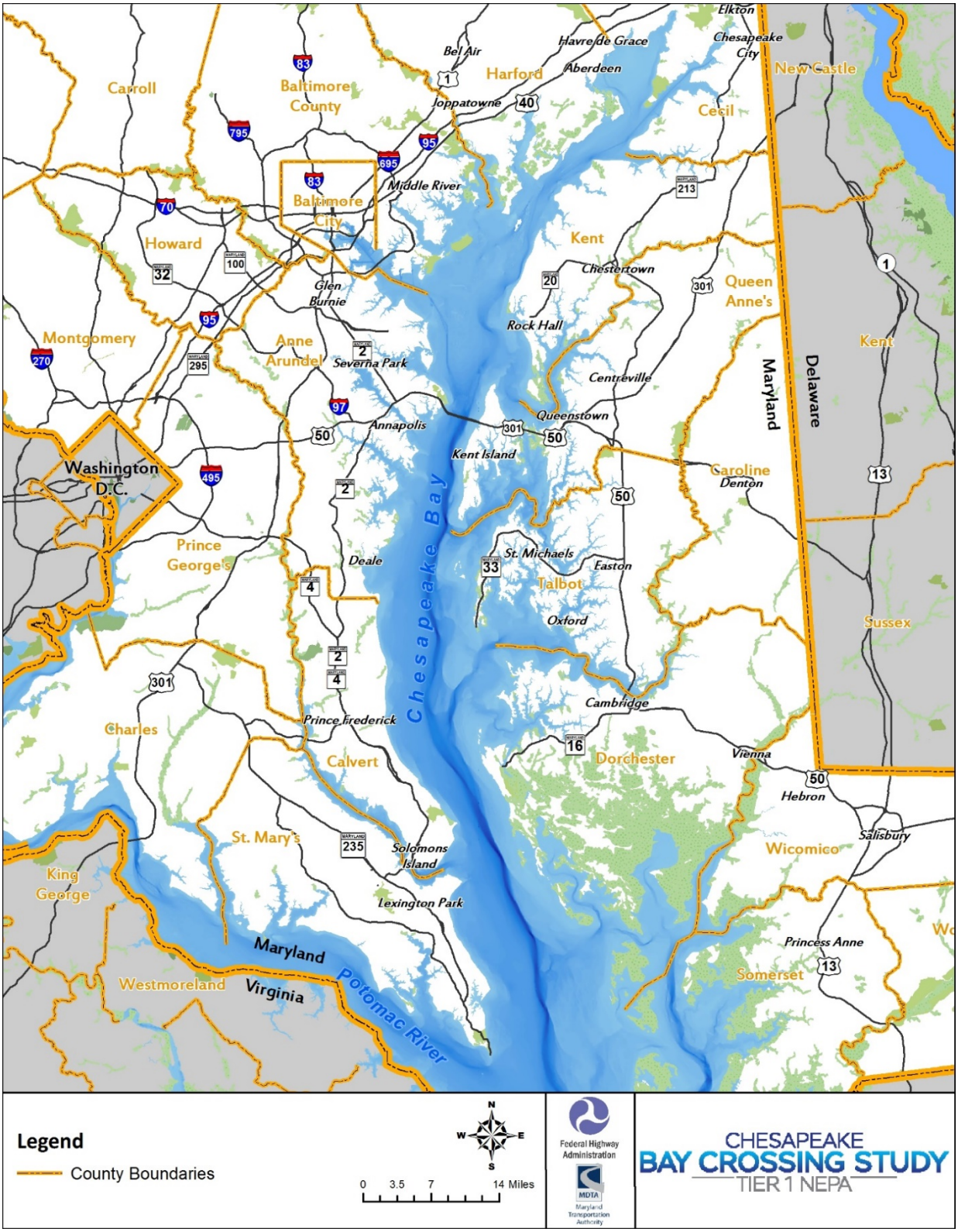
1.2 Purpose and Need

Evaluation of the CARA included an assessment of existing and potentially expanded transportation infrastructure needed to support additional capacity, improve travel times, and accommodate maintenance activities, while considering financial viability and environmental responsibility. The Tier 1 NEPA analysis considers a "No-Build" alternative and addresses the following needs listed under **Section 1.2.1** through **1.2.4**.

1.2.1 Adequate Capacity

The existing two spans of the Bay Bridge, which are part of US 50/US 301 between Anne Arundel and Queen Anne's counties, Maryland, carry increasing volumes of travelers. Congestion resulting from high regional travel demand by weekday commuter and summer weekend recreation trips is expected to worsen by the planning horizon year of 2040 due to planned growth in population and employment. Additional capacity is needed to address existing congestion, future congestion, and related safety concerns, all resulting from increasing travel volume on the Bay Bridge and approach transportation network.

Figure 1-1: Chesapeake Bay Study Area



1.2.2 Dependable and Reliable Travel Times

The anticipated population increase in communities on both sides of the Chesapeake Bay and associated increase in commuter travel, as well as expected increased tourism and recreational travel, will continue to stress mobility across and around the Bay. Marylanders and visitors need dependable Chesapeake Bay crossing options with reliable operating speeds and travel times that provide access to employment and recreation areas, as well as facilitate emergency services and evacuation events.

1.2.3 Flexibility to Support Maintenance and Incident Management in a Safe Manner

Maintenance and rehabilitation activities will increase and exacerbate congestion as the Bay Bridge ages. Additional capacity is needed to maintain flexible options for safe travel during maintenance and for management of other incidents on the Bay Bridge. Safety of travelers, maintenance workers and incident responders will also be considered during corridor alternative development.

1.2.4 Additional Considerations

Additional capacity across the Chesapeake Bay and/or improvements to existing facilities must be financially viable. In order to assess potential additional Bay crossings, it is necessary to consider the means to pay for the development, operation and maintenance of such facilities.

The Chesapeake Bay is a critical environmental resource in Maryland; therefore, any Bay Crossing improvements must take into account the sensitivity of the Bay, including existing environmental conditions and the potential for any new capacity to adversely impact the Bay and the important natural, recreational, socio-economic and cultural resources it supports.

2.0 ALTERNATIVES CONSIDERED

The alternatives assessed in this technical study include three CARA and the No-Build Alternative. MDTA conducted a comprehensive screening of 14 corridors throughout the extent of the Chesapeake Bay in Maryland, along with four Modal and Operational Alternatives (MOA) and the No-Build Alternative. The screening resulted in the identification of three CARA; none of the MOA were carried forward for further Tier 1 Analysis as standalone alternatives.

