



EXECUTIVE SUMMARY

The Chesapeake Bay is one of Maryland's most iconic and significant environmental resources. Comprising a 64,000 square mile watershed that spans six states and the District of Columbia, the Bay holds more than 18 trillion gallons of water and is the largest estuary in the United States. The Bay maintains a functioning ecosystem that filters water and provides suitable habitat for diverse and abundant life. It also provides flood protection, serves as a transportation route for cargo and cruise ships, and plays a major role in Maryland's economy through commercial fishing activities and recreational, educational, and tourism opportunities.

The Bay also presents a clear transportation barrier between Maryland's Western and Eastern Shores. The first highway connection across the Chesapeake Bay was constructed in 1952, and the second parallel Bay Bridge was constructed in 1973. As Maryland's only crossing of the Chesapeake Bay, the William Preston Lane Jr. Memorial Bridge (Bay Bridge) plays a major role in the State's regional transportation system and is vital in supporting the diverse regional economy.

However, increased use of the Bay Bridge over the years has meant that daily commuters, regional travelers, truck freight operators, and vacationers have experienced increased congestion, often struggling to reach their destinations with low confidence in travel times. Aging infrastructure,

capacity limitations at the existing bridge, and an increasing demand for trips across the Bay will continue to exacerbate the congestion and delays that travelers currently experience. There would likely be negative consequences with wide-ranging effects if this primary link between the Eastern Shore and the Baltimore and Washington Metropolitan Areas were to become seriously degraded or unavailable due to safety or performance issues.

MDTA understands that the current pandemic situation is impacting all Marylanders today in how we work, in how we spend our free time, and in how we travel. We also recognize the impact that the current pandemic situation has had on transportation patterns throughout the region, including the Bay Bridge. MDTA's number one priority during these challenging times is the health and safety of all Marylanders. Notwithstanding the current crisis, we continue our efforts to ensure transportation improvements are being developed to meet our State's needs not only for today but for the next 20-plus years. At this time, there is no definitive traffic model that would predict how the pandemic will affect long-term traffic projections; however, we will continue to track trends in travel behavior and traffic volumes as our communities, businesses, places of worship, and schools begin to reopen, and consider new information as it becomes available.

What is the Chesapeake Bay Crossing Study: Tier 1 NEPA?

The Chesapeake Bay Crossing Study: Tier 1 NEPA (Bay Crossing Study) is the critical first step to addressing existing and future congestion at the Bay Bridge and its approaches along US 50 and US 301. Led by the Maryland Transportation Authority (MDTA) and the Federal Highway Administration (FHWA), the study encompasses a broad geographic area, spanning nearly 100 miles of the Chesapeake Bay from the northern-most portion in Harford and Cecil counties to the southern border with Virginia between St. Mary's and Somerset counties. Through data collection, analysis, and modeling, as well as with extensive agency and public input, the Bay Crossing Study will result in the identification of a selected corridor alternative to address congestion at the Bay Bridge.

This document is a Tier 1 Draft Environmental Impact Statement (DEIS). The DEIS is being circulated to agencies and the public for comment before the development of a Final Environmental Impact Statement (FEIS) and issuance of a Record of Decision (ROD) identifying the Tier 1 selected alternative.

What is the purpose of the Bay Crossing Study and why is it needed?

The purpose of the Bay Crossing Study is to consider corridors for providing additional capacity and access across the Chesapeake Bay in order to improve mobility, travel reliability, and safety at the existing Bay Bridge.

The project needs are adequate capacity, dependable and reliable travel times, and the flexibility to support maintenance and incident management. As part of the study, MDTA will also consider financial viability of the proposed alternatives and environmental resources.

What is the National Environmental Policy Act (NEPA)?

The National Environmental Policy Act (NEPA) is federal legislation that applies to projects receiving federal funding or approval. NEPA requires Federal agencies to prepare an environmental impact statement that assesses the impact of a major action on the human and natural environment. NEPA requires consideration of a reasonable range of alternatives and ensures that agencies and the public are informed and involved in considering the potential effects of such action on the environment.



TIERED NEPA PROCESS

What is a tiered NEPA approach?

A tiered approach to NEPA is a staged process that allows a federal agency to examine a potential action on a broad scale in an initial EIS (the first stage, or Tier 1) and subsequently analyze a more site-specific action in another NEPA study at a later date (the second stage, or Tier 2).

