

5 MDTA RECOMMENDED PREFERRED CORRIDOR

Based on the analysis of a wide range of engineering and environmental factors described in this DEIS and supporting documents, as well as input received through public comments and coordination with State and federal cooperating agencies, **Corridor 7 has been identified as the MDTA-Recommended Preferred Corridor Alternative (MDTA-RPCA)**. The analysis used to identify the MDTA-RPCA is summarized below to highlight the differences between the three CARA and the advantages of Corridor 7. The identification of the MDTA-RPCA included an analysis of the following categories for each of the CARA: traffic analysis, cost and engineering, and environmental considerations. While all three of these factors were important in the identification of the MDTA-RPCA, the traffic analysis proved to be the key distinguishing factor. The assessment of cost, engineering, and environmental factors provided further support for Corridor 7 as the MDTA-RPCA. The selection of an alternative will not be finalized until comments on this DEIS and input from the public hearings are considered. The selected alternative will be included in the Final EIS and Record of Decision (ROD).

5.1 TRAFFIC ANALYSIS

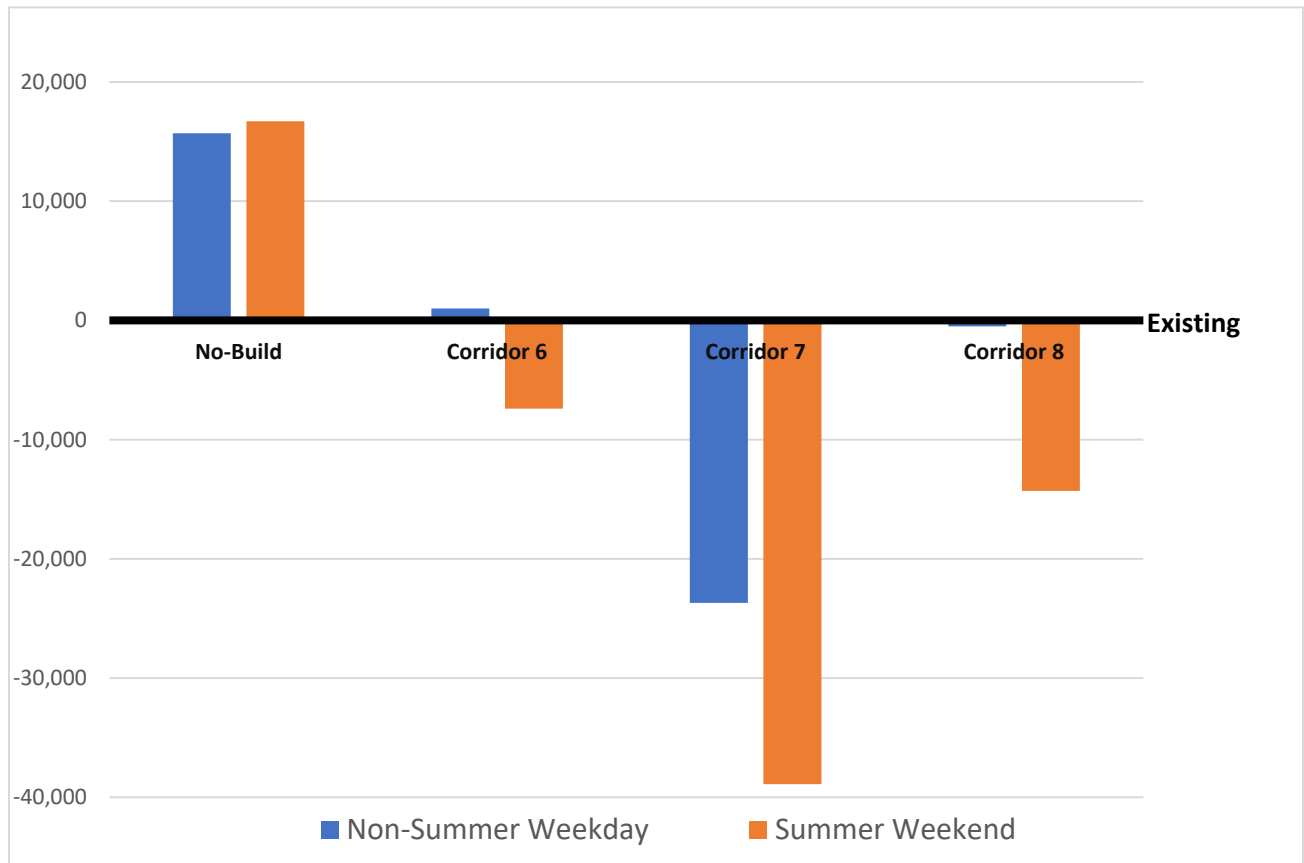
The primary focus of the Bay Crossing Study is to relieve traffic congestion at the Bay Bridge, which would be accomplished by attracting vehicles away from the Bay Bridge and onto a new crossing. The Screening Traffic Analysis (described in **Section 3.2.2**) determined that Corridor 7 would provide the greatest congestion relief, based on comparison of the Average Daily Traffic (ADT) volumes at the Bay Bridge, for both non-summer weekdays and summer weekends in 2040 for the three CARA.