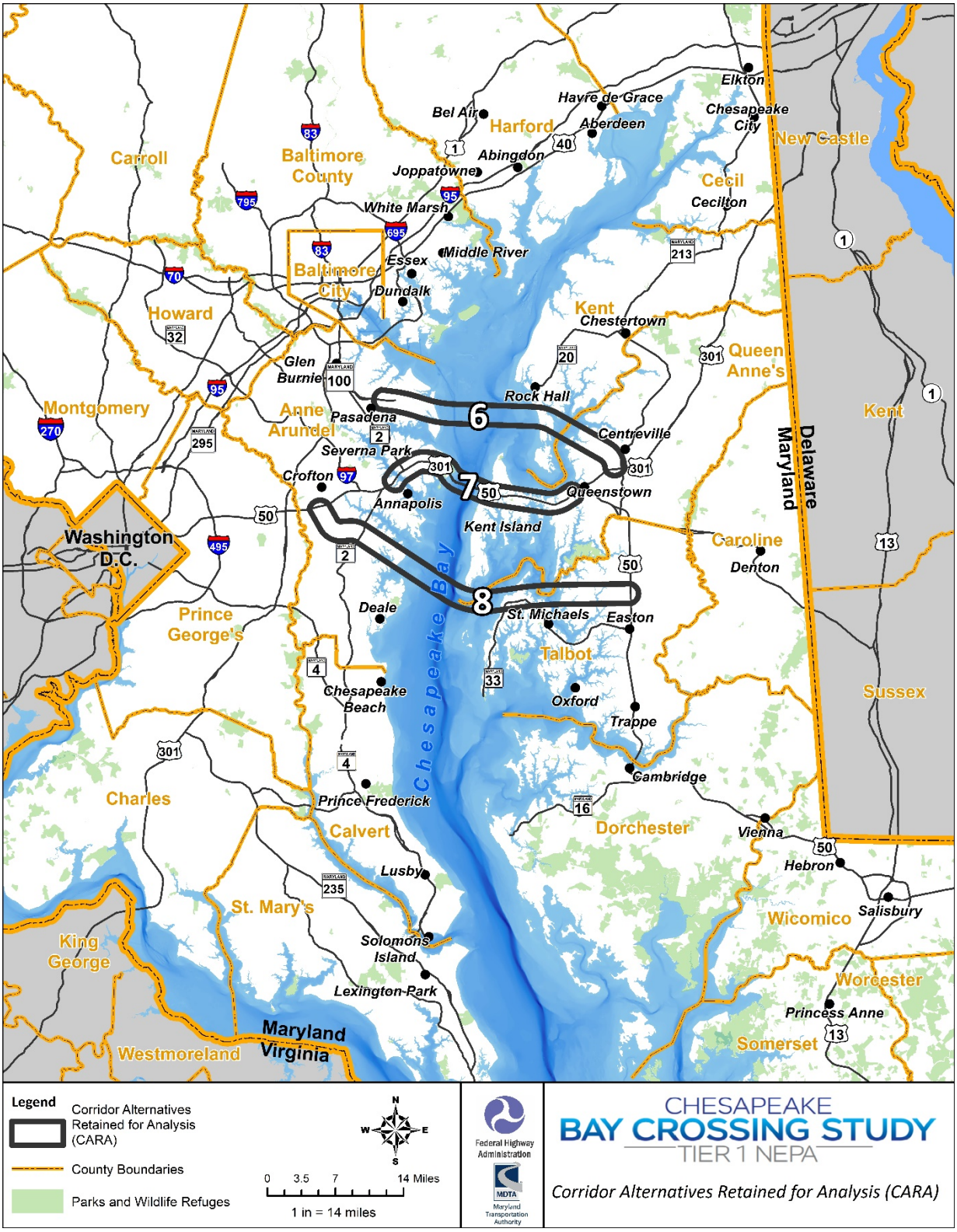
2.1 No-Build Alternative

The No-Build Alternative is included as a baseline for comparison to the corridor alternatives described below. The No-Build Alternative includes all currently planned and programmed infrastructure projects. The No-Build Alternative would include regular maintenance at the existing Bay Bridge, located between Anne Arundel County and Queen Anne's County. The No-Build Alternative includes existing transportation systems management/travel demand management (TSM/TDM) measures including contraflow lanes on the existing bridge, as well as any planned and funded TSM/TDM measures as of Project Scoping in 2017 such as automated contraflow lanes.

2.2 Corridor Alternatives Retained for Analysis

MDTA conducted a comprehensive screening of 14 corridors throughout the extent of the Chesapeake Bay in Maryland. The screening process resulted in the identification of three CARA known as Corridor 6, Corridor 7, and Corridor 8 (**Figure 2-1)**. Each CARA is a two-mile wide corridor extending far enough on each shore to connect to existing major roadway infrastructure of 4 lanes or greater. Neither specific

Figure 2-1: Corridor Alternatives Retained for Analysis



roadway alignments nor a possible crossing location are identified in this Tier 1 Study; identification of alternative alignments would occur if a Preferred Corridor is selected and carried forward into Tier 2.

2.2.1 Corridor 6

From west to east, Corridor 6 begins with a tie-in at MD 100 and follows MD 177, with the crossing located north of Gibson Island. After crossing the Chesapeake Bay, Corridor 6 returns to land on the Eastern Shore north of the Eastern Neck National Wildlife Refuge, roughly perpendicular to MD 445. From there, the corridor turns southeast to cross the Chester River and does not follow existing roadway network until the tie-in with US 301 south of Centreville.

2.2.2 Corridor 7

Corridor 7 follows existing infrastructure along the location of the existing Bay Bridge. From west to east, the corridor begins just west of the US 50/301 crossing of the Severn River. The corridor continues to follow US 50/301 over the Severn River, crossing the Chesapeake Bay and returning to land on Kent Island near Stevensville. The corridor continues to follow US 50/301 over Kent Narrows, ending at the US 50/301 split near Queenstown. While this corridor follows the existing crossing along its centerline, a new crossing and the associated infrastructure could potentially be located anywhere within the two-mile wide corridor.