NEPA regulations issued by the Council on Environmental Quality (CEQ) 40 CFR Parts 1500-1508) and the Federal Highway Administration 923 CFR § 771.111(g)) recognize tiering as an appropriate option for complying with NEPA, particularly for projects like the Bay Crossing Study that must examine information at a very broad scale (i.e., determining a potential corridor) before shifting the focus to a project at a site-specific scale (i.e., determining an alignment within a specific corridor)

Why did the Bay Crossing Study pursue a tiered analysis?

Most infrastructure-related NEPA efforts focus on design alternatives at a specific location. However, the Bay Crossing Study is different by virtue of its scale – the study area for the effort spans nearly 100 miles of the Chesapeake Bay. Within those 100 miles, there are myriad of crossing possibilities. By using a tiered NEPA approach, MDTA will narrow the area under consideration by evaluating two-mile wide potential corridors in Tier 1.

Completion of the Tier 1 study does not presume that a Tier 2 study will occur, and a Tier 2 study is not funded at this time. However, if a Corridor Alternative is selected in Tier 1, a potential Tier 2 study would include development and evaluation of specific design alternative alignments within the selected Corridor Alternative. A smaller geographic

area would be studied in a potential Tier 2 study, allowing for a more detailed evaluation. This tiered approach allows for a more efficient environmental review and permitting process.

What is included in a Tier 1 and a Tier 2 analysis?

A Tier 1 NEPA Study includes a high-level review of cost, engineering, and environmental data. The Tier 1 study for this effort may conclude with the selection of a Corridor Alternative for a potential Bay Crossing.

A Tier 2 NEPA Study would further evaluate possible alignments within the Corridor Alternative selected in Tier 1. More detailed analysis of cost, engineering, and environmental data would be conducted in a potential Tier 2 study.

TIER 1 NEPA (CURRENT STUDY)

- › Establish the project Purpose and Need
- › Evaluate a range of alternatives across the Bay using broadscale engineering information
- › Include public involvement and comment
- › Identify a Selected Corridor Alternative

TIER 2 NEPA (FUTURE STUDY)

- › Refine Purpose and Need
- › Identify alignments within the Selected Corridor Alternative identified in Tier 1
- › Include more detailed engineering of alternatives and specific assessment of potential environmental impacts
- › Identify potential mitigation measures
- › Include public involvement comment
- › Identify a Selected Alternative within the Tier 1 Selected Corridor



RANGE OF ALTERNATIVES

What alternatives has the Bay Crossing Study considered?

Three categories of alternatives were evaluated for the Bay Crossing Study: the No-Build Alternative, modal and operational alternatives (MOAs), and corridor alternatives.

The **No-Build Alternative** included the existing infrastructure, planned future improvements, and regular maintenance of the Bay Bridge.

The **Modal and Operational Alternatives** are presented in the graphic below.



Transportation System Management (TSM) / Travel Demand Management (TDM)- infrastructure and operational changes to improve the function of the existing roadway network without adding major new capacity. Improvements evaluated included all-electronic tolling or variable tolling. (All-electronic tolling at the Bay Bridge has since been implemented as of Spring 2020)



Ferry service- one or more sets of ferry terminals to connect the Eastern Shore and the Western shore. May include roadway improvements to connect terminals to existing roadways



