Chesapeake BAY CROSSING STUDY
TIER 2 NEPA

CULTURAL RESOURCES TECHNICAL REPORT

Volume 1: Overview

Maryland Transportation Authority
MDTA

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ABBREVIATIONS AND ACRONYMS

ACHP	Advisory Council on Historic Preservation
APE	Area of Potential Effects
ARDS	Alternatives Retained for Detailed Study
CARA	Corridor Alternatives Retained for Analysis
CFR	Code of Federal Regulations
EIS	Environmental Impact Statement

FEIS	Final Environmental Impact Statement
FHWA	Federal Highway Administration
MD	Maryland
MDTA	Maryland Transportation Authority
MHT	Maryland Historical Trust
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOI	Notice of Intent
NRHP	National Register of Historic Places
PA	Programmatic Agreement
PTSU	Part-time Shoulder Use
ROD	Record of Decision
SHA	Maryland Department of Transportation State Highway Administration
SHPO	State Historic Preservation Office
SUP	Shared Use Path
TDM	Transportation Demand Management
TSM	Transportation Systems Management
U.S.	United States

1 INTRODUCTION

The Chesapeake Bay Crossing Study (Bay Crossing Study) is a two-tiered engineering and environmental study being advanced by the Maryland Transportation Authority (MDTA) in coordination with the Federal Highway Administration (FHWA). The Bay Crossing Study is addressing existing and future transportation issues at the William Preston Lane, Jr. Memorial Bridge (Bay Bridge) and its approaches along U.S. 50/301. Each tier of the Bay Crossing Study involves development of an Environmental Impact Statement (EIS), in compliance with the National Environmental Policy Act (NEPA), to describe potential significant environmental effects and inform the evaluation of alternatives. Tier 1 of the Bay Crossing Study (Tier 1 Study) was completed in April 2022. At that time, the FHWA issued a Final EIS/Record of Decision (FEIS/ROD) identifying Corridor 7, the corridor that includes the Bay Bridge and its approaches, as the Selected Corridor Alternative for further evaluation. Tier 2 of the Bay Crossing Study (Tier 2 Study) was launched in June 2022 to focus on a project-level (site-specific) analysis within the Tier 1 Selected Corridor Alternative (Corridor 7). Study limits for the Tier 2 Study analysis are defined in **Section 2.2**. The Tier 2 NEPA process was initiated formally with publication of a Notice of Intent (NOI) to prepare an EIS in the Federal Register on November 15, 2024.

This four-volume cultural resources document has been prepared to support and inform the EIS. In accordance with 36 Code of Federal Regulations (CFR) §800.8, consultation under Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, is running concurrently with the NEPA process. Section 106, and its implementing regulations at 36 CFR 800, requires federal agencies such as FHWA to consider the effects on historic properties of undertakings they carry out, approve, or fund on historic properties. Therefore, the MDTA and FHWA identified historic properties within the undertaking's area of potential effects (APE); assessed effects to those properties; and are consulting with the Maryland Historical Trust (MHT), representing Maryland's State Historic Preservation Officer (SHPO), and additional consulting parties throughout the Section 106 process.

Section 106 of the NHPA is a procedural requirement consisting of several steps for federal agencies to consider effects to historic properties resulting from undertakings. The MDTA, through delegated authority, assists in performing several of the steps on behalf of the FHWA. The process is initiated by determining the undertaking and identifying appropriate consulting parties. An APE is established in consultation with the SHPO, wherein historic properties, should they exist, may be affected by the proposed undertaking. Historic properties are districts, sites, buildings, structures, or objects meeting criteria for inclusion in the NRHP. The MDTA and FHWA then identify historic properties within the APE, and, if not previously evaluated, determine their eligibility for the National Register of Historic Places (NRHP), in consultation with consulting parties. Effects to such properties resulting from the proposed undertaking are then assessed.

Adverse effects to historic properties occur where there is an expected diminishment of those qualities that qualify a property for inclusion in the NRHP. If adverse effects are anticipated, resolution of effects can occur through a binding agreement document that stipulates measures to avoid, minimize, and/or mitigate adverse effects to historic properties. Where undertakings are unusually complex, and/or effects cannot be fully determined, a programmatic agreement (PA) may be used to fulfill Section 106. Because of the Tier 2 Study's geographic scope, complexity, and limited design information, the MDTA and FHWA informed consulting parties of the intention to conclude Section 106 project review by executing a PA resolving known anticipated adverse

effects and stipulating ongoing consultation requirements as design advances. Accordingly, this report documents the identification and evaluation efforts to date, but additional efforts and consultation are expected to occur under the anticipated PA terms being developed in consultation with participating consulting parties.

Volume 1 of this *Cultural Resources Technical Report* consists of an overview of the status of Section 106 review for the Tier 2 Study and historic property identification efforts. Volume 2 consists of the *Cultural Resources Gap Analysis Technical Report* (Gap Analysis), which is a review of existing cultural resources information and studies of the APE, including a methodology for additional identification and evaluation of historic properties. The *Architectural Historic Properties Identification* (Volume 3) documents architectural resources identification efforts. Volume 4 consists of the *Phase I Archaeological Survey within MDTA and SHA Right-of-Way for the Chesapeake Bay Crossing Study, Tier 2 NEPA, Anne Arundel and Queen Anne's Counties, Maryland* (Hutchins-Keim, Ross, and Cascardi 2024).