As shown in **Table 5-1** and **Figure 5-1**, Corridor 7 would result in an estimated reduction of approximately 23,700 vehicles per day (vpd) on non-summer weekdays on the Bay Bridge compared to existing conditions, and a reduction of approximately 38,900 vpd on summer weekends on the Bay Bridge compared to existing conditions. These reductions in traffic on the Bay Bridge would be substantially greater than could be achieved by a new crossing in Corridor 6 or Corridor 8, as shown in the column labeled 'Change in ADT.'

Table 5-1: 2040 Average Daily Traffic Volumes

CORRIDOR ALTERNATIVE	2040 SUMMER WEEKEND ADT				2040 NON-SUMMER WEEKDAY ADT			
	EXISTING BRIDGE	EXISTING BRIDGE: CHANGE FROM 2017	PROPOSED CROSSING	COMBINED CROSSINGS	EXISTING BRIDGE	EXISTING BRIDGE: CHANGE FROM 2017	PROPOSED CROSSING	COMBINED CROSSINGS
Measure	ADT	Change in ADT	ADT	ADT	ADT	Change in ADT	ADT	ADT
Existing (2017)	118,600	N/A	N/A	118,600	68,600	N/A	N/A	68,600
No-Build (2040)	135,300	+16,700	N/A	135,300	84,300	+15,700	N/A	84,300
Corridor 6	111,200	-7,400	45,700	156,900	69,600	+1,000	18,200	87,800
Corridor 7	79,700	-38,900	79,700	159,400	44,900	-23,700	44,900	89,800
Corridor 8	104,300	-14,300	55,200	159,500	68,100	-500	20,000	88,100

Figure 5-1: 2040 Average Daily Traffic Volumes – Change from Existing Conditions (2017)



Corridor 6 would provide some traffic benefit on summer weekends, but weekday non-summer traffic would increase compared to existing conditions on the Bay Bridge. Corridor 8 would provide some traffic benefit on both non-summer weekday and summer weekends, but still substantially less compared to Corridor 7.

The Screening Traffic Analysis also considered whether queue lengths/durations at the existing Bridge would worsen by 2040 compared to existing conditions for each of the CARA. The analysis determined that Corridor 7 would not result in greater queue lengths/durations than existing conditions at the Bay Bridge on summer weekends or on non-summer weekdays. Corridors 6 or 8 would each result in no greater queue lengths/durations at the Bay Bridge than currently exists on summer weekends, but either would result in a longer queue for one hour on non-summer weekdays.

In addition, the Screening Traffic Analysis estimated that Corridor 7 would have no hours of LOS E or F operation at the Bay Bridge on summer weekends or non-summer weekdays. Neither Corridor 6 nor

Corridor 8 would reduce the hours of LOS E or F to zero at the Bay Bridge, either on non-summer weekdays or summer weekends. On non-summer weekdays in particular, the hours of LOS E or F would be worse than current conditions in 2040. Both Corridor 6 or 8 would reduce the number of hours with LOS E or F at the Bay Bridge on summer weekends, but would not eliminate LOS E or F conditions.