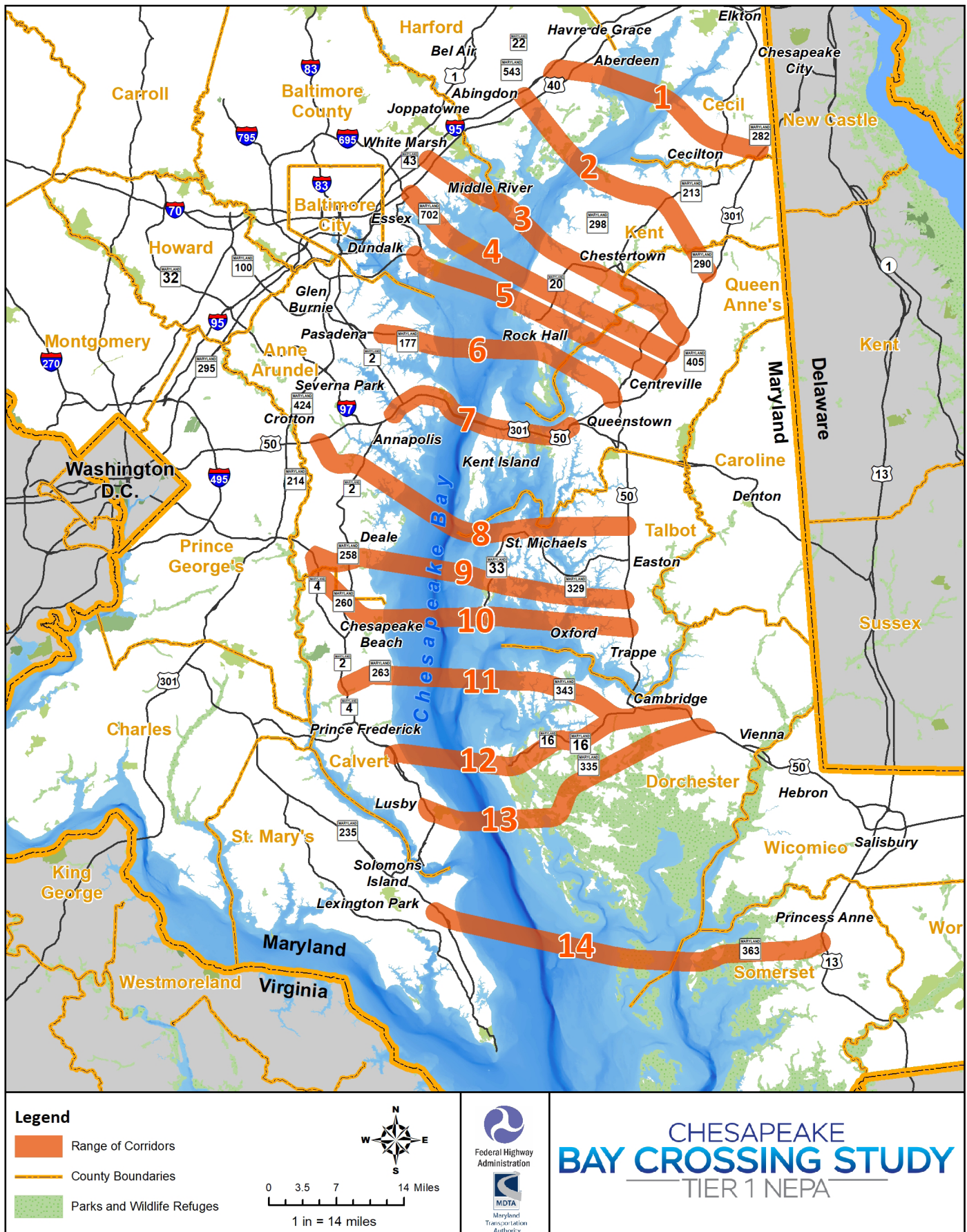
Bus Rapid Transit- high-quality bus-based transit system that would use the existing Bay Bridge or a new crossing



Rail Transit- rail service providing passenger service that would use a new Bay crossing

Fourteen Corridor Alternatives were developed to include potential Chesapeake Bay crossing locations and the approach roadways that would tie into the existing roadway network, as shown on the map on page 5.





How were the MOAs considered?

MOAs were analyzed separately from the corridor alternatives because they were strategies not tied to a specific geographic location. An examination of the MOAs revealed that they would not meet the study purpose and need as stand-alone alternatives because they would not provide adequate capacity to relieve congestion at the existing bridge, provide dependable and reliable travel times, or provide flexibility to support maintenance and incident management at the existing bridge. Therefore, all MOAs were recommended to be eliminated from further consideration as stand-alone alternatives.

However, three of the MOAs – TSM / TDM, BRT, and Ferry Service – are recommended to be considered in combination with other alternatives should the Bay Crossing Study advance to a Tier 2 NEPA study. MDTA would consider the TSM / TDM, Ferry Service, and BRT MOAs in combination with other alternatives in a Tier 2 evaluation. Rail would not be evaluated further due to the anticipated high cost and low ridership.

How were the corridor alternatives screened?

The initial 14 corridor alternatives were screened using the elements of the study purpose and need. Each alternative was assessed for its ability to provide adequate capacity, dependable and reliable travel times, and flexibility to support maintenance and incident management at the existing Bay Bridge. Environmental resources, financial viability, and public comment/agency input were also considered.