2.2.3 Corridor 8

From west to east, Corridor 8 begins with a tie-in at US 50/301 at the interchange with MD 424. From there, the corridor roughly follows MD 424 and MD 214. The crossing begins near Mayo on the western shore, passing just south of the southern tip of Kent Island, then curving northeast. The corridor returns to land on the Eastern Shore near MD 33, west of St. Michaels. From there, Corridor 8 crosses the Miles River, and does not follow the existing roadway network until it ties in with MD 50 north of Easton.

3.0 REGULATORY CONTEXT

Various federal and state regulations and guidance require that potential impacts on air quality be considered during the NEPA review of transportation projects. Major regulations and guidance that apply to the potential air quality impacts of transportation projects include:

- The Clean Air Act and Amendments, 42 U.S.C. 7401 *et seq*.
- The Transportation Conformity Rule, 40 CFR part 93 subpart A
- Environmental Protection Agency (USEPA) Transportation Conformity Guidance for the *South Coast II* Court Decision (November 2018)
- FHWA Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents (October 18, 2016)
- The Greenhouse Gas Reduction Act of 2009, Md. ENVIRONMENT Code Ann. § 2-1201 - § 2-1211
- General Emissions Standards, Prohibitions, and Restrictions - Particulate Matter, Code of Maryland Regulations (COMAR) 26.11.06.03

4.0 METHODOLOGY

A screening process narrowed the initial 14 corridors down to the CARA to be analyzed in detail in the Tier 1 EIS. The BCS Tier 1 Study air quality assessment has been performed for the CARA. The goal of the BCS Tier 1 Study air quality assessment is to provide documentation of potential differences in air quality

impacts resulting from the CARA. This Tier 1 air quality assessment involves reviewing existing USEPA National Ambient Air Quality Standard (NAAQS) designations along the CARA to determine which air quality regulations are applicable.

Mobile Source Air Toxics are considered by examining predicted traffic volumes to outline the potential need for qualitative and quantitative analyses. Greenhouse gas considerations and construction requirements are also qualitatively discussed.

5.0 CLEAN AIR ACT (CAA)

The CAA outlines transportation conformity requirements for highway projects involving FHWA approval to ensure air quality goals will be met with project implementation. Transportation conformity applies in geographic areas identified by the USEPA as having exceeded NAAQS for transportation related pollutants. NAAQS dictate pollutant levels which protect public and environmental health. Attainment areas are designated where pollutant levels do not exceed the NAAQS. Nonattainment areas are designated where pollutant levels exceed NAAQS. Maintenance areas are designated where pollutant levels have improved from NAAQS nonattainment to attainment and require monitoring to ensure air quality programs maintain pollutant levels which do not exceed the NAAQS.

NAAQS have been established for five pollutants emitted from transportation activities:

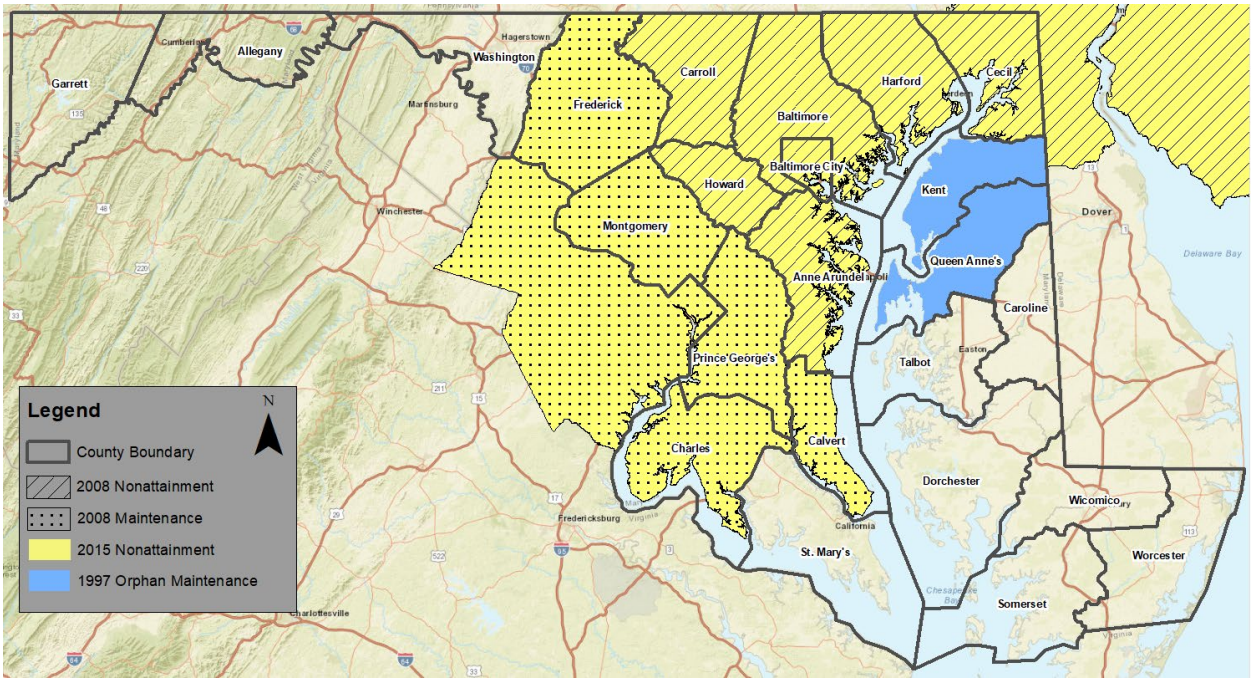
- ozone (O_3),
- coarse particulate matter (PM_{10}),
- fine particulate matter ($PM_{2.5}$),
- nitrogen dioxide (NO_2), and
- carbon monoxide (CO).

USEPA periodically establishes new NAAQS and rescinds existing NAAQS based on rigorous scientific review, resulting in multiple NAAQS for some pollutants. When discussed, NAAQS are generally distinguished by year of USEPA establishment and time over which pollutant measurements are averaged. As currently designated by USEPA, Baltimore City and 11 Maryland counties (Anne Arundel County, Baltimore County, Calvert County, Carroll County, Cecil County, Charles County, Frederick County, Harford County, Howard County, Montgomery County, and Prince George's County) are in 2015 O_3 8-hour NAAQS nonattainment areas (**Figure 5-1**).