Corridor 7 would require no additional travel time to divert vehicles from the Bay Bridge to a new crossing. Corridors 6 and 8, in contrast, would each require approximately 26 minutes of additional travel time for vehicles diverted from the Bay Bridge. Thus, Corridors 6 or 8 would not provide the same level of flexibility to support maintenance and incident management at the Bay Bridge as Corridor 7.

Following selection of the CARA, an additional traffic analysis of Corridors 6, 7 and 8 was conducted. The CARA Traffic Analysis included evaluation of the 2040 peak hour traffic volumes and LOS for a new crossing in each corridor and the Bay Bridge for both summer weekends and non-summer weekdays. The results of the CARA Traffic Analysis provided greater detail in distinguishing between the CARA to help identify the MDTA-RPCA.

The results of the CARA Traffic Analysis further defined the differences between the CARA and reinforced the notable advantages of Corridor 7 in meeting the goals of the Bay Crossing Study. The LOS analysis was conducted to further evaluate the ability of the CARA to meet the study purpose and need. The LOS metric at the existing Bay Bridge demonstrates how well each CARA could relieve the traffic congestion at the existing crossing. The LOS at a new crossing was developed for comparison with the existing crossing.

The CARA Traffic Analysis revealed that substantial new capacity in Corridor 6 or 8 would still result in unacceptable peak hour LOS at the Bay Bridge in 2040. **Table 5-2** and **Table 5-3** present the 2040 peak hour LOS at a new crossing and at the Bay Bridge with the assumed addition of eight new lanes for each new crossing in the CARA. Note that the assumption of eight new lanes was used to evaluate the draw of traffic to a new crossing location without limiting the available capacity. The eight-lane scenario presented here is included for comparative purposes only; the actual number of lanes in any Corridor Alternative would be identified in a Tier 2 study.

Table 5-2: 2040 Summer Weekend Peak Hour LOS

CORRIDOR ALTERNATIVE	CORRIDOR 6		CORRIDOR 7		CORRIDOR 8		NO-BUILD	
	EB	WB	EB	WB	EB	WB	EB	WB
Existing Bay Bridge – Peak Hour LOS	F	E	D	C	F	E	F	F
New Crossing – Peak Hour LOS¹	B	A	D	C	B	B	N/A	N/A

¹ Although Corridors 6 and 8 provide a LOS A or B, the Bay Bridge would still operate at LOS E or F, thus demonstrating that those corridors would not draw enough traffic away from the Bay Bridge to effectively relieve congestion.

Table 5-3: 2040 Non-Summer Weekday Peak Hour LOS

CORRIDOR ALTERNATIVE	CORRIDOR 6		CORRIDOR 7		CORRIDOR 8		NO-BUILD	
	EB	WB	EB	WB	EB	WB	EB	WB
Existing Bay Bridge – Peak Hour LOS	E	E	C	C	E	E	F	F
New Crossing – Peak Hour LOS¹	A	A	C	C	A	A	N/A	N/A

¹ Although Corridors 6 and 8 provide a LOS A or B, the Bay Bridge would still operate at LOS E or F, thus demonstrating that those corridors would not draw enough traffic away from the Bay Bridge to effectively relieve congestion.

With new capacity in Corridors 6 or 8, the Bay Bridge would still experience peak hour LOS F (eastbound) or LOS E (westbound) on non-summer weekends in 2040. An equivalent amount of new capacity added in Corridor 7 would result in peak hour LOS D eastbound and LOS C westbound in 2040 on summer weekends at the existing bridge.

On non-summer weekdays, new capacity in Corridors 6 or 8 would still result in peak hour LOS E on the Bay Bridge in both directions. The equivalent new capacity at Corridor 7 could achieve LOS C in both directions at the existing bridge.

This analysis demonstrates that even a substantial addition of new capacity in Corridor 6 or Corridor 8 would not sufficiently relieve the traffic congestion problem at the Bay Bridge. LOS E and F are considered unacceptable LOS, causing unpredictable travel times and major delays. A new eight-lane crossing in Corridor 7 could much more effectively improve the traffic conditions at the Bay Bridge by achieving LOS C westbound and LOS D eastbound on summer weekends, and LOS C in both directions on non-summer weekdays.