The 14 corridor alternatives were screened in two phases. In the first phase, corridors were analyzed for adequate capacity, focusing specifically on anticipated 2040 summer weekend and non-summer weekend average daily traffic (ADT) at the existing crossing. Corridors were eliminated that could not reduce the 2040 ADT at the existing

crossing to below existing (2017) levels on either summer weekends or non-summer weekdays. They were also screened for unavoidable impacts to major resources like the Aberdeen Proving Ground or Blackwater National Wildlife Refuge.

In the second phase, the corridors that met the metrics from the first phase were evaluated for their ability to provide dependable and reliable travel times; offer flexibility to support maintenance and incident management at the existing bridge. The screening also considered results of the screening-level environmental inventory and potential financial viability.





The environmental inventory portion of the screening process identified natural, socioeconomic, and cultural resources present in the two-mile wide corridor alternatives. Since developing specific alignments within a given corridor was not a goal of the Tier 1 NEPA study, impacts were generally assessed on a qualitative basis. The screening-level environmental inventory was used as an indicator of the types of resources that would be anticipated to be present, their overall prevalence, and the magnitude of potential impacts in comparison to other corridor alternatives.

Financial viability was assessed considering the complexity of the crossing and the magnitude of the approach infrastructure. The evaluation of the complexity included what would be required to build a new crossing, with the assumption that longer corridor alternatives and wider deep-water or channel crossings would require greater expense to construct. The approach infrastructure referred to the overall length and complexity of infrastructure required to connect to logical termini on both sides of the Chesapeake Bay.





CORRIDOR ALTERNATIVES RETAINED FOR ANALYSIS

Which corridor alternatives were evaluated in more detail?

Three corridor alternatives were identified as Corridor Alternatives Retained for Analysis (CARA) as a result of the screening process applied to the 14 initial corridors:

CORRIDOR 6

Connects Pasadena and Centreville. Follows MD 177 and ties in with MD 100 on Western Shore; does not follow existing road network on Eastern Shore to tie into US 301.

CORRIDOR 7

Follows existing road network along US 50/301 from west of the Severn River on the Western Shore to US 50/301 split on the Eastern Shore; includes location of existing Bay Bridge.

CORRIDOR 8

Follows MD 214/424 and ties into existing US 50 interchange on Western Shore; does not follow existing road network on Eastern Shore to connect to US 50.

These three corridors were the only corridors to meet all elements of the purpose and need, and were carried forward for further analysis in the DEIS. They were anticipated to provide adequate capacity, dependable and reliable travel times, and flexibility to support maintenance and incident management at the existing bridge. Furthermore, the CARA achieved the goal of reducing congestion better than all other corridors – a goal that was emphasized by public input collected at the Fall 2019 Open Houses.

What are the potential impacts of the CARA?

The Tier 1 NEPA study evaluated potential environmental impacts by using a screening-level inventory as an indicator of the types of resources that would be anticipated to be present,

their overall prevalence, and the magnitude of potential impacts in comparison to other corridor alternatives. Corridor alternatives with greater acreage or numbers of a resource would be expected to be more likely to impact those resources. See adjacent tables. The environmental inventory consisted of identifying the total amount of each resource present within each two-mile wide corridor. In addition to the environmental inventory, a qualitative assessment was conducted to evaluate the distribution of resources throughout the corridors and the potential to avoid impacts. This qualitative assessment is detailed in Chapter 4 of the DEIS. The DEIS also includes analysis of indirect and cumulative effects, such as potential increased land use change and development near a new crossing.

What were the findings of the environmental analysis?