Baltimore City and 6 Maryland counties (Carroll County, Baltimore County, Harford County, Cecil County, Howard County, and Anne Arundel County) are also in 2008 O_3 8-hour NAAQS nonattainment areas, while 5 Maryland counties (Frederick County, Montgomery County, Prince George's County, Charles County, and Calvert County) are within a 2008 O_3 8-hour NAAQS maintenance area.

Kent County and Queen Anne's County are located in an orphan 1997 O_3 8-hour NAAQS maintenance area. The term "orphan" notes that although the 1997 O_3 8-hour NAAQS was revoked in 2015, this area is still subject to transportation conformity requirements (USEPA 2018 *Transportation Conformity Guidance for the* South Coast II *Court Decision*).

Figure 5-1: Maryland O_3 8-Hour NAAQS Nonattainment and Maintenance Areas



There are no USEPA designated nonattainment or maintenance areas in Maryland for PM_{10}, $PM_{2.5}$, NO_2, or CO. West of the Bay, Corridors 6, 7, and 8 intersect Anne Arundel County, which is in the 2008 and 2015 O_3 NAAQS nonattainment areas. East of the Bay, Corridors 6, 7, and 8 are located partially in Queen Anne's County, which is in a 1997 O_3 NAAQS orphan maintenance area.

A conformity determination would be completed for the preferred alternative identified during a potential future Tier 2 NEPA analysis regardless of the Corridor since Corridors 6, 7, and 8 each would be located within O_3 2008 and 2015 NAAQS nonattainment areas as well as 1997 orphan maintenance.

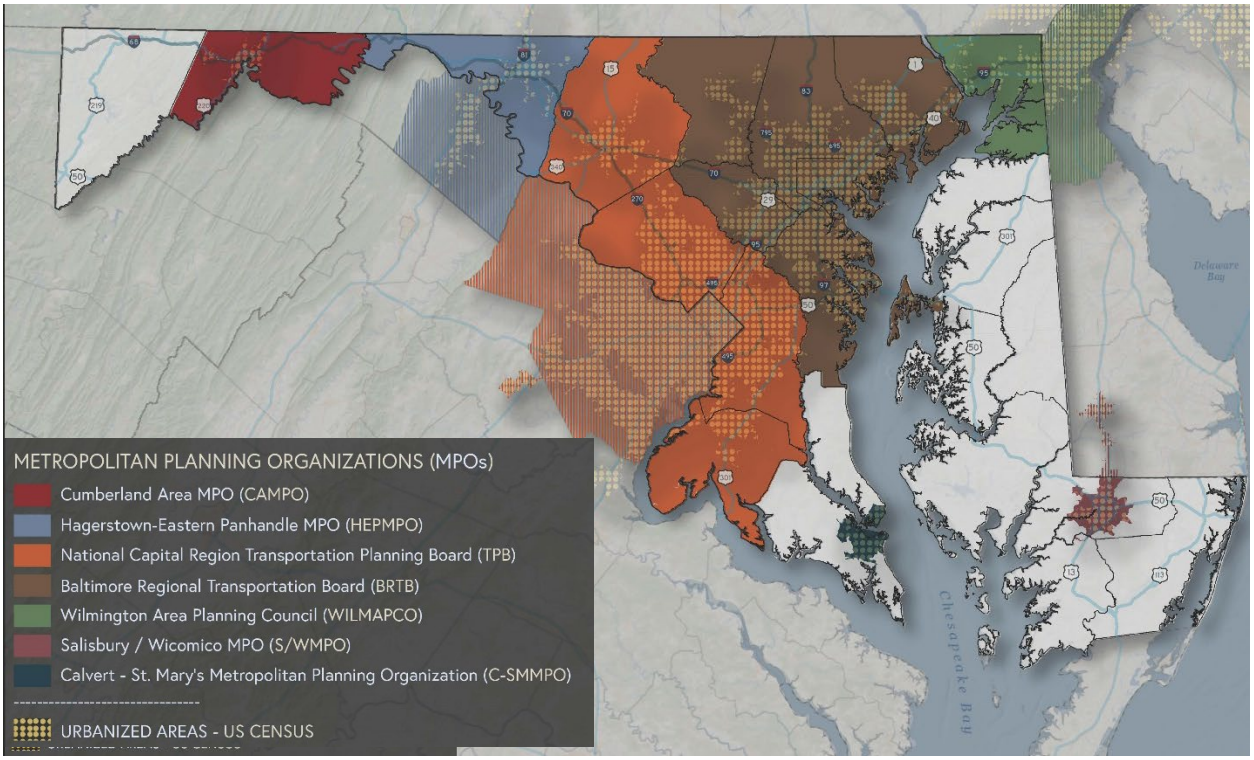
When transportation conformity requirements apply to a project, a transportation conformity determination must be completed prior to approval of the final NEPA document, in this case during a Tier 2 analysis, to demonstrate these requirements are met and show the project will not cause new NAAQS violations, worsen existing NAAQS violations, or delay timely attainment of relevant NAAQS or interim milestones (42 U.S.C. 7506(c)). The purpose of these requirements is to ensure the project conforms to, or is consistent with, the state implementation plan (SIP). A SIP is a collection of regulations and documents used by a state, territory, or local air district to reduce air pollution in nonattainment/maintenance areas and ensure NAAQS implementation, maintenance, and enforcement. The conformity determination would be completed for the preferred alternative identified during a potential future Tier 2 NEPA analysis.

Conformity determination requirements for projects within an O_3 8-hour nonattainment/maintenance area, as well as O_3 8-hour orphan maintenance areas, are fulfilled when the project is included in both the applicable conforming long-range transportation plan (LRTP) and transportation improvement program (TIP) with descriptions consistent with the current design concept and scope (40 CFR 93.109). An LRTP is

a federally mandated planning document for urbanized areas which describes long-term plans to operate, maintain, and expand transportation infrastructure over a minimum planning horizon of 20 years. A TIP, complementary to the LRTP, is a federally mandated planning document for urbanized areas which describes short-term transportation infrastructure plans over a planning horizon of at least four years.