It is important to note that the LOS A and B for the new crossing in Corridors 6 and 8 are due to the inability of a new crossing in either corridor to draw enough traffic away from the Bay Bridge. These high LOS would result from a lower number of vehicles using the new crossing in Corridor 6 or 8, while larger numbers of vehicles would continue to use the Bay Bridge resulting in LOS E or F. For Corridor 7, in contrast, the traffic volumes would balance out between the Bay Bridge and the new crossing. This would provide greater congestion relief and improved peak hour LOS at the Bay Bridge under Corridor 7.

5.2 ENGINEERING AND COST

Conceptual project cost estimates were developed for Corridors 6, 7, and 8, as described in **Section 3.5**.

For cost estimation purposes, Corridor 7 was estimated to need five to seven new crossing lanes. The number of new approach lanes would vary between four and seven to match the total number of crossing lanes, and also depends on whether the new approach lanes would be located on a new alignment or adjacent to the existing US 50/301 alignment. The costs included a new Chesapeake Bay crossing, all on-land infrastructure, and crossings of the Severn River and Kent Narrows. The preliminary estimated cost of a new bridge across the Chesapeake Bay and associated infrastructure in Corridor 7 would be between \$5.4 and \$8.9 billion in 2020 dollars. A new bridge-tunnel and associated infrastructure would cost an estimated \$8.0 to \$13.1 billion. The lower end of the cost estimate for Corridor 7, which assumed primarily utilizing existing infrastructure, would be the lowest of all three corridors. This indicated that cost savings could be achieved from utilizing the existing US 50/301 approach roadways in Corridor 7. The higher end of the cost estimate for Corridor 7 assumes that the new lanes would be completely on a new alignment. The cost estimates are shown in **Table 3-11** and **Table 3-12** in **Section 3.5** above.

For cost estimation purposes, Corridor 6 was estimated to need four new lanes, which would achieve LOS C/D. The range of costs included the potential for new lanes completely on a new alignment, or up to 33 percent following existing roadways. The estimates accounted for a Chesapeake Bay crossing, all on-land infrastructure, and a crossing of the Chester River. The cost estimate for Corridor 6 ranged between \$6.6 and \$7.2 billion for a bridge across the Chesapeake Bay and associated infrastructure. The cost of a bridge-tunnel and associated infrastructure was estimated between \$12.7 and \$13.3 billion. These estimates showed that the high end of the bridge cost estimate would be lower than the high end of the Corridor 7 bridge estimate, but the lower end of the range for a bridge in Corridor 6 would be higher than the low end of the range for Corridor 7. This showed that an entirely new alignment in Corridor 6 could be less expensive than an entirely new alignment in Corridor 7; but that cost savings could be achieved by utilizing existing infrastructure in Corridor 7.

For cost estimation purposes, Corridor 8 was estimated to need four to six new lanes to meet LOS D and C, respectively. The range of costs included potential for new lanes completely on new alignment, or up to 20 percent following existing roadways. The estimates accounted for a Chesapeake Bay crossing, all on-land infrastructure, and two crossings of the Miles River. The cost estimate for Corridor 8 ranged between \$11.7 and \$15.7 billion for a bridge across the Chesapeake Bay and associated infrastructure. The cost of a bridge-tunnel and associated infrastructure was estimated between \$13.2 and \$18.0 billion. Due in large part to the 12 mile length of crossing required in Corridor 8, the lower end of the cost estimates for a bridge in Corridor 8 would still be higher than the high end of the range in Corridors 6 or 7. The low end of the range for a bridge crossing in Corridor 8 (\$11.7 billion) would be more than twice as high as the low end of the range for a bridge in Corridor 7 (\$5.4 billion). Thus, even accounting for the range of potential costs, a new crossing in Corridor 8 would be substantially more expensive than Corridor 7.

5.3 ENVIRONMENTAL CONSIDERATIONS

The evaluation of environmental considerations showed that all three CARA contain substantial environmental resources. The environmental inventory within the two-mile wide corridors, however, does not provide the level of specificity needed to determine actual environmental impacts. Specific impacts would be largely determined by the alignment of a new crossing, which would be developed during a future Tier 2 study. The inventory of environmental features is, however, a useful indicator at the Tier 1 level of detail for comparing among broad corridor alternatives. Generally speaking, corridors with greater acreage or numbers of a resource are expected to be more likely to result in impacts to those resources.