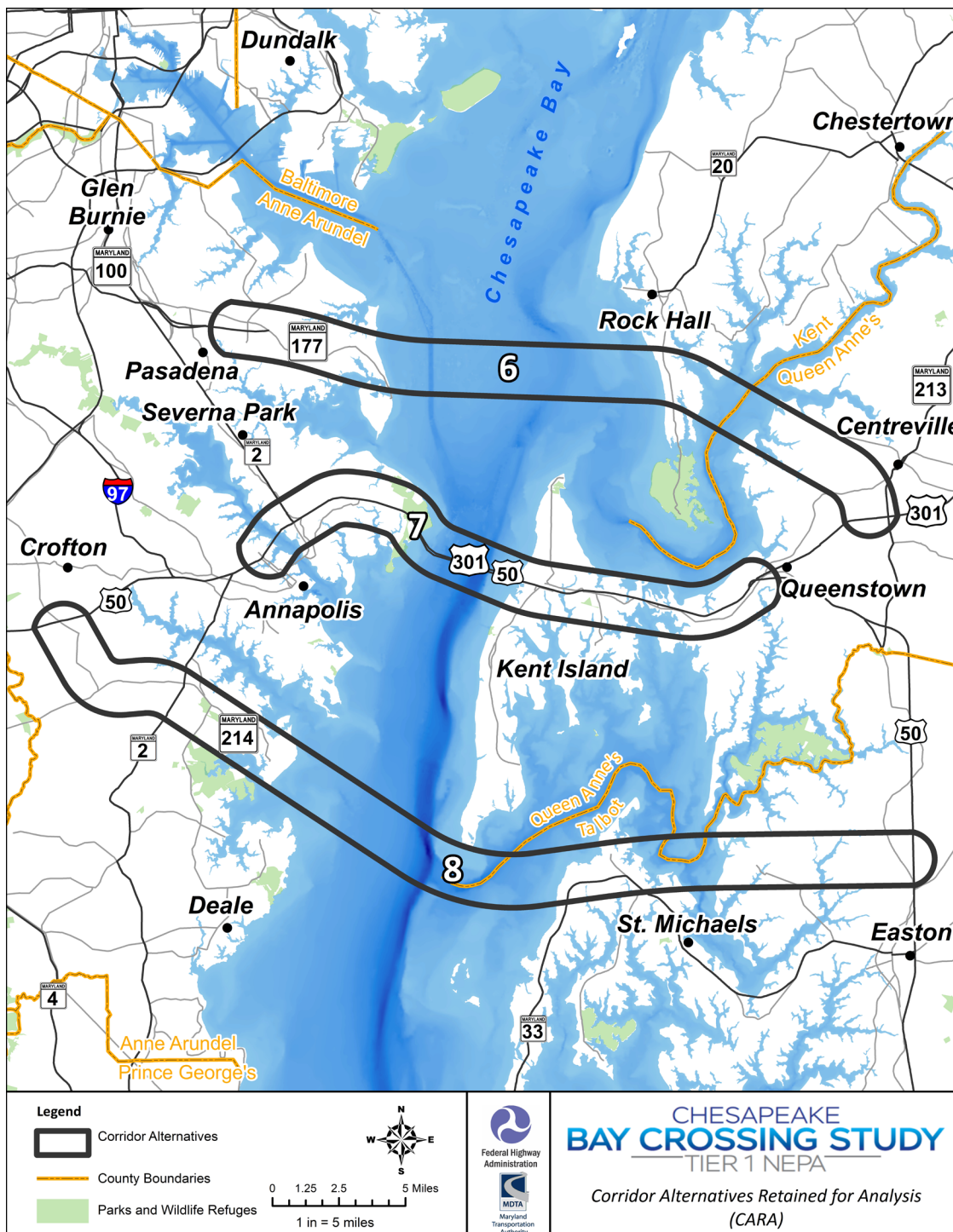
The evaluation of resource distribution and potential for avoidance yielded differing results for the numerous different resources. Many resources were identified that could not be avoided, such as 100-year floodplains and Chesapeake Bay Critical Areas. Aquatic resources such as submerged aquatic vegetation and oyster resources often cover the full width of the open water portions of the corridors. Other resources such as community facilities could potentially be avoided in some cases, though further analysis would be required.

Corridor 7 would potentially have lower overall environmental impacts due to the shorter 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. 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.

The analysis of indirect and cumulative effects determined that Corridors 6 and 8 could result in substantial land use changes on the Eastern Shore. Providing access to undeveloped land on the Eastern Shore in proximity to major employment centers

such as Baltimore and Washington, DC could lead to increased demand for unplanned residential development in the rural areas of Corridor 6 and 8. Corridor 7, in contrast, would be more compatible with existing and planned future land uses. Public and agency input emphasized the potential for induced growth effects of a new crossing as a topic of particular importance for this Tier 1 study.



ENVIRONMENTAL INVENTORY RESULTS WITHIN THE CARA

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
MDNR Non-Tidal Wetlands	Acres	1,200	1,500	2,080
MDNR Tidal Wetlands	Acres	18,460	10,870	29,940
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	6,470	1,580	2,090
Noise-Sensitive Areas	Acres	5,390	7,400	5,700

How much will the CARA cost?