LRTP and TIP documents are developed by the governing Metropolitan Planning Organization (MPO), which is also responsible for ensuring the LRTP and TIP conform to the SIP. An MPO is a federally mandated and federally-funded transportation policy-making organization made up of representatives from local governments and governmental transportation authorities. For O_3 8-hour nonattainment/maintenance areas, the project must be properly included in the conforming TIP and LRTP for the region as part of the determination that the project also conforms to the SIP. There are seven MPO authorities in Maryland (**Figure 5-2**). Corridors 6, 7, and 8 are located partially within the area under the jurisdiction of the Baltimore Regional Transportation Board (BRTB) MPO and any preferred alternative identified during a potential future Tier 2 NEPA analysis would need to be properly included in the BRTB financially constrained TIP and LRTP descriptions to satisfy conformity determination requirements. This may require an amendment to the TIP and LRTP. A new bay crossing is not listed in either the current BRTB 2020-2023 TIP or Maximize 2045 LRTP. Unless the No-Build Alternative is selected, the preferred alternative will need to meet the conformity requirements of the Clean Air Act Section 176(c) as appropriate during a potential future Tier 2 NEPA analysis.

Figure 5-2: Maryland MPO Authorities



6.0 MOBILE SOURCE AIR TOXICS (MSAT)

In conjunction with the CAA Amendments of 1990, Congress mandated USEPA regulate 188 hazardous air pollutants. Of these pollutants, USEPA identified the following nine compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers or contributors and non-cancer hazard contributors: 1,3-butadien; acetaldehyde; acrolein; benzene; diesel PM; ethylbenzene; formaldehyde; naphthalene; and polycyclic organic matter. While FHWA currently considers these the priority Mobile Source Air Toxics (MSAT), the list is subject to change and may be adjusted in consideration of future USEPA rules.

Depending on project scope and anticipated changes in traffic volumes due to the project, either a qualitative discussion, qualitative analysis, or quantitative analysis must be included in NEPA documentation (FHWA 2016 *Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents*). Qualitative MSAT discussion is recommended for projects with no meaningful impacts on traffic volumes, which are considered by FHWA to have no potential MSAT effects. Qualitative MSAT analysis is recommended for projects that serve to improve highway operations which impact traffic volumes without adding substantial new capacity and have design year annual average daily traffic estimates below 140,000 vehicles per day (VPD). Such projects are considered by FHWA to have low potential MSAT effects. Quantitative MSAT analysis is recommended for projects located in proximity to populated areas which either create new capacity or create significant additional capacity that is above 140,000 VPD in the design year, which for this Bay Crossing Study is the planning horizon year of 2040. Such projects are considered by FHWA to have higher potential MSAT effects.

Both quantitative and qualitative analyses would involve comparing the Preferred Corridor Alternative to the No-Build Alternative during a potential future Tier 2 NEPA analysis. Under the No-Build Alternative, traffic volumes are projected to continue to grow. On non-summer weekdays, traffic volumes at the existing Bay Bridge are expected to increase from 68,600 VPD in 2017 to 84,300 VPD in 2040. On summer weekends, traffic volumes at the existing Bay Bridge are expected to increase from 118,600 VPD in 2017 to 135,300 VPD in 2040.

Tables 6-1 and **6-2** display projected design year 2040 average daily traffic (ADT) volumes for the No-Build and CARA on non-summer weekdays and summer weekends. Shaded cells represent the values utilized for MSAT considerations. The No-Build Alternative was not used in determining likely MSAT analysis needs. The No-Build Alternative would be considered in the potential future Tier 2 NEPA analysis, regardless of the Corridor. These values are indicative of the likely level of MSAT analysis needed for any alternative alignment identified in a potential future Tier 2 NEPA analysis.

On both non-summer weekdays and summer weekends, a new crossing within Corridor 6 is projected to have an ADT below 140,000 VPD, yet since a new crossing within Corridor 6 would add capacity, the alternative alignment in a Tier 2 NEPA analysis would have low potential MSAT effects and a qualitative MSAT analysis would be considered.

Corridor 7 encompasses the Bay Bridge. Therefore, the combined total projected ADT at both the new crossing and the Bay Bridge would be considered in determining the type of MSAT analysis that would likely be most appropriate for Corridor 7. On non-summer weekdays Corridor 7 does not exceed 140,000 VPD but does exceed 140,000 VPD on summer weekends in 2040. Additionally, Corridor 7 is located in

proximity to populated areas in both Annapolis and Kent Island. Therefore, any alternative alignment in a Tier 2 NEPA analysis would have a higher potential MSAT effect and a quantitative MSAT analysis be considered.

Similar to Corridor 6, a new crossing within Corridor 8 has projected traffic volumes less than 140,000 VPD on both non-summer weekdays and summer weekends, and a new crossing within Corridor 8 would add capacity. Therefore any alternative alignment in a Tier 2 NEPA analysis in this corridor would have a low potential MSAT effect and a qualitative MSAT analysis would be considered.

Table 6-1: 2040 Non-Summer Weekday Projected Average Daily Traffic Volumes (VPD)

CROSSING	NO-BUILD	Corridor 6	Corridor 7	Corridor 8
Existing Bay Bridge	**84,300**	69,600	44,900	68,100
New Crossing	N/A	**18,200**	44,900	**20,000**
Total – Existing Bridge and New Crossing	84,300	87,800	**89,800**	88,100

Note: Shaded cells represent the values considered in determining the likely MSAT analysis needs

Table 6-2: 2040 Summer Weekend Projected Average Daily Traffic Volumes (VPD)

CROSSING	NO-BUILD	Corridor 6	Corridor 7	Corridor 8
Existing Bay Bridge	**135,300**	111,200	79,700	104,300
New Crossing	N/A	**45,700**	79,700	**55,200**
Total – Existing Bridge and New Crossing	135,300	156,900	**159,400**	159,500

Note: Shaded cells represent the values considered in determining the likely MSAT analysis needs

7.0 TRAFFIC CHARACTERISTICS

Projected traffic characteristics from all alternatives under consideration may also be indicators of relative levels of vehicle emissions. Two of these characteristics include travel speed and truck percentage.