2 BACKGROUND

The Chesapeake Bay is one of Maryland's most important natural, economic, and cultural resources and the largest estuary in the United States. The 64,000-square-mile watershed that flows into the Chesapeake Bay spans six states and the District of Columbia and includes 150 major rivers and over 100,000 tributaries. The Chesapeake Bay has historically shaped the region's identity, culture, and traditions.

The Bay Bridge is a two-span structure that crosses the Chesapeake Bay from Anne Arundel County on the Western Shore to Queen Anne's County on the Eastern Shore. The original span opened in 1952, and the second span opened in 1973. Today, the two-lane original span typically carries eastbound traffic, and the three-lane second span typically carries westbound traffic. However, lanes on the bridge can be reversed to accommodate periods of heavy traffic. The approaches along U.S. 50/301 on each shore have six lanes (three lanes for each travel direction). The Bay Bridge has become one of Maryland's most iconic and recognizable landmarks, used by millions of Maryland residents and other travelers every year.

2.1 The Tiered NEPA Process

To study possible solutions that could address transportation issues, specifically as they relate to congestion, the MDTA and FHWA are conducting the Bay Crossing Study as a tiered NEPA study. The tiered approach to NEPA has allowed the MDTA and FHWA to focus on broader, planning-level decisions related to the preferred location of a potential new bay crossing in the Tier 1 Study EIS. In the subsequent Tier 2 Study EIS, the MDTA and FHWA analyzed more specific, project-level alternatives and potential impacts.

The Tier 1 Study evaluated 14 possible alternative corridor locations over a broad geographic area that spanned nearly 100 miles of the Chesapeake Bay between Harford and Cecil counties to the north and St. Mary's and Somerset counties to the south. The Tier 1 Study identified Corridor 7 as the Selected Corridor Alternative, which is a two-mile-wide and approximately 22-mile-long corridor that follows existing U.S. 50/301 and includes the location of the existing Bay Bridge.

The Tier 2 Study involves a project-level (site-specific) alternatives analysis within the Tier 1 Selected Corridor Alternative (Corridor 7). The focus of the Tier 2 Study is to identify the environmental impacts associated with alternatives to address the Tier 2 Study's Purpose and Need. This technical report supports the evaluation presented in the EIS.

2.2 Study Limits

The MDTA analyzed the traffic volumes along Corridor 7 and its interchanges to determine appropriate study limits for the Tier 2 Study. The Tier 2 western study limit has been identified as the MD 2/MD 450 interchange just east of the Severn River Bridge, and the Tier 2 eastern study limit has been identified as the U.S. 50/301 split.

2.3 Purpose and Need

The purpose of the Tier 2 Study is to address existing and future transportation capacity needs and access across the Chesapeake Bay and at the Chesapeake Bay Bridge approaches along the U.S. 50/301 corridor. The Tier 2 Study is evaluating measures to reduce congestion; improve

travel times and reliability, mobility, and roadway deficiencies; and accommodate maintenance activities and navigation, while minimizing impacts to local communities and the environment. Five needs have been identified:

- **Adequate Capacity and Reliable Travel Times** – Capacity of the Bay Bridge and its approaches on U.S. 50/301 are not sufficient to accommodate existing and anticipated traffic demand, resulting in traffic congestion on the Bay Bridge and adjacent roadway network.

- **Mobility** – Congestion at the Bay Bridge and its approaches and subsequent spillover effects on local roadways limit the movement of people, goods, and services across the Chesapeake Bay and in adjacent communities.

- **Roadway Deficiencies** – The bridge does not meet current design standards for design or traffic operations because of the existing narrow lane widths, lack of shoulders, and other factors.

- **Existing and Future Maintenance Needs** – Due to the age and design life of the existing Bay Bridge, substantial maintenance of the facility will be needed, leading to lane closures that make incident management more difficult and caused increased traffic and congestion delays.

- **Navigation** – The existing Bay Bridge is a key constraint for the height of ships that travel the Chesapeake Bay, including to the Port of Baltimore.

The MDTA has also identified two study objectives:

- **Environmental Responsibility** – Project alternatives will be developed to avoid and minimize impacts to communities and sensitive environmental resources.

- **Cost and Financial Responsibility** – Cost and financial responsibility will be a factor when analyzing and evaluating potential solutions, with regard to the means of paying for the development, operation, and maintenance of all proposed facilities.

3 ALTERNATIVES

The MDTA identified the Alternatives Retained for Detailed Study (ARDS), which are the NEPA range of reasonable alternatives for evaluation in the Tier 2 Study EIS. The ARDS include the No-Build Alternative and six build alternatives (**Figure 3-1)**. Each build alternative includes removing the existing eastbound and westbound Bay Bridge spans and replacing them with two new bridge spans constructed near the location of the existing Bay Bridge. The ARDS are differentiated by the number of lanes provided across the new bridge and on the approaches as well as the bridge location, and consist of:

- **Alternative A - No-Build**: retains the existing Bay Bridge, the U.S. 50/301 alignment, and the existing number of lanes: 6 lanes along U.S. 50/301 on the Western Shore, 5 lanes across the Chesapeake Bay on the existing Bay Bridge, and 6 lanes along U.S. 50/301 on the Eastern Shore;

- **Alternative B - 6-8-6 North**: 6 lanes along U.S. 50/301 on the Western Shore, 8 lanes across the Chesapeake Bay on a new bridge with one span to the north of the existing spans and one span in-between the existing spans, and 6 lanes along U.S. 50/301 on the Eastern Shore;

- **Alternative C - 6-8-6 South**: 6 lanes along U.S. 50/301 on the Western Shore, 8 lanes across the Chesapeake Bay on a new bridge with one span to the south of the existing spans and one span in-between the existing spans, and 6 lanes along U.S. 50/301 on the Eastern Shore;