Two cost estimates were developed for each corridor. First, cost estimates were developed that assumed the new lanes for the approach roadways would be completely on new alignment (representing a high estimate) or a portion of the new lanes would follow an existing roadway and the existing infrastructure would be widened where possible (representing a low estimate). Second, since it has not been determined whether a new Chesapeake Bay crossing would be a bridge or a bridge-tunnel, cost estimates were developed for both structure types. A tunnel-only option was not evaluated due to the anticipated high cost.

Crossing Type	Cost Range (in Billions)	Corridor 6	Corridor 7	Corridor 8
Bridge only	Low End of Range	\$6.6	\$5.4	\$11.7
	High End of Range	\$7.2	\$8.9	\$15.7
Bridge-Tunnel	Low End of Range	\$12.7	\$8.0	\$13.2
	High End of Range	\$13.3	\$13.1	\$18.0





MDTA-RECOMMENDED PREFERRED CORRIDOR ALTERNATIVE

What is the MDTA Recommended Preferred Corridor Alternative (MDTA-RPCA)?

The corridor screening results and further evaluation in the DEIS showed that Corridor 7 had substantial advantages over the other CARA, Corridors 6 and 8. The advantages of Corridor 7 included:

- › Better congestion relief at the existing Bay Bridge
- › More effective reduction of duration of unacceptable level of services
- › More effective backup reduction at the Bay Bridge
- › Better compatibility with existing land-use patterns likely resulting in fewer indirect effects
- › The best diversion route and overall incident management
- › Potential for lower environmental impacts particularly to Chesapeake Bay aquatic resources

As a result, Corridor 7 was identified 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).

How was the MDTA-RPCA identified?

To identify the MDTA-RPCA, three categories of information were analyzed for each of the CARA consistent with the established Tier 1 Study Purpose and Need: traffic, engineering and cost, and environmental considerations.

The traffic analysis focused on congestion relief, which examined Average Daily Traffic (ADT)

volumes at the Bay Bridge for both non-summer weekdays and summer weekends in 2040 and considered whether queue lengths and durations at the existing Bay Bridge would worsen by 2040 compared to existing (2017) conditions with the addition of a new crossing. While none of the CARA would result in greater queue lengths or durations at the Bay Bridge than currently exist on summer weekends, only Corridor 7 would not result in a longer queue length on non-summer weekdays. Additionally, Corridor 7 would have no hours of Level of Service (LOS) E or F operation at the Bay Bridge on summer weekends or non-summer weekdays; however, Corridor 6 and 8 would not reduce the hours of LOS E or F to zero at the Bay Bridge on either non-summer weekdays or summer weekends.

Cost estimates and analysis of environmental considerations were developed for Corridors 6, 7, and 8 and are shown in the tables above. Since Corridor 7 requires the shortest crossing of the Chesapeake Bay due to the narrower width of the Bay at this location, and since it has the shortest overall length of improvements necessary due to the presence of existing infrastructure in the corridor, it could potentially result in the lowest overall environmental impacts as compared to Corridors 6 and 8, particularly for aquatic resources in the Chesapeake Bay.

When will the MDTA-RPCA be constructed?

Following issuance of a ROD at the conclusion of the Tier 1 NEPA Study currently anticipated in Winter 2021/2022, a Tier 2, project-level NEPA Study could proceed. Final project design and construction would follow final agency decisions based on completion of Tier 2 NEPA Study documents. Currently, there is no timetable for construction of a new crossing.



COORDINATION AND PUBLIC INVOLVEMENT

What agencies are involved with the Bay Crossing Study?

The MDTA and the FHWA are undertaking the Bay Crossing Study in coordination with federal, state, and local agencies and stakeholders.

The FHWA is the lead federal agency for the Bay Crossing Study. A lead federal agency is the agency that carries out the federal action and is responsible for complying with the requirements of NEPA, and supervises the preparation of the environmental document. Beyond the lead federal agency, there are two additional designations for parties involved with the NEPA process: cooperating agencies and participating agencies.

Cooperating agencies are those that have special expertise regarding certain aspects relevant to the project and are committed to participating in the scoping process, providing information or analyses in their area of expertise, and making their staff available to support the NEPA process. A cooperating agency may adopt the FHWA NEPA document after an independent review. The following seven cooperating agencies for the Bay Crossing Study were asked to provide their concurrence at study milestones: the US Army Corps of Engineers, the US Coast Guard, the Environmental Protection Agency, the National Marine Fisheries Service, the Maryland Department of Transportation State Highway Administration, the Maryland Department of Environment, and the Maryland Department of Natural Resources.