Tables 7-1 and **7-2** reflect the average daily 2040 design year non-summer weekday and summer weekend vehicle speeds in each direction for the CARA and No-Build alternatives at the respective crossing of the Bay. More detailed tables are included in **Appendix A.**

Table 7-1: 2040 Non-Summer Weekday Average Daily Vehicle Speeds (MPH)

CROSSING		NO-BUILD	Corridor 6	Corridor 7	Corridor 8
Existing Bay Bridge	Eastbound	42	45	45	45
	Westbound	43	45	45	45
New Crossing	Eastbound	N/A	55	55	55
	Westbound	N/A	55	55	55

Speeds rounded to closest 1 MPH

Table 7-2: 2040 Summer Weekend Average Daily Vehicle Speeds (MPH)

CROSSING		NO-BUILD	Corridor 6	Corridor 7	Corridor 8
Existing Bay Bridge	Eastbound	35	41	45	44
	Westbound	37	45	45	45
New Crossing	Eastbound	N/A	55	55	55
	Westbound	N/A	55	55	55

Speeds rounded to closest 1 MPH

These tables indicate average vehicle speeds would be greater at the existing Bay Bridge with any of the CARA; Corridor 7 has the highest projected vehicle speeds on summer weekends in 2040. Higher speeds with a reduction in congestion are typically related to lower vehicle emissions for certain pollutants.

Tables 7-3 and **7-4** compare the average daily number of trucks crossing the Chesapeake Bay in the 2040 design year non-summer weekday and summer weekends for the CARA and No-build conditions. Shaded cells in the tables represent the values compared for potential emissions considerations.

Table 7-3: 2040 Non-Summer Weekday Projected Average Daily Truck Volumes (VPD)

CROSSING	NO-BUILD	Corridor 6	Corridor 7	Corridor 8
Existing Bay Bridge	**12,730**	10,510	5,810	10,290
New Crossing	N/A	**2,750**	7,750	**3,010**
Total - Existing Bridge and New Crossing	12,730	13,260	**13,560**	13,300

Note: Shaded cells represent the values compared for potential emissions considerations

Table 7-4: 2040 Summer Weekend Projected Average Daily Truck Volumes (VPD)

CROSSING	NO-BUILD	Corridor 6	Corridor 7	Corridor 8
Existing Bay Bridge	**11,230**	9,230	5,670	8,660
New Crossing	N/A	**3,790**	7,560	**4,580**
Total – Existing Bridge and New Crossing	11,230	13,020	**13,230**	13,240

Note: Shaded cells represent the values compared for potential emissions considerations

Corridors 6 and 8 do not include the existing Bay Bridge and therefore only truck volumes at the new crossing are compared to the No-Build. Since Corridor 7 includes the existing Bay Bridge, the total truck volume of the existing Bay Bridge and New Crossing are considered. These tables indicate Corridors 6 and 8 would result in lower truck volumes than the No-Build Alternative, whereas Corridor 7 would increase the number of projected daily truck crossings. Higher truck volumes are typically related to greater vehicle emissions.

8.0 GREENHOUSE GASES

Currently, there are no federal mandated project planning requirements regarding the consideration of greenhouse gas (GHG) impacts for transportation projects. Projected GHG emissions may be qualitatively discussed for alternative alignments within a Preferred Corridor Alternative during a potential future Tier 2 NEPA analysis if warranted and practicable.

Existing USEPA standards and regulations are focused on enabling the production of energy efficient vehicles and refined fuel standards to reduce GHG emissions. Maryland also does not require GHG analysis at the project level. However, the Maryland Department of Transportation (MDOT) is exploring strategies and programs aimed at reducing GHG emissions in conjunction with Maryland's Greenhouse Gas Emissions Reduction Act (GGRA). The GGRA was first signed into law in 2009 and renewed in 2016, seeking a 25 percent reduction in GHG emissions by 2020 and 40 percent reduction by 2030, as compared to 2006 emission levels. According to the 2011 MDOT *Maryland Climate Action Plan*, the evaluation of individual project GHG emissions through the NEPA process was considered, but it was determined more appropriate for GHG emissions impacts to be addressed in the statewide and/or regional planning processes. The Maryland Department of the Environment (MDE), MDOT, and Maryland MPO representatives are continuing discussions regarding the evaluation of GHG emissions impacts of major new transportation projects (*Maryland 2015 Greenhouse Gas Reduction Act Plan*). A 2016 report developed jointly by MDE and MDOT, *Charting the Path Forward*, expects Maryland will meet and exceed its 2020 emissions reduction goals, including a projected 13% reduction in transportation emissions from 2006 levels.

9.0 CONSTRUCTION EMISSIONS

The construction phase of any project has the potential to impact the local ambient air quality by generating fugitive dust through activities such as demolition and materials handling. MDOT has addressed this possibility by establishing procedures to be followed by contractors involved in transportation project site work through publishing the *Standard Specifications for Construction and Materials*. Through consultation with the MDE Maryland Air and Radiation Management Administration, MDOT determined 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*. Therefore, all appropriate measures as indicated by Code of Maryland Regulations 26.11.06.03 D will be incorporated during the construction of any resulting improvements to minimize the impact on the air quality of the area. Mobile source emissions can also be minimized during construction by prohibiting 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 can help to minimize the construction emission impact of any transportation improvement project. Regardless of the CARA selected, the same measures to minimize construction emissions would be required during project construction.

10.0 SUMMARY

A single Preferred Corridor Alternative will potentially be identified at the conclusion of the Tier 1 EIS process. Alternative alignments within the Preferred Corridor Alternative would be evaluated and compared to the No-Build Alternative in a potential future Tier 2 NEPA analysis; such improvements would be subject to CAA transportation conformity, MSAT, GHG, and construction emissions requirements. Under the CAA, any Tier 2 preferred alternative within a Preferred Corridor Alternative would require a conformity determination in either Corridor 6, 7, or 8 during Tier 2. The preferred alternative will meet the conformity requirements of the Clean Air Act Section 176(c) as appropriate. Any Tier 2 alternative alignments within Corridors 6 and 8 would likely be considered to have low potential MSAT effects and involve a qualitative MSAT analysis in Tier 2. Any Tier 2 alternative alignments within Corridor 7 would likely be considered to have higher potential MSAT effects and involve a quantitative MSAT analysis in Tier 2. Based on projected travel speeds, Corridor 7 may result in lower emissions for some pollutants than Corridors 6 and 8. However, based on projected truck volumes, Corridor 7 could also result in higher emissions for some pollutants than Corridors 6 and 8. GHG and construction emissions may be qualitatively considered in Tier 2 regardless of the Corridor selected as the Preferred Corridor Alternative.