- **Alternative D - 8-8-8 North**: 8 lanes along U.S. 50/301 on the Western Shore, 8 lanes across the Chesapeake Bay on a new bridge with one span to the north of the existing spans and one span in-between the existing spans, and 8 lanes along U.S. 50/301 on the Eastern Shore;

- **Alternative E - 8-8-8 South**: 8 lanes along U.S. 50/301 on the Western Shore, 8 lanes across the Chesapeake Bay on a new bridge with one span to the south of the existing spans and one span in-between the existing spans, and 8 lanes along U.S. 50/301 on the Eastern Shore;

- **Alternative F - 8-10-8 North**: 8 lanes along U.S. 50/301 on the Western Shore, 10 lanes across the Chesapeake Bay on a new bridge with one span to the north of the existing spans and one span in-between the existing spans, and 8 lanes along U.S. 50/301 on the Eastern Shore; and

- **Alternative G - 8-10-8 South**: 8 lanes along U.S. 50/301 on the Western Shore, 10 lanes across the Chesapeake Bay on a new bridge with one span to the south of the existing spans and one span in-between the existing spans, and 8 lanes along U.S. 50/301 on the Eastern Shore.

Each of the ARDS will also include an optional pedestrian / bicycle shared use path, tolling, transit-related improvements, Transportation Systems Management (TSM)/Transportation Demand Management (TDM), stormwater management, utilities, and truck weigh and inspection stations. These common items, in addition to the improvements associated with each build alternative, informed the development of the limit of disturbance (LOD) for each build alternative. Additional detail on the ARDS can be found in the Tier 2 Study Draft EIS.

3.1 Alternative A: No-Build

Alternative A (6-5-6), the No-Build Alternative, would retain the existing Bay Bridge, the U.S. 50/301 alignment, and the existing number of lanes. This alternative would retain six lanes on the approaches on the Eastern and Western Shores and five lanes on the two-span Bay Bridge. The No-Build Alternative will include regular maintenance of the Bay Bridge and U.S. 50/301, but no capital improvements other than currently planned and programmed projects.

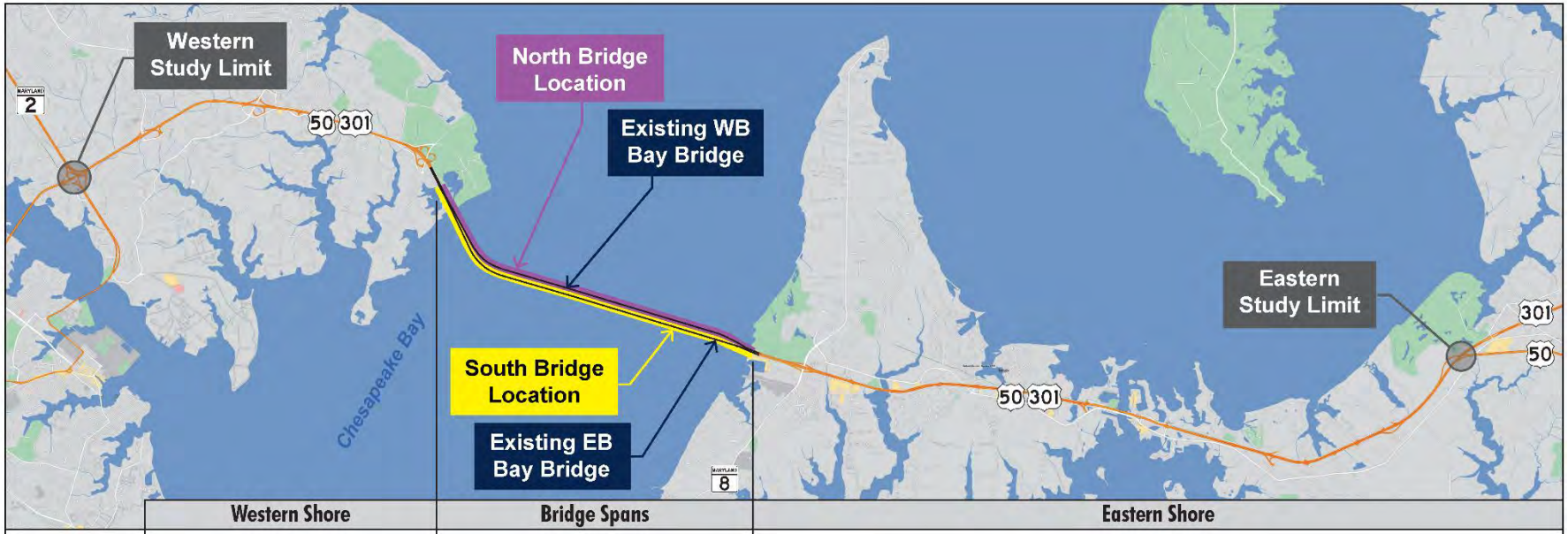
3.2 Alternative B: 6-8-6 North

Alternative B (6-8-6 North) would replace the existing Bay Bridge spans with two new bridge spans and would consist of six lanes along U.S. 50/301 on the Western Shore (three per direction), eight lanes on a new bridge (four per direction), and six lanes along U.S. 50/301 on the Eastern Shore (three per direction). The two new bridge spans would consist of one span to the north and one span in between the location of the existing bridge spans. The approach roadways would remain on the existing roadway alignment, except where necessary to connect to the new bridge spans. Thus, with Alternative B, the five existing bridge lanes would be increased to eight bridge lanes; however, the number of lanes on the Western Shore and Eastern Shore would not change and would remain at six total travel lanes beyond the immediate tie-ins to the new bridge spans.