In some instances, the geographic distribution of resources throughout a corridor also informs the qualitative discussion of potential impacts. For example, resources clustered along the edge of a corridor could allow a greater possibility of avoidance compared to resources that span the full width of a corridor. This kind of qualitative analysis is detailed in **Chapter 4** and the supporting technical reports, and is summarized below. In general, the discussion focuses on resources that showed some distinction among the corridors.

Corridor 7 would require the shortest crossing of the Chesapeake Bay due to the narrower width of the Bay at this location. Corridor 7 also has the shortest overall length of improvements necessary due to the presence of existing infrastructure in the corridor (see **Table 5-4**). These factors lead to Corridor 7 potentially resulting in the lowest overall environmental impacts compared to Corridors 6 or 8.

Table 5-4: Corridor and Crossing Lengths in Miles

CORRIDOR ALTERNATIVE	APPROXIMATE LENGTH OF CHESAPEAKE BAY CROSSING	APPROXIMATE LENGTH OF ON-LAND IMPROVEMENTS	APPROXIMATE LENGTH OF OTHER WATER CROSSINGS	TOTAL CORRIDOR LENGTH
Corridor 6	11	14	3	28
Corridor 7	4	17	1	22
Corridor 8	12	21	4	37

Table 5-5 displays a selection of key resources included in the environmental inventory. More detail and discussion of additional resources is included in **Chapter 4**. The environmental inventory reflects the breadth and complexity of existing environmental conditions in the two-mile wide corridors, and indicates some advantages and some disadvantages for every corridor. However, consideration of all the environmental factors suggests that Corridor 7 would potentially result in fewer environmental impacts to sensitive aquatic resources of the Chesapeake Bay such as open water, fish habitat, and oysters.

Additionally, the presence of the existing US 50/301 corridor could allow for less impactful new infrastructure in Corridor 7. Corridors 6 and 8 would both require a major, new limited-access roadway largely on a new alignment through areas that are currently not impacted by major transportation infrastructure. However, a future Tier 2 alternative could be developed in Corridor 7 that expands the existing US 50/301 infrastructure. Much of the land adjacent to the existing US 50/301 roadway is developed, so utilizing this infrastructure potentially minimizes overall impacts to on-land natural resources.

A future Tier 2 alternative that expands capacity along existing roadways in Corridor 7 could also minimize impacts to community cohesion and disruption to residential neighborhoods. Neighborhoods in the vicinity of US 50/301 have generally been developed to the north or south of the highway, often separated by a commercial area or wooded buffers. Thus, new capacity in Corridor 7 could avoid bisecting existing residential neighborhoods; impacts would likely be primarily along the periphery of residential areas. Such an alignment would, however, have greater impacts on commercial land uses and community facilities that are more prevalent alongside US 50/301. Access roads to adjacent land uses could also be impacted. Corridor 7 is more developed and contains greater amounts of commercial land uses, community facilities, and noise-sensitive areas.

Table 5-5: Summary of Environmental Inventory

RESOURCE	UNIT	CORRIDOR 6	CORRIDOR 7*	CORRIDOR 8
Total Area	Acres	35,010	27,990	46,810
Land	Acres	16,840 (48%)	18,330 (65%)	26,230 (56%)
Open Water	Acres	18,140 (52%)	9,660 (35%)	20,590 (44%)
Community Facilities Total	Count	27	70	37
Forest Land	Acres	4,500	4,500	8,520
Residential Land Use	Acres	5,660	6,560	6,830
Commercial Land Use	Acres	270	930	320
Environmental Justice (EJ) Census Tracts	Count (Census Tracts)	1 Low-income 0 Minority Race/Ethnicity	1 Low-income 1 Minority Race/Ethnicity	0 Low-income 0 Minority Race/Ethnicity
Total Section 4(f) Resources	Count	10	25	24
Area of Section 4(f) Resources	Acres	1,190	1,680	1,650
MDNR Non-Tidal Wetlands	Acres	1,200	1,500	2,080
MDNR Tidal Wetlands	Acres	18,460	10,870	24,940
Surface Waters	Linear Feet	344,380	394,020	471,890
100-Year Floodplain	Acres	3,050	6,640	3,950
Chesapeake Bay Critical Area	Acres	4,910	9,810	8,120
FIDS Habitat	Acres	7,020	6,900	11,410
Sensitive Species Project Review Areas (SSPRAs)	Acres	2,720	2,180	8,630
Green Infrastructure – Total	Acres	4,880	4,480	11,450
Essential Fish Habitat (EFH)	Acres	64,320	36,650	87,680
Submerged Aquatic Vegetation (SAV)	Acres	40	270	460
Oyster Resources	Acres	11,130	3,460	7,960
MDNR Oyster Sanctuaries	Acres	6,465	1,580	2,087
Noise-Sensitive Areas	Acres	5,390	7,400	5,700