APPENDIX A
Traffic Characteristics Data Tables

2040 Summer Weekend - Speed

Existing Structure

Eastbound -->

Time	No-Build	Corridor 6	Corridor 7	Corridor 8
12-1AM	45.0	45.0	45.0	45.0
1-2AM	45.0	45.0	45.0	45.0
2-3AM	45.0	45.0	45.0	45.0
3-4AM	45.0	45.0	45.0	45.0
4-5AM	45.0	45.0	45.0	45.0
5-6AM	45.0	45.0	45.0	45.0
6-7AM	45.0	45.0	45.0	45.0
7-8AM	45.0	44.9	45.0	45.0
8-9AM	45.0	45.0	45.0	44.7
9-10AM	44.5	44.6	45.0	45.0
10-11AM	42.6	44.6	45.0	45.0
11AM-12PM	20.0	43.9	45.0	44.4
12-1PM	20.0	43.5	45.0	44.2
1-2PM	20.0	43.3	45.0	44.0
2-3PM	20.0	43.5	45.0	44.2
3-4PM	20.0	42.6	45.0	43.2
4-5PM	20.0	20.0	45.0	20.0
5-6PM	20.0	20.0	45.0	42.5
6-7PM	20.0	20.0	45.0	42.7
7-8PM	20.0	42.6	45.0	43.6
8-9PM	43.5	45.0	45.0	45.0
9-10PM	45.0	45.0	45.0	44.8
10-11PM	45.0	45.0	45.0	45.0
11PM-12AM	45.0	45.0	45.0	45.0
Average EB	**35.4**	**41.4**	**45.0**	**43.5**

<-- Westbound

Time	No-Build	Corridor 6	Corridor 7	Corridor 8
12-1AM	45.0	45.0	45.0	45.0
1-2AM	45.0	45.0	45.0	45.0
2-3AM	45.0	45.0	45.0	45.0
3-4AM	45.0	45.0	45.0	45.0
4-5AM	45.0	45.0	45.0	45.0
5-6AM	45.0	45.0	45.0	45.0
6-7AM	45.0	45.0	45.0	45.0
7-8AM	45.0	45.0	45.0	45.0
8-9AM	45.0	45.0	45.0	45.0
9-10AM	45.0	45.0	45.0	45.0
10-11AM	44.4	45.0	45.0	45.0
11AM-12PM	44.3	45.0	45.0	45.0
12-1PM	20.0	44.4	45.0	44.8
1-2PM	42.9	44.7	45.0	45.0
2-3PM	43.0	44.8	45.0	45.0
3-4PM	20.0	44.5	45.0	44.8
4-5PM	20.0	43.5	45.0	44.1
5-6PM	20.0	43.6	45.0	44.1
6-7PM	43.0	44.6	45.0	45.0
7-8PM	20.0	43.9	45.0	44.9
8-9PM	20.0	44.0	45.0	44.9
9-10PM	20.0	44.2	45.0	45.0
10-11PM	45.0	45.0	45.0	45.0
11PM-12AM	45.0	45.0	45.0	45.0
Average WB	**37.4**	**44.7**	**45.0**	**44.9**

Note: LOS F Condition

New Structure

Eastbound -->

Time	No-Build	Corridor 6	Corridor 7	Corridor 8
12-1AM		55.0	55.0	55.0
1-2AM		55.0	55.0	55.0
2-3AM		55.0	55.0	55.0
3-4AM		55.0	55.0	55.0
4-5AM		55.0	55.0	55.0
5-6AM		55.0	55.0	55.0
6-7AM		55.0	55.0	55.0
7-8AM		55.0	55.0	55.0
8-9AM		55.0	55.0	55.0
9-10AM		55.0	55.0	55.0
10-11AM		55.0	55.0	55.0
11AM-12PM		55.0	55.0	55.0
12-1PM		55.0	55.0	55.0
1-2PM		55.0	55.0	55.0
2-3PM		55.0	55.0	55.0
3-4PM		55.0	55.0	55.0
4-5PM		55.0	55.0	55.0
5-6PM		55.0	55.0	55.0
6-7PM		55.0	55.0	55.0
7-8PM		55.0	55.0	55.0
8-9PM		55.0	55.0	55.0
9-10PM		55.0	55.0	55.0
10-11PM		55.0	55.0	55.0
11PM-12AM		55.0	55.0	55.0
Average EB		**55.0**	**55.0**	**55.0**

<-- Westbound

Time	No-Build	Corridor 6	Corridor 7	Corridor 8
12-1AM		55.0	55.0	55.0
1-2AM		55.0	55.0	55.0
2-3AM		55.0	55.0	55.0
3-4AM		55.0	55.0	55.0
4-5AM		55.0	55.0	55.0
5-6AM		55.0	55.0	55.0
6-7AM		55.0	55.0	55.0
7-8AM		55.0	55.0	55.0
8-9AM		55.0	55.0	55.0
9-10AM		55.0	55.0	55.0
10-11AM		55.0	55.0	55.0
11AM-12PM		55.0	55.0	55.0
12-1PM		55.0	55.0	55.0
1-2PM		55.0	55.0	55.0
2-3PM		55.0	55.0	55.0
3-4PM		55.0	55.0	55.0
4-5PM		55.0	55.0	55.0
5-6PM		55.0	55.0	55.0
6-7PM		55.0	55.0	55.0
7-8PM		55.0	55.0	55.0
8-9PM		55.0	55.0	55.0
9-10PM		55.0	55.0	55.0
10-11PM		55.0	55.0	55.0
11PM-12AM		55.0	55.0	55.0
Average WB		**55.0**	**55.0**	**55.0**

2040 NonSummer Weekday - Speed

Existing Structure

Eastbound -->

Time	No-Build	Corridor 6	Corridor 7	Corridor 8
12-1AM	45.0	45.0	45.0	45.0
1-2AM	45.0	45.0	45.0	45.0
2-3AM	45.0	45.0	45.0	45.0
3-4AM	45.0	45.0	45.0	45.0
4-5AM	45.0	45.0	45.0	45.0
5-6AM	45.0	45.0	45.0	45.0
6-7AM	45.0	45.0	45.0	45.0
7-8AM	45.0	45.0	45.0	45.0
8-9AM	45.0	45.0	45.0	45.0
9-10AM	45.0	45.0	45.0	45.0
10-11AM	44.4	45.0	45.0	45.0
11AM-12PM	44.5	45.0	45.0	45.0
12-1PM	43.6	45.0	45.0	45.0
1-2PM	45.0	45.0	45.0	44.6
2-3PM	44.1	45.0	45.0	45.0
3-4PM	20.0	43.7	45.0	43.9
4-5PM	20.0	43.7	45.0	43.7
5-6PM	20.0	43.3	44.8	43.3
6-7PM	43.9	45.0	45.0	45.0
7-8PM	45.0	44.7	45.0	44.8
8-9PM	45.0	45.0	45.0	45.0
9-10PM	45.0	45.0	45.0	45.0
10-11PM	45.0	45.0	45.0	45.0
11PM-12AM	45.0	45.0	45.0	45.0
Average EB	**41.7**	**44.8**	**45.0**	**44.8**