3.3 Alternative C: 6-8-6 South

Alternative C (6-8-6 South) would replace the existing Bay Bridge spans with two new bridge spans and would consist of six lanes along U.S. 50/301 on the Western Shore (three per direction), eight lanes on a new bridge (four per direction), and six lanes along U.S. 50/301 on the Eastern Shore (three per direction). The two new bridge spans would include one span to the south and one span in between the location of the existing bridge spans. The approach roadways would remain on the existing roadway alignment, except where necessary to connect to the new bridge spans. Thus, with Alternative C, the five existing bridge lanes would be increased to eight bridge lanes; however, the number of lanes on the Western Shore and Eastern Shore would not change and would remain at six total travel lanes beyond the immediate tie-ins to the new bridge spans.

Figure 3-1: Alternatives Summary



	Western Shore	Bridge Spans	Eastern Shore
Alternative A: No-Build	6 Lanes	5 Lanes	6 Lanes
Alternative B	6 Lanes	8 Lanes NORTH	6 Lanes
Alternative C	6 Lanes	8 Lanes SOUTH	6 Lanes
Alternative D	8 Lanes	8 Lanes NORTH	8 Lanes
Alternative E	8 Lanes	8 Lanes SOUTH	8 Lanes
Alternative F	8 Lanes	10 Lanes NORTH	8 Lanes
Alternative G	8 Lanes	10 Lanes SOUTH	8 Lanes

3.4 Alternative D: 8-8-8 North

Alternative D (8-8-8 North) would replace the existing Bay Bridge spans with two new bridge spans and would consist of eight lanes along U.S. 50/301 on the Western Shore (four per direction), eight lanes on a new bridge (four per direction), and eight lanes along U.S. 50/301 on the Eastern Shore (four per direction). The two new bridge spans would include one span to the north and one span in between the location of the existing bridge spans. Alternative D would increase the number of lanes along the U.S. 50/301 approaches to eight lanes from the MD 2/MD 450 interchange on the Western Shore to the U.S. 50/301 split on the Eastern Shore and would generally remain on the existing roadway alignment except where necessary to connect to the new bridge spans. Thus, with Alternative D, the five existing bridge lanes would be increased to eight bridge lanes and the number of lanes on the Western Shore and Eastern Shore would increase from six total travel lanes to eight total travel lanes.

3.5 Alternative E: 8-8-8 South

Alternative E (8-8-8 South) would replace the existing Bay Bridge spans with two new bridge spans and would consist of eight lanes along U.S. 50/301 on the Western Shore (four per direction), eight lanes on a new bridge (four per direction), and eight lanes along U.S. 50/301 on the Eastern Shore (four per direction). The two new bridge spans would include one span to the south and one span in between the location of the existing bridge spans. Alternative E would increase the number of lanes along the U.S. 50/301 roadway approaches to eight lanes from the MD 2/MD 450 interchange on the Western Shore to the U.S. 50/301 split on the Eastern Shore and would generally remain on the existing roadway alignment except where necessary to connect to the new bridge spans. Thus, with Alternative E, the five existing bridge lanes would be increased to eight bridge lanes and the number of lanes on the Western Shore and Eastern Shore would increase from six total travel lanes to eight total travel lanes.

3.6 Alternative F: 8-10-8 North

Alternative F (8-10-8 North) would replace the existing Bay Bridge spans with two new bridge spans and would consist of eight lanes along U.S. 50/301 on the Western Shore (four per direction), ten lanes on a new bridge (five per direction), and eight lanes along U.S. 50/301 on the Eastern Shore (four per direction). The two new bridge spans would include one span to the north and one span in between the location of the existing bridge spans. Alternative F would increase the number of lanes along the U.S. 50/301 approach roadway to eight lanes from the MD 2/MD 450 interchange on the Western Shore to the U.S. 50/301 split on the Eastern Shore and would generally remain on the existing roadway alignment except where necessary to connect to the new bridge spans. Thus, with Alternative F, the five existing bridge lanes would be increased to ten bridge lanes and the number of lanes on the Western Shore and Eastern Shore would increase from six total travel lanes to eight total travel lanes.

3.7 Alternative G: 8-10-8 South

Alternative G (8-10-8 South) would replace the existing Bay Bridge spans with two new bridge spans and would consist of eight lanes along U.S. 50/301 on the Western Shore (four per direction), ten lanes on a new bridge (five per direction), and eight lanes along U.S. 50/301 on the Eastern Shore (four per direction). The two new bridge spans would include one span to the south and one span in between the location of the existing bridge spans. Alternative G would increase the number of lanes along the U.S. 50/301 approach roadway to eight lanes from the MD 2/MD 450 interchange on the Western Shore to the U.S. 50/301 split on the Eastern Shore

and would generally remain on the existing roadway alignment except where necessary to connect to the new bridge spans. Thus, with Alternative G, the five existing bridge lanes would be increased to ten bridge lanes and the number of lanes on the Western Shore and Eastern Shore would increase from six total travel lanes to eight total travel lanes.

3.8 Other Components of the Build Alternatives

3.8.1 Optional Pedestrian / Bicycle Shared Use Path

All proposed build alternatives include the option for the safe inclusion of a pedestrian/bicycle shared use path (SUP) along a new bridge. The MDTA has identified connections to existing and proposed trails and recreational facilities on the Eastern Shore and Western Shore.