* Shading indicates the MDTA-RPCA

For both Corridors 6 or 8, the distribution of residential land and the density of residential subdivisions encompassing the full width of the corridor on the Western Shore would make avoidance of residential communities unlikely. A potential Tier 2 alternative within Corridor 6 would cause community impacts on the Western Shore for residential areas located near MD 177. Corridor 8 includes the greatest acreage of residential land. Communities and residential neighborhoods in Corridor 8, particularly in the vicinity of

Mayo, Beverly Beach, and St. Michaels, would likely be impacted. A new crossing in Corridors 6 or 8 would thus be more likely to cause substantial community impacts by bisecting residential areas, disrupting local mobility, and causing other potential impacts to community cohesion compared to Corridor 7. More detailed discussion of potential community impacts is included in **Section 4.1.2**. Due to the more developed land uses in Corridor 7, it includes the highest acreage of noise-sensitive areas, as discussed in **Section 4.7.3**. Corridor 7 also contains two Census Tracts identified as potential Environmental Justice populations, as presented in **Section 4.1.4**.

Corridors 7 and 8 contain roughly the same number and acreage of Section 4(f) protected lands, and Corridor 6 contains a somewhat smaller amount (see **Section 4.3**). Potential impacts to Section 4(f) lands will require consideration of avoidance and minimization in a Tier 2 EIS. As noted in **Table 5-4**, Corridor 7 would require a much shorter crossing of the Chesapeake Bay compared to Corridors 6 and 8, which could result in potentially lower impacts to the open water of the Bay and other major waterways. Corridor 6 would require a Chesapeake Bay crossing of roughly 11 miles and a Corridor 8 crossing would be 12 miles, compared to an approximate length of four miles for Corridor 7. In addition to the main crossing of the Chesapeake Bay, Corridor 7 would require shorter crossings of other major waterways adjacent to the Bay. Corridor 7 would require approximately one mile of additional water crossings, whereas Corridors 6 or 8 would require three or four miles of additional water crossings, respectively. As a result, the amount of open water in Corridor 6 (18,140 acres) or Corridor 8 (20,590 acres) are each substantially higher than Corridor 7 (9,660 acres). A longer crossing would require greater impervious surfaces, more substantial construction, and a greater overall footprint of area impacted in the Chesapeake Bay and other major water bodies.

Aquatic resources associated with open water such as Essential Fish Habitat (EFH) and oyster resources are more prevalent in Corridors 6 and 8 compared to Corridor 7. EFH and oyster resources encompass the full width of the corridor in some locations, and thus impacts could not be avoided. Further discussion of aquatic resources is included in **Section 4.4.7**. Tidal wetlands, which include open water of the Chesapeake Bay, are also substantially lower for Corridor 7 compared to Corridors 6 or 8 (see **Section 4.4.2**). Overall, the longer crossing is likely to result in greater impact on the Chesapeake Bay and associated aquatic resources compared to Corridor 7.

For many on-land natural resources such as forest, non-tidal wetlands, surface waters, FIDS Habitat, SSPRAs and green infrastructure, the inventory numbers are roughly similar between Corridors 6 and 7, and notably higher for Corridor 8 (See **Section 4.4.5** and **Section 4.4.6**). Thus, impacts to terrestrial resources would likely be greatest under Corridor 8, largely due to the length of on-land improvements and the less developed nature of the corridor. Improvements in Corridor 7 could potentially reduce impacts to such resources by expanding the existing US 50/301 corridor, whereas Corridor 6 would require greater improvements on a new alignment likely translating to greater impacts. Some resources associated with coastline such as Chesapeake Bay Critical Areas and 100-year flood plains are somewhat more prevalent in Corridor 7 compared to Corridors 6 or 8 due to the geography of the corridor (as discussed in **Section 4.4.3** and **Section 4.4.4**). During a Tier 2 EIS and later final design, more detailed study would be completed to avoid and minimize adverse impacts to floodplains.