Participating agencies are those agencies with an interest in the project. There are 35 participating agencies in the Bay Crossing Study. A list of participating agencies is found in Section 6.2.

In addition, MDTA has provided notifications at major milestones to other agencies that could be affected by the action including: six federal, eight state, four county, 68 municipal, three metropolitan planning

organizations, 31 stakeholder organizations, 17 federally-recognized tribes, and ten state-recognized tribes.

Lead, cooperating, participating, and notified agencies and stakeholders are listed in Chapter 6 of the DEIS.

Interagency Coordination Meetings (ICMs), designed to foster communication between cooperating and participating agencies and the MDTA, were held thirteen times since study initiation in October 2017. Participants were asked to provide feedback on the study process, methodologies, and results of major findings at study milestones.

What is the Section 106 consultation process?

Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations set forth in 36 Code of Federal Regulations (CFR) Part 800, requires Federal agencies to take into account the effects of their undertakings on historic properties. It affords the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on such undertakings. The Bay Crossing Study is engaging in Section 106 consultation with the ACHP and the Maryland Historical Trust, the designated State Historic Preservation Officer, because a new crossing would have the potential to impact historic properties.

The Section 106 process seeks to accommodate historic preservation concerns with the needs of Federal undertakings through consultation among the agency official and other parties with an interest in the effects of the undertaking on historic properties. According to 36 CFR Part 800.16 (I), the term "historic property," refers to any prehistoric or historic district, site, building, structure, or object listed in or eligible for inclusion in, the National Register of Historic Places (NRHP).

How has the public been engaged in the study

The Bay Crossing Study launched a website in October 2017 to share project information and gather feedback from the public. Additionally, three rounds of public meetings have been held to date.

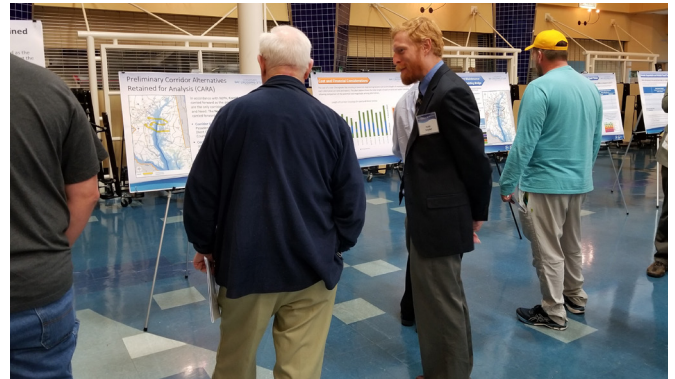
MDTA has received over 1,800 public comments on the study including letters, emails, website comments, public meeting comment cards, and MDTA customer survey cards. The comprehensive public outreach program conducted in support of the Bay Crossing Study has yielded important information and informed key decisions throughout the process. The comments collected reflected a wide range of concerns that were considered in the development of the screening process and methodologies for the environmental technical studies supporting this DEIS.

How can the public comment on the DEIS?

The public can comment on the DEIS in multiple ways: via the project website, email, comment cards, and letters. The public will also have the opportunity to provide formal written or spoken testimony at the DEIS Public Hearing and during the DEIS comment period.

Comments on DEIS can be provided in several ways:

- › Fill out a comment card and/or provide testimony at a public hearing
- › Visit the website at: www.baycrossingstudy.com
- › Email your comments to: info@baycrossingstudy.com



What are the next steps in the NEPA process?

Following issuance of a ROD at the conclusion of the Tier 1 NEPA Study, a Tier 2, project-level NEPA Study may be advanced. Completion of Tier 1 does not presume that Tier 2 will be initiated, and a potential Tier 2 study has not been funded at this time. The Tier 2 NEPA Study could result in decisions made on a project-level (site-specific) analysis through evaluation of specific alignments within the corridor selected in the Tier 1 NEPA Study.

The Tier 2 analysis would include preliminary engineering design of alternative alignments and the assessment of potential environmental impacts associated with those alignments. As indicated previously, three of the MOAs – TSM / TDM, BRT, and Ferry Service – would be considered in combination with other alternatives should the Bay Crossing Study advance to a Tier 2 NEPA undertaking. Similar to the Tier 1 NEPA Study, agency and public involvement would be an essential part of the Tier 2 effort.