<-- Westbound

Time	No-Build	Corridor 6	Corridor 7	Corridor 8
12-1AM	45.0	45.0	45.0	45.0
1-2AM	45.0	45.0	45.0	45.0
2-3AM	45.0	45.0	45.0	45.0
3-4AM	45.0	45.0	45.0	45.0
4-5AM	45.0	45.0	45.0	45.0
5-6AM	45.0	45.0	45.0	45.0
6-7AM	20.0	44.4	45.0	44.6
7-8AM	20.0	43.7	45.0	43.4
8-9AM	44.2	45.0	45.0	45.0
9-10AM	45.0	45.0	45.0	45.0
10-11AM	45.0	45.0	45.0	45.0
11AM-12PM	45.0	45.0	45.0	45.0
12-1PM	45.0	45.0	45.0	45.0
1-2PM	45.0	45.0	45.0	45.0
2-3PM	45.0	45.0	45.0	45.0
3-4PM	45.0	45.0	45.0	45.0
4-5PM	45.0	45.0	45.0	45.0
5-6PM	45.0	45.0	45.0	45.0
6-7PM	45.0	45.0	45.0	45.0
7-8PM	45.0	45.0	45.0	45.0
8-9PM	45.0	45.0	45.0	45.0
9-10PM	45.0	45.0	45.0	45.0
10-11PM	45.0	45.0	45.0	45.0
11PM-12AM	45.0	45.0	45.0	45.0
Average WB	**42.9**	**44.9**	**45.0**	**44.9**

Note: LOS F Condition

New Structure

Eastbound -->

Time	No-Build	Corridor 6	Corridor 7	Corridor 8
12-1AM		55.0	55.0	55.0
1-2AM		55.0	55.0	55.0
2-3AM		55.0	55.0	55.0
3-4AM		55.0	55.0	55.0
4-5AM		55.0	55.0	55.0
5-6AM		55.0	55.0	55.0
6-7AM		55.0	55.0	55.0
7-8AM		55.0	55.0	55.0
8-9AM		55.0	55.0	55.0
9-10AM		55.0	55.0	55.0
10-11AM		55.0	55.0	55.0
11AM-12PM		55.0	55.0	55.0
12-1PM		55.0	55.0	55.0
1-2PM		55.0	55.0	55.0
2-3PM		55.0	55.0	55.0
3-4PM		55.0	55.0	55.0
4-5PM		55.0	55.0	55.0
5-6PM		55.0	55.0	55.0
6-7PM		55.0	55.0	55.0
7-8PM		55.0	55.0	55.0
8-9PM		55.0	55.0	55.0
9-10PM		55.0	55.0	55.0
10-11PM		55.0	55.0	55.0
11PM-12AM		55.0	55.0	55.0
Average EB		**55.0**	**55.0**	**55.0**

<-- Westbound

Time	No-Build	Corridor 6	Corridor 7	Corridor 8
12-1AM		55.0	55.0	55.0
1-2AM		55.0	55.0	55.0
2-3AM		55.0	55.0	55.0
3-4AM		55.0	55.0	55.0
4-5AM		55.0	55.0	55.0
5-6AM		55.0	55.0	55.0
6-7AM		55.0	55.0	55.0
7-8AM		55.0	55.0	55.0
8-9AM		55.0	55.0	55.0
9-10AM		55.0	55.0	55.0
10-11AM		55.0	55.0	55.0
11AM-12PM		55.0	55.0	55.0
12-1PM		55.0	55.0	55.0
1-2PM		55.0	55.0	55.0
2-3PM		55.0	55.0	55.0
3-4PM		55.0	55.0	55.0
4-5PM		55.0	55.0	55.0
5-6PM		55.0	55.0	55.0
6-7PM		55.0	55.0	55.0
7-8PM		55.0	55.0	55.0
8-9PM		55.0	55.0	55.0
9-10PM		55.0	55.0	55.0
10-11PM		55.0	55.0	55.0
11PM-12AM		55.0	55.0	55.0
Average WB		**55.0**	**55.0**	**55.0**

2040 Non-Summer Weekday - Daily Truck Volumes

Existing Structure

Daily	No-Build	Corridor 6	Corridor 7	Corridor 8
Total EB	6,386	5,273	2,962	5,164
Total WB	6,343	5,239	2,849	5,124
Total EB+WB	12,729	10,512	5,811	10,288

New Structure

Daily	No-Build	Corridor 6	Corridor 7	Corridor 8
Total EB	0	1,414	3,950	1,542
Total WB	0	1,332	3,799	1,473
Total EB+WB	0	2,746	7,748	3,015

Existing + New Structure

Daily	No-Build	Corridor 6	Corridor 7	Corridor 8
Total EB	6,386	6,687	6,912	6,706
Total WB	6,343	6,570	6,647	6,597
Total EB+WB	12,729	13,258	13,560	13,303

2040 Summer Weekend - Daily Truck Volumes

Existing Structure

Daily	No-Build	Corridor 6	Corridor 7	Corridor 8
Total EB	5,616	4,550	2,880	4,264
Total WB	5,614	4,682	2,790	4,390
Total EB+WB	11,230	9,232	5,670	8,654

New Structure

Daily	No-Build	Corridor 6	Corridor 7	Corridor 8
Total EB	0	2,054	3,840	2,446
Total WB	0	1,737	3,720	2,139
Total EB+WB	0	3,791	7,560	4,584

Existing + New Structure

Daily	No-Build	Corridor 6	Corridor 7	Corridor 8
Total EB	5,616	6,604	6,721	6,710
Total WB	5,614	6,419	6,510	6,528
Total EB+WB	11,230	13,023	13,230	13,239