3.8.2 Tolling

The MDTA owns and operates the Bay Bridge and uses tolls from its eight facilities to maintain and operate all their facilities. The Bay Bridge will continue to be a tolled facility and the MDTA will continue to manage it and the toll to address the current and future traffic and the associated congestion.

3.8.3 Transit-related Improvements

Transit-related improvements would be made through a financial commitment from the MDTA that would focus on providing a one-time investment for local transit agencies near the Bay Bridge. The same commitment would be made for all alternatives and would not be used to differentiate between alternatives.

All transit-related opportunities would be determined in the future, closer to the time of construction. The MDTA would coordinate with the Maryland Transit Administration (MTA), local governments, and local transit agencies to help determine the opportunities. However, these agencies would determine the transit-related improvements that would be most beneficial for them at that time, and they would be separate and distinct projects from the Bay Crossing.

3.8.4 TSM TDM Considerations

Two TSM/TDM improvements were considered with the retained build alternatives for potential implementation: congestion pricing and part-time shoulder use (PTSU) lanes.

The Bay Bridge will continue to be a tolled facility. If a build alternative is selected, congestion pricing could be used in the future to provide flexibility for toll management strategies that the MDTA could use to further reduce congestion and achieve transportation goals.

The shoulders on the bridge would be full width (12 feet wide) to accommodate future maintenance needs and incident management; therefore, they would also be wide enough to accommodate a PTSU lane. Although the build alternatives have been developed to accommodate PTSU, the operation of PTSU lanes is not being included as part of the alternatives. Future implementation of PTSU is not precluded.

3.8.5 Stormwater Management (SWM)

A planning-level, conceptual SWM analysis was completed that identified the stormwater needs and potential treatment locations throughout the study area for each build alternative.

3.8.6 Utilities

The study area along U.S. 50/301 contains public utilities including: potable water, sanitary sewer, natural gas, electric power/distribution, communications, and cable television. The build alternatives would impact some of these utilities that are in close proximity to U.S. 50/301, and the impacts to these utilities and associated replacements have been included in the build alternatives.

3.8.7 Truck Weigh and Inspection Station

There are two existing Truck Weigh and Inspection Stations (TWIS) along U.S. 50/301 between Oceanic Drive and the Bay Bridge, one in each direction. As part of the build alternatives, these facilities would be upgraded and relocated where necessary.

3.8.8 Limits of Disturbance (LOD)

The LOD is the proposed boundary that would include all construction, erosion and sediment control, SWM, and right-of-way offsets. The LODs for the alternatives were developed from the proposed horizontal and vertical geometry, typical sections, roadside design, and proposed interchange modifications. For Alternatives B and C, the number of lanes on the Western Shore and Eastern Shore would not change and would remain at six total travel lanes beyond the immediate tie-ins to the new bridge spans. This would mean the limits of roadway improvements associated with Alternatives B and C would end at the immediate tie-ins to the new bridge spans, compared with the limits of roadway improvements for Alternatives D through G, which would end at the study limits (MD 2/MD 450 and the U.S. 50/301 Split). Due to the shorter distance of proposed roadway modifications associated with Alternatives B and C, the LODs associated with these two build alternatives are smaller than the LODs associated with the other build alternatives.

4 SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT

4.1 Regulatory Context

Section 106 of the NHPA, and its implementing regulations at 36 CFR Part 800, requires federal agencies to take into account the effects of their undertakings on historic properties and afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment. The Bay Crossing Study, as "a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency" and requiring multiple Federal "permits, license or approvals" is an undertaking as defined at 36 CFR Part 800.16(y). Because this undertaking may affect historic properties, it is subject to further review under Section 106.

The Bay Crossing Study involves coordination with multiple federal agencies, all of which are subject to Section 106 requirements. The FHWA is serving as the lead federal agency and fulfilling the collective responsibilities for all federal agencies under the requirements of Section 106. In accordance with the PA Implementing Section 106 of the NHPA for FHWA Undertakings in Maryland, FHWA has delegated responsibility to the MDTA, in coordination with The Maryland Department of Transportation State Highway Administration (SHA), to initiate Section 106 review and consultation. Additional participants in the Bay Crossing Study Section 106 process include the ACHP; the MHT, which serves as the Maryland SHPO; Tribal Governments; Local Governments; other Consulting Parties with a demonstrated interest; and the public.

4.2 Process

The Section 106 process generally consists of four parts: initiation of the review process, identification of historic properties, assessment of effects, and resolution of adverse effects. A PA may be used if the effects of the undertaking on historic properties cannot be fully determined prior to the approval of the undertaking.

4.3 NEPA and Section 106

In accordance with 36 CFR §800.8, the Bay Crossing Study is coordinating Section 106 compliance with the NEPA process. The NEPA environmental review process and Section 106 consultation initiated during Tier 1 (as described **in Section 4.4.1**) is continuing during Tier 2. The MDTA has developed alternatives within the Tier 1 Selected Corridor Alternative, Corridor 7, following the process described in 23 United States Code §139. This included the identification of preliminary alternatives and ARDS that would be advanced for study in the Tier 2 EIS. In accordance with 36 CFR §800.4(a)(1), the MDTA refined the APE established in Tier 1 based on the ARDS. The MDTA will identify the potential effects to historic properties from each retained alternative and consider these potential effects in the identification of a Preferred Alternative. The development and evaluation of alternatives and the MDTA's Recommended Preferred Alternative will be documented in the Tier 2 DEIS.