Corridor 7 would likely result in additional new capacity to the existing transportation network in relative proximity to the Bay Bridge, which would be more compatible with existing land use patterns and plans compared to Corridor 6 or Corridor 8. Corridor 7 would have indirect effects, but likely less potential for

induced growth compared to Corridors 6 and 8 due to existing development patterns and density in the corridors.

When it was constructed, the Bay Bridge resulted in growth in areas such as Kent Island and Queenstown due to new accessibility to these areas. The pattern and pace of growth that began since the construction of the Bay Bridge would continue with a new crossing in Corridor 7. New capacity in the vicinity of the existing crossing would potentially increase the demand for development. However, this demand would be expected to result in a more incremental change within the existing pattern of land use development, rather than a substantial departure from existing patterns that would be expected under Corridors 6 or 8. A greater area in proximity to Corridor 7 is designated as Priority Funding Areas (PFAs) relative to Corridors 6 or 8, indicating that growth in these locations would be more compatible with planned future land uses compared to Corridors 6 or 8.

In contrast to Corridor 7, Corridor 6 would provide new access to areas within a roughly 30 to 45-minute distance of Baltimore City, and Corridor 8 would provide new access to areas within a roughly 45 to 60-minute distance of Washington DC, potentially resulting in increased demand for residential development on the Eastern Shore. The Indirect and Cumulative Effects (ICE) analysis showed that these corridors would likely result in new development pressure on important natural and agricultural resources, areas vulnerable to residential development, and areas largely outside of designated PFAs. Thus, a new crossing in Corridors 6 or 8 would have the potential to substantially alter land use patterns and result in greater pressure for unplanned growth than Corridor 7, likely with corresponding impacts to natural resources, community cohesion, and agricultural resources, especially on the Eastern Shore. This potential for indirect effects from new land use development on the Eastern Shore has been a primary concern reflected in public and agency input throughout the study process, particularly from communities on the Eastern Shore. Further discussion of indirect and cumulative effects is included in **Section 4.8**.

5.4 SUMMARY

The analysis shows that Corridor 7 would have substantial advantages in terms of traffic, engineering and cost, and environmental considerations. The identification of Corridor 7 as the MDTA-RPCA can be summarized by the following key points:

- Corridor 7 would provide the greatest traffic relief at the Bay Bridge, and thus has a greater ability to meet the Purpose and Need of this Tier 1 Study. Corridor 7 would divert substantially more traffic away from the Bay Bridge in terms of total vehicles per day on both summer weekends and non-summer weekdays.
- A new crossing in Corridor 7 would result in greater peak hour congestion relief at the Bay Bridge compared to an equivalent number of lanes in Corridors 6 or 8.
- Corridor 7 would likely be the least costly of the three CARA because of the ability to utilize existing infrastructure on US 50/301 and the shorter length of crossing over the Chesapeake Bay.

- Corridor 7 would potentially have lower overall environmental impacts due to the shorter Chesapeake Bay crossing length and ability to utilize existing on-land infrastructure along US 50/301. Corridors 6 and 8 would require longer crossings and more roadway along new alignment, likely resulting in greater impacts to sensitive environmental resources in and around the Chesapeake Bay, especially tidal wetlands and aquatic resources like SAV and oyster resources.
- Corridor 7 could have greater impacts to noise sensitive areas and socioeconomic resources such as community facilities and commercial areas due to the more developed nature of the corridor compared to Corridors 6 and 8.
- Corridors 6 and 8 would likely cause substantial indirect effects from new connectivity between rural lands on the Eastern Shore and employment centers such as Baltimore and Washington, DC. Corridors 6 or 8 could lead to substantial pressure for new residential development, especially on the Eastern Shore, with corresponding impacts to farmland and natural resources. Corridor 7 would have some indirect effects, but they would be more consistent with existing land use patterns and plans.