4.4 Section 106 Consultation Summaries

4.4.1 Tier 1

During Tier 1, FHWA and the MDTA initiated the Section 106 consultation process on May 10, 2018. Consulting parties were invited to participate in consultation on November 29, 2018, and on April 9, 2019. Invited parties included federally-recognized tribes, government agencies, and other local organizations. The APE for Tier 1 was defined as the three Corridor Alternatives Retained for Analysis (CARA) (Corridors 6, 7, and 8).

Tier 1 activities included the phased identification of historic properties within the APE. Section 106 regulations per 36 CFR §800.4(b)(2) allows agencies to complete phased identification of historic properties for projects such as the Bay Crossing Study, in which large corridors or land areas are being considered as alternatives. The Section 106 regulations state that final identification and evaluation of historic properties may be deferred "if it is specifically provided for in a memorandum of agreement executed pursuant to [36 CFR] § 800.6, a programmatic agreement executed pursuant to [36 CFR] § 800.14(b), or documents used by an agency official to comply with the National Environmental Policy Act pursuant to [36 CFR] §800.8." Tier 1 historic properties identification focused on establishing the likely presence of historic properties within the APE, since previous historic properties survey and documentation were not uniform in scope or scale throughout the CARA. The resulting Cultural Resources Technical Report allowed for direct comparison of the CARA when analyzing each corridor alternative and identified significant resources, such as National Historic Landmarks, that merited avoidance.

The MDTA recorded Section 106 decisions made during Tier 1 in the Tier 1 FEIS/ROD. Recorded commitments included the deferral of historic properties identification and the continuation of the Section 106 process during Tier 2, in accordance with 36 CFR §§800.4(b)(2) and 800.8. The FEIS/ROD also documented Section 106 activities completed in Tier 1 and specified that Section 106 historic properties identification would continue only within the Preferred Corridor Alternative (Corridor 7).

4.4.2 Tier 2

The MDTA recommenced Section 106 consultation during Tier 2 NEPA on August 9, 2023, via letter from the MDTA to MHT, ACHP, other federal agencies, federally-recognized tribes, and other consulting parties, including state agencies, state-recognized tribes, and organizations, associations, and individuals with demonstrated legal or economic interest in the undertaking and the preservation of historic properties within the Tier 1 preferred corridor alternative (**Appendix A**). **Appendix B** lists all invited consulting parties.

Consulting parties meetings have occurred on February 29, 2024, May 7 2025, and October 30, 2025, and all were attended by FHWA. The first meeting provided overviews of the Tier 2 Study and the Section 106 process for this undertaking. A draft schedule of activities was also presented. The second meeting provided general Tier 2 Study updates, presentation of the refined APE, and an update on Section 106 historic property identification efforts. The third meeting included general Tier 2 Study updates, a preliminary list of adversely affected properties, and the PA development outline. Additional consulting parties meetings are anticipated to provide updates on adversely affected properties and development of the PA.

4.5 Identification Efforts

4.5.1 Area of Potential Effects

The Tier 2 Study is continuing the identification of historic properties. The MDTA defined architectural and archaeological Study Areas to resume historic properties identification and inform evaluations of Tier 2 alternatives (**Figure 4-1**). The Study Areas were used to identify historic properties during the alternatives development and prior to the eventual refinement of the APE based on the Tier 2 ARDS. The Architectural Study Area encompasses a one-mile corridor from the east bank of the Severn River to just east of the U.S. 50/301 split, expanded to include areas along the Chesapeake Bay shoreline with the potential for visual impacts. The Archaeological Study Area has the same termini and comprises the U.S. 50 right-of-way and a 1,000-foot buffer on either side of the right-of-way.

On April 25, 2025, the MDTA submitted to MHT and consulting parties an update to the APE (**Appendix C**). The APE is based on a preliminary engineering LOD along the U.S. 50/301 corridor with buffer to account for potential audible/visual effects to adjacent parcels that would not be physically affected by the project. Along the Chesapeake Bay, the APE includes parcels adjacent to the Chesapeake Bay, as well as the Sandy Point Shoal Lighthouse, to account for potential visual effects from new bridge structures. Field visits were completed on the Eastern Shore to determine areas in which the existing bridge is visually prominent.

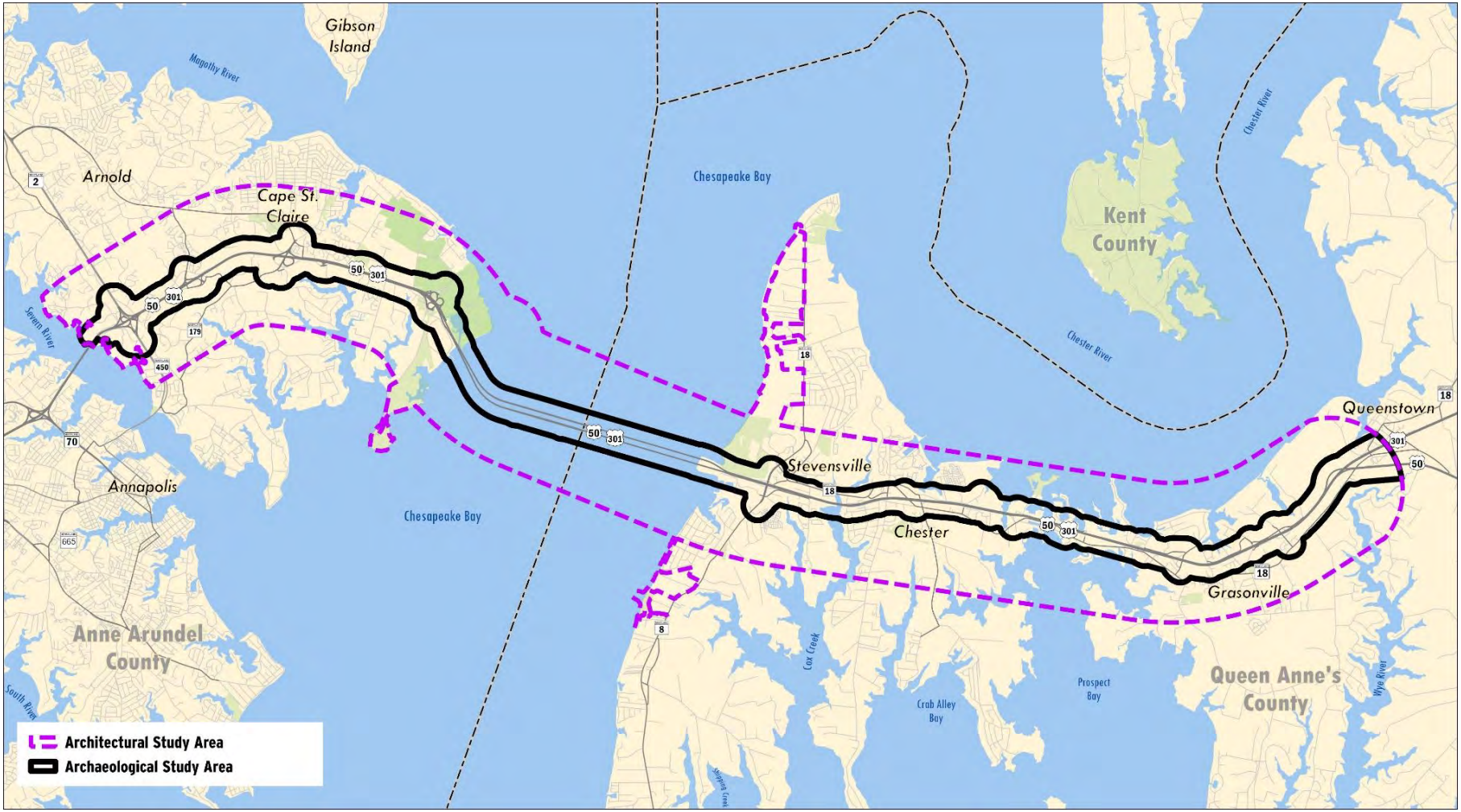
4.5.2 Identification of Historic Properties within the APE

The scope of identification efforts for historic properties requires consultation with the SHPO per 36 CFR §800.4 (a) and (b). To accommodate the large Study Areas and number of properties requiring evaluation, the MDTA developed Volume 2 of this report, the Gap Analysis,[1] and submitted it to MHT for review and comment on December 4, 2023. MHT responded and agreed with the general approaches in the Gap Analysis on January 11, 2024. The MDTA submitted a final Gap Analysis report to MHT and consulting parties on May 7, 2024.

The Gap Analysis included an overview of previous surveys and recorded cultural resources within the Study Areas; it evaluated the potential for encountering archaeological resources and recommendations for NRHP evaluations of historic architectural resources. The Gap Analysis also included recommendations for prioritizing archaeological and architectural surveys.

[1] For the purposes of this study, the MDTA defines the Gap Analysis as a document that synthesizes previous cultural resources work, identifies recorded and unrecorded cultural resources, and proposes methodologies to identify and evaluate historic properties.

Figure 4-1: Historic Property Identification Study Areas



4.5.3 Architectural Resources Evaluations

Because the Architectural Study Area contains a large number of post-World War II developments and property types associated with suburban development in Anne Arundel and Queen Anne's counties, the Gap Analysis (Volume 2) identified a need for additional historic context to consistently evaluate these resources. The MDTA developed the *Suburbanization Historic Context Addendum (1890-1990), Anne Arundel and Queen Anne's Counties, Maryland* (Diehlmann, et al. 2024) to understand suburban development in Anne Arundel and Queen Anne's counties. The historic context identified how the trends and patterns of development compared to those identified in previous studies that discuss national and statewide suburbanization perspectives within Montgomery and Prince George's counties commissioned by the SHA:

- *Suburbanization Historic Context and Survey Methodology, I-495/I-95 Capital Beltway Corridor Transportation Study* (1999 Suburbanization Context; KCI 1999); and
- *Suburbanization Historic Context Addendum (1961–1980), Montgomery and Prince George's Counties, Maryland* (2019 Context Addendum; Manning et al. 2019).

The historic context provides an overview of trends that influenced the development of the built environment in Anne Arundel and Queen Anne's counties. It identifies trends, patterns, and resource types that are unique to Anne Arundel and Queen Anne's counties and are not discussed in previous suburbanization contexts.

Given the MDTA's decision prior to the Tier 2 Study NOI to only consider alternatives along the existing U.S. 50/301 corridor and the large number of unevaluated resources within the Study Area, architectural historic properties identification prioritized resources closest to U.S. 50/301. The MDTA's priority architectural fieldwork area included all parcels within 400 feet of U.S. 50/301 right-of-way and the right-of-way of corridor interchanges, as well as areas along the Chesapeake Bay shoreline with the potential for visual effects. Any additional resources outside of this area requiring NRHP evaluation would be identified and evaluated following the refinement of the APE as appropriate. The MDTA presented this survey methodology to consulting parties in its February 2024 consulting parties meeting.

Of 245 resources identified in the Architectural Study Area, the MDTA submitted 230 architectural resource survey or evaluation forms to MHT and additional consulting parties for review and comment, a process which began on February 29, 2024. The MDTA identified 14 previously unevaluated resources in the Tier 2 Study as eligible for listing in the NRHP. Additionally, there are 24 previously identified resources that are eligible for or listed in the NRHP, for a total of 36 architectural historic properties in the Architectural Study Area. Of those 36, 17 historic properties are within the refined APE.

Printed copies of each form and archival discs (with supporting files) were provided to MHT via rolling batch submittals, at which time the additional consulting parties received the forms for review and comment via links to an ArcGIS Online web map maintained by the MDTA, where full evaluation forms could be downloaded (https://www.arcgis.com/apps/webappviewer/index.html?id=682920e149e14345b4e866a8c56df589). The final batch was submitted on July 23, 2025, with concurrence from MHT received on August 25, 2025. Comments were received from MHT and additional consulting parties and addressed as appropriate.

4.5.4 Archaeological Resources Evaluations

The Gap Analysis (**Volume 2**) identified portions of the Archaeological Study Area that were likely to contain significant archaeological remains that may be impacted by the proposed undertaking and provided recommendations for additional archaeological investigations. The MDTA recommended that areas of high and moderate archaeological potential be subjected to archaeological survey and areas of low potential be judgmentally tested. The MDTA also recommended that archaeological survey be completed in a staged approach based on archaeological potential, property ownership, proximity to U.S. 50, and LOD associated with alternatives within the Study Area.

As alternative alignments were not immediately available, the MDTA first conducted Phase I survey along the U.S. 50 corridor within areas of high and moderate archaeological potential within the existing MDTA and SHA right-of-way in the Archaeological Study Area. Phase I survey was also conducted in low potential areas using judgmental testing.

Five newly identified sites were documented as a result of the Phase I archaeological investigation within the existing right-of-way (see **Volume 4**). All five sites were determined not eligible for the NRHP and MHT concurred with the determination.

The MDTA then conducted Phase I survey within areas common to the ARDS that were identified as having high and moderate archaeological potential in the Gap Analysis (see **Volume 5**). Phase I survey was also conducted in low potential areas using judgmental testing.

Five newly identified sites were documented as a result of the Phase I archaeological investigation within the areas common to the ARDS. All five sites were determined not eligible for the NRHP and MHT concurred with the determination.

There are two previously identified archaeological historic properties—Sandy Point Farmhouse (18AN534/AA-330) and Sharpe-Ridout-Boone Mill (18AN652)—within the refined APE. Neither of these sites warrant preservation in place. Additionally, nine previously identified, but unevaluated, archaeological sites (18AN534, 18AN652, 18AN672, 18AN871, 18AN1192, 18QU51, 18QU63, 18QU66, 18QU216, 18QU235, 18QU236, 18QU237, 18QU238, 18QU411, and 18QU916) are within the refined APE and may require archaeological survey and evaluation if located within the Preferred Alternative LOD.

4.6 Next Steps

4.6.1 Additional Identification

If the APE boundary changes as a result of the project refinements or selection of the Preferred Alternative, the MDTA will evaluate all architectural resources (constructed in or before 1987) within the APE, if not already evaluated for NRHP eligibility as part of the Study Area, to the extent possible.

The MDTA will conduct archaeological surveys within any previously unsurveyed areas common to all alternatives. Additional archaeological survey will be conducted in the same stratified approach based on archaeological potential within those areas of the Preferred Alternative not surveyed previously, as practicable based on the Tier 2 Study schedule.

In the event of property access permissions being denied, changes in the Preferred Alternative's LOD, or project scheduling, archaeological survey not completed during Section 106 consultation will be integrated as a stipulation(s) in the Tier 2 Study PA.

Underwater Phase I survey will be completed after the identification of the Preferred Alternative and will focus on areas presumed to be subject to disturbance if a specific LOD is not established.

As the Tier 2 Study LOD is developed, additional investigation may be necessary, consistent with the assessment of archaeological potential for any new LOD outside the Archaeological Study Area.

4.6.2 Effects Assessment

Following the identification of the Preferred Alternative, the MDTA will make an assessment of adverse effects to historic properties located within the APE by applying the criteria of adverse effect in accordance with 36 CFR 800.5. An adverse effect may occur when there is an alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association (36 CFR Part 800.5[a][1]).

Examples of adverse effects (36 CFR Part 800.5[a][2]) include:

- Physical destruction of or damage to all or part of the property;
- Alteration of a property, including restoration, rehabilitation, repair, maintenance, stabilization, hazardous material remediation and provision of handicapped access, that is not consistent with the Secretary of the Interior's *Standards for the Treatment of Historic Properties* (36 CFR Part 68) and applicable guidelines;
- Removal of the property from its historic location;
- Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
- Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features;
- Neglect of a property which causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe or Native Hawaiian organization; and
- Transfer, lease, or sale of property out of federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

4.6.3 Programmatic Agreement

Due to the complexity of the undertaking and because effects on historic properties will not be fully determined prior to completion of the EIS, the MDTA expects to complete the Section 106 review through the execution of a PA, in accordance with 36 CFR 800.14(b)(1)(ii). The PA will govern continuing consultation as the program continues; document the resolution of known adverse effects to historic properties; and provide procedures for additional historic properties identification and resolution of adverse effects following advancement of design.

The MDTA will oversee implementation of the stipulations of the PA as the Tier 2 Study continues into design and construction.